

PD-NCB Consultants Limited



In association with

Wright Engineers Ltd & Golder Associates

Report No.9

**Revised Report on
Hat Creek Openpit No.1**

(Volume II - Plans)

to

British Columbia Hydro and Power Authority

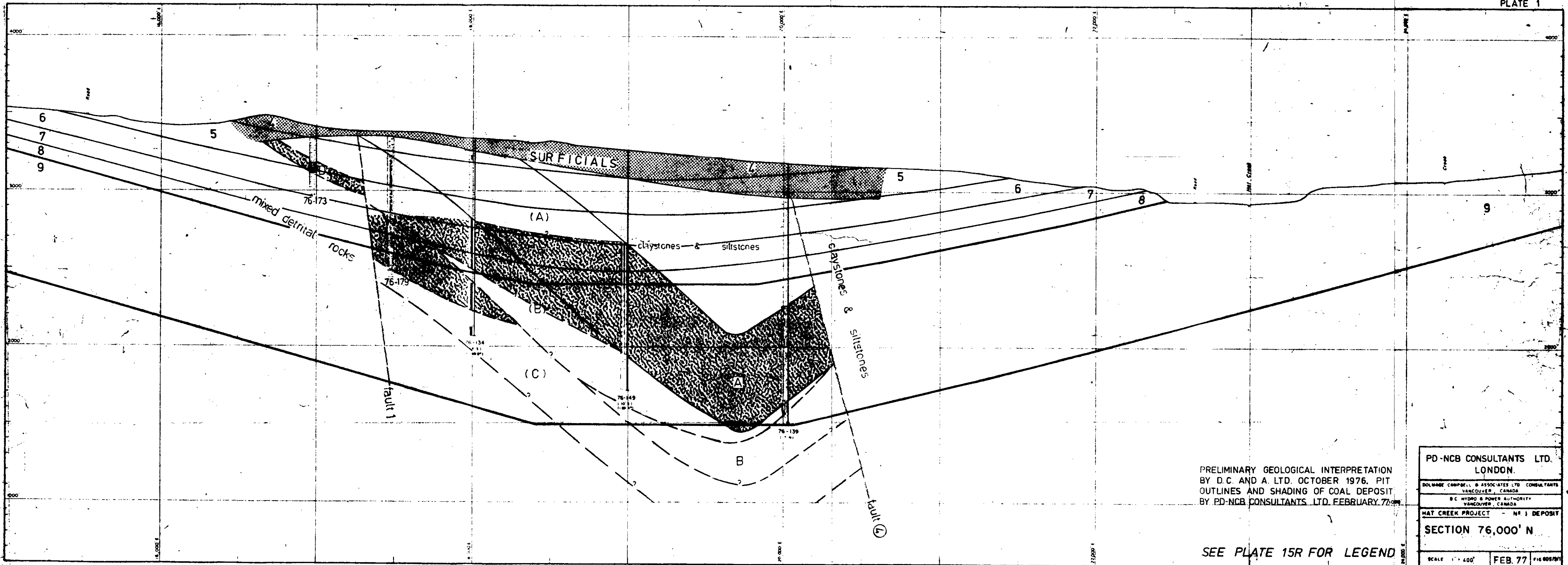
London

March 1977

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- Plate 2 - Section 77,000 N
- Plate 3 - Section 77,500 N
- Plate 4 - Section 78,000 N
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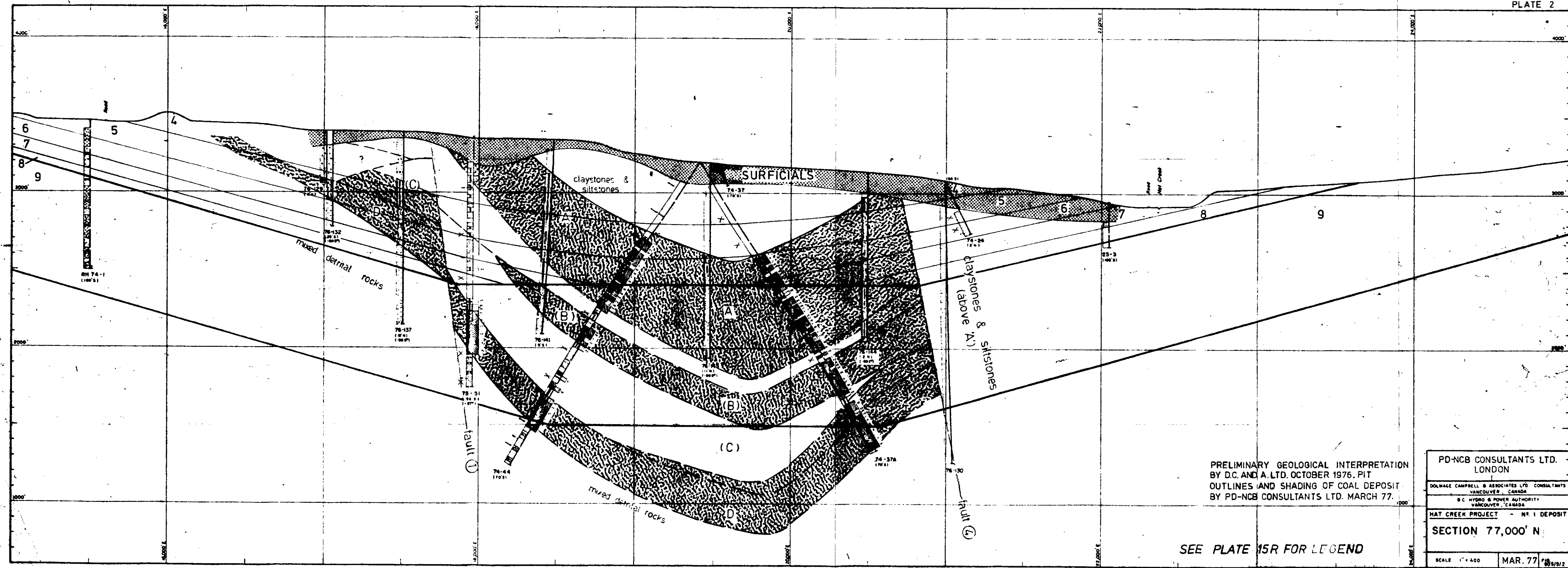
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SEE PLATE 15R FOR LEGEND

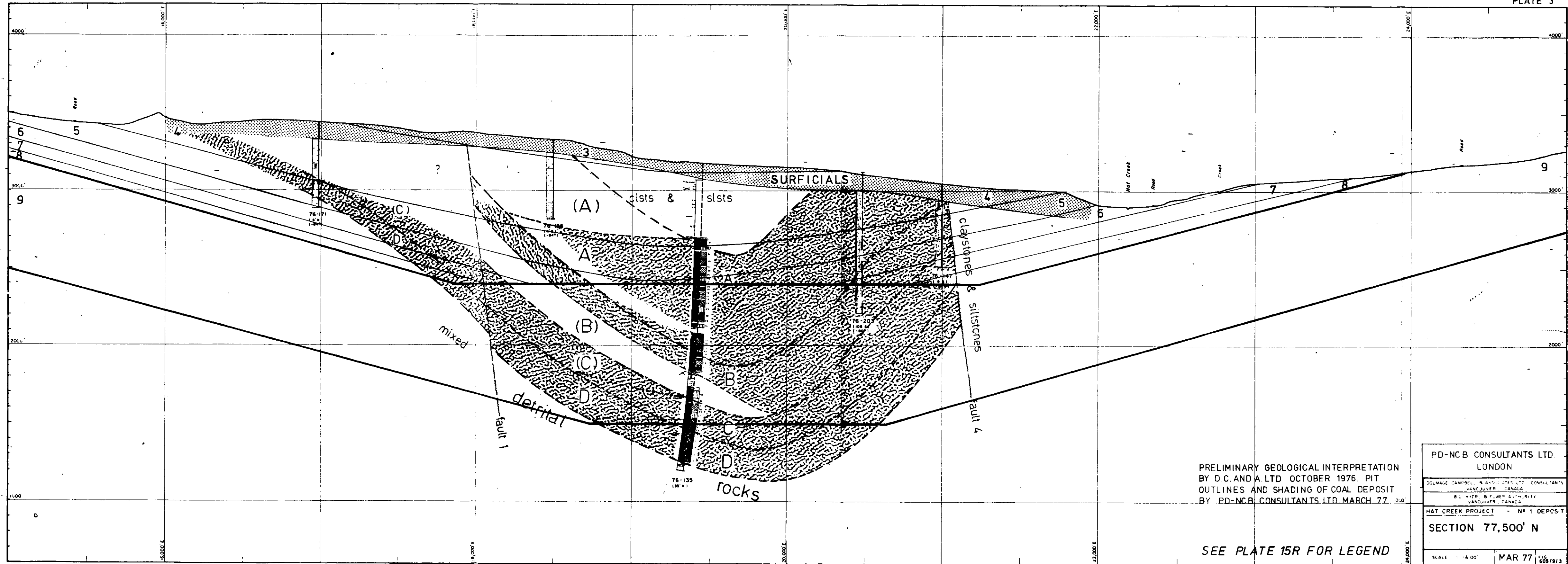
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SCALE 1" = 400'	FEB. 77
FIG 605/PM	



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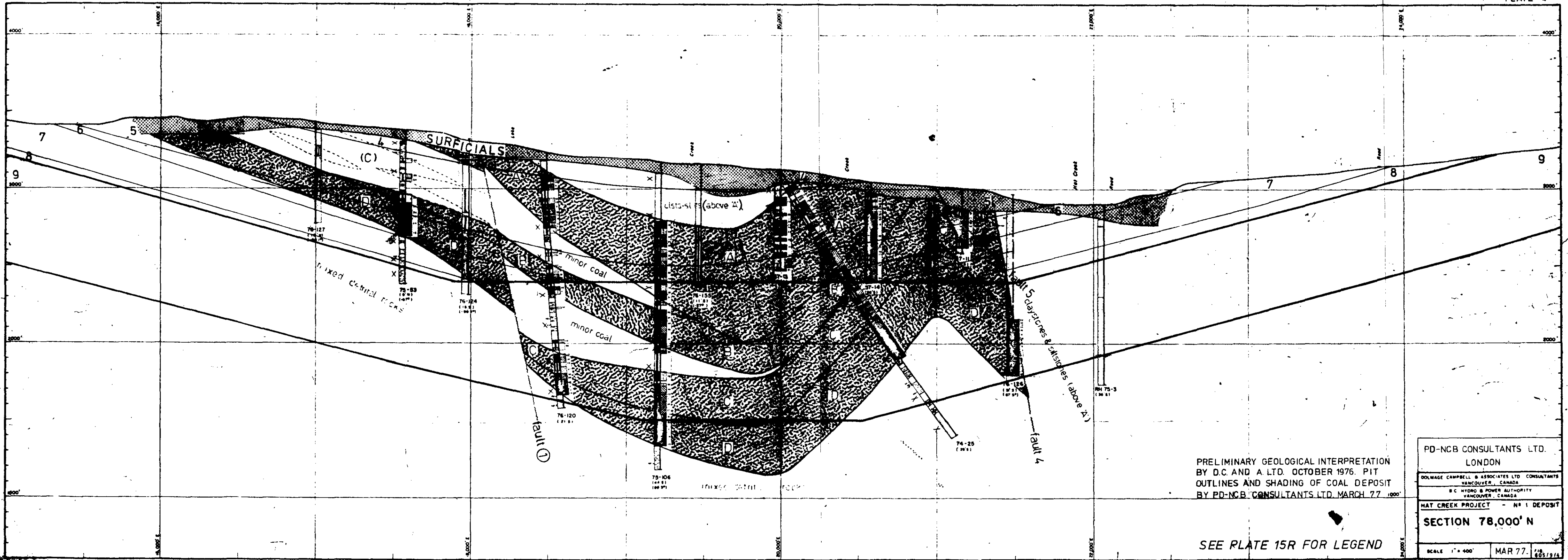
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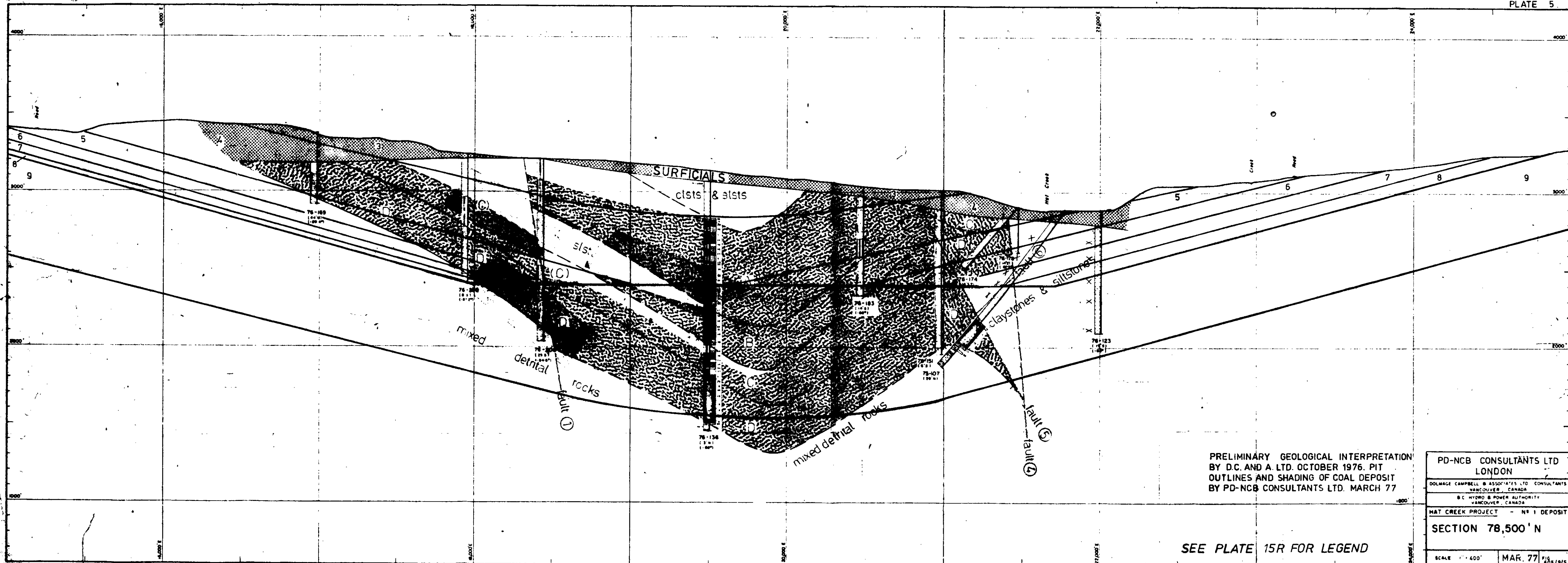
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SCALE 1" = 400'	MAR 77
FIG. 605/973	



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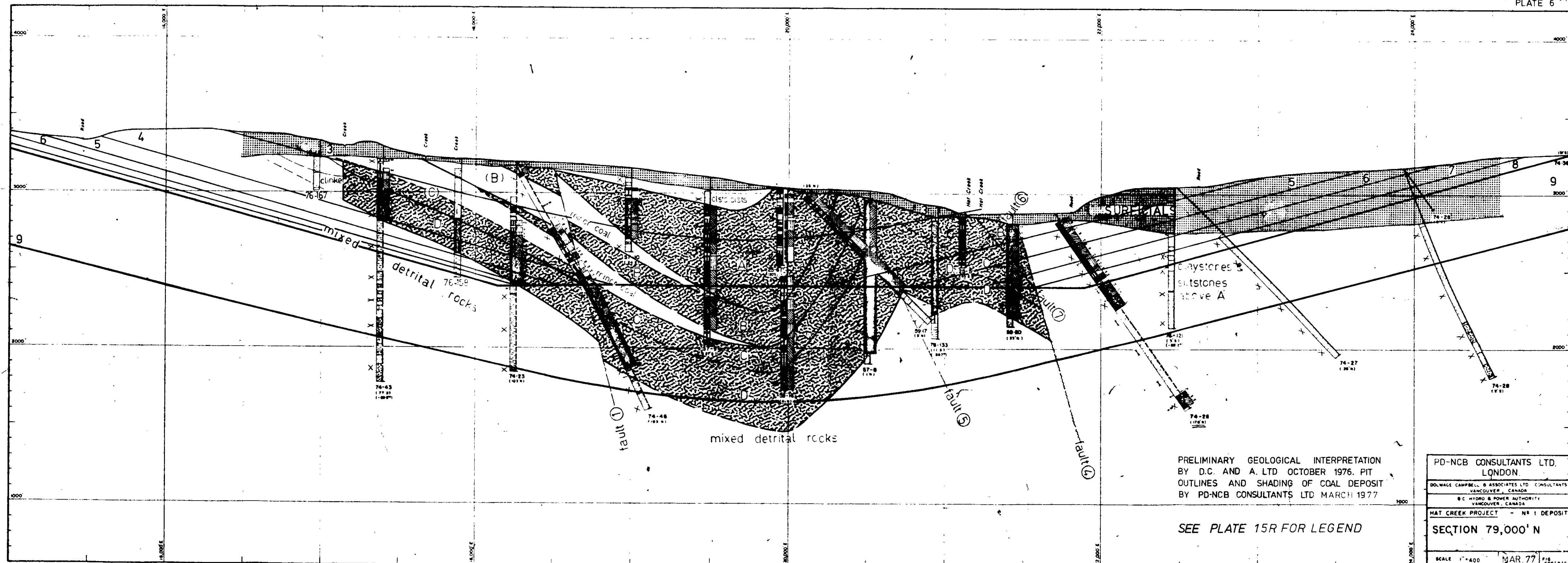
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SCALE 1" = 400'	MAR 77.



