

WATER PERMIT NO. 1815-1

Name of Applicant: **Homestake Mining Co.**

Address: **630 E Summit, Lead SD** Phone: **605 722-4875**

Amount of Water Claimed: Total Acres:

Source of Water Supply: **Whitewood Creek**

Water to be used for: County: **Lawrence**

Type of Waste Disposal System:

Location:

PRIORITY Date Received: **4-2-04** Application/License Fee: **\$200**

Corrected Application Received: Period of Annual Use:

Remarks:

Diversion Point: **NW ¼ SW ¼ Sec 34-T5N-R3E**

Land to be Irrigated: **NA**

Depth of Well: **NA**

Well Driller: : **NA**

Remarks:

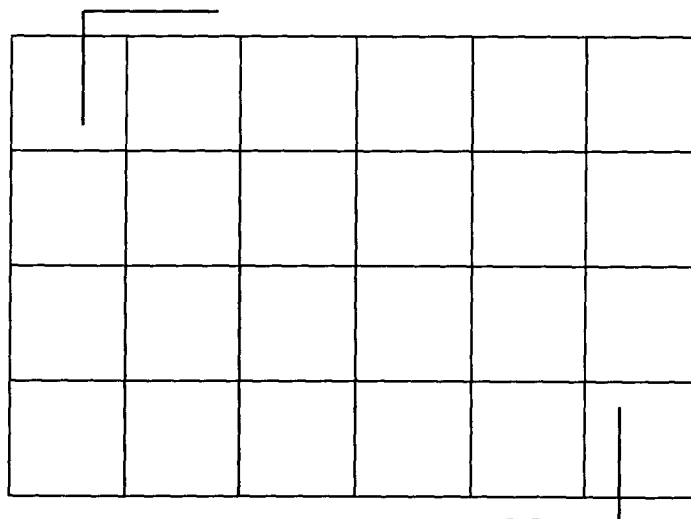
Type of Map: **topo**

Prepared by: **Keith Stodalisky, PE**

Reviewed and the Number Assigned on: **4-2-04**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____



**SOUTH DAKOTA
WATER PERMIT NO. 1815-1**

Date of first receipt of application April 2, 2004.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 1815-1 to Homestake Mining Co., 630 E Summit, Lead SD 57754-1700 authorizing the relocating of a segment of Whitewood Creek subject to the following limitations and conditions:

1. Water Permit No. 1815-1 authorizes relocation of an approximate 2,100 foot segment of Whitewood Creek in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 34-T5N-R3E. The creek bed will be relocated to facilitate reclamation of the Yates Waste Rock Facility. Approximately 455 feet of the creek is currently conveyed in a culvert buried beneath the toe of the waste rock pile. This project is to accomplish restoration by removing the creek from the existing culvert and relocating the creek a short distance (approximately 200 feet) southeast of the present creek channel. This will allow the reclamation of the Yates waste rock pile to ensure long-term, optimum stability of the waste rock by reducing the slope of the pile.
2. The project is for the purpose of reclamation at Homestake Mining Company's Yates Waste Rock Facility.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 1815-1 is June 7, 2004.
5. The date from which applicant may claim right is April 2, 2004.
6. One-fifth of the construction is to be completed on or before December 7, 2006.
7. All construction is to be completed on or before June 7, 2009.
8. Water is to be put to beneficial use on or before June 7, 2013.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

WATER MANAGEMENT BOARD

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

JUN 29 2004

date



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

Mail to: Water Rights Program Joe Foss Building 523 E. Capitol Pierre, SD 57501-3181 (605) 773-3352	No. <u>1815-1</u>	(office use only) Hydrologic Unit <u>10120202</u>
	Basin <u>Belle Fourche R.</u>	
	Newspaper <u>Lawrence Co. Centennial, Deadwood</u>	

RECEIVED

APR 02 2004

WATER RIGHTS
PROGRAM

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

Check use(s) of water:

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

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

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

- Name of Applicant Homestake Mining Company of California Phone 605.722.4875
(check one) ☒ Owner ☐ Tenant/lessee
Mailing Address 630 East Summit, Lead State SD 57754-1700
(Street, RR, or Box and City) (Zip Code)
- Amount of water claimed _____ *CFS or **GPM ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)
- Source of water supply Whitewood Creek
- Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
Relocation of Creek will occur in NW1/4 SW1/4 Section 34, T5N, R3E, B.H.M.
County Lawrence
- County or counties where water will be used Lawrence
- Annual period during which water is to be used _____
- Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

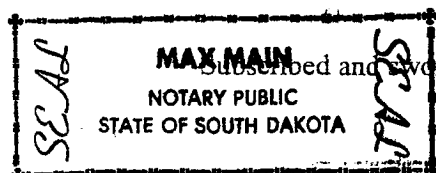
Creek bed will be relocated to facilitate reclamation of the Yates Waste Rock Facility

See attached letter from The MINES Group, Inc. for further description.

STATE OF SOUTH DAKOTA) SS
County of Lawrence

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

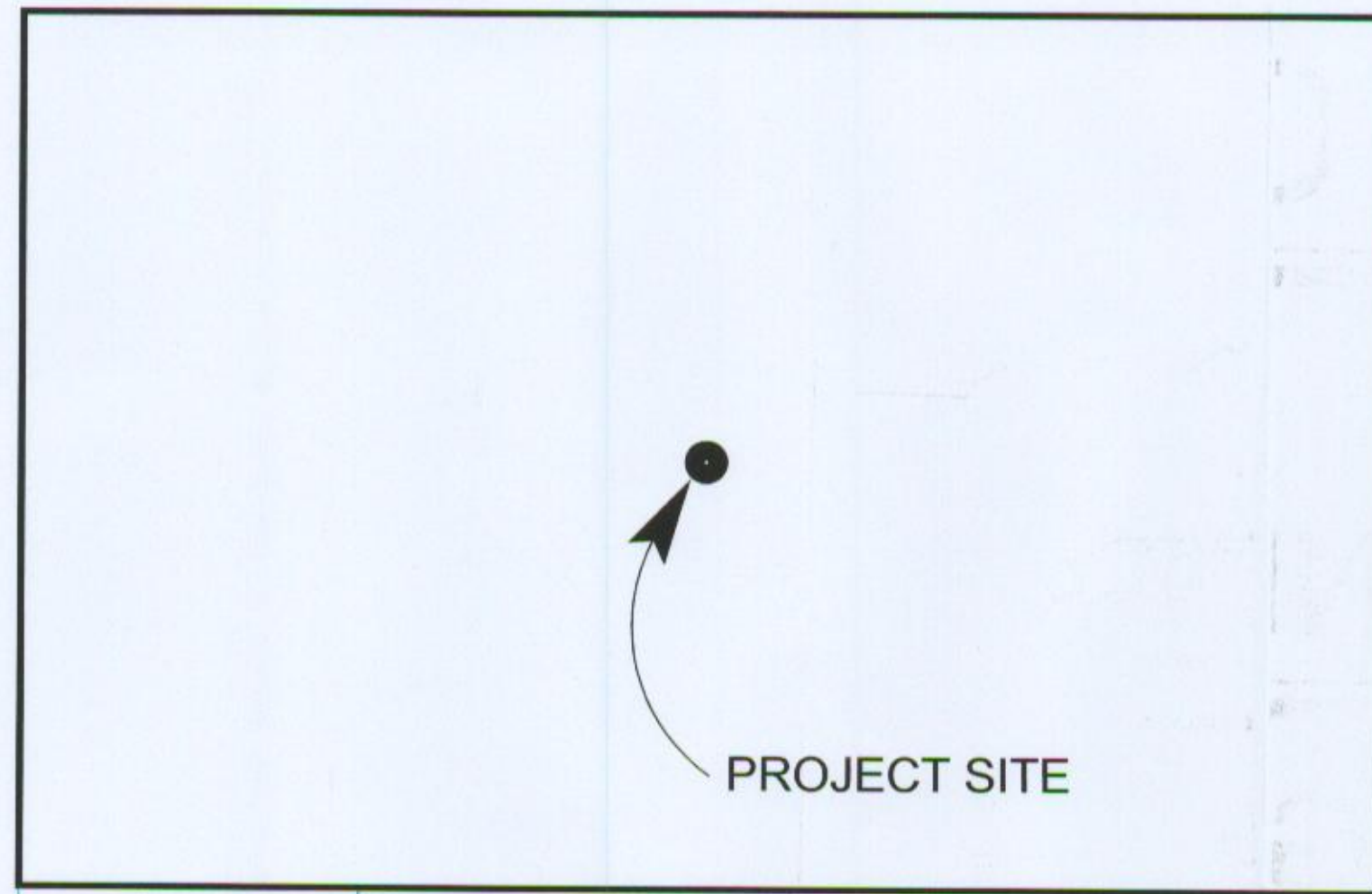
I, Todd A. Duck, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.



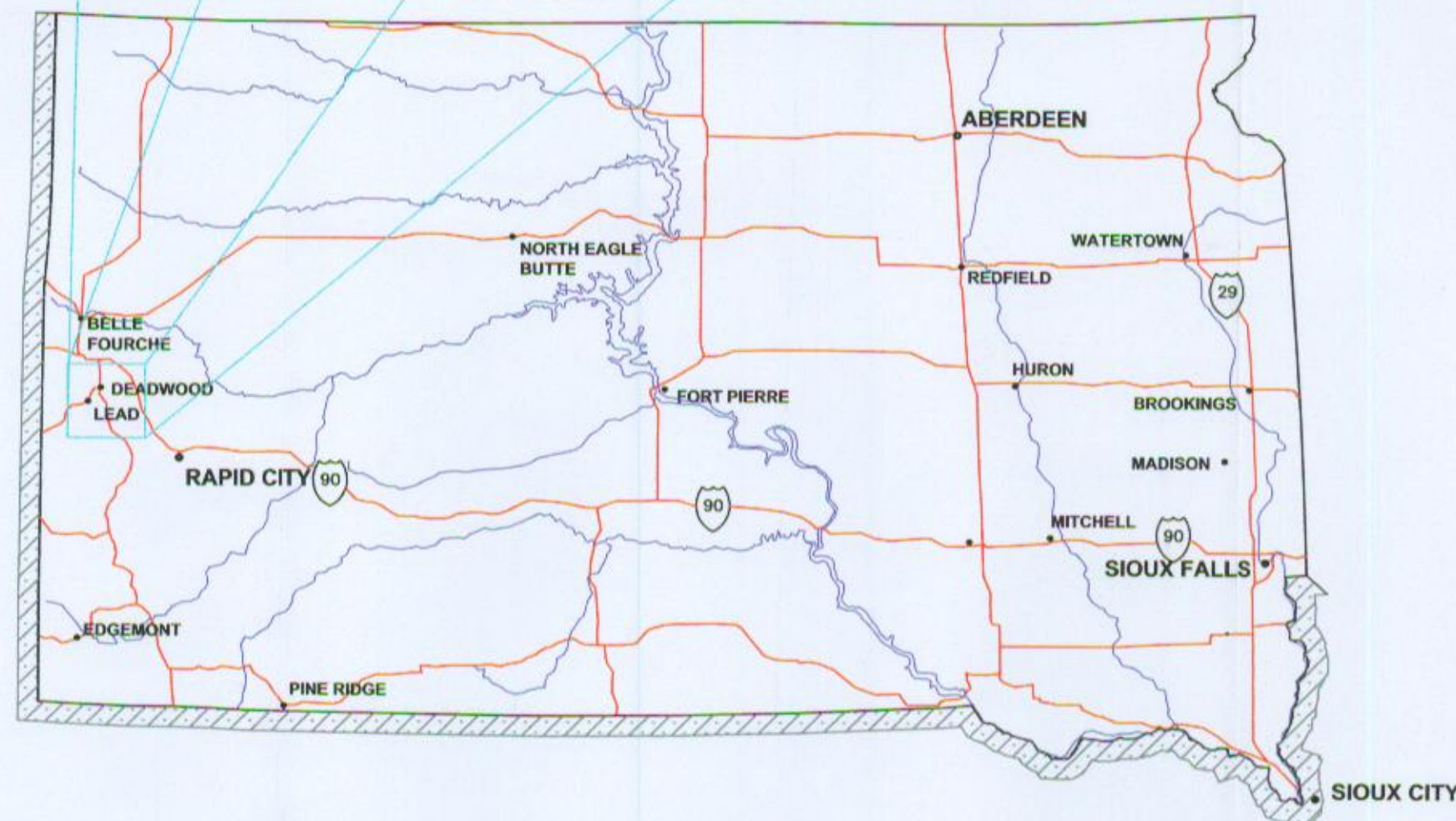
Applicant's signature Todd A. Duck
Subscribed and sworn to before me this 19th day of March 2004

Max Main
Notary Public signature
My Comm. Exp. May 15, 2008

SITE LOCATION MAP



PROJECT SITE

MAP OF SOUTH DAKOTA
(NOT TO SCALE)

HOMESTAKE MINING COMPANY

YATES WASTE ROCK RECONFIGURATION

DESIGN DRAWINGS

LIST OF DRAWINGS

REVISION	DRAWING No.	TITLE
0	032704-01	TITLE SHEET
0	032704-02	YATES WASTE ROCK DUMP RECONFIGURATION
0	032704-03	HDPE LINER LAYOUT
0	032704-04	CROSS SECTIONS AA' AND BB'
0	032704-05	CROSS SECTIONS CC' AND DD'
0	032704-06	TYPICAL DETAILS - STREAM RESTORATION COMPONENTS
0	032704-07	TYPICAL DETAILS - STREAM RESTORATION COMPONENTS

PREPARED FOR

HOMESTAKE MINING COMPANY
LEAD, SOUTH DAKOTA

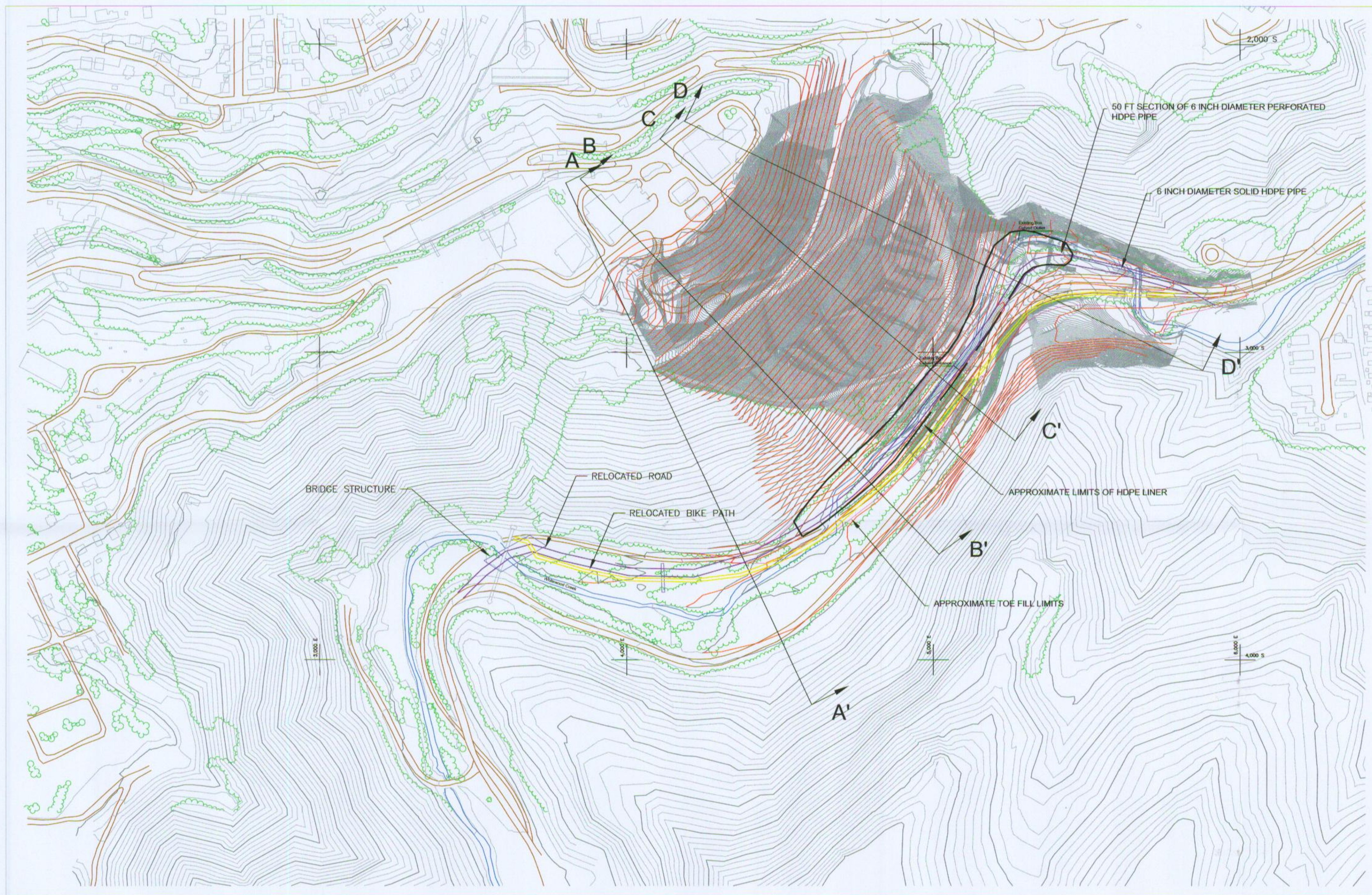
PREPARED BY

C:\TMG\Admin\MINES_Logo_small.bmp

1325 AIRMOTIVE WAY, SUITE 175U
RENO, NEVADA 89502
TEL: (775) 322-7622

I HEREBY CERTIFY THAT THE DRAWINGS FOR THE STREAM
YATES WASTE ROCK DUMP RECONFIGURATION DESIGN WERE
PREPARED UNDER MY DIRECTION BY THE MINES GROUP, INC.
FOR HOMESTAKE MINING COMPANY.

DRAWING NO.: 032704-01



REVISIONS	NO.					DESCRIPTION					BY	CH.	APPRVD.	DATE

REVISIONS	NO.					DESCRIPTION					BY	CH.	APPRVD.	DATE

REFERENCES

DESIGNED	K. Myers	12/16/03
DRAWN	AC	12/16/03
CHECKED		
APPROVED		
APPROVED		

ENGINEER

PREPARED FOR:
HOMESTAKE MINING COMPANY
630 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

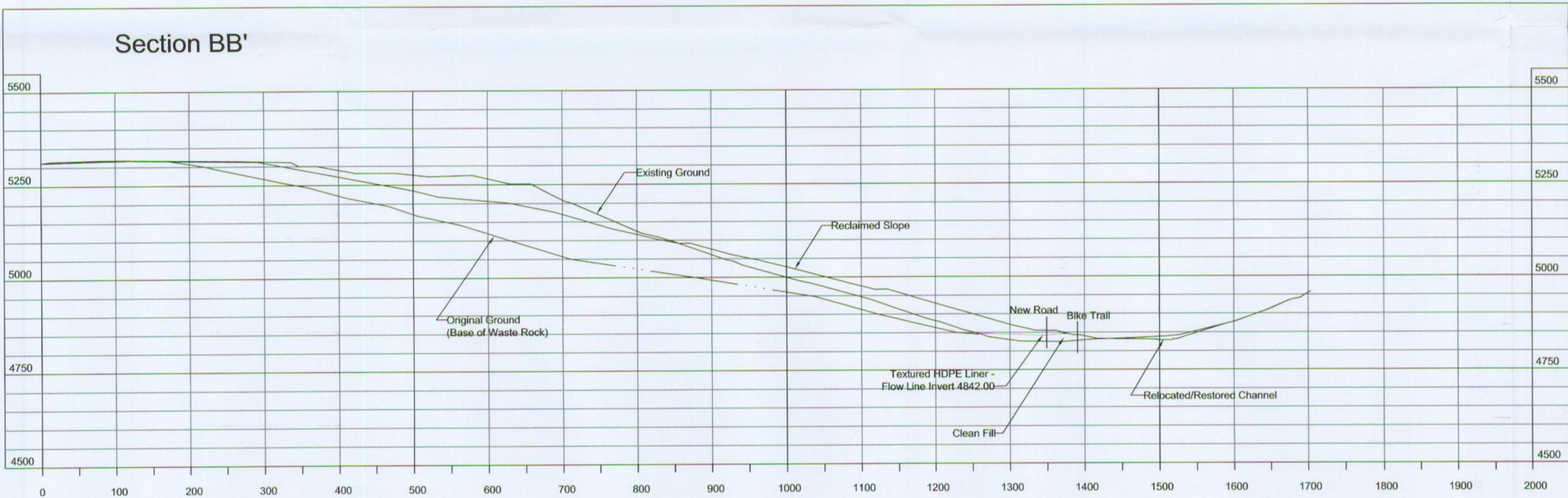
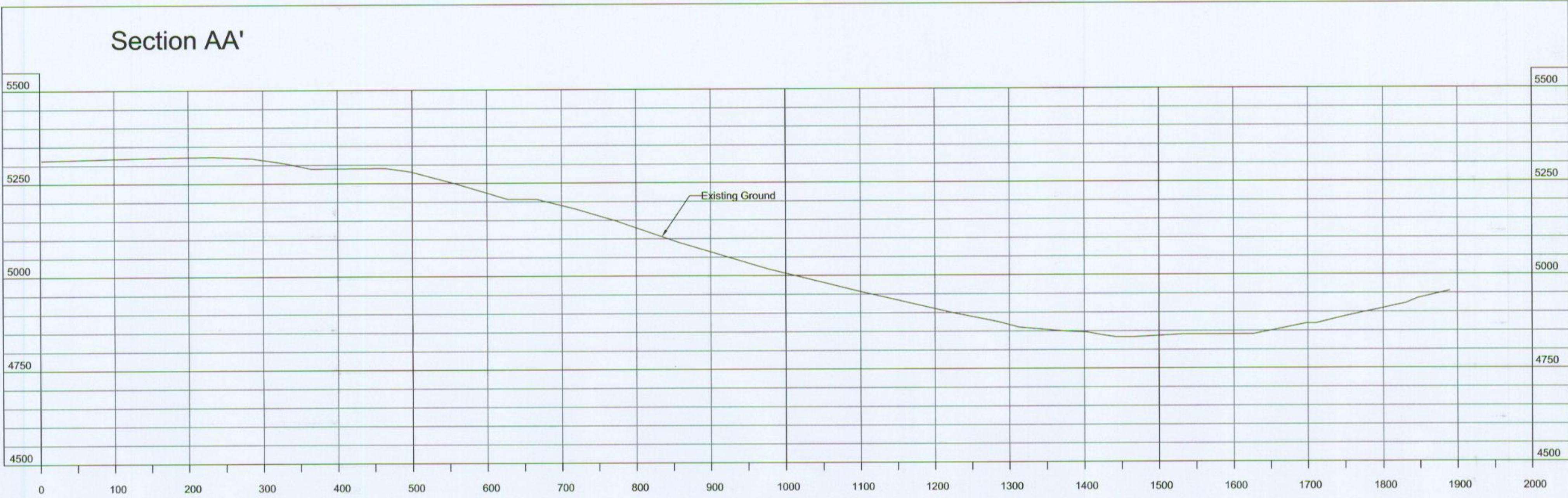
TITLE
HDPE LINER LAYOUT

PREPARED BY:
C:\NIG\Admin\MHES_Logo_small.bmp
1325 AIRMOTIVE WAY, SUITE 175J
RENO, NEVADA 89502
(775) 322-7622

SCALE 1" = 100'

