

Mining and Reclamation Plan
Huntington Canyon No. 4 Mine Permit Application

APPENDIX 4

HUNTINGTON-CLEVELAND IRRIGATION
COMPANY WATER RIGHTS

Scott M. Matheson
Governor



STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110

Alvin E. Rickers, Director
Room 426 801-533-6121

December 16, 1980
533-4207

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS

Community Health Services
Environmental Health
Family Health Services
Health Care Financing
and Standards

OFFICES

Administrative Services
Health Planning and
Policy Development
Medical Examiner
State Health Laboratory

Mr. Jim Voorhees
Beaver Creek Coal Company
P.O. Box A.U.
Price, Utah 84601

Re: 10 GPM Water Treatment Plants
for Beaver Creek Coal Company's
Gordon Creek and Huntington
Canyon Mine Sites

Dear Mr. Voorhees:

On November 13, 1980, we received plans and specifications from Con Tro Flo., Inc. relating to two 10 gpm treatment plants proposed for the Beaver Creek Coal Company at the Gordon Creek and Huntington Canyon Mine Sites. It is our understanding that the primary use of the treated water will be for showering and sanitation purposes and that bottled water would be used for drinking purposes.

The plans and specifications for the proposed plants have been reviewed and found to be in basic compliance with Utah Public Drinking Water Regulations however, before approval can be given the following information must be submitted and found acceptable:

1. Evidence must be submitted that there is a legal right to utilize water from the proposed sources for domestic purposes for each mine site.
2. We apparently have no details regarding the finished water storage tanks at these two mine sites. Therefore, details of these tanks including access openings, vents, overflows, drains, etc., must be provided.

The following comments reflect our review of the plans and specifications submitted by Con Tro-Flo. Inc. relating to the 10 gpm treatment plants.

1. It is assumed that the coating system used on the interior surfaces of the plants will be one of Inemec systems indicated on the information received on December 10, 1980. If a different coating system is to be used then the appropriate approvals will be needed.

December 16, 1980

2. No continuous turbidity monitoring equipment was specified for these plants because the proposed filtration rate was less than 3 gpm/sq. ft. In a proposed change to the Utah Public Drinking Water Regulations, the Safe Drinking Water Committee will require that all treatment plants commencing construction after March 1, 1981 must have continuous turbidity monitoring and recording facilities. It is also proposed that all other plants install and operate such equipment by March 1, 1982. We bring this to your attention so that plans can be made to incorporate this equipment into the system to meet those provisions.
3. Proper protection must be provided at the raw water source to prevent debris from entering the intake structure.
4. Jar testing on representative raw water samples is essential to determine proper chemical dosages.
5. All pipes should be color coded per Section 8.3 of Utah's Public Drinking Water Regulations.
6. Sufficient laboratory equipment must be provided by the owner to assure proper operation and monitoring of the water plants. Appendix H of the Utah Public Drinking Water Regulations lists the required equipment.

If you have any questions or if we may be of assistance, please let us know.

Sincerely,



Michael B. Georgeson, P.E.
Chief, Engineering Section
Bureau of Public Water Supplies

DBB:v1b

cc: Con Tro Flo Co. Inc.
Southeastern District Health Department

Beaver Creek Coal Company
P. O. Box AU
Price, Utah 84501
Telephone 801 637-5050



October 22, 1982

Appendix 4 (continued)

Mr. Michael B. Georgeson, P.E.
Chief, Engineering Section
Bureau of Public Water Supplies
Department of Health
150 West North Temple
P.O. Box 2500
Salt Lake City, UT 84110

Dear Mr. Georgeson:

In early 1981, the water treatment plant designed and fabricated by Con-Tro-Flo Co., Inc., went on-line at our Huntington Canyon #4 Mine. To date, the plant has performed very well. It was installed as per the approval of your bureau in December of 1981. No changes have been made.

The plant was oversized in anticipation of mine expansion in the future. At the 10 GPM design treatment rate, the capability exists to produce 14,400 GPD. Using figures of 35 gallons/employee/day, and 100 employees, 3500 GPD will be required after expansion. There still exists an oversize factor of 4 times. We see no problem in supplying sufficient culinary water to meet our anticipated needs.

Enclosed is information on our water rights, and a copy of the overall system schematic. The "Hardy Coal Company" and "Swisher Coal Co." referred to in the water rights, are predecessors to Beaver Creek Coal Co. It was our recollection that this material had been supplied to you, but in searching our files, we found no documentation.

If you have any questions, please give us a call.

Sincerely,

BEAVER CREEK COAL COMPANY


James S. Voorhees
Senior Mine Engineer

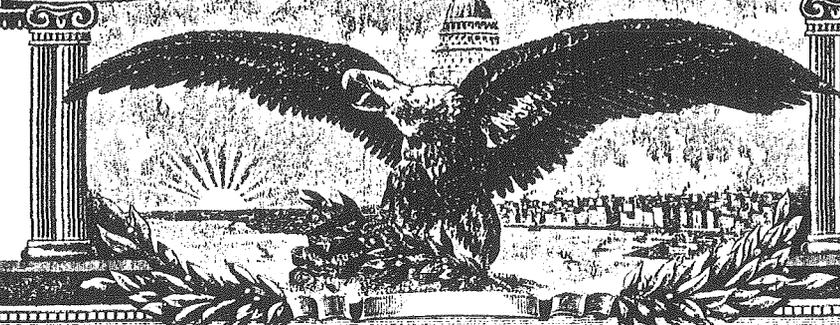
JSV/mp

Enclosures

cc: Day Guy w/o enclosures
Bill Nadauld/Con-Tro-Flo w/o enclosures
File #16-3-4

NUMBER
A-2361

SHARES
300.00



HUNTINGTON-CLEVELAND IRRIGATION COMPANY

HUNTINGTON, UTAH

ORIGINATING CANAL *Cleveland Canal*
SURRENDERED CERTIFICATE NUMBER *A 730*

THIS CERTIFICATE IS ISSUED
ON THE DATE HEREOF TO RE-
PLACE A LOST ORIGINAL CER-
TIFICATE NO. *A 730* FOR
300.00 SHARES ISSUED ON
May 22, 1974

This Certificate that *Beaver Creek Coal Company*

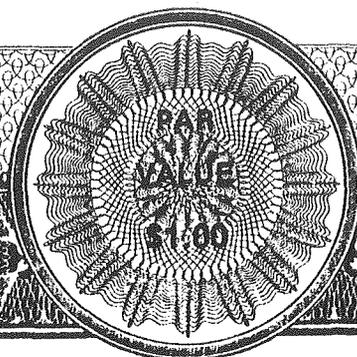
is the owner of *Eight Hundred and* no 100 *Class A* Shares of the Capital Stock of
Huntington-Cleveland Irrigation Company

transferable only on the books of the Corporation by the holder hereof in person or by Attorney upon surrender of this Certificate properly endorsed.

IN WITNESS WHEREOF, *the said Corporation has caused this Certificate to be signed by its duly authorized officers and its Corporate Seal to be hereunto affixed*
this 19th *day of* February *A.D. 19* 86

Wm. H. Spang
Secretary

J. H. Simpson
President



(EXISTING)

AGREEMENT

THIS AGREEMENT entered into on this 24 day of September, 1976, by and between SWISHER COAL COMPANY, a Utah Corporation, and HUNTINGTON CITY, a Municipal Corporation;

W I T N E S S E T H :

THAT WHEREAS, SWISHER COAL COMPANY is undertaking to develop and put into operation a coal mine in Mill Fork Canyon, known as Huntington Canyon #4 Mine, in Emery County, Utah;

AND WHEREAS, HUNTINGTON CITY has received in the past and is now receiving a major portion of its culinary water supply from a spring in Little Bear Canyon in the general proximity of the proposed mining operation;

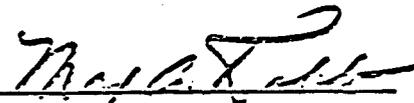
AND WHEREAS, the parties to this Agreement wish to cooperate with each other so as to assure that SWISHER COAL operation will not in any manner result in a loss or diminution of the water supply available to the CITY from the spring, do hereby AGREE and COVENANT between themselves as follows:

1. That SWISHER COAL COMPANY shall immediately initiate a full-scale hydrologic study of all of the area involved in the plan for the mining operation at Huntington Canyon #4 Mine and the area associated with the spring to be done by a professionally acknowledged hydrologic engineering firm employed by SWISHER COAL, and approved by HUNTINGTON CITY, for the purpose of determining the possible consequences to the flow of the spring as the result of the proposed mining operation.
2. That the CITY will maintain a flow meter at the spring site and shall take measurements from the meter on a continuing basis so that any interference with the water supply or diminution in the flow can be readily determined and the flow figures as measured shall be made available to SWISHER COAL COMPANY.
3. That explosives will not be used in the course of normal coal extraction in the Huntington Canyon #4 Mine.

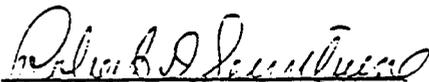
4. That in the event that SWISHER COAL COMPANY should encounter substantial volumes of water which may be contributory to Little Bear Spring as a result of the mining operation in the Huntington Canyon #4 Mine, SWISHER COAL will, within seven (7) days after such encounter, take such action as is necessary to divert the flow of water into the supply system of HUNTINGTON CITY in such a manner that will insure the culinary quality of the water. Upon the failure of SWISHER COAL to undertake such diverting action within the time specified, SWISHER agrees to respond in damages at the rate of ONE THOUSAND (\$1,000.00) DOLLARS per day until such action is taken.

5. In the event that the mining operation diminishes or interferes with the flow of water from the spring, SWISHER COAL COMPANY agrees to obtain water of a culinary quality from some other source and to place it in the culinary water system of HUNTINGTON CITY in such quantity and quality as would replenish the flow that is lost. In the event that mechanical water treatment is required to bring the water up to Utah State's standards for culinary water, the SWISHER COAL COMPANY agrees to reimburse the CITY for the costs of treating this water thru the CITY'S treatment plant as long as the interruption continues.

SWISHER COAL COMPANY

By: 

HUNTINGTON CITY

By: 

A G R E E M E N T

THIS AGREEMENT by and between Huntington-Cleveland Irrigation Company, a corporation, herein referred to as the "Irrigation Company", and Swisher Coal Company, a corporation, herein referred to as the "Coal Company", Witnesseth:

Whereas, the Coal Company is a stockholder in the Irrigation Company and has requested the Irrigation Company to file in its name with the State of Utah, an appropriate application to change the point of diversion, place and nature of use of water to a spring and stream in Mill Fork Canyon for use for coal mining purposes, and,

Whereas, other stockholders in the Irrigation Company, particularly Huntington City and North Emery Culinary Water Users Association, believe that mining operations in Mill Fork may adversely affect the flow of water from a spring or springs used by them or either of them,

Now, therefore, in consideration of the mutual covenants contained herein,

IT IS AGREED:

1. The Irrigation Company will file in behalf of the Coal Company an appropriate change application provided that the coal company shall prepare such application and pay filing fee and other expenses in connection with the processing of it to approval and certification.
2. The Coal Company shall measure by an automatic measuring device all water diverted from Mill Fork Spring and Stream and shall furnish to the Irrigation Company a record of such measurements each month. The measuring device may be inspected and tested by an agent or employee of the Irrigation Company at any reasonable time.
3. The Coal Company to the same extent as may be determined by Irrigation Company with respect to the other shareholders will pay all assessments hereafter levied against its stock in the Irrigation Company, including the general assessments,

and the assessment for operation and maintenance of the canal in which the water has heretofore been carried and any extra assessments for corporate purposes.

4. It is recognized by the parties that the water entitlement represented by a share of stock in the Irrigation Company varies from day to day, month to month, and year to year, and the coal company agrees that the determination of such water entitlement, including losses of water in the irrigation canals, ditches, reservoirs, and other facilities from seepage, evaporation and transportation and other causes, shall be made from time to time by the Irrigation Company, and that such determination shall be binding upon the Coal Company to the same extent that it is binding on other shareholders. If, at any time, the Coal Company should be diverting a quantity of water in excess of its entitlement, it shall forthwith reduce the diversion to the proper flow and quantity and agrees that any excess use of water from any previous period shall reduce its entitlement in any subsequent period within the time frame of one water year.

5. If the Coal Company should, by its mining operations, intercept and collect in its tunnels, shafts and other workings any appreciable amount of underground water, it shall promptly notify the Irrigation Company; and it shall be presumed that such water is tributary to Huntington Creek and cannot be used by the Coal Company unless approval is obtained from the Irrigation Company. Any amount of such water which is not so lawfully used by the Coal Company shall either be released to Huntington Creek or shall be replaced in equal quantity and quality at the expense of the Coal Company in a manner approved by the Irrigation Company. Agents and representatives of the Irrigation Company shall have the right, at any reasonable time, to inspect the mine and any waters intercepted therein. The Coal Company agrees to furnish to the Irrigation Company within 30 days after flowing water is encountered in its mining operations, a map showing the location or locations of water interceptions.

6. In the event that the mining operation should diminish or interfere with the flow of water from any spring being utilized as a source of culinary water by any stockholder of the Irrigation Company, the Coal Company agrees to obtain water of a culinary quality from some other source and to place it in the culinary water system of the Irrigation Company in such quantity and quality as would replenish the flow that is lost. In the event that mechanical water treatment is required to bring the water up to Utah State's standards for culinary water, the Coal Company agrees to reimburse the Irrigation Company for the costs of treating this water through a treatment plant as long as the interruption continues.

7. The provisions of this Agreement create rights and obligations in favor of and binding upon Irrigation Company and Coal Company but this Agreement neither creates nor abridges any right of action on the part of any shareholder of Irrigation Company.

8. This Agreement shall be effective from the date hereof and during such time as the Coal Company mines coal in Mill Fork Canyon. It shall be binding on the successors and assigns of the parties.

Dated this 8 day of Dec., 1976.

HUNTINGTON-CLEVELAND IRRIGATION CO.

By Walter M. Spring
President

SWISHER COAL COMPANY

By J. A. C. Kobb
President

WITNESS:

J. Donald Little

ANACONDA Minerals Company
555 Seventeenth Street
P.O. Box 5300
Denver, Colorado 80217
Telephone 303 293 4000



Domestic Land Acquisitions

March 1, 1984

Mar Grange
Huntington-Cleveland Irrigation Company
Box 327
Huntington, UT 84528

RE: Beaver Creek Coal Company
Water Rights

Dear Mr. Grange:

I would appreciate your assistance in getting the ownership of record changed on water rights previously owned by Hardy Coal Company and Swisher Coal Company, now owned by (Beaver Creek Coal Company) Atlantic Richfield Company.

By purchase agreement dated October 22, 1979 Atlantic Richfield Company acquired Swisher Coal Company from General Exploration Company. I have attached a copy of exhibit A to that Purchase Agreement listing the water rights conveyed. Included therein is all stock owned in the Huntington-Cleveland Irrigation Company referenced in an agreement between Huntington-Cleveland Irrigation Company and Swisher Coal Company dated December 8, 1976.

I do not have a copy of the agreement referenced and would appreciate your providing a copy if you have one.

I believe, that included in the above transfer was certificate No. A-730 for 800 shares of Class A Stock to Hardy Coal Company (a copy of which is enclosed). The ownership of the Hardy Coal Company shares must have been transferred to Swisher Coal Company as it is referenced in the Application for Temporary Change of Point of Diversion dated December 14, 1976 copy of which is also attached.

I am also attaching documentation which will show the transfer of ownership from Swisher to GEX to Beaver Creek Coal Company and to Atlantic Richfield Company.

When we discussed this matter on the phone you mentioned that a lost instrument bond would be needed. However, I am still unsure as to the number of shares involved. If you could provide me with a listing we can provide a bond to cover them.

New certificates should be issued to Atlantic Richfield Company for all the rights.

If you need additional information, or if there are any fees for the transfer, please call me collect at (303) 293-7560.

Page 2
Beaver Creek Coal Company
Water Rights
March 1, 1984

I would appreciate any assistance you might be able to give in expediting this matter as we are currently in the process of getting our permits for mining, and the ownership needs to be reflected correctly on local records.

Very truly yours,



Paula A. King
Landman

PAK/gld
Enclosures

cc: B. L. Bertoli
D. Guy, BCCC
J. A. Herickhoff, BCCC

Mining and Reclamation Plan
Huntington Canyon No. 4 Mine Permit Application

APPENDIX 5
APPROVED SEWAGE DISPOSAL
SYSTEM

September 3, 1982

BEAVER CREEK COAL COMPANY
WASTE WATER DISPOSAL SYSTEM
HUNTINGTON CANYON #4 MINE



WASTE WATER DISPOSAL SYSTEM
PLAN FOR CONSTRUCTION AND MAINTENANCE

GENERAL DESCRIPTION

Beaver Creek Coal Company is expanding its surface facilities at the Huntington Canyon #4 Mine site. The mine is located in Section 16, Township 16 South, Range 7 East, in Emery County, Utah, approximately 36 miles southwest of Price.

This submittal covers the complete design of a waste disposal addition to the existing system.

WASTE WATER DISPOSAL SYSTEM SPECIFICATIONS

DESIGN PARAMETERS

- 1) Bathhouse facilities will include toilets, sinks and showers.
- 2) Facilities redesigned for a maximum of 100 persons per day.
- 3) Disposal system designed for 35 gallons per person per day. (Based on Workers at Factories, Table V-2, Part V of Code of Waste Disposal Systems.)
- 4) Allowable rate of application is 1.0 gallons per square foot of sidewall per day.
- 5) Design is based to comply with Utah State Division of Health, Code of Waste Disposal Regulations, Part V, Small Underground Waste Water Disposal Systems.
- 6) Design is certified by a Registered Professional Engineer, State of Utah.

DESIGN

The system proposed is a septic tank/drainfield type, using proven and approved materials and techniques. It will consist of a waste water discharge line, septic tank and absorption trenches.

LOCATION AND INSTALLATION

Location and installation of the system will be such that with reasonable maintenance it will function in a sanitary manner and will not create a nuisance, health hazard or endanger the quality of any waters in the State. The location of the entire system is shown on the attached map.

CONSTRUCTION MATERIALS

All materials used in the construction of the system shall be durable, sound and not unduly subject to corrosion. Pipe, pipe fittings and similar materials shall comply with the Utah Plumbing Code.

