

WATER PERMIT NO. 1715-1

Name of Applicant: Wayne Haines

Address: HCR 71 Box 28, Faith SD 57626

Phone: 605 748-6623

Amount of Water Claimed: 34.2 acre-feet

Total Acres: NA

Source of Water Supply: runoff

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

County: Meade

Type of Waste Disposal System:

Location: 25 miles west of Faith

PRIORITY Date Received: 3-16-2000

Fee: \$150

Corrected Application Received:: 3-28-2000

Period of Annual Use: Jan 1- Dec 31

Remarks:

Diversion Point: SE ¼ SW 1/4

Sec 21-T12N-R13E

Water Impounded: E ½ SW ¼, W ½ SE ¼

Sec 21-T12N-R13E

Depth of Well: NA

Well Driller: : _

Remarks:

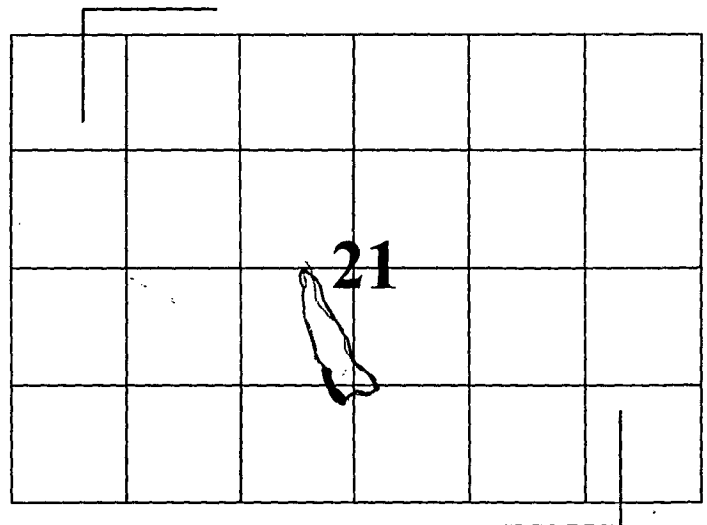
Type of Map: topo

Prepared by: Roger Smith, PE

Reviewed and the Number Assigned on: 3-28-2000

By: Karen Schlaak

Notice of Hearing - date to intervene: _____



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

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

(office use only)
No. 1715-1 Hydrologic Unit 10/20/13
Basin Lower Cheyenne
Newspaper Faith Independent, Faith, SD



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

Check use(s) of water:

☐ Municipal	☐ Suburban Housing	☒ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☒ Fish & Wildlife	☐ Geothermal Heat
☐ Domestic (over 18 gpm)	☐ Industrial	☒ Other <u>Livestock</u>	

Type of Application: ☒ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
(check one) ☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____
☐ Amendment/Correction to Permit No. _____

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.) _____

- Name of Applicant Wayne Haines Phone 605-748-6623
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address HCR 71 Box 28, Faith State SD 57626
(Street, RR. or Box) (Zip Code)
- Amount of water claimed _____ *CFS or _____ **GPM _____ ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Surface water runoff
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
SE 1/4 SW1/4 of Section 21 - T. 12 N., R. 13 E. Water Impounded: E 1/2 SW 1/4, W 1/2 SE 1/4
Sec. 21-T12N-R13E County Meade
- County or counties where water will be used Meade
- Annual period during which water is to be used 12 month Jan 1 - Dec 31
- Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

The dam is being constructed for recreation, fish & wildlife and livestock water. Please see attached Design Report and project plans for additional information.

STATE OF SOUTH DAKOTA)
County of Meade SS

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Attach map and any other technical information. (see instructions)

I, Wayne Haines, 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 X Wayne Haines

Subscribed and sworn to before me this 11 day of March 2000

Cynthia Frankfort
Notary Public

SOUTH DAKOTA
WATER PERMIT NO. 1715-1

Date of first receipt of application March 16, 2000.

Date of return to applicant for corrections, amendments or changes March 21, 2000.

Date of receipt of corrected application March 28, 2000.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1715-1 to Wayne Haines, HCR 71 Box 28, Faith SD 57626 authorizing the construction of the dam and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 1715-1 authorizes impoundment of 34 acre-feet of water from runoff by constructing a dam located in the SE ¼ SW ¼, SW ¼ SE ¼ Section 21 with water impounded in the E ½ SW ¼, W ½ SE ¼ Section 21; all in T12N-R13E. This permit authorizes impoundment of sufficient water annually to maintain water to the outlet elevation of 2789.0 feet mean sea level.
2. The water appropriated shall be used for the purpose of providing habitat for fish and wildlife propagation, recreational use and livestock watering and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 1715-1 is June 12, 2000.
5. The date from which applicant may claim right is March 16, 2000.
6. One-fifth of the construction is to be completed on or before December 12, 2002.
7. All construction is to be completed on or before June 12, 2005.
8. Water is to be put to beneficial use on or before June 12, 2009.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. Water Permit No. 1715-1 authorizes a dam with storage capacity of 34 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation of 2,789.0 feet mean sea level.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

WATER MANAGEMENT BOARD

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

JUL 10 2000

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 _____ Length of Gravel Pack _____
- e) Depth to Top of Water Bearing Material _____
- f) Depth to Water (ground surface to water level) _____
- g) Distance to nearest existing domestic well: _____
- On applicants property _____ On property owned by others _____

2. Wastewater Disposal System Information

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

3. Dugout Information

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

4. Water Storage Dams

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

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

Ducks Unlimited, Inc.
3502 Franklin Avenue
Bismarck, ND 58501

- b) Freeboard 5.0 feet
- c) Crest Width 12.0 feet
Crest Length 640 feet
- d) Height 13 feet
- e) Primary Outlet Capacity _____
If pipe, diameter 42 inches
- f) Secondary Spillway Capacity _____
Spillway Width 120 feet
- g) X & Y Slope _____
Upstream 3:1
Downstream 3:1
- h) Surface Area of Impoundment 12.7
- i) Storage 34.2 Acre Feet
- j) Drainage Area Above Dam 1510 Acres

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

LOCATION NOTICE FOR DAM/DUGOUT

Copy

Meade
County

75325
Location Notice No. (Office Use)

I, Wayne Haines, of _____
Name

HCR 71 Box 28, Faith, SD 57626

Address & Zip Code

Meade

County

(check one) X owner, _____ operator, of the following described land, do hereby
notify the Water Management Board of the State of South Dakota and all others concerned that I am exercising
my right under SDCL 46-4, for construction of a (check one) X dam, _____ dugout for the purpose of
impounding runoff waters for livestock, recreation and fish & wildlife purposes.
(type of use - livestock, recreation, etc.)

The following data is presented in compliance with SDCL 46-4-3 and 46-4-4.

(1) Date of:

(a) This notice February 14, 2000

(b) Proposed construction Summer of 2000



(2) Legal description of the land upon which the dam/dugout is located:

NW1/4SW1/4 of Section 23 - T. 12 N., R. 13 E. or Lat. 44° 59' 13.6"; Lon. 102° 30' 29"

(describe to the nearest 40 acre subdivision)

(3) Location of the dam/dugout from a section corner:

See attached map for directions

(describe distance N.S.E.W. in feet from the corner)

(4) County Meade

(5) Name of landowner Wayne Haines, Faith, SD

(6) Acre feet of water claimed annually 24.93

NOTES: If the storage of the proposed structure at the spillway crest or overflow elevation exceeds twenty five (25) acre feet, a water permit from the Water Management Board is required.

A location notice is required on a dugout only if the dugout captures surface water

(7) Complete the following information for the proposed dam/dugout:

*Items to be completed for a dugout

*a) Dam/Dugout designed by Ducks Unlimited, Inc.

3502 Franklin Ave., Bismarck, ND 58501

b) Freeboard 6.0 feet

d) Height 16 feet

c) Crest Width 12.0 feet

* Depth, if Dugout _____

Crest Length 304 feet

e) Outlet Dimensions

Pipe diameter 42"

Spillway width 100 feet

f) X & Y Slope:

Upstream 3:1

Downstream 3:1

*g) Water surface area 6.48 acres

*h) Storage at spillway crest or overflow elevation

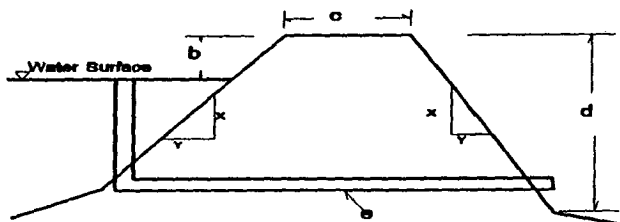
(acre feet) 24.93

i) Maximum storage to top of dam crest

(acre feet) 74.0

*j) Drainage area above dam/dugout

(acres) 1,312



Enclosed is ten dollars (\$10.00). The Water Management Board is requested to file this copy of the Location Notice in their official records. The original Location Notice has been filed (do not record) with the Register of Deeds of Meade County in accordance with SDCL 46-4-3.

Wayne Haines

Owner

Ducks Unlimited

Locator

STATE OF SOUTH DAKOTA

COUNTY OF Meade

)ss
)

I, Wayne Haines the applicant, certify that I have read this Location Notice and that the matters stated in this notice are true and that I intend, and am able to start construction within sixty days after the filing of this notice.

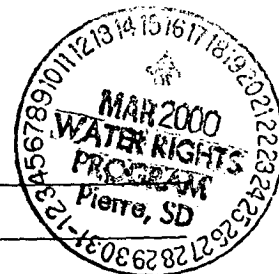
Subscribed and sworn to before me this 11th day of March, 2000.

Signed

X Wayne Haines

Carol A. Frankfort
Notary Public

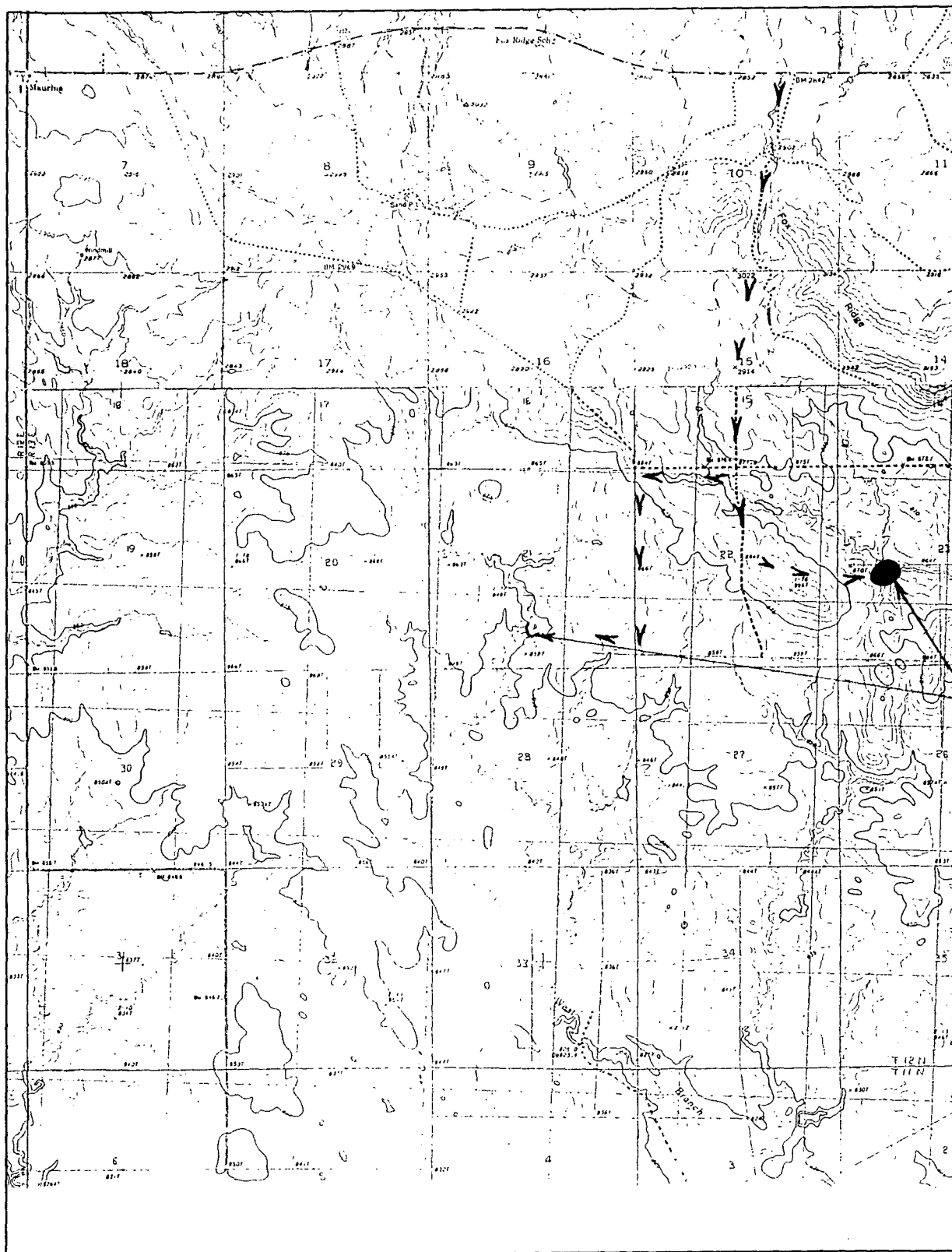
(seal)





NORTH HALF

MEADE COUNTY



PROJECT SITES

VICINITY MAP

DESIGN REPORT

For

FOX RIDGE WETLANDS
East Site

MEADE COUNTY, SD (SD-0288-001)

January 26, 2000



Prepared by:

Ducks Unlimited, Inc.
3502 Franklin Avenue
Bismarck, ND 58501

DESIGN REPORT

PROJECT: Fox Ridge Wetlands - East Site
SD -0288-01

LOCATIONS: NW ¼ SECTION 23 TWP. 12N RGE. 13E
Latitude 44° 59' 13.6"
Longitude 102° 30' 29"
Meade County, South Dakota

MARSH DATA: Full Service Level (FSL) @ 2815.0 (mean sea level)
6.48 Surface Acres @ FSL
24.93 Acre-Feet Capacity @ FSL
Maximum Depth - 10 feet (with the exception of structure excavation - 13')

PROJECT DATA: Minimum Top of Dam - elevation 2821.0
Top Width - 12'
Primary Spillway - elevation 2815.0
Emergency Spillway - elevation 2818.0
Upstream Berm - 10' wide @ elevation 2815.0
Side Slopes - 3 (horizontal): 1 (vertical)

CLASSIFICATION: 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 is expected should failure occur. The product of the "maximum storage capacity" times the "effective height" is 624. (48 x 13)

PRELIMINARY RISK ASSESSMENT: The proposed dam is located in a remote area made of pasture and rangeland. No improved roads or buildings exist downstream of the proposed dam for numerous miles.

PROPOSED PROJECT: The dam will be constructed having an upstream berm at elevation 2815.0, a top width of 12' at elevation 2821.0, and downstream slope of 3:1. The dam will be constructed from local material obtained from the required emergency spillway excavation and below the full service level where feasible

PRIMARY SPILLWAY: The structure will have fixed level water control capabilities at elevation 2915.0. Variable level water control will be provided by a separate structure (Agri-drain inline water control structure) having the capability of retaining water at 6" increments between elevations 2809.0 and 2815.0. The riser, acting, as a circular weir will be a 60" 14 gage corrugated metal pipe. The outlet barrel will be a 42", 14 gage corrugated metal pipe at a 0% slope at elevation 2802.0. A protected plunge pool will be located at the discharge of the outlet pipe.

EMERGENCY SPILLWAY: An emergency spillway will be excavated adjacent to the right (looking downstream) abutment. The channel will have a level crest at centerline of 265' and a width of 100'. Flows will outlet into an existing swale that will deliver flows back to the original creek.

HYDROLOGY / HYDRAULICS: A hydrologic analysis of surface water runoff was performed using two methods. A peak discharge was determined from regression equations developed in WATER-RESOURCE INVESTIGATIONS REPORT 80-80 USGS. The NRCS TR-20 METHOD was used to determine the inflow hydrograph. The hydraulic curve number used in the TR-20 METHOD was manipulated to create peak discharges similar to those developed from the regression equation. Other assumptions made in developing inflow hydrographs

by the TR-20 METHOD were:

Rain Duration = 1.00

Rain Table # = 1

Antecedent moisture condition = 2

Inflow hydrographs developed from the TR-20 METHOD were routed through the primary and emergency spillways. This yielded outflow hydrographs revealing peak discharges at maximum reservoir elevations corresponding to various runoff events. Hydraulic Calculations for the emergency spillway were performed by FLOCOMP, a program that computes gradually-varied flow profiles in prismatic channels using the Standard Step Method. 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 following table is a summary of that printout:

PARAMETERS:

WATERSHED - 2.05 SQ MI

TIME OF CONCENTRATION - 1.6 HOURS

CURVE #'s - 78 (5 yr) 80 (10 yr) 82 (25yr) 85 (100 yr)

Event	Rainfall (in)	Runoff (ac-ft)	Peak Inflow (cfs)	Peak Discharge (cfs)	Max WSP (elevation)	Freeboard* (ft)	Flow in E.S. (cfs)
5 yr	2.4	80	164	96	2816.85	4.4	0
10 yr	2.8	120	280	153	2818.19	3.06	<10
25yr	3.4	186	461	357	2819.21	2.04	186
100 yr	4.2	288	760	674	2819.98	1.27	512

*Calculated from a finish grade

DROUGHT ANALYSIS: It is difficult to determine the frequency in which there will be adequate runoff to sustain the marsh through the brood-rearing period, criteria important to project sponsors. Using NRCS methods, the 80% and 50% annual runoff will generate 15 and 43 acre-feet respectively. The annual requirement assuming an evaporative loss of approximately 3 feet is 15 acre-feet.

SOIL INVESTIGATION: As of this writing a soil investigation has not been completed. A preliminary investigation determined that suitable quantities of acceptable material are likely. A soil investigation report, to be completed in the near future, will be available upon request. The plans will be modified to show the approved borrow areas as well as any other modifications recommended by the geotechnical consultant.

IMPACTS TO SURROUNDING PROPERTY: The planned construction and subsequent reservoir will be contained within land owned by Wayne Haines and managed by the SD Game, Fish & Parks Dept. through a Cooperative Wildlife Agreement.

Dated: January 26, 2000

Submitted By:

Roger Smith, P.E (PE-4325)
Regional Engineer
Ducks Unlimited
Great Plains Regional Office



RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N2 416444

Pierre, _____ March 28, 2000

RECEIVED OF Wayne Haines, HCR 71, Box 28, Faith, SD 57626
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. 1715-1

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

50 00

50 00

By Harold E. Eide
Chief Engineer

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N^o 416426

Pierre, March 16, 2000

RECEIVED OF Wayne Haines, HCR 71, box 28, Faith, SD 57626
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>1715-1</u> to Appropriate Water, to construct and to put water to beneficial use _____	150	00
Fee for Application for Permit No. _____ to Appropriate Water, for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for _____		

(Any Other Work Provided by Law)	Total	150 00

By Harold Enble
Chief Engineer



DEPARTMENT OF GAME, FISH AND PARKS

Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

March 15, 2000



Water Rights Program
DENR – Foss Building
523 E. Capitol
Pierre, SD 57501

Dear Sirs:

Enclosed are a Location Notice and a Water Rights Permit application for two embankment ponds, or wildlife dams. The proposed locations of the structures are in northwest Meade County, South Dakota. Please refer to the enclosed maps and application forms for the exact locations.

These embankments are being constructed on private land in cooperation with the landowner, South Dakota Game, Fish & Parks and Ducks Unlimited, Inc. The purposes of these structures are for wildlife, recreation and livestock watering.

If you have any questions regarding this project, please contact me at 773-3658 or at the above address.