DRAWING No. 032704-03

REVISION
0



NO.	DESCRIPTION	BY	CH.	APPRVD.	DATE

NO.	DESCRIPTION	BY	CH.	APPRVD.	DATE

REFERENCES					

DESIGNED	K. Myers	12/16/03
DRAWN	AC	12/16/03
CHECKED		
APPROVED		
APPROVED		
APPROVED		

ENGINEER

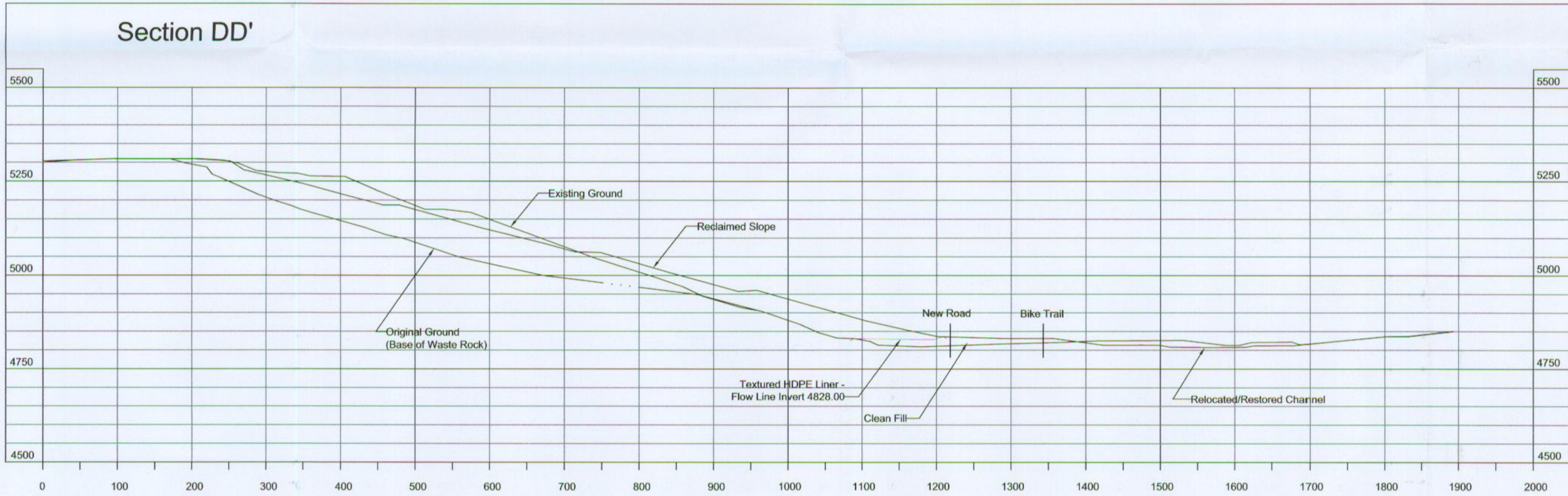
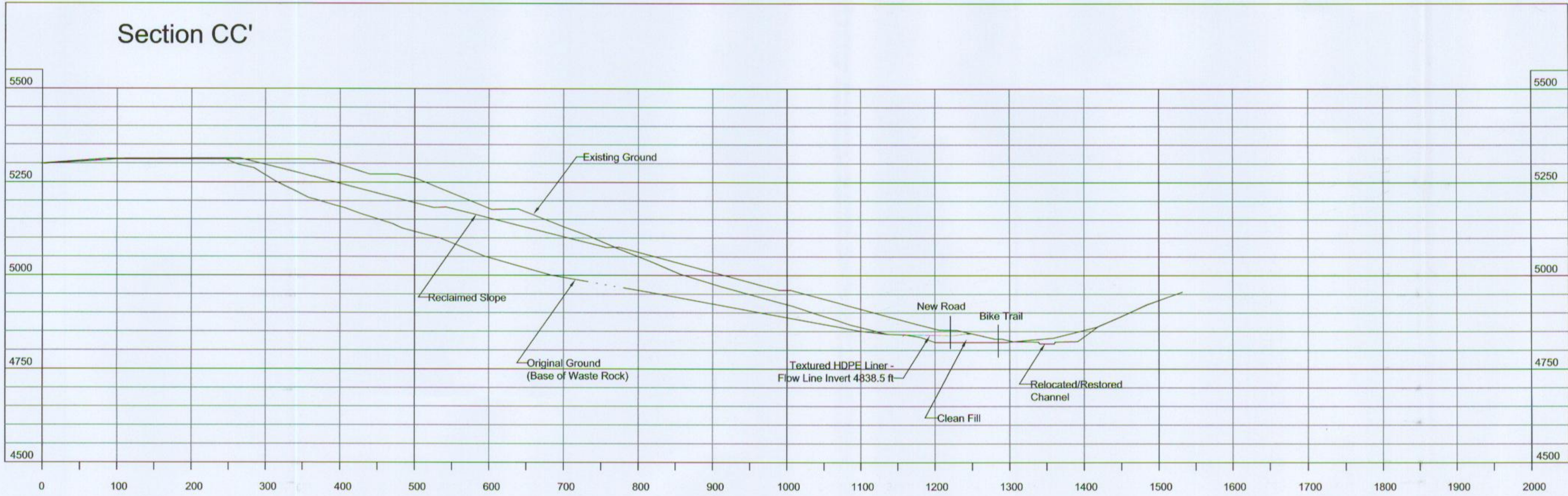
PREPARED FOR:
HOMESTAKE MINING COMPANY
630 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

TITLE
CROSS SECTIONS
AA' and BB'

PREPARED BY:
C:\TMG\Admin\MINES_Logo_small.bmp
1325 AIRMOTIVE WAY, SUITE 175U
RENO, NEVADA 89502
(775) 322-7622

SCALE
1" = 100'
DRAWING No.
032704-04

REVISION
0



NO.	DESCRIPTION	BY	CH.	APPRVD.	DATE
1					
2					
3					
4					
5					

NO.	DESCRIPTION	BY	CH.	APPRVD.	DATE
1					
2					
3					
4					
5					

REFERENCES	

DESIGNED	K. Myers	12/15/03
DRAWN	AC	12/15/03
CHECKED		
APPROVED		
APPROVED		
APPROVED		

ENGINEER

PREPARED FOR:
HOMESTAKE MINING COMPANY
630 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

TITLE
CROSS SECTIONS
CC' and DD'

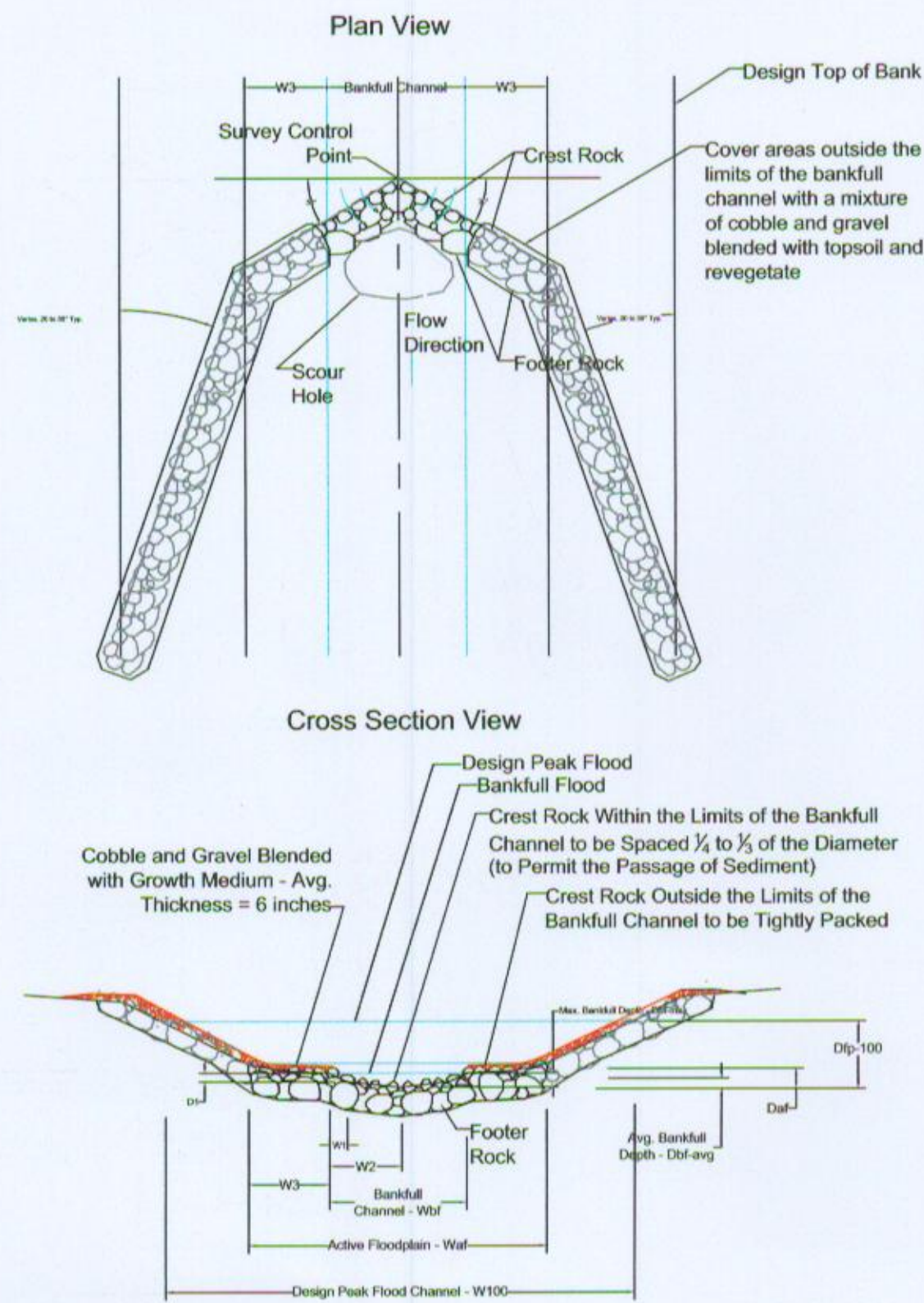
PREPARED BY:
C:\TMG\Admin\MINES\Logo_email.bmp
1325 AIRMOTIVE WAY, SUITE 175U
RENO, NEVADA 89502
(775) 322-7622

SCALE
1" = 100'
DRAWING No.
032704-05

REVISION
0

Typical Details for Rock Cross-Vane (Modified Rock Vortex Weir)

Not to Scale



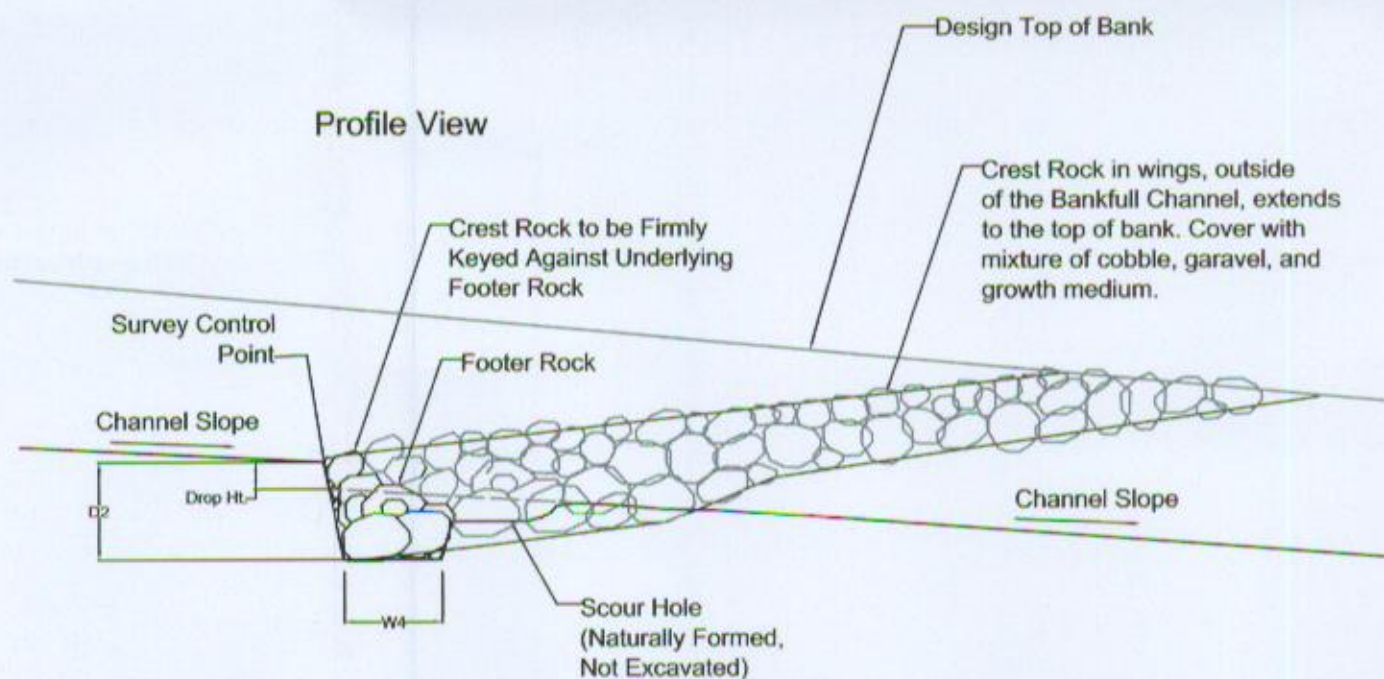
Notes on Construction:

1. Stake the location of each structure on the centerline of the channel alignment.
2. Excavate the rough grade of the channel including the drop (step) in the channel grade at the staked location of each vane structure and establish channel cross sectional shape, prior to beginning construction of the vane structures.
3. Excavate a trench for the placement of the footer rock that establishes the upstream pointing chevron shape of the vane and extends to the design top of bank.
4. Place the footer rock in the base of the trench.
5. Place the crest rock against the upstream side of the trench, keying the rock against the back of the footer rock. Take care to establish the required spacing between crest rock within the limits of the bankfull channel and preserve the cross sectional shape of the bankfull channel. Outside the limits of the bankfull channel, the crest rock should be tightly packed.
6. Backfill any large voids with small rock and gravel.
7. Cover exposed rock outside the limits of the bankfull channel with a mixture of cobble, gravel and growth medium (topsoil if available) to permit revegetation of the surface. The thickness of the cover mixture should average approximately 6 inches.

Table of Cross-Vane Design Dimensions

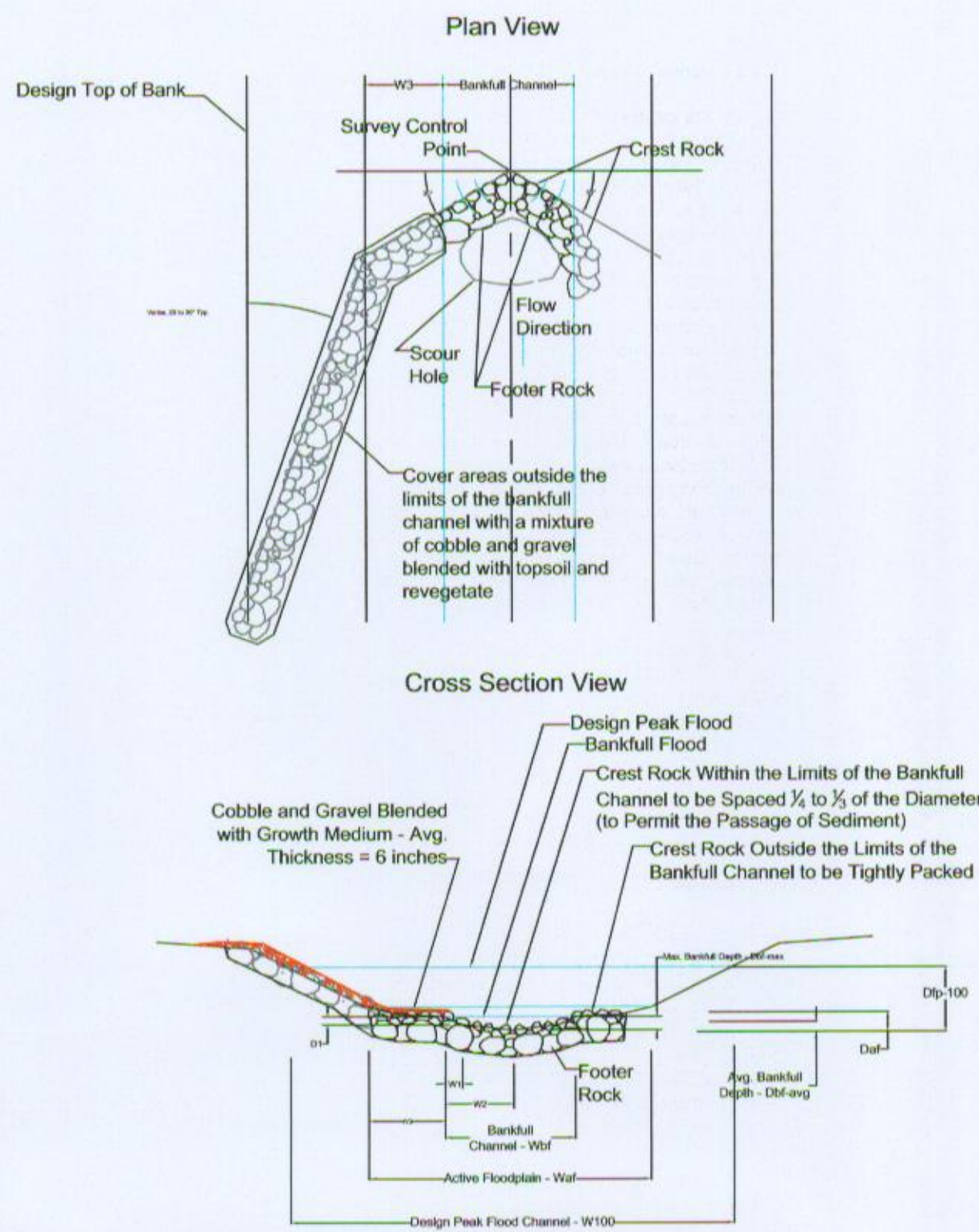
Widths	W1	1.8 ft	Depths	D1	0.9 ft
	W2	8 ft		D2	1.38 ft
	W3	Varies		D3	1.8 ft to 2 ft
	W4	19.6 ft		D4	0.93 ft
	W5	Varies		D5	2.76 ft
	W6	68 to 190 ft		D6	7 to 10 ft
	W7	17 ft		D7	1.8 ft
	W8	Varies		D8	Varies
	W9	Varies		D9	Varies
	W10	Varies		D10	Varies
	W11	Varies		D11	Varies
	W12	Varies		D12	Varies
	W13	Varies		D13	Varies
	W14	Varies		D14	Varies
	W15	Varies		D15	Varies
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	W96	Varies		D96	Varies
	W97	Varies		D97	Varies
	W98	Varies		D98	Varies
	W99	Varies		D99	Varies
	W100	Varies		D100	Varies

* - Informational only



Typical Details for J-Hook Single Vane

Not to Scale



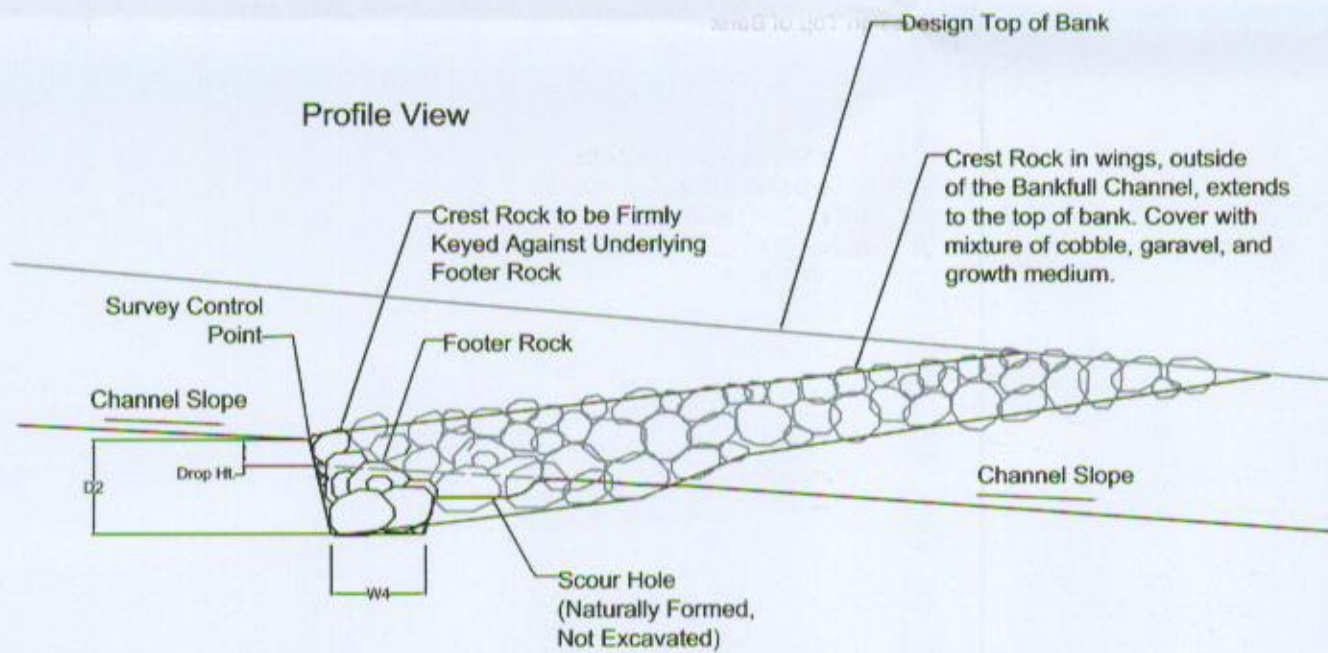
Notes on Construction:

1. Stake the location of each structure on the centerline of the channel alignment.
2. Excavate the rough grade of the channel including the drop (step) in the channel grade at the staked location of each vane structure and establish channel cross sectional shape, prior to beginning construction of the vane structures.
3. Excavate a trench for the placement of the footer rock that establishes the upstream pointing chevron and hooked shape of the vane and extends to the design top of bank.
4. Place the footer rock in the base of the trench.
5. Place the crest rock against the upstream side of the trench, keying the rock against the back of the footer rock. Take care to establish the required spacing between crest rock within the limits of the bankfull channel and preserve the cross sectional shape of the bankfull channel. Outside the limits of the bankfull channel, the crest rock should be tightly packed.
6. Backfill any large voids with small rock and gravel.
7. Cover exposed rock outside the limits of the bankfull channel with a mixture of cobble, gravel and growth medium (topsoil if available) to permit revegetation of the surface. The thickness of the cover mixture should average approximately 6 inches.

Table of J-Hook Single Vane Design Dimensions

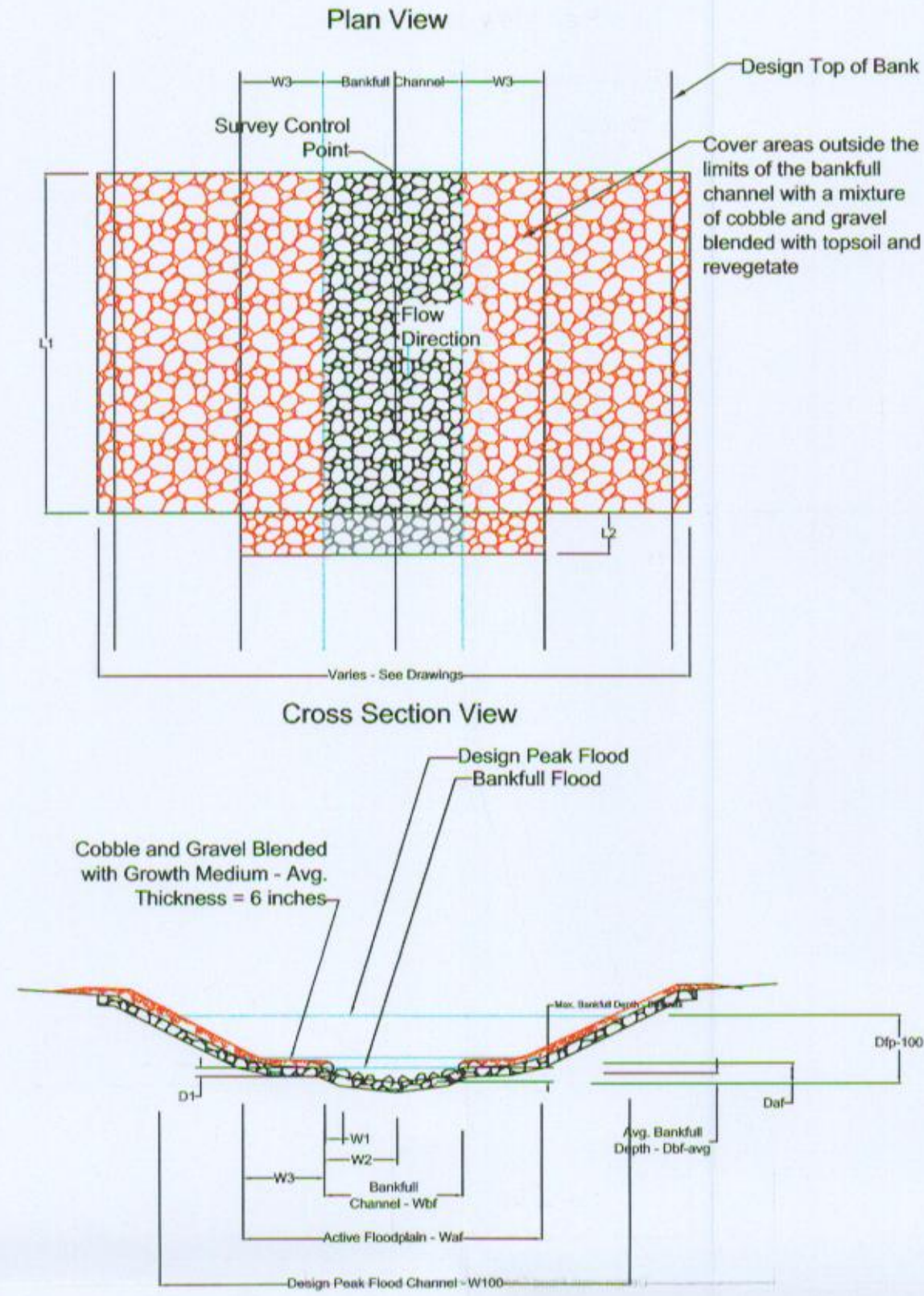
Widths	W1	1.8 ft	Depths	D1	0.9 ft
	W2	8 ft		D2	1.38 ft
	W3	Varies		D3	1.8 ft to 2 ft
	W4	19.6 ft		D4	0.93 ft
	W5	Varies		D5	2.76 ft
	W6	68 to 190 ft		D6	7 to 10 ft
	W7	17 ft		D7	1.8 ft
	W8	Varies		D8	Varies
	W9	Varies		D9	Varies
	W10	Varies		D10	Varies
	W11	Varies		D11	Varies
	W12	Varies		D12	Varies
	W13	Varies		D13	Varies
	W14	Varies		D14	Varies
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	W97	Varies		D97	Varies
	W98	Varies		D98	Varies
	W99	Varies		D99	Varies
	W100	Varies		D100	Varies

* - Informational only



Typical Details for Rock Riffle

Not to Scale



- Notes on Construction:
1. Stake the location of each structure on the centerline of the channel alignment.
 2. Excavate the rough grade of the channel, including the steepened riffle section, and establish channel cross sectional shape, prior to beginning construction of the riffle.
 3. Excavate a sloping trench for the placement of the rock at the downstream end of the riffle that armors the transition back into the normal channel bed.
 4. Place the specified rock material within the footprint of the riffle structure.
 5. Backfill the sloping trench at the downstream end of the riffle structure with channel bed material.
 6. Cover exposed rock outside the limits of the bankfull channel with a mixture of cobble, gravel and growth medium (topsoil if available) to permit revegetation of the surface. The thickness of the cover mixture should average approximately 6 inches.

