

Considered: _____

WATER PERMIT NO. 5015-3

MAP No. 5015-3

Name of Applicant GAME, FISH AND PARKS

Post Office Address ANDERSON BUILDING, PIERRE, SD 57501

Amount of Water Claimed 350 ac ft-two fills of 175 ac ft each year Total Acres _____

Source of Water Supply runoff and Missouri River Non-consumptive

n
Water to be used for FWP County Charles Mix

About _____ miles _____ of _____

PROOF OF PUBLICATION: Received 1st 9-5-84 Not Received _____

APPLICATION: Approved 9-26-84 Subject to _____

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

PRIORITY _____ Date Received 3/19/84 Fee n/a Remarks _____

3/19/84

Corrected Application Received _____ Period of Annual Use 4/1 to 9/30

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

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

not applicable

Diversion Point _____

SE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 15-T98N-R69W

Land to be Irrigated _____

Well Log: Driller _____ Licensed YES _____ NO _____

Depth of Well _____ REMARKS _____

Type of Map drawn PREPARED BY Bob Hanten GFP Reviewed and the Number

assigned on 3/21/84 By Betty Woodruff

cc/nelson & Hanten

No. 5015-3 Hydrologic Unit 10140101
 Map No. 5015-3 Basin MI
 Newspaper Charles Mix Co. News, Box 157-Hedges 57342
 Thru

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 ☒ **FWP**

Type of Application: Check one or more of the following

New ☒ Vested Right ☐ Future Use ☐ Change Use ☐☐ Amend Permit No. _____ with old priority date retainedChange diversion point(s) ☐ Add diversion point(s) ☐ Other ☐☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. _____☐ Construction to use water reserved by Future Use Permit No. _____1. Name of Applicant SD Dept. of Game, Fish & Parks Phone No. 773-3384Post Office Address Anderson Bldg, 445 E. Capitol Ave., Pierre, SD State 57501
(Street, RR or Box) Zip Code2. Amount of water claimed (c.f.s) 350 ac.ft. (two fills of 175 ac ft. each/year)3. Source of water supply Runoff and Missouri River4. Location of point of diversion Dry Creek Fish Subimpoundment,SW 1/4 Section 15, Township 98N, Range 69WCounty Charles Mix5. Counties where water will be used Charles Mix6. Annual period during which water is to be used April - Sept. (Non-consumptive)

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)

Subimpoundment adjacent to Lake Francis Case to rear fish to stock into the lake.
 The pond will be filled with runoff water from Dry Creek or back fill water from
 Lake Francis Case. The fish raised in the water & released to Lake Francis Case.

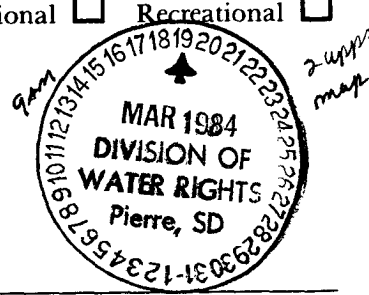
Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map
 (see instruction)

STATE OF SOUTH DAKOTA)
 County of Hughes)^{ss}

I, Robert L. Hanten, Fisheries Staff Spec., GF&P 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 Robert L. HantenSubscribed and sworn to before me this 19th day of March 1984Charles E. Keeler

Notary Public (or other qualified officer)



WATER PERMIT

The Water Management Board hereby approves Water Permit Application No. 5015-3
Dept. Game, Fish and Parks Anderson Bldg Pierre
(Applicant) (Post Office Address)
South Dakota 57501 With the following qualifications.
(State) (Zip Code)

Date of first receipt of application March 19, 1984.

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

Date of receipt of corrected application —, 19—. Approved September 26, 1984.

The Water Management Board hereby approves this Water Permit No. 5015-3 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 March 19, 1984.
2. The equivalent of at least one-fifth of the specified work is to be completed on or before March 26, 1987.
3. The whole of said work is to be completed on or before September 26, 1989.
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is September 26, 1993.
5. The water appropriated shall be used for the purpose of Fish & Wildlife production (FWP)
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 350 acre feet annually ~~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 FWP on or before September 26, 1993; said water to be used during the following described annual period: April 1 to September 30

WATER MANAGEMENT BOARD
 By: John Hatch
Chief Engineer
 Division of Water Rights
 Dept. of Water and Natural Resources
October 23, 1984

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

SD Dept. of Transportation

Pierre, South Dakota

b) Freeboard 4 ft.

c) Crest Width 22 ft.

Crest Length 500 ft.

d) Height 24 ft.

e) Outlet Dimensions:
Pipe diameter 24 in.

Spillway width 54 in.

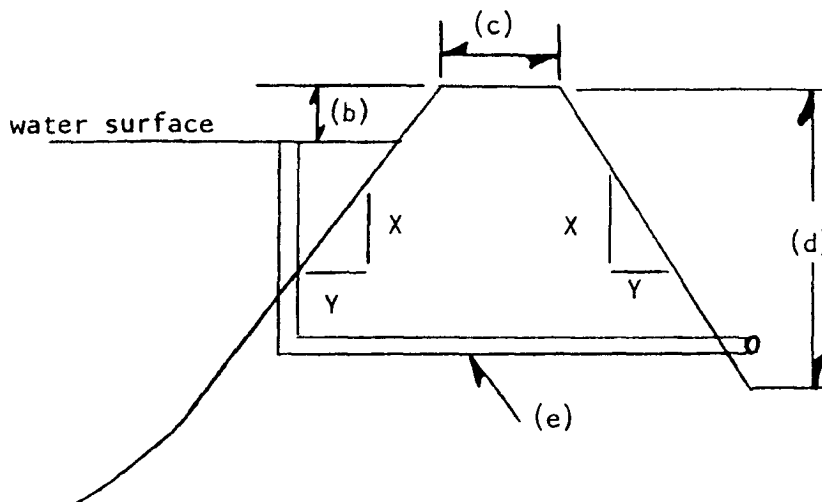
f) X & Y Slope
Upstream 1/3

Downstream 1/3 - 1/4

Surface Area of Impoundment _____

Storage _____ acre feet

Drainage area above dam _____



Robert J. Hunter
Signature of Applicant

David B. Fisher
G.F.R.P.





Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501

WATER RIGHTS DIVISION
(605) 773-3352

5015-3

October 23, 1984

Dept. Game, Fish & Parks
Anderson Building
Pierre, South Dakota 57501

Dear Sir;

Enclosed herewith is your Water Permit No. 5015-3 as approved by the Water Management Board authorizing you to construct your water diversion system and the water to beneficial use, not exceeding the limits as specified in said Water Permit No. 5015-3.

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

Very truly yours,

A handwritten signature in black ink, appearing to read "John Hatch". The signature is written in a cursive, flowing style.

JOHN HATCH, Chief Engineer
Water Rights Division

JH:ms

enclosure

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

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

WNR-809-5/83

WP or WR No. 5015-3

Instruction to Newspaper - Publish first publication of the following Notice on or before August 8, 1984 with 2nd publication 1 week later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 5015-3 to Appropriate Water and/or to Amend Water Permit or Water Rights No. _____

Notice is hereby given that the South Dakota Department of Game / Fish & Parks whose mailing address is 445 E. Capitol, Anderson Bldg., Pierre, South Dakota has made an application for a permit

to appropriate for non-consumptive use 350 acre feet annually of water, two fills of 175 acre feet each year. The pond will be filled with runoff water from Dry Creek or back fill water from the Missouri River for fish culture. The point of diversion will be located in SW $\frac{1}{4}$ Section 15, T98N, R69W.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends Approval of Application No. 5015-3 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at Civil Defense Room, Capitol Building, Pierre, South Dakota on September 26 1984 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to make a determination on this application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the Applicant and the Chief Engineer by September 14, 1984. The petition may be informal, but it must include a statement describing the petitioners interest in the application, the reason for the petitioner's opposition to or support of the application, and the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17, 46-5-1 thru 46-5-16, 46-5-24, 46-5-25, 46-5-30.2, 46-5-31; 46-2A-1 thru 46-2A-10, 46-2A-12; ~~(ground) 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, (future use) 46-5-38 thru 46-5-40, (transfer lands) 46-5-30.4, 46-5-33 thru 46-5-35, (10,000 AFA) 46-5-20.1, 46-5-8.1; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15; (future use) 74:02:01:24 thru 74:02:01:25, (10,000 AFA) 74:02:01:15:02 thru 74:02:01:15:05.~~

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

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWNR, Joe Foss Bldg, Pierre SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by September 14, 1984.

PROOF OF PUBLIC

STATE OF SOUTH DAKOTA)
County Charles Mix) ss.

I, Harold Jaeger

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

Water was taken from the Charles Mix County

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

City of Geddes

County of Charles Mix and State of South
that the said notice was published in said newspaper on the fo
two dates:

August 9, 1984

August 16, 1984

Harold Jaeger
(Signature)

Owner - Publisher
(Title)

Aug 16, 1984
(Date Signed)

Cost of Printing: \$38.02

PUBLIC NOTICES

Public Notice
Advertising
Protects Your
Right To Know

NOTICE OF HEARING
ON APPLICATION NO. 5015-3
TO APPROPRIATE WATER
AND/OR TO AMEND WATER
PERMIT OR WATER
RIGHTS NO.

Notice is hereby given that the South Dakota Department of Game, Fish & Parks whose mailing address is 445 E. Capitol, Anderson Bldg., Pierre, South Dakota has made an application for a permit to appropriate for non-consumptive use 350 acre feet annually of water, two fills of 175 acre feet each year. The pond will be filled with runoff water from Dry Creek or back fill water from the Missouri River for fish culture. The point of diversion will be located in SW 1/4 Section 15, T98N, R69W.

Pursuant to SDCL 46-2A-2 the Chief Engineer of the Water Rights Division recommends Approval of Application No. 5015-3 because 1) unappropriated water is available, 2) will be no unlawful impairment of existing rights, 3) is beneficial use of water and 4) is in the public interest.

This application will be considered by the Water Management Board at Civil Defense Room, Capitol Building, Pierre, South Dakota on September 26, 1984 at 10:00 am.

The recommendation of the Chief Engineer is not final or binding upon the Board and the Board is authorized to make a determination on this application after it reaches a conclusion based upon facts presented at the public hearing. Any interested person who may be affected by a Board decision and who intends to participate in the hearing before the Board and present evidence or cross-examine witnesses according to SDCL 1-26, must file a written petition with BOTH the Applicant and the Chief Engineer by September 14, 1984. The petition may be informal, but it must include a statement describing the petitioners interest in the application, the reason for the petitioner's opposition to or

the signature and mailing address of the petitioner or his legal counsel if legal counsel is obtained. The applicant need not file a petition.

