

WATER PERMIT NO. 6624-3

Name of Applicant: **Jim Finley**

Address: **410 North Hughes St, Blunt SD 57522**

Phone: **605 962-6242**

Amount of Water Claimed: **62.10 acre-feet**

Total Acres: **NA**

Source of Water Supply: **runoff**

Water to be used for: **fish & wildlife propagation and livestock water**

County: **Hughes**

Type of Waste Disposal System:

Location: **2 miles northwest of Blunt**

PRIORITY

Date Received: **5-11-05**

Application/License Fee: **\$200**

Corrected Application Received:

Period of Annual Use: **January 1 – December 31**

Remarks:

Diversion Point: **E ½ SE ¼ Sec 1- T112N-R77W**

Land to be Irrigated:

Depth of Well: **NA**

Well Driller:

Remarks:

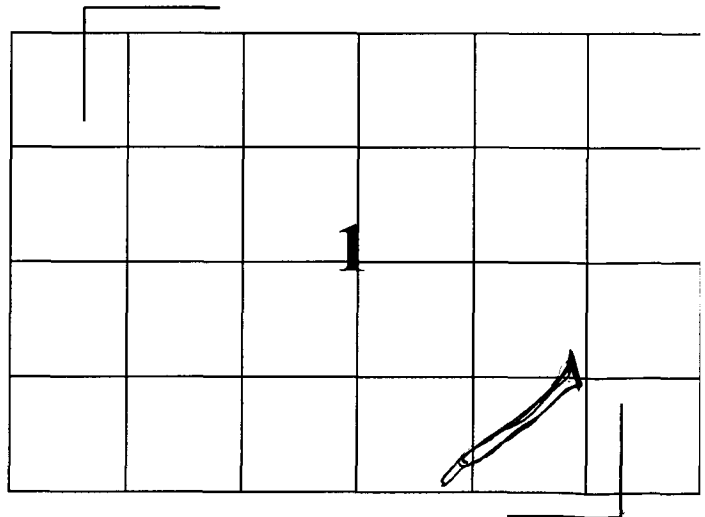
Type of Map: **aerial**

Prepared by: **Kevin Paulsen, NRCS**

Reviewed and the Number Assigned on: **5-11-05**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



RECEIVED
MAY 11 2005
WATER RIGHTS
PROGRAM

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>6624-3</u> (office use only)	Hydrologic Unit <u>10140103</u>
	Basin <u>Missouri River</u>	
	Newspaper <u>Capital Journal, Pierre</u>	

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: (check one)

- ☐ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
☐ 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.)

1. Name of Applicant Jim Finley Phone (605) 962-6242
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address 410 North Hughes Street Blunt State SD 57522
(Street, RR, or Box and City) (Zip Code)
2. Amount of water claimed: _____ *CFS or _____ **GPM 62.10 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)
3. Source of water supply Runoff from watershed
4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Hughes
SW 1/4 Section 1 T112N R77W
E 1/2 SE 1/4
5. County or counties where water will be used Hughes
6. Annual period during which water is to be used continuous Jan 1 - Dec 31
7. 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)

Attached plans and specifications.

STATE OF SOUTH DAKOTA)

County of Hughes

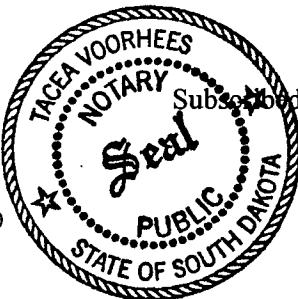
SS

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, Jim Finley, 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.

Applicant's signature Jim Finley

Subscribed and sworn to before me this 11th day of May 20 05



4-2000

Tacea Voorhees

Notary Public signature Tacea Voorhees
Notary Public
My Commission Expires
May 1, 2008

**SOUTH DAKOTA
WATER PERMIT NO. 6624-3**

Date of first receipt of application May 11, 2005.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 6624-3 to Jim Finley, 410 N Hughes St, Blunt SD 57522 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. 6624-3 authorizes impoundment of 62.10 acre-feet of water from runoff by constructing a dam located in the E ½ SE ¼ Section 1 with water impounded in the E ½ SE ¼, SW ¼ SE ¼ Section 1; all in T112N-R77W on an unnamed tributary to Medicine Creek. This permit authorizes impoundment of sufficient water to maintain water to the outlet elevation.
2. The water appropriated shall be used for the purpose of fish and wildlife propagation and livestock water purposes 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. 6624-3 is July 25, 2005.
5. The date from which applicant may claim right is May 11, 2005.
6. One-fifth of the construction is to be completed on or before January 25, 2008.
7. All construction is to be completed on or before July 25, 2010.
8. Water is to be put to beneficial use on or before July 25, 2014.
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. 6624-3 authorizes a dam with a storage capacity of 62.1 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
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 27 2005

date



RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date MAY 11, 2005

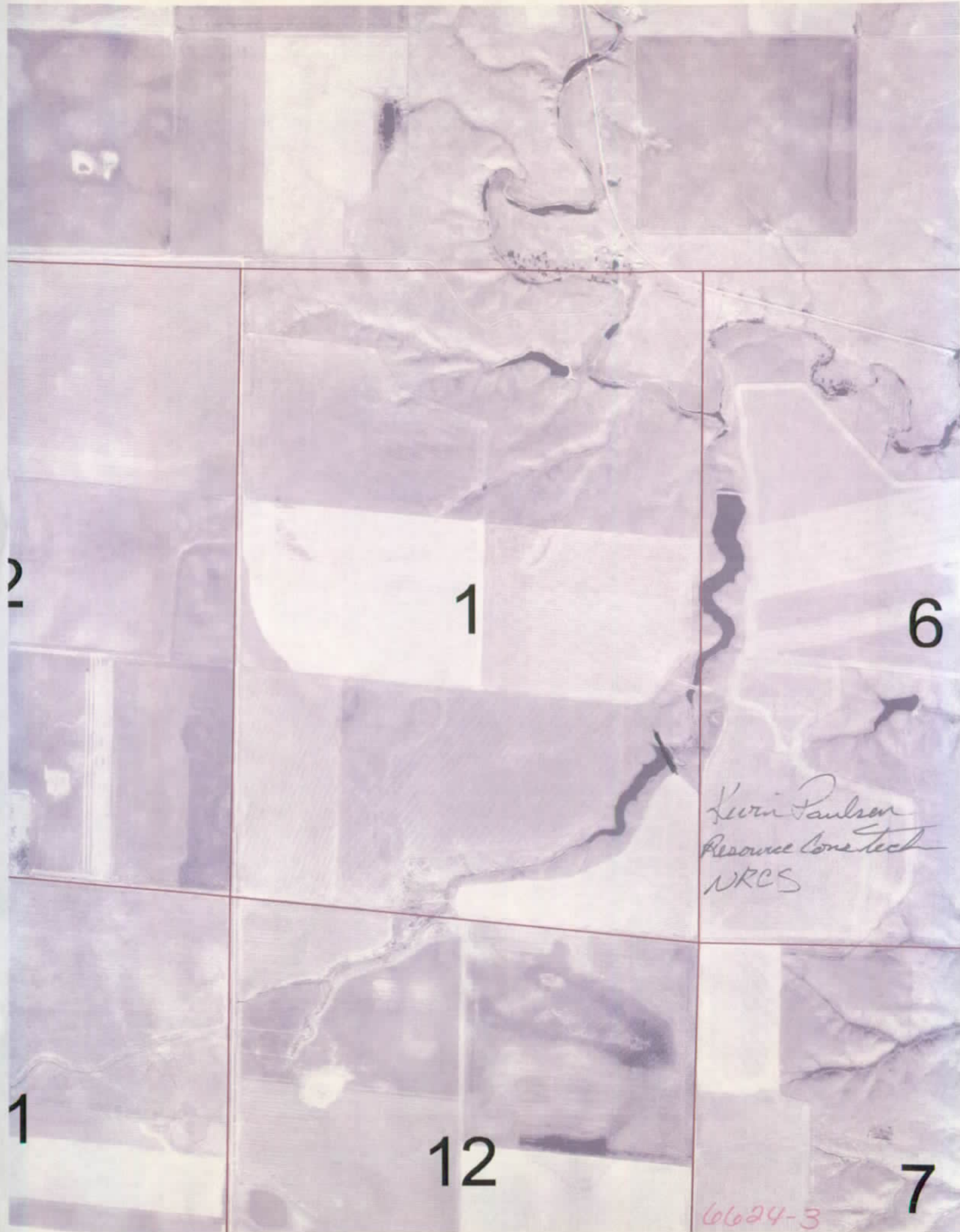
RECEIVED OF Finley Farming Inc., H James Finley, PO Box 39, Blunt SD 57522

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

Fee for Application for Permit No. <u>6624-3</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. <u>6624-3</u>	50	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	200.00

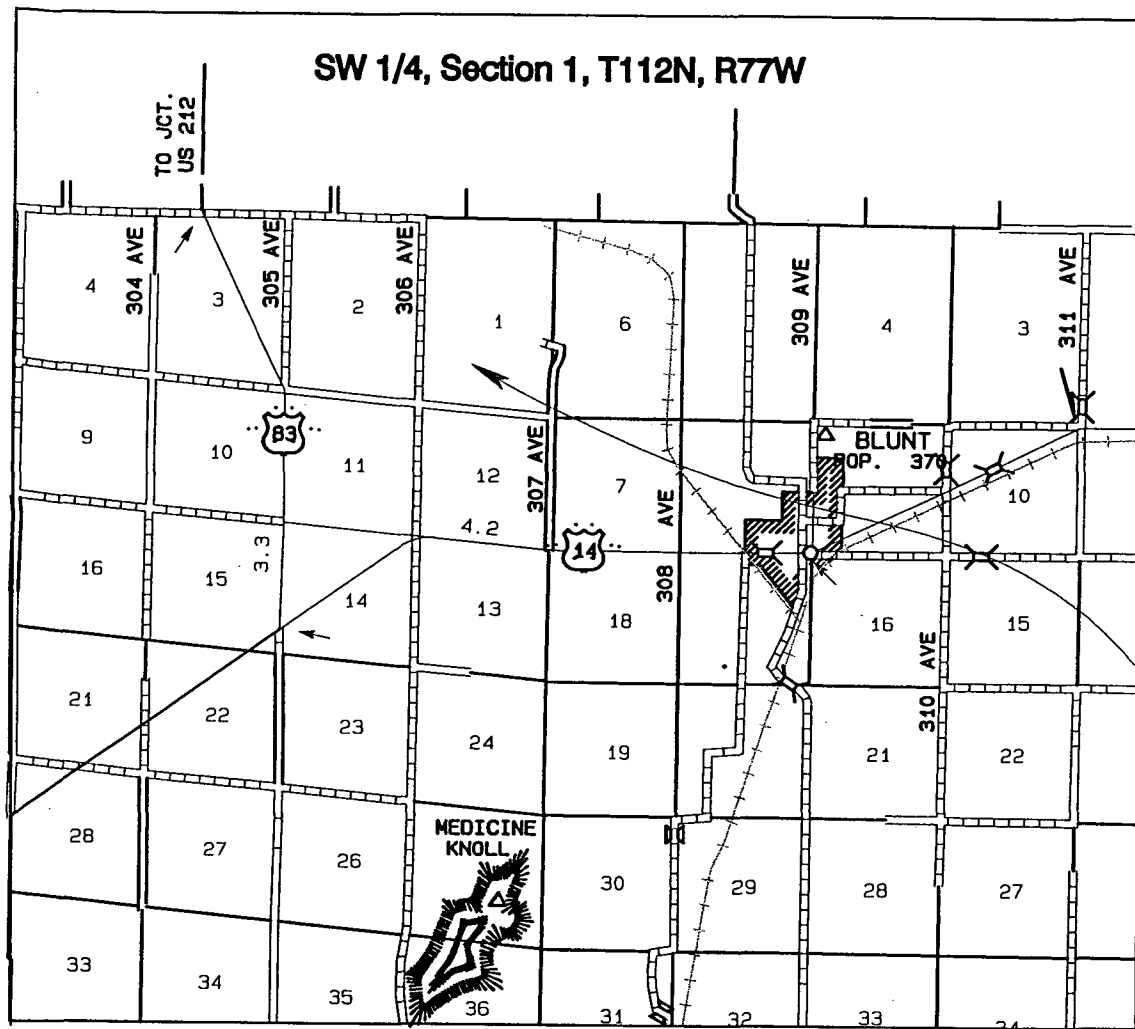
No. 001815

By Darland Erbe
Chief Engineer on



Kevin Paulson
Resource Consultant
NRCS

66624-3



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JUN - 1 2005
WATER RIGHTS
PROGRAM

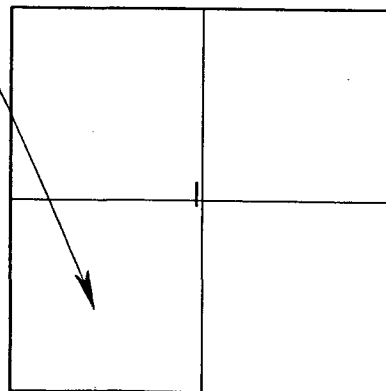
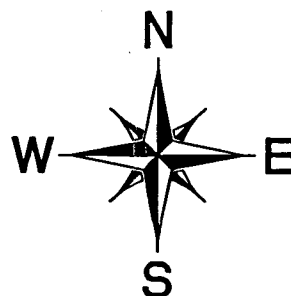


TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY	'AS BUILT' QUANTITY
Excavation			
Core Trench	cu. yd.	1,979	
Unsuitable Material Removal	cu. yd.	310	
Earthfill Class S	cu. yd.	10,332	
Topsoil	sq. yd.	2,113	
Seeding	acre	2	
60" dia. x 4' deep concrete drop structure	each	1	
24" dia. dual wall smooth lined PE pipe	lin. ft.	93	
4" PVC Perforated Pipe (SCH 40 min)	lin. ft.	13	
4" PVC NON Perforated Pipe (SCH 40 min)	lin. ft.	47	
Fine Drainfill	cu.yd.	11	
Timber Structure	BD.FT.	276	

Construction Specifications

Clearing and Grubbing	SD-2
Stripping	SD-4
Excavation	SD-5
Earth Fill, Class S	SD-7
Drain Fill and Filter	SD-9
Salvaging and Spreading Topsoil	SD-10
Concrete for Minor Structures	SD-12B
Steel Reinforcement	SD-13
Wood Fabrication and Installation	SD-16
Seeding	SD-28
Plastic Pipe	SD-55

Hydraulic Data

Drainage Area	4,076 Acres
Time of Concentration	24.9 hours
Runoff Curve Number	75

Principal Spillway, 2 yr, 24-hr. Rainfall	2.2 Inches
Emergency Spillway 50 yr, 24-hr. Rainfall	4.6 Inches

Principal Spillway Discharge at ES	70 CFS
Emergency Spillway Discharge	409 CFS

Estimated 40 year Sediment Yield	47.2 AcFt
Estimated Sediment Yield Below Crest	38.8 AcFt
Estimated Sediment Yield Above Crest	9.4 AcFt

Crest of Normal Pool	10.0 Acres	62.1 AcFt
Crest of Emergency Spillway	12.2 Acres	85.3 AcFt
Top of Dam	15.1 Acres	121.8 AcFt

According to South Dakota State Law, " No excavator may begin any excavation without first notifying the One-Call Notification Center of the proposed excavation" at 1-800-781-7474

Notes

1. A preconstruction meeting is required before construction between NRCS, Jim Finley, and the contractor.
2. Water Rights Permit and Location Notice is required by South Dakota Department of Environment and Natural Resources. This is the responsibility of the landowner.

Sheet Index

- 1 Cover
- 2 Plan
- 3 General Layout
- 4 Profile of Dam
- 5 Cross Section of Dam
- 6 Concrete Riser
- 7 Trash Rack and Baffle
- 8 Sand Anti-Seep Collar
- 9 Timber Pipe Support

**Hazard Class A
Job Class IV**

Contact Information

Jim Finley
410 N Hughes Street
Blunt, SD 57522
605-962-6242

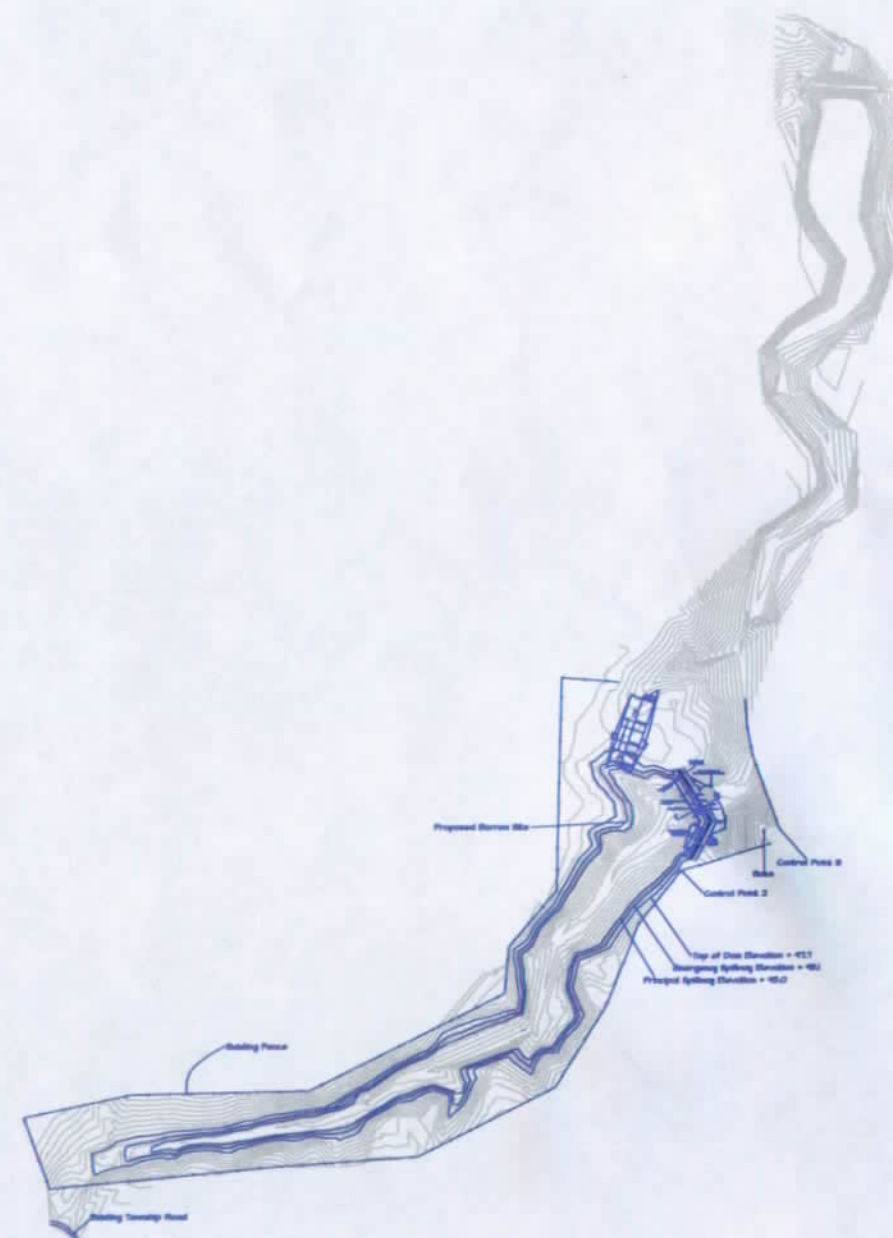
Approved by:
Title: A. E. 515

Date: 4/2/05
Designed by: D. Edwards
Drawn by: A. Roman
Traced by: J. P. D.
Checked by: J. P. D.