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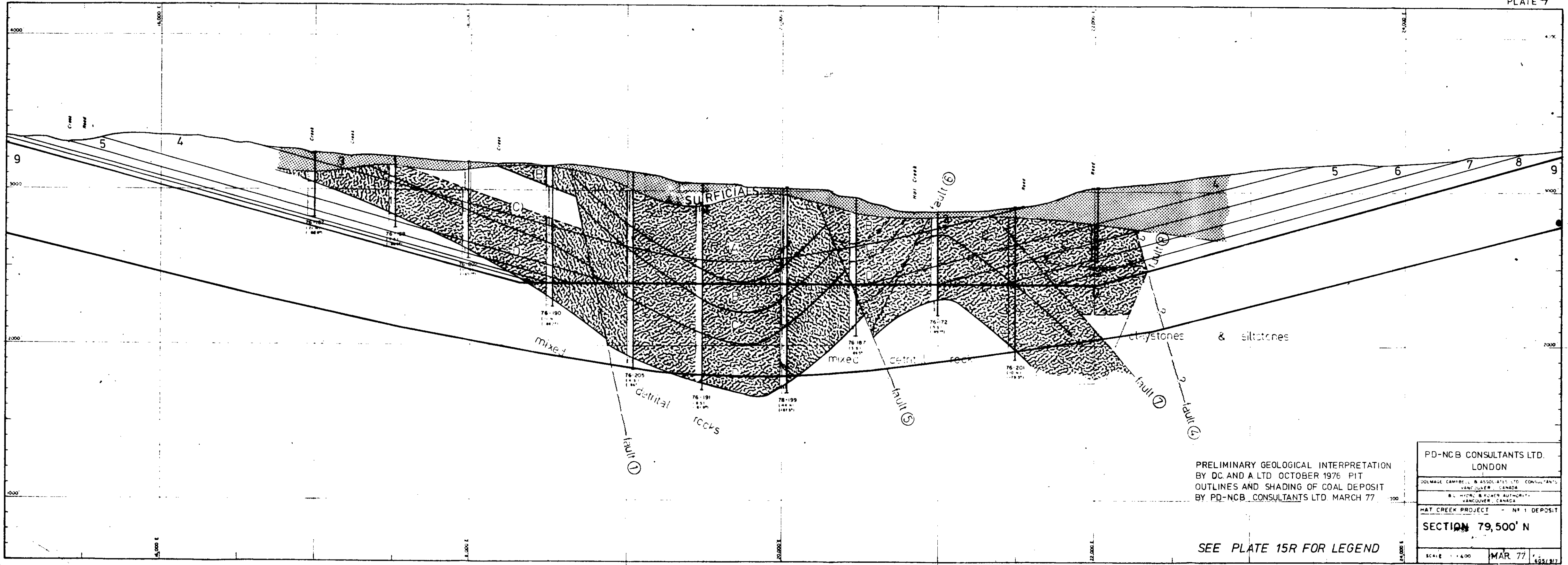
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MAT CREEK PROJECT - No 1 DEPOSIT		
SECTION 78,500' N		
SCALE 1" = 400'	MAR. 77	FIG. 605/195



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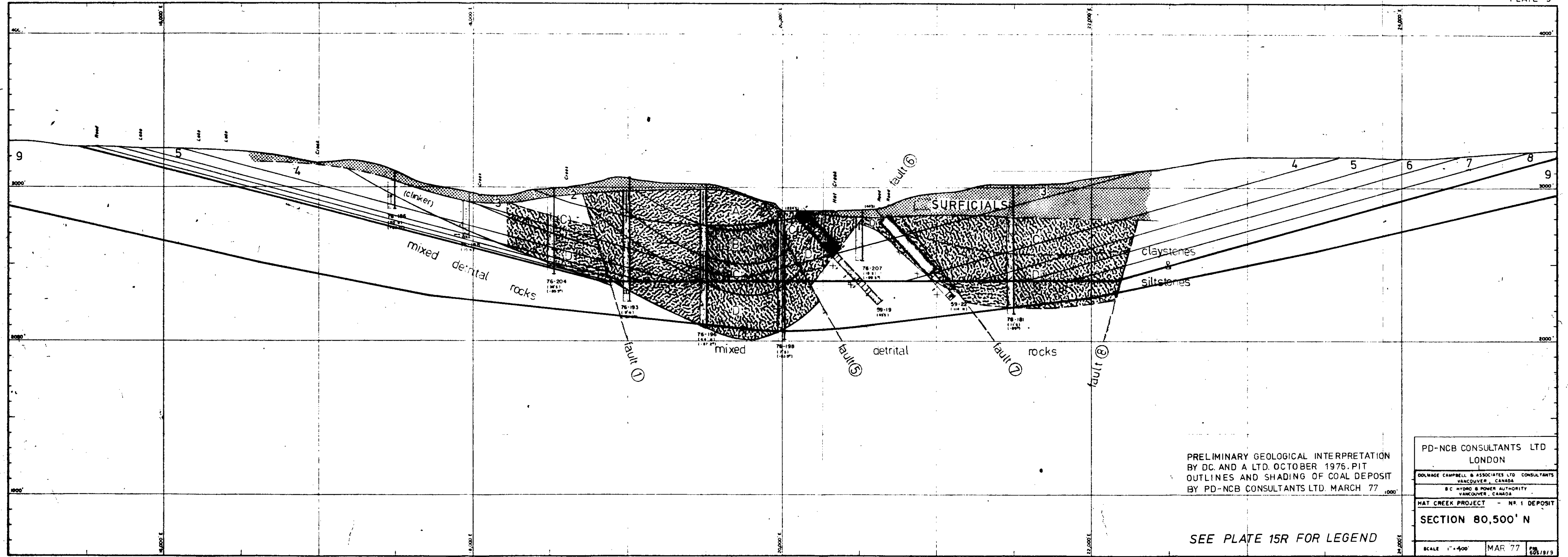
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SECTION 79,000' N	
SCALE 1"=400'	MAR 77
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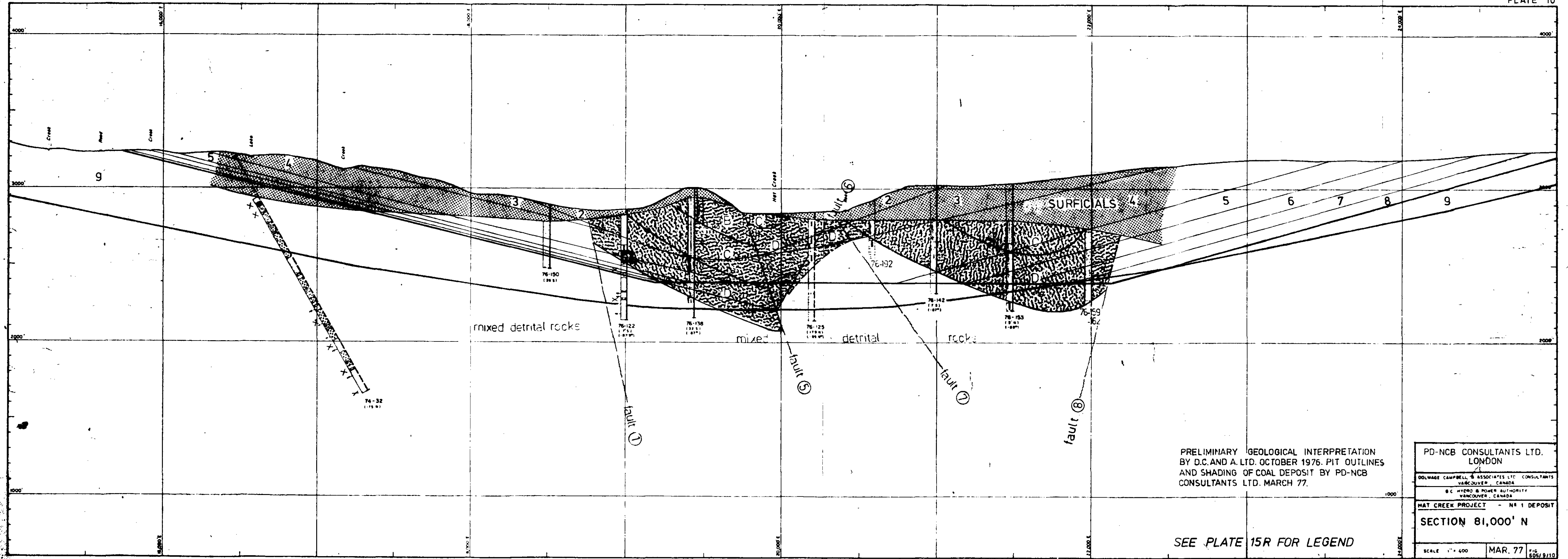
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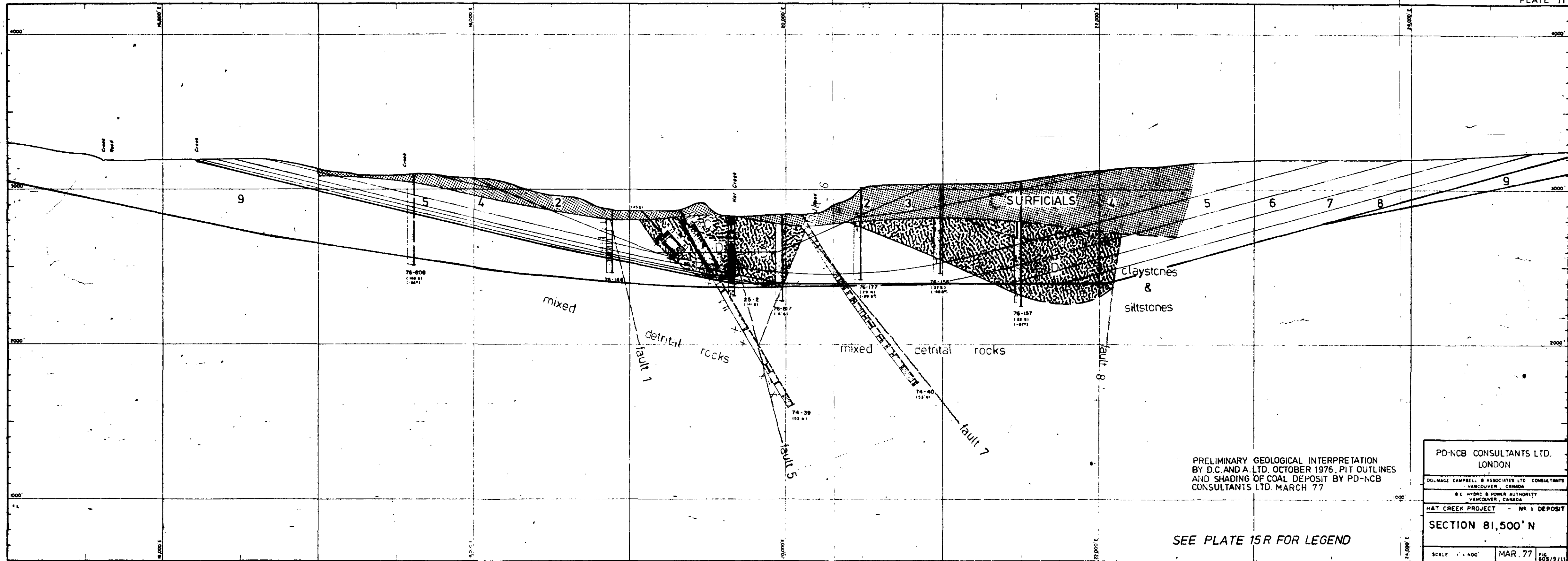
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MAT CREEK PROJECT - NO. 1 DEPOSIT		
SECTION 80,500' N		
SCALE 1" = 400'	MAR 77	PD-605/19/9



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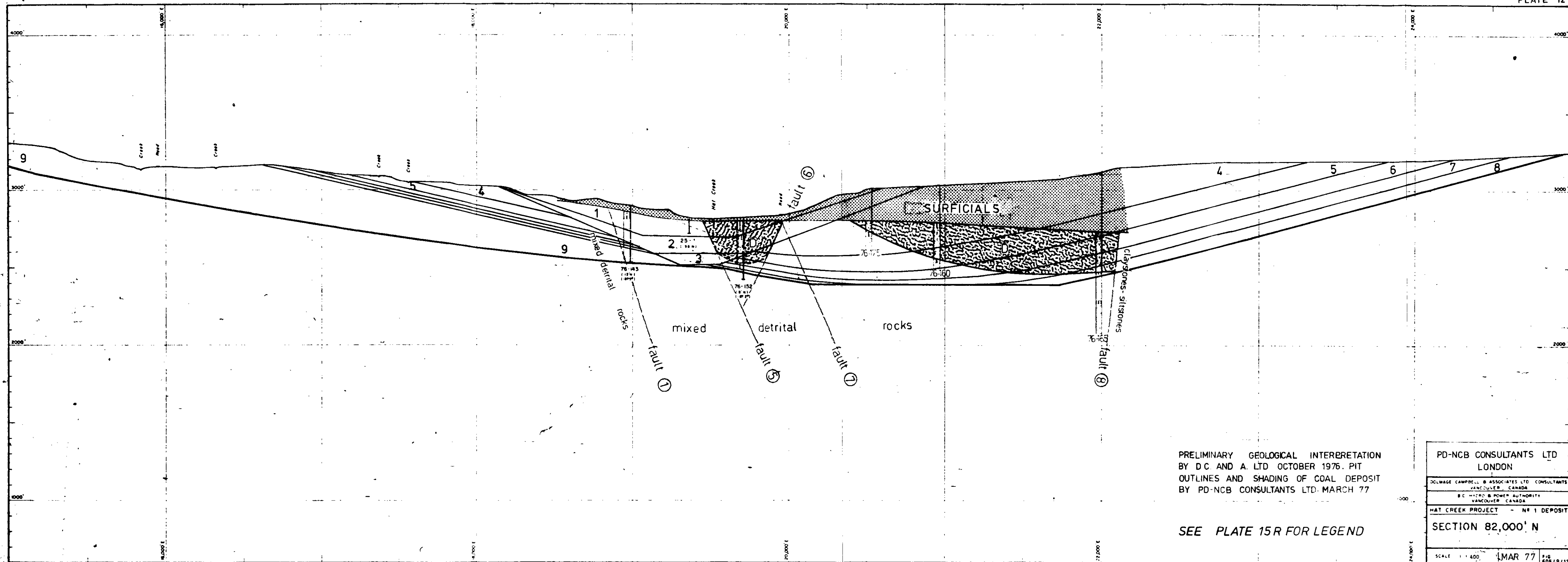
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NAT CREEK PROJECT - No 1 DEPOSIT	
SECTION 81,000' N	
SCALE 1" = 400'	MAR. 77
FIG 605/9/10	



