

Exhibit #21: Road reconstruction information



Exhibit #22: Notice of hearing on road reconstruction



Exhibit #23: Detailed Subsidence Monitoring Plan



Swisher Coal is about to enter into a co-operative agreement with the U.S. Forest Service to provide a complete and continuing plan for subsidence monitoring. Essentially, the plan is as follows:

The Forest Service will fly the area of the #4 Mine, as well as a number of other mine sites located within the Forest Service boundary, and prepare a set of base maps. Company surveyors have worked closely with the Forest Service engineers and Aerial Photograph personnel in selecting the proper location for a number of permanent control points that will fit and overlap as necessary on the Aerial photos. These control points, both within and outside the area of potential subsidence influence, have been placed in concrete, targeted with aerial flagging and have been surveyed in using an electronic distance meter and a one-second theodolite. State co-ordinates, central zone modified to 8,000 feet, and sea level elevations have been established on all the control points and on all survey control inside the mine by a registered land surveyor. The Forest Service in completing its initial base maps using high resolution photography and pinpointing calculated co-ordinate points that will comply with the United States Geological Survey guideline in 30 CFR 211 which requires, three monitoring stations per panel, control stations outside the angle of draw and stations ahead of mining operations so that baseline measurements are recorded. The Forest Service will fly the area once a year and the exact same co-ordinate points can then be located and the subsidence monitored. Although the co-operative agreement has not yet been signed as of this writing, all parties are working in good faith and the program is considered a sure thing by the parties involved.

Exhibit #24: Letter of concurrence from Forest Service about
subsidence monitoring plan



UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Manti-LaSal National Forest
350 East Main Street
Price, Utah 84501

2820

August 18, 1978



Mr. Jack Moffitt
Area Mining Supervisor
USGS, Conservation Division
8426 Federal Building
125 South State Street
Salt Lake City, Utah 84138

SL-064903

Dear Mr. Moffitt:

This letter is to keep you advised of the status of the Swisher Coal Company Mining and Resource Monitoring Plans, with regard to Forest Service concurrence.

The Forest Service has concurred conditionally to approval of the Mining and Reclamation Plan for Lease SL-064903. We have not concurred with the Subsidence/Hydrologic Monitoring portion of the mining plan. The Manti-LaSal National Forest is in the process of finalizing our Forest Resource Monitoring requirements for underground coal mines. We are, and have been, working with Swisher Coal Company for the past few months in developing an acceptable resource monitoring plan. A cooperative agreement with Swisher to jointly initiate this study will be drawn up within the next few weeks.

At the present time, Swisher is establishing ground control, and placing permanent monuments over the mine. These monuments are to be used for aerial photography control for subsidence monitoring. Swisher also is establishing base data on springs, seep, and streams for their hydrologic monitoring.

W. H. Baker
~~Reed C. Christensen~~

for
REED C. CHRISTENSEN
Forest Supervisor

cc: Swisher Coal Company
RO

RECEIVED
AUG 22 1978

SWISHER COAL CO.

Exhibit #25: Map of subsidence monitoring control points



Exhibit #26: Cover letter, U.S. Geological Survey mine plan and
reclamation approval





United States Department of the Interior

GEOLOGICAL SURVEY

Office of the Area Mining Supervisor
Conservation Division
8426 Federal Building
125 South State Street
Salt Lake City, Utah 84138

February 16, 1977

Mr. Max Robb, President
Swisher Coal Company
P.O. Box AU
Price, Utah 84501

Dear Mr. Robb:

By a memorandum received February 15, 1977, we were advised that the Under Secretary of Interior has concurred in our proposed approval of the mining plan for your Huntington Canyon No. 4 mine.

Accordingly, the mine plan submitted for approval December 3, 1975, for your Huntington Canyon No. 4 mine is approved subject to the following conditions:

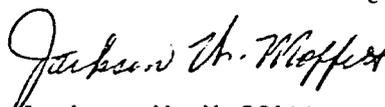
- 1) Any appropriate mitigating measures or stipulations generated as a result of the final Central Utah Regional EIS may be made further conditions of approval of the mine plan. All recommendations of the Forest Service and Geological Survey will also become provisions of the mine plan including the information requested by the enclosed memorandum of December 27, 1976, to the Mining Supervisor to bring the mine plan into future compliance with 30 CFR 211. (Copy attached.)
- 2) The company should set up an onsite study on effects of surface subsidence and a subsidence monitoring system. The study details, such as ground control plots in the undermined and adjacent areas and monitoring timetables, shall be established with the Mining Supervisor prior to any extensive mining.
- 3) ~~The operator shall establish and maintain a ground water~~ monitoring system as required by the Mining Supervisor. In establishing the monitoring system, in consultation with the Mining Supervisor, the operator shall submit maps and adequate narratives to further clarify the following hydrological requirements to the regulations: water table measurements, quantity and quality of ground water systems, and location of aquifers including any substantial perched aquifers.

- 4) The operator shall conform to all performance and operating standards that refer to the surface effects of underground mining (30 CFR 211.40).

As noted in stipulation No. 1, the mine plan must be revised to contain the information requested by the December 27, 1976, memorandum to the Mining Supervisor, copy attached, to bring it into full compliance with 30 CFR 211. To comply with the regulations, the additional information must be submitted by May 17, 1977.

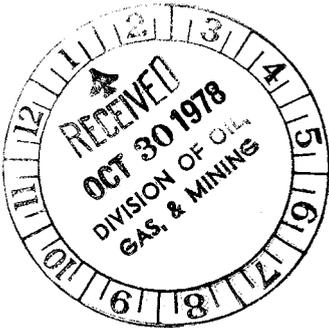
We have consulted with the Governor of the State of Utah and he also recommends that you be authorized to proceed with the further development of the mine.

Sincerely yours,



Jackson W. Moffitt
Area Mining Supervisor

Exhibit #27: Cover letter, Division of Oil, Gas, and Mining mine plan
and reclamation approval





SCOTT M. MATHESON
Governor

OIL, GAS, AND MINING BOARD

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

I. DANIEL STEWART
Chairman

CLEON B. FEIGHT
Director

CHARLES R. HENDERSON
JOHN L. BELL
THADIS W. BOX
C. RAY JUVELIN

December 14, 1977

Dave Shaver
Swisher Coal Company
P.O. Box A U
Price, UT 84501

Re: Annual Operations and Progress Report
Huntington Cayon #4 - ACT/015/004

Dear Mr. Shaver:

Your company is approved to operate the above named mine under the 1975 Utah Mined Land Reclamation Act. The Rules (Rule M-8(b)) direct the Division to obtain an Annual Operations and Progress Report for each active mine. An updated map and plan is called to be submitted annually in the same rule.

Enclosed you will find the Division's annual report form (MR-3). Please return the completed form with the updated map by January 31, 1978. If your mine has not started operating since approval, and you feel an updated is not required, so state this on the MR-3.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

Ronald W. Daniels
RONALD W. DANIELS
COORDINATOR OF MINED
LAND DEVELOPMENT

/tlb

Enclosure: MR-3

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

19 77 OPERATIONS AND PROGRESS REPORT

(To be filed for each Mining Operation at
the end of each calander year)

OPERATOR: Swisher Coal Co. Sec. 16 T. 16S R. 7E B&M SLB&M
Address: P.O. Box AU No. of approved Notice of
Price, Utah 84501 INTENTION: _____
DATE OF APPROVAL: _____

(1) The gross amount of materials moved during the year for this mining operation
was: None

(2) STATUS OF RECLAMATION WORK* None, except that grass seed has been planted.

<u>Month</u>	<u>WORK PERFORMED</u>	<u>RESULTS</u>
January	_____	_____
February	_____	_____
March	_____	_____
April	_____	_____
May	_____	_____
June	_____	_____
July	_____	_____
August	_____	_____
September	_____	_____

STATUS OF RECLAMATION WORK (Continued)

<u>Month</u>	<u>WORK PERFORMED</u>	<u>RESULTS</u>
October	_____	_____
November	_____	_____
December	_____	_____

* The monthly status of reclamation work may be outlined on a separate sheet if desired.

(3) INCLUDE WITH THIS REPORT, AN UP-DATED MAP AND PLAN, PREPARED IN ACCORDANCE WITH RULE M-3, (1).

Exhibit #28: Plan for Drainage and Dust Control at
C.V. Spur Preparation and Loading Facility



C.V. Spur Preparation
and Loading Facility
Exhibit #28

Drainage and Dust Control

The coal produced from the lease area of the Huntington #4 Mine will be hauled by truck to the preparation/loading facility at C.V. Spur, located approximately 5 miles southeast of Price, Utah.

Coal Flow

The coal will be weighed as it is brought in and then dumped into an underground hopper. The raw coal will be crushed to -3" and loaded onto a covered conveyor, where it is deposited into a coal stacking tube and stockpiled. The raw coal is then drawn from this pile through underground feeders, onto a covered conveyor and fed into the preparation plant. The cleaned coal is taken from the plant via a covered conveyor, and again placed into a stacking tube. This coal is recovered via underground feeders, and carried by a covered conveyor to a totally enclosed 10,000 ton silo, for unit train loading.

Dust Control

The following dust control measures are employed in the system:

Underground receiving hopper, all conveyors covered, water spray systems on underground reclaim feeders, coal stacking tubes with windows to allow open cone stacking with minimum dust from free-fall, water outlets located near all stockpiles for sprays as needed, totally enclosed storage prior to loading.

Drainage

The property area under Swisher control at C.V. Spur is 160 acres. Of this amount, approximately 55.0 acres are considered involved in the disturbed area; the drainage from the other 105.0 acres will be natural and will be diverted prior to reaching the disturbed area. The attached map shows the drainage pattern, proposed ditches, diversions, and proposed settling pond.

The general plan for drainage/sedimentation control in this area is as follows:

The runoff from the disturbed area is estimated to be .90 inches for a 10 year, 24 hour storm. This water will be collected in 3 separate ponds. The overflow pond north of the tipple and the pond below the refuse pile will have overflow structures capable of handling a 25 year, 6 hour storm. The overflow (if any) from these ponds will be collected in a third pond located at the northeastern (lowest) corner of the property.. After settling, this water will be placed back into the raw water feed for the preparation plant for re-use. The sediment collected will be cleaned

periodically and placed in the refuse pile on the site. The drainage from the refuse pile is also collected in the settling pond with the other runoff water; therefore, this system is essentially a closed type, with no expected discharge, except in the event of a storm to exceed the pond design limits.

Refuse Pile

As mentioned earlier, any waste material produced from the mine that cannot be stored within the mine, will be brought to the refuse pile at C.V. Spur. This pile will be constructed and maintained as per M.S.H.A. regulations. No toxic materials are expected to be encountered in any of the drainage in this area, due to the low sulfur content of the coal. The refuse pile will ultimately be reclaimed in a manner similar to that at the mine site -- by contouring the pile, covering with soil and re-seeding. Drainage from the pile can still be taken to the settling pond structure before discharge (after reclamation).

DG/ag

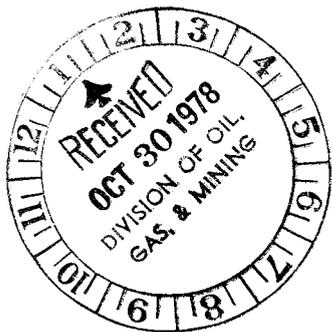
C.V. Spur
Drainage System
Calculations

- * A. Use 1.7" figure for 10 year, 24 hour precipitation event.
- **B. Table A-4, p. 538 - Runoff Curve No. (CN) = 92
Cover - Herbaceous
Condition - Poor
Soil Group - D (High Runoff Potential)
- **C. From fig. A-4, p. 541, the direct runoff is found to be .90 inches.
- D. Drainage Area = 55.0 acres. Total runoff will be .9" x 55 acres = 49.5 acre inches or 4.125 acre feet.
- E. The volumes of the sedimentation ponds are as follows:
1. Overflow pond north of Prep. Plant - 100' x 100' x 6' = 60,000 ft.² or 1.377 acre feet.
 2. Storage pond below refuse pile - 100' x 150' x 6' = 90,000 ft.² or 2.066 acre feet.
 3. Settling Pond at northeast corner - 150' x 100' x 6' = 90,000 ft.² or 2.066 acre feet.
 4. Total storage capacity - 5.51 acre ft.
- *F. All structures will be designed to overflow at a rate in excess of that for a 25 year, 6 hour precipitation event. (1.6").
Runoff = .80 inches
 $0.8" \div 6 \text{ hr.} = .133 \text{ in./hr.} \div 60 \text{ min./hr.} = .0022 \text{ in./min.}$
 $.0022 \text{ in./min.} \times 55 \text{ acres} = .122 \text{ ac. in./min.} \div 12 = .0102 \text{ ac. ft./min.}$
 $.0102 \text{ ac. ft./min.} \times 326,700 \text{ gal./ac. ft.} = 3332 \text{ gal./min.}$
- * Taken from NOAA, Atlas II, Volume 6, "Precipitation Frequency Atlas of Western U.S. - 1973".
- ** Calculations made using the reference "Design of Small Dams" by the Bureau of Reclamation, Appendix A, "Estimating Rainfall Runoff from Soil and Cover Data".

Exhibit #29: Map of Proposed Drainage Control at C.V. Spur



Exhibit #30: Mining Plan Checklist
(Added as supplement from Mining Plan
submitted to U.S.G.S.)



Mining Plan Checklist
Huntington Canyon #4 Mine
Short-Term Lease Application U33454
Huntington Canyon, Emery County, Utah
Swisher Coal Company

GENERAL NOTE

The following information is submitted in answer to the Coal Mining Plan Checklist provided by the USGS for mine plan evaluation. There will be no surface disturbance as a result of mining on the lease now being applied for. Therefore, many of the questions on the checklist relating to surface effects and reclamation are not really applicable to this mine plan inasmuch as these same questions were answered in a mine plan submitted for the opening of the mine and the mining of existing Federal Lease SL064903. However, for the sake of completeness all questions have been responded to in this checklist.

Seven copies submitted
Enclosed are seven complete copies of the mining plan.

Person responsible for operations: Name, address, telephone, lease number
Max Robb, P.O. Box AU, Price, Utah 84501 (801) 637-5050
Lease application U33454

Surface owners (if other than U.S.)

Names, Addresses

The surface of the lease area is controlled by the U.S. Forest Service

Owners of subsurface minerals (if other than U.S.)

Same as above

Description of the environment in the mining area:

Geologic conditions

The mine is located in the northern part of the Wasatch Plateau coal fields near its west edge in Emery County, Utah. The area is mountainous and the drainages have cut deep canyons, notably Huntington Canyon which is located approximately a mile from the mine site. Elevations range from 7000' in Huntington Canyon to 10,700' on East Mountain in which the mine is located. The mine site is situated at 7820' elevation.

Strata of the Masuk, Star Point, Blackhawk, Castlegate, Price River and North Horn formations, all of cretaceous age, are exposed in the Canyons. The bottom of Huntington Canyon is filled with unconsolidated alluvium.

The Huntington Canyon area can be divided roughly into three structural divisions: to the east, faults and grabens of the Pleasant Valley fault zone, in the center, little disturbed rock, and to the west, faults of the Joes Valley fault zone. The mine site is located in the eastern portion of the undisturbed center zone.

The coal seam is located in the Blackhawk formation of the Mesa Verde group. This formation is 700' to 1000' thick and consists mostly of interbedded sandstone and siltstone, as well as commercial deposits of coal.

Potential geologic hazards

The greatest geologic hazard concerning the mining operation is the possibility of intercepting and thus disrupting the flow of the Little Bear Spring. This spring is located about 6000' from the mine portals and is the main source of culinary water for the City of Huntington (pop. 2000). The spring is located at the base of the Star Point sandstone and is, therefore, over 300' stratigraphically below the coal horizon to be mined under this plan. A public report made by the Division of Water Resources of the U.S. Geologic Survey concluded that mining done in the area covered by this mining plan will not, in all likely-hood, interfere with the flow of the spring (copies of this report are available

upon request). The effect on the spring as a result of extended future operations has been studied by Vaughn Hansen Associates, a professionally recognized private engineering firm which specializes in ground water hydrology. The findings of this study is that mining operations within this lease area will not likely affect the quantity or quality of Little Bear Spring. A copy of this report is included as a part of this plan.

Types and depths of soils

The mine is located on the south facing slope of Mill Fork Canyon. Soil is poorly developed here, as most of the surface is ledge-rock or talus slopes. Where present, soils are sandy loam and vary in depth from a few inches to several feet in the deeper side ravines.

Distribution of soils

Soils are generally better developed on the north facing slopes since precipitation in the form of snow is held in place longer and vegetation is much more abundant on these slopes. Mountain and ridgetops have more poorly developed soils while in the protected canyon drainage bottoms the soil is better developed.

Types and density of vegetation

Vegetation is typical of the mid-elevation forest, consisting mostly of spruce, fir, juniper, pinyon and aspen. Smaller vegetation consists of mortensia, browse, sneezeweed, brome, wheatgrass and peavine.

Distribution and dominance of vegetation

The north facing slopes are predominantly heavy timbered with spruce, fir and pine, while the south facing slopes are predominantly pinyon and juniper. Aspen generally are confined to the canyon bottom in this area.

Climatological data:

Monthly range of temperature

Temperatures range from -15°F to 95°F with an average of 50°F . There are approximately 75 frost-free days per year. Since the mine sits at an elevation of 7800', differences in temperature between day-time highs and night-time lows can be extreme.

Monthly range of precipitation

The area of the mine site receives upward of 40 inches of precipitation a year, mostly in the form of snowfall in late winter and early spring. Late summer often brings heavy thunderstorms. July is perhaps the driest month.

Average direction and velocity of winds

Winds are generally from the west at between 0 and 15 mph. However, due to the mountainous aspect of the area, winds are erratic and inconsistent.

Distribution, abundance and habitat of fish and wildlife (especially threatened and endangered species)

Wildlife consists of mule deer, elk, mountain lion, black bear, squirrels, rabbits, mice and other small animals, as well as certain varieties of hawks, mountain jays and owls. There are no fish in the area of the mine site. There are no threatened or endangered species in the area of interest.

Condition of land covered by mining

The land at the mine site is mostly steep hillside with heavy timber cover. The area is essentially undisturbed except for a low standard 4WD road along several of the ridges.

Land uses existing at time of mining

There is very little used made of the area at present. Because of the existing access road to the mine site, the area does receive some use during hunting season for elk and deer. Nearby mountains are periodically used for sheep grazing.

Capabilities of land to support prior alternate uses

The present uses of the area (mining, sport hunting, sheep grazing) are the only feasible land uses at this time. Timber cutting is not feasible because the isolated grove-like stands of timber cannot provide the quantity necessary for a successful operation. Campers and other recreationists in general shun the area and concentrate instead on camp grounds and fishing sites provided in part by the Forest Service located along the bottom of Huntington Canyon.

Proposed use of land following reclamation

The use of the land after reclamation will be the same as those existing at present, that is, sport hunting and sheep grazing.

Description of how proposed post-mining land use is to be achieved

Since there will be no surface disturbance, post-mining land use will be the same as pre-mining and during-mining use.

Nature of coal deposit

13270 BTU (as received), 13847 (dry), 6.10% ash, 0.62% sulfur, 47.34% fixed carbon, 42.39% volatiles, 4.17% moisture.

Extent of coal deposit

The seam being mined is the Blind Canyon Seam which lies approximately 100' above the Star Point sandstone. The same seam is being mined by Peabody Coal Company in their Deer Creek operation located about five miles to the south, and the seam outcrops in Blind Canyon (its type locality) four miles to the north. The seam varies in thickness over the property from 4' in the want areas to over 13' in the old mine works. The Hiawatha seam is also present approximately 100' stratigraphically below the Blind Canyon Seam.

Estimated recoverable reserves

Based on recent drill hole information and resultant isopach plots the recoverable reserve in the lease application in the Blind Canyon Seam is 1,250,000 tons. The Hiawatha Seam, which rests on top of the Star Point sandstone is estimated to contain another 1,550,000 tons but there are no plans to develop this seam until the upper seam has been worked out.

Method of mining

Mining will be done by the room and pillar method. Development entries will be driven on 80' x 80' centers, using a five entry set for advancing to the extremes of the property. Rooms will be driven on 80' x 80' or 60' x 60' centers depending on the depth of cover (overburden) in the given area. Total pillar extraction will be done in the roomed out areas. Protective barrier pillars will be left on either side of the main entries from 150' to 500' wide, depending again on the depth of cover.

Mining sequence

Main entries will be driven to the extremes of the properties on development and butt entries will be driven at right angles off the mains. Rooms will be driven off the butt entries and pillar extraction will take place in the room areas. Barrier pillars and chain pillars in the mains will be extracted on final retreat.

Proposed production rate

Production is planned for 2000 tons per day, increasing from there to a maximum of 3000 tons per day. Production is planned year round with only minor delays in the winter after major snow storms.

Reclamation schedule

Reclamation will begin within one month of cessation of mining operations, and will be completed as soon thereafter as possible.

Estimated timetable for each phase of reclamation work

1. Clean up of trash and debris - one week
2. Redistributing of top soil - one week
3. Re-establishment of prominent drainage features - two weeks
4. Scarification of hard packed surfaces of yards and roads - one week
5. Reseeding of area - one week

Final completion of work

Barring inclement weather, reclamation efforts should be complete within six weeks after commencement. Reclamation efforts will be completed within six months of termination of mining operations in any event.

Method of grading and backfilling

There will be no back filling.

Method of soil stabilization and compaction

Soil will be stabilized and compacted by running over it with large rubber tired construction equipment.

Method of contouring

Other than the obliteration of some of the smaller roads, there will be no contouring.

Method of soil preparation and fertilizer application

Disturbed areas will be scarified and fertilizer will be hand broadcast to insure uniform spreading and density control.

Type and mixture of shrubs, trees, grasses, forbs or other vegetation to be planted

The following seed mix, as prescribed by the U.S. Forest Service will be applied during reclamation:

- 3 lb. Smooth Brome
- 3 lb. Timothy Grass
- 2 lb. Orchard Grass
- 2 lb. Crested Wheat Grass
- 1 lb. Kentuck Blue Grass
- 1 lb. Ranger Alfalfa
- 1 lb. Meadow Foxtail

Method of planting including quantity and spacing

Reseeding will be done by hand broadcasting at a prescribed rate of 13 lb. per acre.

Engineering techniques proposed to be used in mixing

Swisher Coal Company maintains a full staff of experienced and professionally qualified engineers capable of planning, designing and constructing all phases of underground and surface installations. All phases of mining will be done on the basis of sound mining practices and in accordance with all governing laws.

Engineering techniques proposed to be used in reclamation including construction of roads

Roads will be designed and built with the cut and fill method, using advanced surveying methods.

Engineering techniques proposed to be used in reclamation including ditches, water retention facilities, dams or settling ponds

None of the above are planned or anticipated.

Engineering techniques proposed to be used in reclamation including control of water drainage and accumulation

All yard areas and roads will be properly graded to permit surface water drain-

age and to prevent ponding or other accumulation. Diversion ditches shall be placed at the head of highwalls to divert hillside drainage away from construction areas.

A list of all major equipment

Equipment used in reclamation will include: Dump truck, road grader, front-end loader, D-8 bulldozer.

Estimated cost/acre of reclamation for backfilling, grading, replacement of top soil, seeding and/or planting, irrigation, fertilization, maintenance
Total cost of reclamation is estimated to be \$500 per acre.

Method and measures to comply with Sec. 211.4 and 211.40

Inasmuch as these sections are part of the laws of the United States Government, Swisher Coal Company will comply fully as a matter of law.

Method and measures to comply with special terms and conditions of the lease
Through proper management and administration, Swisher Coal Company will comply with any special terms and conditions of the lease.

Methods and measures to comply with 211.4

See above statement.

Methods and measures to minimize, control or prevent soil erosion

Soil erosion will be controlled by properly drained yards and roads and by properly constructed diversion ditches and by prompt and thorough reseeding of disturbed areas.

Methods and measures to minimize, control or prevent air pollution

There will be no air pollution as a result of the mining operation.

Methods and measures to minimize, control or prevent surface or ground pollution

All trash will be disposed of in a sanitary manner and good housekeeping will be practiced at all times.

Methods and measures to minimize, control or prevent water pollution

The Company will comply with State and EPA standards for all effluents which may cause water pollution.

Methods and measures to minimize, control or prevent diminution of normal waterflow

Swisher Coal Company owns 800 shares of water in the Huntington-Cleveland Irrigation Company and has been issued a permit by the State Water Rights Division to divert this water from Mill Fork stream.

Methods and measures to minimize, control or prevent adverse impact upon fish and wildlife
Because of the small scale nature of this operation, the effects on fish and wildlife will be negligible.

Methods and measures to minimize, control or prevent permanent damage to vegetation, crop or timber
There is no agricultural use of the area and timbering operations are infeasible.

Methods and measures to minimize, control or prevent creations of unsafe or hazardous conditions
The Mining Enforcement and Safety Administration of the Department of the Interior has established rules and regulations governing every aspect of safety in and around all coal mines and regularly dispatches safety inspectors to insure that these regulations are being followed.

Methods and measures to minimize, control or prevent damage to improvements
There are no improvements in the area to damage.

Methods and measures to minimize, control or prevent damage to recreational, cultural, scientific, historical, archeological and paleontological values
There is nothing in the area of significant recreational, cultural, scientific, historical, archeological or paleontological interest. The area has been given an archeological clearance by a qualified archeologist.

Methods and measures to minimize, control or prevent adverse impacts on adjacent land use
Nothing of the operation will affect or interfere with adjacent land uses.

Measures to comply with operating and reclamation standards
Operating and reclamation standards will be complied with.

State reclamation standards adopted
Swisher Coal has filed a plan of reclamation with the Division of Oil, Gas and Mining of the State of Utah for this operation and the plan has been approved. Copies of the plan are included herein.

Compliance steps for air quality control laws and regulations
Air quality laws and regulations will be complied with.

Compliance with water quality control laws and regulations
Water quality laws and regulations will be complied with.

Measures for maximum recovery of mineral resources
It is in the best interest of Swisher Coal Company to extract the coal to the

fullest extent possible and all necessary measures of engineering, production and supervision are geared toward this end.

Method of abandonment

Within six months after mining operations are permanently terminated, all surface structures will be removed from the site, including all mine buildings and steel structures. Usable items will be salvaged and unusable items will be disposed of in an approved sanitary land fill.

All mine portals and openings will be tightly sealed to prevent entry into the mine by unauthorized persons. "Danger" signs will be placed at the portals. Seals will be of fireproof construction, made of concrete blocks with mortared joints and will be hitched 12 inches into the ribs. The seals will be placed in by the portals to a point where the overburden height is at least three times the heights of the seal. The portal will then be back filled with earth up to the seal.

All portal areas, mine yards, access roads, haul roads and all other areas of the surface involved in the mining operations will be thoroughly cleaned of all trash and junk. Such trash will be disposed of in an approved sanitary land fill.

Logs and analysis of overburden samples
Does not apply.

Quantity of surface water
Mill Fork stream runs nearby at a rate of 30gpm.

Quantity of ground water systems
It is impossible to determine the quantity of ground water systems until the mine progresses into the mountain. Little Bear Spring produces about 500 gallons per minute.

Quality of ground water system
The water from Little Bear Spring is used by the City of Huntington for culinary water and meets all State Health Standards.

Surface water levels
There is no surface water in the area of interest.

Water table measurements
None have been determined.

Data on dissolved solids under seasonal flow conditions
Unknown at present.

Data on suspended solids under seasonal flow conditions
Unknown at present.

Impact of mining operations upon the hydrology of the area
A report published by the U.S.G.S. Water Resources Division concluded that in all likelihood mining activity would not have a significant effect on the ground water hydrology. A similar study by Vaughn Hansen Associates concluded likewise.

Plans for protecting oil, gas and water wells and resources
There are no oil, gas or water wells in the area.

Justification for not recovering coal
All coal that can economically be recovered will be recovered.

Topographic natural drainages and cultural features
Shown on map.

Archeological and cultural features
There are no archeological or cultural features in the area.

Roads and vehicular trails
Shown on map.

Name of watershed
The area lies within the upper Huntington Creek watershed.

Location of surface stream that mine waters are discharged into
See map.

Plan views of land to be affected
See map.

Cross section of land to be affected
See attached sheet.

Location and elevation of drill holes
See map.

Nature and depth of the various strata of overburden
See enclosed sheet.

Nature and thickness and extent of any coal
See enclosed sheet.

Nature and thickness and extent of rider seams above coal to be mined
No rider seams are known to exist.

Nature of the strata beneath coal to be mined
See enclosed sheet.

Location of the next known deeper coal seam below the seam to be mined
See enclosed sheet.

Location of any other mineral values encountered
No other mineral values are known to exist in the area.

Hydrologic data
See map.

Any other relevant information
See map.

Mineral crop lines
See map.

Strike and dip of the coal to be mined
From all indications, the seam is flat-lying.

Location and extent of known surface mine workings
See map.

Location and extent of known underground workings
See map.

Location of oil, gas and water wells within ¼ mile of affected land
There are no oil, gas or water wells within ½ mile of the affected area

Location of aquifers
There are no known aquifers in the mine area.

Estimated elevation of the water table and potentiometric surface
There is insufficient information available to determine the elevation of the water table and potentiometric surface.

Location of spoil
There will be no spoil.

Location of waste or refuse areas
There will be no refuse disposed in this area.

Location of topsoil preservation area
See map.

Location of impoundments of water
See map.

Location of water treatment facilities
See map.

Location of natural or constructed drain ways
See map.

Location of any discharges to any surface body of water
There are no plans to discharge to any surface body of water.

Cross sections of final surface configuration
See enclosed drawings.

Location of surface structure and facilities
See map.

Final planned topography
See map.

Final drainage
See map.

Coal and overburden isopach
See map.

Proposed sequence of mining by year over lease or LMU
See map.

Surface ownership
See map.

Planned mine layout
See map.

Location and dimensions of shafts
There will be no shafts.

Location and dimensions of slopes
There will be no slopes.

Location and dimensions of drifts
There will be no drifts.

Location and dimensions of crosscuts
See map.

Location and dimensions of haulage ways
See map.

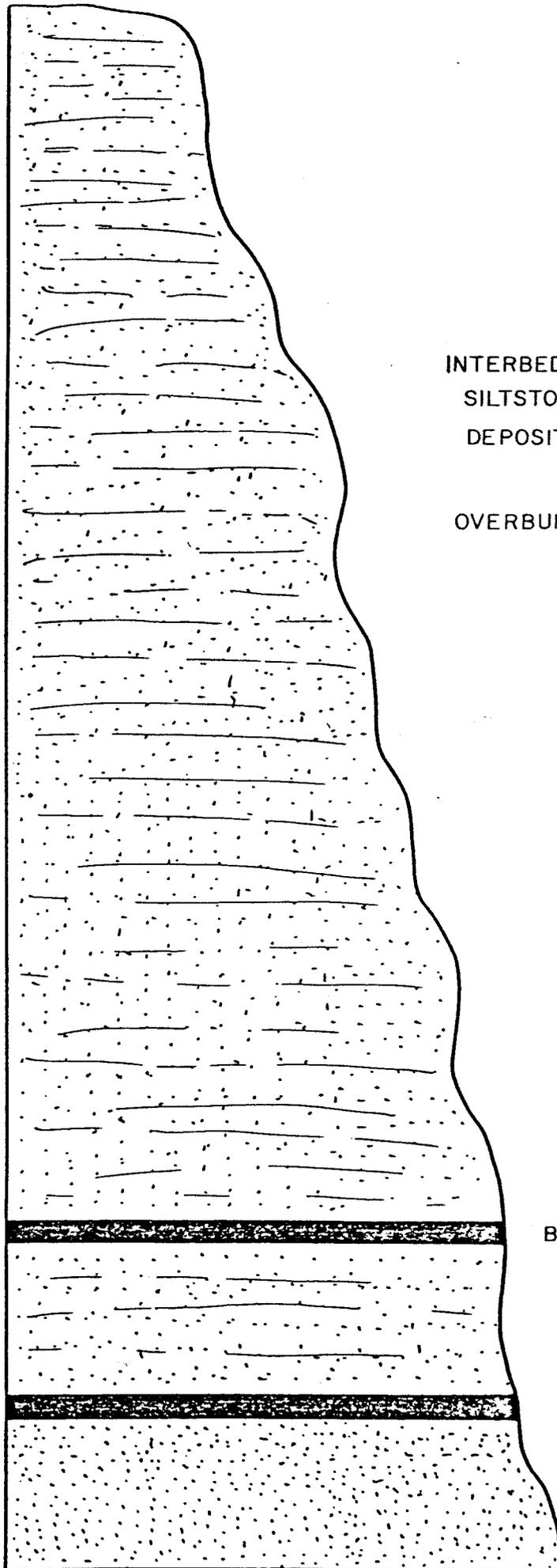
Location and dimensions of aircourses
See map.

Location and dimensions of rooms
See map.

Location and dimensions of entries
See map.

Location and dimensions of barrier pillars
See map.

GEOLOGIC CROSS SECTION, MILL FORK AREA
HUNTINGTON CANYON #4 MINE



INTERBEDDED SANDSTONES AND
SILTSTONES, NON-COMMERCIAL
DEPOSITS OF COAL

OVERBURDEN = 0-1800' THICK

BLIND CANYON SEAM 5'-13'

INTERBEDDED SANDSTONES
AND SILTSTONES 50'-100'

HIAWATHA SEAM 5'-8'

STAR POINT SANDSTONE
+ 200'

Exhibit #31: Mine Plan for Huntington Canyon #4 Mine
(Added as supplement from Mining Plan
submitted to U.S.G.S.)

Mine Plan
Huntington Canyon #4 Mine
Short-Term Lease Application U33454
Huntington Canyon, Emery County, Utah
Swisher Coal Company

DESCRIPTION OF EXISTING AREA

The mine site is located in Mill Fork Canyon, a tributary to Huntington Canyon in Emery County, Utah, about 12 miles northeast of the town of Huntington. It is reached by a one mile access road taking off Utah State Route #31. The mine site area stands at an elevation of approximately 7900 feet in a highly dissected part of the Wasatch Plateau and supports a scattered growth of spruce, pine and juniper as well as lesser vegetation typical of the highland forest.

Scattered small scale mines have operated in the area of Huntington Canyon since the early 1930's. Presently coal is being produced nearby in Trail Canyon from the privately owned Co-op Mine and in Deer Creek by Peabody Coal Company.

The Huntington Canyon #4 Mine is extracting coal from various tracts of fee land as well as from Federal Lease #SL064903 which contains 160 acres. The lease tract under application is outlined on the accompanying maps and is described as follows:

T16S, R7E - Section 8 S $\frac{1}{2}$ SE $\frac{1}{4}$
Section 16 W $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$
Section 17 NE $\frac{1}{4}$

Total 440 acres

This lease tract is bordered on the north by Company owned fee land and open Federal coal, on the east by Fee land, on the south by Federal lease SL064903 and fee land, and on the west by open Federal coal and fee land. The surface of the lease area is controlled by the Forest Service.

NATURE AND EXTENT OF DEPOSIT

The Blind Canyon Seam has a relatively wide aerial extent and is one of the principle producing seams in the Huntington Canyon region. In the Mill Fork area of interest, the seam varies in thickness from 13 feet in the Leamaster Mine to a reported 4 feet in the Helco Mine located nearby to the west. The coal sits on a competent sandstone-siltstone foundation and is overlain by a massive sandstone which forms a very stable roof in the mine. No roof bolts have ever been used in the Leamaster Mine and many intersections have been cut in excess of 30 feet wide with no signs of roof failure.

The seam shows localized rolls but over a wide area appears to be generally flat. Maximum cover is about 1,600 feet occurring in the northwestern section of the lease block. From all available geologic data the area seems to be free of any major fault systems.

DEVELOPMENT PHASES

The mine portal was opened and mining started by Vern Leamaster in 1943 and served the local domestic coal market until 1964. During that time approximately 127,000 tons were extracted from the mine from both the Federal lease and fee properties. Nearby, the Helco Mine and the Skeen Mine were also in operation, although on a much smaller scale. In 1975 Swisher Coal Company of Price, Utah, a wholly-owned subsidiary of General Exploration, acquired the option to purchase the mine and began construction of the portal facilities in early 1976. Realizing the limited reserves available from these portals, the Company applied for additional Federal coal under the short-term criteria in April, 1976. On February 16, 1977, the Company received an approved mine plan and commenced operations shortly thereafter.

Mineable reserves for the lease tract is estimated at 1,250,000 tons in the Blind Canyon seam in which the mine is now operating, and 1,550,000 tons in the lower Hiawatha seam.

PROPOSED MINING METHODS

All existing surface improvements are shown on the accompanying maps. Mining from the lease area will not require additional surface facilities.

Coal production comes from a continuous miner section using room-and-pillar method of extraction. Additional miner units will be put into production in the future as market requirements increase. Main entries will be driven with five entries on 80-foot centers with cross-cuts also on 80-foot centers. Butt entries will be driven with three or five entries on 80' x 80' centers. Rooms will be taken 500 feet to 600 feet on either side of the butt entries and a 220 foot barrier pillar will be left to protect the mains. Entries, cross-cuts and rooms will be driven 20 feet wide. Where coal height allows, two feet of top coal will be left for protection and roof control will be accomplished by timbering and roof bolting. Abandoned and de-activated areas will be sealed off as they are worked out.

The mine has been developed from the outcrop and utilizes only a small portion of the old workings as shown on the enclosed map. Main entries have been driven through the old works in a northeasterly direction until the workings were cleared and then turned to the northwest to parallel the outcrop and to line up with property holdings to the north. Butt entries will be driven in an east-west direction to allow the most efficient extraction of the lease block and to provide the best access for proper development of surrounding coal lands should additional Federal leases be acquired in the future.

Coal is brought out of the mine on a 42-inch belt conveyor, run through a single roll crusher and then discharged down an enclosed chute into a 2,000-ton capacity storage pile located in the lower box canyon. The coal is then loaded into 28-ton trucks by a front-end loader and hauled to market.

There is no coal washing facilities on the site and, therefore, no refuse disposal. In the past the mine has been characteristically dry and mine water discharge was not a problem. Any water encountered in future operations will either leave with the coal product as interstitial moisture or will be sumped underground for subsequent use. If water is present in quantities so as to require discharge, such discharge will be covered under NPDES permit #UT0023116 (copy enclosed) as issued by the Environmental Protection Agency. Canyon drainage is diverted around both the upper and lower mine yard to prevent erosional damage to the yards and to preclude siltation of Mill Fork. In the stock piling and loading areas the drainage is coursed to prevent contamination of the stream by coal from the storage pile.

Combustible trash is burned in well designed incendiaries and incombustible trash is disposed of in an approved sanitary land fill located on fee land. Sewage is disposed of by a septic tank and drain field system approved by the State Health Department. Trailers are used for offices, bath house and material storage. These are of a semi-permanent nature and may be replaced by more permanent structures in the future if needed.

ABANDONMENT AND RECLAMATION PLAN
HUNTINGTON CANYON #4 MINE
SWISHER COAL COMPANY

1. Within six months after mining operations are permanently terminated, all surface structures will be removed from the site, including all mine buildings and steel structures. Useable items will be salvaged and unuseable items will be disposed of in an approved sanitary land fill.
2. All mine portals and openings will be tightly sealed to prevent entry into the mine by unauthorized persons. "Danger" signs will be placed at the portals. Seals will be of fireproof construction, made of concrete blocks with mortared joints and will be hitched 12-inches into the ribs. The seals will be placed in by the portals to a point where the overburden height is at least three times the height of the seal. The portal will then be back-filled with earth up to the seal.
3. All portal areas, mine yards, access roads, haul roads and all other areas of the surface involved in the mining operation will be thoroughly cleaned of all trash and junk. Such trash will be disposed of in an approved sanitary land fill.
4. Because of the rocky, ledgy character of the north side of Mill Fork Canyon, top soil is either non-existent or else poorly developed in most areas. Therefore, no plans have been made to stock pile top soil for future reclamation use, especially since the small amount of top soil that does occur near the canyon bottom has been contaminated by coal fines from past mining operations and consequently is no better suited for plant support than the sub-soils. Upon termination of mining activities, all disturbed surface areas will be reseeded with the following mix as prescribed by the U.S. Forest Service for this particular location:

Per Acre	3 lb. Smooth Brome
	3 lb. Timothy Grass
	2 lb. Orchard Grass
	2 lb. Crested Wheat Grass
	1 lb. Kentucky Blue Grass
	1 lb. Ranger Alfalfa
	1 lb. Meadow Foxtail
Total	<u>13 lb. per acre</u>

5. In addition to the reseeded that will be done by Swisher Coal Company, large native Ponderosa pine trees, as well as Cottonwood and Aspen trees have been left encircling the lower yard and will significantly contribute to the natural refoiling of the disturbed area. Natural refoiling of the upper yard is also expected to augment reseeded efforts.
6. As much as possible, prominent drainage features which have been diverted,

channeled or culverted will be returned to their original alignment. However, such re-establishment of alignment will not be done where excessive siltation of Mill Fork or Huntington Canyon may result. Any area likely to impound water will be graded to prevent impoundment.

7. The purpose of reclamation will be to present an area of aesthetic appearance and one compatible with surrounding forest use. Surveys will be made as often as is necessary to insure that the objectives of reclamation are being fulfilled.