This application is made pursuant to the provisions of SDCL 46-1-1 thru 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17, 46-5-1 thru 46-5-16, 46-5-24, 46-5-25, 46-5-30.2, 46-5-31; 46-2A-1 thru 46-2A-10, 46-2A-12; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

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

Any person wishing a copy of the Chief Engineer's recommendation, further information on this application or to assure access to the hearing by the handicapped can contact the Water Rights Division, DWNR, Joe Foss Bldg, Pierre, SD (605 773-3352) for assistance prior to the hearing date. The time of the hearing will be automatically extended for at least twenty days upon written request of the applicant or any person who has filed a petition to oppose or support the application. The request for extension must be filed with the Chief Engineer by September 14, 1984.

Pub. Aug. 9 & 16



REPORT FOR APPLICATION NO. 5015-3

SOUTH DAKOTA DEPARTMENT OF GAME, FISH & PARKS

May 15, 1984

Water Permit Application No. 5015-3 is to appropriate, for non-consumptive use, 350 acre feet of water annually from Dry Creek watershed runoff and back up water from the Missouri River. The point of diversion is to be located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 15, T98N, R69W.

Discussion

The intent of this application is to build a subimpoundment located at the mouth of Dry Creek and the Missouri River. The reservoir will be filled either by runoff water from Dry Creek or back up water from the Missouri River. The reservoir will be stocked with young fish and drained into the Missouri River when the fish reach the correct size.

Conclusion

- 1) There is unappropriated water available for Water Permit Application No. 5015-3.
- 2) The diversion of 350 acre feet annually will not have an adverse effect on existing water rights.



TIMOTHY G SCHAAL
Water Resources Engineer

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT

APPLICATION NO. 5015-3, S.D. Department of Game, Fish and Parks

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 5015-3, South Dakota Department of Game, Fish and Parks.

The Chief Engineer is recommending APPROVAL of Application No. 5015-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) in the public interest.

See the attached report for additional information.

A handwritten signature in black ink, appearing to read "John Hatch", with a stylized, cursive script.

JOHN HATCH, Chief Engineer
Water Rights Division

Permit No. 5015-3
Missouri River - Water District

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

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

I have this day made a thorough examination of the water use system constructed by the **South Dakota Game, Fish & Parks** of **Anderson Building, 445 East Capitol, Pierre, SD 57501** holder of Permit No. **5015-3**, bearing the priority of **March 19, 1984** authorizing the diversion of the storage of **350** acre-feet (2 fills) of the waters of **Dry Creek** for **fish culture** purposes, in **Charles Mix** County.

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

A. Works used to divert the water:

N/A

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

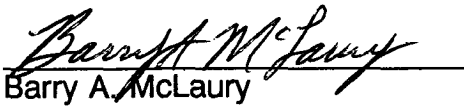
Natural drainage

C. Works used to apply water to beneficial use:

Water stored in place by a dam on Dry Creek

The system is in the following condition **Good**. The point of diversion is located **265 feet N and 790 feet E of the SW quarter corner of Section 15 T98N-R69W (SW1/4 SW1/4)**. The works are capable of storing **175** acre-feet of water (2 fills) which is to be used for **fish culture**.

Exceptions to compliance are: **None** Date: **April 29, 1993**



Barry A. McLaury
Natural Resources Analyst
DENR, Water Rights Division

REPORT ON INSPECTION OF PERMIT NO. 5015-3

DATE: April 29, 1993

Other permit(s) associated with the project: None

DIVERSION POINT LEGAL LOCATION: 265 feet N and 790 feet E of the SW quarter corner of Section 15 T98N-R69W (SW1/4 SW1/4).

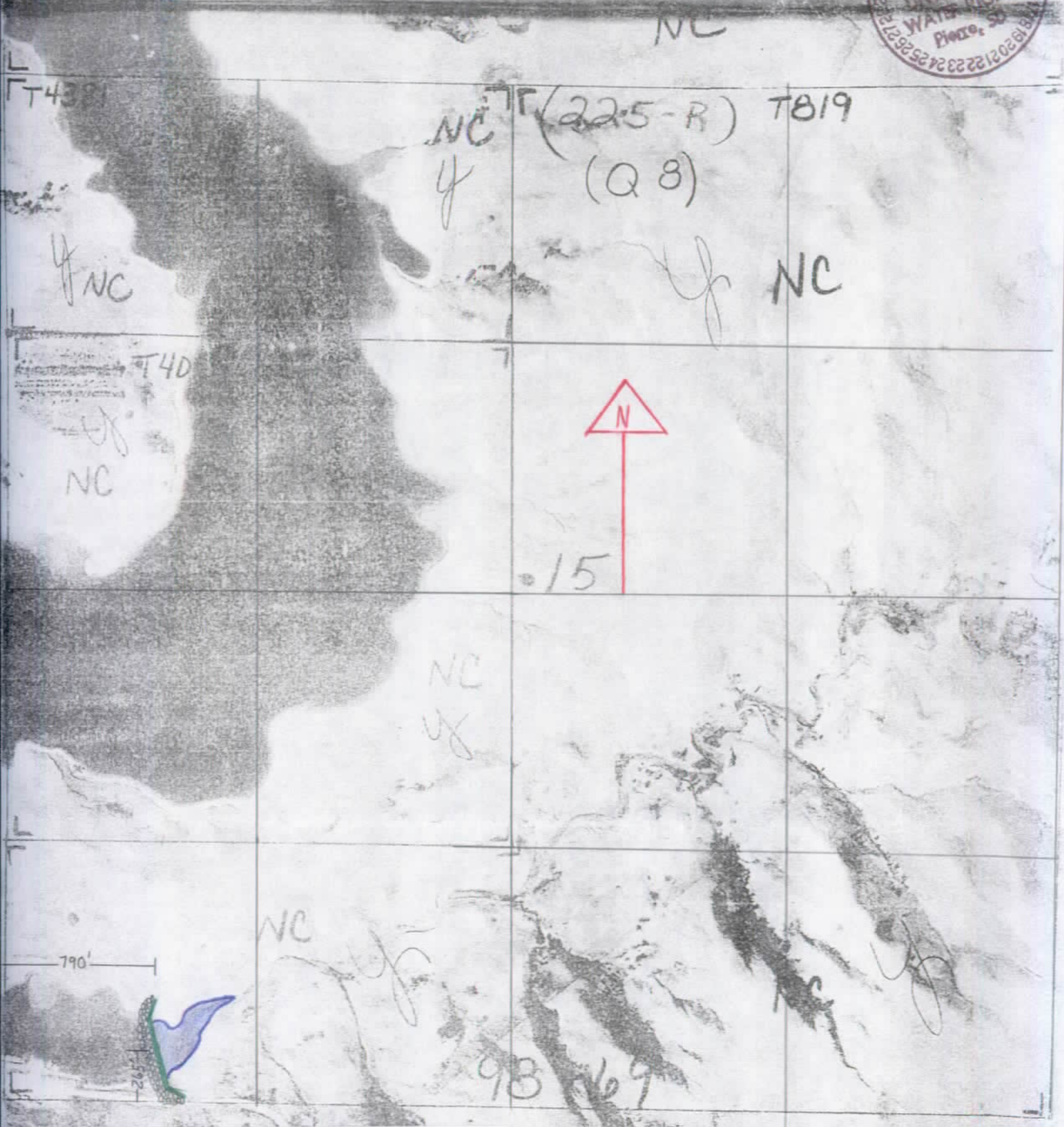
DAM INFORMATION:

- | | |
|--|---|
| 1) Height to crest <u>30</u> feet | 10) Outlet tubes: |
| 2) Height to primary spillway <u>(adjustable)</u> feet | a) diameter <u>3 ft X 3 ft</u> inches |
| 3) Height to secondary spillway <u>20</u> ft | b) type <u>concrete box</u> |
| 4) Crest width <u>20</u> feet | c) valved <u>Y</u> |
| 5) Crest length <u>500</u> feet | d) valve type <u>bridge planks</u> |
| 6) Secondary spillway length <u>150</u> feet | e) location on structure |
| 7) Secondary spillway width <u>48" concrete tube</u> | <u>center of embankment</u> |
| 8) Approx. storage <u>175</u> ac-ft | 11) Category of Dam <u>III</u> |
| 9) Date constructed: <u>November 1983</u> | 12) Inspection Sheet Completed <u>N</u> |
| | 13) Name of Contractor <u>Schweigert Const.</u> |

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 N/A
- 3) All structures, wells and lands on map Y
- 4) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period N/A

NOT TO SCALE



Barry McLaury *Barry A. McLaury*
Natural Resources Analyst
Division of Water Rights
Date May 4, 1993

5015-3

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 5015-3

(1) South Dakota Department of Game, Fish and Parks of 523 E Capitol, Joe Foss Building, Pierre SD 57501 made Application No. 5015-3, March 19, 1984 for a water permit to store 350 acre-feet of water annually from Dry Creek, Charles Mix County, South Dakota for fish and wildlife propagation purposes. Permit No. 5015-3, with a priority date of March 19, 1984 was approved September 26, 1984 and issued to the applicants for diversion of water with construction of the described water supply system to be completed on or before September 26, 1989 and the application to beneficial use of said water completed on or before September 26, 1993.

(2) It is certified that the applicant has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to store 350 acre-feet of water (two 175 acre-feet fills annually) for beneficial use. The location of the diversion point is 265 feet N and 790 feet E of the SW quarter corner of Section 15-T98N-R69W (SW 1/4 SW 1/4). The storage capacity of the dam is 175 acre-feet.

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

(4) Pursuant to South Dakota Water Law 46-5-30.1 the South Dakota Department of Game, Fish & Parks, 523 E Capital, Joe Foss Building, Pierre SD 57501 the holders and/or owners of Water Permit No. 5015-3 is issued a license to appropriate water, the right to store 350 acre-feet of water (two 175 acre-feet fills annually) from Dry Creek with a priority date of March 19, 1984 from the location specified in (2) of this license. The water is used for the purpose of fish and wildlife propagation. This license is subject to any limitations or qualifications listed in Water Permit No. 5015-3 and subject to South Dakota State Law.



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

NOV 15 1994

date



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

NOV 15 1994

5015-3

Tim Olson, Water Permits Coordinator
South Dakota Department of
Game, Fish & Parks
523 E. Capitol
Joe Foss Building
Pierre, SD 57501

Dear Mr. Olson:

Enclosed is Water License No. 5015-3. Water License No. 5015-3 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 Division
(605) 773-3352

rd
enclosures

NOTES REGARDING SPECIFICATIONS

- Design Specifications: A.A.S.H.T.O. Specifications for Highway Bridges, 1977 Edition, with Interim Specifications thru 1982, using Service Load Design.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 1977 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

NOTES REGARDING DESIGN MIX OF CONCRETE

- All structure concrete shall be Class "A" designed to produce a 28 day compressive strength of 4,500 p.s.i.
- Type II Cement is required.