Sincerely,

Paul Coughlin
Wildlife Biologist

Enclosure



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

March 21, 2000

Wayne Haines
HCR 71 Box 28
Faith SD 57626

Dear Mr. Haines:

Thank you for submitting the *Application for a Permit to Appropriate Water* for your 34.2 acre-feet storage dam. We have received the \$150 application filing fee. In addition to the application filing fee, the Water Rights Program now collects the \$50 licensing fee at the time of filing. Please submit \$50 for the licensing of the water permit.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352

Water Permit Application #1715-1
Wayne Haines

Fox Ridge Wetlands - Site #1 (East)

Cat. 3 - Low Hazard Dam

Top of Dam Elev. - 2821
2nd Spway Elev. - 2818
P. Spway Elev. - 2815
DIS Top Elev. - 2805

Ht = 16 ft

Normal Storage Capacity - 24.93 Ac.-Ft
Int. Storage Capacity - 47.8
Max. Storage Capacity - 74.0

Int. Capacity x Eff. Height = $47.8 \times 13 = 621.4 < 3000$ ∴ 25 yr
Minimum Spillway Design

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

DA = 1312 Ac = 2.05 mi.²
SI = 2.50
Slope = 75 ft/mile

$$\begin{aligned} Q_{25} &= 83.4 A^{.65} S^{.46} S_i^{-.72} \\ &= 83.4 (2.05)^{.65} (75)^{.46} (2.50)^{-.72} \\ &= 83.4 (1.54) (6.68) (0.517) \\ &= \underline{445 \text{ cfs}} \end{aligned}$$

$$\begin{aligned} Q_{100} &= 132 A^{.65} S^{.46} S_i^{-.67} \\ &= 132 (2.05)^{.65} (75)^{.46} (2.50)^{-.67} \\ &= 132 (1.59) (7.29) (0.54) \\ &= \underline{830 \text{ cfs}} \end{aligned}$$

Secondary Spillway Flow

$$\begin{aligned} Q &= C L H^{3/2} \quad C = 2.6 \\ &= (2.6)(100)(3)^{1.5} \quad L = 100 \quad H = 3 \text{ ft.} \\ &= \underline{1350 \text{ cfs}} \end{aligned}$$

Section 74:02:08:09

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

NRCS Annual Yield

CN = ~~18~~⁸⁰ ISO = 1 1/2 DA = 1312 Ac.

80% chance = 0.18
 $0.18 \times 1312^{1/2} = \underline{19 \text{ Ac.-Ft.}}$

50% chance = 0.42
 $0.42 \times 1312^{1/2} = \underline{46 \text{ Ac.-Ft.}}$

10% chance = 2.0
 $2.0 \times 1312^{1/2} = \underline{219 \text{ Ac.-Ft.}}$

Water Permit Application # 1715-1
Wayne Haines

Fox Ridge Wetlands - Site #2 (West) Cat. 3 - Low Hazard Dam

Top of Dam Elev. - 2794	] - <u>Ht = 13 ft</u>
2nd Spway Elev. - 2791	
P. Spway Elev. - 2789	
D/S Toe Elev. - 2781	

Normal Storage Capacity - 34.2 A.-Ft
Int. Storage Capacity - 64.8
Max. Storage Capacity - 124

Int. Capacity x Eff. Height = $65 \times 10 = 650 < 3000$ ∴ 25 yr
Minimum Spillway Design

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

$$\begin{aligned} DA &= 1510 A_c = 2.36 \text{ mi}^2 \\ SI &= 2.50 \\ \text{Slope} &= 75 \text{ ft/mile} \\ Q_{25} &= 83.4 A^{.65} S^{.46} S^{-.67} \\ &= 83.4 (2.36)^{.65} (75)^{.46} (2.50)^{-.67} \\ &= 83.4 (1.674) (6.68) (.517) \\ &= \underline{480 \text{ cfs}} \end{aligned}$$

$$\begin{aligned} Q_{100} &= 132 A^{.65} S^{.46} S^{-.67} \\ &= 132 (2.36)^{.65} (75)^{.46} (2.50)^{-.67} \\ &= 132 (1.75) (7.29) (.541) \\ &= \underline{910 \text{ cfs}} \end{aligned}$$

Secondary Spillway Flow

$$\begin{aligned} Q &= CLH^{3/2} \quad C = 2.6 \\ &= (2.6)(120)(3)^{1.5} \quad L = 120 \text{ ft} \\ &= \underline{1620 \text{ cfs}} \quad H = 3 \text{ ft} \end{aligned}$$

Section 74:02:08:09

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

NRCS Annual YieldCN=80, ISO=1 1/2 DA=1510 A_c

$$\begin{aligned} 80\% \text{ chance} &= 0.18 \\ 0.18 \times 1510/12 &= \underline{23 \text{ A.-Ft.}} \end{aligned}$$

$$\begin{aligned} 50\% \text{ chance} &= 0.42 \\ 0.42 \times 1510/12 &= \underline{53 \text{ A.-Ft.}} \end{aligned}$$

$$\begin{aligned} 10\% \text{ chance} &= 2.0 \\ 2.0 \times 1510/12 &= \underline{252 \text{ A.-Ft.}} \end{aligned}$$



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

May 4, 2000

Wayne Haines
HCR 71, Box 28
Faith, SD 57626

Dear Mr. Haines:

We have reviewed the plans and specifications for your two dams associated with the Ducks Unlimited Fox Ridge Wetlands Project located in Sections 21 & 23, T12N-R13E, in Meade County. The plans and specifications as submitted are approved. Approval of the plans and specifications does not authorize construction of the dams. The construction may not begin until Water Permit Application No. 1715-1 is approved.

Our review was to determine compliance with the requirements of the Water Management Board Safety of Dams Rules, Chapter 74:02:08. Approval of these plans and specifications does not release you, as owner of the dams, from the responsibility for operating and maintaining the dams in good repair to ensure the safety of the dams.

The Haines Dam No.1 will be classified as a small size Category 3, Low Hazard dam with a dam height of 16 feet and a normal storage capacity of 25 acre-feet and a maximum storage capacity of 74 acre-feet. The Haines Dam No.2 will be classified as a small size Category 3, Low Hazard dam with a dam height of 13 feet and a normal storage capacity of 34 acre-feet and a maximum storage capacity of 124 acre-feet.

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

Sincerely,

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

c: Roger Smith, Ducks Unlimited

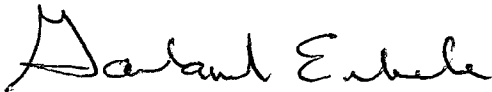
**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1715-1, Wayne Haines**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 1715-1, Wayne Haines, HCR 71, Box 28, Faith, SD 57626.

The Chief Engineer is recommending APPROVAL of Application No. 1715-1 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. Water Permit No. 1715-1 authorizes a dam with storage capacity of 34 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation of 2,789.0 feet mean sea level.
2. Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.

See report on application for additional information.

A handwritten signature in black ink, appearing to read "Garland Erbele". The signature is fluid and cursive, with the first name "Garland" being more prominent than the last name "Erbele".

Garland Erbele, Chief Engineer
May 4, 2000

REPORT ON
WATER PERMIT APPLICATION NO. 1715-1
Wayne Haines
April 20, 2000

Water Permit Application No. 1715-1 has been filed by Wayne Haines to impound 34.2 acre-feet of water from runoff by constructing a dam (Haines Dam No. 2) located in the SE ¼ SW ¼, SW 1/4 SE 1/4 of Section 21-T12N-R13E, in Meade County. The application also requests impoundment of sufficient water to maintain water at the outlet elevation 2789.0 feet mean sea level. The water will be used for fish and wildlife production, recreation and livestock watering.

Discussion:

Haines Dam No. 2 will be classified as a small size, Category 3, Low Hazard dam. The dam has been designed by Ducks Unlimited, Inc., as part of their Fox Ridge Wetlands project. The plans and specifications have been reviewed and will be approved; however, construction of the dam can not begin until Water Permit Application No. 1715-1 is approved.

The Haines Dam No. 2 will be 13 feet high with a normal storage capacity of 34.2 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 124 acre-feet with a reservoir level at the top of dam elevation. A dam of this size and hazard classification is required to have a minimum spillway design capable of passing a 25-year frequency event.

The dam has a drainage area of 2.36 square miles. The dam is designed to have a CMP drop inlet structure with a 72 inch riser and a 42 inch barrel and 5 foot of freeboard as the primary spillway, and a 120 foot wide earthcut spillway with 3 feet of available freeboard as the secondary spillway. Ducks Unlimited uses the NRCS TR-20 model to route the inflow through the dam. They route a 25 year event peak of 471 cfs through the structure with 2.3 feet of freeboard remaining, and a 100 year event peak of 876 cfs through the structure with 1.51 feet of freeboard remaining.

The annual yield for this drainage area with an 80 percent chance of occurrence, or 8 out of 10 years, is expected to be 23 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 53 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 252 acre-feet.

The Fox Ridge Wetlands Project involves another dam, Haines Dam No. 1, which is covered by Location Notice No. 75325. Haines Dam No. 1 will be classified as a small size, Category 3, Low Hazard dam. The dam has been designed by Ducks Unlimited, Inc., and the plans and specifications have been reviewed and will be approved.

The Haines Dam No. 1 will be 16 feet high with a normal storage capacity of 24.9 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 74 acre-feet with a reservoir level at the top of dam elevation. A dam of this size and hazard classification is required to have a minimum spillway design capable of passing a 25-year frequency event.

The dam has a drainage area of 2.05 square miles. The dam is designed to have a CMP drop inlet structure with a 60 inch riser and a 42 inch barrel and 6 foot of freeboard as the primary spillway, and a

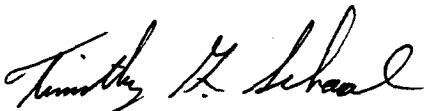
100 foot wide earthcut spillway with 3 feet of available freeboard as the secondary spillway. Ducks Unlimited uses the NRCS TR-20 model to route the inflow through the dam. They route a 25 year event peak of 461 cfs through the structure with 2.04 feet of freeboard remaining, and a 100 year event peak of 760 cfs through the structure with 1.27 feet of freeboard remaining.

The annual yield for this drainage area with an 80 percent chance of occurrence, or 8 out of 10 years, is expected to be 19 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 46 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 219 acre-feet.

Both of these dams are located on different branches of Beaver Dam Creek, about 14 miles upstream of their confluence. Dam No. 1 is located in the NW ¼ SW ¼ of Section 23-T12N-R13E on the Middle Branch of Beaver Dam Creek. Dam No. 2 is located in the SE ¼ SW ¼, SW ¼ SE ¼ of Section 21-T12N-R13E on the West Branch of Beaver Dam Creek. There are no existing Water Permits/Rights located on the West Branch of Beaver Dam Creek between the proposed dam and the confluence. There is one permit located below Dam No. 1 (LN No. 75325) on the Middle Branch of Beaver Dam Creek. Water Right No. 600-1, held by Wayne A. Vig, is located about 12 miles below the dam and appropriates 1.05 cfs from the Middle Branch of Beaver Dam Creek to irrigate 74 acres of lands in Sections 27 & 34-T11N-R14E. Approval of Water Permit Application No. 1715-1 should not have any adverse effect on Water Right No. 600-1.

Conclusions:

1. Water Permit Application No. 1715-1 should be approved since unappropriated water is available and approval should not have any adverse effect on existing Water Permits/Rights.
2. If approved, the low flow bypass requirement for downstream domestic use should be a qualification on Water Permit Application No. 1715-1.



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

Approved by:



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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

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

May 4, 2000

Wayne Haines
HCR 71, Box 28
Faith, SD 57626

Dear Mr. Haines:

Water Permit Application No. 1715-1 for fish & wildlife propagation, recreation, and livestock use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Faith Independent printed at Faith, SD (Ph # (605) 967-2161). For your information, a copy of the notice, the recommendation of the Chief Engineer and a report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

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



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

May 4, 2000

Faith Independent
Box 38
Faith, SD 57626-0038

ATTENTION: Legal Public Notice

Enclosed is a Notice of Hearing on Application No. 1715-1 to Appropriate Water to be published twice. Please publish the first notice on May 10, 1000, 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 Wayne Haines, HCR 71, Box 28, Faith, SD 57626 (Ph # (605) 748-6623).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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

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

No. 1715-1

Date _____

We are in receipt of your letter of May 4, 2000, enclosing Notice of Hearing to Appropriate Water by Application No. 1715-1 which was first published in our issue of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name

Newspaper

Instruction to Newspaper - Publish first Notice on May 10, 2000, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1715-1 to Appropriate Water

Notice is given that Wayne Haines, HCR 71 Box 28, Faith SD 57626 has filed an application for a water permit to impound 34 acre-feet of water from runoff by constructing a dam located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 21 with water impounded in the E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ Section 21; all in T12N-R13E. This application requests impoundment of sufficient water to maintain water to the outlet elevation of 2789.0 feet mean sea level. The water is to be used to provide habitat for fish and wildlife propagation, recreational use and livestock watering purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1715-1 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by May 29, 2000.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

www.state.sd.us/denr

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

May 16, 2000

Wayne Haines
HCR 71, Box 28
Faith, SD 57626

Dear Mr. Haines:

On May 4, 2000 letters were sent to you and the Faith Independent regarding Water Permit Application No. 1715-1 for fish & wildlife propagation, recreation, and livestock use. Diane from the Faith Independent has indicated the paper did not receive the notice, consequently it was not published.

Enclosed is another Notice of Application No. 1715-1 which has been sent to the Publisher of the Faith Independent (Ph # (605) 967-2161). The notice is to be published on May 24 and 31. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

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

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

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



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

May 16, 2000

Faith Independent
Box 38
Faith, SD 57626-0038

ATTENTION: Diane

Enclosed is a Notice of Hearing on Application No. 1715-1 to Appropriate Water to be published twice. Please publish the first notice on May 24, 2000 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 Wayne Haines, HCR 71, Box 28, Faith, SD 57626 (Ph # (605) 748-6623).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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

No. 1715-1

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

Date _____

We are in receipt of your letter of May 16, 2000 enclosing Notice of Hearing to Appropriate Water by Application No. 1715-1 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper

Instruction to Newspaper - Publish first Notice on May 24, 2000, with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 1715-1 to Appropriate Water

Notice is given that Wayne Haines, HCR 71 Box 28, Faith SD 57626 has filed an application for a water permit to impound 34 acre-feet of water from runoff by constructing a dam located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 21 with water impounded in the E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ Section 21; all in T12N-R13E. This application requests impoundment of sufficient water to maintain water to the outlet elevation of 2789.0 feet mean sea level. The water is to be used to provide habitat for fish and wildlife propagation, recreational use and livestock watering purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1715-1 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by June 12, 2000.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
 County of Meade) SS

I, Diane K Isaacs

certify that the attached printed Notice was taken

from the Faith Independent

printed and published in Meade - Faith

County of Meade and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

May 24, 2000

May 31, 2000

Cost of Printing \$33.45

Diane K Isaacs
 (Signature)

Office Manager
 (Title)

May 31, 2000
 (Date Signed)



Notice of Application No. 1715-1 to Appropriate Water

Notice is given that Wayne Haines, HCR 71 Box 28, Faith SD 57626 has filed an application for a water permit to impound 34 acre-feet of water from runoff by constructing a dam located in the SE 1/4 SW 1/4, SW 1/4 SE 1/4 Section 21 with water impounded in the E 1/2 SW 1/4, W 1/2 SE 1/4 Section 21; all in T12N-R13E. This application requests impoundment of sufficient water to maintain water to the outlet elevation of 2789.0 feet mean sea level. The water is to be used to provide habitat for fish and wildlife propagation, recreational use and livestock watering purposes.

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The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Nettie H. Myers, Secretary, Department of Environment and Natural Resources.

[Publish May 24 & 31, 2000]



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

JUL 10 2000

Wayne Haines
HCR 71, Box 28
Faith, SD 57626

Dear Mr. Haines:

Enclosed is Water Permit No. 1715-1 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

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

enclosures

REPORT ON INSPECTION OF PERMIT NO. 1715-1

Other permit(s) associated with the project: Location Notice No. 75325 (Haines Dam No. 1)

DATE OF INSPECTION: September 15, 2004

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

NAME & ADDRESS OF PERMIT HOLDER: Wayne Haines, HCR 71 Box 28, Faith, SD 57626

DIVERSION POINT LEGAL LOCATION: 950 ft. north & 2500 ft. east of the SW corner of Sec. 21-T12N-R13E (SE ¼ SW ¼) (Lat. 44.98219, Long. -102.54322).

DAM INFORMATION: (Haines Dam No. 2)

- 1) Height to crest 13 feet
- 2) Height to primary spillway 8 feet
- 3) Height to secondary spillway 10 feet
- 4) Crest width 12 feet
- 5) Crest length 640 feet
- 6) Spillway length XXX feet
- 7) Spillway width 120 feet
- 8) Approx. storage (Normal) 34 acre-feet
- 9) Approx. storage (Maximum) 124 acre-feet
- 10) Date constructed: 2000

PERMIT QUALIFICATIONS AND REGULATIONS:

- 1) Soil and water permit lands agree with lands being irrigated and lands listed on permit N/A
- 2) Special qualifications to permit being abided by yes
- 3) All structures, wells and lands on map yes
- 4) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period N/A

Permit No. 1715-1
Lower Cheyenne River - Water District

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

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

I have this day, **September 15, 2004**, made a thorough examination of the water use system constructed by **Wayne Haines** of **HCR 71 Box 28, Faith, SD 57626** holder of Permit No. **1715-1**, bearing the priority of **March 16, 2000** authorizing the storage of **34** acre-feet of the waters of **runoff** for **fish & wildlife propagation, recreation and livestock water** purposes, in **Meade** County.

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

A. Works used to divert the water:

A 13 ft. high earthen dam with a normal storage capacity of 34 acre-feet

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

N/A

C. Works used to apply water to beneficial use:

A 13 ft. high earthen dam with a normal storage capacity of 34 acre-feet

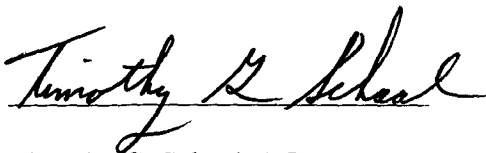
The system is in the following condition **good**. The point of diversion is located **950 ft. north & 2500 ft. east of the SW corner of Sec. 21-T12N-R13E (SE ¼ SW ¼) (Lat. 44.98219, Long. -102.54322)**. The works are capable of storing **34** acre-feet of water which is to be used for **fish & wildlife propagation, recreation and livestock water**. Water has been put to beneficial use to the maximum extent as follows:

A 13 ft. high earthen dam with a normal storage capacity of 34 acre-feet

and the license should be issued for **34** acre-feet of storage.