WATER REQUIREMENTS

The greatest use of water will be for the sprays on the mining machinery. For a two-unit mine maximum water requirements for this purpose would be approximately 16,000 gallons per day, for a four-unit mine, 32,000 gallons per day. Additionally, a maximum of 2,000 gallons per day would be needed for showering and sanitary purposes. Water is obtained for this from a pumping station drawing out of Mill Fork or Huntington Creek. This pumping station has been constructed according to the specifications of the Forest Service and the State Water Engineer. Potable water is tested and treated to comply with State Health Department standards.

PERSONNEL REQUIREMENTS

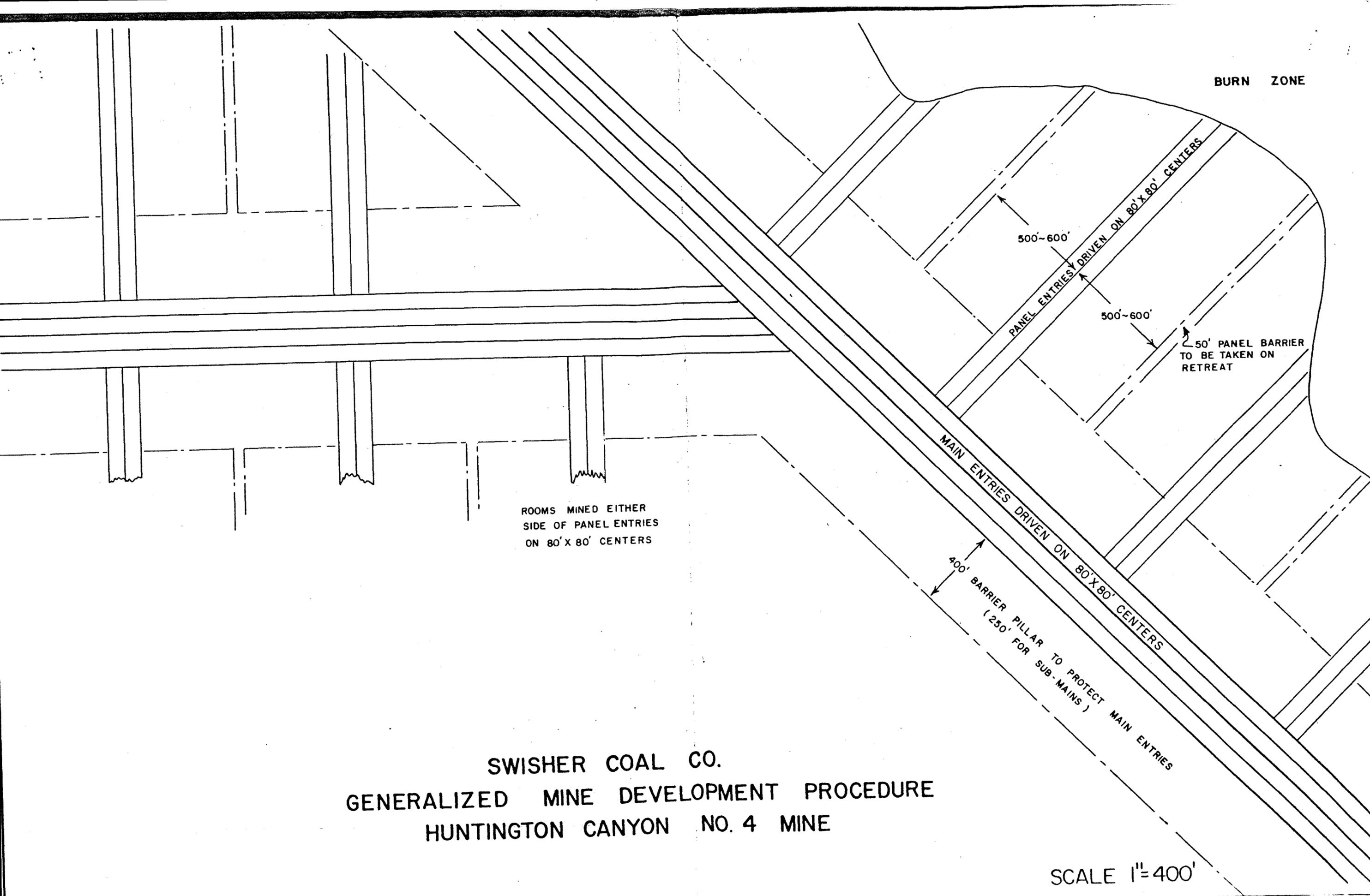
A maximum of about 120 people will be employed when the mine is in full operation, including hourly workers, supervisors and staff. Swisher Coal Company is an equal opportunity employer and is non-discriminating in its hiring practices. Support employment is needed for truck haulage and mine services such as parts distributors and fuel outlets. Revenue is generated in the area in the form of personal income of mine employees and of service and support industries, as well as taxes, royalties and lease payments. The effect of the increased employment and revenue on the area economy is healthy.

HEALTH AND SAFETY

Health and safety requirements in all coal mines are established by the Mining Enforcement and Safety Administration of the Department of the Interior. All phases of mining are regulated by M.E.S.A. including fire control, dust control, refuse disposal, roof control, ventilation and haulage. In addition to the statutory provisions of the 1969 Coal Mine Health and Safety Act, the individual operators are required to submit various plans covering specific areas of health and safety which, when approved, become legally binding. The following plans have been approved by M.E.S.A. and are included with this report:

1. Roof Control Plan
2. Ventilation System and Methane and Dust Control Plan
3. Fan Stoppage Plan
4. Plan for Search of Smoking Material
5. Emergency Medical Assistance Plan
6. Plan for Surface Organization and Procedure in Case of Mine Fire or Explosion.

BURN ZONE



ROOMS MINED EITHER
SIDE OF PANEL ENTRIES
ON 80' X 80' CENTERS

SWISHER COAL CO.
GENERALIZED MINE DEVELOPMENT PROCEDURE
HUNTINGTON CANYON NO. 4 MINE

SCALE 1"=400'



Exhibit #33 - Response to: Division of Oil, Gas and Mining, Conditional Approval of Huntington Canyon #4 Mining and Reclamation Plan

SWISHER COAL CO.

P. O. BOX A U

PRICE, UTAH 84501

PHONE 801-637-5050

December 1, 1978

Mr. Ronald W. Daniels
Coordinator of Mined Land Development
State of Utah
Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Dear Mr. Daniels:

Thank you for your letter of November 22, 1978, concerning the conditional approval of the #4 Mine Plan. I have attached a copy of your letter for reference, and in an effort to expedite the approval, I will address each of your requests in their original order.

- (1) Swisher Coal will hereby commit to regrade and revegetate the regraded area rills and gullies greater than 9 inches deep, as per part 717.14(d).
- (2) Swisher Coal will hereby commit to cover two coal seams exposed at the face up, as per part 717.14(e).
- (3) Swisher Coal will hereby commit to formulate and submit a Reclamation Plan for the Castle Valley Rail Spur cleaning plant facility within 6 months of the date of this letter (11-22-78), as per part 717.15.
- (4) Swisher Coal will hereby commit to submit an analytical quality control system for water monitoring, as per part 717.17(b)(iv).
- (5) Swisher Coal will submit a detailed engineering and construction plan for the discharge and diversion structures and the sedimentation ponds for approval by the U.S. Forest Service and O.S.&M. by January 1, 1979, and will begin construction of said structures within one month of approval of said plans by the Division of Oil, Gas and Mining. (It must be noted that the above time schedule may be varied due to extreme winter weather conditions; however, we will attempt to meet the schedule as nearly as possible).

SWISHER COAL CO.

P. O. BOX A U

PRICE, UTAH 84501

PHONE 801-637-5050

Mr. Ronald W. Daniels
December 1, 1978
Page Two

- (6) Swisher Coal will hereby commit to monitor water in the mine, and to upgrade ground water monitoring procedures if found necessary by your division, as per part 717.17 (h).
- (7) Swisher Coal will hereby commit to revegetate and stabilize cut and fill slopes and the area associated with the mine, including the roads and face-ups, as per part 717.17.
- (8) Swisher Coal will hereby commit to undertake monthly monitoring of surface waters, as per part 717.17(b) (iii).

I have forwarded seven copies of this exhibit to Mr. Murray Smith of the Office of Surface Mining in Denver. If you have any questions, or need any further information, please contact me.

Thank you for your consideration.

Respectfully,



Dan W. Guy, P.E.
Chief Engineer

DWG/ag

Enclosure



SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

OIL, GAS, AND MINING BOARD

I. DANIEL STEWART
Chairman

CHARLES R. HENDERSON
JOHN L. BELL
THADIS W. BOX
C. RAY JUVELIN

D R A F T

November 22, 1978

Mr. Dave Shaver
Swisher Coal Company
90 West 1st North
Price, Utah 84501

Re: Conditional approval of
Huntington Canyon #4
Mining and Reclamation Plan

Dear Dave:

This letter is to inform you that the Division, through a cooperative review with the Denver Regional Office of the Office of Surface Mining, hereby grants tentative approval to your plan submitted for this mine. This approval is conditional upon the Division and the Office of Surface Mining receiving the following additions to the mining and reclamation plan from Swisher:

1. A commitment to regrade and revegetate the regraded area rills and gullies greater than 9 inches deep, part 717.14(d).
2. A commitment to cover two coal seam(s) exposed at the face-up, part 717.14(e).
3. A commitment to formulate and submit a Reclamation Plan for the Castle Valley Rail Spur cleaning plant facility within 6 months of the date of this letter, part 717.15.
4. A commitment to submit an analytical quality system for water monitoring, part 717.17(b)(iv).
5. A commitment to submit a detailed engineering and construction plan by January 1, 1979, for the discharge and diversion structures and the sedimentation ponds for approval by the U.S. Forest Service and this division. Also a commitment to begin construction of discharge and diversion structures and the sedimentation ponds within one month of approval of said plans by this division, part 717.17(c)(1).

Mr. Dave Shaver
November 22, 1978
Page Two

6. A commitment to monitor water in the mine and to upgrade ground water monitoring procedures if this division finds it necessary, part 717.17(h).
7. A commitment to revegetating and stabilizing cut and fill slopes and the area associated with the mine including the roads and face-ups, part 717.17.
8. A commitment to undertake monthly monitoring of surface waters, part 717.17(b)(iii).

If you have any questions concerning this conditional approval, please contact this office. Upon receipt of the above information from Swisher the Division and the Office of Surface Mining will proceed with a final approval of this mining and reclamation plan.

Very truly yours,

RONALD W. DANIELS
COORDINATOR OF MINED
LAND DEVELOPMENT

RWD/sp
enc: Interim Rules

SWISHER COAL CO.

P. O. BOX A U
PRICE, UTAH 84501
PHONE 801-637-5050

December 5, 1978

Mr. Ron Daniels
Coordinator of Mined Land Develop.
State of Utah
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116



Dear Mr. Daniels:

Enclosed are two copies each of Exhibits #32 and #33 for addition to our O.S.M. plans. Exhibit #32 is the revised mining plan and other information requested (and approved) by the U.S.G.S. Exhibit #33 is the list of commitments as requested by your office.

I have forwarded five copies of Exhibit #32 and seven copies of Exhibit #33 to the O.S.M. in Denver.

If you need any further information, please let me know.

Respectfully,

A handwritten signature in cursive script that reads "Dan W. Guy".

Dan W. Guy, P.E.
Chief Engineer

DWG/ag

Enclosures

Exhibit #32 - November 22, 1978 Mining Plans and typical illustrations
for Huntington Canyon #4 Mine - both seams.
(Added as supplement at request of U.S.G.S.)



United States Department of the Interior

SL-064903
U-33454

GEOLOGICAL SURVEY
Office of the Area Mining Supervisor
Conservation Division
8426 Federal Building
125 South State Street
Salt Lake City, Utah 84138

December 1, 1978

Mr. Max Robb, President
Swisher Coal Company
P.O. Box AU
Price, Utah 84501

RECEIVED
DEC 4 1978

Dear Mr. Robb:

SWISHER COAL CO.

Enclosed is a xerox copy of that portion of Swisher's updated mine development plan of the Blind Canyon seam as received in this office on November 30, 1978. We have made a note on the panel located directly above the main entry system projected on the mine development plan for the Hiawatha coal seam. Please put this note on your maps and send us two copies of only the map with the changes. Send OSM five copies of the maps and data you sent us on November 30, 1978. Your submittal as noted completes our requirements at this office.

If you have any questions please advise.

Sincerely yours,

Jackson W. Moffitt
Jackson W. Moffitt
Area Mining Supervisor

Enclosure

SWISHER COAL CO.

P. O. BOX A U
PRICE, UTAH 84501
PHONE 801-637-5050

November 29, 1978

Mr. Jackson W. Moffitt
Area Mining Supervisor
U.S. Dept. of Interior
Geologic Survey
Conservation Division
8426 Federal Building
125 South State Street
Salt Lake City, Utah 84138

RE: Swisher Coal Co.
Huntington #4 Mine
SL-064903
U-33454

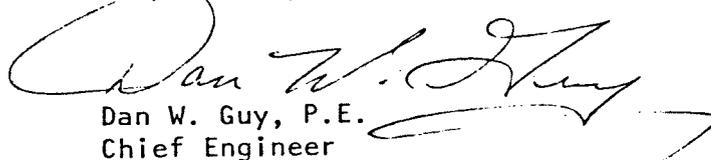
Dear Mr. Moffitt:

Please find enclosed, two work copies of the mining projections and typical illustrations as requested in your letter of November 22, 1978.

I hope this submittal will be sufficient to obtain your early approval of our mining plans. If you need any further information, please let me know.

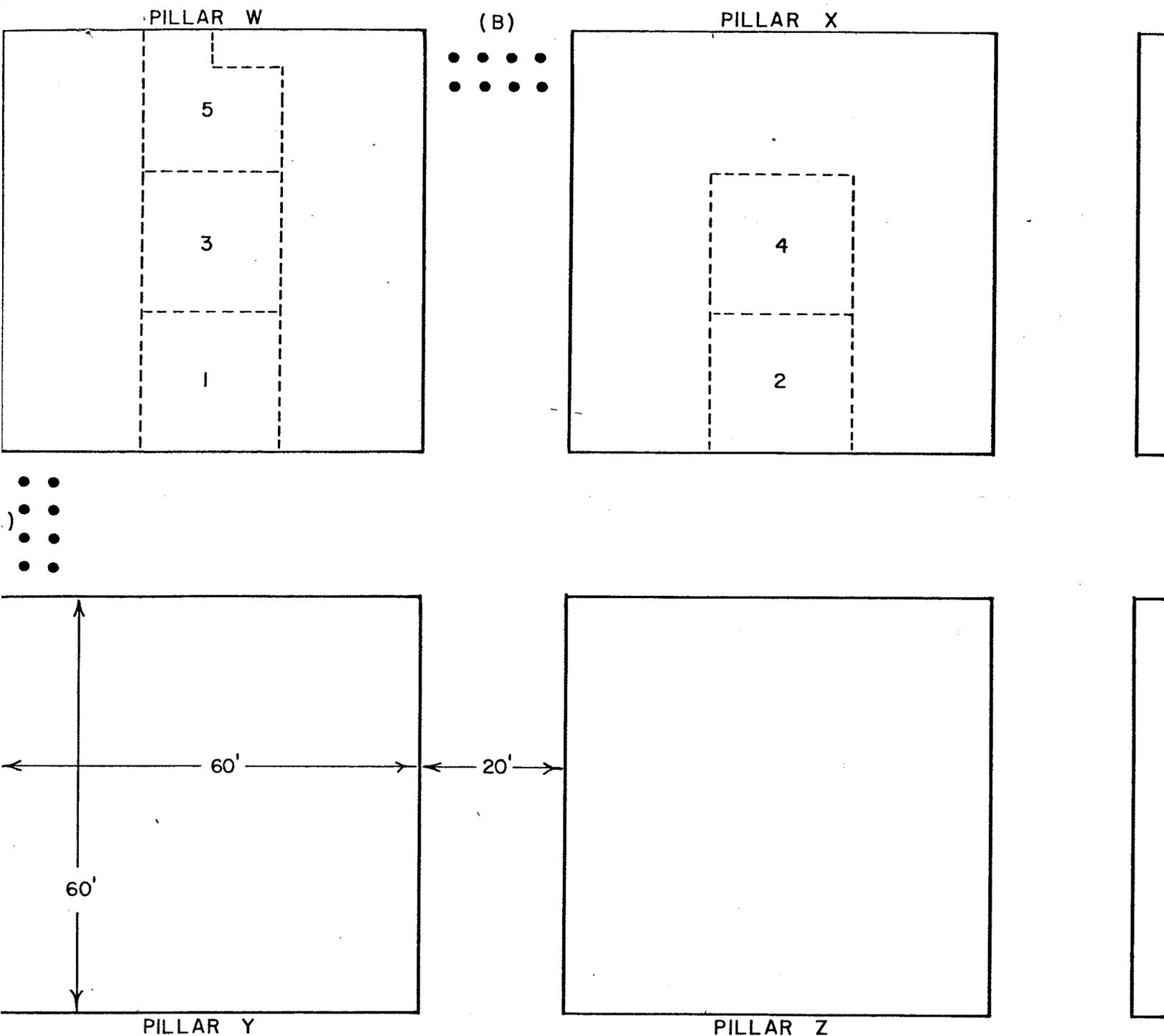
Thank you for your consideration.

Respectfully,


Dan W. Guy, P.E.
Chief Engineer

DWG/ag

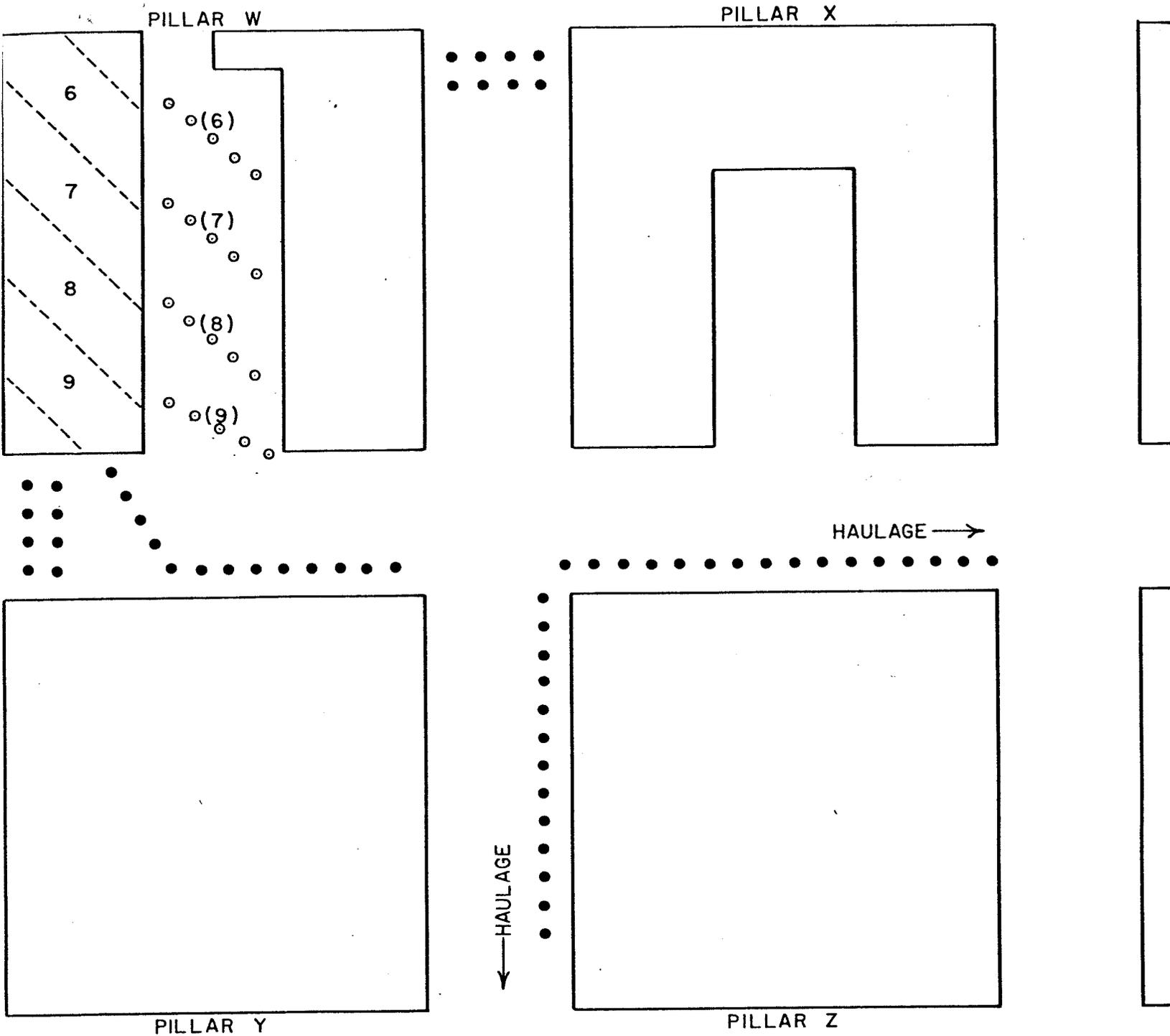
Enclosures



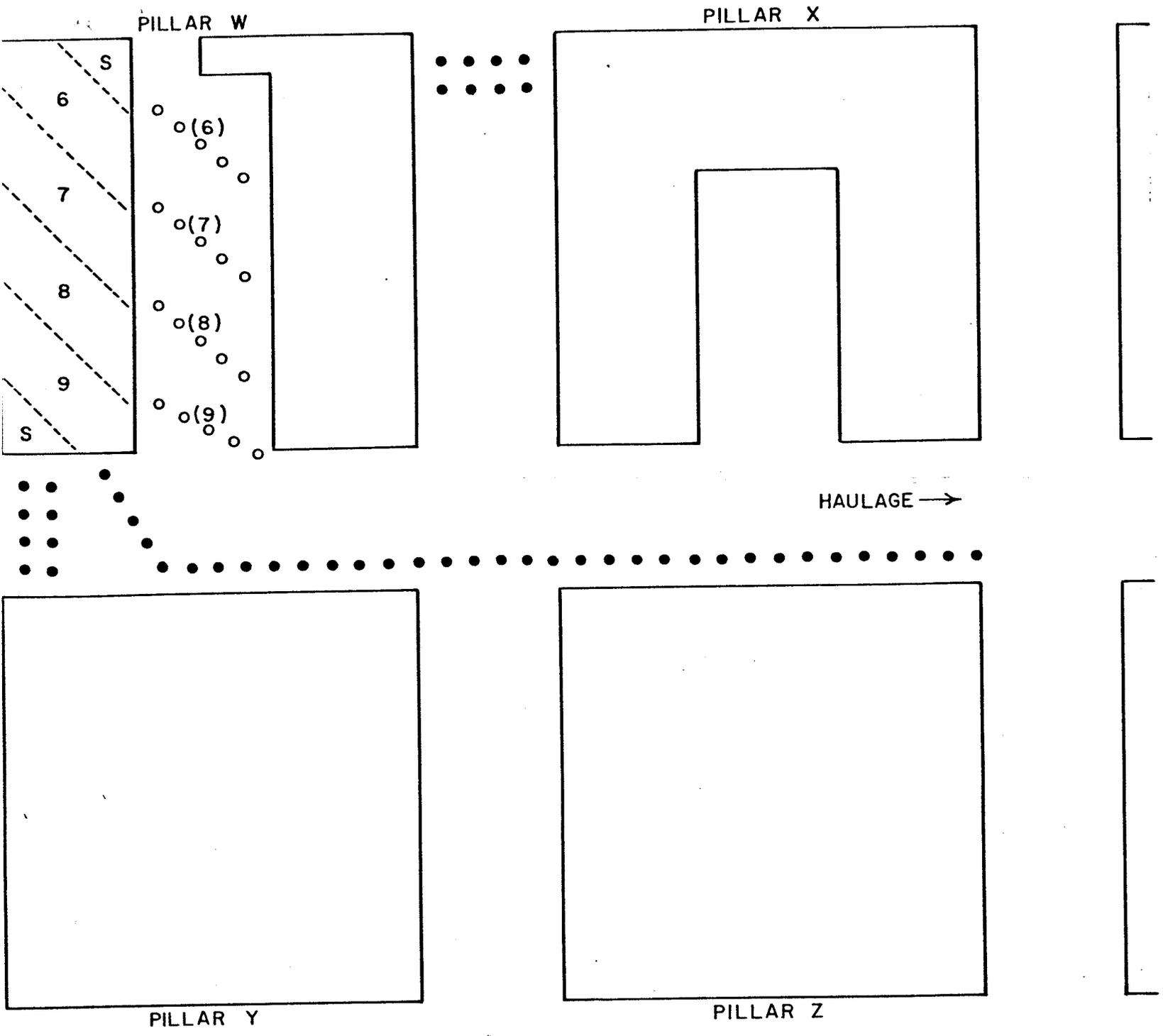
1. All entries, crosscuts and intersections shall be bolted in accordance with the approved roof control plan before starting pillar splits.
2. Breaker posts will be placed in positions A and B as shown prior to the first box cut.
3. Box cuts 1, 2, 3, 4 and 5 will be mined as shown. Typically cut 1 will be bolted as cut 2 is being mined, cut 2 bolted as cut 3 mined, etc. A 5' stump may be left at the end of cut 5 on either side at the discretion of the mine foreman. The sequence of the box cuts may vary depending on pillar location, pillar size, haul road direction, etc. Roadway posts and turn posts shall be installed before the 2nd cut into the pillar split.

Proposed pillaring plan, subject to change with MSHA 6-month review.

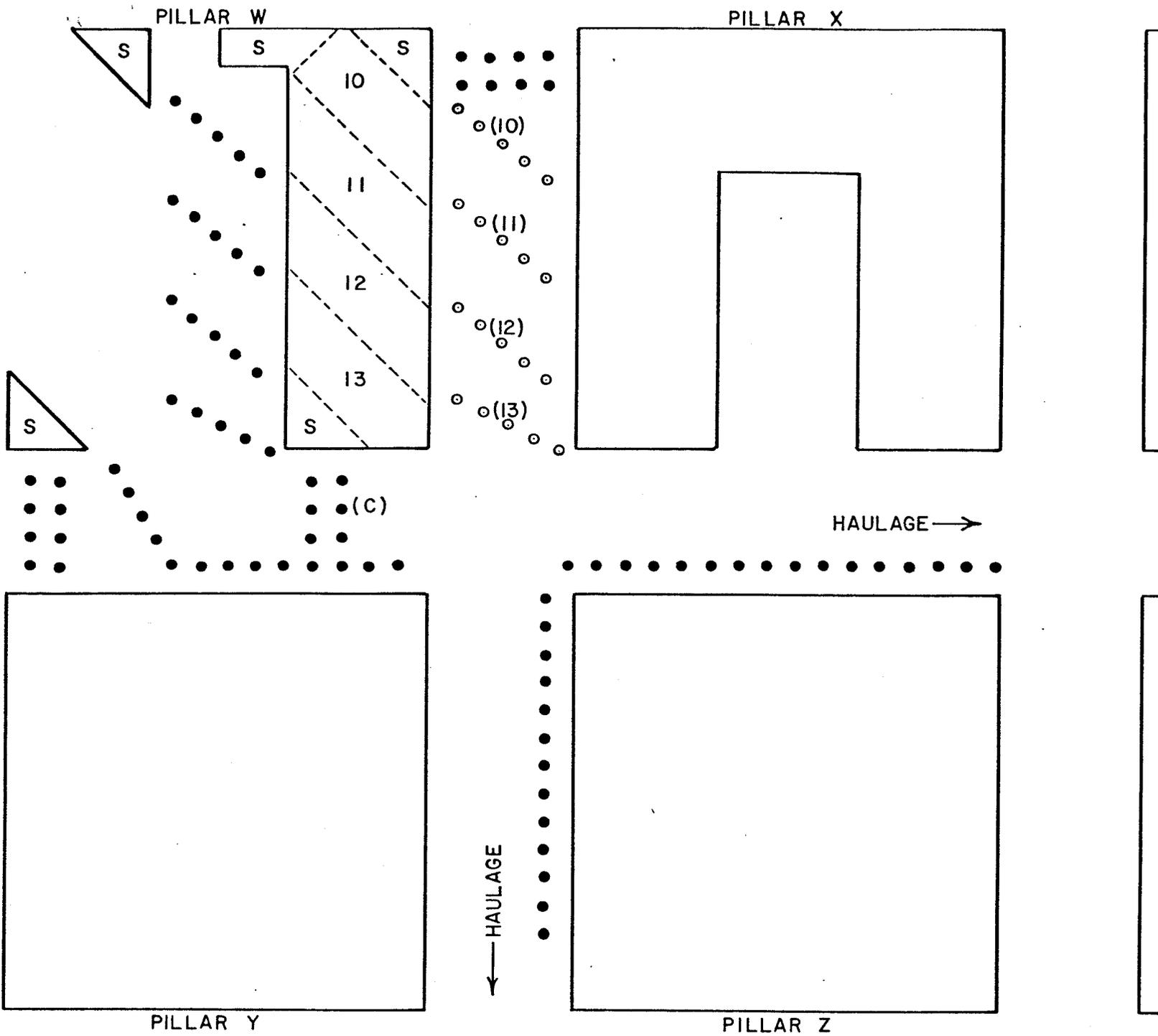
SCALE 1" = 20'



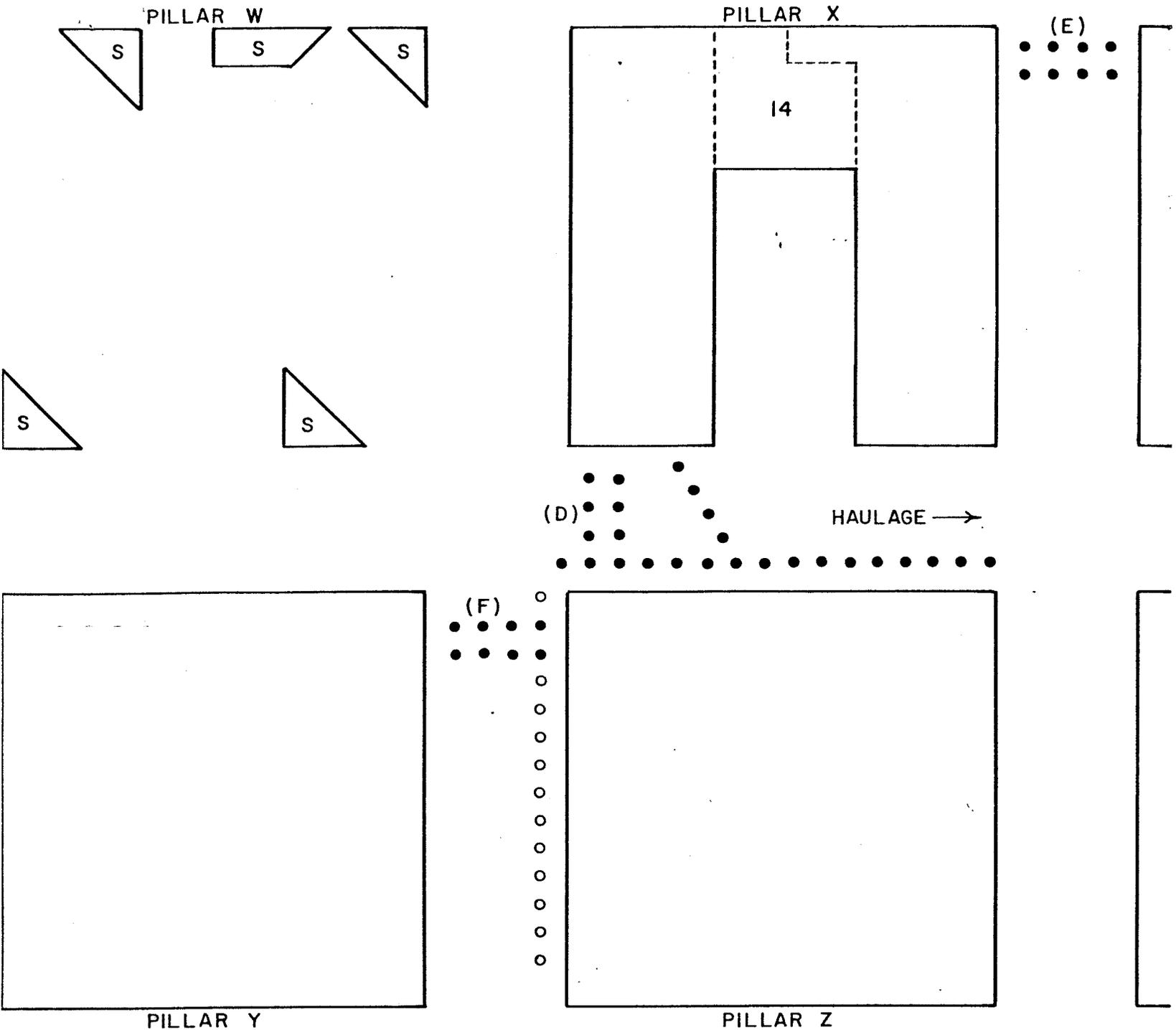
4. Roadway timbers will be placed as shown to allow double haulage (two shuttle cars) around pillar Z. When single haulage is necessary, roadway timbers will be placed as shown on plate P-2 (a). Roadway timbers may be located on either side of the roadway as needed to accommodate shuttle car travel so long as the roadway width does not exceed 16'.
5. Warning timbers located at (6) will be installed prior to cut 6 being mined. Timbers (7) will be placed prior to cut 7 being mined, and so on. Each cut will be approximately 10' wide or the width of the continuous miner in use.



Configuration of roadside timbers when single haulage around pillar Z is necessary. Roadway timbers may be located on either side of the roadway as needed to accommodate shuttle car haulage so long as the roadway width does not exceed 16'.



6. Breaker posts shall be placed at location (C) as shown after mining inby is completed.
7. Warning timbers (10) will be installed as required as cut 10 is being mined. Timbers (11) will be placed as required prior to cut 11 being mined, and so on,



8. After pillar W is extracted, breaker posts shall be installed at locations D, E, and F as shown.
9. Radius timbers will be installed leading into the split of pillar X prior to cut 14.
10. At this point pillar X will be extracted in the same manner as was pillar W with all breaker posts, radius timbers, and roadway timbers installed as outlined in plates 1-3 of this plan.
11. Cut sequences may vary depending on pillar location, pillar size and dimension, haulroad direction, etc. so long as the timbering procedures outlined in this plan are followed.
12. Direction of pillar attack is optional depending on existing conditions such as slips, faults and others stated above.
13. Breaker posts, turn posts, and roadway posts, shall be installed on 4' centers. Width of entry or crosscut will determine number of posts required.



United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION
COAL MINE HEALTH AND SAFETY
POST OFFICE BOX 15087
DENVER, COLORADO 80215

DISTRICT 9

April 6, 1976

In Reply Refer To:
EMS - H&S 3-1-7

Dave Shaver, Mining Engineer
Swisher Coal Company
90 West First North
Price, Utah 84501

Re: Huntington Canyon #4
I.D. No. 42-01270
Ventilation Plan

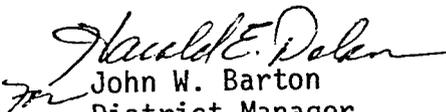
Dear Mr. Shaver:

The ventilation plan for the subject mine has been approved. The plan is subject to revision at any time and shall be reviewed by the operator and MESA at least once every six months.

Before any changes are made in the approved ventilation system, they shall be submitted to and approved by the District Manager prior to being implemented.

This plan supersedes any previously approved plans, and a copy of this plan shall be made available to the miners.

Sincerely yours,


John W. Barton
District Manager

Enclosure





United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION
COAL MINE HEALTH AND SAFETY
POST OFFICE BOX 15037
DENVER, COLORADO 80215

DISTRICT 9

April 6, 1976

In Reply Refer To:
EMS - H&S 3-1-7

Dave Shaver, Mining Engineer
Swisher Coal Company
90 West First North
Price, Utah 84501

Re: Huntington Canyon #4
I.D. No. 42-01270
Ventilation Plan

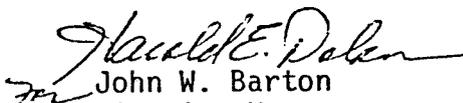
Dear Mr. Shaver:

The ventilation plan for the subject mine has been approved. The plan is subject to revision at any time and shall be reviewed by the operator and MESA at least once every six months.

Before any changes are made in the approved ventilation system, they shall be submitted to and approved by the District Manager prior to being implemented.

This plan supersedes any previously approved plans, and a copy of this plan shall be made available to the miners.

Sincerely yours,


John W. Barton
District Manager

Enclosure



Ventilation System and
Methane and Dust Control Plan
#4 Mine.

GENERAL

1. Company Name - Swisher Coal Company
Mine Name - Huntington Canyon #4 Mine
Post Office Address - 90 West First North, Price, Utah 84501
Telephone No. - (801) 637-5050
USBM I.D.# - 42-01270
Operator's Name - Max A. Robb
Operator's Title - President
Operator's Address - 935 North Second East, Price, Utah 84501
Operator's Telephone No. - (801) 637-3581
2. Life of mine is less than one year.
3. Number of Employees - Undetermined until mine becomes operational.

Main Fan Installation

The main fan shall be of fireproof construction and shall be set no less than 15 feet from the nearest side of the mine opening, and shall have explosion doors and/or weak walls with a cross-sectioned area equal to or greater than the connecting entry. The fan shall be equipped with a pressure recording gauge and an automatic signal device designed to give alarm should the fan slow down or stop. The recording gauge and the automatic signal device shall be located on the side of the fan. The fan shall be driven by an electric motor operating on a separate power circuit independent of any other mine circuit. The area surrounding the fan shall be kept free of flammable material for at least 100 feet in all directions. The fan shall be kept in continuous operation except for scheduled stoppages for maintenance or adjustment. During such stoppages all men will be withdrawn from the mine and the mine power shall be cut off.

If an unusual variance of the mine ventilation pressure is observed, or if an electrical or mechanical deficiency of a mine fan is detected, the mine superintendent or mine foreman shall be notified immediately and appropriate action or repairs shall be instituted promptly.

Airflow shall be maintained in all intake and return aircourses. Multiple fans are not anticipated at any time in the future.

Section and Face Ventilation System

1. The complete section and face ventilation system for a typical five entry system is shown on Drawing Set #1. Line brattice used to ventilate the working face will be maintained to within 15 feet of the working face as shown on Drawing #2. Since the roof is supported by a conventional timbering plan wherein timbers must be placed so that the roadway does not exceed 16 feet in width, maintaining the line brattice to within 15 feet of the working face is the practical limit since it allows the continuous miner to operate without fear of damaging the face ventilation devices and always keeps the operator under permanently supported top. Where the line curtain is kept to within 15 feet of the face, no less than 8,000 cfm of air shall be maintained at the working face. The volume of air reaching the last open crosscut shall not be less than 12,000 cfm. A minimum mean entry face velocity of 80 feet per minute shall be maintained at all working faces where coal is cut, mined or loaded.
2. Ventilation in belt haulage entries will be controlled by regulations and check curtains. Belt air will be regulated to the return.
3. All air returning from working sections will be taken into the main returns so that no air reversal can occur.
4. Coal shall not be permitted to accumulate at the outby end of the face equipment to the extent that ventilation of the working face is restricted.

Permanent Stoppings

1. All ventilation devices such as stoppings, overcasts and undercasts shall be of substantial and incombustible construction installed in a workmanlike manner and maintained in a condition to serve the purpose for which they were intended. Any stopping leaking air excessively shall be repaired.
2. Permanent stoppings between intake and return air courses shall be constructed of cinder blocks with mortared joints. In short lived sections, Kennedy Stoppings or wire-and-plaster stoppings may be used for the last 600 feet only. Permanent stoppings will be maintained to and including the third connecting cross-cut outby the working face. Belt isolation stoppings will be of block-and-mortar, Kennedy metal or wire-and-plaster construction and will be installed within three shifts after the belt has been advanced toward the working face.
3. D.N.A.
4. A description of the construction of a stopping is shown on Drawing #3. Stoppings will be used to separate the return air course from the belt entry and to separate the belt entry from the intake air courses and escapeways. Refer to Drawing #1 for details.
5. Belt isolation stoppings made from Kennedy metal or wire and plaster construction shall only be used in short lived areas such as rooms, panels or butts.
6. Temporary stoppings or equivalent will be used to isolate the belt entry after a belt move while permanent stoppings are being constructed.

Methane and Dust Control Plan

- 1 a-b. Dust will be controlled at transfer points and loading points by rock dusting and manual clean up practices. Also, water will be introduced on the return belt 1,000 feet beyond the mine portal.
 - c. D.N.A.
 - d. D.N.A.
 - e. Rock dust will be applied to belt haulageways.
 - f. Where used, continuous miners shall be equipped with 27 water sprays operating at 125 psi and delivering 16 gpm. Pumps and sprays on face loading and cutting equipment will be maintained in operable condition at all times.
 - * g. Roadways will be rock dusted to control dust.
 - h. D.N.A.
 2. At least 24 of the water sprays indicated for dust suppression in each area shall be maintained and operated at the indicated volume and water pressure in the plan during mining operations.
 3. No bleeder entries are anticipated at this time. Before any pillar mining is done a bleeder entry system will be included on a six month review of the ventilation plan.
 4. The methane content in any return aircourse other than an aircourse returning the split of air from a working section shall not exceed 2.0 volume per centum. The methane content in the air in active workings shall be less than 1.0 volume per centum. If at any time the air in any active working contains 1.0 volume per centum or more of methane, changes or adjustments ^{shall} ~~should~~ be made at once in the ventilation in the mine so that the air shall contain less than 1.0 volume per centum of methane.
 5. Methane examinations shall be made at the working face at the last permanent support by certified or qualified men using either an approved methaneometer or a flame safety lamp.
 6. When an area is to be sealed, the location, sequence of installation, and method of construction of the seals will be submitted on the six month review of the ventilation system plan.
- * Whenever haulageways are dry and dusty and dust is being raised by moving equipment, the haulageways shall be wetted down with water to keep the dust from entering the ventilating current.