NRCS NATURAL RESOURCES
CONSERVATION SERVICE
USDA-NRCS PIERRE FIELD SUPPORT OFFICE
1717 North Lincoln Avenue Suite #104
PIERRE, SOUTH DAKOTA 57501-1258

Jim Finley South Pond
SW 1/4, Sec. 1, T112N, R77W
Hughes County, South Dakota

$\frac{1}{50}$

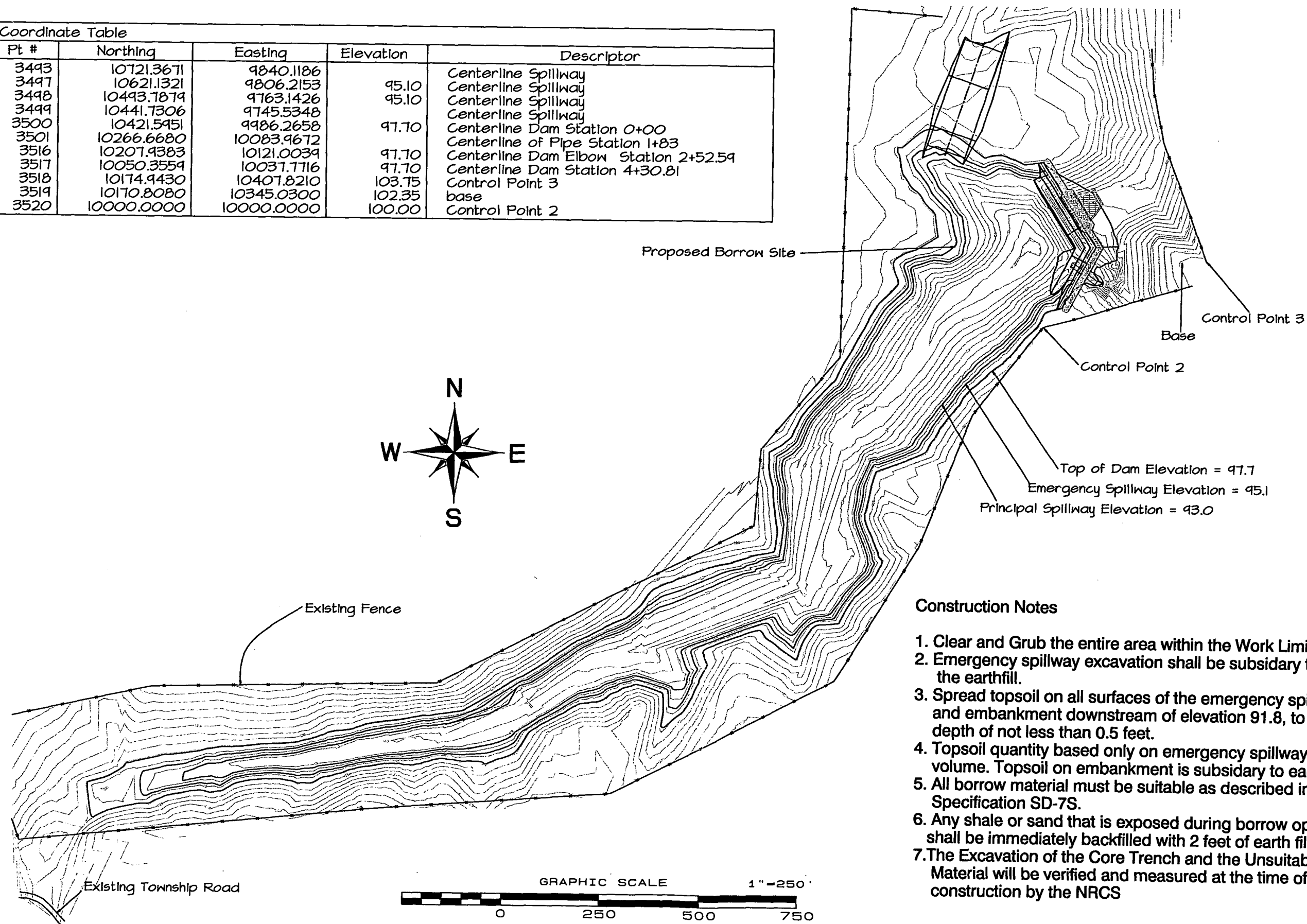


1" = 800'

1" = 100'



Coordinate Table				
Pt #	Northing	Easting	Elevation	Descriptor
3493	10721.3671	9840.1186		Centerline Spillway
3497	10621.1321	9806.2153	95.10	Centerline Spillway
3498	10493.7879	9763.1426	95.10	Centerline Spillway
3499	10441.7306	9745.5348		Centerline Spillway
3500	10421.5951	9986.2658		Centerline Dam Station 0+00
3501	10266.6680	10083.9672		Centerline of Pipe Station 1+83
3516	10207.9383	10121.0039	97.70	Centerline Dam Elbow Station 2+52.59
3517	10050.3559	10037.7716	97.70	Centerline Dam Station 4+30.81
3518	10174.9430	10407.8210	103.75	Control Point 3
3519	10170.8080	10345.0300	102.35	base
3520	10000.0000	10000.0000	100.00	Control Point 2



Top of Dam Elevation = 97.7
Emergency Spillway Elevation = 95.1
Principal Spillway Elevation = 93.0

Construction Notes

1. Clear and Grub the entire area within the Work Limits.
2. Emergency spillway excavation shall be subsidiary to the earthfill.
3. Spread topsoil on all surfaces of the emergency spillway and embankment downstream of elevation 91.8, to a depth of not less than 0.5 feet.
4. Topsoil quantity based only on emergency spillway volume. Topsoil on embankment is subsidiary to earthfill.
5. All borrow material must be suitable as described in Specification SD-7S.
6. Any shale or sand that is exposed during borrow operations shall be immediately backfilled with 2 feet of earth fill.
7. The Excavation of the Core Trench and the Unsuitable Material will be verified and measured at the time of construction by the NRCS



NATURAL RESOURCES
CONSERVATION SERVICE

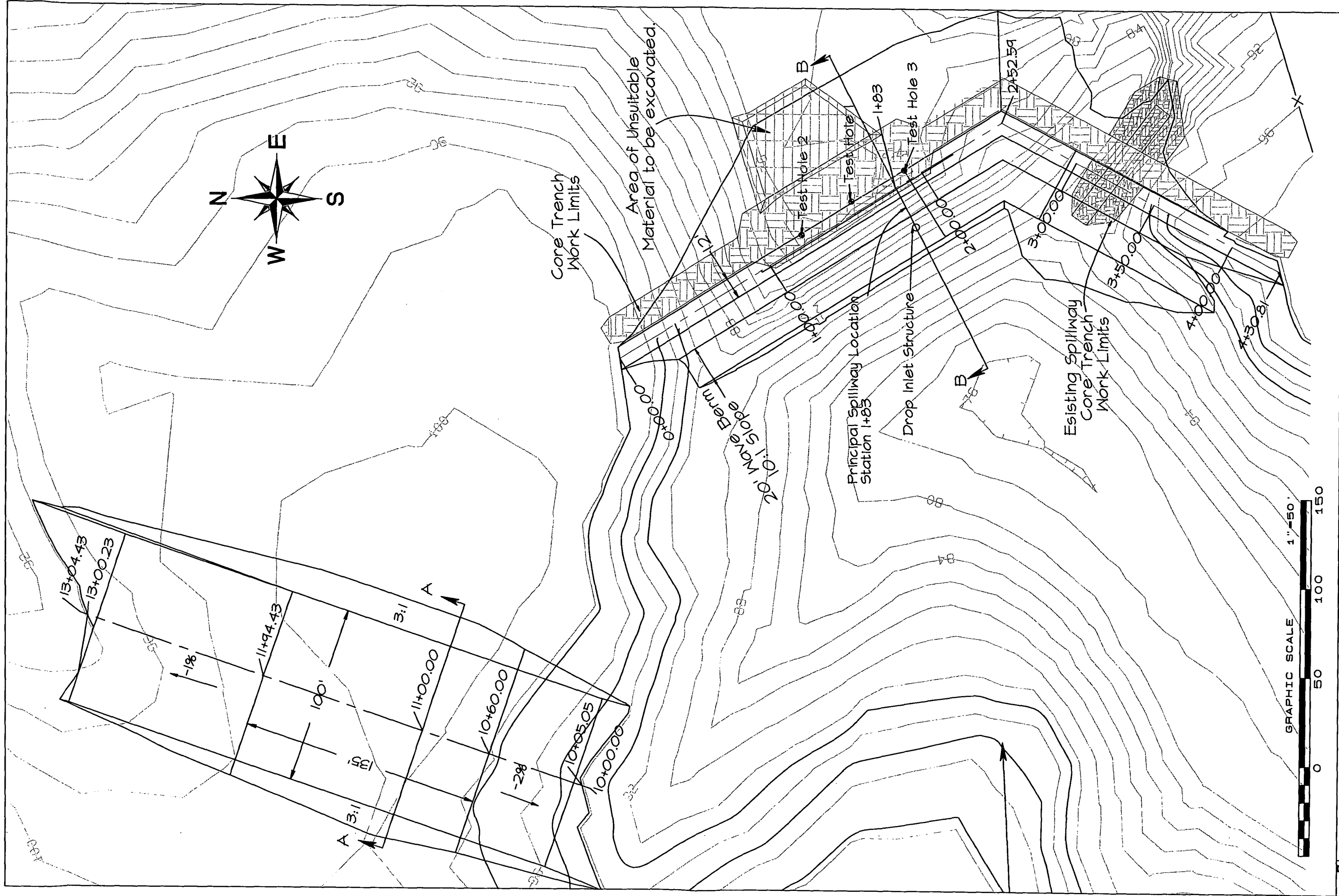
USDA-NRCS PIERRE FIELD SUPPORT OFFICE
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PIERRE, SOUTH DAKOTA 57501-1288

Jim Finley South Pond
SW 1/4, Sec. 1, T112N, R77W
Hughes County, South Dakota

Drawing No: Finley South

Sheet No: 2 of 9

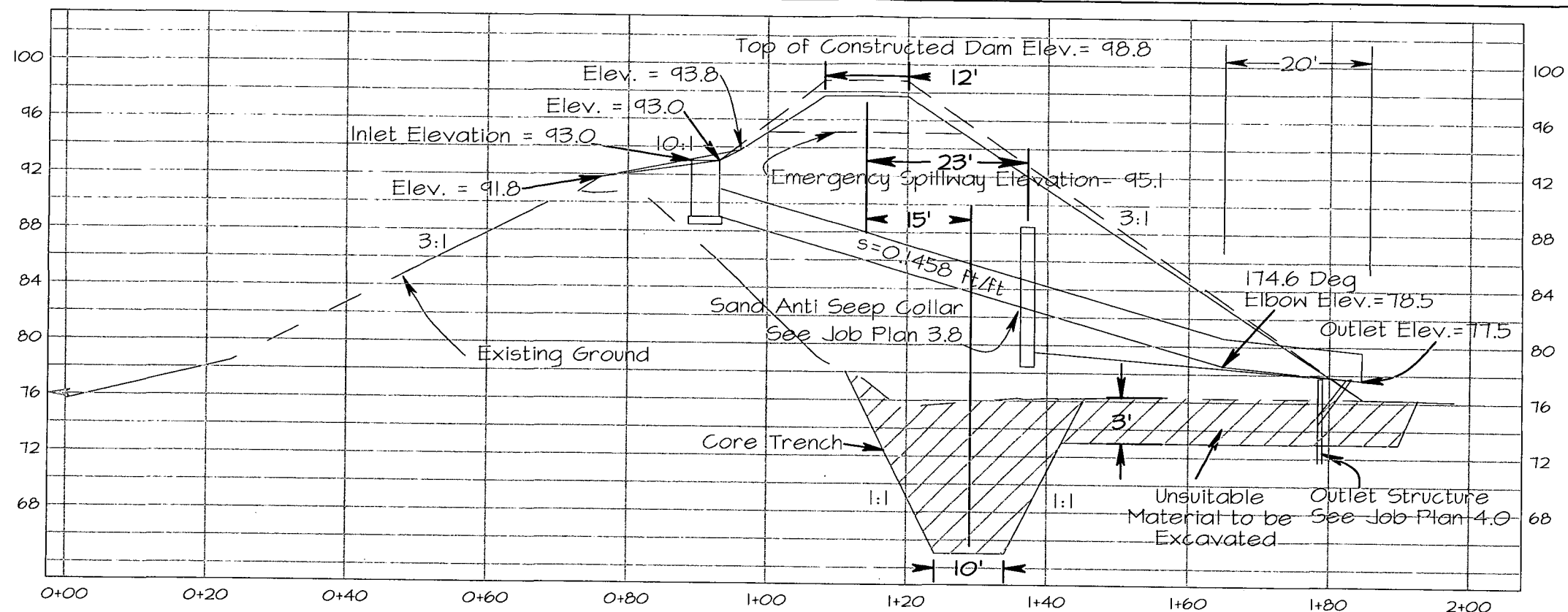
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Drawn by: A. Roman
Traced by:
Checked by:
Date: 4/21/05
4/21/05
Approved by:
Title:
Title:



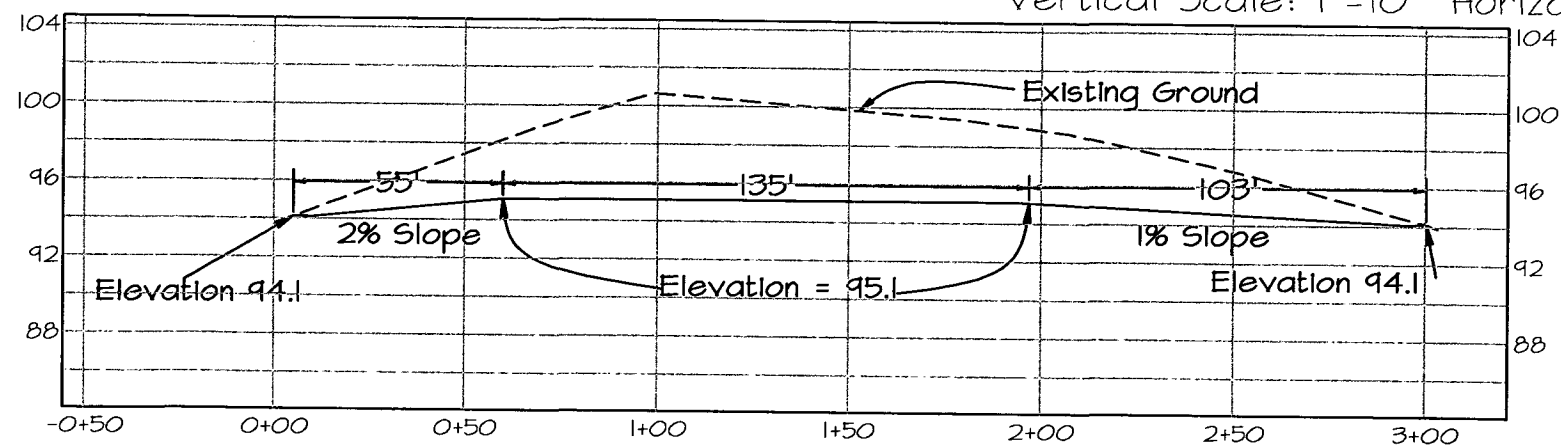
Jim Finley South Pond
 SW 1/4, Sec. 1, T112N, R77W
 Hughes County, South Dakota

NRCS NATURAL RESOURCES CONSERVATION SERVICE
 USDA-NRCS PIERRE FIELD SUPPORT OFFICE
 1717 North Lincoln Avenue Suite #104
 PIERRE, SOUTH DAKOTA 57601-1288

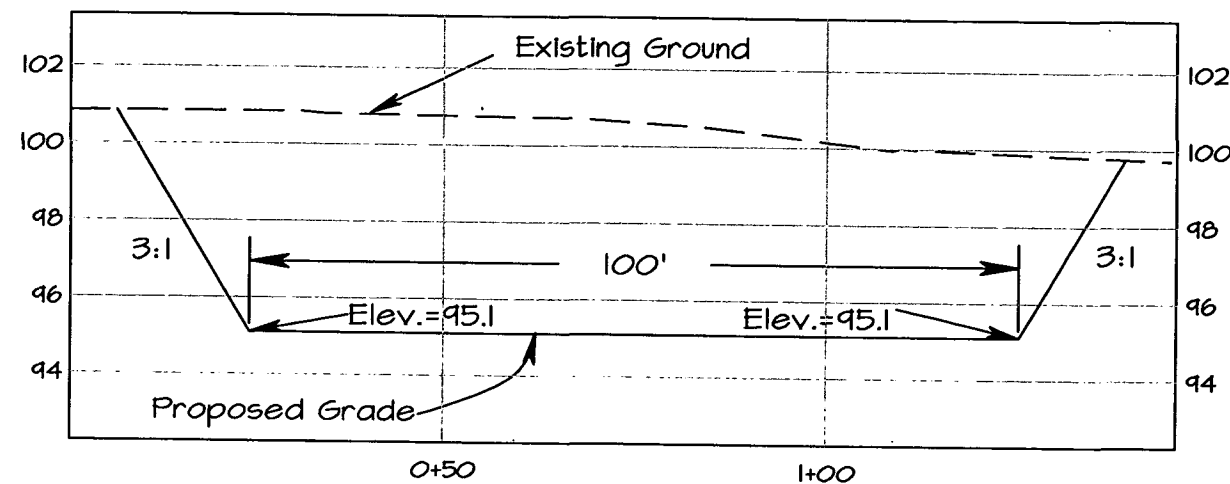
Designed by: <u>D. Edwards</u>	Date: <u>4/21/05</u>	Approved by: _____
Drawn by: <u>A. Roman</u>	<u>4/21/05</u>	Title: _____
Traced by: _____		Title: _____
Checked by: _____		Title: _____



CROSS SECTION OF DAM B-B
Vertical Scale: 1"=10' Horizontal Scale: 1"=20'



EMERGENCY SPILLWAY PROFILE
Vertical Scale: 1" = 10' Horizontal Scale: 1" = 50'



EMERGENCY SPILLWAY CROSS SECTION A-A
Vertical Scale: 1"=5' Horizontal Scale: 1"=25'

Note: Excavation of Emergency Spillway (4,215 CY) and Stripping (677 CY) is subsidiary to Earth Fill.