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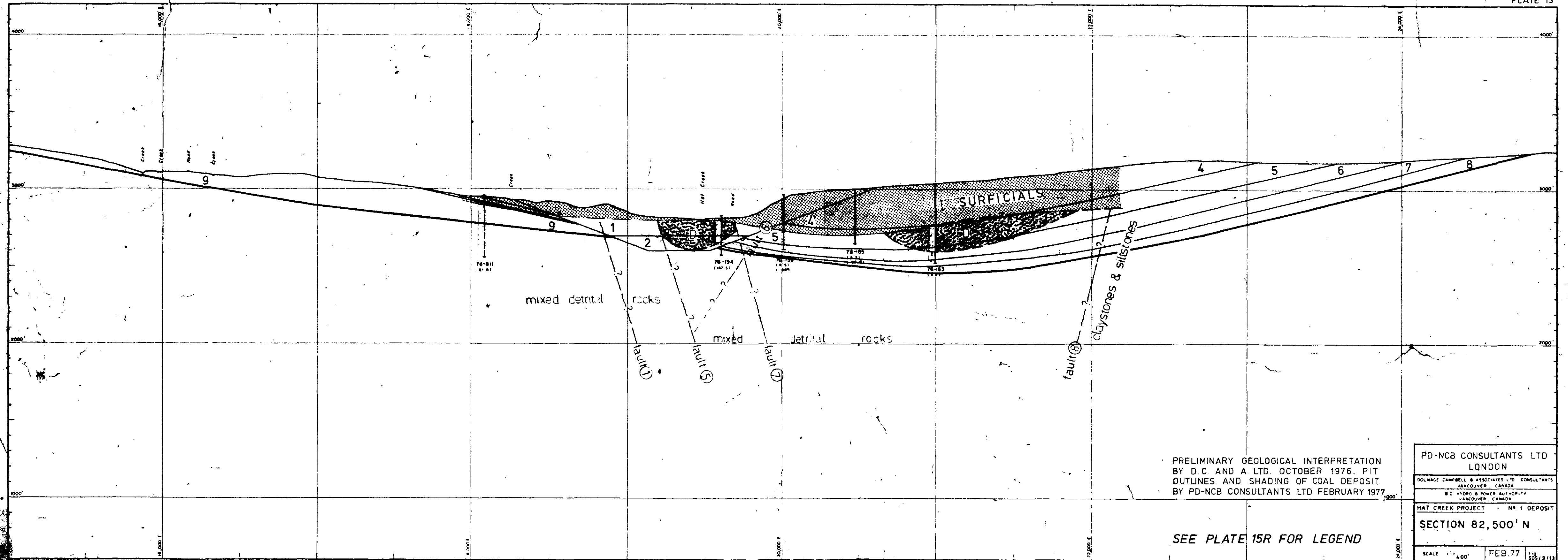
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SCALE 1" = 400'	MAR. 77



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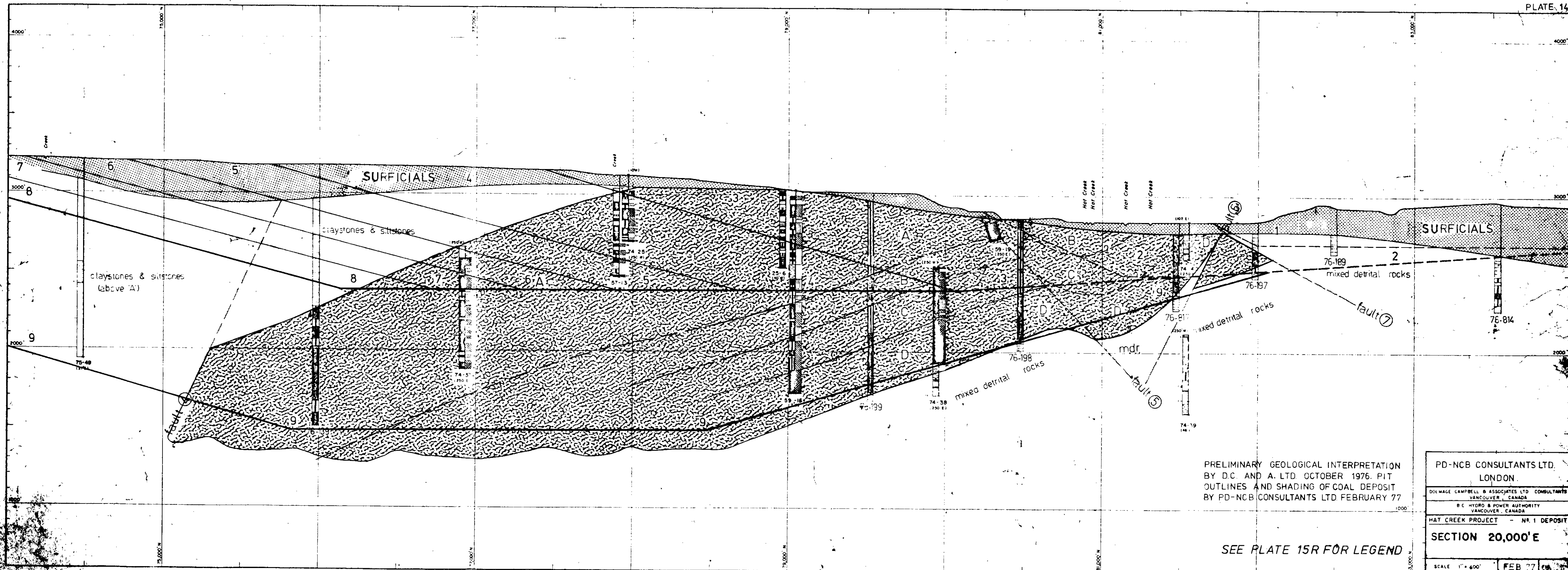
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SCALE 1:400	MAR 77 FIG 603/8/12



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HAT CREEK PROJECT - NO 1 DEPOSIT	
SECTION 82,500' N	
SCALE 1" = 400'	FEB. 77
FIG 605/B/13	

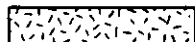
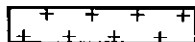
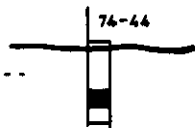
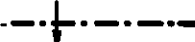
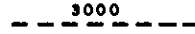
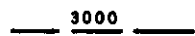
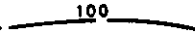


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HAT CREEK PROJECT - NO. 1 DEPOSIT	
SECTION 20,000'E	
SCALE 1" = 400'	FEB 77

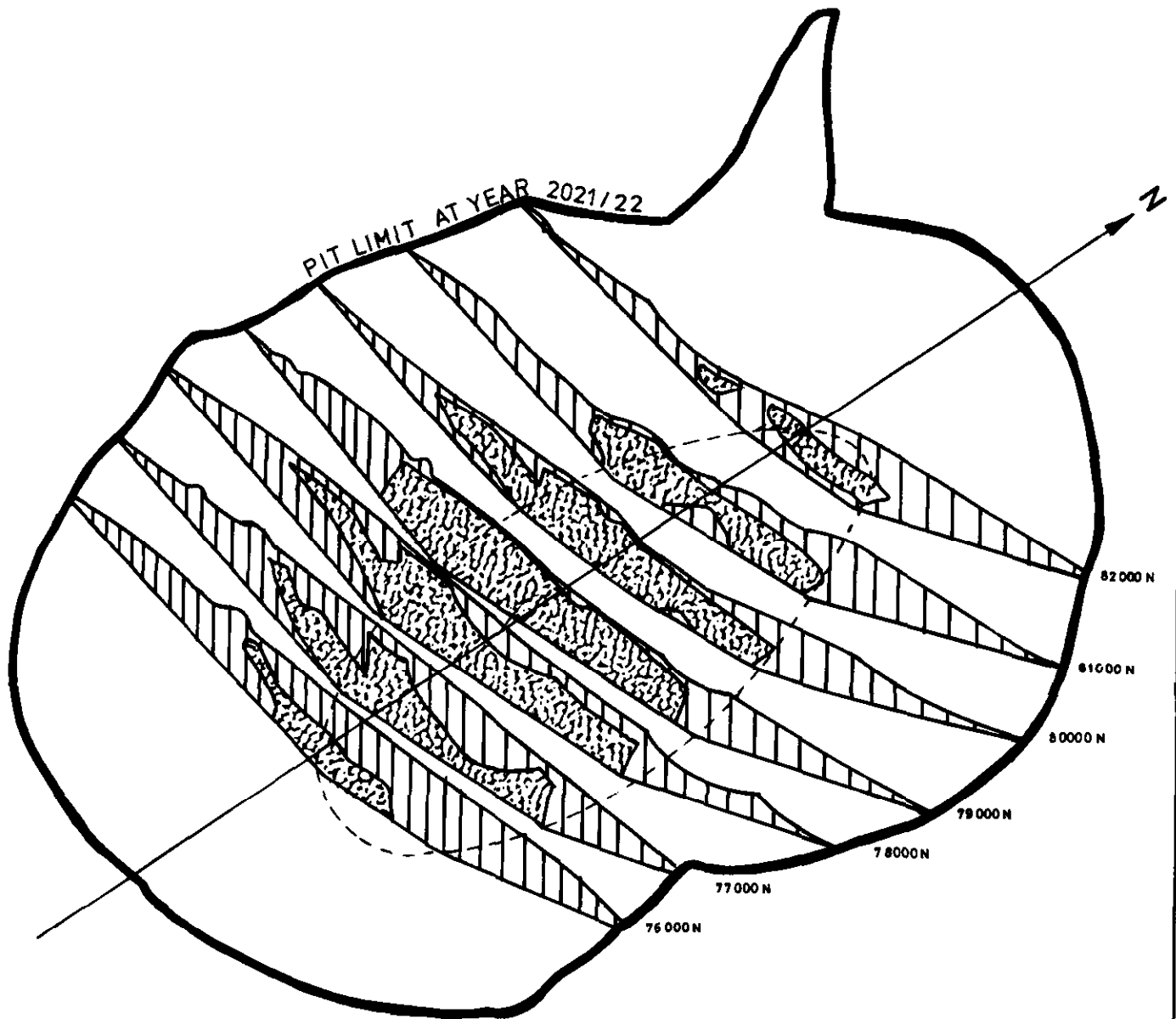
LEGEND OF SYMBOLS USED ON GEOLOGICAL PLANS AND SECTIONS

Coal	
Surficials	
Volcanics	
Marble	
Borehole on plan with reference no.	
Borehole on section with reference no.	
Fault on plan with direction of downthrow	
Fault on plan under volcanics	
Fault on section with direction of throw	
Contours within area of incrop (value in feet above datum)	
Contours outside area of incrop (value in feet above datum)	
Isopachytes (value in feet)	

ABBREVIATIONS

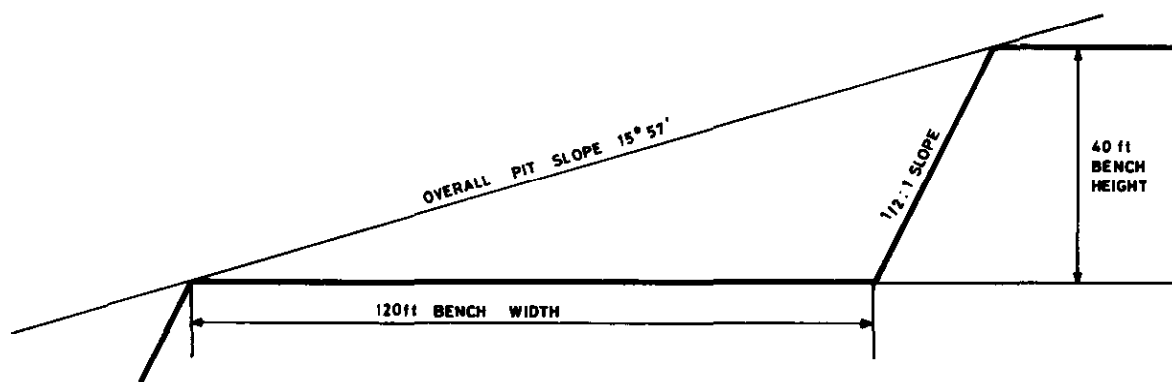
Ss = Sandstone	Carb = Carbonaceous
Sh = Shale	Clsts = Claystones
Silsts = Siltstones	Ag = Agglomerate
Cg = Conglomerate	B = Breccia
C = Coaly	Bas = Basalt
Mdr = Mixed detrital rocks	

PICTORIAL REPRESENTATION OF THE COAL WITHIN THE 600 FT PIT



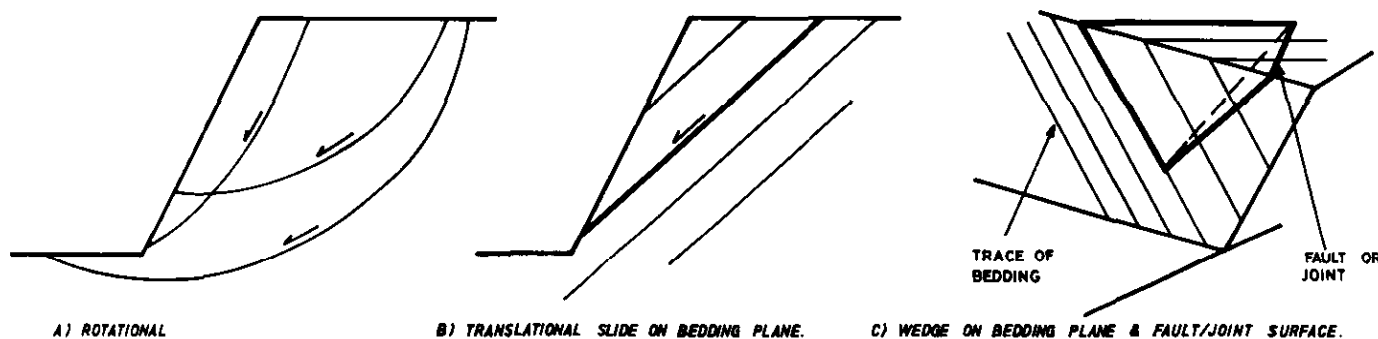
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Eng'r. W. Y.	Date MAR 77	Drg.No. 605/9/16

MODES OF FAILURE OF PIT SLOPES



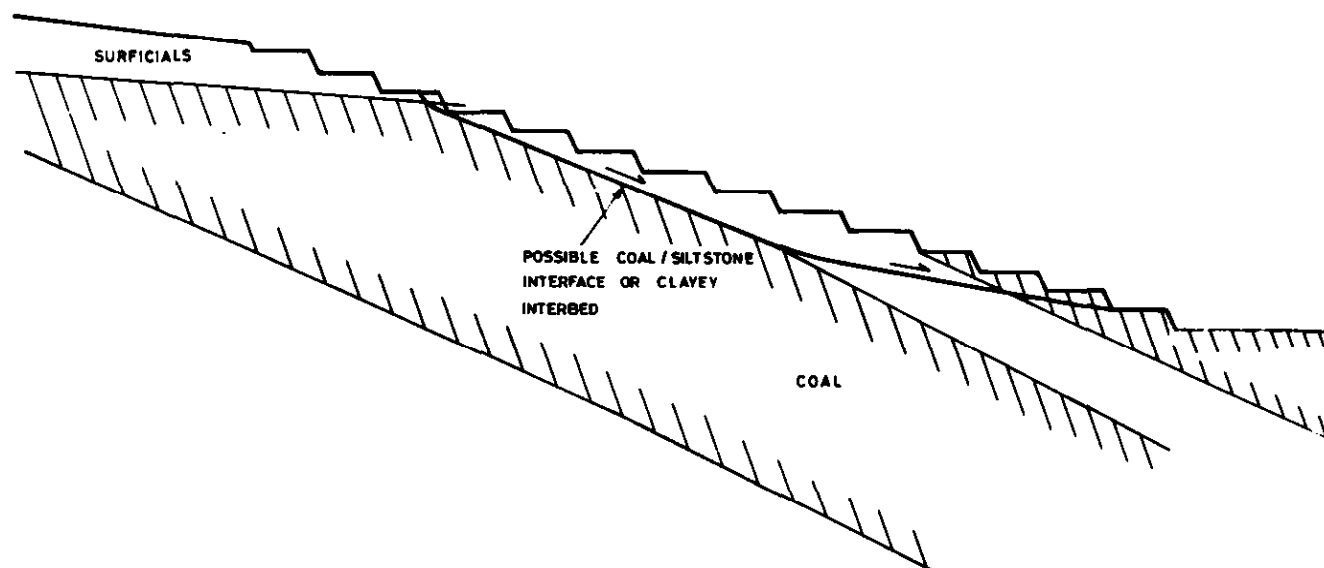
a). Overall pit slope - proposed bench configuration.

SCALE 1:400



b). Modes of bench failure.

SCALE 1:400



c). Potential curvilinear or biplanar pit failure on west slope.