Diesel Equipment

1. All diesel equipment used underground will be operated and maintained according to the manufacturer's instructions.
2. The atmosphere in the operator's compartment and the atmosphere returning from any working place where diesel powered equipment is being used shall be tested at least once a week while the equipment is in operation, and if the analyses of these samples exceeds five parts per million NO₂ or 50 parts per million CO, or both, corrective measures shall be taken immediately.
3. If any unusual discoloration of the exhaust occurs, the atmosphere in the operator's compartment and the atmosphere returning from the diesel equipment will be tested immediately. If levels of NO₂ and CO are detected approaching those stated in paragraph 2, samples will be taken every shift until such levels are reduced to normal operating levels.
4. If for any reason the levels specified in paragraph 2 are exceeded, corrective measures will be taken immediately. Samples will be taken every hour thereafter until the corrective measures are shown to be effective.
5. The date, time of sampling, machine identification and the results of the analyses shall be recorded in a book maintained for that purpose.

Mine Map

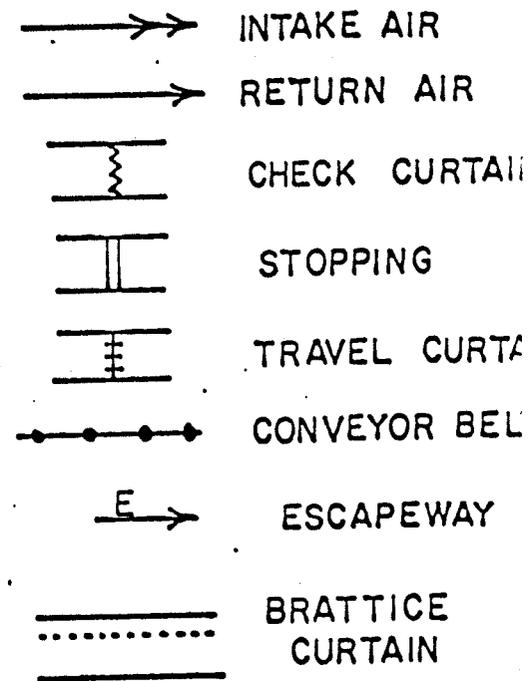
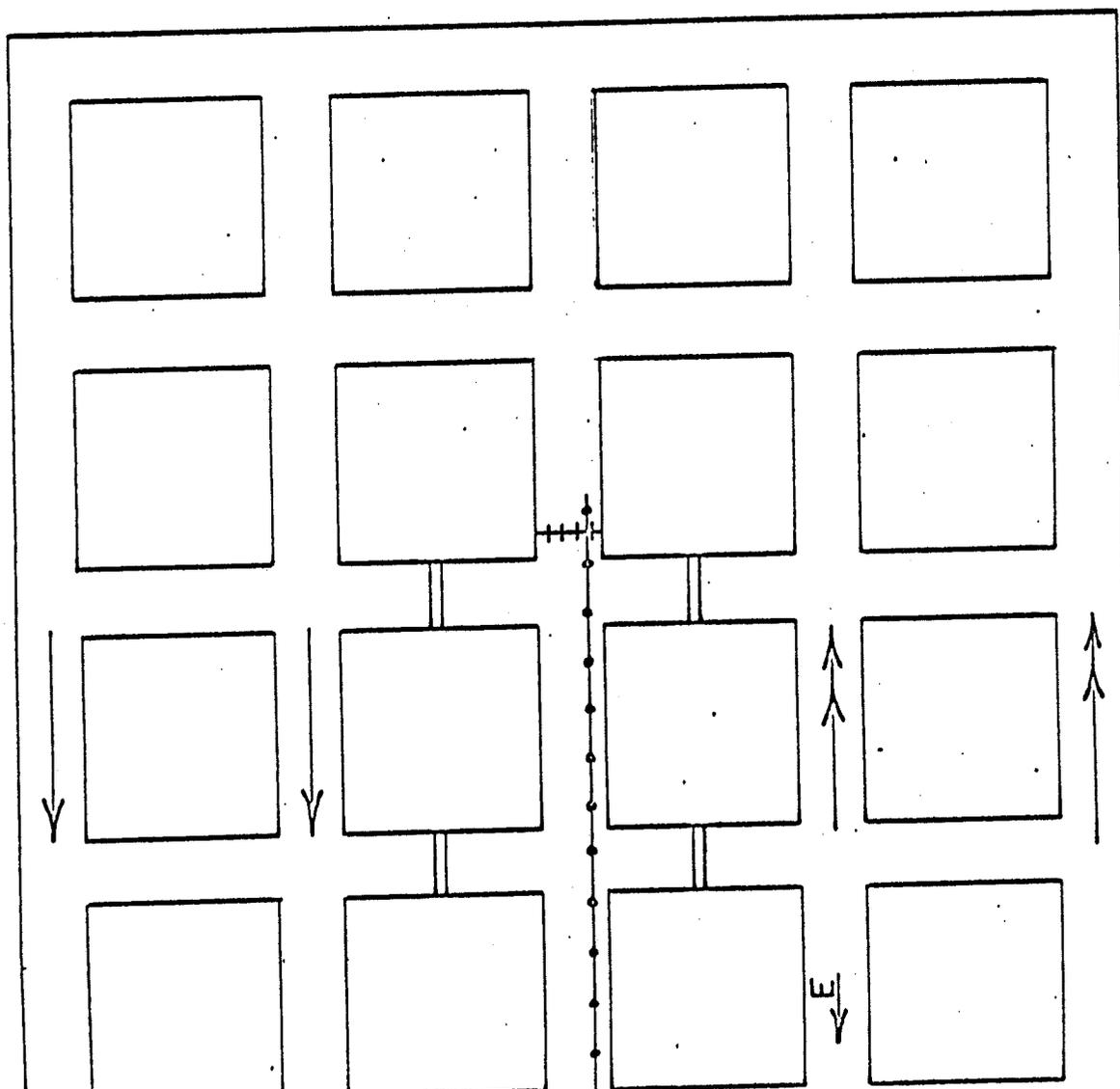
A mine map showing the following will be submitted once the mine becomes operational:

1. A legend.
2. Property lines
3. No oil or gas wells are present
4. All known underground workings adjacent, above and below the mine
5. Complete fan data
6. Location of all surface openings with air direction and quantity
7. Faults
8. Projections for one year with ventilation controls
9. Projections for each section
10. All underground workings with active section delineated
11. Location of stoppings, overcasts, regulators, seals, air lock doors and man doors
12. Volume of air entering and leaving each split and the percent of methane.
13. Location and average height, width and air velocity in conveyor belt haulage entry
14. Velocity of air at restricted conditions
15. Areas which have been abandoned or pillared
16. Location of proposed shafts, slopes or drifts
17. Location of proposed seals
18. Elevation of coal seam
19. Escapeways designated by symbols

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM

BEGINING OF CUT CYCLE

DRAWING SET NO.1

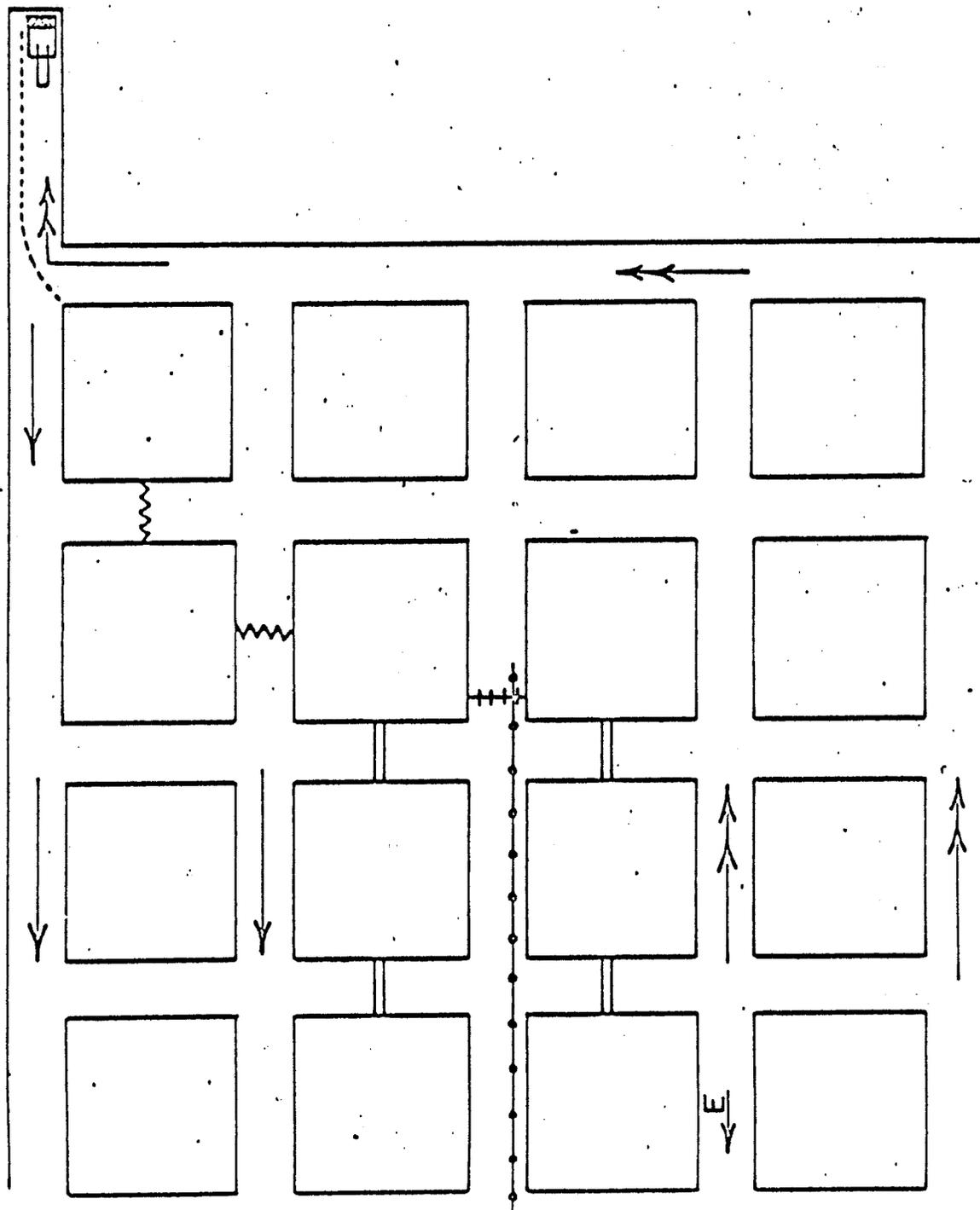


SCALE 1" = 60'

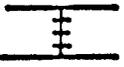
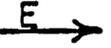
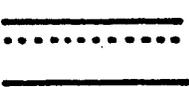
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 1

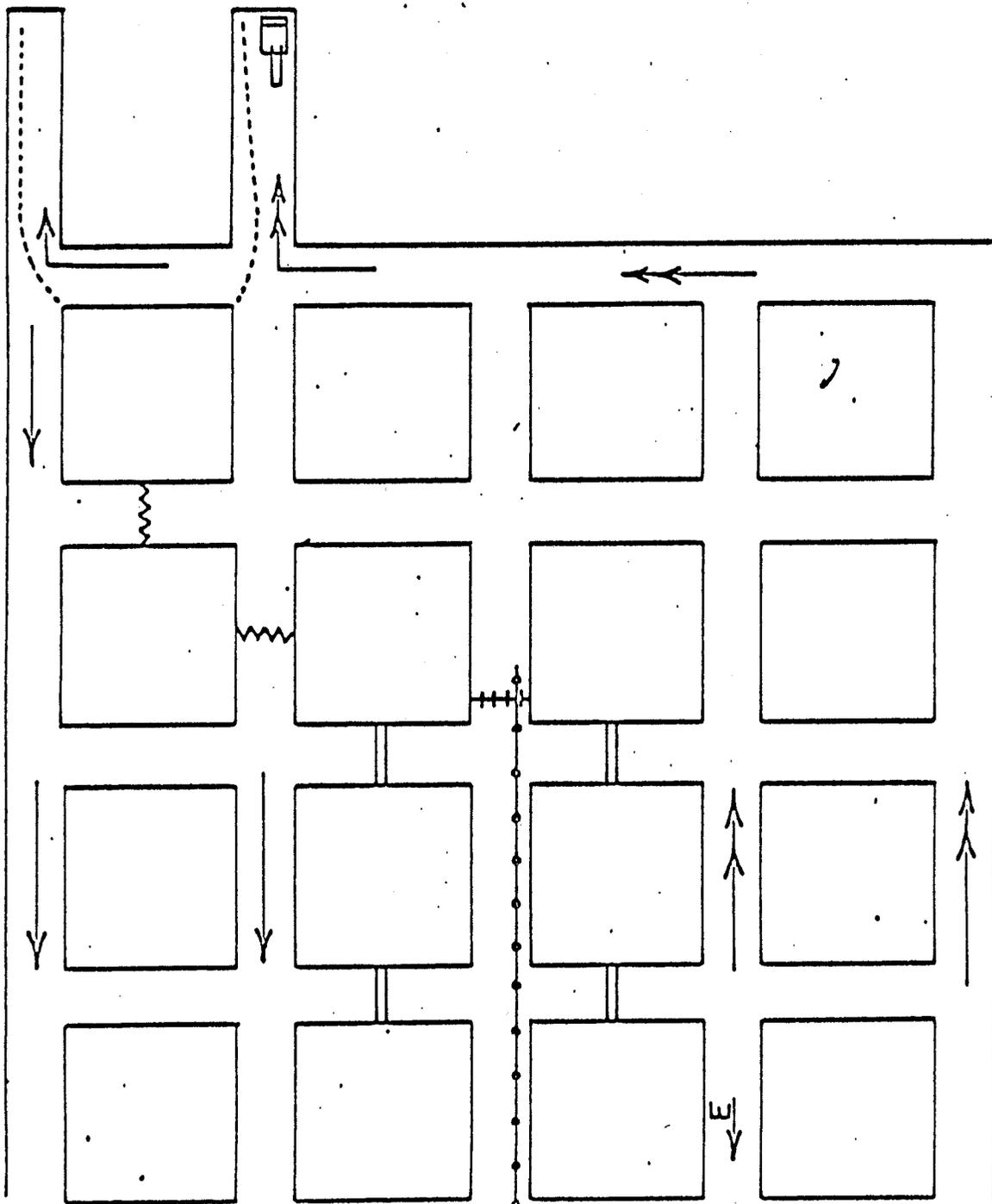
-  INTAKE AIR
-  RETURN AIR
-  CHECK CURTAIN
-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

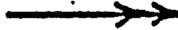
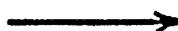
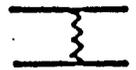
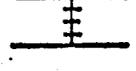
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 2

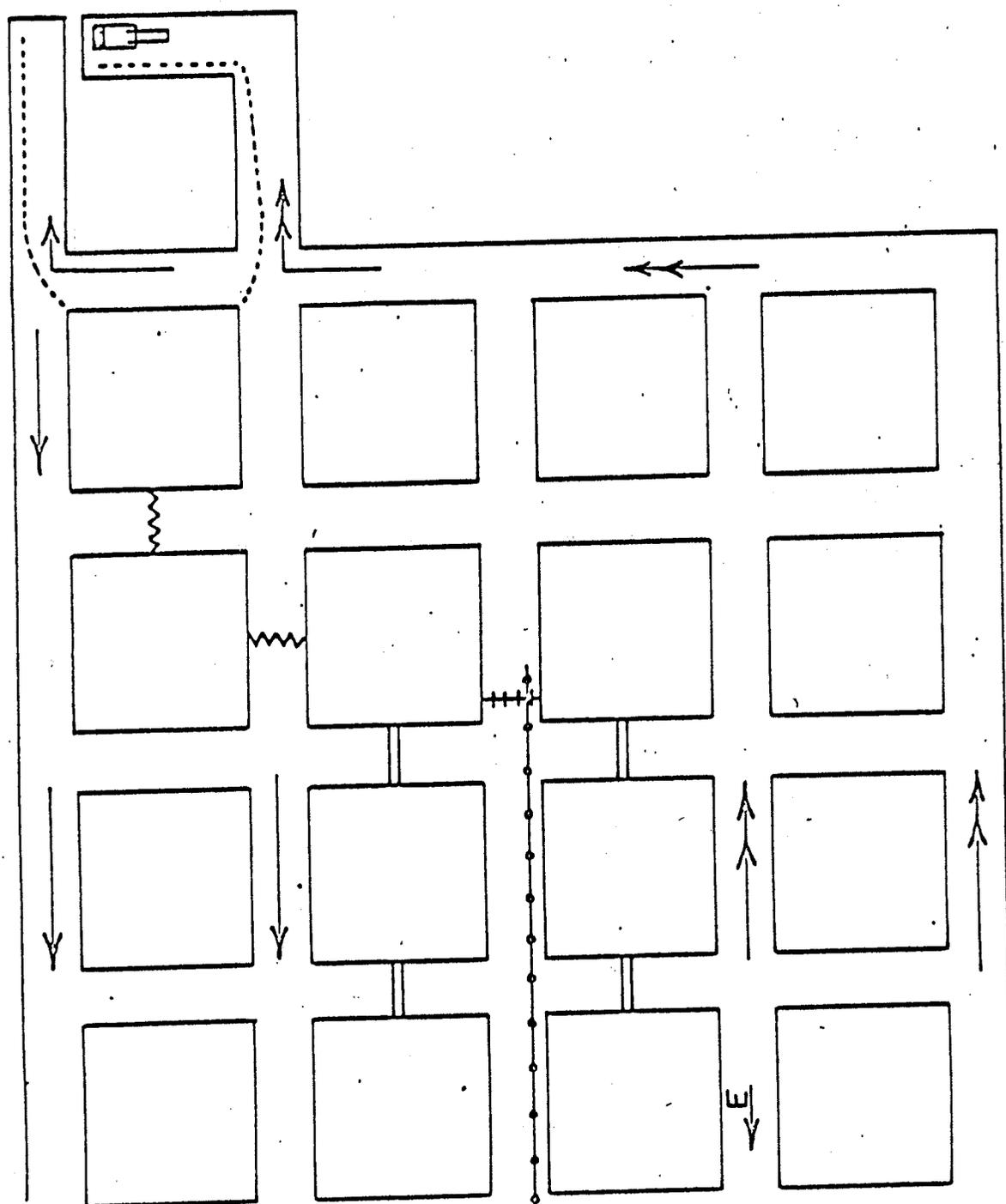
-  INTAKE AIR
-  RETURN AIR
-  CHECK CURTAIN
-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

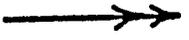
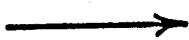
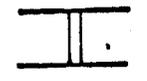
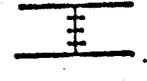
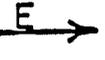
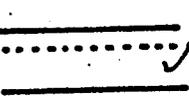
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 3

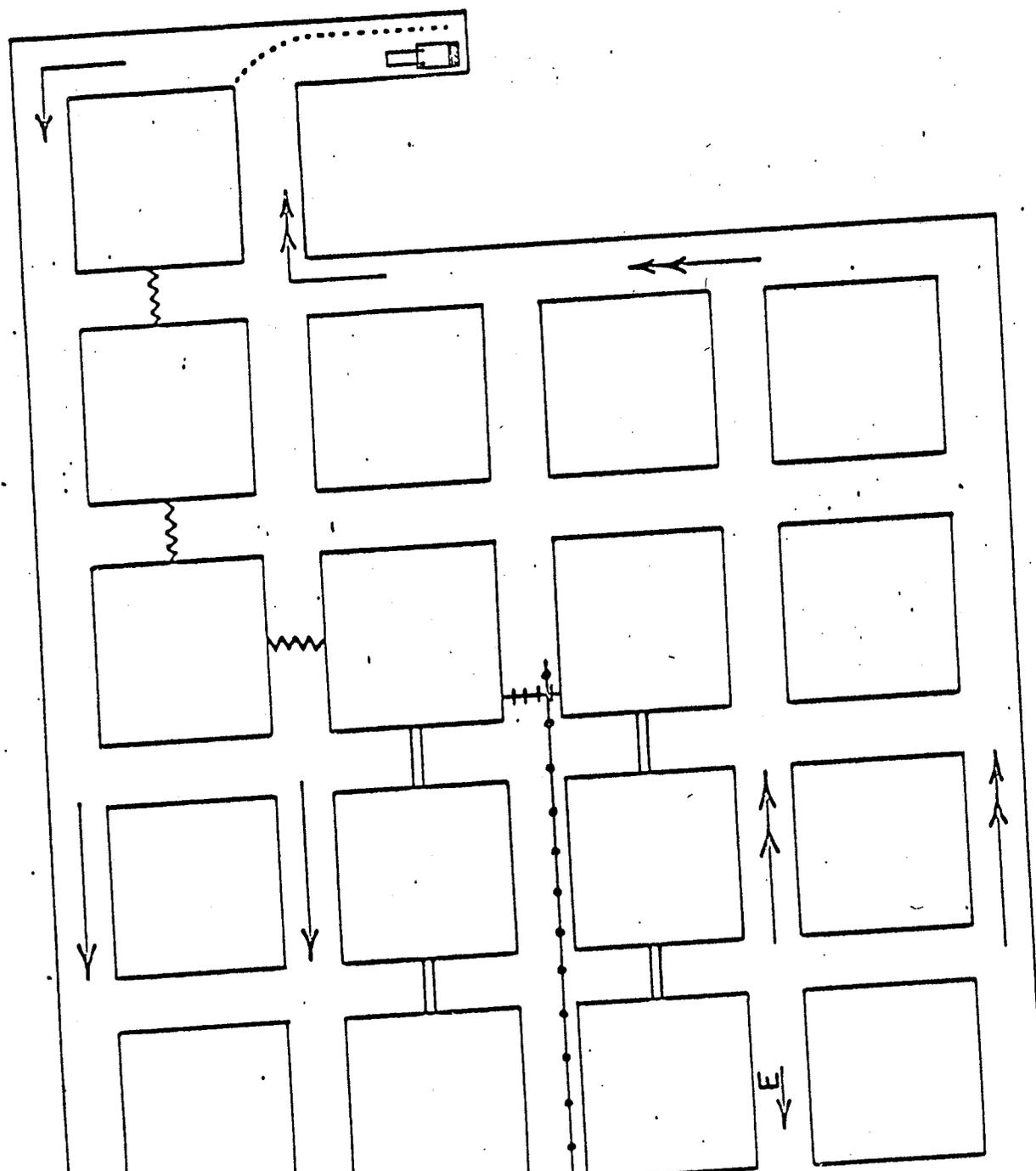
-  INTAKE AIR
-  RETURN AIR
-  CHECK CURTAIN
-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

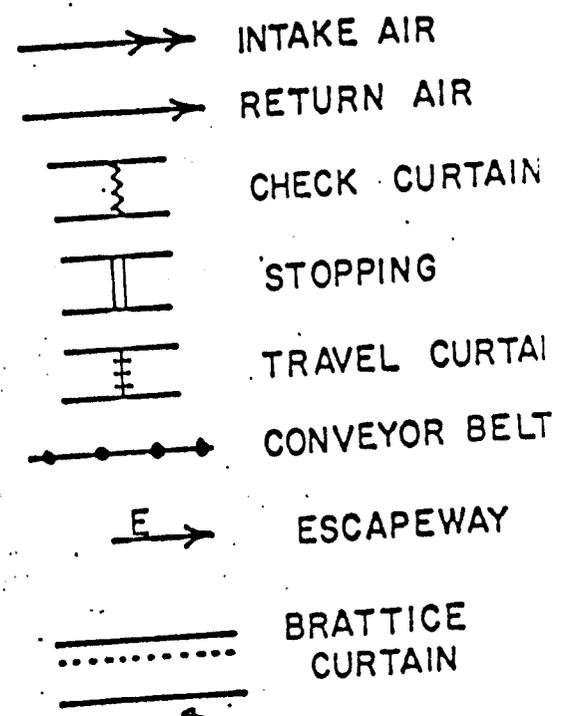
MINE #4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 4

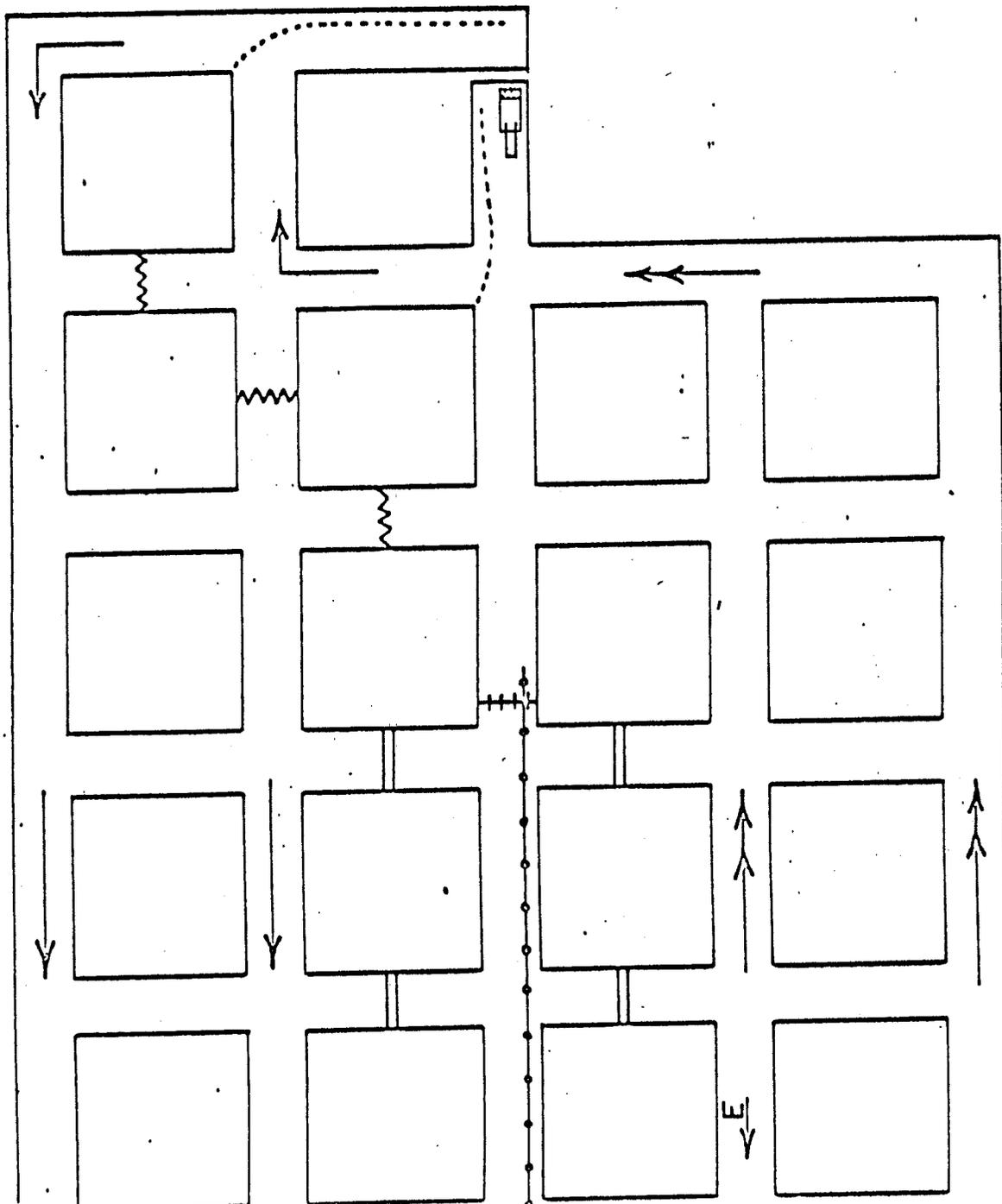


SCALE 1" = 60'

MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 5

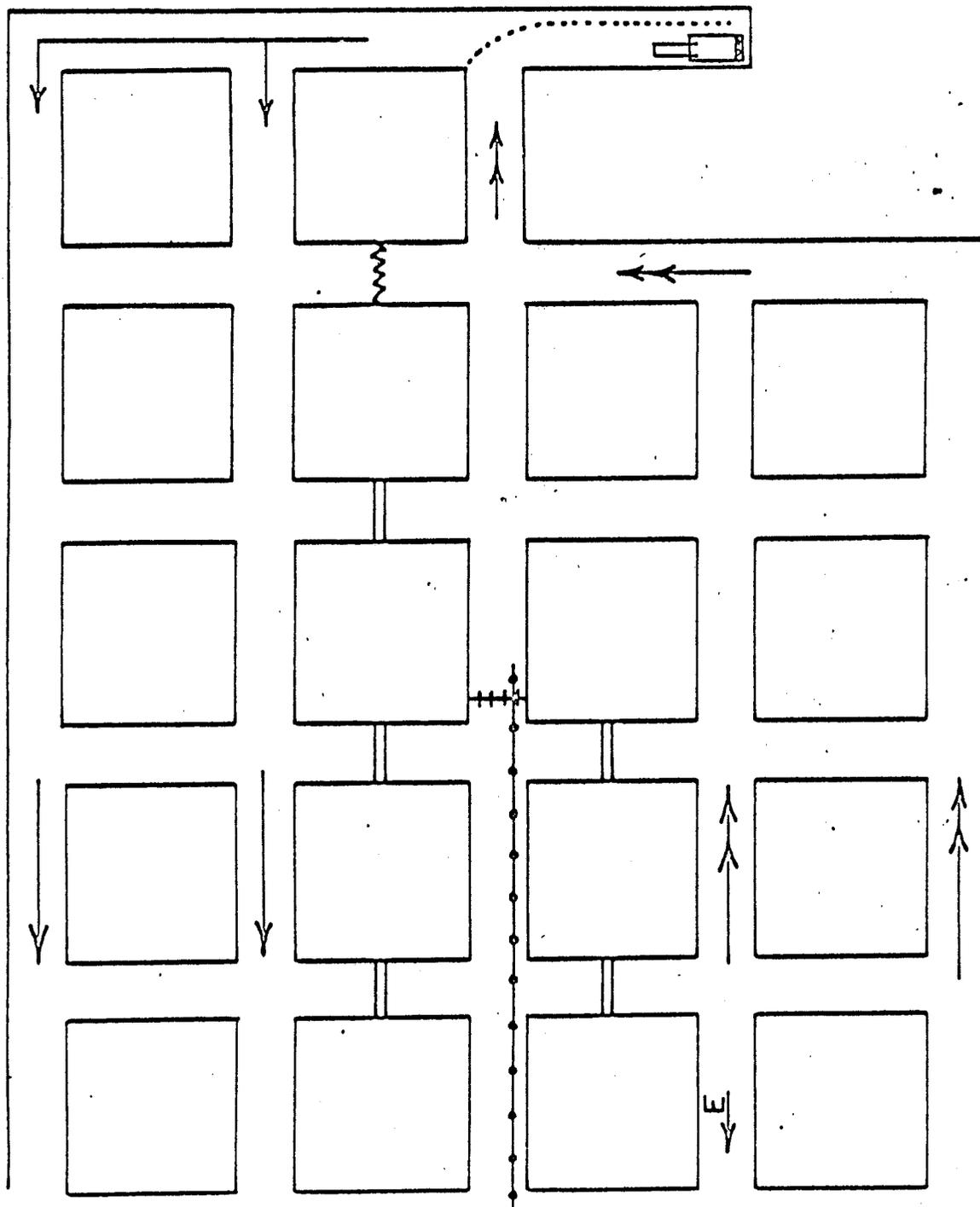
- INTAKE AIR
- RETURN AIR
- CHECK CURTAIN
- STOPPING
- TRAVEL CURTAIN
- CONVEYOR BELT
- ESCAPEWAY
- BRATTICE CURTAIN

SCALE 1" = 60'

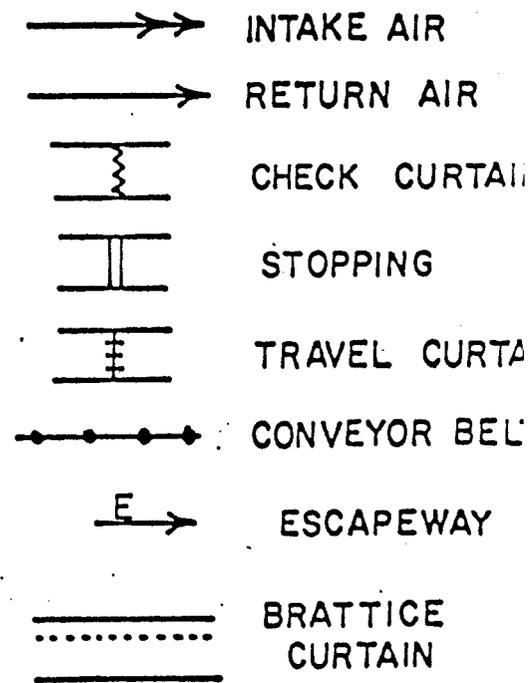
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 6

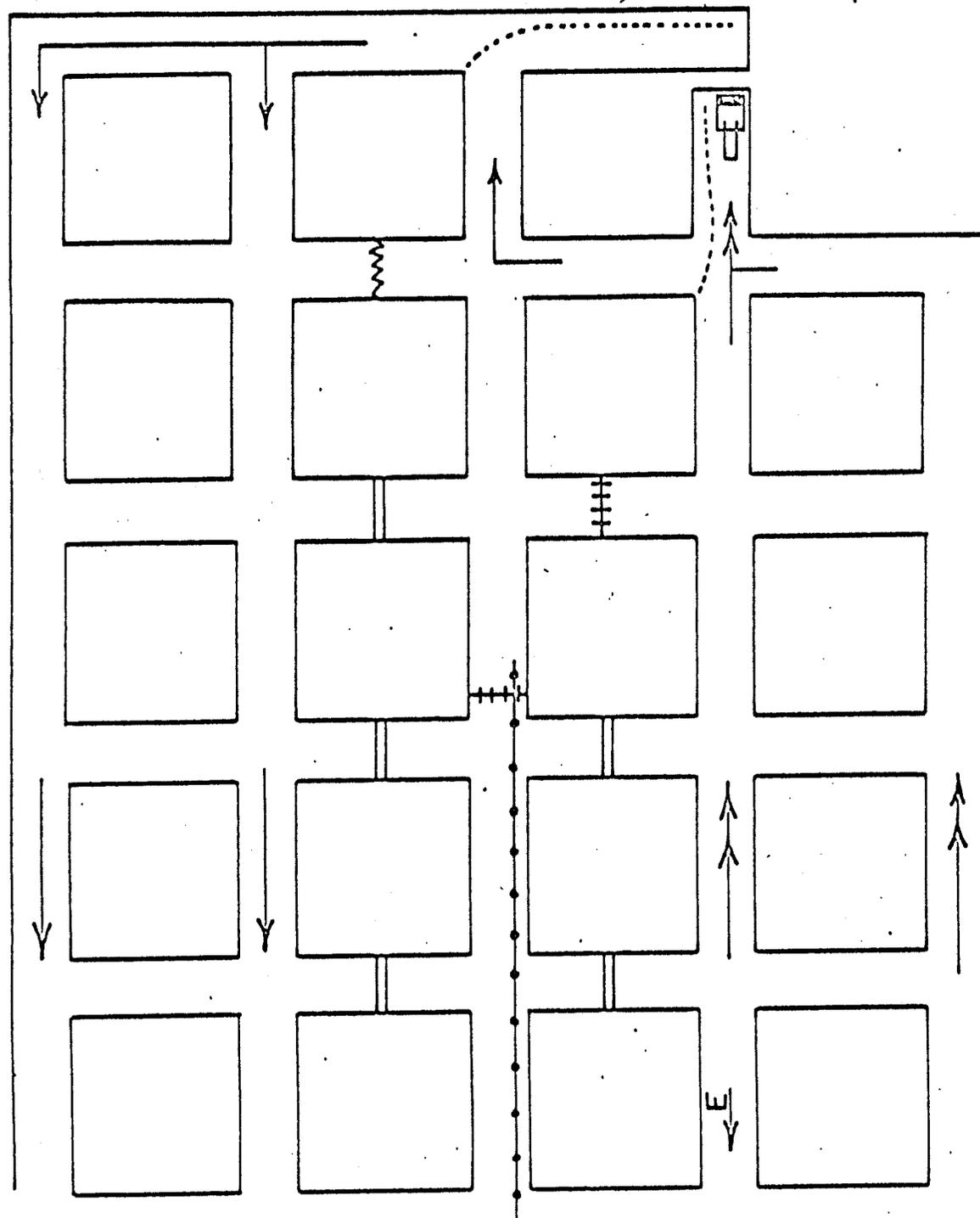


SCALE 1" = 60'

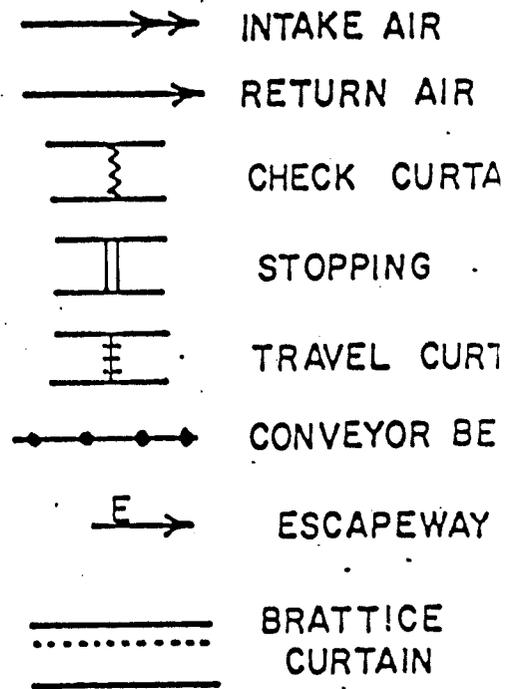
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE OF ENTRY SYSTEM



CUT NO. 7

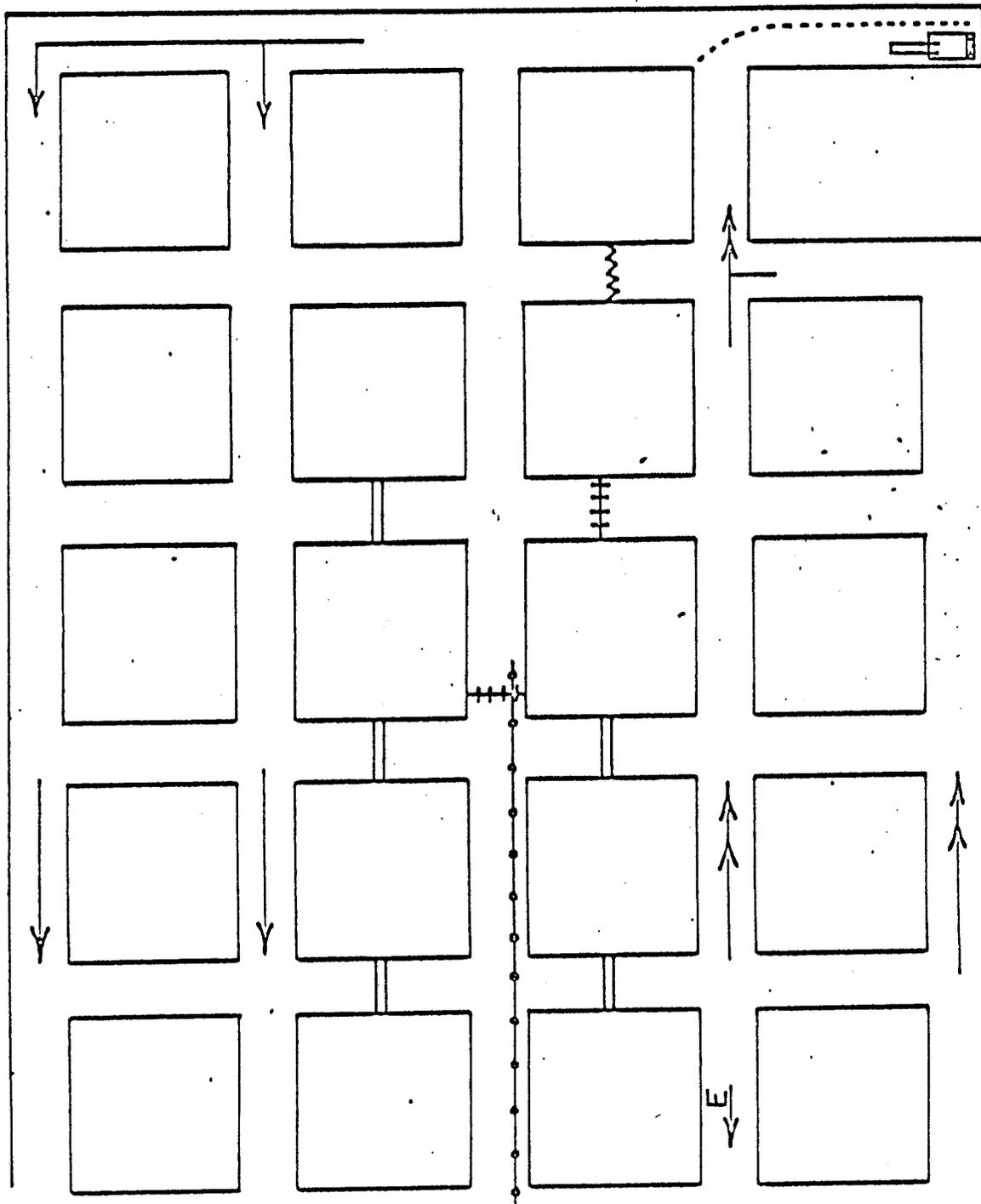


SCALE 1" = 60'