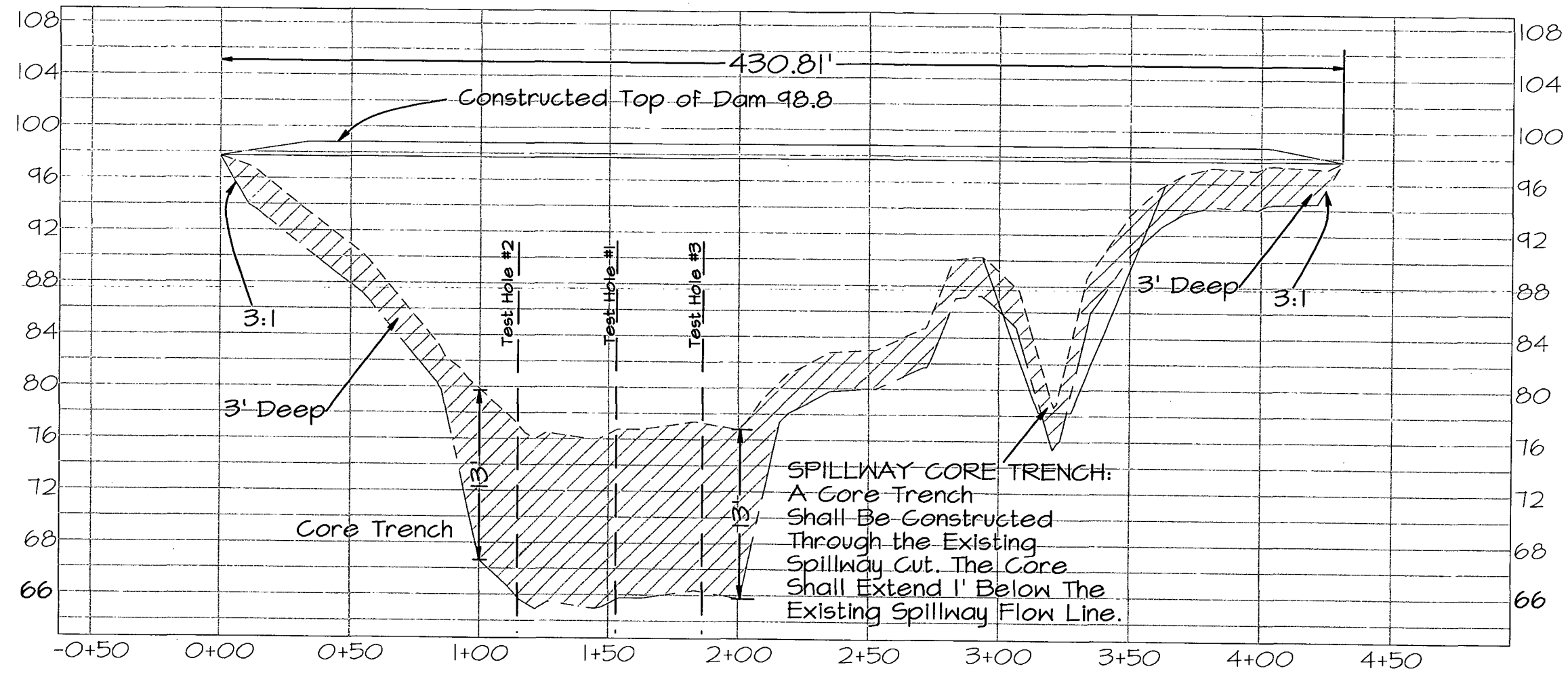
Approved by: _____
Title: _____

Designed by: D. Edwards
Drawn by: A. Roman
Traced by: _____
Checked by: _____

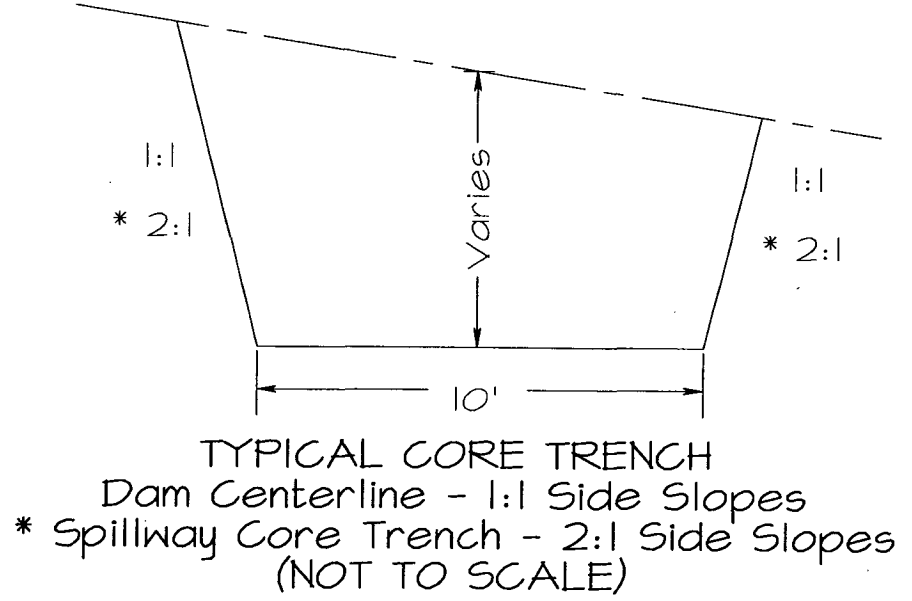
NRCS NATURAL RESOURCES
CONSERVATION SERVICE
USDA-NRCS PIERRE FIELD SUPPORT OFFICE
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PIERRE, SOUTH DAKOTA 57501-1288

Jim Finley South Pond
SW 1/4, Sec. 1, T112N, R77W
Hughes County, South Dakota

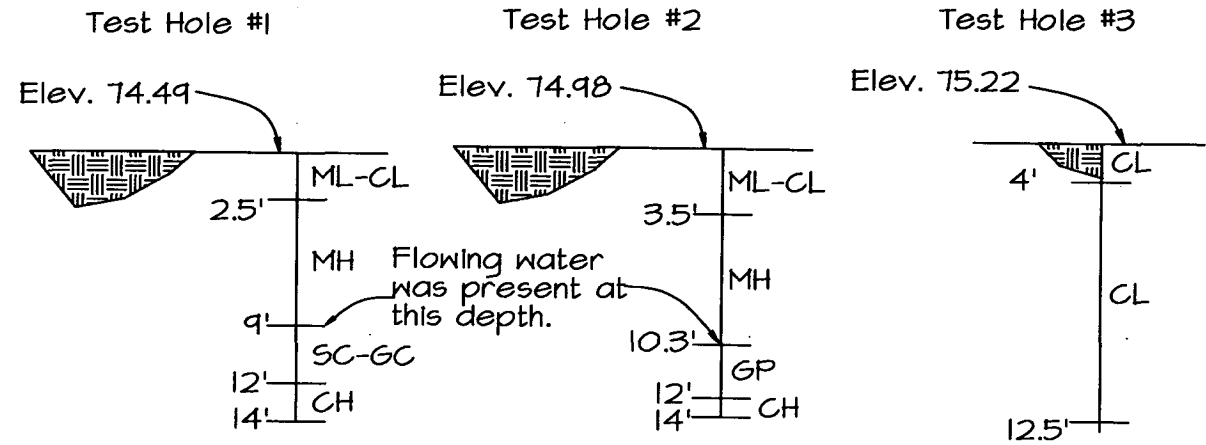
Drawing No: Finley South
Sheet No: 4 of 9



DAM PROFILE
Vertical Scale: 1" = 10' Horizontal Scale: 1" = 50'



LOG OF TEST HOLES
Vertical Scale: 1" = 10.0'

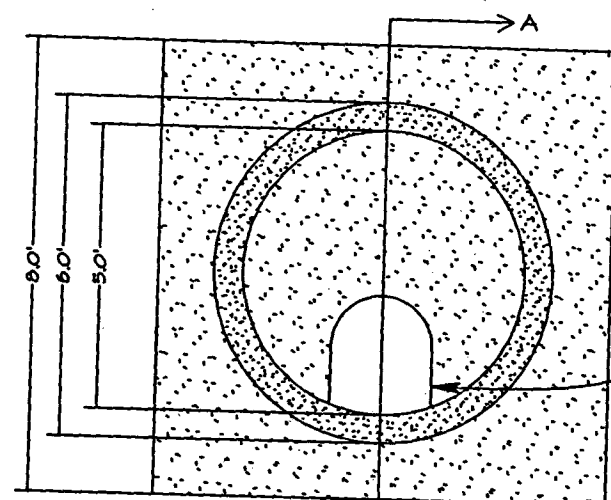


Approved by: _____
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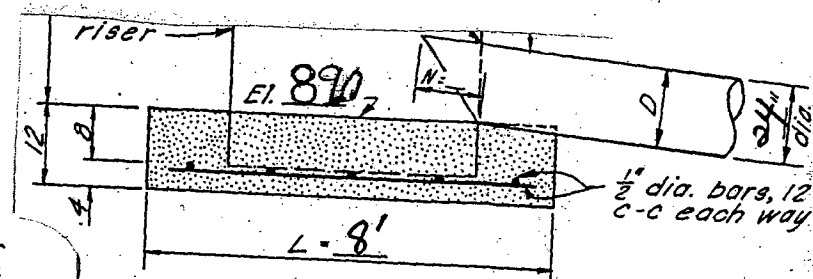
Date: 4/21/05
Designed by: D. Edwards
Drawn by: A. Roman
Traced by: _____
Checked by: _____

NRCS NATURAL RESOURCES
CONSERVATION SERVICE
USDA-NRCS PIERRE FIELD SUPPORT OFFICE
1717 North Lincoln Avenue Suite #104
PIERRE, SOUTH DAKOTA 57501-1288

Jim Finley South Pond
SW 1/4, Sec. 1, T112N, R77W
Hughes County, South Dakota



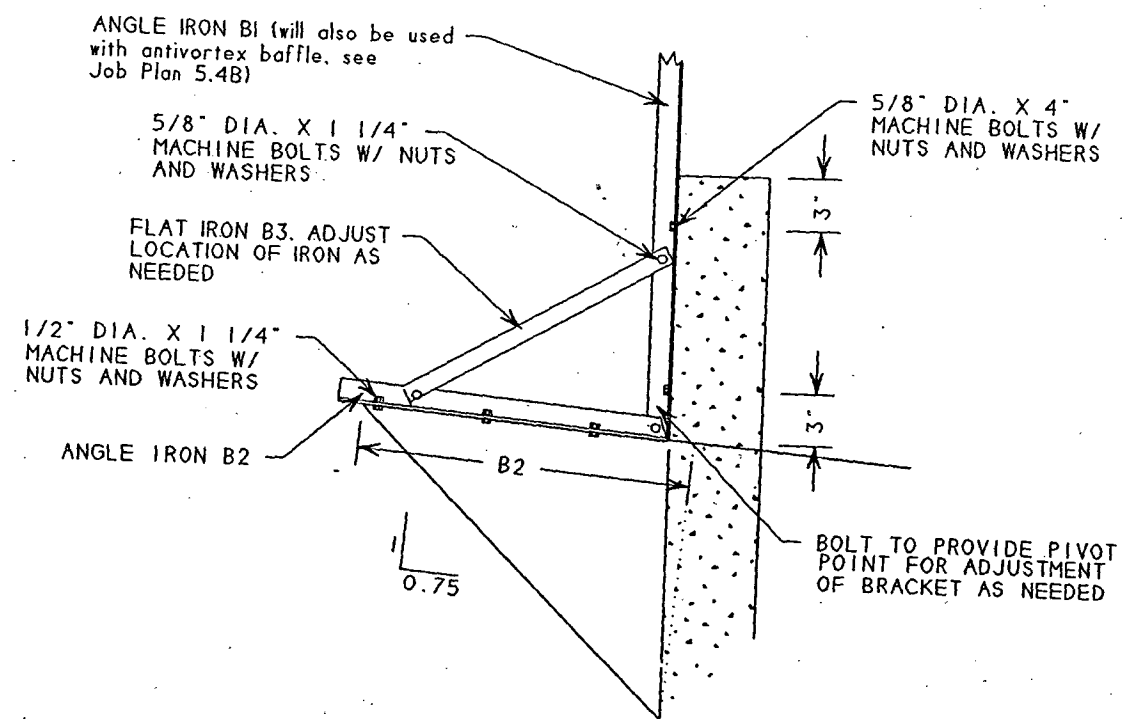
PLAN VIEW



SECTIONAL ELEVATION A-A

REFERENCE: GUIDE PLAN NO. 5.4

DOWEL DETAIL



SUPPORT BRACKET DETAIL

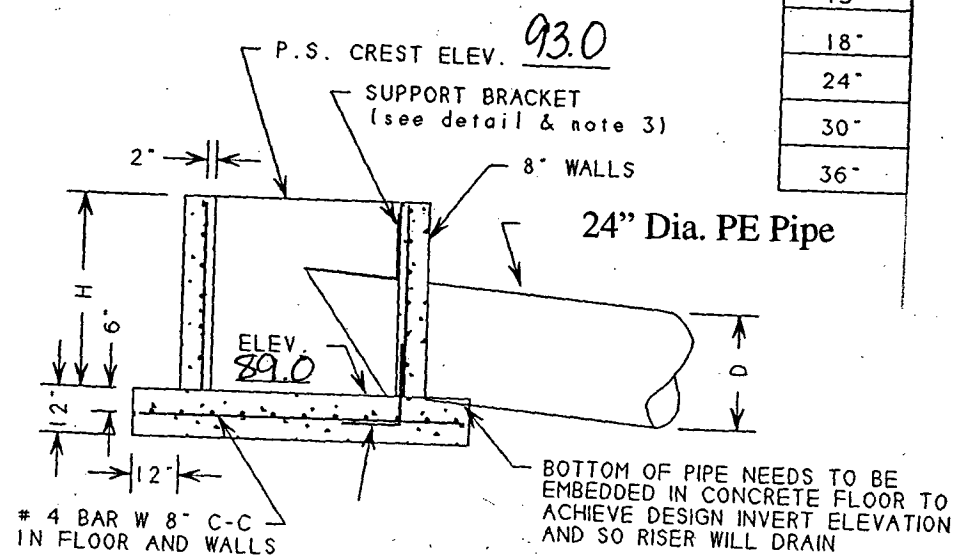
BARREL DIA. D
10"
12"
15"
18"
24"
30"
36"

Base= 2.4 CY Drop Structure= 5.2CY

SUPPORT BRACKET			BOLTS W/ WASHERS & NUTS		
2" X 2" 3/16" ANGLE IRON LENGTH FT.-IN. B1	3/16" X 2" FLAT IRON LENGTH FT.-IN. B2	3/16" X 2" FLAT IRON LENGTH FT.-IN. B3	1/2" DIA X 1 1/4"	5/8" DIA X 1 1/4"	5/8" DIA X 4"
	7 1/2"				
	9"				
	11 1/4"				
	1'-1 1/2"				
3'-10 1/2"	1'-6"	1'-9"	3	2	2
3'-10"	1'-10 1/2"	2'-0"	3	2	2
4'-3 3/4"	2'-3"	2'-4"	3	2	2

1. CONCRETE AROUND PIPE NEEDS TO BE VIBRATED TO INSURE A GOOD SEAL AROUND PIPE.

3. SUPPORT BRACKET REQUIRED ONLY FOR PIPE SIZES 24" thru 36"



SECTIONAL ELEV. A-A

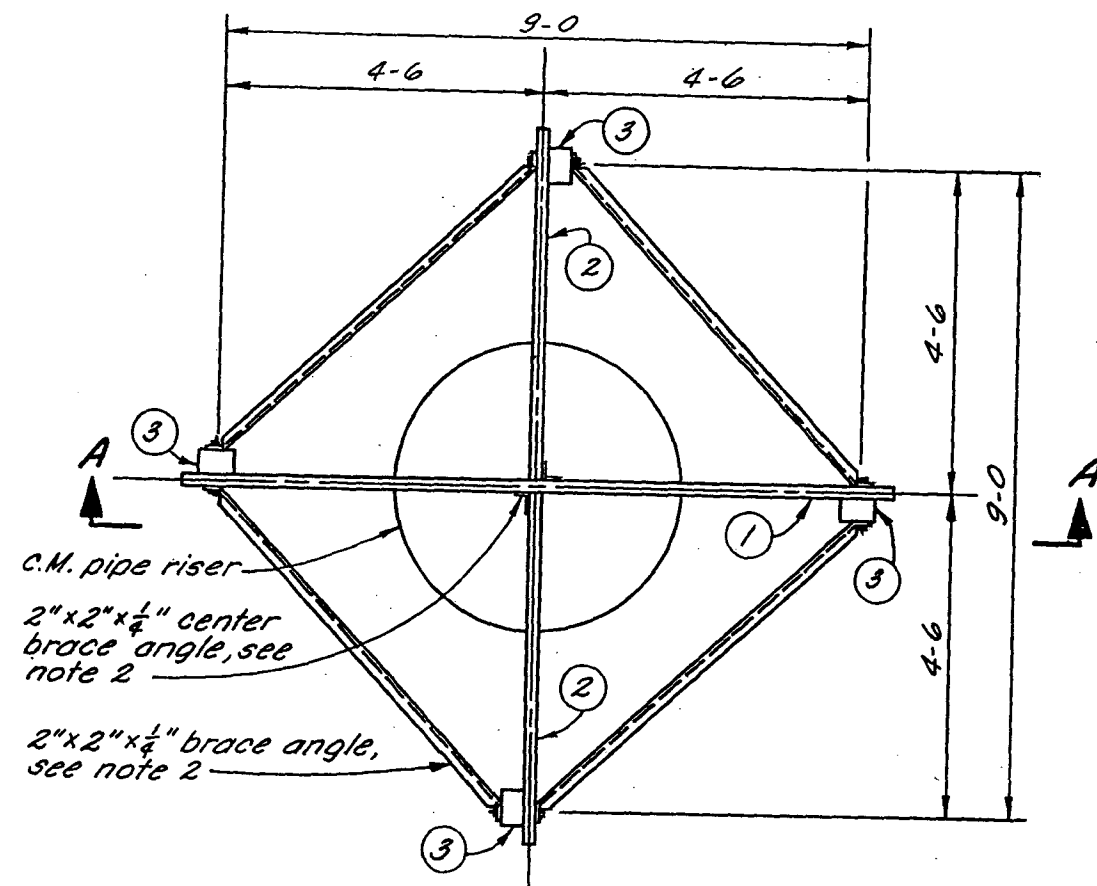
CONCRETE RISER AND PVC HOOD INLET COMBINATION

Jim Finley South Hughes County

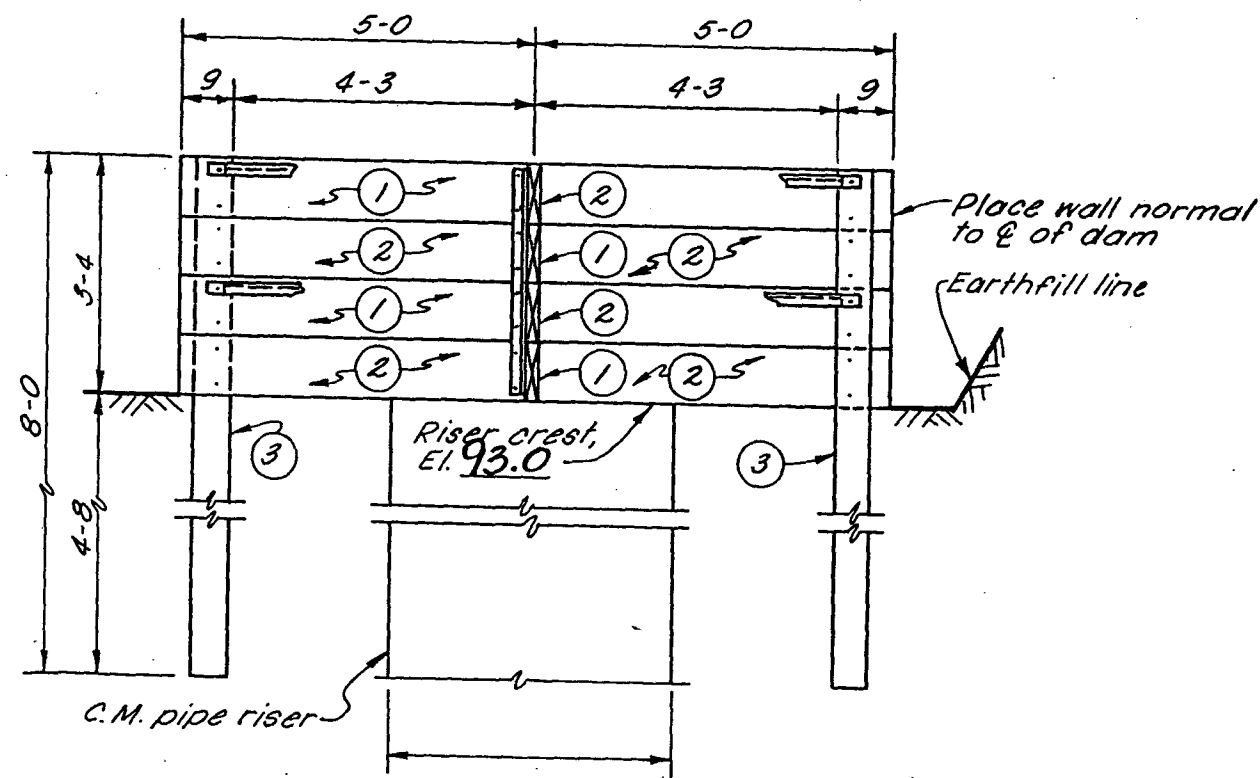
USDA U.S. Department of Agriculture
Natural Resources Conservation Service