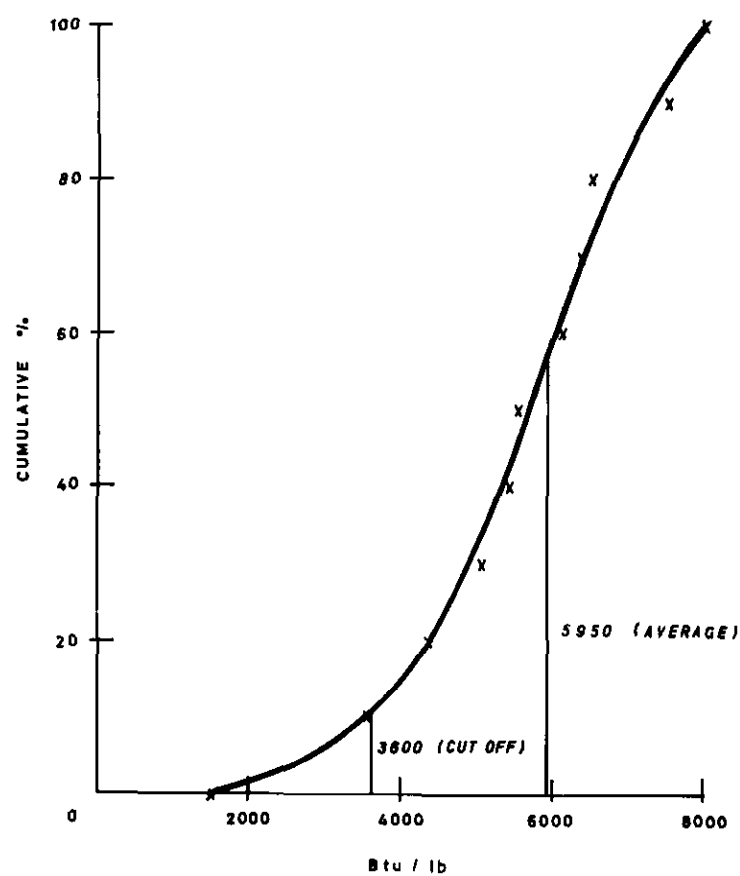
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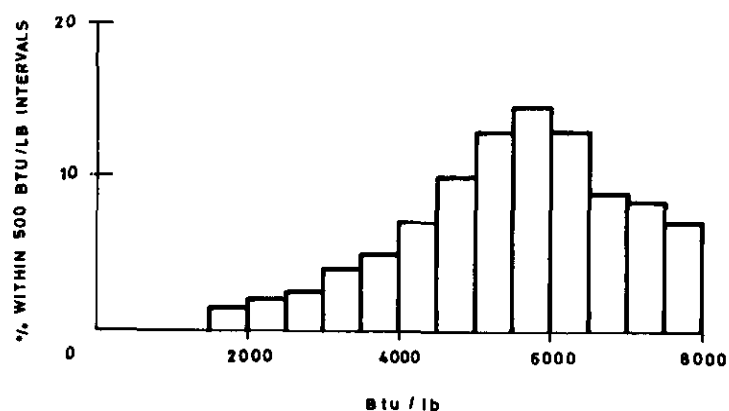
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G.W.	Mar. 77	605/9/17

ASSUMED COAL QUALITY HISTOGRAM

(based on 20% moisture)



(a) Cumulative % against Btu/lb

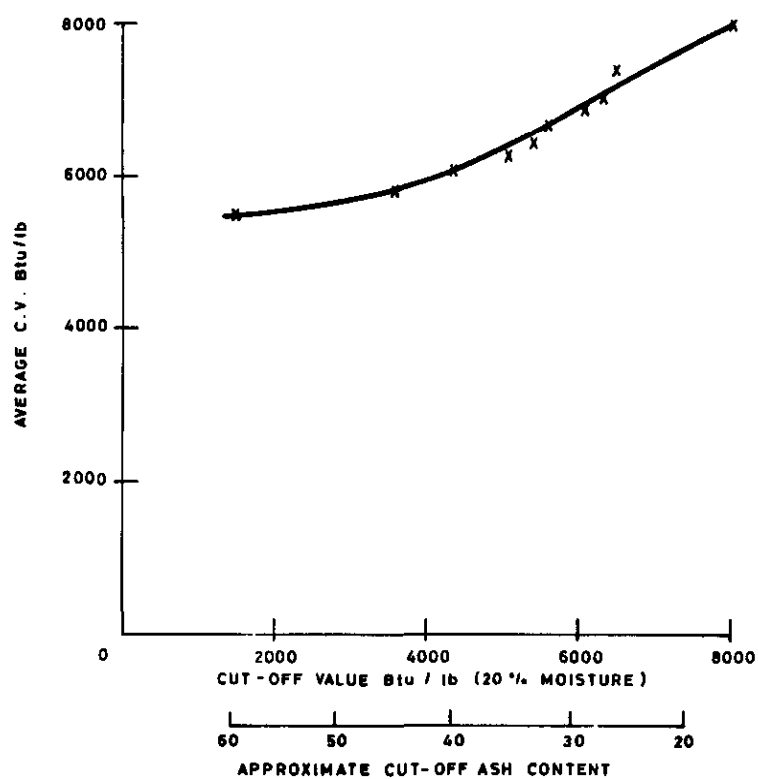


(b) % within 500 Btu/lb intervals

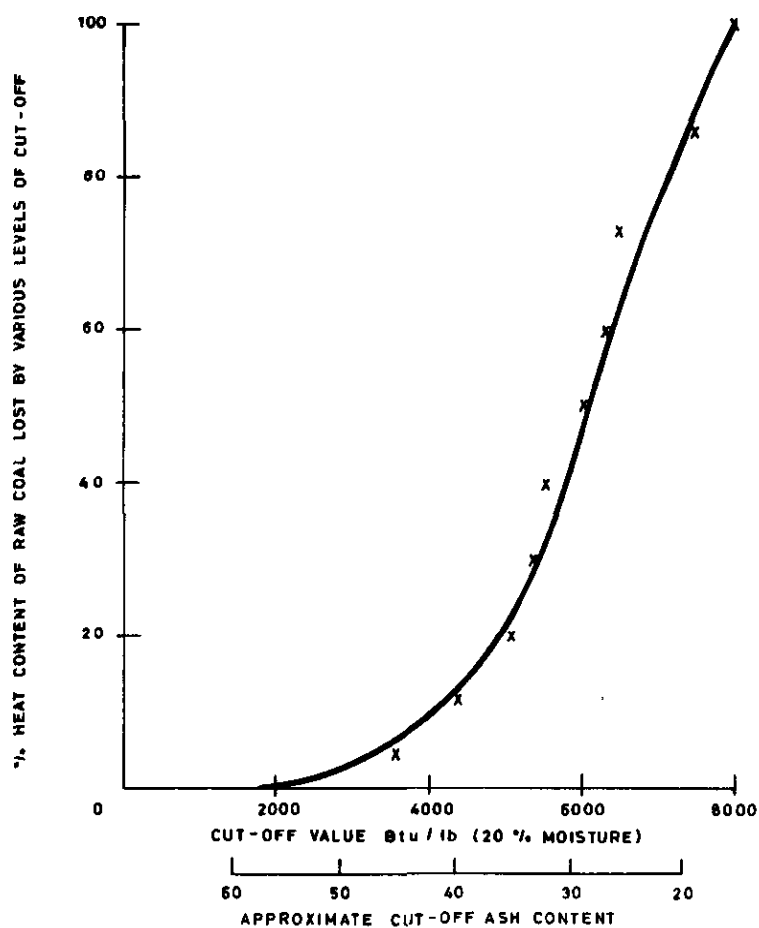
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Eng'r.	Date	Drg. No.
A.J.K.G.	Mar. 77	605/9/18

EFFECT OF VARIOUS LOW GRADE COAL CUT-OFF LEVELS



(a) Average C.V. resulting from different cut-offs



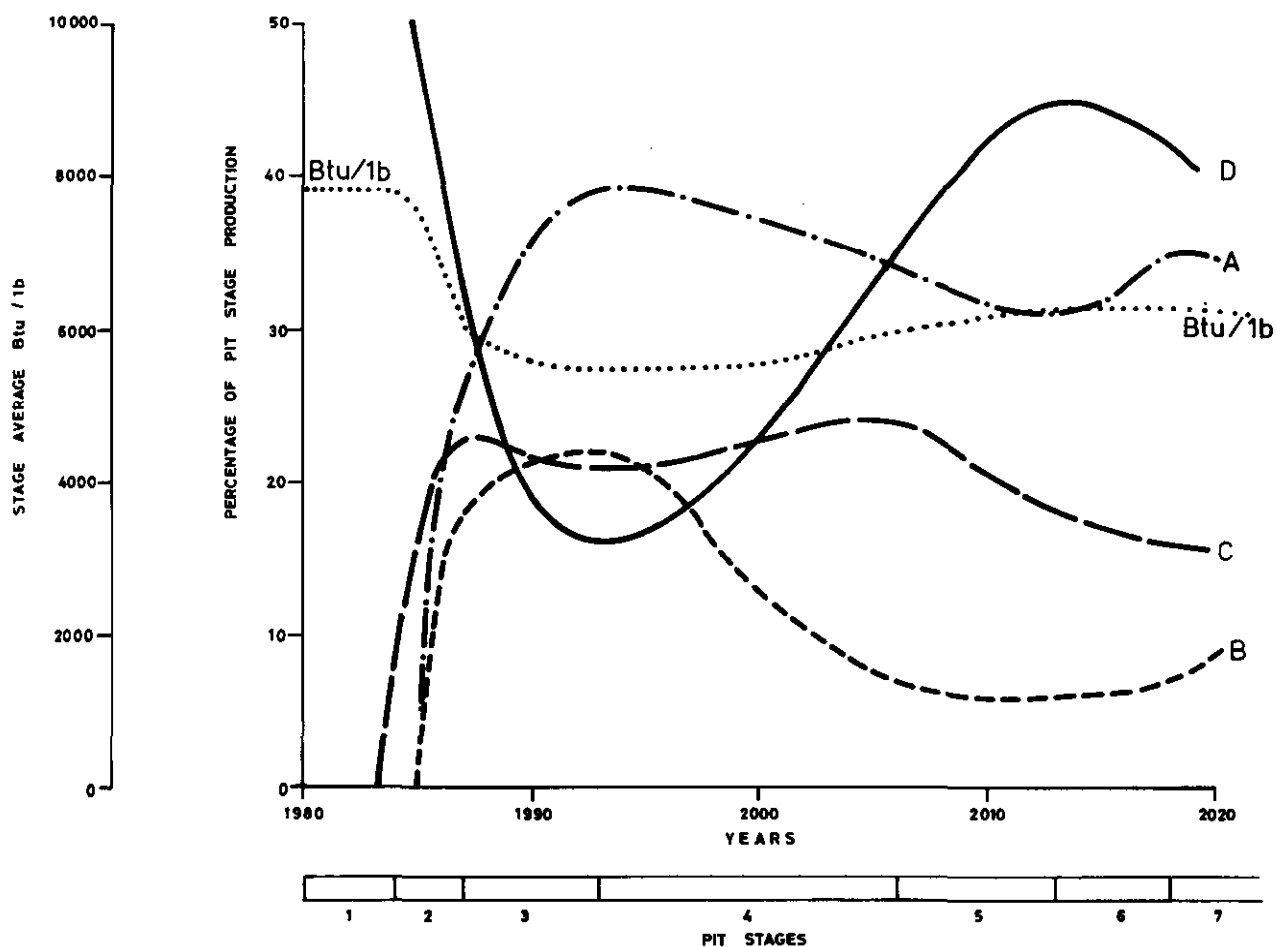
(b) Loss of energy resource resulting from different cut-offs

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London

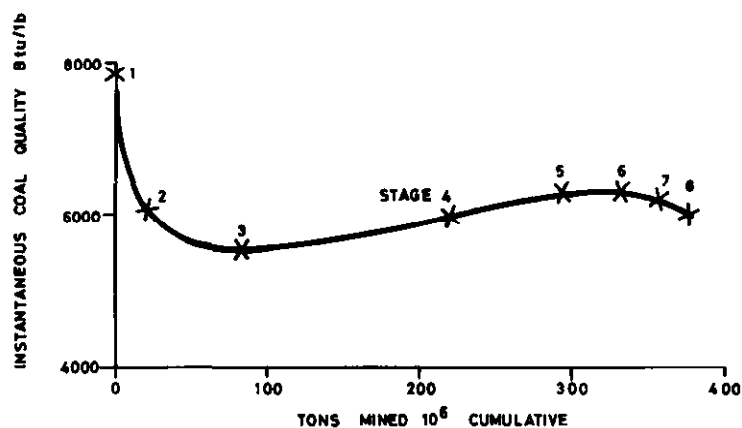
Eng'r. A.J.K.G.	Date Mar. 77	Drg. No. 605/9/19
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COAL QUALITY BY PROPORTION OF ZONES AND PIT STAGES

(Based on 20% moisture).



a). Coal quality and proportion of zones mined by year and pit stage.

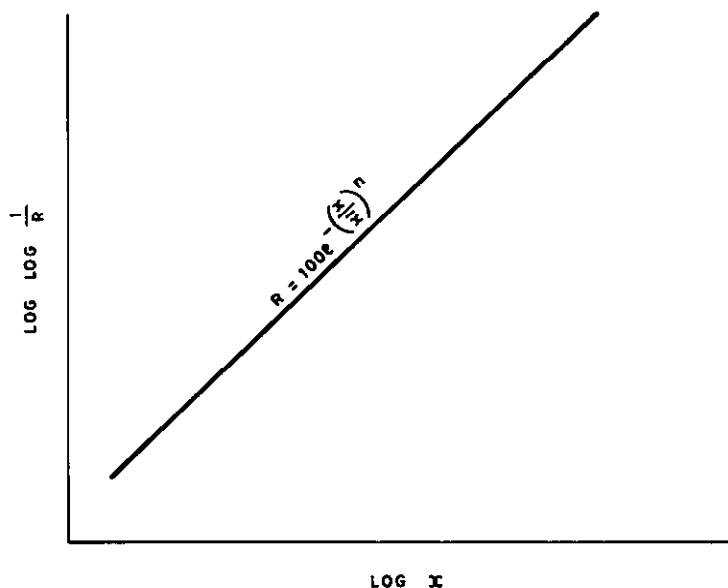


b). Coal quality by cumulative tons ROM.

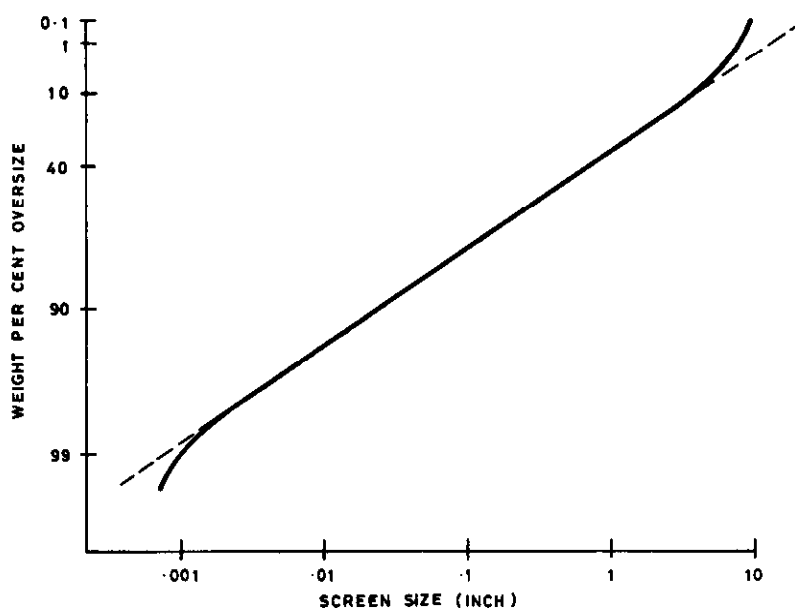
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ROSIN-RAMMLER SIZE DISTRIBUTION THEORY



