R614-301-500
ENGINEERING
APPENDIX

VALLEY CAMP OF UTAH, INC.
SCOFIELD ROUTE, HELPER, UTAH 84526

MRP Update Register

Mine Name	File Number
Valley Camp / Belina	ACT/007/001

Date Rec.	Page #s	Plate #s	Approval Date	Insert By	Content/Remarks
10/87	various	various	N. Approval	RPS	mid-term permit update package
2/3/87 4/24/87	Addendum Report	Map 1-3 sheets Map 1-4 Map 2, 3, 4, 5	5/3/89	RPS	Sed Pond / Road Certs. Small Area Exemptions

Mine Fit
S. Linman

VALLEY CAMP OF UTAH, INC.

Scofield Route
Helper, Utah 84526

January 22, 1987

Mr. Lowell P. Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Mid Permit Term Review
Belina Complex ACT/007/001

Dear Mr. Braxton:

Pursuant to the requirements of UMC 788.11, and your letter to Mr. Walter L. Wright of October 6, 1986 regarding the above subject, information in the form of addendums and replacements for Valley Camp's original mining and reclamation plan, is enclosed for your review.

Changes or additions to the plan are labeled by regulation section and described for each volume. Hopefully, the enclosed section, "Mid Permit Review Submittal - by Volumes", will assist you in your review and placement of this material.

I have also enclosed my interpretation of the status of your Item No. 5 (letter of 10-6-86), which deals with the original permit conditions.

If you have questions, comments, or need of additional information on the enclosed material, please contact me.

Sincerely,

Trevor G. Whiteside
Chief Engineer

TGW/gs

Enclosures Mid Permit Review (3 Copies)

16 January 1987

MID-PERMIT REVIEW SUBMITTAL
OF JANUARY 16, 1987

ITEM NO. 5

The following is a status report of the original ten (10) conditions which were attached to the Valley Camp, Inc. mining permit. In hopes of eliminating further confusion which resulted from the re-numbering of the conditions by the DOGM, I have prepared a cross reference to the present numbering system.

Original Number	Subject	Present Number
1	Cultural Resources	N/A
2	Surface & Ground Water	1
3	Mining in Section 36	N/A
4	In-Mine Water Monitoring	3
5	Subsidence of Intermittent Streams	4
6	Redistribution of Topsoil	5
7	Experimental Plots or Studies	6
8		
1 thru 5)	Wetland & Riparian Areas	7 (3 & 4)
9	Squawfish & Humpback Chub	N/A
10	Belina Road Reclamation Plan	9

The following update will deal with Condition Nos. 1, 3, 4, 5, 6, 7 and 9, as presently numbered.

Condition No. 1

A revised surface and ground water monitoring plan was submitted on October 2, 1984. Although those plans contain excessive monitoring and analysis work, when compared to the recently formulated "Water Monitoring Guidelines" (February 18, 1986), they should be inserted into UMC 817.52 of Volume V, if approved.

Condition No. 3

A revised in-mine ground water monitoring plan was submitted on January 7, 1986. If approved, insert into UMC 817.52 of Volume V.

Condition No. 4

The Division signed off on this condition, siting Valley Camp's ongoing subsidence monitoring plan as adequate protection.

Condition No. 5

The required chemical and nutrient analysis data has been previously submitted. Additional concerns may have been answered by the Cedar Creek Associates, Inc. report, submitted August 26, 1986.

Condition No. 6

The Cedar Creek Associates, Inc. report, "Cover and Productivity Analysis of Temporary Revegetation Sites at Valley Camp of Utah, Inc.'s Utah No. 2 and Belina Operations," of August, 1986, was submitted to the Division on August 26, 1986.

Condition No. 7, Part 3

A response to this section was submitted on March 3, 1986, and approved on June 6, 1986. The submitted Vaughn Hansen Associates research data, dated February 26, 1986, should be inserted into UMC 817.52, Volume V.

Condition No. 7, Part 4

As a result of UMC 817.54 being repealed, a revised "Alternative Water Supply Information," plan is enclosed with this submittal for insertion into UMC 783.17, Volume III, Appendix N, if approved.

Condition No. 9

The Morrison-Knudsen report for the reclamation of the Belina mine haul road, originally submitted for compliance of this condition, on January 4, 1985, has been revised and three (3) copies of the new M-K report, "Belina Haul Road Reclamation Report," January, 1987, are enclosed with this submittal.

 16 January 1987

BELINA MINE PERMIT NO. UT-0013

MID-PERMIT REVIEW SUBMITTAL - BY VOLUMES

VOLUME I

Section	Revision - Addition Description
782.13	Revised page nos. 5 and 5a are enclosed as replacements. Mr. Wright's title has been changed.
782.13	A revised listing of officers and directors for Valley Camp of Utah, Inc., Valley Camp Coal Co., and Kanawha and Hocking Coal and Coke Co. is enclosed as replacement page nos. 6 through 9a.
782.14	This section is updated with enclosed page nos. 16-18 through 16-36. Insert behind page no. 16-17.
782.15	New page no. 22a is enclosed for insertion behind page no. 22. This page corrects the Marakis Lease description found in paragraph 3 on page 22.
782.15	Revised page no. 44 is enclosed as a replacement for the same page in Appendix A.
	This page reflects revised comments for Lease Nos. U-47947 and U-47975.

VOLUME III

Page iii has been revised to include additional figures.

784.11 Revised page nos. 2 through 5a are enclosed as replacements for corresponding page numbers. This revision includes the full seam method of mining. Figure 3-1, page no. 6, is also revised to reflect the anticipated 5-year production tonnages.

784.12 Revised page nos. 13 through 15 are enclosed as replacements. This revision reflects the change in frequency of sediment pond inspections.

784.12 A revised drawing, No. B4-0010, "Concrete Filter Pond," is enclosed as Figure 3-6C, page no. 20C, for replacement of that figure presently in the plan.

784.12 A new drawing, No. B3-0020, for typical gabion structures, is enclosed as Figure 3-6D, page no. 20D.

784.12 A new drawing, No. A4-0092, for typical decant pipes, is enclosed as Figure 3-6E, page no. 20E.

784.12 A new drawing, No. B4-0038, "Belina Mine Wash Bay and Retaining Wall," is enclosed as Figure 3-6F, page no. 20F.

784.12 A new drawing, No. A4-0056, "Truck Scale Location and Approach - Utah No. 2," is enclosed as Figure 3-6G, page no. 20G.

784.13 Figure 3-8 (page 23) has been revised to reflect 1987 dollars.

784.13 Appendix A has been revised to reflect 1987 reclamation costs.

784.13 Appendix B has been revised to reduce the number of different seed mixes.

784.14 Figure 3-13 on page 45 has been revised to reflect the present water monitoring.

784.14 Page Nos. 46 and 47 have been revised to reflect the present discharge (flow) determination procedure.

784.24 Page 92 has been revised to include recent road paving activities.

784.24 Figure 3-32, Drawing No. A5-0067, has been revised to show recent paving activities. This figure has been numbered as page no. 92A. Refer also to Map No. D4-0085, Envelope 9 of Volume IV, for general site location.

VOLUME IV

Map B-3, No. D2-0060, "Belina No. 2 Mine Progress Map," is submitted in lieu of a five (5) year forecast map. See Section 782.17 of Volume VI.

Map C-5, No. C5-0034 (Rev. 1), "Area Over Underground Works," has been updated and is submitted as a replacement for the same map in Envelope No. 10.

Map A, "Surface Ownership," has been updated and is enclosed as a replacement for the same map in Envelope No. 1.

Map A-1, "Coal Ownership," has been updated and is submitted as a replacement for the same map in Envelope No. 2.

Map C has been revised to show an enlarged topsoil storage location, and, also, the proposed sediment disposal area. This map replaces the present Map C in Envelope No. 7.

Map No. D4-0085, "Utah No. 2 Loadout Surface Facility," is enclosed as an updated replacement for Map C-3 in Envelope No. 9 of Volume IV. See also Section 784.24 of Volume III.

VOLUME V

Section	
817.52	An update of the monitoring of mine water discharge facility and practices is enclosed as page 9A-1, for insertion into this section. This update applies to Sections 784.14 and 784.16 of Volume VI.
817.52	The in-mine ground water monitoring plan has been revised as a result of meetings with Division personnel. A new plan is enclosed, pursuant to Condition No. 3 of the mine permit approval, for insertion into this section as page nos. 9D, 9E and 9F.
817.46 [784.16 (b) 1 & 2]	New page no. 10B-1, showing the new capacity of Sediment Pond No. 2, is enclosed for insertion behind page no. 10B of this section. New page no. 10B-2, Drawing No. B3-0033, "Utah No. 2 Pond-Stage Capacity and Curve," is also enclosed for insertion.
782.19	The MSHA identification number for the Loadout area (Utah No. 2) has been changed. An updated page no. 4C is enclosed for replacement of corresponding pages in this section of Volume Nos. V and VI.
***	Updated Roof Control and Ventilation plans are enclosed for replacement of those found in Appendix B.

VOLUME VI

Section

784.12 A revised list of maps and drawings certified by Mr. E. B. Foust is enclosed on page 18 for insertion into this section.

782.17 An updated underground development schedule for Belina No. 1 is enclosed. New pages 782.17-1 and 782.17-2 replace those with corresponding page numbers dated November 14, 1983.

783.15 A "Revised Alternative Water Supply Information," is enclosed for insertion into Appendix N. New pages 41 and 42 replace corresponding pages presently enclosed in the plan.

Maps

The No. 2 Sediment Pond (Loadout Facility) has been cleaned out and enlarged. A revised drawing, No. C4-0060, Rev. 1, showing the new configuration and capacities is enclosed for insertion into Map Section P-1 to P-3 of Volume VI. This drawing should replace Drawing No. C5-0027 found in Map Envelope P-1 to P-3.

New Map No. D4-0084, "Belina Surface Facility," is enclosed for insertion into the envelope containing Map No. C-6. The new map will update old Map C-6, and show new installations and paving of the roads.

The new cross-drains placed on the Belina Mine Road are shown on Map T-1. Revised sheets P-4 through P-7 are enclosed as replacements.

In accordance with the regulations, the accumulated sediment must be removed when it reaches 60% of maximum. It should be noted that, with the fixed decant system, it may be necessary to dewater the pond by pumping after some precipitation events in order to provide storm surcharge capacity or by using a dewatering device (See Figure 3-4).

The emergency spillway was designed to handle the OSM Regulation's design storm of 25 year - 24 hours. OSM regulations require at least 1.0 feet of clearance between the maximum elevation of water in the emergency spillway and the crest of the embankment. The spillways were designed to handle the flow rates of a 25 year - 24 hour storm (2.92 inches) and still satisfy the freeboard requirements.

Sediment ponds will be periodically maintained to remove deposited sediments so that storage volume can be preserved. This will occur when the design sediment storage volume has been 60% displaced. Prior to undertaking cleaning activities, specific plans for cleaning and disposal of material will be submitted to the regulatory authority for approval.

A thorough inspection of the sediment ponds and embankments will be undertaken at least once per

quarter. When examining for stability and performing a general inspection, the inspector will be looking for any of the following conditions:

- Seepage from anywhere on the down-stream side of the embankment, but especially around the discharge pipe;
- Erosion of embankment slopes;
- Continuity of emergency spillway;
- Erosion around entrance or exit of discharge pipe;
- Clogged principal or emergency spillway;
- Check slope stakes for obvious slope movement (if utilized);
- Level of sediment;
- Placement of wave erosion protection (if utilized);
- Erosion at spillway discharges;
- Clogging of dewatering device.

Monitoring for embankment movement (Skelly and Loy, 1979) will also be a part of this inspection where applicable. This will be performed by setting stakes in the embankment along the toe and several rows proceeding up from the toe. The original position and elevation will be recorded with reference to a permanent landmark. These positions will be checked during inspection. If unstable or potentially un-

stable conditions exist, corrective measures will be taken immediately.

The below ground structures are the reclaim tunnels at the load-out facility and the Belina Mine (Figure 3-6), the Belina culinary well (Figure 3-6A), concrete filter pond (Figure 3-6C), and the mine portals. Reclamation of all structures addressed in this section is covered in detail in the following reclamation plan, Section 784.13.

The Utah No. 2 Mine is sealed as shown in Figure 3-7 at approximately 700 feet underground. The portals for this mine are presently closed off with chain link fencing; the fan is turned off and the fanhouse door is kept locked. The mine, at present, is temporarily abandoned. At the closing of the mine, the portals will be sealed, and the area reclaimed as described in Section 784.13.

The maps and drawings listed below and included in Volume VI of Valley Camp of Utah, Inc. mining permit application were prepared under my supervision, and to the best of my knowledge can be certified as correct.

DRAWINGS	MAPS
No. A5-0069	D5-0087
No. A5-0064	D5-0088
No. A5-0063	D1-0089
No. A5-0066	D1-0090
No. A5-0062	D4-0084 Rev. 1
No. B4-0010	C-6 (D4-0084)
No. A5-0082	D-1 (D4-0044)
No. A5-0065	D-2 (D4-0046)
No. A5-0081	Map J
No. A5-0078	P-1 (C5-0026)
No. A5-0079	P-2 (C4-0060)
No. A5-0070	T-1 (P1-P7 Rev.)
No. A5-0071	D5-0095
No. A5-0068	P-3 (C5-0028)
No. B5-0011	
No. A5-0072	
No. A5-0075	
No. A5-0076	
No. A5-0013	
No. A4-0056	
No. B4-0038	
No. A4-0092	
No. B3-0020	

1/20/87

Edwin B. Foust, P. E.
Utah Registration #05323-0916-0

UMC 782.17 PERMIT TERM INFORMATION

The applicant states that two seams will be mined and refers the reader to Volume III, page 2. The page lists three seams to be mined. A date is given for areas to be mined, but whether it is the beginning or end date is not noted. The applicant states that 120 acres will be disturbed at the end of the permit term and 150 acres at the end of the mine life. The additional 30 acres are not accounted for. The applicant should provide both beginning and end dates for each phase of the mining operation. The discrepancies in seams to be mined and acreage to be disturbed must be resolved.

COMMENTS

The applicant presently has developed operations in two (2) seams. The Belina No. 1 is in the Upper O'Connor Seam and the Belina No. 2 is located in the Lower O'Connor Seam. The McKinnon Seam (mentioned on Page 2, Volume III) will not be mined until such time as additional coal leases, if acquired, provide a large enough area to make development in this seam economically feasible. The statement concerning the possible future mining in the McKinnon Seam was simply a commitment to mining that seam when and if circumstances warranted. Additionally, the applicant was acknowledging the existence of that seam and not indicating any planned mining activity.

The schedule for underground development for each mine during the permit term is as follows, with approximate land locations indicated. Also, refer to Volume IV, Map B-2, Belina No. 1 Mine Forecast; and Map B-3, Belina No. 2 Mine - Current Progress, for area projections. Note that production dates beyond the permit term are for reference only.

Belina No. 1 Mine

Miner Section	Start Date	End Date	Location (Section, Township, Range)
1			
	01-01-87	05-31-87	NE¼ NW¼ Sec. 36, T13S, R6E
	06-01-87	11-30-87	SW¼ NW¼ Sec. 36, T13S, R6E
	12-01-87	10-31-88	NW¼ NW¼ Sec. 36, T13S, R6E
	11-01-87	12-31-88	NE¼ NW¼ Sec. 36, T13S, R6E
	01-01-89	03-31-89	NE¼ NW¼ Sec. 36, T13S, R6E
	04-01-89	06-31-89	SE¼ SW¼ Sec. 25, T13S, R6E
	07-01-89	09-15-89	NW¼ NW¼ Sec. 31, T13S, R7E
	09-16-89	12-31-89	SW¼ SW¼ Sec. 30, T13S, R7E
	01-01-90	07-15-90	SW¼ SW¼ Sec. 30, T13S, R7E
	07-16-90	12-31-90	NW¼ NW¼ Sec. 31, T13S, R7E
	01-01-91	03-31-91	NW¼ NW¼ Sec. 31, T13S, R7E
	04-01-91	-	NE¼ NE¼ Sec. 36, T13S, R6E

Miner Section	Start Date	End Date	Location (Section, Township, Range)
	-	-	SW¼ SW¼ Sec. 30, T13S, R7E
	-	12-31-91	SE¼ SE¼ Sec. 25, T13S, R6E
2			
	01-01-87	05-31-87	SE¼ SW¼ Sec. 25, T13S, R6E
	06-01-87	11-30-87	SW¼ NE¼ Sec. 25, T13S, R6E
	12-01-87	12-31-87	NW¼ SE¼ Sec. 25, T13S, R6E
	01-01-88	09-30-88	NE¼ SW¼ Sec. 25, T13S, R6E
	10-01-88	-	SW¼ NE¼ Sec. 25, T13S, R6E
	-	12-31-88	NW¼ SE¼ Sec. 25, T13S, R6E
	01-01-89	07-31-89	SW¼ NE¼ Sec. 25, T13S, R6E
	08-01-89	12-31-89	NW¼ SE¼ Sec. 25, T13S, R6E
	01-01-90	04-31-90	SW¼ NE¼ Sec. 36, T13S, R6E
	05-01-90	12-31-90	NW¼ SE¼ Sec. 36, T13S, R6E
	01-01-91	12-31-91	SW¼ NE¼ Sec. 36, T13S, R6E
3			
	01-01-87	10-15-87	NE¼ NE¼ Sec. 36, T13S, R6E
	10-16-87	12-31-87	NW¼ NW¼ Sec. 31, T13S, R7E
	01-01-88	09-30-88	SE¼ NE¼ Sec. 36, T13S, R6E
	10-01-88	12-31-88	NE¼ SE¼ Sec. 36, T13S, R6E
	01-01-89	12-31-89	NE¼ SE¼ Sec. 30, T13S, R7E
	01-01-90	-	SE¼ NE¼ Sec. 36, T13S, R6E
	-	12-31-90	SW¼ NW¼ Sec. 31, T13S, R7E
	01-01-91	02-31-91	NW¼ NW¼ Sec. 31, T13S, R7E
	03-01-91	03-31-91	SW¼ SW¼ Sec. 30, T13S, R7E
	09-01-91	12-31-91	NW¼ NW¼ Sec. 31, T13S, R7E

Belina No. 2 Mine

No advance is forecast for the duration of this permit term. In lieu of a forecast map, a current progress map is substituted for Map B-3, and is shown in this submittal as Drawing No. D2-0062.

Alternative Water Supply Information

In the event Valley Camp's water monitoring program determines the impact of mining has caused a significant measurable decrease, or interruption of flow to the water supply within the mine plan area, Valley Camp has nearby water rights available that could be developed to replace existing sources, if necessary.

These water rights include: Clear Creek Springs (0.5 CFS), Clear Creek Mine Tunnel No. 3 (0.446 CFS), Utah No. 1 Mine (0.15 CFS), O'Connor Mines (0.047 CFS and 0.030 CFS), the Belina Mine well (7.7 acre-feet/yr.), and stockwater rights on Boardinghouse and Finn Creeks (unspecified amounts). The free flow sources mentioned above, that are not being utilized by Valley Camp, are in fact, presently benefiting the water users downstream from the point source.

Inserted to hold true page numbers.

Comment Update for A & B

The present Belina Mine water discharge facility is a concrete settling-filtering unit situated near the fan portal of the Belina No. 1 Mine. The facility was constructed during the third quarter of 1983. The unit is approximately 22' x 145', and varies in depth from 8 feet to 11 feet. The pond is a multi-cell unit, consisting of five (5) cells or chambers. Details of this structure can be seen by referring to Drawing No. B4-0010 in Section 784.12 of Volume III.

Monitored flows from the Belina Mine discharge have increased from a previously reported 0.6 cubic feet per second maximum, to a maximum flow of 1.10 cubic feet per second. The mine water discharge is monitored according to the current NPDES permit and is referred to as pond 005A in the permit. Grab samples, a minimum of twice monthly, are analyzed for pH, TSS, TDS, iron, and oil and grease. Flow is measured for each sample by observing final discharge through a Parshall Flume installed at the outlet of the pond. The data for these parameters and sample results is on file at the Division's office.

This discharge is permitted through the U. S. Environmental Protection Agency as No. Ut-0022985, approved August 24, 1977, and renewed June 30, 1982.

This section also applies to Sections 784.14 and 784.16.

8 January 1987

UMC 817.52 GROUND WATER MONITORING

The in-mine ground water monitoring program at Valley Camp, Inc. consists of: (1) monitoring ground water inflow to the Belina Mine from individual or collected sources which exceed five (5) gpm discharge for periods in excess of thirty (30) consecutive days; and (2) determining the consumption of ground water through evaporation, production and mine discharge.

Upon encountering new sources or areas of measurable flow (five [5] gpm or more), which continue for at least thirty (30) days, sampling will begin and continue on a quarterly basis. The first sample taken will have a full suite of analysis performed, as per Table 1, with subsequent quarterly samples being examined for field measurements only.

On a quarterly basis, a report will be submitted to the regulatory authority providing the analytical data, and a brief historical discussion describing any changes in source activity for each monitoring point. The quarterly report shall also include a map locating all measurable monitoring points, i.e. faults, roof drippers, sumps, etc., as well as indicating the suspected geologic source of the flow (channel sandstone, fault, fracture, lineament system, etc.).

Quarterly monitoring will continue until source flows diminish to less than five (5) gpm, or until the regulatory authority approves discontinuance of the site.

An annual in-mine ground water monitoring report will be submitted within ninety (90) days after the end of the reporting year. This report will be a summary of the previous year's data, and an estimate of ground water consumption resulting from ventilation, evaporation, coal production and mine discharge.

TABLE 1

IN-MINE GROUND WATER MONITORING

WATER QUALITY PARAMETER LIST FOR

OPERATIONAL MONITORING

Field Measurements

Flow

PH

Specific Conductance

Temperature (C°)

Laboratory Measurements (Mg/L)

Total Dissolved Solids

Total Hardness (As Ca CO_3)

Bicarbonate (HCO_3^-)

Calcium (Ca)

Chloride (CL^-)

Iron (FE)

Magnesium (Mg)

Manganese (MN)

Potassium (K)

Sodium (Na)

Sulfate (SO_4^{-2})

NOTE: Major, minor ions and trace elements are to be analyzed in dissolved form only.

A cation/anion balance shall be calculated on all comprehensive analyses.

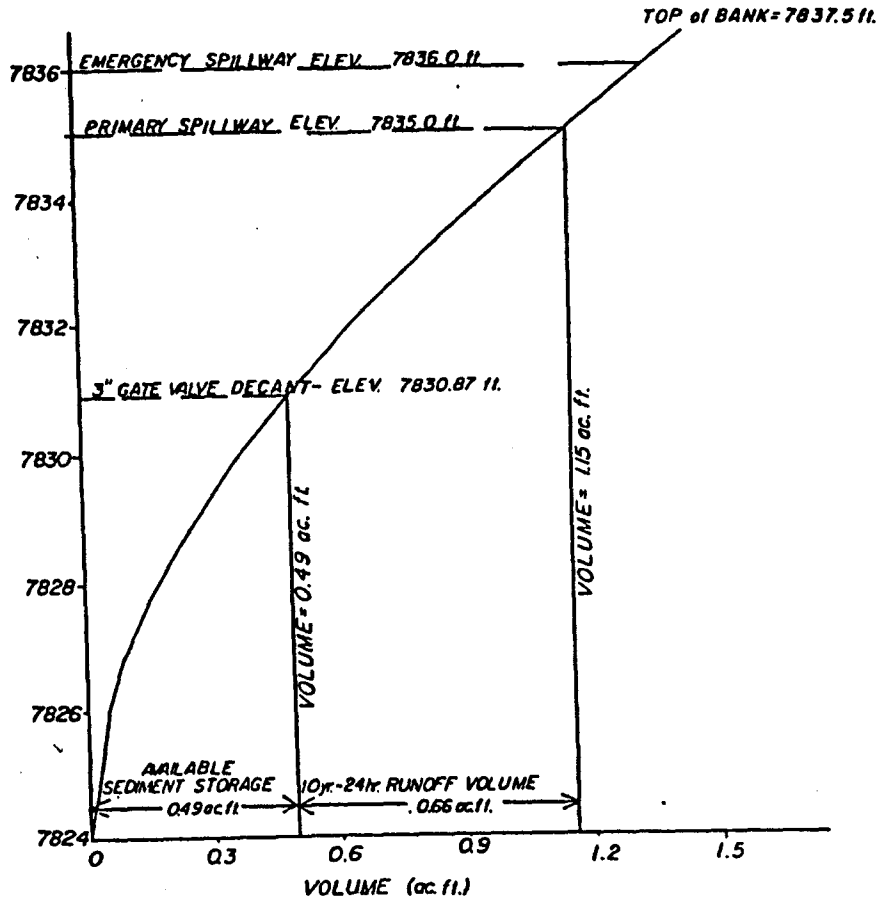
UMC 817.46 Hydrologic Balance Sedimentation Ponds

In August of 1985, Valley Camp enlarged the No. 002 sediment pond at Utah No. 2, to a total capacity of 1.31 acre feet. A composite of the individual capacities are as follows:

No. 002 Sediment Pond Capacity

Sediment Storage to Decant	=	0.49 Acre Ft.
Water Storage From Decant to Primary Outlet	=	0.66 Acre Ft.
Total Storage to Primary Outlet	=	1.15 Acre Ft.
Storage From Primary to Emergency Outlet	=	0.16 Acre Ft.
TOTAL CAPACITY	=	1.31 Acre Ft.

For further information, see Drawing No. C4-0060 (Rev. 1) Map P-2 of Volume VI.



ELEV. ft.	AREA ac.	VOLUME ac. ft.	Σ VOLUME ac. ft.
7824	0.01		0
		0.05	
7826	0.04		0.05
		0.13	
7828	0.09		0.18
		0.21	
7830	0.12		0.39
		0.36	
7832.63	0.15		0.75
		0.39	
7834.93	0.19		1.14

DRAWN BY: K. PAPPAS	VALLEY CAMP OF UTAH, INC.
DATE: SEPT 10, 1985	SCOFIELD ROUTE
CHECKED BY:	HELPER, UTAH 84526
DATE:	
APPROVAL:	TITLE: UTAH NO. 2 POND - STAGE CAPACITY & CURVE
APPROVAL:	
APPROVAL:	SCALE: NONE — DRAWING NO. B-3-0033

10B-2

Permit Name and Address	License #, Approval, or Submittal Date	Requirements, Contents, and Remarks
U. S. FEDERAL COMMUNICATION COMMISSION Washington, D.C.		
License in the Private Operational Fixed Microwave Radio Service	License No. 23744-IS-86	Issued 9-17-76
MINE SAFETY AND HEALTH ADMINISTRATION U. S. Dept. of Labor P. O. Box 25367 Denver Federal Center Denver, CO 80225		
ID No. and Safety Plans Operator & Contractors	Belina No. 1 - No. 42-01279 Coal Handling Facilities No. 42-01995 Belina No. 2 - No. 42-01280	Issued 2-12-76 Issued 3-29-74 Issued 2-12-76
Roof Control Plan - Mine	August 11, 1986 Approved	Reviewed every 6 months. Commencing mine development after establishing mine ventilation
Ventilation System-Methane and Dust Control Plan-Mine	December 31, 1986	Review every 6 months. Commencing mine development after establishing mine ventilation
Escapeway Map	July 28, 1980 Approved Updated Monthly	Underground Mine. Commencing underground mining
Fan Installation Plan	July 28, 1980	Commencing mine development after construction

VALLEY CAMP OF UTAH, INC.

Scofield Route

Helper, Utah 84526

VENTILATION, METHANE AND DUST CONTROL PLAN

FOR

BELINA NO. 1 MINE

I. D. NO. 42-01279

JUNE 9, 1986

VALLEY CAMP OF UTAH, INC.

Scofield Route
Helper, Utah 84526

9 June 1986

VENTILATION PLAN

I. GENERAL INFORMATION

A. Mine and Company Data:

Mine Name:	Belina No. 1 Mine, I.D. No. 42-01279
Company:	Valley Camp of Utah, Inc.
Address:	Scofield Route, Helper, Utah 84526
Mine Location:	Approximately 2.0 miles South of Scofield Town Site, Thence 3.2 miles Southwest of Route 96.
Telephone:	(801) 448-9413
Operator:	W. L. Wright Signature: W L Wright
Title:	President and Chief Operating Officer
Address:	672 North Apple Circle Price, Utah 84501
Telephone:	(801) 637-3445

B. Life of Mine is anticipated to be more than one year.

C. Number of Employees:

Surface	44
Underground	116
Total	160

D. Official in charge of health and safety at the mine:

Virgil Lamb — Mine Superintendent
Name and Title

Person to be contacted concerning the ventilation system and methane and dust control plan:

Trevor Whiteside — Chief Engineer
Name and Title

E. Average tons of coal produced per day: 2,200

Average quantity of methane produced per day:

0 ft.^{3}

Number of active sections: development 2 ;

pillar extraction 1 ; longwall 0

Name and average height of coal seam being mined:

Upper O'Connor Seam 16 feet

F. Number of citations, orders, and extensions received for exceeding the respirable dust standard listed by Mechanized Mining Unit (MMU) for the last 12 months.

	MMU No. 001	MMU No. 003	MMU No. 004	MMU No. 006	MMU No. 008
___Citations	0	0	0	0	0
___Orders	0	0	0	0	0
___Extensions	0	0	0	0	0

G. Plan Status (Check One):

___ New plan.

___ Current plan has been reviewed and no changes are proposed.

__X__ Find enclosed proposed revisions or supplements to the current plan, listed by page number with a brief description of each.

II. MAIN FANS

A. The main fans will be installed and operated according to the requirements of Sections 75.300-2 and 75.300-3. Should it be necessary to deviate from these requirements, the substitution will provide no less than the same measure of protection to the miners, and the District Manager will be contacted for approval.

B. Inspection, examinations and records of fan operation will be conducted and kept by a qualified person in accordance with Section 75.300-4.

C. In the event of mine fan failure or stoppage, the requirements of Sections 75.321 and 75.321-1 will be followed.

III. GENERAL METHANE AND DUST CONTROL PRACTICES

A. Methane content in any return air course other than air courses returning the split of air from a working section (as provided in Section 75.309 and Section 75.310) will not exceed 2.0 volume per centum.

B. Shuttle car haulageways will be kept in a damp condition.

C. No underground crushers or dumps are anticipated.

D. The maximum distance an entry or room will be advanced inby the breakthrough before the next breakthrough is made into the entry or crosscut will be 125 feet and 100 feet, respectively.

E. The sequence of mining will be from the intake to the return. This sequence will keep the roof bolter operators from working in the return air current during most cutting cycles. When roof bolting does occur in return air, respirators will be available.

F. In the event a connection cannot be made between entries or rooms, and a dead end is left, line brattice will be installed within twenty (20) feet of the face before the area is abandoned.

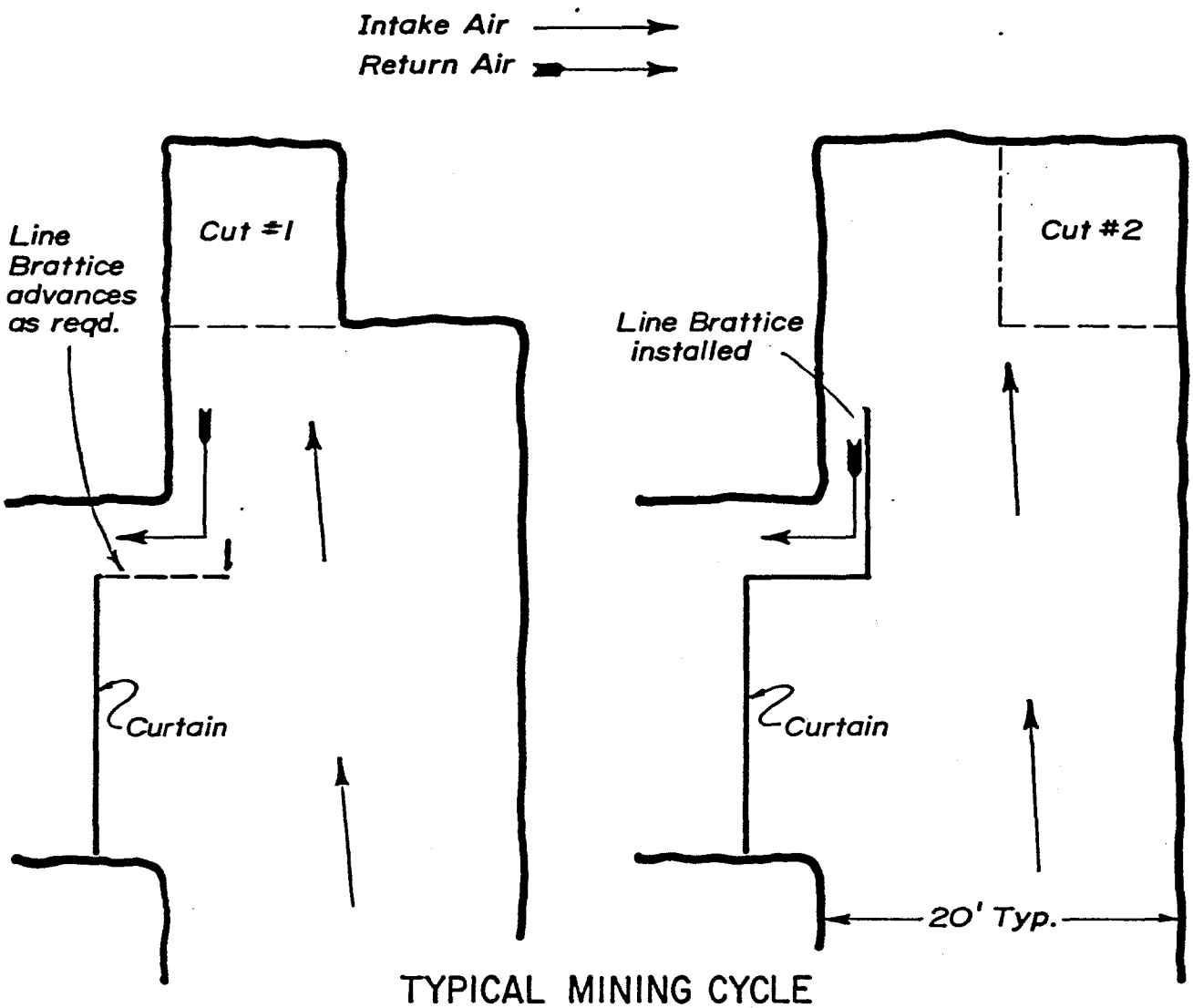
G. "Line brattice or any other approved device used to provide ventilation to the working face from which coal is being cut, mined or loaded, will be installed at a distance no greater than fifteen (15) feet from the area of deepest penetration, to which any portion of the face has been advanced." NOTE: This does not apply during mining of bottom coal.

H. Dust suppression on roof bolters will be accomplished by the use of either an approved dust collection system or a wet (water) drilling system.

During roof bolting, the line curtain or vent tubing will be maintained to within twenty (20) feet of the face.

I. The maximum distance a ventilation device will be maintained from an idle face will be twenty (20) feet. Only a perceptible movement of air for ventilation will be required in these faces until electrical or diesel equipment is taken inby the last open crosscut.

J. A conventional type trickle duster will be used in the return to help neutralize float coal dust. Auxiliary exhaust-type fans may also be used in conjunction with trickle dusters. Trickle dusters will be either mounted on the fan, or the conventional type will be located in a return air course exhausting simultaneously with the auxiliary fan.



TYPICAL MINING CYCLE

Notes:

1. Maximum sump cut of Continuous Miner shall be 10 feet.
2. Brattice shall be maintained to within 15 ft. of the face.
3. The minimum mean air velocity shall be 60 ft. per minute.
4. Brattice line will be extended as cut progresses.

DRAWN BY: Ed Sanderson	VALLEY CAMP OF UTAH, INC. SCOFIELD ROUTE HELPER, UTAH 84526	
DATE: April 16, 1981		
CHECKED:		
APPROVAL:		
APPROVAL:		
SCALE: 1"=10'	TITLE TYPICAL MINING CYCLE	DRAWING NO. A5-0030

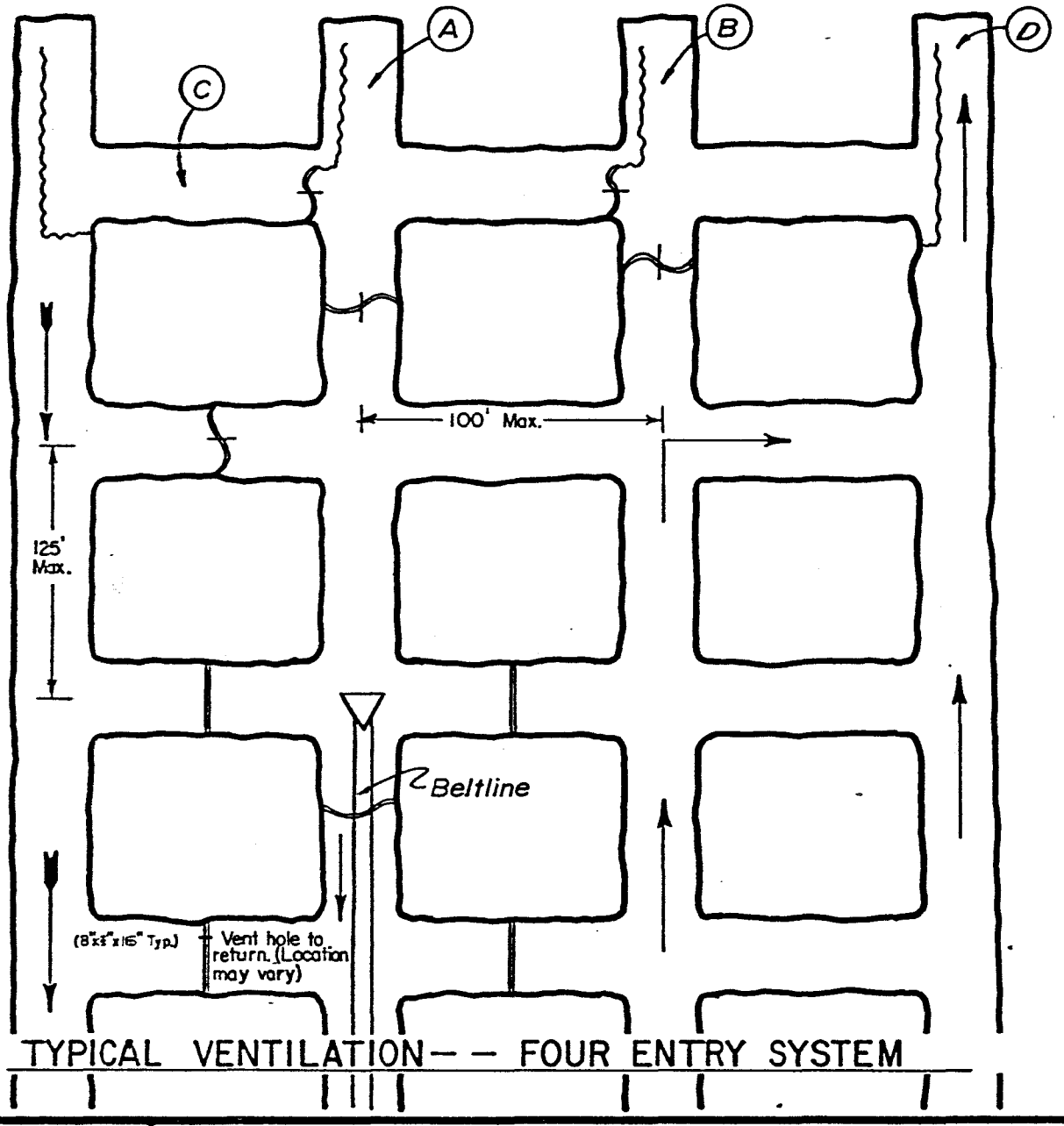
VENTILATION PLAN

LEGEND

- Line Brattice
- Curtains
- Short Term Stoppings
- Intake Air
- Return Air

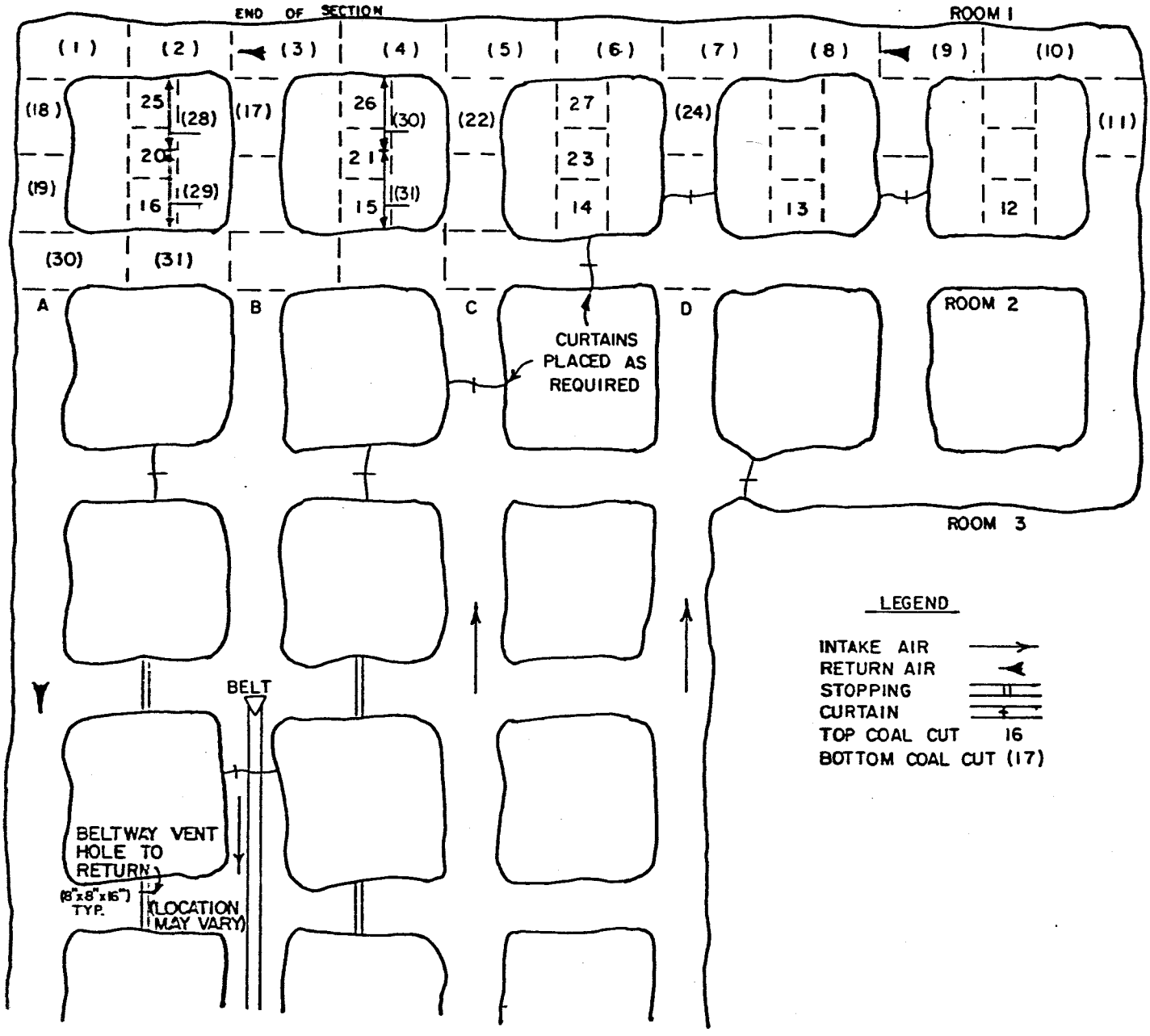
EXPLANATION

- (A) Mining face
- (B) Bolting face
- (C) Last open crosscut
- (D) Idle face



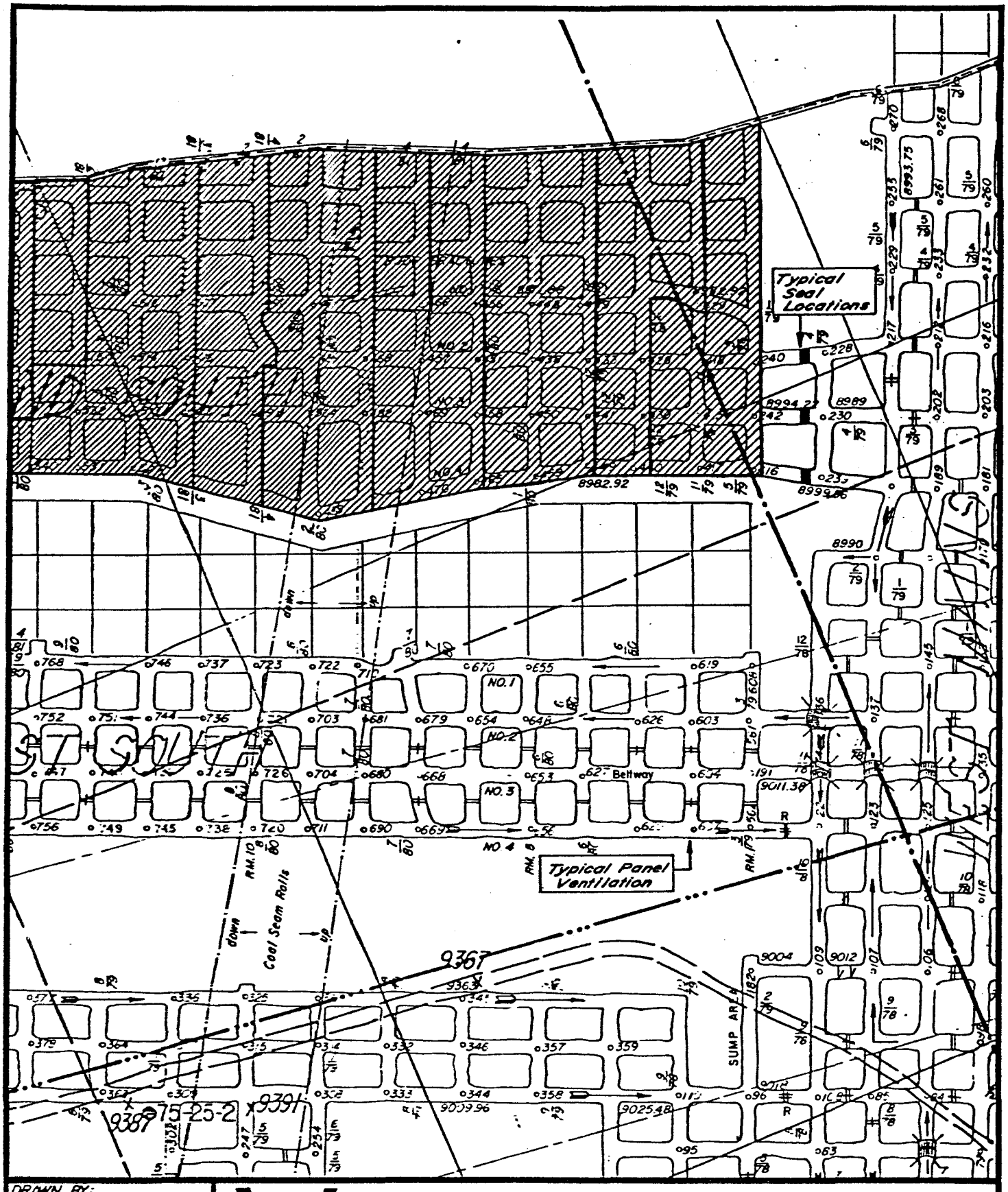
TYPICAL VENTILATION-- FOUR ENTRY SYSTEM

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**	
DATE: April 16, 1981	**SCOFIELD ROUTE**	
CHEXED:	**HELPER, UTAH 84526**	
APPROVAL:		
APPROVAL:		
SCALE: None	TITLE 4 ENTRY VENTILATION SYS.	DRAWING NO. A5-0031



1. DEVELOPE 3 ROOMS AT A TIME.
2. BOTTOM COAL CUTS WILL HAVE AT LEAST 45 f.p.m. OF AIR PASSING OVER THE MINER DURING MINING WITH AT LEAST 18,000 c.f.m. AT THE LAST OPEN CROSSCUT.
3. TOP COAL PILLAR SPLITS WILL BE VENTILATED AS SHOWN ON PAGE 5 (Dwg. A5-0030) AND PAGE 6 (Dwg. A5-0031) OF THE APPROVED VENTILATION PLAN.
4. TEMPORARY BARRICADES AND WARNING SIGNS WILL BE PLACED AT TYPICAL POINTS A THRU D UPON COMPLETION OF OUTBY FLOOR CUTS.
5. ROOM LENGTHS, CUT SEQUENCE AND DIRECTION OF PILLAR SPLITS MAY VARY DEPENDING UPON CONDITIONS.