GENERAL NOTES REGARDING CONSTRUCTION

- All exposed concrete corners shall be chamfered 3/4" unless noted otherwise.
- Use 2" clear cover on all reinforcing steel except as shown.
- The Contractor shall imprint on the structure the date of construction as specified and detailed on Standard Plate No. 305 which is on Sheet No. 15 of 15.

NOTE REGARDING REINFORCING STEEL

- Reinforcing Steel shall conform to ASTM-A615, Grade 60.

NOTES REGARDING 24 INCH C.M.P.

- The 24 in. dia. C.M.P. shall be installed as shown on Sheet 12 of 15 and in accordance with Section 450 of the South Dakota Standard Specifications, Class B Bedding shall be used. The 24 in. dia. C.M.P. shall be 14 ga. and asbestos-bonded bituminous coated. The pipe shall be provided cut to the length shown on the plans but may be assembled from two or more shorter lengths. The pipe shall be installed so that the longitudinal riveted seam is positioned at the top of the pipe. The 24 in. Coated 14 Ga. C.M.P. shall be furnished and installed at the unit price bid for each item.
- Non seepage diaphragms shall be provided as shown on Sheet 12 of 15. The 14 ga. diaphragms shall be asbestos bonded bituminous coated. The cost for furnishing and installing the seepage diaphragms shall be included in the unit price bid for 24 in. C.M.P. 14 Ga. Coated, Furnish.
- The flared end section shall be bituminous coated and shall be furnished and installed at the unit price bid for each item.

NOTES REGARDING STRUCTURAL ALUMINUM

- All aluminum plates and shapes shall conform to the Aluminum Association Specifications for Aluminum Structures, 1976 and shall be Alloy 6061-T6.
- Shop plans shall include details of all welded joints indicating welding process and filler metal to be used. The cost of welding shall be included in the unit price bid for Structural Aluminum.
- All costs involved in furnishing, fabricating, and installing aluminum plates or shapes shown in these plans shall be paid for at the unit price bid for Structural Aluminum, this includes aluminum screens detailed on Sheet No. 12 of 15.

NOTE REGARDING SHOP PLANS

- Shop plans shall be required for all fabricated steel or aluminum items. Shop plans shall be submitted to the Bridge Program for prior approval.
- The initial submittal of Shop Plans and/or Detailed Drawings shall be 2 sets. Once necessary revisions have been made, if required, 5 sets shall be submitted for final distribution.

NOTE REGARDING CONCRETE PROTECTION

- The water control structure concrete shall be subject to the same protection requirements as those set forth for bridges in the Special Provision for Concrete Masonry.

NOTES REGARDING GRANULAR BASE

- Granular Base shall be placed, as shown on Sheet 13 & 14 of 15, between the Engineering Fabric and the Concrete Fabric Mat. The Granular Base shall be placed to a uniform compacted depth of four (4) inches.
- The Granular Base shall consist of clean, hard durable, sand, gravel or rock, crushed or uncrushed, meeting the following gradation requirements by dry weight.

Grain Size	Allowable Percent Passing
1/2 Inch	100
3/8 Inch	95-100
No. 4	40-100
No. 10	0-20
No. 40	0-10
No. 200	0-3

The Granular Base shall have a Los Angeles Abrasion Test Loss of not more than forty (40) percent.

- No specific density is required however the Granular Base shall be compacted to the satisfaction of the Engineer.
- The finished Granular Base shall be smooth and free from waves and other irregularities.
- Granular Base will not be measured; payment will be for plans quantity and shall include all costs incurred to furnish and place Granular Base at the price bid per cubic yard.

NOTES REGARDING STOP LOGS

- Stop Logs shall be No. 1 Grade Douglas Fir-Larch as graded by the West Coast Lumber Inspection Bureau and Western Wood Products Association, and listed in the National Design Specifications For Wood Construction (N.D.S.), 1977 Edition.

- The finished size of the stop logs shall be 3"x6"x3'-9".

- Stop logs shall be paid for at the Lump Sum Bid for Non-Structural Timber.

NOTE REGARDING STOP LOG/SCREEN CHANNEL

The Stop Log/Screen Channel shall be made from aluminum plate bent in a press brake or fabricated by welding. Optionally it may be fabricated from steel plates by welding or bent in a press brake and galvanized after fabrication, however it shall still be paid for at the unit price bid for Structural Aluminum. If bent or fabricated plate is used, either aluminum or steel, its thickness shall be 1/8".

NOTE REGARDING CONSTRUCTION BRACING

During backfilling operations adjacent to the structure, the Contractor shall provide temporary bracing, at the mid height of the wing walls, between the stop log/screen channels. The bracing shall be used to maintain the 3'-6" dimension across the inside of the structure. Provide one brace for each pair of channels. All cost involved in providing the bracing shall be absorbed in the various contract items. A minimum total of four braces are required.

NOTES REGARDING ENGINEERING FABRIC

- This work shall consist of furnishing and installing Engineering Fabric in reasonably close conformity with the requirements specified herein or on Sheet 13 & 14 of 15.
- The Engineering Fabric shall be of non-woven material conforming to the following requirements:
Tensile Strength (ASTM D1682): 125 lbs. in any principal direction.
Burst Strength (ASTM D751): 125 psi minimum.
Puncture Strength (ASTM D751): 50 lbs. minimum.
Equivalent Opening EDS: 75-140.
- The material shall be placed so the lapped joints between the rolls are transverse to the axis of the embankment, i.e., transverse to the Center Line of Impoundment Road.
On joints at the end of rolls, the upper end shall be lapped over the lower end. All joints shall be lapped a minimum of twelve (12) inches.
- Vehicles and equipment shall not be operated directly on the fabric. The full depth of Granular Base shall be in place before any equipment is allowed on the area.
- Prior to placement of the Engineering Fabric the slopes and surfaces shall be smooth, free of obstructions and conform to plan configuration.
- This work will be measured by the square foot of surface area of Engineering Fabric accepted complete in place on the project. Measurement will not include fabric required for lapped seams or joints.
- This work will be paid for at the Contract Unit Price Per Square Foot for Engineering Fabric, Non-Woven complete in place on the project. Payment for this item shall be understood to include full compensation for furnishing the Engineering Fabric, Non-Woven, and for all Labor, Equipment, Material and Incidentals necessary to prepare the area for the Engineering Fabric and satisfactory installation of the Engineering Fabric.

NOTES REGARDING EXTRUDED INSULATION BOARD

- One and one-half inch extruded insulation board shall be placed against the outside of the wingwalls and backwall of the structure to within one half foot of the finished ground line.
- The extruded insulation board shall be Styrofoam HI made by Dow Chemical Company or any approved equal conforming to A.A.S.H.T.O. Specification M230-70.
- All costs involved in furnishing and placing the insulation board shall be absorbed in the unit price bid for Class "A" Concrete Misc.

NOTE REGARDING VENT TUBE

A Vent Tube shall be welded into the C.M.P. as shown on Sheet 12 of 15. The 2" Standard Weight Steel Pipe shall conform to ASTM-A53 Grade "B". The 4"x3"x3/8" angles shall conform to ASTM-A36. The 3/4"x5/8" bolts shall conform to ASTM-A307 and be galvanized in accordance with ASTM-A153, including nuts and washers. Prior to welding the vent tube to the C.M.P., an area of the C.M.P. coating shall be removed sufficient to allow cutting the hole in the C.M.P. and welding the 2" pipe in place. After welding the heat affected zone shall be coated with an approved zinc rich paint and the coating restored by painting with Trumbull 5X Brush Grade Asphalt made by the Trumbull Asphalt Co., Minneapolis, Minn. Phone 612-322-3671, or an approved equal. The 2" pipe and 4"x3"x3/8" angle shall be galvanized in accordance with AASHTO-M111 (ASTM-A123). All costs involved in furnishing, fabricating, welding, galvanizing and installing the angles and pipe shall be included in the unit price bid for Structural Steel. The cost of providing and installing the galvanized A307 bolts, nuts and washers shall be included in the unit price bid for Class "A" Concrete Misc.

NOTES REGARDING 24 IN. SLUICE GATE

- The sluice gate shall be either a Coplastix, Chased-Invert Type, Ball-mounting sluice gate as manufactured by Ashbrook-Simon-Hartley Co., P.O. Box 16527 Houston, Texas 77053, Telephone 713-449-0322 or a Model 20-100 (Flat Back) Sluice Gate manufactured by Hydro Gate Co., P.O. Box 99, Longmont, Colorado 80501, Telephone 303/651-6400.
- The sluice gate shall be suitable for use with a 24 in. diameter round opening in the backwall and the sluice gate, frame and anchorage shall be designed for 20-foot face pressure and 10 foot back pressure.
- Steel guides, head angles or any other steel part of the apparatus that is not stainless steel, shall be galvanized in accordance with AASHTO Specification M111 (ASTM-A123). If welding or other fabrication is required the part shall be galvanized after fabrication. Bolts, including anchor bolts, which stainless steel shall be galvanized in accordance with the appropriate ASTM Specification for the type of bolt. If the sluice gate is cast iron it shall have bronze seating surfaces and bronze lift nut.
- The sluice gate and associated apparatus may generally have the features shown on Sheet 6 of 15. The sluice gate may be circular or square. In any case the "T-Wrench" (or operating device) must be completely removable when the sluice gate is in the fully open or closed position, leaving no part of the remaining apparatus to interfere with the removable steel grate at the top of the backwall. Provide two (2) "T-Wrenches."
- The sluice gate manufacturer shall provide the Contractor with written instructions covering the installation of the sluice gate and associated apparatus.
- Detailed drawings of the sluice gate and all associated apparatus shall be submitted to the Bridge Program for approval prior to fabrication. See Notes Regarding Shop Plans for number of sets of drawings required. In addition, design computations for the Coplastix Sluice Gate shall be submitted to the Bridge Program for prior approval.
- The sluice gate shall be paid for at the unit price bid for 24 in. Diameter Sluice Gate. This payment shall be full compensation for all labor, equipment, materials and incidentals necessary to furnish and install the sluice gate and associated apparatus.

NOTES REGARDING ELASTOMERIC BEARING PADS

- The elastomeric bearings shown on Sheet No. 8 of 15 shall be in conformance with AASHTO Specifications Division 1, Section 12 and Division 2, Section 25. The elastomer shall be 100 percent virgin chloroprene (neoprene), 60 durometer, meeting the requirements of AASHTO Specification 2.25.2 Table "B". The elastomeric bearing shall be 7"x6" in plan and have a thickness of 1 inch.
- Prior to installation of the elastomeric pads, the Contractor shall submit a Certificate of Compliance indicating material designation, durometer and conformance to the above noted AASHTO Specifications, to the Bridge Program for approval.
- All costs involved in furnishing and installing the elastomeric bearings, shall be included in the unit price bid for Elastomeric Bearing Pads.