(a) Straight line produced by theoretical Rosin-Rammler plot



(b) deviation from straight line which often occurs at extreme ends of curve

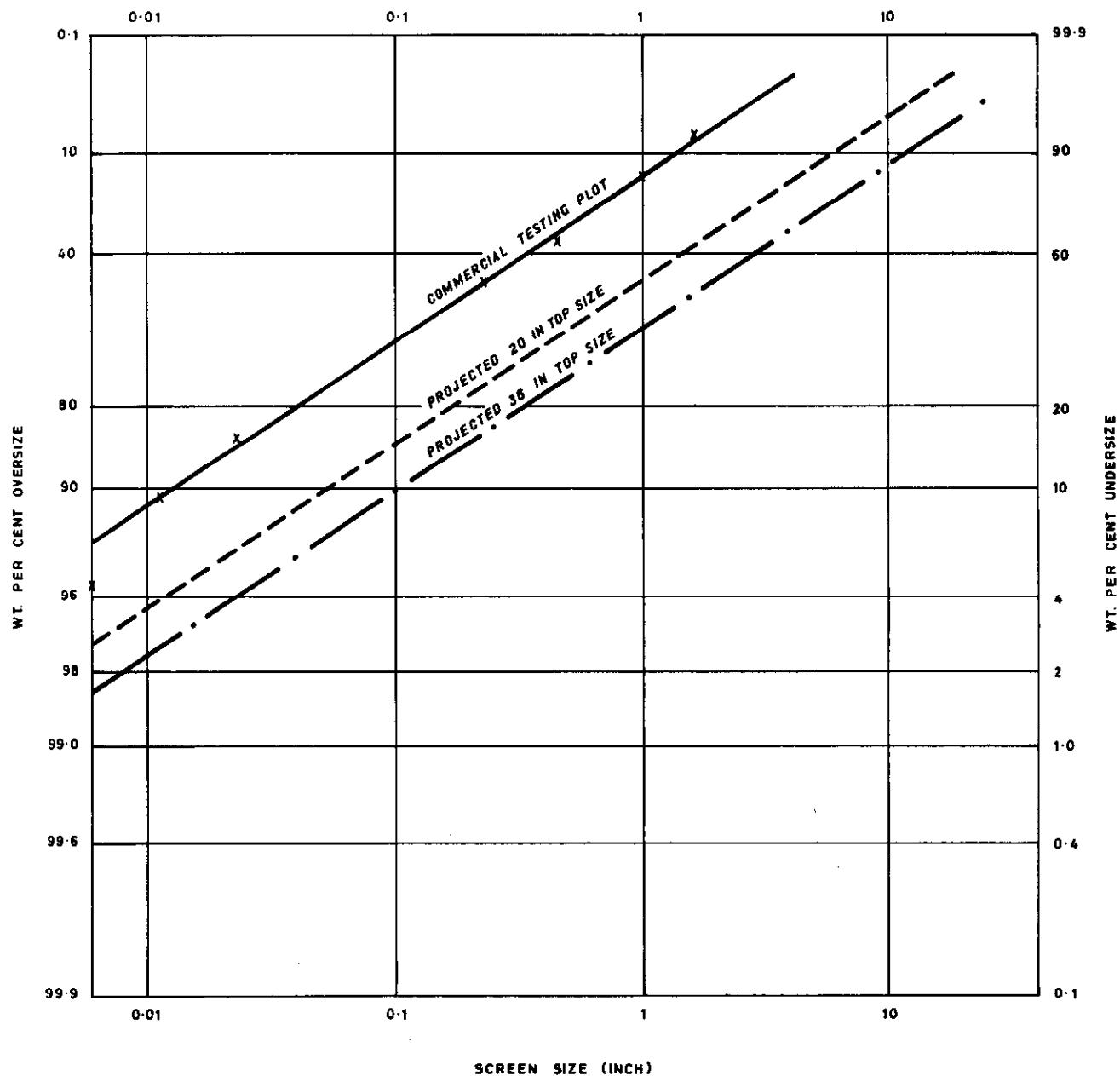
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Date
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605/9/ 21

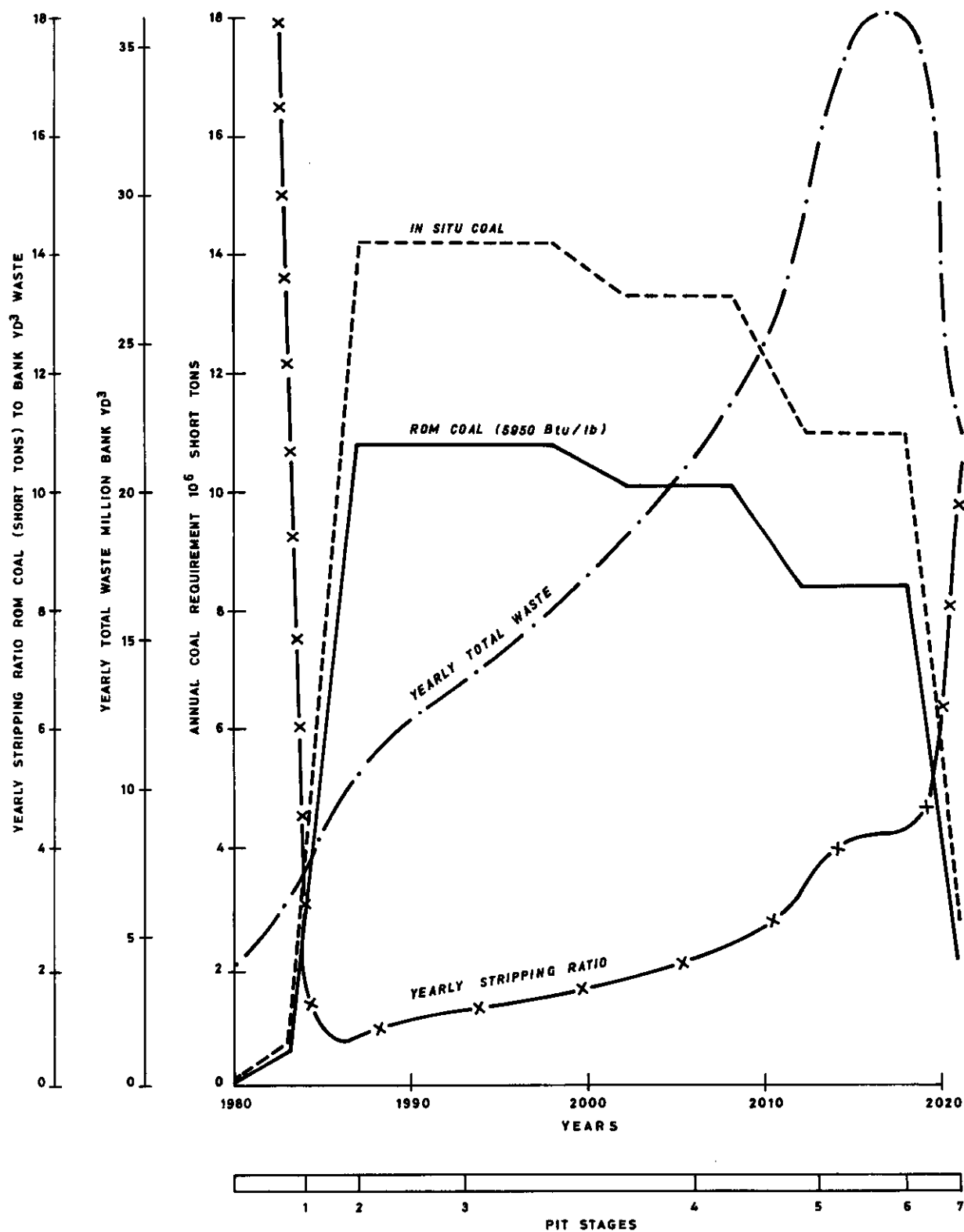
POSSIBLE SIZE DISTRIBUTION OF HAT CREEK COAL
BASED ON THE ROSIN-RAMMLER THEORY



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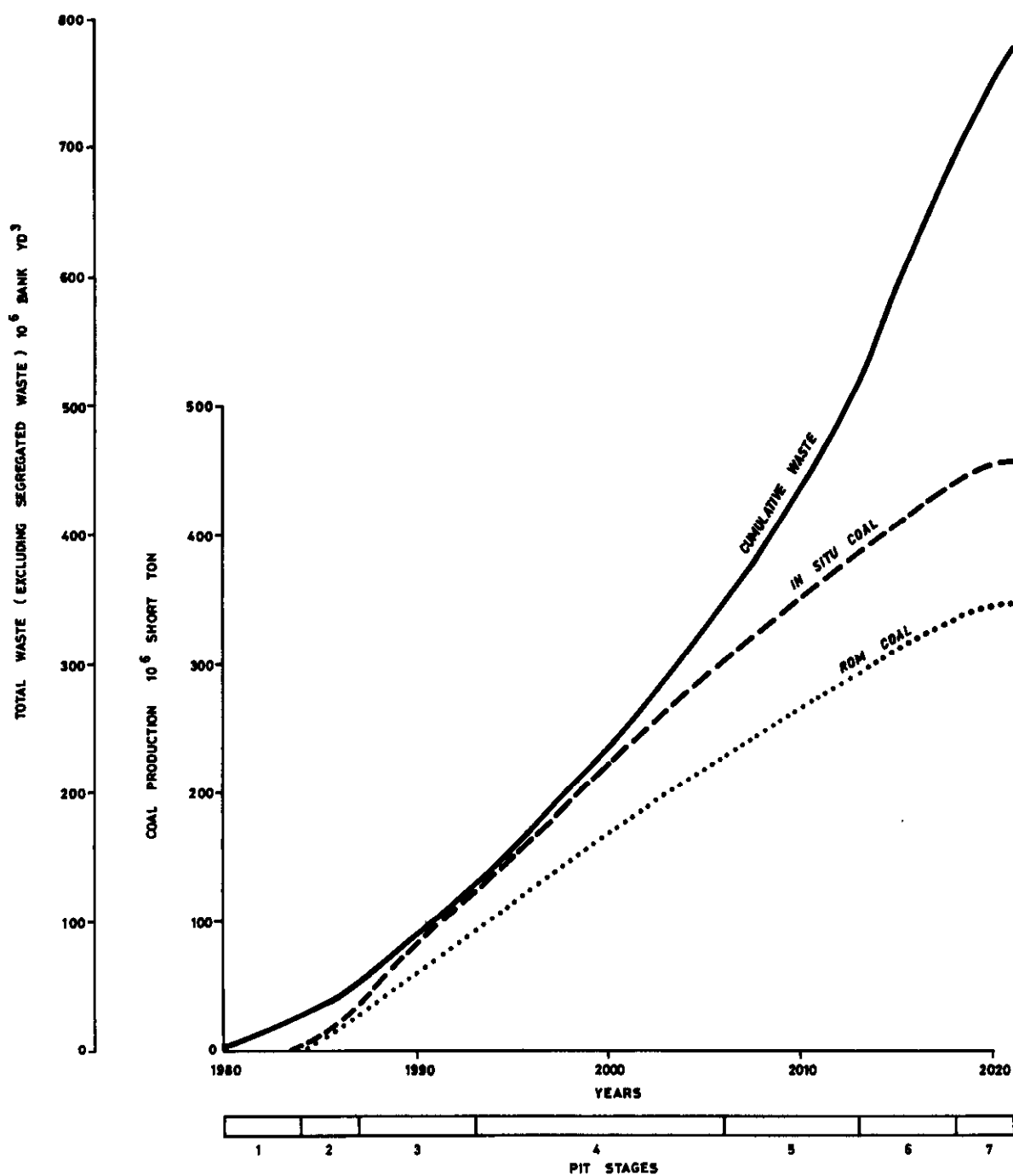
Eng'r. A.J.K.G.	Date April 77	Drg. No. 605/9/22
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COAL REQUIREMENTS FOR A 4x560 MW POWER STATION YEARLY WASTE REMOVAL - YEARLY STRIPPING RATIO



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Eng'r. A.J. K.G.	Date Mar. 77	Drg. No. 605/9/23

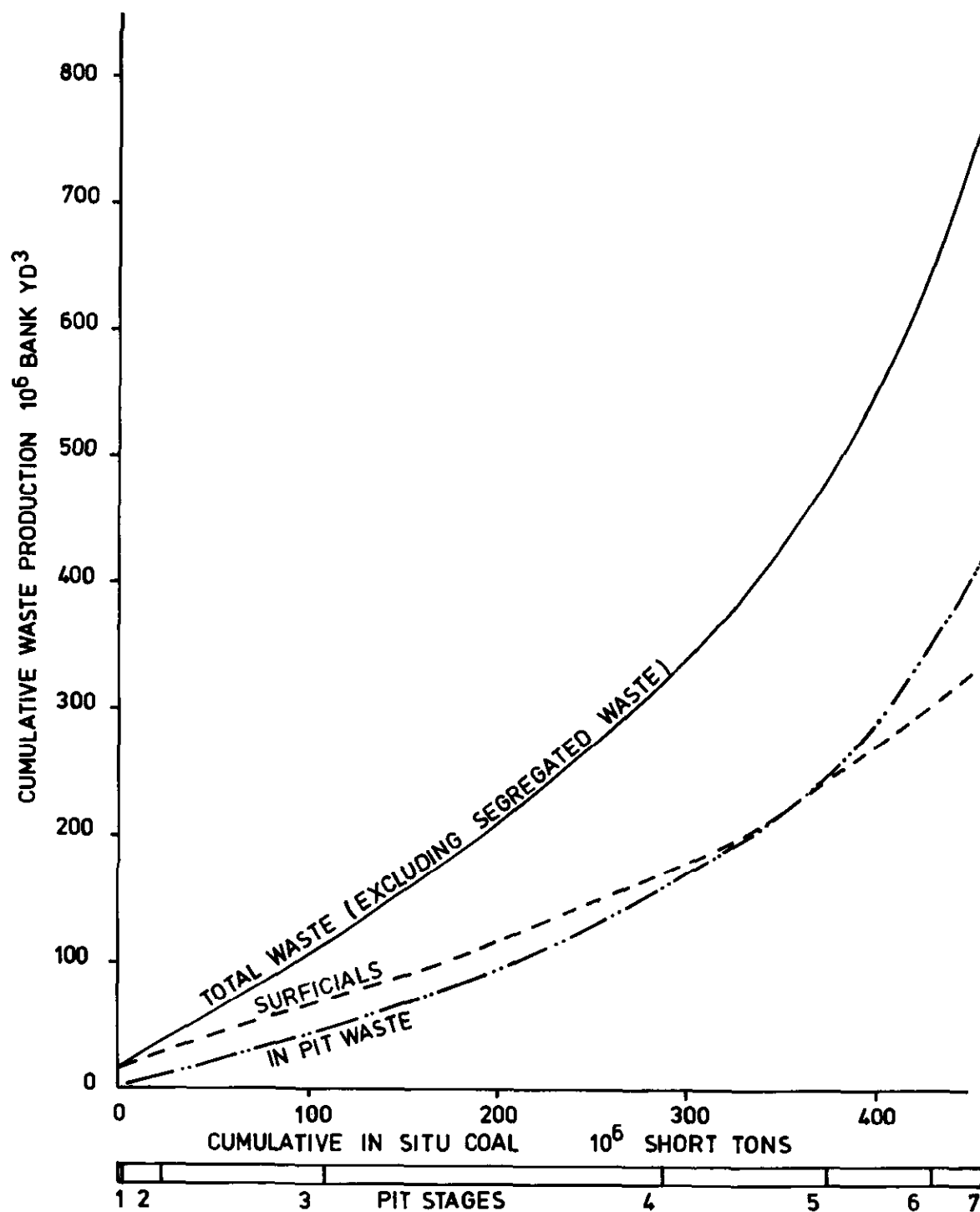
CUMULATIVE COAL REQUIREMENTS FOR A 4 x 560 MW POWER STATION AND CUMULATIVE WASTE REMOVAL



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London.