WASTE WATER DRAINAGE LINE

This line will convey waste water from the bathhouse facilities to the septic tank. The following criteria shall be followed for installation of this line:

- 1) It shall be of suitable, approved material and have water-tight and root-proof joints.
- 2) It will have an inside diameter of four (4) inches and be laid on a minimum grade of 15 inches per 100 feet.
- 3) Clean-outs will be installed every 50 feet and at every change of direction, and will be constructed of two (2) 45° bends with clean-out.
- 4) Lines will not be closer than ten (10) feet horizontally to any water service pipes.

WASTE WATER QUANTITY ESTIMATES

Estimates have been based on Table V-2 "Estimated Quantity of Domestic Waste Water" Part V, Underground Waste Water Disposal Systems. The value from the table used is 35 gallons per person per day for workers at factories. The disposal system is being re-designed for a maximum of 100 people capacity. Total daily waste water at maximum would be:

$$100 \text{ persons} \times 35 \text{ gallons/person/day} = 3500 \text{ gallon/day}$$

SEPTIC TANK

The septic tank shall be constructed of durable materials which will resist both physical forces and corrosive reactions, and designed so that it will provide settling of solids, accumulation of sludge and scum, and proper access for cleaning.

The septic tank proposed here is of a standard approved concrete type, sold commercially under the name "Dura-Crete". The tank will meet all requirements of Sections V-13 through V-21 of Part V, Small Underground Waste Water Disposal Systems. A detailed drawing of the proposed tank is included.

The tank sizing is based on the requirements of Section V-15c for waste waters flowing greater than 1500 gallons per day.

$$V = 1125 + (0.75)(Q)$$

Where "Q" is 3500 GPD

$$V = 1125 + (0.75)(3500) = 3750 \text{ gallon/day}$$

A new 2500-gallon septic tank, in addition to the existing 2500-gallon tank is proposed for this installation.

Existing Tank	2,500 gallons
Proposed Addition	2,500 gallons
Total Tank Capacity	<u>5,000 gallons</u>
(Excess Capacity	1,250 gallons)

DISCHARGE LINES

The effluent from the septic tank will be conducted to the absorption field through a water-tight line meeting the requirements for house sewers.

Tank outlet inverts will be at least one (1) inch below the inlet invert.

ABSORPTION FIELD

- 1) Soil Exploration: The attached copy of Seepage Pit Construction Certificate by Gerald C. Story shows 0 to 10' of sandy loam or sandy clay soil. Also, attached is a field soil texture test certificate conducted by David R. Chenoweth (Soil Scientist) which shows a sandy loam soil in the proposed expansion area.
- 2) Installation: The field is to be placed level with all trenches interconnected.
- 3) Sizing: The allowable rate of application of waste water for a gravel-sand-clay soil mixture is 1.0 gallon per square foot of sidewall per day. Based on this rate, a minimum of 3500 square feet of absorption field area is needed for the expected waste water discharge of 3500 gallons per day. The total seepage area in the existing sewage disposal system is 2912 square feet. The proposed additional field will consist of two (2) trenches, two (2) feet in width and 155 feet in total length, separated by 20 feet of undisturbed soil, wall-to-wall. This will provide a combined total absorption area of 5110 square feet. This will provide an absorption area of 1610 square feet in excess of that required.
- 4) Criteria: The absorption field will consist of gravel-filled trenches provided with perforated pipes to distribute septic tank effluent over the absorption field, from which it will percolate through the trench walls and bottom into the surrounding subsurface soil.
 - a) The portion of trenches below distribution lines shall be in natural or acceptable stabilized soil.

- b) The proposed system shall be level with all trench bottoms constructed at the same elevation. All distribution lines and trenches will be level and interconnected.
- c) Effluent distribution lines will be four (4) inches in diameter, perforated pipe of suitable material.
- d) Gravel-fill in the trench bottoms will be 1/2-inch by 2-1/2-inch drain rock and will completely encase the perforated distribution lines. The gravel will be covered with untreated building paper or straw prior to backfilling.

PARKING AREA

Due to the small confined area for surface facilities and parking, we propose to make an over-flow parking area on top of our absorption field. Because of this parking area, the absorption field has been purposely over-designed in size. With the type of soil and depth of the absorption trenches, we feel that the proposed parking area can be constructed and used without any impact on the system or endangering the quality of any waters of the State.

STATE OF UTAH
 DEPARTMENT OF HEALTH
~~45 ft. Douglas Blvd.~~
 Salt Lake City, Utah

INDIVIDUAL SEWAGE DISPOSAL SYSTEM INSPECTION REPORT

Property Address Huntington Canyon County Emery County

Owner Swisher Coal City County Area

Contractor Minchey Digging Case No. _____

Number of Bedrooms ^{Men} 40 Basement No Seepage Test loam Soil

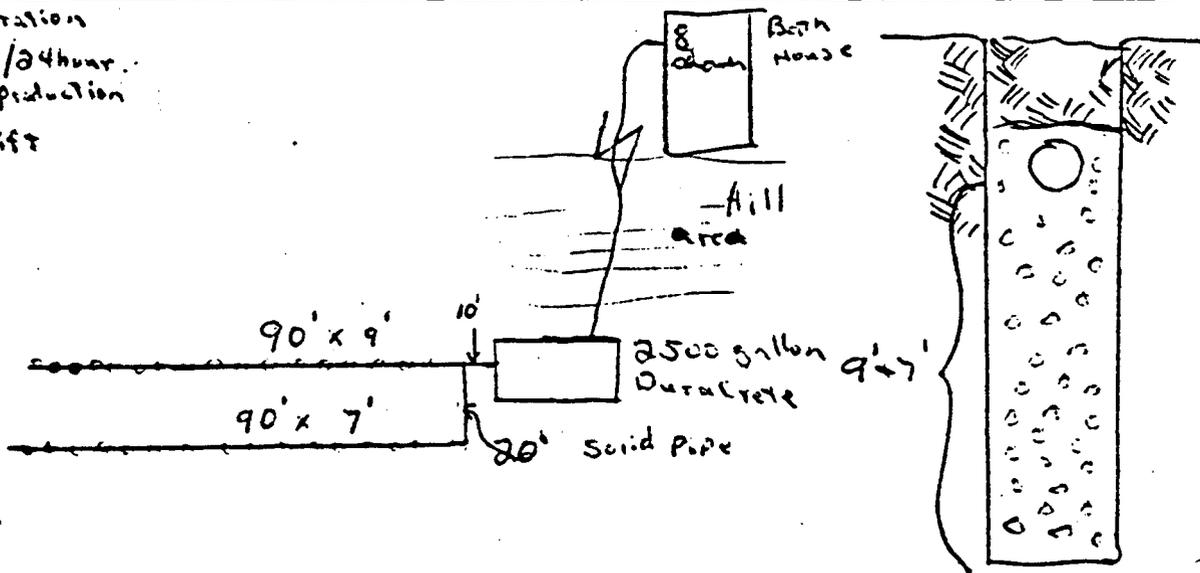
Required Seepage Area 2500 Sq. Ft.

Water Supply: Public Private

Septic Tank Tile Disposal Field Seepage Pit

Sketch of Units:

Shuter reports operation
 20 men per Section/24hour.
 Operation 80% men/production
 crew each 8hour Shift



rain field installed on flat area

Total Seepage Area = 2912 sq ft

Existing Installation

Date of Final Inspection October 1976 Approved Rejected

Give reasons for rejection _____

Remarks: installation CONSULT FINANCING AGENCY PRIOR TO BACKFILL

Authority Section I-1 (v)
 Utah Code Waste Disposal Reg.

Herald C. Story
 Sanitarian

SEEPAGE PIT CONSTRUCTION CERTIFICATE

I certify that the seepage pit provided for effluent disposal on property located at Swisher Coal Co # 4 Mine
Huntington Canyon Emery County Utah

has a diameter of _____ and a total depth of 9 feet and has been constructed in accordance with the requirements specified in "Individual Sewage Disposal System Regulations" promulgated by the Utah State Division of Health.

I further certify that soil structure, as determined during excavation of the pit, is as follows (measurements from ground surface):

Heavy tight clay, hard pan, rock and other impervious formations	from to	Total thickness _____
Clay with small amount of gravel	from to	Total thickness _____
Clay with considerable amount of gravel	from to	Total thickness _____
Sandy loam or sandy clay	from <u>0</u> to <u>10'</u>	Total thickness <u>10'</u>
Fine sand	from to	Total thickness _____
Coarse sand or gravel	from to	Total thickness _____

Seepage pit inlet is 2 feet below ground surface.

Signed Gerald C. Story
(Name of Builder)

Address Box 800

Date October 1976

Price Utah

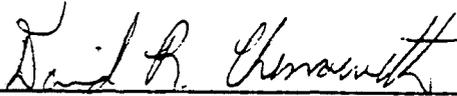
Table 7

Seepage Trench
Minimum Absorption Area Requirements and
Allowable Rate of Application of Wastewater
(Based on Soil Descriptions)^{(a) (b)}

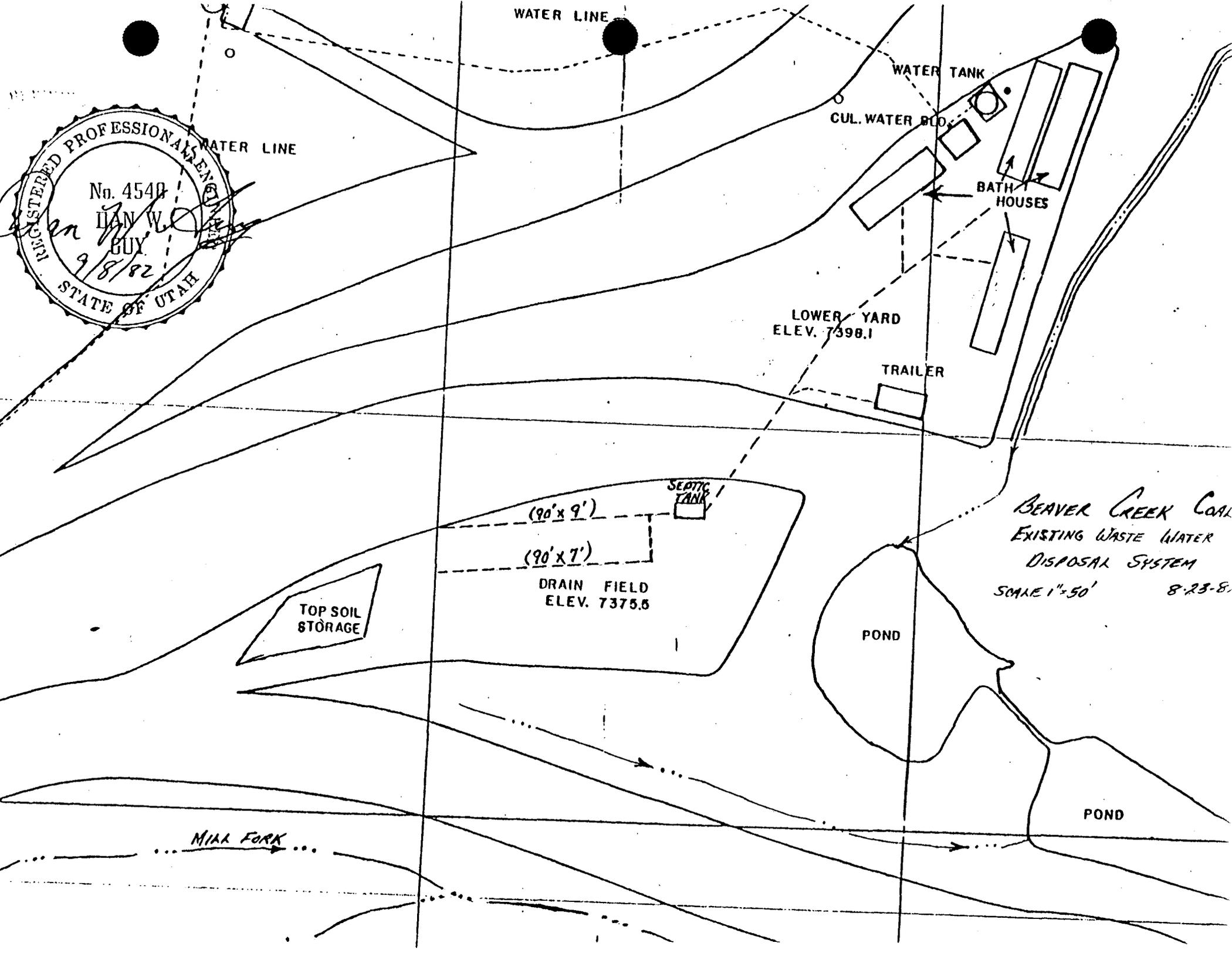
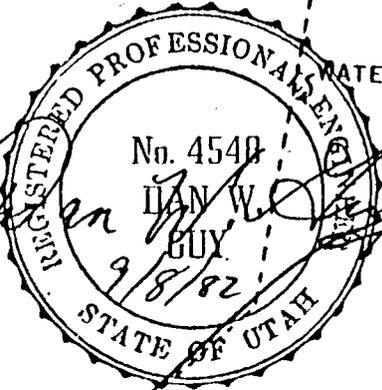
Symbol and Character of Soil by Uniform Classification System	Residential Sq. ft. of sidewall area required per bedroom (c) (d)	Commercial, Institutional, etc. Maximum rate of applica- tion in gallons per sq. ft. sidewall per day ^(e)
GW Well graded gravels, gravel-sand mix- tures, little or no fines-----	50 ^(f)	4.0 ^(f)
GP Poorly graded gravels or gravel-sand mixtures, little or no fines-----	50 ^(f)	4.0 ^(f)
SW Well graded sands, gravelly sand, little or no fines-----	75 ^(f)	2.67 ^(f)
SP Poorly graded sands or gravelly sands, little or no fines-----	75 ^(f)	2.67 ^(f)
SM Silty sand, sand-silt mixtures-----	125	1.6
GC Clayey gravels, gravel-sand-clay mixtures-----	200	1.0
SC Clayey sands, sand-clay mixtures-----	200	1.0
ML Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity----	400 ^(f)	.5 ^(f)
CL Inorganic clays of low to medium plas- ticity, gravelly clays, sandy clays, silty clays, lean clays-----	450 ^(f)	.4 ^(f)
OL Organic silts and organic silty clays of low plasticity-----	(g)	(g)
MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts--	(g)	(g)
CH Inorganic clays of high plasticity, fat clays-----	(g)	(g)
OH Organic clays of medium to high plasticity, organic silts-----	(g)	(g)
PT Peat and other highly organic silts-----	(g)	(g)

Field Check of Soil Texture Within Drainage Field - Huntington Canyon
No. 4 Mine

At the request of Dan Guy, on August 10 I conducted a hand texture test of soil within the proposed expansion area for the sewage leach field at Huntington Canyon No. 4 Mine. The results of my field test indicate that the soil texture is a sandy loam. Additionally, I estimated that the soil contained approximately 70% sand particles and 15% coarse fragments (greater than 2.0 mm). Due to the high amount of sand particles and coarse fragments, I feel this particular soil would have a high percolation rate when compared to other soils with heavier (more clay) textures.



David R. Chenoweth
Soil Scientist



WATER TANK
CUL. WATER BLD.
BATH HOUSES
LOWER YARD
ELEV. 7398.1
TRAILER

SEPTIC TANK
(90' x 9')
(90' x 7')
DRAIN FIELD
ELEV. 7375.8

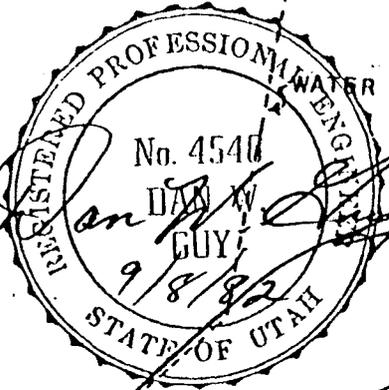
TOP SOIL STORAGE

BEAVER CREEK COAL
EXISTING WASTE WATER
DISPOSAL SYSTEM
SCALE 1" = 50'
8-23-82

POND

POND

MILL FORK



WATER LINE

WATER LINE

WATER TANK

CUL. WATER BOD.

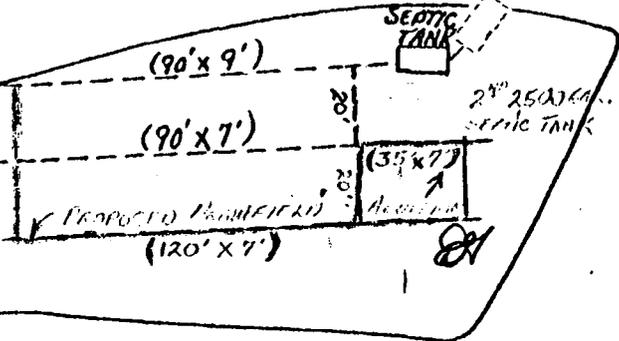
BATH HOUSES

LOWER YARD
ELEV. 7398.1

TRAILER

BEAVER CREEK COAL
PROPOSED DRAINFIELD
ADDITION
SCALE 1"=50' 8-23-82

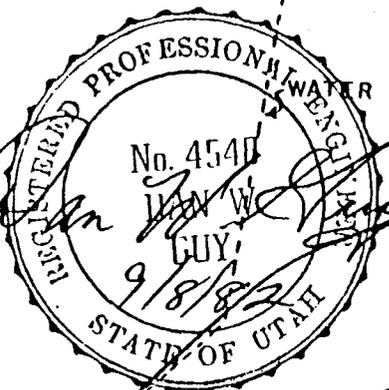
TOP SOIL
STORAGE



POND

POND

MILL FORK



WATER LINE

WATER LINE

WATER TANK

CUL. WATER DUCT

BATH HOUSES

LOWER YARD
ELEV. 7398.1

TRAILER

STEPS TO
BATH HOUSE LEVEL

BEAVER CREEK COAL
PROPOSED SURFACE
ADDITIONS

SCALE 1"=50' 8-23-82

TOP SOIL
STORAGE

BERM

OVER-FLOW
PARKING
AREA

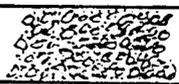
POND

POND

MILL FORK

BEAVER CREEK COAL CO.
HUNTINGTON CYN. #4 MINE

OVER-FLOW PARKING AREA.