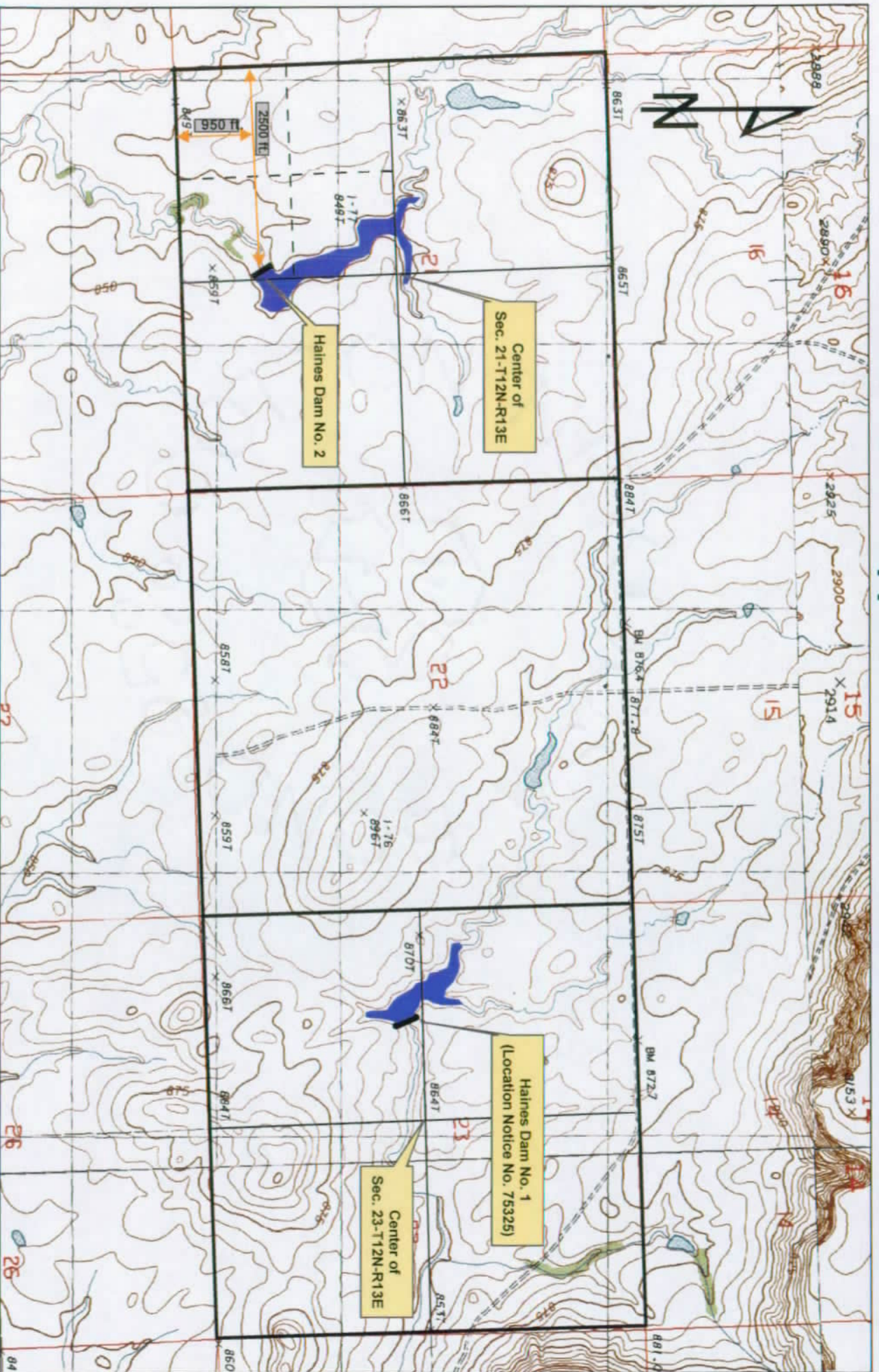
Applicable permit qualifications have been complied with: Yes **X**

Exceptions to compliance are: **none** Date Report Completed: **January 12, 2005**



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

Water Permit Application No. 1715-1



South Dakota Department of
Environment and Natural Resources
Protecting South Dakota's Tomorrow... Today



Timothy G. Schaal
1/12/05
Timothy G. Schaal, P.E.
Natural Resources Engineer Specialist
DENR, Water Rights Program

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 1715-1

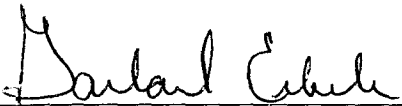
(1) Wayne Haines, HCR 71 Box 28, Faith SD 57626 made Application No. 1715-1, March 16, 2000 for a water permit to impound 34 acre feet of water from runoff, Meade County, South Dakota for fish and wildlife propagation, recreational use and livestock watering purposes. Permit No. 1715-1, with a priority date of March 16, 2000 was approved June 12, 2000 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before June 12, 2005 and for the application to beneficial use of water on or before June 12, 2009.

(2) The water supply system has been completed and water applied to beneficial use in accordance with South Dakota State Law. Pursuant to South Dakota Codified Law 46-5-30.1, the holder and/or owner of Water Right No. 1715-1 is issued a license, bearing a priority date of March 16, 2000, to impound 34 acre feet of water for fish and wildlife propagation, recreational use and livestock watering purposes.

The location of the storage dam (spillway) is 950 feet north and 2,500 feet east of the southwest corner of Section 21-T12N-R13E (SE ¼ SW ¼).

(3) This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Permit No. 1715-1, including the following now applicable qualifications:

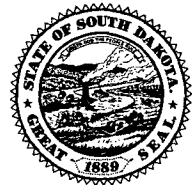
- Water Permit No. 1715-1 authorizes a dam with storage capacity of 34 acre-feet of water and sufficient water annually to maintain the water level to the outlet elevation of 2,789.0 feet mean sea level.
- Low flows as needed for downstream domestic use, including livestock water and prior water rights must be by-passed.



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

APR 19 2005

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

APR 19 2005

1715-1

Wayne Haines
HCR 71 Box 28
Faith SD 57626

Dear Mr. Haines:

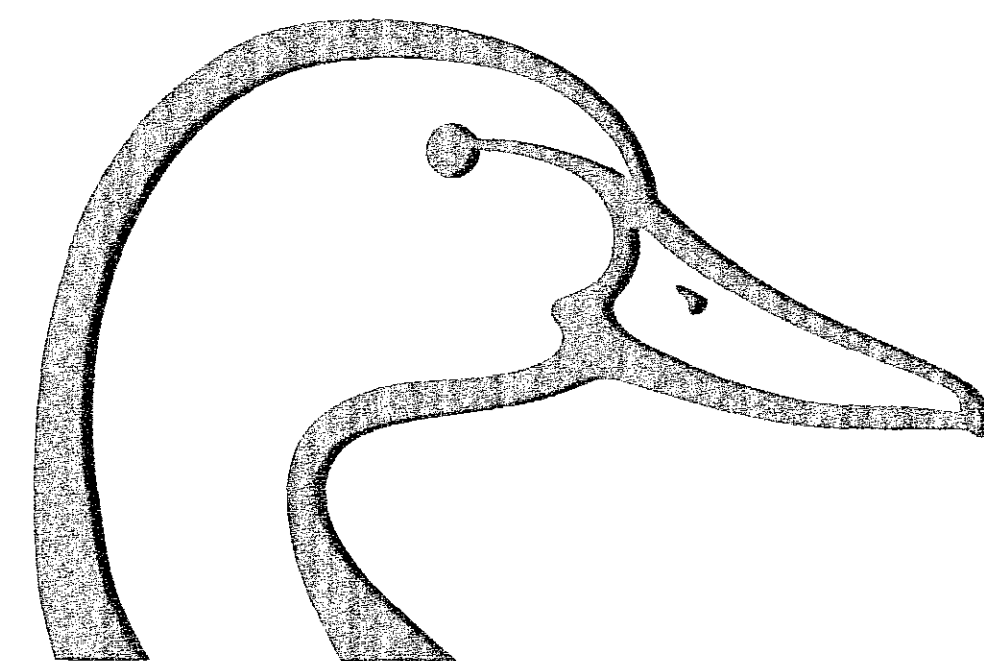
Enclosed is Water License No. 1715-1. This is the final water right document completing your process of obtaining a Water Right.

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

Sincerely,

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

enclosures



DUCKS UNLIMITED SPECIFICATIONS

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QUANTITIES

MOBILIZATION	1 L.S.
SITE PREPARATION	
EAST SITE	1027 C.Y.-S*
WEST SITE	815 C.Y.-S*
SPILLWAY EXCAVATION (INFORMATION ONLY)	
EAST SITE	3823 C.Y.
WEST SITE	286 C.Y.
EMBANKMENT CONSTRUCTION	
EAST EMBANKMENT	7430 C.Y.-S*
WEST EMBANKMENT	6901 C.Y.-S*
WATER	14 M-GAL.
WATER CONTROL STRUCTURE	
1-60"Ø CMP RISER-EAST SITE	1 L.S.
1-72"Ø CMP RISER-WEST SITE	1 L.S.
APPURTENANCES	1 INC.
CULVERT INSTALLATION	
42"Ø CMP	166 L.F.-P
12"Ø PVC	54 L.F.-P
RIPRAP	
CLASS I	22 C.Y.-P
CLSSS II	92 C.Y.-P

*INCLUDES 15% FOR SHRINKAGE

**BASED ON 10 GAL./C.Y. ONLY ACTUAL QUANTITY
USED WILL BE PAID FOR.

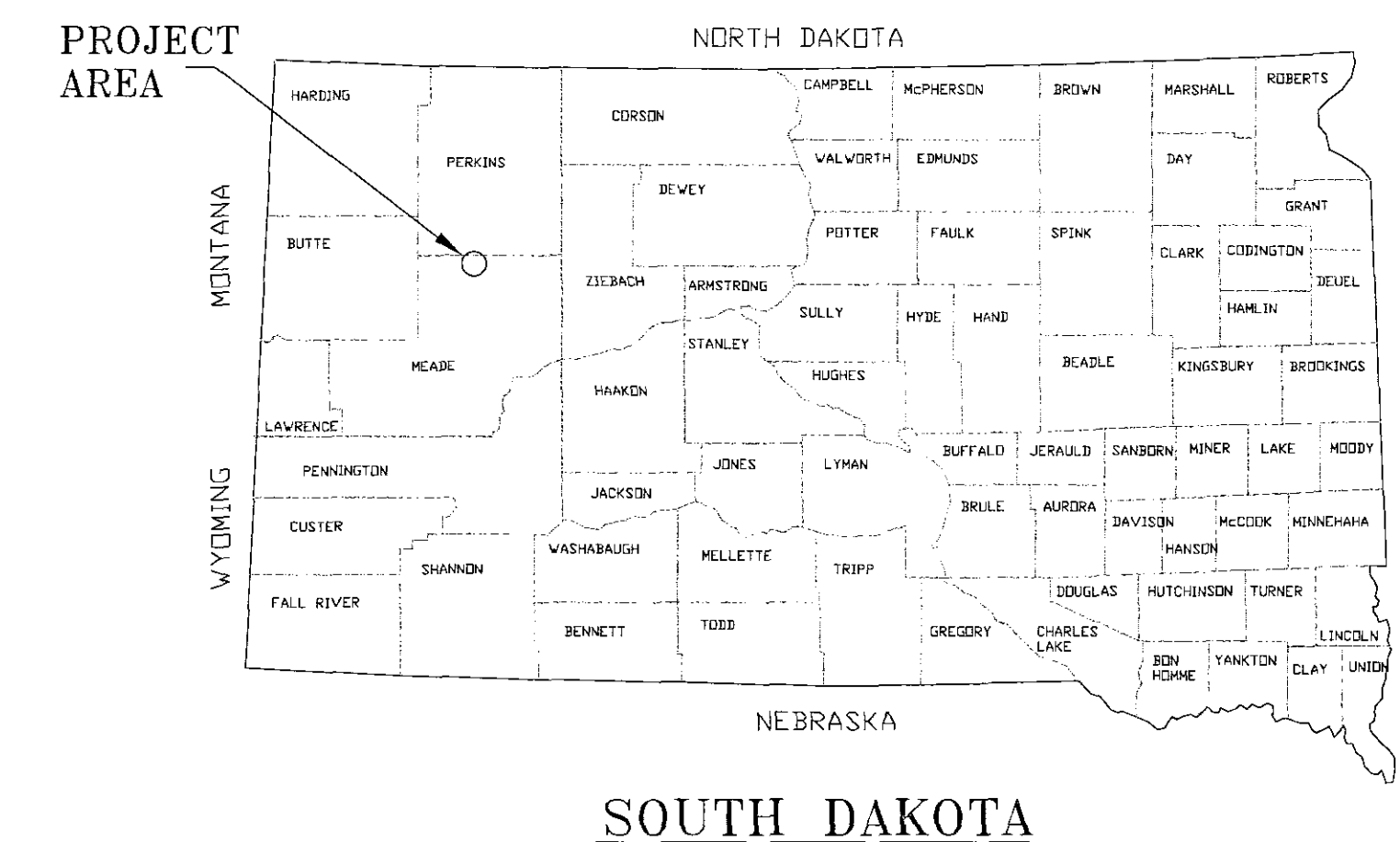
DUCKS UNLIMITED

PROJECT

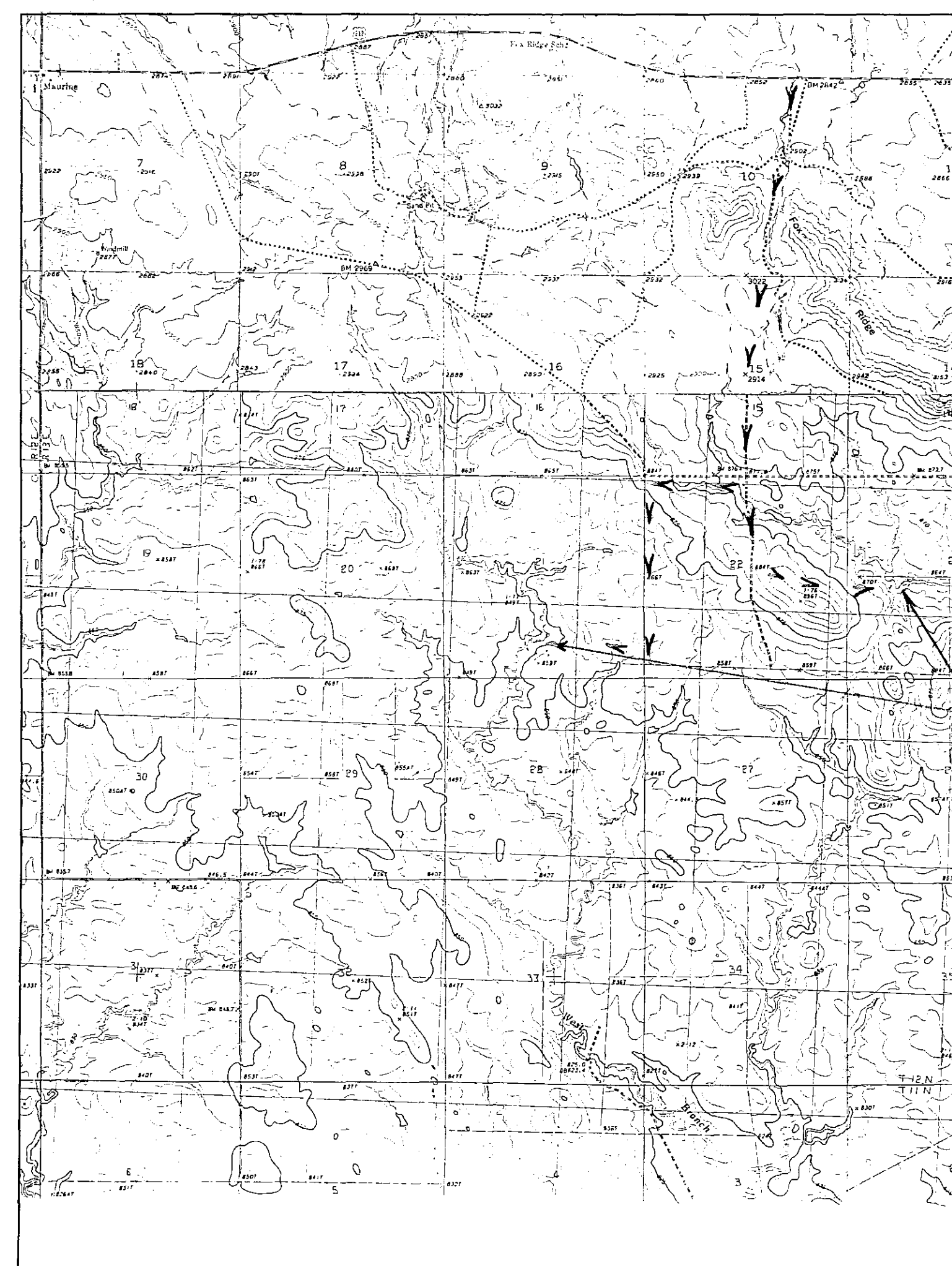
FOX RIDGE WETLANDS SECTIONS 21&23, T12N, R13E, MEADE COUNTY, SOUTH DAKOTA

IN COOPERATION WITH

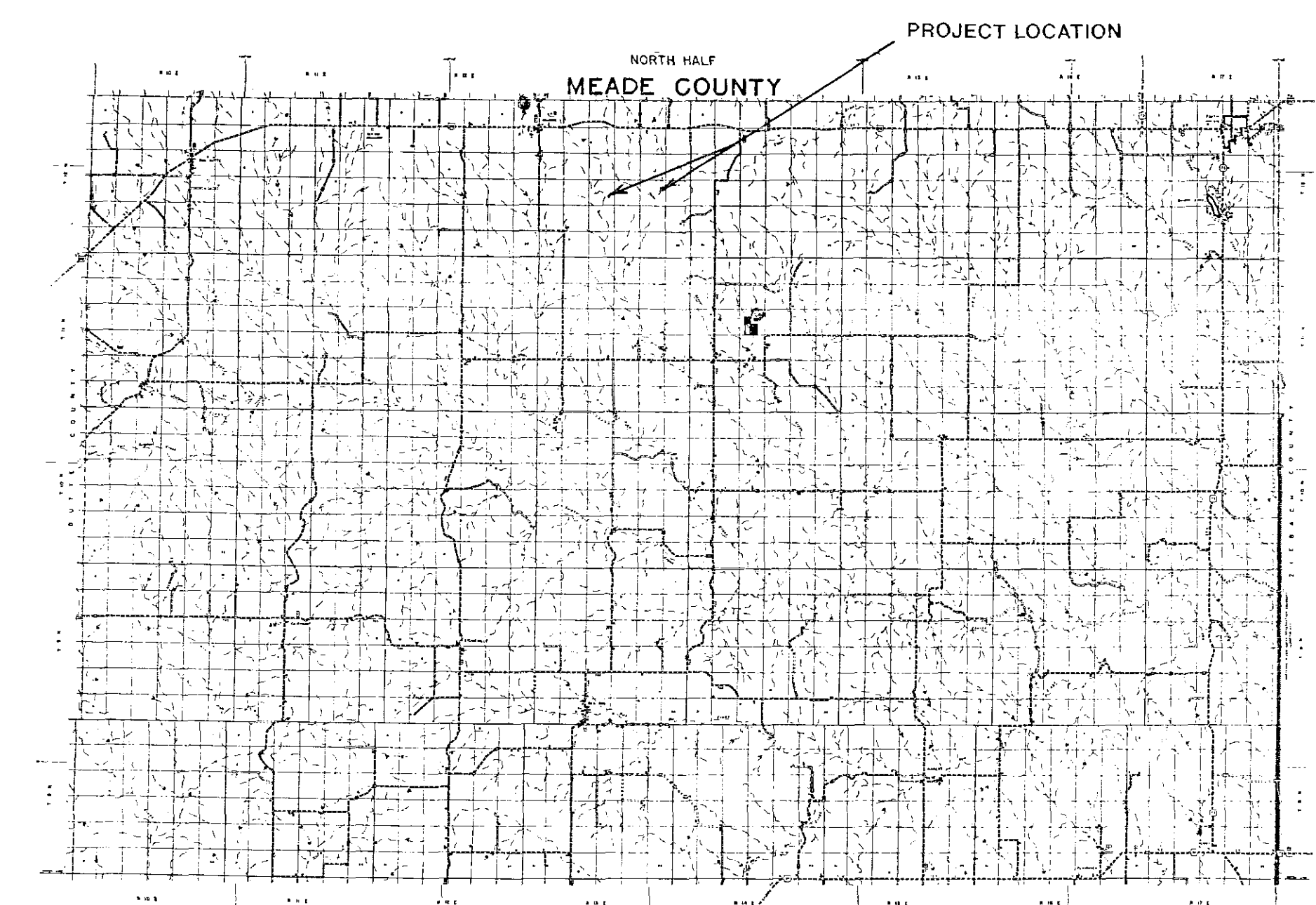
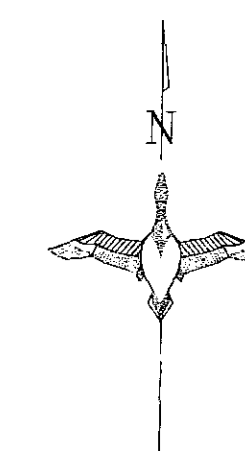
SOUTH DAKOTA DEPT. OF GAME, FISH & PARKS