Eng'r. A.J.K.G.	Date. Mar. 77	Drg.No. 605/9/24
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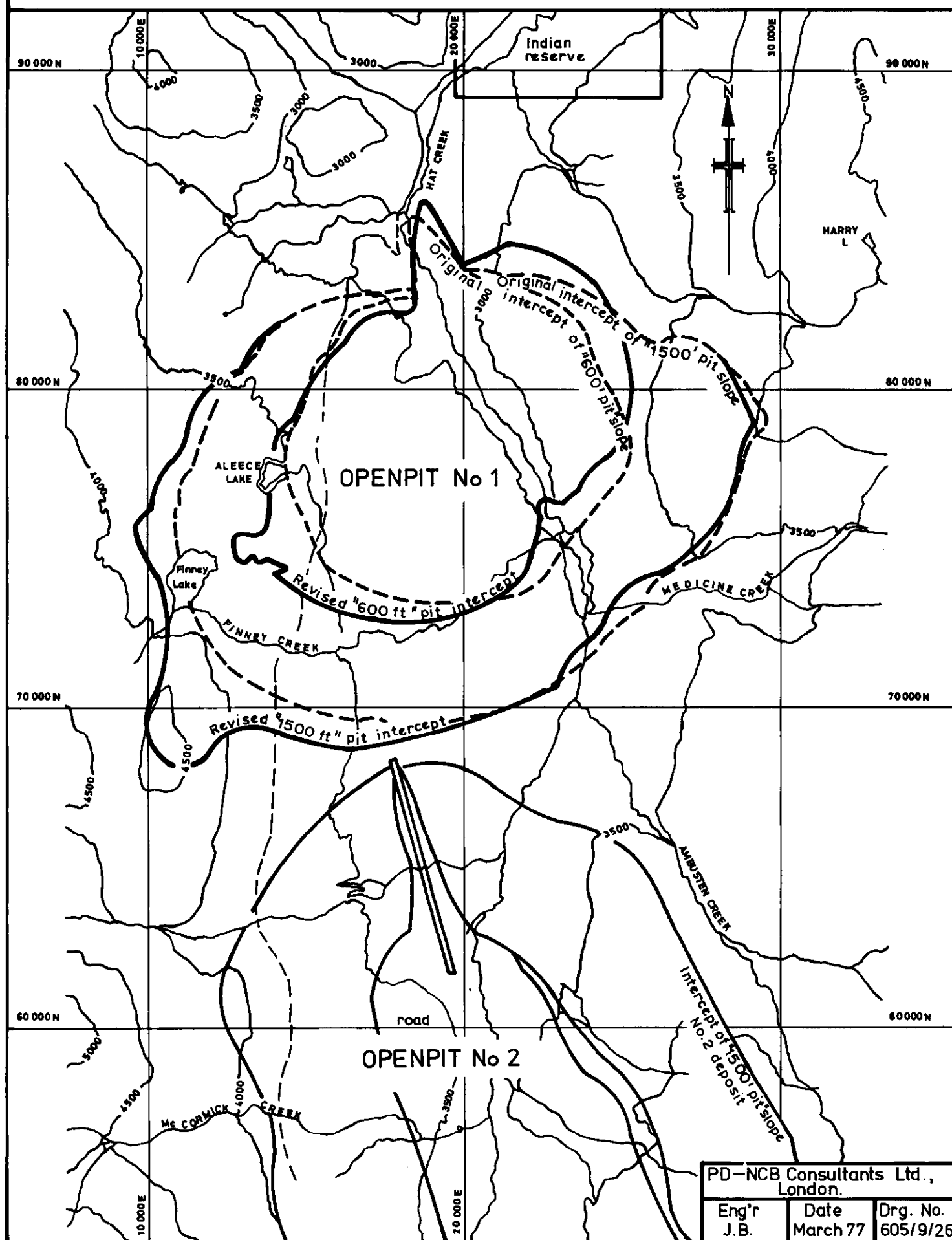
CUMULATIVE VOLUMES OF WASTE VERSUS CUMULATIVE TONNAGE OF IN SITU COAL



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Eng'r A.J.K.G.	Date Mar. 77	Drg. No. 605/9/25

CHANGES IN No 1 OPENPIT OUTLINE

Scale: 1" = 4000 feet

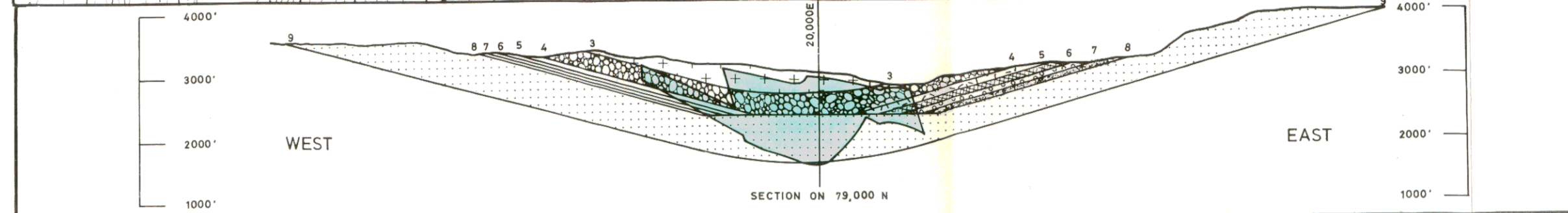
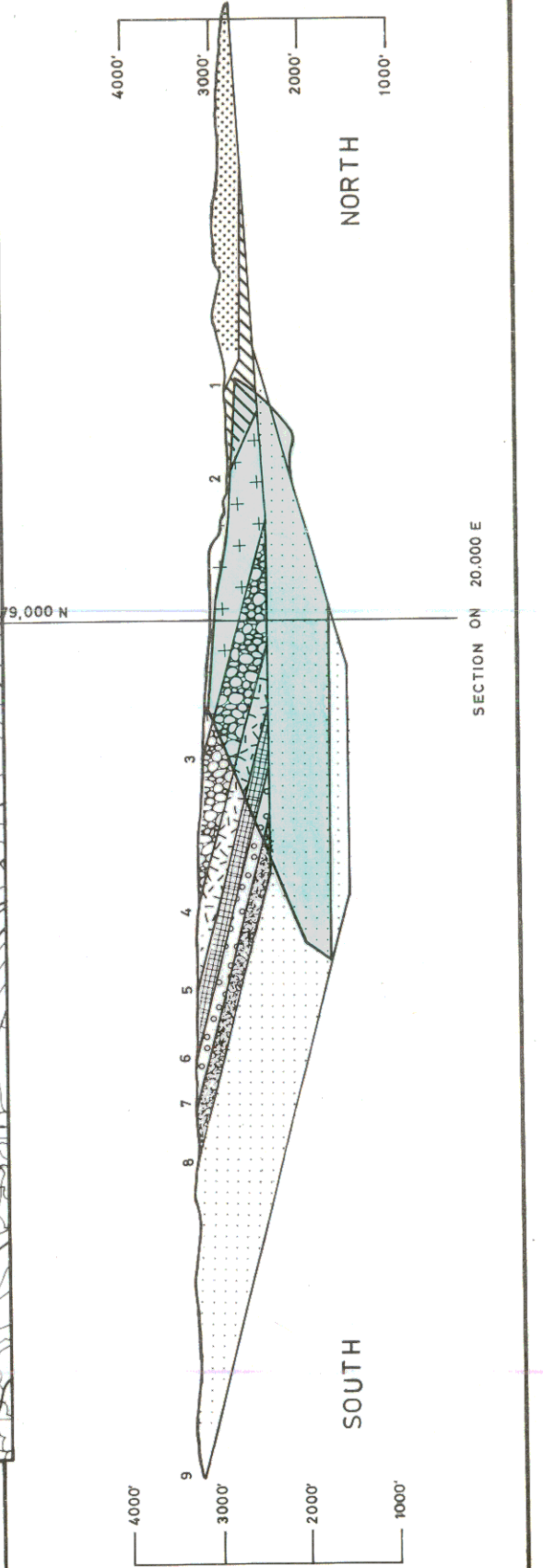
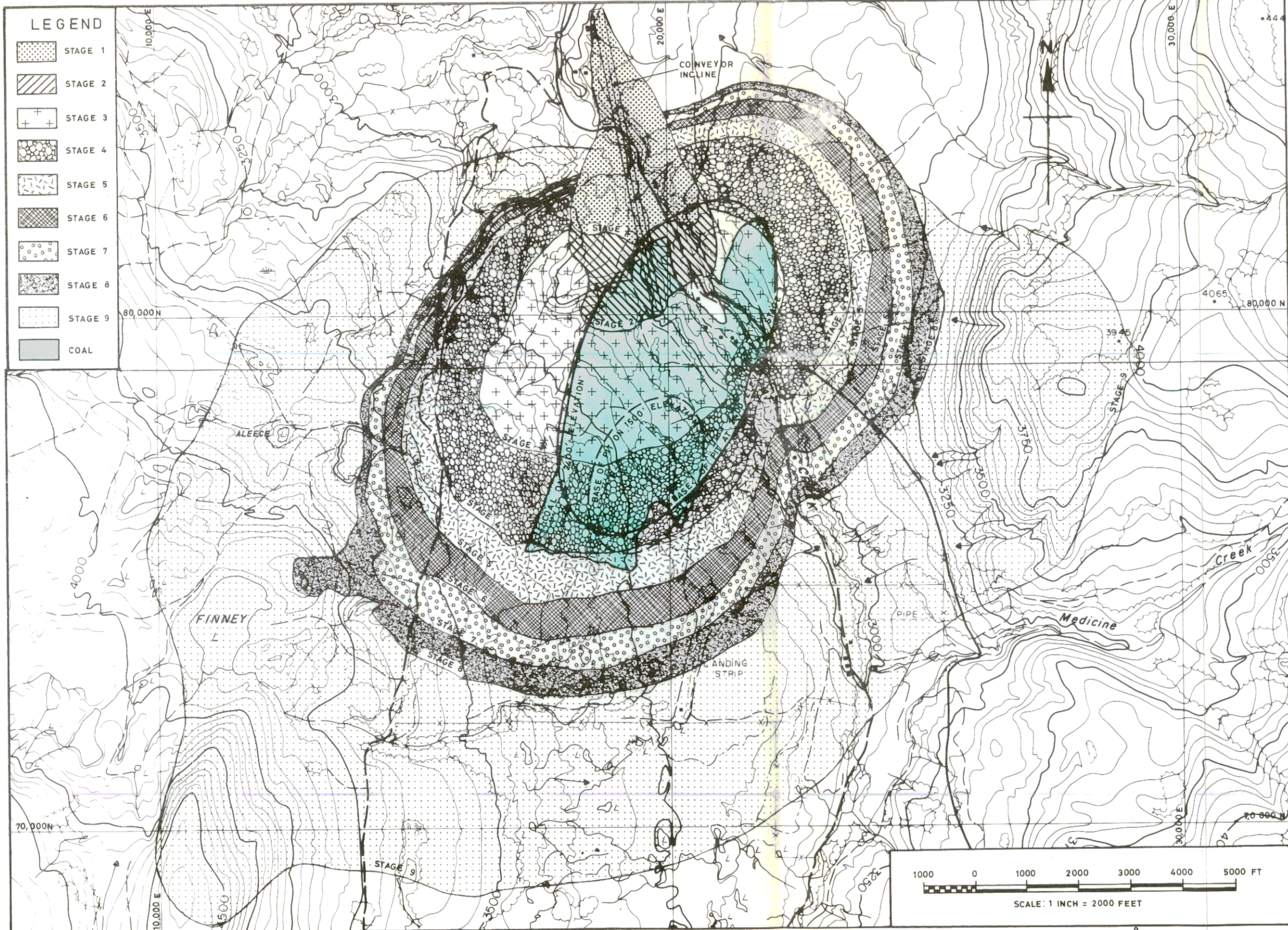


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J.B.

Date
March 77

Drg. No.
605/9/26



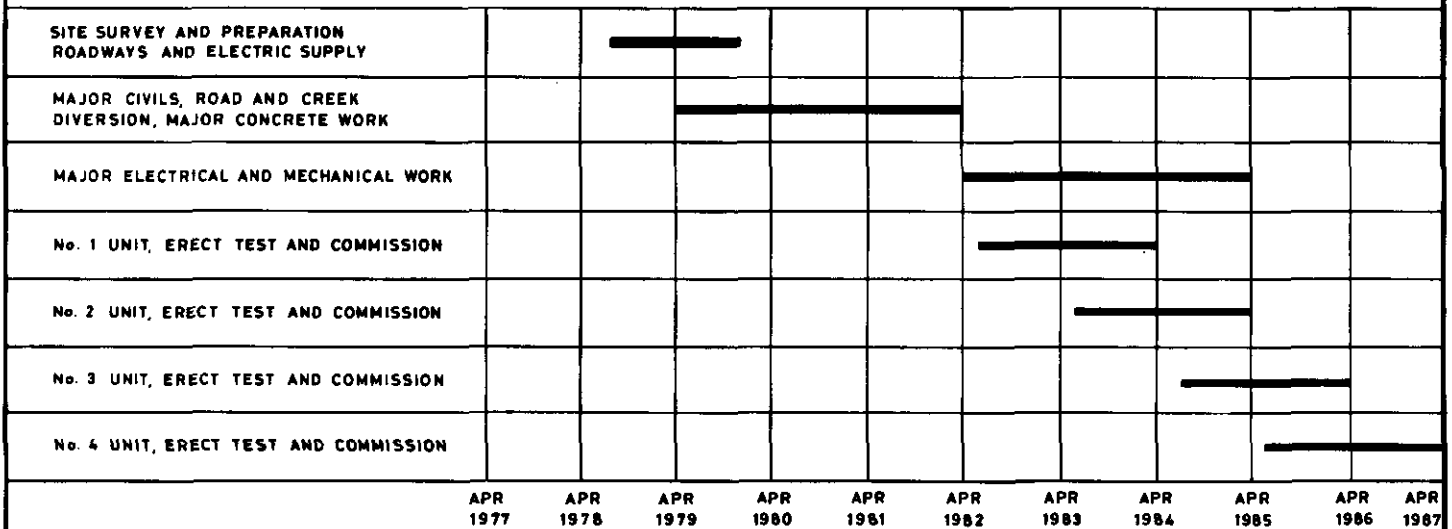
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HAT CREEK No. 1 DEPOSIT
SURFACE INTERCEPTS OF
STAGES OF PIT DEVELOPMENT
TO 1500' ELEVATION

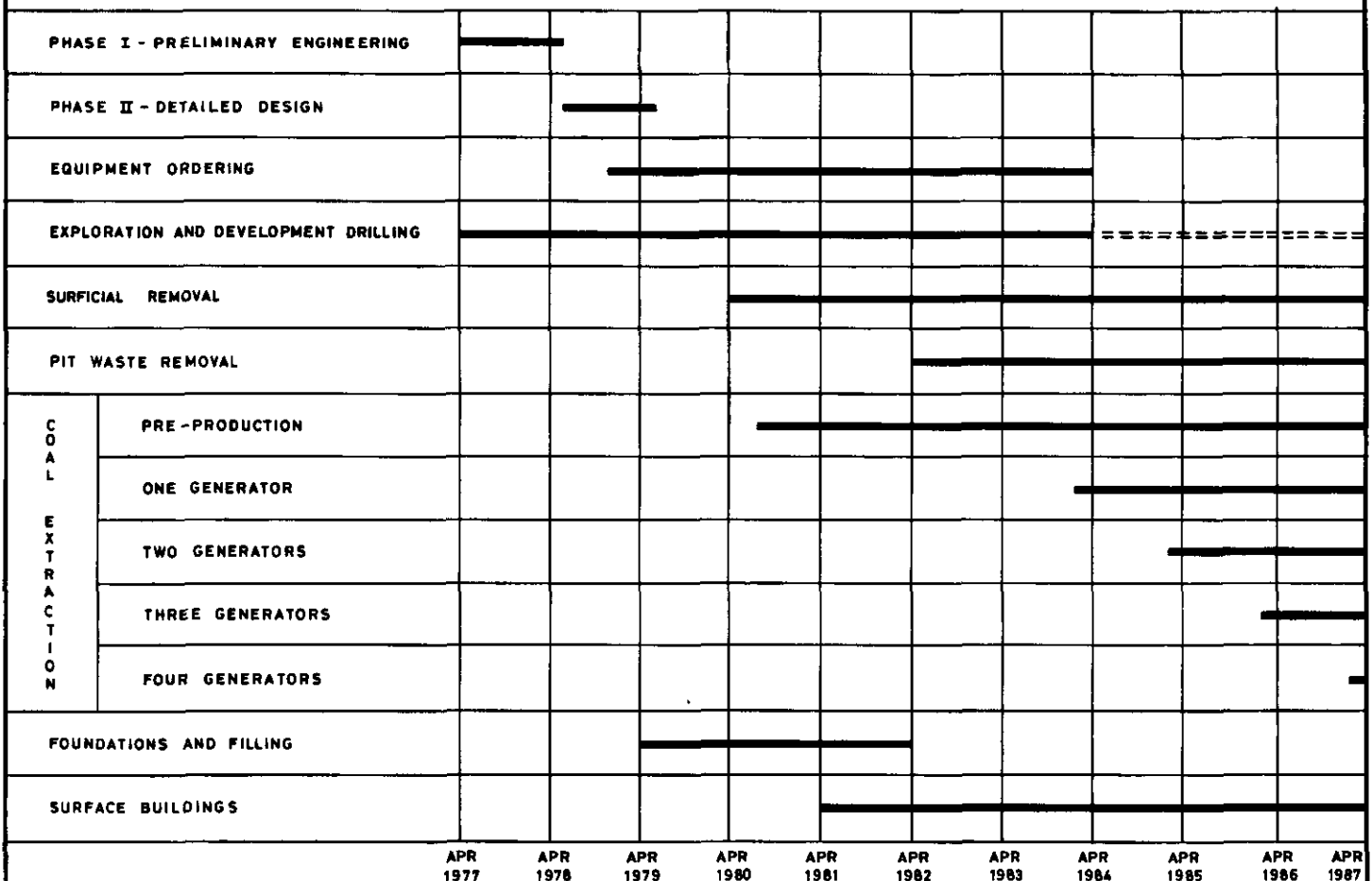
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CONSTRUCTION SCHEDULES