WATER CONTROL STRUCTURE FOR DRY CREEK FISH SUBIMPOUNDMENT

STA. 4+50.00

SEC. 15-T 98 N-R 69 W

PROJ. NO. GP0367

CHARLES MIX COUNTY (2) OF (15)

ESTIMATE OF STRUCTURE QUANTITIES

STATION		Electrometric Bearing Pad	Engineering Fabric, Non-Woven	Structure Excavation, Box Culvert	Undercutting Culverts	24 Inch Diameter Sluice Gate	54 RCP Class 2, Furn.	54 RCP, Install	54 RCP Flared End, Furn.	54 RCP Flared End, Install	Class "A" Concrete, Misc.	Reinforcement for Concrete Masonry	Structural Aluminum	Steel Grating	Structural Steel	Non-Structural Timber	Chain Link Fence (4 Ft.)	Slope Protection	Concrete Fabric Mat	Fabric Mat Test Specimens	Granular Base	24 in. CMP 14 Ga. Coated, Furnish	24 in. CMP 14 Ga. Coated, Install	24 CMP Ends, Furnish	24 CMP Ends, Install				
FROM	TO																												
UNIT		Each	Sq. Ft.	Cu. Yds.	Cu. Yds.	Each	L. F.	L. F.	Each	Each	Cu. Yd.	Lb.	Lb.	Sq. Ft.	Lump Sum	Lump Sum	L. F.	Sq. Yd.	Sq. Ft.	Lump Sum	Cu. Yd.	L. F.	L. F.	Each	Each				
TOTAL		4	1,845	22.1	250.4	1	40.0	40.0	2	2	38.1	10,050	445	206.5	L. S.	L. S.	103	1,486	5,167	L. S.	22.8	164.0	164.0	1	1				

5015-3

NOTES REGARDING WALKWAY TRUSS, WORK PLATFORM AND STRUCTURAL BRACES

- NOTES REGARDING SLOPE PROTECTION

- NOTE REGARDING ERECTION OF TRUSS

For erection purposes the truss shall be lifted only from the points indicated in the elevation view on Sheet 8 of 15. Lifting shall be done in such a manner that the forces are entirely vertical, i.e., with no inward or outward component of the force. This may require the use of a "broader beam" or other similar device to ensure vertical forces.

NOTE REGARDING STRUCTURAL STEEL

For informational purposes only, the total quantity of Structural Steel on this project is 4,039 lbs.

NOTE REGARDING DEFORMED BAR ANCHORS

Deformed Bar Anchors shall be 1/2" dia. X 24" long Nelson Fluxed Deformed Bar Anchor Studs, automatically welded. The automatic welds shall be made in accordance with recommendations of Nelson Steel Welding Division, Lorain, Ohio 44055. In lieu of Deformed Bar Anchors, 24" long No. 4 Reinforcing Steel with a carbon equivalency of 0.40% or less may be used. If No. 4 Reinforcing Steel is used, the shop plans shall show the welding details for prior approval. All costs incurred to furnish and install either Deformed Bar Anchors or No. 4 Rebar shall be included in the Unit Price Bid for Reinforcement for Concrete Masonry.

NOTICE REGARDING CHAIN LINK FENCE

- NOTES REGARDING CHAIN LINK FENCE
1. Chain Link Fence Fabric and miscellaneous hardware shall conform to the South Dakota Standard Specifications, Section 930, except as modified below.
 2. The Chain Link Fabric shall be 48" high, No. 9 Gage, 2" diamond mesh knuckled at both selvages.
 3. All costs involved in furnishing and installing chain link fence fabric and miscellaneous hardware shall be paid for at the unit price bid for Chain Link Fence (4 Ft.).

NOTES REGARDING 54 IN. RCP.

- 1 The 54" pipe shall be furnished and installed in accordance with Section 450 of the South Dakota Standard Specifications except as modified below:
- 2 The 54" MCP shall be Class II with all sections tied together and shall have flared and sections Details of tie bolts and flared and sections are shown on Sheet No. 25 of 124
- 3 The installation and bedding of the flared and section shall be coordinated with the details of concrete fabric mat shown on Sheet 13 of 15

NOTES REGARDING STEEL GRATING

1. The steel grating shall be manufactured by the Reliance Steel Products Co. 3700 Walnut Street, Mc Keesport, PA 1584, Telephone (412) 461-3616, or approved equal. It shall be their Type IR2, or equivalent. The steel grating shall have $1\frac{1}{2} \times \frac{1}{4}$ bearing bars spaced at 17 1/2" centers and $1\frac{1}{2} \times \frac{1}{4}$ cross bars spaced at 2" centers.
2. After fabrication the grating shall be given one shop coat of Red Lead Paint (AASHTO Designation M72, Type 1) or Red Lead Iron Oxide Paint (AASHTO Designation M72, Type 3) and field coat of Gray Paint followed by a coat of Brown Paint. The Brown Paint shall be semi-gloss bridge paint approved by the Engineer. All field welds and adjacent heat affected areas shall be given one coat of Red Lead Paint prior to the application of the prescribed field coats of paint.
3. All cost involved in fabricating, installing and painting the grating shall be included in the Unit Price Bid for Steel Grating.
4. Steel grating shall be attached to its supports by field welds. When attached to the walkway truss floor beams, the attachment points along each floor beam shall be approximately 6" on center. Attachment shall be by $3\frac{1}{2} \times 2$ " long fillet welds on each side of the bearing bar. Steel grating on the work platform shall have attachment points spaced on approximately 1'-0" centers. The grating shall be attached to the $2\frac{1}{2} \times 2 \times \frac{1}{4}$ " or $4 \times 4 \times \frac{3}{8}$ " angles, not to the W8 x 15 overhang beams, using $\frac{1}{4} \times 2$ " long fillet welds on each side of the bearing bar.

STA. 4+50.00

SEC. 15-T 98 N-R 69 W

PROJ. NO. GP 0367

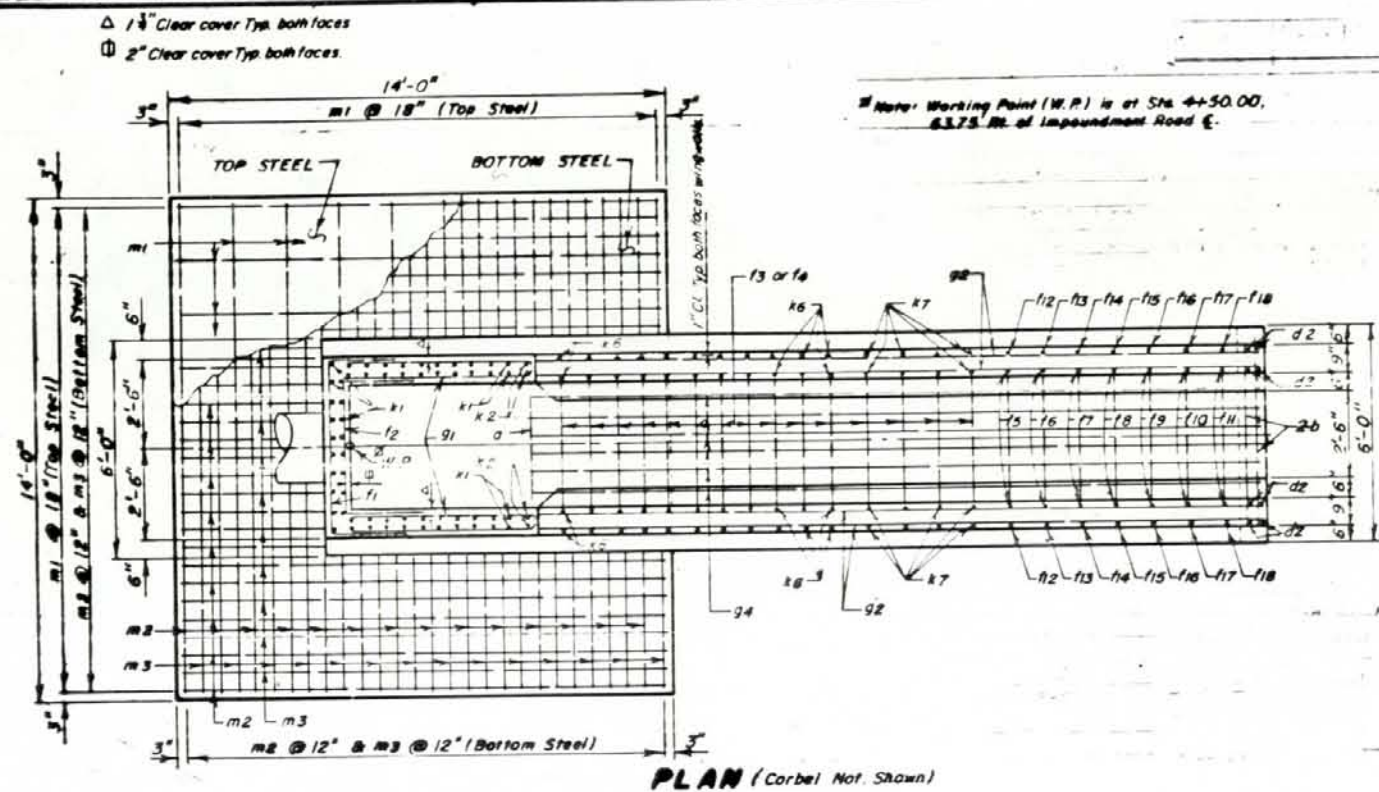
CHARLES MIX COUNTY (3) OF (15)