DRAWN BY: J.A.U.	DATE: 4-10-84	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526
CHECKED BY:	DATE: Jul. 26, 84	
REVISED BY:	SCALE: ———	
APPROVAL ENG.:		
APPROVAL SAFETY:	TITLE: TYPICAL VENTILATION FOR FULL SEAM ROOM DEVELOPMENT	DRAWING NO. A5-0083 / REV. NO.
APPROVAL MINE:		



DRAWN BY: ED SANDERSON	**VALLEY CAMP OF UTAH, INC.**	
DATE: JUNE 18, 1981	**SCOFIELD ROUTE**	
CHECKED:	**HELPER, UTAH 84526**	
APPROVAL:		
APPROVAL:		
SCALE: NONE	TITLE PANEL VENT. & SEALING, TYP.	DRAWING NO. A5-0037

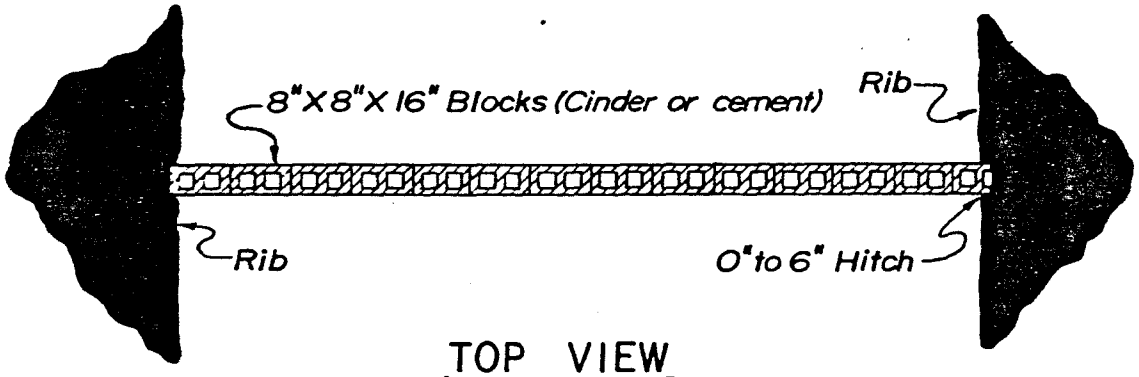
IV. CONSTRUCTION AND USE OF VENTILATION CONTROLS

A. "All ventilating controls such as stoppings, overcasts, undercasts, doors, regulators, shaft partitions, etc., shall be of substantial and incombustible construction, installed in a workmanlike manner and maintained in the condition to serve the purpose for which they were intended. The intent being to direct air to the sections and working faces, and to separate entries for escapeway purposes."

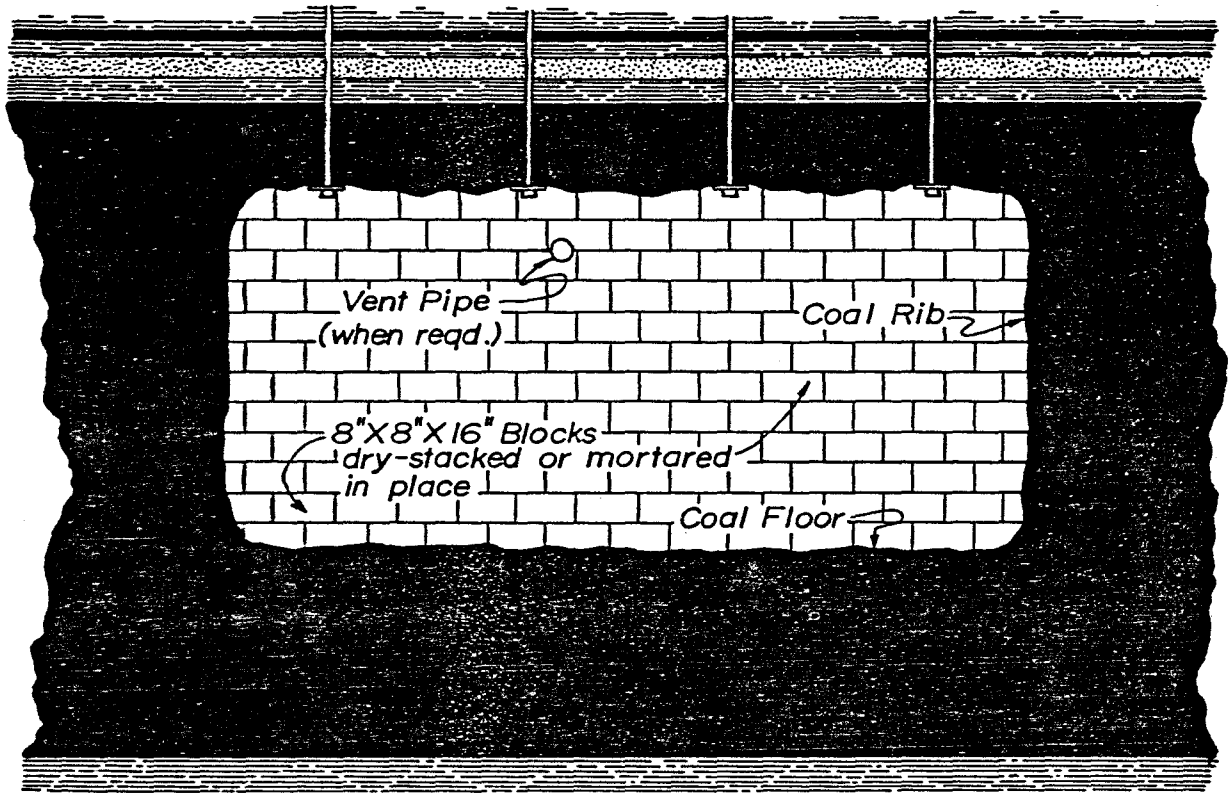
B. "Permanent stoppings erected between the intake and return air courses shall be maintained to, and including, the third connecting crosscut outby the faces of the entries. Whenever the third connecting crosscut is broken through, work shall be started on building the stopping as soon as possible, and shall be continued in a reasonable and diligent manner until completed. Similarly, whenever a belt move is completed, temporary stoppings shall be installed immediately and work shall be started on building the permanent stoppings as soon as possible, and shall be continued in a reasonable and diligent manner until completed."

C. The use of wooden materials to assist in the installation of the above ventilation devices will be kept to a minimum, and will be treated with an M.S.H.A. approved fire retardant.

D. In the event irregular holes in any of the utilized ventilation devices or controls are created by the normal and accepted construction procedures, they will be "filled" with M.S.H.A. "approved materials." Approved materials may consist of incombustible material as described in 30 CFR 75.316-2(b), or steel, tin, mortar or an approved fiber sealant.



TOP VIEW



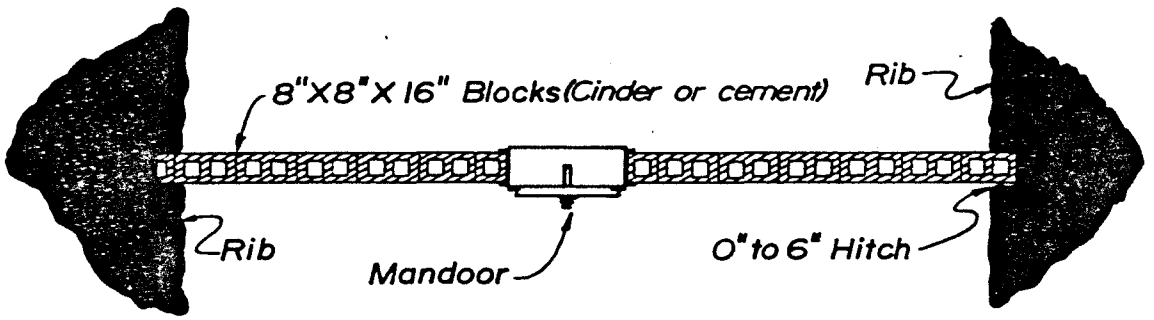
FRONT VIEW

NOTES:

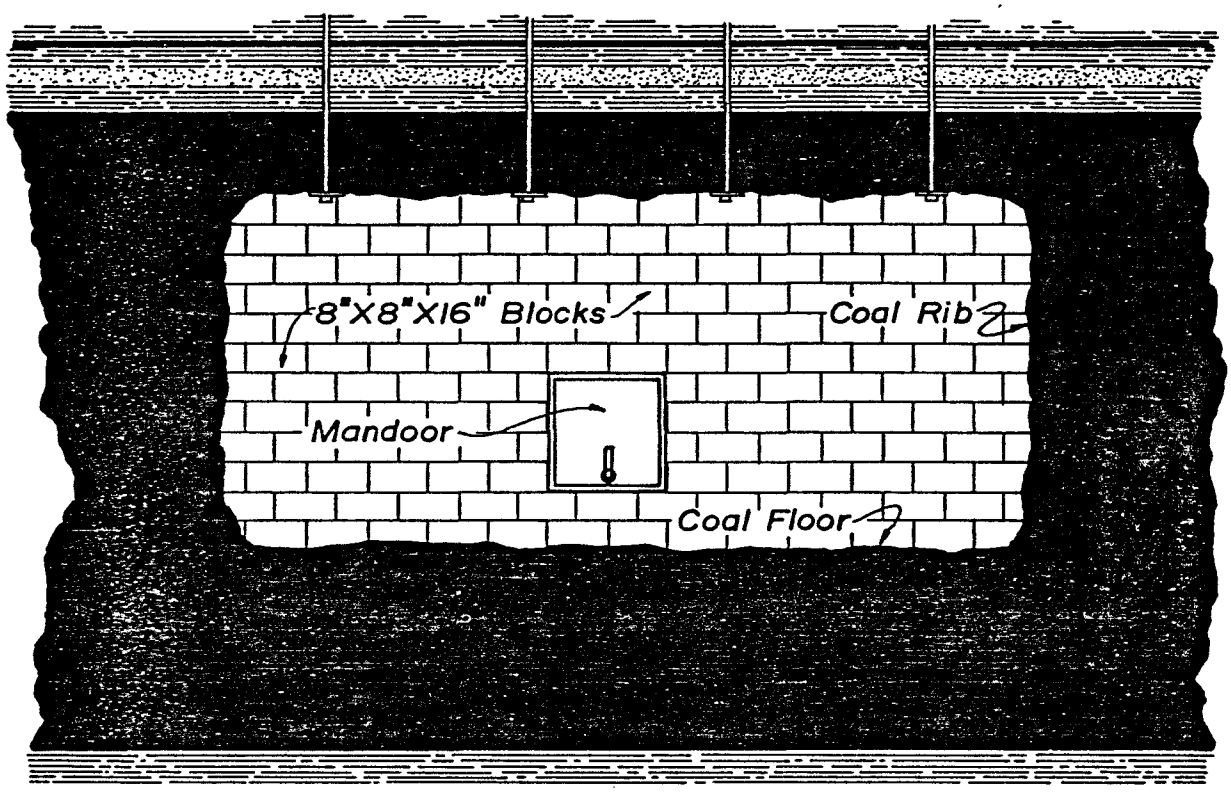
1. All stoppings (permanent) shall be made with 8"X8"X16" blocks, dry-stacked or mortared in place. Dry-stacked blocks will be coated on both sides with an approved construction type sealant. Mortared blocks may be coated on one side with mortar or an approved fiber type sealant, a minimum of 1/8" in thickness.
2. Ventilation pipe for belt lines, etc., will be used when required.
3. Permanent stoppings will be used for long term (2 years or more) controls, and may be used for short term controls, depending on conditions.

DRAWN BY: Ed Sanderson	DATE: June 22,82	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: 1"= 5'		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: PERMANENT STOPPING, TYP.	DRAWING NO. A5-0049	REV. NO. 1
APPROVAL MINE:			

VENTILATION PLAN



TOP VIEW

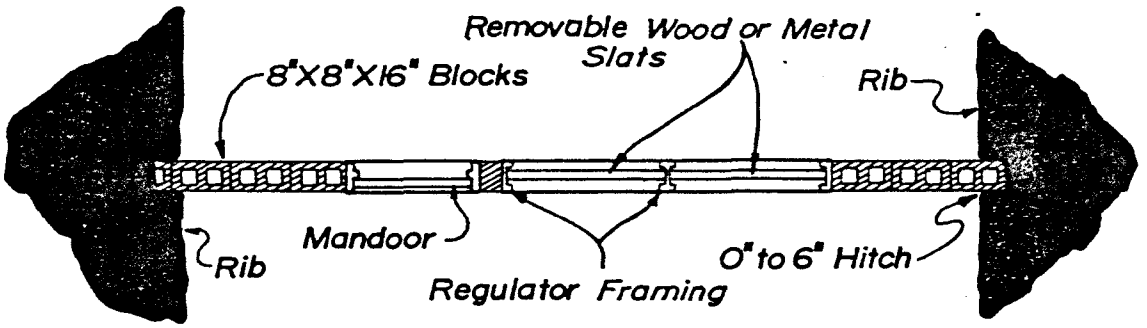


FRONT VIEW

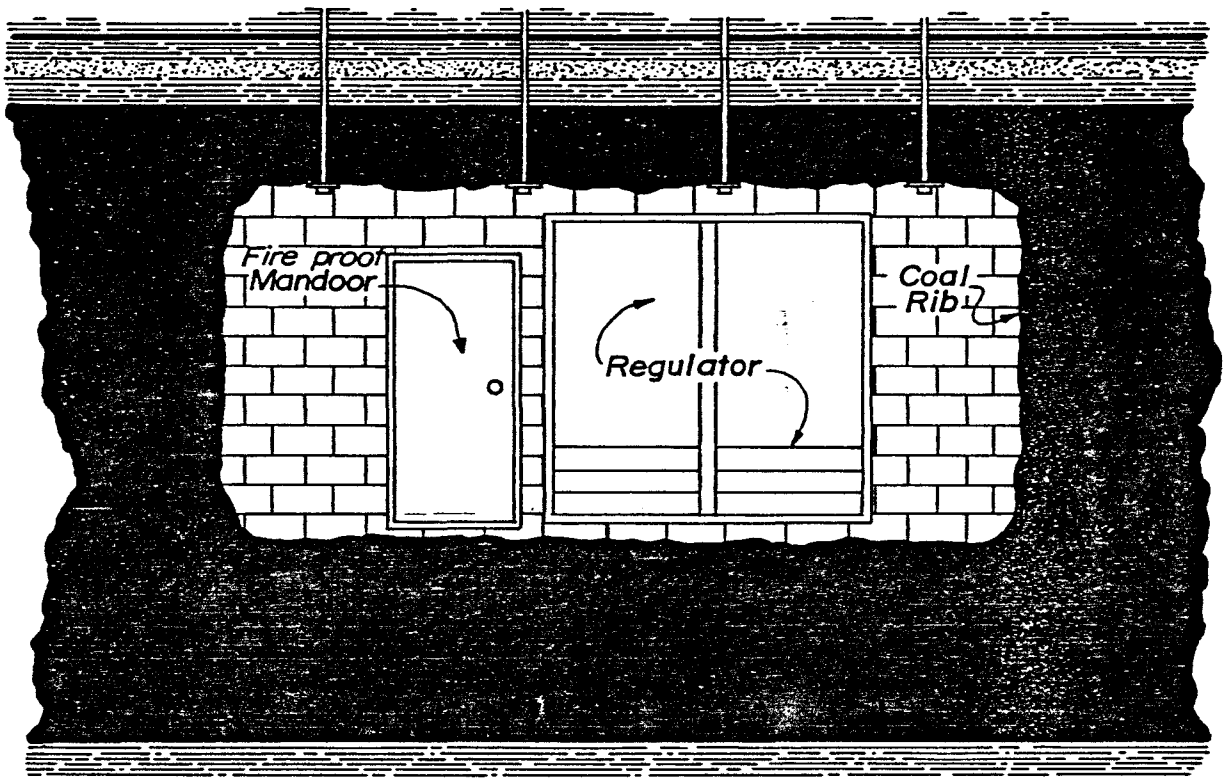
NOTES:

1. Mandoor stoppings will be constructed with the same workmanship and materials as permanent stoppings.
2. Self-closing, fire proof mandoors (may vary in dimensions) will be located at intervals not to exceed 500' in any given entry or ventilation split.

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**	
DATE: April 13, 1981	**SCOFIELD ROUTE**	
CHECKED:	**HELPER, UTAH 84526**	
APPROVAL:		
APPROVAL: W. I. Wright		
SCALE: 1"= 5'	TITLE STOPPING W/ MANDOOR, TYP.	DRAWING NO. A5-0026



TOP VIEW

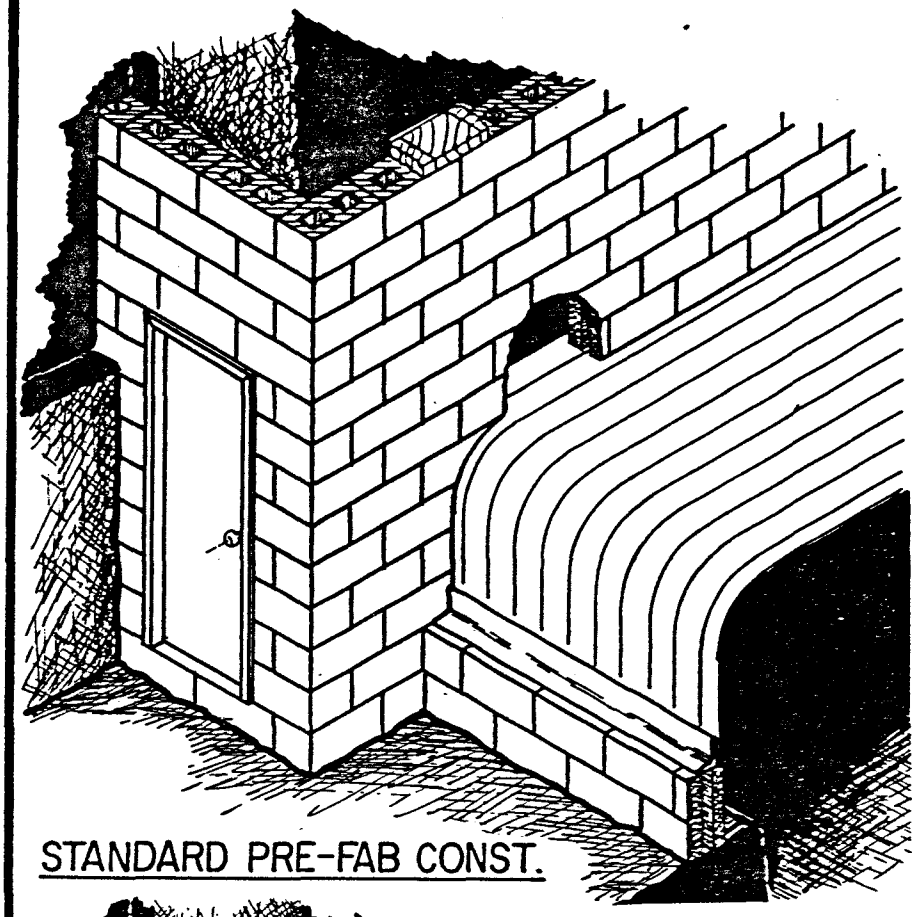


FRONT VIEW

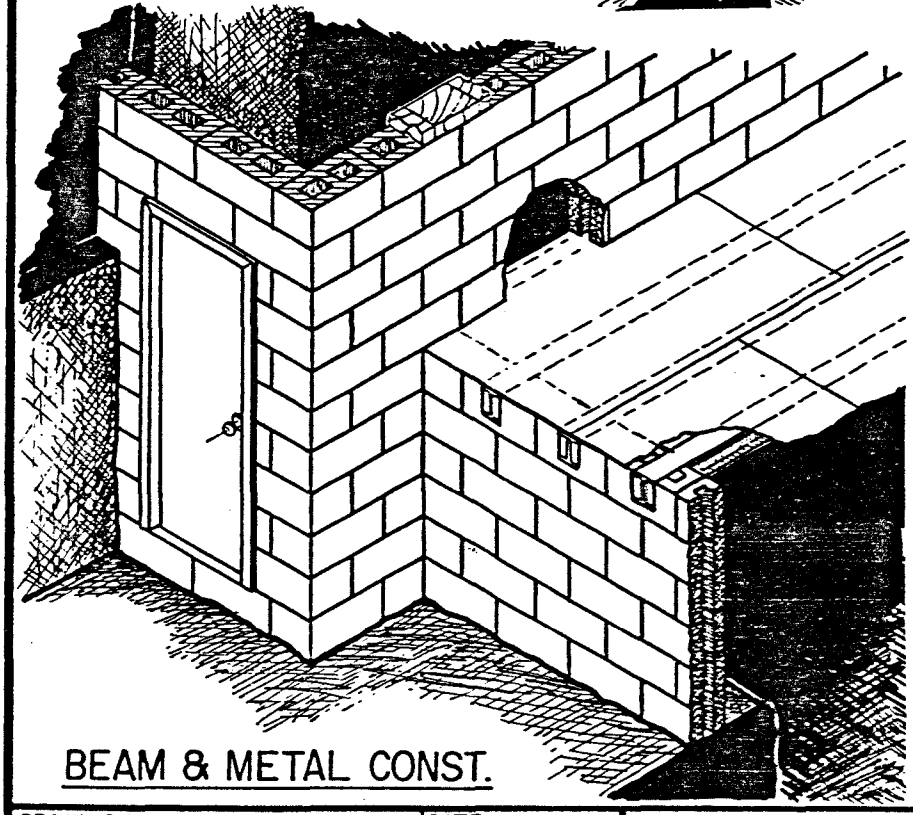
NOTES:

1. Regulators will be constructed with the same materials and workmanship as permanent stoppings.
2. Combustible products used in construction will be kept to a minimum.

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**	
DATE: April 13, 1981	**SCOFIELD ROUTE**	
CHECKED:	**HELPER, UTAH 84526**	
APPROVAL:		
APPROVAL: W.L. Wright		
SCALE: 1" = 5'	TITLE REGULATOR, TYPICAL	DRAWING NO. A5-0019



STANDARD PRE-FAB CONST.

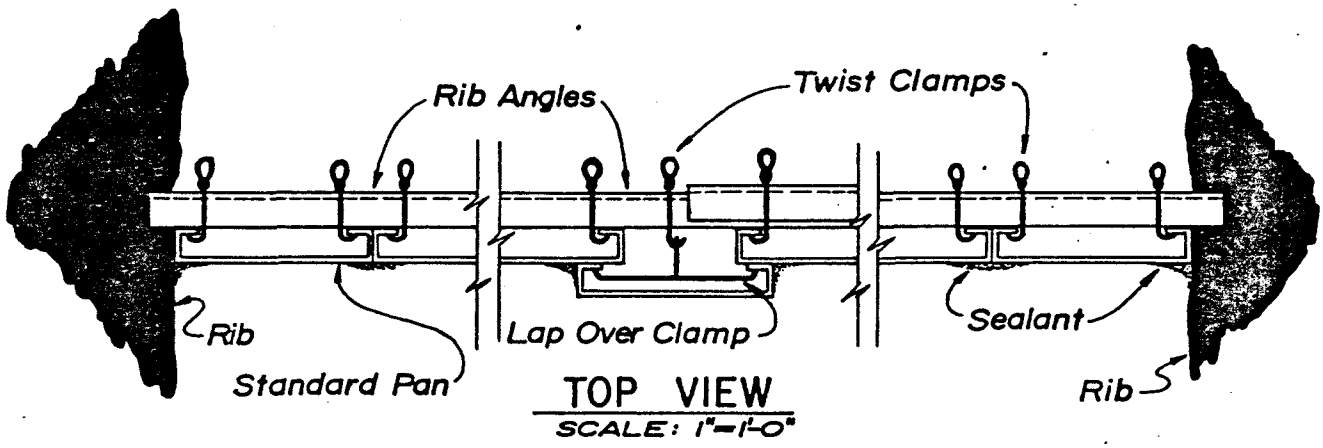


BEAM & METAL CONST.

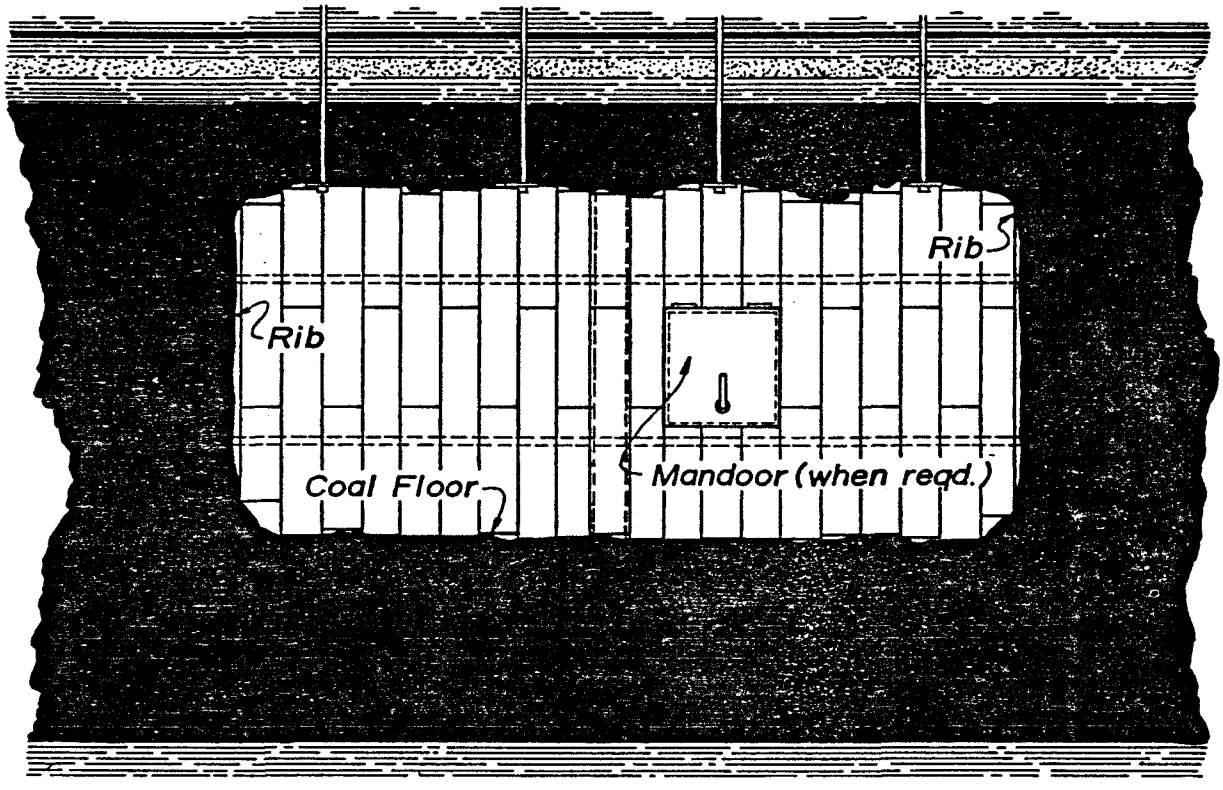
NOTES:

1. Overcasts shall be constructed with concrete or cinder blocks. (8"X8"X16")
2. Blocks may be dry-stacked or mortared in place.
3. Overcasts that are dry-stacked must be coated on both sides with an approved fiber type sealant (min. $\frac{1}{8}$"thick)
4. Mortared overcasts may be coated on one side with mortar or an approved fiber type sealant.
5. Overcasts may be constructed with other materials, tin, steel, wood treated with fire retardent, or any combination of the above.
6. Pre-fab metal is ribbed steel and at least 21 gauge.
7. Metal on beam type will be flat sheets of steel and at least 21 gauge.
8. Wood used in the construction of overcasts are cap pieces used as squeeze blocks against the roof in areas prone to weight stress. Cap pieces are pre-treated and mortared in place for additional safety.
9. Overhead beams will be at least 3" channel, 'I' or 'H' type.

DRAWN BY: Ed Sanderson	DATE: June 22,82	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: NONE		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: PERMANENT OVERCASTS, TYP.	DRAWING NO. A5-0047	REV. NO. 0
APPROVAL MINE:			



TOP VIEW
SCALE: 1"=1'-0"

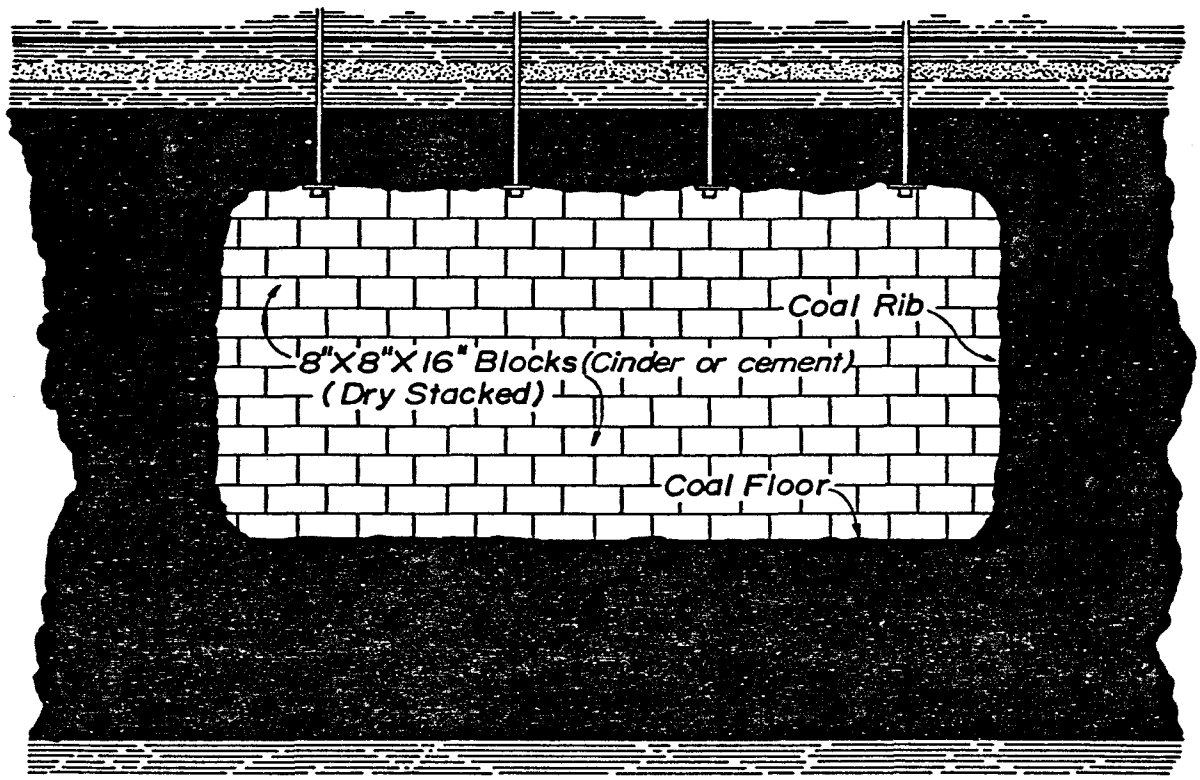


FRONT VIEW
SCALE: 1"=5'

Notes:

1. *Short term stoppings to be constructed of standard packaged Kennedy Panels and accessories.*
2. *All irregular holes to be filled with approved materials. (See p. 9).*
3. *Joints to be coated with an approved sealant.*
4. *Stoppings to be used for short term (less than 2 years) controls only, with no more than 36 per series of development.*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**	
DATE: April 14, 1981	**SCOFIELD ROUTE**	
CHECKED:	**HELPER, UTAH 84526**	
APPROVAL:		
APPROVAL: W. L. WRIGHT		
SCALE: "as noted"	TITLE: SHORT TERM STOPPING, Kennedy	DRAWING NO. A5-0028



FRONT VIEW

Notes:

1. *All irregular holes to be filled with approved materials. (See p. 9).*
2. *Intake side of stopping to be coated with mortar or an approved fiber type sealant.*
3. *Stoppings to be used for short term (less than 2 years) controls only, with no more than 36 per series of development.*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**	
DATE: April 15, 1981	**SCOFIELD ROUTE**	
CHECKED:	**HELPER, UTAH 84526**	
APPROVAL: TSW		
APPROVAL: W.L. WRIGHT		
SCALE: 1" = 5'	TITLE SHORT TERM STOPPING, Block	DRAWING NO. A5-0029

V. SEALS AND BULKHEADS

Materials and methods for construction:

A. Seals, when required, will be installed as soon as possible after the areas are mined out. Permanent seals will be constructed of solid concrete blocks which will withstand a minimum static load of 20 PSIG.

B. The permanent seal location will not be less than ten (10) feet from the nearest corners of a pillar, and in an area as stable as possible. Prior to installation, all loose materials will be removed from ribs, roof and floor for at least three (3) feet from either end of the proposed location of the seal, and questionable roof will be properly supported.

C. A vent pipe will be installed through at least one (1) seal of each set in each panel, and extend into a return air course. This pipe will be less than eight (8) inches, but more than two (2) inches in diameter, and will have a strength equal to Schedule 40 steel pipe. It will be packed with coarse gravel or minus one inch (-1") crushed stone with fines removed for at least ten (10) feet, or provided with an equivalent flame arrestor. This pipe will be located near the roof, at least four (4) feet from a rib, and not on center line of the seal, and will be closed at each end with perforated caps or equivalents.

D. At least one (1) seal of each set of seals will be fitted with a surveillance tube to permit sampling of gases. This tube will be 1/4 inch copper tubing, or equivalent, and will be sealed at the accessible outlet end with a valve. The tube and valve will be capable of withstanding a minimum of 75 PSIG pressure.

E. A pipe for water drainage will be installed in at least one (1) seal of each set of seals. The pipe will be located no greater than eighteen (18) inches above the floor level in the lowest seal of each set, and will be of corrosion resistant material (one [1] to four [4] inches) in diameter and equal in strength to Schedule 40 steel pipe. A U-tube trap will be installed to prevent airflow through the pipe when water is not present. A sealing cap or valve may also be used to prevent air flow through the pipe.

F. In sealed adjoining intake airways (none anticipated), a pre-shift exam for methane will be made in the passageway adjoining the seals.

G. Before bulkheads are constructed, the return air from the area to be sealed will be examined for carbon monoxide. If detectable concentrations of carbon monoxide are present in the atmosphere, bulkheads will be constructed in accordance with procedures approved by the Secretary or his authorized representative.

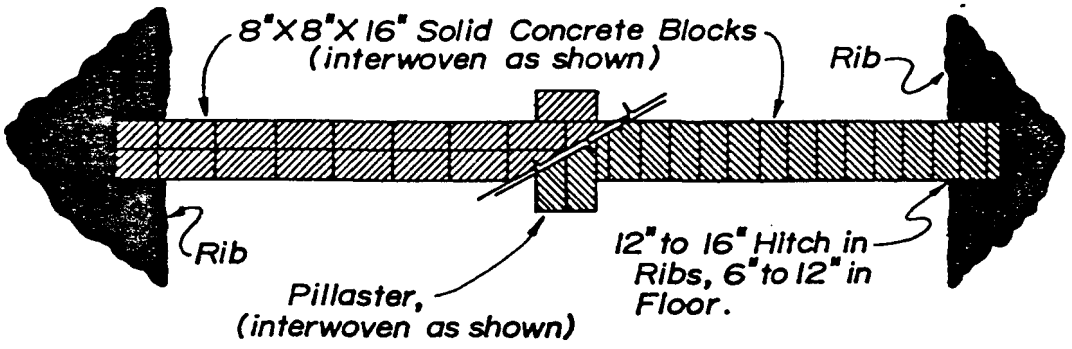
H. The bulkheads will not be used to impound water in the sealed areas unless approved by the Secretary or his authorized representative.

I. Seals will be of solid concrete blocks (average minimum compressive strength of 1800 PSI tested in accordance with A.S.T.M. C-140-70) and mortar one [1] part cement, three [3] parts sand, and not more than seven [7] gallons of water per sack of cement). Seals will be installed in the following manner: the bulkhead will be recessed at least twelve (12) inches deep in the rib, and at least six (6) inches deep in the floor (no recess will be made in the roof). The blocks will be at least six (6) inches high, except in the top course, and eight (8) inches wide. The blocks will be laid in mortar in a transverse pattern. In the bottom course, the blocks will be laid with a long axis parallel to the rib. The long axis in succeeding courses will be perpendicular to the long axis of the block in the preceding course. An interlaced pilaster will be constructed in the approximate center of the bulkhead.

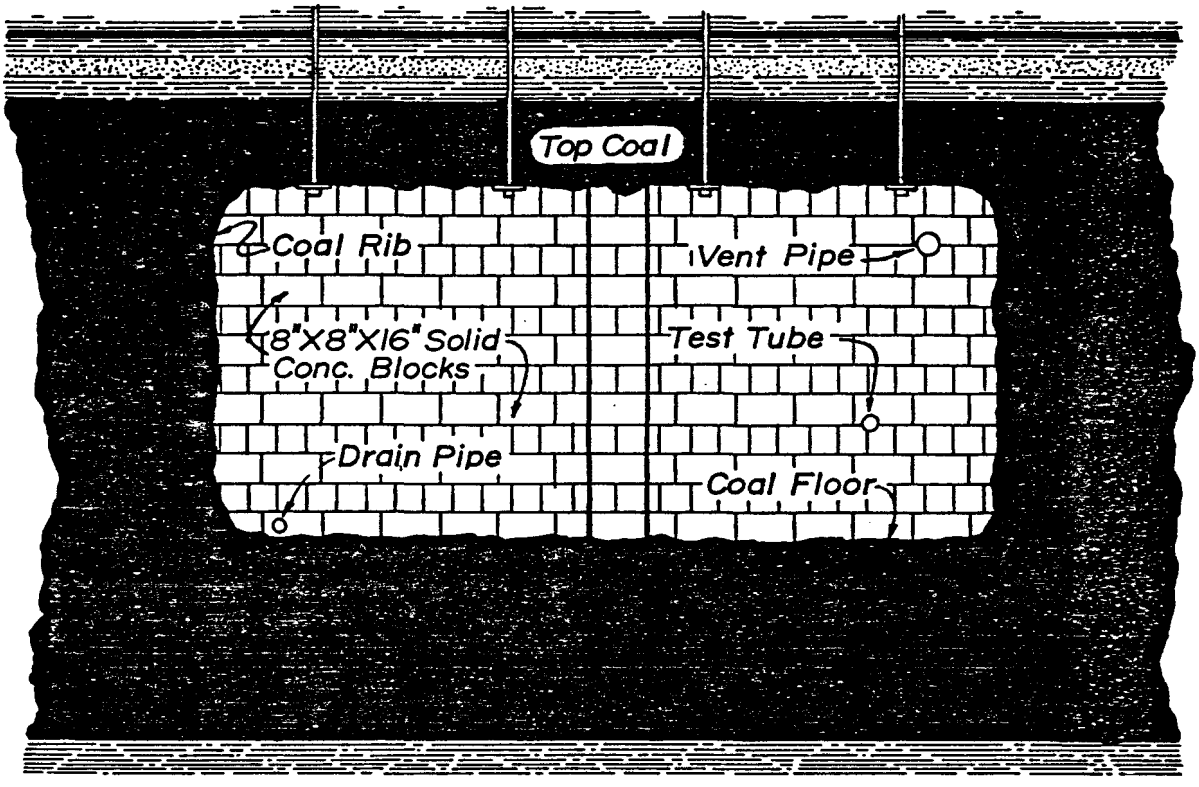
J. Sequence of seal construction will be as follows:

(1) Belt entry;
(2) Intake entries;
(3) Return entries;

Return entries will be done simultaneously, when possible.



TOP VIEW



FRONT VIEW

Notes:

1. *Blocks to be 8"X8"X16" solid concrete (min. compressive strength 1800 PSIG), hitched 12" to 16" into the ribs and 6" to 12" into the floor.*
2. *Vent pipe and test tubes shall be placed in one seal in each set.*
3. *A drain pipe shall be provided in one seal in each set.*
4. *Interwoven Pillaster shall be built in the approximate center of the seal.*
5. *Seals shall be 16" thick and sealed with an approved sealant material.*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: April 8, 1981	**SCOFIELD ROUTE**
CHECKED:	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL: W. L. WRIGHT	
SCALE: 1"=5'	TITLE SEAL, TYPICAL (CONC. BLOCK) — DRAWING NO. A5-0018

VI. DIESEL EQUIPMENT

A. "Any diesel equipment used in or inby the last open crosscut shall comply with Title 30, Part 36, of the Code of Federal Regulation."

B. "All diesel equipment shall be operated and maintained in accordance with the manufacturer's operating specifications and the maintenance manual. These manuals and specifications shall be made available for reference."

C. The exhaust from operating diesel equipment will be sampled daily at the operator's station with the engine running; if the analysis of the samples exceeds five (5) parts per million nitrogen dioxide, or fifty (50) parts per million of carbon monoxide, or both, corrective measures will be taken immediately. Sampling device will be a DRAEGER MULTI-GAS DETECTOR unit or equivalent.

D. The atmosphere returning from any working place where diesel-powered equipment is being used will be tested at least once each shift while the equipment is in operation, and if the analysis of the samples exceeds five (5) parts per million nitrogen dioxide, or fifty (50) parts per million carbon monoxide, or both, corrective measures will be taken immediately.

E. The date, time, machine identification and results of analysis of samples will be recorded in a book maintained for this purpose, and kept available for reference for a period of one (1) month.

F. NOTE: Positive ventilation will be maintained over diesel equipment at all times. In accordance with 30 CFR 36, a minimum of one-half ($\frac{1}{2}$) the recommended 150 CFM per brake horsepower will be maintained over each unit during operation. When more than one unit is required to be operated in one (1) section, the minimum quantity of air in the last open crosscut will be one-half of the total recommended CFM of all those operating units, or a minimum of 75 CFM per brake horsepower. Example: 2 Elmacs @ 50 b.h.p. x 150 CFM (7,500) each = 15,000 CFM; plus 1 Eimco @ 84 b.h.p. x 150 CFM (12,600) = 27,600 TOTAL CFM, which divided by 2 equals the required minimum of 13,800 CFM in the last open crosscut. Regardless of type and quantity of equipment used, the total required quantity of air shall not be less than 12,000 CFM.

G. Equipment used to transport men or materials into each section that is then parked will be exempt from the multiple equipment requirements. If left unattended, these units will be shut off. Attended equipment may be left running until assigned work is completed or equipment is removed from section.

CLASSIFICATION OF UNDERGROUND VEHICLES

DIESEL EQUIPMENT - BELINA MINES

Personnel Carriers

1. Make: Elmac
   Type: Boss buggy
   Serial No.: 605BH-11101-9001
   Date Mfg.: 1979
   Engine: 2 cyl.
   HP: 17
   Ventilation recommended: 2,550 CFM

2. Make: Elmac
   Type: Boss buggy
   Serial No.: 605BH-11125-9073
   Date Mfg.: 1979
   Engine: 2 cyl.
   HP: 17
   Ventilation recommended: 2,550 CFM

3. Make: Elmac
   Type: Boss buggy
   Serial No.: 605BH-11125-9074
   Date Mfg.: 1979
   Engine: 2 cyl.
   HP: 17
   Ventilation recommended: 2,550 CFM

4. Make: Jeep
   Type: CJ5
   Serial No.: JEFM85H66T025263
   Date Mfg.: 1981
   Engine: 4 cyl.
   HP: 65
   Ventilation recommended: 9,750 CFM

5. Make: Jeep
   Type: CJ5
   Serial No.: JEFM85H4CT025262
   Date Mfg.: 1981
   Engine: 4 cyl.
   HP: 65
   Ventilation recommended: 9,750 CFM

6. Make: International
   Type: Scout II
   Serial No.: K0063-KGD21369
   Date Mfg.: 1980
   Engine: 6 cyl.
   HP: 110
   Ventilation recommended: 16,500 CFM

7. Make: Ford - Elmac
   Type: Mantrip
   Serial No.: P14-4-11101-9002
   Date Mfg.: 1979
   Engine: 3 cyl.
   HP: 50
   Ventilation recommended: 7,500 CFM

8. Make: Ford - Elmac
   Type: Mantrip
   Serial No.: P14-4-50752-9093
   Date Mfg.: 1979
   Engine: 3 cyl.
   HP: 50
   Ventilation recommended: 7,500 CFM

9. Make: Ford - Elmac
   Type: Mantrip
   Serial No.: P14-4-51252-9096
   Date Mfg.: 1979
   Engine: 3 cyl.
   HP: 50
   Ventilation recommended: 7,500 CFM

10. Make: Ford - Elmac
    Type: Mantrip
    Serial No.: P14-4-51252-9097
    Date Mfg.: 1979
    Engine: 3 cyl.
    HP: 50
    Ventilation recommended: 7,500 CFM

11. Make: Ford - Elmac
    Type: Mantrip
    Serial No.: P14-4-51252-9098
    Date Mfg.: 1979
    Engine: 3 cyl.
    HP: 50
    Ventilation recommended: 7,500 CFM

12. Make: Ford - Elmac
    Type: Mantrip
    Serial No.: P14-4-51252-9099
    Date Mfg.: 1979
    Engine: 3 cyl.
    HP: 50
    Ventilation recommended: 7,500 CFM

13. Make: EIMCO
    Type: Flatbed
    Serial No.: 975-0472
    Date Mfg.: 1981
    Engine: 6 cyl.
    HP: 84
    Ventilation recommended: 12,600 CFM

14. Make: EIMCO
Type: Flatbed
Serial No.: 975-0473
Date Mfg.: 1981
Engine: 6 cyl.
HP: 84
Ventilation recommended: 12,600 CFM

15. Make: Isuzu
Type: 4x4 Pickup
Serial No.: JAABR14U3G0711985
Date Mfg.: 1985
Engine: 4 cyl. Turbo
HP: 80
Ventilation recommended: 12,000 CFM

16. Make: Isuzu
Type: 4x4 Pickup
Serial No.: JAABR14U9G0712168
Date Mfg.: 1985
Engine: 4 cyl. Turbo
HP: 80
Ventilation recommended: 12,000 CFM

17. Make: Isuzu
Type: 4x4 Pickup
Serial No.: JAABR14U3G0720606
Date Mfg.: 1985
Engine: 4 cyl. Turbo
HP: 80
Ventilation recommended: 12,000 CFM

Maintenance and Material Vehicles

1. Make: Wagner
Type: 4 Wheel Drive Scooptram
Serial No.: 306 80
Date Mfg.: 1980
Engine: 6 cyl.
HP: 150
Ventilation recommended: 22,500 CFM

2. Make: Wagner
Type: 4 Wheel Drive Scooptram
Serial No.: 211 80
Date Mfg.: 1980
Engine: 6 cyl.
HP: 150
Ventilation recommended: 22,500 CFM

3. Make: Wagner
Type: 4 Wheel Drive Scooptram
Serial No.: 175 82
Date Mfg.: 1982
Engine: 6 cyl.
HP: 150
Ventilation recommended: 22,500 CFM

4. Make: EIMCO
   Type: Luber Truck
   Serial No.: 975-0537
   Date Mfg.: 1981
   Engine: 6 cyl.
   HP: 40
   Ventilation recommended: 6,000 CFM

5. Make: Jeffrey
   Type: Dresser Ram Car
   Serial No.: 37688 (23C-1512)
   Date Mfg.: 1980
   Engine: 6 cyl.
   HP: 150
   Ventilation recommended: 22,500 CFM

6. Make: Jeffrey
   Type: Dresser Ram Car
   Serial No.: 37904 (23C-1511)
   Date Mfg.: 1981
   Engine: 6 cyl.
   HP: 150
   Ventilation recommended: 22,500 CFM

7. Make: Ford - Huber
   Type: Grader
   Serial No.: M269-M850
   Date Mfg.: 1980
   Engine: 4 cyl.
   HP: 52
   Ventilation recommended: 7,800 CFM

8. Make: John Deere
   Type: 350C Crawler-Dozer
   Serial No.: 705052
   Date Mfg.: 1985
   Engine: 3 cyl.
   HP: 32
   Ventilation recommended: 4,800 CFM

9. Make: John Deere
   Type: 350C Crawler-Dozer
   Serial No.: 705302
   Date Mfg.: 1985
   Engine: 3 cyl.
   HP: 32
   Ventilation recommended: 4,800 CFM

VII. BLEEDER SYSTEM

A. Inasmuch as this mine, as well as this area, has a history of being "gas free", the use of a typical forced-air bleeder system is not anticipated.