(a) Construction schedule for 4x560 MW power station



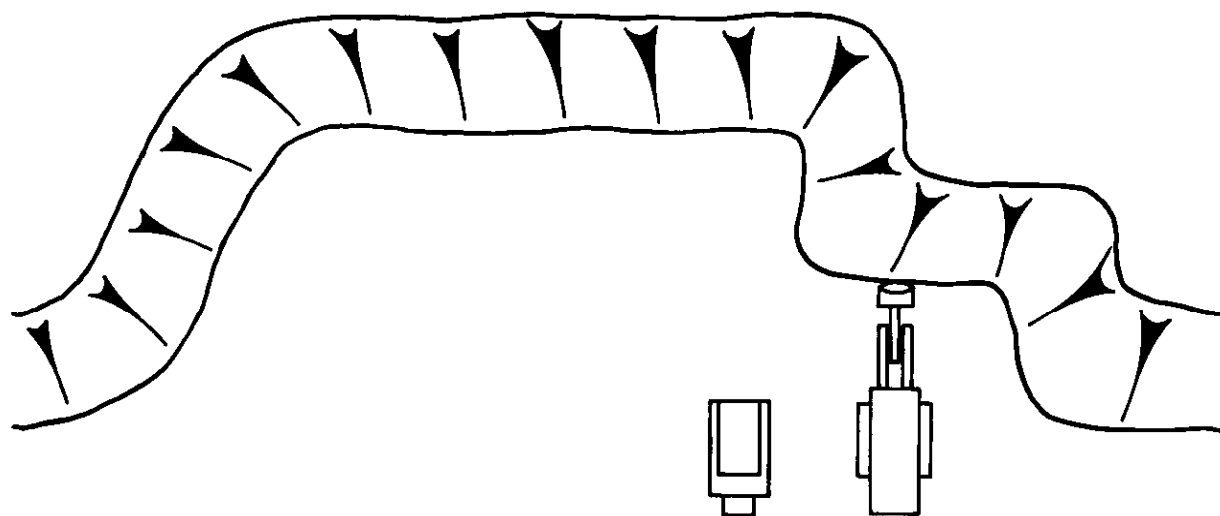
(b) Openpit no.1 development schedule



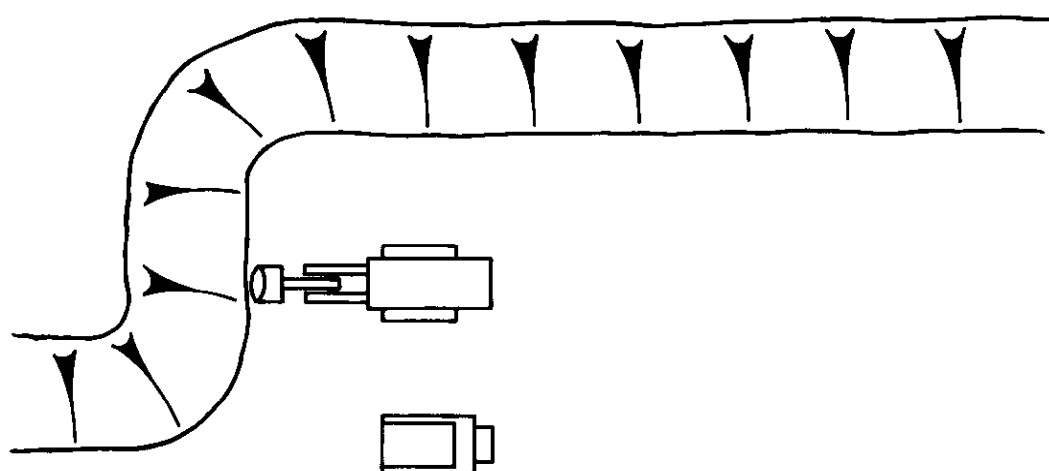
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Eng'n A.J.K.G.	Date Mar. 77	Drg. No. 605/9/28
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DIAGRAM SHOWING "FACE" AND "ON-END" LOADING



(a) Excavating on face

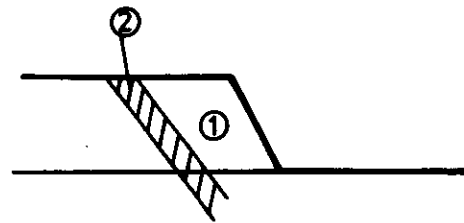


(b) Excavating on end

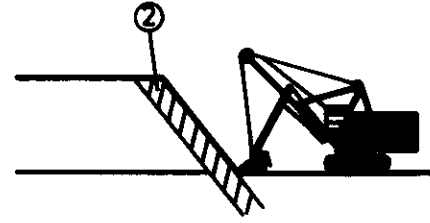
PD-NCB Consultants Ltd London		
Eng'r. M. A.	Date March 77	Drg. No. 605/9/29

TYPICAL SELECTIVE MINING OF PARTINGS FROM 3 ft TO 5 ft THICK

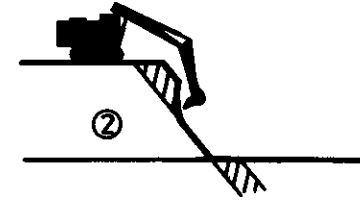
Not to scale.



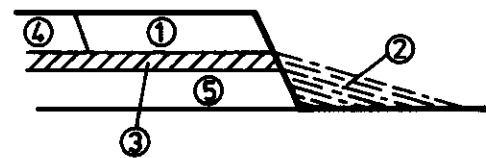
A. a). Blast and load coal ①



b). Load most of parting ②



c). Load remainder of parting ② with hydraulic excavator.



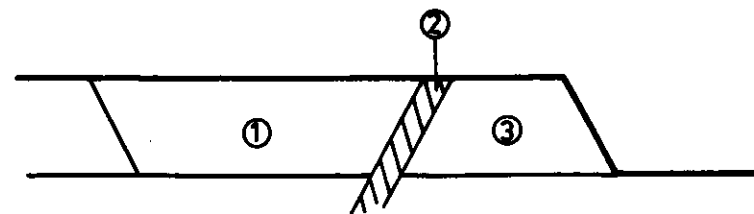
B. a). Blast top coal ① to form ramp ②



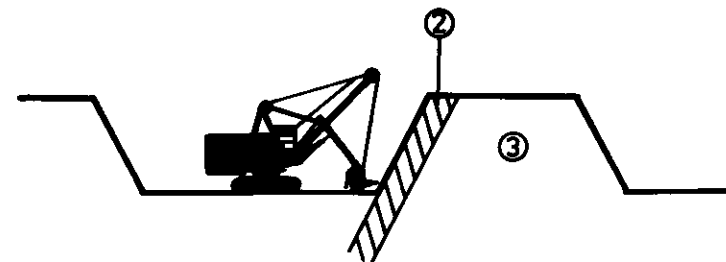
b). Move large shovel onto parting ③ and load parting.



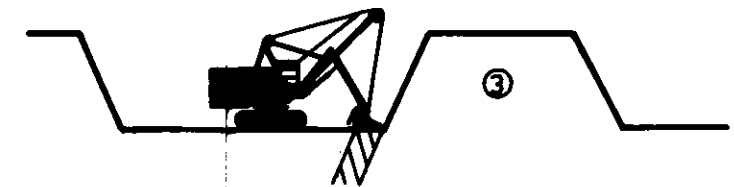
c). If necessary blast remainder of top coal ④ and load with shovel. Blast and remove coal ⑤.



C. a). Blast coal ① and remove "on end" leaving coal ③ for stability of waste parting.



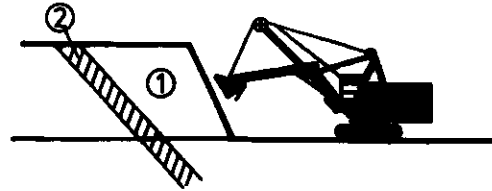
b). Remove coal ① and then parting ②.



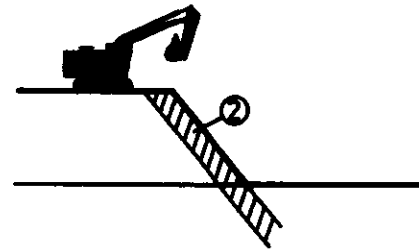
c). Remove coal pillar ③ as in A above.

Partings.....

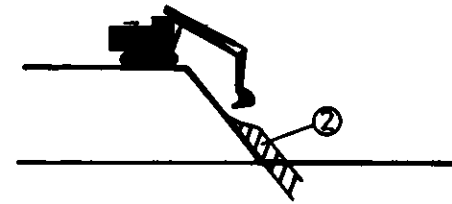
TYPICAL SELECTIVE MINING OF PARTINGS BELOW 3ft THICK Not to scale.



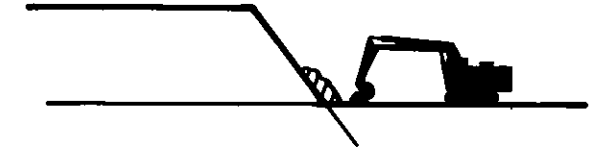
A. a). Blast and load coal ①



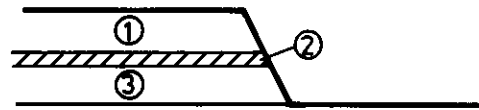
b). Move hydraulic backhoe to bench top.



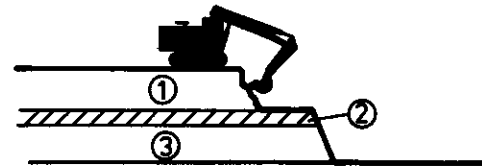
c). Remove top half of parting ②



d). Remove bottom half of parting ② with hydraulic shovel.



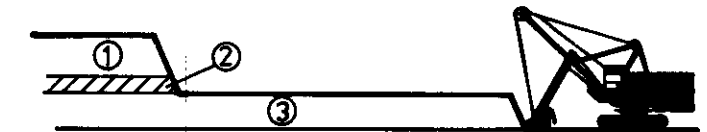
B. a). Blast top coal. ①



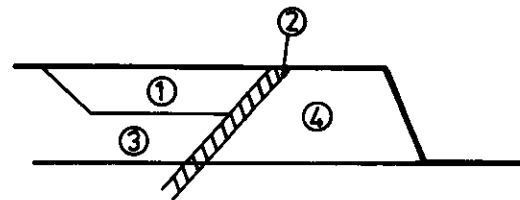
b). Remove coal ① by backhoe.



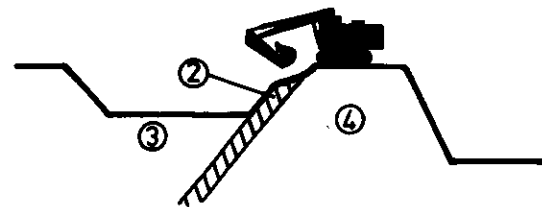
c). Ramp down and use hydraulic shovel to clear parting ②



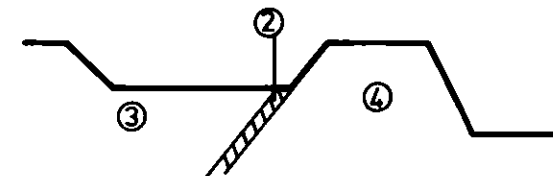
d). Blast coal ③ and remove with large shovel.



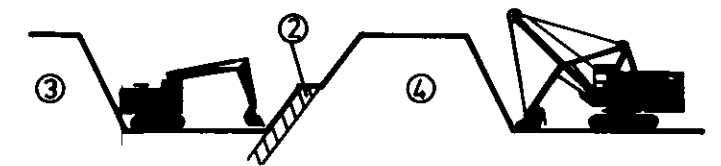
C. a). Blast coal ① and remove with backhoe.



b). Remove top half of parting ② with backhoe.



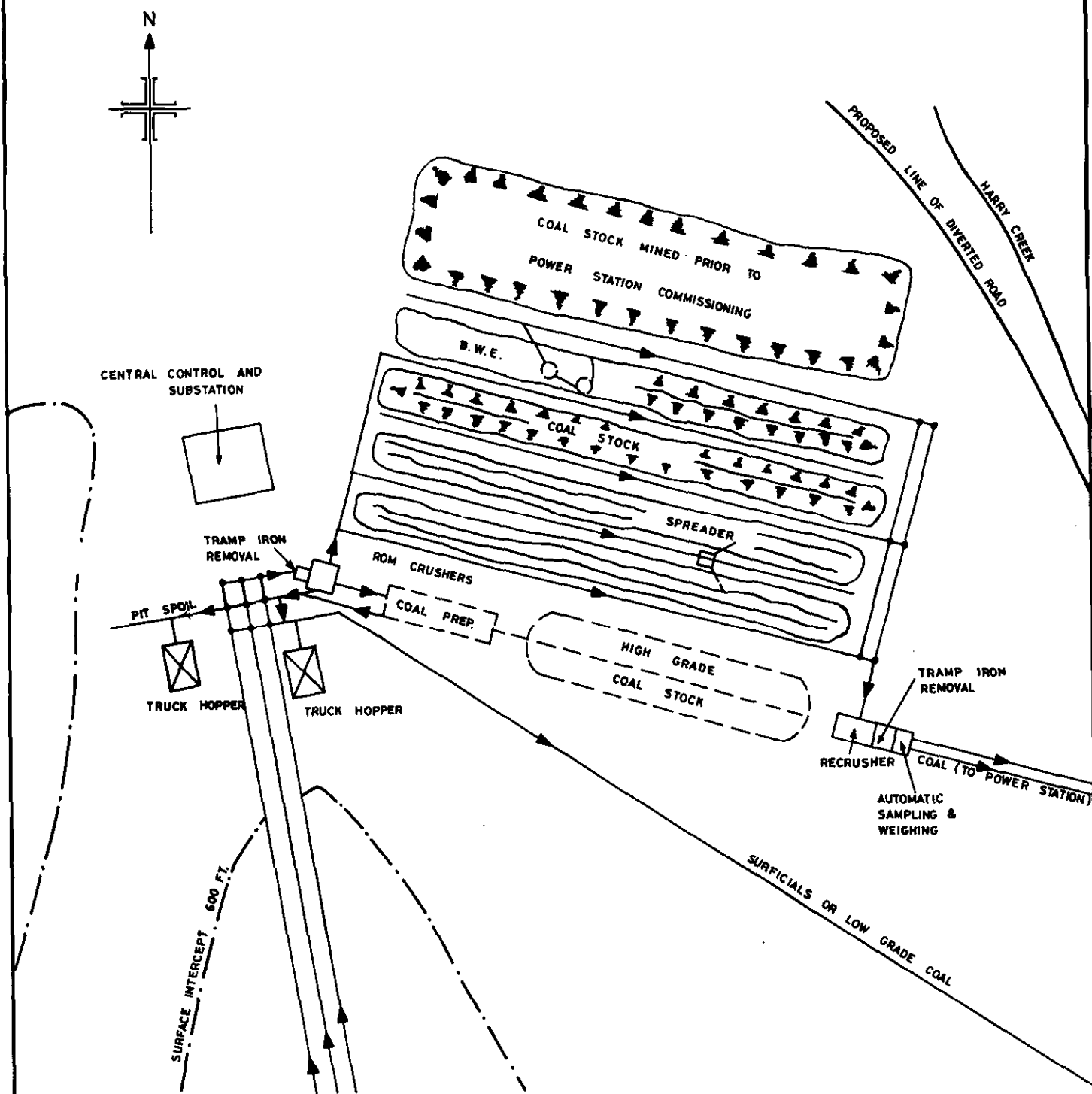
c). Blast coal ③ and remove with hydraulic shovel.