SOUTH DAKOTA



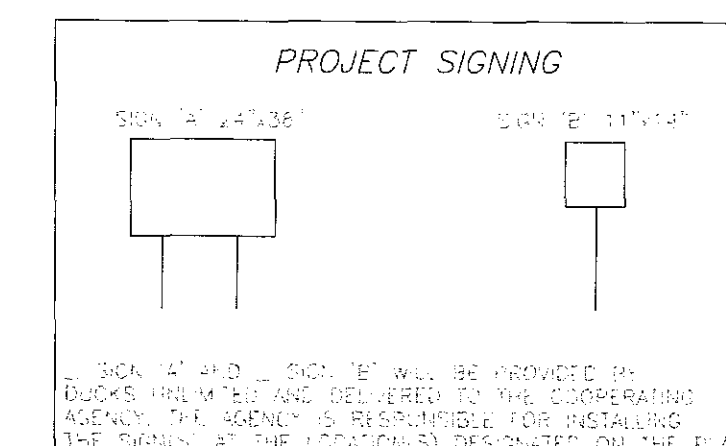
PROJECT SITES



MEADE COUNTY

AGENCY CONTACT:
PAUL CAUGHLIN
S.D. DEPT. OF GAME,
FISH & PARKS
605/773-3381

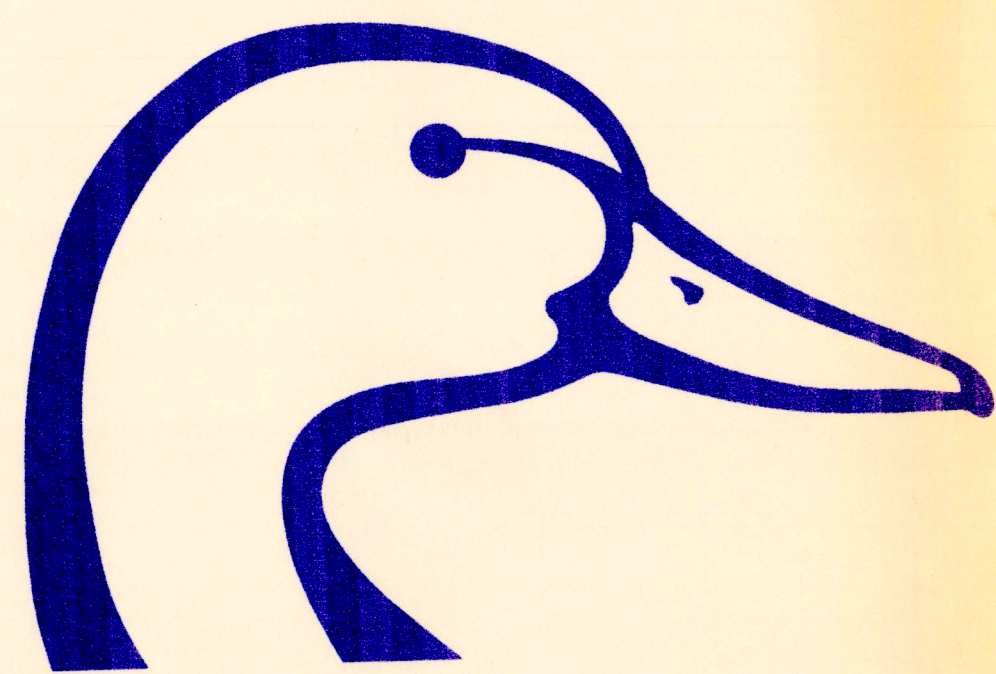
LANDOWNER CONTACT:
WAYNE HAINES
605/748-2263



	PROJECT NO. SD-0288-001 FOX RIDGE WETLANDS		DESIGNED BY: R.C.S.
	GREAT PLAINS REGIONAL OFFICE		DRAWN BY: B
DATE: 1-17-00	SHEET NO. 1 OF 9	APPROVED BY: <i>[Signature]</i>	SURVEYED BY:
		CHECKED BY: B.R.K.	APPROVED BY: 1715-1

VICINITY MAP

1715-1



DUCKS UNLIMITED SPECIFICATIONS

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QUANTITIES

MOBILIZATION	1 L.S.
SITE PREPARATION	
EAST SITE	1027 C.Y.-S*
WEST SITE	815 C.Y.-S*
SPILLWAY EXCAVATION (INFORMATION ONLY)	
EAST SITE	3823 C.Y.
WEST SITE	286 C.Y.
EMBANKMENT CONSTRUCTION	
EAST EMBANKMENT	7430 C.Y.-S*
WEST EMBANKMENT	6901 C.Y.-S*
WATER	14 M-GAL.
WATER CONTROL STRUCTURE	
1-60"Ø CMP RISER-EAST SITE	1 L.S.
1-72"Ø CMP RISER-WEST SITE	1 L.S.
APPURTENANCES	1 INC.
CULVERT INSTALLATION	
42"Ø CMP	166 L.F.-P
12"Ø PVC	54 L.F.-P
RIPRAP	
CLASS I	22 C.Y.-P
CLSSS II	92 C.Y.-P

*INCLUDES 15% FOR SHRINKAGE
**BASED ON 10 GAL./C.Y. ONLY ACTUAL QUANTITY
USED WILL BE PAID FOR.

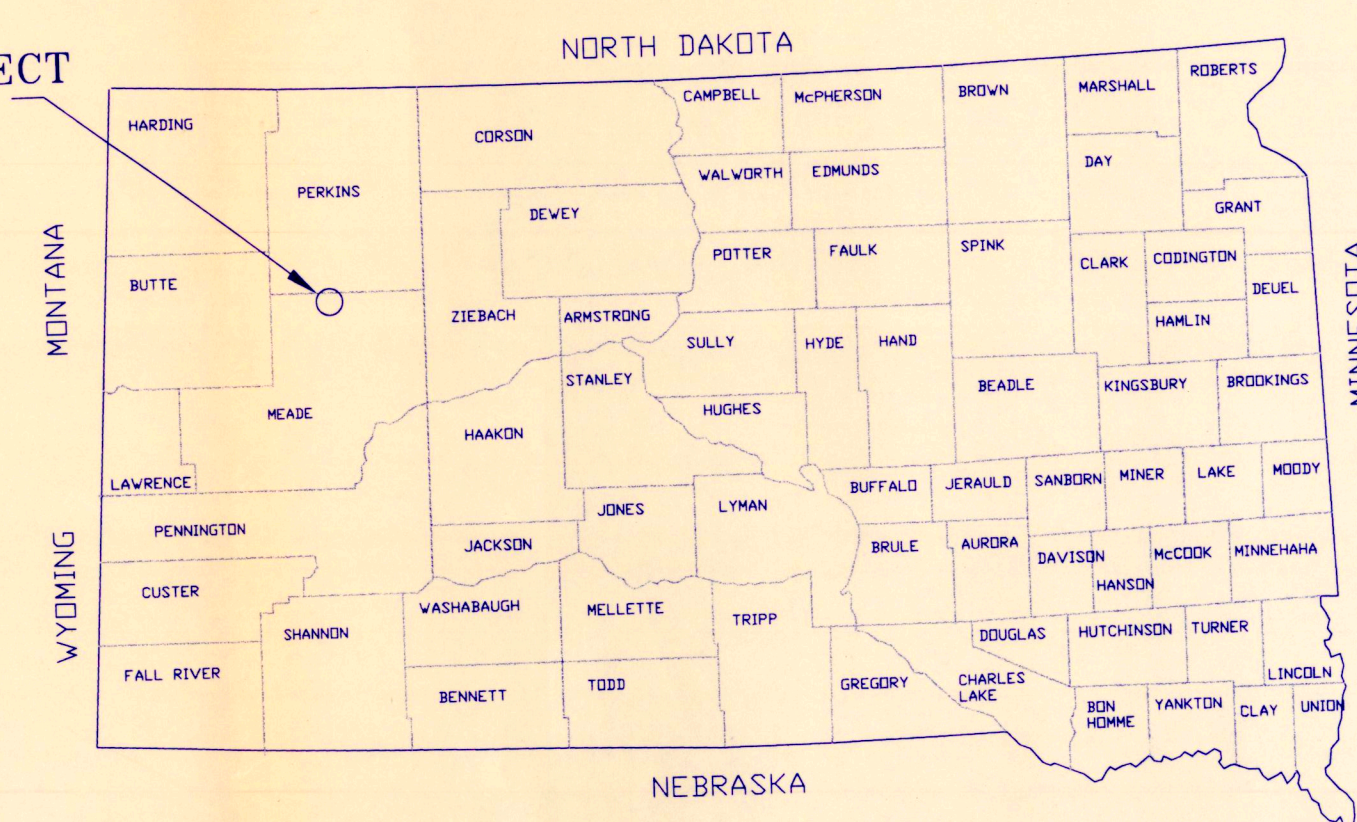
DUCKS UNLIMITED

PROJECT

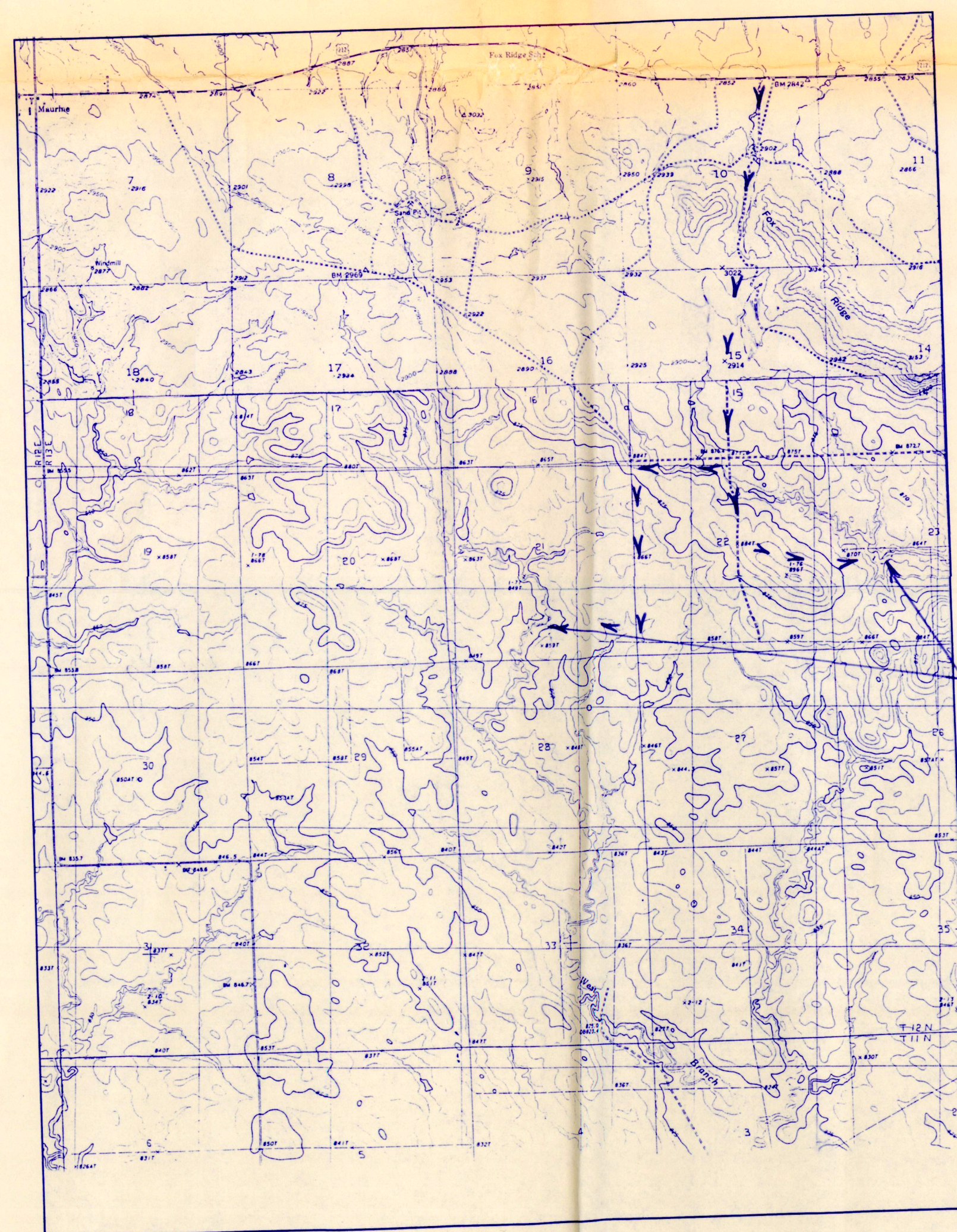
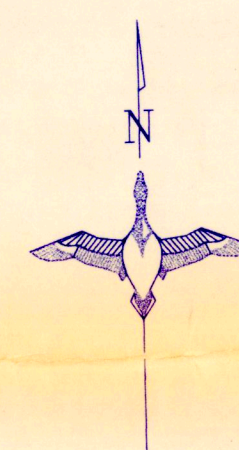
FOX RIDGE WETLANDS SECTIONS 21&23, T12N, R13E, MEADE COUNTY, SOUTH DAKOTA

IN COOPERATION WITH

SOUTH DAKOTA DEPT. OF GAME, FISH & PARKS

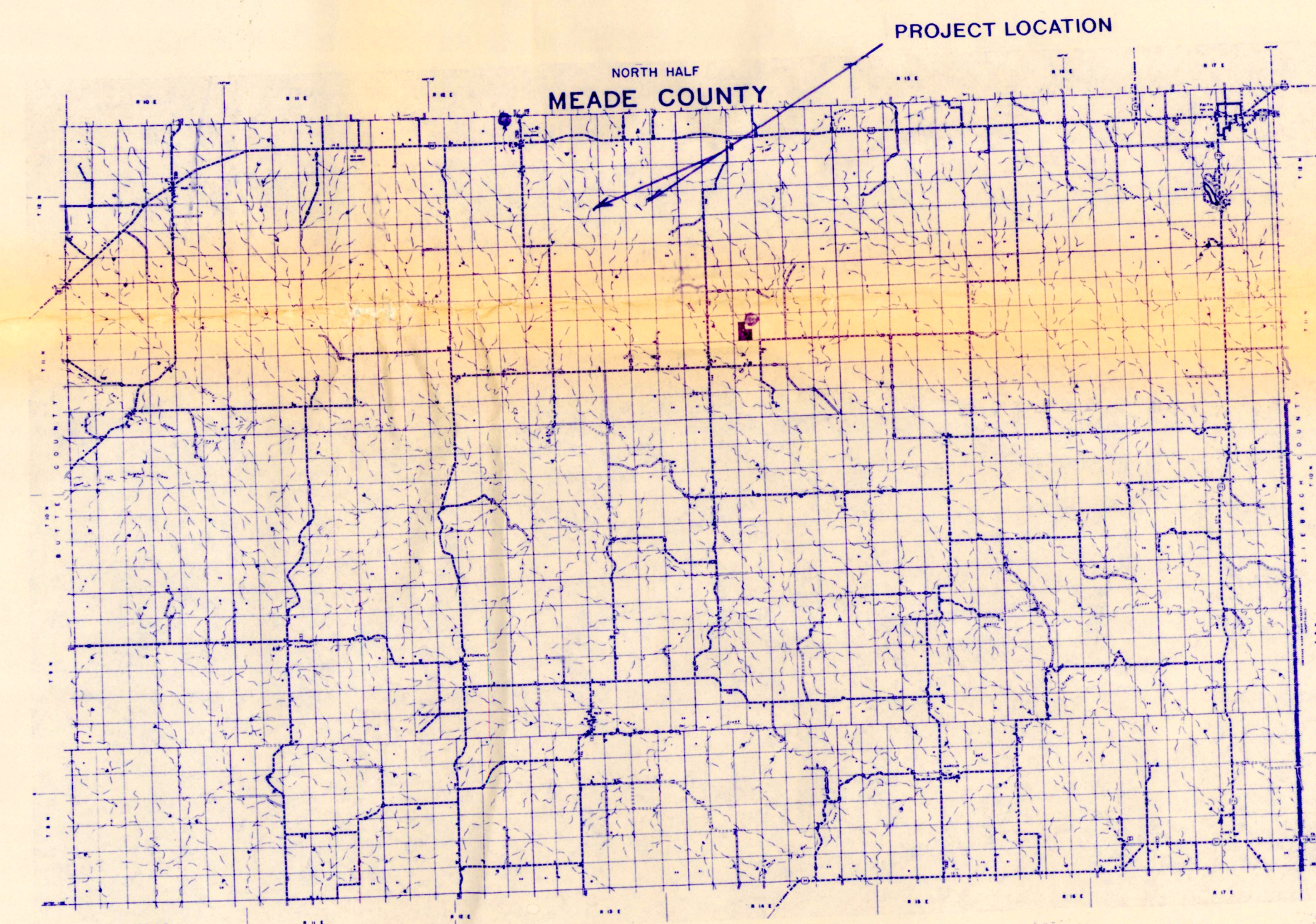
PROJECT
AREA

SOUTH DAKOTA



PROJECT SITES

VICINITY MAP



MEADE COUNTY

AGENCY CONTACT:
PAUL CAUGHLIN
S.D. DEPT. OF GAME,
FISH & PARKS
605/773-3381

LANDOWNER CONTACT:
WAYNE HAINES
605/748-2263

DUCKS
UNLIMITED
INC.

GREAT PLAINS REGIONAL OFFICE
DATE: 1-17-00

PROJECT NO. SD-0288-001
FOX RIDGE WETLANDS

VICINITY MAP

APPROVED BY: *[Signature]*

SHEET NO. 1 OF 9

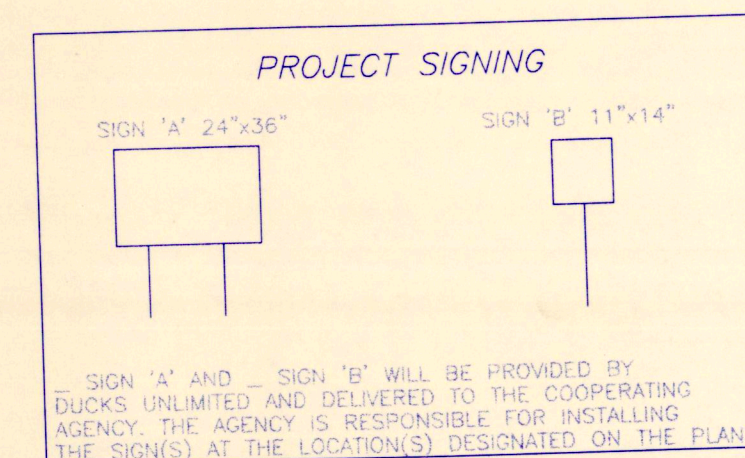
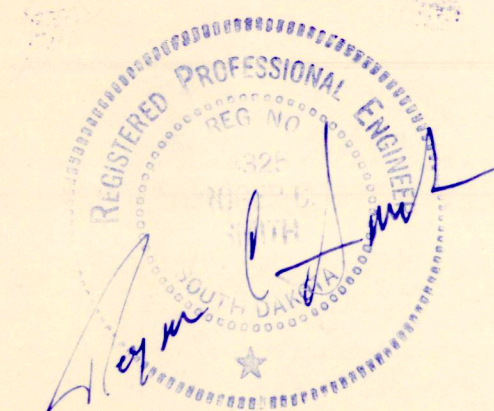
DESIGNED BY: R.C.S.