B. When mining is completed in panels and sub-mains, seals will be installed at the entrance to these areas nearby the first open crosscut as shown on Drawing Nos. A5-0037, Page 8, and A1-0097, Page 28. These seals will be installed as described in Section V.

VIII. FIREPROOF ENCLOSURES UNDERGROUND

Housings for underground transformer stations, battery-charging stations, substations, compressor stations, shops and permanent pump stations, shall be housed in fireproof enclosures. Typical ventilation and construction shall be as shown on Drawing No. A1-0104 (page 29).

DESIGNATED AREA SAMPLING

MINE BELINA NO. 1 **MINE I.D. NO.** 42-01279

LOCATION OF DESIGNATED AREA: Main West belt line return air course regulator, at Mine Station 10. *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:* Approximately 50 feet upwind (opposite direction of airflow) from the center of the intersection where air is directed into the return airway. Placed at normal breathing level but not less than 1 ft. from the roof or rib on the walkway side.	*DESIGNATED AREA ID. NO.* 200-0
LOCATION OF DESIGNATED AREA: Main South belt line return air course regulator, at Mine Station 55. *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:* Approximately 50 feet upwind (opposite direction of airflow) from the center of the intersection where air is directed into the return airway. Placed at normal breathing level but not less than 1 ft. from the roof or rib on the walkway side.	*DESIGNATED AREA ID. NO.* 201-0
LOCATION OF DESIGNATED AREA: 3rd East head drive transfer point to Main South belt line, at Mine Station 1478. *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:* Within 10 to 40 ft. downwind (with direction of airflow) of the dust generating source. On the walkway side of the Main South belt line, but not less than 1 ft. from the roof or rib.	*DESIGNATED AREA ID. NO.* 202-0
LOCATION OF DESIGNATED AREA: 3rd West main belt line return air course regulator, at Mine Station 1302. *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:* Approximately 50 feet upwind (opposite direction of air flow) from the center on the intersection where air is directed into the return airway. Placed at normal breathing level but not less than 1 ft. from the roof or rib on the walkway side.	*DESIGNATED AREA ID. NO.* 206-0
LOCATION OF DESIGNATED AREA: 3rd East belt line return air course regulator, at Mine Station 1488. *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:* Approximately 50 feet upwind (opposite direction of airflow) from the center of the intersection where air is directed into the return airway. Placed at normal breathing level but not less than 1 ft. from the roof or rib on the walkway side.	*DESIGNATED AREA ID. NO.* 208-0

REMARKS:

DESIGNATED AREA SAMPLING

MINE BELINA NO. 1 (CONT.) **MINE I.D. NO.** 42-01279

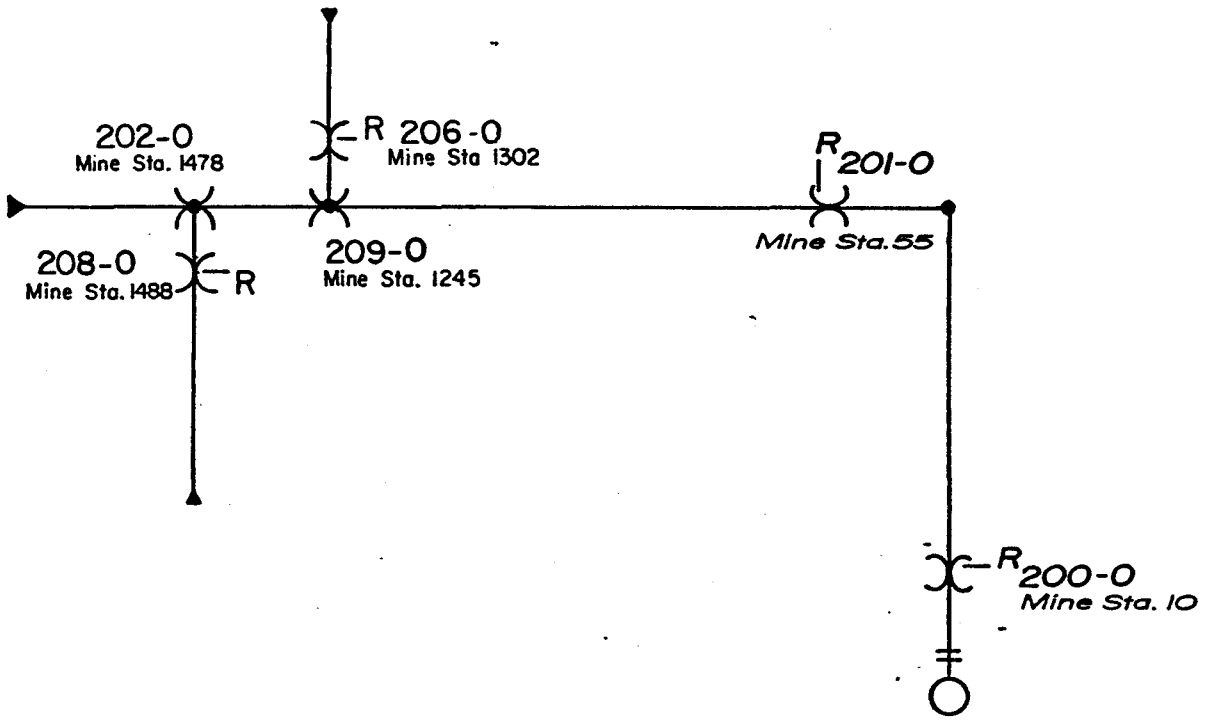
LOCATION OF DESIGNATED AREA: 3rd West Return belt drive transfer point onto Main South belt, at Mine Station 1245. *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:* Within 10 to 40 ft. downwind (with direction of airflow) of the dust generating source. On the walkway side of the Main South belt line, but not less than 1 ft. from the roof or rib.	*DESIGNATED AREA ID. NO.* 209-0
LOCATION OF DESIGNATED AREA: *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:*	*DESIGNATED AREA ID. NO.*
LOCATION OF DESIGNATED AREA: *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:*	*DESIGNATED AREA ID. NO.*
LOCATION OF DESIGNATED AREA: *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:*	*DESIGNATED AREA ID. NO.*
LOCATION OF DESIGNATED AREA: *POSITION OF SAMPLING INSTRUMENT WITHIN DESIGNATED AREA:*	*DESIGNATED AREA ID. NO.*

REMARKS:

LEGEND

- Mine Opening
- Belt Transfer Point
- Section Loading Point
- Designated Area
- R Air Regulator
- Air Movement
- Stopping

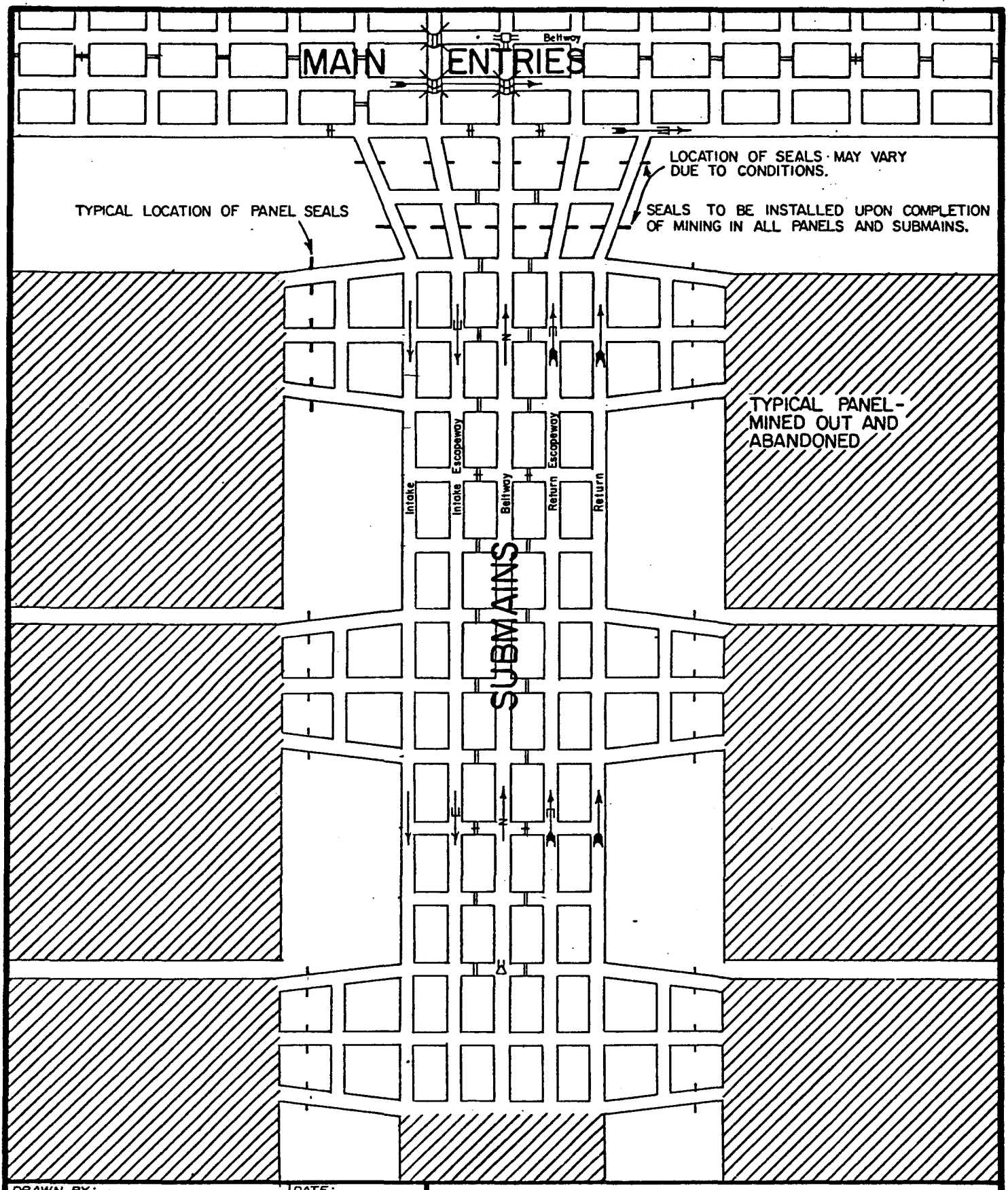
STANDBY NO.



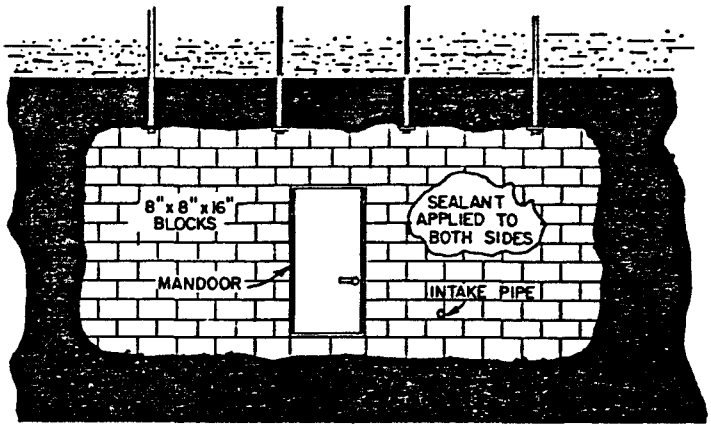
"SUPERCEDES DWG. NO. A5-0032"

DRAWN BY: Ed Sanderson	DATE: Mar. 22,82	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: None		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: DESIGNATED AREA LINE DIAG.	DRAWING NO. A5-0044	REV. NO. 2
APPROVAL MINE:			

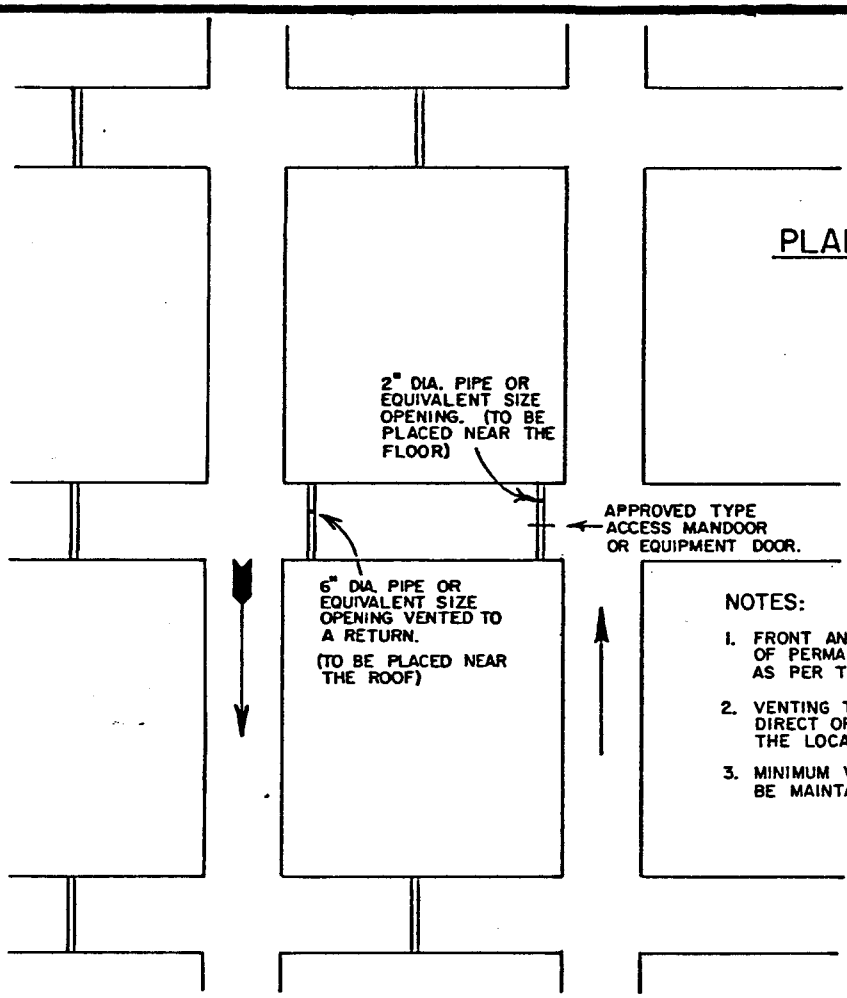
VENTILATION PLAN



DRAWN BY: J.A.U.	DATE: 1-16-85	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: 1" = 200'		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: ALTERNATE METHOD OF SEALING ABANDONED AREAS	DRAWING NO. AI-0097	REV. NO.
APPROVAL MINE:			



DETAIL OF TYPICAL ISOLATION STOPPING



NOTES:

1. FRONT AND REAR STOPPINGS WILL BE OF PERMANENT DESIGN AND CONSTRUCTED AS PER THE APPROVED VENTILATION PLAN.
2. VENTING TO THE RETURN WILL BE DIRECT OR BY PIPING, DEPENDING ON THE LOCATION OF THE INSTALLATION.
3. MINIMUM VELOCITY OF 1200 f.p.m. WILL BE MAINTAINED AT THE ENTRANCE.

DRAWN BY: J.A.U.	DATE: 6-13-85	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526
CHECKED BY:	DATE:	
REVISED BY:	SCALE: —	
APPROVAL ENG:		
APPROVAL SAFETY:	TITLE: TYPICAL DETAILS OF PERMANENT UNDERGROUND INSTALLATION HOUSINGS	DRAWING NO. AI-0104 / REV. NO.
APPROVAL MINE:		

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 001-0 SECTION: 3 WEST 2 LEFT

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000 cfm
at bolting faces	3,000 cfm
at idle faces . . perceptible movement.	cfm
at the last open crosscut	12,000 cfm
at the intake end of the pillar line	12,000 cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft./min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Joy 12CM3 (S.N. JM 2007)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W.L. Wright
(Signature - Company Official)

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 003-0 SECTION: IDLE

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000 cfm
at bolting faces	3,000 cfm
at idle faces	perceptible movement cfm
at the last open crosscut	12,000 cfm
at the intake end of the pillar line	12,000 cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft/min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Joy 12CM3 (S.N. JM 2009)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W. L. Wright
(Signature - Company Official)

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 004-0 SECTION: 3 WEST 2 RIGHT

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000	cfm
at bolting faces	3,000	cfm
at idle faces . . . perceptible movement		cfm
at the last open crosscut	12,000	cfm
at the intake end of the pillar line . .	12,000	cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft/min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Joy 12CM3 (S.N. JM 2010)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W. C. Wright
(Signature - Company Official)

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 005-0 SECTION: IDLE

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000 cfm
at bolting faces	3,000 cfm
at idle faces . . . perceptible movement.	cfm
at the last open crosscut	12,000 cfm
at the intake end of the pillar line	12,000 cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft/min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Joy 12CM3 (S.N. JM 2008)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W.L. Wright
(Signature - Company Official)

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 006-0 SECTION: IDLE

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000 cfm
at bolting faces	3,000 cfm
at idle faces	perceptible movement cfm
at the last open crosscut	12,000 cfm
at the intake end of the pillar line	12,000 cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft/min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Joy 12CM3 (S.N. JM 2012)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W. L. Wright
(Signature - Company Official)

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 007-0 SECTION: IDLE

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000 cfm
at bolting faces	3,000 cfm
at idle faces	perceptible movement cfm
at the last open crosscut	12,000 cfm
at the intake end of the pillar line	12,000 cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft/min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

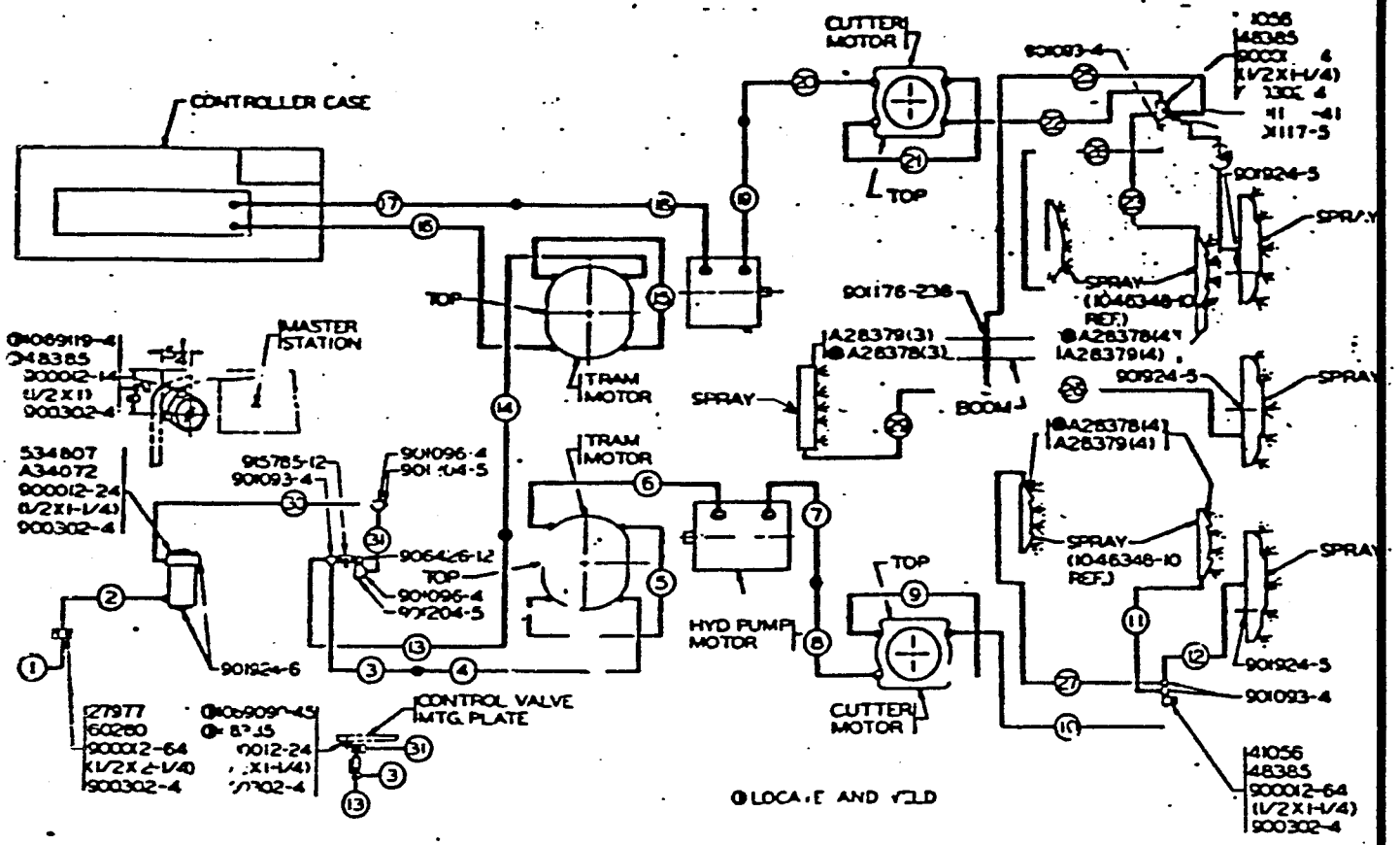
EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Joy 12CM3 (S.N. JM 2011)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W.L. Wright
(Signature - Company Official)



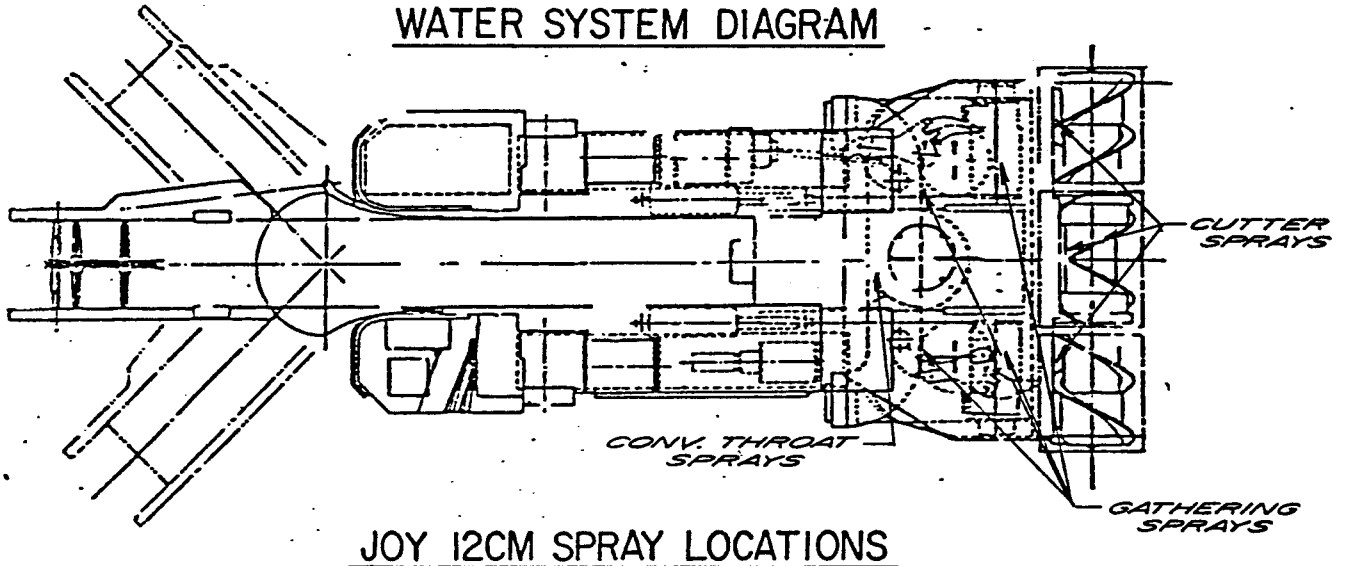
PD2439-1
- 700080-158 MPT REUSABLE
- 712080-158 MPT CRIMP
- 712080-155 MPT CRIMP

PD2439-2
- 700080-154 JIC REUSABLE
- 712080-154 JIC CRIMP

PD2439-4
- 712080-156 JIC CRIMP

PD2439-5
- 712080-157 STEEL CRIMP

WATER SYSTEM DIAGRAM



JOY 12CM SPRAY LOCATIONS

NOTE: A MINIMUM OF 90% OF ALL SPRAYS SHALL BE IN WORKING ORDER, AT 100 P.S.I. MINIMUM.

DRAWN BY: Ed Sanderson	DATE: Mar. 24, 82	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: None		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: JOY 12CM WATER SYSTEM	DRAWING NO. A5-0045	REV. NO. 0
APPROVAL MINE:			

DUST CONTROL PRACTICES IN THE FACE AREA

MINE NAME: BELINA NO. 1 EQUIPMENT TYPE: CONTINUOUS

MINE I.D. NO. 42-01279 HAULAGE: ELECTRICAL SHUTTLE CAR

MMU I.D. NO. 008-0 SECTION: 3 WEST 1 LEFT

DESIGNATED OCCUPATION (D.O.) 036 IS BELT AIR USED AT THE FACE? NO

The following parameters are hereby adopted into the ventilation system and methane and dust control plan as per 30 CFR 75.316:

1. Minimum air quantities shall be as follows:

at working faces	6,000 cfm
at bolting faces	3,000 cfm
at idle faces . perceptible movement .	cfm
at the last open crosscut	12,000 cfm
at the intake end of the pillar line	12,000 cfm

2. The minimum mean entry air velocity in the working place shall be 60 ft/min on advance; 45 ft/min while pulling bottom coal.

   Positive airflow shall be maintained in all entries in active areas of the mine.

3. The maximum distance the line curtain is maintained from the point of deepest penetration of the face shall be: 15 feet

4. The following water suppression system shall be maintained and operated as follows:

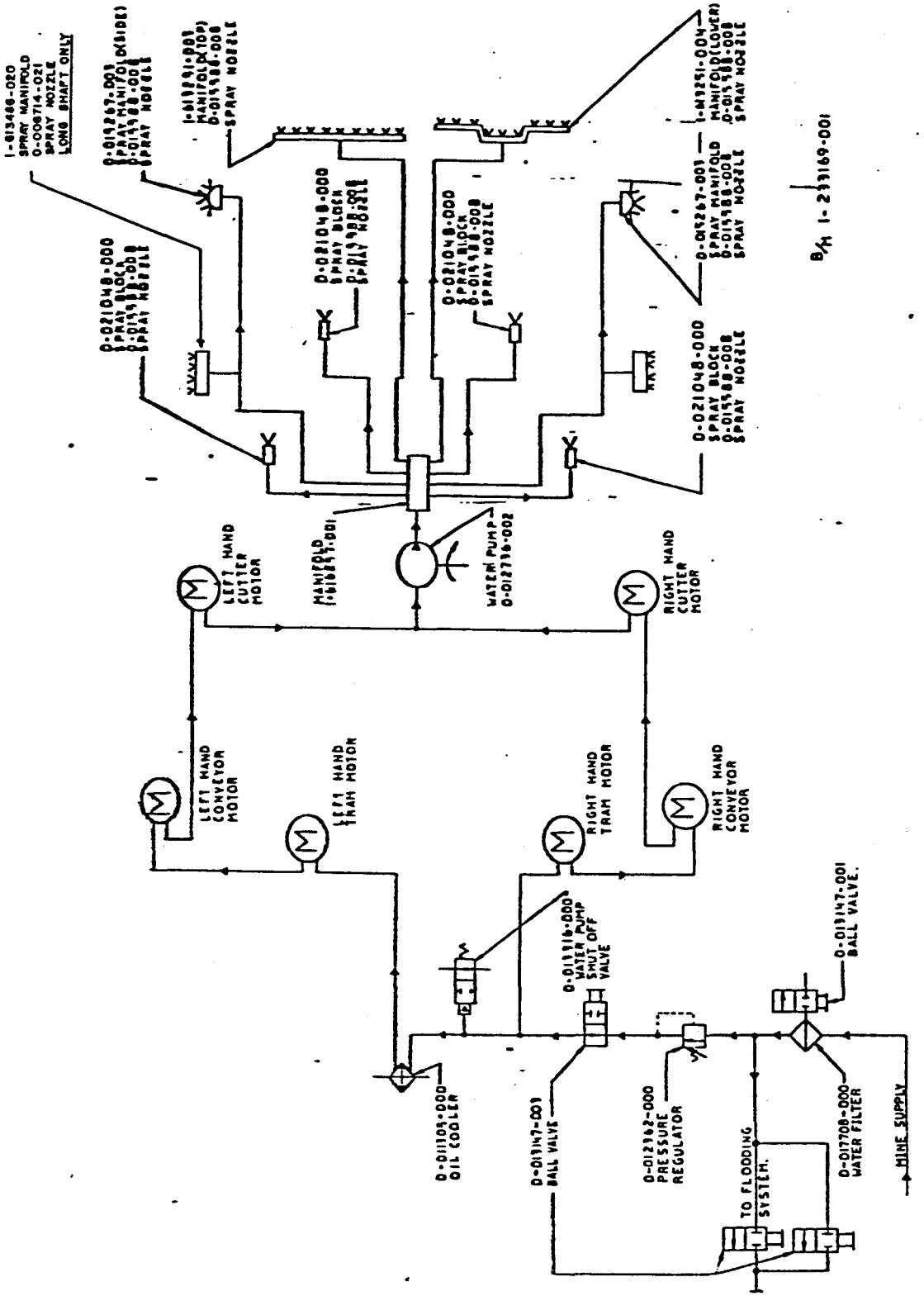
EQUIPMENT DESCRIPTION	NUMBER OF SPRAYS	TYPE OF SPRAYS	MINIMUM OPERATING PRESSURE
Lee-Norse LN-800 (S.N. 9231)	36	1,2&3	100 PSI
Long-Airdox Feeder Breaker	6		50 PSI

   Use of feeder breaker sprays are dependent on moisture of coal.

5. Other controls or practices: (additional sheets will be identified by MMU I. D. Number).

6. Water system schematic, percentage of operating sprays and spray bank locations on machinery listed above follow all MMU sheets.

W L Wright
(Signature - Company Official)



NOTE: A MINIMUM OF 90 % OF ALL SPRAYS SHALL BE IN WORKING ORDER, AT 100 P.S.I. MINIMUM.

DRAWN BY: J.A.U.	DATE: 2-25-85	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE:		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: LEE NORSE LN-800 WATER SYSTEM	DRAWING NO. A5-0099	REV. NO.
APPROVAL MINE:			

ROOF CONTROL PLAN

FOR

BELINA NO. 1 MINE

I.D. #42-01279

August 23, 1976

Revised May 2, 1977

Revised September 1, 1979

Revised August 28, 1979

Revised March 18, 1981

Revised December 13, 1982 ✓

ROOF CONTROL PLAN

General Information

Date December 13, 1982 Mine I.D. NO. 42-01279

A. Company Valley Camp of Utah, Inc.

Address Scofield Route, Helper (City) Utah (State)

B. Mine Belina No. 1

Mine Location:

Scofield (City) Carbon (County) Utah (State)

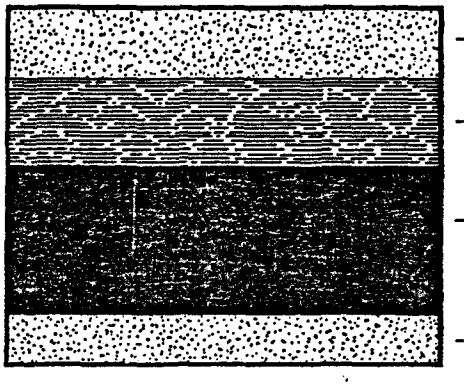
C. Location (Reference to nearest highway route, direction and distance)

3.2 Miles Southwest Off Route No. Utah 96

D. Type(s) of plan Full

E. Area(s) of mine covered by the plan Entries, rooms, crosscuts and pillars

F. Maximum cover 1081 Feet



G. W. L. Wright (Company or mine official validating plan) Vice President - Operations (Title)

Roof Control Investigator

This Roof Control Plan approved this date herebe supersedes all previously approved plans.

Approved by _____ Date

Title _____

H. ROOF-SUPPORT MATERIALS - Roof Bolts

Manufacturer: CF&I Steel Corp.
Mikco Industries
OR Equivalent

Manufacturer's Designation: 5772-1238-141.2
None

Minimum length: 60"

Diameter: 3/4 ~~High Strength~~
5/8 Extra High Strength

Type steel: Hot Rolled

Type thread: Rolled

Length of thread: 6" to 8"

Type head: Standard
(Standard, Self Centering, Cone Nec

Dimensions of bolt head: Nut 1-1/8" Flange 1-1/2"

I. BEARING PLATES

Manufacture: Mikco Industries
Pattin-West
OR Equivalent

Manufacturer's Designation: None
None

Dimensions: $\frac{1}{4}$" x 6" x 6"
3/16" x 6" x 6" High Tensil

Shape: Square and Embossed

Center Hole Size: 13/16"

J. WASHERS

Manufacturer: N/A

Manufacturer's Designation: N/A

Type steel: N/A

Size: N/A

Shape: N/A
(Donut embossed, Bell embossed, Flat)

Hole Size: N/A

K. ANCHORAGE UNIT

Manufacturer: Ohio Brass
Pattin-West
OR Equivalent

Manufacturer's Designation: OB22378
5792-0125-9

Type: Standard Expansion Shell

Size of Finished Hole: 1-3/8"

Method of Drilling: Rotary, Percussion or Combination

Dust Control: Vacuum and/or water

Installed torque: 150 to 200 Foot-Pounds, Conventional

L. MATERIALS USED IN CONJUCTION WITH ROOF BOLTS

Cottonwood Blocks 2" x 8" x 12" (Min.) with one hole

Roof Bolt Mats as required --- See Drawing

M. FACE EQUIPMENT AND SECTION HAULAGE EQUIPMENT ASSOCIATED WITH EACH

1. Joy Continous Miner 12CM1-10BX; 950 AC Volt
2. 2 -- 10SC-22 Joy Shuttle Cars; 250 DC Volt
3. 1 -- Lee Norse Model TD-2-43-5-4E Roof Bolter
4. 1 -- Galis Model 320A Roof Bolter; 440 AC Volt
5. Kersey Scoop Tractor; Model PAST-24-S
6. MSA Trickle Duster
7. Galis Auxillary Fans; Model 1520 480 Volts
8. Wagner Scooptram
9. Jeffery Diesel Ramcar Model 37688
10. Joy RCS 220 Air Compressor

N. SEQUENCE OF MINING AND INSTALLATION OF SUPPORTS INCLUDING TEMPORARY SUPPORTS

Plan drawing showing sequence of mining including pillar mining where applicable, sequence of installation and spacing of supports including temporary supports and maximum width of entries, rooms intersections, crosscuts and pillar lifts are attached.

Entry Width 20 Feet

Entry Centers 70' - 100' Main Entries

Crosscut Width 20 Feet

Crosscut Centers 75 Feet - 120 Feet

Room Width 20 Feet

Room Centers 40 Feet - 80 Feet

Room Crosscut Width 19 Feet

Room Crosscut Centers 60 Feet Minimum

Slope Width (Anthracite) N/A

Gangway Width (Anthracite) N/A

O. ROOF SUPPORT MATERIAL-Conventional or Temporary and Supplemental

Length of Post As Required

Diameter of Post One (1) inch for each 15 inches in length up to 8 feet, but in no case will the diameter be less than 4 inches. For heights over 8 feet, the minimum allowable diameter will be 8 inches. Split posts shall have a cross-section area equal to that required for round posts of equivalent lengths. Smaller posts may be used provided they are set in clusters to provide equivalent support.

Type of Post Round or split of solid straight grain wood with the ends sawed square and free from defects which would affect their strength.

Cap blocks, size and shape (2"x4") x 6" x 30" Minimum

Wedges, size and shape (O"x1") x 6" x 10" Minimum

Crossbars, type Straight grain solid wood or metal - When required

Crossbars, size A minimum of 3 inches by 8 inches of varying length when required

Planks, size A minimum of 1 inch by 8 inches of varying length - when required

Cribbing blocks, size A mimimum of 30 inches in length of varying cross section - when required

Mats 1/16 Ga. metal steel 2"-11" wide, 3'-9' long; 4-15 holes (2" dia.) per 9 sheet; corrugation spacing 5-7 1/2"; corrugation depth 6 13/16"; corrugation width 7' 2 3/4".

Wire mesh American Fence or equivalent

P. ARCH SUPPORT MATERIAL

Manufacturer Commercial Shearing OR Equivalent

Manufacturer's Designation

Maximum width 20' 0" Minimum width 14' 0"

Maximum height 14' 0" Minimum height 9' 0"

Size W8 x 24#/Ft. Minimum load

Material A572 Grade 50

Lagging 3" x 12" x 3' 11 1/2" Minimum

Rods 3/4" x 51" with 3" thread at each end. (Min.) Nuts 3/4" (2 per rod)

Pipe spacers Schedule 40 Minimum Minimum length 3' 11 1/2"

ROOF SUPPORT MATERIALS FOR RESIN GROUTED RODS

A. RODS

Manufacturer: Pattin-West; Safeloc Systems; CF&I; OR Equivalent

Manufacturer's Designation: _____

Minimum length: 60 inches

Diameter: 3/4 inch Min.

Type Steel: Grade 40 ASTM A-615

Type Head: Square

Minimum Yield: _____

Dimensions of bolt head : Nut: 1-1/8 inch Flange: 2 inch

B. BEARING PLATES

Manufacturer: Mikco Ind.; OR Equivalent

Manufacturer's Designation: _____

Dimensions: 6" x 6" x 3/16" Pressed with bent corner and 1" or 1-1/8" Center Hole

Shape: Square

Center Hole Size: 1" and 1-1/8"

C. RESIN

Manufacturer: Dupont; Carboloy; OR Equivalent

Manufacturer's Designation: _____

Type: Tube

Method of Drilling: Rotary, percussion or combination

Size of Finished Hole: 1" - 1 1/32"

Dust Control: Water and/or Vacuum

SAFETY PRECAUTIONS FOR FULL BOLTING AND COMBINATION PLANS

1. This is the minimum roof control plan and was formulated for normal roof conditions while using the mining system(s) described. In areas where subnormal roof conditions are encountered, indicated, or anticipated, the operator shall provide additional support where necessary. If changes are to be made in the mining system that necessitates any change in the roof control plan, the plan shall be revised and approved prior to implementing the new mining system.

2. (a) All personnel required to install roof supports shall be trained by a qualified supervisor designated by mine management before being assigned to perform such work. This training shall insure that such persons are familiar with the functions of the support being used, proper installation procedures, and the approved roof control plan.

   (b) Supervisors in charge, and miners who install supports, shall be informed of an approved roof control plan and any changes in a previously approved roof control plan not later than their first working shift following receipt of the approved plan. As soon as possible, but no later than three weeks after receipt of this approved plan, all provisions contained herein shall be fully explained to all miners whose duties require them to be on a "working section." All new miners shall have the hazards of mine roof and ribs and the content of this plan explained to them before they start to work.

3. (a) Upon completion of the loading cycle, a reflectorized warning device, such as a "Stop" sign, shall be conspicuously placed to warn persons approaching any area that it is not permanently supported. It is to be emphasized that the warning device has been placed to cause the person to stop, examine, and evaluate the roof and rib conditions prior to entering the area.

   (b) Where required, the installation of temporary supports shall begin prior to moving the roof bolting machine into the place, unless roof bolting machines are equipped with acceptable automated temporary supports.

4. Only those persons engaged in installing temporary supports shall be allowed to proceed beyond the last row of permanent supports until temporary supports are installed. Before any person proceeds inby permanently supported roof, a

thorough visual examination of the unsupported roof and ribs shall be made. If the visual examination does not disclose any hazardous condition, persons proceeding inby permanent supports for the purpose of testing the roof by sound and vibration method and installing supports shall do so with caution and shall be within 5 feet (less if indicated on sketches) of a temporary or permanent support. If hazardous conditions are detected, corrective action shall be taken to give adequate protection to the workmen in the area involved.

5. When wooden material such as planks, header blocks, or crossbars are used between the plate and the roof for additional bearing surfaces, the use shall be limited to short-life openings (not to exceed 3 years) unless treated. Bearing plates used in conjunction with wooden materials shall be not less than 4 inches square or of equivalent area.

6. When installing permanent supports, temporary supports may be re-positioned in the sequence indicated on the attached sketches (pgs. 18 & 26). However, if it is necessary to remove temporary supports (other than those specified above) before permanent supports are installed, such temporary supports shall be removed by some remote means, or another temporary support shall be installed in such a manner that the workman removing the support remains in a supported area. Means of removal of such supports shall be approved by the District Manager.

7. Where it is necessary to perform any work such as extend line curtains or other ventilation devices inby the roof bolts, or to make methane tests inby the roof bolts, a minimum of two temporary supports shall be installed. This minimum is applicable only if they are within 5 feet of the face or rib and the work is done between such supports and the nearest face or rib. Other methods of providing temporary supports for this work will be used if equivalent protection is provided.

8. Where rehabilitation work is being done, the following temporary support pattern shall apply:

   (a) Where bolts are being replaced in isolated instances (such as where equipment has knocked bolts loose), one temporary support shall be installed within a radius of 2 feet from each bolt to be replaced. Does not apply when roof bolting machine is equipped with an ATRS system.

   (b) Where crossbars or roof bolts are being installed in an area where roof failure is indicated, a minimum

of two rows of temporary supports shall be installed on not more than 5 feet centers across the place so that the work in progress is done between the installed temporary supports and adequate permanent supports in sound roof.

9. (a) Where loose material is being taken down, a minimum of two temporary supports on not more than 5 foot centers shall be installed between the miner and the material being taken down, unless such work can be done from an area supported adequately by permanent roof supports.

   (b) To enable miners to perform their duties from a safe position without exposure to falling material, a bar of suitable length and design shall be provided on all mobile face equipment, except haulage equipment, and such bar shall be used when prying down loose material. (The length of the bar shall be suitable for the area involved in its use; i.e. construction area, roof-fall areas, and other mining areas require a bar of suitable length).

10. All metal jacks shall be installed with a cap block between the jack and the roof, unless an oversize bearing plate is provided (not less than 36 square inches).

11. Roof bolts shall be installed in the sequence shown in the drawings.

12. In each active working place where roof bolts are installed, at least one roof bolt hole shall be drilled to a depth of at least 12 inches above the anchorage horizon of the bolts being used to determine the nature of the strata. Such test holes shall be drilled at intervals not to exceed 22 feet. The test hole shall be either left open for examination or a roof bolt of a length equal to (or greater than) the required test hole depth may be installed and tightened provided adequate anchorage is obtained.

13. *An approved, calibrated torque wrench that will indicate the actual torque on the roof bolts by a direct reading shall be provided in each working section.

14. *Immediately after the first bolt is installed in each place, the torque shall be tested and, thereafter, at least one roof bolt out of every four shall be tested by a qualified person. If any of the bolts tested do not fall within the required torque range, the remaining previously installed bolts on this cycle shall be tested.

15. *On a daily basis, a spot check of torques will be performed on at least one out of each ten of the roof bolts from the outby corner of the last open crosscut to the face and a record kept of the results. The torque range is 150-200 ft. lb. This record is to show the number of roof bolts tested, number of roof bolts below the recommended range, and the number of the roof bolts above the recommended range. If the results show that a majority of the roof bolts are not maintaining at least seventy percent of the minimum torque required (fifty percent if plates bear against wood), or have exceeded the maximum required torque by fifty percent, supplementary support such as additional roof bolts, longer roof bolts with adequate anchorage, posts, cribs, or crossbars to be installed until a review of the adequacy of the roof control plan is made by an authorized representative of the Secretary of the Interior.

16. (a) Sidecuts will be started only in areas that are supported with permanent roof supports. Where the installation of additional supports is required prior to starting the sidecut, such supports shall be set on 5 foot centers. Once the sidecut has been completed, the sidecut shall be supported by either temporary or permanent supports prior to working in the intersection.

(b) During development, except where old workings are involved, mine openings shall not be holed through into unsupported areas. When a mine opening holes through into a permanently supported entry, room, or crosscut, the intersection so created shall be considered unsupported, and no work shall be done in or inby such intersections until either:

(i) The newly created opening is permanently supported as indicated in the approved roof control plan, or;

(ii) The newly created opening is timbered off with at least one row of posts installed on not more than 5 foot centers across the opening.

17. Posts installed for the purpose of roof support, shall have a wooden cap block, plank or crossbar between the post and roof. Where crossbars or planks are installed, they shall be blocked to equally distribute the load across their length.

18. Posts shall be installed tight and on solid footing. Not more than two wooden wedges shall be used to install a post.

19. A supply of suitable roof support material including temporary supports sufficient to support the roof during one complete cycle of mining shall be provided within 5 crosscuts outby each section dumping point.