ESTIMATE OF STRUCTURE QUANTITIES

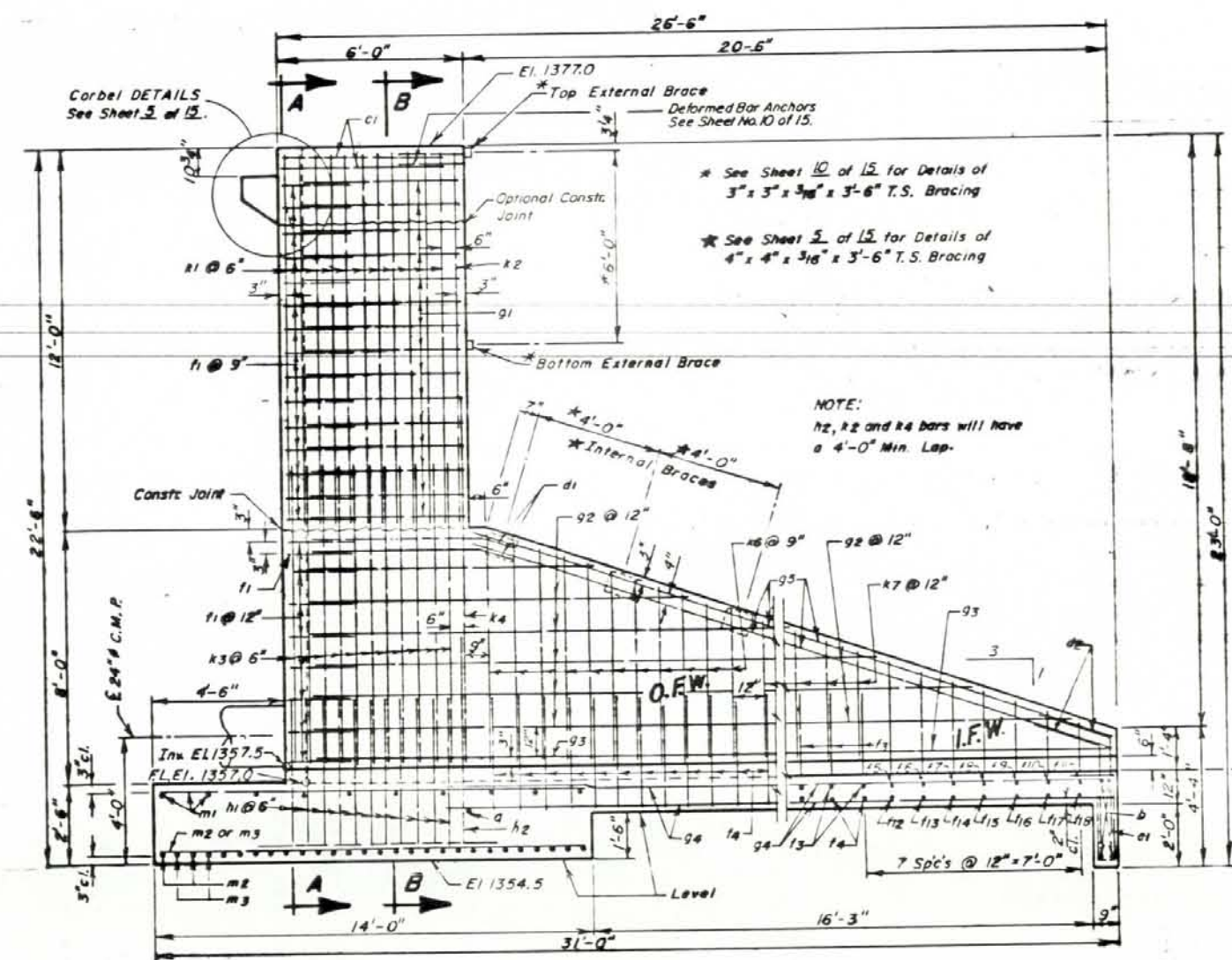
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5015-3

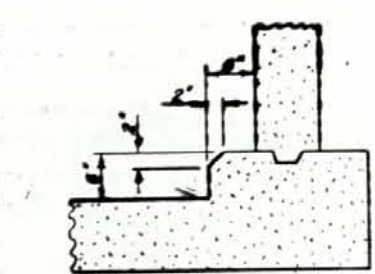
FED. HWY. ADMIN. NO.	STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
8	S.D.	GP0367	37	124



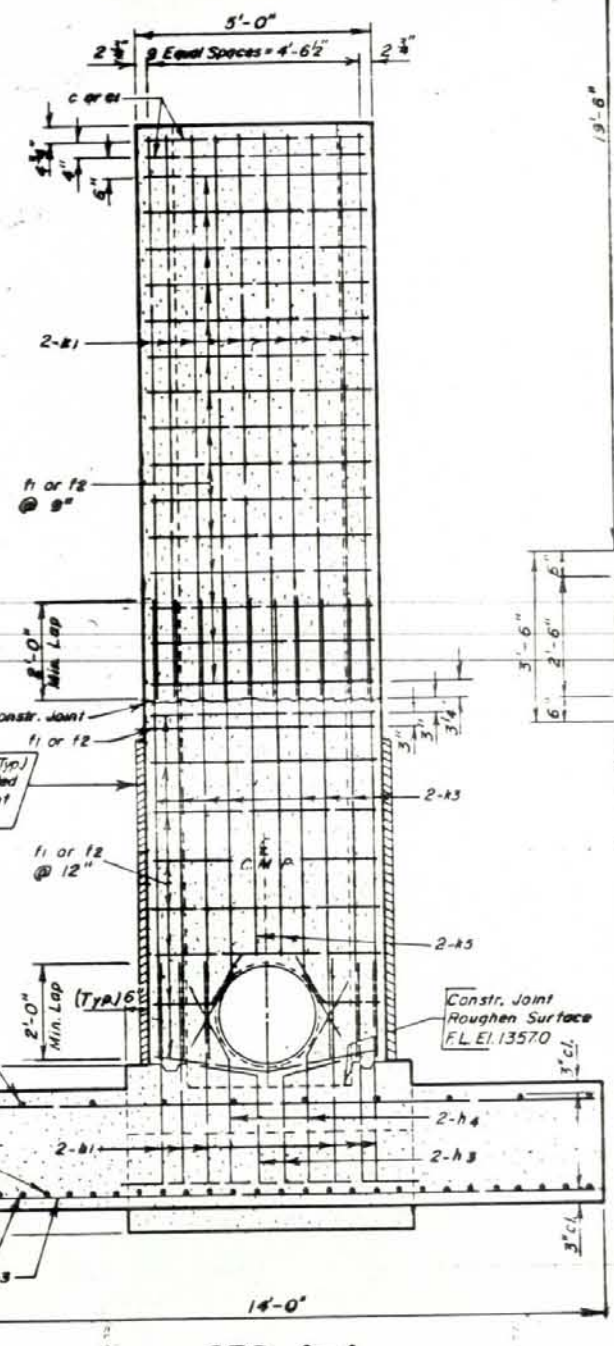
PLAN (Corbel Not Shown)



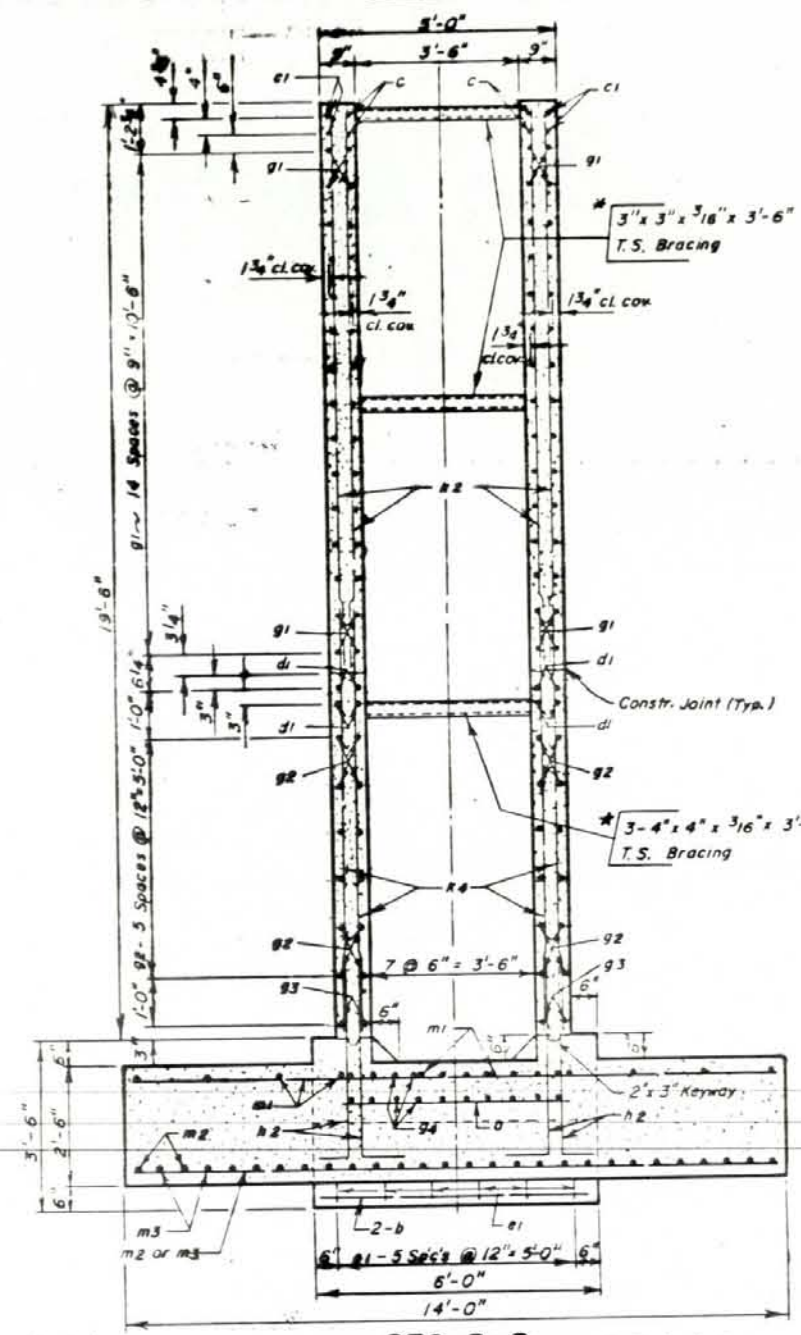
ELEVATION



OPTIONAL FILLET DETAIL
(At Bottom Slab)
Note: Contractor may form the optional full fillet, with 2" Chamfer, as detailed. The cost of the additional concrete shall be borne by the Contractor.



SEC. A-A



SEC. B-B

REINFORCEMENT DETAILS
WATER CONTROL STRUCTURE
FOR
DRY CREEK FISH SUBIMPOUNDMENT
STA. 2+50.00 TO 6+00.00 SEC. 15-T98N-R69W
PROJ. NO. GP 0367
CHARLES MIX COUNTY
S. D. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
MAY 1983 4 OF 15

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	27		

5015-3

Note: Care shall be taken to ensure that stop log and screen channels maintain their relative location shown in the Plan View and are kept vertical and plumb during concrete placement.

Structural Conn. Insert
Structural Conn. Insert & Bar
See Detail this sheet.