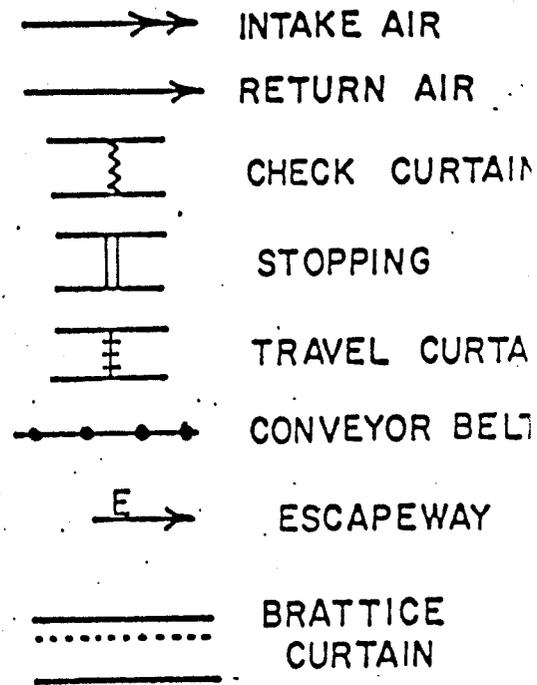
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 8

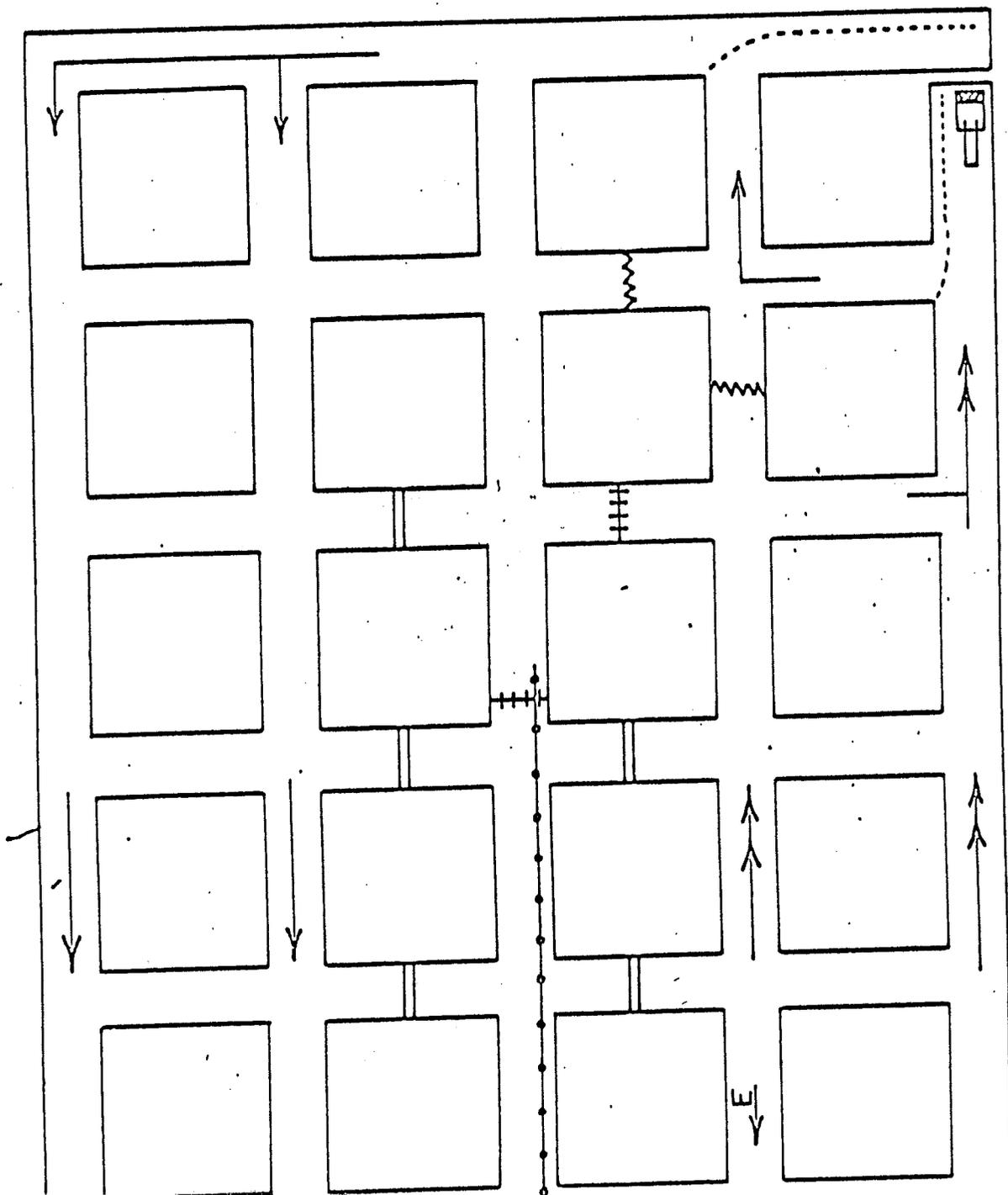


SCALE 1" = 60'

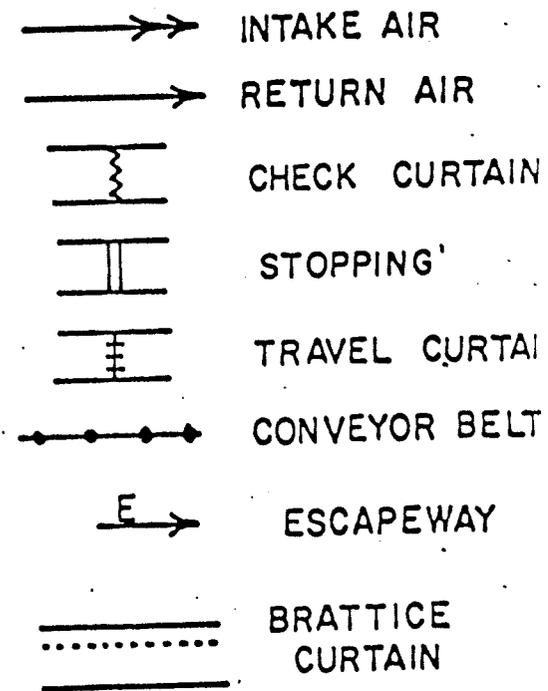
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 9

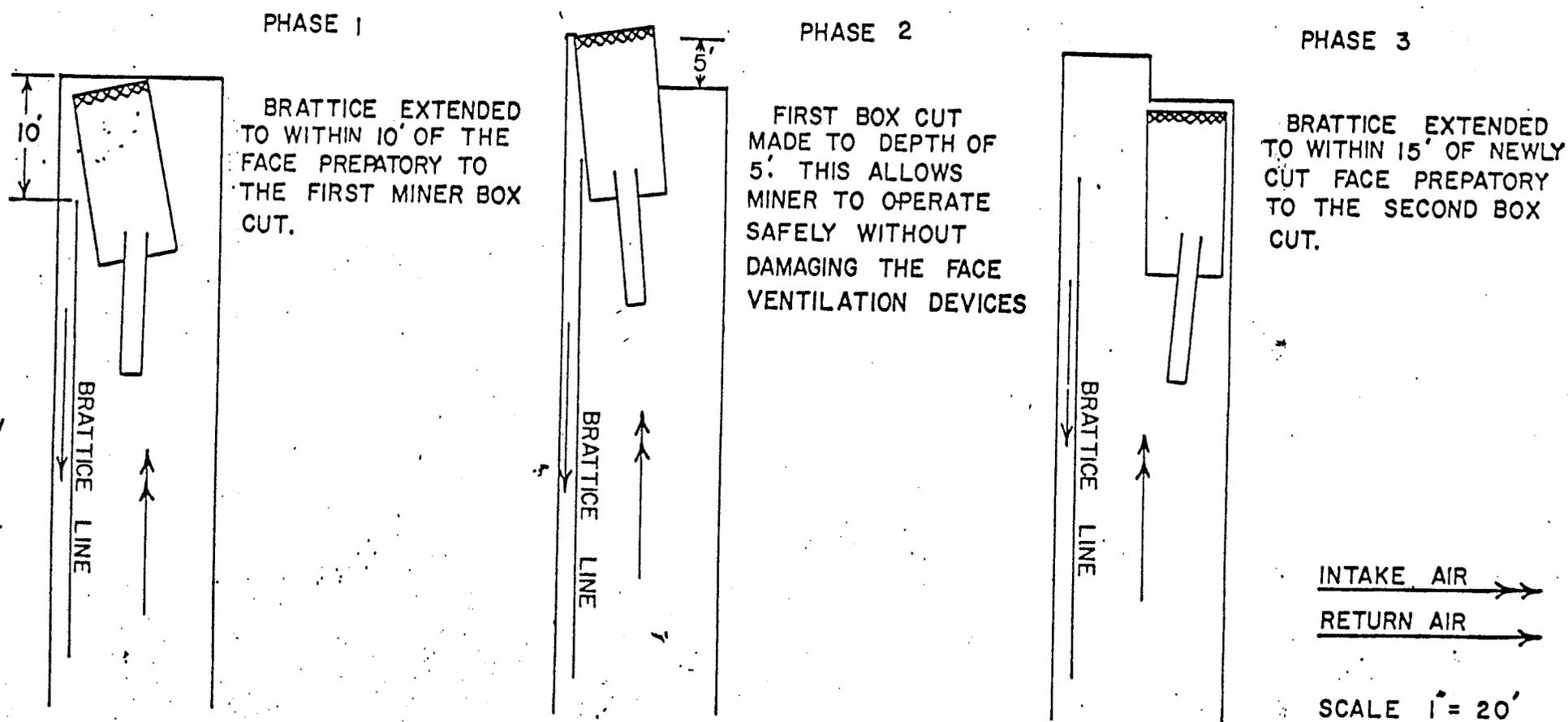


SCALE 1" = 60'

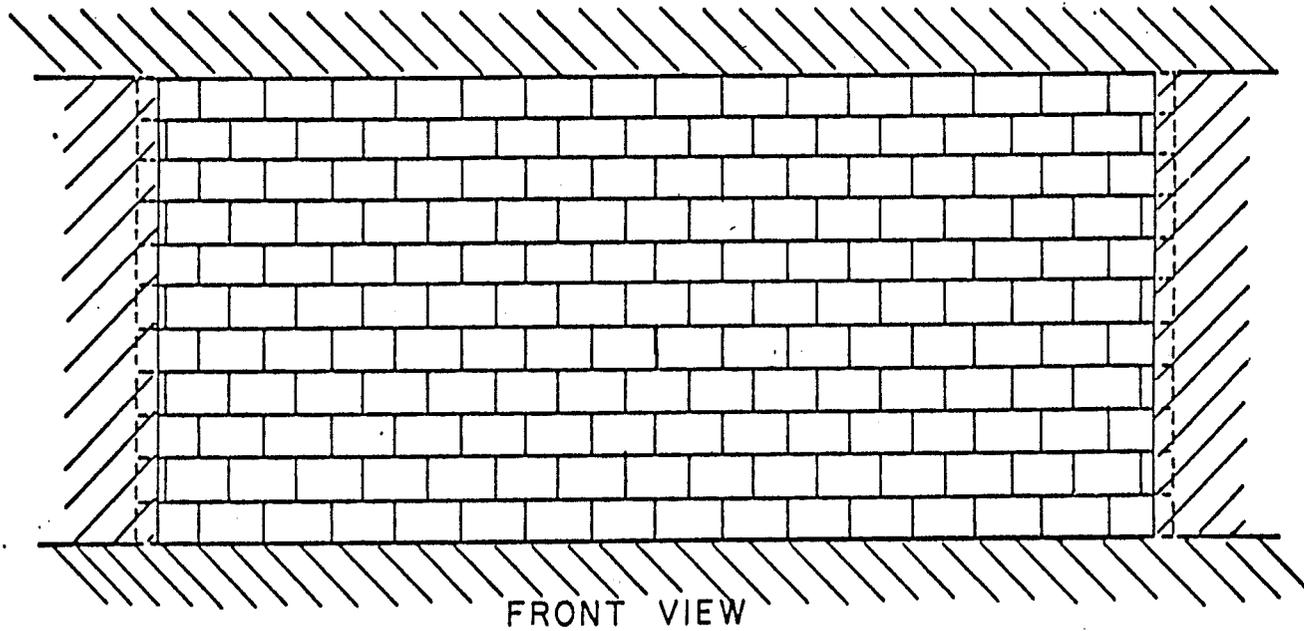
MINE # 4

SWISHER COAL CO.

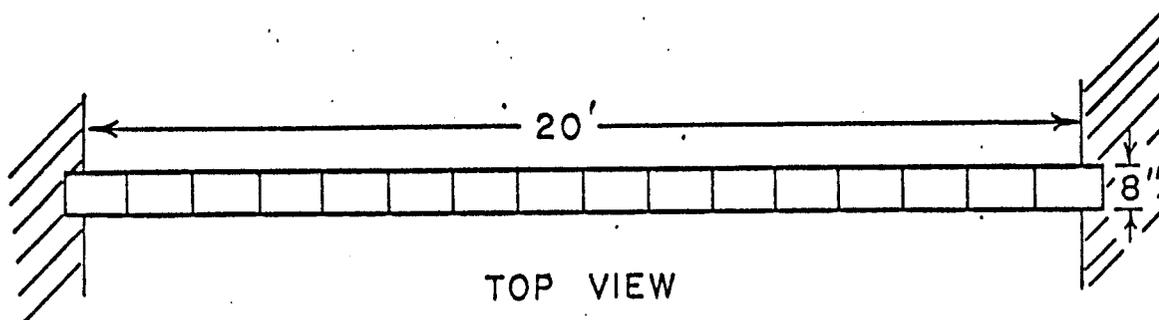
FACE VENTILATION SCHEME
 SWISHER COAL CO.
 MINE * 4



CONSTRUCTION OF PERMANANT STOPPING



STOPPINGS ARE MADE OF CINDER BLOCK WITH MORTARED JOINTS. OTHER TYPES OF BLOCK OF COMPARABLE QUALITY AND COMPRESSIVE STRENGTH MAY BE USED. ALSO AN AIR SEALANT SUCH AS "STOP-IT" MAY BE APPLIED TO THE STOPPING.



SCALE 1" = 4'

MINE # 4

SWISHER COAL CO.

November 22, 1978

Max Robb
Swisher Coal

Dear Mr. Robb:

We are presently reviewing the modified mine plan for Swisher's Huntington Canyon #4 Mine. The modification updates the mine plan to include Swisher's lease U-33454 and will also be required to satisfy all the current regulations.

At present we have four categories of documents and maps from Swisher that compile the original approved mine plan and proposed modification. They are:

1. The original mine plan, conditionally approved on February 16, 1977, sent to the OSM on September 13, 1978.
2. The miner modification to the original approved mine plan. (Permission to cut a new mine panel into the area of low coal.)
3. The modified mine plan received on May 11, 1978, and subsequently sent to OSM for approval with an addendum environmental analysis on October 3, 1978.
4. Modified mine plan as received from OSM on November 17, 1978.

We have received the total mine plan submitted to us and find the following items that should be included:

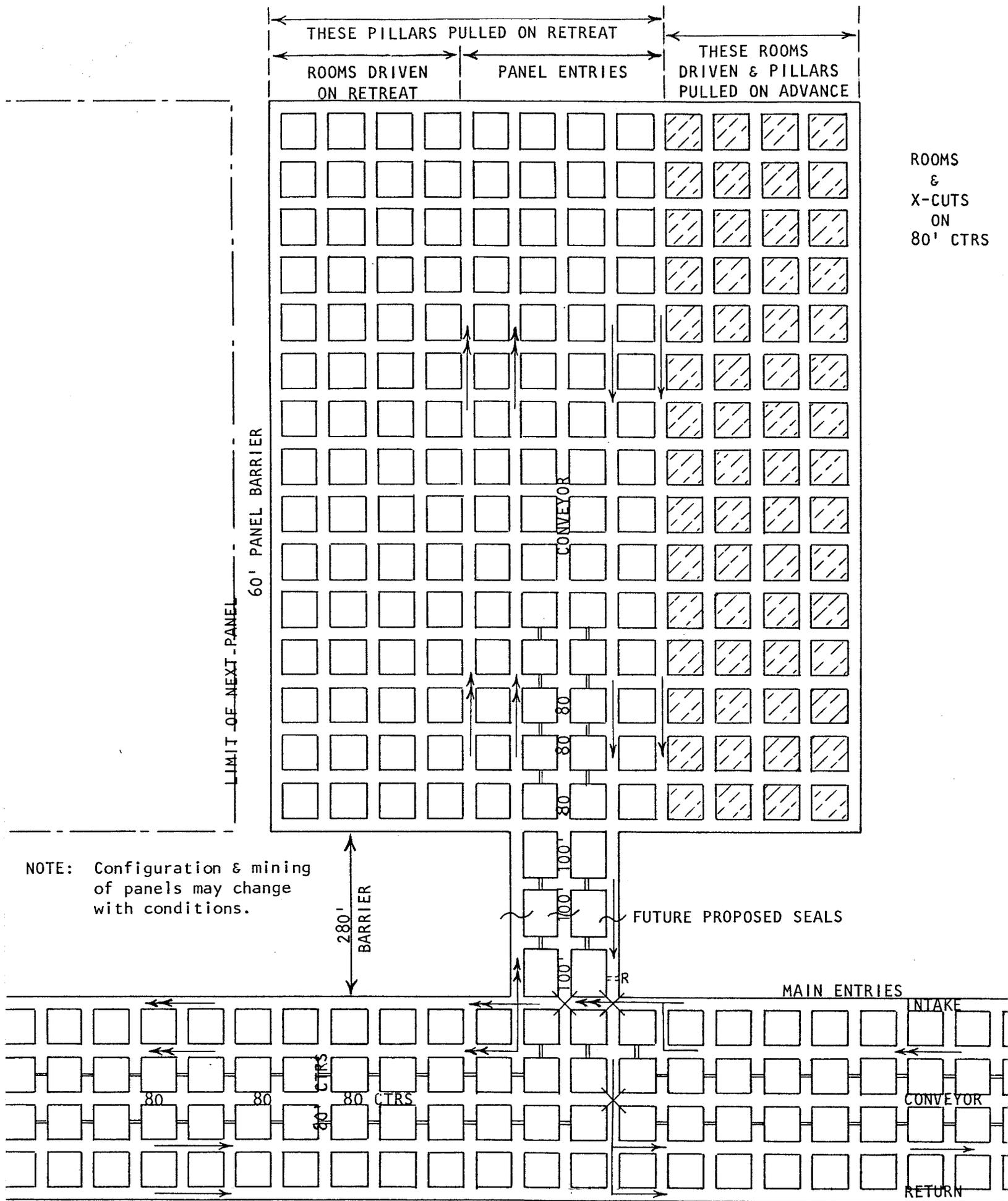
1. Line projections which show how you propose to mine all mineable coal in all coal seams and attain maximum economic recovery.
2. A forecast of the mining operations for the next five (5) years. (Given in mine plan to USGS; not in plan to OSM. Therefore, has to be updated.)
3. Typical illustrations showing mining sequences for each type of mining proposed for the mine. ie:
 - a. Development of main entry if different than five entry system.
 - b. Development of panel entries.
 - c. Retreat mining procedure, to include chain and barrier pillars.

Please refer to the 30 CFR 211 Column 12 regulations in preparing mine maps. A copy of modification of the May 17, 1975, regulations was issued on August 22, 1978. A copy is enclosed for your use. (We assume you have the May 17 copy.)

Submit to us two work copies of the items listed above. After our review and acceptance, seven copies will be required. (Send five copies to OSM and two copies to USGS.) OSM has agreed to this procedure.

If you have any questions please call.

Jack Moffitt
USGS



Proposed plan typical of panels - Huntington Canyon #4 Mine.

HUNTINGTON #4 MINING & RECLAMATION PLAN
LIST OF ENCLOSURES
2-14-79

REVISIONS:

- Introduction and List of Exhibits (Revised)
- Exhibit #19 - Plan for Construction and Maintenance of Sedimentation Ponds and Diversion Structures (Revised)
- Exhibit #20 - Hydrologic Monitoring Plan (Revised)
- Exhibit #23 - Detailed Subsidence Monitoring Plan (Revised)

ADDITIONS:

- Exhibit #34 - Vicinity Map
- Exhibit #35 - Regional Features and Descriptions
- Exhibit #36 - Wilderness Study Area
- Exhibit #37 - Map and Description of Additional Surface Facilities and/or Disturbance Anticipated Over Life of Mine
- Exhibit #38 - Lower Seam Road Details
- Exhibit #39 - Description of Final Configuration of Surface Areas
- Exhibit #40 - Typical of Reclaimed Roads
- Exhibit #41 - Typical of Reclaimed Pad Areas
- Exhibit #42 - Description & Sketch of Sign Design
- Exhibit #43 - Land Use
- Exhibit #44 - Disposal of Spoil & Waste Materials
- Exhibit #45 - Letter of Request to E.P.A. to amend N.P.D.E.S. Permit #UT-0023116 & Amendment Approval by E.P.A.
- Exhibit #46 - Ground Water Systems
- Exhibit #47 - Hydrologic Impact of Roads
- Exhibit #48 - Soils

Exhibit #49 - Vegetation

Exhibit #50 - Wildlife

Exhibit #51 - Dust Control

Exhibit #38: Lower Seam Road Details

N O T I C E

The following information is submitted to the State of Utah Division of Oil, Gas, and Mining as agents for the Office of Surface Mining to fulfill the requirements for obtaining a mining and reclamation permit as required by Public Law 95-87 for the Huntington Canyon #4 Mine located in Mill Fork Canyon, a tributary of Huntington Canyon, Emery County, Utah. All persons who read the information submitted herein should be aware of the fact that the #4 Mine is an existing underground operation which began production in April 1977. All surface facilities needed in conjunction with the mine operation have been constructed. The mine is presently operating under a plan approved by the U.S. Geological Survey on 2-16-77 which plan encompasses the 211 regulations. The mine is also operating under a mining and reclamation plan approved by the Division of Oil, Gas, and Mining on 8-10-76. Cover letters for the plans are enclosed in the appendix as exhibit #26 and #27 respectively. The bodies of these plans are large and voluminous and are not included as part of this submittal. They are however, available upon request.

Even though the #4 Mine is an existing underground operation working under approved mining and reclamation plans, the company hereby submits the following information in a spirit of full cooperation with the governing agencies. In as much as the format for submitting information required for the permit is not yet specified and the final regulations are not yet in effect, information submitted herein follows in two forms: 1) Comments related to sections 507 and 508 of public law 95-87 and 2) Comments related to part 784 of the Surface Coal Mining and Reclamation Operations Permanent Regulatory Program as issued July 21, 1978. Much information is duplicated between the two but, for the sake of completeness, all items of each have been completed.

SURFACE COAL MINING AND RECLAMATION OPERATIONS
PERMANENT REGULATORY PROGRAM

July 21, 1978

784.12 (a) Within three months after termination of the underground mining operation, the following reclamation efforts will be started:

- 1) Remove all buildings, steel structures and other surface facilities4 weeks
- 2) Clean up all trash and debris1 week
- 3) Seal up all mine openings to the surface2 weeks
- 4) Regrade mine yard to a smooth surface and re-establish principle drainage features to their original horizontal alignment2 weeks
- 5) Spread topsoil1 week
- 6) Plant approved seed mix to re-establish vegetation1 week

784.12 (b) At this time the company is making no estimate of the cost of reclamation because such reclamation may not take place for another 40 years if the underground operation lasts that long. Because the rate of inflation over the next 40 years is anybody's guess an estimate based on today's dollar would be totally inappropriate at the time of reclamation.

784.12 (c) Signs, as prescribed by Subchapter K will be placed at the two entrances to the yard facilities as shown on Exhibit #3.

784.12 (d) As described in the answer to 784.12 (a) major drainage features will be restored to their original horizontal alignment to the extent practical. It will be impossible to restore the mine yards to the approximate original contour because these yards were dozed out of very steep, rugged, and rocky canyon walls. Nearly all fill material escaped over the edge of the canyon walls and cannot be retrieved. To fill the cuts would require making further cuts up-bank from the yards which would result in far greater environmental damage than now exists. Terracing and leveling is impossible due to the rocky steep nature of the terrain. Instead the area will be smoothed and contoured to a pleasing appearance and topsoil will be drifted over the area to assure the success of the revegetation efforts.

784.12 (e) Topsoil will be recovered to the extent possible, from future surface disturbance (sedimentation ponds, etc.), and stored on the upper mine terrace. Upon reclaiming the area, it will be smoothed out to a uniform thickness with a grader, and compacted by wheel pressure to prevent it from blowing or washing away.

784.12 (e)(1) The placing, spreading, and compacting of the topsoil will be completed within 10 weeks after reclamation begins. Seeding will be done within a week after that.

784.12 (e)(2) The following seed mix has been prescribed by the Forest Service for revegetation in this area:

- 3 lb. Smooth Brome
- 3 lb. Timothy Grass
- 2 lb. Orchard Grass
- 2 lb. Chested Wheat Grass
- 1 lb. Kentucky Blue Grass
- 1 lb. Ranger Alfalfa
- 1 lb. Meadow Foxtail
- 13 lbs. per acre

784.12 (e)(3) See answer to 784.12 (e)(2)

784.12 (e)(4) Revegetation efforts can likely be completed successfully without mulching; however, mulching will be used where necessary to insure revegetation.

784.12 (e)(5) There will be no irrigation needed to encourage revegetation. Pest and disease control, if deemed necessary will be done under the directive of the U.S. Forest Service.

784.12 (e)(6) In as much as the Forest Service will prescribe the seed mix to rise and will monitor the success of the revegetation effort to their satisfaction the reference-area concept will not be utilized.

784.12 (f) It is in the interest of the company, both economically and operationally, to maximize full utilization of the coal resource. Mining plans are drawn up to allow extraction of pillars to maximize recovery to the greatest extent practicable. This plan is subject to the approval of the U.S. Geological Survey. (See Supplement)

784.12 (g)(1) Materials which constitute a fire hazard will be burned in an approved manner prior to reclamation. There is no reason to believe that any toxic or acid-forming material will have to be disposed of during reclamation since the coal has a very low sulfural content. However, all the yard will be regraded and covered with topsoil as a part of reclamation which will in itself dilute and render harmless any suspect toxic or acid forming material.

784.12 (g)(2) See answer to 784.12 (g)(1)

784.12 (h) After the extraneous steel is removed from the portals the mine openings will be sealed with a double thickness of 8" solid concrete blocks in the location shown on Exhibit #3.

784.12 (i) All mining equipment will be hauled away and re-used in other company application or else scrapped out depending on the condition of the equipment.

784.12 (j) Swisher is the holder of two NPDES permits issued by The Environmental Protection Agency for the #4 Mine. See Exhibit #14.

784.12 (k) All permits and approved plans issued by those agencies responsible for the enforcement of air, water, and other environmental resources stipulate reporting procedures and other remedial measures.

784.13 (a)(1) Complete information can be obtained from the Vaughn Hansen Report (Exhibit #6) and the USGS Water Resources Report (Exhibit #5).

784.13 (a)(2) The only surface water on the mine property is in Mill Fork Creek. The company presently has rights to 300 shares of this water as evidenced by the following documents:

- 1) Certificate of water stock-Exhibit #15
- 2) Approved right to divert water at the mine site approved by stub water engineer-Exhibit #17
- 3) Special use permit to construct diversion facilities from Forest Service-Exhibit #18

784.13 (a)(3) See answer to 784.13 (a)(2)

784.13 (b)(1),(2) Surface drainage shall be treated in a settling pond as described in Exhibit #19.

784.13 (b)(4) Refer to Exhibit #20

784.13 (c) Refer to Exhibits #5 and #6

784.13 (e) Exhibit 21 shows the only section of road in which grades are in excess of those outlined in CFR 717.17 (5)(2)(ii)(A). However, the Division of Oil, Gas, and Mining is now making a determination of whether this section of road must be reconstructed. Their decision will become part of this plan. See Exhibit #22.

784.14 (a) The land on which the mine is located has long been used for coal mining. The canyon has supported three underground operations in the past and the surface facilities of the #4 Mine are located in exactly the same area as those of the old Leamaster Mine which operated nearly a quarter of a century ago. Other than coal mining the only other use of the land has been deer hunting although this use has been only on a limited basis since the rocky terrain of the canyon walls is not as inviting to deer as the higher country which offers a more lush browse. After termination of mining operations, the disturbed areas will be revegetated to a degree acceptable by the U.S. Forest Service and the land will once again support its principle pre-mining use, ie: deer forage.

784.14 (b)(1) The proposed post-mining use of the land is to be achieved by regrading the yards, spreading topsoil, planting the area and monitoring the revegetative effort to the satisfaction of the U.S. Forest Service.

784.14 (b)(2) After the area has been reclaimed to range condition, the management of the area will be according to the Forest Service's master management plan.

784.14 (b)(3) The proposed post-mine use of the land does not differ from the pre-mining use.

784.14 (b)(4) Reclamation plans will be consistent with the uses as determined by the U.S. Forest Service, the U.S. Geologic Survey, and the State Division of Oil, Gas, and Mining.

784.14 (c) Other than surface owned by the company all facilities are on lands controlled by the Forest Service and have been approved by special use permits.

784.15 (a) See Exhibit #19. The dam will be constructed upon final design approval. Provisions can be made to clean the facility with a clam shell. After reclamation is complete, the dam and ponding facilities will be regraded to the approximate original contour and revegetated according to Forest Service specifications.

784.15 (b) Plans do not conflict with Mine Health and Safety Administration Section 77.216-2.

784.15 (b)(i) From visual observation and past excavation of the area there is no doubt concerning the presence of bedrock (massive sandstone) at the base of the proposed dam. No adverse geologic conditions occur in the area.

784.15 (b)(i)(A) The bedrock is solid sandstone and no adverse geologic conditions occur.

784.15 (b)(i)(B) There has been no past mining nor will there be any further mining in the area of the dam since it is located stratigraphically below the coal horizons.

784.15 (b)(ii) There are no seeps, spring, or ground water flow in the vicinity of the dam.

784.15 (b)(iii) The dam will not incorporate a subdrainage system.

784.15 (b)(iv) Material for construction will depend upon final approval design. Density, water content, shear strength, consolidation and permeability will be determined by a registered engineer to assure proper construction of the facility.

784.15 (b)(v) See Exhibit #19

784.15 (b)(vi) See Exhibit #19

784.15 (b)(vii) See Exhibit #19

784.15 (b)(ix) See Exhibit #19

784.15 (b)(x) See Exhibit #19

784.16 There are no public parks or historic places in the mining area.

784.17 There is no public road to be relocated as a result of the mine operation.

784.18 There is not, nor will there be, any waste or refuse disposal areas in this area.

784.19 Subsidence Monitoring
See Exhibit #23 Detailed Monitoring Plan
See Exhibit #24 Letter of Explanation from Forest Service
See Exhibit #25 Map Showing Location of Set Control Points

784.20 It is the intent of reclamation to provide a browse cover equal to or greater than that which exists naturally in the native area. This would tend to enhance the environment for deer and other wildlife animals. There are no fish in Mill Fork Stream so nothing of the reclamation effort will either enhance nor detract fish.

784.21 There will be no blasting associated with the surface effects of the mine operation.

784.22 The underground mine is using room-and-pillar techniques of extraction. Major equipment consists of continuous mining machines, shuttle cars, feeder breakers, roof bolters, and conveyor belts. The mine is projected to produce approximately 500,000 tons per year reaching a maximum of 750,000 tons per year as addition federal leases are acquired.

Sections 507 and 508
Public Law 95-87

- 507 (b)(1)(A) Swisher Coal Company
P.O. Box AU, Price, Utah 84501
- 507 (b)(1)(B) Map #1 shows the property involved in the #4 Mine operation and the surface ownership.
- 507 (b)(1)(C) Map #1 shows the holders of record of leasehold interest.
- 507 (b)(1)(D) DNA
- 507 (b)(1)(E) DNA
- 507 (b)(1)(F) DNA
- 507 (b)(2) All property adjacent to the mine property is controlled by the federal government (surface: Forest Service, subsurface: Geological Survey)
- 507 (b)(3) Applicant does not hold any previous or current surface coal mining permits.
- 507 (b)(4) See attached Exhibit #2
- 507 (b)(5) Swisher Coal Company, nor any of its affiliates, has never had a mining permit suspended or revoked.
- 507 (b)(6) Advertisement will be published in the Sun Advocate (local paper serving southeastern Utah) on dates determined by the Division of Oil, Gas, and Mining after review of the plans.
- 507 (b)(7) The operation consists of an underground coal mine using the room-and-pillar method of mining. Mining equipment used includes continuous miners, shuttle cars, roof bolters, feeder-breakers, conveyor belts, and support machinery.
- 507 (b)(8) The mine began production in February 1977. The life of the mine is indefinite, depending upon acquisition of surrounding federal coal. Total acreage involved in surface facilities is 6.8 acres.
- 507 (b)(9) Enclosed is a map of the surface facilities (Exhibit #3). Authority to mine in this area is given by the lease assignments which are attached as Exhibit #4.
- 507 (b)(10) The mine is located in the water shed of Mill Fork Creek, a tributary of Huntington Creek, a tributary of the San Rafael River, a tributary of the Colorado River.
- 507 (b)(11) Enclosed are copies of the following reports which deal exclusively with the possible hydrologic impacts of the mining operation.

a) Environmental Impact Analysis for Swisher Coal Company Proposed Huntington Canyon #4 Underground Coal Mine. Prepared by the Water Resources Branch of the U.S. Geologic Survey Exhibit #5

b) Water Quality and Hydrologic Study in Vacinity of Huntington Creek Mine #4 and Little Bear Spring. Prepared by Vaughn Hansen Associates, consulting engineers. Exhibit #6

507 (b)(12) Climatological data of the area can be found in the Environmental Analysis Report prepared by the U.S. Forest Service. Applicable sections of this EAR are included as Exhibit #7.

507 (b)(13) Enclosed is a topographic map of the mine area showing property boundaries, man-made features, etc. Exhibit #8

507 (b)(14) Enclosed is a map of the surface configuration with three cross-sections showing representative slices thru the mine yards, showing overburden strata, elevations, coal seams, and other geologic factors (Exhibit #9). Also enclosed is a map showing the location of all drill holes, the outcrop line, strike and dip of the coal seam, old works in the area, etc. (Exhibit #10)

507 (b)(15) Enclosed are drill hole logs and analysis sheets for the coal. (Exhibit #11)

507 (b)(16) There is no farm land, not to mention prime farmland, in the area of the minesite.

507 (b)(17) DNA

507 (c) DNA

507 (d) Enclosed is a Reclamation Plan (Exhibit #12)

507 (e) A copy of this application will be made available at the Carbon County Court House, Price, Utah.

507 (f) Enclosed is a certificate of insurance from the Fidelity and Casualty Insurance Company certifying that Swisher Coal Company has a public liability insurance policy in force for the mining and reclamation operations outlined in the plan. (Exhibit #13)

507 (g) There will be no blasting for this operation and therefore no blasting plan is submitted.

508 (a)(1) All lands in the underground portion of the mining operation are shown on Exhibit #1. The surface effects of the operation will not be extended beyond the existing surface improvements.

508 (a)(2)(A) The land is presently used for underground coal mining and associated surface facilities. The land in the past has also been used for coal mining. In fact, the surface facilities of the Huntington Canyon #4 Mine are in the exact same area of those of the old Leamaster Mine and some of the older structures associated with the past operation can still be seen today in the area. Other than coal mining, the areas only other use has been deer hunting. The canyon walls are much too steep and rocky to support farming, domestic livestock grazing, logging, or any other use.

508 (a)(2)(B) See answer to 508 (a)(2)(A)

508 (a)(2)(C) See answer to 508 (a)(2)(B)

508 (a)(3) At such time as the land is no longer used for the purpose of coal mining it shall be regraded and revegetated to be suitable to deer grazing which was the principle pre-mining use of the land. Enclosed is a pertinent section of the multiple hand use plan for the mine area prepared by the U.S. Forest Service.

508 (a)(4) Post-mining land use will be achieved by regrading the mine site area, and covering such area with native topsoil sufficient to sustain a healthy growth of grasses and forbs as prescribed by the U.S. Forest Service. The growth will be checked and replanted periodically as needed to insure that the revegetation efforts are successful.

508 (a)(5) Mining will be done, and is being done, by underground room-and-pillar methods using continuous mining machines, shuttle cars, feeder breakers, and conveyor belts. Reclamation will be done using a D-8 Caterpillar Dozer, a 988 front end loader, and a G16 road grader. All surface irregularities will be smoothed out and graded so that drainage is slow and even over the disturbed areas. Topsoil will be hauled from the storage pile and spread over the recontoured yard and compacted with the wheels of the loader. Topsoil will be spread in sufficient depth to insure a successful revegetation effort. Surface drainage will be controlled by reestablishing to the extent practicable, the original drainage features. It is estimated that it will cost nearly \$2,000 per acre to reclaim the mine yard.

508 (a)(6) It is in the interest of the company, both economically and operationally, to maximize full utilization of the coal resources. Mining plans are drawn up to allow extraction of pillars to maximize recovery to the greatest extent practicable.

<u>508 (a)(7)</u>	Removal of surface structures	4 weeks
	Regrading and recontouring	2 weeks
	Topsoil covering	2 weeks
	Seeding	1 week
	TOTAL	<u>9 weeks</u>

508 (a)(8) Swisher is the surface owner.

508 (a)(9) Swisher is the holder of two NPDES permits issued by the Environmental Protection Agency for the #4 Mine. Exhibit #14

508 (a)(10) The entire mine area is located on extremely steep, rugged, rocky, ledgy terrain which makes obtaining original contour impossible. The reclamation plan strives to most effectively reinitiate pre-mining use to post-mining application.

508 (a)(11) See Exhibit #1

508 (a)(12) Results of test boring are shown on Exhibit #11

508 (a)(13)(A) Surface water and ground water systems are fully explained
in Exhibits #5 and #6

508 (a)(13)(B) Enclosed is a copy of the certificate of water shares owned
by Swisher Coal Company in the Huntington Area (Exhibit #15)

508 (a)(13)(C) Enclosed is a copy of an agreement reached between the City
of Huntington and Swisher wherein Swisher agrees to replace any waters lost
from the City's culinary source as a result of mining operations. Exhibit #16

List of Exhibits

- Exhibit #1 : Property map showing ownership interest
- Exhibit #2 : Articles of incorporation
- Exhibit #3 : Map of the surface facilities
- Exhibit #4 : Lease assignments
- Exhibit #5 : Report on the hydrologic impact of operations prepared by the Water Resources Division of the U.S. Geological Survey
- Exhibit #6 : Hydrologic Report prepared by Vaughn Hansen Associates
- Exhibit #7 : Environmental Analysis Report prepared by the U.S. Forest Service
- Exhibit #8 : Topographic map showing property boundaries, man-made features, etc.
- Exhibit #9 : Cross-section of surface showing overburden, geology, coal seams, elevations, etc.
- Exhibit #10: Drill hole map
- Exhibit #11: Drill hole logs, analysis sheets
- Exhibit #12: Reclamation plan as approved by the Division of Oil, Gas, and Mining
- Exhibit #13: Certificate of Insurance
- Exhibit #14: NPDES permits issued by the Environmental Protection Agency
- Exhibit #15: Certificate of Water Shares
- Exhibit #16: Agreement with City of Huntington
- Exhibit #17: Approved change of point of diversion from State Division of Water Rights
- Exhibit #18: Special use permit for pumping facilities
- Exhibit #19: Plan for construction and maintenance of settling pond facility (Revised 2-79)
- Exhibit #20: Hydrologic monitoring plan (Revised 2-79)
- Exhibit #21: Road reconstruction information
- Exhibit #22: Notice of hearing on road reconstruction

- Exhibit #23: Detailed subsidence monitoring plan (Revised 2-79)
- Exhibit #24: Letter of concurrence from Forest Service about subsidence monitoring plan
- Exhibit #25: Map of subsidence monitoring control points
- Exhibit #26: Cover letter, U.S. Geological Survey mine plan and reclamation approval
- Exhibit #27: Cover letter, Division of Oil, Gas, and Mining mine plan and reclamation approval
- Exhibit #28: Plan for controlling drainage at C.V. Spur Preparation and Loading Facility
- Exhibit #29: Map of proposed drainage control at C.V. Spur
- Exhibit #30: Mining plan checklist (Added as supplement from mining plan submitted to U.S.G.S.)
- Exhibit #31: Mine plan for Huntington Canyon #4 Mine (Added as supplement from mining plan submitted to U.S.G.S.)
- Exhibit #32: November 22, 1978
Mining Plans and typical illustrations for Huntington Canyon #4 Mine - both seams
(Added as supplement at request of U.S.G.S.)
- Exhibit #33: Response to: Division of Oil, Gas, and Mining, Conditional Approval of Huntington Canyon #4 Mining and Reclamation Plan
- Exhibit #34: Vicinity Map
- Exhibit #35: Regional Features and Descriptions
- Exhibit #36: Wilderness Study Area
- Exhibit #37: Map and Description of Additional Surface Facilities and/or Disturbance Anticipated Over Life of Mine
- Exhibit #38: Lower Seam Road Details
- Exhibit #39: Description of Final Configuration of Surface Areas
- Exhibit #40: Typical of Reclaimed Roads
- Exhibit #41: Typical of Reclaimed Pad Areas
- Exhibit #42: Description & Sketch of Sign Design
- Exhibit #43: Land Use
- Exhibit #44: Disposal of Spoil & Waste Materials

- Exhibit #45: Letter of Request to E.P.A. to amend N.P.D.E.S. Permit #UT-0023116 & Amendment Approval by E.P.A.
- Exhibit #46: Ground Water Systems
- Exhibit #47: Hydrologic Impact of Roads
- Exhibit #48: Soils
- Exhibit #49: Vegetation
- Exhibit #50: Wildlife
- Exhibit #51: Dust Control

Exhibit #23: Detailed Subsidence Monitoring Plan (Revised)

EXHIBIT #23
DETAILED SUBSIDENCE MONITORING PLAN
(REVISED)

Swisher Coal Co. Huntington Canyon #4 Mine Area

General Subsidence Requirements

Attached hereto, is a map showing the area of potential subsidence based upon geologic and engineering data, hereby submitted with proposed underground coal mining plans to satisfy the requirements of 30 CFR 211. In addition, the regulations are interpreted to mean that subsidence must be monitored and controlled in a predicable manner.