DRAWN BY: JS

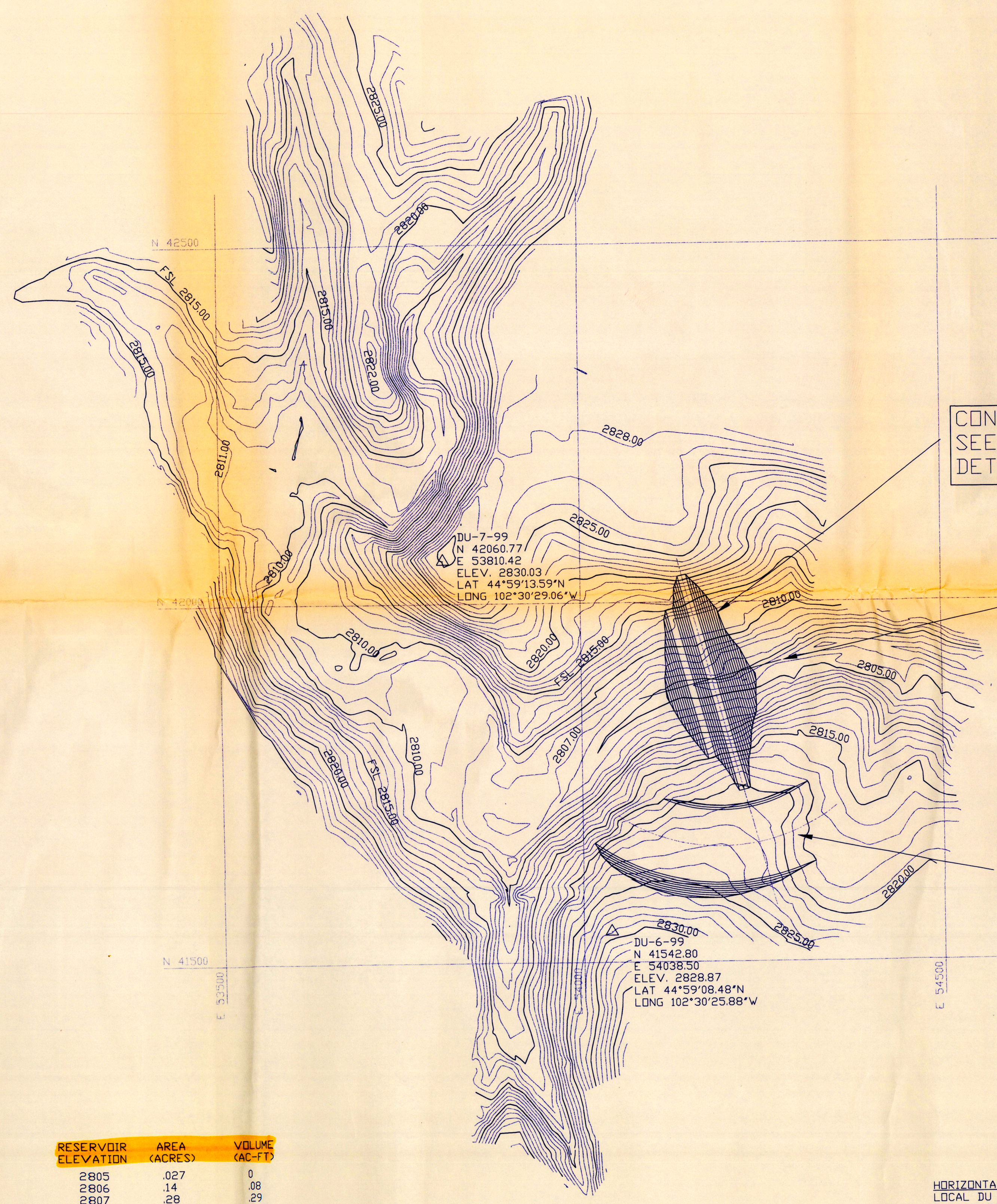
SURVEYED BY:

CHECKED BY: B.R.K.

APPROVED BY: 1715-1



1715-1



CONSTRUCT EMBANKMENT
SEE SHEETS 3 & 4 FOR
DETAILS

INSTALL WATER
CONTROL STRUCTURE
SEE SHEETS 4 & 5
FOR DETAILS

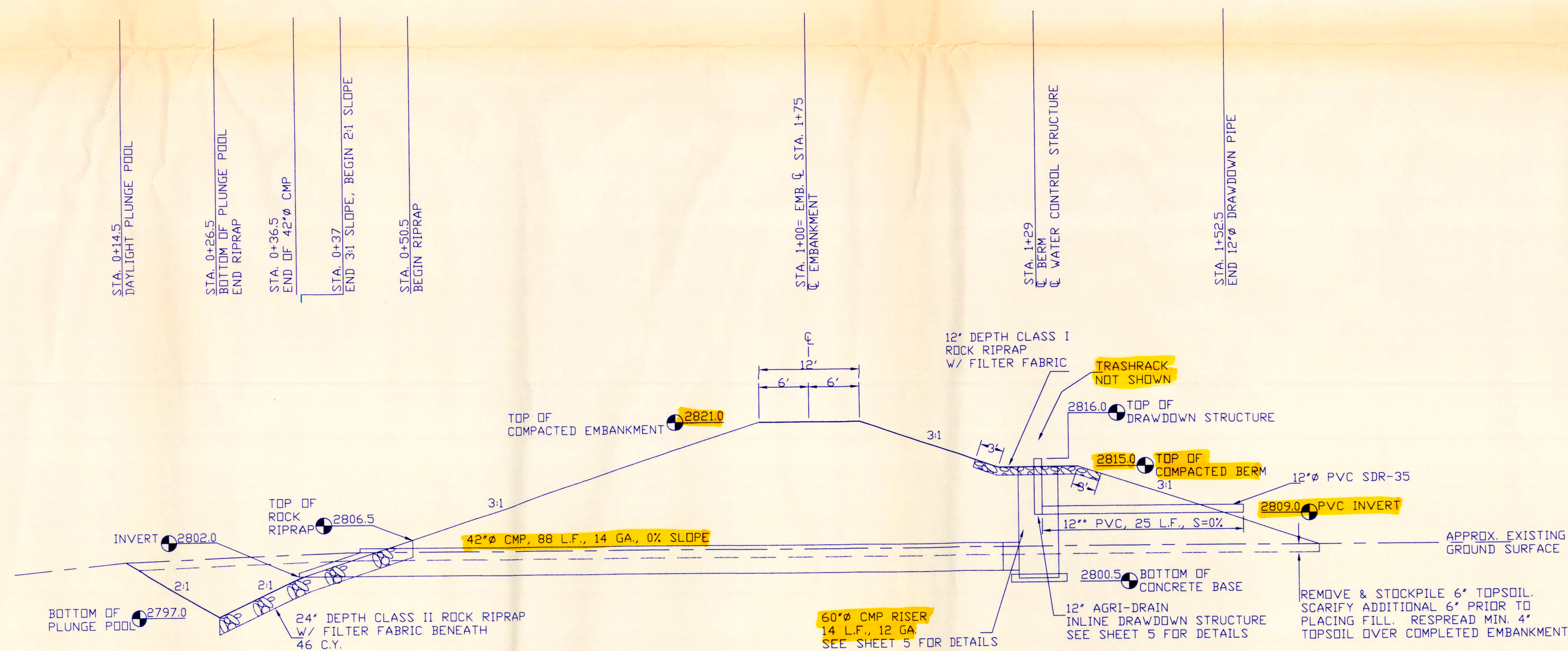
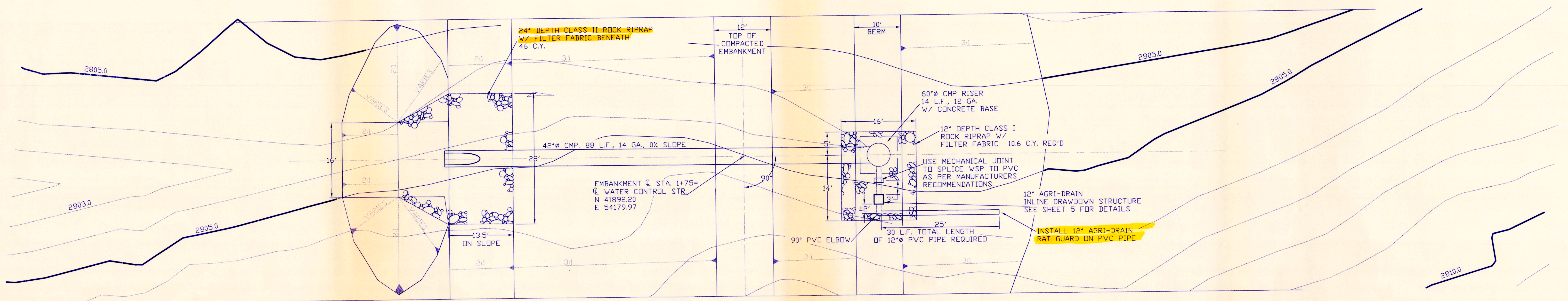
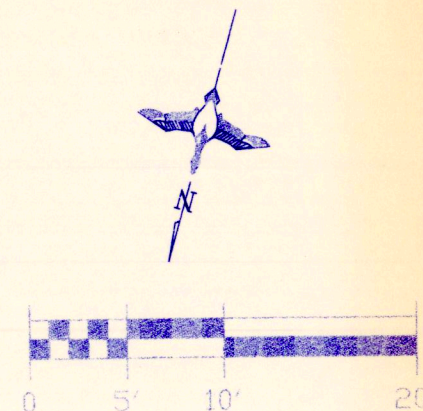
EXCAVATE
EMERGENCY SPILLWAY
SEE SHEET 3 FOR DETAILS

RESERVOIR ELEVATION	AREA (ACRES)	VOLUME (AC-FT)
2805	.027	0
2806	.14	.08
2807	.28	.23
2808	.68	.77
2809	1.17	1.70
2810	2.05	3.31
2811	3.11	5.89
2812	3.89	9.39
2813	4.74	13.70
2814	5.62	18.88
FSL 2815	6.48	24.93
2816	7.54	31.3
2817	7.90	39.7
2818	8.3	47.8
2819	10.2	57.0
2820	12.0	68.1
2821	14.4	74.0

EAST SITE TOPOGRAPHY
SCALE: 1"=100'

HORIZONTAL CONTROL:
LOCAL DU COORDINATES WITH AZIMUTH REFERENCED TO TRUE NORTH WITH
OBSERVATIONS FROM TRIMBLE 4400 GPS RECEIVERS ON JANUARY 19, 1999
FROM THE WGS84 ELLIPSOID.
VERTICAL CONTROL:
CALIBRATED FROM GPS INFORMATION TO SDDT BENCH MARK STAMPED
"212-90.00 1995" WHICH HAS A SOUTH DAKOTA ELEVATION FROM THE
DOT OF 2870.44 FEET.

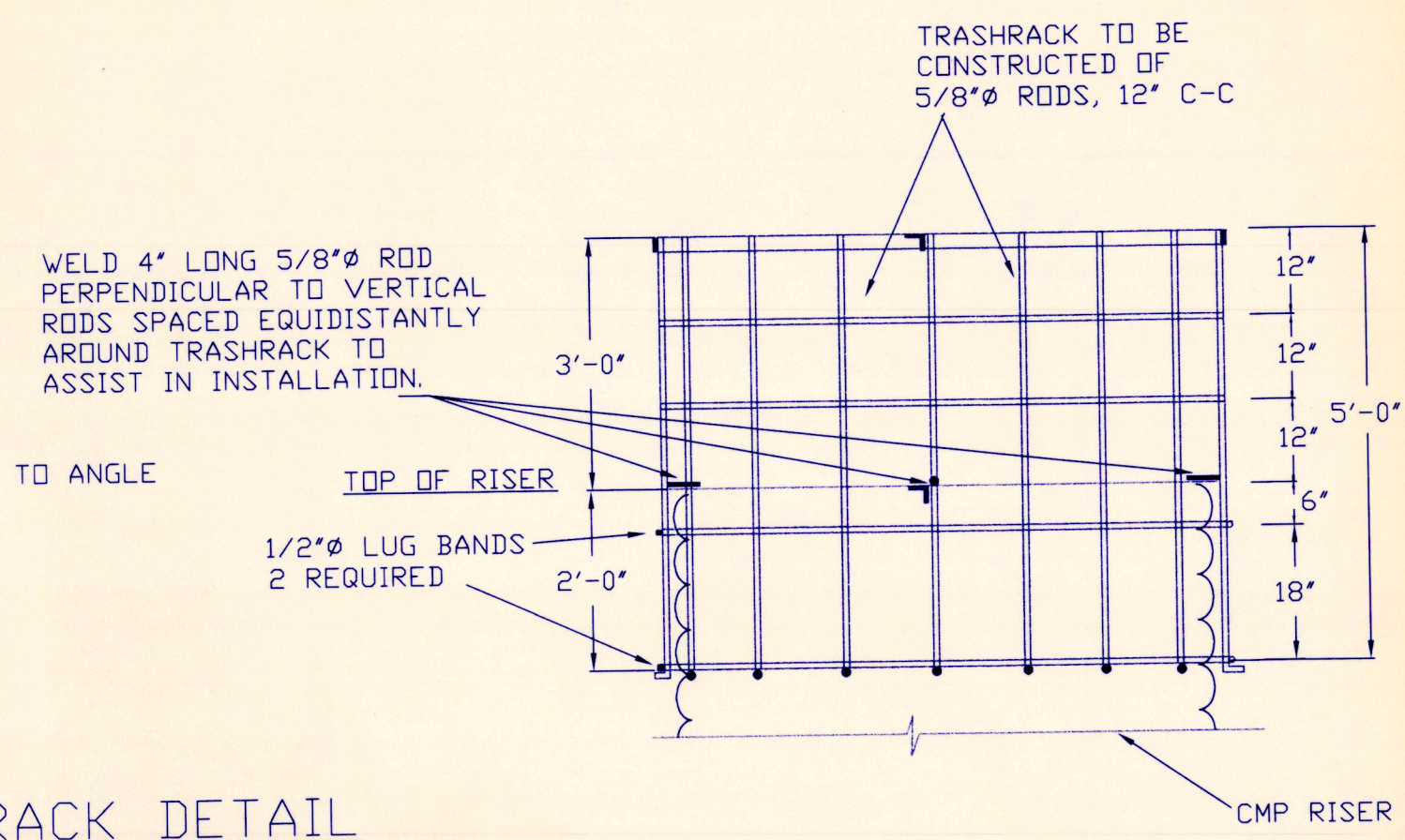
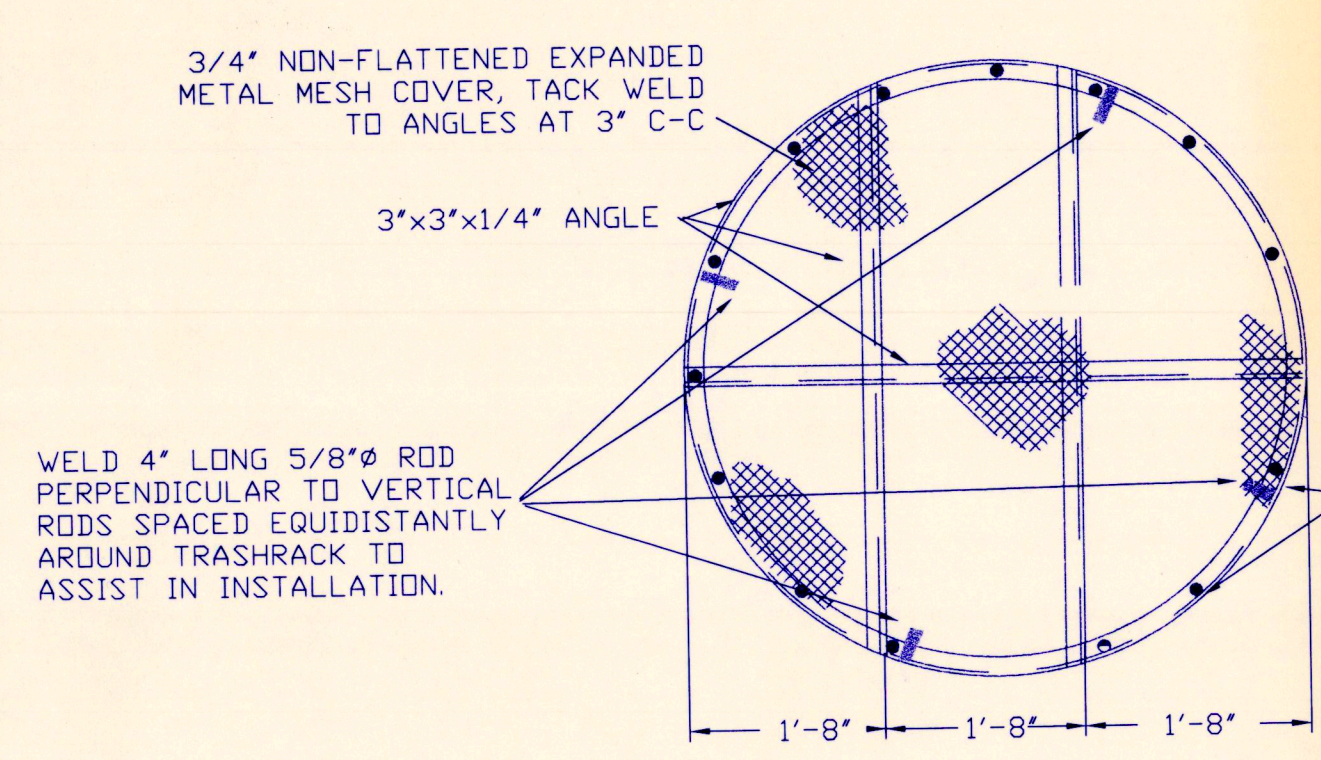
 DUCKS UNLIMITED INC. GREAT PLAINS REGIONAL OFFICE	PROJECT NO. SD-0288-001	DESIGNED BY: R.C.S.
	FOX RIDGE WETLANDS	DRAWN BY: 16
	EAST SITE (#1)	SURVEYED BY: G.L.J.
	PROJECT TOPOGRAPHY	CHECKED BY: B.R.K.
DATE: 1-17-00	SHEET NO. 2 OF 9	APPROVED BY:



EAST STRUCTURE & PROFILE
SCALE: 1"=10' VERT. & HORIZ.

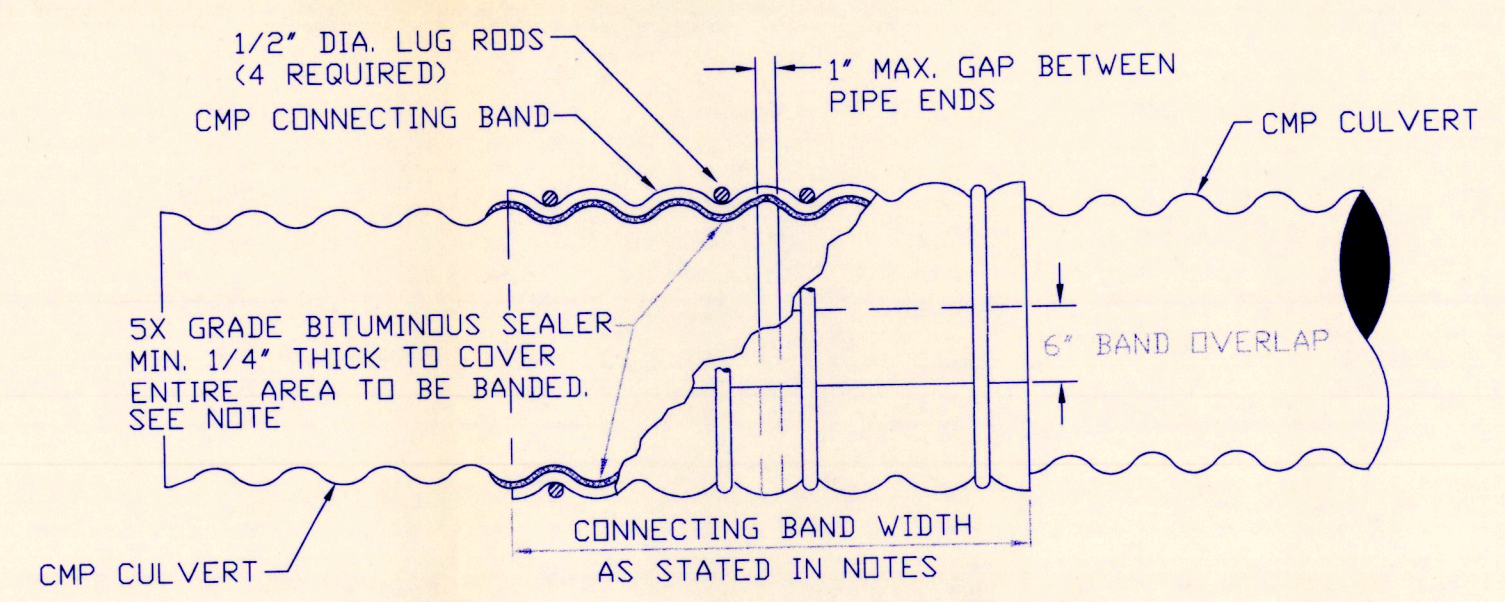
EXCAVATION NOTE:
EXCAVATION REQUIRED FOR STRUCTURE/PIPE INSTALLATION
IS CONSIDERED INCIDENTAL TO APPROPRIATE BID ITEM
EXCAVATION REQUIRED BY THE ENGINEER BELOW THE
STRUCTURE/PIPE GRADE IS CONSIDERED EXTRA WORK.