DESIGNED: A. Roman
DRAFTED: 4/15/05
DATE: 4/15/05
APPROVED BY: _____
TITLE: _____
DWG NO.: _____
SHEET 6 OF 9
PVC-H&R-ged

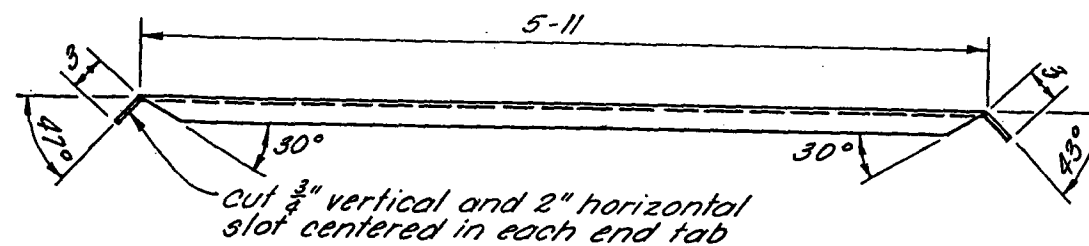
JOB PLAN 5.4A1 1/02



PLAN VIEW



SECTIONAL ELEVATION A-A



PLAN VIEW OF BRACE ANGLE

TABLE OF QUANTITIES

ITEM	MARK	NO. REQ'D.	QUANTITY
2" X 10" X 10' PRESSURE TREATED LUMBER	1	4	67 BD. FT.
2" X 10" X 4'-11" PRESSURE TREATED LUMBER	2	8	66 BD. FT.
4" X 6" X 8' PRESSURE TREATED POST	3	4	64 BD. FT.
2" X 2" X 1/4" X 6'-5" STEEL ANGLE		8	164 LB.
2" X 2" X 1/4" X 3'-2" STEEL ANGLE		2	20 LB.
5/8" X 8" STEEL BOLTS, NUTS, 2 WASHERS		32	32 SETS
1/2" X 3" STEEL BOLTS, NUTS, 2 WASHERS		32	32 SETS

NOTES:

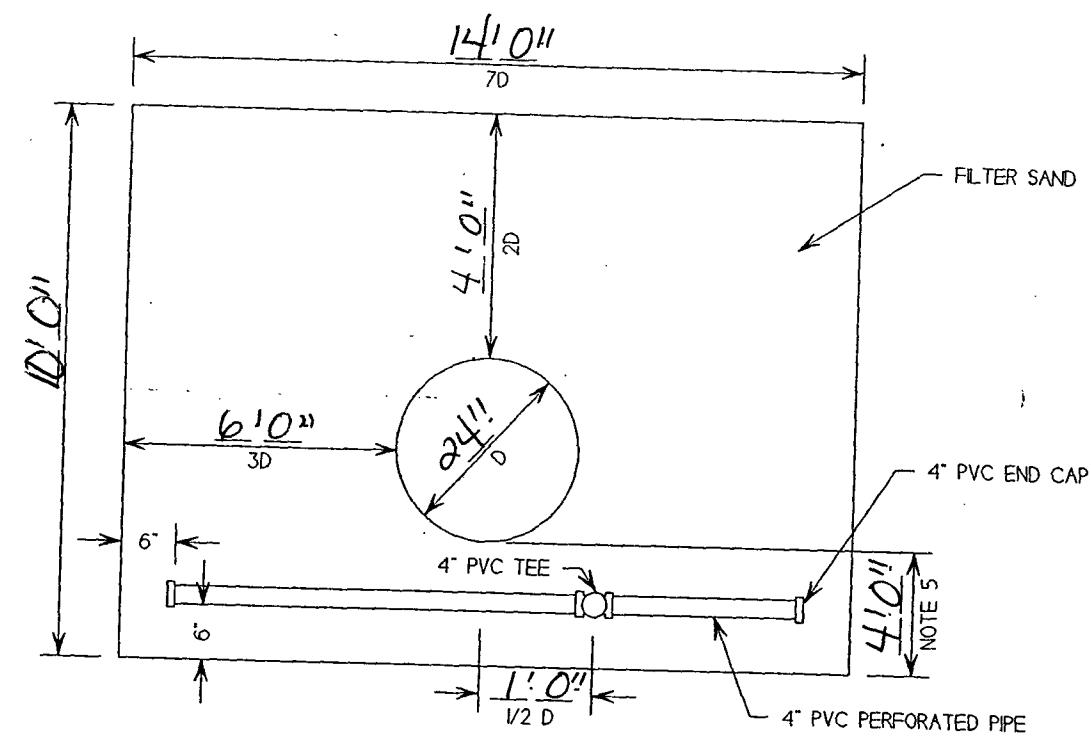
1. TO 4" X 6" POSTS (4 REQUIRED) BOLT 2" X 10" BOARDS USING TWO 5/8" X 8" BOLTS PER 2" X 10" BOARD. DO NOT PLACE BOLTS CLOSER THAN 1 1/2" FROM EDGE OF BOARD.
2. FOR CENTER BRACE ANGLES DRILL 8 - 9/16" HOLES 5/8" FROM OUTER EDGE OF EACH LEG OF EACH ANGLE AND CENTERED 5 1/4" APART ALONG THE LEG.
3. ATTACH BRACE ANGLES TO TOP BOLT ON TOP 2" X 10" BOARD AND TO TOP BOLT ON NEXT TO BOTTOM BOARD.

TRASH RACK AND BAFFLE
FOR RISER DIA. 36" THRU 60"

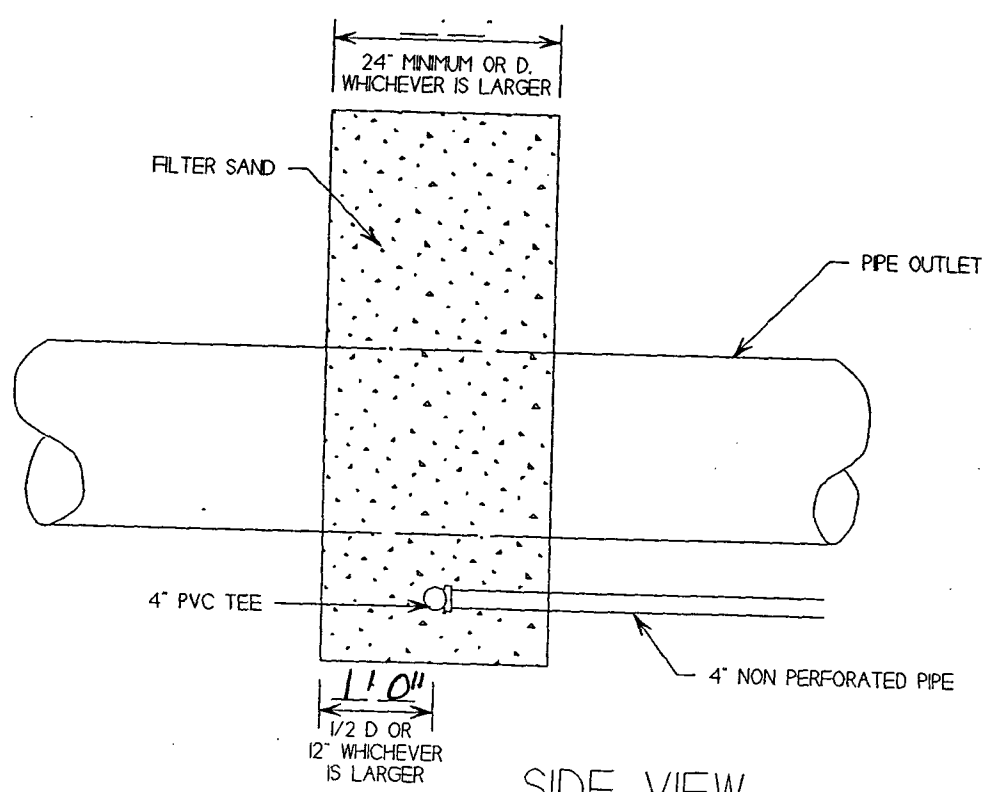
OPERATOR: <u>Jim Finley</u>	
CONSERVATION DISTRICT: <u>Hughes County</u>	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed: <u>A. Roman</u> 4/05	Approved by: _____
Drawn: <u>A. Roman</u> 4/05	Title: _____
Traced: _____	Title: _____
Checked: _____	Sheet: <u>7</u> Drawing No. _____

JOB PLAN NO. 6.4

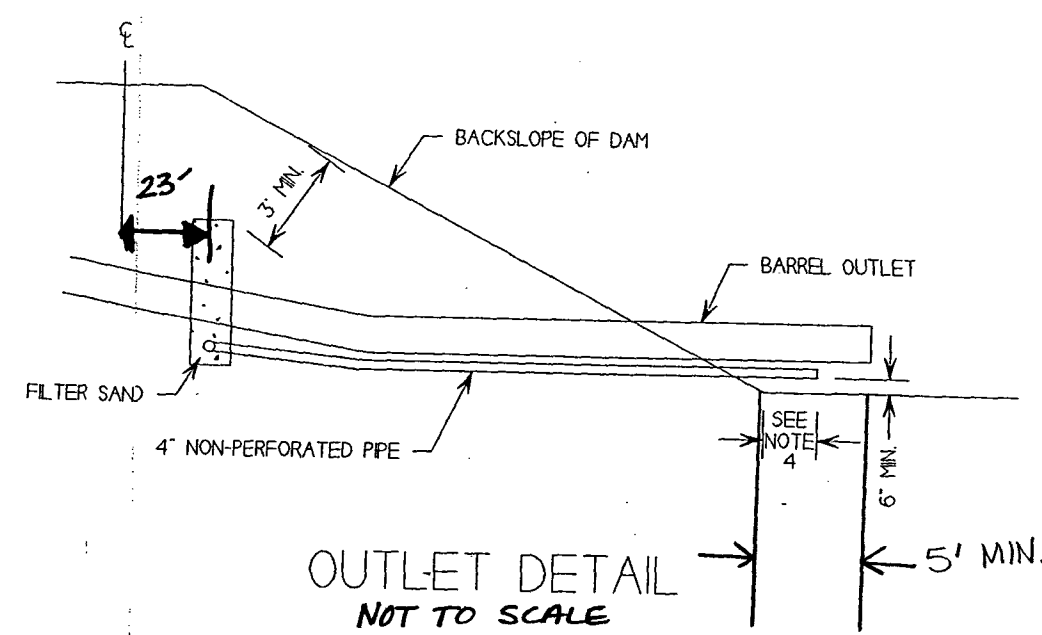
5, N-29, 073.6-40



UPSTREAM VIEW



SIDE VIEW



OUTLET DETAIL
NOT TO SCALE

FILTER GRADATION

SIEVE SIZE	PERCENT PASSING
3/8"	100
4	85-100
8	80-100
16	50-85
30	25-60
50	10-30
100	2-10

- NOTE: 1. THE 4" DIA. PIPE SHALL BE SDR 35 PVC OR STRONGER
2. PROVIDE AN ANIMAL GUARD ON DRAIN OUTLET PIPE. DRILL 2-2 1/2" HOLES ON Q. 6" FROM END OF PIPE AND PLACE A 3/8" DIA. 5 1/2" LONG GALVANIZED STEEL BOLT THRU THEM AND SECURE WITH A NUT (PLACE BOLT HORIZONTAL).
3. FILTER SAND WILL BE CLEAN CONCRETE SAND.
4. 4" PIPE WILL BE SECURED TO PIPE SUPPORT AND EXTEND A MIN. OF 2' BEYOND SUPPORT.
5. DISTANCE EQUALS 18" MINIMUM IF BARREL AND 4" PIPE ARE LOCATED IN ORIGINAL FOUNDATION MATERIAL, AND 2D MINIMUM IF LOCATED IN FILL MATERIAL FOR DAM.
6. INSTALL COLLAR IN LOWER SEGMENT OF MIDDLE 1/3 OF DAM CROSS SECTION INTERCEPTED BY THE PRINCIPAL SPILLWAY.

LIST OF MATERIALS			
ITEM NO.	ITEM	UNIT	QUANTITY
1	4" PVC PERFORATED PIPE	lf.	13
2	4" PVC NON-PERFORATED PIPE	lf.	47
3	4" PVC END CAP	ea.	2
4	4" PVC TEE	ea.	1
5	SAND	cy.	11
6	ANIMAL GUARD (see note 2)	ea.	1

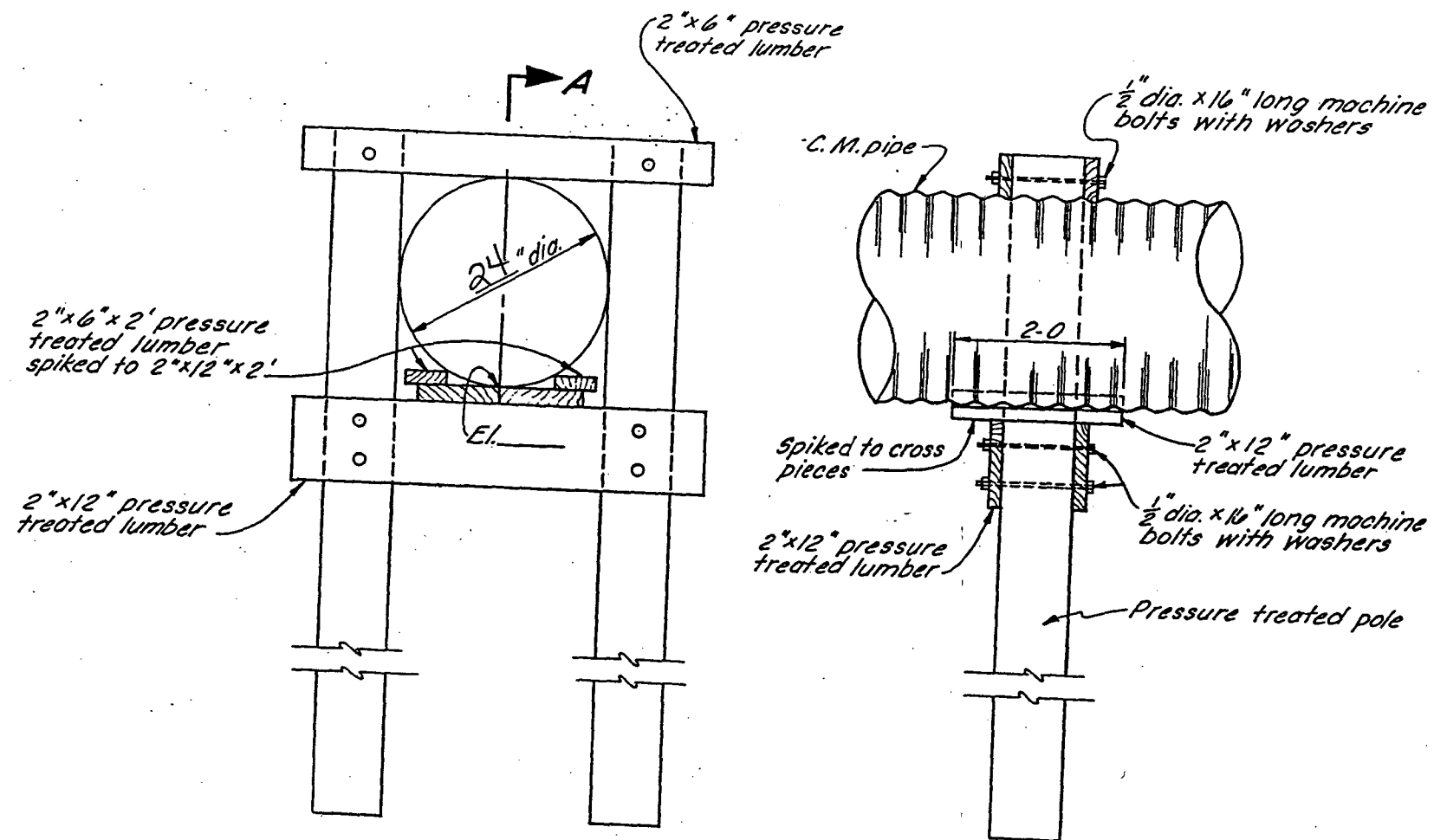
SAND ANTISEEP COLLAR

Jim Finley South Dam
Hughes County

USDA U.S. Department of Agriculture
Natural Resources Conservation Service

DESIGNED: *A. Roman*
DRAFTED: *A. Roman*
DATE: 4/15/05

APPROVED BY: _____
TITLE: _____
SHEET 8 OF 9
DWG NO. sandscg02



ELEVATION

SECTIONAL ELEVATION A-A

TABLE OF QUANTITIES

ITEM	LENGTH FOR 24" DIA. C.M. PIPE	UNIT	QUANTITY
PRESSURE TREATED POLE 10" DIA.	10-0	EACH	2
2" X 12" PRESSURE TREATED LUMBER	4-0	EACH	6
2" X 6" PRESSURE TREATED LUMBER	4-0	EACH	2
2" X 12" PRESSURE TREATED LUMBER	2-0	EACH	3
2" X 6" PRESSURE TREATED LUMBER	2-0	EACH	2
1/2" DIA. MACHINE BOLTS WITH NUTS	1-4	EACH	10
1/2" DIA. WASHERS		EACH	20

REFERENCE: GUIDE PLAN NO. 4.0

NOTES:

- HAND OR MACHINE TAMP BACKFILL THOROUGHLY AROUND FOOTINGS AND COLUMNS.

TIMBER PIPE SUPPORT

OPERATOR: <u>Jim Finley- South Dam</u>	
CONSERVATION DISTRICT: <u>Hughes</u>	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed by <u>A. Roman</u>	Date <u>4/15/55</u>
Drawn by <u>A. Roman</u>	Approved by _____
Traced by _____	Title _____
Checked by _____	Sheet <u>2</u> of <u>9</u>
Drawing No. _____	

JOB PLAN NO. 4.0

5, N-29,073.40

CONSTRUCTION SPECIFICATIONS

For:

Jim Finley
South Dam
SW ¼ Section 1 T112N R77W

RECEIVED

MAY 11 2005

WATER RIGHTS
PROGRAM

Prepared by:

USDA-NATURAL RESOURCES CONSERVATION SERVICE
Pierre Field Support Office
605-224-2476

Assisting:

Hughes County Conservation District

According to South Dakota State Law no excavator may begin any excavation without first notifying the One-Call Notification Center of the proposed excavation.

1-800-781-7474

CLEARING AND GRUBBING (SD-2)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of clearing, grubbing and disposal of trees, snags, logs, brush, shrubs, stumps, and rubbish from the designated areas.