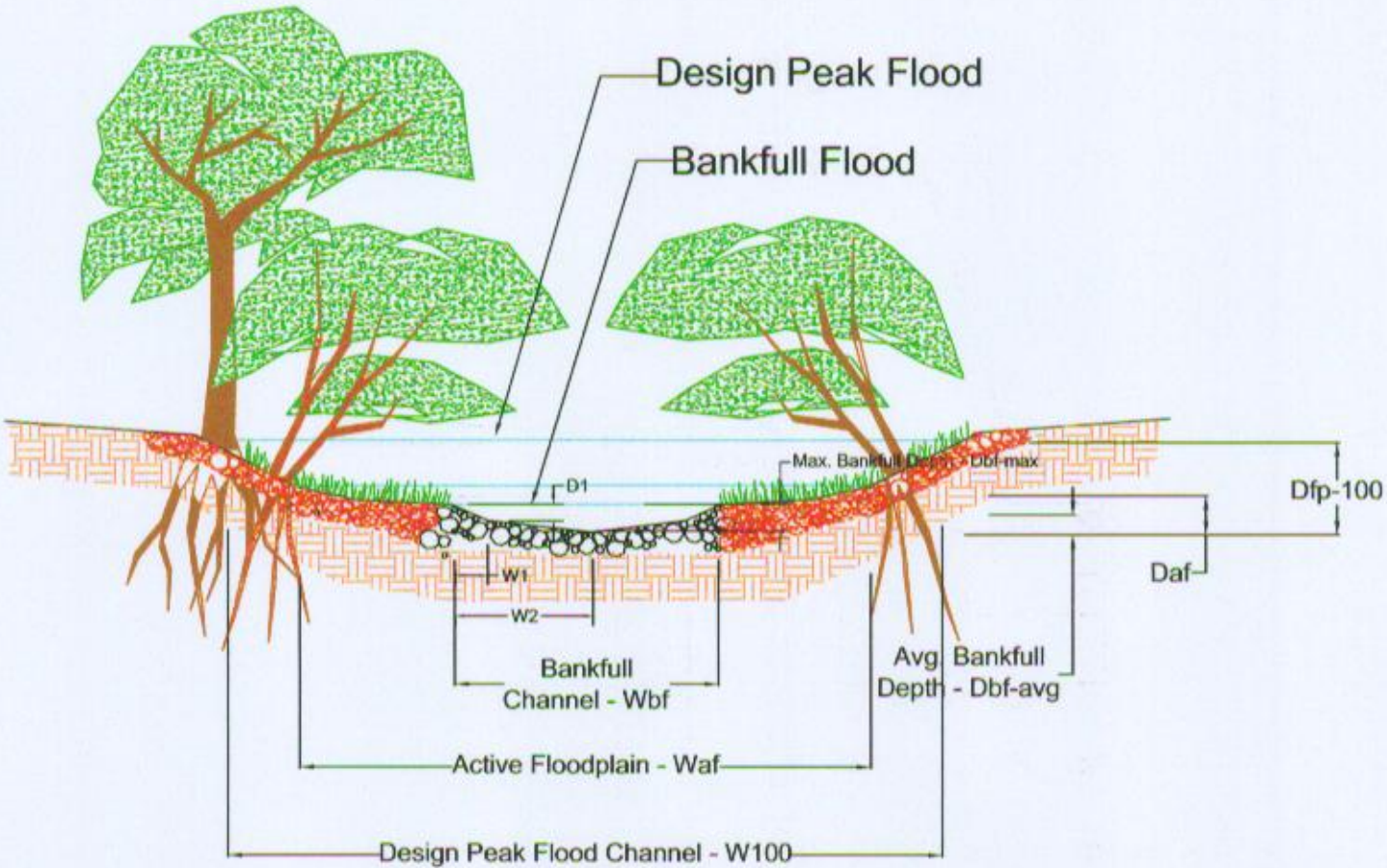
Table of Rock Riffle Design Dimensions

Widths and Lengths	Widths	Lengths	Depths	Depths
W1	1.8 ft	D1	0.9 ft	
W2	8 ft	D2	1.38 ft	
W3	Varies	D3	1 ft to 2 ft	
W4	19.6 ft	D4	0.93 ft	
W5	Varies	D5	2.76 ft	
W100*	68 to 190 ft	D6	7 to 10 ft	
L1	40 ft	D7	3.0 ft	
L2	6 ft	D8	1.5 ft	

* - Informational only

Typical Cross Section for B4 Channel

Not to Scale



Cobble Sized Armor Layer

Cobble Blended with Growth Medium

Table of Channel Design Dimensions (including any adjustments for scour)

Widths	Widths	Depths	Depths
W1	1.8 ft	D1	0.9 ft
W2	8 ft	D2	1.38 ft
Wbf	19.6 ft	D3	0.93 ft
Waf	Varies	D4	2.76 ft
W100*	68 to 190 ft	D5	7 to 10 ft

* - Informational only

NOTES:

Target design channel characteristics -
Width/depth ratio: 21.85
Entrenchment ratio: 2.28
Slope: .01 to .04 ft/ft
Sinuosity: 1.04
Meander wavelength: +/- 220 ft

Q100 = 9310 cfs

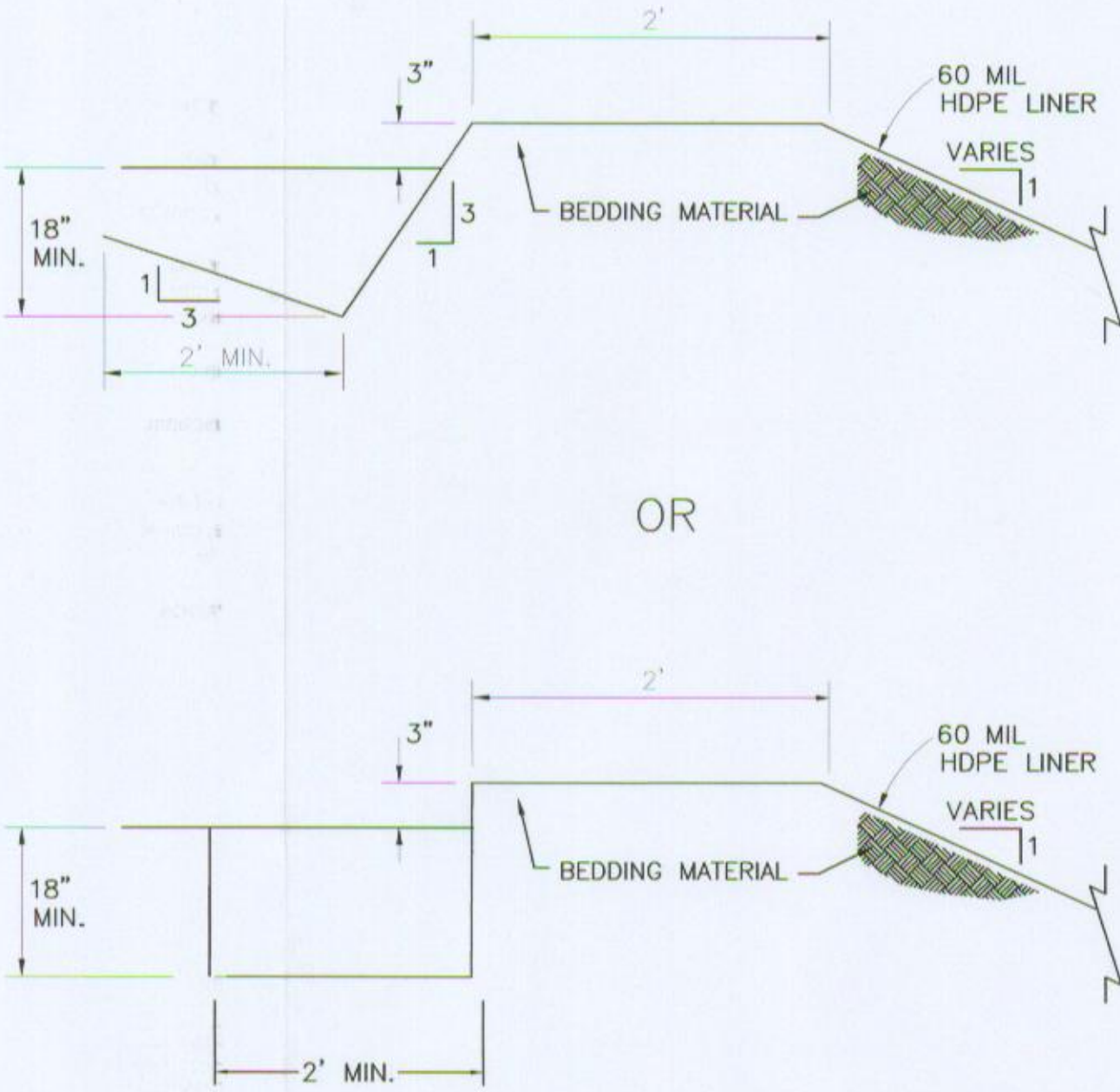
Location of the bankfull channel within the active floodplain varies as a function of sinuosity.

Bank side slopes not to exceed 2H:1V (except in areas of constructed walls)

Dominant vegetation in floodplain and banks will consist of woody trees and shrubs (cottonwood, willow, birch, etc.)

TYPICAL LINER ANCHOR DETAIL

NTS



NO.	DESCRIPTION	BY	CH.	APPRVD	DATE	NO.	DESCRIPTION	BY	CH.	APPRVD	DATE	DESIGNED	K. Myers	12/15/03
												DRAWN	AC	12/16/03
												CHECKED		
												APPROVED		
												APPROVED		
												APPROVED		

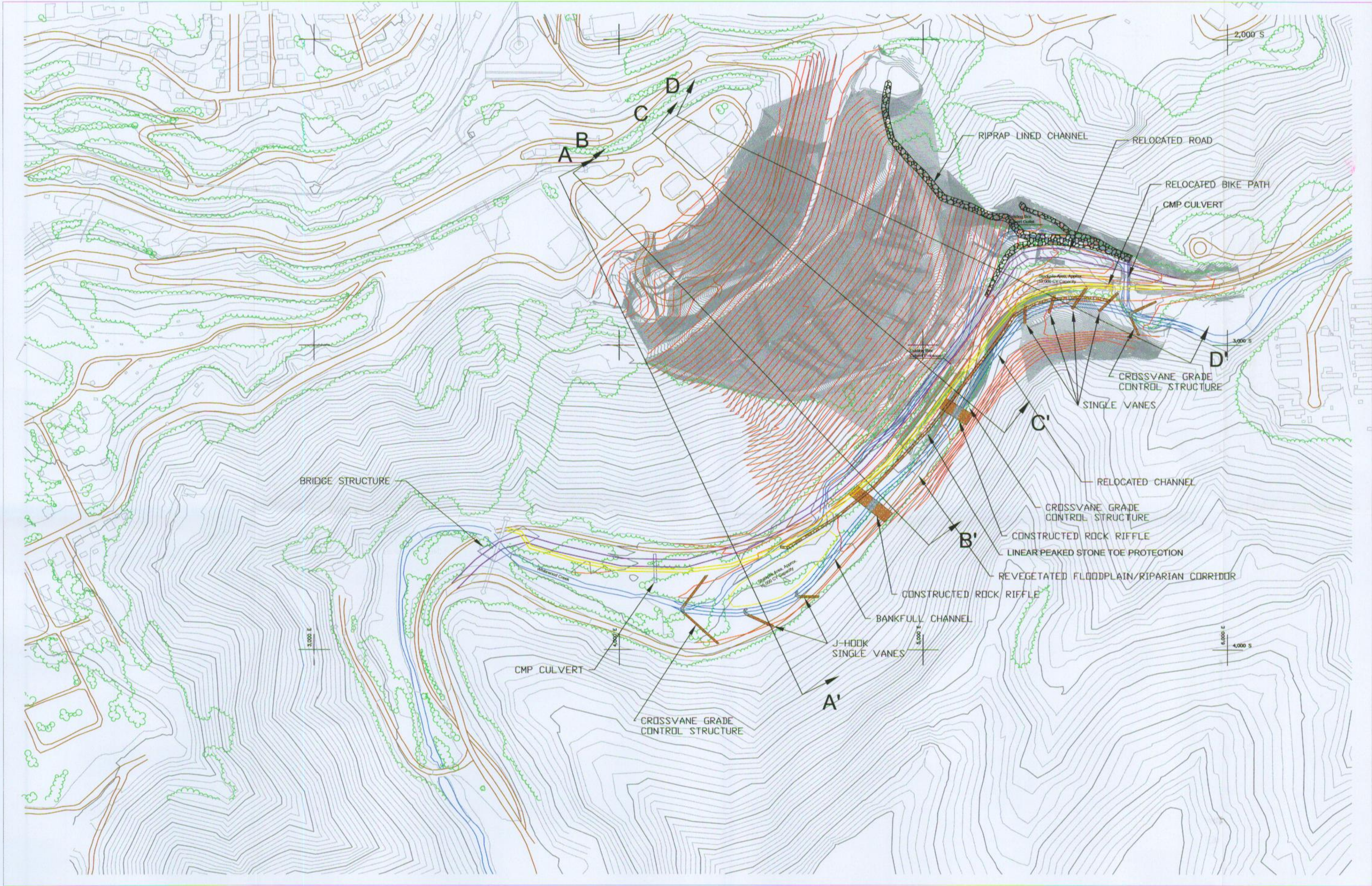
PREPARED FOR:
HOMESTAKE MINING COMPANY
630 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

PREPARED BY:
C:\TMC\Admin\MINES\Logos_small.bmp
1325 AIRMOTIVE WAY, SUITE 175U
RENO, NEVADA 89502
(775) 322-7622

TITLE
TYPICAL DETAILS
STREAM RESTORATION COMPONENTS

SCALE
1" = 100'
DRAWING No.
032704-07

REVISION
0



REVISIONS

NO.	DESCRIPTION	BY	CH.	APPRVD	DATE

REVISIONS

NO.	DESCRIPTION	BY	CH.	APPRVD	DATE

REFERENCES

DESIGNED	K. Myers	12/16/03
DRAWN	AC	12/16/03
CHECKED		
APPROVED		
APPROVED		
APPROVED		

ENGINEER

PREPARED FOR:
HOMESTAKE MINING COMPANY
630 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

TITLE
YATES WASTE ROCK DUMP
RECONFIGURATION

PREPARED BY:
C:\TMO\Admin\MINES_Logo_small.bmp
1325 AIRMOTIVE WAY, SUITE 175U
RENO, NEVADA 89502
(775) 322-7622

SCALE
1" = 100'

DRAWING No.
032704-02

REVISION

0

The MINES Group, Inc.

*1325 Airmotive Way, Suite 175u
Reno, NV 89502*

Reno Office:

Phone: 775-322-2660

Fax: 775-322-2660

E Mail: Minesgrp@aol.com

Incline Office:

Phone: 775-833-3383

Fax: 775-833-2413

E Mail: Kmyers4978@aol.com

September 27, 2002

Mr. Todd Duex
Homestake Mining Company
630 East Summit
Lead, South Dakota 57754-1700

Dear Mr. Duex:

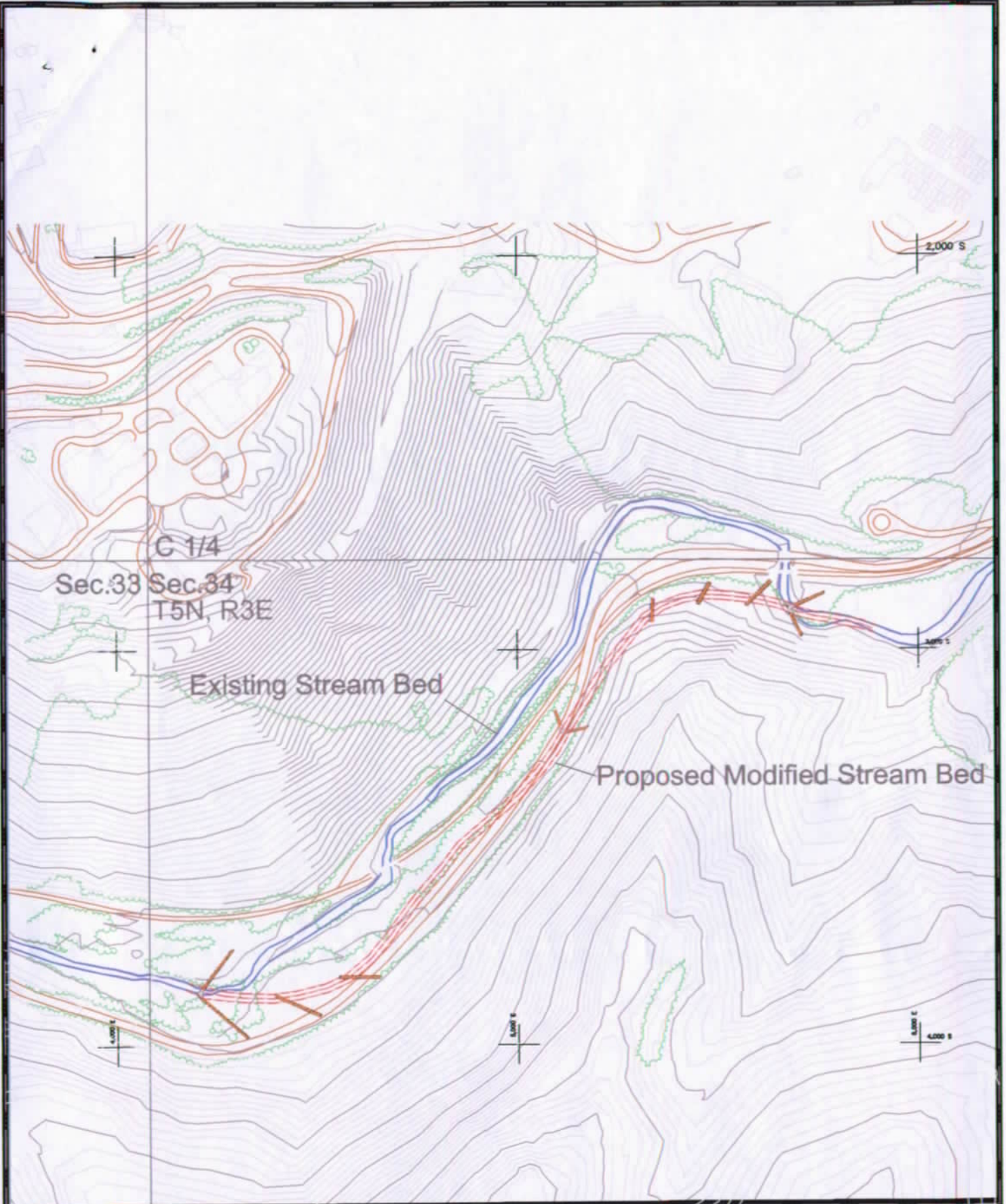
This letter is intended to answer your question concerning potential impacts of the proposed stream relocation/restoration for Whitewood Creek on the hydrology of the stream. The proposed grading for the Yates waste rock facility will not alter hydrologic basin boundaries. The new channel will have the same approximate length, grade, cross section, bedmaterial, and character as the former channel. There are no diversions associated with the new channel and no proposed structures that would impound water or otherwise constrain flow within the channel. The character (and associated curve number) of the local ground surface in this portion of the basin is not being altered significantly (i.e., no paved surfaces will be added and there will be no change in land use that might alter runoff response). Therefore, the new relocated/restored channel will not alter the downstream hydrology in any significant way.

We hope this has provided you with the information you required. Please call if you have any further questions.

Regards,
The MINES Group, Inc.



Kenneth L. Myers
Principal



HOMESTAKE MINING COMPANY
Yates Waste Rock Facility Reclamation Project
Whitewood Creek Diversion Plan

DATE: February 12, 2004

SCALE: See Above Grid Ticks

DRAWN BY:

DWG: G:\Group\Reclamation\Land\Yates\YatesReclamationplan-WaterRights.dwg

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date April 2, 20 04

RECEIVED OF Bennett, Main & Gubbrud, 618 State St, Belle Fourche SD 57717

The following amount in fees for services rendered as provided for by law: For MCmeatake Mining Co.

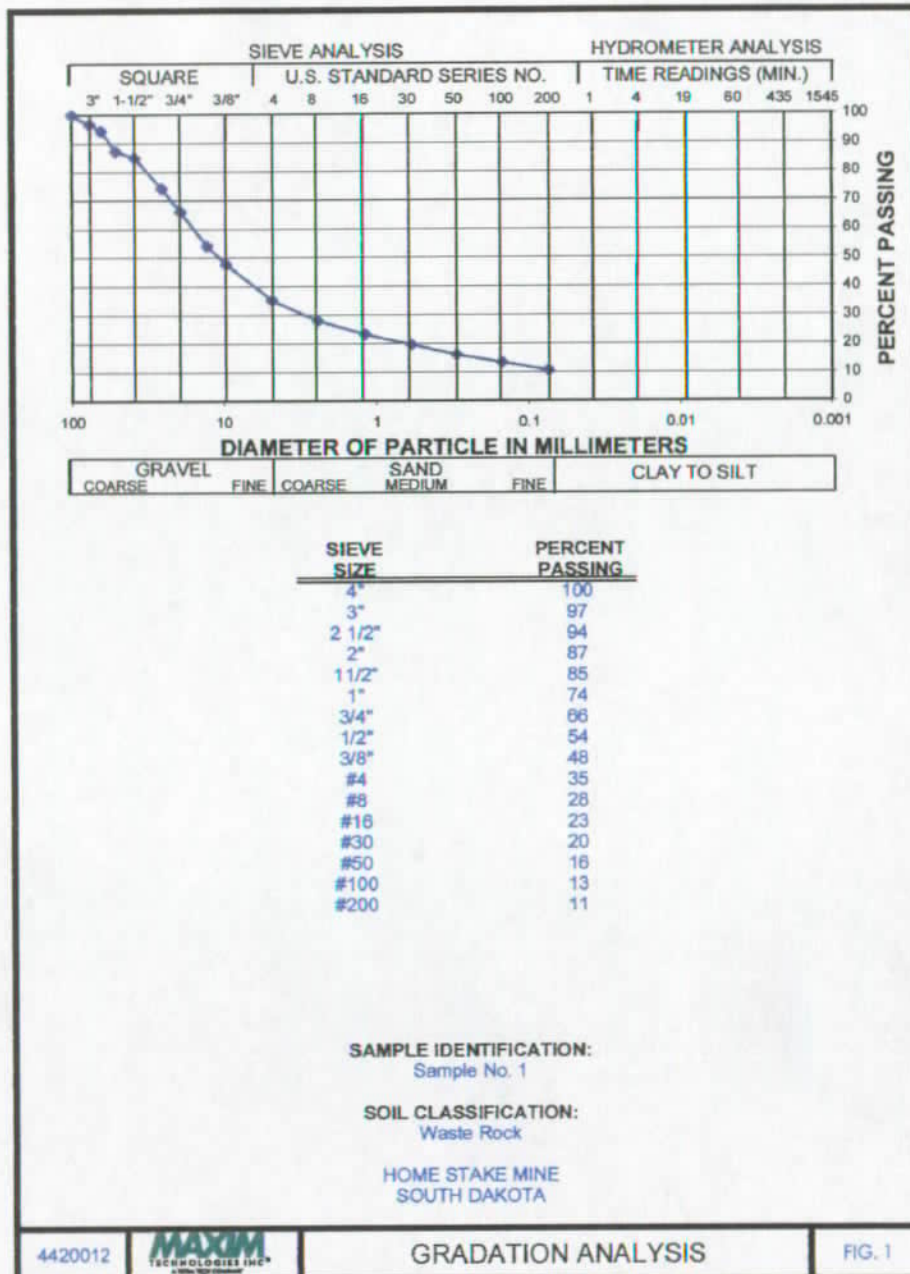
Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	150	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____	50	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
	200	00
(Any Other Work Provided by Law) TOTAL	150.00	

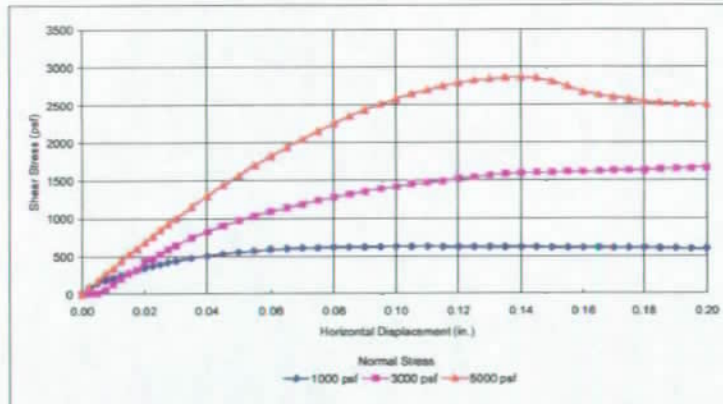
No.