(1" MAX GRAVEL) BASE

NATIVE FILL

GRAVEL-SAND-CLAY MIXTURES
(1.0 GAL/SQ. FT. MAX.
RATE OF APPLICATION)

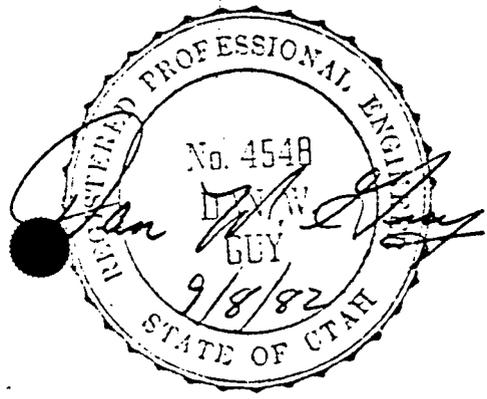
1/2" x 2 1/2"
DRAIN ROCK

STRAW?

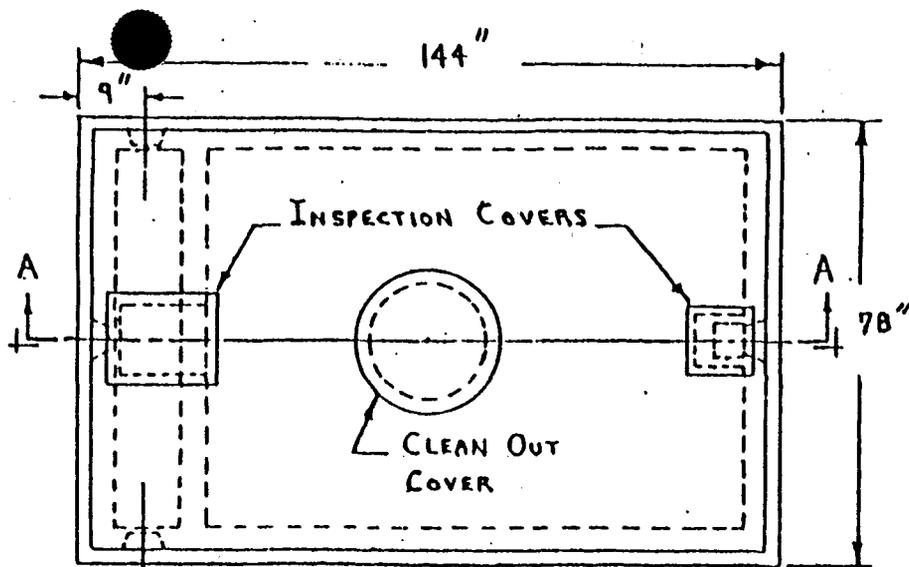
4" PERF PIPE

7'

2'

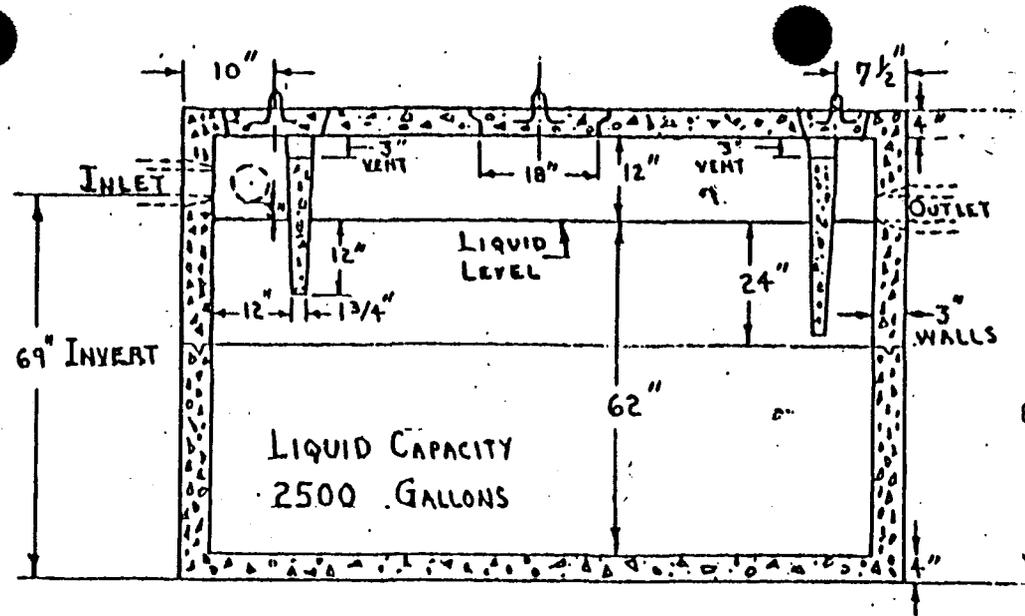


TRENCH DETAIL
SCALE 3/4" = 1' 9-3-82



ALT. INLET
KNOCKOUTS 3 PLACES

TOP VIEW



SECTION A-A

NOTE:

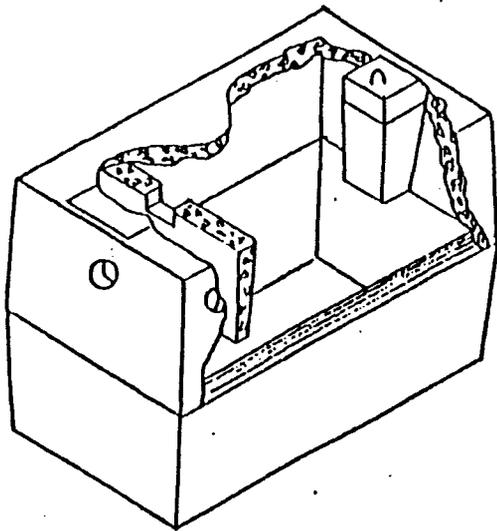
CAPACITY - 2500 GALLONS

WEIGHT - 28000 POUNDS

EXCAVATION DIMENSIONS - 9' X 15'

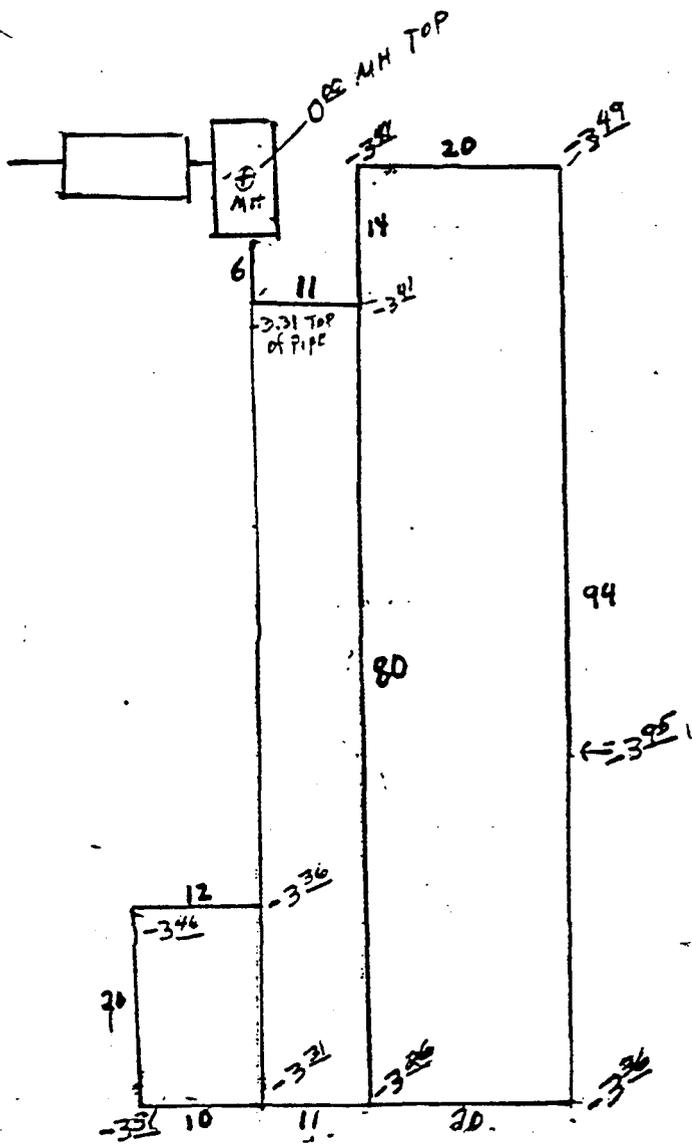
FLOW LINE - 5'-9"

SEALED WITH ASPHALT ROPE AND REINFORCED
WITH 4" X 4" - 4 X 4 WELDED FABRIC



CUTAWAY ISOMETRIC

2500 GALLON - TWO PEICE SEPTIC TANK		
SCALE: NONE	APPROVED BY:	DRAWN BY:
DATE: 4-29-74		REVISED:
DURA - CRETE, INC.		
1475 W. 3500 S.		SALT LAKE CITY, UTAH
PHONE NO. 262-1140		DRAWING NUMBER:



372 TOTAL PIT

MIKE HEKIMER
 PO BOX 644
 Carlsbad 84513

APPROVAL NOTICE

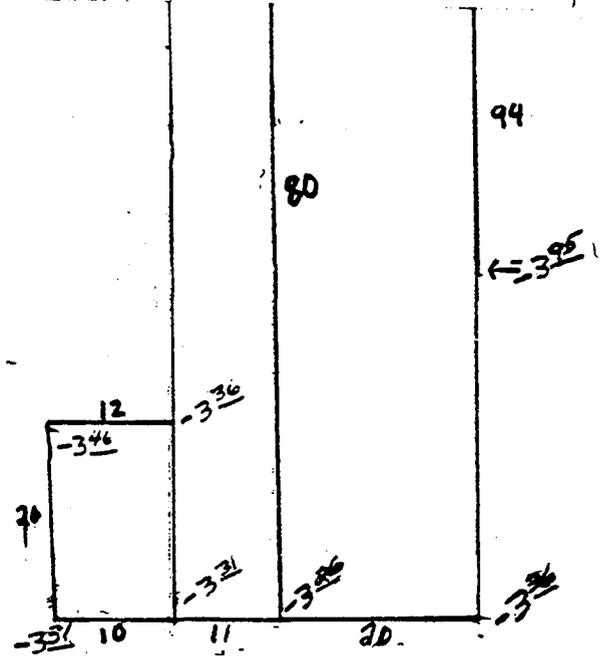
Name of Owner Brewer Creek Coal Co #4 Mine

Location Huntington Canyon

Contractor Welch Contractors Inc

A final onsite inspection of your wastewater disposal system has been conducted by the health department and approval is hereby given for backfill.

Sanitarian Michael N. Herkimer Date Nov. 22, 1982



372 TOTAL PIT

MIKE HERKIMER
PO Box 644
Curtisville 84513

Mining and Reclamation Plan
Huntington Canyon No. 4 Mine Permit Application

APPENDIX 6

U.S.F.S. Special Use Permits/Specifications
on
Mill Fork Road

3/15/84

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Manti-LaSal National Forest
599 West Price River Drive
Price, Utah 84501

2820
7730

August 31, 1982



Mr. Tom Parker
ARCO Coal Company
1109 South Carbon Avenue
Price, Utah 84501

Dear Mr. Parker:

Enclosed is the approved Road-Use Permit for Forest Development
Road No. 50245 to your No. 4 mine.

Sincerely,

W H Bailey
for
REED C. CHRISTENSEN
Forest Supervisor

Enclosure

ROAD USE PERMIT
(re: FSM 7344)

Authority:

Acts of 6/30/14, 4/24/50, 6/12/60,
10/14/64, and 10/21/76 (16 USC 498,
572, 530, and 532-38; and 43 USC 1702,
1761, 1764, and 1765).

~~LEAVIER CREEK~~ ^{THS} ~~ARCO~~ Coal Company
(Name)

of

1109 South Carbon Avenue
Price, Utah 84501
(Address and ZIP Code)

(hereafter called the permittee) is hereby granted use of the following road(s) or road segments: (See map attached) That segment of Mill Fork Canyon Road, No. 50245, from its intersection with State 31 to the Forest boundary located between Sections 16 and 21, T16S, R7E, SLBM, a distance of approximately 1.3 miles.

on the Manti-LaSal National Forest, subject to the provisions of this permit, including clauses 1 through 13, on page(s) 1 through 3 for the purpose of hauling coal from their No. 4 Mine and transporting supplies, equipment, and personnel to and from said mine.

The exercise of any of the privileges granted in this permit constitutes acceptance of all the conditions of the permit.

1. Compliance with Laws, Regulations, and Rules Governing Use. The permittee, in exercising the privileges granted by this permit, shall comply with the regulations of the Department of Agriculture and all Federal, State, County, and Municipal laws, ordinances, or regulations which are applicable to the area or operations covered by this permit. The permittee, its agents, employees, contractors, employees of contractors, and guests of the permittee shall comply with the rules and regulations prescribed by the Forest Service for the control and safety in the use of the road and to avoid damage to the road. Such rules and regulations shall include:
 - a. Closing the road or restricting the use when required by any government agency which, by law, has jurisdiction to authorize such closing or restrictions.
 - b. Upon reasonable notice closing the road during periods when, in Forest Service judgment, there is extraordinary fire or avalanche danger.
 - c. Traffic controls which, in the judgment of the Forest Service, are required for the safe and effective use of the road by authorized users thereof.

This permit is accepted subject to all of its terms and conditions.

ACCEPTED	Permittee (Name and Signature) <i>Thomas H. Parker</i>	Date <i>25 Aug 1982</i>
APPROVED	Issuing Officer (Name and Signature) Title <i>W H Bailey</i>	Date <i>9/1/82</i>

- d. The permittee shall not use chemical poison, as defined in Section 2 of the Federal Insecticide, Fungicide, and Rodenticide Act of June 25, 1945, as amended (61 Stat. 163; 73 Stat. 286; 75 Stat. 18; 75 Stat. 190), or any chemical or other road surface treatment without the approval of the Regional Forester or his designated representative. The application for approval shall be in writing and shall specify the area to be treated, the material used in the treatment, and the time, rate, and method of application.
2. Use Nonexclusive. The privileges granted in this road use permit, including use when the road is closed to public use, is not exclusive. The Forest Service may use the road and authorize others to use the road at any and all times. The permittee shall use the road in such a manner as will not unreasonably or unnecessarily interfere with the use thereof, by other authorized persons including the Forest Service.
3. Use Plans. Prior to use each year this permit is in effect, the permittee shall notify the District Ranger Ira W. Hatch 10 S. Carbon Ave., Price, Utah 84501, telephone No. 801- 637-2817 in writing of the date and approximate time when such use will commence; the anticipated duration of such use, the names and addresses of permittee's contractors or agents who will use the road on behalf of the permittee, the estimated extent of use, purpose of use, and such other information relative to permittee's anticipated use as the Forest Service may from time to time reasonably request. When there is a significant change in use by the permittee, it is the permittee's responsibility to promptly notify the District Ranger in writing. Plans and changes will be approved by the Forest Supervisor before use may commence.

Operation of equipment is not desirable on these roads when wet surface or saturated subgrade conditions would cause excessive damage. ~~A sustained winter operation is prohibited, and snow removal is to be done only on an emergency basis unless specifically approved in the annual use plan, or as a provision of this permit.~~ ^{EWTH} _{WS} Where emergency access by the permittee is required during periods when excessive damage will occur, the permittee will promptly repair the damage.

4. Maintenance. The permittee shall bear the expense of maintenance proportionate to his use. This expense will be borne by the permittee, its agents, operators, and/or contractors. The Forest Service will, upon request of the permittee, make a determination of the proportionate road use and resulting road maintenance responsibilities and assign the maintenance accordingly.

Where road maintenance standards required by the permittee are above those required by the Forest Service, the permittee shall bear the total incremental cost of maintaining the road to the higher standard.

Maintenance shall be performed in accordance with Forest Service specifications or requirements for maintenance as hereinafter listed, or as may be mutually agreed upon from time to time and shall consist of (1) current

maintenance as necessary to preserve, repair, and protect the roadbed, surface and all structures and appurtenances, and (2) resurfacing equivalent in extent to the wear and loss of surfacing caused by operations authorized by this permit.

- a. Maintenance and Resurfacing Requirements and Specifications. Exhibit I, attached, specifies these requirements and shall be adhered to.
5. Fire Prevention and Suppression. The permittee shall take all reasonable precautions to prevent and suppress Forest fires. No material shall be disposed of by burning in open fires during the closed fire season established by law or regulation, without a written permit from the Forest Service.
6. Damages. The permittee shall exercise diligence in protecting from damage the land and property of the United States covered by and used in connection with this permit, and promptly upon demand shall pay the United States for any damage resulting from negligence, or from violation of the terms of this permit or of any law or regulation applicable to the National Forests, by the permittee, or by his agents, contractors, or employees of the permittee acting within the scope of their agency, contract, or employment.
7. Officials Not to Benefit. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise herefrom unless it is made with a corporation for its general benefit.
8. Outstanding Rights. This permit is subject to all outstanding rights.
9. Suspension. Upon the failure of the permittee, its agents, employees or contractors to comply with any of the requirements of this permit, the officer issuing the permit may suspend operations in pursuance of this permit.
10. Termination. This permit shall terminate on January 1, 1986 unless extended in writing by the Forest Service. It may be terminated upon breach of any conditions herein.
11. The Environmental Assessment Report developed for this project shall be made a part of this permit. This permit is subject to the guidelines, requirements and constraints developed in that report.
12. Traffic Operations. The permittee may install a guard shack on Forest land adjacent to road #50245 near the lower loadout facility. The purpose of the guard shack shall be to provide protection of the guard person from the elements. The activities of a guard may be to administer use of the road in an attempt to discourage theft and vandalism from the mine. The purpose of the guard shall not be to prevent the public from use of the road. The appearance and size of the guard shack shall be as mutually agreed to between District Ranger Ira Hatch and the permittee.

MAINTENANCE REQUIREMENTS

EXHIBIT I

Road Maintenance. Road maintenance is defined as the performance of work on the entire road facility commensurate with Permittee's use. This work consists of restoration and preservation of surface, shoulders, roadsides, structures, drainage, sight distance, and such traffic control devices as are necessary for prevention of excessive erosion damage to the facility and adjacent lands.