20. An additional supply of supplementary roof support material consisting of roof bolts, at least 12 inches longer than the bolt length being used, and posts of proper length with sufficient cap pieces and wedges, shall be provided at the mine site or a dumping point inside which would allow for delivery to any section of the mine within 30 minutes. (The roof bolts, 12 inches longer, do not apply to resin installations).

21. A suitable roof sounding device shall be provided with all mobile face equipment except haulage equipment. If face workmen who are not operators or helpers on such equipment do not carry a roof sounding device, such device shall be available within 250 feet of their working area.

22. (a) Where roof falls have occurred and at all overcast, boom holes, and other construction sites that require removal of mine roof material, (e.g. by blasting, by ripping with a continuous mining machine, by cutting with a cutting machine, or any other means), the roof shall be considered unsupported. If miners are required to enter such areas either to travel over the fallen material, to clean it up, or perform other duties, the roof shall be supported adequately. Mine Management shall devise and have posted in writing at the scene of such unsupported roof, a plan describing the procedures to be followed for Working Roof Falls.

(b) All roof falls and other areas in the active workings where the mine roof material has been removed from its natural location by any means, and is not being cleaned up, shall be posted off at each entrance to the area by at least one row of post (or the equivalent) installed on not more than 5-foot centers across the opening.

23. On all active haulageways, all crossbars or beams shall be installed with some means of support that will prevent the beam or crossbar from falling, in the event the supporting legs are accidentally dislodged.

24. Devices such as spherical washers, angle washers, or slotted wood wedges, should be used to compensate for the angle when roof bolts are installed at angles greater than 5° from the perpendicular to the roof line.

25. All roof bolt materials shall be stored and handled in such a manner that will minimize damage to the materials.

26. All unintentional roof falls defined in Title 30, CFR Part 50, shall be investigated and the results of the investigation recorded in a book provided for that purpose. Such falls shall be shown on a map of the mine.

27. In areas where steel arch supports (Dwg. No. A5-0016) or crossbars (Dwg. No. A5-0014) are being installed, roof bolting, as normally done, will be required. Roof bolting may however, be used to supplement the installation of either crossbars or steel arches.

28. All roof bolts will be installed at least to a depth of 24" above the coal seam.

*NOTE: Does not apply to Resin Bolting Procedures

Revised by 8-7-84

SAFETY PRECAUTIONS

AUTOMATED TEMPORARY ROOF SUPPORT

1.

	Roof Bolter Manufacturer	Model Number	Serial Number	Minimum Load Carrying Capacity
1.	Lee-Norse	TD2-43	21271	17,318 lbs.
2.	Lee-Norse	TD2-43	21343	17,318 lbs.
3.	Lee-Norse	TD2-43	21374	17,318 lbs.
4.	Lee-Norse	TD2-43	21447	17,318 lbs.
5.	Lee-Norse	TD2-43	21449	17,318 lbs.

2. Automated temporary roof support systems shall be used in lieu of conventional temporary supports in all faces where they will reach the roof. (See also Item No. 14).

3. Upon completion of the loading cycle, a reflectorized warning sign, such as "STOP" or "CAUTION - UNSUPPORTED ROOF", etc., shall be provided to warn persons approaching the area that it is not permanently supported, and such signs, etc., shall remain in place until installation of permanent supports is started.

4. The controls necessary to position and set the automated support shall be located in such a manner that they can be operated from under permanent support.

5. This automated support system may be used in all working sections and falls, or construction areas where it can be used safety and correctly.

6. A check valve or equivalent protection shall be incorporated in the automated temporary support system to eliminate the danger of collapse through sudden loss of oil due to a broken hose.

7. No one shall proceed inby the automated support system unless a minimum of two temporary supports are installed not more than five feet apart and within five feet of permanent support, face or ribs, and the work is done between such supports and/or the nearest face or rib.

8. The roof bolter operator shall not proceed inby the last complete row of bolts until the safety arm support is placed firmly against the roof at the point where the work is to be performed.

9. While drilling, the center of the safety arm support shall be against the roof, and shall be no more than 5 feet from the last complete row of bolts and either the coal rib or an installed bolt. (See also Item No. 14).

10. At least two safety jacks shall be available in the section to be used when unusual or adverse roof conditions are encountered, and the automated temporary support does not provide adequate protection for the operator. Timber may be used in place of safety jacks, if height requires.

11. Where crossbars are being installed, they may be moved into place and secured against the roof with the automated support system before persons proceed inby permanent supports to install legs under the bars.

12. The temporary roof support requirements stated elsewhere in the plan do not apply where the roof bolting machine is equipped with an acceptable A.T.S. system. This does not preclude the use of temporary supports for additional safety precautions during periods of inactivity such as strikes and mine shutdowns. Temporary supports may also be used to make necessary face tests and to assist in ventilation.

13. In areas that have been mined, or have fallen above the height limit of the automated temporary support system, a maximum of one (1) crib block may be used to allow the support to be pressured against the mine roof.

14. The manner in which the A.T.S. system is otherwise employed shall be consistent with the approved roof control plan.

SAFETY PRECAUTIONS FOR RESIN GROUTED RODS

1. All safety precautions required in the regular roof control plan will be followed, except the torque test required for conventional-type roof bolts will not apply. If failure occurs, the bolting operation will discontinue until the reason for failure has been determined. If the reason for failure cannot be determined, changes in the roof bolting procedure will be made to adequately support the roof, or supplemental supports will be used.

2. Persons responsible for the installation of resin rods will be taught the installation procedures recommended by the manufacturer, including the safe handling precautions of the resin material.

3. Drill steels will be equivalent in length to the rods used or adequately marked to assure proper hole depth. Each drill hole will be filled the entire length with resin.

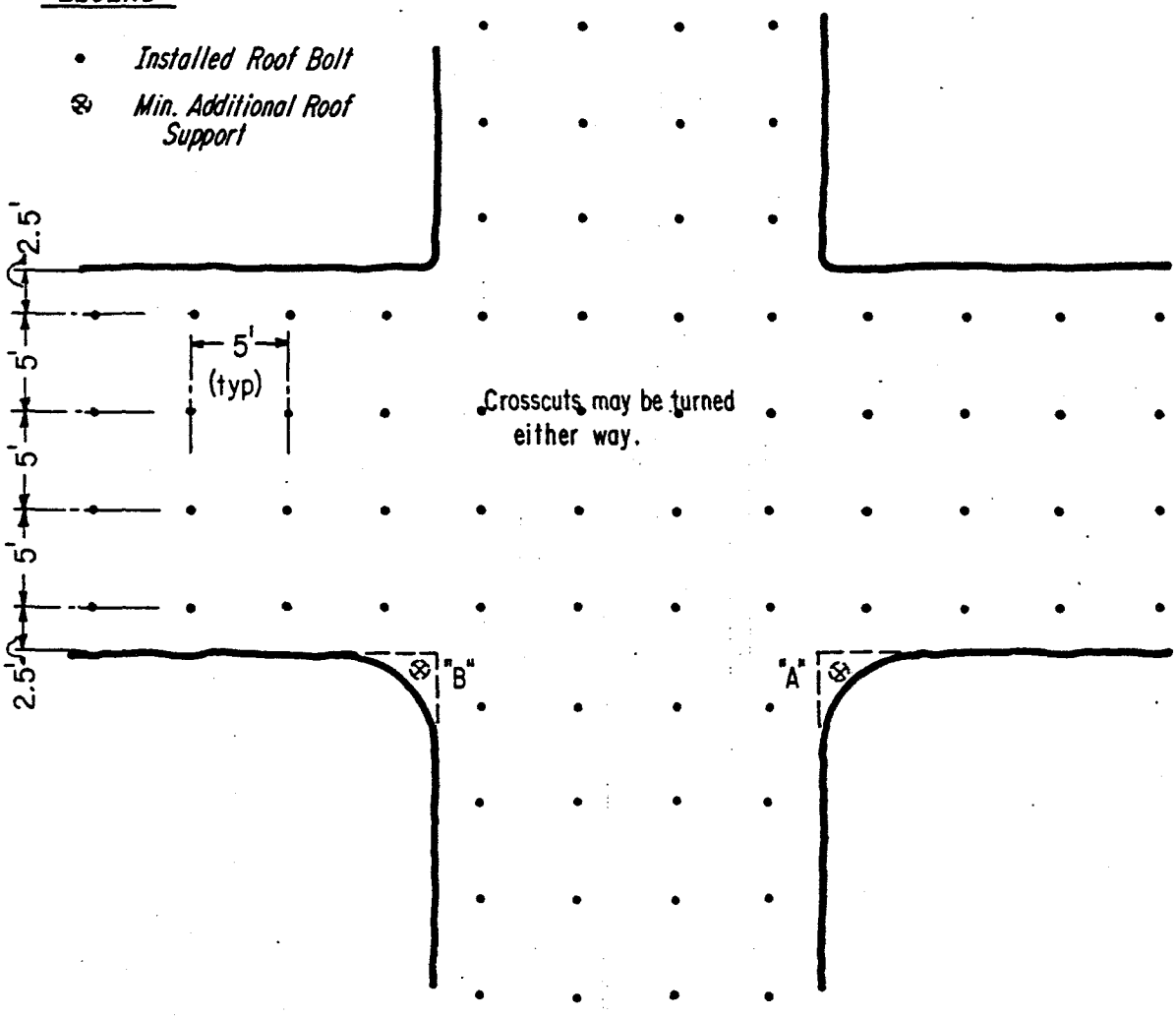
4. All resin grouted rods will be used with bearing plates approved for use. The bearing plate or the wood material between the bearing plate and the roof will be tight against the mine roof.

5. Resin packages will be stored in an area where the temperature is within the range recommended by the manufacturer.

6. Broken cartridges or cartridges which show signs of deterioration will not be used.

7. Resin grouted rods and conventional roof bolts will not be intermixed during systematic bolting cycles, except that intermixing may occur in areas where supplementary supports are required.

8. Resin cartridges will not be used if the recommended shelf-life has been exceeded, unless written autorization for use is permitted by the manufacturer or an authorized representative of the manufacturer.

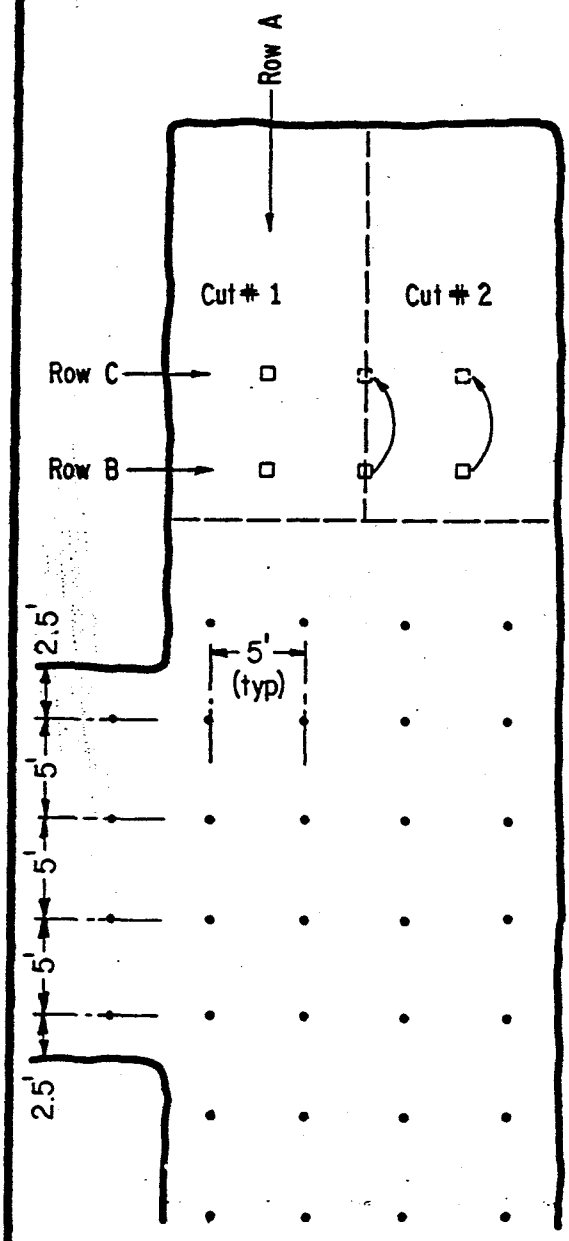


TYPICAL INTERSECTION

Notes:

1. *All entries and crosscuts shown are supported according to the roof control plan.*
2. *Due to the length of the continuous miners, it is necessary to cut a slight curve when turning a crosscut (see "A" & "B"). Additional roof support (roof bolts and/or timbers) will be placed in these areas.*
3. *Curves can be cut either to the right or left, and when necessary in both directions.*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Mar. 25, 1981	**SCOFIELD ROUTE**
CHECKED: T.G.W	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL: W.L.W	
SCALE: 1"=10'	TITLE TYPICAL INTERSECTION — DRAWING NO. A5-0020



Notes:

1. *Depth of sump cuts controlled by ventilation requirement, but the Continuous Mining Machine operator shall not be advanced beyond the last permanent roof support.*
2. *Temporary supports in row A installed promptly upon withdrawal of machine from cut #1. Row B to be set promptly upon withdrawal of machine from cut #2. Temporary supports in row B shall be advanced to row C after the first row of bolts are installed. This cycle shall continue until the entire cut is bolted.*

LEGEND

- □ *Temporary Supports*
- □ *Future Temporary Supports*
- • *Installed Roof Bolts (5ft. centers)*

TEMPORARY SUPPORT PATTERN

for use

WITHOUT A.T.R.S. SYSTEM

(Full Roof Bolt Plan)

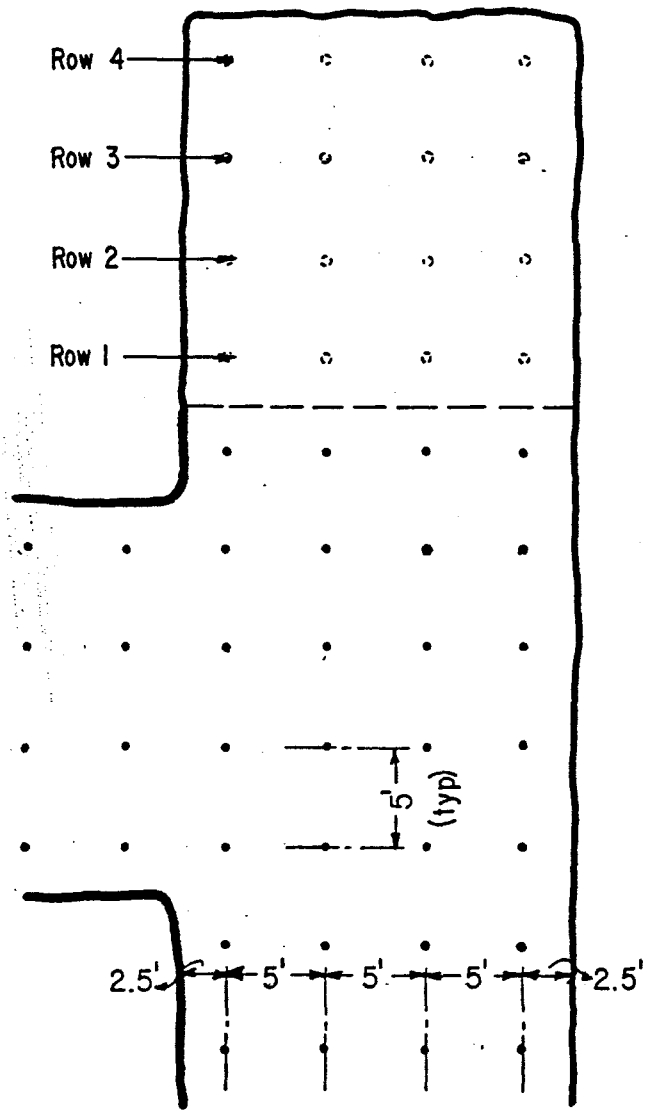
DRAWN BY:	Ed Sanderson
DATE:	Mar. 24, 1981
CHECKED:	TGW
APPROVAL:	
APPROVAL:	W. L. W.
SCALE:	1" = 10'

VALLEY CAMP OF UTAH, INC.

SCOFIELD ROUTE

HELPER, UTAH 84526

TITLE	DRAWING NO.
TEMPORARY SUPPORT PATTERN	A5-0023



Notes:

1. *Bolting sequence is by row number.*
2. *Standard procedure will be to install 3 roof bolts from each position. (Numbered)*
3. *Row 1 will be completed before bolting in row 2 will commence.*
4. *Bolting cycle may begin on right side depending upon conditions.*
5. *Temporary posts or jacks will be installed only where needed to make necessary tests or for ventilation purposes.*
6. *The Continuous Mining Machine Operator shall not be advanced beyond the last row of permanent roof support.*

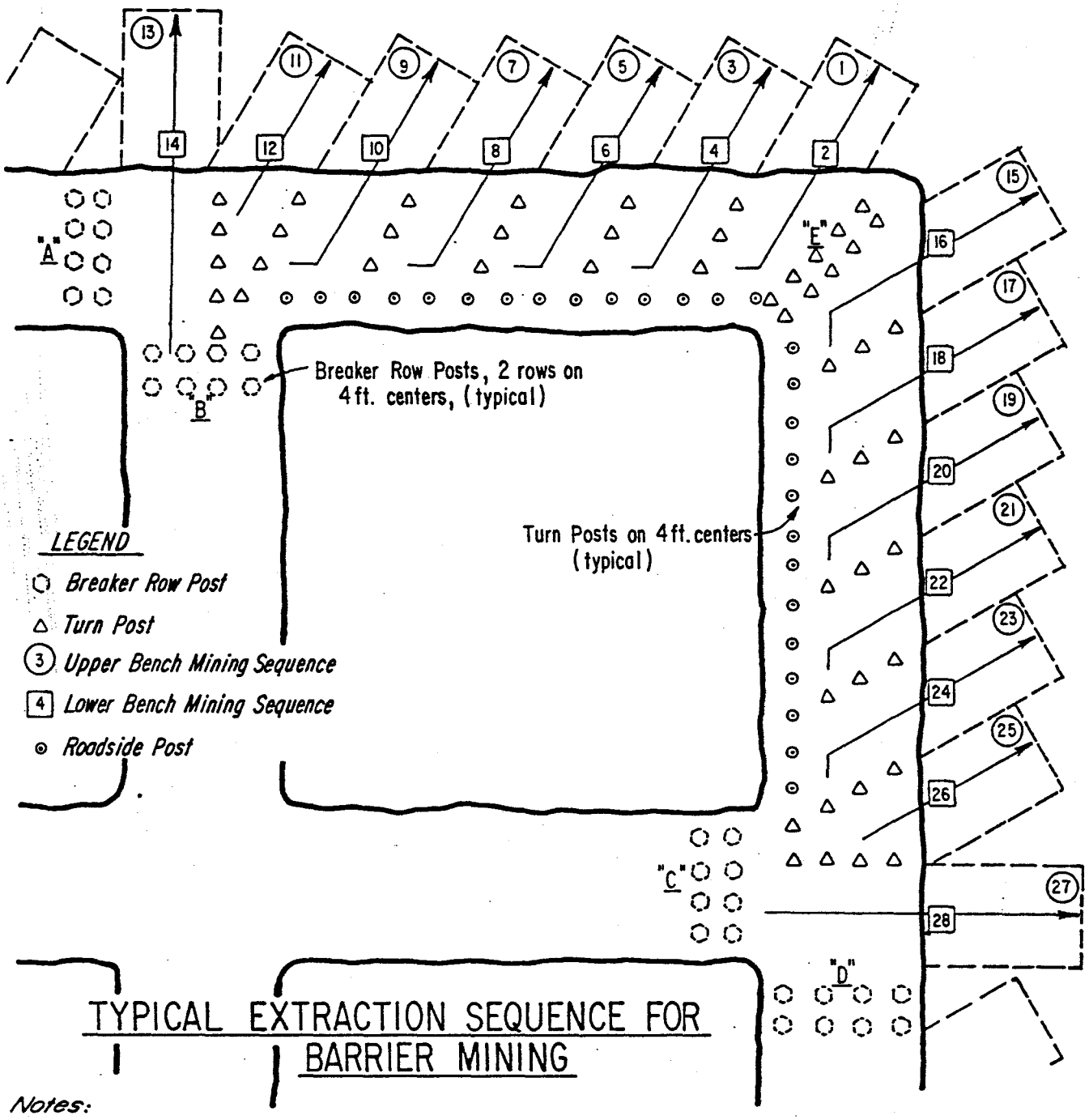
LEGEND

- *Installed Roof Bolts*
- *Future Roof Bolt Locations*

ROOF BOLT INSTALLATION SEQUENCE

for
Lee Norse Twin Boom Roof Bolters
with Temporary Roof Support System
Model No. TD-2-43-5-4E

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Mar. 24, 1981	**SCOFIELD ROUTE**
CHECKED: TGW	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL: WLW	
SCALE: 1"= 10'	TITLE ROOF BOLT INSTALLATION SEQU. / DRAWING NO. A5-0024



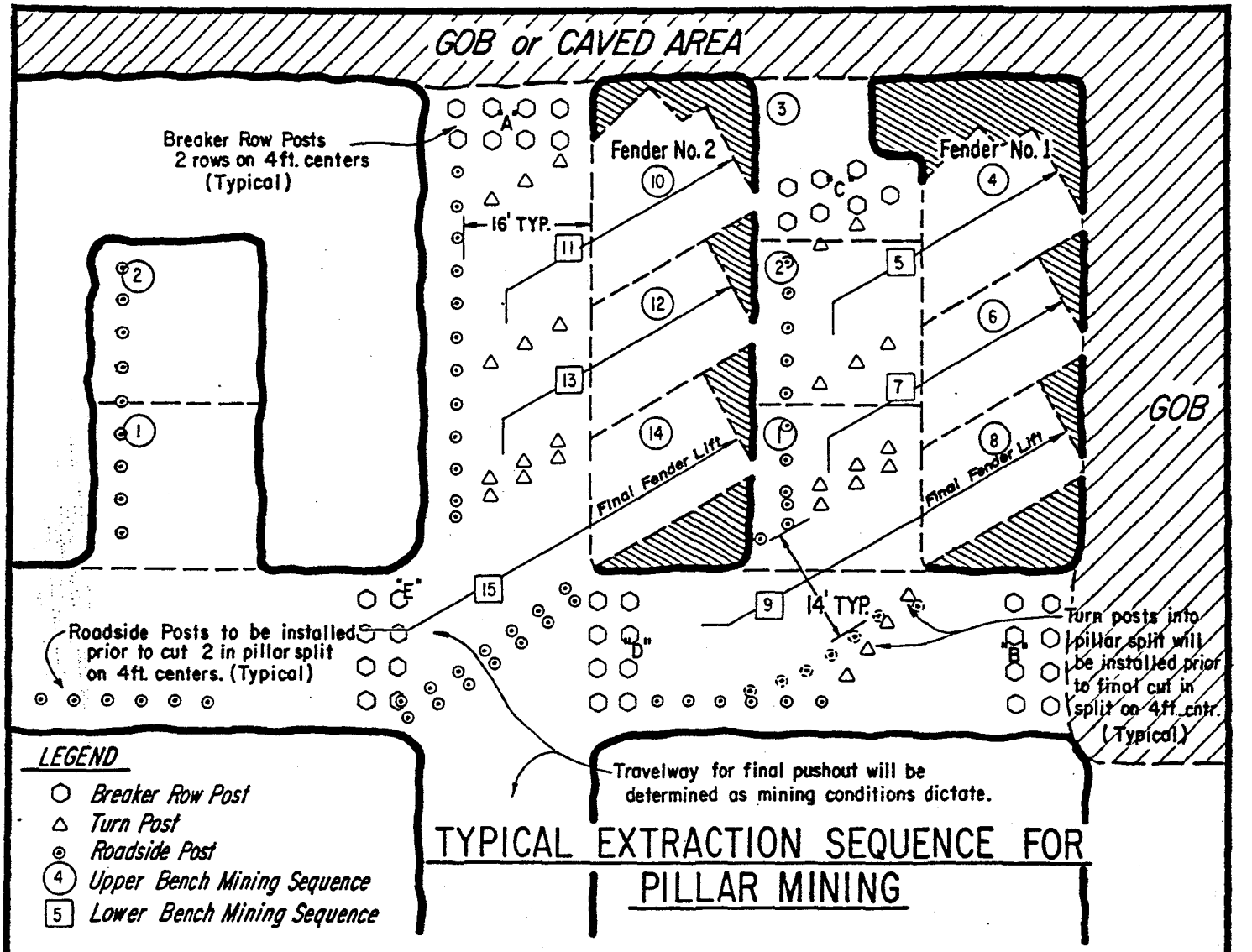
TYPICAL EXTRACTION SEQUENCE FOR BARRIER MINING

Notes:

1. *Pillar breaker rows A,B,C, & D shall be installed upon completion of inby mining.*
2. *Turn posts shall be installed on 4' centers on the inby side of subsequent lifts.*
3. *Prior to starting cut #1, install turn posts in double row "E".*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Mar. 18, 1981	**SCOFIELD ROUTE**
CHECKED: T.G.W.	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL: W.L.W.	
SCALE: 1" = 20'	TITLE: BARRIER EXTRACTION — DRAWING NO. A5-0011

ROOF SUPPORT PLAN



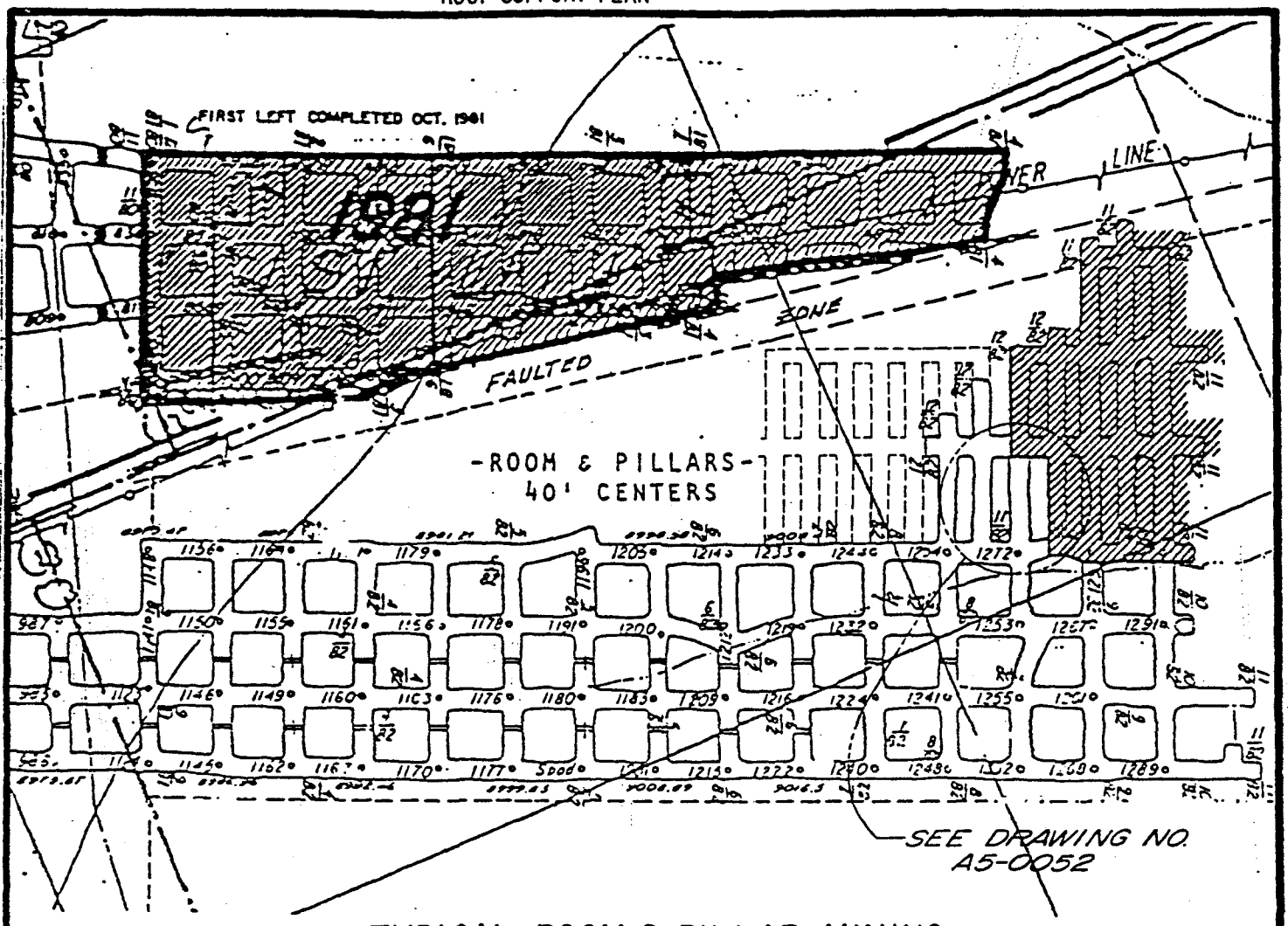
TYPICAL EXTRACTION SEQUENCE FOR PILLAR MINING

Notes:

1. *Typical as to mining sequence and post installation.*
2. *All entries, crosscuts, rooms and intersections shall be bolted in accordance with the approved roof control plan before starting pillar splits.*
3. *Final cut in pillar split, not to exceed 20 ft. in depth, will not be bolted.*
4. *Pillar breaker rows "A" & "B" shall be installed adjacent to pillared area prior to initial cut in piller split.*
5. *Pillar breaker row "C" will be installed upon completion of pillar split.*
6. *Pillar breaker row "D" will be installed upon completion of mining fender No. 1.*
7. *The width of travelway leading to a final fender lift shall be reduced to 14 ft. by a double row of posts on each side.*
8. *Pillar breaker Row "E" will be installed before the pillar split is completed in pillar No. 2.*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Aug. 12, 1981	**SCOFIELD ROUTE**
CHECKED:	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL:	
SCALE: 1" = 20'	TITLE PILLAR EXTRACTION
	DRAWING NO. Rev. 4 A5-0010

ROOF SUPPORT PLAN



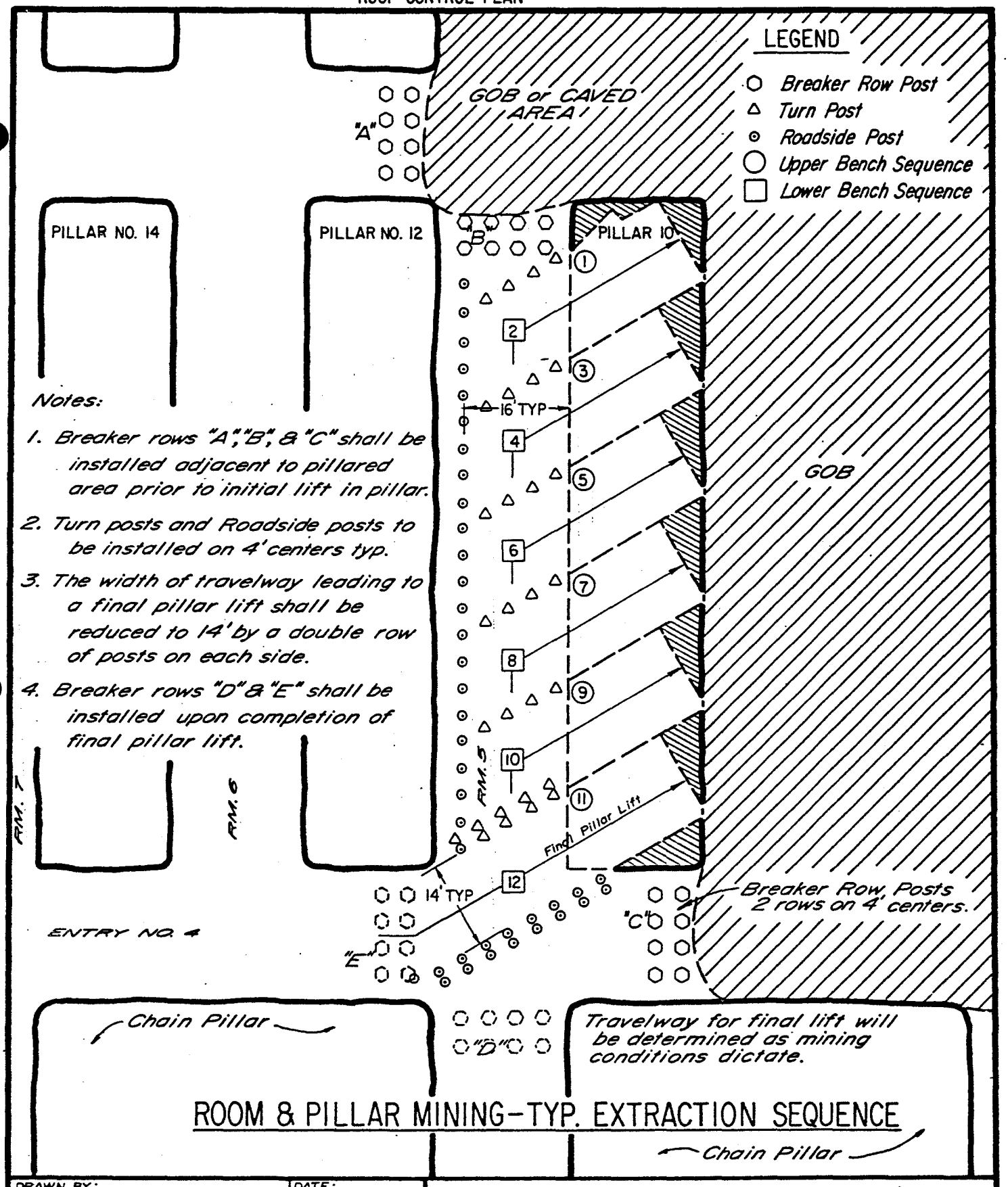
TYPICAL ROOM & PILLAR MINING

Notes:

1. *Typical mining sequence and post installation is shown on dwg. no. A5-0052.*
2. *All entries, crosscuts, rooms and intersections shall be bolted in accordance with the approved roof control plan before starting pillar mining.*
3. *Lifts shall not exceed 15 feet in width.*
4. *During pillar mining, the miner operator shall not advance beyond the last row of permanent support.*
5. *Turn posts shall not be cut out when the lower bench is being mined.*
6. *All personnel assigned to sections extracting pillars and/or barriers will be instructed in "Pillar Extraction Procedures" by a qualified person, designated by mine management, before being assigned to perform such duties.*

DRAWN BY: Ed Sanderson	DATE: Dec. 9, 1982	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: 1"=200'		
APPROVAL ENG.: TGW			
APPROVAL SAFETY:	TITLE: PILLAR EXTRACTION, ROOMS	DRAWING NO. A5-0051	REV. NO. 0
APPROVED MINE:			

ROOF CONTROL PLAN



Notes:

1. Breaker rows "A","B", & "C" shall be installed adjacent to pillared area prior to initial lift in pillar.
2. Turn posts and Roadside posts to be installed on 4' centers typ.
3. The width of travelway leading to a final pillar lift shall be reduced to 14' by a double row of posts on each side.
4. Breaker rows "D" & "E" shall be installed upon completion of final pillar lift.

ROOM & PILLAR MINING–TYP. EXTRACTION SEQUENCE

DRAWN BY: Ed Sanderson	DATE: Dec. 9, 1982	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: 1"=20'		
APPROVAL ENG: T.G.W.			
APPROVAL SAFETY:	TITLE: PILLAR EXTRACTION, ROOMS	DRAWING NO. A5-0052	REV. NO. 0
APPROVAL MINE:			

PILLAR & BARRIER MINING:

1. Lifts shall not exceed 15 feet in width.

2. During pillar mining, the miner operator shall not advance beyond the last row of permanent support.

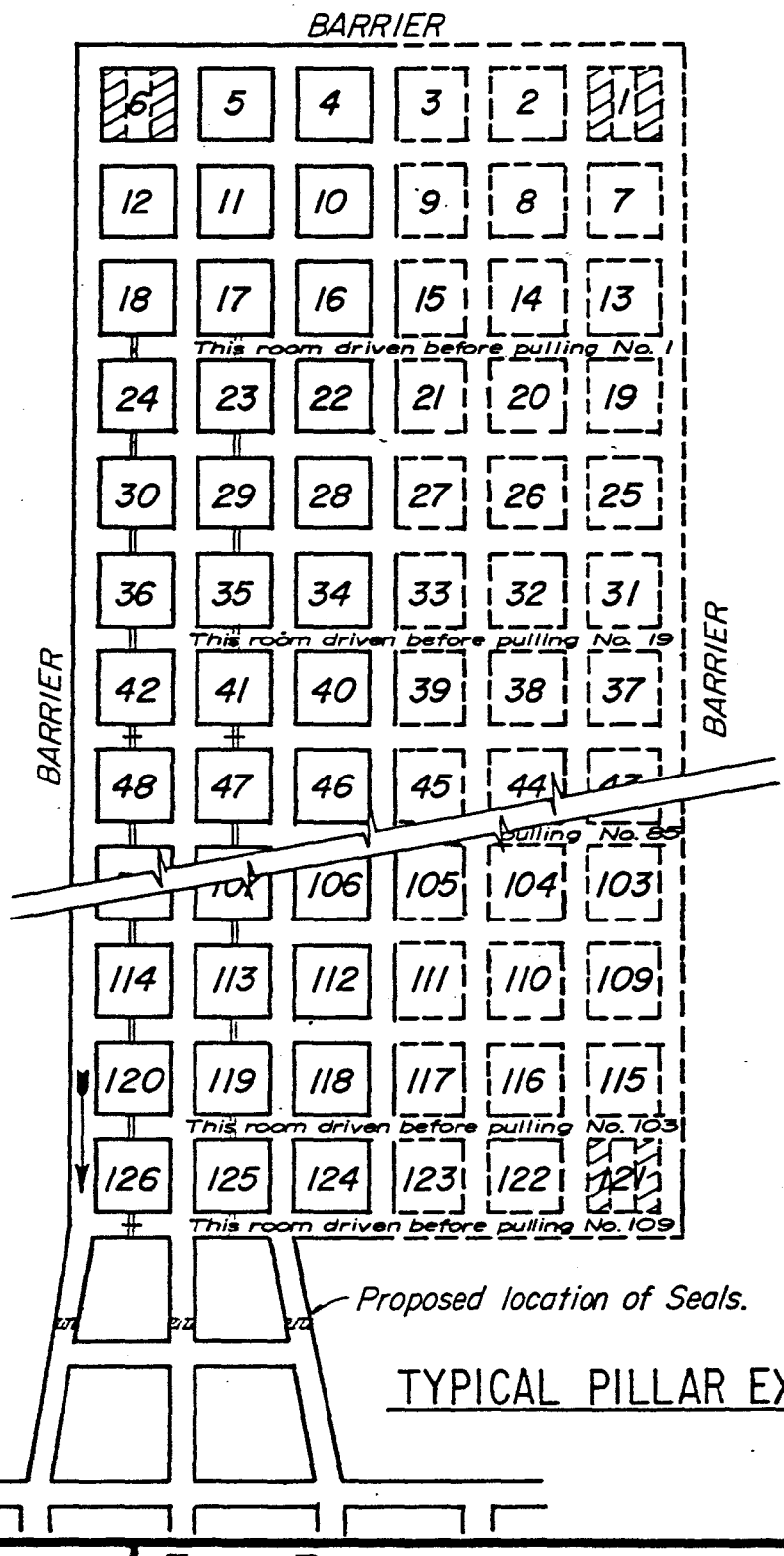
3. Turn posts shall not be cut out when the lower bench is being mined.

4. All personnel assigned to sections extracting pillars and/or barriers will be instructed in "Pillar Extraction Procedures" by a qualified person, designated by mine management, before being assigned to perform such duties.

DRAWN BY: Ed Sanderson	DATE: Aug. 12, 81	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526
CHECKED BY:	DATE:	
REVISED BY:	SCALE: NONE	
APPROVAL ENG.:		
APPROVAL SAFETY:	TITLE: GENERAL NOTES, Pillar Mining	DRAWING NO. A5-0008 / REV. NO. 2
APPROVAL MINE:		

NOTES:

1. This is a typical pillar sequence for the Belina No. 1 Mine. Mining conditions may dictate the application of alternate sequence.

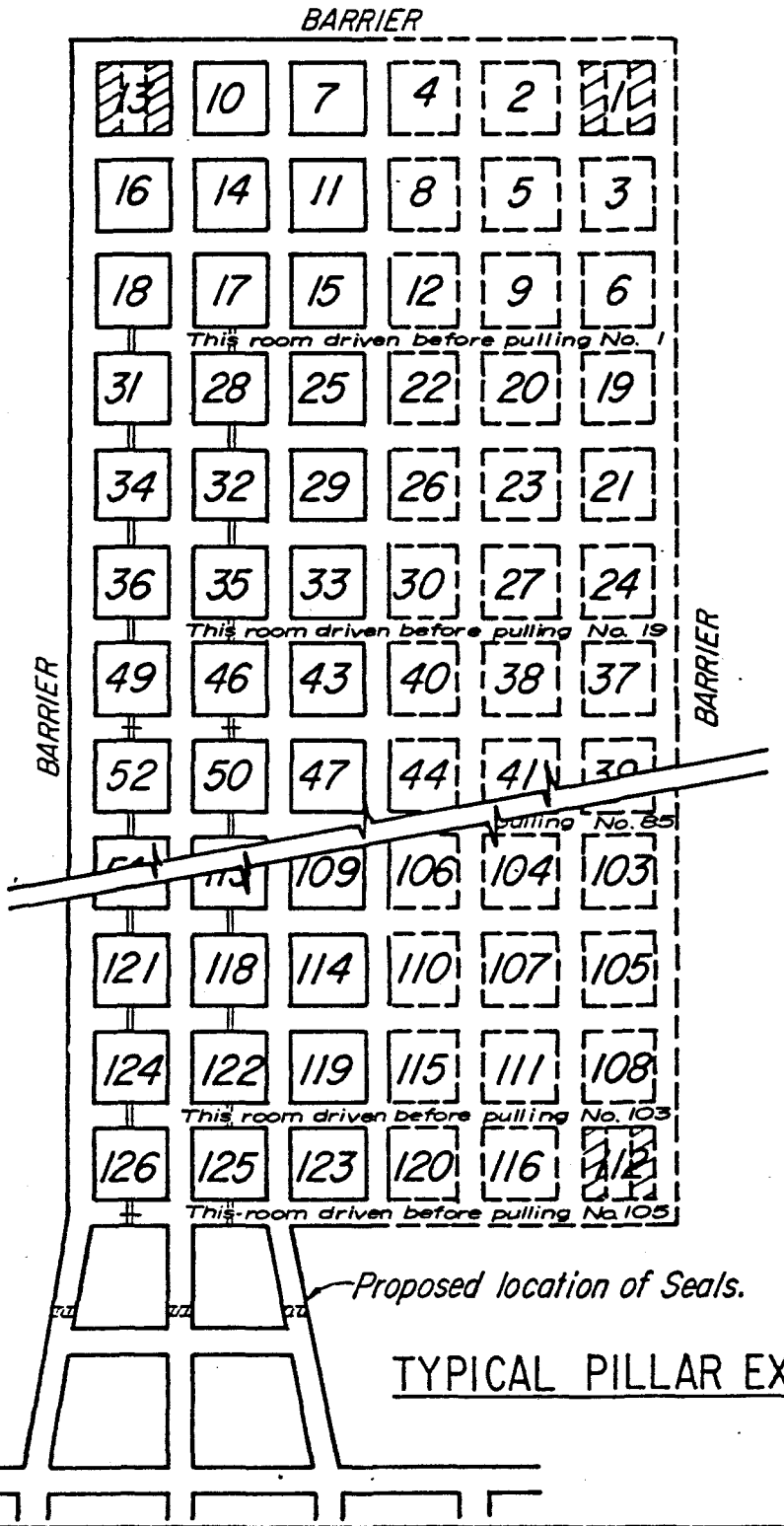


TYPICAL PILLAR EXTRACTION SEQUENCE

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Mar. 18, 1981	**SCOFIELD ROUTE**
CHECKED: TGW	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL: W.L.W	
SCALE: NONE	TITLE 90° PILLAR SEQUENCE — DRAWING NO. A5-0006

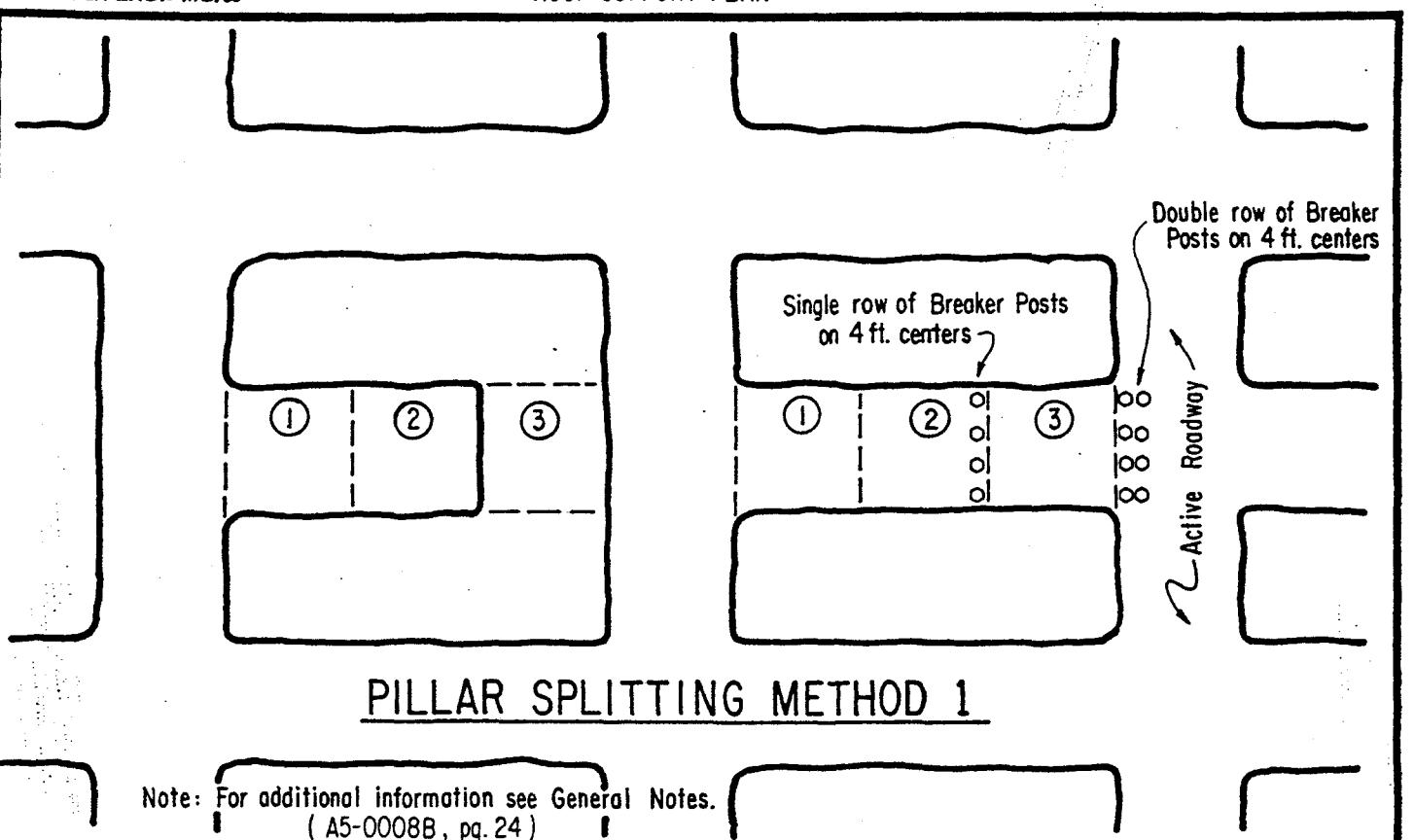
NOTES:

1. This is a typical pillar sequence for the Belina No. 1 Mine. Mining conditions may dictate the application of an alternate sequence.