Personal Qualifications

The baseline study and determination of the need for a subsidence monitoring program will be performed by a qualified professional. Surveyed monitoring stations, monuments, and subsidence maps will be certified by a professional engineer, professional land surveyor, or other professionally qualified person.

Subsidence Investigations & Monitoring That Involves Private Surface Overlying Federal Minerals

The only surface owner, within our mining protections and angle of draw, besides Swisher Coal Co., is United States Forest Service. Swisher Coal Co. is trying to come to an agreement with the Forest Service regarding an Aerial Photography Subsidence Monitoring Program. Meetings have been arranged and attended by both parties, discussion ensued to the point that Swisher Coal set the Aerial Photo Control that was recommended by the Forest Service but final negotiations never reached a cooperative agreement, and as summer ended, we were informed that the sun angle was too low for aerial photos and no further discussion has taken place.

Locations of Stations

At least one reference station will be tied to the existing surface and the underground survey, and be located out of the area to be affected by underground mining. This station will have a reliable coordinate and elevation should be set in concrete. Preferably, this station will be located in an easily accessible area. The first subsidence station should be placed as close as possible to the reference station and preferably, at the same elevation to facilitate direct levels. However, vertical angle elevations may be used if the accuracy

is within the 0.5' \pm limit. Since the subsidence shall be measured relative to the reference station, it is imperative that such station be located in a stable area, preferably in solid rock or in a concrete base of adequate size. All subsidence stations originally tied to this reference shall be monitored relative to this point and no other. A sufficient number of fixed monuments will be installed over areas subject to potential subsidence and in outlying stable areas for control. A typical grid system will consist of three stations per panel. One station will be located in the center of each panel with other stations over adjacent barrier and chain pillars. Exact spacing due to rugged terrain may be a limiting factor in some areas. The location of the long range projections, 18 months plus, of mining and monitoring are subject to change as new information is obtained. The location of monitoring points shown on the enclosed map is subject to final field inspection and determination of the best location due to physical features encountered.

Monuments will be steel rebar with aluminum caps set so that weather, frostheave, or livestock will not disturb them.

Underground monitoring points will be placed in the roof of the belt entry at locations where a surface monitoring point is relatively vertically above. Other monitoring points will be placed underground at special points where subsidence may occur.

Subsidence Network

There are two types of networks which may be used separately or in conjunction (the loop type network and/or the fan type network).

The loop type shall employ a closed loop survey, with the elevations of each subsidence station figured relative to each preceding station, starting and ending with the reference point. The disadvantage of this system is that it necessitates traveling to each station to establish an elevation.

The fan type network is preferred but may not be feasible in some areas. This type would allow the monitoring of a number of stations from one reference point. This is an open ended survey but reliable results should be obtained through the use of accurate instruments (one second theodolite and six mile electronic distance meter). It is likely that as the mine grows in size, a combination of the two networks may be employed. It should also be noted that separate networks may also be employed, providing each has its own reference point out of the area affected by mining. Proposed reference points are shown on the attached map.

Monitoring Schedule

Stations shall be monitored for subsidence, at six months intervals, (Spring and Fall). The stations monitored will include all stations within the mining area plus angle of draw and all stations within the 18 months projection of mining operations plus angle of draw. A record shall be kept of each monitoring cycle and a copy of the results shall be submitted to the Area Mining Supervisor. Such record shall show the total subsidence of each station relative to the original condition of the station. The subsidence monitoring program will include a semi-annual survey of the condition of the ground surface above all underground mine workings (plus angle of draw). This survey will attempt to identify and document the presence of tension cracks, fissures, structural offsets, and obvious subsidence damage to buildings, roads, or other cultural facilities.

The upper seam (Blind Canyon Seam) mining plan is shown on the enclosed map, angle of draw is shown for the lower seam (Hiawatha Seam). Additional monitoring points for the lower seam are also shown.

Recovery is estimated at 75% within the panels. Pillars of adequate size shall be left along all mains until final retreat (See map).

Alternate Program

It is proposed to use this conventional subsidence monitoring program until such time as a more efficient monitoring method may be developed. Since the points recommended by the Forest Service are already installed, it would be a simple matter to convert to an aerial monitoring system if an equitable agreement can be reached.

Exhibit #20: Hydrologic Monitoring Plan (Revised 1-18-79)

EXHIBIT #20
HYDROLOGIC MONITORING PLAN
(Revised 1-18-79)

Swisher Coal has had a water monitoring program in effect for some time, at all of its operating properties. In the #4 Mine area, there have been 8 monitoring sites, (4 for the U.S.G.S., 2 for O.S.M., and 2 for the E.P.A.) checked monthly with results going to the various agencies.

Since the U.S.G.S. and O.S.M. are both concerned with water monitoring, it is proposed that the distinction between these sample points be eliminated, the parameters increased to include both agency requirements, and results sent to both agencies.

Following is the proposed revised Water Monitoring Program for #4 Mine area:

Stations - There are proposed to be 10 monitoring stations located in the #4 Mine area. The location of these stations are shown on the attached map, and descriptions of each can be found on the attached general information sheet. If additional springs or seeps are found to exist within the area of possible disturbance, (see map), then the number of stations shall be increased accordingly. The attached general area map shows the known springs, seeps, and ponds in the general area - taken from a U.S. Forest Service map of the Huntington area. The only seep that exists within the projected mining "angle of draw" is shown as station 4-9-W. Other stations shown are for monitoring surface waters: streams, runoff and sedimentation pond discharges.

If water is encountered underground, it shall be checked according to the schedule and parameters listed on the General Information Sheet. If the water persists, and must be pumped out of the mine, it will be monitored on a twice/month basis at the inlet and outlet of the sedimentation structure.

Locations - The locations of all proposed stations are shown on the attached map, and also described in the General Information Sheet. These locations are as precise as can be plotted on a map, and can easily be identified in the field by the installed flow devices; ie: wiers, etc.

Type - Hydrological monitoring will include the following types of locations: seeps or springs within the affected area, streams (monitored above and below the project areas that may contribute to quality degradation), runoff above and below the sedimentation structures, and such other areas where either underground water or additional surface water seeps or springs are detected.

Monitoring Frequency - For the majority of the stations, the monitoring frequency will be monthly. Station numbers 4-6-W will be monitored monthly and within 12 hours of any storm that creates runoff of a quantity that reaches the sedimentation structure. Station 4-7-W will be monitored during any period of discharge from the structure during regular working hours. Station 4-9-W is a seep, and will be monitored once in the Spring and Fall of each year. Station 4-4-W will be monitored monthly for all parameters except flow - flow will be checked bi-weekly for the first year to establish likely variations.

Parameters - The following parameters shall be checked at each sample point:

1. Flow
2. PH
3. Water Temperature
4. Specific Conductance
5. Total Dissolved Solids
6. Total Suspended Solids
7. Total Iron
8. Total Manganese
9. Nitrate
10. Sulfate
11. Chloride
12. Oil & Grease

Sampling Devices - Flows will be determined by the use of "V" notch wiers, except in stations 4-2-W and 4-9-W. 4-2-W will have a totalizing flowmeter or a wier, and the flow from 4-9-W (seep) will be determined by direct volume/time measurement in a container of known quantity.

Water temperature will be determined with a thermometer in the field.

PH will be determined in the field with a PH meter.

Specific conductance may also be determined in the field with a spectrophotometer.

The samples for T.D.S., T.S.S., Iron, Manganese, Nitrate, Sulfate, and Chloride shall be collected in a clean, water-tight container of adequate volume (approximately 1 gallon) to allow for testing of all parameters needed. This is standard procedure for sampling for chemical analysis. Samples for Oil & Grease shall be taken in a water-tight plastic or glass container, pre-treated with a slight amount of Sulfuric Acid.

In the event a sample is taken for coliform, it shall be taken in a pre-treated sample bottle supplied by the State for Bacteriologic Examination.

If other parameters are needed at some point in time, the sampling devices used will be those recommended for those particular type samples. Recommendations can be obtained from various State water quality experts or consulting firms if needed.

Sampling Methods - Only a qualified individual will perform the water sampling. He shall be familiar with the operation of all devices, such as wiers, PH meters, thermometers, specific conductance meters, and with all sampling methods and containers for the various tests.

Sampling will be conducted on a regular schedule, and in a consistent manner as nearly as possible. Access into certain sample points may become impossible at times, requiring some deviation from the schedule. All points will be checked when possible, and a report submitted even if dry or inaccessible.

Analysis Methods - All water analysis shall be performed by a qualified individual using standard methods for analyses. Whenever possible, the analyses will be performed by the technician in the Swisher Coal Co. laboratory. Those parameters that cannot be tested in our facility will be run by a certified, reputable, commercial lab. Check samples on our laboratory will also be sent out periodically to a commercial firm.

All analyses will be according to standard methods.

Reports - Reports shall be submitted to the Oil, Gas, and Mining and to the U.S.G.S. within sixty (60) days of date of collection. These reports shall include: station number, type, location, date of collection, individual responsible for collection, and all data required for the parameters checked. A sample report form is attached with this program.

All support data, and a complete copy of all monitoring results will be kept on file at the Swisher Coal Co. office.

General - It should be noted that the above described sampling program does not include the E.P.A. sampling stations, even though these stations are shown on the attached map. The E.P.A. stations are sampled according to the requirements in the N.P.D.E.S. permits and results are sent to the E.P.A. and State of Utah as required. A copy of each report is kept on file in the Swisher Coal Co. office.

#4 MINE
HYDROLOGIC MONITORING PROGRAM
GENERAL INFORMATION SHEET

STATION	LOCATION	TYPE	FREQUENCY	FLOW DEVICE	RESULTS TO:	REMARKS
4-1-W	Upper Little Bear	Spring	Monthly	Wier	OG&M, USGS, Hunt. City	
4-2-W	Lower Little Bear	Spring	Monthly	Wier or Flow Meter	OG&M, USGS, Hunt. City	
4-3-W	Upper Mill Fork	Perennial Stream	Monthly	Wier	OG&M, USGS	
4-4-W	Mill Fork above Sed. Pond	Stream	Flow - bi-weekly Other - Monthly	Wier	OG&M, USGS	
4-5-W	Mill Fork below Sed. Pond	Stream	Monthly	Wier	OG&M, USGS	
4-6-W	Inflow to Sed. Pond	Runoff	W/in 12 hrs of storm or monthly	Wier	OG&M, USGS	
4-7-W	Outflow from Sed. Pond	Discharge	When discharging during regular shift.	Wier	OG&M, USGS	Also monitored for EPA as per NPDES Permit
4-8-W	Mill Fork above Huntington Creek	Stream	Monthly	Wier	OG&M, USGS	
4-9-W	Head of Little Bear Canyon	Seep	2/year spring/fall	Direct Collection vol/time	OG&M, USGS	

#4 MINE
 HYDROLOGIC MONITORING PROGRAM
 DATA REPORT FORM

STATION	LOCATION	TYPE	FREQUENCY	FLOW	PH STD. UNIT	TEMP °C	SPEC. COND.	TDS	TSS	IRON	MANGANESE	NITRATE	SULFATE	CHLORIDE	OIL & GREASE	REMARKS
4-1-W	Upper Little Bear	Spring	Monthly													
4-2-W	Lower Little Bear	Spring	Monthly													
4-3-W	Upper Mill Fork	Perennial Stream	Monthly													
4-4-W	Mill Fork above Sed. Pond	Stream	Flow bi-wk other/mo.													
4-5-W	Mill Fork below Sed. Pond	Stream	Monthly													
4-6-W	Inflow to Sed. Pond	Runoff	w/in 12 hr of storm or monthly													
4-7-W	Outflow from Sed. Pond	Discharge	When discharging													
4-8-W	Mill Fork above Hunt. Crk.	Stream	Monthly													
4-9-W	Head of Little Bear	Seep	Spring & Fall													

SWISHER COAL CO.
 P.O. BOX AU
 PRICE, UTAH 84501

DATE SAMPLED: _____

DATE ANALYZED: _____

SAMPLED BY: _____

ANALYZED BY: _____

Exhibit #51: Dust Control

EXHIBIT #51
DUST CONTROL

As the coal is mined underground, water sprays on the continuous miner wet it to eliminate coal dust. The coal is loaded onto a conveyor where it is sprayed once again on its way out of the mine. On the surface, the coal travels on a covered conveyor, drops into a covered chute, and finally into the stockpile below.

From the stockpile, the coal is loaded by front-end loader into the trucks and taken from the property. As mentioned earlier, the trucks will not be overloaded, and a strict speed limit will be followed in Mill Fork Canyon. The above procedure will result in a minimum of coal dust produced by the handling operation.

In addition to the above, roads are kept sprinkled in dry conditions to help alleviate dust produced by traffic. This sprinkling can be extended to the loading pad and around the stockpile as necessary.

DG/ag

Exhibit #19: Plan For Construction And Maintenance
Sedimentation Ponds And Diversion Structures
(Revised)

EXHIBIT #19

(Revised)

PLAN FOR CONSTRUCTION AND MAINTENANCE
SEDIMENTATION PONDS AND DIVERSION STRUCTURES
GENERAL DESCRIPTION

The disturbed area of the #4 Mine is contained within a large, single drainage area which collects immediately below the lower facility yard and dumps into Mill Fork Creek. In order to minimize additional sediment loading to the stream from this disturbed area, it is proposed to divert a major portion of this drainage before it reaches the disturbed area, and then collect the runoff from the disturbed area into sedimentation structures located in the canyon bottom above Mill Fork Creek.

An overall drainage map of the area, including locations of the proposed structures, is attached. Listed below are specifications for both the sedimentation ponds and diversion structures. Also attached to this exhibit are detailed location maps and certified design drawings for each.

Huntington #4 Mine
Sedimentation Pond Specifications

Location: The proposed dam locations are to be in the existing drainage directly below the coal stockpile loading area, (See attached map). This site appears to offer the most effective sedimentation control with the least amount of environmental disturbance.

Alternate Locations: The attached location map shows 2 alternate sites considered for sedimentation structures. Both of these sites are located on U.S. Forest surface, and both would require extensive alteration of the existing environment. Site "A" would require both a relocation of Mill Fork Creek and extensive clearing of existing trees and other vegetation. Site "B" would require the installation of a much larger structure, since it would be located in an area far below the proposed structures and would therefore need to contain a great deal more runoff. It should be evident from the topographic map of this area that the choices for pond sites are very limited, and that the above proposed location is the most compatible with the existing conditions.

Exhibit #19
Plan For Construction And Maintenance
Sedimentation Ponds And Diversion Structures
Page Two

- Design:** In an effort to minimize environmental destruction, and still obtain adequate storage, we are proposing to build two smaller ponds in series, as shown on the attached map.
- Purpose:** To comply with requirements from the Office of Surface Mining for the control of sedimentation as listed under the Underground Mining General Performance Standards. The ponds are to be constructed in a manner to facilitate the holding and settling of contaminated water from the mine site. An overflow is to be provided in the event of a massive inflow of surface water exceeding the capacity of the ponds. The ponds will be cleaned as necessary and the waste material placed in an approved disposal site.
- Construction:** The construction of the ponds will be as per specifications of the State Engineer, the U.S. Forest Service, and the Office of Surface Mining as applicable to the particular final design.
- Environmental Considerations:** The proposal site is in the most effective drainage control location. With the addition of a second pond, some of the structure would be on Forest Service land, adjacent to the road. The U.S. Forest Service has indicated that this would be acceptable providing proper design criteria were met. Every effort will be made to minimize environmental destruction in the construction and maintenance of the facility.
- Capacity:** The structure will have a capacity adequate to store the runoff and sediment load from a 10 year 24 hour precipitation event, with an overflow capacity in excess of that for a 6 hour 25 year event. The ponds shown on the attached map would have a capacity of approximately .85 acre ft.
- Safety Precautions:** The structure will be regularly inspected by a licensed individual as required by law. The pond will be cleaned as necessary and any weakness or defects in the structure will be immediately corrected.
- Monitoring:** Two new water monitoring stations will be established at the inlet and outlet of the ponds, (See water monitoring program for details).

Exhibit #19
Plan For Construction And Maintenance
Sedimentation Ponds And Diversion Structures
Page Three

- Diversions:** Natural runoff from the areas above the portal is proposed to be diverted onto either side of the canyon in which the mine/stockpile facility is located, (See map). It is proposed to divert this water into a large ditch at the base of the portal highwall, and carry it away from the disturbed areas. Diversion ditches will be of an adequate size and will be maintained on a regular basis. (See Diversion Structure Specifications)
- Maintenance:** The sedimentation ponds shall be inspected after each storm, and the sediment shall be cleaned as necessary. In no case, shall sediment be allowed to build beyond the point of reducing the pond capacity below .75 acre-ft. $((.41 + .09) \times 1.5$ safety factor). Sediment removed shall be stored on the upper mine yard adjacent to the topsoil storage. If the sediment is of acceptable quality, it shall ultimately be used to help reclaim the area. If it is not of acceptable quality for reclamation, it can at that time be taken underground for final disposition.
- Seeding:** We shall attempt to re-seed all feasible disturbed areas around the mine site with a seed mixture recommended by the U.S. Forest Service for this area. Mulching will be used as required.
- Culverts:** The culverts along the access road will be improved and maintained to provide a cleaner inlet and less erosive outlet.
- Calculations:**
- * A. Use 2" figure for 6 hr. - 25 yr. precipitation event.
 - **B. Table A-4 p. 538 - Runoff Curve No. (CN) = 81
Cover - Herbaceous
Condition - Fair
Soil Group - C (Slow infiltration rate)
 - **C. From fig. A-4 p. 541, the direct runoff is found to be .6 inches.
 - D. Drainage area - 8.26 acres. Total runoff will be $.6" \times 8.26$ acres = 4.96 acre-inches or .41 acre ft.
 - E. Sediment storage volume shall be .1 acre-ft. per acre of disturbed area. The disturbed area is measured to be .92 acres; therefore, the sediment storage area must be $.92$ acres $\times .1 = .092$ acre-ft. Total storage volume shall therefore need to be a minimum of $.41$ acre-ft. + $.09$ acre-ft. = $.50$ acre-ft. Using a 1.5 safety factor, this volume shall be no less than .75 acre-ft.

- F. The area₂ of the proposed sedimentation ponds is 9450 ft.² or .217 acres. Ultimate capacity of the ponds is .85 acre-ft. This volume is 1.7 times that required for a 6 hr. - 25 yr. storm.
- G. Overflow capacity required from a 25 year precipitation event is estimated at 375 gpm; therefore, the overflow structure is designed to handle water in excess of this amount.
- H. Conclusion: the pond size will be more than adequate to contain the expected runoff from the disturbed area during a 24 hr. - 10 yr. or 6 hr. - 25 yr. precipitation event, as required.
- * Taken from the U.S.G.S. "Assessment of the potential geologic impact of the proposed Leamaster Mine (reopened), coal leasehold U-064903 Emery County, Utah," April 2, 1976.
- ** Calculations made using the reference "Design of Small Dams" by the Bureau of Reclamation, Appendix A, "Estimating Rainfall Runoff from Soil and Cover Data".

Diversion Structure Specifications

Location: Diversion structures are to be located at the base of the highwall at the portal area. There will be 2 separate structures, each diverting natural runoff to either side of the drainage in which the disturbed area is located. The attached map shows the proposed structures and direction of diversion.

Alternate Locations: The only possible alternate location for the diversion structures would be above the highwall at the mine portals. Due to the steep, rock nature of the terrain at this point, construction of diversions in this location would create extensive damage to the environment in the formation of a new highwall (or cut) and to the mine yard, fan and portals by the inevitable fall of rocks from the area. This site is considered infeasible from both the standpoint of safety, and of environmental disturbance with additional sediment loading.

Exhibit #19
Plan For Construction And Maintenance
Sedimentation Ponds And Diversion Structures
Page Five

- Design: The proposed diversions are to be temporary. They will be constructed by digging a trench along the highwall and depositing the material in a compacted berm to the outside. The typical section and profile of the diversions are shown on the attached drawing. Once the structures leave the pad and parallel the roads, the configuration will change to a cut ditch since the road is already bermed on the outside, and sloped to the inside ditch.
- Purpose: To reduce the amount of runoff that crosses the disturbed areas, in an effort to minimize the size of the sedimentation ponds. Without such diversions, the runoff to the sedimentation ponds would be approximately 10 times as great as expected under this plan.
- Construction: The construction of the diversion ditches will be under the direction of a certified engineer. Any fill to be placed will be in lifts not to exceed 12" and compaction will be at least 95%. Outlets from the structures will be rip-rapped in such a manner as to act as energy dissipators. A safety factor of 1.5 minimum is incorporated into the design of the structure.
- Capacity: The structures will have the combined capacity to adequately divert the runoff from a 10 year 24 hour precipitation event, with an overflow capacity in excess of that for a 6 hour 25 year event.
- Maintenance: The diversion structures will be maintained and cleaned as needed. Any sediment removed from the structures will be stored with that from the sedimentation ponds and disposed of in the same manner.
- Reclamation: The diversion structures will be obliterated during final reclamation of the mine site. This will be accomplished by grading of the berm back into the trench. The entire yard will be reclaimed to the extent feasible (as described in Exhibit 39) and planted. Natural drainage will be restored to the extent practical as described in Exhibit #39.
- Calculations: * A. Use 2" figure for 6 hr. - 25 yr. precipitation event.
- **B. Table A-4, p. 536 - Runoff Curve No. (CN) = 81
Cover - Herbaceous
Condition - Fair
Soil Group - C (Slow Infiltration Rate)

- **C. From figure A-4 p. 541, the direct runoff is found to be .6 inches.
- D. Drainage Area - 74.82 acres. Total Runoff will be .6" x 74.82 acres or 44.89 acre-inches or 3.74 acre-ft.
- E. Cross-sectional area of diversions will be approximately 4 sq. ft. Diversion "A" will have a length of approximately 1000 ft. with a resulting volume of 4000 cubic ft. Diversion "B" will have a length of approximately 1100' and a volume of 4400'. Diversions will have a minimum slope of -2% toward the discharge end.
- F. Overflow capacity required from a 25 yr. 6 hr. event is calculated to be 3385 gpm. Since there are 2 structures of approximate equal length, it is estimated that each ditch must have the capability of handling approximately 1700 gallons per minute of runoff. Estimating flow from a ditch of this type is comparable with that from a "V" notch or rectangular wier. The typical section of the diversion is a trapezoid; however, for flow calculations, I have assumed it to be a 90° V-Notch wier with a maximum depth of 18". Using the formula $Q = .57 (4/15 LH\sqrt{2gH})$, the calculated flow from such a wier would be 3016 gpm. A flow of 1756 gpm could be attained at a depth of 14½" in a "V" Notch Wier, and a flow of 1742 gpm can be passed through a rectangular wier 3' wide at a depth of only 6½". Since the diversion configuration is between these two, it is estimated that the depth of water in the ditch when flowing 1700 gpm would be about 10½ inches. The calculated safety factor on these diversions is a minimum of 3016/1700 or 1.77.
- G. Conclusion: the proposed diversion structures will be adequate to divert the expected runoff from a 24 hr. 10 yr. or 6 hr. 25 yr. precipitation event as required, with a minimum safety factor of at least 1.5.

*
** See notes at bottom of Sedimentation Pond
Specification Sheet.

Discharge Structures

Diversions and Sedimentation Ponds

Energy dissipators shall be provided at all discharge points from the diversion structures and sedimentation ponds, (See overflow typical). In general, these dissipators will be of rock of substantial size, capable of absorbing the water force without moving. The discharges from the diversion structures will be onto a protective surface (ie: conveyor belting or equivalent), and then into an area of rocks (or rip-rap) to dissipate the energy prior to allowing the drainage to run naturally. At the sedimentation ponds, it is proposed to line the overflows and channels with rip-rap (see typical) to the point of final discharge into the ditch above the road.

Cyclone Discharge

The minimum overflow from the cyclone water treatment system to Mill Fork Creek is zero, since the system works on a demand basis from the water tank. When operating, the water is diverted to the tank, and when idle, the flow passes to Mill Fork. This is estimated to be approximately 20% of the total flow, with 80% being pumped to the tank for mine use.

DG/ag

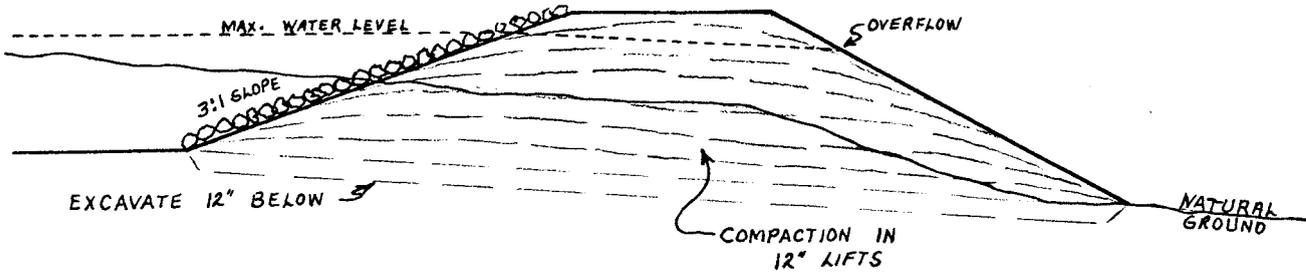
General Notes
for
Construction
of
Dams, Berms, and Overflows

1. In areas where any fill material is to be placed, the natural ground will be removed for at least 12" below the base of the structure.
2. Compaction of all fill materials shall be at least 95%. Native material will be used wherever practical. Fill will be placed in lifts not to exceed 12", and compacted prior to placing next lift.
3. Rip-rap will be placed on the water side of all fills to prevent scouring. Inside slopes shall be 3:1 minimum.
4. Dams shall be constructed to overflow at least 1 foot below the top.
5. Overflows shall have a minimum depth of 1 foot and a minimum width of 3 feet. They shall be constructed (or lined) with at least 1 foot of rip-rap on all surfaces, and shall discharge into an energy dissipator to prevent scouring.
6. All construction of sedimentation ponds will be performed under the direction of a qualified professional.

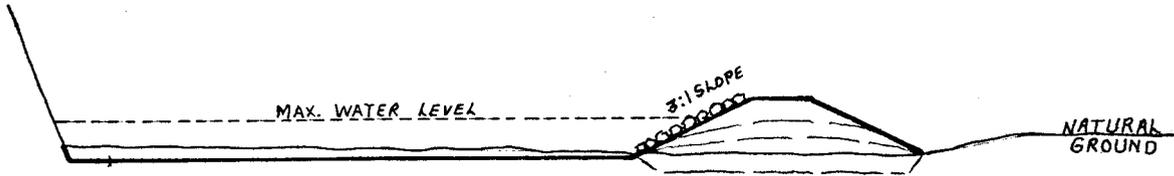
DG/ag



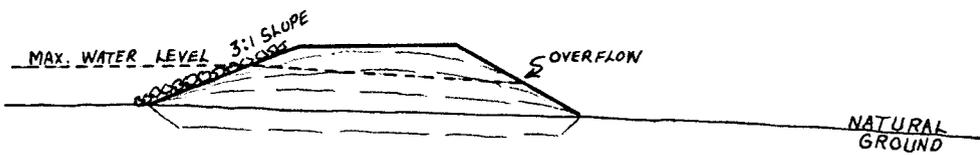
UPPER DAM



LOWER BERM



LOWER DAM



OVERFLOW TYPICAL

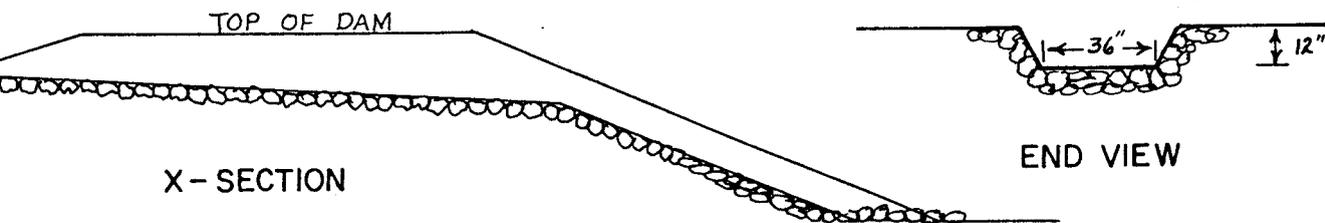




Exhibit #32 - November 22, 1978 Mining Plans and typical illustrations
for Huntington Canyon #4 Mine - both seams.
(Added as supplement at request of U.S.G.S.)



United States Department of the Interior

GEOLOGICAL SURVEY
Office of the Area Mining Supervisor
Conservation Division
8426 Federal Building
125 South State Street
Salt Lake City, Utah 84138

SL-064903
U-33454

December 1, 1978

Mr. Max Robb, President
Swisher Coal Company
P.O. Box AU
Price, Utah 84501

RECEIVED
DEC 4 1978

Dear Mr. Robb:

SWISHER COAL CO.

Enclosed is a xerox copy of that portion of Swisher's updated mine development plan of the Blind Canyon seam as received in this office on November 30, 1978. We have made a note on the panel located directly above the main entry system projected on the mine development plan for the Hiawatha coal seam. Please put this note on your maps and send us two copies of only the map with the changes. Send OSM five copies of the maps and data you sent us on November 30, 1978. Your submittal as noted completes our requirements at this office.

If you have any questions please advise.

Sincerely yours,

Jackson W. Moffitt
Jackson W. Moffitt
Area Mining Supervisor

Enclosure

SWISHER COAL CO.

P. O. BOX A U
PRICE, UTAH 84501
PHONE 801-637-5050

November 29, 1978

Mr. Jackson W. Moffitt
Area Mining Supervisor
U.S. Dept. of Interior
Geologic Survey
Conservation Division
8426 Federal Building
125 South State Street
Salt Lake City, Utah 84138

RE: Swisher Coal Co.
Huntington #4 Mine
SL-064903
U-33454

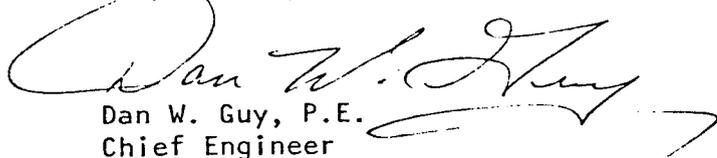
Dear Mr. Moffitt:

Please find enclosed, two work copies of the mining projections and typical illustrations as requested in your letter of November 22, 1978.

I hope this submittal will be sufficient to obtain your early approval of our mining plans. If you need any further information, please let me know.

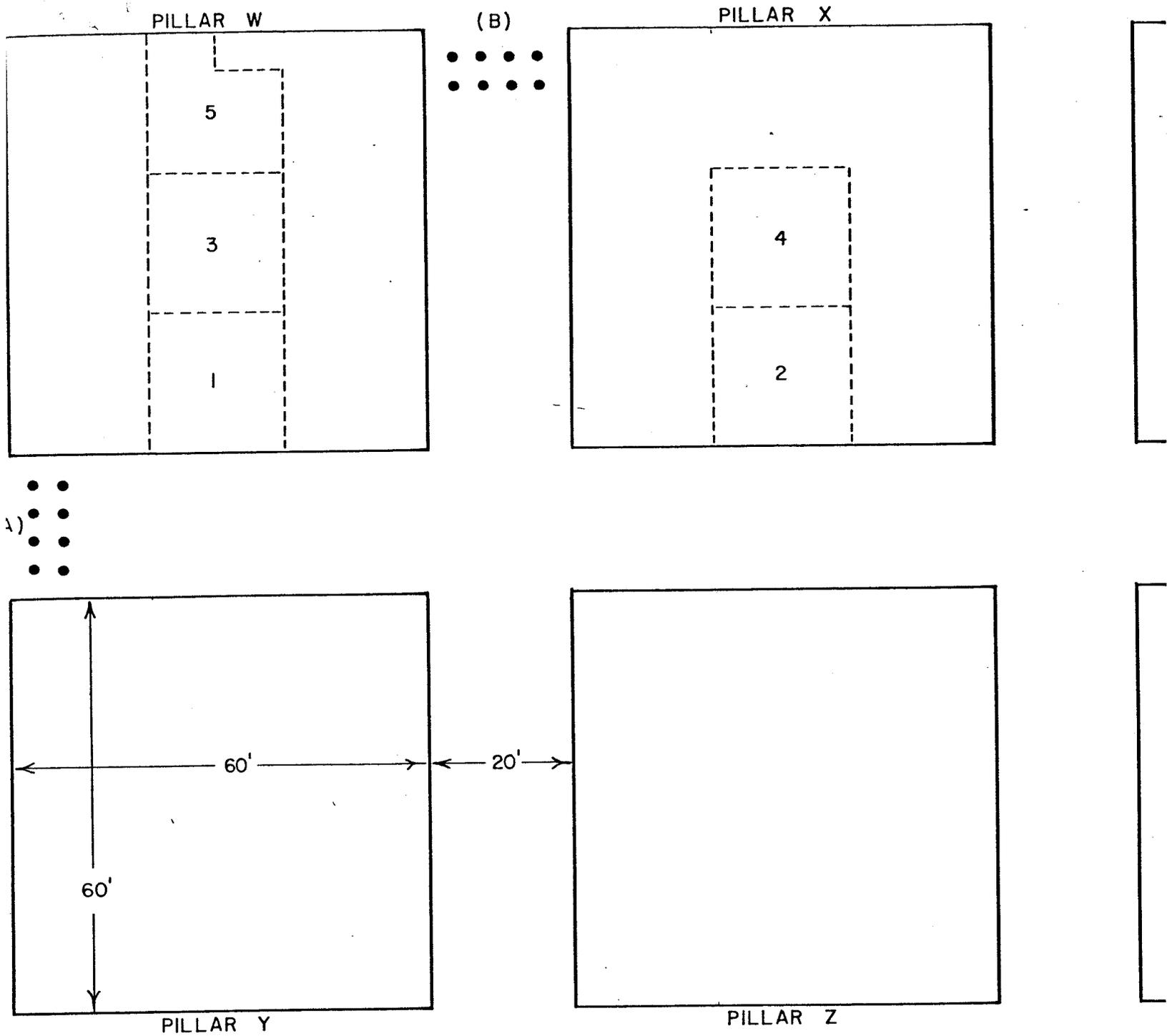
Thank you for your consideration.

Respectfully,


Dan W. Guy, P.E.
Chief Engineer

DWG/ag

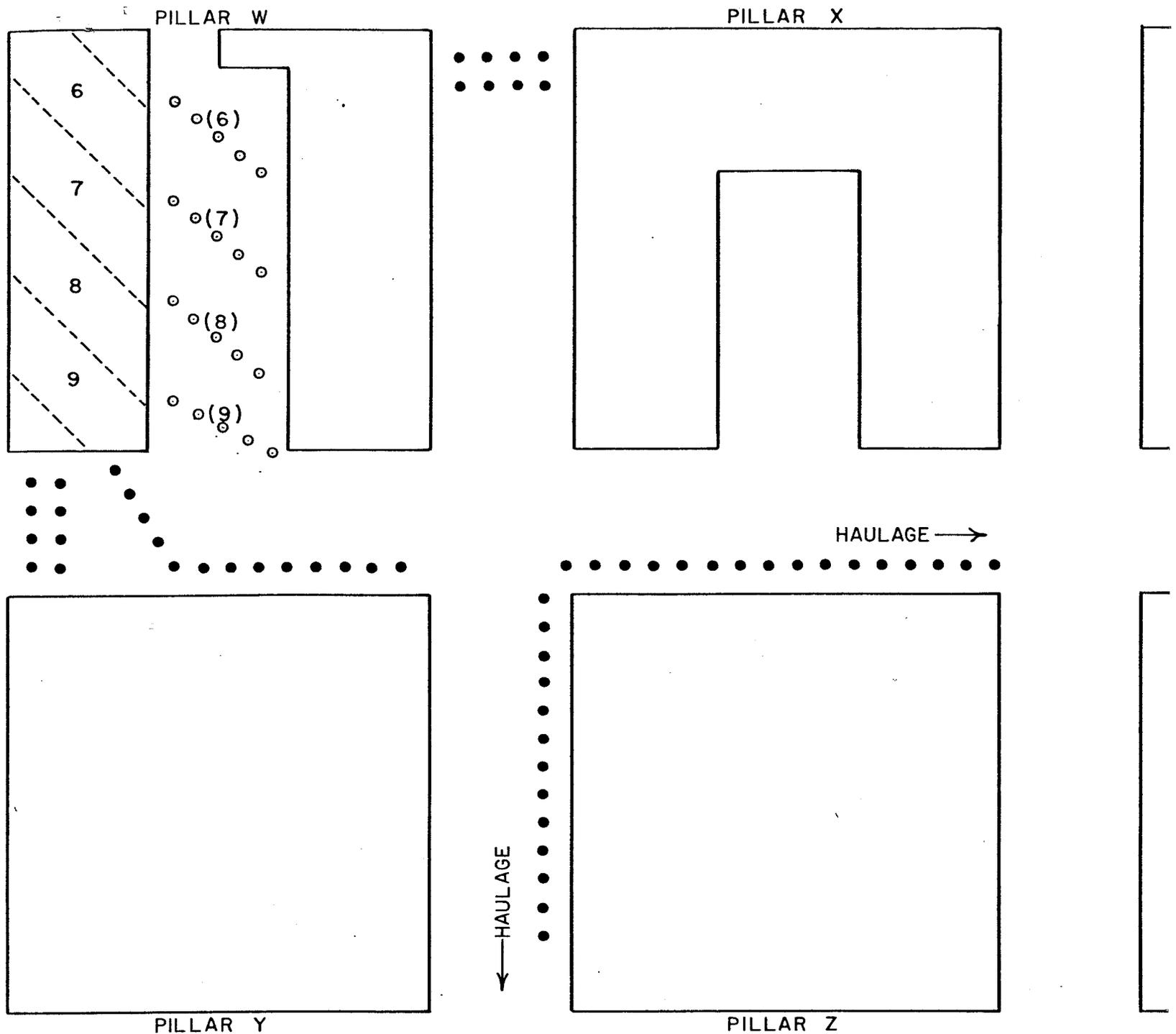
Enclosures



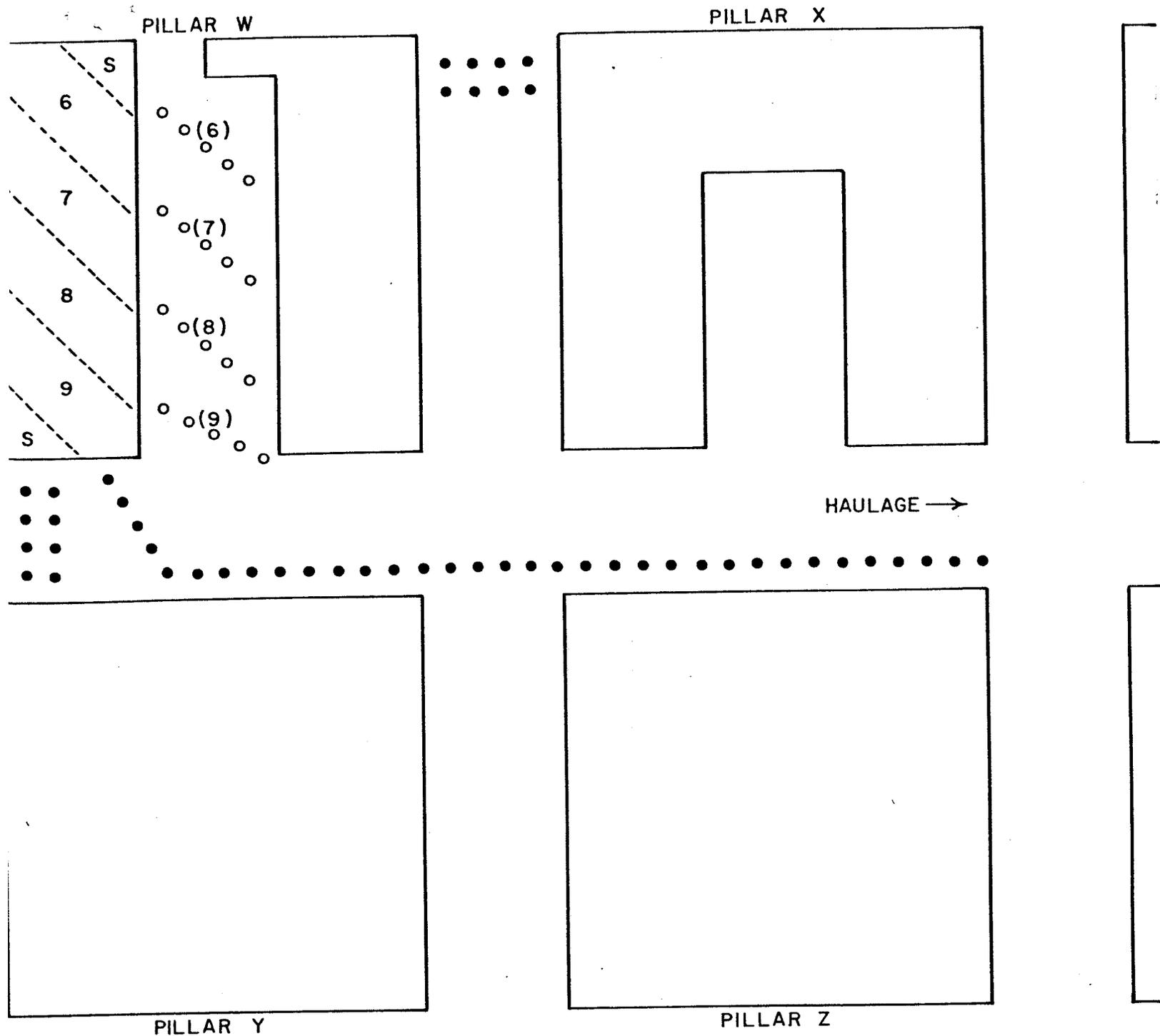
1. All entries, crosscuts and intersections shall be bolted in accordance with the approved roof control plan before starting pillar splits.
2. Breaker posts will be placed in positions A and B as shown prior to the first box cut.
3. Box cuts 1, 2, 3, 4 and 5 will be mined as shown. Typically cut 1 will be bolted as cut 2 is being mined, cut 2 bolted as cut 3 mined, etc. A 5' stump may be left at the end of cut 5 on either side at the discretion of the mine foreman. The sequence of the box cuts may vary depending on pillar location, pillar size, haul road direction, etc. Roadway posts and turn posts shall be installed before the 2nd cut into the pillar split.