- I. Description. Maintenance work to be done currently during the periods of use by the Permittee shall include:
 - A. Removal of slides and boulders, which obstruct safe sight distance.
 - B. Adequate blading and shaping of roadway surfaces and ditches to maintain the original cross sections.
 - C. Removal of earth and debris from ditches and culverts so that the drainage systems will function efficiently at all times.
 - D. Prevention of excessive dusting of road surface materials.
 - E. Repair of damages to fences, cattleguards, culverts, and other roadway structures including traffic regulatory and directional signs.
 - F. Restoration of eroded fills and repair and protection of shoulder berms, berm outlets, stabilized waterways, vegetated slopes, and other erosion control features.
 - G. Removal of snow from roadway surface.
 - H. Replacement of roadway and/or surfacing material worn out and lost through use of the roadway.
 - I. Maintenance and erection of signs to warn the public of hauling operations.
- II. Performance. All items of maintenance work shall be done currently as necessary to insure safe, efficient transportation and to protect roads, streams, and adjacent lands from excessive damage. Work shall be done in accordance with the following minimum standards of performance:
 - A. Removal of Material. Earth, rocks, trees, brush, and debris removed from roadways and ditches shall not be deposited in stream channels or upon slope stabilization and erosion control features.

- B. During roadway blading and shaping operations, banks shall not be undercut nor shall gravel or other selected surfacing material be bladed off the roadway surface. The original crown or slope of the road shall be preserved. Mud, debris, and oversize material shall be deposited outside the roadway by hand or by careful blading, and these materials shall not be mixed with the road surfacing material.
- C. Ditches, culverts, drop inlets, trash racks, downspouts, and splatter structures shall be kept clear of earth, slash, and other debris so that drainage systems will function efficiently during, and immediately following, periods of road use by Permittees. This includes correcting and eliminating causes of erosion or plugging of the structure, and actual repair of the structure and riprap if damaged.
- D. Fugitive dust shall be controlled to prevent hazardous driving conditions or loss of road surface or binder material. The Permittee shall control such dusting by sprinkling, or other approved surface treatments.
- E. Permittee shall promptly repair all damages, caused by the Permittee's operations, to the road surface or to any structures in or adjacent to the roadways.
- F. Any washing or settling of roadway fills shall be corrected promptly to prevent additional soil erosion or roadway damage. Shoulder berms, berm outlets, and stabilized waterways shall be protected during road maintenance operations and, if damaged, such structures shall be promptly restored to their original condition including repair and reseedling of vegetation established to control slope erosion. No earth, rocks, or other debris shall be deposited upon any roadside slope stabilization structure or feature.
- G. Snow Removal
 - 1. Requirements
 - a. Sanding of hazardous areas shall be with sand. Coal dust or salt are not to be used.
 - b. Equipment - The equipment should be in sound operating condition, be equipped with angle blade or adequate grousers or traction tires, and be operated by a fully qualified operator.

c. Removal

Width - Snow will be removed to the full width of the road plus any turnouts and ditch lines. Through-cuts will be allowed only after snow depths exceed the height of the cab or across flat ground. Disposal shall always be to the outside or downhill side of the road.

Outlets - Outlets for surface runoff shall be placed in all snow through-cuts at points where water can flow off the road surface at the following intervals:

- 8% or less grades - 500 feet center to center minimum.
- 8% and up grades - 300 feet center to center minimum.

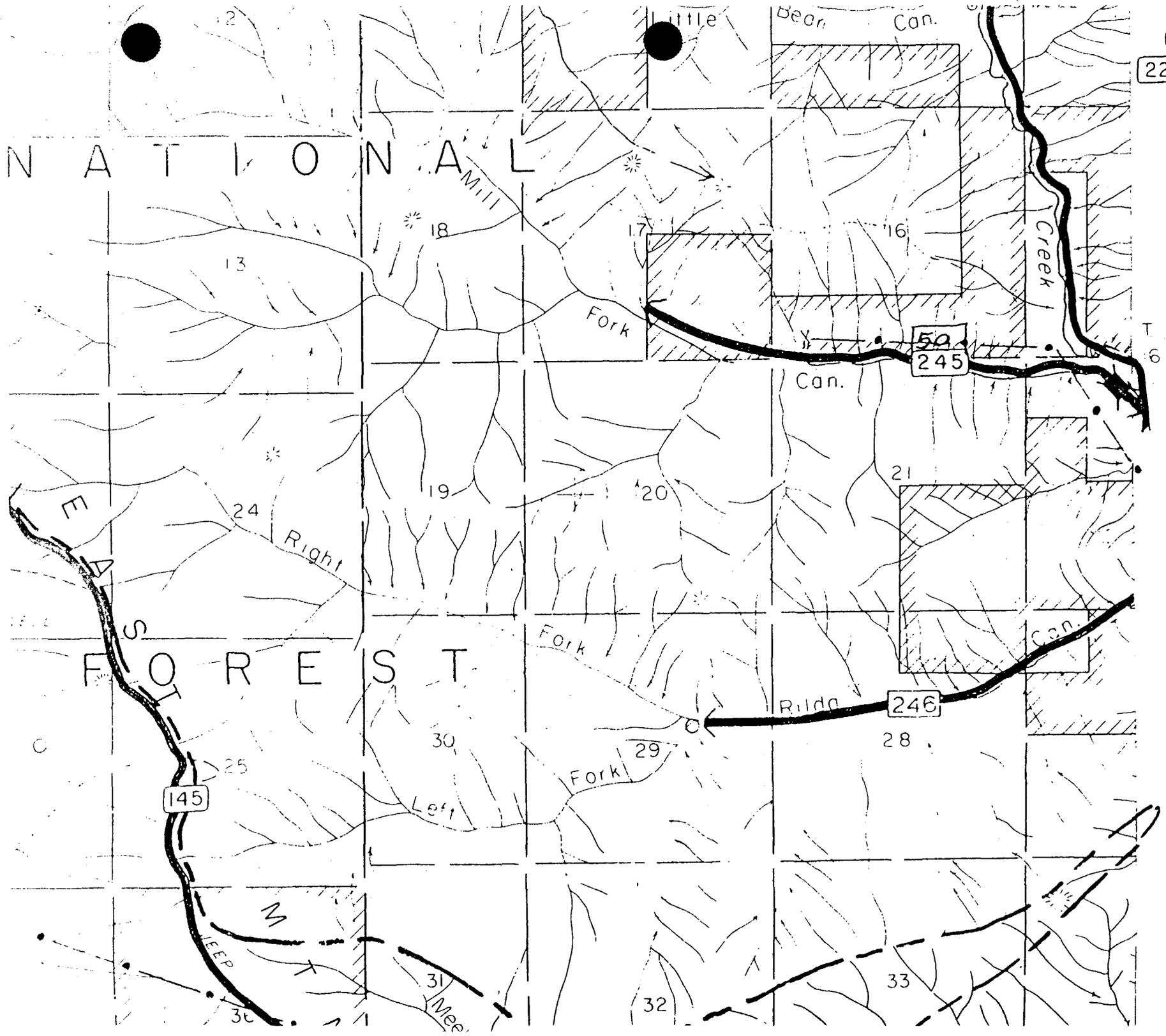
Cattleguards - Crawler tractors will not be operated across cattleguards.

Culvert Cleaning - Culvert heads and outlets shall be cleaned of snowpack by hand.

Tree Damage - Snow should not be pushed, blown, or stacked on trees along the roadside. Care will be taken to avoid scarring trees with equipment.

2. Inspections

- a. Intermittent inspections may be made during snow removal operations.
- b. Final inspection will be made to check for full compliance and damages.



BR. NO
50245-.1

April 21, 1976

COOPERATIVE AGREEMENT
Between
SWISHER COAL COMPANY
and
MANTI-LASAL NATIONAL FOREST, U.S.D.A.

This Cooperative Agreement, made and entered into by and between the Swisher Coal Company, Price, Utah, hereafter referred to as the COOPERATOR and the Forest Service, U.S. Department of Agriculture, hereafter referred to as the FOREST SERVICE, under the provisions of the Act of October 31, 1964, (16 USC 532, 535). WITNESSETH:

WHEREAS, the Mill Fork Canyon Road, No. 50245, hereinafter referred to as ROAD, is presently used jointly by the public, government agencies, and by the Cooperator; and

WHEREAS, the Cooperator desires to upgrade and maintain the Road to facilitate the operation of his coal mine business.

WHEREAS, it is mutually advantageous for the parties herein to cooperate in the reconstruction of the Road; and

WHEREAS, the Cooperator is willing to contribute money, labor, materials, and equipment toward reconstruction of the Road in order to upgrade the Road, maintain hauling efficiency, and improve traffic safety.

Now, THEREFORE, in consideration of the above premises, the parties hereto agree as follows:

A. The Cooperator will:

1. Reconstruct the Road from its intersection with the Fairview-Huntington Highway to the ^{LOADING FACILITIES} ~~Forest boundary~~ to standards, specifications, lines, and grades mutually agreed upon by the Forest Service and Cooperator and provide quality control inspections during construction.
2. Construct the single lane bridge across Huntington Creek to the standards, specifications, lines, and grades mutually agreed upon by the Forest Service and Cooperator and provide quality control inspections during construction.
3. Provide the Forest Service with a formal Right-of-Way [?] ~~agreement~~ for public access across portions of private land in Sections 16 and 17 of Township 16 South, Range 7 East, Salt Lake Baseline Meridian. The type and magnitude of which will be mutually agreed upon by the Forest Service and the Cooperator.

B. The Forest Service will:

1. Make a determination of the Road standards necessary as in A1 and A2.

EXPEND THE FUNDS NECESSARY TO

2. Survey, design, prepare drawings and specifications, and accomplish initial construction staking as relates to ~~A1~~ and ~~A2~~ *THE DEVELOPMENT OF THE ROAD AND BRIDGE.*

3. Provide inspection assistance during construction to assure compliance with the agreed design specifications and drawings.

4. Grant a ROAD USE PERMIT at such point in time as the aforementioned items are complete.

C. It is mutually agreed and understood by and between the parties that:

1. No member of, or delegate to, Congress or Resident Commissioner shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

2. Equal Employment Opportunity. See Exhibit "A" attached and hereby made a part of this Agreement.

3. The Cooperator shall indemnify the United States against any liabilities for damage to life or property resulting from negligent acts or omissions of acts of Cooperator's employees, agents, or servants, occurring in the performance of this Agreement. Cooperator assumes no liability for injuries or damages to anyone using the Road.

4. No contribution herein provided for shall entitle the Cooperator to exclusive use of the Road or to any share of interest in the Road other than the right to use same under regulations of the Forest Service. All improvements shall be and remain the property of the United States.

5. Nothing herein shall be construed as obligating the Forest Service, to expend, or as involving the United States in any contract or other obligations for future payment of money in excess of appropriations and expenditures authorized by law.

6. Nothing herein shall be construed as obligating Swisher Coal Company, Division of General Exploration Company, for future Road construction expenditures in excess of those authorized by annual budgets approved by General Exploration Company.

7. Either party may terminate this Agreement by providing 60 days written notice. Unless terminated by written notice, this Agreement will remain in force indefinitely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the last date written below.

Date

Swisher Coal Company

Date

Forest Supervisor
Manti-LaSal National Forest

EQUAL OPPORTUNITY

(The following clause is applicable unless this contract is exempt under the rules, regulations, and relevant orders of the Secretary of Labor (41 CFR, Ch. 60).

During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.
- (b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
- (c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (f) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

Continued on reverse

- (g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

AMENDMENT NO. 1

Road Use Permit
Mill Fork Canyon Road No. 50245
Swisher Coal Company

Clause 7. Rules Governing Use, Subpart (9) Other

This clause is hereby amended to read as follows:

The operator shall limit hauling truck speeds to 25 miles per hour on roads covered by this permit.

Accepted

[Signature]
Swisher Coal Company

Date

10/15/79

Approved

William H. Holey, Acting Forest Supervisor

Date

August 24, 1976

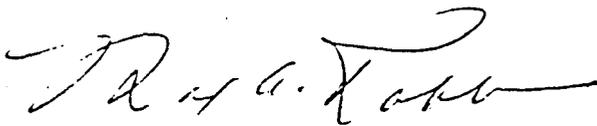
To Forest Supervisor
Manti-LaSal National Forest

The Swisher Coal Company hereby acknowledges its intent to grant to the Forest Service the following right of way for public access in return for Forest Service designs of the road and bridge and other considerations under the "Road Use Permit". Title transfer will be made upon receipt of the right of way plat and description.

The right of way in question begins at approximately the south quarter corner of Section 16, T16S, R7E, SLBM then meanders westerly through the south $\frac{1}{2}$ of the south $\frac{1}{2}$ of Section 16 to Section 17. From this point, the road traverses the southern half of the privately owned south east quarter of Section 17 bearing north west to the Forest Boundary.

The required right of way width will be developed in the description to encompass the road "as built" in Section 16 and "as exists" in Section 17.

Action on the right of way will commence following the remonumentation program by the Bureau of Land Management.



Swisher Coal Company

ROAD USE PERMIT (Re: FSM 7770)

Swisher Coal Company of 90 West, 1st North, Price, Utah 84501 (Name) (Address and ZIP Code)

(hereafter called the permittee) is hereby granted use of the following road(s) or road segments: That segment of Mill Fork Canyon Road, Number 50245, from its intersection with State 31 to the Forest Boundary located between sections 16 and 21, T16S; R7E, SLBM a distance of approximately 1.3 miles.

on the Manti-LaSal National Forest, subject to the provisions of this permit including clauses 2-1 through 19, on page(s) 1 through 6 for the purpose of hauling coal from their number 4 mine.

The exercise of any of the privileges granted in this permit constitutes acceptance of all the conditions of the permit.

Rate for sharing of maintenance is shown in clause 9. (Per traffic unit, MBF, cu. yd other-Specify)

2-1. WORK REQUIRED TO ACCOMMODATE PERMITTED USE. In accordance with this use, the permittee shall perform the work described below and in accordance with plans and specifications attached hereto: The work required shall include the construction of 0.5 miles of road to a 34 foot base including shaping and drainage. The work will also include constructing a 54 foot long single lane bridge across Huntington Creek. Six inches of gravel sub-base shall be placed over entire extent of the haul road, approximately 1.3 miles. (See attached continuation)

WORK PERFORMANCE SCHEDULE. (Construction of required improvements or reconstruction will be completed within 6 months and before hauling commences.)

* or 180 continuous working days with allowance for inclement weather.

This permit is accepted subject to all of its terms and conditions.

Table with 4 columns: ACCEPTED/APPROVED, Permittee (Name and Signature), Issuing Officer (Name and Signature), Title, Date. Includes handwritten signature of R. A. K.

Delete if not applicable.

(7) Regulation of the number of vehicles so as to prevent undue congestion of this road.

(8) The Permittee shall not use an "active ingredient" as defined in Section 2 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended (86 Stat. 973), in violation of said act on the land described in this permit.

(9) Other-Specify (Optional)

8. INSURANCE. Permittee shall be required to carry public liability and property damage insurance for the operation of vehicles, in the amounts established by applicable State laws, cooperative agreements, or easements issued on the subject road or roads. In any event, the permittee must carry liability insurance and property damage insurance of not less than \$ 100,000 for injury or death to one person, \$ 300,000 for injury or death to two or more persons, and \$ 50,000 for damage to property. Proof of satisfactory insurance may be required by the Forest Service prior to hauling over this road and will be for the duration of the permit, and such insurance policy shall bear an endorsement requiring the issuing company to give 30 days prior written notice to the Forest Supervisor Manti-LaSal National Forest of cancellation or material change.

9. MAINTENANCE. The permittee shall bear the expense of maintenance proportionate to his use. This expense will be borne by The Swisher Coal Company and the Forest Service. At a future time when hauling commences, the Forest Service will conduct a study to determine the proportionate share of maintenance cost for which each of the parties is to be held responsible. The study will take into consideration both the number of vehicles using the Road, and the type of vehicle. Forest Service will update such study periodically and will reapportion maintenance costs. Until such time as a study indicated otherwise, the Swisher Coal Company will perform all maintenance required under this permit.

Maintenance shall be performed in accordance with Forest Service specifications or requirements for maintenance as hereinafter listed, or as may be mutually agreed upon from time to time and shall consist of (1) current maintenance as necessary to preserve, repair, and protect the roadbed, surface and all structures and appurtenances, and (2) resurfacing equivalent in extent to the wear and loss of surfacing caused by operations authorized by this permit.

9a. MAINTENANCE AND RESURFACING REQUIREMENTS AND SPECIFICATIONS. (Specify)

Maintenance shall be performed on a routine, reoccurring interval to include cleaning of ditches and catch basins, removal of surface ruts and imperfection, maintenance of surface materials, and dust abatement control. Maintenance shall also include snow removal and the sanding of hazardous areas. Coal dust shall not be used during maintenance operations. (See attached continuation)

10. PERFORMANCE BOND. In the event the permittee is to perform his proportionate share of road maintenance, road resurfacing, or betterment, as determined and within time periods established by the Forest Supervisor, the Forest Service may require as a further guarantee of the faithful performance of such work that the permittee furnish and maintain a surety bond satisfactory to the Forest Service in the sum of one hundred thousand dollars (\$ 100,000.00), or in lieu of a surety bond, deposit into a Federal depository, as directed by the Forest Service, and maintain therein cash in the sum of one hundred thousand dollars (\$ 100,000.00), or negotiable securities of the United States having market value at time

of deposit of not less than hundred thousands 100,000.00). As soon as security for the performance of road maintenance (and betterment) requirements or the settlement of claims incident thereto is completed, unencumbered cash guarantees or negotiable securities deposited in lieu of surety bond will be returned to the permittee.

11. **FIRE PREVENTION AND SUPPRESSION.** The permittee shall take all reasonable precautions to prevent and suppress Forest fires. No material shall be disposed of by burning in open fires during the closed season established by law or regulation without a written permit from the Forest Service.

12. **DAMAGES.** The permittee shall exercise diligence in protecting from damage the land and property of the United States covered by and used in connection with this permit, and promptly upon demand shall pay the United States for any damage resulting from negligence, or from violation of the terms of this permit or of any law or regulation applicable to the National Forests, by the permittee, or by his agents, contractors, or employees of the permittee acting within the scope of their agency, contract, or employment.

13. **OFFICIALS NOT TO BENEFIT.** No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise herefrom unless it is made with a corporation for its general benefit.

14. **OUTSTANDING RIGHTS.** This permit is subject to all outstanding rights.

15. **SUSPENSION.** Upon the failure of the permittee, its agents, employees or contractors to comply with any of the requirements of this permit, the officer issuing the permit may suspend operations in pursuance of this permit.

16. **TERMINATION.** This permit shall terminate on January 1, 1986 unless extended in writing by the Forest Service. It may be terminated upon breach of any conditions herein. This permit shall be reviewed annually is subject to revision.

17. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provisions thereof, the following clauses will control.