ESTIMATED QUANTITIES

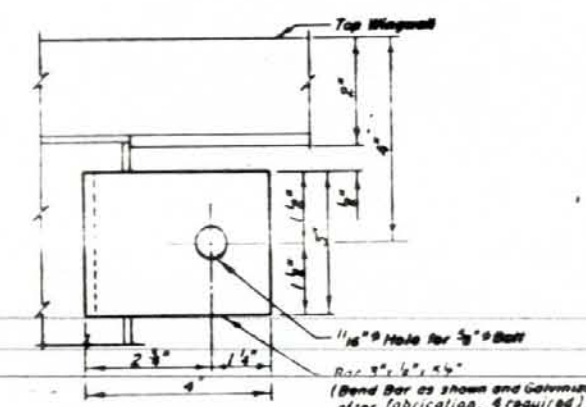
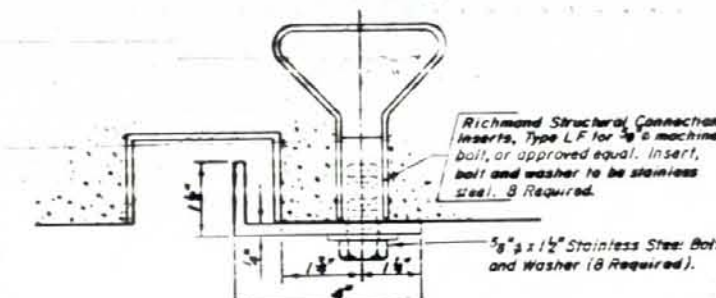
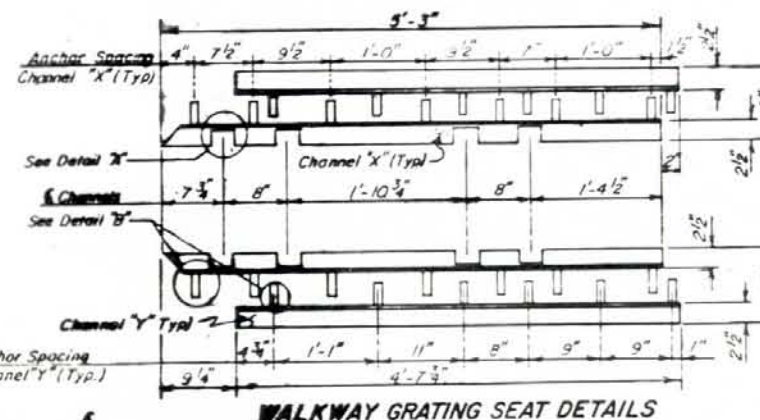
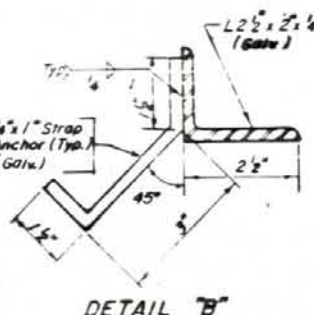
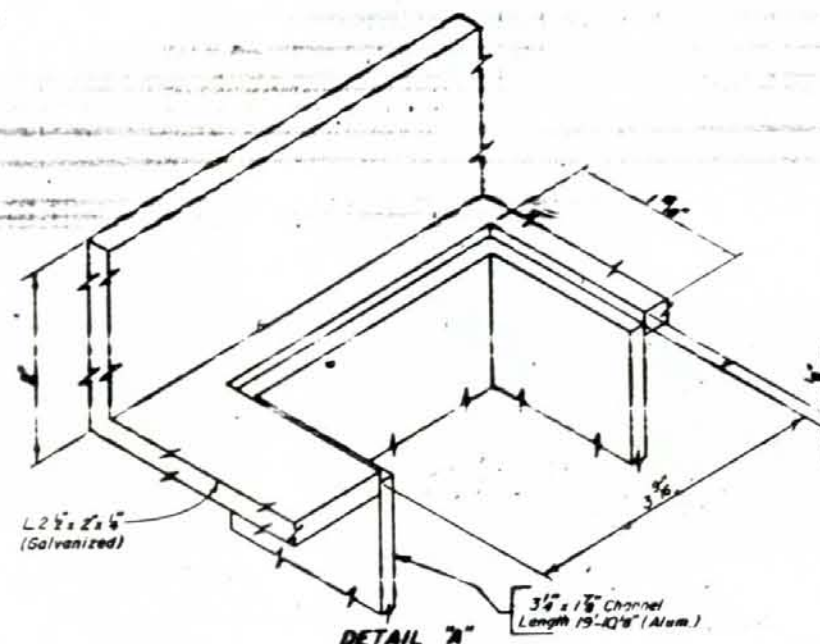
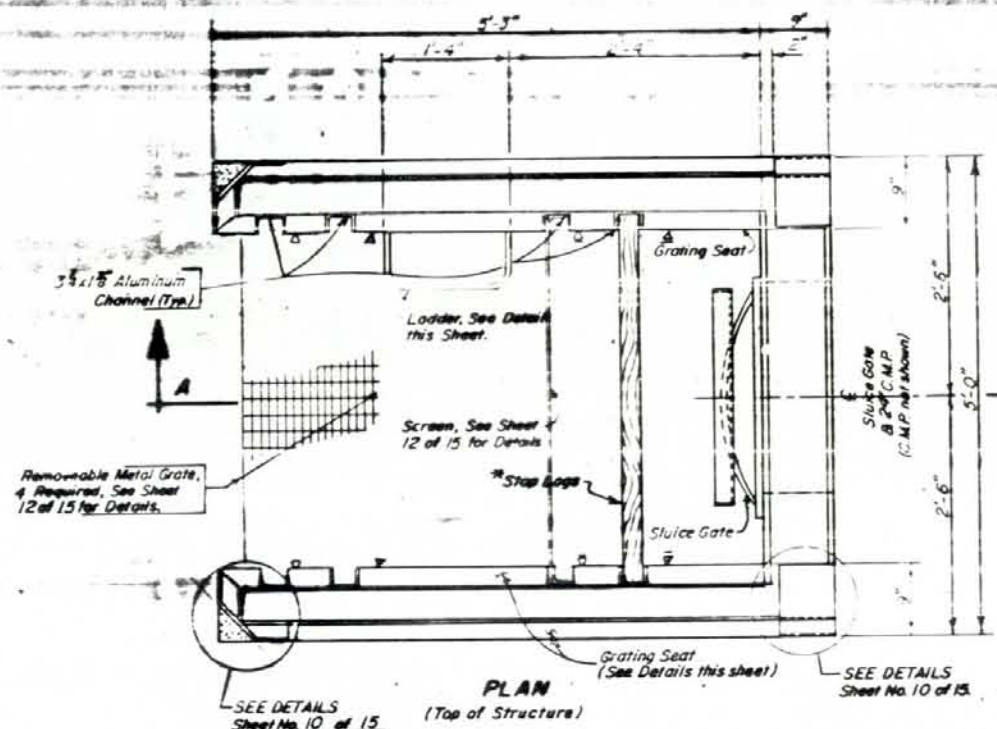
ITEM	UNIT	QUANTITY
1. Structural Aluminum	Lbs.	133
2. Structural Steel	L.S.	Lump Sum
3. Non-Structural Timber	L.S.	Lump Sum

1. Quantity for stop log channel, screen channel and anchors only

2. For informational purposes the estimated Board Feet of Non-Structural Timber is 2025 Board Feet (36 stop logs).

Four 3" x 4" x 5 1/2" Bars, wt. 4.7 lbs., are included in Structural Steel quantity. Cost of 8 Structural Conn. Inserts, 1/2" x 1/2" x 1/2" bolts and washers, shall be absorbed in unit price for Class "A" Concrete Mix.

3. For informational purposes, the estimated weight of Structural Steel is 90.4 lbs. which is the weight of walkway grating seat and anchors plus 4.7 lbs. from Item No. 2. (This sheet only)



CHANNEL STOP DETAILS

MISCELLANEOUS DETAILS WATER CONTROL STRUCTURE FOR DRY CREEK FISH SUBIMPOUNDMENT

STA. 2 +50.00 TO 6 +00.00 SEC. 15 - T 98 N - R 69 W

PROJ. NO. GP 0367

CHARLES MIX COUNTY

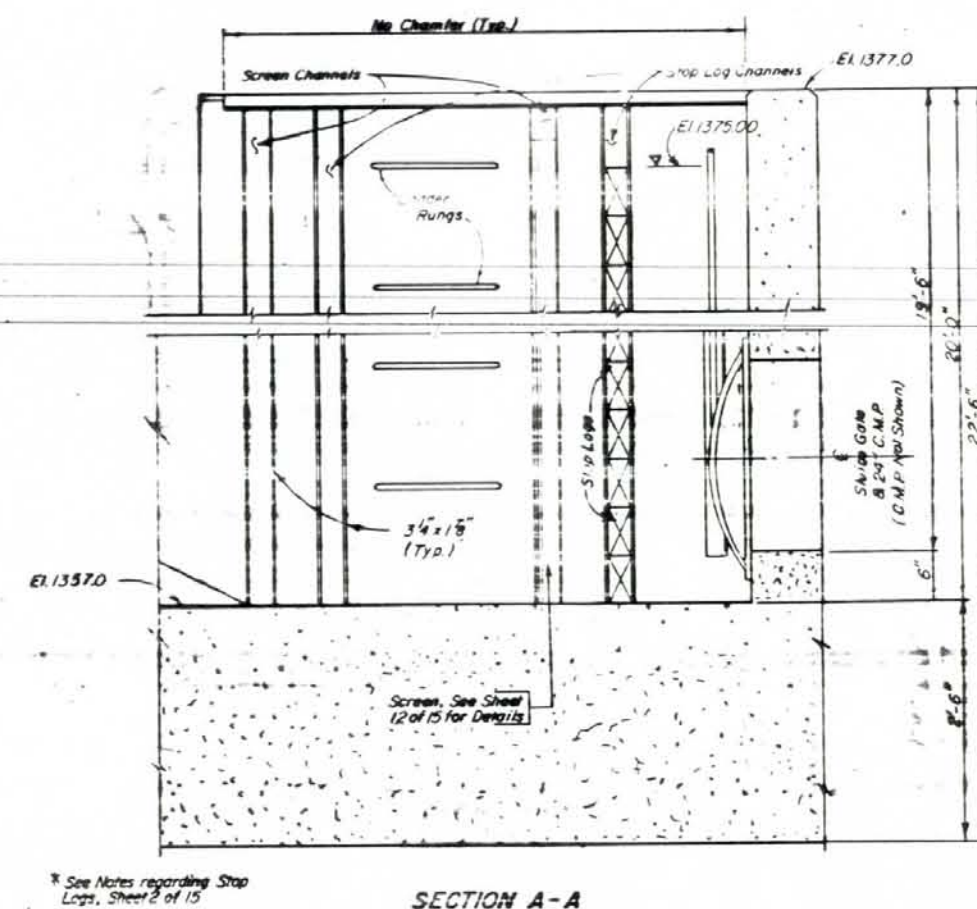
S. D. DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