Proposed pillaring plan, subject to change with MSHA 6-month review.

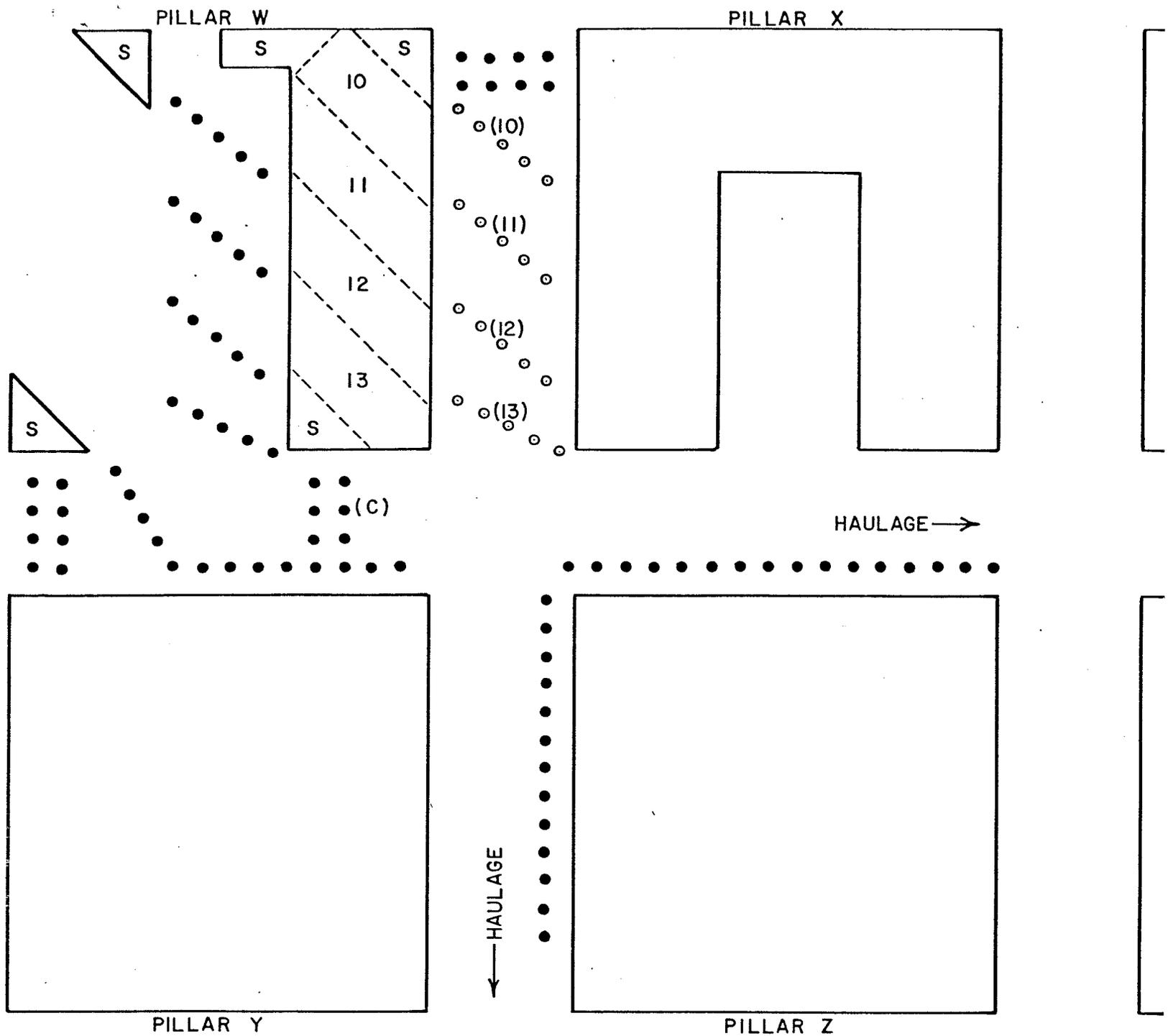
SCALE 1" = 20'



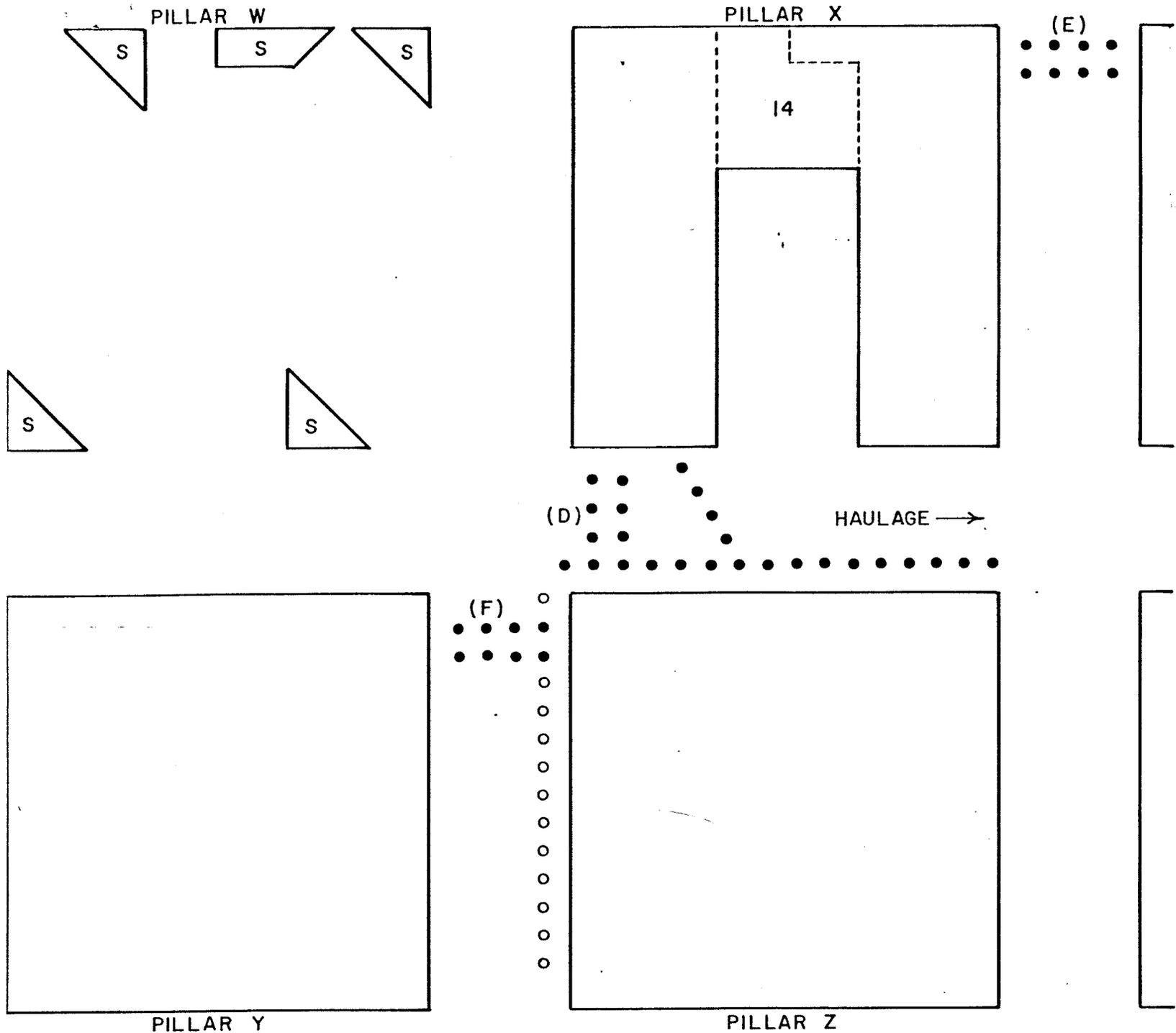
4. Roadway timbers will be placed as shown to allow double haulage (two shuttle cars) around pillar Z. When single haulage is necessary, roadway timbers will be placed as shown on plate P-2 (a). Roadway timbers may be located on either side of the roadway as needed to accommodate shuttle car travel so long as the roadway width does not exceed 16'.
5. Warning timbers located at (6) will be installed prior to cut 6 being mined. Timbers (7) will be placed prior to cut 7 being mined, and so on. Each cut will be approximately 10' wide or the width of the continuous miner in use.



Configuration of roadside timbers when single haulage around pillar Z is necessary. Roadway timbers may be located on either side of the roadway as needed to accommodate shuttle car haulage so long as the roadway width does not exceed 16'.



6. Breaker posts shall be placed at location (C) as shown after mining inby is completed.
7. Warning timbers (10) will be installed as required as cut 10 is being mined. Timbers (11) will be placed as required prior to cut 11 being mined, and so on,



8. After pillar W is extracted, breaker posts shall be installed at locations D, E, and F as shown.
9. Radius timbers will be installed leading into the split of pillar X prior to cut 14.
10. At this point pillar X will be extracted in the same manner as was pillar W with all breaker posts, radius timbers, and roadway timbers installed as outlined in plates 1-3 of this plan.
11. Cut sequences may vary depending on pillar location, pillar size and dimension, haulroad direction, etc. so long as the timbering procedures outlined in this plan are followed.
12. Direction of pillar attack is optional depending on existing conditions such as slips, faults and others stated above.
13. Breaker posts, turn posts, and roadway posts, shall be installed on 4' centers. Width of entry or crosscut will determine number of posts required.



United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION
COAL MINE HEALTH AND SAFETY
POST OFFICE BOX 15087
DENVER, COLORADO 80215

DISTRICT 9

April 6, 1976

In Reply Refer To:
EMS - H&S 3-1-7

Dave Shaver, Mining Engineer
Swisher Coal Company
90 West First North
Price, Utah 84501

Re: Huntington Canyon #4
I.D. No. 42-01270
Ventilation Plan

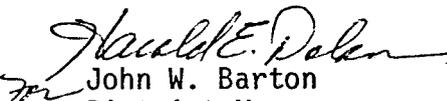
Dear Mr. Shaver:

The ventilation plan for the subject mine has been approved. The plan is subject to revision at any time and shall be reviewed by the operator and MESA at least once every six months.

Before any changes are made in the approved ventilation system, they shall be submitted to and approved by the District Manager prior to being implemented.

This plan supersedes any previously approved plans, and a copy of this plan shall be made available to the miners.

Sincerely yours,


John W. Barton
District Manager

Enclosure





United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION
COAL MINE HEALTH AND SAFETY
POST OFFICE BOX 15037
DENVER, COLORADO 80215

DISTRICT 9

April 6, 1976

In Reply Refer To:
EMS - H&S 3-1-7

Dave Shaver, Mining Engineer
Swisher Coal Company
90 West First North
Price, Utah 84501

Re: Huntington Canyon #4
I.D. No. 42-01270
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Sincerely yours,


John W. Barton
District Manager

Enclosure



Ventilation System and
Methane and Dust Control Plan
#4 Mine.

GENERAL

1. Company Name - Swisher Coal Company
Mine Name - Huntington Canyon #4 Mine
Post Office Address - 90 West First North, Price, Utah 84501
Telephone No. - (801) 637-5050
USBM I.D.# - 42-01270
Operator's Name - Max A. Robb
Operator's Title - President
Operator's Address - 935 North Second East, Price, Utah 84501
Operator's Telephone No. - (801) 637-3581
2. Life of mine is less than one year.
3. Number of Employees - Undetermined until mine becomes operational.

Main Fan Installation

The main fan shall be of fireproof construction and shall be set no less than 15 feet from the nearest side of the mine opening, and shall have explosion doors and/or weak walls with a cross-sectioned area equal to or greater than the connecting entry. The fan shall be equipped with a pressure recording gauge and an automatic signal device designed to give alarm should the fan slow down or stop. The recording gauge and the automatic signal device shall be located on the side of the fan. The fan shall be driven by an electric motor operating on a separate power circuit independent of any other mine circuit. The area surrounding the fan shall be kept free of flammable material for at least 100 feet in all directions. The fan shall be kept in continuous operation except for scheduled stoppages for maintenance or adjustment. During such stoppages all men will be withdrawn from the mine and the mine power shall be cut off.

If an unusual variance of the mine ventilation pressure is observed, or if an electrical or mechanical deficiency of a mine fan is detected, the mine superintendent or mine foreman shall be notified immediately and appropriate action or repairs shall be instituted promptly.

Airflow shall be maintained in all intake and return aircourses. Multiple fans are not anticipated at any time in the future.

Section and Face Ventilation System

1. The complete section and face ventilation system for a typical five entry system is shown on Drawing Set #1. Line brattice used to ventilate the working face will be maintained to within 15 feet of the working face as shown on Drawing #2. Since the roof is supported by a conventional timbering plan wherein timbers must be placed so that the roadway does not exceed 16 feet in width, maintaining the line brattice to within 15 feet of the working face is the practical limit since it allows the continuous miner to operate without fear of damaging the face ventilation devices and always keeps the operator under permanently supported top. Where the line curtain is kept to within 15 feet of the face, no less than 8,000 cfm of air shall be maintained at the working face. The volume of air reaching the last open crosscut shall not be less than 12,000 cfm. A minimum mean entry face velocity of 80 feet per minute shall be maintained at all working faces where coal is cut, mined or loaded.
2. Ventilation in belt haulage entries will be controlled by regulations and check curtains. Belt air will be regulated to the return.
3. All air returning from working sections will be taken into the main returns so that no air reversal can occur.
4. Coal shall not be permitted to accumulate at the outby end of the face equipment to the extent that ventilation of the working face is restricted.

Permanent Stoppings

1. All ventilation devices such as stoppings, overcasts and undercasts shall be of substantial and incombustible construction installed in a workmanlike manner and maintained in a condition to serve the purpose for which they were intended. Any stopping leaking air excessively shall be repaired.
2. Permanent stoppings between intake and return air courses shall be constructed of cinder blocks with mortared joints. In short lived sections, Kennedy Stoppings or wire-and-plaster stoppings may be used for the last 600 feet only. Permanent stoppings will be maintained to and including the third connecting cross-cut outby the working face. Belt isolation stoppings will be of block-and-mortar, Kennedy metal or wire-and-plaster construction and will be installed within three shifts after the belt has been advanced toward the working face.
3. D.N.A.
4. A description of the construction of a stopping is shown on Drawing #3. Stoppings will be used to separate the return air course from the belt entry and to separate the belt entry from the intake air courses and escapeways. Refer to Drawing #1 for details.
5. Belt isolation stoppings made from Kennedy metal or wire and plaster construction shall only be used in short lived areas such as rooms, panels or butts.
6. Temporary stoppings or equivalent will be used to isolate the belt entry after a belt move while permanent stoppings are being constructed.

Methane and Dust Control Plan

1 a-b. Dust will be controlled at transfer points and loading points by rock dusting and manual clean up practices. Also, water will be introduced on the return belt 1,000 feet beyond the mine portal.

c. D.N.A.

d. D.N.A.

e. Rock dust will be applied to belt haulageways.

f. Where used, continuous miners shall be equipped with 27 water sprays operating at 125 psi and delivering 16 gpm. Pumps and sprays on face loading and cutting equipment will be maintained in operable condition at all times.

* g. Roadways will be rock dusted to control dust.

h. D.N.A.

2. At least 24 of the water sprays indicated for dust suppression in each area shall be maintained and operated at the indicated volume and water pressure in the plan during mining operations.

3. No bleeder entries are anticipated at this time. Before any pillar mining is done a bleeder entry system will be included on a six month review of the ventilation plan.

4. The methane content in any return aircourse other than an aircourse returning the split of air from a working section shall not exceed 2.0 volume per centum. The methane content in the air in active workings shall be less than 1.0 volume per centum. If at any time the air in any active working contains 1.0 volume per centum or more of methane, changes or adjustments ^{shall} ~~should~~ be made at once in the ventilation in the mine so that the air shall contain less than 1.0 volume per centum of methane.

5. Methane examinations shall be made at the working face at the last permanent support by certified or qualified men using either an approved methaneometer or a flame safety lamp.

6. When an area is to be sealed, the location, sequence of installation, and method of construction of the seals will be submitted on the six month review of the ventilation system plan.

* Whenever haulageways are dry and dusty and dust is being raised by moving equipment, the haulageways shall be wetted down with water to keep the dust from entering the ventilating current.

Diesel Equipment

1. All diesel equipment used underground will be operated and maintained according to the manufacturer's instructions.
2. The atmosphere in the operator's compartment and the atmosphere returning from any working place where diesel powered equipment is being used shall be tested at least once a week while the equipment is in operation, and if the analyses of these samples exceeds five parts per million NO_2 or 50 parts per million CO, or both, corrective measures shall be taken immediately.
3. If any unusual discoloration of the exhaust occurs, the atmosphere in the operator's compartment and the atmosphere returning from the diesel equipment will be tested immediately. If levels of NO_2 and CO are detected approaching those stated in paragraph 2, samples will be taken every shift until such levels are reduced to normal operating levels.
4. If for any reason the levels specified in paragraph 2 are exceeded, corrective measures will be taken immediately. Samples will be taken every hour thereafter until the corrective measures are shown to be effective.
5. The date, time of sampling, machine identification and the results of the analyses shall be recorded in a book maintained for that purpose.

Mine Map

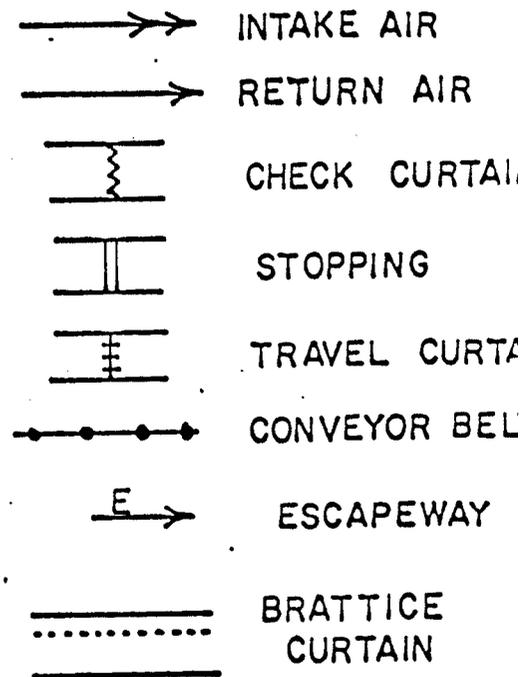
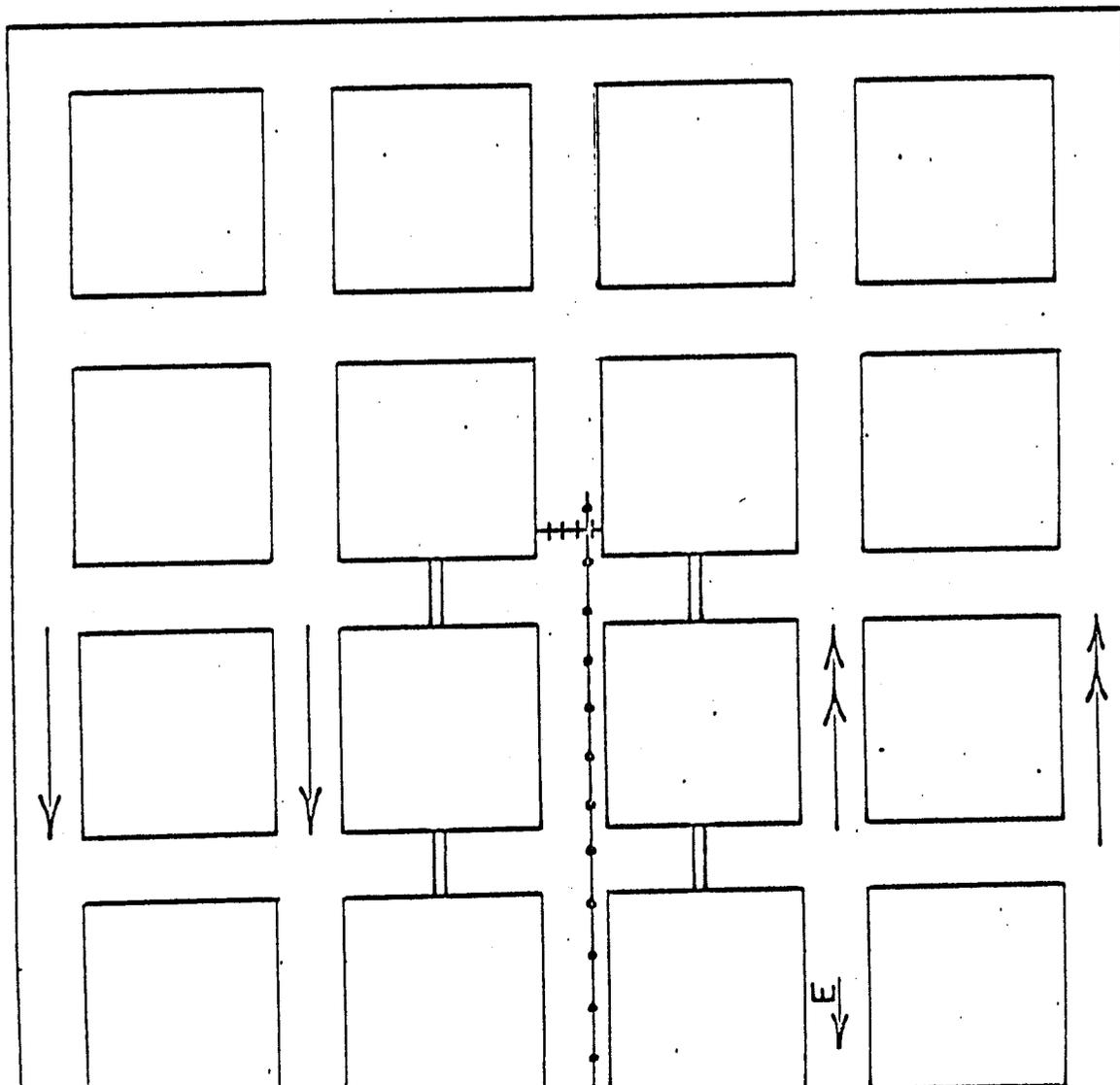
A mine map showing the following will be submitted once the mine becomes operational:

1. A legend.
2. Property lines
3. No oil or gas wells are present
4. All known underground workings adjacent, above and below the mine
5. Complete fan data
6. Location of all surface openings with air direction and quantity
7. Faults
8. Projections for one year with ventilation controls
9. Projections for each section
10. All underground workings with active section delineated
11. Location of stoppings, overcasts, regulators, seals, air lock doors and man doors
12. Volume of air entering and leaving each split and the percent of methane.
13. Location and average height, width and air velocity in conveyor belt haulage entry
14. Velocity of air at restricted conditions
15. Areas which have been abandoned or pillared
16. Location of proposed shafts, slopes or drifts
17. Location of proposed seals
18. Elevation of coal seam
19. Escapeways designated by symbols

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM

BEGINING OF CUT CYCLE

DRAWING SET NO.1



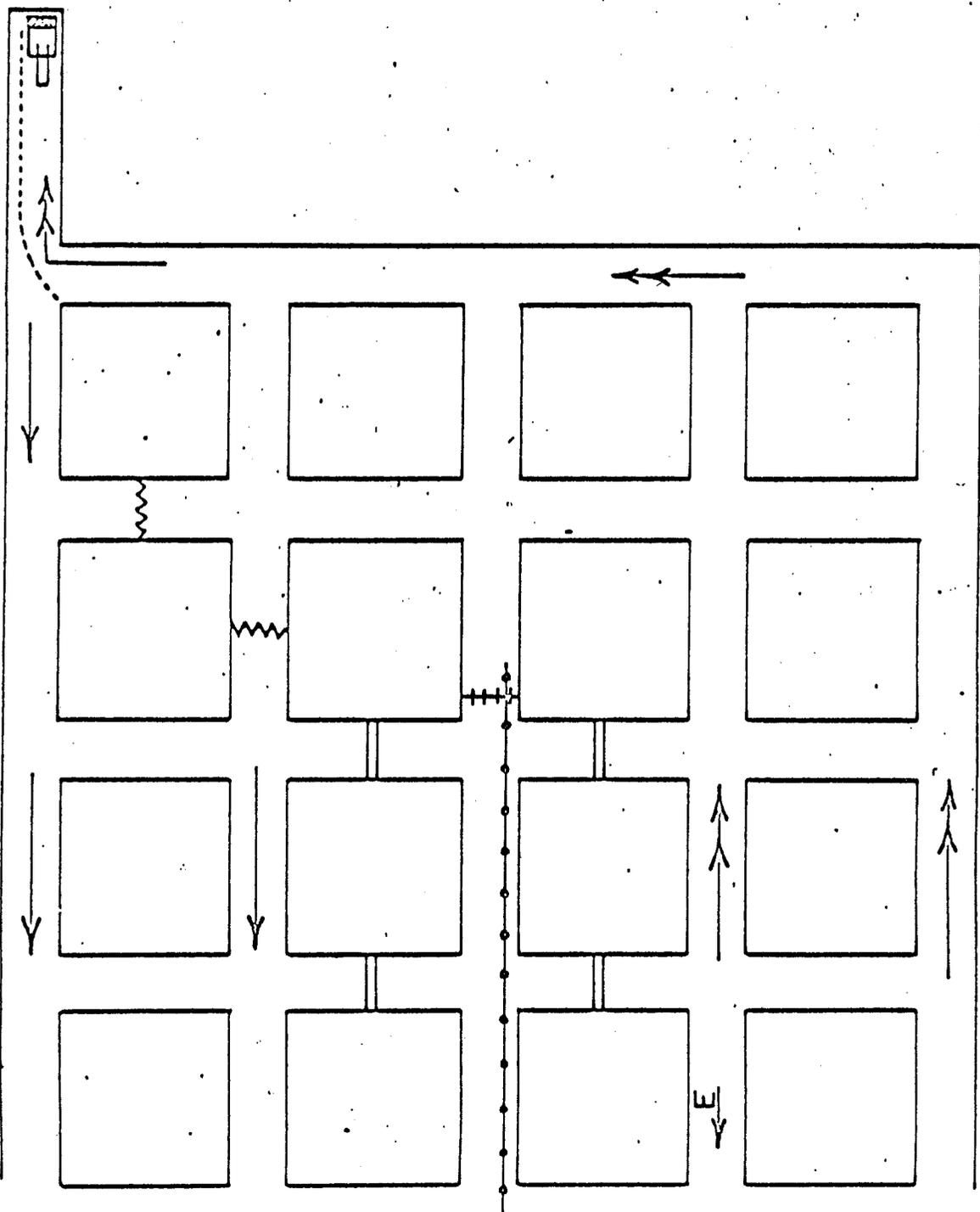
SCALE 1" = 60'

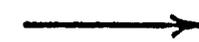
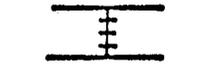
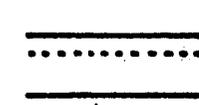
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM

CUT NO. 1



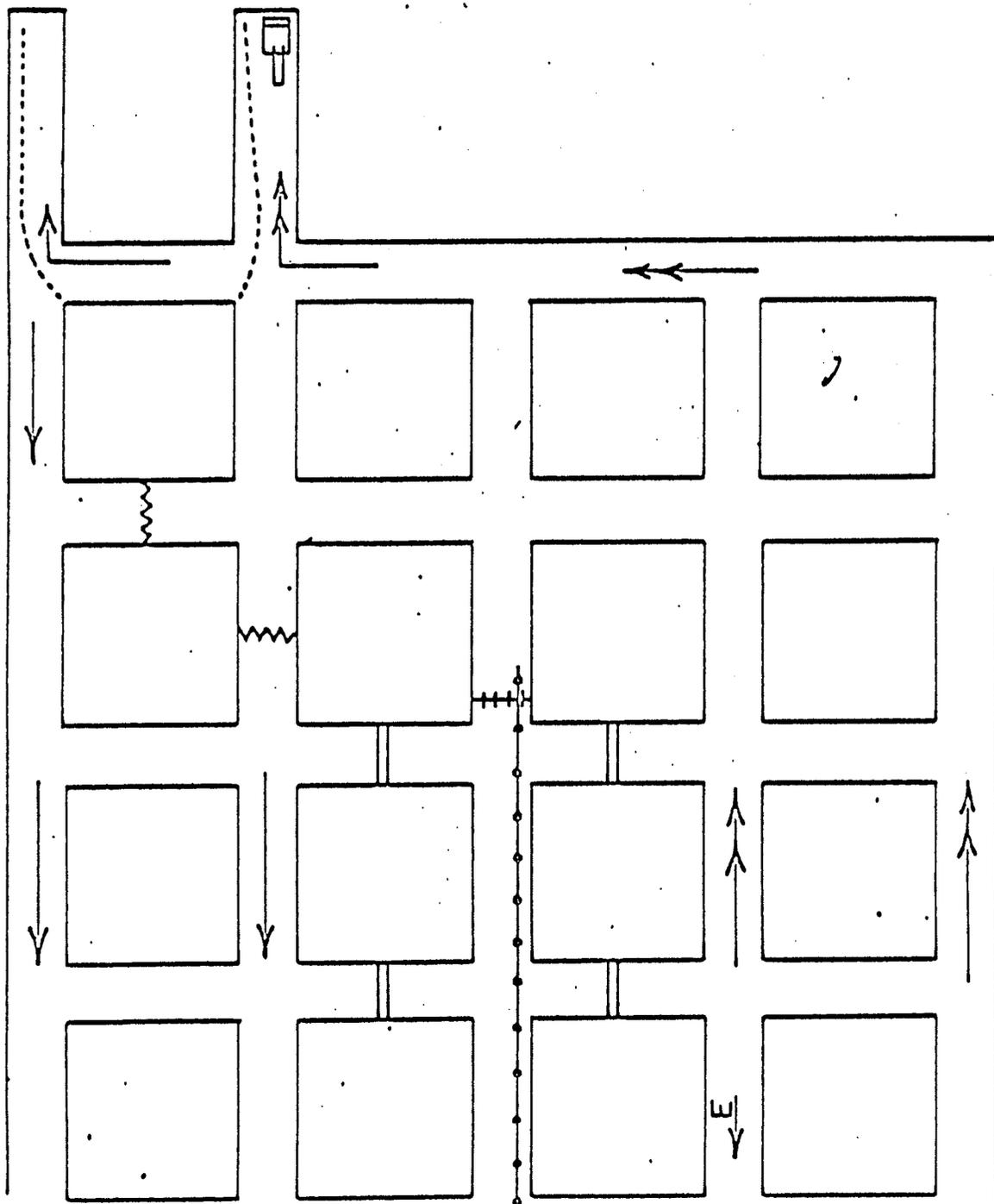
-  INTAKE AIR
-  RETURN AIR
-  CHECK CURTAIN
-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

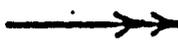
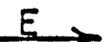
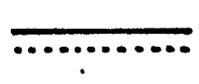
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 2

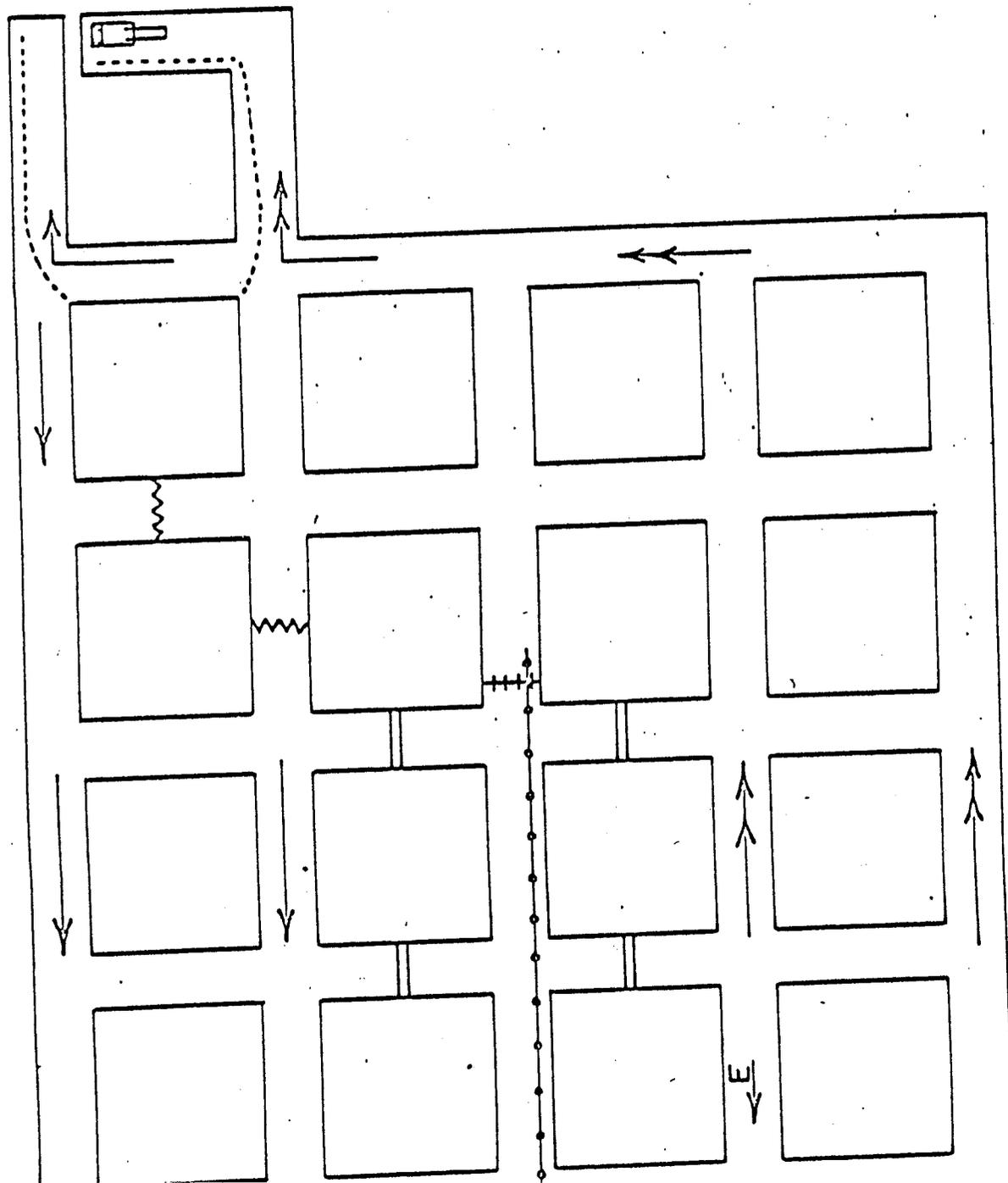
-  INTAKE AIR
-  RETURN AIR
-  CHECK CURTAIN
-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

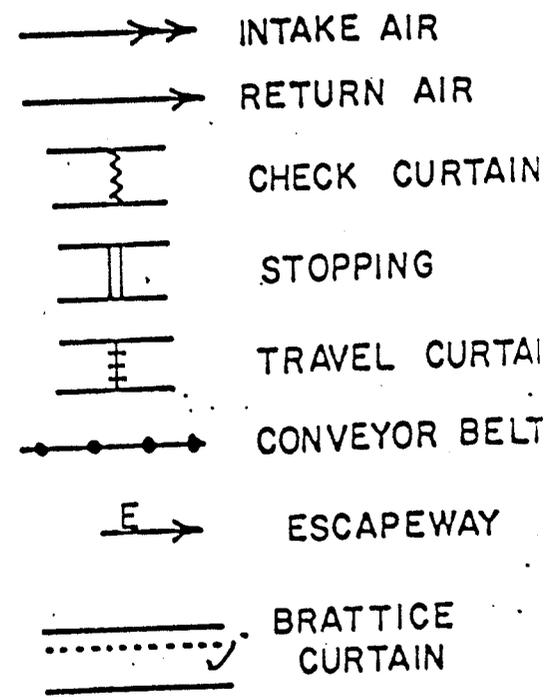
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5: ENTRY SYSTEM



CUT NO. 3

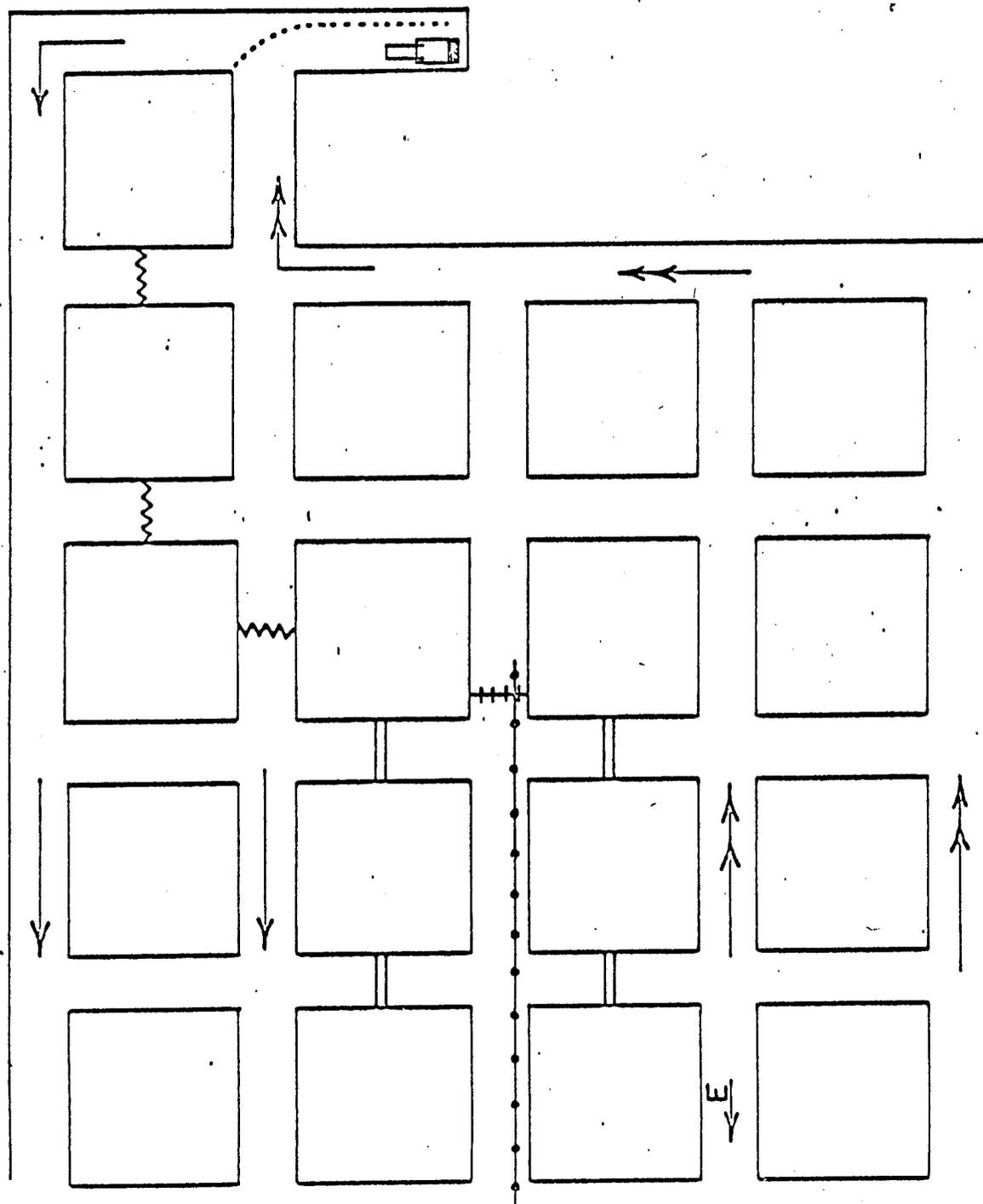


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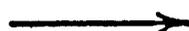
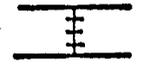
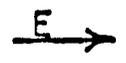
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 4