18. The Environmental Analysis Report developed for this project shall be made a part of this permit. The permit is subject to the guidelines and recommendations developed in that report.

19. Before final acceptance, buildings, roadways, borrow pits, quarries, and all ground occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excessive materials, temporary structures and equipment, and all parts of the work shall be left in a neat and presentable condition. Cleanup will include roughly spreading the overlying material and topsoil back over disturbed areas such a manner so that water will not collect in low areas. All slopes will be smooth a uniform.

2-1. Work Required to Accommodate Permitted Use

The attached plans, general provision, general specifications, and construction details shall be used and shall be adhered to as follows:

- A. The Permittee shall supply the materials to construct the bridge and road including material certification. The certifications are to be forwarded to the Manti-LaSal National Forest for confirmation prior to installation or erection. The Permittee shall also supply the corrugated metal culvert, aggregate, and bitumen surfacing materials needed to construct the road.
- B. The Permittee shall provide quality control inspections during construction. Such inspection will include but not be limited to:
 1. That pipe and bridge materials are of the proper size, shape, gage, and quality as specified.
 2. That compactive effort is maintained as specified through in-place density tests. This action will require that the permittee obtain moisture density curves for field samples prior to beginning construction activities.
 3. That aggregate surfacing gradations meet the specifications.
 4. That constructed sections conform to the lines and grades as shown on the plans and staked on the ground by the Forest Service.
- C. The inspectors provided by the Permittee shall be qualified to take the tests called for in the specifications. The inspectors shall certify in writing that the work and materials comply with the specifications.
- D. Where materials are delivered to the job site, certification shall be made and given to the Forest Service prior to installation of the materials. A copy of the suppliers certification shall be forwarded to the Forest Service.
- E. In the attached specifications, the term "Contractor" refers to the Permittee, the Swisher Coal Company. The term "Engineer" refers to the person or persons designated by the Permittee as their Project Engineer. Inspection by the Forest Service will be done to insure that the Permittee's inspectors require compliance with the specifications.
- F. The term Contracting Officer refers to the Forest Supervisor.
- G. The Swisher Coal Company will take the necessary steps to obtain a responsible contractor, as determined by a review of said contractor's past performance and financial capabilities. Said contractor will be agreeable to all parties of this permit.

(Continuation)

9a. Maintenance and Resurfacing Requirements and Specifications

It is the intent of this permit that at some future time, the Permittee will provide an adequate bituminous pavement structure over the entire haul route. This second stage of construction concerning bituminous surfacing shall commence at such time as degradation of the gravel surface and dust abatement can no longer be contained by routine maintenance.

The specifications developed as a part of this contract contain no references to bituminous surfacing requirements. Such specifications and requirements will be developed by the Forest Service at that time.

Engineering - (801) 637-5032

November 18, 1975

Mr. Ira Hatch
District Ranger
Manti-LaSal National Forest
10 North Carbon Avenue
Price, Utah 84501

Dear Ira:

Enclosed is an account of our recent meeting in Mill Fork Canyon and the conditions set forth in your verbal permission for Swisher Coal Company to begin upgrading the lower section of the road.

Sincerely,

SWISHER COAL COMPANY

Dave Shaver
Mining Engineer

DS:kk

Enclosure

On Thursday, November 13, 1975, a meeting between the U.S. Forest Service and Swisher Coal Co. was held on the site in Mill Fork Canyon, a tributary of Huntington Canyon, Emery County, Utah. Those in attendance representing the Forest Service were Ira Hatch, Bill Boley and Roger Thomas. Representing Swisher Coal Co. were Dave Shaver, Reid Olsen, Ted Hanks and Max Robb.

At this time verbal permission was granted Swisher Coal Co. by the Forest Service to begin upgrading the section of road in Mill Fork Canyon from the intersection of the haul road at the old Leamaster Mine site to the big bend in the road up the canyon from the existing bridge over Huntington Creek. Road work below this stretch will be delayed until an appropriate bridge site is selected; road work above this section will be delayed until further surveying and engineering is done. Conditions of this verbal permission are:

1. All culvert locations are to be approved by the Forest Service and staked prior to construction.
2. The horizontal alignment of the road is to remain essentially unchanged.
3. The existing grade of the road is to remain unchanged except for localized smoothing and leveling.

On November 14 Ralph Geibel and Dan Hadley of the Forest Service and Dave Shaver and Bert Jeansolme of Swisher Coal staked the culverts along this stretch with the exception of the upper two culverts which locations are dependent upon the development of a more detailed site plan of the mine yard area. With the exception of the culvert handling the drainage from the side canyon in which the mine yard is located all culverts are to be 24" or 18" in diameter depending on the recommendation of the Forest Service hydrologist and are designed to accommodate a 26' wide road base. Culverts have been ordered.

Mining and Reclamation Plan
Huntington Canyon No. 4 Mine Permit Application

APPENDIX 7

SEDIMENT POND MODIFICATION

APPROVAL

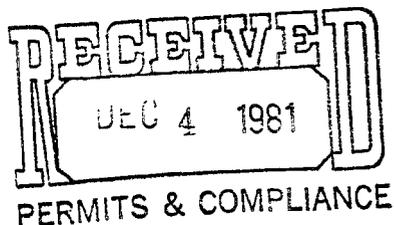


STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

December 1, 1981



Mr. Ken Wangerud, Coordinator
Permits and Compliance
Arco Coal Company
P. O. Box 5300
Denver, Colorado 80217

RE: Huntington #4
Sedimentation Pond
Modification
ACT/015/004
Emery County, Utah

Dear Ken:

The Division of Oil, Gas and Mining has reviewed Arco's request to modify the existing sedimentation ponds at the Huntington #4 mine to treat and discharge mine water which has accumulated in two underground sumps.

The nature of this project is to discharge mine water directly over established surface runoff drainages to the upper cell of the two sedimentation ponds. The mine water will be dewatered to the lower cell through a 12 inch cnp culvert equipped with a head gate in the lower cell to manually regulate flow. The lower cell treatment system consists of a filter dike of coke breeze covered with slag through which mine water will be filtered before discharging into Mill Fork Creek. The fact that the upper cell has a maximum capacity of 68 acre feet or that requested for the 10-year, 24-hour event plus sediment storage, justifies the Division granting approval of this project with stipulations.

According to Mr. Dan Guy, chief engineer for Beaver Creek Coal Company, the mine discharge system may be temporary and will be used minimally due to a number of factors:

1. This initial discharge should eliminate the mounting disposal problem of several hundred thousand gallons of mine water which has accumulated in underground sumps.

2. The assumed rate of mine water accumulation should come close to equaling that which is required for operational use underground.
3. If the rate of mine water accumulation exceeds underground use, then discharge from underground sumps would only occur on an infrequent basis and under controlled conditions.*
4. If the rate of mine water accumulation is highly excessive compared to the rate of operational use with discharge occurring on a regular basis, then a new system of discharging mine water to the lower pond cell would be designed and incorporated.

The Division approves the use of the lower cell of the sedimentation ponds as a mine water treatment facility utilizing the established surface drainages for routing mine water flow which will be passed through the upper cell to the lower cell by use of a 12 inch cmp dewatering culvert with a head gate, which will be manually controlled. The mine water will then be filtered through a coke breeze and slag dike before discharging into Mill Fork Creek. The following stipulations are concurrent with this approval and must be adhered to in using this system.

1. The operator will summarize the operational need and capability of this system within six months of this approval to justify its further use or nonuse.
2. The operator will use a 12 inch cmp culvert as a dewatering device for two purposes: (1) to pass mine water discharge from the upper cell to the lower cell; and (2) for dewatering of the 10-year, 24-hour volume after an appropriate detention period has been achieved.
3. Within one month of this approval, the operator shall submit to the Division the rate of dewatering from the upper cell to the lower cell which adequately maintains the filter dike process with a commitment to dewater at this constant rate.
4. All mine water discharge and treatment shall be carried out during operating hours at Huntington #4. The operator shall commit to closing off the gate valve at the end of each mine water discharge occurrence. There should be no mine water discharged during the spring snowmelt/runoff period.

*Controlled conditions implies operator knowledge of current weather conditions and the surface operator maintaining the opening of the head gate at a rate which will prevent a washout situation in the lower sedimentation cell, and the closing of the head gate between occurrences of mine water discharge.

Mr. Ken Wangerud, Coordinator

ACT/015/004

December 1, 1981

Page 3

5. All stipulations of the State of Utah, Division of Water Pollution Control shall be fulfilled.
6. All design information resulting from Stipulations 1, 3 and 5 shall be forwarded to the Division within the specified time period.

If you have any further questions regarding this approval, please contact Sally Kefer of my staff.

Sincerely,

Sally Kefer
for JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

CC: Dan Guy, Beaver Creek Coal Co.
Richard Dawes, OSM

JWS/SK/btb

APPENDIX 8
MILL FORK CREEK
DISTURBED AREA
RECLAMATION PLAN

RECLAMATION PLAN - DISTURBED AREAS

MILL FORK CREEK #4 MINE

SCOPE:

The scope of this reclamation plan is to establish a permanent, effective and diverse vegetative cover, capable of self-regeneration and plant succession, for use as rangeland and wildlife habitat. A prompt vegetative cover will be established which, through time, will allow vegetative cover, woody plant density and productivity to recover to levels equal to the cover, density, and productivity of adjacent areas.

The following procedures are designed to revegetate and control erosion. They should, to a large degree, satisfy the commitments made by Beaver Creek Coal Company in their permit, while also satisfying OSM regulations as pertaining to wildlife concerns and final reclamation for those areas which will be utilized after mining operations are concluded.

The areas in question are along and adjacent to the #4 Mine, mine access road, Pump house and Holding pond, and will be of a permanent nature.

The actual ground involved comprises approximately 120 sq. meters of disturbed land, primarily disturbance associated with the removal of the Pump house, pond and fence. (See Plate 3 - 1b). The actual procedures involve a four phase program; (1) earthwork: To prepare a site which will be stable enough for a period of time to allow vegetation to become established, (2) hydroseed, tacify, and mulch the entire area to supplement revegetation and control run-off until stabilization is complete, (3) to plant seedlings to further stabilize the soil and to provide necessary wildlife, hydrological and aesthetic commitments as detailed in mine reclamation permit, and (4) to enhance and re-establish a riparian zone in conjunction to Mill Fork Creek.

METHODOLOGY

Phase 1; Earth Moving

UMC 817.44 Hydrologic Balance: Stream Channel Diversions

The methodology which Beaver Creek Coal Company contemplates implementing upon final abandonment and reclamation of that portion of Mill Fork Creek in the vicinity of the pump house and pond are as follows:

1. To use a large track-mounted excavator to remove the pump house and to regrade the opposing banks on approximately a 3 to 1 slope to facilitate revegetation and to enhance the establishment of a riparian zone. In-place soils will be utilized for the grading or reshaping of this area. This will consist merely of redistributing existing soils over a small area prior to planting. The use, depths, and quality will be as they exist prior to reclamation. (Note Fig. 1 for the present stream configuration and post reclamation configuration, Fig. 1 - A.)
2. To rip-rap a small holding pond along the channel where the existing concrete structure is presently, by utilizing native materials. The actual methodology is to leave the concrete structure in place, construct a rock face by utilizing large rock, 2' - 3' in diameter. Secure the rocks together in a stacked manner; with the lowest portion corresponding to the existing channel to create a centralized spillway. Once the rocks are secured into the channel, rock rip-rap should be laid on the up stream side to a height equal to the height of the concrete retainer and continued up stream for a distance of 36" decreasing in height so as to be level with the original rip-rapped channel. Then by utilizing a backhoe, a pit approximately 3' in diameter should be dug at the

Stream Channel Diversions (Continued)

fall line of the spillway and lined with large rock 2'+. The pond configuration should mitigate the loss of the silt load in the existing pond. The silt area associated with the present pond will form a small riparian bench when reseeded and should enhance the area in creating a small park along the area of disturbance.

The intent of the holding pond created by the rock dam is to maintain the sediment and minimize the down stream migration of this potentially detrimental source of silt and convert it into a potentially beneficial, enriched, growth media to facilitate the enlargement and establishment of riparian vegetation. Over a course of time the water holding capability of the ponded area will decrease as this pond fills with sediment, however, the small pond at the base of the spillway should remain relatively free from sediment and due to the small surface areas and depth, they will hold water over an extended period during dry seasons. A diagram is attached for your review. (See Figure 2).

Below the area of the confluence of disturbance, three silt fences (100X filter) will be installed to minimize the migration of any sediment during the reclamation effort. These filters will be checked daily and cleaned as indicated. The filters will be maintained until the creek is within normal sediment levels, and the reclamation implementation is completed. (See Figure 3 for basic design.)

Stream Channel Diversions (Continued)

Phase 2 - Seeding and Mulching

The entire area of disturbance will be hydroseeded during September - October, 1985. The seed mix and rate of application is attached. Hydroseeding and mulching will be carried out in conjunction with the earth work of phase 1. Recommendations for the hydroseeding and mulching operation are as follows:

This methodology involves the use of a hydroseeder to apply the seed and tac to all disturbed areas and then to overspray the seeding with a wood-fiber mulch (approximately 3,000 lbs./acre long fiber) in combination with fertilizer and additional tacifying agents.

The following rates of material should be utilized:

(Rates of tac were developed with respect to velocity and erosive power of water which is proportional to the square root of the slope.) An empirical factor was determined from laboratory and field studies to arrive at the minimum tac fiber ratio. Thus, 60 pounds of tac per ton of fiber is about minimum for slopes up to 20% and the empirical factor is determined as $60 \times 25\% = 15$. A 25% slope is about maximum for the minimum amount of tac. For a 100% slope (1 : 1 or 45°) the ratio of tac to fiber is calculated as:

Phase 2 - Seeding and Mulching (Continued)

SUGGESTED RATIOS OF TAC TO FIBER FOR HYDRO-SEEDING AND HYDRO-MULCHING
TO SERVE AS MULCH OR SOIL BINDER

<u>SLOPE</u> <u>ANGLE</u>	<u>SLOPE</u> <u>RATIO</u>	<u>PERCENT</u> <u>SLOPE</u>	<u>LBS.TAC</u> <u>PER TON FIBER</u>	<u>RATIO TAC</u> <u>TO FIBER</u>
	Rise:Run			
14°	1 : 4	25%	60 (minimum) *	1 : 30
26°	1 : 2	50%	80	1 : 25
33°	1 : 1½	66%	100	1 : 20
45°	1 : 1	100%	120	1 : 16
45°	1½ : 1	150%	140	1 : 14
64%	2 : 1	200%	160 (minimum)	1 : 12

* 60 pounds is suggested as a minimum to insure excellent stabilization; however, in many conditions 40 pounds of tac per acre has given excellent results on a 1:4 or less slope.

Following the seeding effort the entire area of disturbance will be hydro-mulched and fertilized. The rate of application of the mulch is:

2,000 to 3,500 lbs/acre on all areas

The mulch should also be fortified with tac as previously indicated according to slope. Incorporated in the mulch slurry the following rate of fertilizer will be applied per acre:

180 lbs. N/acre
 100 lbs. P₂C₅/acre
 100 lbs. K₂O₅/acre

Phase 2 - Seeding and Mulching (Continued)

The seed mix is composed of a permanent reclamation species, primarily grasses: approximately 12 lbs./acre. The seed mix was developed as a result of an inventory of adjacent areas above and below the area of disturbance. The seed mix is attached as Appendix A and the inventory as Appendix B.

Phase #3 - Planting:

The planting of seedlings will be done within 1 year of the seeding effort in order to evaluate the number and species of seedlings necessary to ensure both composition and stocking of woody species to maximize utilization by wildlife and domestic grazing.

The species and numbers of individual plants are correlated to the inventory conducted in the Fall of 1984.

The planting of willow cuttings will be done in conjunction to the seeding effort.

The numbers of individual plants are correlated to the inventory conducted in the Fall of 1984.

Planting Procedures

Planting will be done utilizing willow cutting approximately 18" in length and $\frac{1}{2}$ " in diameter. The cuttings will be collected from plants in the area of the Permit. The cuttings should be spaced at approximately 3' intervals along the border of the creek and the disturbed area. Each shoot should be buried a minimum of 9".

Phase #3 - Planting (continued):

Care should be taken to leave no air pockets or loose dirt (which would constitute settling). The shoots should be firm when a light pressure is exerted on the stem and standing in an upright position.

Phase #4 Enhance and Re-establish Riparian Zone Along Mill Fork Creek
and Holding Pond #4 Mine

Due to apparent lack of any consequential riparian zone along Mill Fork Creek, the establishment of one, in conjunction with the reclamation effort will constitute enhancement.

The principal factors which appear to be limiting a riparian zone are:

1. The extreme angle of the opposing canyon walls, and
2. The dense over-story of both, conifers to the north, and deciduous trees on the south.

Both of these obstacles are mitigated through the meadow-park configuration which will be constructed upon final reclamation.

The holding pond structure will be maintained and fortified with rock rip-rap. The interior of the concrete structure should then be fortified with a minimum of 18" of additional rip-rap (12"+ material).

In this manner, the stability of the pond will be assured and the pond can be maintained and allowed to go through a normal pond succession. This will eliminate the necessity of subsequent reclamation when this pond would have had to been removed. By utilizing this method of natural succession, the following environmental benefits will be gained:

1. The ponds can be maintained as a valuable reservoir for Macroinvertebrates during dry periods.
2. The Micro and Macroinvertebrates which are presently in abundance in the pond, can be maintained.
3. The pond will act as an enhancement feature in providing additional water in the drainage, and in time will significantly increase the riparian habitat.

Monitoring

Upon completion, the reclaimed area will be monitored to determine when bond release parameters are achieved. If the monitoring indicates inadequacies, the area will be supplemented with additional efforts.

The monitoring procedures will be the same sampling methodologies which will be incorporated in establishment of bond release on the balance of the mine site, and as discussed previously in the plan.

ATTACHMENT A

RECOMMENDED SEED MIX

RIPARIAN HABITAT

RIPARIAN AREA
GRASSES (seed)

<u>Scientific Name</u>	<u>Common Name</u>	<u>lbs./acre</u>
Agropyron smithii	Western Wheatgrass	3
Agropyron trachycaulum	Slender Wheatgrass	2
Bromus carinatur	Mountain Brome	2
Carex Spp.	Sedge	2
Poa pratensis	Kentucky Bluegrass	2

11# PLS

Trees and Shrubs

Mohonia repens	Creeping Oregon Grape	.25
Rosa woodii	Woods Rose	.5
Rubus idaeus		
sachalinensis	American Red Raspberry	.25
Salix rigida	Yellow (Watson) Willow	
(cuttings on 3' centers along channel & pond)		.25

1.25# PLS

TOTAL SEED 12.25# PLS per acre

NOTE: Insert in Appendix 8

6/24/85

ATTACHMENT B

INVENTORY OF RIPARIAN VEGETATION

MILL FORK CREEK

On October 29, 1984, an inventory of Mill Fork Creek was conducted by M.A. Coonrod of the consulting firm of E.I.S.