	PROJECT NO. SD-0288-001		DESIGNED BY: R.C.S.
	FOX RIDGE WETLANDS EAST SITE		DRAWN BY: 6
	STRUCTURE PLAN & PROFILE		SURVEYED BY:
	DATE: 1-17-00		CHECKED BY: B.R.K.
SHEET NO. 4 OF 9		APPROVED BY:	



TRASHRACK DETAIL

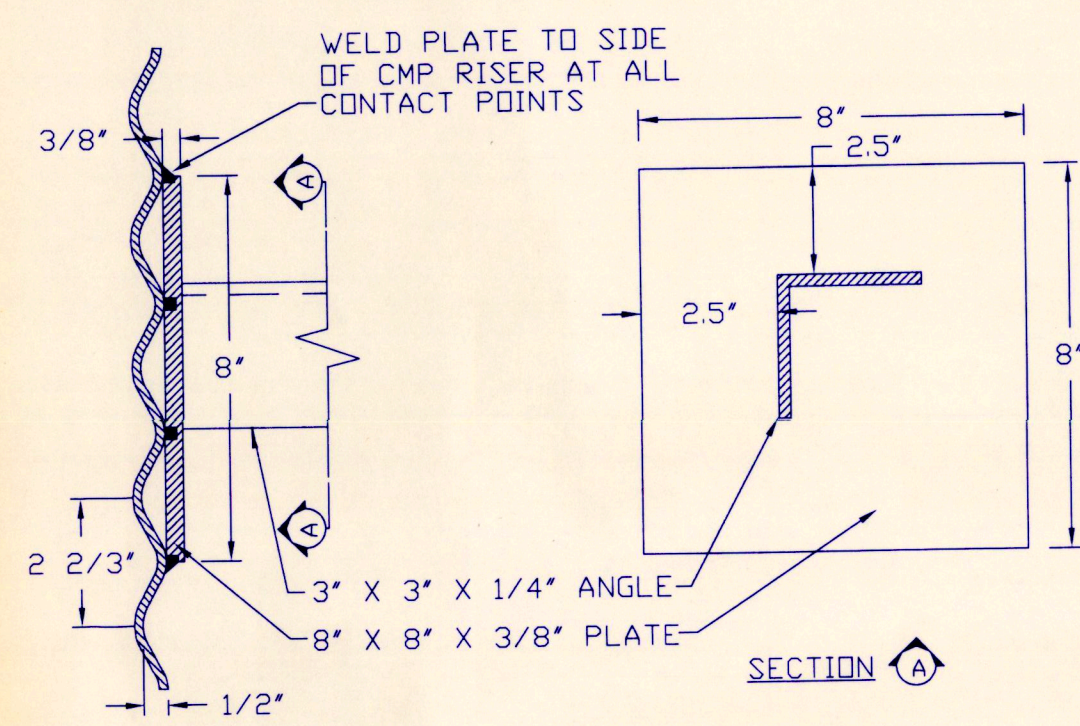
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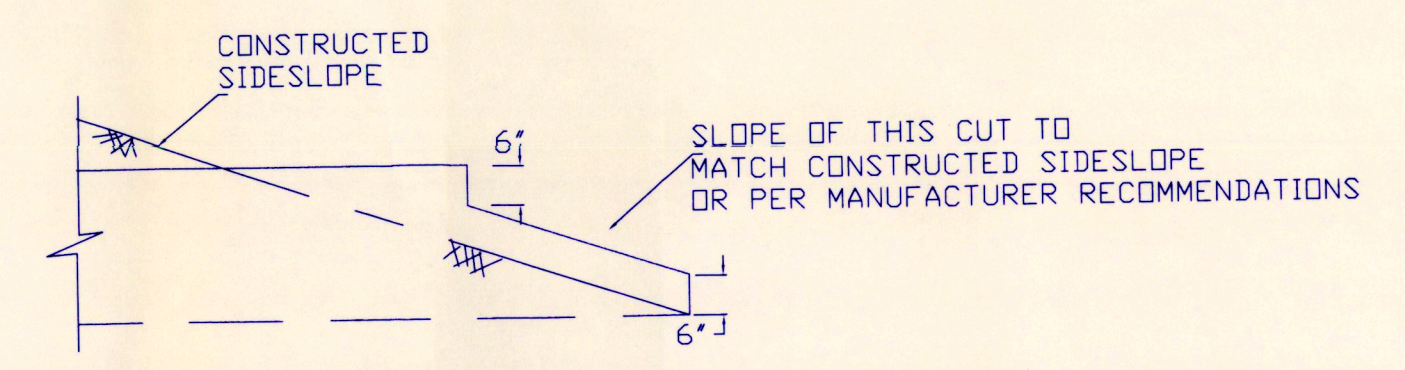
AFTER BANDS HAVE BEEN TIGHTENED, A COAT OF 5X SEALER SHALL BE APPLIED AROUND THE CULVERT AT THE ENDS OF THE CONNECTING BAND AND ALONG THE SEAM OF THE BAND OVERLAP.

NOTE TO SUPPLIERS:
IF ANNULAR PIPE IS USED, USE A 2 FT. WIDE
ANNULAR BAND. IF HELICAL PIPE WITH 4
CORRUGATIONS REROLLED TO ANNULAR IS USED,
USE A 21 INCH WIDE ANNULAR BAND. SEE
SPECIFICATION 207.2.

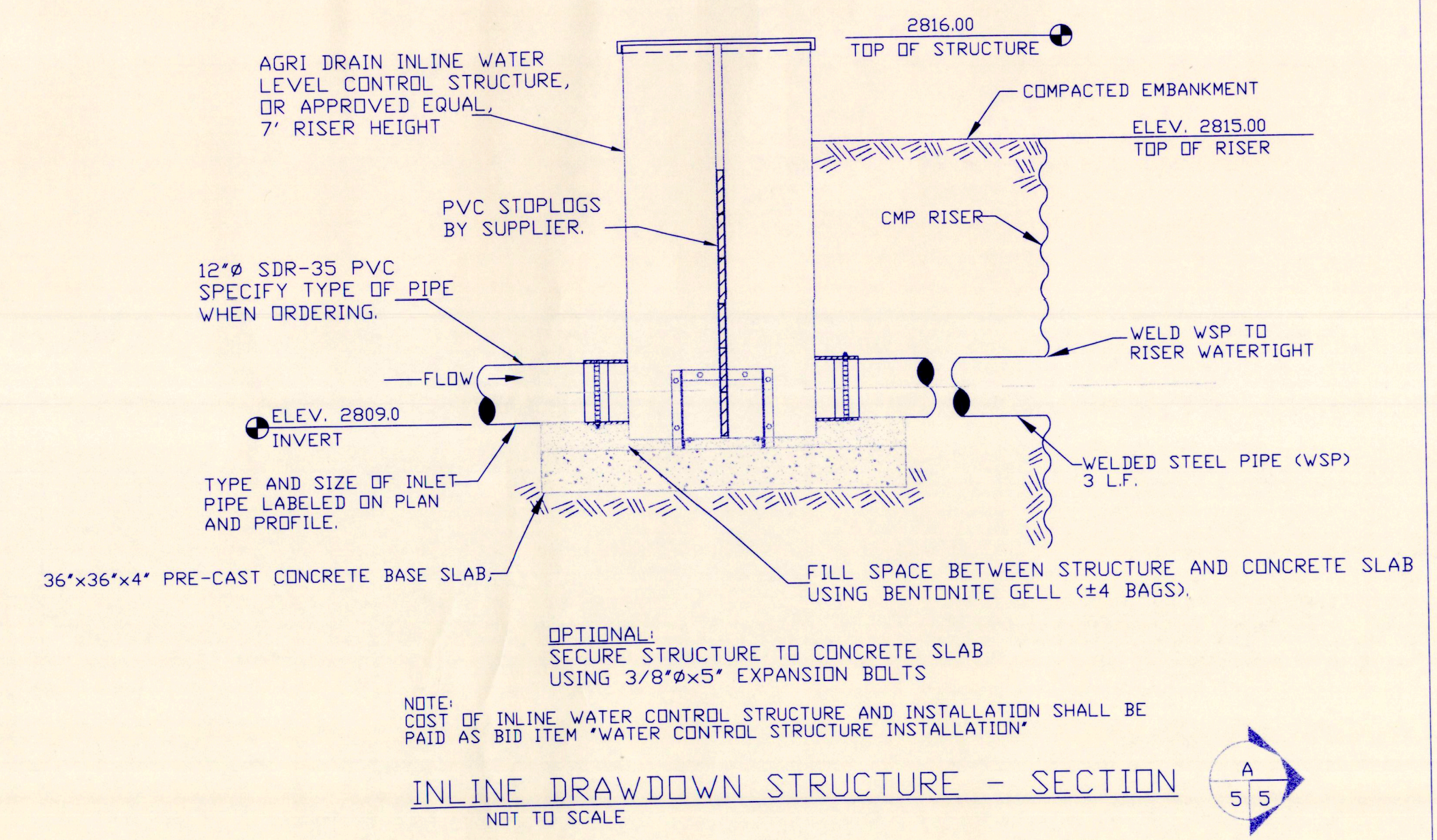
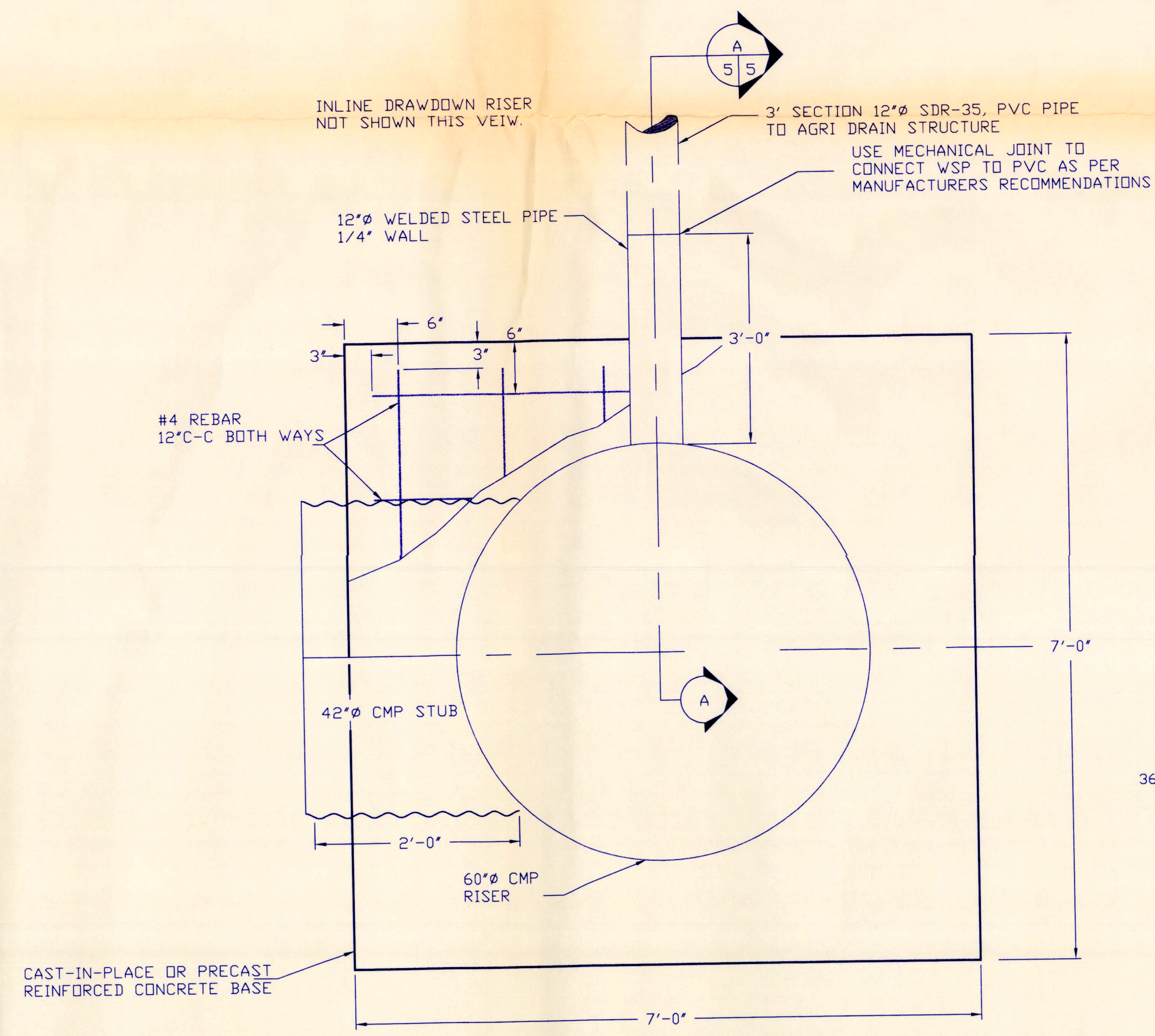
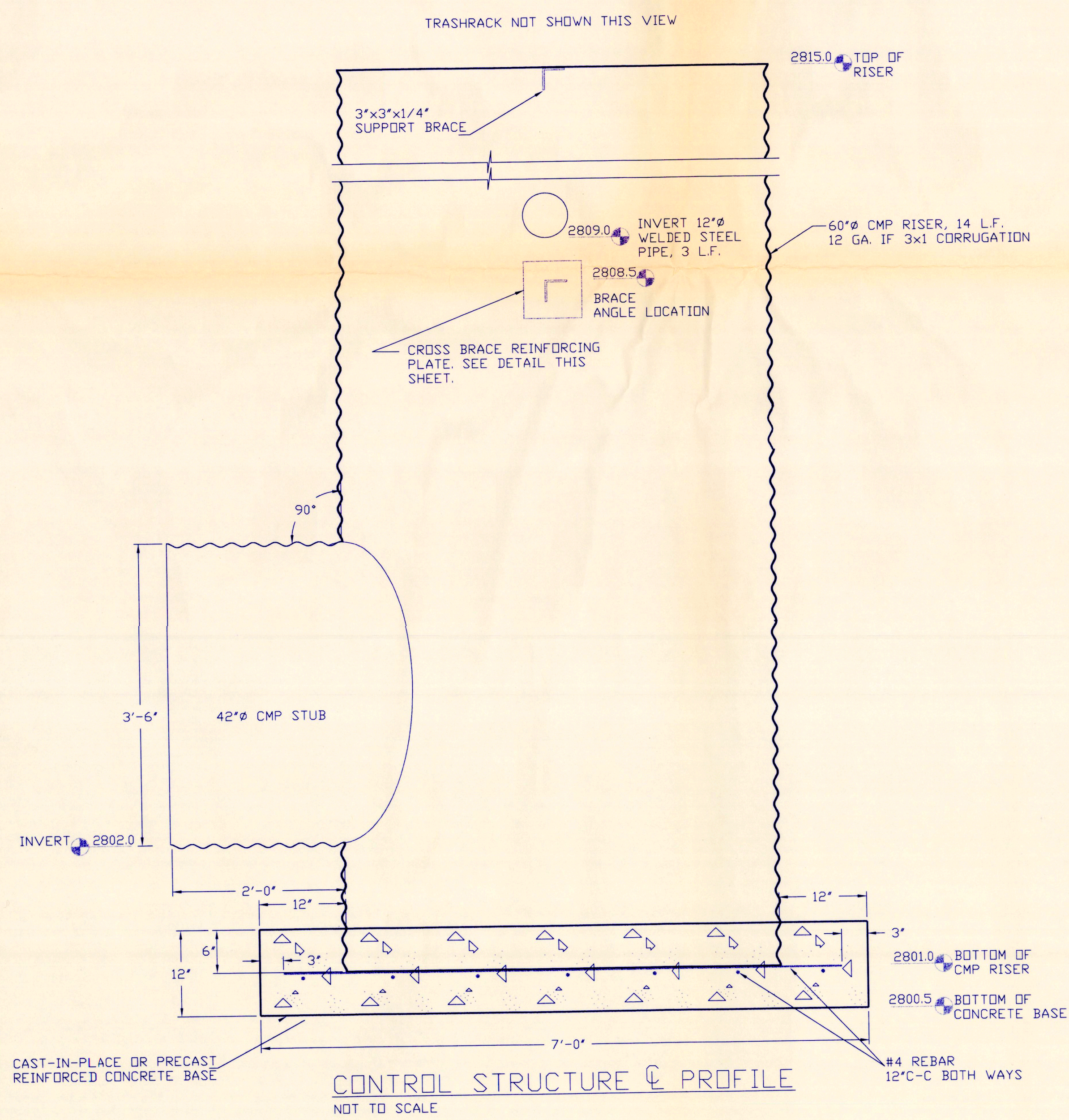
CONNECTING BAND DETAIL
NOT TO SCALE

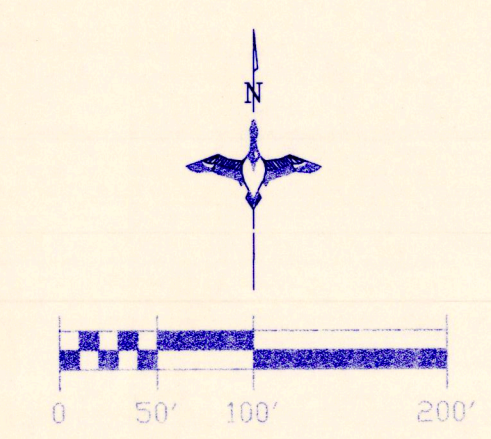
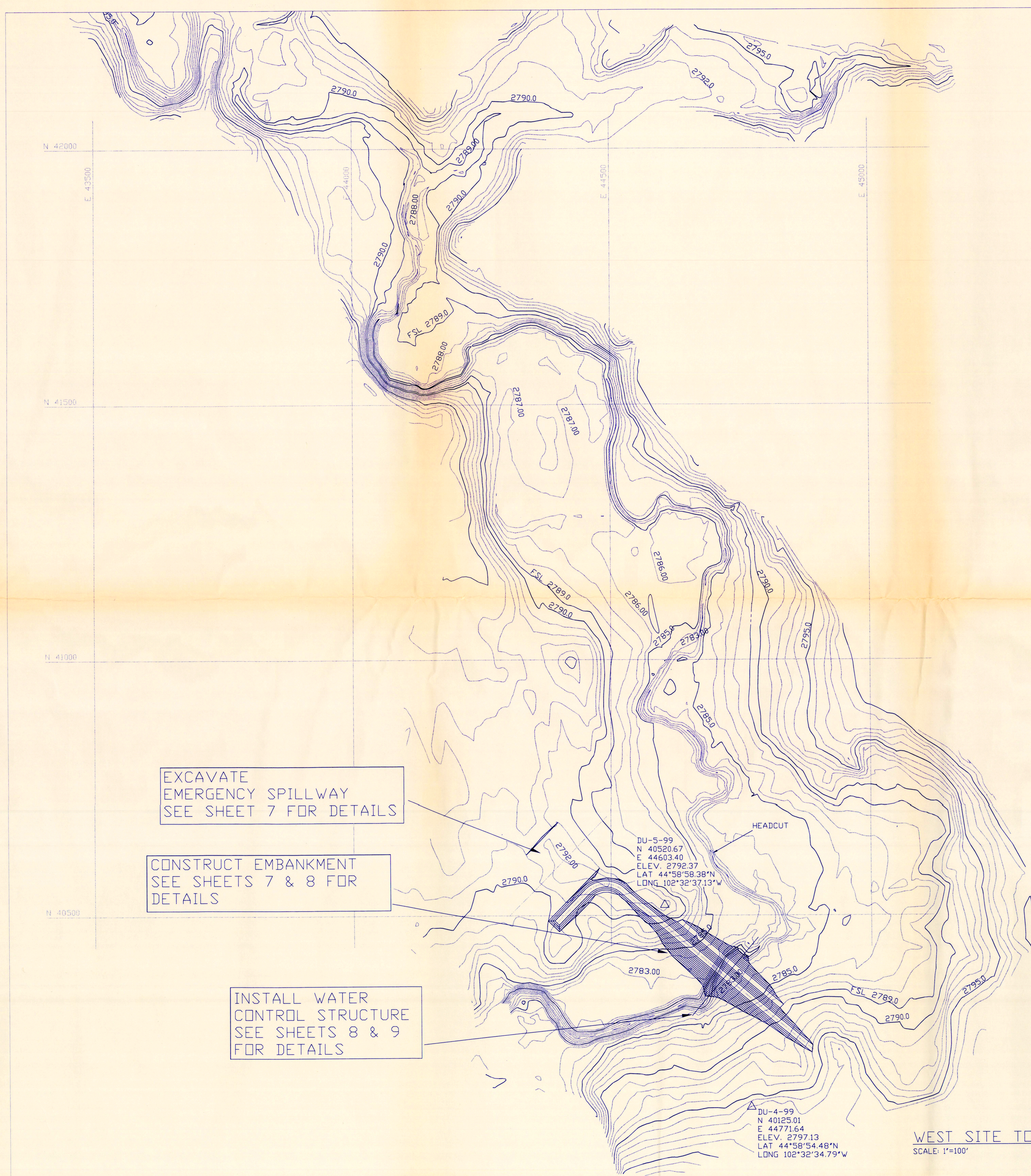