By Garland Erbele
Chief Engineer 1125

Appendix A

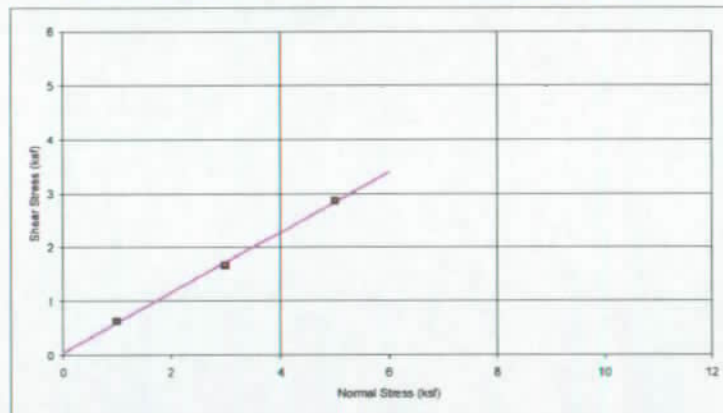
Shear Strength Testing





SAMPLE AREA: 12.566 sq. in. TYPE OF TEST: CONSOLIDATED, DRAINED
 AVG. RATE OF STRAIN: 0.0025 IN./MIN.

Peak Friction Angle (deg): 29 Peak Cohesion (ksf) 0.05



SAMPLE IDENTIFICATION:
 Sample No. 1

SOIL CLASSIFICATION:
 Remolded Waste Rock, Minus 1/2-inch Material

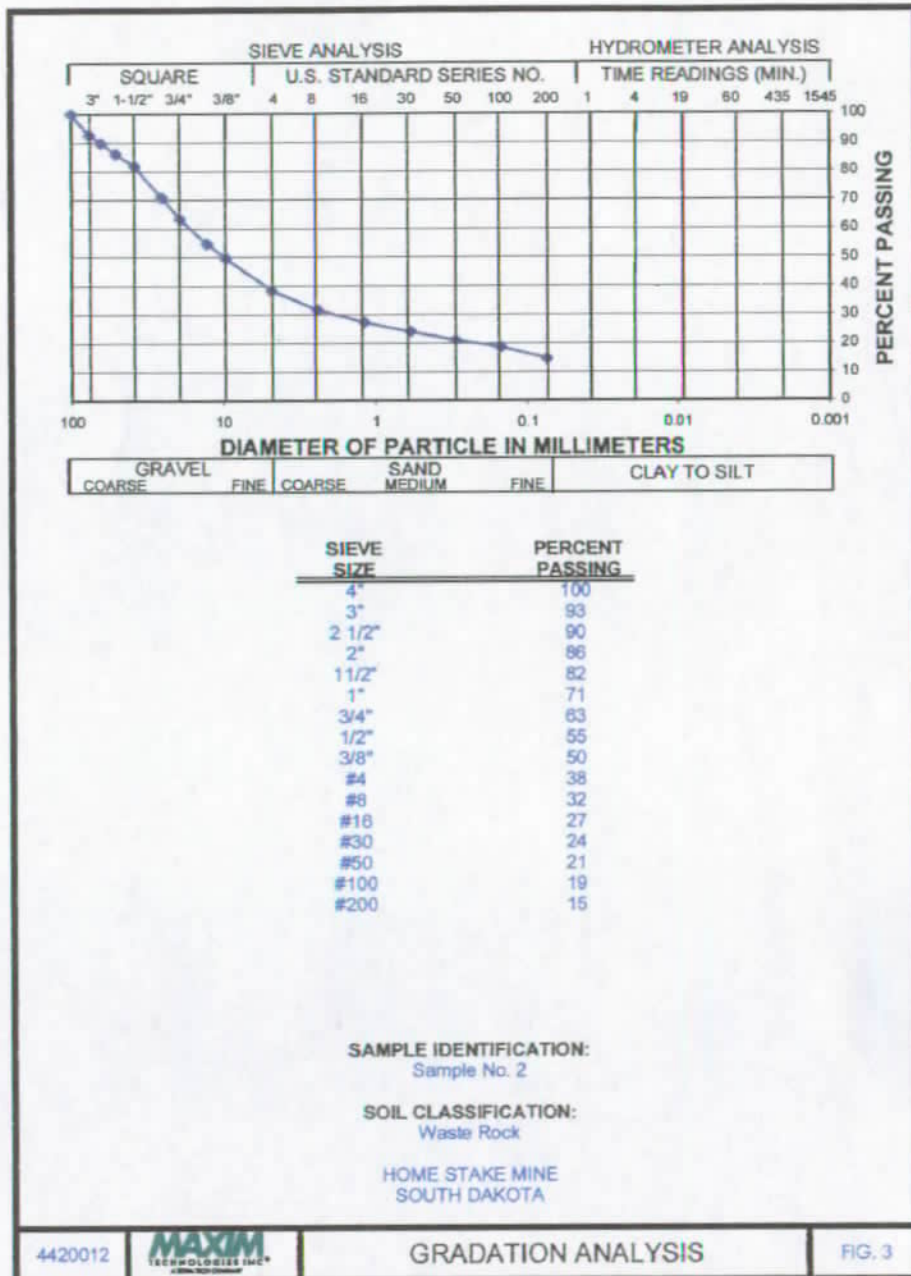
HOME STAKE MINE, SOUTH DAKOTA

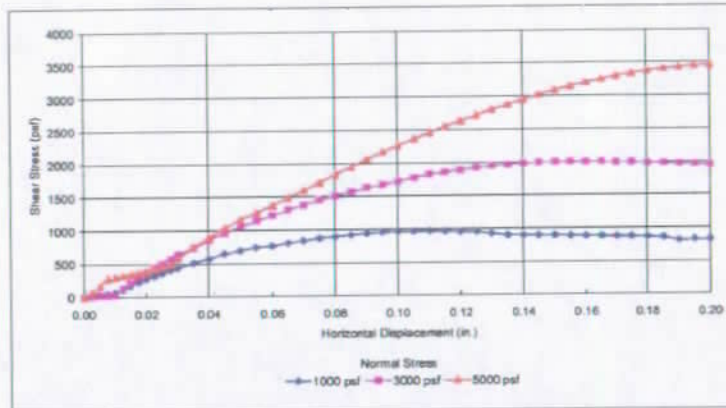
4420012

MAXIM
 TECHNOLOGIES INC.
A TETRA TECH COMPANY

DIRECT SHEAR GRAPHICS

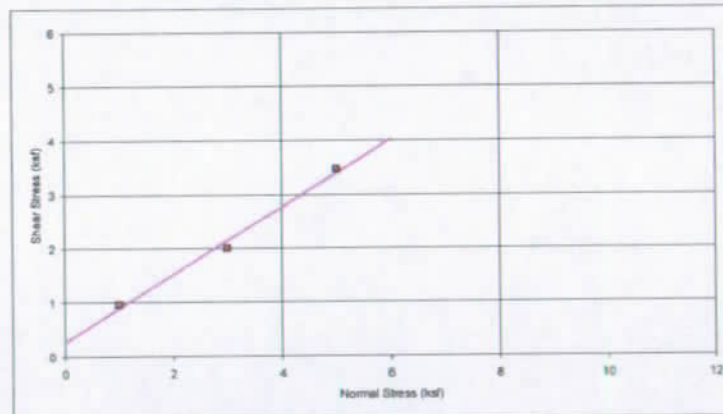
Fig. 2





SAMPLE AREA: 12.586 sq. in. TYPE OF TEST: CONSOLIDATED, DRAINED
 AVG. RATE OF STRAIN: 0.0025 IN./MIN.

Peak Friction Angle (deg): 32 Peak Cohesion (ksf) 0.28



SAMPLE IDENTIFICATION:
 Sample No. 2

SOIL CLASSIFICATION:
 Remolded Waste Rock, Minus 1/2-inch Material

HOME STAKE MINE, SOUTH DAKOTA

4420012

MAXIM
 TECHNOLOGIES INC.
www.maximtechnologies.com

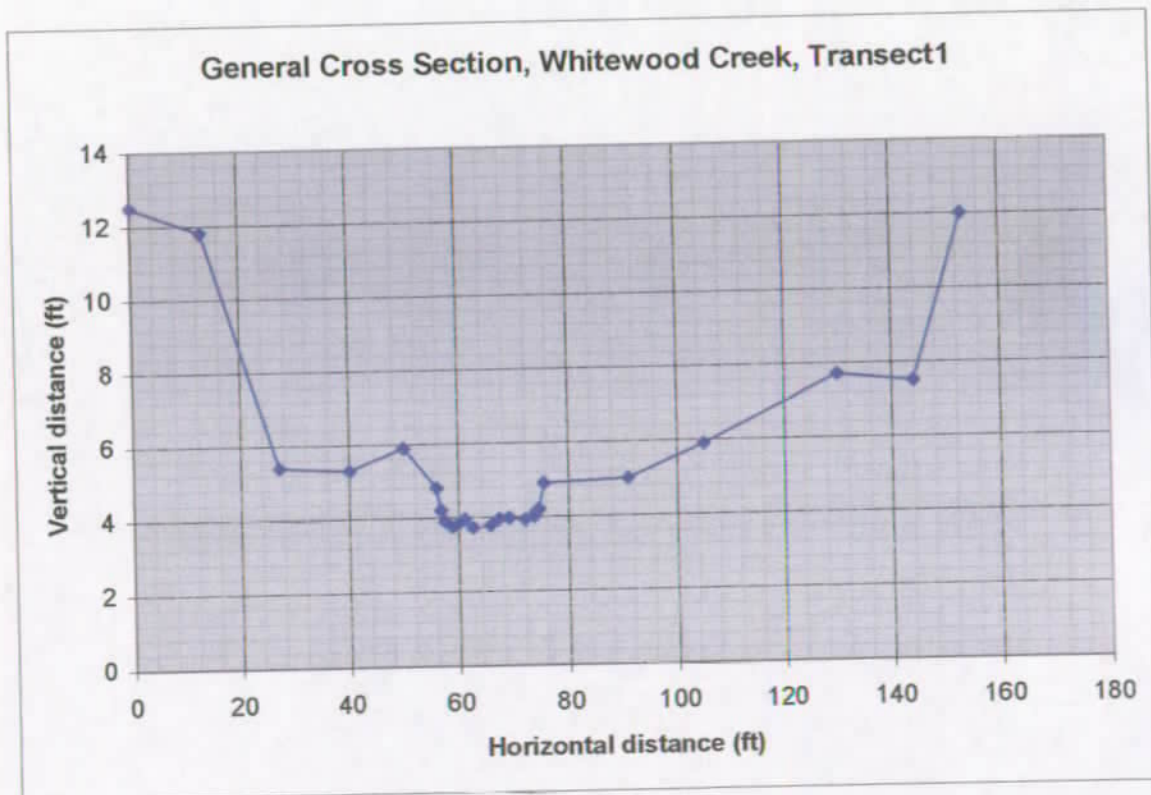
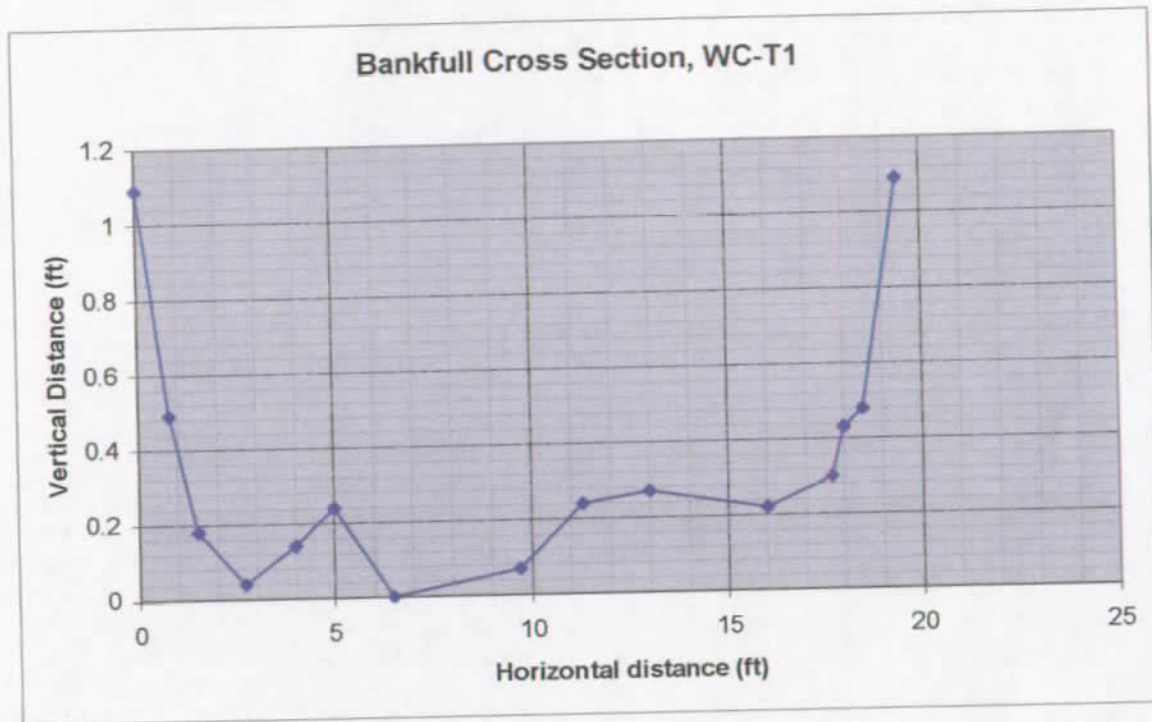
DIRECT SHEAR GRAPHICS

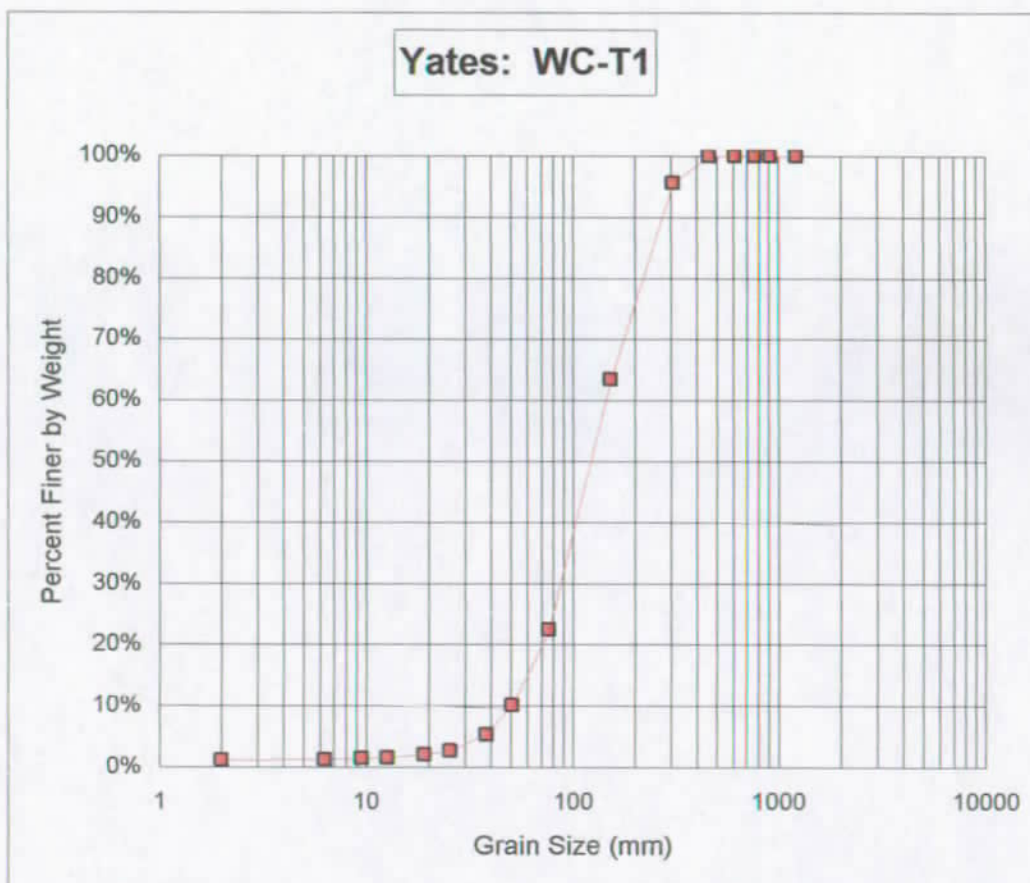
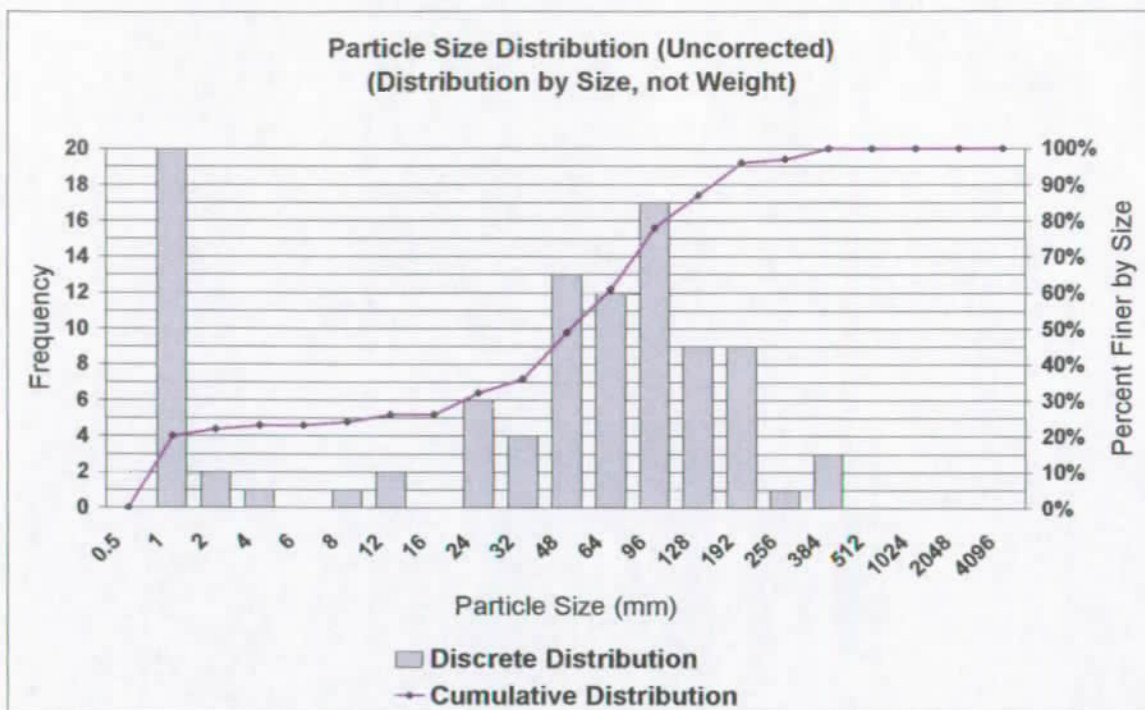
Fig. 4

Appendix B

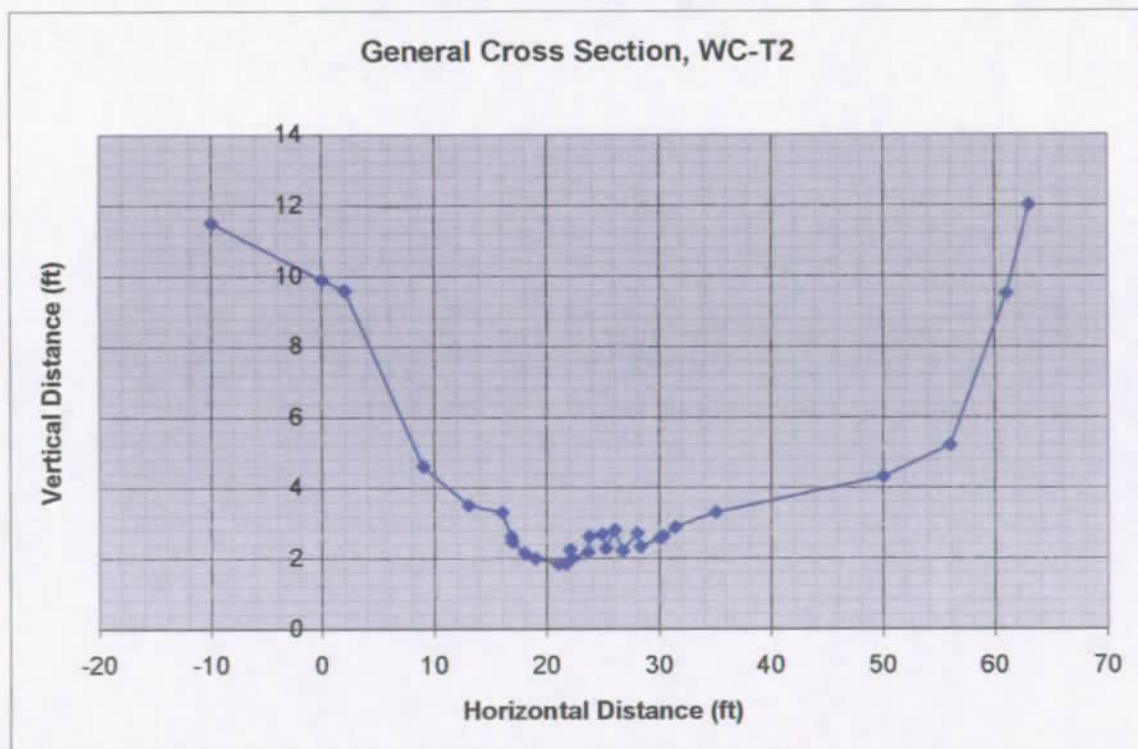
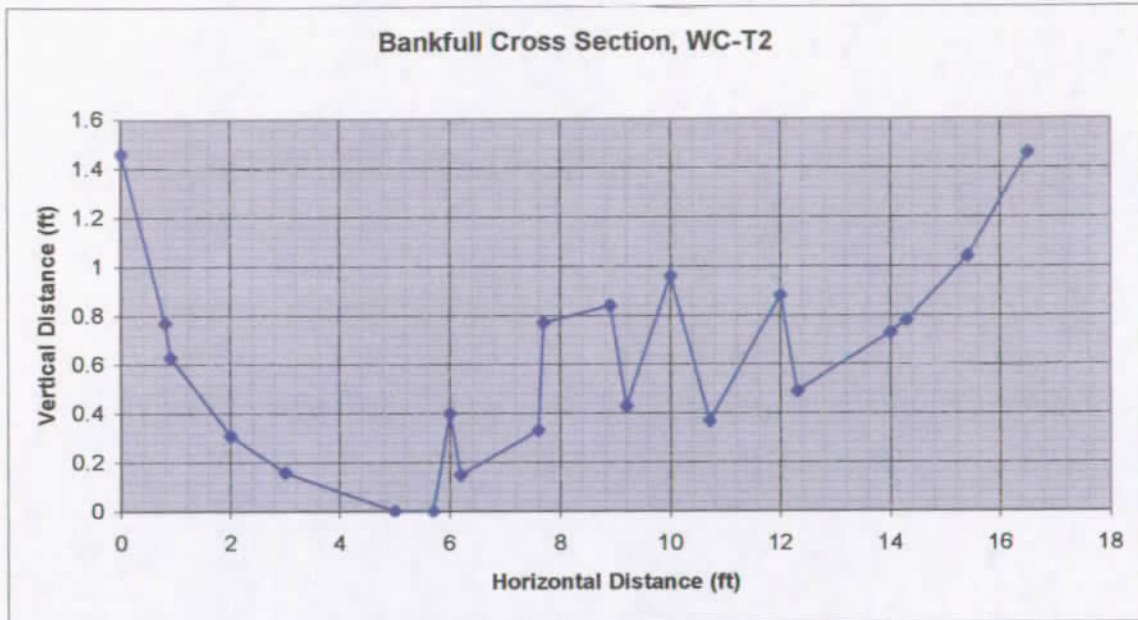
Channel Transects