2. Protection of Existing Vegetation

Trees and other woody vegetation designated to remain undisturbed shall be protected from damage throughout the entire construction period. Vehicles, stockpiled materials, and/or ground disturbance shall not be allowed within the dripline of the vegetation designated to remain in place. The contractor shall repair any damage resulting from the contractor's operations or neglect.

3. Marking

Limits of the areas to be cleared and grubbed will be marked by stakes, flags, tree markings or other suitable methods. Trees to be left standing and uninjured will be designated by special markings placed on the trunks at a height of about six feet above the ground surface.

4. Clearing and Grubbing

Unless otherwise specified, all stumps, roots, and root clusters that have a diameter one inch or larger shall be grubbed out to a depth of at least two feet below subgrade for concrete structures and one foot below ground surface for embankment and other designated sites. All trees not marked for preservation, and all snags, logs, brush, shrubs, stumps, rubbish, and similar materials shall be cleared from within the limits of the marked areas.

5. Disposal

Where brush piles for wildlife are not specified on the drawings, cleared and grubbed materials shall be disposed of by burning and/or burying at locations shown on the drawings or shall be disposed of by methods and at sites selected by the contractor and approved by the NRCS Inspector. Materials to be buried shall be placed at least two feet below the surrounding ground line, and shall be covered by at least two feet of soil with the soil surface graded to drain.

The contractor is responsible for complying with all applicable laws and regulations and the payment of any and all fees that may result from disposal at locations away from the construction site.

STRIPPING (SD-4)
CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of removing topsoil and other undesirable materials from borrow areas and foundations of structures and earth fills.

2. General

Required stripping excavation depth will be the depth needed to expose subsoil reasonably free of roots and other perishable material. Excavated earth material suitable for fill shall be placed in earth fills as appropriate. Stripped material suitable for topsoil shall be stockpiled and placed over disturbed areas as shown on the drawings or as approved by the NRCS Inspector. All waste material shall be disposed of as shown on the drawings or as approved by the NRCS Inspector.

3. Foundation Stripping

Remove loose soil and extend stripping to a reasonably smooth surface in consolidated subsoil. Except as shown on the drawings, foundation slopes shall be excavated to one horizontal to one vertical, or flatter.

4. Borrow Area Stripping

Borrow areas shall be stripped to expose material suitable for earth fill.

EARTH FILL-CLASS S (SD-7S)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of the construction of compacted earth fills where the amount of compaction is to be controlled by specifying a construction method.

2. Materials

All fill materials shall be obtained from required excavations and designated borrow areas. Selection, blending, placement and compaction of fill will be subject to approval of the NRCS Inspector.

Fill materials shall contain no frozen material, sod, roots or other perishable material, or rocks larger than eight inches in diameter. Fill shall not be placed on a frozen surface.

3. Foundation Preparation

All foundation (including abutment) surfaces shall be shaped one horizontal to one vertical or flatter except as otherwise specified.

After stripping (see stripping specification), the foundation shall be loosened thoroughly by scarifying or plowing to a minimum depth of four inches. The foundation shall then be compacted by the process specified for the fill.

4. Placement

All foundation excavation and preparation shall be completed before placing fill. Except as required by the drawings, fill material shall be mixed and uniformly placed throughout the entire fill without lenses, streaks, pockets, or layers of material that differ significantly from surrounding material.

Placement and compaction methods must prevent damage to structures and allow the structure to assume backfill loads gradually and uniformly. Within 2 feet of any structure, fill layer thickness must not exceed 4 inches and equipment loads must not exceed 400 pounds.

Fill shall be placed in approximately horizontal layers. Except as described above, fill layer thickness shall not exceed nine inches for compaction by large machines or four inches for small hand directed power tampers.

If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified parallel to the axis of the fill, to a depth of not less than two inches, before the next layer is placed.

Except as otherwise specified, openings temporarily left in dam fills (for pipe installation, streamflow, etc.) shall have side slopes three horizontal to one vertical or flatter. When filling the opening, the bonding surface of the fill in place shall be stripped of all material not meeting the requirements of this specification and shall be scarified, moistened, and recompacted as new earthfill is placed.

5. Control of Moisture Content

At the time of compaction, earth fill shall have a moisture content that when kneaded in the hand will form a ball that does not easily crumble when pressed between the hands. If the soil is too wet, it will yield free water when kneaded in the hand.

Fill materials must be wetted or dried as needed to achieve proper moisture prior to compaction.

6. Compaction (Class S)

Fill layers shall be compacted by one of the following methods.

- a. By routing the hauling and spreading equipment such that all points of the fill are traversed by at least one tread track of the loaded equipment traveling parallel to the centerline of the fill.
- b. By at least 2 passes of a tamping (sheepsfoot) roller weighing at least 100 pounds per square inch of bearing area.

Fill adjacent to structures shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually directed power tampers or plate vibrators. Within 2 feet of any structure, equipment loads must not exceed 400 pounds.

Compaction of fill adjacent to concrete structures shall not be started for at least the following number of days after placement of the concrete.

Concrete Structure	Days After Concrete Placement
Vertical or near-vertical walls with earth load on one side only	14
Walls backfilled on both sides simultaneously	7
Conduits and spillway risers, cast-in-place (with inside forms in place)	7
Conduits and spillway risers, cast-in-place (forms removed)	14
Conduits, pre-cast, cradled	2
Conduits, pre-cast, bedded	1
Anti-seep Collars and Cantilever Pipe Supports (backfill both sides simultaneously)	3

DRAINFILL AND FILTER (SD-9)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of furnishing, placing and compacting drain fill and filter sands and/or gravels.

2. Materials

Aggregates shall be sand, gravel, crushed stone, or mixtures thereof, composed of clean, hard, durable mineral particles free of organic matter, clay balls, soft particles or other substances that would interfere with free draining properties of the aggregates.

Not more than five percent of the material may be limestone, and not more than 15 percent may be flat elongated particles.

The aggregates shall meet the following gradation requirements except as otherwise specified.

Filter Aggregate Size	percent Finer by Weight
3"	100
1"	90 to 100
#4	50 to 85
#50	10 to 40
#200	0 to 5

3. Subgrade Preparation

Surfaces on which drain fill will be placed shall be as undisturbed as possible (do not scarify), and must be free of standing water during placement of drain aggregates. Care shall be taken to prevent collapse of drain walls.

4. Placement

Drain fill shall not be placed until the subgrade has been made available for inspection by the NRCS Inspector. Drain fill shall not be placed around pipes until the pipe installation has been made available for inspection by the NRCS Inspector.

Material must be placed in uniform, approximately six-inch thick layers. Extreme care shall be taken to assure uniformity of the drain fill, and to prevent segregation or contamination of the drain fill with foreign mater. When collector pipes are included in drains, the fill materials shall be placed in a manner to avoid displacing the pipe.

SALVAGING AND SPREADING TOPSOIL (SD-10)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of salvaging topsoil from borrow pits or other excavations and spreading it in the designated areas to the specified depths.

2. Quality of Topsoil

Topsoil shall consist of friable soil reasonably free of grass, roots, weeds, sticks, stones or other foreign materials.

3. Excavation

Topsoil shall be removed after clearing, grubbing and removing vegetation and shall be stockpiled. Objectionable materials shall be removed and buried, or disposed of, at locations approved by the NRCS Inspector.

4. Spreading

Spreading shall not be done when the ground or topsoil is frozen, excessively wet or otherwise in a condition detrimental to the work. Surfaces to be covered shall be lightly scarified just prior to the spreading operation.

All earth fills not to be submerged shall be covered with topsoil to a depth of 6 to 18 inches measured perpendicular to the surface of the fill and placed to the neat lines shown on the drawings.

After placement is completed, the topsoil surface shall be left in a condition that will permit seeding equipment to be operated without excessive smoothing.

CONCRETE FOR MINOR STRUCTURES (generally for structures <10 cu. yd.) (SD-12B)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of proportioning, forming, placing, finishing, and curing portland cement concrete.

2. Materials

Portland Cement shall conform to ASTM C150, Type II or IIA and shall be low alkali. Partially hydrated or damaged cement shall not be used.

Aggregates shall conform to the requirements of ASTM C33. Coarse aggregates shall be size 467 (1/2 inch to #4 sieve) unless otherwise specified. Aggregates must be free of contamination and segregation.

Water shall be clean, free of harmful chemicals and suitable for drinking.

Air-entraining admixtures must follow the Manufacturer's recommendations.

3. Concrete Mix Design

The contractor or person in charge of construction shall be responsible for designing a concrete mix that will produce 3000 pounds per square inch compressive strength at 28 days and meet the following requirements:

The concrete mix must contain less than six gallons of water per bag of cement.

The mix must contain at least six bags of cement per cubic yard of concrete.

Air-entrainment shall be between four and seven percent by volume.

Concrete slump after mixing must be between two and five inches.

Use of Ready Mixed concrete meeting this specification is encouraged. Upon request, the vendor must provide the owner and NRCS Inspector a signed delivery ticket giving the quantities of concrete, cement, fine aggregate, coarse aggregate, and water contained in the batch.

Calcium chloride, Sodium chloride (salt) or other corrosive accelerators shall not be used.

4. Concrete Forms

Forms shall be wood, plywood, metal, fiberglass or other approved material. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags, or other irregularities. Forms shall not be embedded in the concrete.

5. Placing Concrete

Concrete shall be placed in final position within 1.5 hours after adding cement (water if using sack-crete premix) to the mix.

Earth surfaces under concrete shall be compacted, and free of debris, frost, ice, or flowing water. Concrete shall not be dropped more than five feet vertically without use of equipment designed to prevent segregation.

Each layer of concrete must be completely consolidated by spading, hand tamping, and/or mechanical vibration. Vibration shall compact the concrete and bring it into intimate contact with the forms, reinforcing steel, and other embedded items while removing voids and pockets of trapped air.

Unformed concrete surfaces (excluding slip-formed surfaces) exposed in the completed work shall be accurately struck off to grade and then float finished. Concrete edges exposed in the final work shall be chamfered or finished with molding tools.

Concrete shall be placed at air temperatures between 40°F and 80°F unless special measures are taken to protect the concrete. Concrete must be protected from freezing for 24 hours after placement.

6. Curing

All concrete shall be cured by keeping all exposed surfaces wet for 7 days (counting only days above 50°F). Alternately, the wet cure process can be stopped when curing compound is applied as recommended by the manufacturer.

7. Defective Concrete

Honey combed areas and other voids in concrete must be promptly repaired with mortar patching immediately upon discovery.

Damaged concrete and concrete not meeting requirements of this specification will be rejected.

STEEL REINFORCEMENT (SD-13)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of furnishing and placing steel reinforcement for reinforced concrete or pneumatically applied mortar.

2. Materials

Steel reinforcement shall be free of flaky rust, oil, grease, paint, mill scale, or other deleterious matter.

Steel bar reinforcement (except as otherwise specified) shall be grade 40, 50, or 60 deformed bars conforming to one of the following specifications.

- a. Deformed and Plain Billet-steel Bars for Concrete Reinforcement ASTM A615
- b. Rail-steel Deformed and Plain Bars for Concrete Reinforcement ASTM A616 with S1 Supplement Requirements
- c. Axle-steel Deformed and Plain Bars for Concrete Reinforcement ASTM A617

Dowels shall be plain round bars conforming to the above specifications.

Fabricated deformed steel bar mats for concrete reinforcement shall meet ASTM A184.

Plain steel welded wire fabric for concrete reinforcement shall meet ASTM A185.

Deformed steel welded wire fabric for concrete reinforcement shall meet ASTM A497.

Epoxy-coated steel bars for concrete reinforcement shall meet ASTM A775.

3. Cutting and Bending

Reinforcing bars may be shop or field cut and/or bent. All bends must be made without heating or otherwise weakening the bar. Shop bends must meet American Concrete Institute Standard 315. Bars with kinks, cracks, or improper bends will be rejected.

4. Splicing Bar Reinforcement

Except as otherwise specified, splices of reinforcing bars shall provide an overlap of at least 30 times the smaller bar diameter, but not less than 12 inches.

5. Splicing Welded Wire Fabric

Welded wire fabric shall be overlapped one full mesh (rectangle) not counting cut portions.

6. Placing

Reinforcing shall be accurately placed and secured in position to prevent its displacement during concrete placement. Tack welding of bars is not permitted. Dimensions shown on the plans indicating concrete cover, are the clear distances from the concrete surface to the reinforcing steel.

Metal hangers, spacers, and ties shall be placed in a manner that they are not exposed in the finished concrete surface. The legs of metal chairs or side form spacers that may be exposed on any surface of slabs, walls, beams, or other concrete surfaces shall be a design that will not corrode at the concrete surface. Precast concrete chairs shall be clean and moist at the time of concrete placement.

On structures exceeding four cubic yard of concrete, concrete shall not be placed until the reinforcement has been inspected and approved by the NRCS Inspector. For any size pour, inspection of reinforcement embedded in concrete may be performed by the NRCS Inspector using radar, or other inspection instruments.

WOOD FABRICATION AND INSTALLATION (SD-16)

CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of furnishing and constructing wood structures and wood parts of composite structures.

2. Plywood Material

Plywood and Oriented Strand Board (OSB) for use in above ground sheltered construction (buildings etc.) shall meet Product Standard PS-1 and shall conform to the requirements shown on the drawings.

Plywood for use in exposed above ground construction shall be exterior grade, meet Product Standard PS-1 and shall conform to the requirements shown on the drawings.

Treated plywood for use above ground shall meet Product Standard PS-1 and be pressure treated with waterborne preservatives (Arsenicals) to a retention level of at least 0.4 pounds per cubic foot except as shown on the drawings.

Treated plywood that is to be in permanent contact with water or the earth must meet Product Standard PS-1 and be pressure treated with waterborne preservatives (Arsenicals) to a retention level of 0.6 pounds per cubic foot, except as shown on the drawings.

3. Structural Timber and Lumber Material

All wood material shall be sound wood free from decay and disease damage, shall be straight, not cracked, and shall meet the requirements shown on the drawings. Structural timber and lumber shall be structural grade or better.

Unless otherwise specified, all timber and all nominal lumber sizes 2X10 or larger shall be pressure treated by one of the following preservatives:

Cresote

Pentachlorophenol

Waterborne Preservatives (Arsenicals) treated to 0.4 pounds per cubic foot retention

Unless otherwise specified, all nominal lumber sizes 2X8 or smaller shall be pressure treated using waterborne preservatives (Arsenicals). Wood for use above ground shall be treated to a retention level of at least 0.4 pounds per cubic foot. Wood for use in permanent contact with water or earth shall be treated to a retention level of at least 0.6 pounds per cubic foot.

4. Metal Hardware

Bolts, nuts, washers, rods, angle iron, and other metal hardware shall be an appropriate grade of steel, and if installed underground, shall be galvanized, or have equal corrosion protection.

5. Installation

All framing shall be true and exact. Timber and lumber shall be accurately cut and assembled to close fit. Nails and spikes shall be driven with just sufficient force to set the heads flush with the surface of the wood.

Bolt holes shall be drilled for snug fit. Holes for lag screws shall be bored with a bit not larger than the body of the screw at the base of the thread.

Washers shall be used in contact with all bolt heads and nuts that would otherwise be in contact with wood.

SEEDING (SD-28)
CONSTRUCTION SPECIFICATION

1. Scope

The work shall consist of furnishing all labor, equipment, and materials needed for seeding the areas shown on the drawings.

2. General

Seeding and related operations shall be performed in the following time period.

Dates:

X See Attached Seeding Plan

3. Fertilizer

Fertilizer shall be uniformly applied commercial liquid or dry fertilizer conforming to South Dakota laws and regulations. Fertilizer shall be supplied and applied as follows.

Types and rates:

X

4. Seed

Seed requirements and seeding rates are listed below. Documentation must be provided showing the seed meets current South Dakota laws and regulations. The seed must be planted within one year of its latest germination test.

X

5. Seedbed Preparation

The area to be seeded shall be made reasonably smooth and firm. Ditches shall be filled to conform to design lines and grades before seedbed preparation is begun. Prior to seeding, required fertilizer shall be applied and mixed with the soil surface to a depth of three inches. The contractor shall suspend operations when the soil is too wet.

6. Cover and/or Nurse Crops

When specified, cover and/or nurse crops shall be seeded as follows:

X

7. Sowing Seed

Except as otherwise specified, seeding shall be performed immediately after seedbed preparation. Seeding shall be drilled or broadcast and incorporated in a manner that will achieve uniform distribution of seed placed at appropriate soil depth.

When seeding waterways or similar water flow areas, machinery operations must be performed in a direction that is not parallel to water flow (use Figure 8, serpentine, etc.).

8. Mulching

Except as otherwise specified, required mulching must be performed as soon as possible after seeding. Mulch shall be applied uniformly as follows.

~~*~~

SEEDING PLAN AND RECORD

MLRA

Cooperator

Jim Finley

Cons. District Hughes

53C

Program

WHIP

Practice No. 342

Practice Name: Critical Area Seeding

Cl or Referral No.

3

Seeded by: _____

	PLANNED	APPLIED
Field Number	4	
Seedbed Preparation	Clean, smooth, weed free seedbed will be prepared	
Seeding Equipment	Broadcast and drag	
Acres	2	
Date Planted	Late Summer 8/1 to 9/1	
Ecological Site or Forage Group	Critical Area Group - Loamy or Silty	
Protection Provided	Clip weeds before they compete for moisture and light	

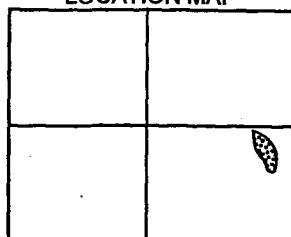
PLANNED						
Seed Species	Variety or Seed Source 1/ may be Common or improved variety listed	Pure Live Seed(PLS) Pounds (lbs)/ac Full Rate	Percent in Mixture 100	Pure Live Seed(PLS) lbs/ac Needed	Acres to Seed	Pure Live Seed(PLS) lbs Required
Alfalfa	See Attached Table 1	15.56	25	3.89	2	7.8
Intermediate Wheatgrass	See Attached Table 1	24.75	25	6.19	2	12.4
Western wheatgrass	See Attached Table 1	24.31	50	12.15	2	24.3

APPLIED						
1/ The origin of Common seed must be ND, SD, NE, MT, WY, MN, or IA						
Seed Species	Variety or Seed Source	Percent Purity	Percent Germ.	Pounds Bulk Seed Planted	Acres Certified	PLS Pounds Planted

* Pubescent wheatgrass may be substituted for Intermediate wheatgrass at any time.

** Thickspike wheatgrass may be substituted for western wheatgrass if the later is not available and only west of the Missouri River. Multiply the western wheatgrass seeding rate by .72

LOCATION MAP



Tract
SE 1/4
S. 1
T. 112N
R. 77W

Planning Assistance By: Kevin Paulsen 4/26/2005
(Name and Date)

Practice Meets SD Standards and Specifications:
Yes No

Certified By: _____
(Name and Date)

Recheck of Quantities By: _____
(Name and Date)

PLASTIC PIPE (SD-55)
MATERIAL SPECIFICATION

1. Scope

This specification covers the quality of Poly Vinyl Chloride (PVC), Polyethylene (PE), High Density Polyethylene (HDPE), and Acrylonitrile-Butadiene-Styrene (ABS) plastic pipe, fittings, and joint materials.