CROSS BRACE REINFORCING PLATE



STEP BEVEL DETAIL
NOT TO SCALE



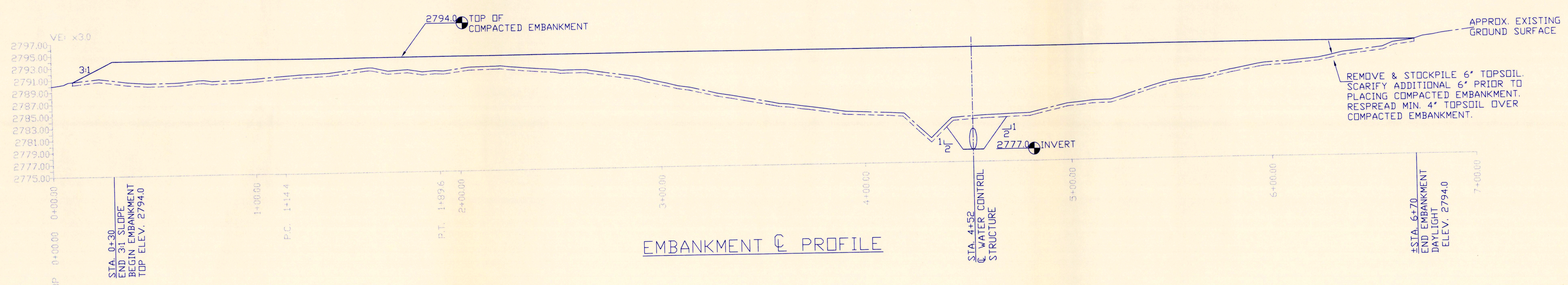
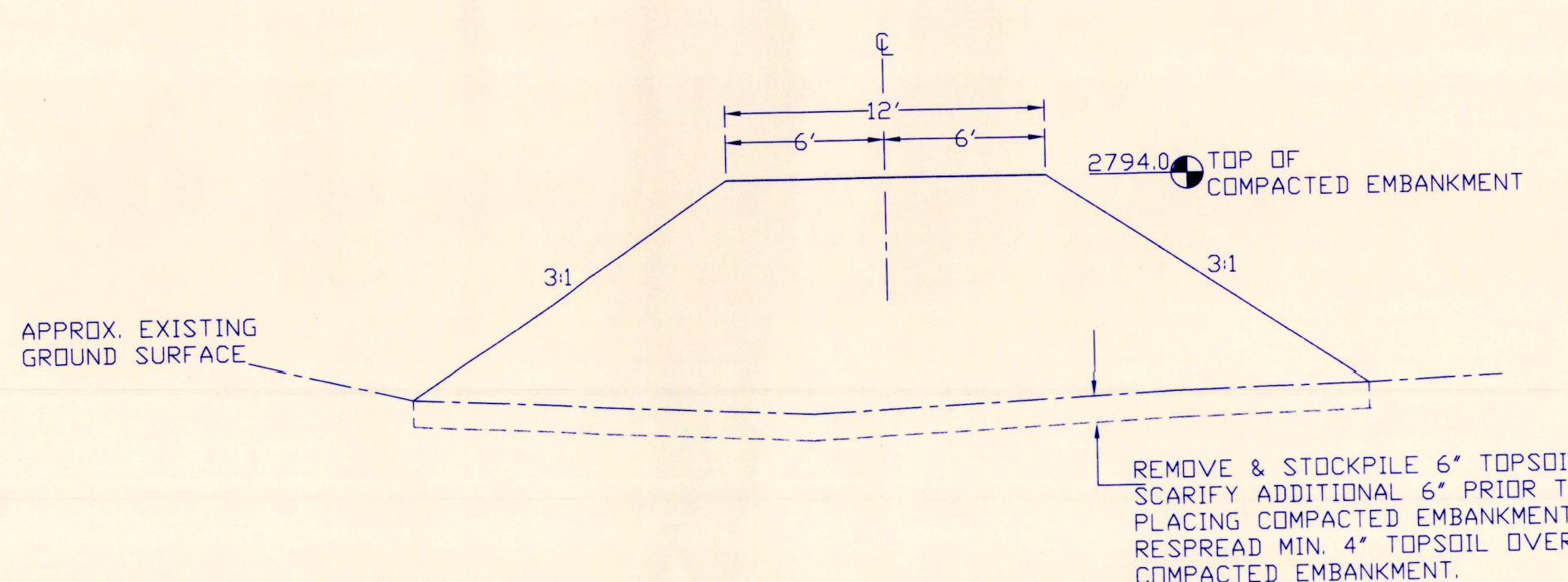
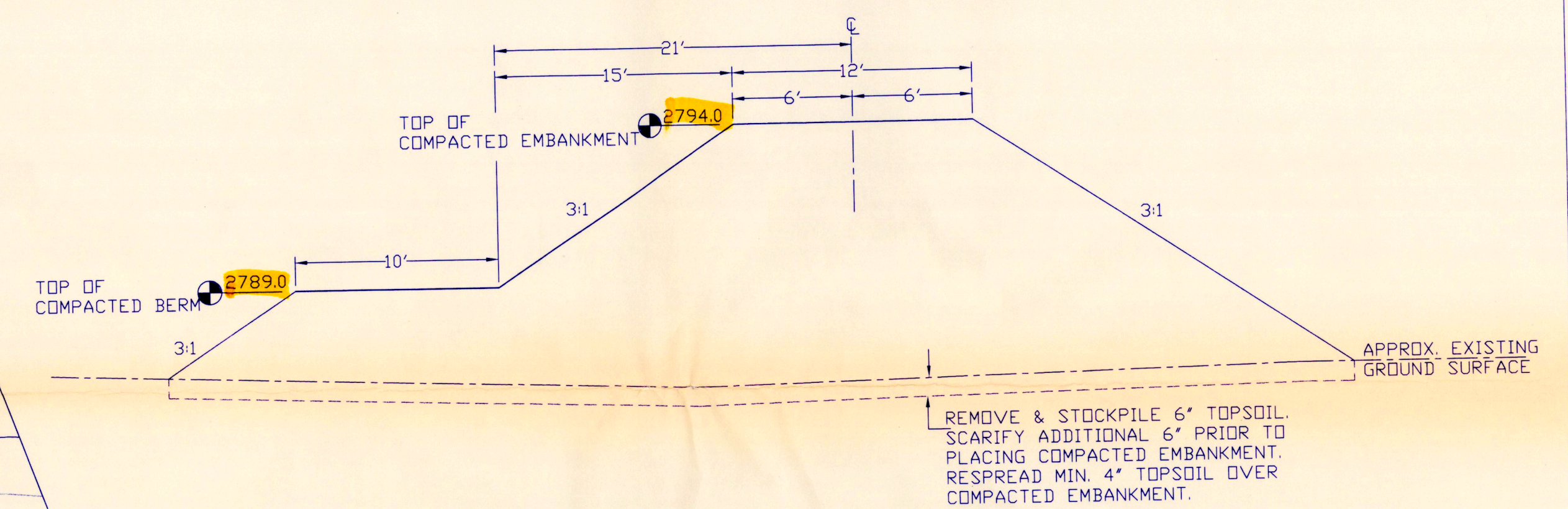
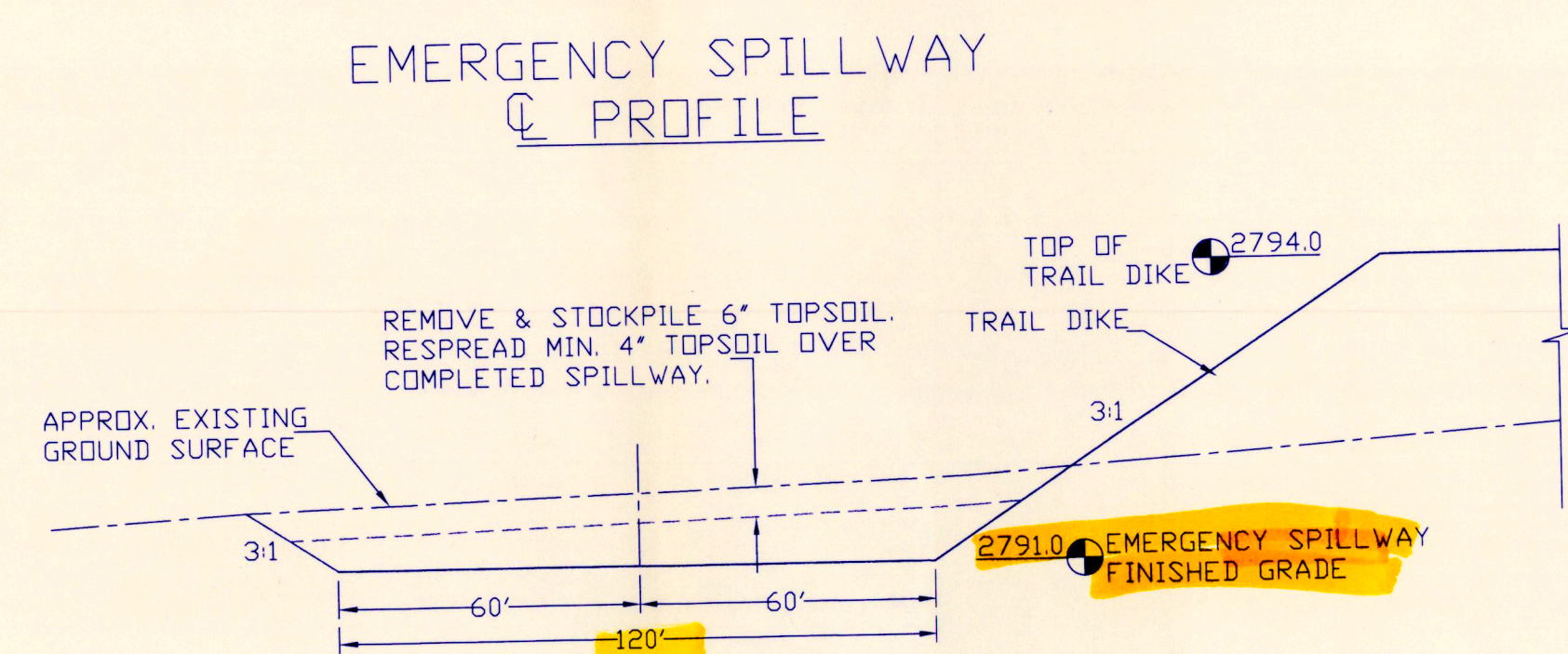
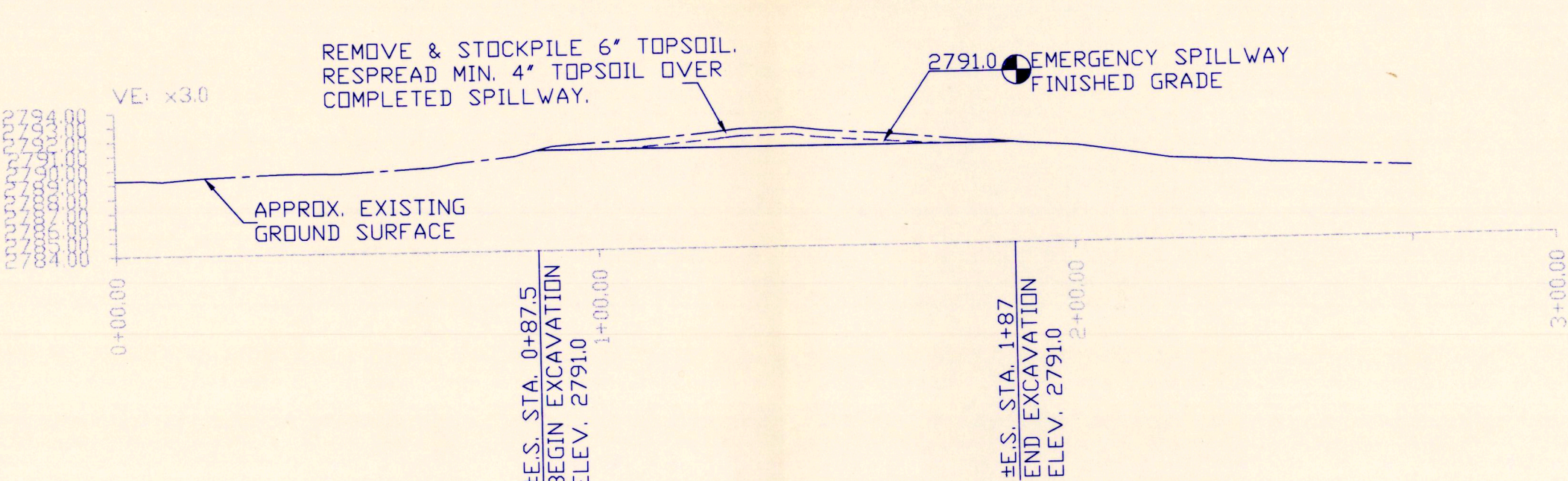
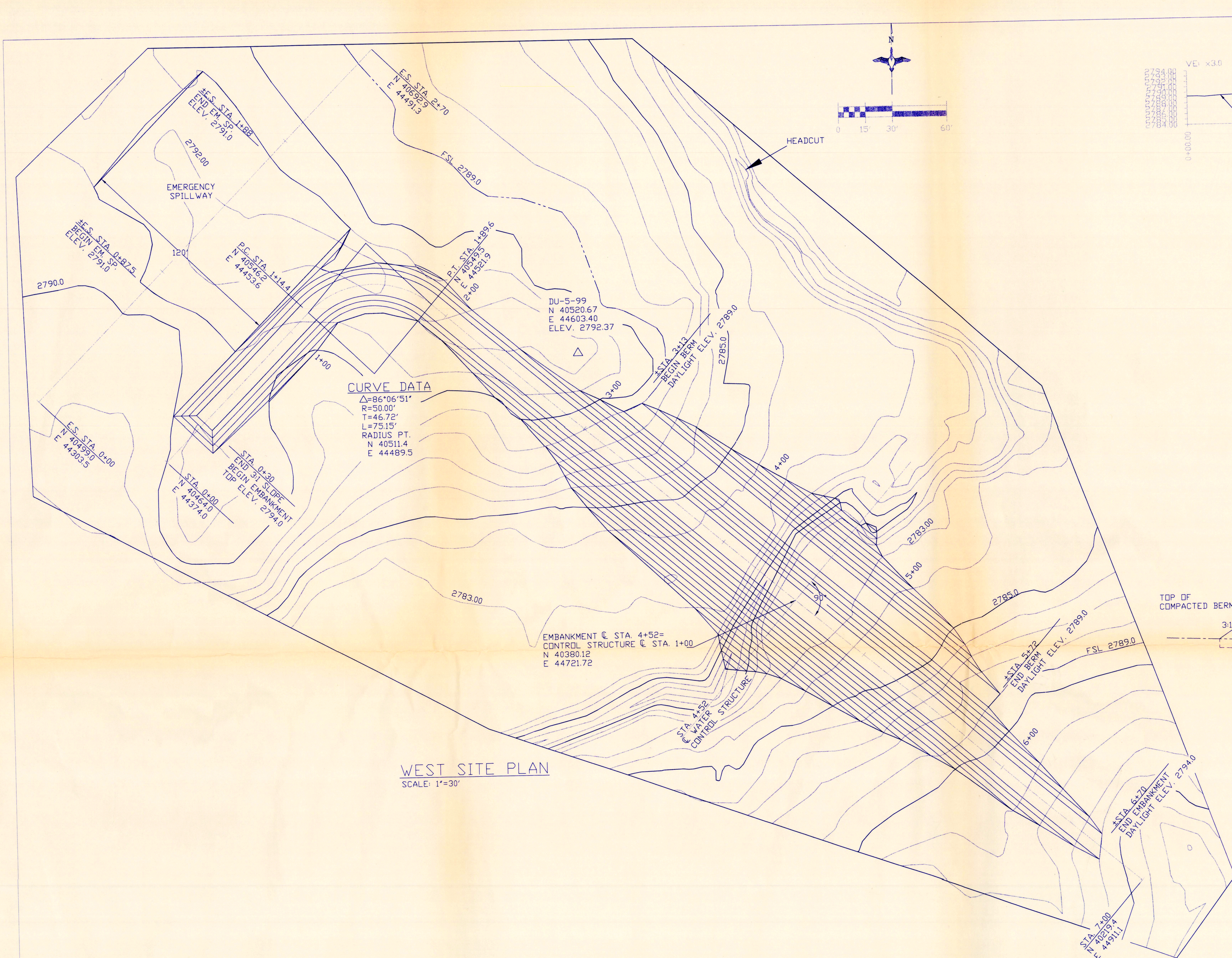


RESERVOIR ELEVATION	AREA (ACRES)	VOLUME (ACRE-Feet)
2781	0.06	0.04
2782	0.20	0.17
2783	0.46	0.50
2784	1.26	1.36
2785	2.86	3.42
2786	5.03	7.36
2787	7.62	13.69
2788	10.35	22.67
FSL 2789	12.67	34.18
2790	15.26	48.15
2791	18.17	64.96
2792	21.80	84.85
2794	29.06	124.0

HORIZONTAL CONTROL:
LOCAL DU COORDINATES WITH AZIMUTH REFERENCED TO TRUE NORTH
WITH OBSERVATIONS FROM TRIMBLE 4400 GPS RECEIVERS ON
JANUARY 8, 1999 FROM THE WGS84 ELLIPSOID.
VERTICAL CONTROL:
CALIBRATED FROM GPS INFORMATION TO SDDT BENCH MARK STAMPED
212-90.00 1995' WHICH HAS A SOUTH DAKOTA ELEVATION FROM THE
DOT OF 2870.44 FEET.