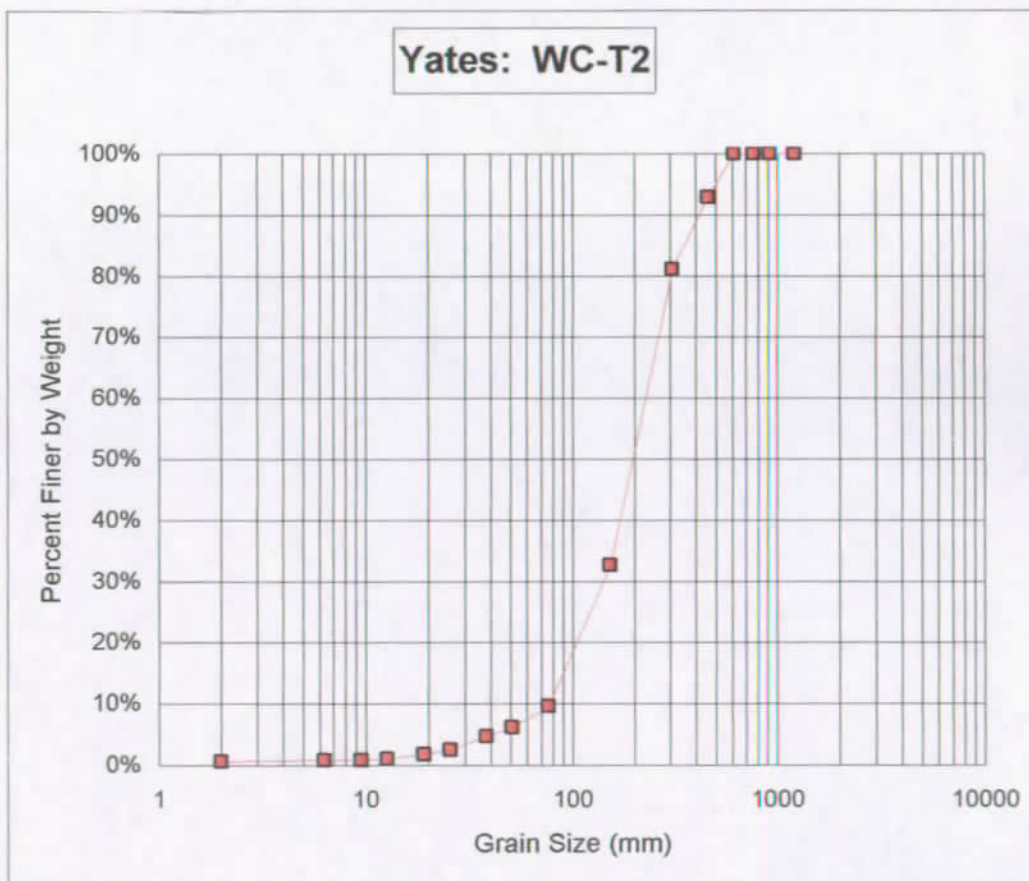
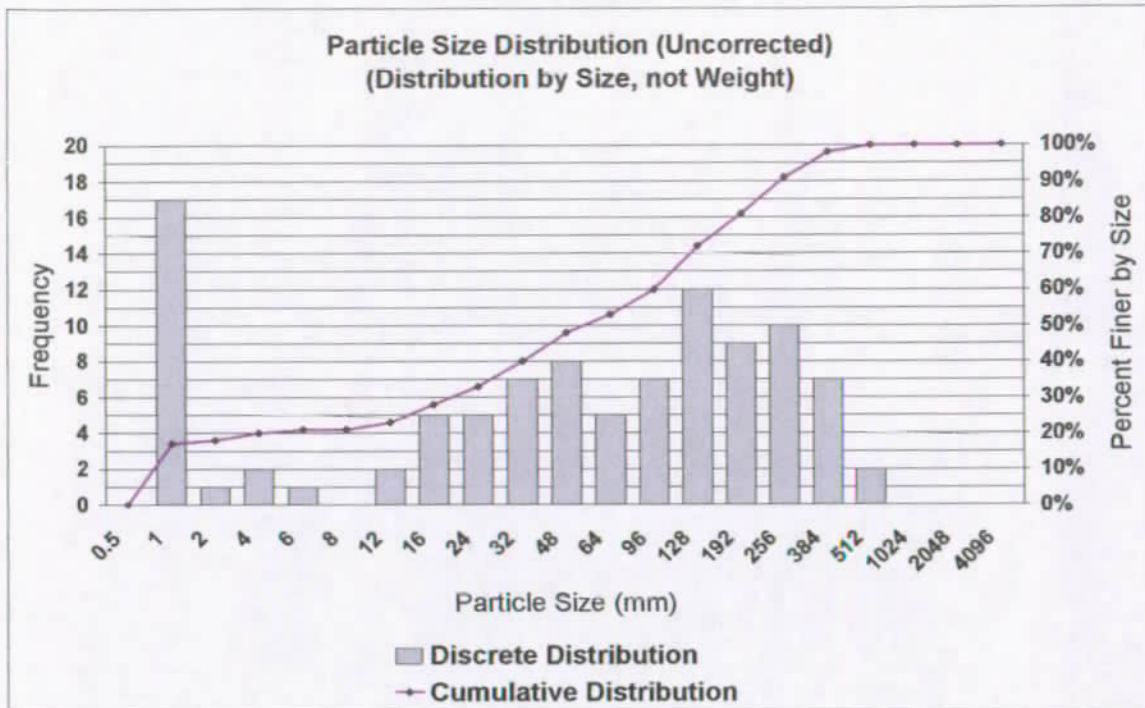
Transect WC-T1



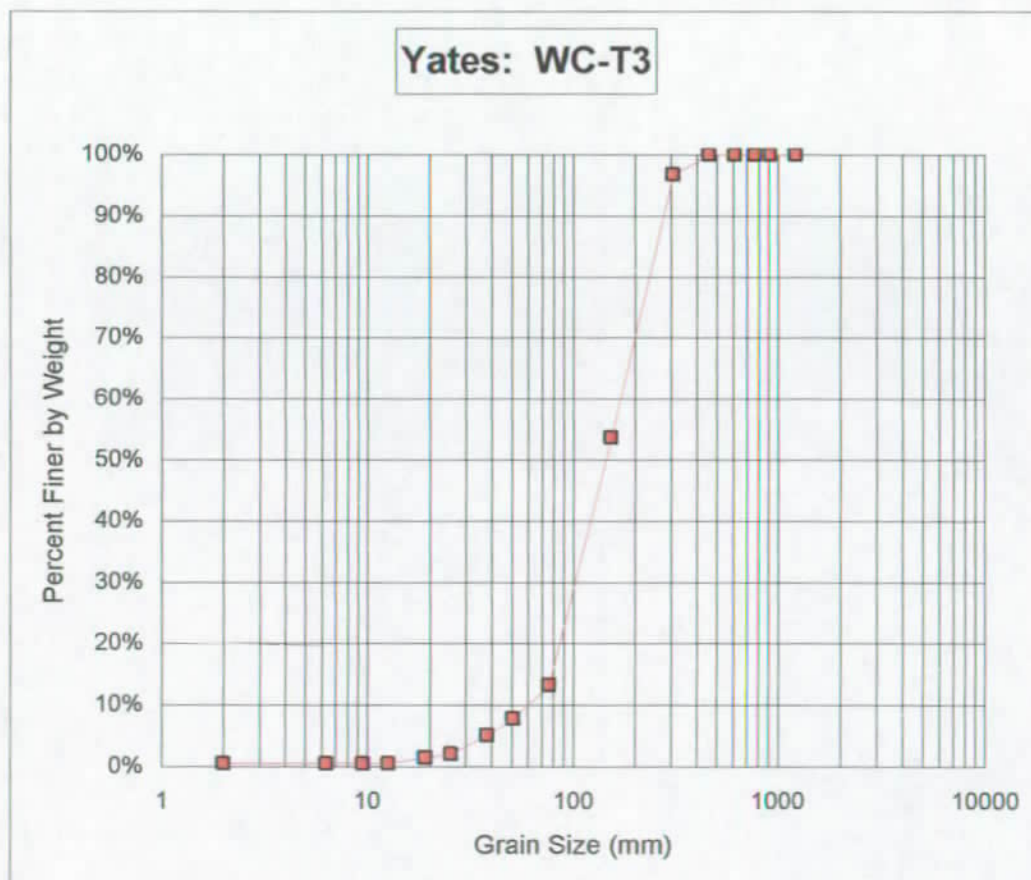
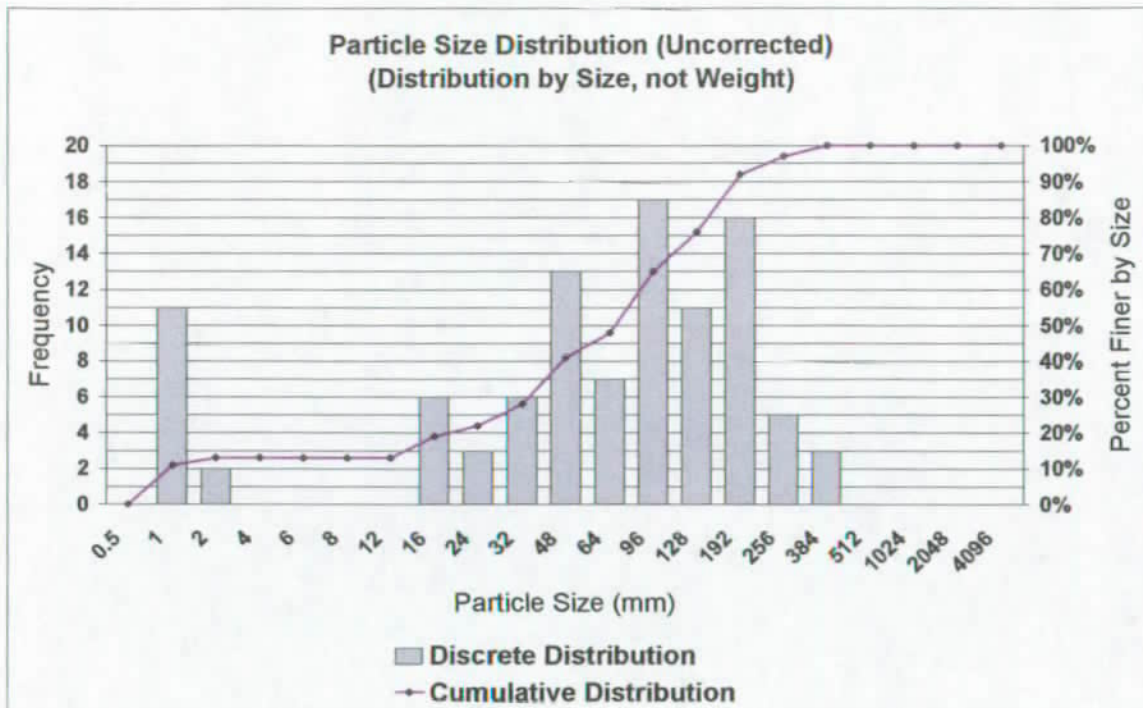


Transect WC-T2

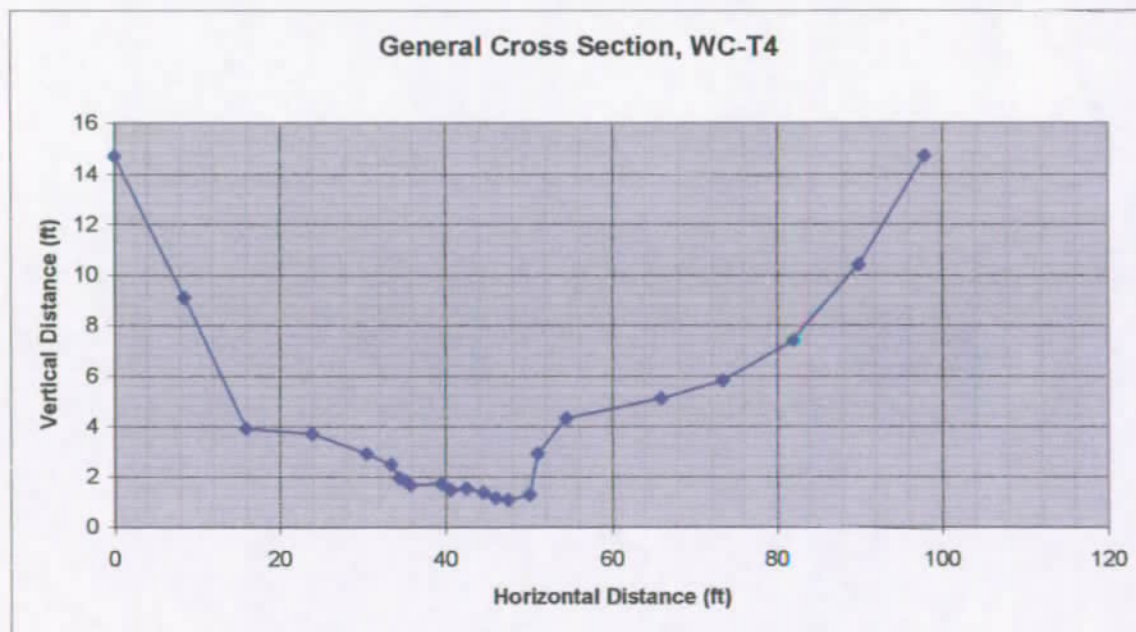
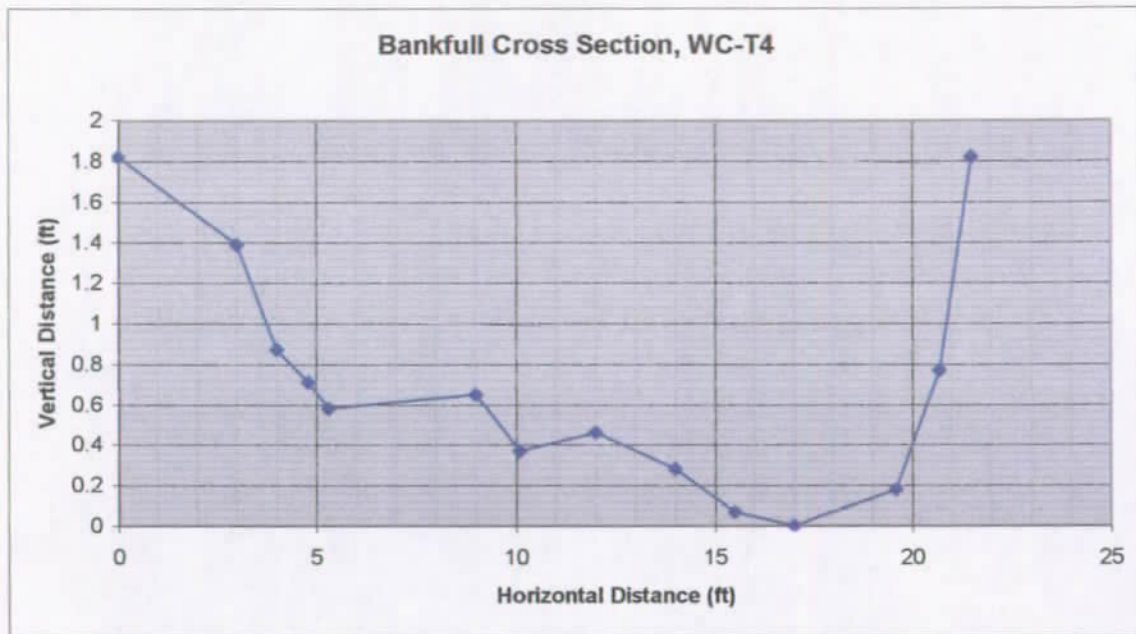


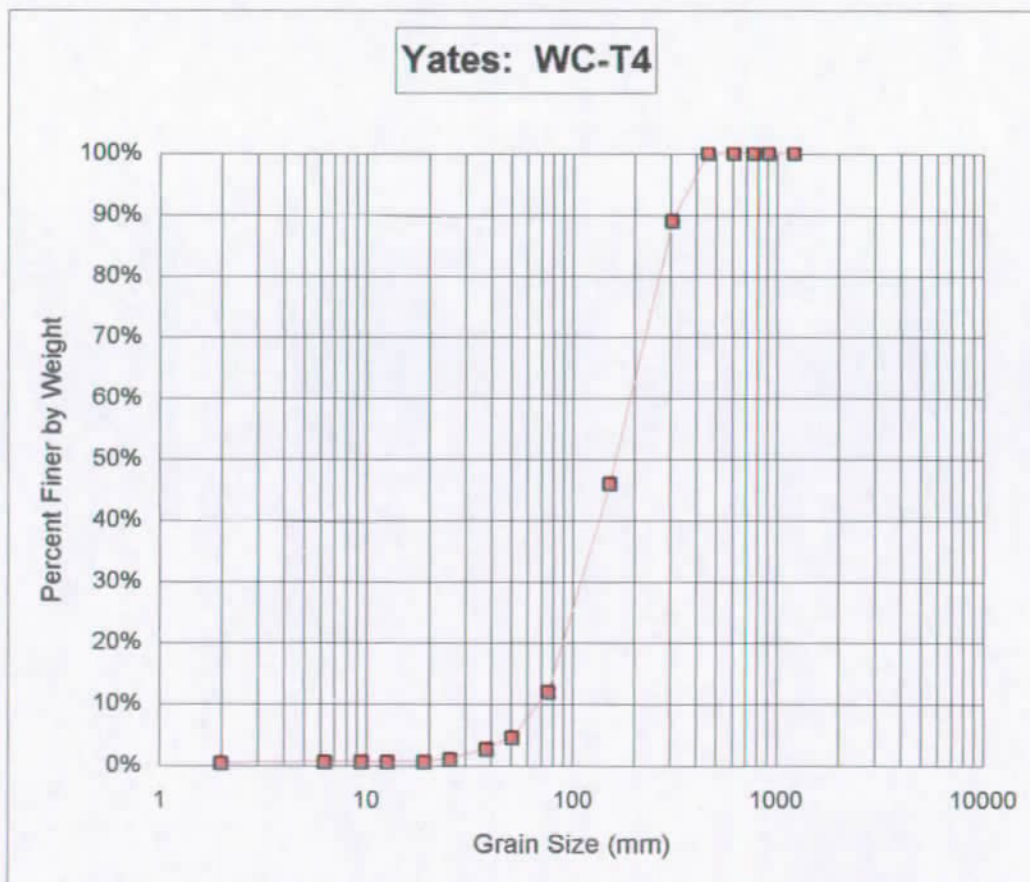
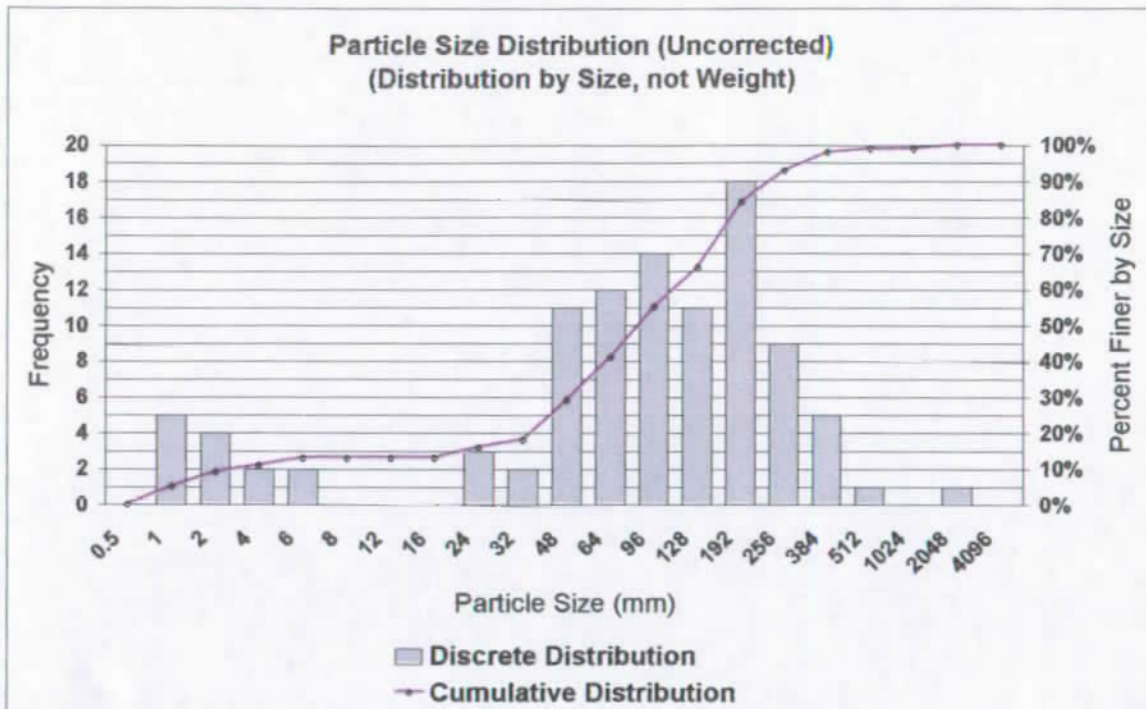


Transect WC-T3

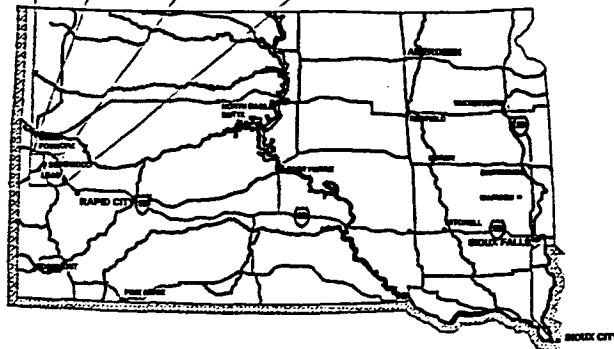
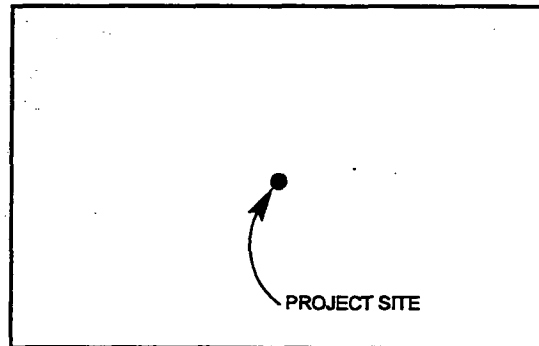