The purpose of the inventory was to attempt to establish an estimate of riparian habitat lost in the construction of Beaver Creek #4 Mine, Pump House, and associated Holding Pond.

Conventional vegetation inventory methods were not utilized due to the narrowness of the channel and the scattered small area dispersal of any riparian zones.

The methodology incorporated was to measure out a 100 meter distance above and below the mine disturbance, then to determine the average width of the riparian zone at each 5 meter interval, then average the distances, and by utilizing the mean, estimate the amount of riparian habitat lost.

The average width above the mine site was 5.6 meters. The average width below the mine site was 6.58 meters. Utilizing the mean of 6 meters for a distance of 20 meters of disturbance, the total riparian habitat lost would equal 120 square meters.

A representative species list was determined and percent of cover by type of vegetative cover.

<u>Vegetative Type</u>	<u>Percent Cover</u>
Grasses	32%
Forbs	63%
Browse	5%

(Aspen less than 8' in height included in Browse classification)

The Principal Species Are:

Grasses

Carex Spp.

Poa Spp.

Agrostis stolonifera

Agropyron Spp.

Forbs

Saxifraga odontiloma

Epilobium alpinum

Veratrum californicum

Minulus guttatus

Achillea millefolium

Osmorhiza chilensis

Rorippa curvipes

Helenium hoopesii

Lathyrus lanzwertii

Browses

Ribes viscosissimum

Sambucus racemosa

Roas woodii

Populus tremuloides

ATTACHMENT C

MILL FORK DRAINAGE

STORM RUNOFF CALCULATIONS

01/14/85

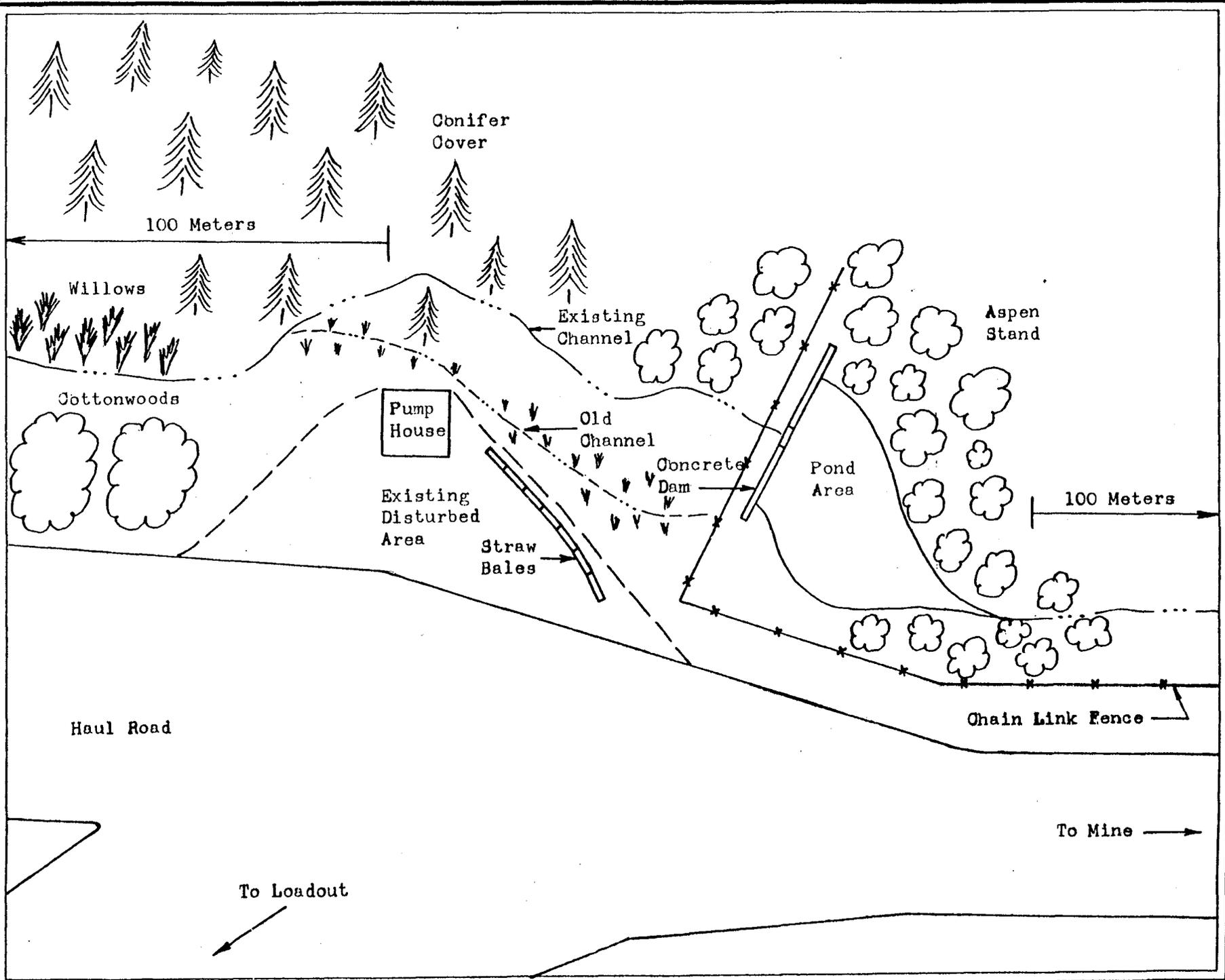
MILL FORK DRAINAGE
STORM RUNOFF CALCULATIONS

Drainage Area	735 Acres
Flow Length	9500 Feet
Slope	21%
Curve Number	70
(Undisturbed Forested, Good Condition)	
100 yr., 24 hr. Precip.	3.3 Inches
10 yr., 24 hr. Precip.	2.3 Inches
Basin Lag	
(Curve Number Method)	0.6 Hrs.
Time of Concentration	1.0 Hrs.
Q (CSM/inch)	320
Peak Discharge (100 yr.)	327 cfs
Peak Discharge (10 yr.)	132 cfs

EXISTING CHANNEL AREA

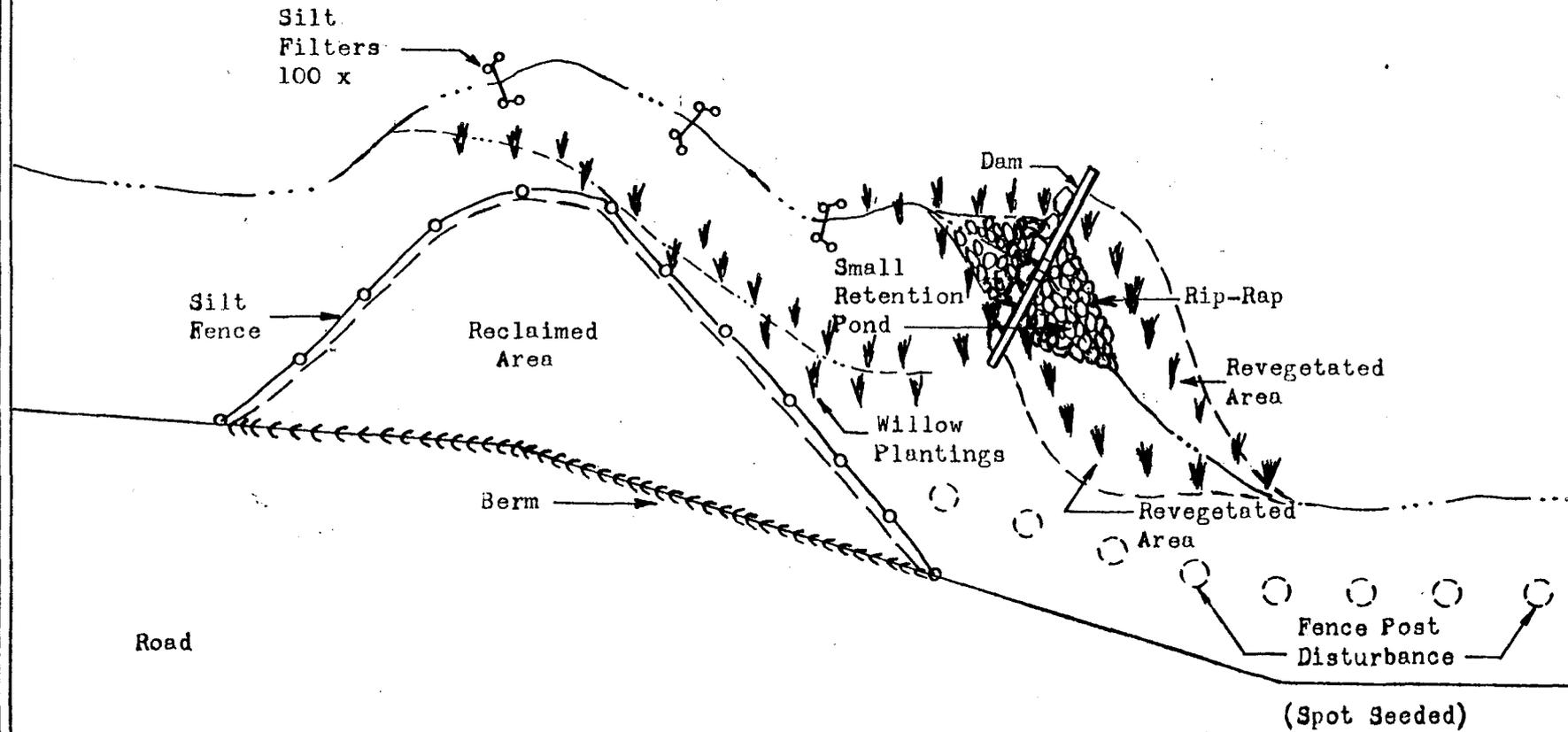
Scale: 1" = 20'

FIGURE NO. 1



Notes: Existing vegetation on Figure 1
to be left undisturbed.

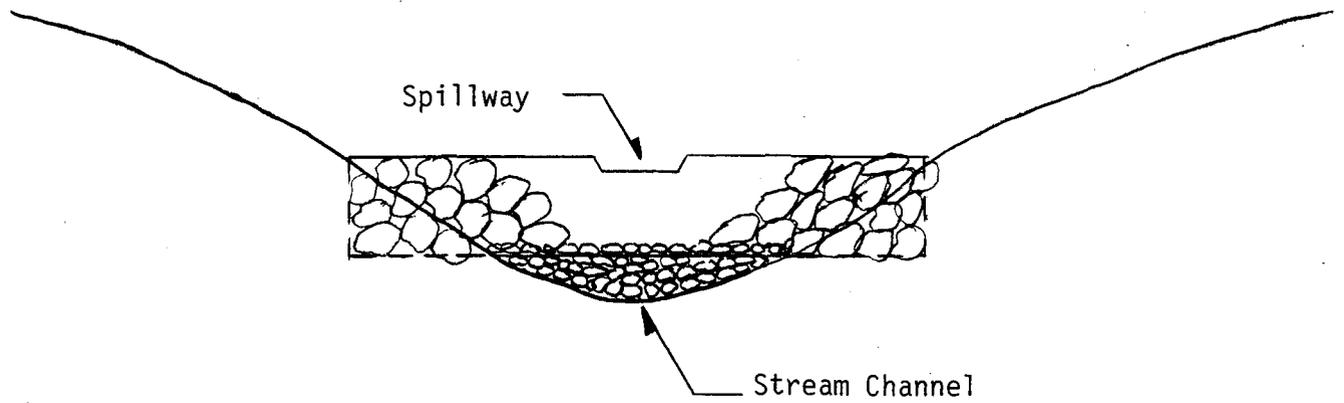
RECLAIMED CHANNEL AREA



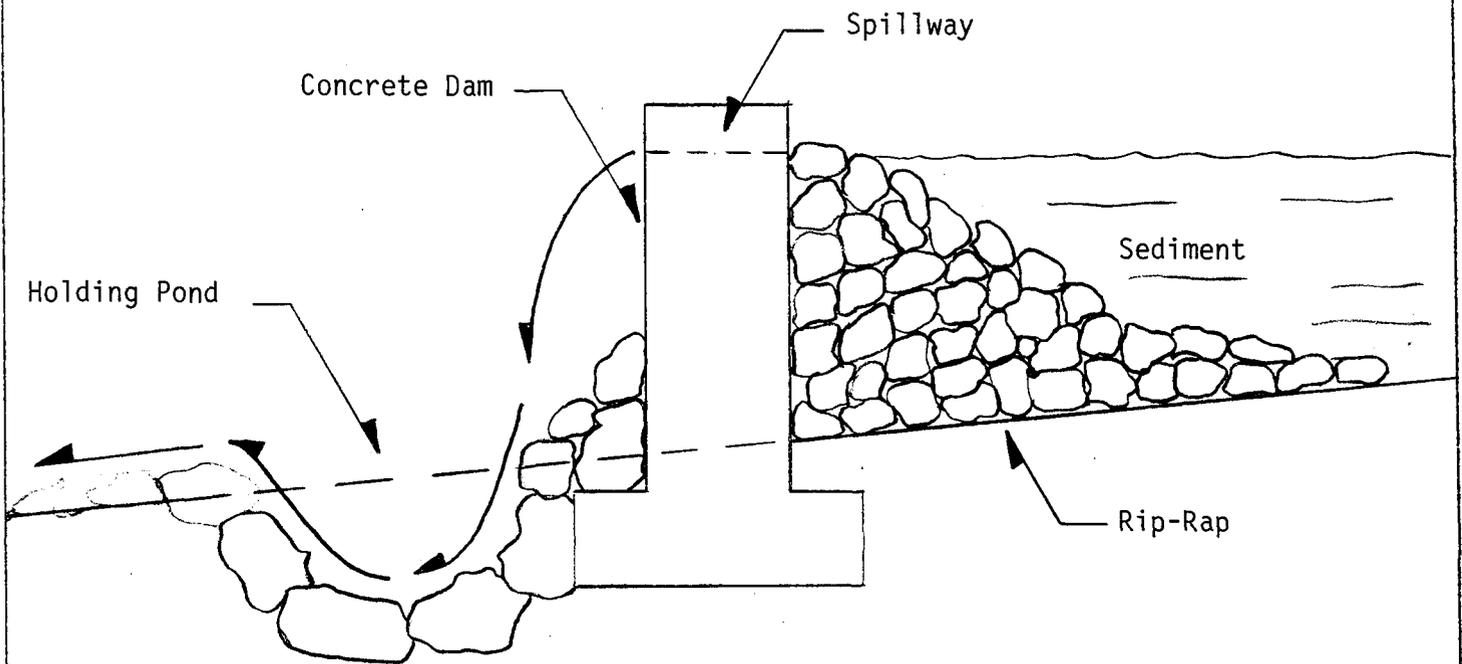
Scale: 1" = 20'

FIGURE
NO. 1-A

CHECK DAM



Section View
Scale 1" = 10'