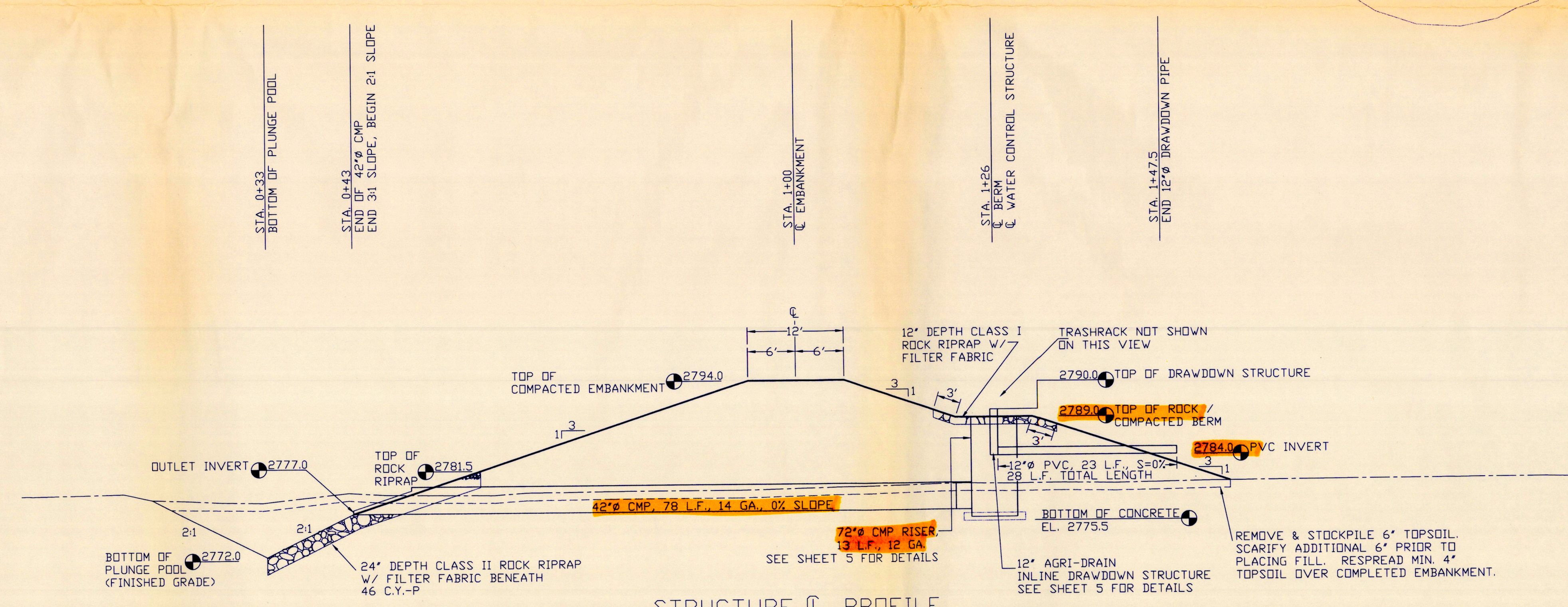
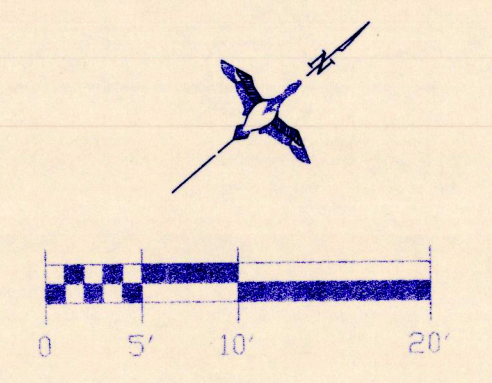
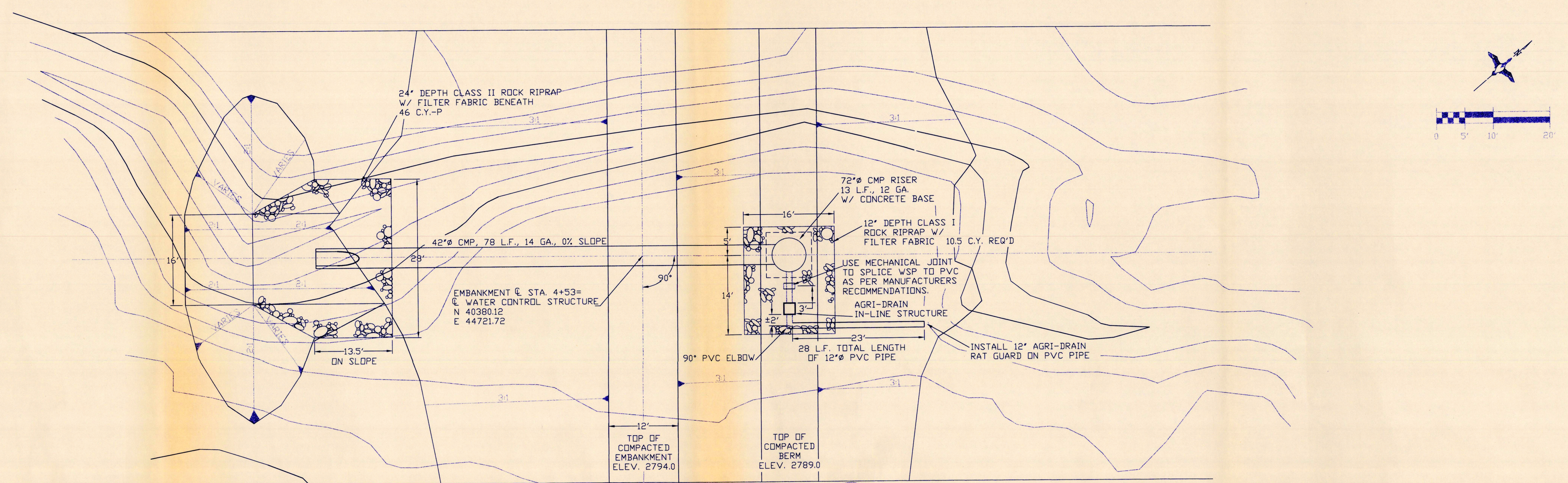
WEST SITE TOPOGRAPHY
SCALE: 1"=100'

GREAT PLAINS REGIONAL OFFICE DATE: 1-17-00	SHEET NO. 6 OF 9	PROJECT NO. SD-0288-001 FOX RIDGE WETLANDS WEST SITE(#2) PROJECT TOPOGRAPHY	DESIGNED BY: R.C.S. DRAWN BY: MB SURVEYED BY: G.L.J. CHECKED BY: B.R.K.
		APPROVED BY:	APPROVED BY:



	PROJECT NO. SD-0288-001		DESIGNED BY: R.C.S.
	FOX RIDGE WETLANDS WEST SITE		DRAWN BY: M
	WEST SITE PLAN & PROFILE		SURVEYED BY:
	GREAT PLAINS REGIONAL OFFICE		CHECKED BY: B.R.K.
DATE:	SHEET NO.	APPROVED BY:	APPROVED BY:
1-17-00	7 OF 9		

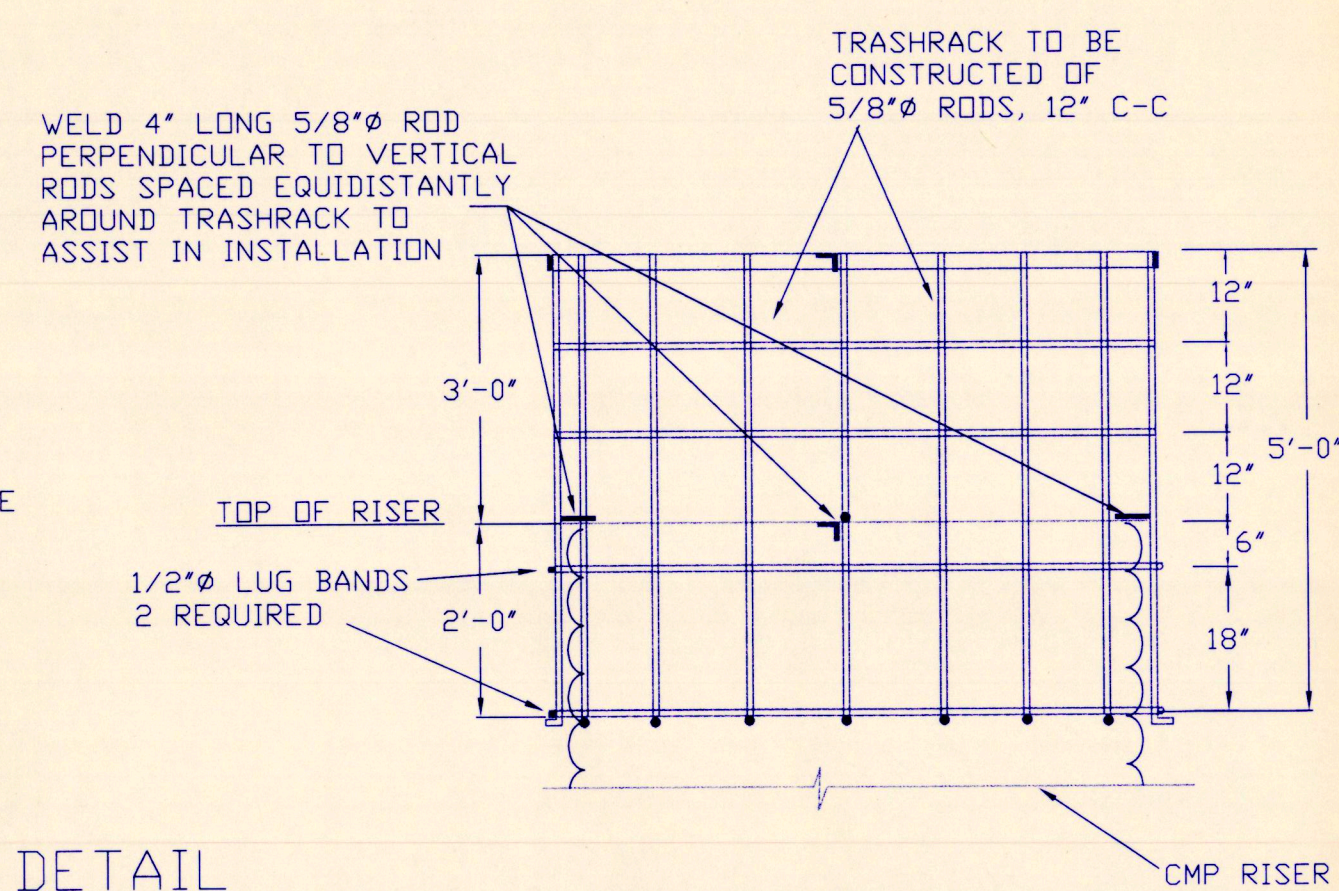
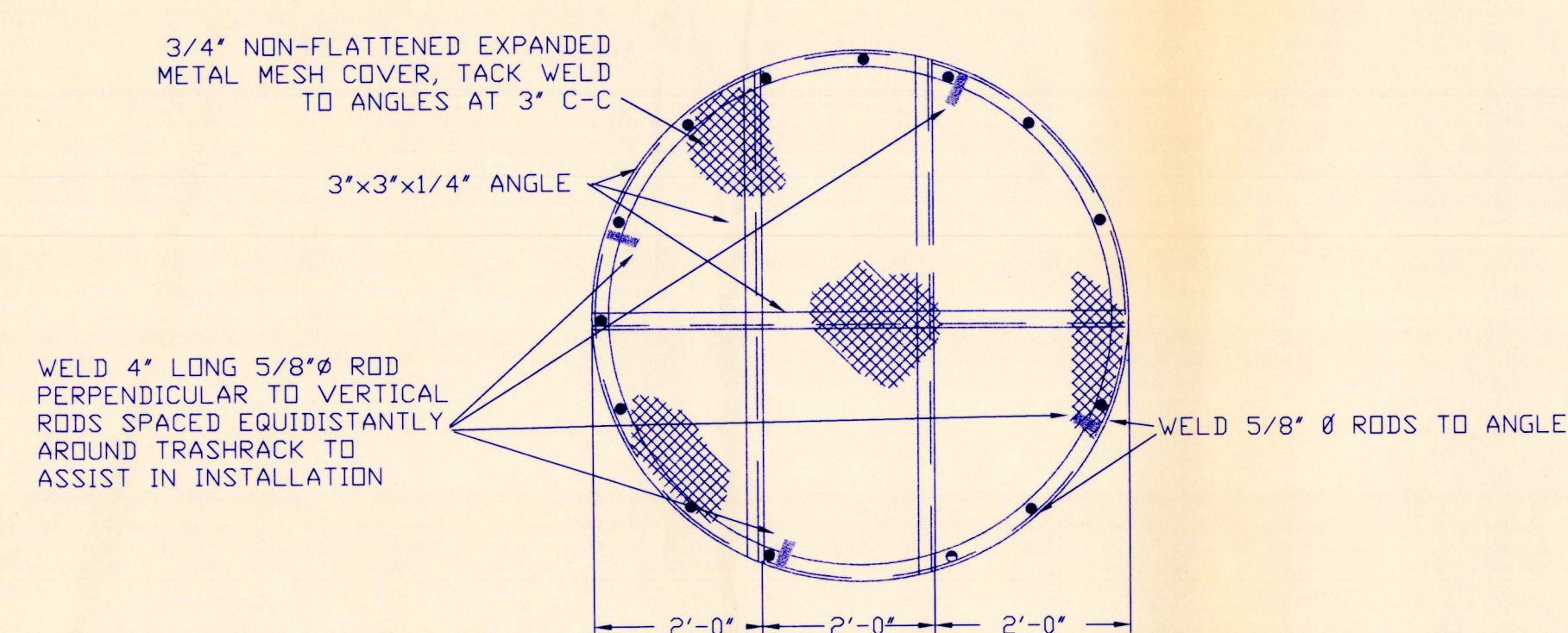
1715-1



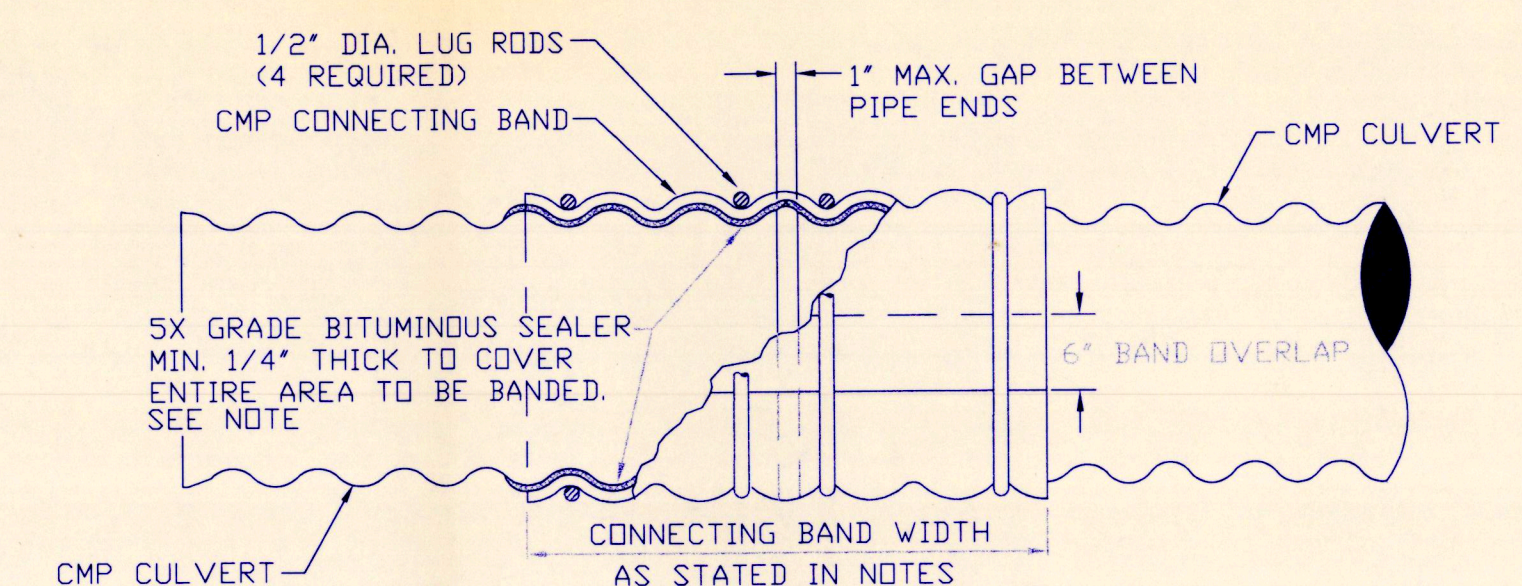
STRUCTURE @ PROFILE
SCALE: 1"=10' VERT. & HORIZ.

EXCAVATION NOTE:
EXCAVATION REQUIRED FOR STRUCTURE/PIPE INSTALLATION IS CONSIDERED INCIDENTAL TO APPROPRIATE BID ITEM.
EXCAVATION REQUIRED BY THE ENGINEER BELOW THE STRUCTURE/PIPE GRADE IS CONSIDERED EXTRA WORK.

DUCKS UNLIMITED INC.	PROJECT NO. SD-0288-001 FOX RIDGE WETLANDS WEST SITE STRUCTURE PLAN & PROFILE	DESIGNED BY: R.C.S. DRAWN BY: J. SURVEYED BY: CHECKED BY: B.R.K.
GREAT PLAINS REGIONAL OFFICE DATE: 1-17-00	SHEET NO. 8 OF 9	APPROVED BY: APPROVED BY:



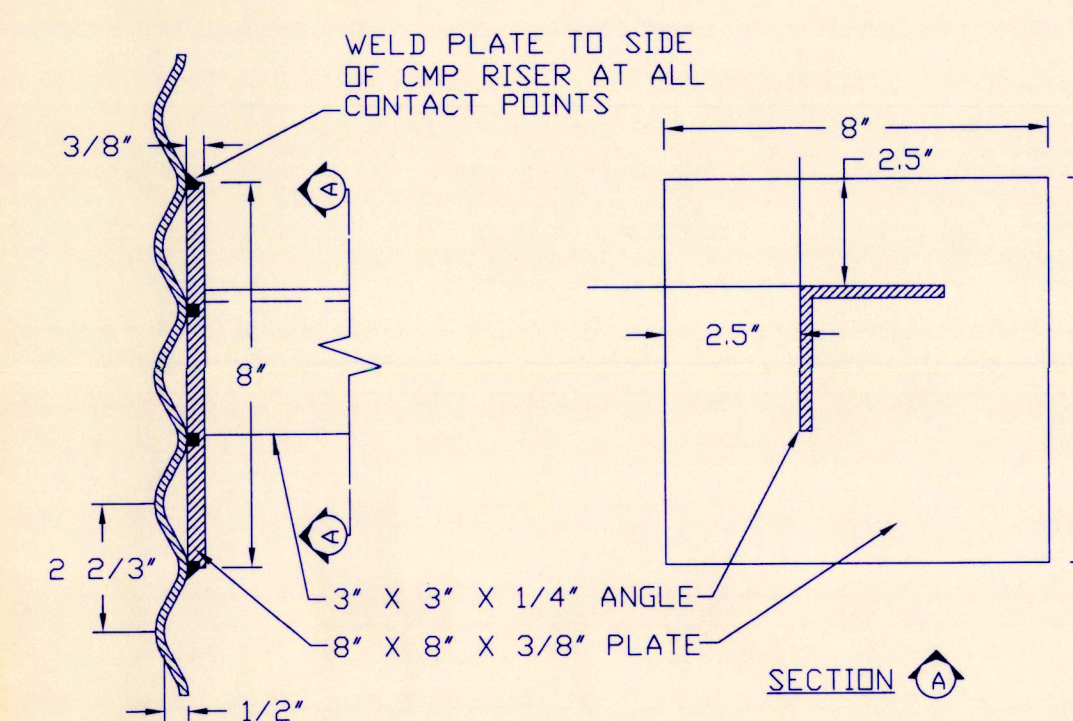
TRASHRACK DETAIL
NOT TO SCALE



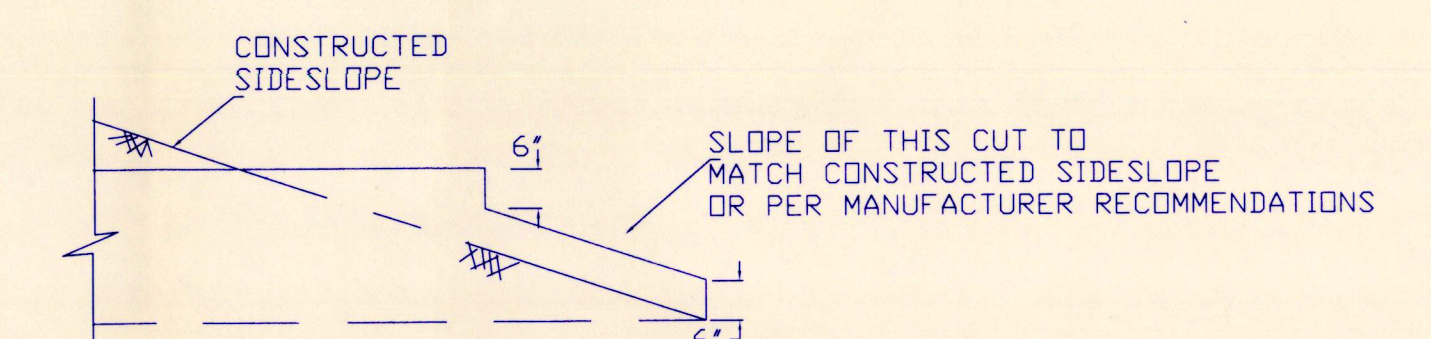
AFTER BANDS HAVE BEEN TIGHTENED, A COAT OF SX SEALER SHALL BE APPLIED AROUND THE CULVERT AT THE ENDS OF THE CONNECTING BAND AND ALONG THE SEAM OF THE BAND OVERLAP.

NOTE TO SUPPLIERS:
IF ANNULAR PIPE IS USED, USE A 2 FT. WIDE
ANNULAR BAND. IF HELICAL PIPE WITH 4
CORRUGATIONS REROLLED TO ANNULAR IS USED,
USE A 21 INCH WIDE ANNULAR BAND. SEE
SPECIFICATION 207.2.

CONNECTING BAND DETAIL



CROSS BRACE REINFORCING PLATE



STEP BEVEL DETAIL
NOT TO SCALE