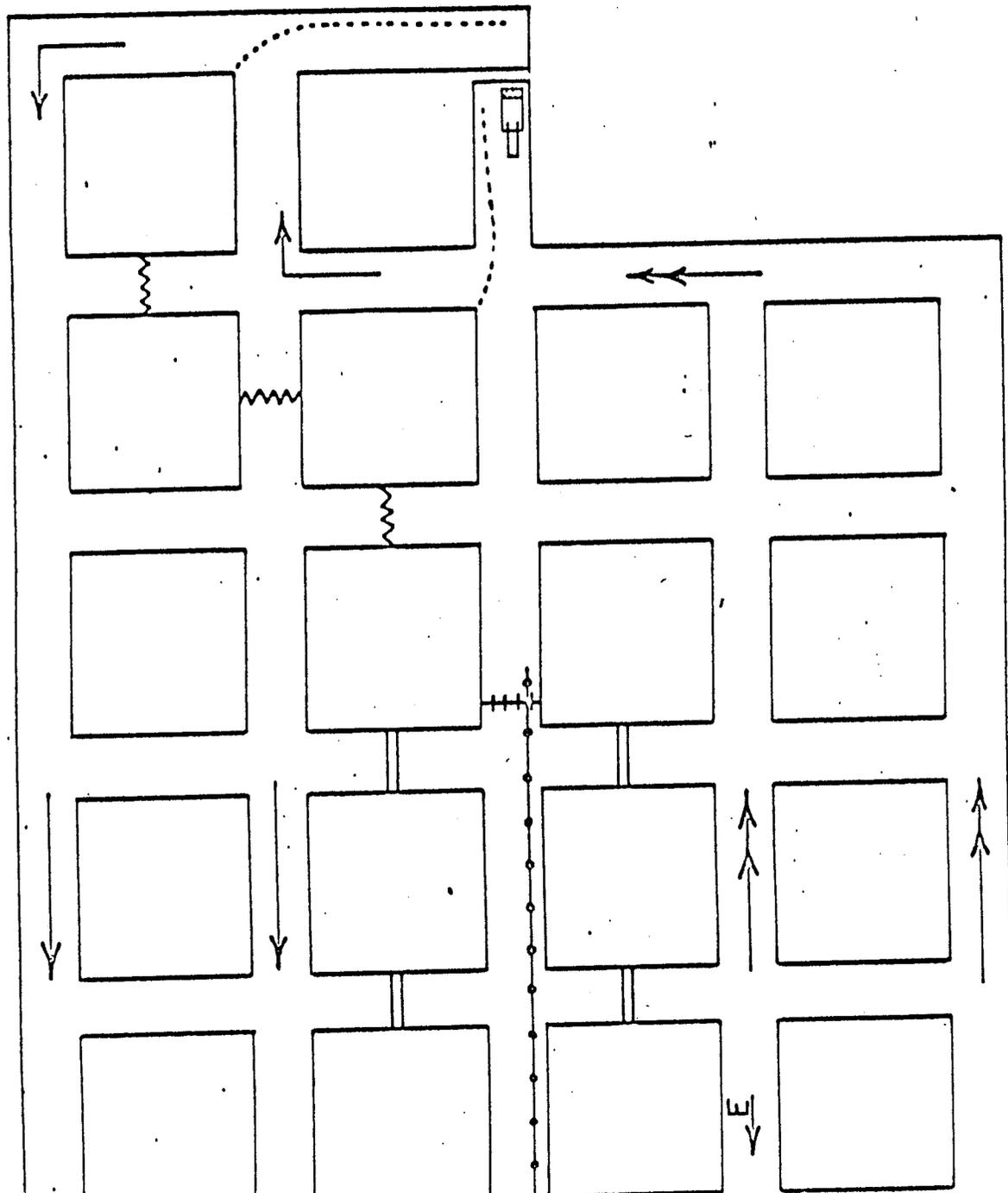
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-  RETURN AIR
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-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

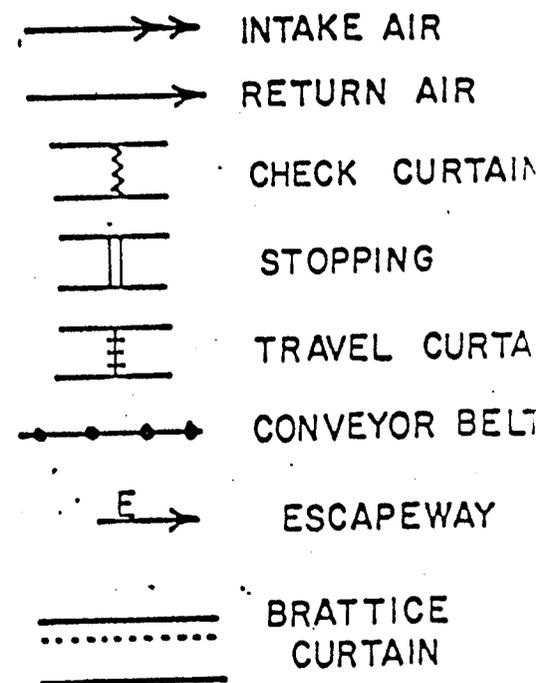
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 5

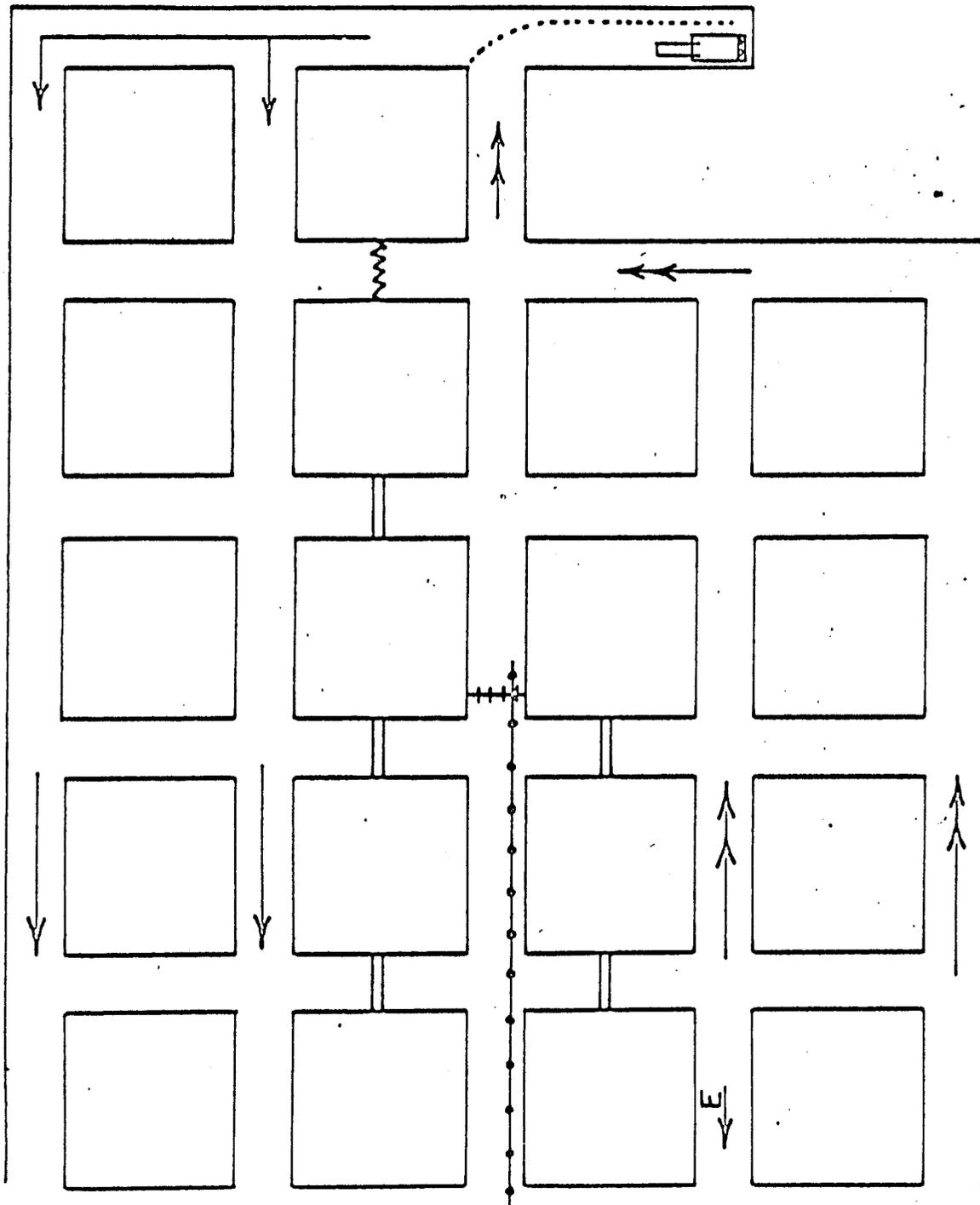


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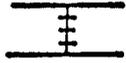
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 6

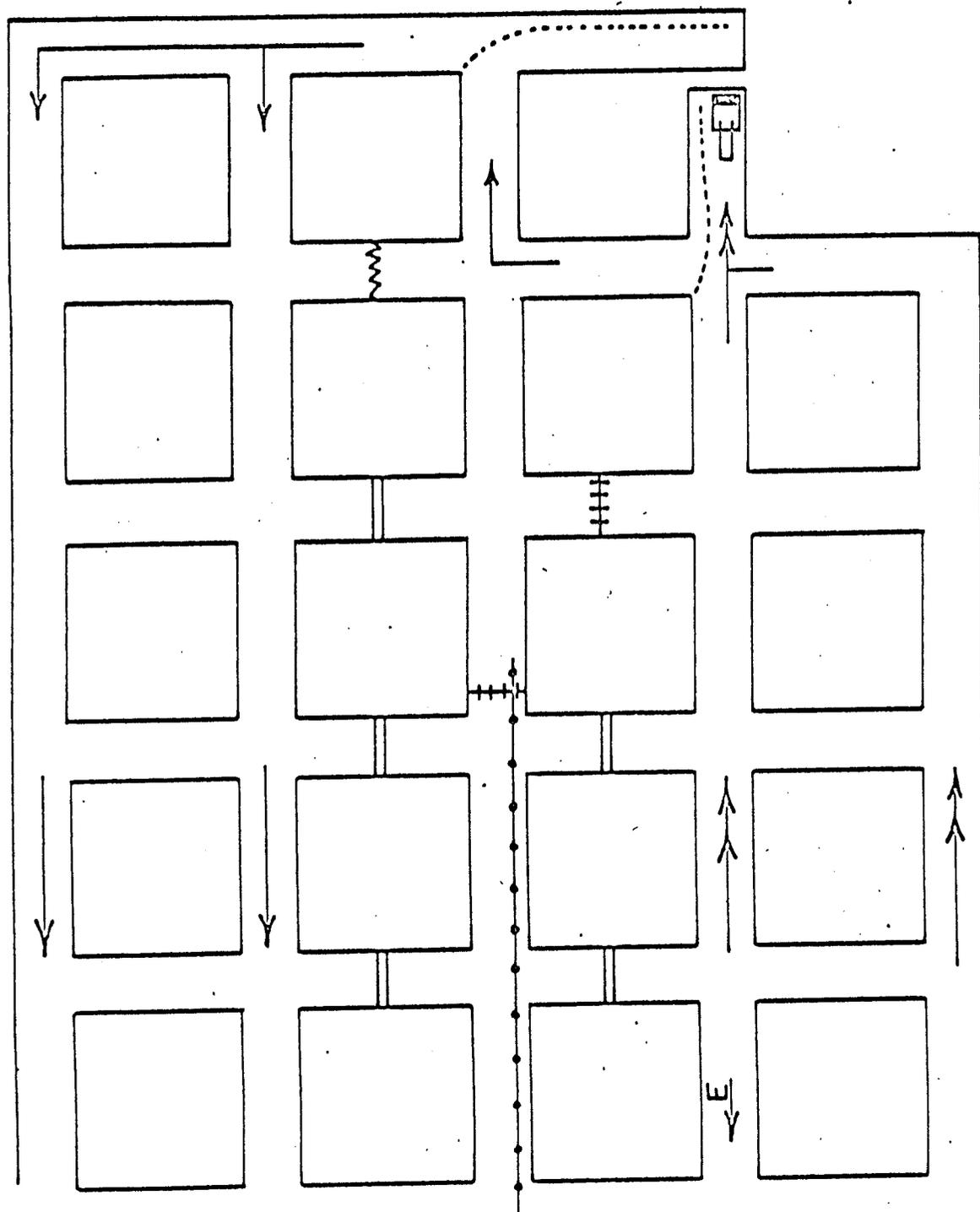
-  INTAKE AIR
-  RETURN AIR
-  CHECK CURTAIN
-  STOPPING
-  TRAVEL CURTAIN
-  CONVEYOR BELT
-  ESCAPEWAY
-  BRATTICE CURTAIN

SCALE 1" = 60'

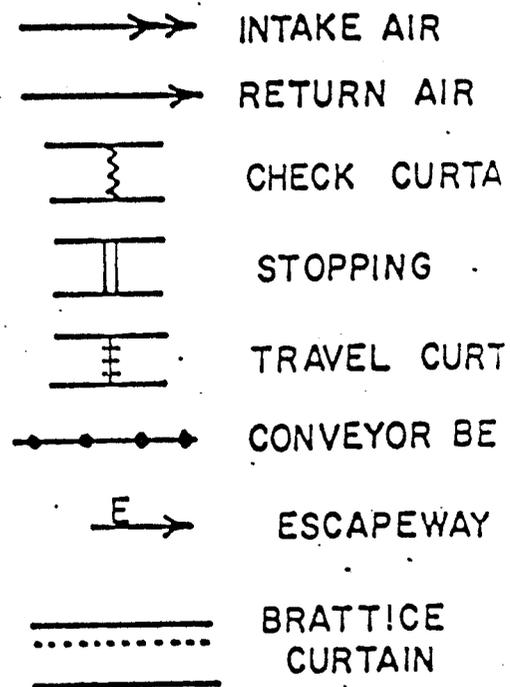
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE & ENTRY SYSTEM



CUT NO. 7

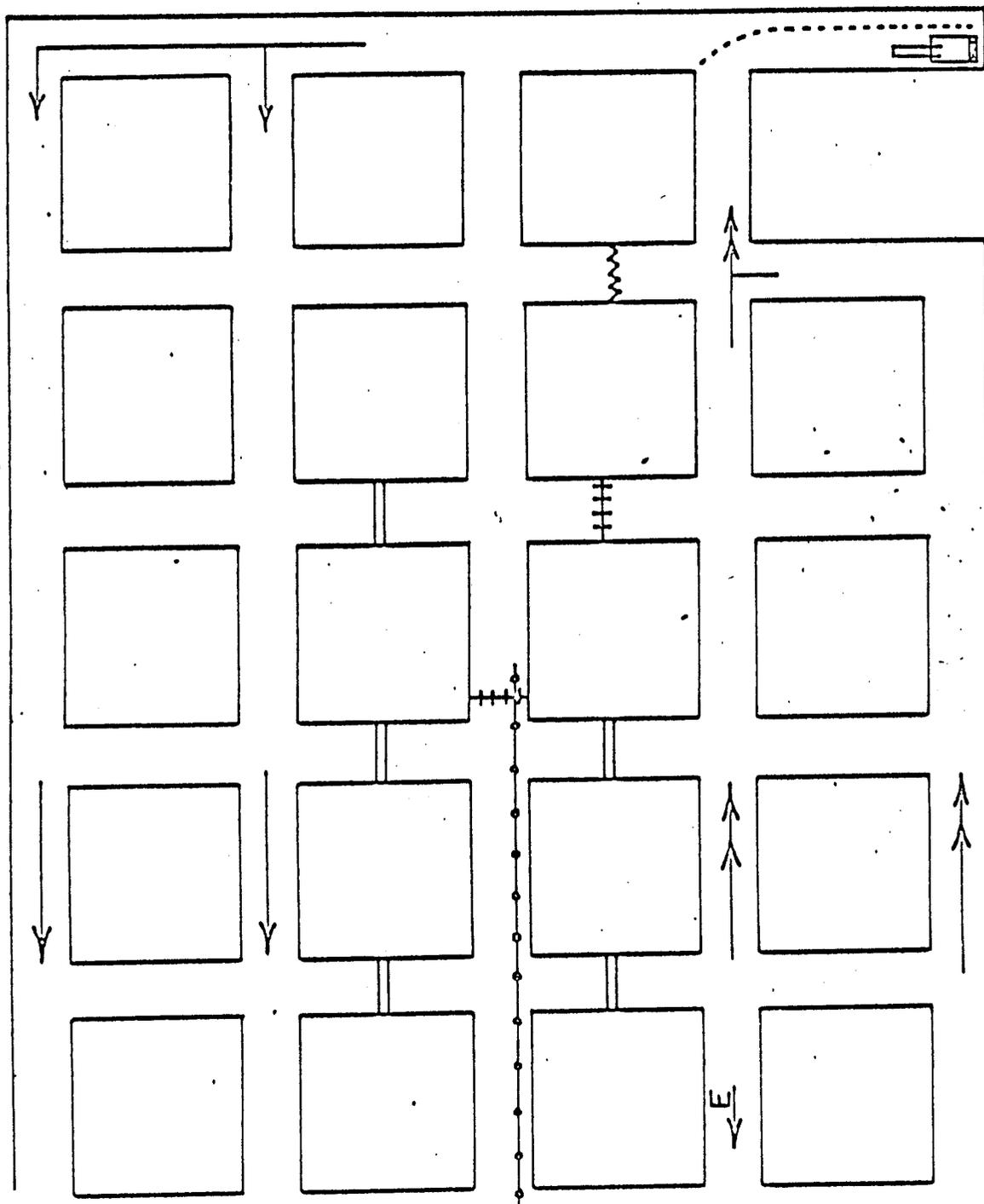


SCALE 1" = 60'

MINE #4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 8

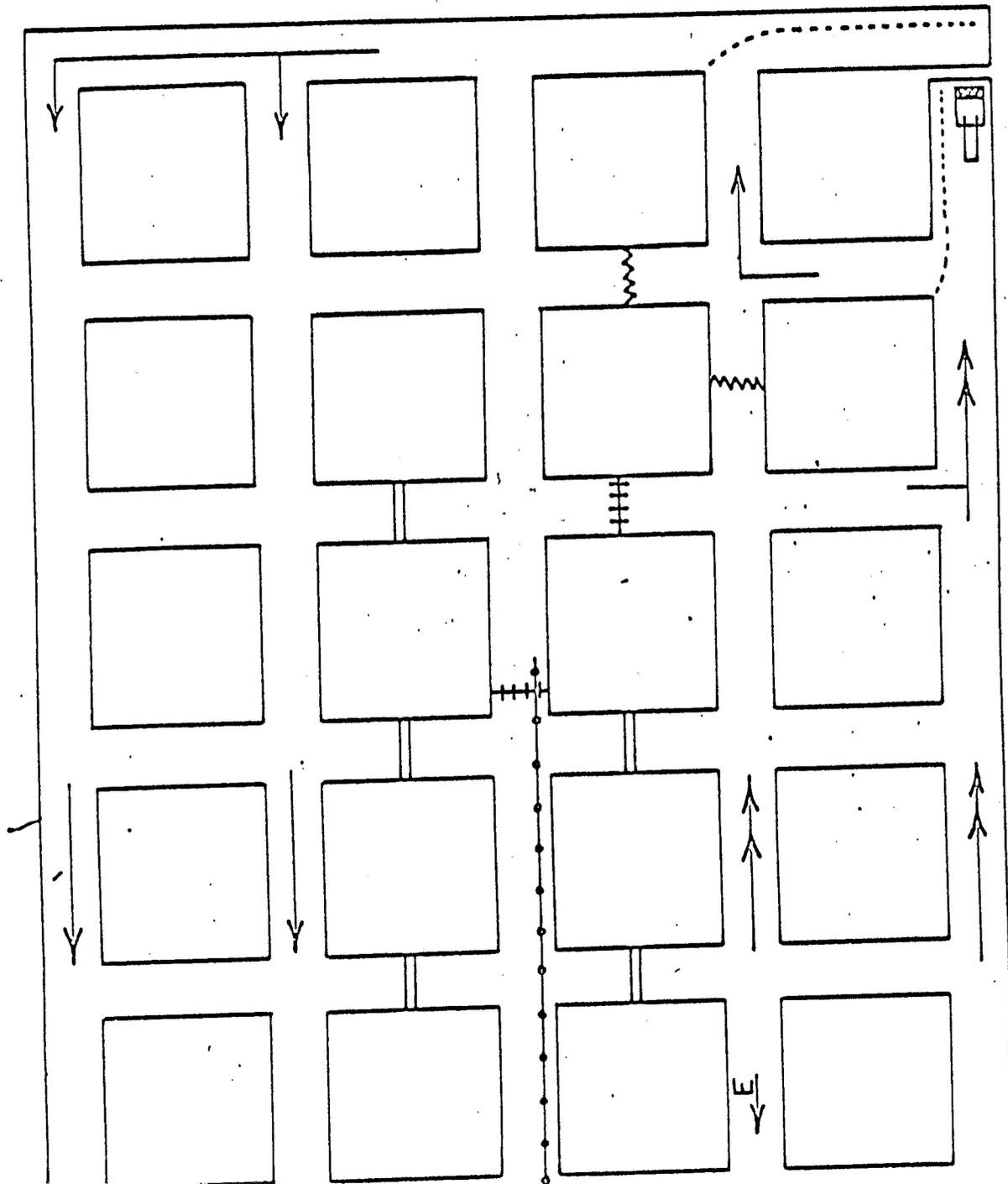
- INTAKE AIR
- RETURN AIR
- ⌞ CHECK CURTAIN
- ⌞ STOPPING
- ⌞ TRAVEL CURTAIN
- CONVEYOR BELT
- E → ESCAPEWAY
- ⋯ BRATTICE CURTAIN

SCALE 1" = 60'

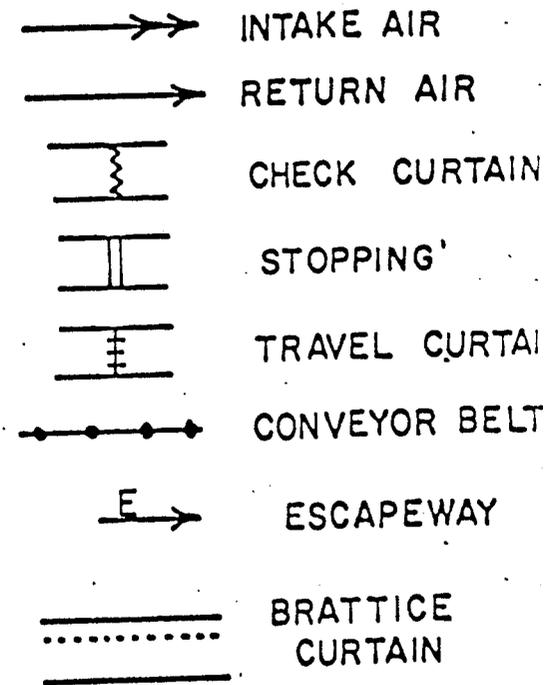
MINE # 4

SWISHER COAL CO.

TYPICAL MINING SEQUENCE 5 ENTRY SYSTEM



CUT NO. 9

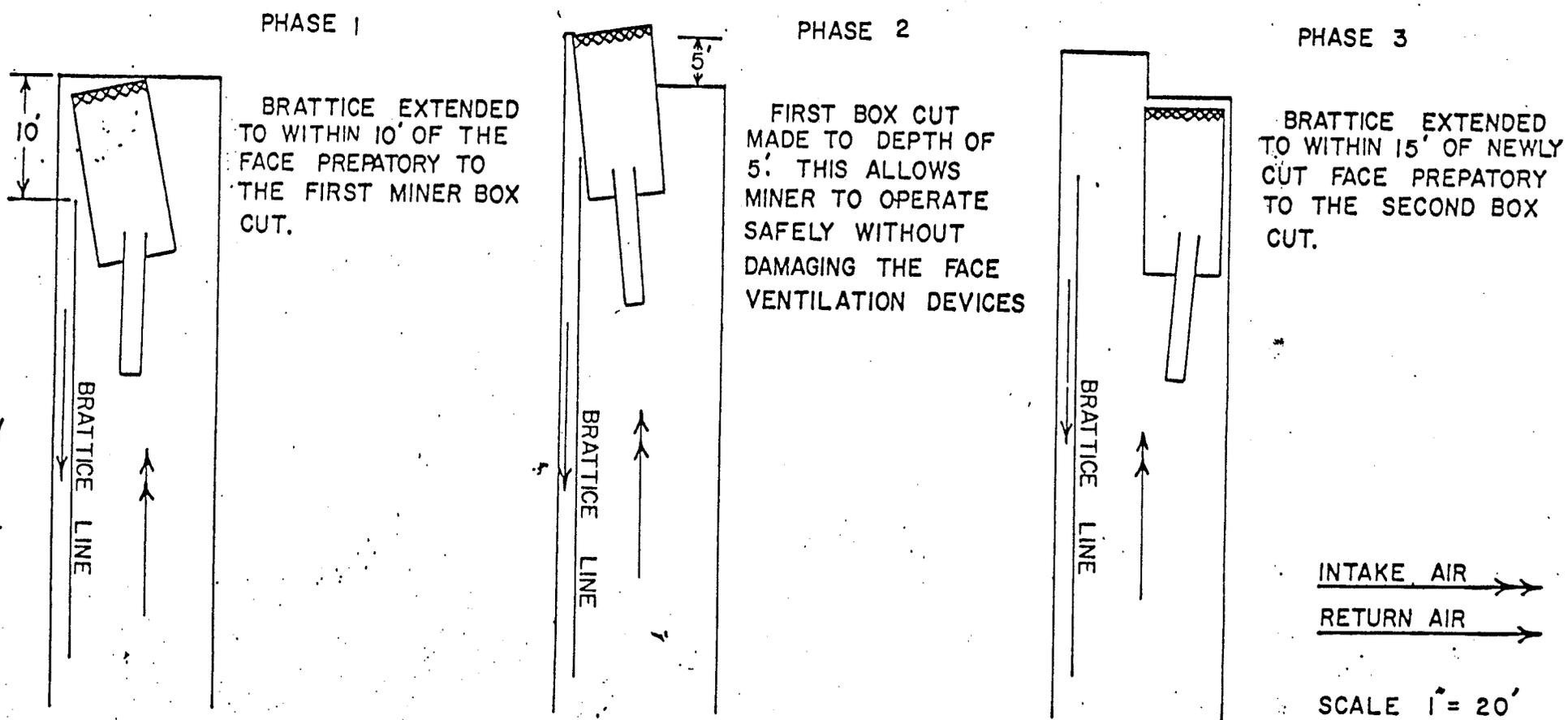


SCALE 1" = 60'

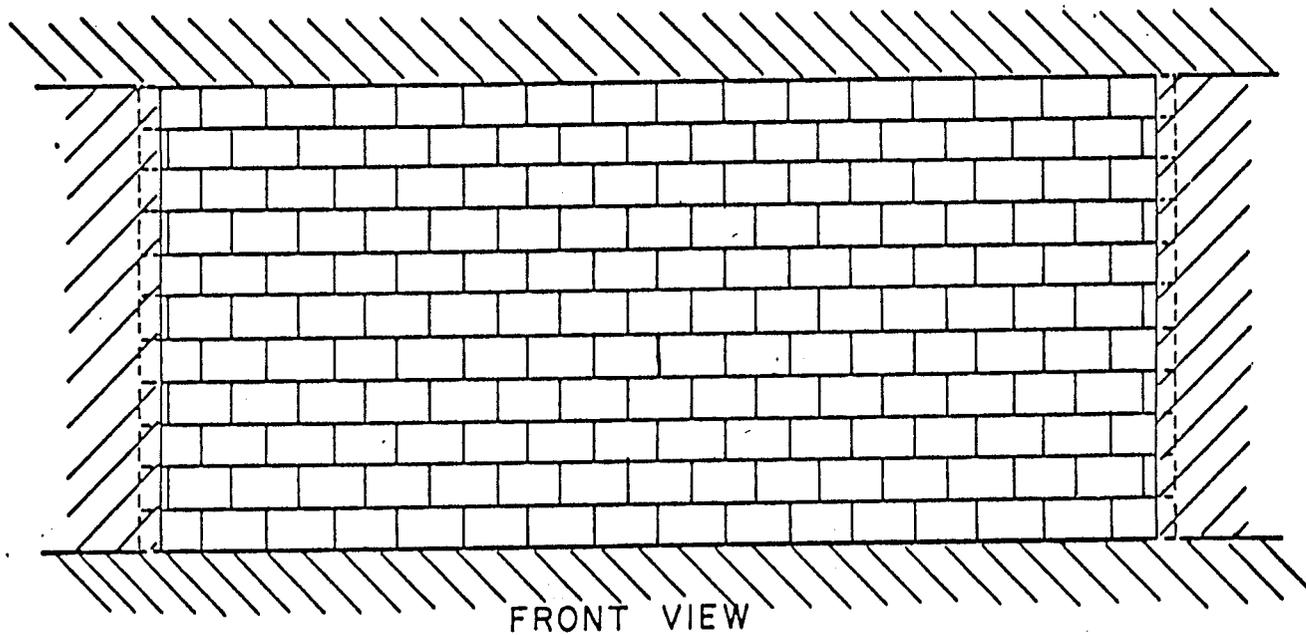
MINE # 4

SWISHER COAL CO.

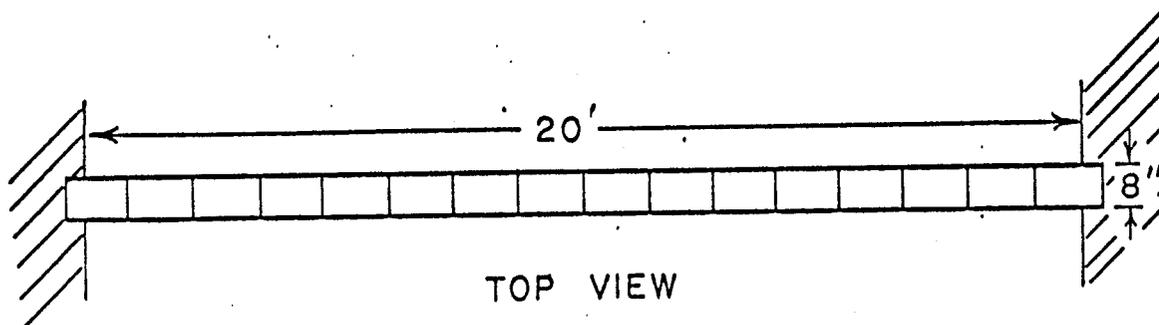
FACE VENTILATION SCHEME
 SWISHER COAL CO.
 MINE * 4



CONSTRUCTION OF PERMANANT STOPPING



STOPPINGS ARE MADE OF CINDER BLOCK WITH MORTARED JOINTS. OTHER TYPES OF BLOCK OF COMPARABLE QUALITY AND COMPRESSIVE STRENGTH MAY BE USED. ALSO AN AIR SEALANT SUCH AS "STOP-IT" MAY BE APPLIED TO THE STOPPING.



SCALE 1" = 4'

MINE # 4

SWISHER COAL CO.

November 22, 1978

Max Robb
Swisher Coal

Dear Mr. Robb:

We are presently reviewing the modified mine plan for Swisher's Huntington Canyon #4 Mine. The modification updates the mine plan to include Swisher's lease U-33454 and will also be required to satisfy all the current regulations.

At present we have four categories of documents and maps from Swisher that compile the original approved mine plan and proposed modification. They are:

1. The original mine plan, conditionally approved on February 16, 1977, sent to the OSM on September 13, 1978.
2. The miner modification to the original approved mine plan. (Permission to cut a new mine panel into the area of low coal.)
3. The modified mine plan received on May 11, 1978, and subsequently sent to OSM for approval with an addendum environmental analysis on October 3, 1978.
4. Modified mine plan as received from OSM on November 17, 1978.

We have received the total mine plan submitted to us and find the following items that should be included:

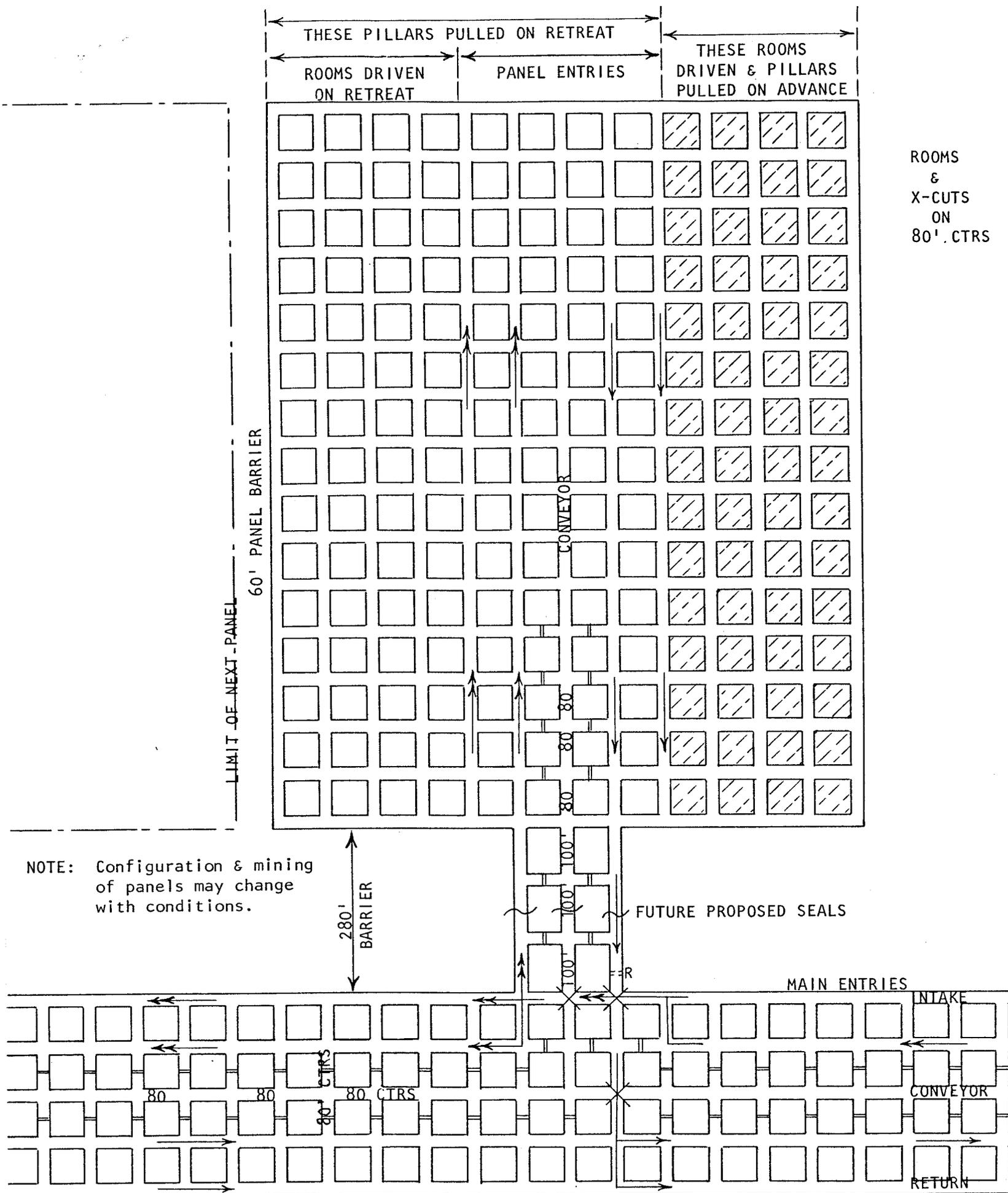
1. Line projections which show how you propose to mine all mineable coal in all coal seams and attain maximum economic recovery.
2. A forecast of the mining operations for the next five (5) years. (Given in mine plan to USGS; not in plan to OSM. Therefore, has to be updated.)
3. Typical illustrations showing mining sequences for each type of mining proposed for the mine. ie:
 - a. Development of main entry if different than five entry system.
 - b. Development of panel entries.
 - c. Retreat mining procedure, to include chain and barrier pillars.

Please refer to the 30 CFR 211 Column 12 regulations in preparing mine maps. A copy of modification of the May 17, 1975, regulations was issued on August 22, 1978. A copy is enclosed for your use. (We assume you have the May 17 copy.)

Submit to us two work copies of the items listed above. After our review and acceptance, seven copies will be required. (Send five copies to OSM and two copies to USGS.) OSM has agreed to this procedure.

If you have any questions please call.

Jack Moffitt
USGS



Proposed plan typical of panels - Huntington Canyon #4 Mine.

Exhibit #34: Vicinity Map

Exhibit #33 - Response to: Division of Oil, Gas and Mining, Conditional
Approval of Huntington Canyon #4 Mining and Reclamation
Plan

SWISHER COAL CO.

P. O. BOX A U
PRICE, UTAH 84501
PHONE 801-637-5050

December 1, 1978

Mr. Ronald W. Daniels
Coordinator of Mined Land Development
State of Utah
Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Dear Mr. Daniels:

Thank you for your letter of November 22, 1978, concerning the conditional approval of the #4 Mine Plan. I have attached a copy of your letter for reference, and in an effort to expedite the approval, I will address each of your requests in their original order.

- (1) Swisher Coal will hereby commit to regrade and revegetate the regraded area rills and gullies greater than 9 inches deep, as per part 717.14(d).
- (2) Swisher Coal will hereby commit to cover two coal seams exposed at the face up, as per part 717.14(e).
- (3) Swisher Coal will hereby commit to formulate and submit a Reclamation Plan for the Castle Valley Rail Spur cleaning plant facility within 6 months of the date of this letter (11-22-78), as per part 717.15.
- (4) Swisher Coal will hereby commit to submit an analytical quality control system for water monitoring, as per part 717.17(b)(iv).
- (5) Swisher Coal will submit a detailed engineering and construction plan for the discharge and diversion structures and the sedimentation ponds for approval by the U.S. Forest Service and O.S.&M. by January 1, 1979, and will begin construction of said structures within one month of approval of said plans by the Division of Oil, Gas and Mining. (It must be noted that the above time schedule may be varied due to extreme winter weather conditions; however, we will attempt to meet the schedule as nearly as possible).

SWISHER COAL CO.

P. O. BOX A U
PRICE, UTAH 84501
PHONE 801-637-5050

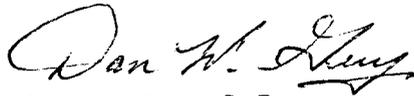
Mr. Ronald W. Daniels
December 1, 1978
Page Two

- (6) Swisher Coal will hereby commit to monitor water in the mine, and to upgrade ground water monitoring procedures if found necessary by your division, as per part 717.17 (h).
- (7) Swisher Coal will hereby commit to revegetate and stabilize cut and fill slopes and the area associated with the mine, including the roads and face-ups, as per part 717.17.
- (8) Swisher Coal will hereby commit to undertake monthly monitoring of surface waters, as per part 717.17(b) (iii).

I have forwarded seven copies of this exhibit to Mr. Murray Smith of the Office of Surface Mining in Denver. If you have any questions, or need any further information, please contact me.

Thank you for your consideration.

Respectfully,



Dan W. Guy, P.E.
Chief Engineer

DWG/ag

Enclosure



SCOTT M. MATHESON
Governor

OIL, GAS, AND MINING BOARD

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL, GAS, AND MINING

1588 West North Temple

Salt Lake City, Utah 84116

(801) 533-5771

I. DANIEL STEWART
Chairman

CHARLES R. HENDERSON
JOHN L. BELL
THADIS W. BOX
C. RAY JUVELIN

CLEON B. FEIGHT
Director

D R A F T

November 22, 1978

Mr. Dave Shaver
Swisher Coal Company
90 West 1st North
Price, Utah 84501

Re: Conditional approval of
Huntington Canyon #4
Mining and Reclamation Plan

Dear Dave:

This letter is to inform you that the Division, through a cooperative review with the Denver Regional Office of the Office of Surface Mining, hereby grants tentative approval to your plan submitted for this mine. This approval is conditional upon the Division and the Office of Surface Mining receiving the following additions to the mining and reclamation plan from Swisher:

1. A commitment to regrade and revegetate the regraded area rills and gullies greater than 9 inches deep, part 717.14(d).
2. A commitment to cover two coal seam(s) exposed at the face-up, part 717.14(e).
3. A commitment to formulate and submit a Reclamation Plan for the Castle Valley Rail Spur cleaning plant facility within 6 months of the date of this letter, part 717.15.
4. A commitment to submit an analytical quality system for water monitoring, part 717.17(b)(iv).
5. A commitment to submit a detailed engineering and construction plan by January 1, 1979, for the discharge and diversion structures and the sedimentation ponds for approval by the U.S. Forest Service and this division. Also a commitment to begin construction of discharge and diversion structures and the sedimentation ponds within one month of approval of said plans by this division, part 717.17(c)(1).