Transect WC-T4





SITE LOCATION MAP



HOMESTAKE MINING COMPANY

YATES WASTE ROCK RECONFIGURATION

DESIGN DRAWINGS

LIST OF DRAWINGS

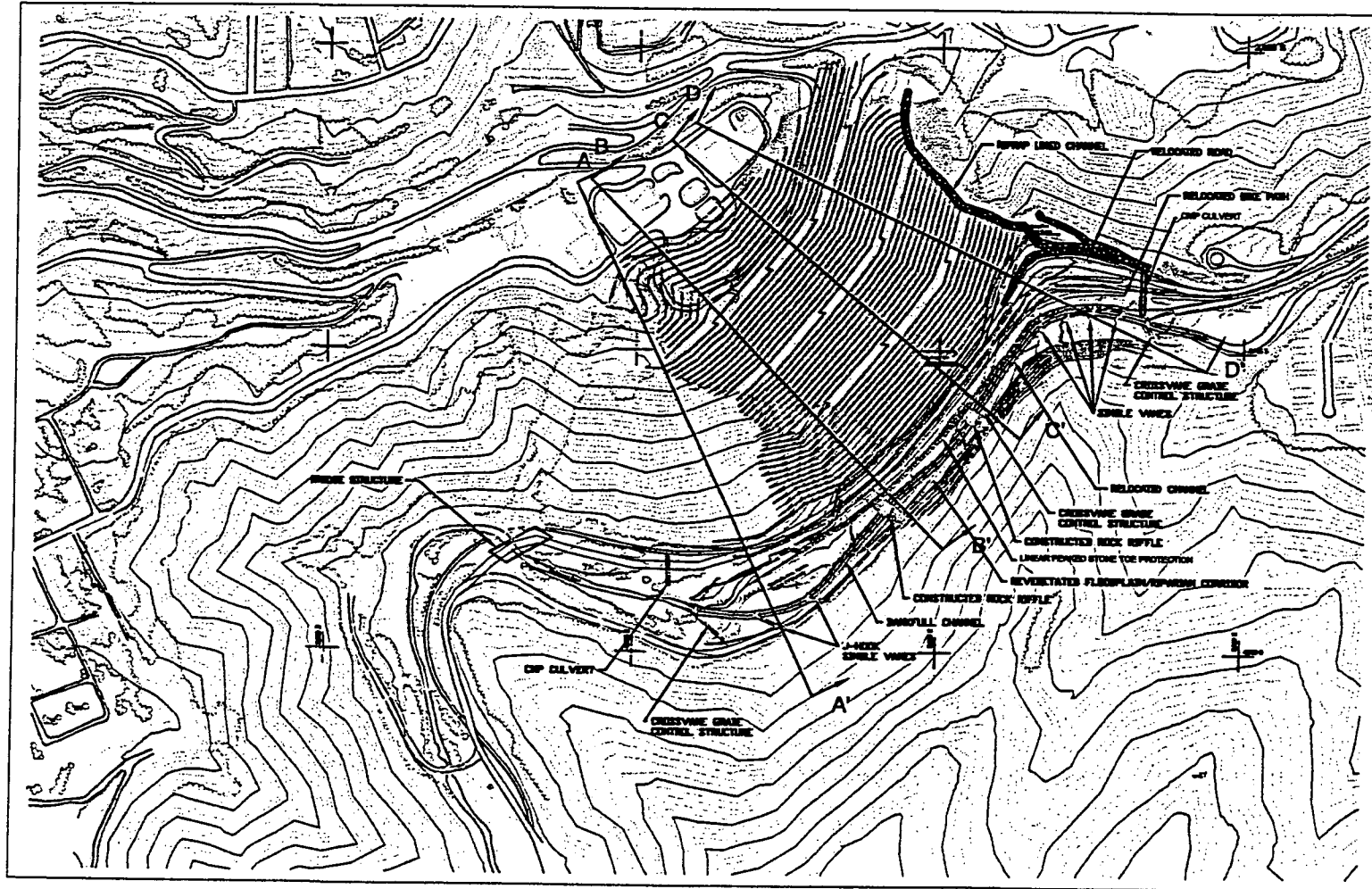
<u>REVISION</u>	<u>DRAWING No.</u>	<u>TITLE</u>
△	032704-01	TITLE SHEET
△	032704-02	YATES WASTE ROCK DUMP RECONFIGURATION
△	032704-03	HOPE LINER LAYOUT
△	032704-04	CROSS SECTIONS AA' AND BE'
△	032704-05	CROSS SECTIONS CC' AND DD'
△	032704-06	TYPICAL DETAILS - STREAM RESTORATION COMPONENTS
△	032704-07	TYPICAL DETAILS - STREAM RESTORATION COMPONENTS

PREPARED FOR
HOMESTAKE MINING COMPANY
LEAD, SOUTH DAKOTA

PREPARED BY
THE MINES GROUP
1325 ARMSTRONG WAY, SUITE 175J
RENO, NEVADA 89502
TEL: (775) 322-7022

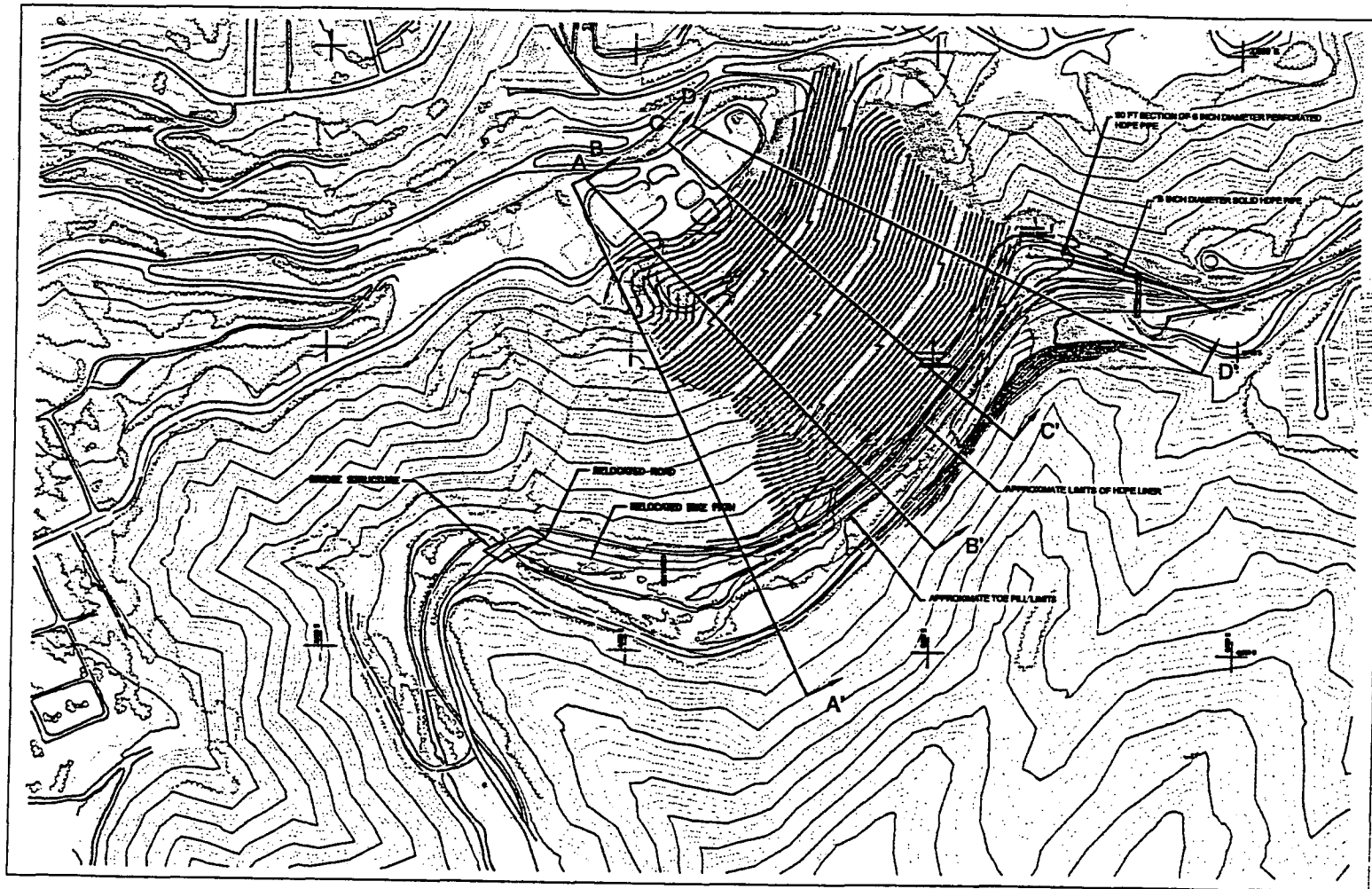
I HEREBY CERTIFY THAT THE DRAWINGS FOR THE STREAM
YATES WASTE ROCK DUMP RECONFIGURATION DESIGN WERE
PREPARED UNDER MY DIRECTION BY THE MINES GROUP, INC.
FOR HOMESTAKE MINING COMPANY.

DRAWING NO. 032704-01



PROJECT NO. _____ DATE _____		PREPARED BY: HOMESTEAK MINING COMPANY 630 EAST SUMMIT STREET LEAD, SOUTH DAKOTA 57754-1700		PREPARED BY: THE GROUP 1000 W. 10TH STREET LEAD, SOUTH DAKOTA 57754-1700	
TITLE: YATES WASTE ROCK DUMP RECONFIGURATION		SCALE: 1" = 100'		DRAWN BY: _____	

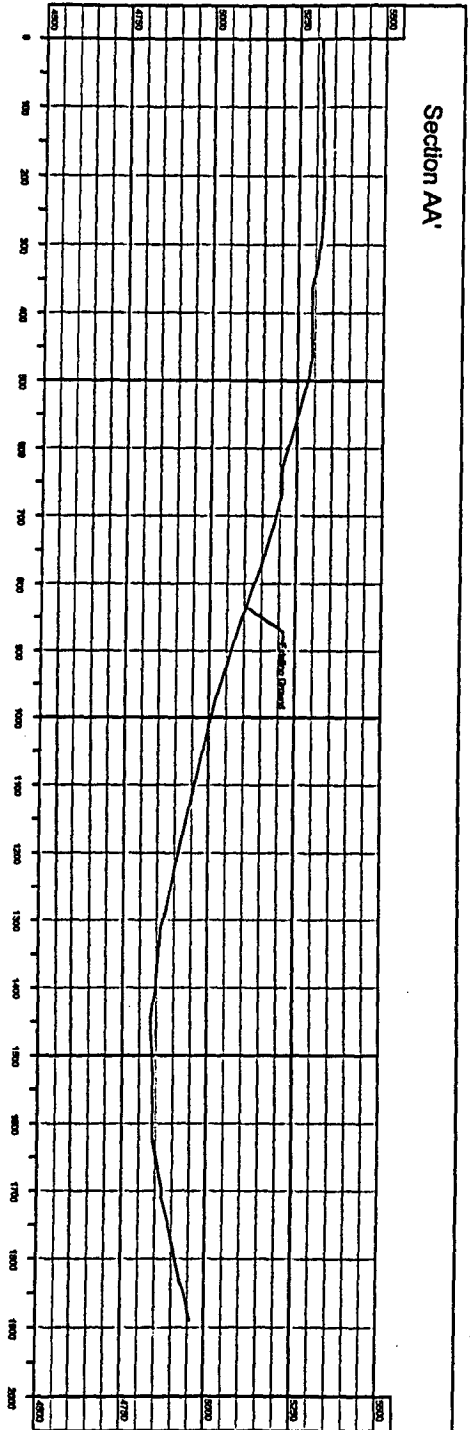




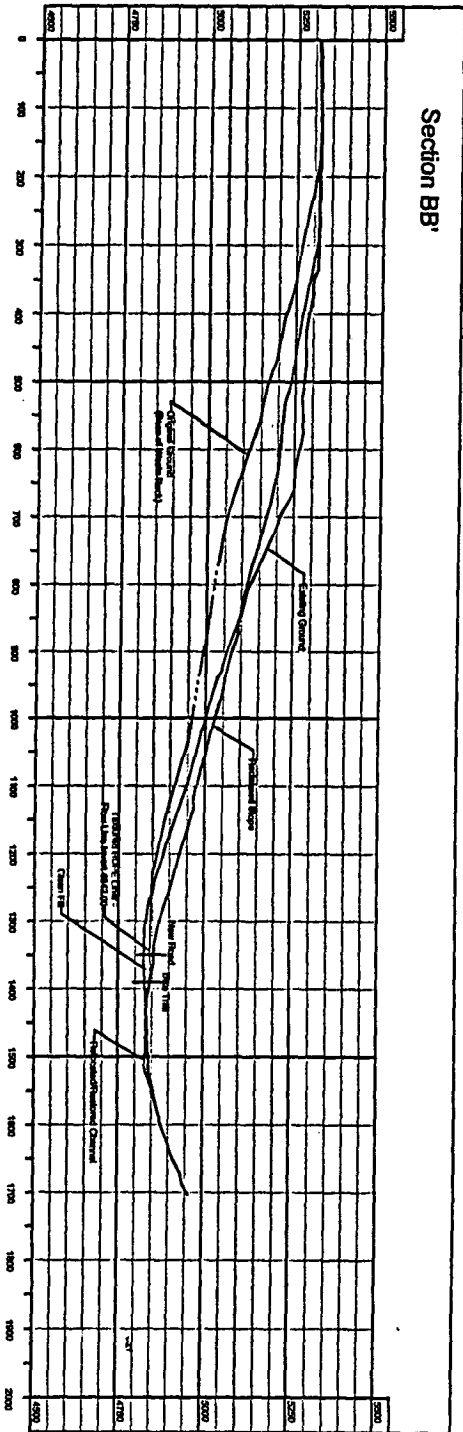
PREPARED BY: HOMESTAKE MINING COMPANY 630 EAST SUMMIT STREET LEAD, SOUTH DAKOTA 57704-1700		PREPARED BY: THE GROUP 1000 ARMYWAY, SUITE 100 RENO, NEVADA 89502 (775) 784-1000	
TITLE: HOPE LINER LAYOUT		SCALE: DRAWING-10	

DESIGNED BY: DATE:	CHECKED BY: DATE:	APPROVED BY: DATE:
-----------------------	----------------------	-----------------------

Section AA'

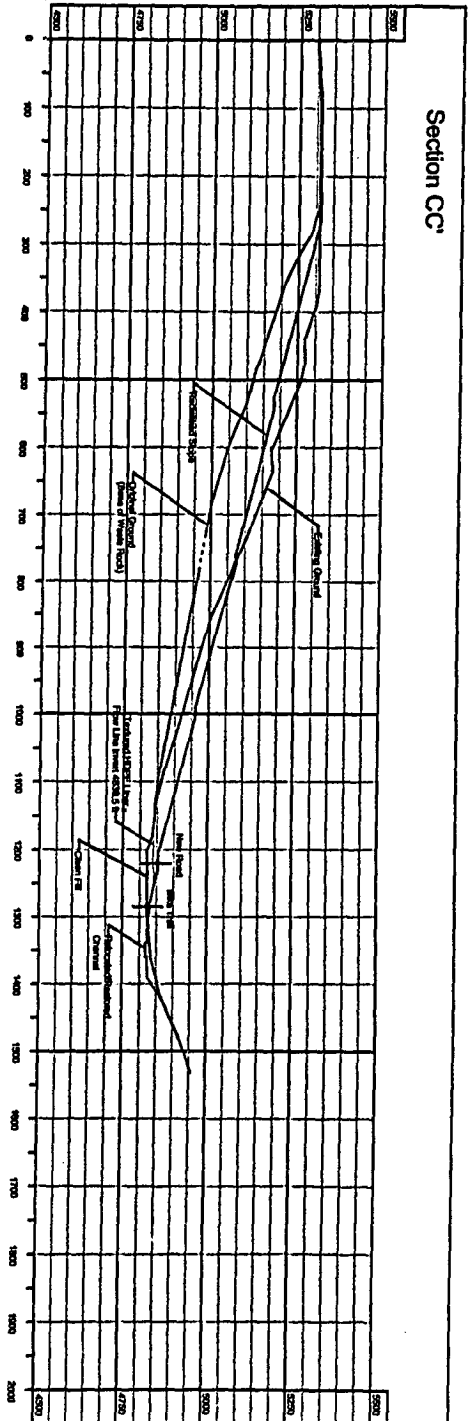


Section BB'

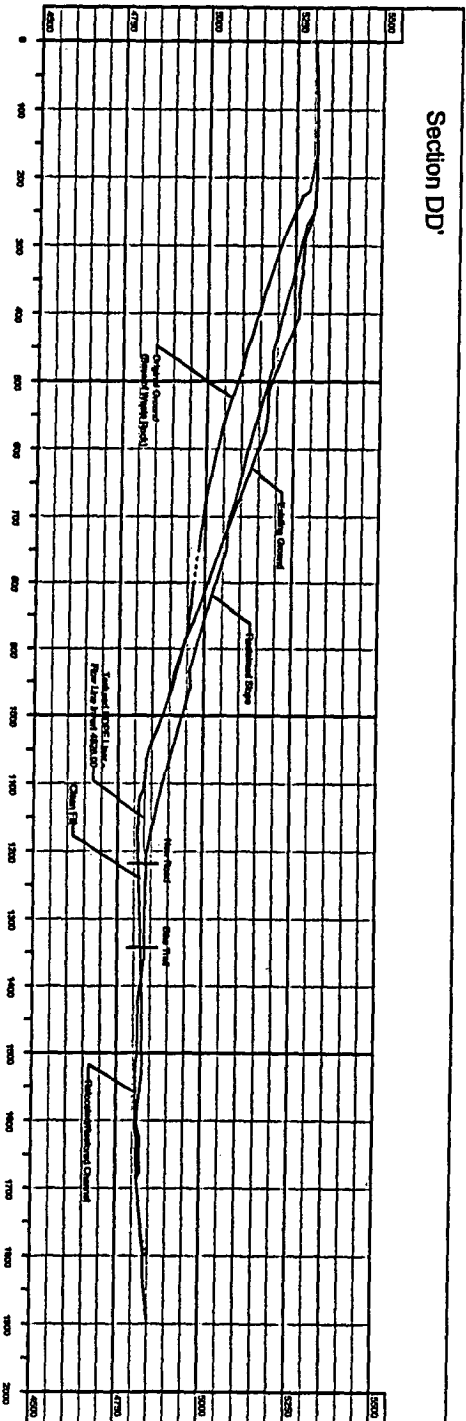


PROJECT: 7705		DATE: 10-1-82	
HOMESTEAK MINING COMPANY		850 EAST SUMMIT STREET	
LEAD, SOUTH DAKOTA 57784-1700		CROSS SECTIONS AA' and BB'	
PREPARED BY: JH		CHECKED BY: JH	
REVISION: 1		DATE: 10-1-82	

Section CC'



Section DD'

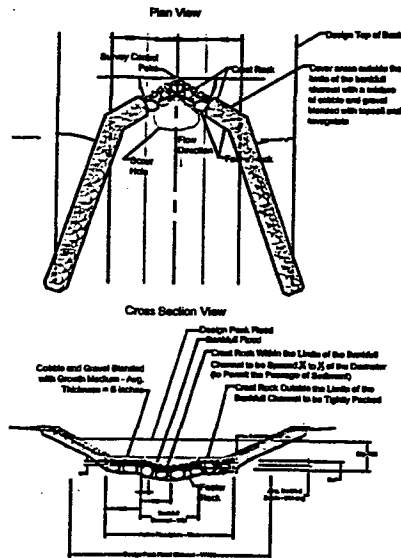


PREPARED BY:
HOMESTEAD MINING COMPANY
600 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

CROSS SECTIONS
CC' and DD'

REVISIONS:
DATE: 11/1/80
BY: J. H. HARRIS, JR.
CHECKED: J. H. HARRIS, JR.
APPROVED: J. H. HARRIS, JR.

Typical Details for Rock Cross-Vane (Modified Rock Vortex Weir)
Not to Scale

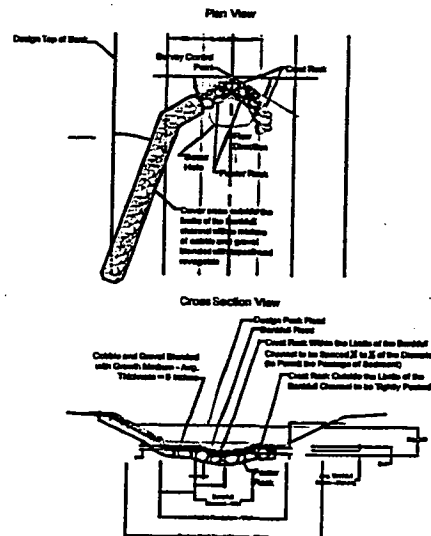


- Notes on Construction:
1. Show the location of each structure on the centerline of the channel alignment.
 2. Estimate the rough grade of the channel at the station location of each vane structure and establish channel cross-sectional shape, prior to beginning construction of the vane structure.
 3. Estimate a month for the placement of the crest rock, but establish the upstream parking channel shape of the vane and extend to the design top of bank.
 4. Place the crest rock in the base of the bank.
 5. Place the crest rock against the upstream side of the bank, leaving the rock against the back of the crest rock. Take care to establish the required spacing between crest rock within the limits of the banked channel and ensure the cross-sectional shape of the banked channel. Outside the limits of the banked channel, the crest rock should be tightly packed. 6. Backfill any large voids with small rock and gravel.
 7. Cover exposed rock outside the limits of the banked channel with a mixture of sods, grass and growth medium (approx 2 inches) to prevent resuspension of the surface. The thickness of the cover material should average approximately 6 inches.

Table of Cross-Vane Design Dimensions

Channel Width (ft)	Crest Rock (ft)	Channel Slope (H:V)	Water Hole (ft)
10	10	1:1	10
15	15	1:1	15
20	20	1:1	20
25	25	1:1	25
30	30	1:1	30
35	35	1:1	35
40	40	1:1	40
45	45	1:1	45
50	50	1:1	50

Typical Details for J-Hook Single Vane
Not to Scale

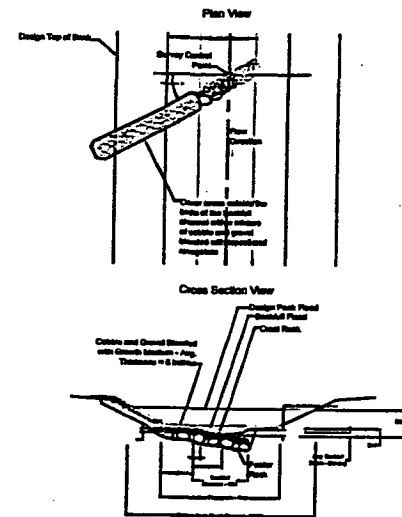


- Notes on Construction:
1. Show the location of each structure on the centerline of the channel alignment.
 2. Estimate the rough grade of the channel at the station location of each vane structure and establish channel cross-sectional shape, prior to beginning construction of the vane structure.
 3. Estimate a month for the placement of the crest rock, but establish the upstream parking channel shape of the vane and extend to the design top of bank.
 4. Place the crest rock in the base of the bank.
 5. Place the crest rock against the upstream side of the bank, leaving the rock against the back of the crest rock. Take care to establish the required spacing between crest rock within the limits of the banked channel and ensure the cross-sectional shape of the banked channel. Outside the limits of the banked channel, the crest rock should be tightly packed. 6. Backfill any large voids with small rock and gravel.
 7. Cover exposed rock outside the limits of the banked channel with a mixture of sods, grass and growth medium (approx 2 inches) to prevent resuspension of the surface. The thickness of the cover material should average approximately 6 inches.