2. Material

The pipe and fittings shall be free of visible cracks, holes, foreign inclusions, or other defects, and shall have dimensions measured as prescribed in ASTM D2122. Joints and fittings shall be as described in the pipe AWWA or ASTM specification and shall be compatible with and have pressure ratings at least equal to the specified pipe. Rubber gaskets for pipe joints shall conform to ASTM F477 Elastomeric Seals (Gaskets for Joining Plastic Pipe). Except as otherwise specified, pipe must conform to the following specifications.

Poly vinyl chloride (PVC) Pipe

Plastic pipe - Schedule 40, 80, or 120	ASTM D1785 or D2466
Pressure rated pipe - SDR Series	AWWA C900 or ASTM D2241
Plastic drain, waste, and vent pipe and fittings	ASTM D2665
Composite sewer pipe	ASTM D2680
Type PSM PVC sewer pipe and fittings	ASTM F3034
Large-diameter gravity sewer pipe and fittings	ASTM F679
Smooth-wall Underdrain Systems for Highway, Airport, and Similar Drainage	ASTM F758
Type PS-46 gravity flow sewer pipe and fittings	ASTM F789
Profile gravity sewer pipe and fittings based on controlled inside diameter	ASTM F794
Corrugated sewer pipe with a smooth interior and fittings	ASTM F949
Pressure pipe, 4-inch through 12-inch for water distribution	AWWA C900
Water transmission pipe, nominal diameters 14-inch through 36-inch	AWWA C905

Polyethylene (PE) pipe

Schedule 40	ASTM D2104
SDR-PR based on controlled inside diameter	ASTM D2239
Schedules 40 and 80 based on outside diameter	ASTM D2447
SDR-PR based on controlled outside diameter	ASTM D3035

High density polyethylene (HDPE) pipe

Plastic pipe and fittings	ASTM D3350
SDR-PR based on controlled outside diameter	ASTM F714
Plastic moldings and extrusion compounds	ASTM D1248
Heat joining polyolefin pipe and fittings	ASTM D2657

Acrylonitrile-butadiene-styrene (ABS) pipe

Plastic pipe, schedules 40 and 80
 Plastic pipe, SDR-PR
 Schedule 40 plastic drain, waste, and vent pipe
 Composite sewer pipe
 Sewer pipe and fittings

ASTM D1527
 ASTM D2282
 ASTM D2661
 ASTM D2680
 ASTM 2751

3. Perforations

Except as otherwise specified, perforations of perforated pipe shall meet the following requirements.

- a. Perforations may be circular or slots, but must be free of materials that reduce effective openings.
- b. Circular perforations shall be 3/16 to 5/16 inch diameter holes arranged in rows parallel to the axis of the pipe. Center-to-center perforation spacing along rows shall not exceed 2.5 inches. Perforations may appear at the ends of short and random lengths.
 Rows shall be arranged in equal groups at equal distance from pipe bottom vertical centerline. Lowermost rows shall be separated by 60 to 125 degrees. Uppermost rows shall be separated by an arc of 166 degrees or less. Other rows shall be uniformly spaced.
- c. Slot perforations shall be located within two rows, with one row in each of the lower quadrants of the pipe. Slots shall be no wider than 1/8 inch and spaced no more than 1.5 inches apart.
- d. Row numbers and minimum openings must be as follows.

Perforations			
Nominal pipe size, inch	Minimum number of rows		Minimum opening/foot, square inches
	circular	slot	
3 to 4	2	2	0.22
6 to 10	4	2	0.44
12 or larger	6	2	0.66

4. Potable use pipeline

Pipelines specified for use to carry potable water shall meet requirements of the National Sanitation Foundation (NSF).

1*****
 SITES XEQ 04/27/2005 WATER RESOURCE SITE ANALYSIS COMPUTER PROGRAM
 VER 2000 (USER MANUAL - DATED MAY 2001)
 TIME 16:59:37

***** 80-80 LIST OF INPUT DATA *****

SITES 05/01/2000JF South Finley Dam 6.36875 H5
 SAVMOV 0 101
 SAVMOV 101 1 1
 * Township Road, 1 -24 inch CMP, 1-36 inch CMP

STRUCTURE TR Township Road
 117 0 0 0.01
 117.5 2 0 0.07
 118 7 0 .44
 118.5 12 0 1.13
 119 21 0 2.8
 119.5 32 0 6.3
 120 43 0 11.8
 120.5 54 0 23
 121 66 150 40
 121.3 76 550 70

ENDTABLE
 WSDATA 5S TR2 AC 75 3385 28529 0.3
 PDIRECT 2.2 .00 4.60
 POOLDATA AC-FT 0 0.01 0
 BTMWIDTH FEET 200
 GO,DESIGN QL TYPE2 24 TYPE2378 24
 SAVMOV 2 101 4 TR
 SAVMOV 101 2
 GO,REACH 1 Cr1 6231 0.45
 SAVMOV 2 101 2 r1
 SAVMOV 101 1

* Without allowance at Hwy 83

STRUCTURE S1 South Pond
 89.5 33.4 ✓
 90 36.8 ✓
 90.5 40.4 ✓
 91 44.2 ✓
 91.5 48.3 ✓
 92 52.6 ✓
 92.5 57.2 ✓
 93 62.1 ✓
 93.5 67.2 ✓
 94 72.5 ✓
 94.5 78.2 ✓
 95 84.1 ✓ 85.34
 95.5 90.3 ✓
 96 96.8 ✓
 96.5 103.6 ✓
 97 110.7 ✓
 97.5 118 ✓ 121.76
 98 127.4 ✓
 98.5 137
 108 300

ENDTABLE
 WSDATA 5A1S1 AC 75 691 6231 .304
 PDIRECT 2.2 .00
 POOLDATA ELEV 93 93 76 SC
 PSINLET 1 1
 PSDATA 1 100 .009 75
 ASDATA 41 300 130 3 .03 2
 ASINSURF 41 0.03

```

ASINLET  41      0.0      0.0      20      0.0      3
          180      10
ENDTABLE
ASEXSURF 41      .03
          .65      0
          3
          2      0
          .02

ENDTABLE
ASEXIT   41      N      100
BTMWIDTH FEET    100
GRAPHICS I
GO,DESIGN HL     TYPE2  24      TYPE2378  24
SAVMOV   2      101  1      S1
ENDJOB

```

```

*****
1SITES XEQ 04/27/2005 ----- COMMENT PAGE -----
      VER 2000                      South Finley Dam          WSID = JF

```

Township Road, 1 -24 inch CMP, 1-36 inch CMP

***** MESSAGE - DRAINAGE AREA FROM WSDATA CONTROL BEING CONVERTED FROM
ACRES TO SQUARE MILES FOR COMPUTATION PURPOSES.

```

1SITES -----
XEQ 04/27/2005      South Finley Dam      WSID= JF
VER 2000            Township Road          SUBW= TR
TIME 16:59:37      SITE = TR              PASS= 1    PART= 1

```

```

***** BASIC DATA *****
CLIMATE AREA - NOT DEFINED      DESIGN CLASS S = USER DEFINED

```

STORM DISTRIBUTION-PSH 24 HOUR TYPE II RAINFALL DISTRIBUTION

STORM DISTRIBUTION AUX. -24 HOUR TYPE II RAINFALL DISTRIBUTION

```

PRECIP. - P-PS,1-DAY  P-PS,10-DAY  P-SD  P-FB
          2.29      0.00      0.00      4.60

WSDATA -   CN      DA-SM      TC/L      -/H      ORF
          75.00      5.29      28529.00      0.30      0.00

SITEDATA- PERM POOL  CREST PS      FP SED      VALLEY FL      378?
          0.00      0.01      0.00      0.00      YES

          BASEFLOW  INITIAL EL  EXTRA VOL  SITE TYPE
          0.00      0.00      0.00      EXISTING

PSDATA - NO. COND  COND L      DIA/W      -/H
          0.00      0.00      0.00      0.00

          PS N      KE      WEIR L      TW EL
          0.000      0.00      0.00      0.00

          2ND STG  ORF H      ORF L      START AUX.
          0.00      0.00      0.00      0.00

ASCRESTS -  AUX.1      AUX.2      AUX.3      AUX.4      AUX.5

```

	0.00	0.00	0.00	0.00	0.00
AUX.DATA - REF.NO.	0	RETARD. Ci	0.00	TIE STATION	0.00
				INLET LENGTH	0
AUX.DATA - INLET N	0.000	SIDE SLOPE	0.00	EXIT N	0.000
				EXIT SLOPE	0.000
ACTUAL AUX?					NO
BTM WIDTH - BW1	200.00	BW2	0.00	BW3	0.00
ft				BW4	0.00
				BW5	0.00

1SITES -----

XEQ 04/27/2005	South Finley Dam	WSID= JF
VER 2000	Township Road	SUBW= TR
TIME 16:59:37	SITE = TR	PASS= 1
		PART= 2

CREST PS	117.00 FT	0.0 ACFT	0.00 AC	0.0 CFS
SED ACCUM	117.00 FT	0.0 ACFT	0.00 AC	0.0 CFS
START ELEV	117.00 FT	0.0 ACFT	0.00 AC	0.0 CFS
NRCS-PSH	D= 24.00 HR	P= 2.20 IN	O= 0.48 IN	DA= 5.29 SM
	TC= 5.89 HR	CN= 75.00	VOL= 115.3 ACFT	
PEAK =	100.9 CFS AT 24.2 HRS			

ROUTED RESULT - HYD TYPE	EMAX	VOL-MAX	AMAX	QMAX
NRCS-PSH	120.62 FT	27.2 ACFT	0.00 AC	93.9 CFS
PS STORAGE	27.2 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.			

RATING TABLE DEVELOPED, SITE = TR :

WITH PS AND AUX. GIVEN - NO ASDATA RECORD GIVEN.

RATING TABLE NUMBER 1						
	ELEV.	Q-TOTAL	Q-PS	Q-AUX.	VOLUME	AREA
	FEET	CFS	CFS	CFS	AC-FT	ACRE
1	117.00	0.00	0.00	0.00	0.01	0.00
2	117.50	2.00	2.00	0.00	0.07	0.00
3	118.00	7.00	7.00	0.00	0.44	0.00
4	118.50	12.00	12.00	0.00	1.13	0.00
5	119.00	21.00	21.00	0.00	2.80	0.00
6	119.50	32.00	32.00	0.00	6.30	0.00
7	120.00	43.00	43.00	0.00	11.80	0.00
8	120.50	54.00	54.00	0.00	23.00	0.00
9	121.00	216.00	66.00	150.00	40.00	0.00
10	121.30	626.00	76.00	550.00	70.00	0.00

1SITES -----

XEQ 04/27/2005	South Finley Dam	WSID= JF
VER 2000	Township Road	SUBW= TR
TIME 16:59:37	SITE = TR	PASS= 1
		PART= 3

AUX. CREST	120.50 FT	23.0 ACFT	0.00 AC	54.0 CFS
------------	-----------	-----------	---------	----------

PS STORAGE 23.0 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV 117.00 FT 0.0 ACFT 0.00 AC 0.0 CFS

ELEVATION OF LOW POINT IS ZERO. NO CRITERIA CHECK MADE FOR
STRUCTURE CLASSIFICATION.

NRCS-FBH D= 24.00 HR P= 4.60 IN Q= 2.13 IN DA= 5.29 SM
TC= 16.39 HR CN= 75.00 VOL= 600.6 ACFT

PEAK = 464.0 CFS, AT 22.7 HRS.

RATING TABLE DEVELOPED, SITE = TR :
WITH PS AND AUX. GIVEN - NO ASDATA RECORD GIVEN.

RATING TABLE NUMBER 2

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	117.00	0.00	0.00	0.00	0.01	0.00
2	117.50	2.00	2.00	0.00	0.07	0.00
3	118.00	7.00	7.00	0.00	0.44	0.00
4	118.50	12.00	12.00	0.00	1.13	0.00
5	119.00	21.00	21.00	0.00	2.80	0.00
6	119.50	32.00	32.00	0.00	6.30	0.00
7	120.00	43.00	43.00	0.00	11.80	0.00
8	120.50	54.00	54.00	0.00	23.00	0.00
9	121.00	216.00	66.00	150.00	40.00	0.00
10	121.30	626.00	76.00	550.00	70.00	0.00

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION 120.50 FT.

DRAWDOWN (DDT) TEST 117.00 FT 0.0 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

TIME = 1.13 DAYS, TO 0.0 CFS (LIMIT = 10.00 DAYS)

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-FBH	200.0	121.18	57.7	0.0	0.68	34.7

***** MESSAGE - ROUTING ONLY: NO AUXILIARY SPILLWAY ANALYSIS

PEAK - CFS	Q-PS	Q-AUX.	Q-TOT.
DISCHARGE =	71.9	386.5	458.4

***** MESSAGE - NHCP378 CRITERIA USED BUT AUXILIARY SPILLWAY RATING NOT
BASED ON ASFILE RATINGS.

INFLOW HYD 1 PSH-PEAK = 93.87 CFS AT 26.37 HRS, LOCATION POINT
INFLOW HYD 1 FBH-PEAK = 458.42 CFS AT 24.17 HRS, LOCATION POINT
HYDOUT 4 TR

REACH ROUTING RESULT PSH - PEAK = 91.15 CFS
LOCATION POINT r1 TIME OF PEAK = 27.84 HRS
XSECTION= 0, REACH LENGTH= 6231. FT CONVEX

NO. ROUTINGS= 0.8, C= 0.45, VBAR= 1.39 FT/SEC METHOD

REACH ROUTING RESULT FBH - PEAK = 450.98 CFS
LOCATION POINT r1 TIME OF PEAK = 25.64 HRS
XSECTION= 0, REACH LENGTH= 6231. FT CONVEX
NO. ROUTINGS= 0.8, C= 0.45, VBAR= 1.39 FT/SEC METHOD

INFLOW HYD 1 PSH-PEAK = 91.15 CFS AT 27.84 HRS, LOCATION POINT
INFLOW HYD 1 FBH-PEAK = 450.98 CFS AT 25.64 HRS, LOCATION POINT
HYDOUT 2 r1

1SITES XEQ 04/27/2005 ----- COMMENT PAGE -----
VER 2000 South Finley Dam WSID = JF

Without allowance at Hwy 83

***** MESSAGE - DRAINAGE AREA FROM WSDATA CONTROL BEING CONVERTED FROM
ACRES TO SQUARE MILES FOR COMPUTATION PURPOSES.

1SITES -----
XEQ 04/27/2005 South Finley Dam WSID= JF
VER 2000 South Pond SUBW= S1
TIME 16:59:37 SITE = S1 PASS= 1 PART= 4

***** BASIC DATA *****
CLIMATE AREA - NOT DEFINED DESIGN CLASS A1 = LT 3000.

STORM DISTRIBUTION-PSH 24 HOUR TYPE II RAINFALL DISTRIBUTION

STORM DISTRIBUTION AUX. -24 HOUR TYPE II RAINFALL DISTRIBUTION

PRECIP. - P-PS,1-DAY	P-PS,10-DAY	P-SD	P-FB	
2.20	0.00	0.00	4.60	
WSDATA - CN	DA-SM	TC/L	-/H	QRF
75.00	<u>1.08</u>	<u>6231.00</u>	<u>0.30</u>	0.00
SITEDATA- PERM POOL	CREST PS	FP SED	VALLEY FL	378?
93.00	93.00	0.00	76.00	YES
BASEFLOW	INITIAL EL	EXTRA VOL	SITE TYPE	
0.00	0.00	0.00	DESIGN	
PSDATA - NO. COND	COND L	DIA/W	-/H	
1.00	100.00	24.00	0.00	
PS N	KE	WEIR L	TW EL	
0.009	1.00	15.70	75.00	
2ND STG	ORF H	ORF L	START AUX.	
0.00	0.00	0.00	0.00	
ASCRESTS - AUX.1	AUX.2	AUX.3	AUX.4	AUX.5
0.00	0.00	0.00	0.00	0.00
AUX.DATA - REF.NO.	RETARD. Ci	TIE STATION	INLET LENGTH	

41	0.00	300.00	130	
AUX.DATA - INLET N	SIDE SLOPE	EXIT N	EXIT SLOPE	ACTUAL AUX?
0.030	3.00	0.030	0.030	NO
BTM WIDTH - BW1	BW2	BW3	BW4	BW5
ft 100.00	0.00	0.00	0.00	0.00

AUXILIARY SPILLWAY RATING DEVELOPED USING WSPVRT.

1SITES -----
 XEQ 04/27/2005 South Finley Dam WSID= JF
 VER 2000 South Pond SUBW= S1
 TIME 16:59:37 SITE = S1 PASS= 1 PART= 5

UNCONTROLLED AREA HYDROGRAPH PSH - PEAK = 48.38 CFS
 TIME TO PEAK = 15.44 HRS, SITE S1

ADDHYD RESULTS PS HYDROGRAPH - PEAK = 95.05 CFS
 TIME TO PEAK = 27.84 HRS, SITE S1

PERM POOL	93.00 FT	62.1 ACFT	0.00 AC	0.0 CFS
CREST PS	93.00 FT	62.1 ACFT	0.00 AC	0.0 CFS
SED ACCUM	93.00 FT	62.1 ACFT	0.00 AC	0.0 CFS
START ELEV	93.00 FT	62.1 ACFT	0.00 AC	0.0 CFS

NRCS-PSH D= 24.00 HR P= 2.20 IN Q= 0.48 IN DA= 1.08 SM
 TC= 4.82 HR CN= 75.00 VOL= 27.8 ACFT
 ACCUMULATED SYSTEM DRAINAGE AREA = 6.37 SQUARE MILES.

PEAK = 95.0 CFS, AT 27.8 HRS.
 ACCUMULATED SYSTEM DRAINAGE AREA = 6.37 SQUARE MILES.

ROUTED RESULT - HYD TYPE	EMAX	VOL-MAX	AMAX	QMAX
NRCS-PSH	95.10 FT	85.3 ACFT	0.00 AC	70.0 CFS

PS STORAGE 23.2 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

DRAWDOWN (DDT) TEST 93.00 FT 62.1 ACFT 0.00 CFS
 CONTROL IS 0.000 DETENTION STORAGE

TIME = 2.01 DAYS, TO 0.0 CFS (LIMIT = 10.00 DAYS)

 RATING TABLE DEVELOPED, SITE = S1 :
 BY PROGRAM FOR PS AND AUX. SPILLWAYS
 AUX. RATING USED WSPVRT METHOD.

RATING TABLE NUMBER 1						
	ELEV.	Q-TOTAL	Q-PS	Q-AUX.	VOLUME	AREA
	FEET	CFS	CFS	CFS	AC-FT	ACRE
1	93.00	0.00	0.00	0.00	62.10	0.00
2	93.31	8.57	8.57	0.00	65.31	0.00
3	93.63	24.25	24.25	0.00	68.56	0.00
4	93.94	44.55	44.55	0.00	71.89	0.00

	FULL CONDUIT FLOW, ELEV = 94.26 FT					
5	94.26	68.59	68.59	0.00	75.43	0.00
6	95.97	71.64	71.64	0.00	96.47	0.00
7	97.69	74.51	74.51	0.00	121.62	0.00
8	99.41	77.28	77.28	0.00	152.62	0.00
9	101.13	79.96	79.96	0.00	182.10	0.00
10	102.85	82.54	82.54	0.00	211.57	0.00
11	104.56	85.05	85.05	0.00	241.05	0.00
12	106.28	87.49	87.49	0.00	270.52	0.00
13	108.00	89.86	89.86	0.00	300.00	0.00

UNCONTROLLED AREA HYDROGRAPH - FBH PEAK = 246.13 CFS
 TIME TO PEAK = 15.05 HRS, SITE S1

ADDHYD RESULTS FREEBOARD HYD. - PEAK = 482.99 CFS
 TIME TO PEAK = 24.91 HRS, SITE S1

1SITES -----
 XEQ 04/27/2005 South Finley Dam WSID= JF
 VER 2000 South Pond SUBW= S1
 TIME 16:59:37 SITE = S1 PASS= 1 PART= 6

AUX. CREST 95.10 FT 85.3 ACFT 0.00 AC 70.0 CFS *flow @ ES Crest*
 PS STORAGE 23.2 ACFT, BETWEEN AUX. CREST AND SED. ACCUM ELEVATIONS.