Mr. Dave Shaver
November 22, 1978
Page Two

6. A commitment to monitor water in the mine and to upgrade ground water monitoring procedures if this division finds it necessary, part 717.17(h).
7. A commitment to revegetating and stabilizing cut and fill slopes and the area associated with the mine including the roads and face-ups, part 717.17.
8. A commitment to undertake monthly monitoring of surface waters, part 717.17(b)(iii).

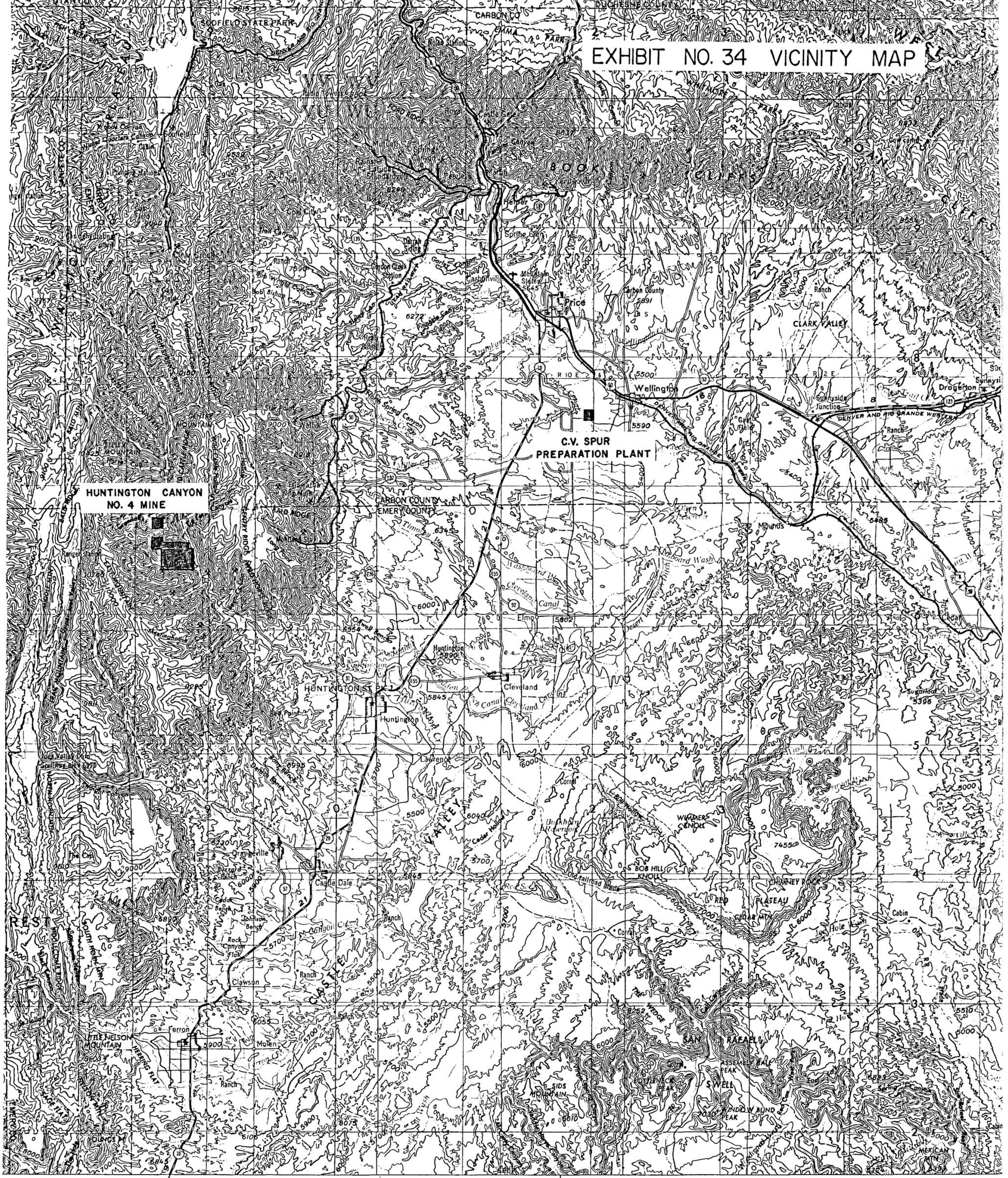
If you have any questions concerning this conditional approval, please contact this office. Upon receipt of the above information from Swisher the Division and the Office of Surface Mining will proceed with a final approval of this mining and reclamation plan.

Very truly yours,

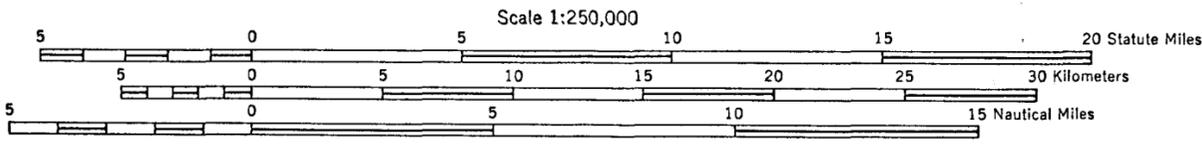
RONALD W. DANIELS
COORDINATOR OF MINED
LAND DEVELOPMENT

RWD/sp
enc: Interim Rules

EXHIBIT NO. 34 VICINITY MAP



15° R 6 E 48 R. 7 E 49 R. 8 E 111° 00' 50 R. 9 E 51 R. 10 E. 52 45' R. 11 E 53 R. 12 E. 54 30' R. 13 E 55



CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

BLACK NUMBERED LINES INDICATE THE 10,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 12
1970 MAGNETIC DECLINATION FROM TRUE NORTH VARIES FROM 15 1/4° (280 MILS) EASTERLY FOR THE CENTER OF THE WEST EDGE TO 15° (270 MILS) EASTERLY FOR THE CENTER OF THE EAST EDGE.

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20242

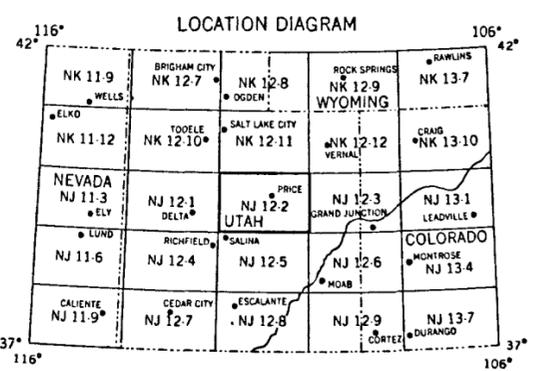


Exhibit #35: Regional Features & Descriptions

REGIONAL FEATURES & DESCRIPTIONS

1. Description of recreational, historical, conservation, archeological and wildlife features in the region surrounding the mine area:

The description of all above listed items can be found in Exhibit #7 "Environmental Assessment Report/Technical Examination" by the U.S. Forest Service, 8-3-78.

2. Description showing wildlife habitat and migration routes in the mine area:

The description of the above can be found in Exhibit #7. It should be noted that the U.S. Forest Service has determined in Exhibit #7, page 20, that "there are no known threatened or endangered species of fish or wildlife known to occur within the proposed lease area".

3. Description showing types, density, productivity, dominance and distribution of vegetation in the mine area:

Again, this data is listed on page 20 of Exhibit #7. It should be noted that the U.S. Forest Service has determined that "there are no known threatened or endangered species of plants known to occur within the proposed lease area".

4. Description showing archeological features in the mine area:

Please refer to page 22 of Exhibit #7 for the U.S. Forest Service's evaluation. Since there will be very limited further surface disturbance (if any), and this only on fee land, there should be no need for any further archeological studies. Attached are results of such a study performed by Brigham Young University in the Huntington Canyon area indicating no archeological sites in the area.

ARCHEOLOGICAL INVESTIGATIONS ON
TROUGH SPRINGS RIDGE AND NEAR THE
HUNTINGTON CANYON-ELECTRIC LAKE DAM

by
J. Terry Walker

Special Report
Department of Anthropology and Archaeology
Brigham Young University

Submitted to:
Swisher Coal Company
Price, Utah

February 1977

On December 18, 1976, Terry Walker surveyed several areas near Huntington Canyon, Emery County, for cultural resources. The purpose of the survey was to investigate five proposed drill sites and a mine expansion for Swisher Coal Company of Price, Utah. The survey and this report were supervised by Dr. Ray T. Matheny of the Department of Anthropology and Archaeology, Brigham Young University. The author was accompanied in the field by Mr. Dave Shaver of Swisher Coal.

The areas surveyed are on land administered by the Manti-LaSal National Forest, Price Ranger District. All five drill sites are located in Sections 17 and 20 of Township 14 South, Range 7 East, while the mine expansion is located in the SW $\frac{1}{4}$ of Section 24 and the NW $\frac{1}{4}$ of Section 25, T. 14 S., R. 6 E. (see accompanying map).

At the drill sites, an area approximately 100 x 50 feet was intensively surveyed. These sites had little or no snow on them and ranged in elevation from 10,350 to 9750. At the mine, two proposed roads leading to and from the mine were surveyed. One road follows an old water line south from the mine to a spring, while the other road connects the spring with some mine buildings and the existing road to the mine. The elevation of the areas around the mine range from 9000 to 9400. In many places near the mine, several inches of snow covered the ground. Because of the snow, the spring was not investigated for cultural resources.

No archaeological sites nor cultural resources were discovered during the survey. Also, no National Register sites are located in or near the areas to be disturbed. Finally, due to the location of the areas surveyed, it is unlikely that any archaeological sites will be affected by the project, including the area around the spring which is already disturbed.

Exhibit #37: Map and Description of Additional
Surface Facilities and/or Disturbance
Anticipated Over Life of Mine

MAP AND DESCRIPTION OF ADDITIONAL
SURFACE FACILITIES AND/OR DISTURBANCE
ANTICIPATED OVER LIFE OF MINE

DESCRIPTION:

1. Access Roads - At this time there are no further access roads anticipated on any surface other than Fee surface. The attached map will show a proposed access road to the future portals in the Hiawatha Seam. Exhibit #38 will show the details of this road. It should be noted that the profile of the proposed road shows grades in excess of the 8% recommended by O.S.M.; however, this route follows that of a pre-existing structure, and will result in far less environmental damage and ultimate sediment loading than would a new, longer route to cut down the grade. It must also be recognized that this lower seam plan is in a very early planning stage and as more information is developed, changes will be highly probable.
2. Ventilation Entries - No additional ventilation entries (other than the Hiawatha Seam portals) are anticipated at this time.
3. Portal Areas - The attached map will show the proposed portal area for the Hiawatha Seam.
4. Other Surface Facilities - The only surface facilities planned at this time are the proposed sedimentation ponds and diversion structures shown on the attached map. Details of these structures can be found in Exhibit #19.

Exhibit #36: Wilderness Study Area

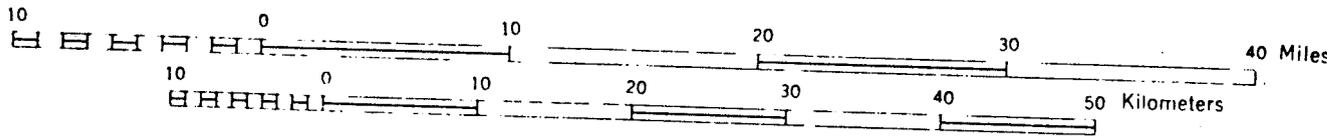
U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

JOHN R. McGUIRE, CHIEF

ROADLESS AND UNDEVELOPED
AREA EVALUATION II
RARE II

November 1977
NATIONAL FORESTS
UTAH

Scale 1:500,000
1 inch equals approximately 8 miles



Datum is mean sea level

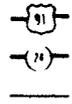
Compiled, edited, and published by the Geological Survey. 1927 North American datum
Lambert conformal conic projection based on standard parallels 33° and 45°

LEGEND

-  Administratively Endorsed Wilderness Proposals (All Agencies)
-  RARE II Roadless Areas
-  Areas with Approved Land Management Plans On Which Implementation Is Deferred For Further Wilderness Consideration
-  Other National Forest System Lands
-  Congressionally Designated Study Areas
-  Residual Primitive Areas Not Previously Endorsed By Administration For Wilderness

LEGEND

-  State capital
-  County seat
-  City, town, or village



Corporate boundary shown for towns over 2,500 population

SOURCE DATA

- U. S. Dept. of the Interior—Geological Survey topographic maps
- U. S. Dept. of the Army—A. M. S. 1:250,000 scale maps
- U. S. Dept. of Commerce—Bureau of Public Roads maps

POPULATION KEY

SALT LAKE CITY	.....	more than 100,000
OGDEN	.....	25,000 to 100,000
Logan	.....	5,000 to 25,000
Vernal	.....	2,500 to 5,000
Beaver	.....	less than 2,500

Population indicated by size of letters

BASE MAP
WITH HIGHWAYS

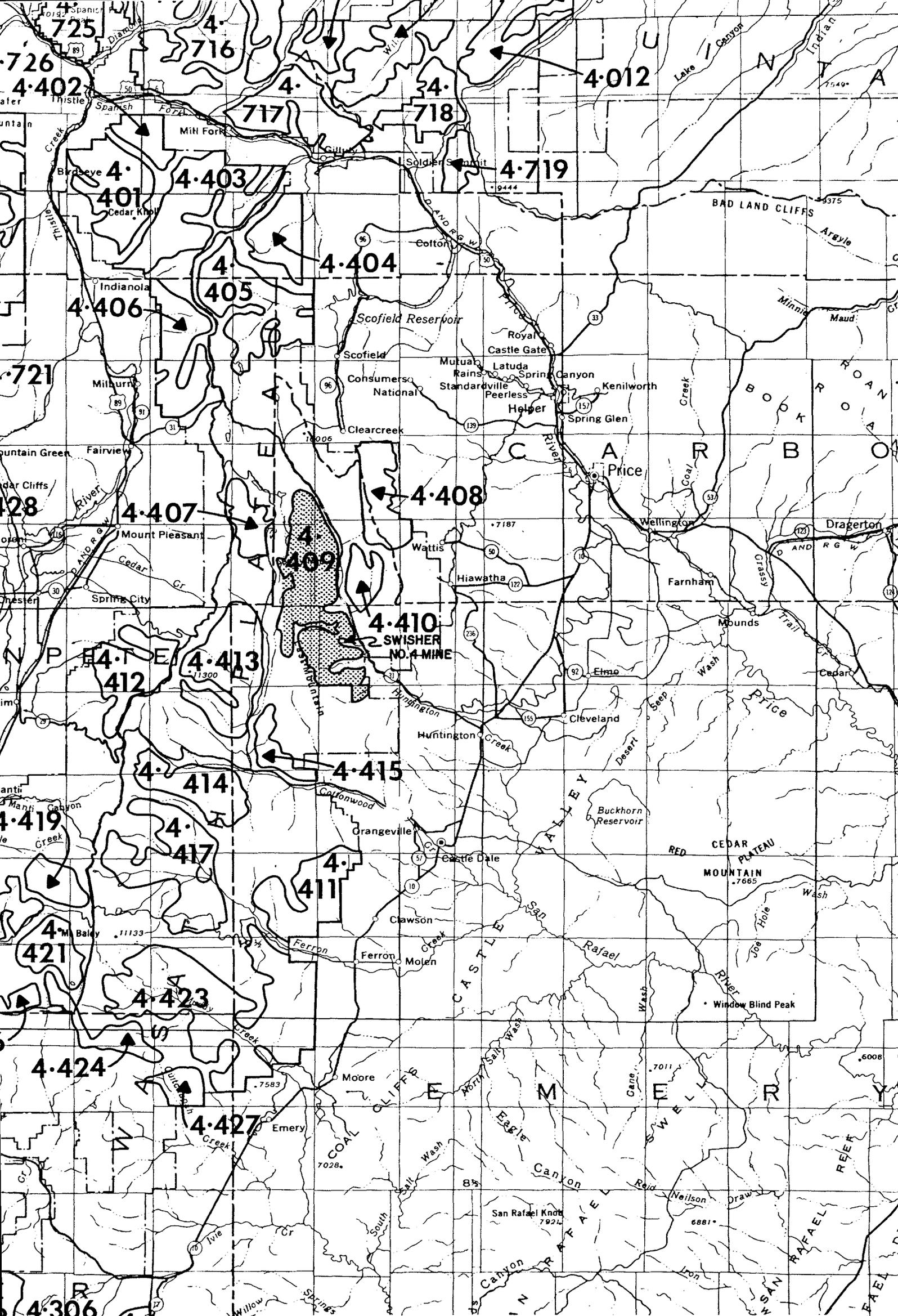


EXHIBIT NO. 36 WILDERNESS STUDY AREA

Exhibit #40: Typical of Reclaimed Roads

ROAD RECLAMATION

TYPICAL AS CONSTRUCTED

TYPICAL FOR RECLAMATION

SLOPES APPROX.

AREA 1 PLACED AS AREA 2

TO BETTER CORESPOND WITH ENVIRONMENT
AREA WILL BE RESEEDED.

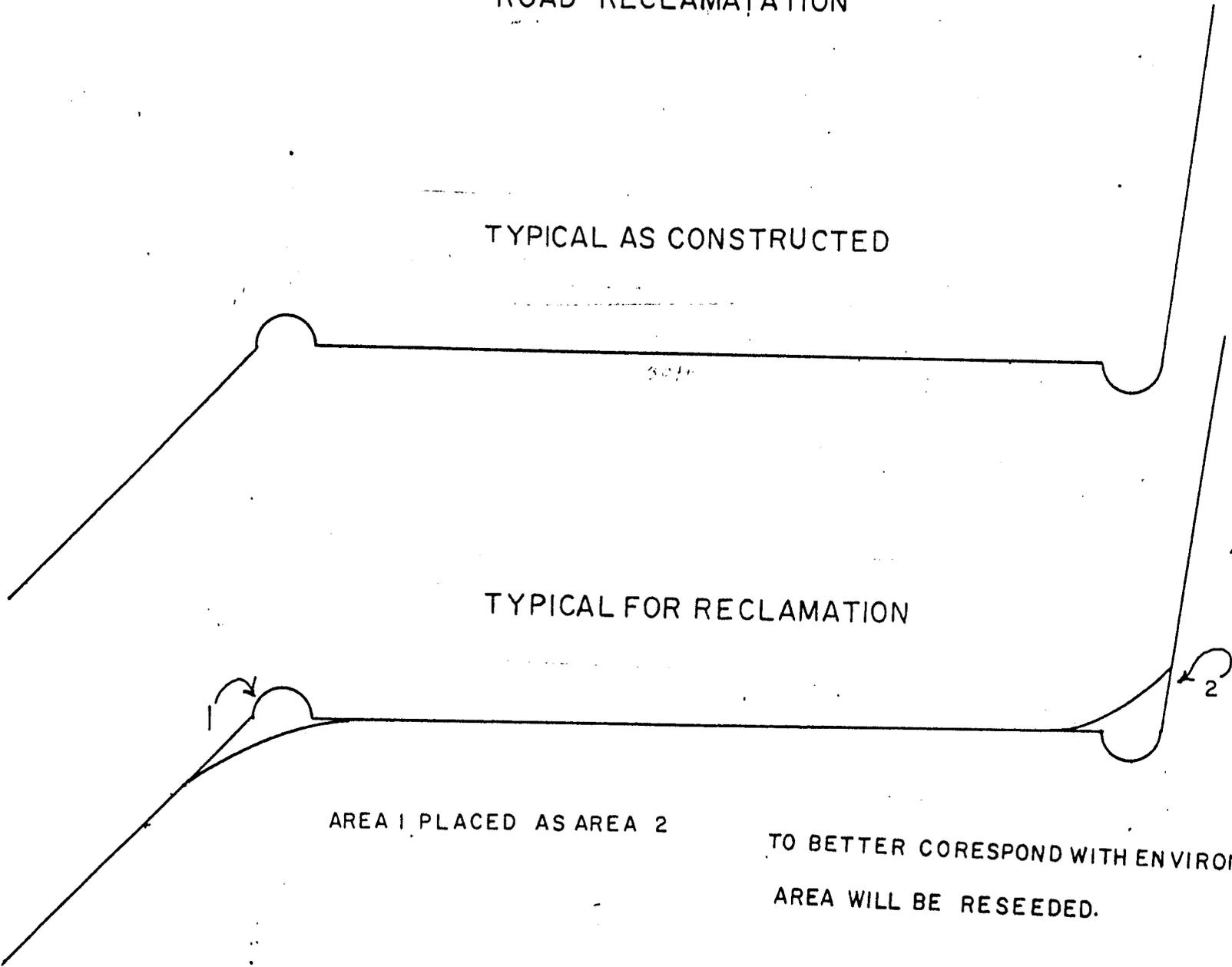


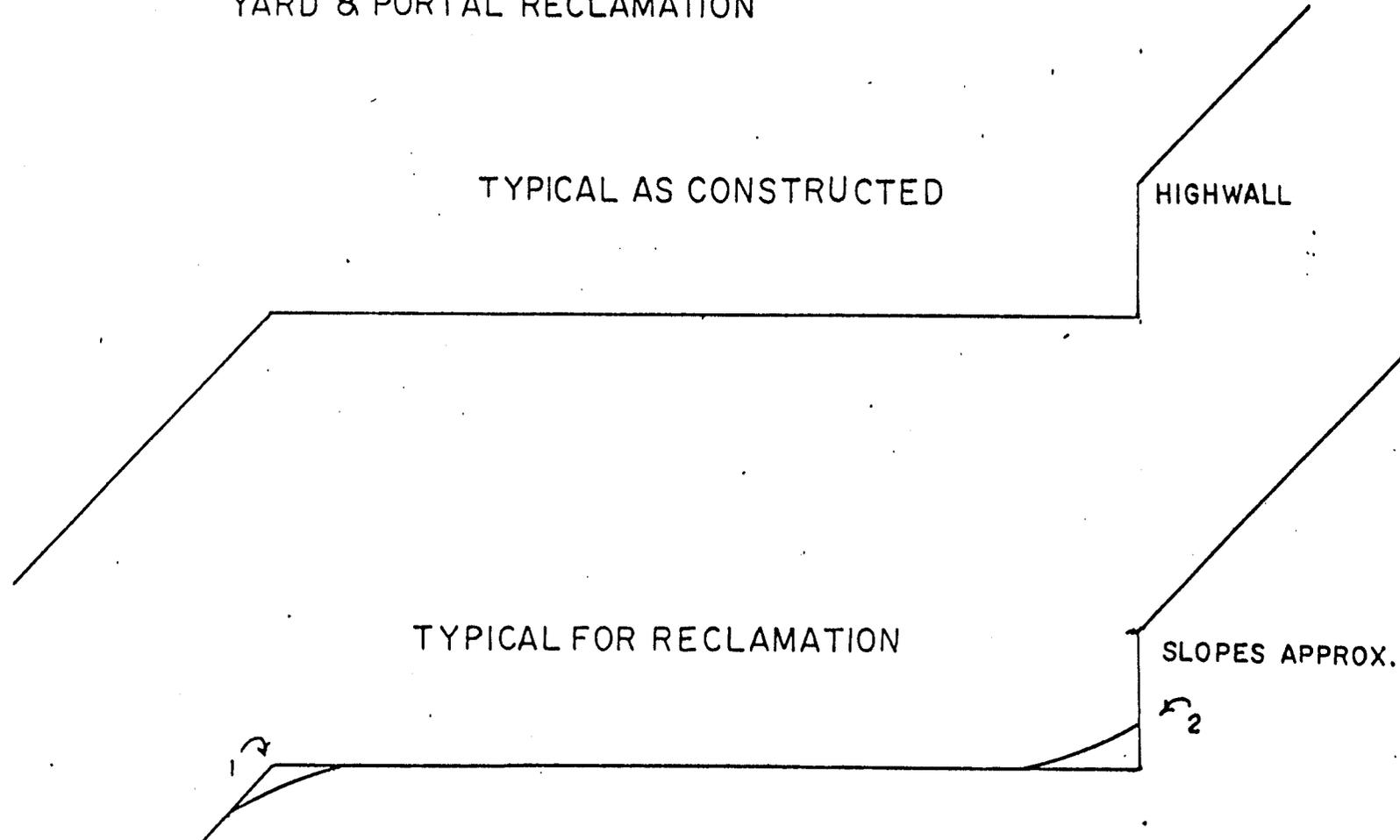
Exhibit #39: Description of Final Configuration of Surface Areas

DESCRIPTION OF FINAL CONFIGURATION
OF SURFACE AREAS

1. Roads - In general, roads in the mine area have been cut into the steep, rocky sidehills and a major part of the material has escaped over the edge. We will reclaim such roads by pulling whatever material can be reached back onto the road and placing it against the highwall. (See Exhibit #40 for typical.) The recontoured area will then be covered with topsoil as needed and be planted. All drainage controls will be removed and natural drainage will be restored to the practical extent.
2. Ramps - None anticipated.
3. Face-Up Areas - As explained in the first section of the Plan, 784.12 (d), it will be impossible to restore the mine yards to the approximate original contour because they were dozed out of very steep, rugged and rocky canyon walls. Nearly all fill material escaped over the edge of the canyon walls and cannot be retrieved. To fill the cuts would require making further cuts up the bank from the yards which would result in far greater environmental damage than now exists. Terracing and leveling is impossible due to the rocky, steep nature of the terrain. Instead, the area will be smoothed and contoured to a pleasing appearance and topsoil will be drifted over the area to assure the success of the revegetation efforts. (See Exhibit #41 for typical.)

Exhibit #41: Typical of Reclaimed Pad Areas

YARD & PORTAL RECLAMATION



TYPICAL AS CONSTRUCTED

HIGHWALL

TYPICAL FOR RECLAMATION

SLOPES APPROX.

2

1

TO BETTER CORESPOND WITH ENVIRONMENT

AREA WILL BE RESEDED.

AREA 1 PLACED AS AREA 2

Exhibit #42: Description and Sketch of Sign Design

DESCRIPTION AND SKETCH OF SIGN DESIGN

1. Specifications - All signs will be of a standard design (see attached sheet) that can be seen and read easily, and shall be made of a durable material (treated/painted wood or metal) and be supported by metal posts.
2. Identification Signs - Signs shall be placed as required at the mine area. Identification signs shall be placed at the two (2) entrances to the mine area as shown on Exhibit #3

Signs shall show name, business address and telephone number of Swisher Coal Co. and identification numbers of permits or other authorizations to operate. Signs will not be removed until after release of all bonds.

HUNTINGTON CANYON NO. 4 MINE

I.D. -42-01270

SWISHER COAL COMPANY

1109 SO. CARBON AVE.

PRICE, UTAH 84501

(801) 637-5050

PERMIT *ACT/015/004

Exhibit #43: Land Use

LAND USE

Present Land Uses - The land on which #4 Mine is located has long been used for coal mining. This canyon has supported three (3) underground operations in the past and the present surface facilities are located in exactly the same area as one of these, the old Leamaster Mine, which operated nearly 25 years ago. Other than coal mining, this area has been used for deer hunting, sightseeing and hiking. There are no developed campgrounds within the area and none planned for the future.

The U.S. Forest Service presently administers the lands in this area for livestock forage, wildlife habitat, watershed, dispersed recreation and coal mining. The Forest Service has, however, determined that the majority of the acreage on the lease tract is classified as non-range and is not used for grazing because of slope, accessibility, rock outcrops, timber, scarcity of grazable vegetation and lack of water. There are no range improvements on the area. Access into the interior portion of the lease tract is limited to a horse trail from the bottom to the top of Mill Fork Canyon and a jeep trail coming from upper Cottonwood Creek to the west, portions of which have been closed. There are no plans to alter this access situation.

The above mentioned uses of this land are primarily the same for stream valleys, steep slopes or flats, hilltop areas, with the exception of coal mining, which is located on the slope and beneath the hilltop areas.

Post-Mining Uses - The post-mining uses of the land will be the same as the pre-mining and present uses described above. Once mining has ceased the disturbed areas will be reclaimed to a degree acceptable by the U.S. Forest Service and the land will once again support its principle pre-mining uses: i.e. deer forage, hunting, sightseeing, watershed and hiking.

The restoration of the area will be achieved by regrading the yards, reclaiming the roads and portal areas to a practical degree, planting all disturbed areas and monitoring the revegetation effort to the satisfaction of the U.S. Forest Service.

Exhibit #44: Disposal of Spoil and Waste Materials

DISPOSAL OF SPOIL AND WASTE MATERIALS

There are not, nor will there be, any mine waste or spoil disposal areas in the #4 Mine area. Any spoil or "gob" generated by the mining operations will be stored underground. Any of this material brought out of the mine will be considered combustible and loaded with the coal from the operation.

Exhibit #45: Letter of Request to E.P.A. to amend NPDES Permit #UT-0023116
& Amendment Approval by E.P.A.

SWISHER COAL CO.

P. O. BOX AU
PRICE, UTAH 84501
PHONE 801-637-5050

January 19, 1979

Mr. Roger E. Frenette, Chief
Permits Administration & Compliance Branch
Enforcement Division
U.S. Environmental Protection Agency
Region VIII
1860 Lincoln Street
Denver, Colorado 80203

RE: NPDES Permit
UT - 0023116

Dear Mr. Frenette:

The Office of Surface Mining is presently reviewing our Mining and Reclamation Plan for the Huntington Canyon #4 Mine. They have brought to our attention that our NPDES Permit #UT-0023116 (Huntington #4 Mine Discharge), specifies the receiving waters to be Huntington Creek. Since any discharge will be to Mill Fork Creek, then to Huntington Creek, they have requested that the permit be amended to name the receiving waters as Mill Fork Creek.

In compliance with their directive, Swisher Coal Co. therefore requests that our NPDES Permit #UT-0023116 be amended to name the receiving waters as "Mill Fork Creek".

Thank you for your cooperation in this matter.

Respectfully,



Dan W. Guy, P.E.
Chief Engineer

DG/ag



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295

FEB 2 1979

REF: 8E-PC

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Dan W. Guy, P.E.
Chief Engineer
Swisher Coal Company
P.O. Box AU
Price, Utah 84501

RE: NPDES Permit Number
UT-0023116

Dear Mr. Guy:

Enclosed you will find a revised page one of the NPDES permit for the Swisher Coal Company, Huntington #4 Mine.

You will note that the receiving water has been changed to Mill Fork Creek as per your letter request of January 19, 1979.

Please substitute this page into your permit. This change will become effective upon the date of your receipt of this correspondence.

If you have any questions in regard to this matter, please do not hesitate to contact Mr. Robert J. Burm of this office at telephone: (303) 837-4901.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Lance C. Vinson".

Lance C. Vinson
Director, Enforcement Division

Enclosure

cc: Utah Division of Health w/encl.
Catherine Chachas w/o encl.
EPA, Utah State Engineer

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Water Pollution Control Act, as amended,
(33 U.S.C. 1251 et. seq; the "Act"),

the Swisher Coal Company, Mine #4,

is authorized to discharge from a facility located at Section 16, Township 16 South Range
7 East, Emery County, Utah,

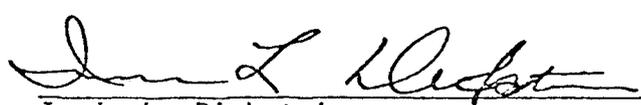
to receiving waters named Mill Fork Creek,

in accordance with effluent limitations, monitoring requirements and other conditions set forth
in Parts I, II, and III hereof.

This permit shall become effective on the date of issuance.*

This permit and the authorization to discharge shall expire at midnight, June 30, 1982.

Signed this 11th day of October, 1977


Irwin L. Dickstein
Director, Enforcement Division

*
Thirty (30) days after the date of receipt of this permit by the Applicant.

Exhibit #46: Ground Water Systems

EXHIBIT #46
GROUND WATER SYSTEMS

1. An analysis of the fracture system of the area and its relation to local springs and seeps can be found in Exhibits #5 & #6. The general opinion therein, is that the majority of the ground water seen in this area is in a main zone of saturation beneath the coal seams, and the source of this water is to the west and northwest of the mining area. The perched aquifers that may exist above the mining area represent a minor amount of water and with the numerous shales in the Blackhawk strata, it is unlikely that any of this water can reach the main zone of saturation. It should be noted that drilling in the mining area has encountered no water, and therefore, there is some question as to whether such perched aquifers even exist above the seams in this particular area.

Both the U.S.G.S. Hydrologic Study (Exhibit #5) and the Vaughn Hansen Hydrologic Report (Exhibit #6) indicate the source of water in the Star Point Sandstone is to the north and west of the mine area, and both reports conclude that our mining should have no significant effect upon either the source of this water or upon the production from Little Bear Spring.

2. All known springs and seeps in this area are shown on the attached map for Exhibit #20, Hydrologic Monitoring Plan. All of the known springs and seeps of the area are to be monitored as shown in Exhibit #20. The Little Bear Springs are used for the Huntington City water supply, the Mill Fork Springs are used for mine water and downstream as irrigation water, and the one seep above the mine area has no known use beyond possible wildlife watering.
3. Mine Water - The underground workings have encountered no water as of this time. As explained in Exhibit #20, if water is intercepted underground, it shall be sampled and monitored regularly. Source, flow and quality will be determined at that time.
4. The Blind Canyon Coal Seam is at an elevation of 7857 feet near Little Bear Canyon. The Little Bear Spring is at an elevation of approximately 7530 feet, or 327 feet below the Blind Canyon Seam in this area.
5. See Exhibit #20 (Revised) for a detailed monitoring program for all springs, seeps, and the program for monitoring Little Bear Spring.

DG/ag

Exhibit #48: Soils

EXHIBIT #48

SOILS

The attached map shows the areas where topsoil will be borrowed through possible future surface disturbance. This map was taken from the Environmental Analysis Report prepared by the U.S. Forest Service, (Exhibit #7). The areas of possible disturbance will be for the sedimentation ponds, and the access to the lower seam portals. The soil in these areas fall into the Soils Capability Unit II.

Following is a description of this soil unit:

"Capability Unit II. Slopes are dissected by shallow, closely-spaced, parallel drainages. Rock outcrops and stony colluvium are at the surface over much of the unit.

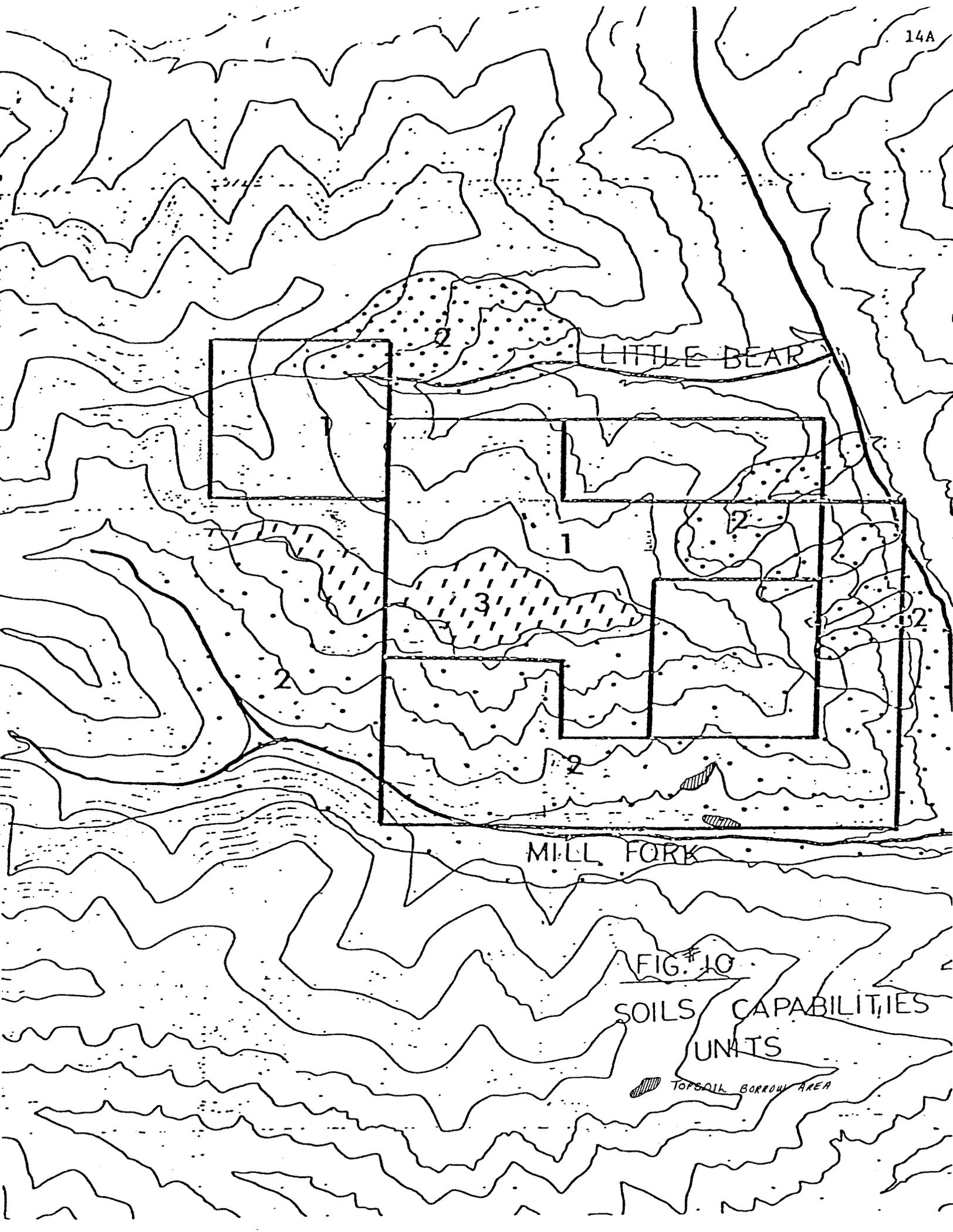
The soils have developed from stony colluvium derived from sandstone and shale bedrock. They are generally shallow (< 20 inches) over bedrock and stony colluvium. The soils are not well-developed. Textures are gravelly and cobbly loams and clay loams. They have a high coarse fragment content (25 to 50 percent) throughout the profile but increasing with depth from the surface.

These soils have moderate inherent erodibilities and severe limitations for revegetation. Their sensitivity to surface disturbance is judged to be high - unprotected disturbed soils will yield high volumes of sediment and poor response to normal revegetation practices can be expected. The soil instability potential is moderate - deep disturbances such as rock cuts will result in some slumping and sliding. On steep slopes, these soils have severe instability potential for location and construction of low standard, unsurfaced roads."

Since no topsoil has been stored at this time, only topsoil from future disturbance will be stored. This storage area will be on the upper mine terrace (see map, Exhibit # 19). The topsoil will be scraped from an area to be disturbed with a dozer or grader, piled and loaded for removal. It will then be deposited in the above mentioned storage area. The soil will be deposited in lifts not to exceed 2', and compacted as necessary for stability. When no further disturbance is anticipated, the storage pile will be planted with a native seed mixture to prevent erosion.

As mentioned in Exhibit #39, the topsoil will be spread as needed to promote revegetation as reclamation of the area is under way.

DG/ag



LITTLE BEAR

MILL FORK

FIG. 10

SOILS CAPABILITIES UNITS

TOPSOIL BORROW AREA

Exhibit #49: Vegetation

EXHIBIT #49

VEGETATION

1. As mentioned earlier, the following seed mix has been recommended by the U.S. Forest Service for revegetation in this area:

3 lb. - Smooth Brome
3 lb. - Timothy Grass
2 lb. - Orchard Grass
2 lb. - Crested Wheat Grass
1 lb. - Kentucky Blue Grass
1 lb. - Ranger Alfalfa
1 lb. - Meadow Foxtail
13 lbs. per acre

In addition, other native forbs and shrubs such as fine leaf sedge, western yarrow, big mountain sagebrush, serviceberry or mountain mahogany, could be added to or substituted within the mixture with the concurrence of the landowner (U.S. Forest Service).

In an effort to satisfy the landowner, Swisher Coal will alter the above seed mixture at their request; however, until such a request is made, we propose to replant the reclaimed areas with the above mixture.

2. Areas to be planted will be "roughened" by raking (or other means) to help hold the seeds in place. The proper seed mixture will then be spread at 13 lbs. per acre either by hand or machine. Mulch will then be applied as necessary, either by machine or by hand in inaccessible areas. The revegetated area will be monitored and if success appears unlikely, alterations will be made with concurrence of the landowner until revegetation success is to their satisfaction.

DG/ag

Exhibit #50: Wildlife

EXHIBIT #50

WILDLIFE

Every effort will be made to protect the wildlife of the area. Vehicle speeds will be posted as 25 mph in Mill Fork Canyon, and night time coal haulage will be employed only when necessary.

The prevention of wind-borne coal particles from entering streams can best be accomplished by observance of the speed limits and not overloading the coal carriers. Our intention is not to overload the carriers, and to enforce the designated speed limit in Mill Fork Canyon. It should be noted that it is not uncommon for the State Road of Utah to use coal slack on the state highways in the winter. This practice will leave evidence of coal along the highways, which in some instances, may be misconstrued as coal truck spillage. We do not intend to use any slack in Mill Fork, and with the low speed of travel, wind or water born coal particles will be held to an absolute minimum.

The proposed drainage plan and sedimentation structures will prevent coal dust and other water-borne sediment from the mine area from reaching the streams. Any coal spills along the road will be cleaned immediately and every effort will be made to prevent spillage from reaching drainages, as discussed in Exhibit #47.

The main road up Mill Fork Canyon is controlled by the U.S. Forest Service and is considered a public road. The access to the mine property is controlled by Swisher Coal, and access is limited to authorized personnel only. Gates into the mine area are locked when the mine is not operating.

DG/ag