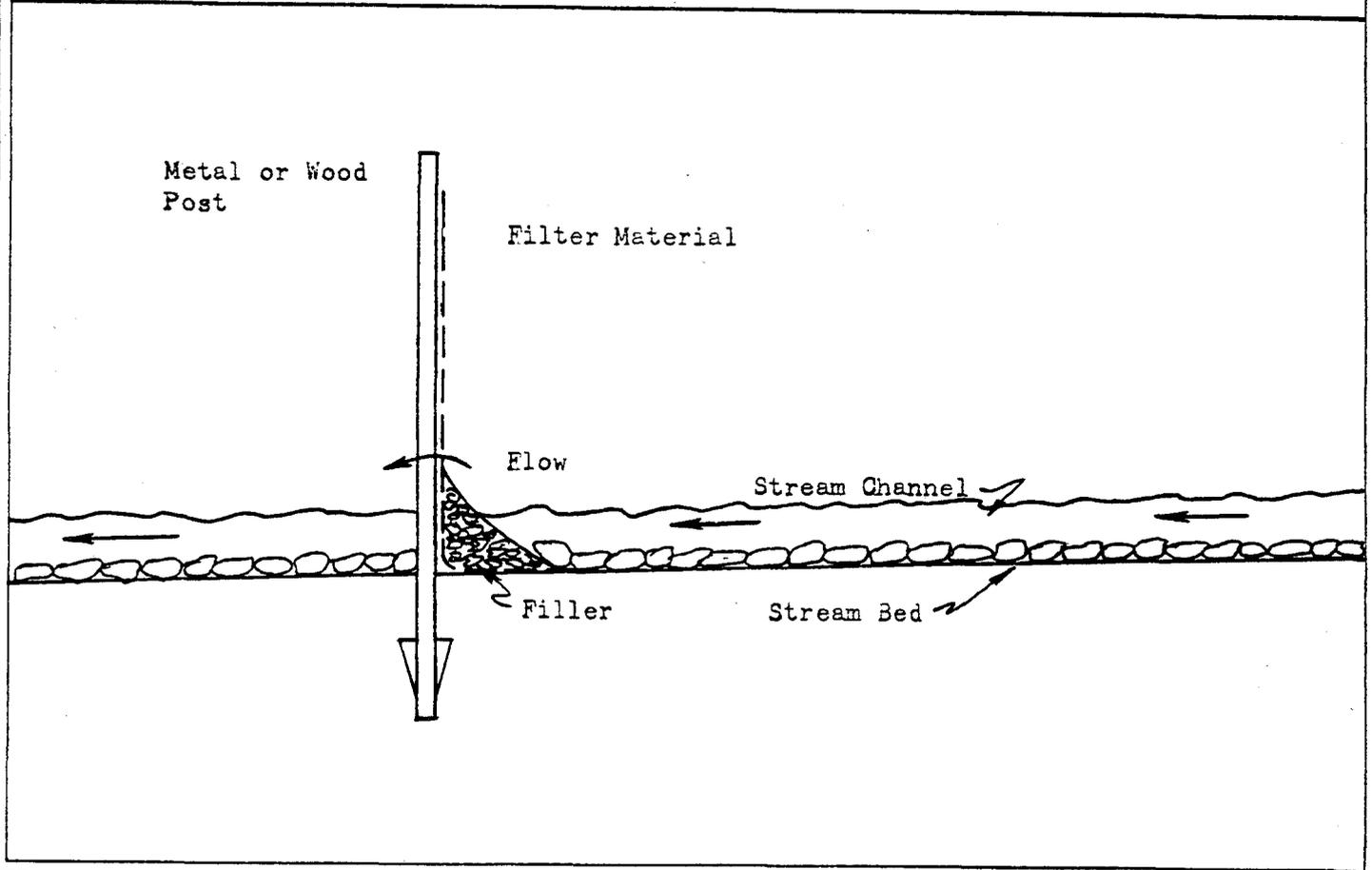
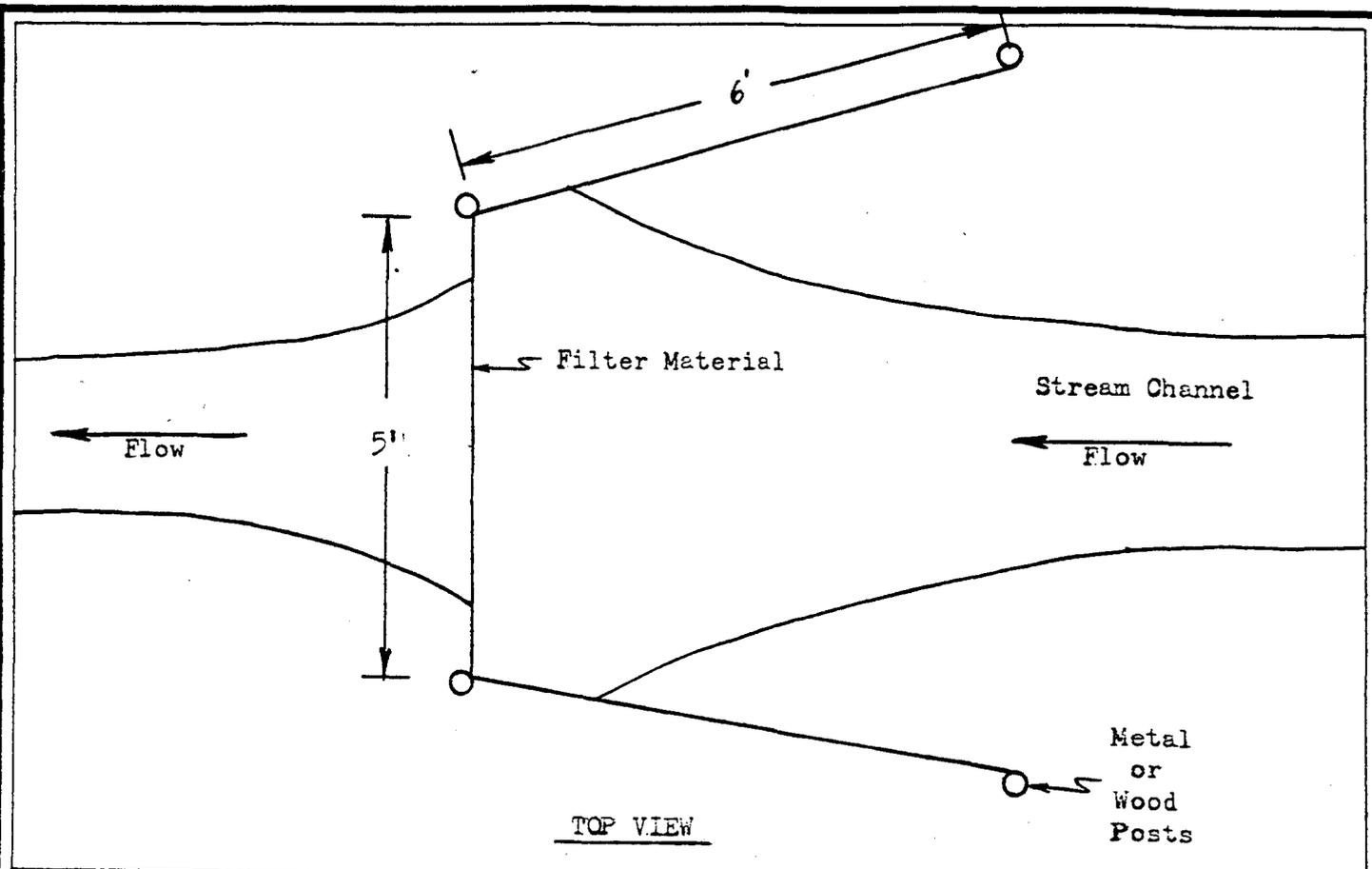


Side View
Scale 1" = 2'

STREAM ENHANCEMENT STRUCTURE

SCALE: As Shown

FIGURE
No.2



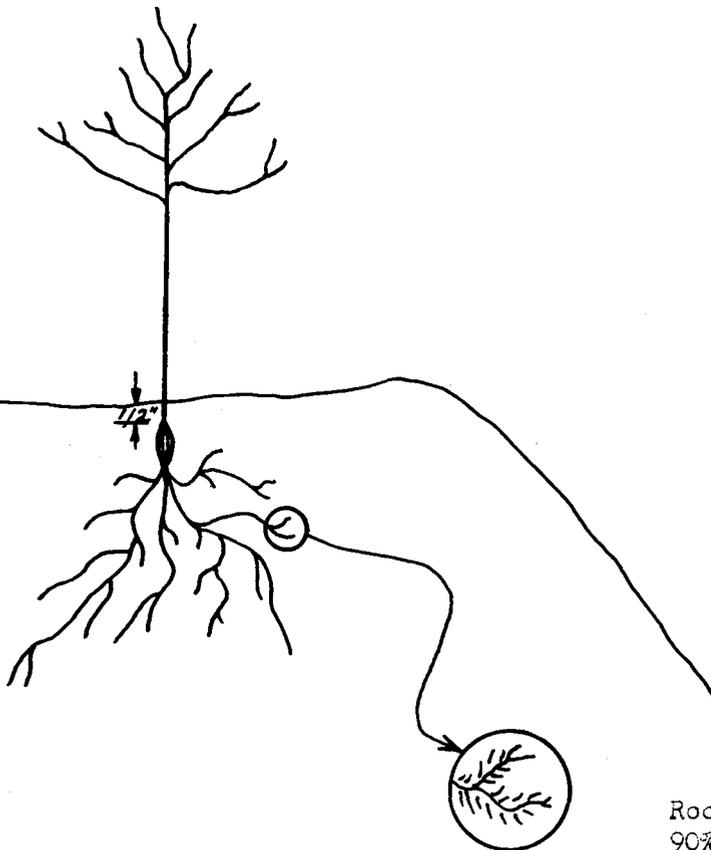
FILTER DESIGN

Scale: 1" = 2'

FIGURE
NO. 3

Notes:

1. Stem planted in a vertical position.
2. Roots are straight and spread in a natural pattern.
3. Soil is firmly packed so no air pockets exist.
4. Root collar is covered by at least 1/2" of soil.
5. Roots are protected from drying.



Root Hairs - Responsible for 90% of plant moisture and nutrient needs. Will die if exposed to dry air over 15 seconds.

PLANTING PROCEDURE

Scale: None

FIGURE
NO. 4

APPENDIX 10
SEDIMENT POND REMOVAL
FOR
PHASE II BOND RELEASE

INCORPORATED
EFFECTIVE:
AUG 26 1995 *QSB*
UTAH DIVISION OIL, GAS AND MINING
PRICE FIELD OFFICE

Appendix 10
Sediment Pond Removal

Introduction:

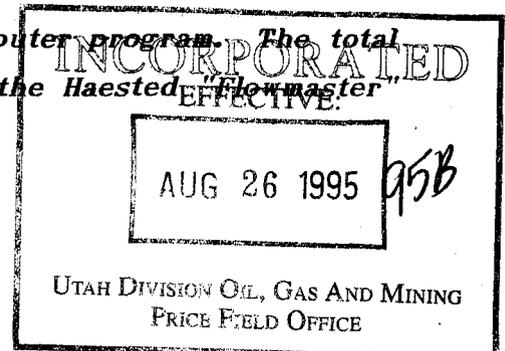
On March 20, 1995, the Utah Division of Oil, Gas & Mining granted approval of the Phase II Bond Release for the Huntington Canyon No. 4 Mine, conditional upon removal of the sediment ponds. This Appendix will address the proposed plans and designs for final removal of the sediment ponds.

General Plan:

The proposed plan for sediment pond removal consists of total removal and recontouring of the lower cell, and reduction of the upper cell to a basin. The basin is not a holding structure, and is intended only to provide surge capacity for the culvert inlet. A 36" culvert will then be installed to carry the drainage from the minesite and basin to Mill Fork Creek. The existing pond configuration is shown on Plate 1 of this Appendix. The proposed, final reclamation is shown on Plates 2 and 3.

Hydrology:

The runoff for the drainage areas were calculated for a 100 year-6 hour storm event of 2.12". Acreages, slopes, runoff curve numbers and times of concentration for both the undisturbed and disturbed (reclaimed) areas were taken from Chapter 7 of the approved permit for the proposed 36" culvert. The watershed area for the existing 24" culvert below the pond area was taken from the watershed map in Attachment A of this Appendix. Expected flows from both the undisturbed and disturbed areas were calculated using the OSM "Storm 6.0" computer program. The total flow was then routed through a culvert using the Haested "Flowmaster" program to determine minimum culvert size.



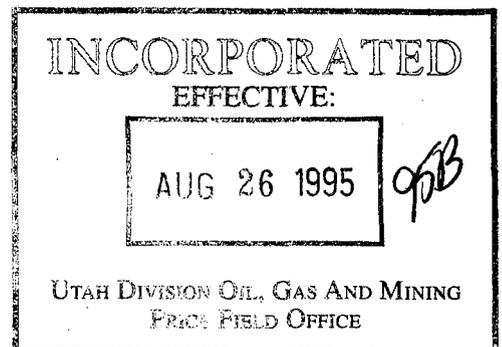
**Huntington Canyon No. 4 Mine
Appendix 10**

Proposed 36" Main Culvert:

The flow from the culvert will discharge onto a rip-rap apron prior to discharge to the stream. The rip-rap apron is proposed to be 15' in length with a bottom width from 3' - 9' and 2h:1v side slopes. Rip-rap will be 6" D50, as described under the Reclamation Section of this Appendix. A proposed design for the rip-rap apron is shown in Attachment A of this Appendix.

Existing 24" Culvert:

This culvert will remain in place to carry runoff from the road and a portion of the reclaimed and undisturbed areas above, which presently drain to the lower cell of the sediment pond. The culvert inlet and outlet is presently protected by a 6" D50 rip-rap, which will also remain in place. Calculations for the justification of the culvert are shown in the following table. Watershed areas and slopes were taken from the Watershed Map in Attachment A of this Appendix.



The following is a list of the parameters used and results obtained:

Culvert	Proposed 36"	Existing 24"
<i>100 year / 6 hour event (in.)</i>	<i>2.12</i>	<i>2.12</i>
<i>Undisturbed/Reclaimed Area (ac.)</i>	<i>78.08</i>	<i>6.89</i>
<i>Undisturbed/Reclaimed Runoff CN</i>	<i>75</i>	<i>75</i>
<i>Undisturbed/Reclaimed Time of Concentration</i>	<i>0.07</i>	<i>0.05</i>
<i>Undisturbed/Reclaimed Peak Flow (cfs)</i>	<i>28.52</i>	<i>2.47</i>
<i>Disturbed Area (ac.)</i>	<i>6.38</i>	<i>0.46</i>
<i>Disturbed Runoff CN</i>	<i>90</i>	<i>90</i>
<i>Disturbed Time of Concentration (hrs.)</i>	<i>0.289</i>	<i>0.07</i>
<i>Disturbed Peak Flow (cfs)</i>	<i>5.60</i>	<i>0.51</i>
<i>Total Peak Flow 100/6 (cfs)</i>	<i>34.12</i>	<i>2.98</i>
<i>Culvert Manning's Number</i>	<i>0.025</i>	<i>0.025</i>
<i>Culvert Slope (%)</i>	<i>3.50</i>	<i>4.00</i>
<i>Velocity (fps)</i>	<i>7.82</i>	<i>4.47</i>
<i>Required Culvert Diameter (ft.)</i>	<i>2.36</i>	<i>0.92</i>
<i>Proposed Culvert Diameter (ft.)</i>	<i>3.00</i>	<i>2.00</i>

As shown above, the proposed culvert diameters are more than adequate to carry the flow from a 100 year-6 hour storm event for this area. Computer backup information is included in Attachment A of this Appendix.

Basin Inlet:

It is proposed to perform additional work on the existing basin inlet to enhance the rip-rap protection and provide a better defined channel. Due to the steepness of the area and existing vegetation, it is questionable whether equipment access can be gained to the inlet without additional disturbance. The following is a proposed plan for the inlet. ~~Equipment~~ equipment (trackhoe) can access the area from the east side:

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- (1) A channel area will be defined according to the design shown in Attachment A;
- (2) Rip-rap will be re-set in the channel with the largest at the base of the slope decreasing in size up the slope;
- (3) Larger pieces of rip-rap will be placed on top of one another in a stair-step fashion as much as possible;
- (4) A mixture of gravel and finer materials (i.e. soil) will be compacted around the rip-rap using a vibrating foot tamper or other tool to achieve similar compaction;
- (5) The area will be reseeded along with the reclaimed pond area.

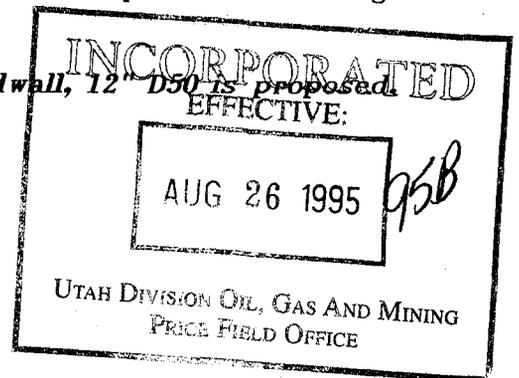
If equipment access is deemed impractical in the field, as much of the above procedure as possible will be performed by hand methods.

Rip-Rap:

Rip-rap sizing for all areas was determined using the calculated flow velocities and selecting the median diameter size from the Rip-Rap Chart in Attachment A. Rip-rap will be generated on site if possible, and will be blocky and angular. The following is a summary of locations, slopes, velocities and proposed sizes of rip-rap to be placed:

Location	Slope	Velocity	Req'd D50	Proposed D50
Main Inlet	45.71%	13.68 fps	20"	20"
36" Cmp Inlet	45.71%	13.68 fps	*20"	12"
36" Cmp Outlet	3.50%	7.82 fps	6"	6"
24" Cmp Inlet	8.00%	3.94 fps	Not Req'd	Existing
24" Cmp Outlet	4.00%	4.47 fps	Not Req'd	Existing

* Due to impractical size and having a cmp headwall, 12" D50 is proposed

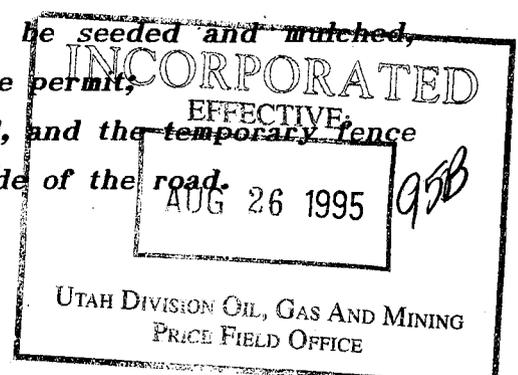


Rip-rap will be placed to a depth of not less than 1.5 times the D50. The rip-rap apron at the outlet of the 36" culvert will be underlain by a filter blanket as shown in Attachment A. All other rip-rap will either remain as is (24" culvert) or be re-set on existing ground with compacted soil/gravel in the voids as described in the Basin Inlet section above.