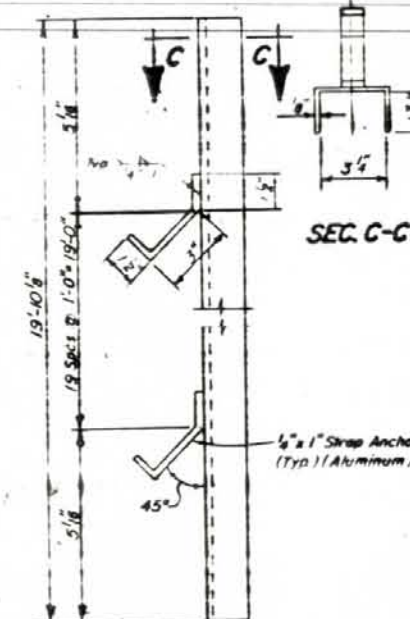
MAY 1983

11 OF 15

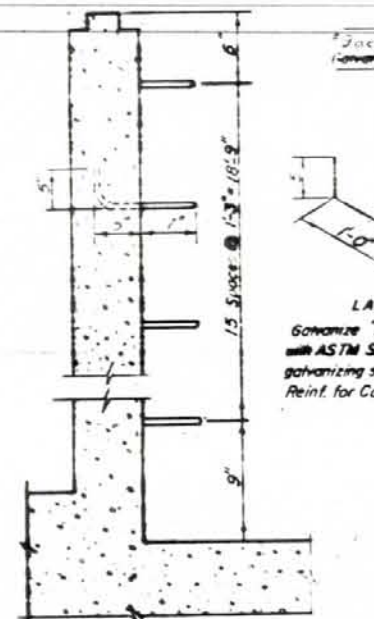
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
			BRIDGE ENGINEER



SECTION A-A



STOP LOG/SCREEN CHANNEL (Aluminum)

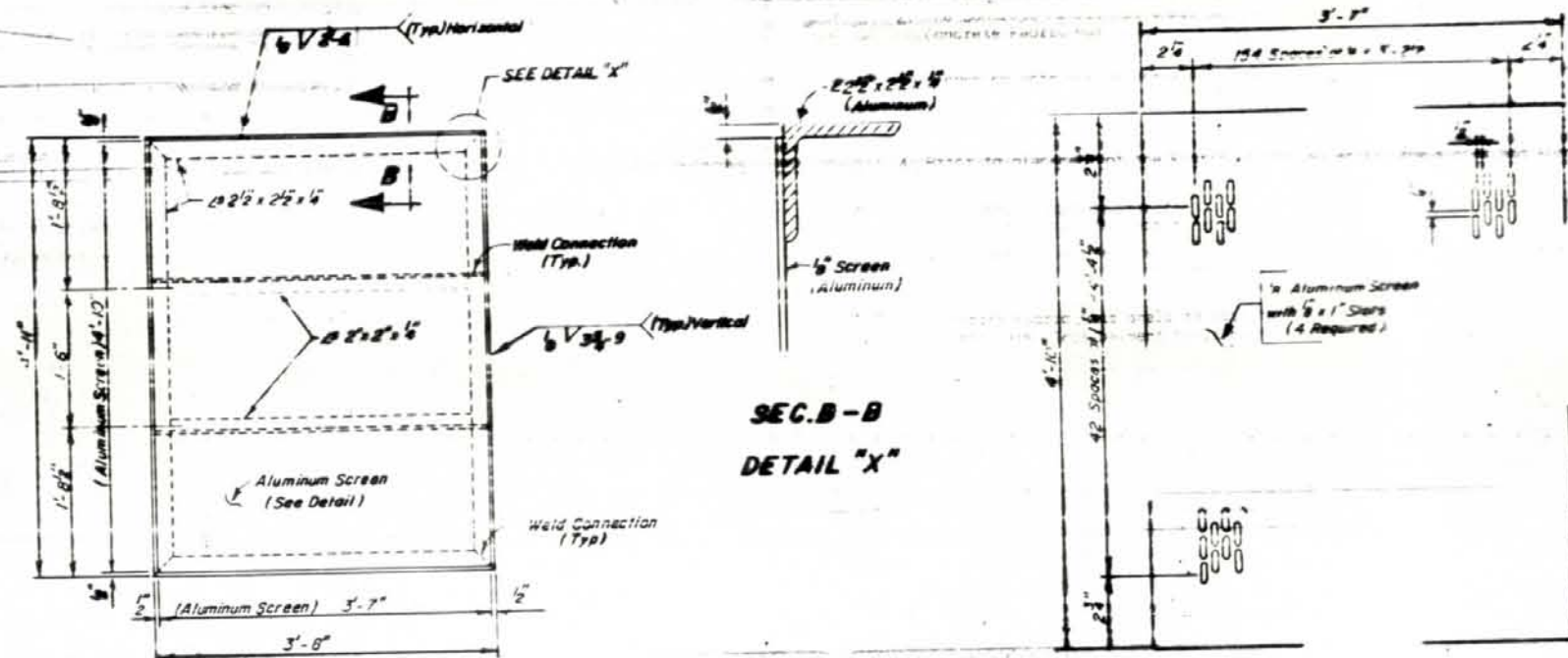


LADDER DETAILS

LADDER RUNG (TYP)
Galvanize "L" bars (ladder rungs) in accordance with ASTM Spec. A767 after fabrication. Cost of galvanizing shall be absorbed in unit price bid for Reinf. for Conc. Masonry.

NOTE

The Supplier shall ensure that the rods or bolts used to attach the Seepage Diaphragms are long enough to account for the thick asbestos bonded precast concrete lining.



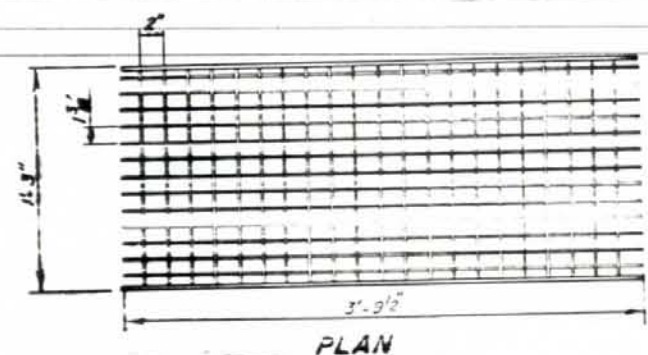
SCREEN & FRAME
(4 Required)

SEC. B-B
DETAIL "X"

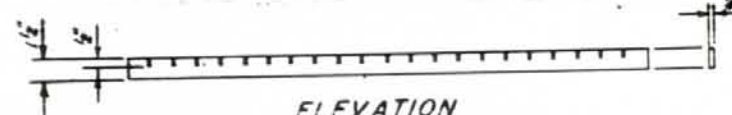
ALUMINUM SCREEN
(4 Required)

ESTIMATED QUANTITIES		
ITEM	UN. T.	QUANTITY
Structural Aluminum	Lbs.	246
Steel Grating	Sq. Ft.	19.0
24" C.M.P. 14Ga. Coated, Furnish	Lin. Ft.	164.0
24" C.M.P. 14Ga. Coated, Install	Lin. Ft.	164.0
24" C.M.P. Ends, Furnish	Each	1
24" C.M.P. Ends, Install	Each	1
Structural Steel	Lbs.	4.3

NOTE: Anchor bolts and Seepage Diaphragms are to be absorbed in price bid for 24" C.M.P. 14Ga. Coated. See Sheet 26 of 124 for Details of Metal End Section for Circular Corrugated Metal Pipe. For informational purposes, the estimated weight of the Structural Steel is 4.3 lbs. (this sheet only).

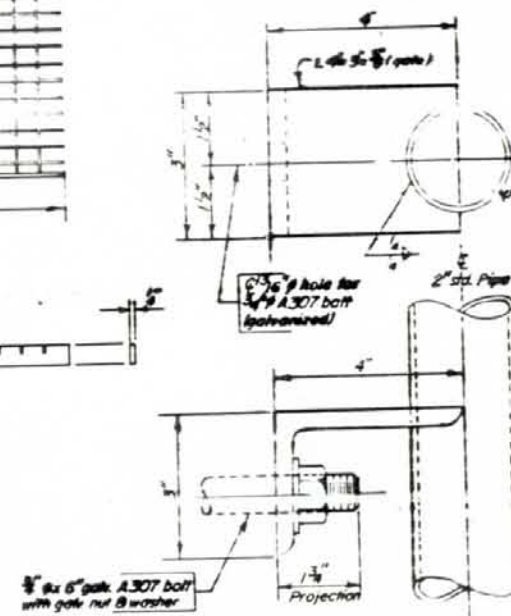


PLAN

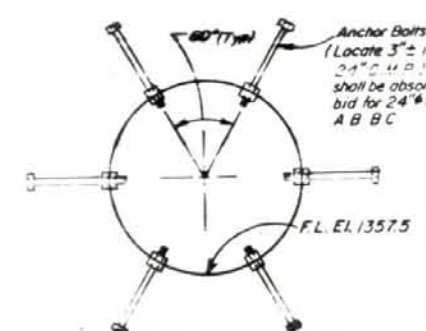


ELEVATION

WALKWAY GRATING
(See NOTE regarding walkway grating)
(4 Required)

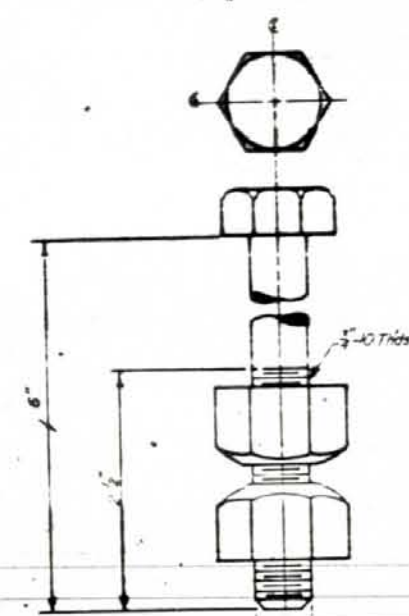
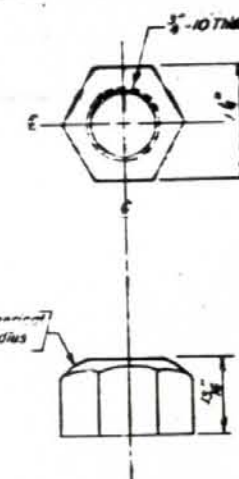