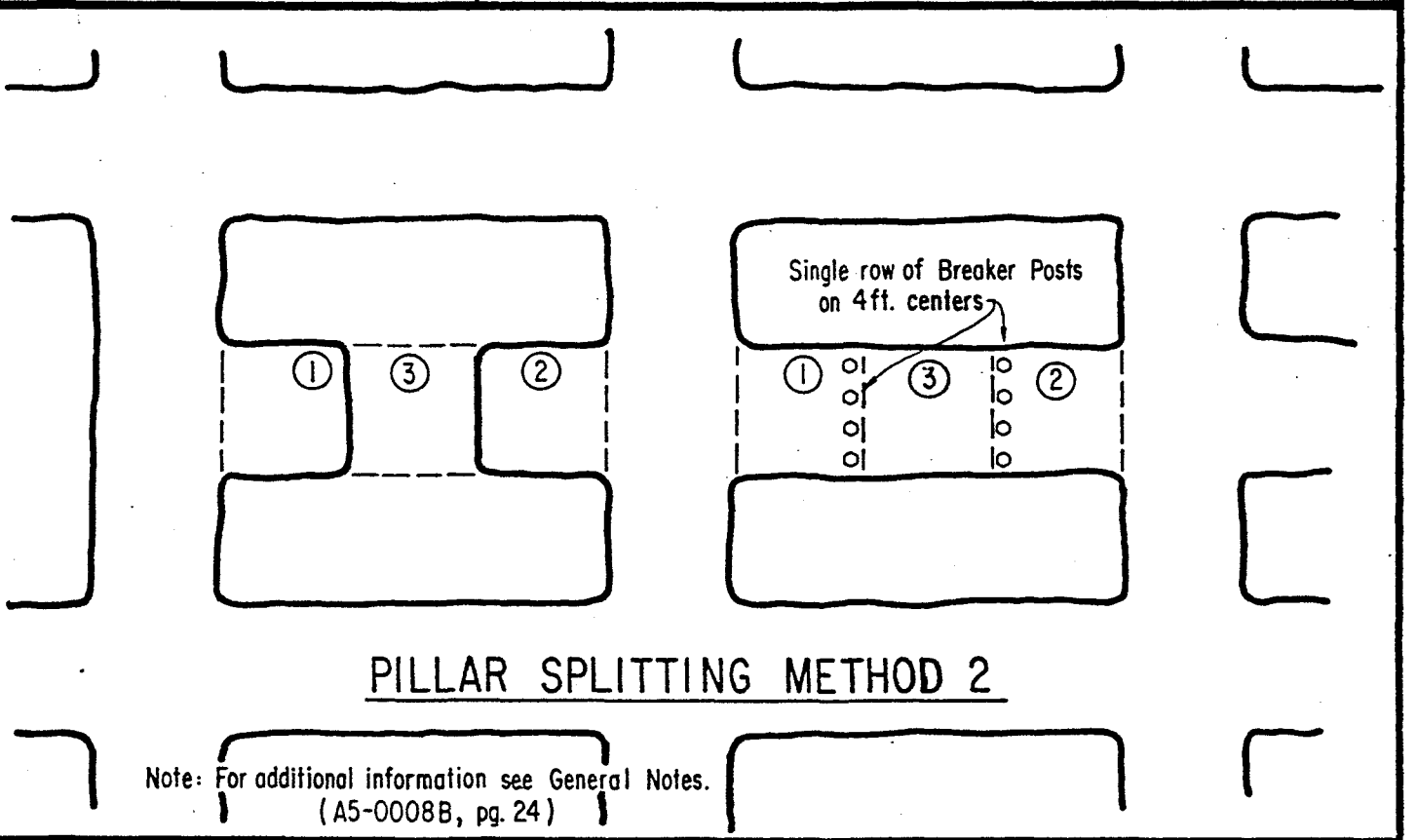
TYPICAL PILLAR EXTRACTION SEQUENCE

DRAWN BY: Ed Sanderson	VALLEY CAMP OF UTAH, INC.
DATE: Mar. 18, 1981	SCOFIELD ROUTE
CHECKED: TGW	HELPER, UTAH 84526
APPROVAL:	
APPROVAL: W.L.W	
SCALE: NONE	TITLE 45° PILLAR SEQUENCE — DRAWING NO. A5-0012



PILLAR SPLITTING METHOD 1

Note: For additional information see General Notes. (A5-0008B, pg. 24)



PILLAR SPLITTING METHOD 2

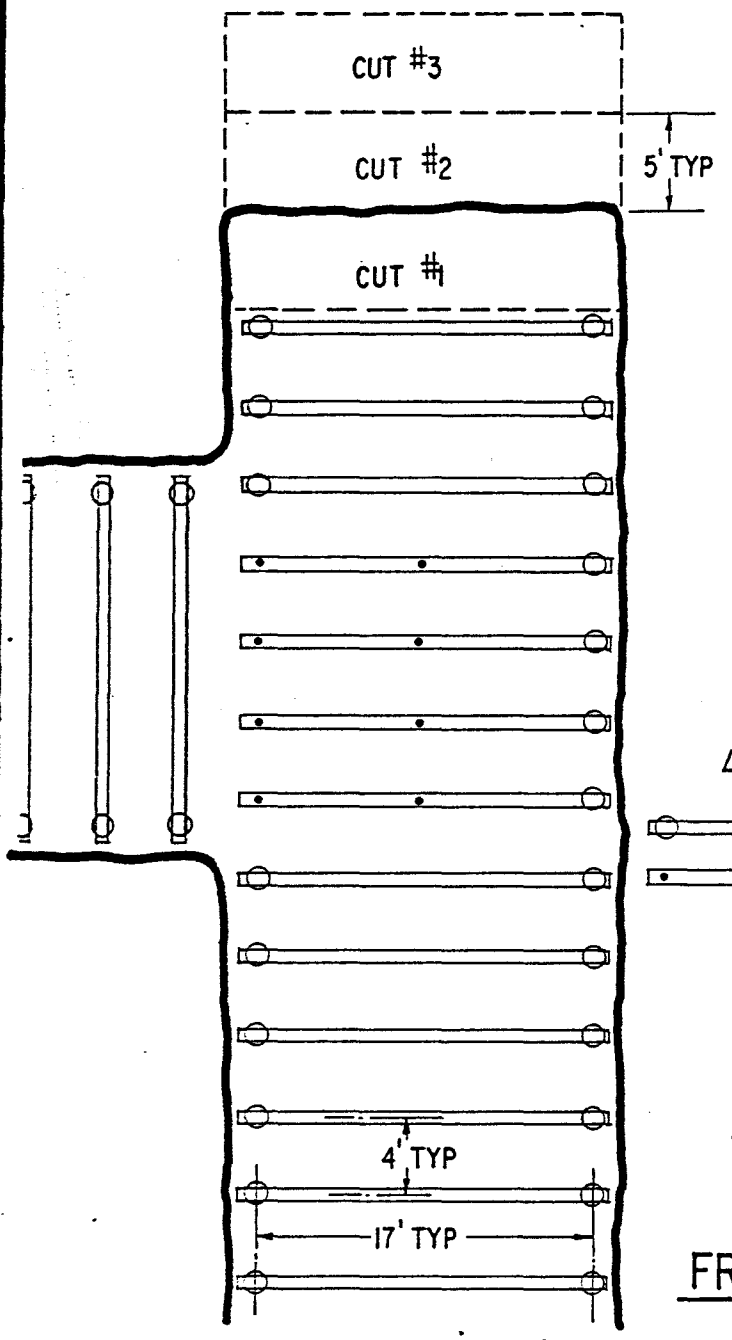
Note: For additional information see General Notes. (A5-0008B, pg. 24)

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Mar. 19, 1981	**SCOFIELD ROUTE**
CHECKED: TGW	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL: W.L.W	
SCALE: 1"=30'	TITLE PILLAR SPLITTING SEQUENCE — DRAWING NO. A5-0013

PILLAR SPLITTING:

1. Splits will be bolted according to the approved plan with the exception of cut #3, which will have one row of posts set across the opening. (see drawing No. A5-0013)
2. If the pillar split is to be used as a roadway, all 3 cuts will be roof bolted as per approved plan.
3. Timbers set across the openings of cut #3 will be set on 4 ft. centers and will be installed promptly upon completion of mining the cut.
4. In areas where cut #3 is left on timbers and is adjacent to an active roadway, a double row of posts will be set across the opening on the roadway side.
5. In places where cut #3 is timbered off, access into such areas will be properly restricted by the use of "Danger" signs.
6. Mining conditions may dictate an alternate cutting sequence.

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: Aug. 12, 1981	**SCOFIELD ROUTE**
CHECKED:	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL:	
SCALE: "NONE"	TITLE GENERAL NOTES, Pillar Splitting — DRAWING NO. A5-0008B



Notes:

1. *Depth of each cut controlled by roof conditions, but mining machine operator shall not advance beyond last permanent support.*
2. *Crossbars will be installed promptly upon completion of cut #1, before cut #2 is made.*

LEGEND

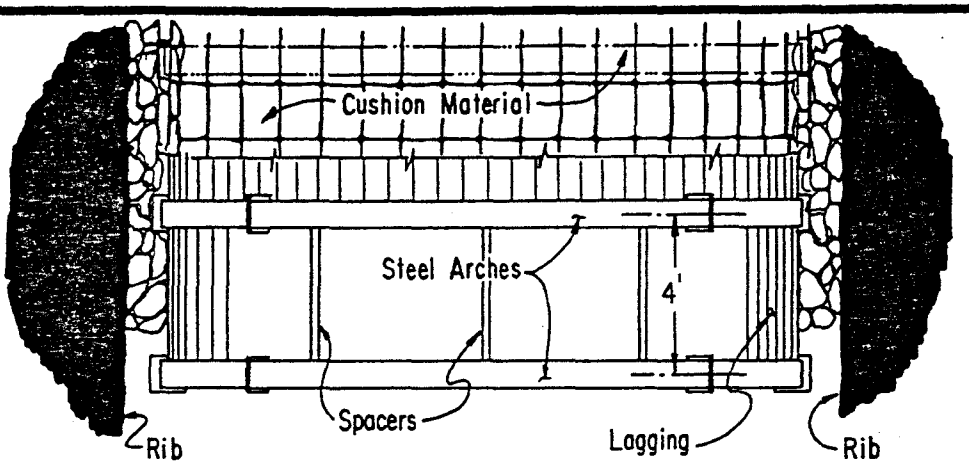
Crossbar on Support Posts

Crossbar bolted to Roof

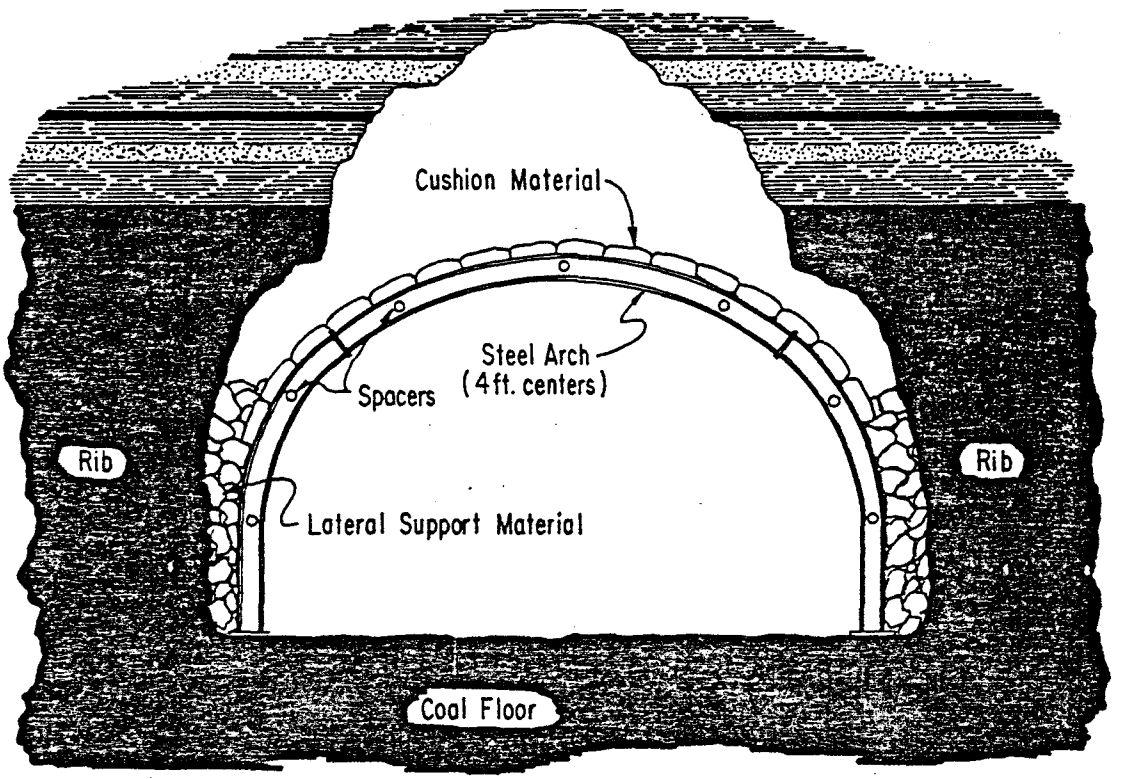
TYP. CROSSBAR PLAN for FRACTURED or HEAVY ROOF AREAS

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**
DATE: July 20, 1981	**SCOFIELD ROUTE**
CHECKED:	**HELPER, UTAH 84526**
APPROVAL:	
APPROVAL:	
SCALE: 1"=10'	TITLE: TYP. CROSSBAR PLAN — DRAWING NO. A5-0014

ROOF SUPPORT PLAN



TOP VIEW



FRONT VIEW

Notes:

1. *Steel Arches will be used as mining conditions and roof strata dictate.*
2. *Lateral support will be installed up to a minimum of 4' as per manufacture's specifications.*

DRAWN BY: Ed Sanderson	**VALLEY CAMP OF UTAH, INC.**	
DATE: Mar. 23, 1981	**SCOFIELD ROUTE**	
CHECKED: TGW	**HELPER, UTAH 84526**	
APPROVAL:		
APPROVAL: W.L.W		
SCALE: 1"=5'	TITLE: TYP. STL. ARCH INSTALLATION	DRAWING NO. A5-0016

A proposed assessment of $15,750.00 was issued on September 9, 1983. A request for assessment conference was made on September 14, 1983. This violation was terminated on August 18, 1983. On December 8, 1983, an assessment conference was held at the Valley Camp of Utah, Inc. office. The finalized assessment was received December 21, 1983, for 0 points and $0.00, and the order was vacated.

17. On February 1, 1984, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N84-7-2-10, of the SMCRA of 1977 (P.L. 95-87), with respect to ten (10) violations. A description and status report follows:

(a) Violation 1 of 10 - 10 of 10

"Failure to meet effluent limitations", provisions of regulations violated being: U.C.A. 1953 40-10-18(2)(i)(ii) and UMC 817.42 (a)(7); the violation applying to the discharge of the Belina sediment pond No. 004, from October, 1982, thru October, 1983. The remedial action required was to "meet effluent limitations", and time for abatement, "none". On March 7, 1984, the proposed assessment was received for the above mentioned violations for 292 points and $4,640.00. On March 16, 1984, a request for an assessment conference was made by Valley Camp of Utah, Inc.

The assessment conference for this violation was held April 23, 1986.

The finalized assessment resulting from the April 23, 1986, assessment conference is as follows:

Violation No. N84-7-2-10	Amount of Assessment as Revised
1 of 10 = 43 Pts.	$ 720.00
2 of 10 = 18 Pts.	$ 180.00
3 of 10 = 21 Pts.	$ 220.00
Total 82 Pts.	$1,120.00

Violation 4 of 10 through 10 of 10 were vacated by acting assessment officer on May 10, 1984.

On May 16, 1986, a check in the amount of $1,120.00, representing full payment of this assessment, was issued to the Division.

18. On April 26, 1984, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation No. N84-7-6-1, of the SMCRA of 1977 (p.L. 95-87), with respect to one (1) violation. A description and status report follows:

(a) Violation 1 of 1

"Failure to meet effluent limitation", provisions of regulations violated being: U.C.A. 1953 40-10-18(2)(i)(ii) and U.M.C. 817.42 (a)(7); the violation applying to the discharge of the Belina sediment Pond No. 004.

Remedial Action Required:

(a) Sample sediment pond discharge for four (4) consecutive days in the presence of Division representatives following receipt of notice.

(b) Demonstrate adequate pond volume to contain runoff from a ten (10) year, 24 hour precipitation event.

The time for abatement was ten (10) days, no later than June 9, 1984.

On June 6, 1984, a modification to the violation was received for remedial action. For Part A, delete: "Sample sediment pond discharge for four (4) consecutive days in the presence of Division representatives following receipt of notice", and add: "Meet effluent limitations". The time for abatement changed to, delete: "Ten (10) days, no later than June 9, 1984, and to add: "Sixteen (16) days, no later than 8:00 AM, June 15, 1984."

On July 5, 1984, a second modification to the violation was received for which the abatement deadline was extended to allow Valley Camp to respond to the Division's review (July 5, 1984 letter) of Valley Camp's proposed abatement, dated June 14, 1984. The new abatement deadline was no later than July 27, 1984, for submittal of response. On August 9, 1984,

a termination notice was received for Part A of the violation. On August 9, 1984, modification to the violation was received where the abatement deadline was extended for Part B until August 28, 1984. A termination notice was received August 30, 1984 for Part B. A proposed assessment of 37 points and $540.00 was received August 31, 1984. On October 22, 1984, a proposed assessment of 28 points and $360.00 was received. No assessment conference was held for this violation. On November 26, 1984, Valley Camp of Utah, Inc. issued check No. 2779, in the amount of $880.00, representing full payment of Notices of Violation Nos. N84-7-9-1 ($520.00) and N84-7-6-1 ($360.00). Final approval of abatement plans for N.O.V. N84-7-6-1 were received October 28, 1985.

19. On August 8, 1984, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N84-7-9-1, of the SMCRA of 1977 (P.L. 95-87), with respect to one (1) violation. A description and status follows:

(a) Violation 1 of 1

"Failure to meet effluent limitation", provisions of the regulations violated being: U.C.A. 1953 40-10-18(2)(i)(ii), and U.M.C. 817.42 (a)(7); the violation applying to the discharge of the Belina sediment pond No. 004.

Remedial Action Required: "Meet effluent limitations", and time for abatement was thirty days; no later than September 7, 1984. The proposed assessment received was August 31, 1984, for the violation was 37 points and $540.00. On September 10, 1984, a termination notice was received. No assessment conference was held for this violation. The finalized assessment of 36 points and $520.00 was received on October 26, 1984. Payment for this violation was included on check No. 2779, issued November 26, 1984, for the payment of N.O.V. Nos. N84-7-9-1 and N84-7-6-1 inclusively.

20. On November 15, 1984, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N84-2-23-1, of the SMCRA of 19 (P.L. 95-87), with respect to one (1) violation. A description and status follows:

(a) Violation 1 of 1

"Failure to maintain sediment control measures to function as designed". Provisions of regulations violated being U.M.C. 817.45 and U.M.C. 771.19, the violation applying to (a) drainage bypassing the culvert inlet into sediment pond No. 002, and (b) roadside ditch and gabion installation adjacent to the truck scale on the south side of the road.

Remedial Action Required: (a) Divert all disturbed area drainage into the mine sediment pond No. 002 as designed, and (b) remove coal fines from roadside ditch, repair and maintain the southern gabion as necessary to function as designed. Time for abatement was two (2) weeks or no later than November 29, 1984. On November 27, 1984, a termination notice was received with an effective date of November 16, 1984. On May 15, 1985, the proposed assessment of 27 points and $340.00 was received.

On May 21, 1985, a request for an assessment conference was made by Valley Camp of Utah, Inc. The assessment conference was held at the Division office in Salt Lake City, Utah. On July 19, 1985, a finalized assessment was received for 27 points and $80.00. Valley Camp of Utah, Inc. issued check No. 2851 in the amount of $80.00 on July 24, 1985, representing full payment.

21. On March 5, 1985, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N85-2-3-2 of the SMCRA of 1977 (P.L. 95-87), with respect to two (2) violations. A description and status report follows:

(a) Violation 1 of 2

"Failure to maintain runoff diversions in order to pass all surface drainage from the disturbed

area through a sedimentation pond". Provisions of regulations violated being: U.M.C. 817.42 (a)(1), U.M.C. 817.45, U.C.A. 40-10-18 (2)(i) (ii); the violation applying to the drainage diversion along the base of the stacker pad and truck dump.

Remedial Action Required: "Reconstruct and maintain the diversion to meet design standards of U.M.C. 817.43 (a) for a ten (10) year - 24 hour precipitation event, and U.M.C. 817.43 (f) (2), requiring a minimum .3 foot freeboard. Submit sizing calculations, maps, and cross-sections of the drainage diversion for DOGM review and approval". Time for abatement: 1) establish drainage controls to divert all disturbed area to a sedimentation pond within two (2) weeks, or by March 20, 1985, 2) submit diversion design (or reference approved designs in MRP) within 30 days, or by April 5, 1985, and 3) establish the drainage ditch to meet design standard by April 5, 1985.

(b) Violation 2 of 2

"Failure to maintain sediment control measures to function in accordance with approved designs". Provisions of the regulations violated being: U.M.C. 817.45, U.M.C. 771.19, U.C.A. 40-10-18

(2)(i)(ii), and drainage control plans for the truck scale installation approved August 13, 1983, and rock gabion filter designs submitted July 25, 1984. The violation applying to: (a) drainage from the area at the base of the truck dump, bypassing the culvert inlet to sediment pond No. 002; (b) truck scale drainage area; and (c) rock gabion filters along the load-out access road.

Remedial Action Required: (a) Divert drainage to the sediment pond and maintain diversion as necessary, (b) establish adequate surface grades and maintain ditchline to divert drainage to sediment pond No. 002, as designed, so that only drainage off the first 75 feet of access road flows through the gabion filters or submit modifications, and (c) maintain filters as designed. Remove sediment and replace straw, and repair rock filter as necessary to ensure that the structure is well secured to prevent short circuting around rock or straw. The time for abatement was two (2) weeks, or by March 20, 1985.

On April 8, 1985, a Modification of Violation was received. For Violation No. 1, the abatement deadline was extended one (1) week until April 12, 1985. On Violation No. 2, the abate-

ment deadline was extended until April 19, 1985, to allow time necessary for DOGM's review of the plans submitted March 22, 1985. For Violation No. 2, under Remedial Action, add: Obtain DOGM approval of modification to drainage control plans approved August 13, 1983. On April 23, 1985, a second notice was received: On Violation No. 1, the abatement deadline was extended until April 25, 1985, and on Violation No. 2, the abatement deadline was extended until April 25, 1985, to allow DOGM time necessary for review of abatement plans submitted April, 11, 1985. On May 6, 1985, a termination notice was received for both violations. On October 15, 1985, a proposed assessment of 25 points and $300.00 was received for Violation 1 of 2, and 36 points,and $520.00 for Violation 2 of 2. On October 15, 1985, a request for an assessment conference was made by Valley Camp of Utah, Inc. On January 21, 1986, an assessment conference was held at the Division office in Salt Lake City, Utah. For Violation Nos. N85-2-3-2, N85-2-10-2, N85-2-11-1, and N85-2-12-1. On March 10, 1986, the finalized assessment for Violation No. N85-2-3-2 was reviewed. Zero points were assessed and the civil penalty was vacated.

22. On June 27, 1985, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of

Violation, No. N85-2-10-2 of the SMCRA of 1977 (P.L. 95-87), with respect to two (2) violations. A description and status report follows:

(a) Violation 1 of 2

"Failure to notify the Division within five (5) days of receipt of analytical results of N.P.D.E.S. discharge samples, which indicated non-compliance with the applicable effluent limitations". The provision of the regulations violated being, U.M.C. 817.52 (b)(i)(ii). The violation applies to samples obtained from N.P.D.E.S. Point 004 in February, March, April and May, and samples obtained from N.P.D.E.S. Point 005 in May.

Remedial Action Required: Submit written notification and a copy of the analytical results for all samples which exceeded the N.P.D.E.S. permit effluent limitations to the Division. Time for abatement was five (5) days, or no later than July 2, 1985.

(b) Violation 2 of 2

"Failure to clearly mark buffer zone". Provisions of the regulations violated being, U.M.C 817.11 (e) and U.M.C. 817.57 (b), the violation applying to the buffer zone at the inlet to Whisky Creek bypass culvert and at the outlet bypass culvert by the pumphouse.

Remedial Action Required: Clearly mark buffer zones to prevent disturbance of the stream by surface operations. The time for abatement was two (2) weeks, or by July 11, 1985. On August 29, 1985, a proposed assessment was received for 18 points and $180.00 for Violation 1 of 2, and 8 points and $80.00 for Violation 2 of 2. On July 12, 1985, a termination notice for Part 1 of 2 of the violation was received. On July 16, 1985, a termination notice for Part 2 of 2 of the violation was received. On September 12, 1985, a request for an assessment conference was submitted. The assessment conference was held at the Division office in Salt Lake City, Utah on January 21, 1986. The finalized assessment was received March 10, 1986, for zero points and the civil penalty was vacated.

23. On July 12, 1985, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N85-2-11-1, of the SMCRA of 1977 (P.L. 95-87), with respect to one (1) violation. A description and status report follows:

(a) Violation 1 of 1

"Failure to meet applicable effluent limitations". Provisions of the regulations violated being: U.M.C. 817.42(b) and U.C.A. 40-10-18(2)(i)(ii); and applying to the Belina Mine Discharge, NPDES

Point 005, sampled May 17, 1985.

Remedial Action Required: Meet effluent limitations, and the time for abatement was "immediately". On July 12, 1985, a termination notice was received. On August 29, 1985, Valley Camp of Utah, Inc. received a proposed assessment of 40 points and a $600.00 civil penalty. On September 12, 1985, Valley Camp of Utah, Inc. requested an assessment conference for this violation. On January 21, 1986, an assessment conference was held at the Division office. On March 10, 1986, the finalized assessment of 40 points and $420.00 was received for the violation. On March 26, 1986, Valley Camp of Utah, Inc. issued check No.2018 for the amount of $420.00, representing full payment for the finalized civil penalty assessed to the subject violation.

24. On August 3, 1985, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N85-2-12-1, of the SMCRA of 1977 (P.L. 95-87), with respect to one (1) violation. A description and status report follows:

(a) Violation 1 of 1

"Conducting mining activities without a permit". Provisions of the regulations violated being: U.M.C. 771.19 and U.C.A. 40-10-9(1); and applying to extension of sediment pond No. 002 at the Utah No. 2 Load-out.

Remedial Action Required:

1. Submit complete and adequate as-built designs and maps for the sediment pond, which are certified by a registered P.E.; obtain D.O.G.M. approval.
2. Submit soil samples of the material excavated in extending the pond to a lab for analyses, as required by U.M.C. 817.22(e) and guidelines.
3. Provide adaquate protection for excavated soil.
4. Submit plans describing the volume of the excavated soil, the storage site, and the intended use of it; obtain D.O.G.M. approval.

Time for abatement was:

1. September 1, 1985;
2. August 14, 1985;
3. August 14, 1985;
4. September 1, 1985.

A proposed assessment of 33 points and a civil penalty of $460.00 was received on September 6, 1985.

On September 12, 1985, Valley Camp of Utah, Inc. requested an assessment conference for this violation.

A Modification Notice was received on February 3, 1986, and extended remedial actions until January 30, 1986. A termination notice for Remedial Action Part No. 2, "samples collected by operator and sent to lab for analysis", was received February 3, 1986.

Termination of Violation, Part 1 of 1 - Complete termination of this violation can now be made because Item No. 1 of the original violation has been abated as of April 28, 1986. Twelve copies of pond drawings were received on the above date. The diagram has been stamped certified by a registered P.E.

A modification of the violation, Part 1 of 1, was received April 3, 1986. The Violation Termination Notice, issued by Tom Wright on January 31, 1986, was no longer valid. Item Nos. 1 and 4, under Remedial Action Required, had not been abated at the time the above termination notice was served. The abatement date was extended to May 5, 1986, due to administrative delays between January 31, 1986, and April 2, 1986. Item No. 1 remains to be abated at this point in time. A termination notice was received April 3, 1986, for Remedial Action Nos. 2, 3 and 4.

On May 14, 1986, a termination notice was issued

by the Division for Remedial Action on Item No. 1. The assessment conference was held at the Division office in Salt Lake City, Utah on January 21, 1986. On March 10, 1986, finalized assessment for Violation N85-2-12-2, being 24 points and $0.00.

25. On January 17, 1986, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation, No. N86-8-2-1, of the SMCRA of 1977 (P.L. 95-87), with respect to one (1) violation. A description and status report follows:

(a) Violation 1 of 1

"Failure to maintain class one (1) road, and to control or minimize erosion and siltation, air and water pollution, and damage to public or private property". Provisions of the regulations violated being: U.M.C. 817.150 et al, U.M.C. 817.153, and U.C.A. 40-10-18(2)(ii)(j); and applying to "snow removed from Valley Camp road, stockpiled on pad above Mud Creek, on the east side of State Route 96, north of Clear Creek".

Remedial Action Required: Retrieve snow removed from Valley Camp Class 1 Road, and place in a permitted, proper snow storage area. A termination notice was received January 30, 1986. On February 5, 1986, a proposed assessment of 11 points and $110.00 was received. On February 6, 1986, a request for an assessment

conference for this violation was submitted. On March 18, 1986, an assessment conference was held at the Division office in Salt Lake City, Utah. The finalized assessment was received March 24, 1986, for 0 points and $0.00.

26. On July 18, 1986, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc. a Notice of Violation, No. N86-9-8-1, of the SMCRA of 1977 (P.L. 95-87), with respect to one (1) violation. A description and status report follows:

(a) Violation 1 of 1

"Failure to pass surface drainage through a treatment facility before leaving permit area". Provisions of the regulations violated being: U.M.C. 817.42(a)(1), U.C.A. 40-10-18(i), and U.C.A. 40-10-18(i)(ii). The violation applying to: 1. The west embankment of the Belina haul road turn in has been used for the disposal of road material during winter snow maintenance, and; 2. The area has been disturbed during the installation of road drainage pipes. In both situations above, no sediment control measures were taken to control drainage from the disturbed areas.

Remedial Action Required:

1. Install sediment control devices to protect stream from runoff coming from dis-

turbed areas, (a) along base of pipe installation disturbance; (b) along diversion ditch where snow blown material was deposited.

2. Seed disturbed areas.
3. Clean diversion ditch from haul road to creek (or reriprap).

Time for abatement was:

1. By July 23, 1986;
2. By August 7, 1986;
3. By July 23, 1986.

On August 4, 1986, a proposed assessment for this violation, in the amount of 26 points and $320.00, was received. On August 4, 1986, a Modification Notice was received as follows: Under nature of violation add: "Failure to prevent, to extent, possible additional contributions of sediment to stream flow or runoff outside permit area". Under provisions of act or regulations violated, add: U.M.C. 817.45 (i). These changes more specifically address the nature of the violations. On August 5, 1986, Valley Camp submitted a request for an assessment conference. A second Modification Notice was received on August 12, 1986, and is as follows: "Item No. 2 is changed to read, seed area disturbed by pipe installation. Item

No. 3 is changed to read, install straw bales along diversion ditch from haul road to creek". The reason for modification was "after further discussion between inspector and the operator, it was agreed that these changes be acceptable". A termination notice for this violation was received on approximately August 19, 1986. On September 4, 1986, an assessment conference was held at the Division office in Salt Lake City, Utah. On September 24, 1986, the finalized assessment was received for 13 points and $130.00. On October 26, 1986, Valley Camp of Utah, Inc. issued check No. 2983, in the amount of $130.00 for full payment of the assessment for this violation.

27. On September 30, 1986, the Division of Oil, Gas & Mining issued to Valley Camp of Utah, Inc., a Notice of Violation No. N86-9-11-1, of the SMCRA of 1977 (P.L. 95-87), with respect to one (1) violation. A description and status report follows:

(a) Violation 1 of 1

"Failure to comply with terms and conditions of the permit approved by the State Regulation Program. Specifically, failure to collect water monitoring data at the approved frequency". Provisions of the regulations violated being, U.M.C. 771.19 and U.M.C. 817.52, and apply to surface and ground water; monitoring data was

not available for the months of April and May of 1986.

Remedial Action reguired was none. The abatement time was N/A. This violation was terminated the same day of issuance. On October 14, 1986, a Modification Notice was received as follows: "Under portion of operation to which notice applies, change surface and ground water monitoring to read, surface water monitoring, only". On October 20, 1986, a proposed asessment of 22 points and $240.00 was received. On November 11, 1986, a check was issued for $240.00 to the Division.

T13S, R7E (Continued)

Section 20: NE 1/4 NE 1/4, Less 1.29 acres to Milton E. and Calvin K. Jacob.

Section 21: That portion of N 1/2 NW 1/4 and N 1/2 NE 1/4 lying North of the Centerline of Broads Canyon Creek.

June 27, 1973, the lease was assigned from the North American Coal Corporation to Kanawha and Hocking Coal and Coke Company. A renewal of this lease in favor of Kanawha and Hocking Coal and Coke Company was issued May 1, 1974, for a period of ten (10) years. A sublease of the lease was entered into January 1, 1978, between Kanawha and Hocking, and Valley Camp of Utah, Inc.

U. S. Coal Lease U-47974

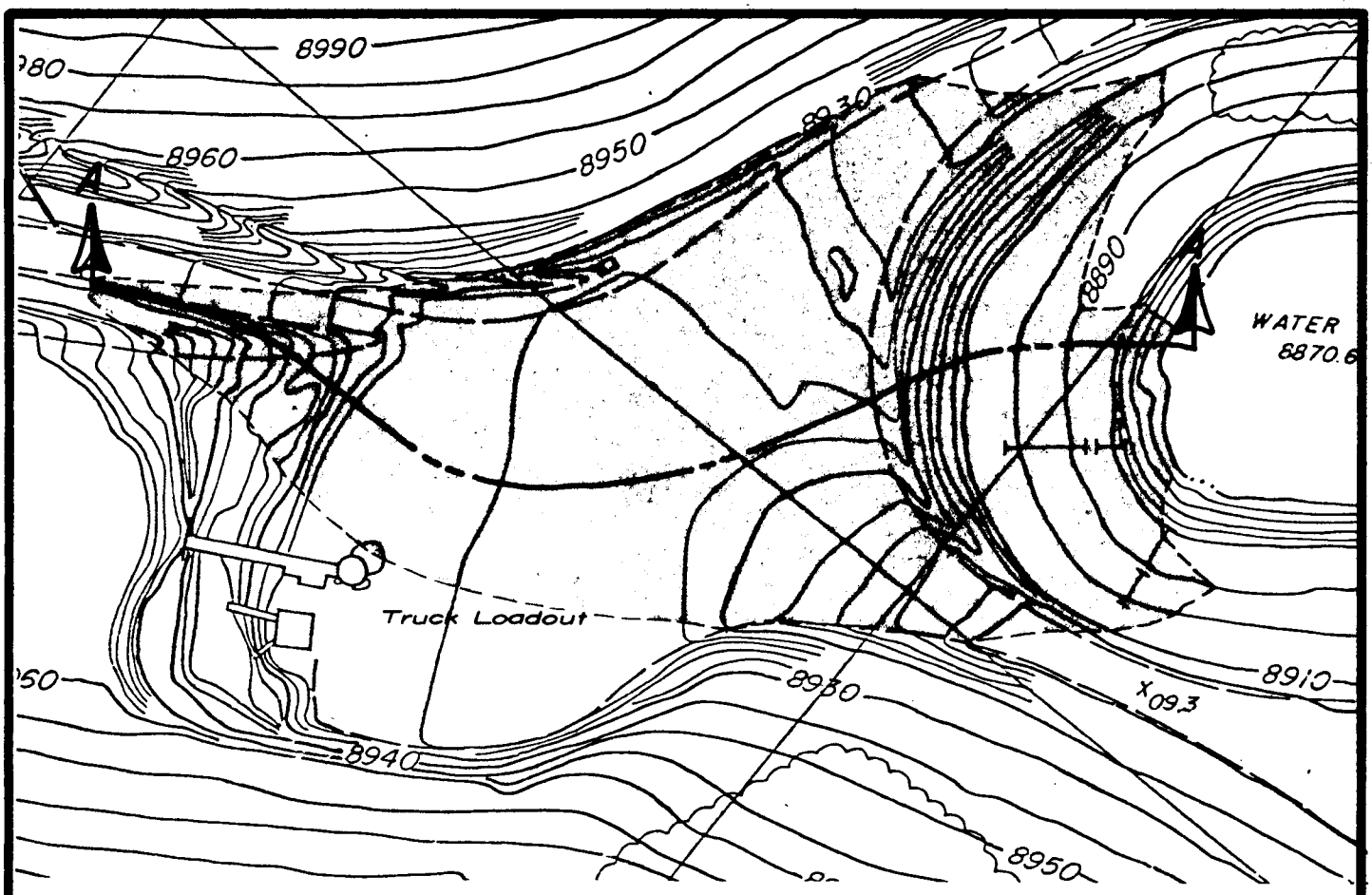
This lease was issued to Kanawha and Hocking Coal and Coke Company effective December 1, 1981. Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc., and the necessary lease required for mining privileges will be entered into prior to the initiation of mining activities on this lease.

All the documents necessary to accomplish this transfer are of record, and have been approved by the Bureau of Land Management.

U. S. Coal Lease U-47975

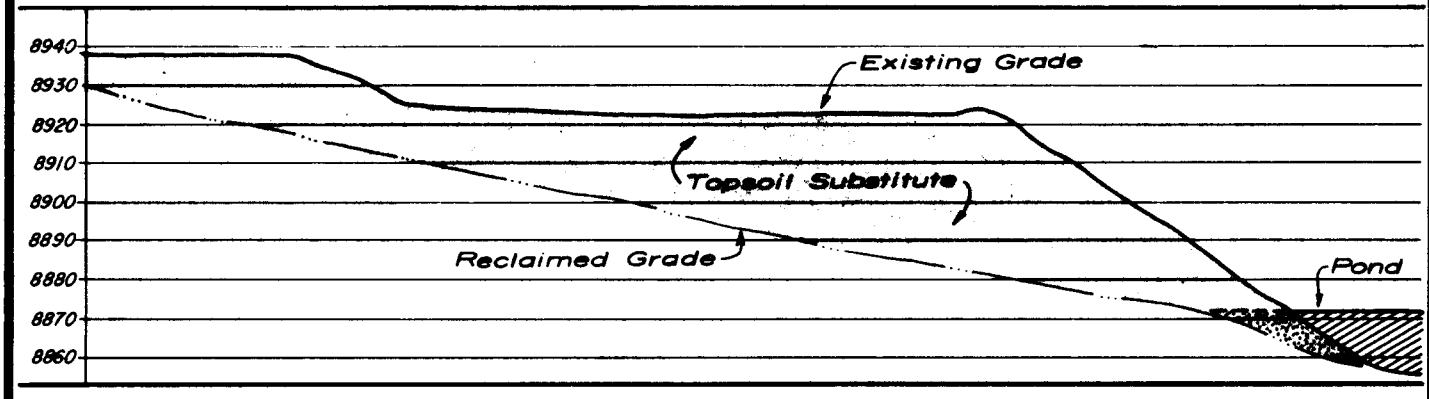
This lease was issued to Kanawha and Hocking Coal and Coke Company effective December 1, 1981. Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc., and the necessary lease required for mining privileges will be entered into prior to the initiation of mining activities on this lease.

All the documents necessary to accomplish this transfer are of record, and have been approved by the Bureau of Land Management.