START ELEV 93.00 FT 62.1 ACFT 0.00 AC 0.0 CFS

EFFECTIVE HEIGHT(H) = 19.1 FEET, PRODUCT = 1630. (H * STORAGE AT CREST AUX.).

INPUT DESIGN CLASS = A1 = LT 3000. PRODUCT. *< 2000 Q2 OK*

NRCS-FBH D= 24.00 HR P= 4.60 IN Q= 2.13 IN DA= 1.08 SM
 TC= 4.82 HR CN= 75.00 VOL= 122.6 ACFT

PEAK = 483.0 CFS, AT 24.9 HRS.
 ACCUMULATED SYSTEM DRAINAGE AREA = 6.37 SQUARE MILES.

 RATING TABLE DEVELOPED, SITE = S1 :
 BY PROGRAM FOR PS AND AUX. SPILLWAYS
 AUX. RATING USED WSPVRT METHOD.

RATING TABLE NUMBER 2

	ELEV. FEET	Q-TOTAL CFS	Q-PS CFS	Q-AUX. CFS	VOLUME AC-FT	AREA ACRE
1	93.00	0.00	0.00	0.00	62.10	0.00
2	93.31	8.57	8.57	0.00	65.31	0.00
3	93.63	24.25	24.25	0.00	68.56	0.00
4	93.94	44.55	44.55	0.00	71.89	0.00
5	94.26	68.59	68.59	0.00	75.43	0.00
6	94.36	68.83	68.83	0.00	76.63	0.00
7	94.47	69.02	69.02	0.00	77.83	0.00
8	94.57	69.20	69.20	0.00	79.07	0.00
9	94.68	69.39	69.39	0.00	80.31	0.00
10	94.78	69.58	69.58	0.00	81.56	0.00
11	94.89	69.76	69.76	0.00	82.80	0.00
12	95.00	69.94	69.94	0.00	84.04	0.00

FULL CONDUIT FLOW, ELEV = 94.26 FT

13	95.10	70.13	70.13	0.00	85.35	0.00
14	95.75	190.57	71.25	119.33	93.49	0.00
15	96.39	452.56	72.34	380.22	102.11	0.00
16	97.55	1178.57	74.28	1104.29	118.97	0.00
17	98.97	2409.66	76.58	2333.08	145.07	0.00
18	101.55	5613.29	80.60	5532.69	189.34	0.00
19	104.78	10862.31	85.35	10776.96	244.67	0.00
20	108.00	17607.89	89.86	17518.03	300.00	0.00

SUMMARY OF AUXILIARY SPILLWAY SURFACE CONDITIONS USED IN COMPUTATIONS BY REACH

REACH	FROM STA (ft)	TO STA (ft)	SLOPE (%)	RETARDANCE CURVE INDEX@	VEGETAL COVER FACTOR	MAINT. CODE	ROOTING DEPTH (ft)	REACH LOCATION *
1	170.	280.	-6.2	0.030	**	**	**	INLET
2	280.	300.	0.0	0.030	**	**	**	CREST
3	300.	400.	3.0	0.030	0.65	3	2.0	EXIT !

@ The program interprets retardance curve index entries of less than 1 as Manning's n values.

* Upper case indicates a reach of constructed spillway channel.

** The program does not use vegetal cover factor, maintenance code, and rooting depth for inlet and crest reaches in computations.

! Reach 3 used in computing exit channel velocities.

DRAWDOWN USING FREEBOARD STORM FOLLOWS, STARTING AT ELEVATION **93.00** FT.

DRAWDOWN (DDT) TEST 93.00 FT 62.1 ACFT 0.00 CFS
CONTROL IS 0.000 DETENTION STORAGE

TIME = 1.83 DAYS, TO 0.0 CFS (LIMIT = 10.00 DAYS)

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.-HP FT	VOL-AUX. ACFT
NRCS-FBH	100.0	95.44	102.8	0.0	1.21	17.4

PEAK - CFS DISCHARGE = **409.0** **Q-AUX** **Q-TOT.** 481.9

	CRITICAL DEPTH FT	CRITICAL VELOCITY FT/SEC	CRITICAL SLOPE-Sc FT/FT	25% OF Q Sc FT/FT
AUXILIARY SPILLWAY ---	0.80	5.01	0.014	0.019

EFFECTIVE STRESS FOR STABILITY ANALYSIS OF AUX. EXIT CHANNEL
(Refer to Ag. Handbook 667, Chapt. 3, for allowable stresses.)

Aux. Discharge = 409. cfs; Bottom Width = 100. ft

REACH NO.	FROM STA	TO STA	SLOPE %	MANNING'S n	VELOCITY ft/s	STRESS lb/ft^2
3	300.	400.	3.00	0.030	6.28	0.728

AUXILIARY SPILLWAY DURATION FLOW = 28.6 HOURS
ATTACK, OE/B = 4.8 ACFT/FT

***** MESSAGE - NHCP378 CRITERIA USED BUT AUXILIARY SPILLWAY RATING NOT BASED ON ASFILE RATINGS.

EXIT CHANNEL FLOW SUPERCRITICAL: MAX VELOCITY= 6.3 FT/SEC
 EXIT SLOPE = 0.030 FT/FT
 FLOW DEPTH = 0.6 FT

>>>> NHCP378 RUN - MINIMUM DEPTH, CREST AUX. TO TOP OF DAM IS 2.00 FT.
 NEW TOP OF DAM ELEVATION = 97.10.

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.HP FT	VOL-AUX. ACFT
MINIMUM AUX.	100.0	97.10	112.4	0.0	2.02	27.1
PEAK - CFS DISCHARGES =		Q-PS 73.6	Q-AUX. 823.1	Q-TOT. 896.6		
		CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q	
		FT	FT/SEC	FT/FT	Sc	
AUXILIARY SPILLWAY ---	1.26	6.27	0.012	0.017		

>>>> NHCP378 RUN - MINIMUM DEPTH, DESIGN FLOW TO TOP OF DAM; 1.00 FT REQUIRED FOR THIS PASS. NEW TOP OF DAM ELEVATION = 97.44.

ROUTED RESULTS	BTM WIDTH FT	MAX ELEV FT	VOL-MAX ACFT	AREA-MAX AC	AUX.HP FT	VOL-AUX. ACFT
MINIMUM AUX.	100.0	97.44	117.4	0.0	2.36	32.0
PEAK - CFS DISCHARGES =		Q-PS 74.1	Q-AUX. 1035.1	Q-TOT. 1109.2		
		CRITICAL DEPTH	CRITICAL VELOCITY	CRITICAL SLOPE-Sc	25% OF Q	
		FT	FT/SEC	FT/FT	Sc	
AUXILIARY SPILLWAY ---	1.47	6.74	0.012	0.016		

INFLOW HYD 1 PSH-PEAK = 70.03 CFS AT 32.97 HRS, LOCATION POINT
 INFLOW HYD 1 FBH-PEAK = 481.85 CFS AT 25.64 HRS, LOCATION POINT
 HYDOUT 1 S1
 1SITES....JOB NO. 1 COMPLETE.

JF South Finley Dam
 0 SUBWATERSHED(S) ANALYZED.
 2 STRUCTURE(S) ANALYZED.
 2 HYDROGRAPHS ROUTED AT LOWEST SITE.
 0 TRIALS TO OBTAIN BOTTOM WIDTH FOR SPECIFIED STRESS OR VELOCITY.

SITES.....COMPUTATIONS COMPLETE

1

SUMMARY TABLE 1

SITES VERSION 2000
DATED 05/01/2000

WATERSHED ID			RUN DATE				RUN TIME		
JF			04/27/2005				16:59:37		
>>>	SITE ID	SUBWS ID	SUBWS DA (SQ MI)	CURVE NO.	TC (HRS)	TOTAL DA (SQ MI)	TYPE DESIGN	STRUC CLASS	<<<
	TR	TR	5.29	75.	16.39	5.29	378NR	S	
PASS NO.	DIA./ WIDTH (IN/FT)	AUX.CREST ELEV (FT)	BTM. WIDTH (FT)	MAX. HP (FT)	MAX. ELEV (FT)	EMB. VOL. (CY)	INTEGR.* DIST. (FT)	EXIT* VEL. (FT/SEC)	TYPE HYD
1	0.0	120.5	200.0	0.7	121.2	0.	0.	0.0	NRCS-FBH
>>>	SITE ID	SUBWS ID	SUBWS DA (SQ MI)	CURVE NO.	TC (HRS)	TOTAL DA (SQ MI)	TYPE DESIGN	STRUC CLASS	<<<
	S1	S1	1.08	75.	4.82	6.37	378CR	A1	
PASS NO.	DIA./ WIDTH (IN/FT)	AUX.CREST ELEV (FT)	BTM. WIDTH (FT)	MAX. HP (FT)	MAX. ELEV (FT)	EMB. VOL. (CY)	INTEGR.* DIST. (FT)	EXIT* VEL. (FT/SEC)	TYPE HYD
1	24.0	95.1	100.0	2.3	97.4	0.	0.	6.3	MIN. AUX.

* INTEGRITY DIST. AND EXIT VEL. ARE BASED ON THE ROUTED HYDROGRAPH AND WILL NOT RELATE TO THE MAX. ELEV. (TOP OF DAM), WHICH IS SET BY MINIMUM DESIGN CRITERIA.

SITES.....SUMMARY TABLE 1 COMPLETED.

NRCS SITES VERSION 2000 ,05/01/2000
JF FILES

INPUT

C:\home\dana.edwards\SITES Program\Dana\Seriesde.D2C

OUTPUT - DATED 04/27/2005 16:59:37

C:\home\dana.edwards\SITES Program\Dana\Seriesde.OUT

GRAPHICS FILES GENERATED

OPTION "L" DATED 04/27/2005 16:59:37

C:\home\dana.edwards\SITES Program\Dana\Seriesde.DRG

OPTION "P" DATED 04/27/2005 16:59:37

C:\home\dana.edwards\SITES Program\Dana\Seriesde.DHY

OPTION "E" DATED 04/27/2005 16:59:37

C:\home\dana.edwards\SITES Program\Dana\Seriesde.DEM

Trimble
5475 Kellenburger Road
Dayton, Ohio 45424-1099, USA
1-937-233-8921

Wednesday, March 16, 2005 9:10:34 AM

County Road Profile & Align.

PROJECT: S:\engineering\Jim Finley\South Dam\Finley4de3.pro

PT#	DESCRIPTION	CURVE DATA BEARING	STATION	NORTH	EAST	ELEV
			DISTANCE	SLOPE	DISTANCE	ZENITH ANGLE
INVERSE SET						
5081	rd		0+00.00	5925.2700	5034.0440	123.46
5078	rd	NO 08'18"E	407.53ft	SD407.53ft		Z90°09'39"
			4+07.53	6332.7970	5035.0280	122.32
5076	rd	NO 05'38"W 179 46'04" AR	107.55ft	SD107.55ft		Z90°11'53"
			5+15.08	6440.3500	5034.8520	121.95
5074	rd	NO 15'35"E 180 21'12" AR	184.03ft	SD184.03ft		Z90°09'09"
			6+99.11	6624.3800	5035.6860	121.46
5067	rd	NO 01'25"E 179 45'50" AR	318.39ft	SD318.39ft		Z90°05'43"
			10+17.50	6942.7670	5035.8170	120.93
5064	rd	NO 13'00"E 180 11'35" AR	201.30ft	SD201.30ft		Z90°05'05"
			12+18.80	7144.0630	5036.5780	120.63
5036	rd	NO 07'33"E 179 54'33" AR	734.72ft	SD734.72ft		Z89°55'38"
			19+53.51	7878.7770	5038.1900	121.57

Rating Table Report Roadway overtop

Range Data:

Discharge	Minimum 0.00	Maximum 600.00	Increment 50.00 cfs
-----------	-----------------	-------------------	------------------------

Discharge (cfs)	HW Elev (ft)
0.00	-9,999.00
50.00	120.88
100.00	120.96
150.00	121.02
200.00	121.07
250.00	121.11
300.00	121.15
350.00	121.19
400.00	121.22
450.00	121.25
500.00	121.28
550.00	121.31
600.00	121.33

Project Title: NRCS upper dam Township Road

c:\nrcstr.cvm

03/16/05 10:02:53 AM

@ Haestad Methods, Inc.

37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

CulvertMaster v1.0

Page 1 of 1

Rating Table Report

Worksheet-1

- Existing 36" CMP in County Road

Range Data:

Discharge	Minimum 0.00	Maximum 50.00	Increment 1.00 cfs
-----------	-----------------	------------------	-----------------------

Discharge (cfs)	HW Elev (ft)
0.00	115.90
1.00	117.31
2.00	117.53
3.00	117.70
4.00	117.84
5.00	117.97
6.00	118.08
7.00	118.20
8.00	118.30
9.00	118.40
10.00	118.49
11.00	118.58
12.00	118.67
13.00	118.76
14.00	118.84
15.00	118.92
16.00	119.00
17.00	119.07
18.00	119.15
19.00	119.22
20.00	119.29
21.00	119.37
22.00	119.44
23.00	119.51
24.00	119.57
25.00	119.64
26.00	119.71
27.00	119.78
28.00	119.84
29.00	119.91
30.00	119.98
31.00	120.04
32.00	120.11
33.00	120.17
34.00	120.24
35.00	120.30
36.00	120.37
37.00	120.43
38.00	120.50
39.00	120.58
40.00	120.62
41.00	120.69
42.00	120.74
43.00	120.80
44.00	120.85
45.00	120.90
46.00	120.95
47.00	121.01
48.00	121.06

Project Title: NRCS upper dam Township Road
c:\nrctr\cvm

03/16/05 07:41:51 AM

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CulvertMaster v1.0
Page 1 of 2

Rating Table Report
Worksheet-1

Discharge (cfs)	HW Elev (ft)
49.00	121.11
50.00	121.17

Project Title: NRCS upper dam Township Road
c:\nrctr\cvm

03/18/05 07:41:51 AM

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CUVERTMASTER v1.0
Page 2 of 2

Rating Table Report

Worksheet-3

Existing 24" CMP in County Road

Range Data:

Discharge	Minimum	Maximum	Increment
	0.00	20.00	1.00 cfs

Discharge (cfs)	HW Elev (ft)
0.00	117.40
1.00	118.25
2.00	118.49
3.00	118.68
4.00	118.84
5.00	118.99
6.00	119.13
7.00	119.26
8.00	119.39
9.00	119.51
10.00	119.64
11.00	119.76
12.00	119.88
13.00	120.01
14.00	120.14
15.00	120.29
16.00	120.45
17.00	120.67
18.00	120.89
19.00	121.12
20.00	121.36

Project Title: NRCS upper dam Township Road

c:\nrcstr.cvm

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37 Brookside Road

Waterbury, CT 06708 USA

(203) 755-1666

CulvertMaster v1.0

Page 1 of 1

South DAM

Trimble						
5475 Kellen	burger Road					
Dayton, Ohi	o 45424-109	9, USA				
1-937-233-8	921					
Thursday, J	anuary 06,	2005 9:16:08	AM			
		PROJECT: S	:\engineeri	Jim Finley\So	uth Dam\Finley4.pro	
HYDROLOGIC	REPORT - PO	ND DEPTH VS	STORAGE PROVIDED			
POND:						
ELEV feet	DEPTH feet	AREA sq.ft.	VOLUME cu.ft.	SUMVOL cu.ft.	Surface Acres	Cumulative Ac/Ft
76		1793		0	0.04	
	0.5		1471.8			
76.5		4094		1471.8	0.09	0.0
	0.5		2816.0			
77		7170		4287.8	0.16	0.1
	0.5		4518.3			
77.5		10903		8806.0	0.25	0.2
	0.5		6757.0			
78		16125		15563.0	0.37	0.4
	0.5		9725.5			
78.5		22777		25288.5	0.52	0.6
	0.5		13234.8			
79		30162		38523.3	0.69	0.9
	0.5		17044.8			
79.5		38017		55568.0	0.87	1.3
	0.5		21126.3			
80		46488		76694.3	1.07	1.8
	0.5		25457.0			
80.5		55340		102151.3	1.27	2.3
	0.5		29825.0			
81		63960		131976.3	1.47	3.0
	0.5		34057.5			
81.5		72270		166033.8	1.66	3.8
	0.5		38118.3			
82		80203		204152.0	1.84	4.7
	0.5		42145.5			
82.5		88379		246297.5	2.03	5.7
	0.5		46326.3			
83		96926.3		292623.8	2.23	6.7
	0.5		50706.6			
83.5		105900		343330.4	2.43	7.9
	0.5		55392.3			
84		115669.1		398722.7	2.66	9.2
	0.5		60465.9			
84.5		126194.6		459188.6	2.90	10.5
	0.5		65973.9			
85		137701		525162.5	3.16	12.1
	0.5		71970.3			
85.5		150180.1		597132.8	3.45	13.7

ELEV feet	DEPTH feet	AREA sq.ft.	VOLUME cu.ft.	SUMVOL cu.ft.	Surface Acres	Cumulative Ac/Ft	
	0.5		78552.8				
86		164031.1		675685.6	3.77	15.5	
	0.5		85869.2				
86.5		179445.8		761554.8	4.12	17.5	
	0.5		94013				
87		196606.2		855567.8	4.51	19.6	Existing Spillway Outlet 86.95
	0.5		102648.1				
87.5		213986		958215.9	4.91	22.0	
	0.5		111230.3				
88		230935.4		1069446.2	5.30	24.6	
	0.5		119832				
88.5		248392.5		1189278.2	5.70	27.3	
	0.5		128444.8				
89		265386.5		1317723.0	6.09	30.3	
	0.5		137256.9				
89.5		283640.9		1454979.9	6.51	33.4	
	0.5		146736.4				
90		303304.8		1601716.3	6.96	36.8	
	0.5		156552.4				
90.5		322904.6		1758268.7	7.41	40.4	
	0.5		166949.3				
91		344892.5		1925218.0	7.92	44.2	
	0.5		178093.5				
91.5		367481.3		2103311.5	8.44	48.3	
	0.5		189155.4				
92		389140.3		2292466.9	8.93	52.6	
	0.5		200035.3				
92.5		411001		2492502.2	9.44	57.2	
	0.5		211054.7				
93		433217.7		2703556.9	9.95	62.1	
	0.5		222323.6				
93.5		456076.5		2925880.5	10.47	67.2	
	0.5		233898.6				
94		479517.8		3159779.1	11.01	72.5	
	0.5		245667.7				
94.5		503153.1		3405446.8	11.55	78.2	
	0.5		257613.5				
95		527300.9		3663060.3	12.11	84.1	
	0.5		270166.5				
95.5		553364.9		3933226.8	12.70	90.3	
	0.5		283067.1				
96		578903.5		4216293.9	13.29	96.8	
	0.5		295757				
96.5		604124.7		4512050.9	13.87	103.6	
	0.5		308372.9				
97		629366.8		4820423.8	14.45	110.7	
	0.5		320976.7				
97.5		654539.9		5141400.5	15.03	118.0	
	0.5		408639.0				
98		980016		5550039.5	22.50	127.4	