Table of J-Hook Single Vane Design Dimensions

Channel Width (ft)	Crest Rock (ft)	Channel Slope (H:V)	Water Hole (ft)
10	10	1:1	10
15	15	1:1	15
20	20	1:1	20
25	25	1:1	25
30	30	1:1	30
35	35	1:1	35
40	40	1:1	40
45	45	1:1	45
50	50	1:1	50

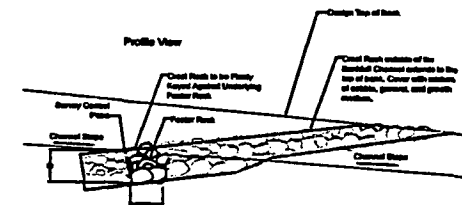
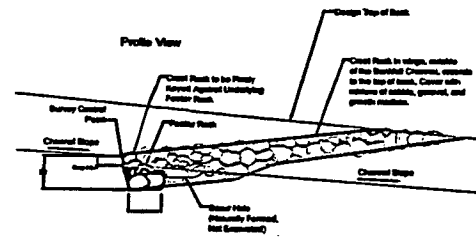
Typical Details for Single Vane
Not to Scale



- Notes on Construction:
1. Show the location of each structure on the centerline of the channel alignment.
 2. Estimate the rough grade of the channel at the station location of each vane structure and establish channel cross-sectional shape, prior to beginning construction of the vane structure.
 3. Estimate a month for the placement of the crest rock, but establish the upstream parking channel shape of the vane and extend to the design top of bank.
 4. Place the crest rock in the base of the bank.
 5. Place the crest rock against the upstream side of the bank, leaving the rock against the back of the crest rock. Take care to establish the required spacing between crest rock within the limits of the banked channel and ensure the cross-sectional shape of the banked channel. Outside the limits of the banked channel, the crest rock should be tightly packed. 6. Backfill any large voids with small rock and gravel.
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Table of Single Vane Design Dimensions

Channel Width (ft)	Crest Rock (ft)	Channel Slope (H:V)	Water Hole (ft)
10	10	1:1	10
15	15	1:1	15
20	20	1:1	20
25	25	1:1	25
30	30	1:1	30
35	35	1:1	35
40	40	1:1	40
45	45	1:1	45
50	50	1:1	50



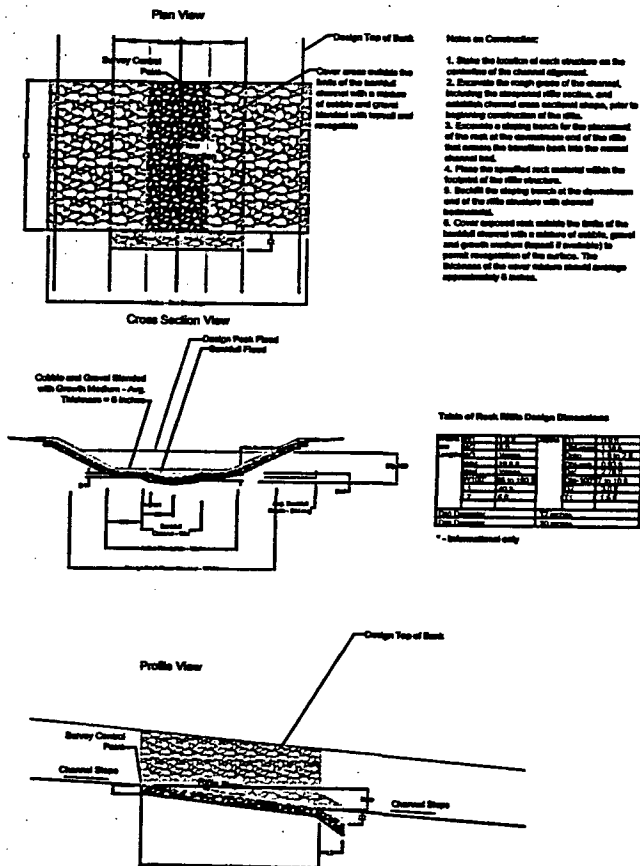
PREPARED BY:
HOMESTAKE MINING COMPANY
830 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

PREPARED BY:
THE GROUP
SIC: 10000000, SIC: 10000000
SIC: 10000000, SIC: 10000000
SIC: 10000000, SIC: 10000000

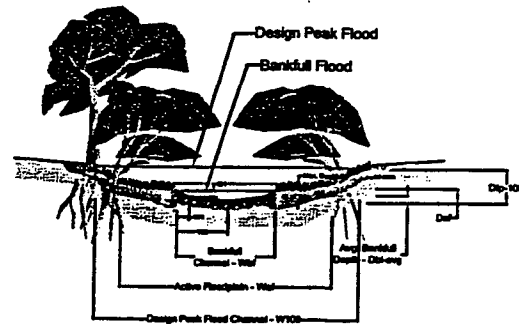
TYPICAL DETAILS
STREAM RESTORATION COMPONENTS



Typical Details for Rock Rills
Not to Scale



Typical Cross Section for B4 Channel
Not to Scale



- Cobble Sized Armor Layer
- Cobble Blended with Growth Medium

Table of Channel Design Dimensions (including any adjustments for scour)

Flow	Width	Depth	Flow	Width	Depth
Q100	1.8 ft	0.1 ft	Q100	1.8 ft	0.1 ft
Q10	1.8 ft	0.1 ft	Q10	1.8 ft	0.1 ft
Q1	1.8 ft	0.1 ft	Q1	1.8 ft	0.1 ft
Q0.1	1.8 ft	0.1 ft	Q0.1	1.8 ft	0.1 ft
Q0.01	1.8 ft	0.1 ft	Q0.01	1.8 ft	0.1 ft
Q0.001	1.8 ft	0.1 ft	Q0.001	1.8 ft	0.1 ft

* - Informational only

NOTES:

Target design channel characteristics -
Width/depth ratio: 21.85
Entrenchment ratio: 2.28
Slope: .01 to .04 ft/ft
Sinuosity: 1.04
Meander wavelength: +/- 220 ft

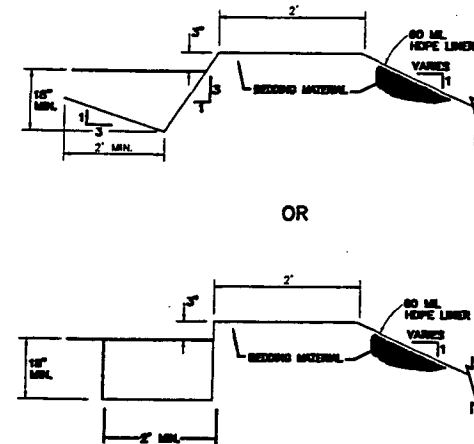
Q100 = 9310 cfs

Location of the bankfull channel within the active floodplain varies as a function of sinuosity.

Bank side slopes not to exceed 2H:1V (except in areas of constructed walls)

Dominant vegetation in floodplain and banks will consist of woody trees and shrubs (cottonwood, willow, birch, etc.)

TYPICAL LINER ANCHOR DETAIL
NTS



PREPARED FOR:
HOMESTEAK MINING COMPANY
630 EAST SUMMIT STREET
LEAD, SOUTH DAKOTA 57754-1700

PREPARED BY:
THE GROUP
ONE HENRIK BLVD. SUITE 100
SIOUX FALLS, SD 57105
(605) 336-1111

TITLE
**TYPICAL DETAILS
STREAM RESTORATION COMPONENTS**

SCALE
AS SHOWN



APPENDIX A:
Wetland Delineation Data Sheets

SOILS

[illegible]

WETLAND DETERMINATION

WETLAND DETERMINATION					
	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland vegetation and hydrological indicators are present. Hydric soil indicators assumed to be present.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: _____
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP08B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Pinus ponderosa</i>	10	T	UPL				
<i>Betula papyrifera</i>	5	T	FACU				
<i>Poa pratensis</i>	10	H	FACU				
<i>Rosa woodsii</i>	5	S	FACU				
Unidentified Grasses/forbs*	70	H	-				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 0/4 = 0%

Remarks: No common wetland plant species observed.

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	
Remarks: Above the flood prone area of Whitewood Creek	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: Wetland plants are absent. Wetland hydrology indicators are absent.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>2</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP08A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Phalaris arundinacea</i> *	20	H	- FACW+				
<i>Carex nebrascensis</i> *	45	H	OBL				
<i>Carex rostrata</i>	10	H	OBL				
<i>Juncus sp.</i>	10	H	FACW				
<i>Salix exigua</i>	5	S	FACW+				
<i>unidentified grasses/forbs</i>	10	H	-				
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) * 50/20 Rule: 2/2 = 100%							
Remarks: Snow cover present during site inspection. Observed species are common wetland plants.							

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☒ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	
Remarks: Within the flood prone area of Whitewood Creek.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland plants present. Wetland hydrology indicators present. It is assumed hydric soil indicators are also present.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>15, 16</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP07B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Pinus ponderosa</i> *	20	T	- UPL				
<i>Populus angustifolia</i> *	10	T	FACW				
<i>Betula papyrifera</i> *	5	T	FACU				
<i>Unidentified Forb</i> *	10	H	-				
<i>Equisetum laevigatum</i> *	2	H	FAC				
<i>Unidentified Grass</i> *	2	H	-				
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) * 50/20 Rule: 2/6 = 33%							
Remarks:							

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	
Remarks: Above the flood prone area of Whitewood Creek	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: Sample point lacks wetland plants and hydrologic indicators. Hydric soil indicators are assumed to be absent.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>15, 16</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP07A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Cornus stolonifera</i>	5	S	- FACW				
<i>Salix exigua</i> *	30	S	FACW+				
<i>Populus angustifolia</i>	5	T	FACW				
<i>Equisetum laevigatum</i> *	40	H	FAC				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 2/2 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	
Remarks: Within the flood prone area of Whitewood Creek. Sample point located immediately downstream of existing trail bridge. Beaver dam is located downstream of sample point.	

SOILS

Map Unit Name (Series and Phase):		N/A	Drainage Class:		N/A
Taxonomy (Subgroup): N/a			Field Observations		
			Confirm Mapped Type?	Yes	No
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Hydric Soil Indicators:					
____ Histosol			____ Concretions		
____ Histic Epipedon			____ High Organic Content in Surface Layer in Sandy Soils		
____ Sulfidic Odor			____ Organic Streaking		
____ Aquic Moisture Regime			____ Listed on the Local Hydric Soils List		
____ Reducing Conditions			____ Listed on National Hydric Soils List		
____ Gleyed or Low-Chroma Colors			____ Other (Explain in Remarks)		
Remarks: Alluvial substrate. Ground was frozen.					

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland plants and hydrological indicators were observed. It was assumed hydric indicators are also present.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>14</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP06</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Unidentified Forb</i>	10	H	- -				
<i>Verbascum thapsus</i>	5	H	UPL				
<i>Unidentified Grass</i>	2	H	-				
<i>Poa pratensis</i> *	20	H	FACU				
<i>Salix exigua</i> *	20	H	FACW+				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 1/2 = 50%

Remarks: Wetland plant species do not exceed 50% of dominant plant cover.

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	

Remarks: Above the flood prone area of Whitewood Creek. Channel is in an entrenched condition.

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: No wetland indicators observed other than a small patch of dogwood.					

SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>6, 7</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP05B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Pinus ponderosa</i> *	40	T	- UPL				
<i>Picea glauca</i> *	10	T	UPL				
<i>Betula papyrifera</i>	5	T	FACU				
<i>Unidentified Forb</i> *	10	H	-				
<i>Equisetum laevigatum</i> *	2	H	-				
<i>Unidentified Grass</i> *	2	H	-				
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) * 50/20 Rule: 0/3 = 0%							
Remarks:							

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	
Remarks: Sample point is approximately >2' higher than the adjacent flood prone area of Whitewood Creek.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland plants and hydrological indicators are present. Hydric soils are assumed to be present.					

SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>6, 7</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP05A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Cornus stolonifera</i>	5	S	- FACW				
<i>Salix exigua</i> *	20	S	FACW+				
<i>Populus angustifolia</i>	2	T	FACW				
<i>Equisetum laevigatum</i> *	40	H	FAC				
<i>Rosa woodsii</i>	2	S	FACU				
<i>Xanthium strumarium</i>	5	H	FAC				
Unidentified Forb	15	H	-				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 2/2 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>-</u> (in.) Depth to Free Water in the Pit: <u>-</u> (in.) Depth to Saturated Soil: <u>-</u> (in.)	

Remarks: Within the flood prone area of Whitewood Creek. Sample point located immediately downstream of existing trail bridge on right stream bank. Beaver dam is located downstream of sample point.

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: No indicators observed.					

SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>6, 7</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP04B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Pinus ponderosa</i> *	10	T	UPL				
<i>Picea glauca</i> *	5	T	UPL				
<i>Poa pratensis</i> *	10	H	FACU				
<i>Mahonia repens</i> *	5	H	UPL				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 0/4 = 0%

Remarks: No wetland plants present.

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	
Remarks: Above the flood prone area of Whitewood Creek. Steep stream bank appears to have been stabilized for existing trail that follows the toe-of-slope of the left hill slope.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: No common wetland plant species observed.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>4, 5</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP01A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Equisetum laevigatum</i> *	20	H	FAC				
<i>Carex nebrascensis</i> *	45	H	OBL				
<i>Carex rostrata</i>	5	H	OBL				
<i>Juncus sp.</i>	5	H	FACW				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 2/2 = 100%

Remarks: Snow cover present during the site inspection. Species observed are common wetland plants.

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☒ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	

Remarks: Within the flood-prone area of Whitewood Creek. Sample point is located on the left river bank. Sample point is located immediately downstream from an old beaver pond.

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland plants and hydrological indicators observed. It is assumed that hydric indicators are present.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>4, 5</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP02B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Betula papyrifera</i>	10	T	- FACU				
<i>Picea glauca</i> *	20	T	UPL				
<i>Pinus ponderosa</i> *	40	T	UPL				
<i>Rosa woodsii</i>	2	S	FACU				
<i>Poa pratensis</i> *	20	H	FACU				
<i>Mahonia repens</i>	2	H	UPL				
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) * 50/20 Rule: 0/3 = 0%							
Remarks:							

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	
Remarks: Sample point is > 3' above the flood prone area of Whitewood Creek. No hydrological indicators were observed.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: Dominance of wetland indicators is not present. Located on inside bend of meander that is >2' above the adjacent wetland.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile		Date: 2/26/04	
Applicant/Owner: Homestake Mining Company		County: Lawrence	
Investigator: D. Wenger, H. Sondossi		State: South Dakota	
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>4, 5</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP02A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Mentha spicata</i>	2	H	NI				
<i>Carex nebrascensis</i> *	40	H	OBL				
<i>Poa pratensis</i>	2	H	FACU				
<i>Populus angustifolia</i>	10	T	FACW				
<i>Heracleum maximum</i>	2	H	FAC				
<i>Salix exigua</i> *	15	S	FACW+				
<i>Cornus stolonifera</i> *	15	S	FACW+				
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) * 50/20 Rule: 3/3 = 100%							
Remarks:							

HYDROLOGY

Recorded Data (Describe in Remarks): ☒ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☒ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	
Remarks: Within the flood prone area of Whitewood Creek, downstream from old beaver dam on right bank.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland plants and hydrological indicators observed. It is assumed that hydric indicators are present.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>4, 5</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP01B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Pinus ponderosa</i> *	60	T	- UPL				
<i>Populus angustifolia</i>	10	T	FACW				
<i>Cirsium vulgare</i>	1	H	UPL				
<i>Unidentified Grass</i>	20	H	-				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 0/1 = 0%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	
Remarks: Sample point on steep stream bank > 3' above the adjacent flood-prone surface of Whitewood Creek.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: Dominance of wetland indicators is not present.					

SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>9</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP03A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Salix exigua</i> *	40	S	FACW+				
<i>Cornus stolonifera</i> *	20	S	FACW				
<i>Heracleum maximum</i>	1	H	FAC				
<i>Mentha spicata</i>	2	H	NI				
<i>Equisetum laevigatum</i> *	20	H	FAC				
<i>Rosa woodsii</i>	2	S	FACU				
<i>Unidentified Forb</i>	2	H	-				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule: 3/3 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	

Remarks: Within the flood prone area of Whitewood Creek. Wetland sample point located on right stream bank located downstream from an old beaver dam and pond, approximately 100 feet from culvert inlets.

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?		X	Hydric Soils Present?		X
Wetland Hydrology Present?		X	Is This Sampling Point a Wetland?		X
Remarks: Dominance of wetland indicators is not present. Located on inside bend of meander that is >2' above the adjacent wetland.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>9</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP03B</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Cornus stolonifera</i>	2	S	- FACW				
<i>Rosa woodsii</i>	2	S	FACU				
<i>Pinus ponderosa</i> *	35	T	UPL				
<i>Picea glauca</i> *	25	T	UPL				
<i>Unidentified Grass</i> *	20	H	-				
<i>Unidentified Forb</i>	10	H	-				
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) * 50/20 Rule: 0/3 = 0%							
Remarks:							

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> </u> (in.) Depth to Free Water in the Pit: <u> </u> (in.) Depth to Saturated Soil: <u> </u> (in.)	
Remarks: Above the flood prone area of Whitewood Creek. No hydrological indicators observed. Approximately > 2' higher than adjacent wetland sample point.	

SOILS

[illegible]

WETLAND DETERMINATION

	Yes	No		Yes	No
Hydrophytic Vegetation Present?	X		Hydric Soils Present?	X	
Wetland Hydrology Present?	X		Is This Sampling Point a Wetland?	X	
Remarks: Wetland plants and hydrological indicators observed. It is assumed that hydric indicators are present.					
SITE DISTURBANCE AND PROBLEM AREA DESCRIPTION					

WETLANDS DATA FORM
ROUTINE INVESTIGATION DETERMINATION

Project/Site: Whitewood Creek, Yates Waste Rock Pile			Date: 2/26/04
Applicant/Owner: Homestake Mining Company			County: Lawrence
Investigator: D. Wenger, H. Sondossi			State: South Dakota
	Yes	No	
Do Normal Circumstances exist on the site?	X		Community ID: <u>Wetland</u>
Is the site significantly disturbed (Atypical Situation)?		X	Photo Number: <u>6, 7</u>
Is the area a potential problem area? (If needed explain on reverse.)		X	Plot ID: <u>SP04A</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
<i>Populus angustifolia</i>	5	T	- FAC				
<i>Salix exigua</i> *	35	S	FACW+				
<i>Cornus stolonifera</i> *	15	S	FACW				
<i>Equisetum laevigatum</i> *	15	H	PAC				
<i>Carex nebrascensis</i> *	15	H	OBL				

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)
* 50/20 Rule:

Remarks: 4/4 = 100%

HYDROLOGY

Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gauge ☐ Aerial Photograph, soil map ☐ Other ☐ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☐ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12 inches ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u> - </u> (in.) Depth to Free Water in the Pit: <u> - </u> (in.) Depth to Saturated Soil: <u> - </u> (in.)	

Remarks: Within the flood prone area of Whitewood Creek. Located on the left stream bank along a channel segment situated between two old beaver dams.

APPENDIX B:
Project Area Photos



Photo 1. View of Whitewood Creek stream corridor approximately 1,200 feet upstream from the channel relocation project area, looking West.



Photo 2. View of reference reach approximately 1,000 feet upstream from the channel relocation project area. WC-T1 is approximately where the researchers are standing. Beaver dam and the associated willows are in the background. The exposed bank in the foreground is dominated by Nebraska sedge.



Photo 3. Upstream view of reference reach containing WC-T2. The bank indicated with arrow is dominated by Nebraska sedge.



Photo 4. Upstream view of reference reach containing WC-T3. Beaver dam is approximately 3 feet high. Arrow indicates existing trail location.



Photo 5. Downstream view from WC-T3. Arrow indicates the upstream begin point for the proposed channel relocation. Existing trail bridge is in view.



Photo 6. Downstream view of Whitewood Creek channel to be relocated. Photo taken immediately downstream from trail bridge.



Photo 7. Looking upstream at bridge crossing of trail near the upstream end of relocation project. The large snow-bank crossing the stream is covering a beaver dam.



Photo 8. Downstream view at the approximate midpoint of the upper segment of the proposed channel relocation. The right bank is dominated by smooth scouring rush and sandbar willow. Note the absence of riparian vegetation on left bank.



Photo 9. Looking downstream at culvert inlet, indicated by arrow. The toe of waste rock pile is in view to the left of culvert inlet. Note the absence of riparian vegetation on the left bank.



Photo 10. View of culvert inlet at the toe of waste rock pile. Note steep cut on the left bank. Redosier dogwood dominates the right bank in the foreground.



Photo 11. View of proposed channel relocation project area downstream from culvert outlets. Waste rock pile is in view. Arrows indicate location of the entrenched channel not visible from this view.



Photo 12. Upstream view of culvert outlet and toe of waste rock pile in the proposed channel relocation project site.



Photo 13. Downstream view from below culvert outlet in the proposed channel relocation project site. There is virtually no riparian-wetland present.



Photo 14. Upstream view of proposed channel relocation project area from road bridge crossing. Riparian-wetlands consist of four isolated clumps of sandbar willow.



Photo 15. Downstream view of Whitewood Creek from foot bridge. Arrow indicates the connection point of the proposed relocated channel. Cutbanks on the far bank are approximately 8 feet above the water surface. Willows dominate the surface of bank in the foreground.



Photo 16. Upstream view of Whitewood Creek. Foot bridge is in view. The connection point of the proposed relocated channel is to the left of the view.



Photo 17. Downstream view of reference reach of Whitewood Creek. Note evulsion to the left of beaver dam.



Photo 18. Upstream view of beaver dam evulsion. Yates waste rock pile is in the background. Arrow indicates where the relocated channel would reconnect to the existing channel.

Section 4
Adjoining Property Ownership Report

***Land Ownership of Adjoining Properties at the Yates Waste Rock Pile Reclamation and Relocation of Whitewood Creek Project Area
(see also attached Project Area Location Map and Property Ownership Map)***

The Railroad Grade (Mickelson Trail) is owned by the City of Deadwood. There is a cooperative agreement between the City of Deadwood and the State of SD, Game Fish and Parks for construction, etc on this portion of the trail.

The Pluma Reservoir Lot is owned by the City of Deadwood, 102 Sherman Street, Deadwood, SD 57732.

Lot P of M.S. 249, 137, 1312 & 1304 is owned by Jill Pontius, Box 315, Deadwood, SD 57732.

Lots 1 & 2, Block A of the Shekell & Estes, M.S. 758 is owned by Cory & Corlis Percy, 116 Kirk Road, Deadwood, SD 57732.

Lots 3, 4, 5, 6 & 7, Block A of the Shekell & Estes, M.S. 758 is owned by Richard & Carol Cope, 1708 S. Sioux Blvd, Brandon, SD 57005.

Lots 8, 9, 10 & 11, Block A, and Lots 1, 2 & 3, Block B of Shekell & Estes, M.S. 758; Pluma School Lot; Lots 4, 5, 6, & 7, Block B, Bowman Sub, M.S. 534 is owned by Pluma Partners, 407 Glendale Drive, Suite #1, Lead, SD 57754.

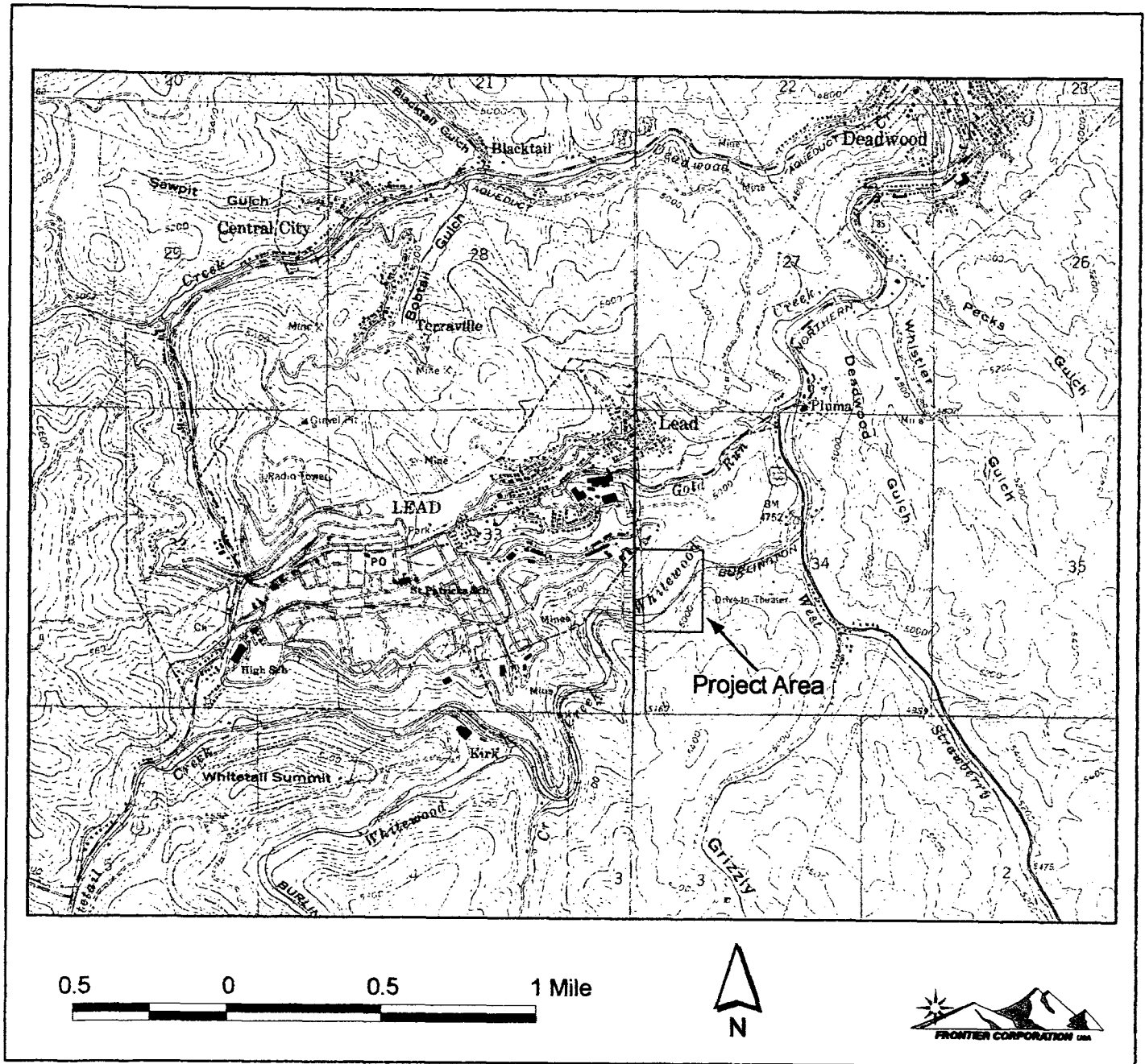
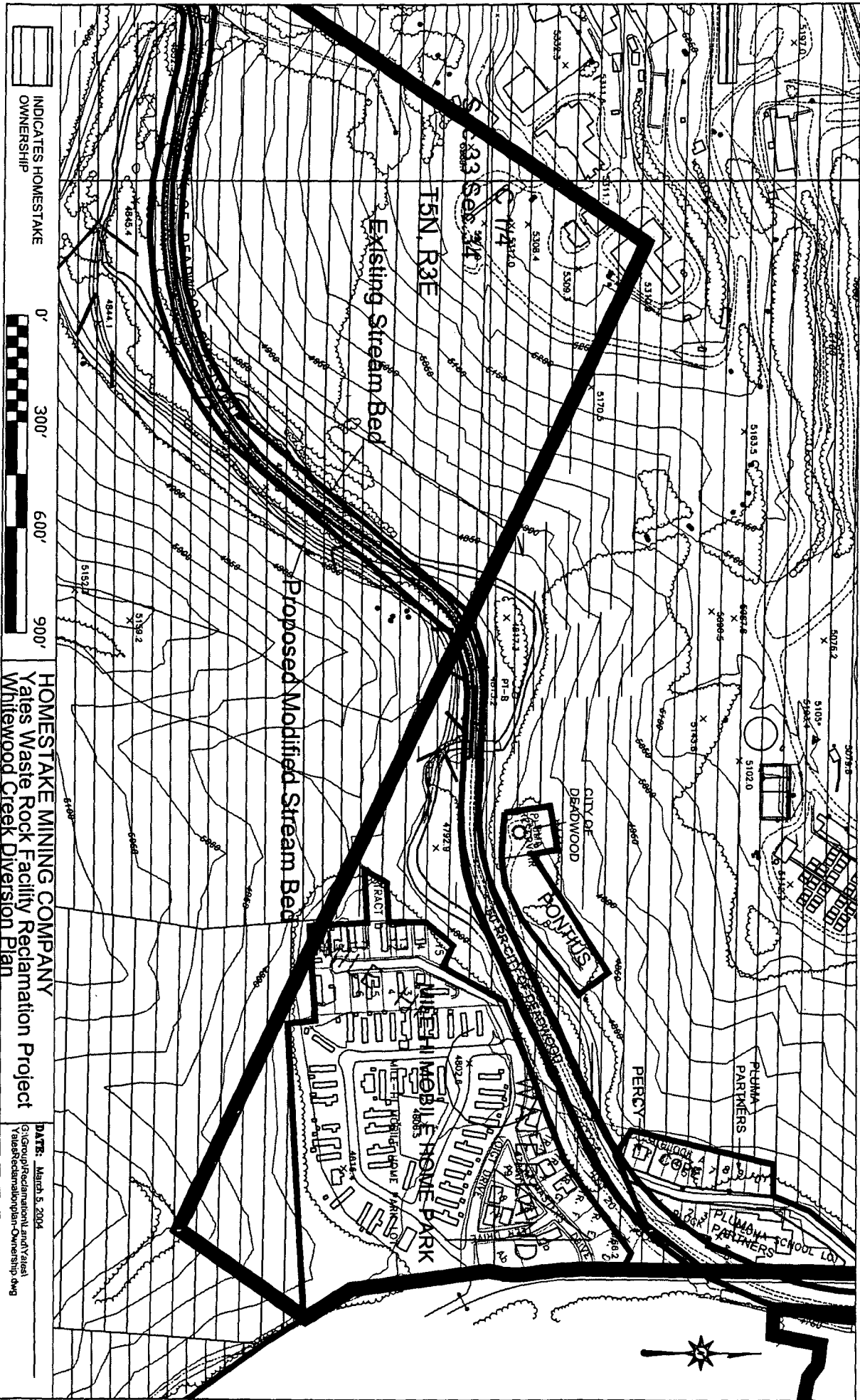


Figure 2. Project Area Location Map.