VENT PIPE DETAILS



SEC. A-A

SEEPAGE DIAPHRAGM



ANCHOR BOLTS & NUTS

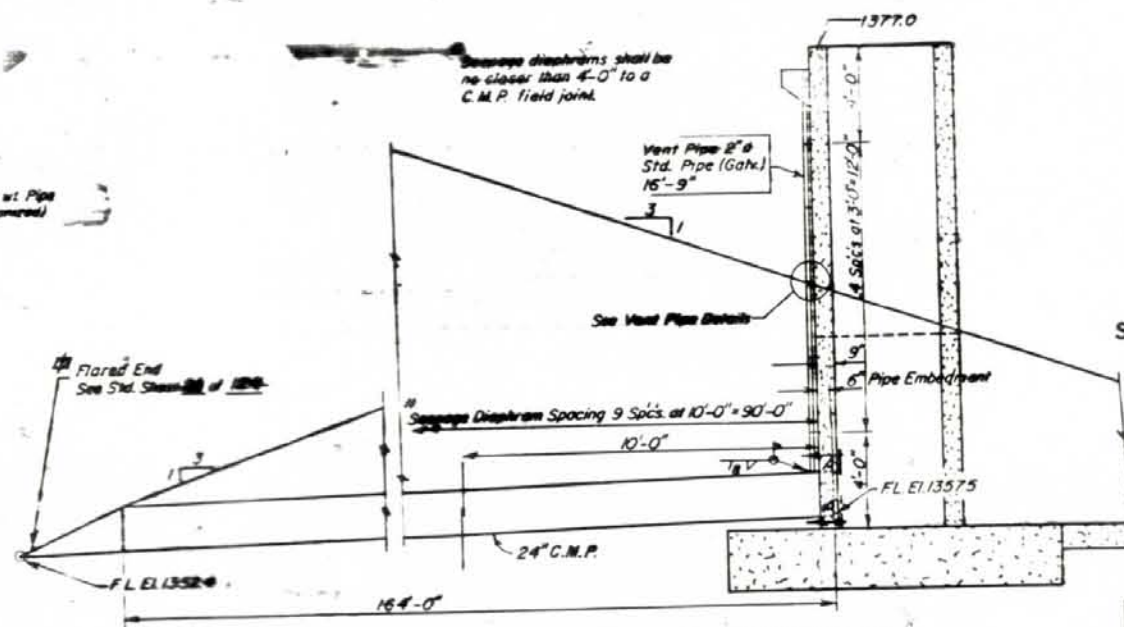
24" C.M.P. & MISCELLANEOUS DETAILS **WATER CONTROL STRUCTURE FOR DRY CREEK FISH SUBIMPOUNDMENT**

STA. 2+50.00 TO 6+00.00 SEC. 15 - T98 N-R69 W
PROJ. NO. GP 0367

CHARLES MIX COUNTY
S. D. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
MAY 1953 (12) OF (15)

SHEET 45 OF 124 SHEETS

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED

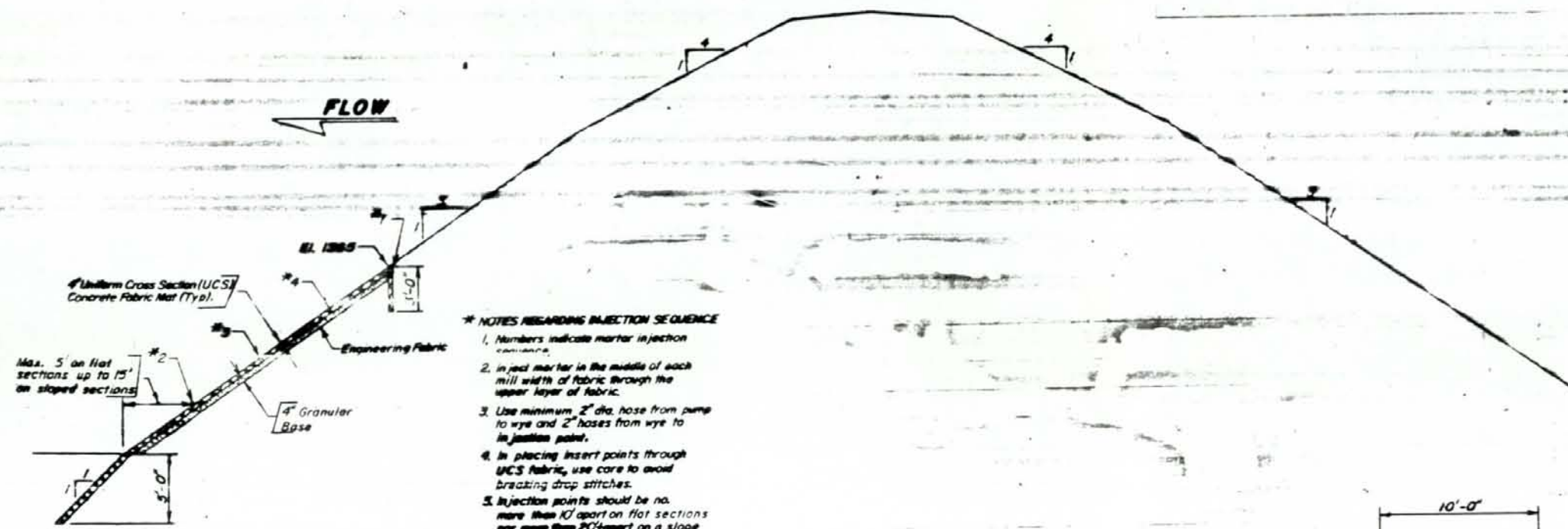


LAYOUT FOR 24" C.M.P. UNDER WEIR

FED. HWY. ADMIN. NO.	STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
8	S.D.	GP0367	47	104

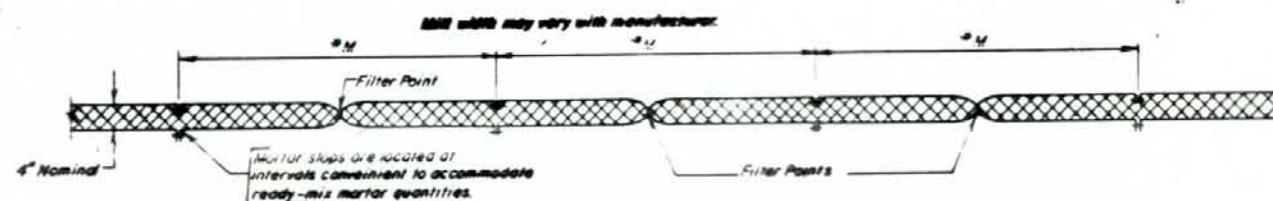
NOTES REGARDING CONCRETE FABRIC MAT

- The fabric forming material used on this project shall be the 4 inch Uniform Cross Section Style.
- The Concrete Fabric Mat shall conform to Special Provisions for Concrete Fabric Mat.
- For encasement, the concrete fabric mat shall be laid into the embankment slopes on both the up stream and down stream outer edges as shown on this sheet. The minimum width of the fabric shall be 6 inches. All costs involved in encasement the two faces shall be absorbed in the unit price bid for Concrete Fabric Mat.
- Prior to placement of the fabric forming material, the slopes and surfaces shall be smooth and free of obstructions.
- See Notes Regarding Injection Sequence. Sequence may be adjusted as necessary in the field, subject to approval by the Engineer.
- A Concrete Fabric Mat section, between the two slopes shall be temporary fitted from lower to upper edge in a single days operation. End of day joints must be encased with the outer slope.



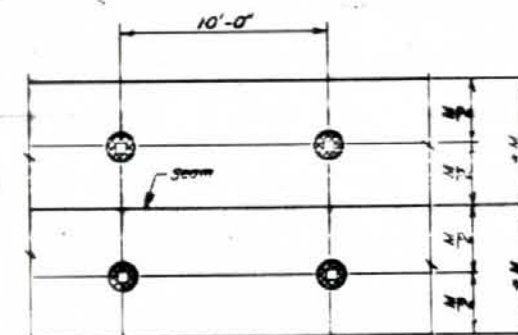
* NOTES REGARDING INJECTION SEQUENCE

- Numbers indicate mortar injection sequence.
- Inject mortar in the middle of each mill width of fabric through the upper layer of fabric.
- Use minimum 2" dia. hose from pump to wye and 2" hoses from wye to injection point.
- In placing insert points through UCS fabric, use care to avoid breaking drop stitches.
- Injection points should be no more than 10' apart on flat sections nor more than 20' apart on a slope.



TYPICAL CROSS SECTION OF FABRIC MAT

CONCRETE FABRIC MAT OPTION



PLAN VIEW OF FILTER POINT SPACING
($M = \text{Millwidth}$)

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Slope Protection	Sq.Yds.	1,486

1. For informational purposes, the following quantities are provided for each optional type of slope protection.

A-CONCRETE FABRIC MAT OPTION

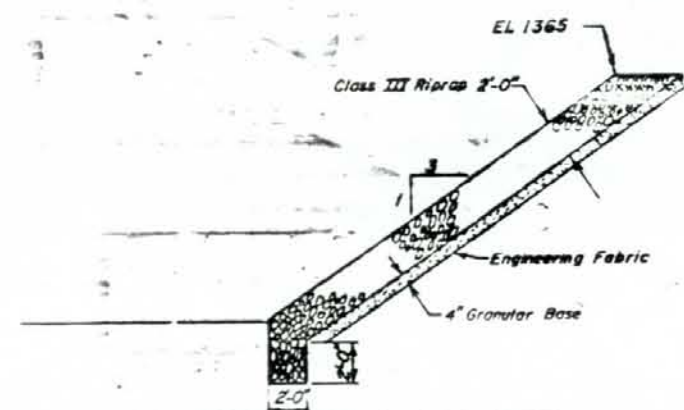
Concrete Fabric Mat	17,266.0 Sq.Ft.
Granular Base	16,511 Cu.Yds.
Engineering Fabric	13,374 Sq.Ft.

B-CLASS III RIPRAP OPTION

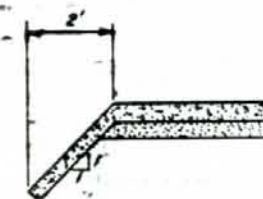
Class III Riprap	10,409 Cu.Yds.
Granular Base	16,511 Cu.Yds.
Engineering Fabric	13,374 Sq.Ft.

- The Sq.Yds. of Slope Protection includes slope protection at the outlet of the 24" C.M.P., see Sheet No. 1 of 15 for details.
- See also Notes Regarding Slope Protection, Sheet No. 3 of 15.

The informational quantity of Concrete Fabric Mat does not include the fabric mat under the flared end section. (See Detail "X" Sheet No. 1 of 15) which shall be absorbed in the item Slope Protection.



CLASS III RIPRAP OPTION



TYPICAL CROSS SECTION OF SIDE TRENCHING FABRIC MAT
(SEC. B-B)

(Concrete Fabric Mat Option Only)

SLOPE PROTECTION DETAILS WATER CONTROL STRUCTURE FOR DRY CREEK FISH SUBIMPOUNDMENT

STA. 2+50.00 TO 6+00.00 SEC. 15-T 98 N-R69 W
PROJ. NO. GP0367

CHARLES MIX COUNTY

S. D. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

MAY 1983 14 OF 15

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	for		BRIDGE ENGINEER

5015-3