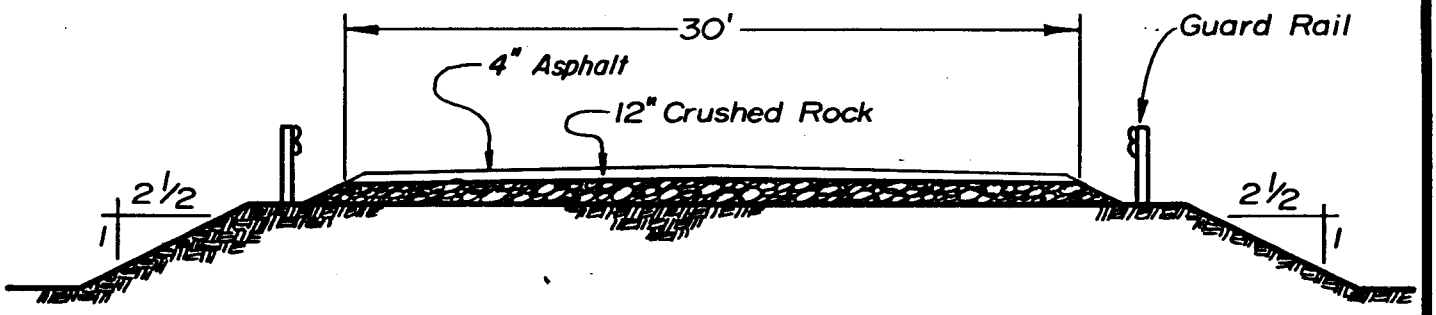
PLAN VIEW
SCALE: 1"=100'

Approx. Topsoil Substitute = 54,000 Tons

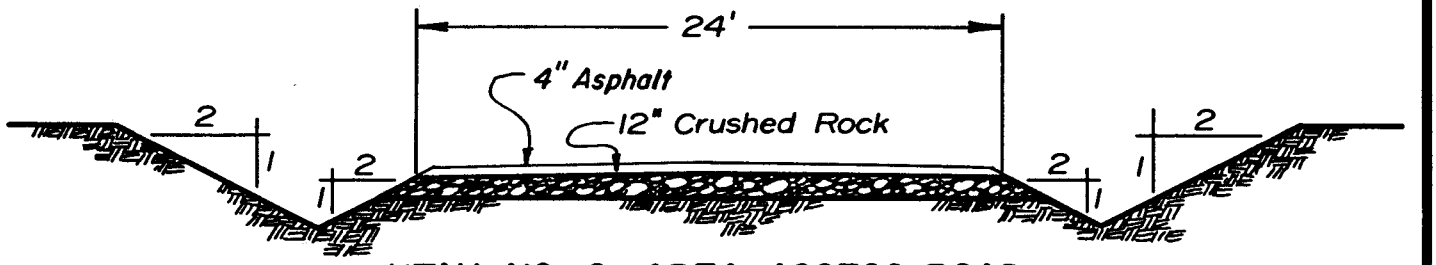


SECTION A-A
SCALE: Horz. – 1"=100'
Vert. – 1"=50'

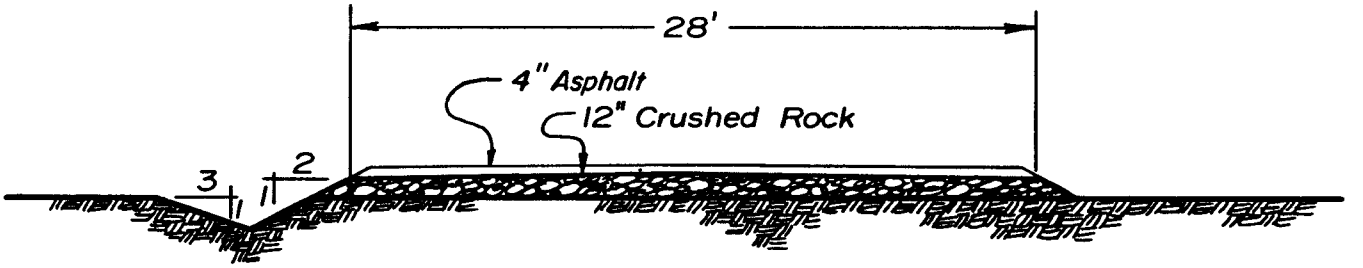
DRAWN BY: Ed Sanderson	DATE: Oct. 13, 1983	**VALLEY CAMP of UTAH** **SCOFIELD ROUTE** **HELPER, UTAH 84526**	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: "As Noted"		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: BELINA SUBSTITUTE TOPSOIL AREA	DRAWING NO. A5-0075	REV. NO. 0
APPROVAL MINE:			



UTAH NO. 2 AREA ACCESS ROAD
CROSS SECTION



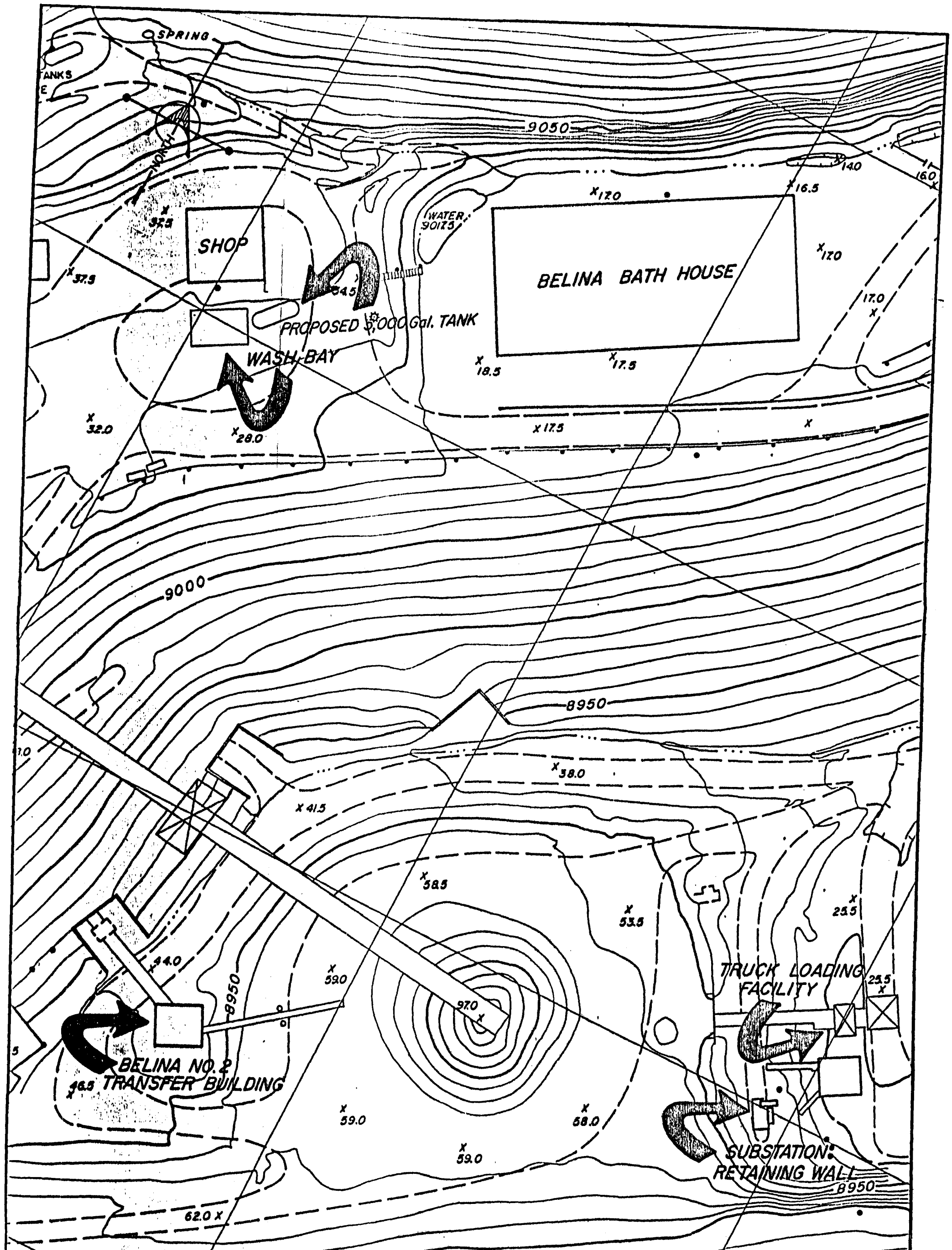
UTAH NO. 2 AREA ACCESS ROAD
CROSS SECTION



OFFICE & WAREHOUSE ACCESS ROAD
CROSS SECTION

Fig. 3-32

DRAWN BY: Ed Sanderson	DATE: Sept. 12, 83	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: NONE		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: UTAH NO. 2 AREA TYPICAL ROAD CROSS SECTIONS	DRAWING NO. A5-0067	REV. NO. 1
APPROVAL MINE:			



VALLEY CAMP OF UTAH, Inc.
SCOFIELD ROUTE
HELPER, UTAH 84526

TITLE: BELINA MINE COMPLEX
WASH BAY & SUBSTATION RETAINING WALL
LOCATIONS —

DRAWN BY: S. Tanner	DATE: Sept. 1986	SCALE: 1" = 50'	
CHECKED BY: T.G. Whiteside	DATE:	REV.	DATE:
APPROVAL BY: T.G.W.	DATE:	DRAWING NO. 84-0038	
APPROVAL BY:	DATE:		

Figure 3-6E

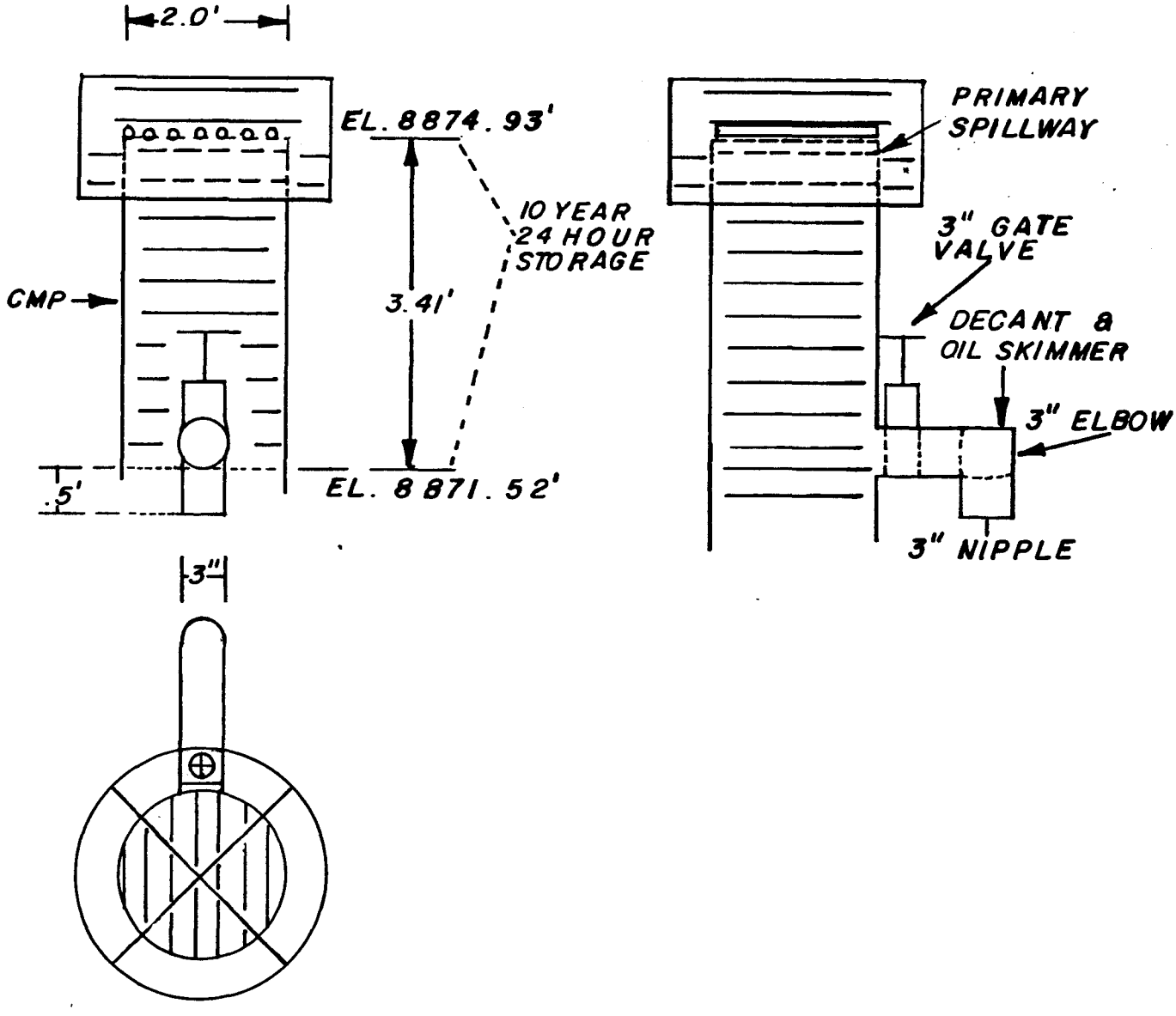
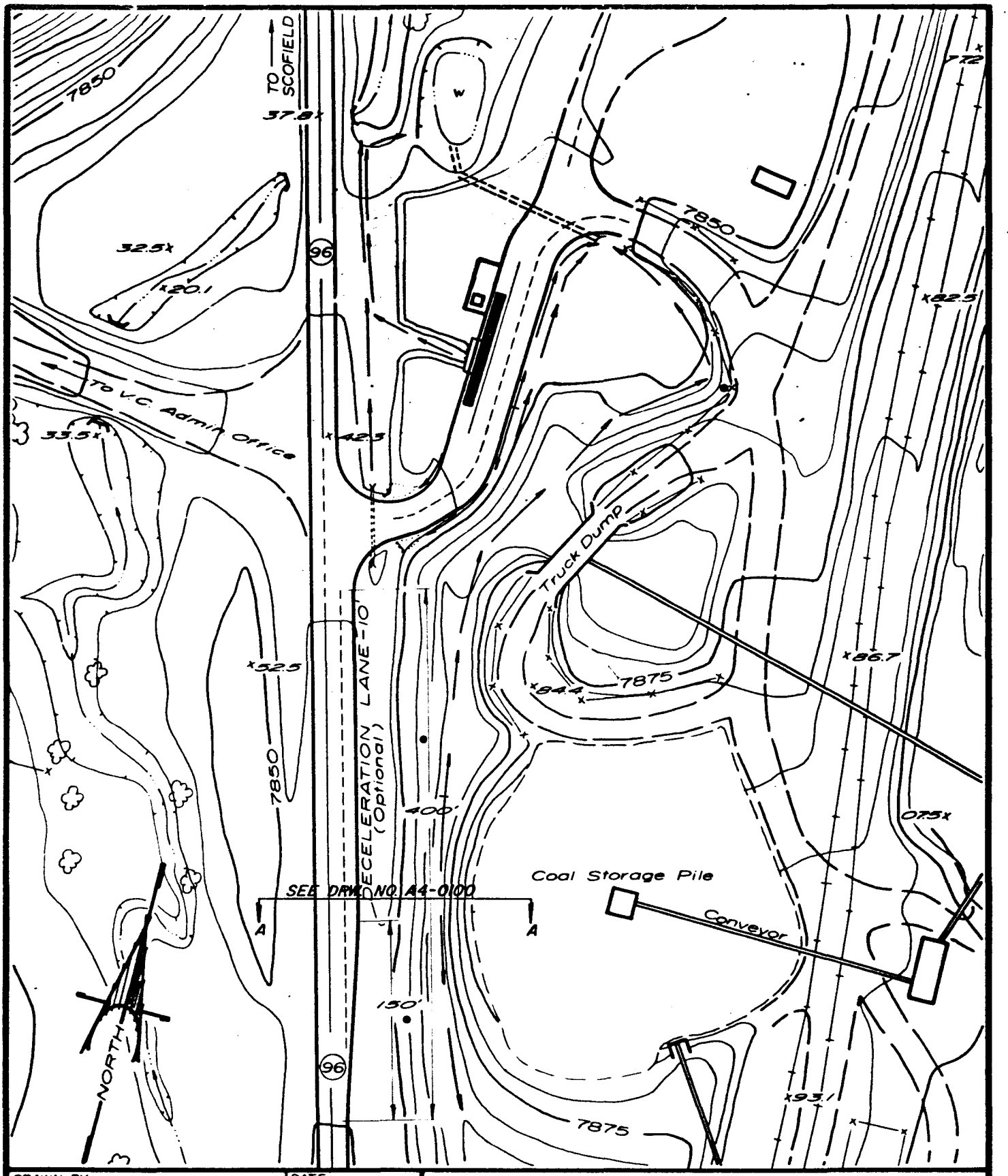


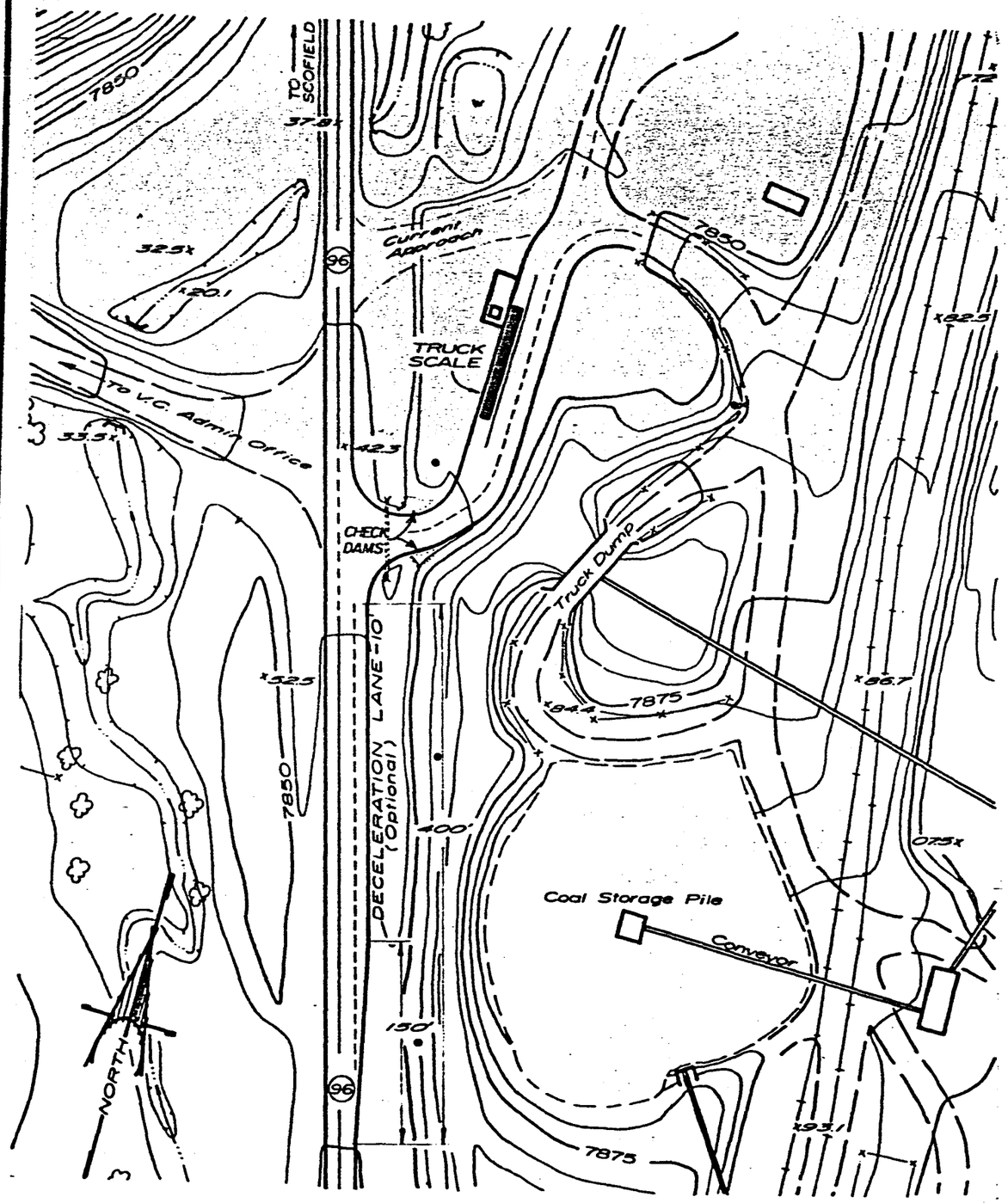
Figure 3-6E

DRAWN BY: K. PAPPAS	DATE: 11-16-84	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY: S.K.T.	DATE:		
REVISED BY:	SCALE: NONE		
APPROVAL ENG.:			
APPROVAL SAFETY:	TITLE: 004 SEDIMENT POND DECANT REVISION	DRAWING NO. A4-0092	REV. NO. 1
APPROVAL MINE:			

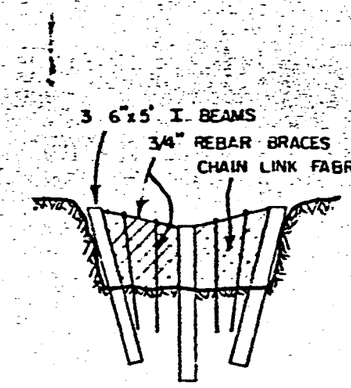


DRAWN BY: Ed Sanderson	DATE: MARCH 20, 85	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: 1" = 100'		
APPROVAL ENG:			
APPROVAL SAFETY:	TITLE: TRUCK SCALE LOCATION & APPROACH - UTAH NO. 2	DRAWING NO: A4-0056	REV. NO: 1
APPROVAL MINE:			

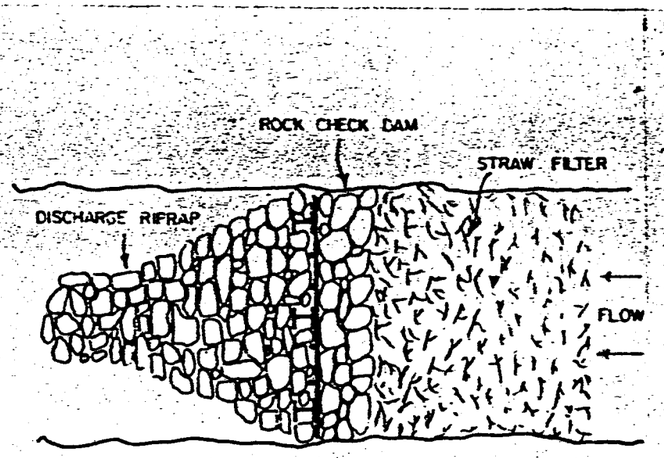
Figure 3-6G



LOCATION MAP
1" = 100'

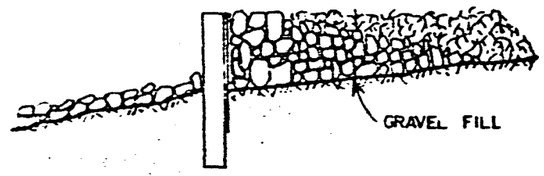


FRONT SECTION VIEW



PLAN VIEW

DETAILS: 1" = 5'

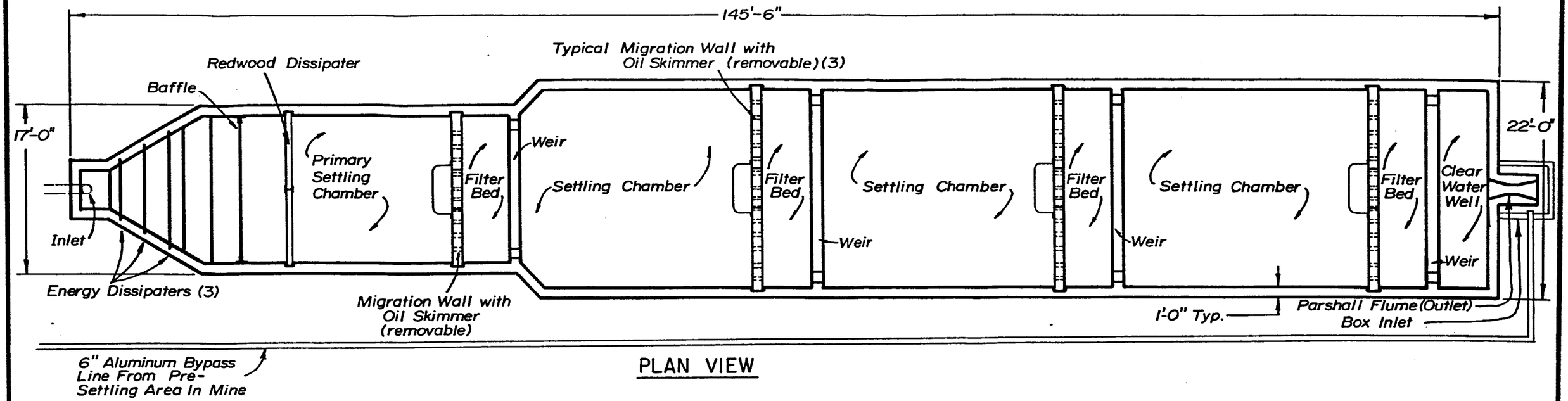


CROSS SECTION VIEW

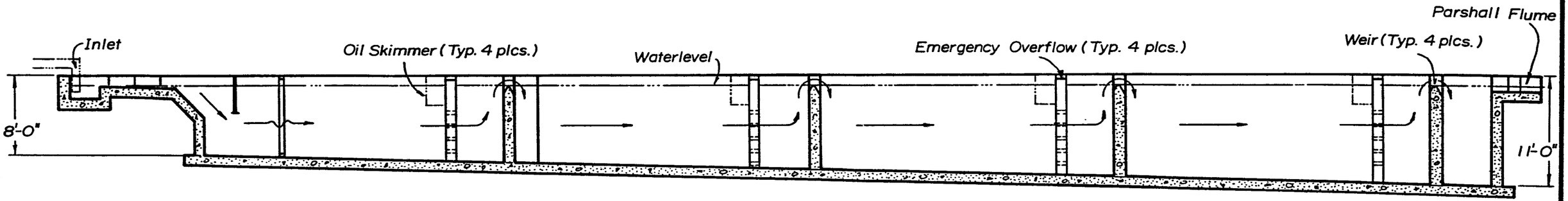
Figure 3-6D

DRAWN BY: J.A.U.	**VALLEY CAMP OF UTAH, INC.**
DATE: 7-26-84	**SCOFIELD ROUTE**
CHECKED BY:	**HELPER, UTAH 84526**
DATE:	TITLE: LOCATION AND TYPICAL DETAILS OF INSTALLED SINGLE FENCE CHECK DAMS.
APPROVAL:	SCALE:
APPROVAL:	DRAWING NO. B3-0020
APPROVAL:	

MONSEN ENG.⁹ MC703



PLAN VIEW



SECTION VIEW & FLOW DIAGRAM

Figure 3-6C

DRAWN BY: Ed Sanderson	VALLEY CAMP OF UTAH, INC.
DATE: Sept. 12, 1983	SCOFIELD ROUTE
CHECKED BY:	HELPER, UTAH 84526
DATE:	TITLE: CONCRETE FILTER POND
APPROVAL:	
APPROVAL:	
APPROVAL:	SCALE: NONE — DRAWING NO. B4-0010

10 January 1984

INTRODUCTION

This document is submitted in response to the remaining deficiencies of the Determination of Adequacy (DOA), based upon the applicant's November 18 submittal and subsequent meeting on December 1, 1983.

Valley Camp's responses are in the same sequence as the reviewer's comments were presented. In some instances, Valley Camp has submitted revised pages and/or drawings for insertion into previously submitted volumes, rather than providing new and additional responses.

A complete listing, by section, of the contents of this submittal is as follows:

783.19	Revised page nos. 783.19-1 through 783.19-4 are submitted as replacements for existing pages 783.19-1, 783.19-2, 7 and 783.19-3 in Volume VI, page nos. 15D through 15N-32 remain in place.
761.11(a)(3)/ 783.12(b)/784.17	Response submitted, insert into Volume VI.
784.13(b)(3)	Response submitted, insert behind page 10 of Volume VI.
784.13(b)(4)	Response submitted, page no. 784-13 (b)(4) replaces existing page in Volume VI. Insert page nos. 784.13 (b)(4)-1 through 784.13(b)(4)-8, and Drawing No. A5-0082. Appendix P, in its entirety, is to be replaced by new sheets dated 1/9/84 and Drawing Nos. A5-0075 and B5-0013.
784.14	Responses submitted, insert pages 13 A, B & C behind page 13 of Volume VI. Insert new page nos. 784.14-1 through 784.14-3 behind page no. 14C of Volume VI.
784.20	Response submitted, insert pages 16B, 16C and Drawing No. A5-0081 behind page 16A of Volume VI.
784.21	Response submitted, insert page nos. 17B, 17C and 17D behind page 17A of Volume VI. Insert Reclamation Map D-1, Revision 4 into map file D-1 of Volume VI.

817.46/784.16(b)(1)&(2)	Response submitted, insert page nos. 10A and 10B into Section 817.46 of Volume V.
817.52	Response submitted, insert page nos. 9B and 9C into Section 817.52 of Volume V.
817.53/817.54	Response submitted, page no. 41 of Appendix N, Volume VI has been revised and replaced by new page nos. 41 and 42.
817.97	Response submitted, Attachment 1 of Appendix M of Volume VI. Insert new pages 817.97-1, 817.97-2 and 817.97-3, (dated 1/6/84) behind page 18C of Section 817.97, Volume VI.

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817.97	Protection of Fish, Wildlife, and Related Environmental Values
817.106	Regrading or Stabilizing Rills and Gullies
817.126	Subsidence Control: Buffer Zones
817.133	Post Mining Land Use
817.13	Sealing Underground Openings
817.101	Backfilling and Grading: General Requirements
817.154	Surfacing

Appendix L -- Geotechnical

Appendix M -- Reclamation Plan

Appendix N -- Hydrology Update

Appendix O -- Cultural Sites

Maps: C-6 -- Belina Portal Area

D-1 -- Reclamation Map, Belina Area

D-2 -- Cross Sections, Belina Area

J -- Post Mining Land Use

P-1 to P-3 -- Sediment Ponds

T-1 -- Haul Road

INTRODUCTION

This document is being submitted in response to the final revised Technical Deficiency Document, which was delivered to Valley Camp on August 30, 1983.

Valley Camp's responses are presented in the same sequence as the comments in the Technical Deficiency Document were presented. The reviewer's comments are reproduced verbatim, followed by Valley Camp's responses. In some cases, Valley Camp has provided revised pages and/or maps to be substituted into the permit application documents that were submitted at an earlier date.

Appendix L, the Geotechnical Report, is not included. It will be submitted in late October. The geotechnical field sampling has been completed, but laboratory analysis, and data interpretation will take a minimum of 30 days.

Map T-1, the haul road as-built, will also be submitted at a later date. A set of design drawings for the haul road has been provided to the Utah DOGM as a temporary substitute for the as-built map.

Several responses incorporate revised materials for substitution into the existing permit application. These substitutions include:

761.11 -- Substitute pages 6I thru 6T-1 into Section 783.12 of Volume V.

782.13 -- Substitute pages 5a and 11, and Table 1-3-1, into Section 782.13 of Volume I.

Substitute page 44 into Appendix A of Volume I.

782.14 -- Remove and discard apges 2A thru 2H of Section 782.14 of Volume V.

782.15 -- Substitute pages 17, 17A, 18, and 22 into Section 782.15 of Volume I.

782.21 -- Substitute pages 37 and 38 (Figure 1-8) into Section 782.21 of Volume I.

783.19 -- Substitute pages 15D thru 15N-32 into Section 783.19 of Volume V.

783.21 -- Substitute pages 83, 83A, and 83B into Section 783.21 of Volume II.

784.11 -- Substitute the revised "Operations Plan" for the existing plan, Section 784.11 of Volume III.

784.12 -- Substitute the revised Map C-6 for the existing map in Volume IV.

Substitute Figure 3-3 and add Figures 3-6a, 3-6b, and 3-6c to Section 784.12 of Volume III.

784.13 -- Substitute revised Maps D-1, D-2, and J for the existing maps in Volume IV.

Add Figure 3-9a to Section 784.13 of Volume III.

784.15 -- Substitute the revised Reclamation Plan: Post Mining Land Use text for the existing Section 784.15 of Volume III.

784.16 -- Add Maps P-1 thru P-3 to Volume IV.

784.24 -- Substitute the revised Transportation Facilities text for the existing Section 784.24 of Volume III.

Add the Section 784.25 provided to replace the Section 784.25 discarded when the original Section 784.24 was removed.

INTRODUCTION

This document is submitted in response to the "Remaining Permit Application Package (PAP) Inadequacies" as delivered to Valley Camp on October 14, 1983.

Valley Camp's responses are presented in the same sequence as the comments in the Technical Deficiency Document were presented. The reviewer's comments are reproduced verbatim, followed by Valley Camp's responses. In some cases, Valley Camp has provided revised pages and/or maps to be substituted into the permit application documents that were submitted at an earlier date.

Appendix L of Volume VI, Geotechnical Report, is included in this submittal for insertion into that volume.

A complete listing of each section, found in the PAP, follows with comments.

761.11- - - - -No response offered at this time as per instructions.

782.13- - - - -Response submitted, substitute page 5a (782.13(c)-1) into Section 782.13 of Volume I.

782.14- - - - -Response submitted, substitute pages 14 through 16L into Section 782.14 of Volume I.

782.15- - - - -Response submitted, substitute page 782.15-2 into Section 782.15 of Volume VI.

782.17(b)- - - Response submitted, substitute Map Nos. B-2 and B-3 into Envelope Nos. 5 and 6 of Volume IV. Discard the original 200 scale maps.

Substitute pages 782.17-1 and 2 into Section 782.17 of Volume VI.

Substitute page 6 into Section 784.11, of Volumes III and VI.

782.19- - - - -Response submitted, substitute pages 4C and 4I into Section 782.19 of Volume V.

783.19- - - - -Response submitted, substitute page 783.19-3 after 783.19-2, Section 783.19 of Volume VI.

783.22- - - - -Response submitted.

784.11- - - - -Response submitted.

784.13- - - - -Response submitted.

784.13(b)(4)- -Response submitted, insert page 784.13 (b)(4)-2 into Section 784.13 of Volume VI.

784.13(b)(5)- -Response submitted.

784.14- - - - -Response submitted.

783.15/784.14 -Response submitted, substitute Revised Map C-5 into Envelope 10 of Volume VI. Remove and discard existing C-5 map.

Substitute page 783.15/784.14-4 into Section 783.15 of Volume VI.

784.15- - - - -Response submitted.

784.20- - - - -Response submitted.

784.21- - - - -Response submitted.

817.97- - - - -Response submitted.

784.22- - - - -Response submitted, insert Figures 3-35 and 3-36 into Section 784.22 of Volume VI.

Substitute page 784.22-2 into Section 784.22 of Volume VI.

784.23- - - - -Response submitted, insert page 18 into Section 784.12 of Volume VI.

817.54- - - - -Response submitted.

Additional information included in this package are revisions for Sections 817.101 and 784.15 of Volume VI. Although not specifically requested in the PAP, these revisions were necessitated as a result of telephone conversations with OSM personnel and submittal of the Morrison-Knudsen report.

784.15- - - - -Substitute page 784.15-2 into Section 784.15 of Volume VI for the existing page.

817.101- - - - Substitute page 817.101(b)(4)(iii) into Section 817.101 of Volume VI for the existing page.

UMC 783.12 GENERAL ENVIRONMENTAL RESOURCES INFORMATION

I. Background

An OSM review of the cultural resources information contained within the Permit Application of 1981 identified nine significant deficiencies which required the submittal of additional information. The list of deficiencies was transmitted by OSM to the Utah Division of Oil, Gas, and Mining (UDOGM) on December 4, 1981, and UDOGM transmitted the comments to the applicant on June 15, 1982.

The apparent completeness review conducted by OSM in 1981 was thorough, and all deficiencies in the application appear to have been identified. The applicant's response to two of the nine deficiencies (May 11, 1982) is, however, inadequate. Additional information, as described below, will be required to allow OSM to comply with Section 106 of the National Historic Preservation Act as outlined in 36 CFR Part 800. In addition, the applicant's response contains information which contradicts certain statements made in the application. Clarification of the discrepancies will be necessary to ensure that OSM has met its responsibilities to identify and evaluate all cultural resources under Executive Order 11593.

II. Adequate ACR Responses

The applicant has provided adequate responses to ACR Items 1, 2, 3, 6, 7, 8, and 9. However, inconsistencies in the responses Items 1, 2, 4, and 7 should be corrected (see Section III, below). The adequate responses fulfill the requirements of 30 CFR 783.24(i) and fulfill, in part, the requirements of UMC 783.12(b).

III. Inadequate ACR Responses

Item No. 4 of the ACR directs the applicant to conduct a sample inventory of the area that will be subject to subsidence. A report of this investigation must be submitted.

The applicant's response appears to be an argument that the surface terrain within the area above the underground workings is, for the most part, so severe that Cultural site occurrence is precluded. The possibility that archaeological sites will occur on ridge crests is acknowledged. However, Map D5-0063 shows moderate terrain over the underground mining area, and there are numerous loci in which cultural sites could occur.

OSM requres that a sample survey be conducted of the subsidence area to identify cultural sites (either a random or nonrandom sample). Therefore, if there are areas in which the likelihood of site occurrence is extremely low (e.g., steep, forested slopes) these areas may be excluded from consideration in the survey. Random or nonrandom sampling designs and the exclusion of any areas from consideration in the survey should be explained and justified in the inventory report.

The objectives of the survey are to estimate the frequencies and locations of certain types of sites that may be damaged through subsidence. Types of sites that are sensitive to the effects of subsidence include rock art, rock shelters, and historic or prehistoric structures. If previous surveys indicate that these types of sites are infrequent in the region, a "declaration of negative findings" may be submitted in lieu of an inventory report. The statement must adequately justify the opinion that sensitive sites will not occur in the subsidence areas, and should substantiate that environmentally comparable areas of sufficient size have been examined to support the declaration. Specifically in regard to the Belina Mines, mostof the reported sites are historic structures. The applicant should therefore explain why this sensitive site type is not expected to occur within the subsidence area. The presence or absence of surface formations conducive to the occurrence of rock art sites or rock shelters should also be discussed.

The applicant should be reminded that a subconsultant retained to conduct a pedestrian survey must hold a valid Forest Service Cultural resources permit for Manti LaSal National Forest, since the inventory will be conducted on National Forest System lands. If an inventory report is prepared, it must contain sufficient information for OSM to seek Determinations of Eligibility and Effect for all sites recorded in the subsidence area.

Item No. 5 of the ACR requests clarification of the eligibility for nomination to the National Register of Historic Places for the recorded cultural sites within and immediately adjacent to the permit area. The applicant has provided documentation of ineligibility for site 27OU/1 and 27OU/2. Site 381N/4 is located well beyond the permit area and therefore, is not of concern in the approval of this permit application. However, the issue of eligibility is still unclear for three recorded sites. The applicant's response indicates that 381N/1 has the greatest potential of all the sites for nomination and that 381N/2 and 381N/3 could yield information significant to areal history. Unclear positions such as these render it impossible for OSM to seek Determinations of Eligibility for the sites within and adjacent to the permit area. The applicant should supply a justified statement of eligibility or ineligibility (not potential eligibility) for sites 381N/1, 381N/2 and 381N/3 or to outline the investigations that will be necessary to assess site eligibility. (Note: Although all three sites are apparently located outside the direct impact areas, and therefore will not be affected), it is recommended that OSM seek Determinations of Eligibility and Effect to ensure that eligible sites are treated property in the future, and/or that ineligible sites be removed from the applicant's future concern.

IV. Inconsistencies

The applicant should clarify the following inconsistencies:

(1) The inventory report submitted as Appendix C of the application states that crew members were spaced 15 to 25 m. apart, whereas the response claims that personnel were 10-15m apart.

(2) The narrative response to Item 1 states that part of the loadout and the southern extreme of the conveyor in section 30 have not been examined. However, Map D5-0063 shows that all impact areas are contained within the survey area. The survey area dipicted on Map D5-0063 appears to encompass the Belina Road Modification and Utah #2 portals. If the survey area is changed, additional pedestrian survey may be required to assure adequate coverage of these impact areas.

(3) The response to Item 6 claims that certain prehistoric sites could be obscured by vegetation yet the response to Item 7 claims high (80 percent) ground surface visibility that would allow any significant sites to be noted. The applicant's consultant is claiming that ground cover, in part, explains why prehistoric sites weren't recorded during the inventory, then claiming high ground surface visibility to support the adequacy of the field methodology. Clarification should be required. This information, which deals with the quality and thoroughness of the inventory, is necessary to allow OSM to meet its responsibilities under EO 11593 to ensure that all cultural resources within the area of impact were identified and recorded.

COMMENTS

The applicant is somewhat unsure as to the specific response desired in this section. The format is confusing and the reviewer duplicates concerns in two sections, II and IV. A response is given as direct as possible in consideration of such convolution.

The following pages have been prepared for response to Item numbers 4 and 5, as mentioned in parts III and IV. Clarification concerning apparent inconsistencies are also submitted along with updated site reports for Site numbers 381N/1, 381N/2, and 381N/3.

The accompanying response pages have been numbered for ready insertion into the appropriate section of Volume V. The site reports will become Appendix O of Volume V.

4) Subsidence Zone Survey

The attached project map* demonstrates the surface area over the proposed underground workings which could be subject to disturbance from subsidence after the completion of the mining program. The majority of this area is situated within the Manti-LaSal National Forest and is characterized by steep, wooded slopes flanking a narrow mountain ridge which lies between the 9600 to 10,000 foot elevations above sea level. This ridge is 1600 to 2000 feet higher than the floor of Pleasant Valley which is about 2.5 miles below and to the east.

Since 1975, AERC personnel have conducted numerous intensive surveys in the surfaces immediately west of the Valley Camp lease area. These surveys, initiated for the Coastal States Energy Company Skyline Project, have included intensive examinations of 18 sample units situated in the Skyline subsidence zone, and numerous drill location, access road, and seismic corridor evaluations. For a complete report on these studies, see Hauck and Weder, "Archeological Surface Evaluations In The Skyline Project," AERC Paper No. 23. To date, only one isolated projectile point has been found in the steep, wooded terrain which is adjacent and identical to the terrain covered in the Valley Camp subsidence zone. Our research demonstrates the paucity of cultural resource sites in this zone. We consider that a 10% random or nonrandom sample survey of the Valley Camp subsidence zone would be of little pertinence. AERC, therefore, proposes that instead of an intensive survey of 10% of the subsidence zone, archeologists conduct a reconnaissance survey along the ridgeline in the proposed Valley Camp project area. If historic or prehistoric sites of significance are situated within the subsidence zone, they will be upon the 9600 to 10,000 foot elevation ridgeline. A reconnaissance survey would most adequately locate and document such sites if they exist. We believe that further sample surveys in the region cannot be justified based upon the results of our past evaluations.

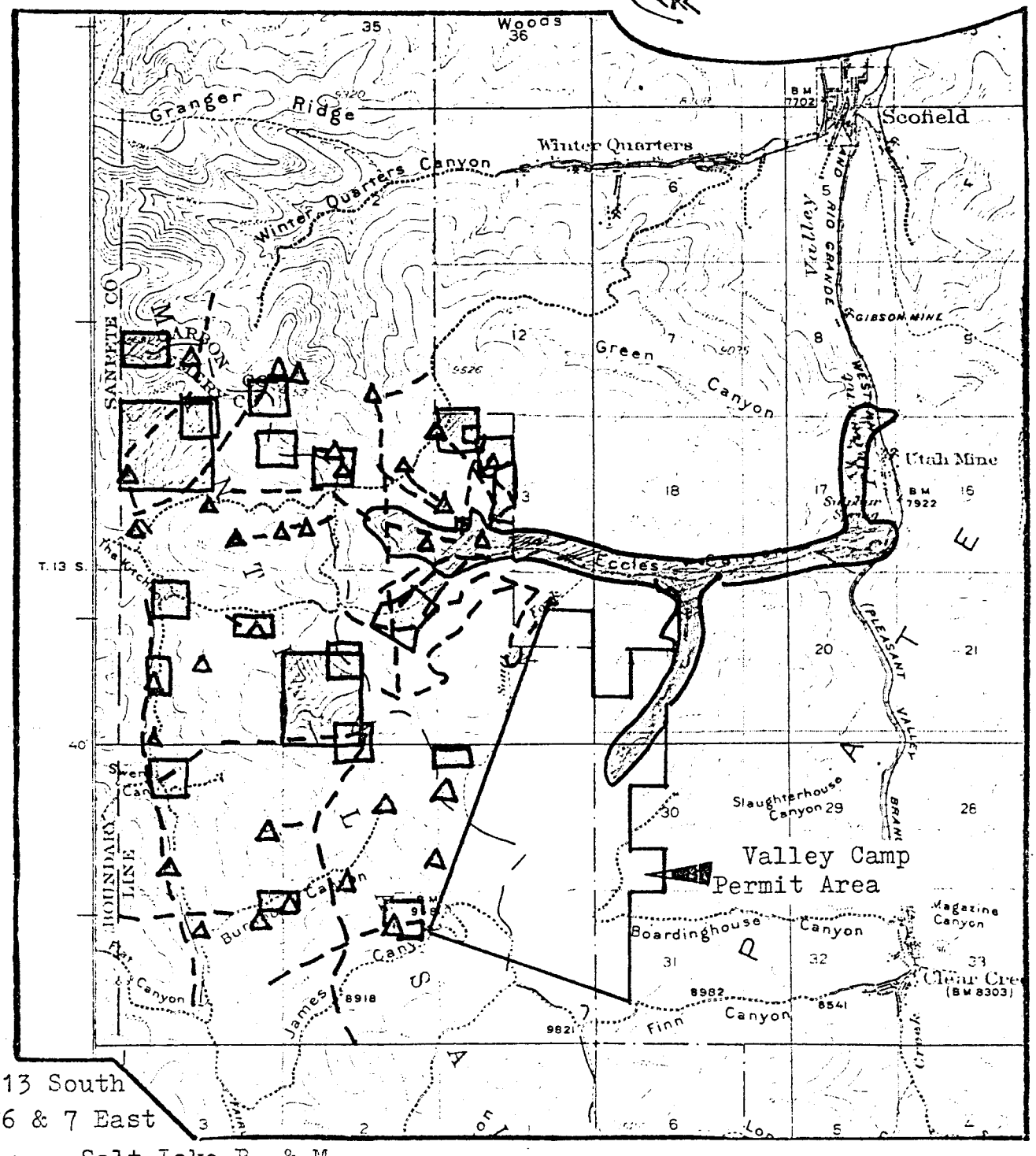
* See Coal Map B in Volume IV.

To emphasize this assessment, a map showing the adjacent surfaces which have been intensively evaluated by AERC personnel since 1975, has been attached. The Eccles Canyon survey for Coastal States Energy Company is shown along with the Valley Camp 1980 evaluation into Whiskey Canyon. Large squares (2) show the locations of two intensive 160 acre survey areas which were accomplished by AERC in 1977 under the Central Coal Contract for the USGS. Smaller rectangles and squares are the locations of AERC's sample survey in the Coastal States permit area subsidence zone. The triangles mark the location of exploratory well locations which have been evaluated by AERC since 1975. The corridors shown on the map are the locations of seismic line routes or access roads.

Seven cultural resource sites were recorded during the course of this field work. Six of the seven are historic and are situated in the lower elevations of Eccles Canyon (AERC 270N/1, 270U/1, 270U/2) and Pleasant Valley (AERC 381N/1, 381N/2, and 381N/3). All six have been discussed in the archeological reports relative to the Valley Camp mine application. The seventh site, a prehistoric lithic scatter, was recorded in the lower elevations to the west of Skyline Ridge during the Coastal States sample survey. That site (42Em1306) is not relevant to the Valley Camp permit application except to demonstrate the paucity of prehistoric sites in the general area. One isolated projectile point has been found in the upper elevations of the Coastal States permit area which flanks the Valley Camp permit area on the west.

Based upon these negative results and after having spent hundreds of man hours in these upper elevations, AERC believes that further sample surveys are neither necessary nor cost effective and submits this data in justification of a "declaration of negative findings." Furthermore, no sensitive, significant historic sites similar to those existing in the lower elevation of Eccles Creek or Pleasant Valley exist in the higher elevations associated with the

ARCHEOLOGICAL · ENVIRONMENTAL RESEARCH CORPORATION



T. 13 South
R. 6 & 7 East
Meridian: Salt Lake B. & M.

Quad: Scofield, Utah
15 minute - USGS

Project: VCU-83-1
Series: Central Utah
Date: 9-8-83

Intensively Evaluated Areas Adjacent to the Valley Camp Permit Area in Carbon & Emery Co.s

Legend:
Surface Parcels
Corridors

N

0 1 2 M.
0 1 2K.
Scale

Valley Camp Mine permit application due to the difficult environmental conditions. The steepness of the slopes and the brutal weather conditions that exist nine months of the year precluded historic occupations sites or industrial developments on a large scale. Small temporary sheepherder campsites may exist on the exposed upper summits of the ridges, but these sites, if present, are of doubtful significance and could be found by reconnaissance survey rather than a sample survey. Finally, the potential for subsidence sensitive prehistoric resources, I. E., rock art and rock shelter sites, whould be addressed. Rock art and rock shelter sites require exposed bedrock ledges and colluvial slopes. The mountains in the general Scofield region are steep but rarely contain rock outthrusts or colluvial slopes. The slopes are covered by soils which have been secured by vegetation so that active erosion channels are not frequently observed. This lack of exposed bedrock and ledges in this region and in the Valley Camp Mine permit application area is not unique for the Wasatch Range. Similar conditions in the higher elevations can be observed for a distance of nearly 50 miles from Scofield south to Mount Baldy.

5) Site Significance

Seven cultural resource sites, all historic, are situated in the general project area. These sites include the historic Eccles Canyon mine site (AERC 270N/1), two cabin foundation sites (AERC 270U/1 and 270U/2) situated at the mouth of Eccles Canyon, the historic Utah No. 1 Mine (42Cb388-AERC 381N/1), the Green Canyon Sawmill site (42Cb389-AERC 381N/2), the Nicolitus Mine site (42Cb390-AERC 381N/3) and the historic Gibson Mine site (AERC 381N/4). Sites 270N/1 and 381N/4 are well outside the general permit area and are therefore not included in a discussion of significance relative to the Valley Camp permit application. The cabin foundation sites (270U/1 and 270U/2) are the only sites which will be adversely affected by the development of the Valley Camp transportation corridor. These two sites do not have the potential for providing information of value on the history of the region and, therefore, do not satisfy any of the National Register Criteria of Eligibility. The remaining three sites will be examined on a site by site basis. None of these three sites will be adversely affected by the mine development although all three are within the general permit area.

The Utah No. 1 Mine Site (42Cb388-AERC 381N/1)

This mine, formerly called the Mud Creek Mine, is the oldest mine in the district, for it was started between 1875 and 1880. Spieker has noted that "this mine was idle for many years after it was opened and the workings are less extensive than those of the other old mines of the district" (1931:96).

A reevaluation of the mine site was conducted on September 2, 1983, by F. R. Hauck of AERC. The site analysis was conducted in conjunction with a rerecording of the site on the current computerized site form. The existing photographic report of the site portal and service area remnants was also upgraded (see attached site report). A Smithsonian

site number has also been assigned to this historic site.

The archeologist examined the portal and remaining service area loci very carefully to determine their potential, through excavation, to provide important architectural or structural information which would be valuable in understanding the history of mining in the region. This site has lost its structural and locational integrity during the past 20 years through general dismantling, vandalism, and extensive railroad bed modification. The portals have collapsed and the entire loadout facility has been destroyed. The only architectural remains still existing on the site are low concrete footings and foundations associated with the two portals and the intermediate service zone (see photographs). Archeological excavation of these areas would produce little information of value pertaining to facility design and use. Excavation of the mine camp would produce information of marginal value.

In summary and by application of the National Register criteria for evaluation, this site lacks integrity of location, design, association and materials. Furthermore, it has marginal value resulting from its association with the earliest mining in Pleasant Valley. This site does not satisfy the criteria of having distinctive characteristics of a type, period or method of construction relative to high artistic value nor does it represent a significant and distinguishable entity. An archeological examination indicates that the site is not likely to yield important information relative to the mining history of the region through excavation. The Utah No. 1 Mine site, therefore, as a physical site, does not meet the criteria for nomination to the National Register of Historic Places.

The Green Canyon Sawmill Site (42Cb389-AERC 381N/2)

This sawmill site situated at the mouth of Green Canyon just west of the Utah No. 1 Mine site, was evidently utilized for cutting mine timbers from logs hauled to the site from the

general locality.

A reevaluation of the sawmill site was made by F. R. Hauck of AERC on September 2, 1983. The site analysis was conducted in conjunction with a rerecording of the site on the current computerized site form. The existing photographic record of the site was upgraded (see attached site report). A Smithsonian site number has also been assigned to this late historic site.

Archeological excavation of the remnants of the site would not provide valuable architectural or structural information relative to the historic development of the valley. The integrity of the site has been lost through past vandalism and the dismantling and removal of the cutting and loading machinery. Application of the National Register criteria for evaluation to this site provides negative results. The site lacks integrity of location, design, materials and association. It has no value resulting from its utilization during the late historic to early modern period of use as a service area to the local mines. This site does not satisfy the criteria of having distinctive characteristics of a type, period or mehtod of construction relative to high artistic value nor does it represent a significant and distinguishable entity. An archeological examination indicates that the mill site is not going to provide important information relative to the mining or logging development of the region. The Green Canyon Sawmill site does not meet the criteria for nomination to the National Register of Historic Places.

The Nicolitus Mine Site (42Cb390-AERC 381N/3)

This site contains three coal mine portals, a campsite, and service zones located at the junction of Eccles Canyon and Pleasant Valley. The portals were opened in the 1920s and worked for five years without commercial success.