INDICATES HOMESTAKE OWNERSHIP



HOMESTAKE MINING COMPANY
Yates Waste Rock Facility Reclamation Project
Whitewood Creek Diversion Plan

DATE: March 5, 2004
© 2004 Reclamation and Yates
Waste Reclamation Plan Ownership, Inc.

Section 5
List of Other Certifications or Approvals/Denials

25. List of other certifications or approvals/denials from other federal, state, or local agencies for work described in this application.

Agency	Type of Approval	Identification #	Date Applied	Date Approved	Date Denied
Lawrence County	Approval to relocate County Road SA42	N/A	N/A	Review in Progress	
SD Game Fish & Parks	Approval to relocate the Mickleson Trail	N/A	N/A	Review in Progress	
City of Deadwood	Approval to relocate the Mickleson Trail	N/A	N/A	Review in Progress	
SD Department of Environment and Natural Resources	SWPPP for Construction Activities	N/A	Pending	Pending Reivew	

There is no formal application process for the approval of the road and trail relocations.

Homestake is in the process of consolidating all storm water permit coverage, including that for storm water discharges associated with the Yates Waste Rock Pile, under its Minor Industrial NPDES Permit (SD-0025933) currently being reviewed by DENR for reissuance. Homestake has and continues to manage storm water associated with the Yates Waste Rock consistent with its Storm Water Pollution Prevention Plan (SWPPP). Storm water management during the Yates Waste Rock construction activities will be further addressed consistent with Homestake's storm water construction permit obligations.

LAW OFFICES OF
BENNETT, MAIN & GUBBRUD
A PROFESSIONAL CORPORATION
618 STATE STREET
BELLE FOURCHE, SOUTH DAKOTA 57717-1489
TEL (605) 892-2011
FAX (605) 892-4084
EMAIL: belletlaw@belletlaw.com

MAX S. MAIN*
DWIGHT A. GUBBRUD
*ALSO LICENSED IN WYOMING

RETIRED
DANN BENNETT

April 1, 2004

Eric Gronlund
Water Rights Program
DENR
Joe Foss Bldg., 523 East Capitol
Pierre, SD 57501-3181

RECEIVED

APR 02 2004

WATER RIGHTS
PROGRAM

**RE: Homestake Water Permit Application
for Purposes of Relocating Whitewood Creek;
Our File No. 2365. 094003.**

Dear Eric:

Enclosed is an original and one copy of Form 2, an application for water permit by Homestake, along with two maps. This application relates to the relocation of Whitewood Creek. Also enclosed is a check payable to the order of DENR in the amount of \$200 as payment of the filing fee and final inspection fee.

As we have discussed, it is necessary for Homestake to relocate the indicated portion of Whitewood Creek to facilitate the reclamation of the Yates Waste Rock Facility. The angle of repose of the Yates Waste Rock Facility will be reduced, and the Facility will be re-vegetated.

Please let me know if you have any questions.

Sincerely,

BENNETT, MAIN & GUBBRUD, P.C.



Max Main

MM/ra

Encs.

cc: Client -Todd Duex (w/App.)



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 1815-1, Homestake Mining Company**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 1815-1, Homestake Mining Company, c/o Todd Duex, 630 E. Summit, Lead SD 57754-1700.

The Chief Engineer is recommending APPROVAL of Application No. 1815-1 because 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest to reclaim the Yates waste rock pile to ensure long-term, optimum stability of the waste rock by reducing the angle of repose of the rock.

See report on application for additional information.

Garland Erbele, Chief Engineer
May 7, 2004

WATER PERMIT APPLICATION No. 1815-1
Homestake Mining Company
630 E. Summit
Lead, SD 57754-1700
(605)722-4680

Water Permit Application No. 1815-1, Homestake Mining Company, proposes to change the course of Whitewood Creek at the bottom of the Yates Waste Rock Facility near Lead, SD to facilitate reclamation work at the site. The main objective of the reclamation effort is to increase stability of the waste rock dump by decreasing the slope angle. (Attachment 1)

Review of Proposed Project

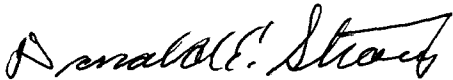
Homestake Mining Company is proposing to relocate approximately 2000-feet of the present channel of Whitewood Creek about 200-feet to the south east so the slope of the south east portion of the Yates Waste Rock Facility can be lessened. This, along with re-vegetation, will provide for long term stability of the waste rock dump in the NW¼ SW¼ of Section 34 T5N R3E (Attachment 1).

Water Source and Existing Water Rights

The U.S. Army Corps of Engineers is aware of and has no reservations with the proposed project. There are no water rights on Whitewood Creek in the immediate area that could be affected by the proposed project. The proposed project was designed by The Mines Group, Inc., Reno, NV and their professional opinion is that the relocated and restored channel will not alter the hydrology or the environment of Whitewood Creek in a significant way during and after the proposed project. Review of The Mines Group, Inc. report prepared for Homestake Mining Company supports these conclusions.

Conclusions

1. Water Permit Application No. 1815-1, Homestake Mining Company, proposes to change the course of Whitewood Creek at the bottom of the Yates Waste Rock Facility near Lead, SD to facilitate reclamation work at the site.
2. Professional review concluded the proposed project will not alter the hydrology or environment of Whitewood Creek in a significant way.
3. No water rights on Whitewood should be adversely affected by the proposed project.



Donald E. Stroup
Natural Resources Project Engineer
DENR Water Rights Program

Reviewed by:



Mark D. Rath
Natural Resources Engineering Specialist
DENR Water Rights Program

References

Yates Waste Rock Pile Reclamation and Relocation of Whitewood Creek, prepared for Homestake Mining Company by The Mines Group, Inc., Project No. 03-27-04, March 2004

Homestake Mining Company
630 E. Summit
Lead, SD 57754-1700
(605)722-4875

T5M R3E

34

— Present Channel
— Proposed Channel

0 250 500 1,000 Feet

Donald E. Stroup
Natural Resources Project Engineer
DENR Water Rights Program



AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA
COUNTY OF LAWRENCE

Dawn Blakeman, Being duly sworn, says, That the Lawrence County Centennial is and, during all times hereinafter mentioned, is a legal newspaper as defined in SDDCL 17-2-2, as amended, published in Deadwood, Lawrence County, South Dakota, by Country Media, Inc.; that affiant is and, during all of said times, was employed as an accounting clerk by the publisher of such newspaper and has personal knowledge of the facts stated in the affidavit; that the notice, order or advertisement, a copy of which is attached, was published in said newspaper for the issue (s) bearing the following dates:

<u>May 20</u>	<u>2004</u>	<u>200</u>	<u>4</u>
<u>May 27</u>	<u>2004</u>	<u>200</u>	<u>4</u>
RECEIVED	<u>200</u>	<u>200</u>	<u>200</u>
JUN 07 2004	<u>200</u>	<u>200</u>	<u>200</u>
WATER RIGHTS PROGRAM	<u>200</u>	<u>200</u>	<u>200</u>

That the full amount of the fee charged for publishing the same, to-wit the sum of

\$ 43.09, I insure solely to the benefit of the publisher of said newspaper; that no agreement or understanding for the division of the fees has been made with any person, and that no part of the fee has been agreed to be paid to any other person.

Dawn Blakeman

Accounting Clerk

Subscribed and sworn before me this

4 Day of June 2004

Pamela Buhler

Notary Public, South Dakota

My Commission expires

Feb 8, 2007

Water application

NOTICE OF APPLICATION NO. 1815-1 to Relocate of Segment of Whitewood Creek

Notice is given that Homestake Mining Company of California, 630 E Summit, Lead SD 57754-1700 has filed an application for a water permit to relocate an approximate 2,100 foot segment of Whitewood Creek in the NW1/4 SW1/4 of Section 34, T5N, R3E. The creek bed is proposed to be relocated to facilitate reclamation of the Yates Waste Rock Facility. Approximately 455 feet of the creek is currently conveyed in a culvert buried beneath the toe of the waste rock pile. This project is to accomplish restoration by removing the creek from the existing culvert and relocating the creek a short distance (approximately 200 feet) southeast of the present creek channel. This will allow the reclamation of the Yates waste rock pile to ensure long-term, optimum stability of the waste rock by reducing the slope of the pile.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1815-1 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by June 7, 2004.

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

Publ May 20 and 27, 2004
Lawrence County Centennial



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

www.state.sd.us/denr

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

May 10, 2004

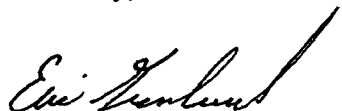
Homestake Mining Company of California
Todd A Duex
630 E Summit
Lead SD 57754-4875

Dear Mr. Duex:

Water Permit Application Nos. 1814-1 & 1815-1 for non-consumptive use has been examined and found to comply with the South Dakota Water Laws and applicable rules. The notice of hearings have been sent to the Publisher of the Lawrence Co. Centennial printed at Deadwood, SD (Ph # 605-578-3305). You will need to contact the newspaper and authorize publication of these notices. For your information, a copy of the notices, the recommendations of the Chief Engineer and the reports on the applications are enclosed. Please review the notices prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notices of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notices once each week for two consecutive weeks. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

c: Max Main, Bennett Main & Gubbrud

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

Instruction to Newspaper - Publish first Notice on May 20, 2004 with the second publication 7 days later. The applicant is responsible for payment.

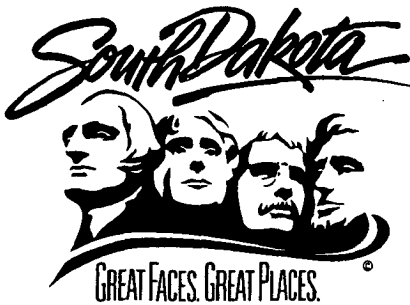
NOTICE OF APPLICATION NO. 1815-1 to Relocate of Segment of Whitewood Creek

Notice is given that Homestake Mining Company of California, 630 E Summit, Lead SD 57754-1700 has filed an application for a water permit to relocate an approximate 2,100 foot segment of Whitewood Creek in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 34, T5N, R3E. The creek bed is proposed to be relocated to facilitate reclamation of the Yates Waste Rock Facility. Approximately 455 feet of the creek is currently conveyed in a culvert buried beneath the toe of the waste rock pile. This project is to accomplish restoration by removing the creek from the existing culvert and relocating the creek a short distance (approximately 200 feet) southeast of the present creek channel. This will allow the reclamation of the Yates waste rock pile to ensure long-term, optimum stability of the waste rock by reducing the slope of the pile.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 1815-1 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on the application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider the application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by June 7, 2004.

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



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

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

May 10, 2004

Lawrence Co. Centennial
376 Main Suite A
Deadwood SD 57732

ATTENTION: Legal Public Notice

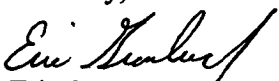
Enclosed is a Notice of Hearing on Application No. 1815-1 to Appropriate Water to be published twice. Please publish the first notice on May 20, 2004 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Homestake Mining Company of California, Todd A Duex, 630 E Summit, Lead SD 57754-4875 (Ph # 605-722-4680).

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

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

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

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

No. 1815-1

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

Date _____
We are in receipt of your letter of May 10, 2004 enclosing Notice of Hearing to Appropriate Water by Application No. 1815-1 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

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

JUN 29 2004

Todd A Duex
Homestake Mining Company
630 E Summit
Lead SD 57754-1700

Dear Mr. Duex:

Enclosed are Water Permit Nos. 1814-1 and 1815-1 for Homestake Mining Company. Permit No. 1814-1 authorizes construction of your water diversion system as part of the reclamation and closure plan for Sawpit and East Waste Rock Disposal Facilities. Permit No. 1815-1 authorizes the relocating of a segment of Whitewood Creek to facilitate reclamation of the Yates Waste Rock Facility.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, are enclosed. Please return the completed forms after finishing the projects. An investigation can then be scheduled so the water licenses may be issued, thus completing the acquisition of a water right.

Sincerely,

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

enclosures

c: Max Main, Bennett, Main & Gubbrud

**NOTICE OF COMPLETION OF WORKS AND
APPLICATION OF WATER TO BENEFICIAL USE**

Date 4/12/06

TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

RECEIVED

APR 18 2006

WATER RIGHTS
PROGRAM

FROM: Homestake Mining Company of California
(name)

630 E. Summit Street

(address)

Lead, SD 57754

(city, state, zip)

605-722-4680

(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 1815-1 states that the water use system is to be constructed by

June 7, 2009

(date)

, and water is to be put to beneficial use by June 7, 2013

(date)

The water use system was completed on July 31, 2005

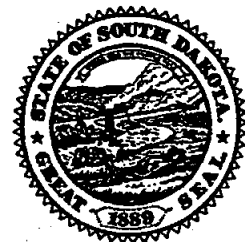
(date)

Applying the water to beneficial use was completed on July 31, 2005

(date)

You may schedule an investigation so that the water license may be issued.

Mark Tugji
(signature)



1815-1

HOMESTAKE MINING COMPANY
630 E. Summit Street
Lead, South Dakota 57754-1700
605-584-GOLD (4653)

August 22, 2007

Mr. Steven M. Pirner, P.E.
Secretary
SD Dept. of Environment and Natural Resources
523 East Capitol / Joe Foss Building
Pierre, SD 57501-3181

**Re: Homestake Mining Company and LAC Minerals (USA) LLC
Notification of Change of Address**

Dear Mr. Pirner:

Homestake Mining Company and LAC Minerals are hereby submitting this notification of a change of address. Homestake and LAC will be moving to the Blacktail Offices adjacent to the Blacktail Water Treatment Plant in Central City effective September 1, 2007. The new address is:

Homestake Mining Co.	LAC Minerals
11457 Bobtail Gulch Street or	11457 Bobtail Gulch Street
Central City, SD 57754	Central City, SD 57754

Please send all correspondence for the Homestake Mining Company or LAC Minerals to the new address beginning September 1st.

Sincerely,



Todd A. Duex
Closure Manager

cc: Mr. Garland Erbele, P.E.
Ms. Jeanne Goodman, P.E.
Ms. Vonni Kallemeyn
Mr. Bill Markley
Mr. Tim Tollefsrud
Mr. Bob Townsend, P.G.

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit Nos. 1815-1

I have this day, Aug 4, 2017 made a thorough examination of the water use system constructed by Homestake Mining Company, 11457 Bobtail Gulch St., Central City, SD 57754 of Permit Nos. 1815-1, bearing the priority of 4/2/2004 authorizing relocation of approximately 2,100 feet of Whitewood Creek for industrial (reclamation) purposes, in Lawrence County.

Inspection contact & relationship to permit holder, if applicable: **Mark Tieszen, Environmental Manager**
605-722-4680

Correspondence: **% Jeff Burich, Closure Manager**
605-722-4680

A. Works used to divert and transport water to place of use:

Homestake relocated a 2,150 foot segment of Whitewood Creek in the N ½ SW ¼ S 34 and the NE ¼ SE ¼ S33 all in T5N R3E. The creek bed was relocated to facilitate reclamation of the Yates Waste Rock Facility. The creek flow was removed from an existing culvert and relocated approximately 200 feet southeast.

B. Works used to apply water to beneficial use:

The relocated channel did not alter the downstream hydrology in any significant way.

C. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes
list any extended period of nonuse: **none**
- 2) Exceptions to compliance are: **none**

D. Condition and Location:

1. The system is in **good** condition with the points of diversion located as follows:

Channel reconstruction start:

1,496' N and 116' W of the SE corner Section 33 T5N R3E (44.348498, -103.749986).

Channel reconstruction end:

2,416' N and 1,604' E of the SW corner Section 34 T5N R3E (44.35099, -103.743557)

2. The channel was constructed **2,150** foot long and the **license should be issued**.
3. All structures, wells and lands on map Yes

F. Comments or other permit(s) associated with the project: Water Permit 1908-1 is located in the immediate vicinity and also authorizes reclamation of the Yates Waste Rock Facility.



Steven Quissell
Water Rights Inspector
DENR Water Rights Program

Date Report Completed: **October 4, 2017**



Looking downstream from start of relocated channel



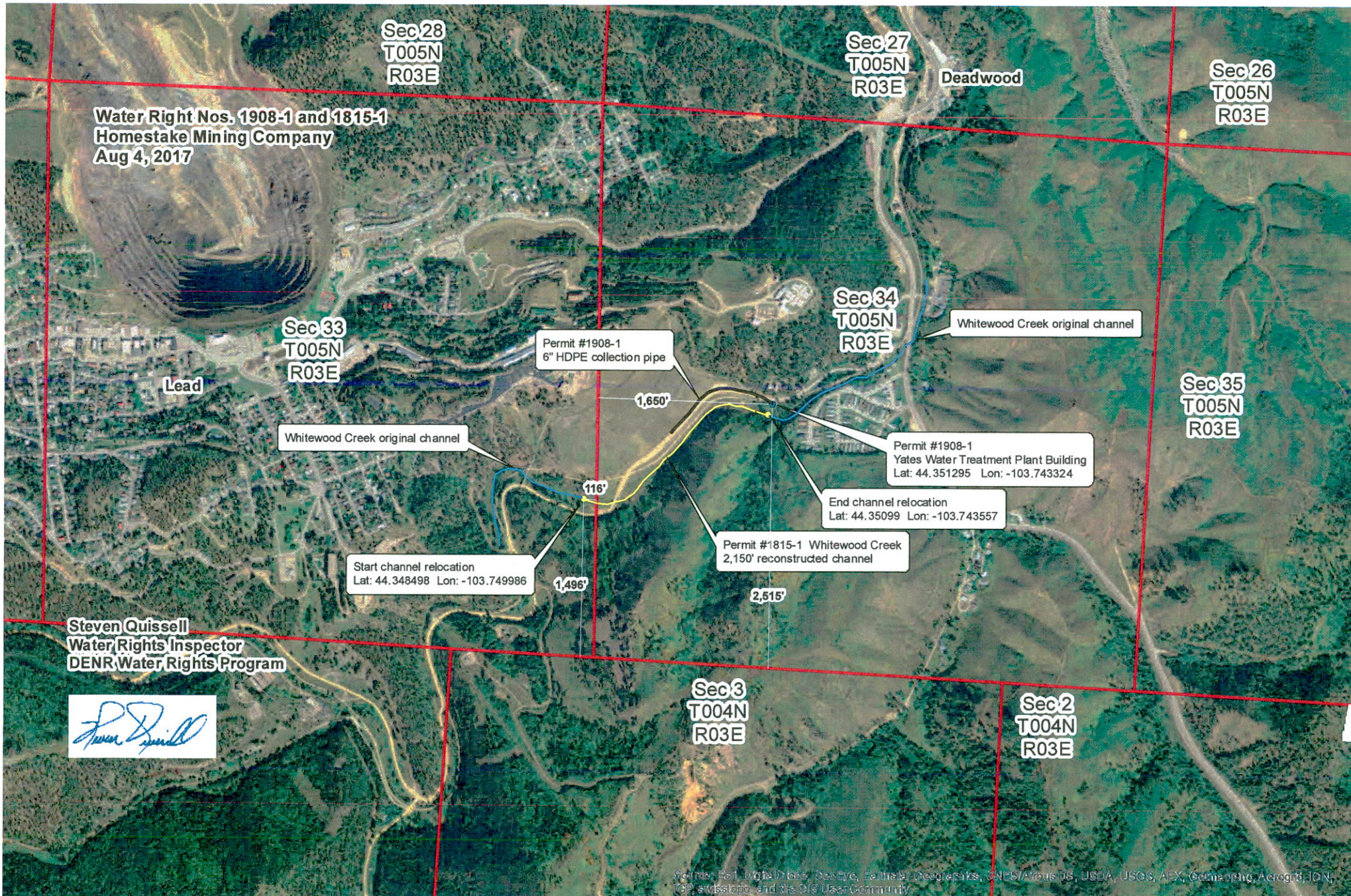
Looking downstream from Kirk Road bridge



Looking upstream from lower end of constructed channel



Reconstructed channel joins original channel





1815-1
**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

OCT 13 2017

1815-1
1886-1
1886A-1

Jeff Burich
Homestake Mining Company
11457 Bobtail Gulch St
Central City SD 57754

Dear Mr. Burich:

Enclosed are Water License Nos. 1815-1 and 1886A-1. They are the final water right documents completing the process of obtaining Water Rights. Included with each license is a map prepared by the staff engineer who conducted the field investigation.

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

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Note: Upon licensing, the applicable portions of Water Permit No. 1886-1 were incorporated into Water License No. 1886A-1.

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 1815-1

(1) Homestake Mining Company, 11457 Bobtail Gulch St., Central City, SD 57754 made Application No. 1815-1, April 2, 2004 for a water permit authorizing relocation of a segment of Whitewood Creek in Lawrence County for reclamation purposes. Permit No. 1815-1, with a priority date of April 2, 2004 was approved June 7, 2004 and issued to the applicant with construction of the described project to be completed on or before June 7, 2009 and the application to beneficial use completed on or before June 7, 2013.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the project.

Homestake relocated a 2,150 foot segment of Whitewood Creek in the N ½ SW ¼ Section 34 and the NE ¼ SE ¼ Section 33 all in T5N, R3E. The creek bed was relocated to facilitate reclamation of the Yates Waste Rock Facility. The creek flow was removed from an existing culvert and relocated approximately 200 feet southeast.

Channel reconstruction start:

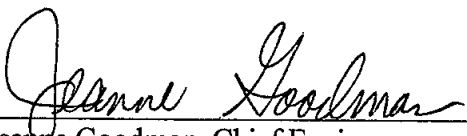
- 1,496'N and 116'W of the SE corner of Section 33 T5N R3E (44.348498, -103.749986)

Channel reconstruction end:

- 2,416'N and 1,604'E of the SW corner of Section 34 T5N R3E (44.35099, -103.743557)

(3) Pursuant to South Dakota Water Law 46-5-30.1 Homestake Mining Company, 11457 Bobtail Gulch St., Central City, SD 57754 the holder and/or owner of Water Right No. 1815-1 is issued a license to maintain the stream relocation of Whitewood Creek with a priority date of April 2, 2004 from the location specified in (2) of this license for reclamation purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 1815-1.


Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

OCT 13 2017
date