Reclamation Plan:

The proposed reclamation plan for the pond area is shown on the enclosed Plate 2, with cross-sections on Plate 3. A description of the proposed plan is as follows:

- (1) All existing rip-rap from the pond overflows will be removed and temporarily stored for re-use;*
- (2) The berm along the lower cell will be pushed into the cell and compacted as fill;*
- (3) The dam of the upper cell will be lowered by approximately 8' and compacted into the lower cell area as backfill;*
- (4) The 36" culvert will be installed from the upper basin across the Mill Fork Road;*
- (5) Rip-rap on the existing pond inlet will be re-set with voids filled in with existing soil;*
- (6) The basin and culvert inlet structure will be rip-rapped using 12" D50 or larger rock with soil in the voids;*
- (7) The culvert outlet structure (rip-rap apron) will be installed using 6" D50 or larger rip-rap placed to a minimum depth of 9" over a bedding of filter fabric;*
- (8) All exposed soil areas will be roughened by hand and/or using the backhoe teeth;*
- (9) The entire re-disturbed area will be seeded and mulched, using the approved seed mix in the permit;*
- (10) The road drainage will be restored, and the temporary fence will be replaced along the pond side of the road.*



ATTACHMENT A

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Title of run: 36" CMP

Solving for.....= Depth Normal
Trapezoid

Flow depth (ft).....=	0.50
First Side slope.....=	2.0
Second Side slope.....=	2.0
Bottom width (ft).....=	4.00
Slope of diversion.....=	0.4571
Manning"s n.....=	0.040
CFS.....=	34.12
Cross section area (sqft)..=	2.49
Hydraulic radius.....=	0.40
fps.....=	13.68
Froude number.....=	3.81

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Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: #4 MINE DRAINAGE

Comment: SEDIMENT POND REMOVAL - 36" CULVERT

Solve For Full Flow Diameter

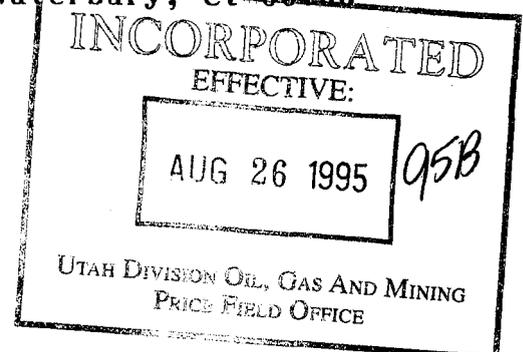
Given Input Data:

Slope.....	0.0350 ft/ft
Manning's n.....	0.025
Discharge.....	34.12 cfs

Computed Results:

Full Flow Diameter.....	2.36 ft
Full Flow Depth.....	2.36 ft
Velocity.....	7.82 fps
Flow Area.....	4.36 sf
Critical Depth....	2.00 ft
Critical Slope....	0.0331 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	34.12 cfs
QMAX @.94D.....	36.70 cfs
Froude Number.....	FULL

Open Channel Flow Module, Version 3.43 (c) 1991
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708



Title of run: 24" CMP

Solving for.....= Depth Normal

Trapezoid

Flow depth (ft).....=	0.29
First Side slope.....=	2.0
Second Side slope.....=	2.0
Bottom width (ft).....=	2.00
Slope of diversion.....=	0.0800
Manning"s n.....=	0.040
CFS.....=	2.98
Cross section area (sqft)..=	0.76
Hydraulic radius.....=	0.23
fps.....=	3.94
Froude number.....=	1.45

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Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: #4 MINE DRAINAGE

Comment: SEDIMENT POND REMOVAL - EXISTING 24" CULVERT

Solve For Full Flow Diameter

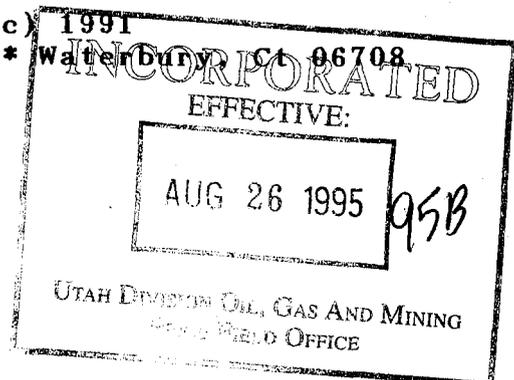
Given Input Data:

Slope.....	0.0400 ft/ft
Manning's n.....	0.025
Discharge.....	2.98 cfs

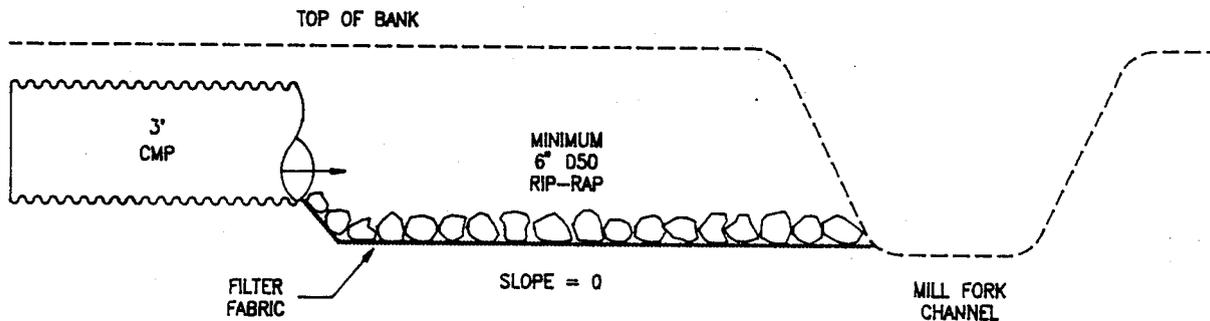
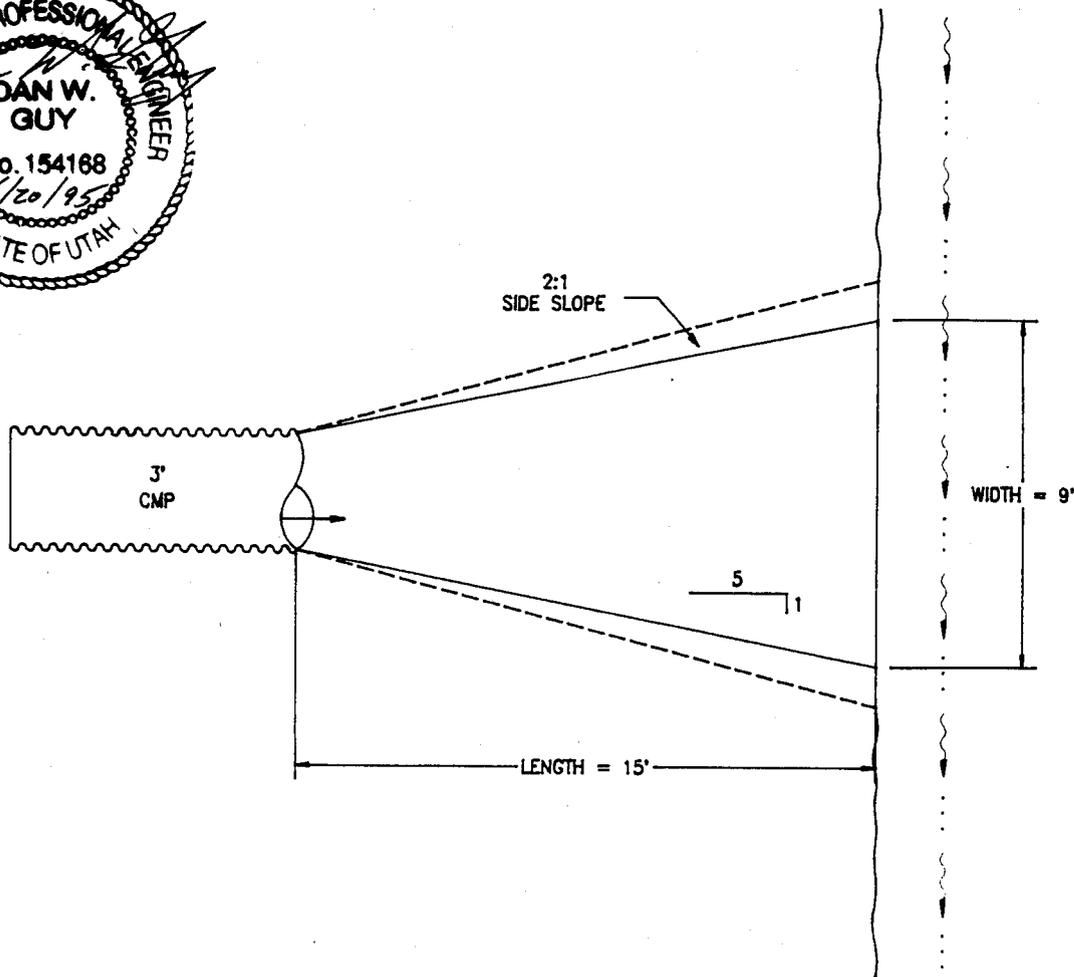
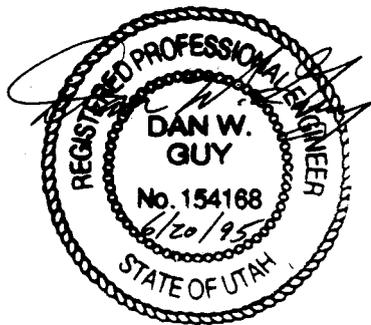
Computed Results:

Full Flow Diameter.....	0.92 ft
Full Flow Depth.....	0.92 ft
Velocity.....	4.47 fps
Flow Area.....	0.67 sf
Critical Depth....	0.75 ft
Critical Slope....	0.0404 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	2.98 cfs
QMAX @.94D.....	3.21 cfs
Froude Number.....	FULL

Open Channel Flow Module, Version 3.43 (c) 1991
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, CT 06708



PROPOSED RIP-RAP APRON



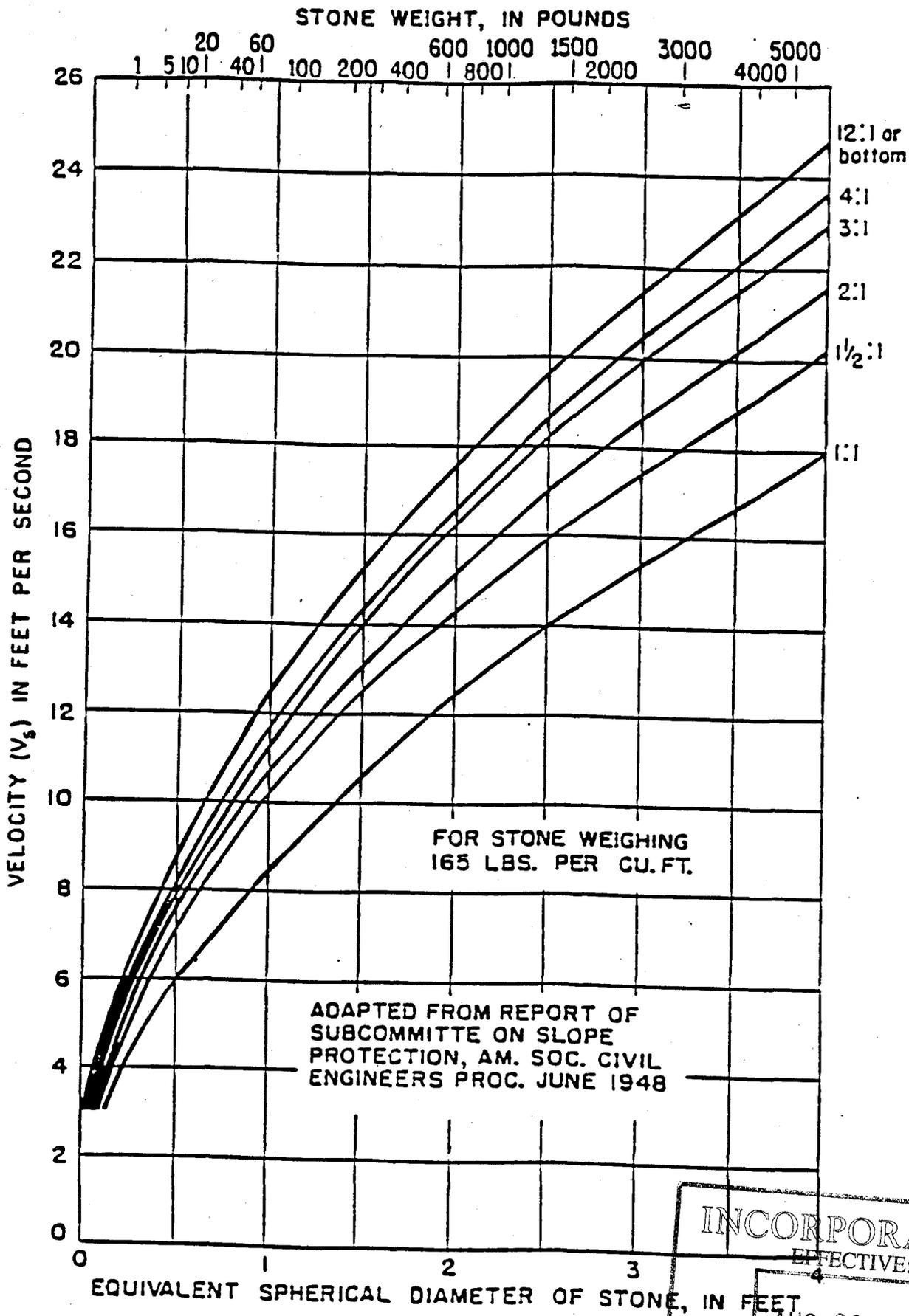
* DESIGN BASED ON FIGURE 7-26, DESIGN OF OUTLET PROTECTION - MAXIMUM TAILWATER CONDITION, EFFECTIVE:
"APPLIED HYDROLOGY AND SEDIMENTOLOGY FOR DISTURBED AREAS", BARFIELD, WARNER & HAAN, 1983.

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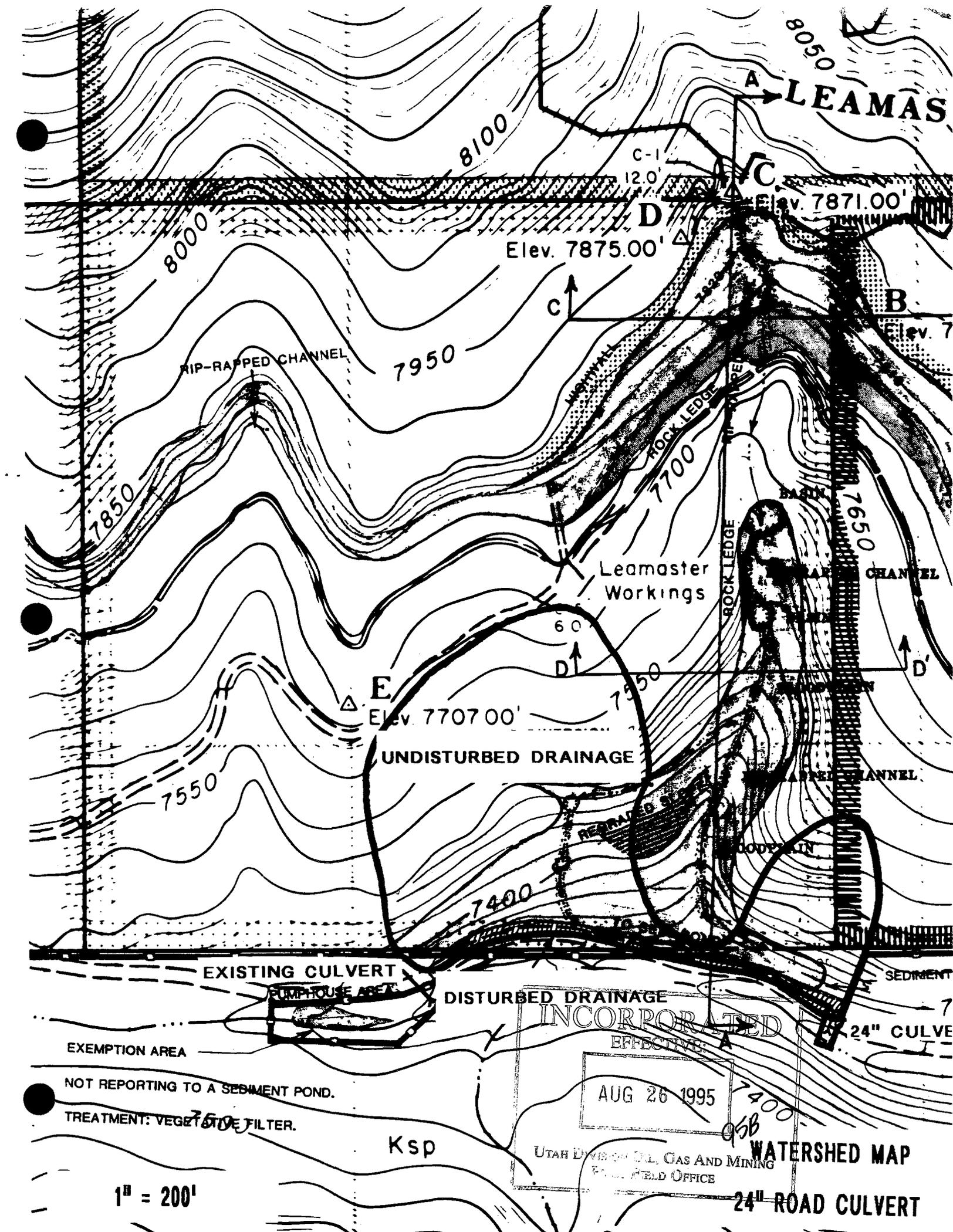
**SIZE OF STONE THAT WILL RESIST DISPLACEMENT
FOR VARIOUS VELOCITIES AND SIDE SLOPES**

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Figure 2
Rip Rap Chart



8500

A → LEAMAS

8100

C-1
12.0'

C
Elev. 7871.00'

8000

D
Elev. 7875.00'

B
Elev. 7

RIP-RAPPED CHANNEL

7950

C ↑

ROCK LEDGE

Leamaster Workings

CHANNEL

7850

60

E
Elev. 7707.00'

UNDISTURBED DRAINAGE

D ↑

7550

RE-RIPPED CHANNEL

WOODEN DAM

7400

EXISTING CULVERT

PUMP HOUSE AREA

DISTURBED DRAINAGE

SEDIMENT

INCORPORATED

EFFECTIVE: A

EXEMPTION AREA

NOT REPORTING TO A SEDIMENT POND.

TREATMENT: VEGETATIVE FILTER.

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FIELD OFFICE

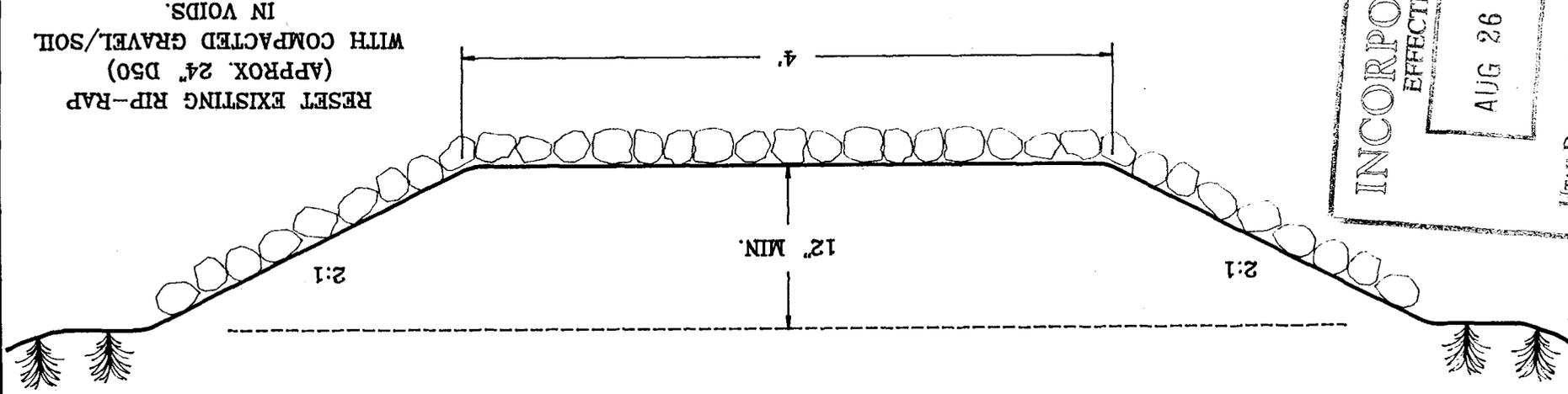
WATERSHED MAP

1" = 200'

24" ROAD CULVERT

95B

TYPICAL SECTION
BASIN INLET DITCH



RESET EXISTING RIP-RAP
(APPROX 24" D50)
WITH COMPACTED GRAVEL/SOIL
IN VOIDS.

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