A reevaluation of the mine site was conducted on September 2, 1983, by F. R. Hauck of AERC. The site analysis was made in conjunction with a rerecording of the site on the

current computerized site form. A series of photographs were taken of the three portals and service areas. A Smithsonian site number has been assigned to this site.

The archeologist found that excavation of the remnants of this site would provide no valuable architectural or structural information relative to the historic development of the area. The integrity of the site is marginal because of its present poor condition. The evaluation of sites indicates that the Nicolitus Mine site does not satisfy any of the four established criteria used to assess the National Register value of cultural resources. It lacks significant workmanship, integrity, association with persons of significance and artistic value. Nor is the site likely to yield information important to understanding the history of the area.

Clarifications Concerning Apparent Inconsistencies in the Archeological Report and Addendum Materials

1) The inventory report submitted as Appendix C of the application states that crew members were spaced 15 to 25 meters apart. This statement is correct. The statement in the response should be changed to read 15 to 25 meters distance between crew members.

2) The narrative response to Item 1 stating that part of the loadout and the southern extreme of the conveyor corridor in Section 30 have not been examined is not accurate. These areas were evaluated by the archeological team. All surfaces identified as having been archeologically surveyed on the ACR Map D5-0063 were examined. The statements made in the narrative response were the result of an error in communication between the archeologist and Valley Camp of Utah.

3) There is no inconsistency between the statement made in response to Item 6 claiming that certain prehistoric sites could be obscrued by vegetation and the response to Item 7 which states that "about 80% of the surveyed surfaces were partially exposed." This statement has nothing to do with 80% ground visibility and cannot be used to assume the conclusion that 80% of the permit area has surfaces that are open and visible. The surveyed areas referenced in the Item 7 statement were confined to the transportation corridor as shown in AERC Figure 2 (revised). These surfaces are some of the more moderate slopes and flats within the permit area which correspondingly have more exposed ground and more potential for resource presence. The comment in Item 6 is correct in that the more steeply wooded slopes in the permit area have surfaces obscured by vegetation, deadfall and duff (pine needle beds). These slopes have little to no potential for containing significant prehistoric cultural sites. The

grade of the slopes, lack of water resources, and exposure to periodic erosion preclude these areas from containing significant sites, e.g., occupations, quarries, or burial loci.

UMC 761.11(a)(3), 783.12(b) and 784.17 CULTURAL AND HISTORIC RESOURCES

The operator has committed in the November 16, 1983, submittal to conduct a 100% pedestrian inventory of the areas that have been selected by OSM, and indicated to the applicant on ACR Map D5-0063 in OSM's 14 October 1983 Determination of Adequacy.

An acceptable cultural resources inventory report shall be submitted to the Division of Oil, Gas and Mining; the Utah SHPO; the BLM; Manti-LaSal National Forest and OSM prior to 31 December 1984. The report shall contain a fully justified recommendation of each resource's eligibility or ineligibility for nomination to the NRHP.

If sites which may be sensitive to the adverse effects of subsidence, e.g., historic and prehistoric structures and/or structural remains, rock shelters, rock art sites, etc., are located, additional survey may be required.

If sites which may be sensitive to subsidence are located, the operator must commit to consult with the regulatory authority to determine whether mitigation measures or subsidence monitoring are necessary to either avoid adverse impacts, or determine whether the sites will be impacted by subsidence.

COMMENTS

If, as a result of the pedestrian survey performed by the applicant in 1984, sites are located which may be sensitive to subsidence, the applicant will notify the regulatory agency of such existence and request consultation for assistance in preparation of an acceptable mitigation plan.

782.13 Identification of Interests

Valley Camp of Utah, Inc., is the permit applicant and operator on the subject properties. The principal place of business for Valley Camp of Utah, Inc., is Scofield, Utah. The address is Scofield Route, Helper, Utah, 84526. The telephone number is (801)448-9420.

The legal or equitable owners of record of the areas to be affected by surface operations and facilities of Valley Camp of Utah, Inc., are shown on the Surface Ownership Map, Map A, Volume IV. A complete listing of Surface Owners and their addresses is shown in Figure 1-4.

The legal or equitable owners of record of the coal to be mined are shown on the Coal Ownership Map, Map A-1, Volume IV. A complete Coal Ownership listing is shown in Figure 1-5.

The holders of record of any leasehold interest in areas to be affected by surface operations or facilities and the holders of record of any leasehold interest to be mined are discussed and presented in detail in Section 782.15 (Right of Entry and Operation Information).

There is no purchaser of record under a real estate contract of areas to be affected by surface operations and facilities or the coal to be mined.

The resident agent of Applicant for the purpose of service of notices and orders related to operations under this application is:

W. L. Wright
President & Chief Operating Officer
Valley Camp of Utah, Inc.
Scofield Route
Helper, Utah 84526
(801)448-9456

The resident agent of Applicant pursuant to the laws of the State of Utah for service of civil process is:

C. T. Corporation
175 South Main Street
Salt Lake City, Utah 84111
(801)364-1228

Valley Camp of Utah, Inc., is a Utah corporation. The capital stock of Valley Camp of Utah, Inc., is totally owned and controlled by The Valley Camp Coal Company. The Valley Camp Coal Company's principal corporate offices are located at 206 Seneca Street, P. O. Box 900, Oil City, PA. 16301. The Valley Camp Coal Company is a corporation organized and existing under the laws of the State of Delaware. The capital stock of The Valley Camp Coal Company is totally owned and controlled by Quaker State Corporation, P. O. Box 989, Oil City, PA. 16301. Lists of Valley Camp of Utah, Inc., and its parent company's officers and directors are shown in Figures 1-2 and 1-3, respectively.

Valley Camp of Utah, Inc., has not operated any surface coal mining operation in the United States within the five years preceding the date of this application. Valley Camp of Utah, Inc., has operated underground coal mining operations during the stated time period under the same corporate name. A listing of those mines, associated permit numbers and regulatory agencies responsible for the permits is found in Appendix B, Volume I.

Kanawha and Hocking Coal and Coke Company is also a subsidiary of The Valley Camp Coal Company, and provides rights necessary for conducting mining operations by Valley Camp of Utah, Inc., through various property agreements. A listing of the officers and directors of Kanawha and Hocking Coal and Coke Company is shown is Figure 1-3-1.

The resident agent for Kanawha and Hocking Coal and Coke Company is:

Walter L. Wright
President & Chief Operating Officer
Valley Camp of Utah, Inc.
Scofield Route
Helper, Utah 84526
(801)448-9456

Valley Camp of Utah, Inc. is conducting underground coal mining operations on the subject lands pursuant to mine permit number ACT/007/014 for Utah No. 2 Mine, and ACT/007/001 for Belina No. 1 Mine, both issued by the State of Utah. Permits concerning surface mining operations being conducted by or applications pending for the applicant or persons listed in paragraph (b) (3) of Section 782.13 of the Permanent Regulatory Program for Surface Coal Mining and Reclamation Operations are listed in Appendix B.

The owners of surface areas contiguous to the proposed permit area are shown on the Surface Ownership Map, Map A, Volume IV. The names and addresses of surface owners contiguous to the proposed permit area are shown in Figure 1-4.

The rights to mine coal in the proposed Mine Permit Area are owned or controlled by Valley Camp of Utah, Inc. The names and addresses of subsurface coal owners contiguous to the proposed permit area are shown in Figure 1-5 and on the Coal Ownership-5 Map A-1, Volume IV.

The Mine Safety and Health Administration identification numbers for the subject mines are:

Belina No. 1	42-01279
Belina No. 2	42-01280
Valcam Loadout Facility	42-01995

There are no properties contiguous to the proposed permit area which are subject to any pending options or other undisclosed interests held or made by the applicant.

Figure 1-2

OFFICERS OF THE VALLEY CAMP COAL COMPANY

OFFICER	POSITION	ADDRESS
Roger A. Markle	Chairman & Chief Executive Officer	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Robert E. Olson	Vice Chairman	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Richard C. Harris	President & Chief Operating Officer	206 Seneca Street P. O. Box 900 Oil City, PA 16301
James L. Litman	Vice President of Production	P. O. Box 218 Triadelphia, WV 26059
David E. Lung	Vice President Finance & Administration Secretary & Treasurer	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Roy E. Nicely	Vice President - Marketing Assistant Secretary	206 Seneca Street P. O. Box 900 Oil City, PA 16301

Figure 1-2
(Continued)

OFFICERS OF THE VALLEY CAMP OF UTAH, INC.

OFFICER	POSITION	ADDRESS
Robert E. Olson	Chairman	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Richard C. Harris	Vice Chairman & Chief Executive Officer	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Walter L. Wright	President & Chief Operating Officer	Scofield Route Helper, UT 84526
David E. Lung	Secretary & Treasurer	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Richard K. Sager	Assistant Secretary	50 South Main, Suite 1600 P. O. Box 45340 Salt Lake City, UT 84145
John S. Kirkham	Assistant Secretary	50 South Main, Suite 1600 P. O. Box 45340 Salt Lake City, UT 84145

Figure 1-3

DIRECTORS OF THE VALLEY CAMP COAL COMPANY

DIRECTORS	ADDRESS
Lee R. Forker	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Richard C. Harris	206 Seneca Street P. O. Box 900 Oil City, PA 16301
James L. Litman	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Roger A. Markle	206 Seneca Street P. O. Box 900 Oil City, PA 16301
William J. McFate	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Robert E. Olson	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Quentin E. Wood	206 Seneca Street P. O. Box 900 Oil City, PA 16301

Figure 1-3
(Continued)

DIRECTORS OF THE VALLEY CAMP OF UTAH, INC.

DIRECTORS	ADDRESS
Richard C. Harris	206 Seneca Street P. O. Box 900 Oil City, PA 16301
David E. Lung	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Roger A. Markle	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Robert E. Olson	206 Seneca Street P. O. Box 900 Oil City, PA 16301

Figure 1-3-(1)

OFFICERS AND DIRECTORS OF KANAWHA AND HOCKING COAL AND COKE COMPANY

OFFICERS	POSITION	ADDRESS
Robert E. Olson	President	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Richard C. Harris	Executive Vice President	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Wendell H. Bolden	Vice President - Coal Reserve Acquisition	P. O. Box 218 Triadelphia, WV 26059
David E. Lung	Secretary & Treasurer	206 Seneca Street P. O. Box 900 Oil City, PA 16301
John S. Kirkham	Assistant Secretary	50 South Main, Suite 1600 P. O. Box 45340 Salt Lake City, UT 84145
Roy E. Nicely	Assistant Secretary	206 Seneca Street P. O. Box 900 Oil City, PA 16301

Figure 1-3-(1)
(Continued)

OFFICERS AND DIRECTORS OF KANAWHA AND HOCKING COAL AND COKE COMPANY

DIRECTORS	ADDRESS
Roger A. Markle	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Richard C. Harris	206 Seneca Street P. O. Box 900 Oil City, PA 16301
A. Perry Mason	206 Seneca Street P. O. Box 900 Oil City, PA 16301
Robert E. Olson	206 Seneca Street P. O. Box 900 Oil City, PA 16301

Figure 1-4

Surface Ownership of Property Affected
and Contiguous to Permit Area

(For location of these ownerships,
see the Surface Ownership Map, Map A, Volume IV)

United States of America, Dept. of Agriculture, U. S. Forest Service, 599 West Price River Drive, Price, Utah, 84501

Kanawha & Hocking Coal and Coke Company, P.O. Box 218, Triadelphia, West Virginia 26059

Milton A. & Bessie Oman, 61 South Main, Salt Lake City, Utah 84115

Jack Otani, P.O. Box 501, Clear Creek, Utah 84517

Della & Hilda Madsen, Meadow, Utah 84644

Hellenic Orthodox Church, Price, Utah 84501

Calvin Jacob, 754 S. Cherry, Orem, Utah 84057

Helen & Nick Marakis, P.O. Box 576, 150 E. 1st South & P.O. Box 805, 160 E. 1st South, Price, Utah 84501

George Telonis, c/o Angelo Georgedes, 761 N. 300 E., Price, Utah 84501

Robert & Ellen Radakovich, 340 N. 600 E., Price, Utah 84501

L. Clan Stilson, 537 South 560 East, Orem, Utah 84057

Alpine School District, 50 North Center, American Fork, Utah

Scott Cook, Fountain Green, Utah 84632

Ted Miller, c/o L. Clan Stilson, 537 South 560 East, Orem, Utah 84057

Rescu-Med, Inc., P.O. Box 1115, Provo, Utah 84601

Figure 1-4 (Continued)

Voyle & Emma Bagley, 1138 Bluebell Lane, Tempe, Arizona 85281

Louis & Anna Kosec, Route #1, Box 12, Helper, Utah 84526

Brent Bawden, 1145 South 2030 East, Price, Utah 84501

Skyline Land Company, Morris & Betty Cook, Box 232, Moroni, Utah 84646

L.D.S. Church, 336 South Third East, Salt Lake City, Utah 84111

Utah Natural Gas, c/o Mountain Fuel Supply Company, P.O. Box 11368, Salt Lake City, Utah 84111

Figure 1-5

Coal Ownership of Property Affected
And Contiguous to Permit Area

(For location of these ownerships,
see Coal Ownership Map, Map A-1, Volume IV)

Kanawha & Hocking Coal & Coke Company, P. O. Box 218, Triadelphia, West Virginia 26059

United States of America, Department of the Interior, Bureau of Land Management, University Club Building, Salt Lake City, Utah 84138

Utah Power & Light Company, P. O. Box 899, Salt Lake City, Utah 84110

Western Reserve Coal Company, Inc., c/o Dean Phillips, P. O. Box 188, Lewiston, Missouri 63452

Kaiser Steel Corporation, 300 Lakeside Drive, Oakland, California 94666

Coastal States Energy Company, Nine Greenway Plaza, Houston, Texas 77046

Noal Tanner, 2796 North Arapahoe Lane, Provo, Utah 84601

Carbon County, County Courthouse, Price, Utah 84501

Stagstead, Inc., 4301 North MacArthur, Oklahoma City, Oklahoma 73122

George Telonis, c/o Angelo Georgedes, 761 North 300 East, Price, Utah 84501

UMC 782.13 IDENTIFICATION OF INTERESTS

UMC 782.13(b)(3). The applicant states that it has only operated underground coal mines under the name of Valley Camp, Inc. in the last five years. It does not give any information on those operated by Quaker State, Valley Camp Coal Company or any of their subsidiaries. The applicant must supply this information.

UMC 782.13(c). The applicant does not give the following information on business entities listed in (a) of this section: names and addresses of their respective principals, officers, or resident agents. This information should be supplied for Kanawha and Hocking Coal Company, Kaiser Steel Corp., and Stagstead, Inc.

UMC 782.13(d). The applicant lists coal mining permits held by Valley Camp Coal Company and subsidiary companies in West Virginia subsequent to 1970 (Volume I, Appendix B). This list is not referenced in the text and does not say whether these are the only additional mines to Belina for which the company has responsibility. There is no list of coal operations for Quaker State. The applicant should identify all of the coal mining permits held in the United States, subsequent to 1970, by Valley Camp, Inc., Valley Camp Coal Company, Quaker State Oil Company and their subsidiaries.

UMC 782.13(f). The name of the mine being permitted is not given. At this point in the application (Volume I), three MSHA identification numbers are listed for Belina #1 and #2 and Utah #2. In Figure 1-7 (Volume I, 782.18-19) the two Belina numbers are listed (it appears there may be a misprint of the number for #2, section 782.13, page 11) and another for coal handling facilities. The number for Utah #2 is omitted. The applicant must list all MSHA identification numbers relating to the permit applicant under 782.13(f).

UMC 782.13(g). The applicant states that there are no properties contiguous to the proposed permit area which are subject to any pending options or other undisclosed interest held or made by the applicant. However, on 20 June 1983, Trevor Whiteside stated that the applicant has acquired two new federal leases to the east of Utah #2 and abutting Beaver Creek. The applicant should identify all properties contiguous to the proposed permit in which it has an interest.

A letter was found in Volume II, Appendix G (Regulatory Agency Correspondence) from Mary Ann Wright (UDOGM) to Glen Phillips (Golder Associates) concerning an adjacent area for Belina #1 and #2 and Utah #2, but the letter does not provide details on why the letter was necessary. Please clarify.

COMMENTS

UMC 782.13(b)(3). Quaker State has not operated coal mines in the last five (5) years. Mines operated by subsidiaries of the Valley Camp Coal Company are shown in Appendix B, Volume I.

UMC 782.13(c). The names and addresses of principals, officers, or resident agents for Kaiser Steel Corp., or Stagstead, Inc., is not required. A list of officers and directors for Kanawha and Hocking Coal and Coke Company is shown on Figure 1-3-1, Page 9a, included with this submittal. Additional information concerning Kanawha and Hocking is provided on revised Page 5a enclosed.

UMC 782.13(d). Page 5a revised, also references the additional mines for which the Valley Camp Coal Company has responsibility. The listing (found in Appendix B, Volume I) along with the mines presently being permitted by the applicant, represents all mining permits required by this section.

UMC 782.13(f). The names of all mines being permitted are shown on Page 11, UMC 782.13. Belina numbers 1 and 2 are active mines and the Utah No. 2 mine being the loadout area.

The coal handling facilities listed on Figure 1-7, UMC 782.18-19 is the Utah No. 2 mine area.

The MSHA numbers for the Utah No. 2 and Belina No. 2 mines were misprints on Page 11 of UMC 782.13. A revised Page 11 is included with this submittal.

UMC 782.13(g). At the time the mine plan was submitted, there were no properties contiguous to the proposed permit area which were subject to pending options or other undisclosed interests held or made by the applicant. Since the submittal, Valley Camp of Utah, Inc., via Kanawha and Hocking Coal and Coke Company, has acquired additional federal coal properties immediately east of the Utah No. 2 mine area. A description of these properties can now be found on revised Pages 17, 17a, and 18, Section 782.15 included in this submittal. Refer to Figure 1-1-1 enclosed. Also included, is a copy of a "letter of intent", from Kanawha and Hocking Coal and Coke Company, to enter into a lease agreement with Valley Camp of Utah, Inc., which will provide rights for development and operation of coal mines on these leases.

The letter from Mary Ann Wright to Mr. Phillips was apparently her response to Mr. Phillips' letter questioning her adjacent area designation in her June 25, 1980, letter also included in Appendix G. Additonally, in my review of Appendix G, I noticed an unsigned June 23, 1980, letter with the same subject matter as the June 25, 1980, letter. Please remove the unsigned copy.

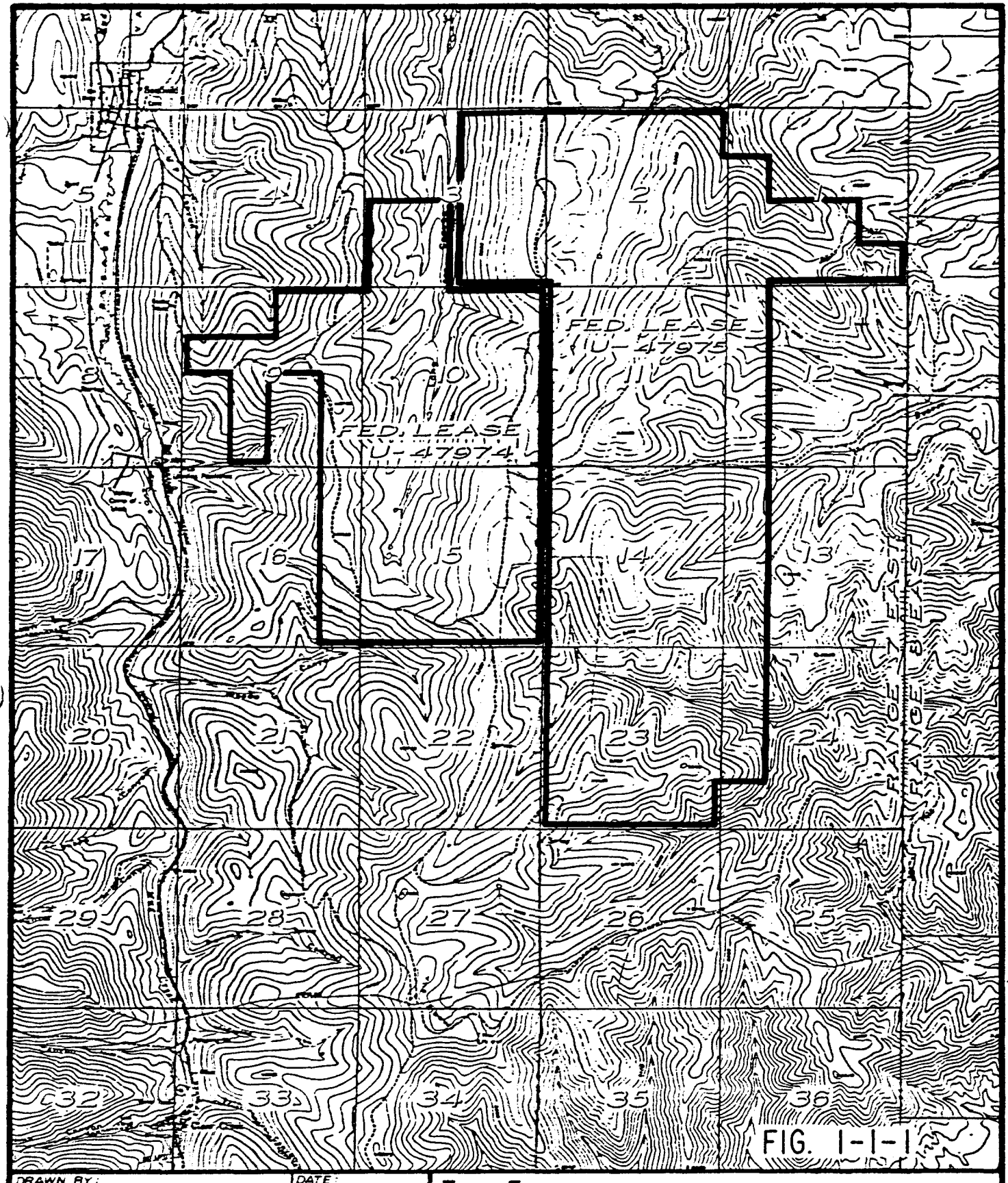


FIG. 1-1-1

DRAWN BY: Ed Sanderson	DATE: Sept. 14, 80	VALLEY CAMP of UTAH SCOFIELD ROUTE HELPER, UTAH 84526	
CHECKED BY:	DATE:		
REVISED BY:	SCALE: None		
APPROVAL ENG:			
APPROVAL SAFETY:	TITLE: MILLER CR. & GORDON CR. LEASES	DRAWING NO: A5-0069	REV. NO: 0
APPROVAL MINE:			

KANAWHA AND HOCKING COAL AND COKE COMPANY
206 Seneca Street
P.O. Box 900
Oil City, Pennsylvania 16301

September 15, 1983

Mr. W. L. Wright
Vice President - Operations
Valley Camp of Utah, Inc.
Scofield Route
Helper, Utah 84526

Re: United States Coal Leases U-47974 and U-47975

Dear Mr. Wright:

Kanawha and Hocking Coal and Coke Company is the current lessee of record of the above-captioned United States coal leases. These leases cover the coal owned by the United States in the following described lands in Carbon County, Utah:

Lease Serial No. U-47974

Township 13 South, Range 7 East, SLM, Utah

Section 3:	Lots 9, 10 N1/2SW1/4
Section 9:	NE1/4, S1/2NW1/4, E1/2SW1/4, E1/2SE1/4
Section 10:	All
Section 15:	All
Section 16:	E1/2E1/2

Lease Serial No. U-47975

Township 13 South, Range 7 East, SLM, Utah

Section 1:	SW1/4NW1/4, SW1/4, W1/2SE1/4, SE1/4SE1/4;
Section 2:	All
Section 3:	Lots 1, 2, 5-8, SW1/4NE1/4, NW1/4SE1/4
Section 11:	All
Section 12:	W1/2W1/2
Section 13:	W1/2W1/2

Section 14: All
Section 23: All
Section 24: NW1/4NW1/4, SW1/4NW1/4, NW1/4SW1/4

Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc. with both corporations having as their parent corporation The Valley Camp Coal Company. It is a customary practice in the coal industry to have separate subsidiaries for different functions within the corporation structure. In the Valley Camp structure Kanawha and Hocking Coal and Coke Company has as its primary function the ownership of real property and interests therein. The conduct of coal mining operations in the State of Utah are conducted by another subsidiary namely Valley Camp of Utah, Inc.

This letter is to inform you that Kanawha and Hocking Coal and Coke Company has acquired the leasehold estates in the above-captioned coal leases. At such time as Valley Camp of Utah, Inc. is prepared to proceed with the development and operation of one or more coal mines on the above-captioned leases, it is the intent of Kanawha and Hocking Coal and Coke Company that a sublease or subleases will be issued to Valley Camp of Utah, Inc. under terms mutually beneficial to both corporations in order to provide for development of the coal reserves contained within said leases.

Very truly yours,

John S. Kirkham
Assistant Secretary

JSK/nw
cc: R. Harris

3904K

782.14

Neither Valley Camp of Utah, Inc., or any subsidiary, affiliate or persons controlled by or under common control with Valley Camp of Utah have had a Federal or State Mining Permit suspended or revoked in the last five years.

Neither Valley Camp of Utah or any of the entities or persons referred to in this section have had a mining bond or similar security deposited in lieu of bond forfeited.

Valley Camp of Utah, Inc., has not received any violations with respect to surface coal mining operations, but has received the following violations concerning underground coal mining operations:

1. Issued by OSM on December 4, 1979, NOV No. 79-5-3-40.
   a. "Material placed on downslope below road cut", in violation of 30 CFR 211.40 (b) and 717.14 (c). No penalty points or civil penalty assessed.

   b. "Failure to maintain access and haulroads as required", in violation of 30 CFR 717.17 (j) (1) and 211.40 (b). Violation was vacated.

   c. "Failure to pass surface drainage from the disturbed areas through sedimentation ponds", in violation of 30 CFR 717.17 (a) and 211.40 (b). Violation was vacated.

2. Issued by OSM on January 8, 1980, NOV No. 80-5-18-7. "Failure to maintain culvert which drains access road", in violation of 30 CFR 717.17 (j) (3) (ii). Violation was vacated. Abatement was completed January 9, 1980.

3. Issued by OSM on June 23, 1980, NOV No. 80-5-7-15. "Failure to salvage topsoil", in violation of 30 CFR 717.20 (a). Final assessment was 29 points and no civil penalty. Abatement was completed July 22, 1980.

4. Issued by DOGM on August 7, 1980, NOV No. 80-1-3-2.
   a. "Failure to pass surface drainage from the disturbed area through a sedimentation pond", in violation of 30 CFR 717.20 (a). Final assessment was 11 points and $200.00. Abatement was completed December 19, 1980.

   b. "Failure to maintain ditches and culverts", in violation of 30 CFR 717.17(j) (3) (ii). Final assessment was 9 points and no civil penalty. Abatement was completed August 11, 1980.

5. Issued by OSM on December 10, 1980, NOV No. 80-V-15-12.

"Operating without an approved permit", in violation of PL 95-87, Section 502 (a) and 211.10 (c). Violation was vacated.

6. Issued by DOGM on June 1, 1981, NOV No. 81-2-5-2.
a. "Failure to post topsoil markers on topsoil or other vegetation supporting materail", in violation of UMC 817.11 (g). Final assessment was 24 points and no civil penalty. Violation was terminated July 9, 1981.

b. "Failure to protect topsoil from wind and water erosion, unnecessary compaction or contamination which lessens the capability of the material to support vegetation when redistributed", in violation of UMC 817.23 (b). Final assessment was 24 points and no civily penalty. Abatement was completed July 9, 1981.

7. Issued by DOGM on July 9, 1981, NOV No. N81-3-11-2.
a. "Failure to comply with terms and conditions of interim permit", in violation of UMC 771.19. Final assessment was 30 points and $400.00. Abatement was completed August 7, 1981.

b. "Failure to post perimeter markers", in violation of UMC 817.11 (d). Final assessment was 10 points and $100.00. Abatement was completed July 20, 1981.

8. Issued by DOGM on August 5, 1981, NOV No. 81-2-10-1. "Failure to comply with terms and conditions of permit-failure to minimize erosion to the extent possible", in violation of UMC 771.19 and UMC 817.45. Final assessment was 17 points and $170.00. Abatement was completed August 21, 1981.

9. Issued by DOGM on December 17, 1981, NOV No. 81-2-17-1. "Operating without a permit, failure to conduct mine operations in accordance with an approved mine plan, unauthorized disposal of underground development waste outside the permit area", in violation of UCA 1953 40-10-9 (1), UMC 771.19, and UMC 817.71 (a). Final assessment was 0 points and no fine. Abatement was completed December 17, 1981.

10. Issued by DOGM on July 21, 1982, NOV No. 82-1-9-2.

a. "Failure to operate in accordance with approved plan, failure to maintain sediment", in violation of UMC 817.46 (e), UMC 771.19 and UMC 817.45. Final assessment was 32 points and $440.00. Abatement was completed October 20, 1982.

b. "Failure to meet effluent limitations", in violation of UMC 817.41 (c). Final assessment was no points or fine. Abatement was completed before July 1, 1983.

11. Issued by DOGM on October 1, 1982, NOV No. 82-4-11-1. "Failure to maintain sedimentation ponds to prevent short circuiting and ensure that water discharged from the disturbed area complies with all State and Federal water quality limitations. Failure to meet applicable State and Federal effluent limitations", in violation of UCA 40-10-18 (2) (i) (ii), UMC 817.41 (c), UMC 817.42 (a) (7), UMC 817.42 (c) and UMC 817.46 (e). Final assessment was 10 points and $180.00. Abatement was completed October 1, 1982.

12. Issued by DOGM on April 12, 1983, NOV No. 83-1-1-1. "Failure to comply with applicable water quality effluent limitations", in violation of UCA 40-10-22, UMC 817.41 (c), and UMC 817.42 (a) (f). Final assessment was 27 points and $340.00. Abatement was completed by July 11, 1983.

13. Issued by DOGM on April 12, 1983, NOV No. 83-7-4-1. "Failure to pass all surface drainage from the distrubed areas through a sedimentation pond, a series of sedimentation ponds, or a treatment facility, before leaving the permit area. Failure to maintain sediment control facilities to prevent to the extent possible additional contributions of sediment to stream flow runoff outside the permit area", in violation of UCA 40-10-18 (2) (i) (ii), UMC 817.42 (a), UMC 817.42 (a) (f), and UMC 817.45 (i). Final assessment was 24 points and $280.00. Abatement was completed April 26, 1983.

14. Issued by DOGM on April 13, 1983, NOV No. 83-7-5-1. "Failure to post perimeter markers in a manner that clearly marks the perimeter of all areas affected by surface operations or facilities", in violation of UMC 817.11. Final assessment was no points and no fine. Abatement was completed April 13, 1983.

15. Issued by DOGM on July 26, 1983, NOV No. 83-7-6-1. "Operating without a permit, failure to conduct underground coal mining activities in accordance with an approved plan", in violation of UCA 40-8-17 (1), UCA 40-10-9, and UMC 771.19. Final assessment was . Abatement was completed September 1, 1983.

16. Issued by DOGM on July 26, 1983, NOV No. C-83-1-1-1. "Failure to meet effluent limitations", in violation of UCA 40-10-22, UMC 817.41 (c) and UMC 817.42 (a) (7). Final assessment was no points and no fine. Abatement was completed August 18, 1983.

17. Issued by DOGM on February 1, 1984, NOV No. N84-7-2-10. "Failure to meet effluent limitations", in violation of UCA 40-10-18 (2) (i) (ii) and UMC 817.42 (a) (7). Final

assessment of 82 points and $1120.00.

18. Issued by DOGM on April 26, 1984, NOV No. N84-7-6-1. "Failure to meet effluent limitations", in violation of of UCA 40-10-18 (2) (i) (ii) and UMC 817.42 (a) (7). Final assessment was 28 points and $360.00. Abatement was completed October 28, 1985.

19. Issued by DOGM on August 8, 1984, NOV No. N84-7-9-1. "Failure to meet effluent limitations", in violation of UCA 40-10-18 (2) (i) (ii), and UMC 817.42 (a) (7). Final assessment was 36 points and $520.00. Abatement was completed September 10, 1984.

20. Issued by DOGM on November 15, 1984 NOV No. N84-2-23-2. "Failure to maintain sediment control measures to function as designed", in violation of UMC 817.45 and UMC 771.19. Final assessment was 27 points and $340.00. Abatement was completed November 27, 1984.

21. Issued by DOGM on March 5, 1985, NOV No. N85-2-3-2.
    a. "Failure to maintain runoff diversions in order to pass all surface drainage from the disturbed area through a sedimentation pond", in violation of UMC 817.42 (a) (1), UMC 817.45, UCA 40-10-18 (2) (i) (ii). Final assessment was no points and no fine. Abatement was completed April 12, 1985.

    b. "Failure to maintain sediment control measures to function in accordance with approved designs", in violation of UMC 817.45, UMC 771.19, and UCA 40-10-18 (2) (i) (ii). Final assessment was no points and no fine. Abatement was completed May 6. 1985.

22. Issued by DOGM on June 27, 1985, NOV No. N85-2-10-2.
    a. "Failure to notify the Division with 5 days of receipt of analytical results of NPDES discharge samples, which indicated non-compliance with the applicable effluent limitations", in violation of UMC 817.52 (b) (i) (ii). Final assessment was no points and no fine. Abatement was completed July 12, 1985.

    b. "Failure to clearly mark buffer zone", in violation of UMC 817.11 (e) and UMC 817.57 (b). Final assessment was no points and no fine. Abatement was completed July 16, 1985.

23. Issued by DOGM on July 22, 1985, NOV No. N85-2-11-1. "Failure to meet applicable effluent limitations", in violation of UMC 817.42 (b) and UCA 40-10-18 (2) (i) (ii). Final assessment was 40 points and $420.00. Abatement was completed July 12, 1985.

24. Issued by DOGM on August 3, 1985, NOV No. N85-2-12-1.

'Conducting mining activities without a permit", in violation of UMC 771.19 and UCA 40-10-9 (1). Final assessment was 24 points and no fine. Abatement was completed April 28, 1985.

25. Issued by DOGM on January 17, 1986, NOV No. N86-8-2-1. "Failure to maintain class 1 road, and to control or minimize erosion and siltation, air and water pollution, and damage to public or private property", in violation of UMC 817.150, UMC 817.153, and UCA 40-10-18 (2) (ii) (j). Final assessment was no points and no fine. Abatement was completed Januray 30, 1986.

26. Issued by DOGM on July 18, 1986, NOV No. N86-9-8-1. "Failure to pass surface drainage through a treatment facility before leaving permit area", in violation of UMC 817.42 (a) (1), UCA 40-10-18 (i), and UCA 40-10-18 (i) (ii). Final assessment was 13 points and $130.00. Abatement was completed August 19, 1986.

27. Issued by DOGM on September 30, 1986, NOV No. N86-9-11-1. "Failure to comply with terms and conditions of the approved permit. Failure to collect water monitoring data at the approved frequency", in violation of UMC 771.19 and UMC 817.52. Final assessment was 22 points and $240.00. No abatement was required.

782.15

Valley Camp of Utah, Inc., has title to and interest in the subject coal lands by way of warranty deeds, bills of sale, assignments, leases and easements.

United States Coal Leases.

The assignments pertaining to the United States Coal Leases are listed below:

Lease No.	Associated Acreage	Issued To	Date of Issuance
U-020305	1,439.4	Emmett K. Olson	3/1/62
U-017354	1,028.5	Independent Coal & Coke Co.	1/1/62
U-044076	2,367.8	Armeda N. McKinnon	9/1/65
U-067498	501.7	Independent Coal & Coke Co.	1/1/62

These lease number and property locations can be found on the Coal Ownership Map, . The properties are described as follows:

Lease No. U-020305 1,439.4 Acres

T13S, R6E
Sec. 13: Lot 7 (SW 1/4 SW 1/4)
Sec. 14: SE 1/4 SE 1/4
Sec. 23: E 1/2 E 1/2
Sec. 24: W 1/2 NW 1/4 , SE 1/4 NW 1/4, S 1/2
Sec. 25: All Lots 1 thru 4, S 1/2 N 1/2, S 1/2
Sec. 26: E 1/2 E 1/2

Lease No. U-017354 1,028.5 Acres

T13S, R6E
Sec. 36: Lots 1 thru 4, N 1/2 S 1/2, N 1/2

T13S, R7E
Sec. 31: N 1/2 SW 1/4

T14S, R6E
Sec. 1: E 1/2 NE 1/4, NE 1/4 SE 1/4

T14S, R7E
Sec. 6: NW 1/4

Lease No. 044076 2,367.8 Acres

T13S, R6E

Sec. 26: W 1/2 E 1/2, W 1/2
Sec. 27: Lots 1 thru 4, E 1/2, E 1/2 W 1/2 (excluding Lawrence Reservoir)
Sec. 34: Lots 1 thru 8, S 1/2
Sec. 35: Lots 1 thru 7, NE 1/4, E 1/2 NW 1/4, NE 1/4 SW 1/4, N 1/2 SE 1/4

Lease No. 067498 501.7 Acres

T14S, R7E
Sec. 6: Lots 2, 6, 7, SW 1/4 NE 1/4, W 1/2 SE 1/4, E 1/2 SW 1/4
Sec. 7: Lots 1, 2, 4, E 1/2 NW 1/4

Carbon County Coal Leases

The assignments pertaining to the lease from Carbon County, Utah, are as follows:

County Lease	Associated Acreage	Issued to	Date of Issuance
Carbon Co.	361.2	North American Coal Corp.	5/1/69

The property is described as follows:

County Lease 361.2 Acres

T13S, R6E
Sec. 24: W 1/2 NE 1/4, SE 1/4 NE 1/4

T13S, R7E
Sec. 19: SW 1/4 SW 1/4
Sec. 30: W 1/2 W 1/2
Sec. 31: NW 1/4 NW 1/4

Private Coal Leases

The assignments pertaining to private coal leases are as follows:

Private Lease	Associated Acreage	Issued to	Date of Issuance
Kanawha & Hocking Coal & Coke Co.	480	Valley Camp of Utah, Inc.	8/1/74
Kanawha & Hocking Coal & Coke Co.	80	Valley Camp of Utah, Inc.	1/8/78
Kanawha &	80	Valley Camp of Utah, Inc.	1/1/81

Hocking Coal
& Coke Co.

These properties are described as follows:

Private Lease 480 Acres

T13S, R7E
Sec. 8: E 1/2 E 1/2
Sec. 9: W 1/2 SW 1/4
Sec. 16: NW 1/4 NE 1/4, NE 1/4 NW 1/4, W 1/2 NW 1/4, NW 1/4 SW 1/4
Sec. 17: NE 1/4 NE 1/4

Private Lease 80 Acres

T13S, R7E
Sec. 30: SE 1/4 SW 1/4
Sec. 31: SW 1/4 NW 1/4

Private Lease 80 Acres

T13S, R7E
Sec. 31: S 1/2 SW 1/4

The following is a general summary of the chains of title with respect to the coal leases held by Valley Camp of Utah, Inc., within the mine plan area.

U.S. Lease U-020305

A coal prospecting permit was issued to Emmet K. Olson effective March 1, 1958, on the lands covered by this lease. On December 8, 1959, an extension of the permit was requested and the permit was extended for two years through March 1, 1962. Emmett K. Olson was issued a Preference Right Coal Lease on March 7, 1962, effective March 1, 1962. An Assignment from Emmett K. Olson to Malcolm N. McKinnon dated April 24, 1962, was filed on May 1, 1962, effective August 1, 1962.

On October 29, 1975, a Sublease was entered into between Frank Armstrong and Zions First National Bank, executors of the estate of Malcolm N. McKinnon, deceased, and Armeda N. McKinnon with Routt County Development, Ltd.

Pursuant to an Exchange Agreement dated September 15, 1975, Routt County Development, Ltd., entered into a Sublease of the portion of land within the mine plan area to Energy Fuels Corporation. This Sublease was then assigned to Valley Camp Of Utah, Inc. Subsequent to that Assignment the Sublease was assigned to Kanawha and Hocking Coal and Coke Company and a subsequent Sublease was entered into between Kanawha and Hocking Coal and

Coke Company and Valley Camp of Utah, Inc. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

U.S. Lease U-017354

This lease was originally issued to Independent Coal and Coke Company effective September 1, 1956. A modified Coal Lease was issued January 1, 1962, effective September 1, 1956. This modified Coal Lease added lands applied for under Serial No. U-067374 to the above-captioned lease. By Assignment of January 2, 1968, approved effective April 1, 1968, the lease was transfered by Independent Coal and Coke Company to the North American Coal Corporation. North American then assigned this lease to Kanawha and Hocking Coal and Coke Company on June 27, 1973. A Sublease of United States Coal Lease U-017354-067374 was entered into between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. An Amendment to Sublease was entered into June 12, 1978, between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

U.S. Lease U-044076

A Coal Prospecting Permit was issued to Armeda N. McKinnon on November 1, 1960. This permit was extended for two years from November 2, 1962. On November 2, 1964, Armeda N. McKinnon filed an application for Preference Right Coal Lease and a lease was issued to her on September 1, 1965.

On October 29, 1975, a Sublease was entered into between Frank Armstrong and Zions First National Bank, executors of the estate of Malcolm N. McKinnon, deceased, and Armede N. McKinnon with Routt County Development, Ltd.

Pursuant to an Exchange Agreement dated September 15, 1975, Routt County Development, Ltd. entered into a Sublease of the portion of land within the mine plan area to Energy Fuels Corporation. This Sublease was then assigned to Valley Camp of Utah, Inc. Subsequent to that assignment the Sublease was assigned to Kanawha and Hocking Coal and Coke Company and a subsequent Sublease was entered into between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

U.S. Lease U-067498

This lease was originally issued to Independent Coal & Coke Company effective January 1, 1962. An Assignment to the North American Coal Company was made January 2, 1968, effective April 1, 1968. North American Coal Corporation assigned the lease to Kanawha and Hocking Coal and Coke Company on June 27, 1973.

Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc. and the necessary leases will be entered into prior to the conduct of any mining operations on this lease. All of the documents necessary to accomplish these transfers are of record and have been approved by the Bureau of Land Management.

Carbon County Lease

This lease was originally entered into on May 1, 1969, between Carbon County, Utah, and the North American Coal Corporation. On June 27, 1973, the lease was assigned from the North American Coal Corporation to Kanawha and Hocking Coal and Coke Company. A renewal of this lease in favor of Kanawha and Hocking Coal and Coke Company was issued May 1, 1974, for a period of 10 years. A Sublease was entered into January 1, 1978, between Kanawha and Hocking and Valley Camp of Utah, Inc.

U.S. Lease U-47974

This lease was issued to Kanawha and Hocking Coal and Coke Company effective December 1, 1981. Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc., and the necessary lease required for mining rights will be entered into prior to the begining of mining activities on this lease.

All documents necessary to accomplish this transfer are of record, and have been approved by the Burear of Land Management.

U.S. Lease U-47975

This lease was issued to Kanawha and Hocking Coal and Coke Company effective December 1, 1981. Kanawha and Hocking Coal and Coke Company is a sister corporation to Valley Camp of Utah, Inc., and the necessary lease required for mining rights will be entered into prior to the begining of mining activities on this lease.

All documents necessary to accomplish this transfer are of record, and have been approved by the Bureau of Land Management.

The right to enter federal coal leaseholds conveyed by the United States Government is confered to the lessees by the Mineral Leasing Act of 1920 and the leases themselves. The right of entry for private and county leases is provided through the individual leases.

The right to construct, operate and maintain access roads, and the right to operate and maintain coal storage and loadout facilites near the mouth of Green Canyon, together with all other uses in connection with ongoing operations of the lessee are conferred by the following:

1. A surface lease dated January 1, 1979, and entered into between and by Della L. Madsen and Robert G. and Hilda M. Hammond and Kanawha and Hocking Coal and Coke Company allows use, possession and occupancy of the subject lands for uses in connection with the performance of general business procedures by the lessee.

T13S, R7E
Sec. 19: E 1/2 SE 1/4, SW 1/4 SE 1/4, SE 1/4 SW 1/4
Sec. 20: W 1/2 SW 1/4
Sec. 29: NW 1/4 NW 1/4
Sec. 30: E 1/2, NE 1/4 NW 1/4

By a sublease effective January 1, 1981, Kanawha and Hocking Coal and Coke Company granted Valley Camp of Utah, Inc., the right to construct, operate and maintain access roads and conveyor systems over and across said lands.

2. A surface lease and right-of-way agreement dated August 14, 1975, and entered into and by Milton A. and Bessie G. Oman and Kanawha and Hocking Coal and Coke Company allows the construction, use and maintenance and other related activities of an access road; together with a right-of-way to construct, use, maintain, and other activities related to installation, use, repair, and removal of a conveyor system, electric transmission line and communication lines with poles and appurtenances, all lying within portions of Sections 17, 18, 19, 20, and 30, T13S, R7E.

Said lease also provides to the lessee, a 40 acre tract lying within portions of Sections 19, and 30, T13S, R7E, for the purpose of conducting underground coal mining operations and related activities, including, without limitation, the construction of portals, buildings, and facilities useful to such operations. The rights under this instrument were subleased in their entirety to Valley Camp of Utah, Inc., by a sublease effective January 1, 1981.

3. A surface lease and easement agreement dated August 6, 1976, and entered into and by Helen, Nick and Koula Marakis, and Kanawha and Hocking Coal and Coke Company allows the exclusive use and possession of the surface of the subject lands for access to and egress from all other properties together with all activities related to access roads and conveyor systems required for coal transportation over, in, under, across, and along leased acreage.

T13S, R7E
Sec. 8: E 1/2 E 1/2 less 2 acres, and less highway right-of-way.
Sec. 9: W 1/2 SW 1/4, less Carbon County Railway right-of-way and less Utah Power & Light Company right-of-way.

Sec. 16: W 1/2 less 0.18 acres for channel change easement.
Sec. 16: W 1/2 E 1/2
Sec. 17: E 1/2 NE 1/4, NE 1/4 SE 1/4 less 8.99 acres highway right-of-way, less LDS church property of 16.75 acres, less 1.52 acres channel change easement.
Sec. 17: That portion of S 1/2 SE 1/4 and SE 1/4 SW 1/4 lying North of Eccles Canyon Creek.
Sec. 20: NE 1/4 NE 1/4, less 1.29 acres to Milton E. and Calvin K. Jacob.
Sec. 21: That portion of N 1/2 NW 1/4 and N 1/2 NE 1/4 lying North of the centerline of Broads Canyon Creek.

By a letter agreement dated September 13, 1976, Kanawha and Hocking Coal and Coke Company transferred to Valley Camp of Utah, Inc., the rights necessary to conduct its proposed operations within the mine plan area.