North Dam

ELEV feet	DEPTH feet	AREA Acres	Vol Ac/Ft	Cumulative Ac/Ft
0		0		
Existing water	10		9.7	9.7
59.5	0.5	3.89	2.0	11.7
60	0.5	4.1	2.1	13.8
60.5	0.5	4.26	2.2	16.0
61	0.5	4.45	2.3	18.2
61.5	0.5	4.65	2.4	20.6
62	0.5	4.88	2.5	23.1
62.5	0.5	5.12	2.6	25.7
63	0.5	5.37	2.8	28.5
63.5	0.5	5.63	2.9	31.4
64	0.5	5.84	3.0	34.4
64.5	0.5	6.16	3.2	37.5
65	0.5	6.48	3.3	40.9
65.5	0.5	6.84	3.5	44.4
66	0.5	7.19	3.7	48.0
66.5	0.5	7.52	3.9	51.9
67	0.5	7.88	4.0	55.9
67.5	0.5	8.29	4.2	60.2
68	0.5	8.68	4.4	64.6
68.5	0.5	9.05	4.6	69.2

ELEV feet	DEPTH feet	AREA Acres	Vol Ac/Ft	Cumulative Ac/Ft				
69		9.42						
	0.5		4.8	74.0				
69.5		9.77						
	0.5		5.0	79.0				
70		10.11						
	0.5		5.1	84.1				
70.5		10.44						
	0.5		5.3	89.4				
71		10.76						
	0.5		5.5	94.9				
71.5		11.09			Existing Spillway Outlet Elevation 71.54			
	0.5		5.6	100.5				
72		11.4						

Water Permit Application No. 6624-3

Jim Finley

Top of Dam Elev. - 97.7
 2nd Spillway Elev. - 95.1
 P. Spillway Elev. - 93.0
 DS Emb Toe Elev. - 76.1

Cont. 3 - Low Hazard Dam

Ht = 21.6 ft

Normal Storage Capacity - 62.10 Ac-Ft
 Int. Storage Capacity - 85.34
 Max. Storage Capacity - 121.76

Int Capacity x Eff. Height = $85.34 \times 19.1 = 1630 < 3000 \therefore 25\text{yr}$
Minimum Spillway Design

From USGS WRI 98-4055 "Tech for Est. Peak Flow Magnitude ... in 50"

$$CA = 6.37 \text{ mi}^2$$

$$P_T = 0.75$$

$$Q_{100} = 148 CA^{.584} P_T^{.73}$$

$$= 148 (6.37)^{.584} (0.75)^{.73}$$

$$= 148 (2.9486) (.8106)$$

$$= \underline{354 \text{ cfs}}$$

$$Q_{100} = 275 CA^{.625} P_T^{.742}$$

$$= 275 (6.37)^{.625} (0.75)^{.742}$$

$$= 275 (3.1812) (.8078)$$

$$= \underline{707 \text{ cfs}}$$

Secondary Spillway Flow

$$Q = CLH^{3/2}$$

$$C = 2.6$$

$$L = 100$$

$$H = 2.6$$

$$= (2.6)(100)(2.6)^{3/2}$$

$$= \underline{1090 \text{ cfs}}$$

NRCS Annual Yield

$$DA = 4076 \text{ Ac} \quad ISO = 2 \quad CN = 75$$

$$80\% \text{ chance} = 0.13$$

$$0.13 \times 4076^{1/2} = 44 \text{ Ac-Ft}$$

$$50\% \text{ chance} = 0.35$$

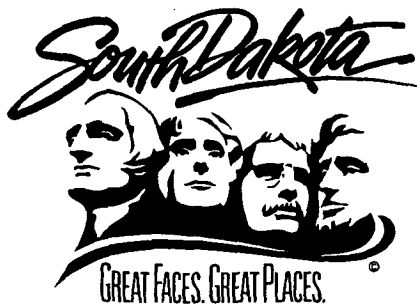
$$0.35 \times 4076^{1/2} = 119 \text{ Ac-Ft}$$

$$10\% \text{ chance} = 1.8$$

$$1.8 \times 4076^{1/2} = 611 \text{ Ac-Ft}$$

Section 74:02:08:09

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



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

June 27, 2005

Jim Finley
410 North Hughes Street
Blunt, SD 57522

Dear Mr. Finley:

We have reviewed the plans and specifications for your dam repair project located in the SE ¼ of Sec. 1-T112N-R77W, in Hughes County. The plans and specifications for the repair of your dam are approved. Approval of the plans and specifications does not authorize construction of the dam. The construction of the dam may not begin until Water Permit No. 6624-3 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 dam, from the responsibility for operating and maintaining the dam in good repair to ensure the safety of the dam.

The Finley Dam will be classified as a small size Category 3, Low Hazard dam with a dam height of 22 ft. and a normal storage capacity of 62.1 acre-feet and a maximum storage capacity of 122 acre-feet.

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

Sincerely,

Timothy G. Schaal, P.E.
Natural Resources Engineer Specialist
for Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

c: Dana Edwards, NRCS, Pierre

REPORT ON
WATER PERMIT APPLICATION No. 6624-3
Jim Finley
June 14, 2005

Water Permit Application No. 6624-3 has been filed by Jim Finley to impound 62.1 acre-feet of water by repairing an existing dam located in the E ½ SE ¼ of Section 1-T112N-R77W on an unnamed tributary to Medicine Creek, in Hughes County. The application also requests impoundment of sufficient water to maintain water at the outlet elevation. The water will be used for fish and wildlife production and livestock water purposes.

Discussion:

The dam will be classified as a small size, Category 3, Low Hazard dam. The Natural Resources Conservation Service (NRCS) has designed the repair of the dam. The plans and specifications have been reviewed and will be approved; however, construction of the dam can not begin until Water Permit Application No. 6624-3 is approved.

The dam will be 22 feet high with a normal storage capacity of 62.1 acre-feet with a reservoir level at the primary spillway elevation, and a maximum storage capacity of 122 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 4076 acres or 6.37 square miles. The dam is designed to have a drop inlet structure with a 6 foot RCP riser with 4.7 feet freeboard and a 24 inch HDPE barrel as the primary spillway, and a 100 foot wide earthcut secondary spillway with 2.6 feet of available freeboard. A 25 year frequency event produces a peak runoff of 354 cfs and a 100 year frequency event produces a peak runoff of 700 cfs. The 100 foot secondary spillway has a capacity of approximately 1090 cfs.

The annual yield for this drainage area with an 80 percent chance of occurrence, or 8 out of 10 years, is expected to be 44.0 acre-feet. The annual yield with a 50 percent chance of occurrence, or 1 out of 2 years, is expected to be 119 acre-feet and the annual yield with a 10 percent chance, or 1 out of 10 years, is expected to be 611 acre-feet.

The Finley Dam will be located in the E ½ SE ¼ of Section 1-T112N-R77W on an unnamed tributary to Medicine Creek about 1.0 mile upstream of the confluence of the unnamed tributary and Medicine Creek. There is an existing Water Right, Water Right No. 3562-3, located about one-half mile downstream on the unnamed tributary. Water Right No. 3562-3 is also owned by Jim Finley. At one time it authorized 560 acres of irrigation from three storage dams. The Water License for Water Right No. 3562-3 was reissued in May 2004 to cancel out the irrigation portion of the permit and only authorize storage of 68 acre-feet of water in two dams. Dam No.1 is located below the proposed dam in the NW ¼ of Sec. 6-T112N-R76W and has 52 acre-feet of storage. Dam No.2 is located in the NE ¼ of Sec. 6-T112N-R76W has 16 acre-feet of storage.

Page 2

Application No. 6624-3

June 14, 2005

Conclusions:

1. Water Permit Application No. 6624-3 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. 6624-3.

A handwritten signature in black ink, reading "Timothy G. Schaal". The signature is written in a cursive, flowing style.

Timothy G. Schaal, P.E.

Natural Resources Engineer Specialist



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 6624-3, Jim Finley**

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. 6624-3, Jim Finley, 410 North Hughes Street, Blunt SD 57522.

The Chief Engineer is recommending APPROVAL of Application No. 6624-3 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) it is in the public interest with the following qualifications:

1. Water Permit No. 6624-3 authorizes a dam with a storage capacity of 62.1 acre feet of water and sufficient water annually to maintain the water level to an outlet elevation.
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.

Garland Erbele, Chief Engineer
June 27, 2005

NOTICE OF APPLICATION

NO. 6624-3 to

Appropriate Water

Notice is given that Jim Finley, 410 North Hughes St., Blunt, SD 57522 has filed an application for a water permit to impound 62.10 acre-feet of water from runoff by constructing a dam located in the E 1/2 SE 1/4 Section 1 with water impounded in the E 1/2 SE 1/4, SW 1/4 SE 1/4 Section 1; all in T112N-R77W on an unnamed tributary to Medicine Creek. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation and live-stock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends **APPROVAL** of Application No. 6624-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. 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 July 25, 2005.

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.

Steven M. Pirner
Secretary

Department of Environment

Form 8

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)

County of Hughes) SS

I, Marylinn Baker

certify that the attached printed Notice was taken

from the Capital Journal

printed and published in Pierre

County of Hughes and

state of South Dakota. The notice was published

in the newspaper on the following two dates:

July 6, 2005

July 13, 2005

Cost of Printing 43.12

Marylinn Baker
(Signature)

Bookkeeping
(Title)

7-15-05
(Date Signed)

RECEIVED

JUL 19 2005

**WATER RIGHTS
PROGRAM**



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

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

June 27, 2005

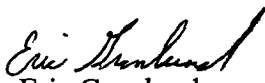
Jim Finley
410 North Hughes St
Blunt SD 57522

Dear Mr. Finley:

Water Permit Application No. 6624-3 for fish & wildlife propagation & livestock water use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Publisher of the Capital Journal printed at Pierre, SD (Ph # 605-224-7301). You will need to contact the newspaper and authorize publication of this notice. 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 and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

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

Instruction to Newspaper - Publish first Notice on July 6, 2005 with the second publication 7 days later. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 6624-3 to Appropriate Water

Notice is given that Jim Finley, 410 North Hughes St, Blunt SD 57522 has filed an application for a water permit to impound 62.10 acre-feet of water from runoff by constructing a dam located in the E ½ SE ¼ Section 1 with water impounded in the E ½ SE ¼, SW ¼ SE ¼ Section 1; all in T112N-R77W on an unnamed tributary to Medicine Creek. This application requests impoundment of sufficient water to maintain water to the outlet elevation. The water is for fish and wildlife propagation and livestock water purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 6624-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. 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 July 25, 2005.

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. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

June 27, 2005

Capital Journal
PO Box 878
Pierre SD 57501

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 6624-3 to Appropriate Water to be published twice. Please publish the first notice on July 6, 2005 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

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 Jim Finley, 410 North Hughes Street, Blunt SD (Ph # 605-962-6242).

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

-----CUT HERE-----

No. 6624-3

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

Date _____

We are in receipt of your letter of June 27, 2005 enclosing Notice to Appropriate Water by Application No. 6624-3 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

JUL 27 2005

Jim Finley
410 N Hughes St
Blunt SD 57522

Dear Mr. Finley:

Enclosed is Water Permit No. 6624-3 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

Permit No. 6624-3
Missouri 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, **November 5, 2009**, made a thorough examination of the water use system constructed by **Jim Finley** of **410 North Hughes St., Blunt, SD 57522** holder of Permit No. **6624-3**, bearing the priority of **May 11, 2005** authorizing the storage of **62.10** acre-feet of the waters of **runoff** for **fish & wildlife propagation and livestock water** purposes, in **Hughes** County.

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

A. Works used to divert the water:

A 21.6 ft. high earthen dam with a normal storage capacity of 62.10 ac-ft of water

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

N/A

C. Works used to apply water to beneficial use:

A 21.6 ft. high earthen dam with a normal storage capacity of 62.10 ac-ft of water

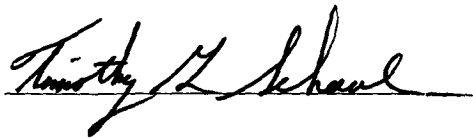
The system is in the following condition **good**. The point of diversion is located **2000 ft. north & 350 ft. west of the SE corner of Sec. 1-T112N-R77W (E ½ SE ¼) (Lat. 44.532785, Long. -100.02829)**. The works are capable of storing **62.1** acre-feet of water which is to be used for **fish & wildlife propagation and livestock water**. Water has been put to beneficial use to the maximum extent as follows:

A 21.6 ft. high earthen dam with a normal storage capacity of 62.10 ac-ft of water

and the license should be issued for **62.10** acre-feet of storage.

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

Exceptions to compliance are: **none** Date Report Completed: **March 5, 2010**



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

REPORT ON INSPECTION OF PERMIT NO. 6624

DATE OF INSPECTION: November 5, 2009

NAME & ADDRESS OF INSPECTION CONTACT/ Jim Finley, 410 North Hughes St. Blunt, SD 57522

RELATIONSHIP TO PERMIT HOLDER, IF APPLICABLE: owner

NAME & ADDRESS OF PERMIT HOLDER: same

DIVERSION POINT LEGAL LOCATION: 2000 ft. north & 350 ft. west of the SE corner of Sec. 1-T112N-R77W (E 1/3 SE 1/4) (Lat. 44.532785, Long. -100.02829)

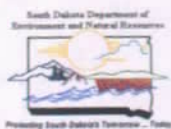
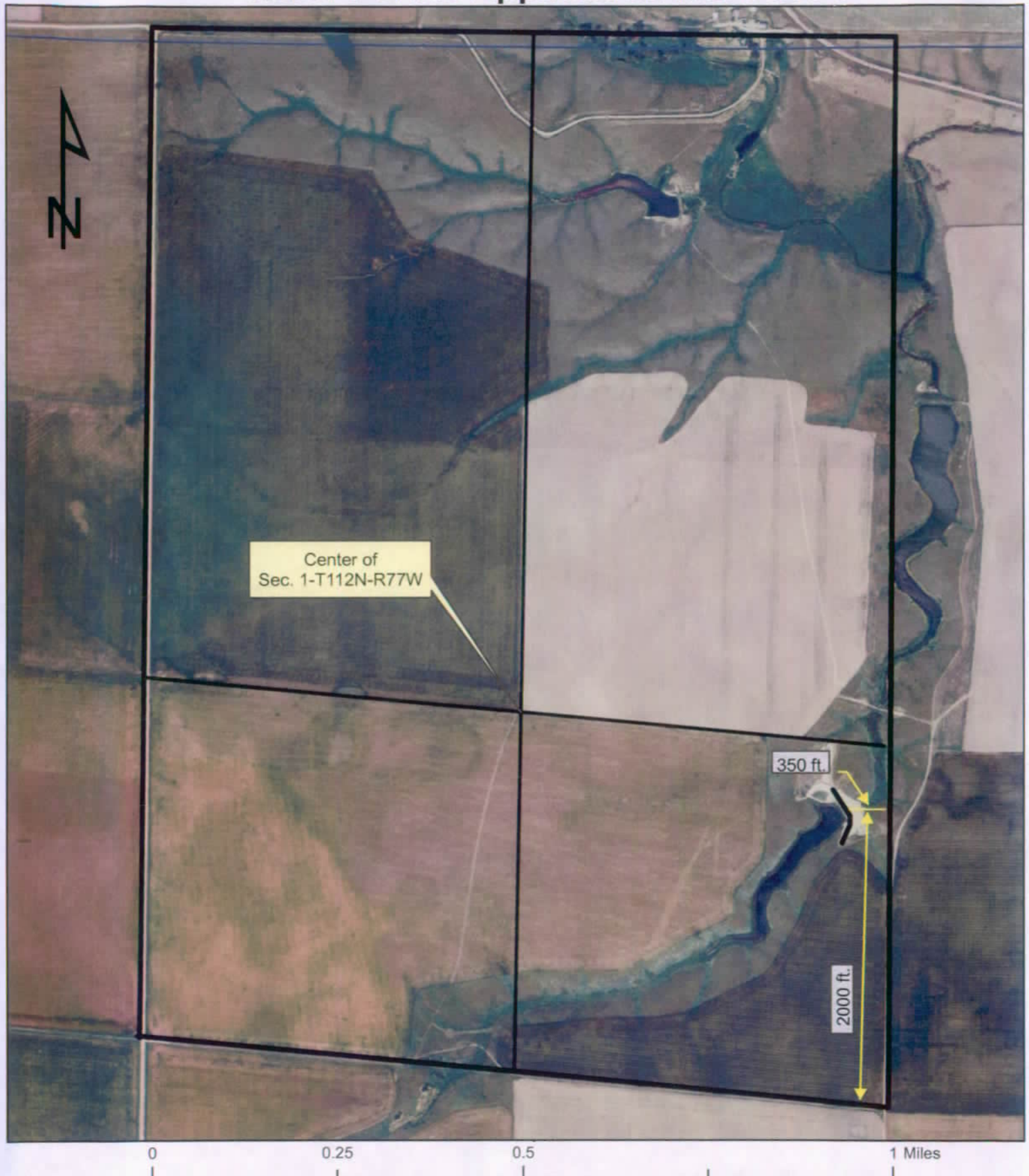
DAM INFORMATION:

- 1) Height to crest 21.6 feet
- 2) Height to primary spillway 16.9 feet
- 3) Height to secondary spillway 19 feet
- 4) Crest width 12 feet
- 5) Crest length 430 feet
- 6) Spillway length XXX feet
- 7) Spillway width 100 feet
- 8) Approx. storage (Normal) 62.1 acre-feet
- 9) Approx. storage (Maximum) 121.76 acre-feet
- 10) Date constructed: 2005

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

Water Permit Application No. 6624-3



Timothy G. Schaal

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

3/5/10



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

APR 23 2010

6624-3

Jim Finley
410 N Hughes St
Blunt SD 57522

Dear Mr. Finley:

Enclosed is your Water License No. 6624-3. Water License No. 6624-3 is the final document which completes the process of obtaining a water right. Included with your license is a map prepared by the staff engineer who conducted the field investigation.

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

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 6624-3

(1) Jim Finley, 410 N Hughes St, Blunt SD 57522 made Application No. 6624-3, May 11, 2005 for a water permit to impound 62.1 acre feet of runoff water by constructing a dam located in Hughes County, South Dakota to be used for fish & wildlife propagation and livestock watering purposes. Permit No. 6624-3, with a priority date of May 11, 2005 was approved July 25, 2005 and issued to the applicant for impoundment of water with construction of the storage dam to be completed on or before July 25, 2010 and for the application to beneficial use of said water on or before July 25, 2014.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the storage dam and is entitled to divert 62.1 acre feet of water with sufficient water annually to maintain the water level to the outlet elevation.

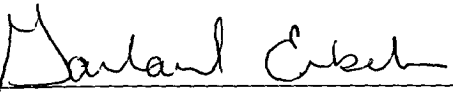
The location of the storage dam (spillway) is 2,000 feet north and 350 feet west of the SE corner of Section 1, T112N, R77W (E ½ SE ¼).

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

(4) Pursuant to South Dakota Water Law 46-5-30.1 Jim Finley, 410 N Hughes St, Blunt SD 57522 the holder and/or owner of Water Right No. 6624-3 is issued a license to appropriate water, the right to impound 62.1 acre feet of runoff water with a priority date of May 11, 2005 from the location specified in (2) of this license for fish & wildlife propagation and livestock watering purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 6624-3 and subject to the following qualifications:

- Water Right No. 6624-3 authorizes a dam with a storage capacity of 62.1 acre feet of water and sufficient water annually to maintain the water level to the outlet elevation.
- 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 23 2010

date