4. An easement effective January 1, 1981, between Kanawha and Hocking Coal and Coke Company, and Valley Camp, grants Valley Camp the right to construct, operate, and maintain access roads, conveyor systems and an office building with related facilities on, over and within the following described lands:

T13S, R7E, SLB&M
Sec. 17: NW 1/4 NE 1/4, SW 1/4 NE 1/4, less and excluding the Kosec property containing approximately 2 acres. NW 1/4 SE 1/4
Sec. 19: NE 1/4 SW 1/4

5. An easement effective January 1, 1981, between Kanawha and Hocking Coal and Coke Company and Valley Camp of Utah, Inc., grants Valley Camp the right to construct, operate and maintain access roads, conveyor systems and railroad trackage with related facilities over and across portions of the following described lands:

T13S, R7E, SLB&M
Sec. 17: S 1/2 SE 1/4

There are no surface or subsurface rights in the permit area which are subject to any pending litigation. Surface ownership is shown on Map A.

782.17

The applicant is requesting a 5 year mining permit and the following information is supplied relevant to that period.

Mining activities will occur primarily in the southern portion of the mine permit area during this initial 5 year period. The mine permit area is shown on Maps B-2 and B-3, and is more fully described as follows: (E5-0018) (E5-0020)

"That area contained in the mine plan area lying north and east of a line extending through the center of Section 36, T13S, R6E, in a northwesterly-southeasterly direction, and being south and west of the north boundary line of the Mine Plan Area shown in Sections 8 and 9, T13E, R7E.

The mines will operate in two seams in the mine plan (permit) area. Individual mine projections are shown in 5 year increments on Map B3 (D2-0060).

	Mine No. 1	Mine No. 2
First Coal Produced	Presently producing	Upon permit approval
Horizontal Extent of Mine.	540 acres	338 acres
Vertical Extent of Mine.	0' to 1000'	0' to 1050'

The additional acreage of disturbance required for surface facilities is:

Area	Acres
Mine No. 1	None planned
Mine No. 2	None planned
Conveyor	3.0
Load-Out	5.0

The approximate total of surface area affected at the end of the permit term is 120.0 acres.

The schedule for underground advancement for each mine during the permit term is as follows, with approximate land locations indicated.

Mine No. 1

Miner Section Date Location (Section, Township, Range)

1	01/01/87 to 05/31/87	NE 1/4 NW 1/4	(36, 13S, 6E)
	06/01/87 to 11/30/87	SW 1/4 NW 1/4	(36, 13S, 6E)
	12/01/87 to 10/31/88	NW 1/4 NW 1/4	(36, 13S, 6E)
	11/01/87 to 12/31/88	NE 1/4 NW 1/4	(36, 13S, 6E)
	01/01/89 to 03/31/89	NE 1/4 NW 1/4	(36, 13S, 6E)
	04/01/89 to 06/31/89	SE 1/4 SW 1/4	(25, 13S, 6E)
	07/01/89 to 09/15/89	NW 1/4 NW 1/4	(31, 13S, 7E)
	09/16/89 to 12/31/89	SW 1/4 SW 1/4	(30, 13S, 7E)
	01/01/90 to 07/15/90	SW 1/4 SW 1/4	(30, 13S, 7E)
	07/16/90 to 12/31/90	NW 1/4 NW 1/4	(31, 13S, 7E)
	01/01/91 to 03/31/91	NW 1/4 NW 1/4	(31, 13S, 7E)
	04/01/91 to --	NE 1/4 NE 1/4	(36, 13S, 6E)
	-- to --	SW 1/4 SW 1/4	(30, 13S, 7E)
	-- to 12/31/91	SE 1/4 SW 1/4	(25, 13S, 6E)
2	01/01/87 to 05/31/87	SE 1/4 SW 1/4	(25, 13S, 6E)
	06/01/87 to 11/30/87	SW 1/4 NE 1/4	(25, 13S, 6E)
	12/01/87 to 12/31/87	NW 1/4 SE 1/4	(25, 13S, 6E)
	01/01/88 to 09/30/88	NE 1/4 SW 1/4	(25, 13S, 6E)
	10/01/88 to --	SW 1/4 NE 1/4	(25, 13S, 6E)
	-- to 12/31/88	NW 1/4 SE 1/4	(25, 13S, 6E)
	01/01/89 to 07/31/89	SW 1/4 NE 1/4	(25, 13S, 6E)
	08/01/89 to 12/31/89	NW 1/4 SE 1/4	(25, 13S, 6E)
	01/01/90 to 04/31/90	SW 1/4 NE 1/4	(36, 13S, 6E)
	05/01/90 to 12/31/90	NW 1/4 SE 1/4	(36, 13S, 6E)
	01/01/91 to 12/31/91	SW 1/4 NE 1/4	(36, 13S, 6E)
3	01/01/87 to 10/15/87	NE 1/4 NE 1/4	(36, 13S, 6E)
	10/16/87 to 12/31/87	NW 1/4 NW 1/4	(31, 13S, 7E)
	01/01/88 to 09/30/88	SE 1/4 NE 1/4	(36, 13S, 6E)
	10/01/88 to 12/31/88	NE 1/4 SE 1/4	(36, 13S, 6E)
	01/01/89 to 12/31/89	NE 1/4 SE 1/4	(30, 13S, 7E)
	01/01/90 to --	SE 1/4 NE 1/4	(36, 13S, 6E)
	-- to 12/31/90	SW 1/4 NW 1/4	(31, 13S, 7E)
	01/01/91 to 02/31/91	NW 1/4 NW 1/4	(31, 13S, 7E)
	03/01/91 to 03/31/91	SW 1/4 SW 1/4	(30, 13S, 7E)
	09/01/91 to 12/31/91	NW 1/4 NW 1/4	(31, 13S, 7E)

Mine No. 2

No advance is forecast for the duration of this permit term. In lieu of a forecast map, a current progress map is substituted for Map B-3, and is shown in this submittal as Drawing No. D2-0062.

Life of Mines Information

In addition to the permit term information, the following is generalized information for the life of the mining operations.

	Mine No. 1	Mine No. 2	Mine No. 3
First Coal Produced	Presently	Upon Permit	Unknown

	Producing	Approval	
Termination of Mining	25-30 Years	25-30 Years	10-15 Years
Horizontal Extent of Workings	2494 Acres	2600 Acres	800 Acres
Vertical Extent of	0' to 1127'	0' to 1200'	0' to 675'

The anticipated number of total acres to be disturbed by underground mining during the life of all mining operations is 3136 acres.

The approximate total of surface land acres to be affected during the life of all mining activities is 150 acres.

UMC 782.18 PERSONAL INJURY AND PROPERTY DAMAGE INFORMATION

The applicant shows insurance coverage which is sufficient, and with a notification rider but the policy expired 1 April 1983. Proof that a policy is in effect must be provided.

COMMENTS

Updated copies of the applicant's Certificate of Insurance was sent to the Division in March, 1983.

782.19

Following is a list of permits, licenses and identification numbers applicable to the mines or facilities within the permit area.

U.S. Geological Survey
2040 Administration Bldg.
1745 W. 1700 S.
Salt Lake City, UT 84138

Mining and Reclamation Plan. Approval letter dated February 10, 1977. Emphasis on mining operation and coal resources.

U.S. Office of Surface Mining
Brooks Tower, Second Floor
1020 15th Street
Denver, CO 80202

Notice of Intent to Explore. Submitted when required. Not applicable at this time because of no exploration activities.

Mining and Reclamation Plan. Included in permit application to the State of Utah. Emphasis on surface operation and reclamation.

U.S. Environmental Protection Agency
Region VIII
1860 Lincoln St.
Denver, CO 80295

Prevention of Significant Deterioration Permit. Not required as per letter dated May 7, 1980, and May 23, 1975, from Utah Dept. of Health.

Oil Spill Prevention Control and Countermeasure Plan. Plan is on file at the Mine Office. Applies to facility drainage, bulk storage tanks, transfer operations, loading and unloading.

National Pollutant Discharge Elimination System Permits. Number UT-022985 approved August 24, 1977. Processed by Utah State and approved by EPA.

U.S. Forest Service
Price, Utah 84501

Surface Distribution and Reclamation Plan. Agreement dated September 25, 1979. Emphasis on subsidence and hydrology.

Exploratory Drilling Permits. No permit at this time.

Seismic Drilling Permit. No permit at this time.

Special Use Permit. No permit at this time.

U.S. Treasury Department
Washington, D.C.

Explosive Storage and Useage Permit. When explosives are used they are obtained and handled according to state and federal regulations. Pertains to use of explosives.

U.S. Federal Communication Commission.
Washington, D.C.

License for Private Operational Fixed Microwave Radio Service. License No. 23744-IS-86 issued September 17, 1976.

Mine Safety and Health Administration
U.S. Dept. of Labor
P.O. Box 25367
Denver Federal Center
Denver, CO 80225

Operator and Contractor Safety Plans and ID Numbers. Belina No. 1 Mine - No.42-01279 issued February 12, 1976. Belina No. 2 Mine - No. 42-01280 issued February 12, 1976. Valcam Loadout Facility - No. 42-01995 issued November 13, 1986.

Roof Control Plan. Approved August 11, 1986, and reviewed every 6 months.

Ventilation System-Methane and Dust Control Plan. Approved December 31, 1986, and reviewed every 6 months.

Fan Installation Plan. Approved July 28, 1980.

Escapeway Map. Approved July 28, 1980, and updated monthly.

Fan Stoppage Plan. Approved July 28, 1980.

Firefighting and Evacuation Plan. Exercise every 90 days.

Training Program. Minimum of 8 hours refresher training per year.

Smoking Prohibition Program. Once per week for UMS 1007 record.

Emergency Medical Assitance. Castleview Hospital and private ambulance 24 hour service.

Listing of Electrical Equipment. Electrical equipment location map in Mine Office.

Safety Plan for Workmen. Company safety rules are provided.

Communications Systems Plan. Telephone and short wave pagers.

UMC 782.21 NEWSPAPER ADVERTISEMENT AND PROOF OF PUBLICATION

Valley Camp states that the newspaper advertisement of the permit application has not been placed because the application has not yet been determined to be complete. The advertisement proposed refers to a figure which is not provided in the application. This figure, Page 3, should be provided. The sentence, "Scofield is situated in Pleasant Valley and is accessible by an all-weather road, State Highway 96" appears to be misplaced and out of context with the previous and following sentences. The lands described in the announcement do not match the permit area. The description of T13S R7E Section 17 is incorrect. The discrepancies in the announcement should be corrected.

COMMENTS

The applicant does not state that he has failed to advertise because the application has not yet been determined complete. In fact, the applicant advertised simultaneous with submission of the Mine Plan Permit in 1980. During the completeness review, two (2) errors were corrected and the applicant will now re-publish the advertisement.

The figure referred to can be found as Page 3 of the Introduction of Volume I. This figure will be included with the publication.

The description for Section 17, T13S, R7E has been revised for clarification and a copy of Page 5A, Volume V is included.

Paragraph number 2 on page 37, UMC 782.21, Volume I has been re-written and the entire proposed public notice, consisting of pages 37 and 38, and Figure 1-1, is included.

Proof of the re-publication of this advertisement cannot be furnished with the submittal until such time as this ad has been published for the required period of time, such proof of publication will be submitted to the Division.

Figure 1-8

PROPOSED PUBLIC NOTICE

FOR FILING UNDERGROUND MINING PERMIT APPLICATIONS

Valley Camp, Inc., wishes to advise the public that it has filed an Underground Mining Permit Application with the State of Utah Department of Natural Resources, Division of Oil, Gas and Mining, and the Office of Surface Mining Reclamation and Enforcement, United States Department of Interior. Valley Camp further advises the public of the following:

1. The full name and business address of the applicant is:

   Valley Camp of Utah, Inc.
   Scofield Route
   Helper, UT 84526

2. The Valley Camp of Utah, Inc. permit area is located in Carbon and Emery Counties, Utah, approximately 2.0 miles south of Scofield, Utah, 20 miles (50 miles by road) northwest of Price, Utah, and 110 miles southeast of Salt Lake City, Utah, (see Figure 1-1 for general area location). Scofield is situated in Pleasant Valley and is accessible by an all-weather road, State Highway 96. This highway intersects U. S. Highways 6 & 50 at Colton Junction, approximately 15 miles northeast of Scofield, Utah. From Colton Junction, U. S. Highways 6 & 50 bear northwesterly to the Interstate 15 Junction at Spanish Fork, Utah. From Colton Junction southeastward, U. S. Highways 6 & 50 follow Price Canyon to Price, Utah.

   The Valley Camp, Inc., property is located approximately 2 miles south of Scofield, and extends from Green Canyon on the north to Cox Canyon on the south.

3. The land areas contained in the permit application are more fully described as follows:

T14S R7E
Section 7 NW 1/4, and NW 1/4 of NE 1/4
Section 6 W 1/2, and W 1/2 of E 1/2

T14S R6E
Section 1 E 1/2 NE 1/4, and NE 1/4 of SE 1/4

T13S R7E
Section 31 SW 1/4, and W 1/2 of NW 1/4
Section 30 W 1/2 of W 1/2, SE 1/4 of SW 1/4, and NE 1/4 of NW 1/4
Section 21 Portions of NW 1/4 of NW 1/4
Section 20 Portions of NE 1/4 of NE 1/4
Section 19 S 1/2 of SW 1/4, NE 1/4 of SW 1/4 and portions of W 1/2 of E 1/2, E 1/2 of NW 1/4, and NE 1/4 of NE 1/4
Section 18 S 1/2 of SE 1/4, and SE 1/4 of SW 1/4
Section 17 NE 1/4 excluding portions of SW 1/4 NE 1/4 and NE 1/4 NE 1/4 N 1/2 SE 1/4 and portions of S 1/2 SE 1/4
Section 16 W 1/2 of W 1/2, NE 1/4 of NW 1/4, NW 1/4 of NE 1/4
Section 9 W 1/2 of SW 1/4
Section 8 E 1/2 of SE 1/4, and a portion of SW 1/4 of SE 1/4

T13S R6E
Section 36 All
Section 35 Portions of E 1/2 of E 1/2, and SW 1/4 of SE 1/4
Section 25 E 1/2, and portions of W 1/2
Section 24 SE 1/4 and portions of S 1/2 of NE 1/4, NW 1/4 NE 1/4, and E 1/2 and SW 1/4

4. All lands associated with this application are shown on the Scofield, Utah, 7½ minute USGS quadrangle map.

5. A copy of the application will be available for public inspection at the Carbon and Emery Counties Recorders' Office.

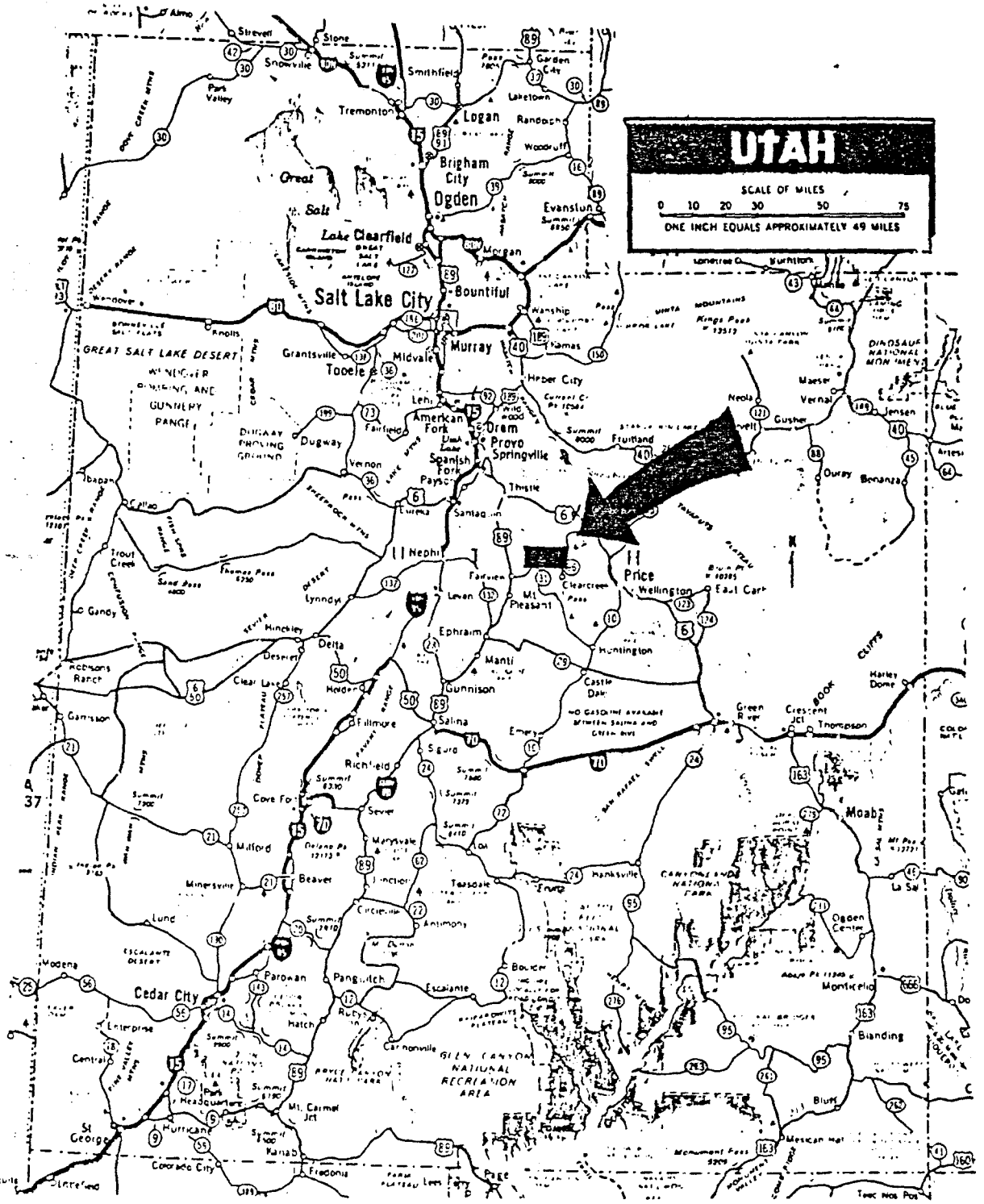
6. Written comments on the proposed application may be submitted to:

State of Utah
Natural Resources & Energy
Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Office of Surface Mining
U. S. Department of the Interior
Brooks Tower Second Floor
1020 15th Street
Denver, Colorado 80295

Figure 1-1

GENERAL LOCATION MAP OF MINE PLAN AREA
VALLEY CAMP OF UTAH, INC.



UMC 783.15/784.14 GROUND WATER INFORMATION

Utah No. 2 Mine

No information has been provided in the permit application concerning ground water resources in the vicinity of the Utah No. 2 Mine. A description of the ground water resources in this area and an assessment of probable hydrologic consequences must be provided. Please see 784.33 Operation Plan: Maps and Plans for other data required for Utah No. 2.

Areal Extent of Ground Water Systems

The description of ground water resources in the vicinity of the Belina Mine is too general, making it difficult to assess the extent of impacts which may occur to surrounding ground water resources. All ground water impacts are presented as localized with no discussion of radiating impacts around the Belina mining operation. A comprehensive analysis of water yielding zones which may provide a hydraulic connection between the mine and springs, streams, or wells must be provided.

For example, the Aberdeen Sandstone immediately below the lowest coal seam to be mined appears to be a continuous water yielding zone that could transmit ground water impacts out and away from the mine. Potential impacts of mining to this areally continuous water yielding zone has not been addressed. Similarly, faulted zones may provide a connection between the mine and springs, streams, or wells. The influence of the Connelville and O'Connor faults with respect to ground water discharge to Eccles Creek is discussed in Vaughn Hansen (1980:65-75). A seepage analysis concludes that significant stream flow changes occur where the Star Point Sandstone and the O'Connor and Pleasant Valley Faults intersect the Eccles drainage near Stations SS19-1 and SS17-1, respectively. The Connelville Fault crosses Eccles Creek in the Blackhawk Formation and apparently has a negligible influence on stream flow. The conclusion is drawn that faults in Blackhawk Formation seal up and do not transmit ground water. However, there is no clear demonstration that mining of the lower O'Connor seam will not be connected to the Star Point Sandstone via the fault zones and thereby affect ground water discharge away from the mine. A case in point exists near well W35-1 where the Star Point Sandstone is in contact with the sandstones of the Blackhawk Formation via the Valentine Fault (Vaughn Hansen, 1980:77). At this location flow rates in excess of 110 gallons per minute were discharged during drilling. In addition, Volume III of the permit application (page 40) indicated that flows as great as 200 gallons per minute were experienced in the Belina No. 1 Mine at the Connelville Fault. The possibility exists that water experienced in the Belina No. 1 Mine at the Connelville Fault was released from the Star Point Sandstone which would ultimately result in a loss of ground water discharge in the area. It should be noted that Well W10-1, located three miles northwest of the lease area, had higher piezometric heads in the Star Point Sandstone than in the Blackhawk Formation. Therefore,

at that location the potential exists for the Star Point Sandstone to flow upwards (i.e., possibly along a fault zone). The piezometric surface of the Star Point Sandstone is not evaluated in the lease area and therefore it is not known for sure whether the potential exists in the lease area for upward migration of ground water from the Star Point Sandstone.

Based on the previous discussion the following questions are justified in order to determine the potential for ground water impacts to occur considerable distances from the Belina Mines:

(1) Evaluate the stratigraphy of the Blackhawk and Star Point Formations for continuous water yielding zones such as the coal seams, fault zones, the Aberdeen Sandstone or the Star Point Sandstone that may be in hydraulic contact with the proposed mining operations. Provide supporting data (i.e., cross-sections, drill logs, etc.).

(2) Analyze the relationship of water bearing zones (connected to the mines) identified above in relation to springs or wells in the area and provide supporting information.

(3) Analyze the ground water drawdown that may occur in the laterally continuous water yielding zones identified above as a result of ground water interception in the Belina Mine and the resulting effect on ground water discharge zones (i.e., springs, seeps, wells, or base flow to streams). The decreases in ground water discharge from mining must be discussed in relation to water rights and other water uses.

(4) Evaluate potential changes to ground water quality as a result of mining.

(5) Please provide all drill logs that show the Aberdeen sandstone or the Star Point Sandstone.

(6) Provide a discussion of known effects of mining on wells or springs in the area and include all supporting data (i.e., geologic strata involved, geologic structures involved, flow of the spring, distance from the mine, change in water levels, spring flow, recovery of spring flow, or water level etc.). The effect of the Utah #2 mine on two wells and a spring must also be included in this discussion.

(7) Provide a discussion of how the Andesite dike observed in the mine influences the ground water flow system and what effect mining through the dike may have on ground water in the area.

(8) Provide a water balance for the Belina #1 and #2 mines. The water balance must include a prediction of ground water inflow to the mine and water consumption both inside and outside of the mine. It should be noted that 19 million gallons of water are evaporated annually within the Wilberg mine.

Ground Water Hydraulics

The pump testing conducted by Coastal States Energy at two different depths in a test well (Vaughn Hansen, 1980:79) does not give reliable results. The method of interpreting the pump test data (U.S. Bureau of Reclamation, 1977) calls for observations of the straight line portion of the drawdown curve. The drawdown data plotted on Figures 20 and 21 show that the drawdown had not stabilized over the 60 minutes of bailing. Therefore, the straight line portion of the curve had not been reached which violates the assumptions of the method used in this analysis. All interpretations based on this analysis are there fore not valid. *Valley Camp of Utah, Inc. must provide other reliable values for transmissivity and storativity for water bearing zones that may be affected by the Belina Mine.

Mike Bishop of the Engineering-Science staff (303) 435-4427) is awaiting a call from Dr. Hansen to discuss the concerns conveyed with respect to UMC 783.15/784.14.

Engineering-Science needs to construct geologic cross-sections to better characterize the influence of geologic structures on the ground water flow system. Therefore, Mike Bishop will contact Trevor Whiteside regarding which specific drill holes would provide the best information to satisfy this need.

COMMENTS

A "Hydrology Update" prepared by Vaughn Hansen Associates, Inc. is attached as Appendix N. It includes material which answers the questions listed above. (Note: while the entire "Hydrology Update" document is Appendix N to this document, it contains internal references to its own Appendices, i.e., Appendices A, B, and C.)

Coal will not be extracted from the Utah No. 2 mine during this 5 year term of permit. As a result, only the adjacent surface facilities (coal loadout) are described in this permit application. Related information is covered in Section 784.33.

(1) Pages 3 thru 13 of the "Hydrology Update" provide an evaluation of the Blackhawk and Star Point Formations. Cross-sections are provided in Appendix B of the "Hydrology Update".

(2) The relationship of the water bearing zones to springs and wells is identified in the evaluation of the evaluation of the Blackhawk and Star Point Formations on pages 3 thru 13 of the "Hydrology Update".

(3) The hydrologic impacts of mining are presented on pages 23-40 of the "Hydrology Update" Water rights are discussed

on pages 36-40 and shown on Plates 5 and 6. Details regarding the water rights are presented on Tables 16 thru 19 of the 1980 "Hydrologic Inventory and Baseline Study".

(4) The potential changes in ground water quality are described on pages 28 and 29 and 34 and 35 of the "Hydrology Update".

(5) The drill logs of those holes penetrating the Aberdeen sandstone are shown graphically on the cross-sections in Appendix B to the "Hydrology Update".

(6) The potential impact of mining on springs and wells is discussed on pages 23 thru 36 of the "Hydrology Update".

(7) The primary discussion of the effect of the dike on the ground waters system is on pages 8 and 9 of the "Hydrology Update".

(8) The primary discussion of the mine water balance is on pages 32 and 33 of the "Hydrology Update".

Graphic cross-sections through the Belina Mine area showing the lamprophyne dike and faults found in the No. 1 mine are included in Appendix B of Appendix N, (Drawing Nos. D1-0089 and D1-0090).

The pump testing of the Coastal States Energy test well is considered to be conservative in the sense that the effect of too short a test is to overestimate the transmissivity. The data from this test sequence is included on pages 13 thru 17 of the "Hydrology Update".

The igneous dike encountered in the Belina No. 1 mine has also been located at four (4) additional sites in or near the Mine Plan area. The five (5) locations, shown on the attached Map No. C-5, are numbered 1 through 5 for easy reference.

Site No. 1 is drill hole No. 75-25-1, located near the Skyline Mine. In this hole, the dike was encountered at a depth of 25 feet and extended to 144 feet.

Site No. 2 is within the Belina No. 1 mine where the dike was measured at 240 feet, in the South Main entries, under approximately 950 feet of cover.

Sites No. 3 and 4 are found along the Boardinghouse Canyon Road, approximately 0.5 and 1.25 miles northwest of Clear Creek, Utah, respectively. At these two (2) locations, the road runs parallel to the dike and between these points, numerous outcrops ranging from a few inches to two (2) feet in width may be observed. These outcrops are weathered to a soft micaceous sand.

Site No. 5 is found at the Old Clear Creek strip pit. Mine maps of this location indicate a series of three (3) dikes each, approximately ten (10) feet in width and all located within a 300 feet distance at this site.

UMC 783.19 VEGETATION

The applicant's response is deficient; the applicant still has not provided the requested data that demonstrates that sample adequacy has been achieved, or that the maximum number of required samples has been taken. Consequently, the applicant has not shown that the baseline vegetation data is equivalent to actual field conditions, and cannot contend that the data are representative of vegetative conditions in the mine permit area. The data provided as page 783.19-3, dated 16 November 1983, by the applicant demonstrates that more sample plots are required. The applicant has not combined the results of the reference and validation areas for three out of four locations.

Therefore, the applicant must respond to the following inadequacy originally identified in the DOA dated October 14, 1983, from OSM to Valley Camp. The inadequacy is repeated in its entirety:

> The applicant's September 16, 1983 response to this section addressed the August 9, 1983 draft version of the Determination of Adequacy (DOA) letter, and not the August 24, 1983 final version that was transmitted to the applicant on August 26, 1983. The August 24, 1983 DOA includes the following clarifications to the earlier draft:
>
> 1. Provide a statistical summary of the reference area and validation area combined data (i.e., means, standard deviation, and sample size) for cover, production, and woody plant density for each vegetation type.
>
> 2. Provide sample adequacy tests for each vegetation type using the combined reference area and validation area data for cover, production and woody plant density.
>
> NOTE: The applicant should understand that the combined reference area and validation area data are generated by adding means and sample sizes of the same vegetation type and calculating new standard deviations. The applicant must not add the standard deviations to calculate the average standard deviation.

COMMENTS

This entire section has been revised to provide the requested data. Insert attached sheet Nos. 783.19-1 through 19-4 into UMC 783.19 of Volume VI.

UMC 783.19 VEGETATION INFORMATION

Valley Camp, Inc. indicates in Figure 2-15 that sample adequacy was not achieved for cover. Information (i.e., means values, standard deviations, etc.) and formulas have not been provided for the regulatory authority to make a complete assessment of the problem. Also, the applicant has not provided documentation as to the formula and supportive data used to obtain the "Similarity Index" in Figure 2-15. The applicant should provide sufficient information to track the calculation procedures used by Valley Camp, Inc. to determine sample adequacy and similarity index and a statistical summary of the data (means, standard deviations, etc.), formulas, constants, level of confidence or accuracy, and any assumptions made that influences the data as required by UMC 771.23(b) and (c).

COMMENTS

A discussion of the formulas used for calculating sample adequacy and reference to validation area similarity may be found in Volume V, UMC 783.19, pages 15D thru 15N.

Similarity was calculated using the formulas recommended by the Office of Surface Mining and researchers such as Krebs and Harper, see also Volume II, Page 15H. The total number of species in the reference area were added to the total number of species in the validation area. This sum was divided into two times the number of species that were common to both areas in order to determine community similarity.

All of the original calculations of sample adequacy were computed to a 90 percent level of statistical confidence. The following table is presented, which adds standard deviation figures for all communities, as well as sample adequacy of the 80 percent confidence level.

Adequacy of Sample, Sample Means, and Standard Deviations for Cover Measurements of the Valley Camp Proposed Lease Area

Vegetative Type	Sample Size	Sample Mean	Standard Deviation	90% N(min)	80% N(min)
Lower Canyon Spruce-Fir					
Validation	20	48.8	42.2	201	123
Reference	20	38.5	43.2	339	206
Conveyor, Aspen Opening (nettle)					
Validation	20	157.1	40.6	18	11
Reference	20	145.3	42.6	23	14
Lower Canyon Aspen					
Validation	20	128.7	33.3	18	11
Reference	20	101.0	26.5	19	11

Conveyor Sagebrush					
Validation	30	110.3		37	
Reference	60	129.8	59.7	57	34
Whiskey Canyon Covenyor Aspen					
Validation	20	178.0	76.1	49	30
Reference	20	172.0	36.5	12	7
Whiskey Canyon Conveyor Spruce-fir					
Validation	20	56.3	48.8	202	123
Reference	20	28.8	24.8	200	122
Portal Yard Spruce-fir	20	39.4	34.4	206	125
Portal Yard Aspen	20	123.7	45.5	36	22

Statistical Summary - Sample Adequacy
of Cover Measurements
For
Reference and Validation Areas Combined

Vegetative Type	Sample Size	Sample Mean	Standard Deviation	Sample Adequacy
Lower Canyon Spruce-Fir	43	44.0	42.5	153
Aspen opening (nettle)	42	136.5	53.3	25
Lower Canyon Aspen	40	114.9	32.9	13
Conveyor Sagebrush	60	129.8	59.7	34
Whiskey Canyon Aspen	40	175.2	59.0	19
Whiskey Canyon Spruce-fir	40	42.6	40.7	149
Portal Yard Spruce-fir	20	39.4	34.4	125
Portal Yard Aspen	20	123.7	45.5	22

Note: Original vegetation communities in the portal yard no longer exist. Reference communities were sampled outside of the disturbed areas, where only 20 plots in each community type were measured. Samples were taken during 1980, prior to DOGM's development of vegetation guidelines.

Statistical Summary - Sample Adequacy
of Productivity Measurements
For
Reference and Validation Areas Combined

Vegetative Type	Sample Size	Sample Mean	Standard Deviation	Sample Adequacy
Lower Canyon Aspen	10	3.89	2.45	65
Conveyor Sagebrush	20	11.53	8.76	94
Whiskey Canyon Aspen	10	5.95	4.59	159
Portal Yard Aspen	10	7.38	3.92	46

Note: Sampling was omitted in spruce-fir communities due to a lack of meaningful ground cover. Productivity measurements are not critical until the time of comparison with revegetated areas and do not need to meet statistical adequacy until that time. Information gathered from these samples is intended to give an indication of productivity trends.

Statistical Summary - Sample Adequacy
of Tree Density Measurements
For
Reference and Validation Areas Combined

Vegetative Type	Sample Size	Sample Mean	Density per Acre
Lower Canyon Spruce-fir	20	11.70	318
Lower Canyon Aspen	20	8.85	556
Whiskey Canyon Aspen	20	13.97	223
Whiskey Canyon Spruce-fir	20	9.95	440
Portal Yard Spruce-fir	10	12.30	288
Portal Yard Aspen	10	26.30	63

Note: Original data sheets (from measurements taken in 1980) have been lost and, therefore, calculation of standard deviations and sample adequacies is not currently possible. Twenty plots were sampled in each community type except in the portal yard, where only 10 plots in each type were measured. Samples were taken in 1980, prior to DOGM's development of vegetation guidelines.

In an effort to further clarify the review of this section (UMC 783.19) revised pages 15D through 15N are also being submitted. In addition, a complete group of related tables for these pages are also enclosed. These tables are numbered 1 through 30 and pages numbered 15N-3 through 15N-32.

VEGETATION

General Description.--The Valley Camp properties and adjacent areas occur within an aspen-spruce-fir phase of the boreal forest biome, with representatives of cool deseret shrub, riparian, and, to a lesser extent, mountain brush community types present as significant though minor components.

The spruce-fir community, a type mainly of north-facing slopes is dominated by Engelmann spruce and subalpine fir, with variants supporting admixtures of aspen and wet meadow subtypes characterized by species of sedges and grasses. Often broad transitional zones occur between the dense spruce-fir forest and adjacent aspen communities. Occasionally stands of the spruce-fir type are almost entirely single species dominants due to past logging or other successional influence. In greater abundance are stands containing all age classes of both spruce and fir species. The spruce-fir type, including areas transitional into aspen, constitutes some 40 percent of the lease and general conveyor corridor area (Figure 2-14, Volume II). The forest floor is frequently subjected to dense shade promoting a near-complete lack of understory foliage. Grasses and sedges are most commonly represented by Agropyron caninum, Stipa spp., Bromus carinatus, and Carex hoodii. Principal forbs in the spruce-fir community include Arnica cordifolia, Lathyrus lanzwertii, Oxmorhiza depauperata, and Fragaria virginiana. Common understory shrubs are Rosa woosdii, Sheperdia canadensis, and Symphoricarpos oreophilus. See Appendix F, Volume II for a complete species list by community type. Some 98 species are

reported present in the spruce-fir type.

The aspen community is a forest type with Populas tremuloides as principal tree species. About 21 percent of the lease area is dominated by aspen alone; south-facing slopes and ridges are main localities of this community. Rather large open area are interspersed among the aspen stands and are dominated by grasses, forbs, and elderberry. These grass-forb-elderberry communities occupy about 13 percent of the lease area. Species diversity in the aspen community is great, with 20 species reported present. The main ground layer species are much the same as those of the grass-forb-elderberry community, with which the aspen community is considered transitional. The combined aspen and grass-forb-elderberry community is very large, constituting about 34 percent of the general lease area and conveyor corridor.

The sagebrush and fringed sagebrush vegetative types occupy 15 percent of the lease area and occur mainly on shallow soils. Collectively they are remarkably diverse, with some 110 species of vascular plants reported. Snowberry is often a major component in the sagebrush community. Fringed sagebrush is a dominant only on rock semibarrents of ridge crests at high elevations.

The riparian community type consists of continuous narrow stips of wetland vegetation along the major drainages, as in the vally bottoms of Eccles Canyon, and along minor tributaries. Total areal extent of the riparian type is very small. Dominant species on these wetland are redtop grass, silver sagebrush, sedge species, grasses, and numberous forbs.

Disturbed areas are present in the proposed lease area some

of which have been treated to reclamation procedures. Both introduced and native species were observed growing along pipeline corridors, roadways and drill pads. The existing portal area shows no attempts at revegetation. Disturbed areas constitute six percent of the lands studied.

Maps.--Maps of vegetative types and soils, which are included with this report, were made for the lease area and Eccles Canyon east of the lease area. These areas were mapped by use of a mosaic of aerial photographs. Community types were outlined on the photographic mosaics; accuracy was assured by correlation of actual communities as inspected on the ground to those discernible on the photographs.

Species Lists by Vegetative Type.--As each plant community was being sampled for its vegetation, a list of all species of vascular plants was compiled. The list was enlarged by checking subtypes within each of the plant communities and by inclusion of species which occur on the same vegetative types of the adjacent and coincident Skyline Project lease and conveyor corridor areas.

Community Analysis (Methods).--Species lists and vegetative and soils data summaries are based in part on extensive adjacent Skyline Project lease area studies. The plant communities and soils occupy the same topographic positions and in all major respects are similar to the Valley Camp lease area. Reconnaissance along the conveyor line corridor indicates potential disturbance of aspen and spruce-fir communities. Sites representative of major vegetative types occurring in the portal area and along both the upper and lower conveyor route were selected for intensive analysis. In each vegetative type permanent transects each 100 meters in

length were established at validation sites along the conveyor route and at vegetatively comparable reference sites. The transects in the reference areas are permanently marked with steel rebar stakes painted red; these will serve as points for comtemporary and future reference. Vegetative analysis of the disturbed portal area was not conducted, but reference areas adjacent to the mining activities already under way and representative of the original communities were selected and analyzed.

Stratified random sampling was employed, in which location of transect lines and plots within homogeneous portions of the vegetative types was randomly determined.* From twenty to forty 2 X 5 dm rectangular plots were placed along each transect. Randomness was insured by using a table of random numbers to select three plots within each ten-meter section of the transect. At each reference and validation site in the aspen, grass-forb-elderberry, and spruce-fir communities the sampling procedures followed those outlined by Daubenmire (1957) for the canopy coverage method. For each species of forb, grass, or shrub the canopy was projected as cover of the ground, and such cover was estimated in six cover classes. Total cover, frequency percent, and composition percent were computed for the species along each transect. Spruce-fir and aspen sites were studied further by application of the quarter method of Curtis (1956), which gives relative cover and relative density values. Tree species dynamics were studied by selecting trees in each size class encountered in the quarter method for diameter, height, and age measurements. Ages of trees were deter-

*Theoretically, failure to place sampling units randomly violates certain assumptions of statistical theory. While subjective placement of sampling units may seriously misrepresent actual conditions

on the ground, random placement of quadrats is not the only objective means of placing samples. The stratified random system used here where placement points in each stratum are located randomly is objective since the sampling point is determined before the sampler sees the spot. Such a method has several advantages. It is far more practical for physical, temporal, and financial reasons; further, it insures that all parts of the sample area are equally sampled. Application of statistical tests can be meaningfully applied.

mined by counting core sample rings extracted from the tree with a Swedish increment borer. Average increments of growth in diameter per year were measured.

Productivity measurements of grass and forb species were made by using 0.96 square-feet plots with weight estimates made on each species as outlined in the Range Analysis Handbook (USDA 1970). The weight estimate of each species in 10 randomly selected plots allows for determination of the total pounds of productivity available for grazing in each forb community. These studies were omitted in the spruce-fir community due to a lack of meaningful ground cover.

In order to evaluate adequacy of sample size, the following formula (Harper 1980) was utilized:

$$N(\text{min.}) = \frac{1.64S}{\bar{x}\ (0.1)}^{2}$$

taking as x the total understory canopy cover per quadrat. With a sample size of N(min.) a 10 percent change in vegetative cover can be detected with a 90 percent confidence level. For details see Snedecor & Cochran 1967, p. 58.

Reference areas have been evaluated for similarity to validation sites using the following similarity index forumla (Bonham et al, 1980; Krebs 1972; Harper 1967):

$$S + \frac{2W}{a + b}$$

where:

S = similarity between the potential reference area and the inventory unit

a = total number of species in the reference area

b = total number of species in the inventory unit

w = number of species in common between a and b

This method requires a subjective decision concerning level of similarity required to accept a reference area.

Vegetation Summary for the Proposed Conveyor Route Disturbance Area.--The lower mine and office areas are disturbed to the extent that little if any natural communities are fully represented. The immediate environs of the mine area had supported before disturbance a sagebrush-grass type similar to the sagebrush communities studied along the Eccles Canyon portion of the conveyor route, where 34 species contributed to a total cover of 130 percent. Shrub species, with Artemisia tridentata dominant, contributed a composition percentage of 61; Agropyron spicatum and other grasses contributed 31 percent. See Table 1-29 for transect data summaries. Table 30 summarizes tree growth data.

A total of 19 species occurred along the transect in the lower canyon spruce-fir understory with grasses and sedges providing the most conver at 46 percent. These species were low in frequency percentages and sparse enough to contribute little if any forage. Forb and grass productivity measurements were thus eliminated in this type. The overstory of spruce and fir provided a high (near 100%) canopy cover, and their average productivity (diameter in-

crease) of 0.38 mm per year was approximately that of other spruce-fir types measured along the conveyor route and at the upper area. The composition of trees in this forest type was near equal with spruce having a relative frequency of 52 percent and 163 trees per acre while fir had a 48 percent frequency and 150 trees per acre. The stand was considered a dynamic stand as both species had representatives in all size classes studied (Table 2 and 4).

Aspen stands along the conveyor line comprised about 32 percent of the total conveyor line area. In the aspen stands along the lower conveyor line total cover of understory species was 97 percent, with 90 percent of the total attributable to grass species. Usually the well developed aspen stands are the most productive for forage but this stand only contributed approximately 390 pounds per acre. Aspen tree growth was sparse in having 496 trees per acre with a diameter growth increment of only 0.32 mm per year. Further evidence of the unproductive nature of this stand was observed in the size class distribution study; no trees were found in the small or large size classes, all trees being either 3-6 or 6-12 inches in diameter. Rotten centers were found in 67 percent of the trees sampled and thus the stand could be considered decadent and not likely to become a dynamic and productive stand of aspen.

Openings along the aspen stands at one time were dominated by palatable species of grass, forbs, and elderberry. Due to excessive grazing, palatable species have been largely replaced by undesirable species such as stinging nettle, sneezeweed, stickseed, and thistle. These areas constituted about three percent of the total conveyor line route.

E. The paragraph on page 45 of the report should be changed as follows:

> Where the conveyor route is parallel to the Skyline Project conveyor corridor the vegetation is mostly sagebrush with a mixture of grasses. Sagebrush and grasses contribute 72 percent cover, the palatable forbs contribute about 11 percent cover, and browse other than sagebrush contribute 46 percent cover. This sagebrush type is the most common of any type along the conveyor route and comprises 34 percent of the total. Transect data indicates a total cover of about 130 percent with 34 species contributing. Productivity value of the sagebrush type was greatest among the sites studied with 1375 pounds per acre (Table 16).

Along the Whiskey Canyon conveyor route both aspen and spruce-fir communities were encountered. The aspen community was among the most diverse in species with a total of 28 species contributing to the understory cover of 162 percent. The species contributing most to forage production were grasses. Forage production of grasses and forbs combined provided 595 pounds per acre (Table 18). Aspen trees here were more productive, with the stands containing some mature trees greater than 15 inches in diameter as well as numerous intermediate sizes down to 1 inch in diameter. All core samples appeared healthy and little evidence of diseased trees was found. The average increment of growth was 0.24 mm per year.

Sample data in the Whiskey Canyon spruce-fir community included four species of trees with spruce and aspen being most abundant. The stand could be considered successional with spruce being the potential climax. Intermediate size classes of aspen were most abundant, with few large trees and very few small replacement trees evident. Douglas fir was apparently giving way to the spruce climax as there were only a few large trees, with little evidence of seedling replacement. Tree density for all species was 434 trees per acre with the growth rate for spruce-fir at 0.34 mm per year and 0.27 mm per year respectively. The understory species, limited

by dense shade, comprised a total of 28 percent.

The reference area for the spruce-fir type was established adjacent and above the portal area; construction activities preclude the establishment of validation sites. The community was dominated by fir trees which constituted a density of 173 trees per acre. These trees were abundant in all size classes indicating a permanent and near-climax community of spruce and fir. Spruce trees, although less abundant (115 trees per acre), were also represented in all size classes. Growth rates for these trees was 0.38 mm per year for spruce and 0.48 mm per year for fir. The understory consists of 21 species, having a total cover percentage of only 38.

The portal aspen reference area studies were also taken adjacent to and above the disturbance areas, on the south-facing slope. Here there was 22 species with grasses contributing 86 percent of the total cover of 110 percent. Total forb productivity was 738 pounds per acre, which is somewhat more than that measured in the aspen stand along the Whiskey Canyon corridor. Trees averaged a diameter increase of 0.50 mm per year, which is greatest for all trees sampled.

A summary of data for the permanent reference sites for the conveyor line is as follows:

Transect Mapping No.	Location	Total Cover %	No. of Species	Prod lb/ Acre	Trees Per Acre
1	Lower Canyon Spruce-Fir	53	19	-	313
2	Aspen opening (nettle)	163	18	-	-
3	Lower Canyon Aspen	97	18	389	633
4	Sagebrush	129	34	1375	-
5	Whiskey Canyon Aspen	165	25	595	357
6	Whiskey Canyon Spruce-Fir	57	2	-	433

Transect Mapping No.	Location	Total Cover %	No. of Species	Prod lb/ Acre	Trees Per Acre
7	Portal Spruce-Fir	38	21	-	288
8	Portal Aspen	110	22	738	63

Sample Adequacy.--In prelimary studies prior to actual samplings it was determined that approximately twenty 2 X 5 plots would be adequate; with this number of plots a 10 percent increase in the number of plots fails to yield to a 10 percent increase in number of species. Sample size is believed adequate to reveal diversity of species along the transect.

Results of adequacy of sample and site similarity calculations are summarized in Figure 2-15, page 49, UMC 783.19, Volume II. In stands where the understory cover was very spotty such as in the dense shade of spruce, quadrat cover data were extremely variable, resulting in a calculated requirement for a prohibitively large number of quadrats. It should be noted that overstory canopy data are not included in transect cover data; inclusion of such data would greatly diminish the variability of sample means as well as the projected required sample size.

THREATENED AND ENDANGERED PLANT SPECIES

Passage of the Endangered Species Act of 1973 (Public Law 23-205) provided the legal basis for establishment of lists of endangered and threatened plant species. Such lists were prepared under direction of the Smithsonian Institution, and were published subsequently in the Federal Register (40: 27824-27924, 1975; and 41: 24524-24572, 1976). Work on endangered and threatened plants of Utah has been reviewed by Welsh, Atwood, and Reveal (1975), and re-evaluated by Welsh (1978). More recently an illustrated manual of endangered and threatened plants of Utah was written by Welsh and Thorne (1979).

The region under investigation was included in a report on threatened and endangered species of the Central Coal lands of Utah (Welsh 1976).

A survey of the literature has failed to indicate the presence of any of the proposed endangered or threatened plant species in the area. This lack of critical or unique species is supported by the field surveys of the lease areas during this investigation, and during investigation of adjacent and coincident lands of the Skyline Project lease and corridor area. The regoin was searched by walking parallel transects on a quarter-section by quarter-section basis, with each community type within each quarter-section being traversed. None of the proposed threatened or endangered species were encountered in either the lease area or in the surrounding areas.