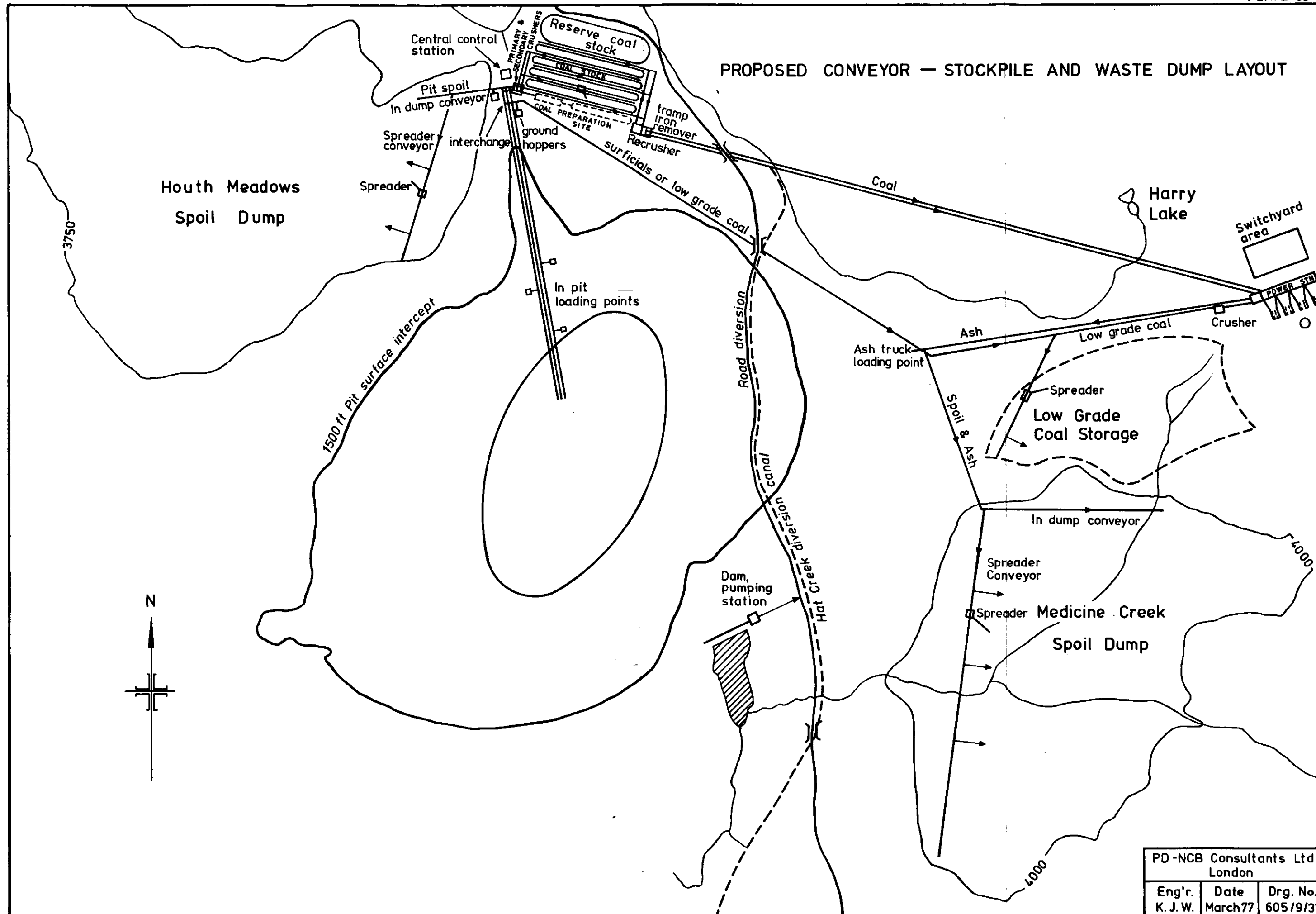


d). Remove bottom half of parting ② with hydraulic shovel. Blast coal ④ and remove with large shovel.

Partings.....

SCHEMATIC LINE DIAGRAM OF PROPOSED INTERCHANGE
AND STOCKPIILING ARRANGEMENT.

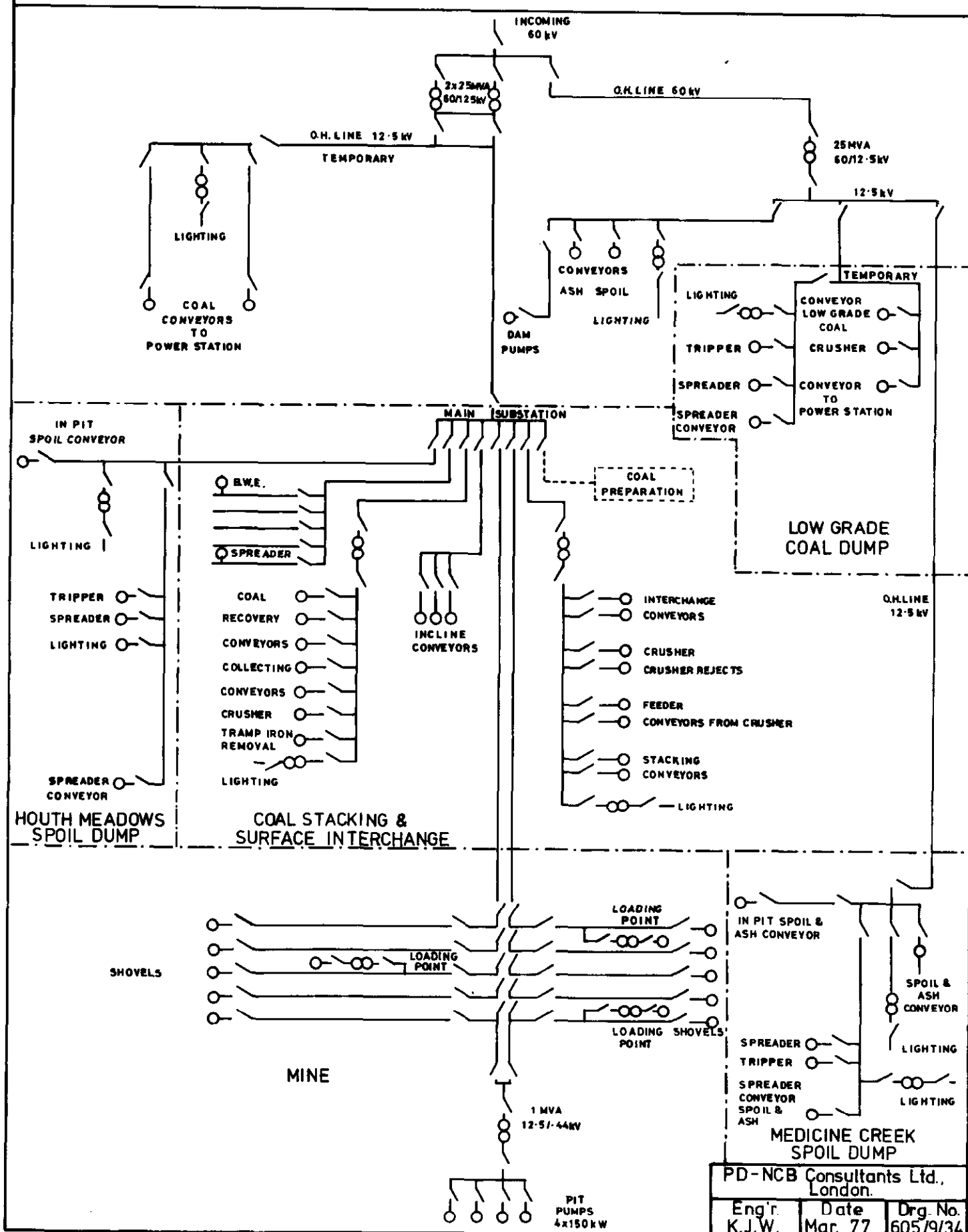




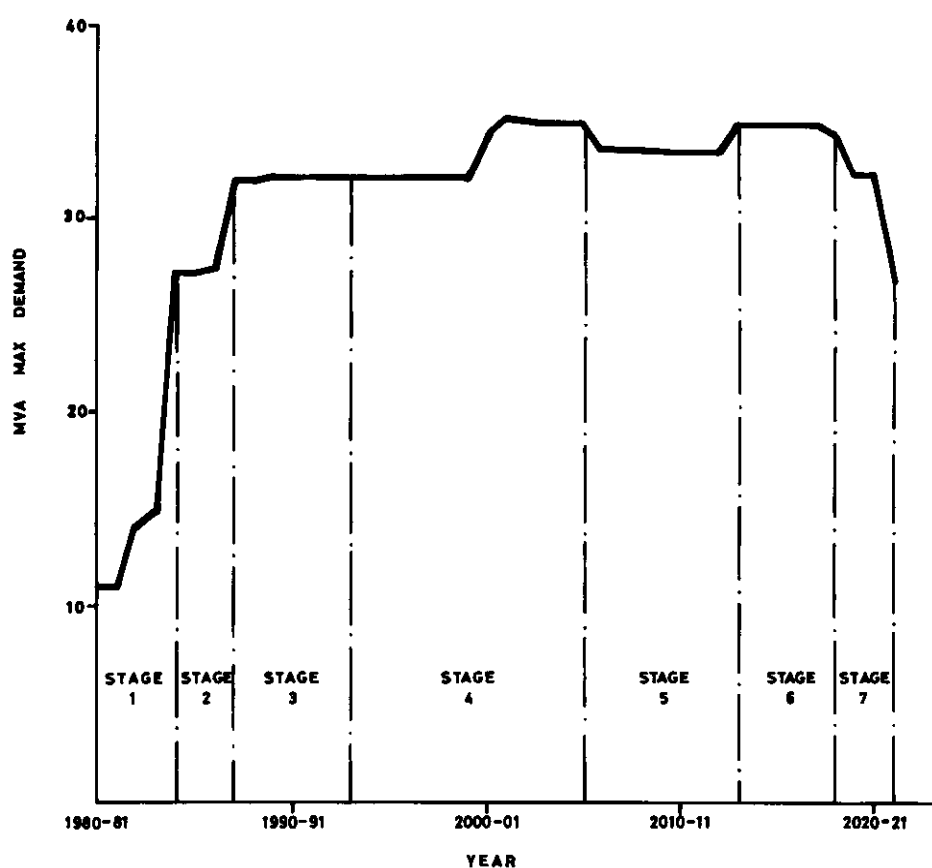
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Eng'r. K. J. W.	Date March 77	Drg. No. 605/9/33

HAT CREEK OPENPIT No.1

CONCEPTUAL POWER DISTRIBUTION ULTIMATE PIT

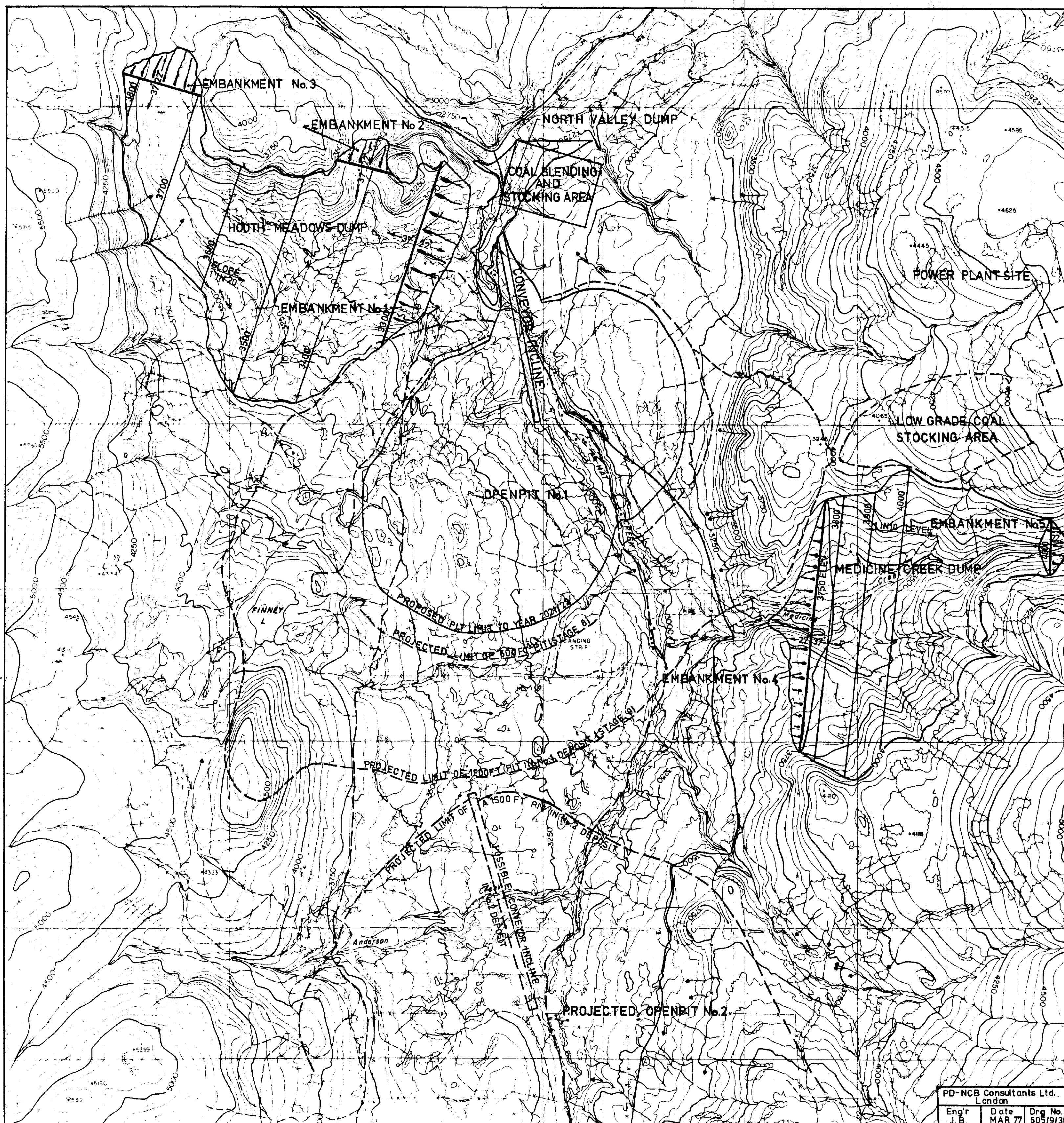


ESTIMATED MAXIMUM POWER DEMAND
IN MVA BY YEARS.
ASSUMING 75% DIVERSITY AND 0.75 POWER FACTOR.



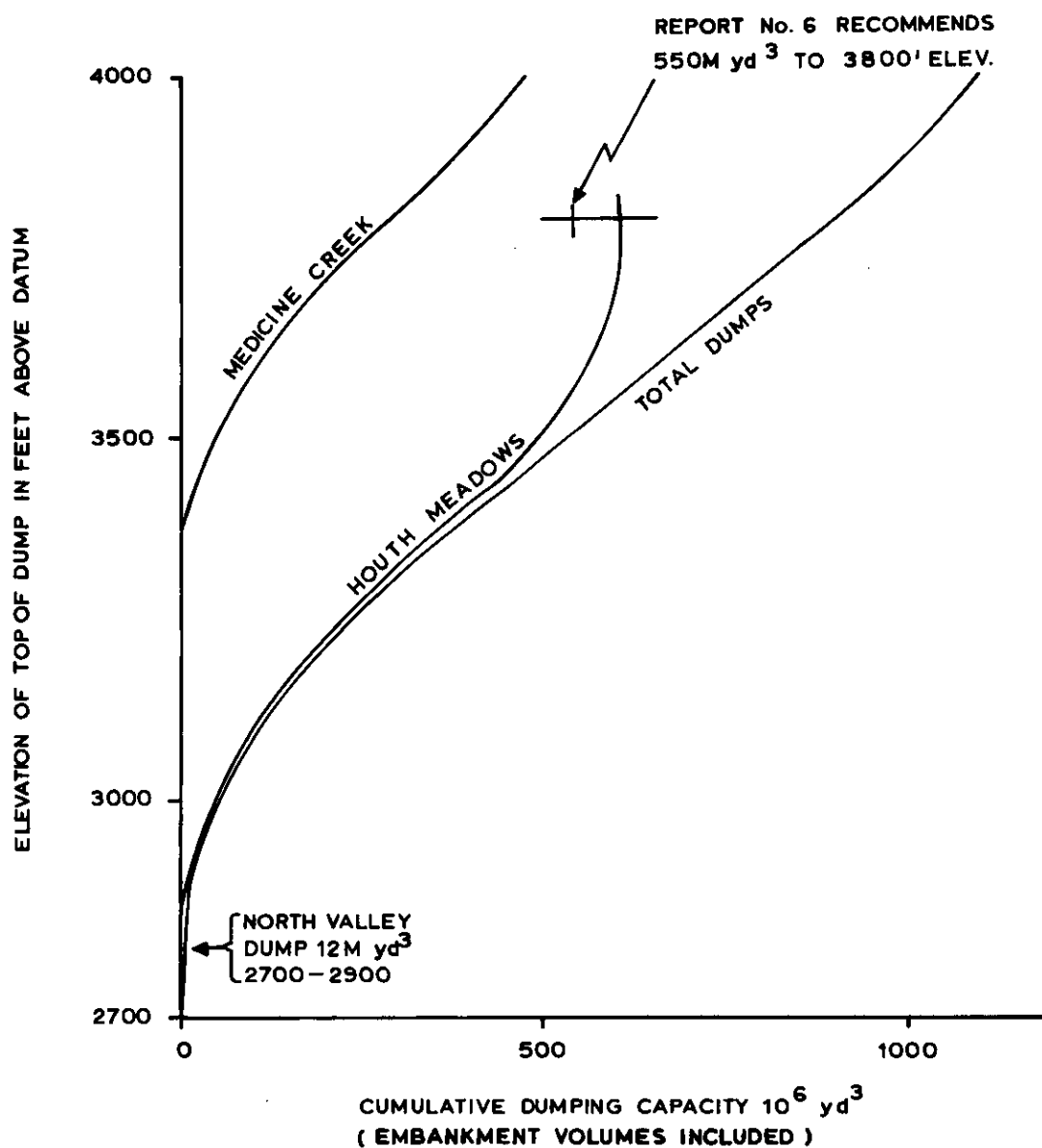
LOCATION OF PROPOSED WASTE DUMPING AREAS

SCALE = 1" = 2000'



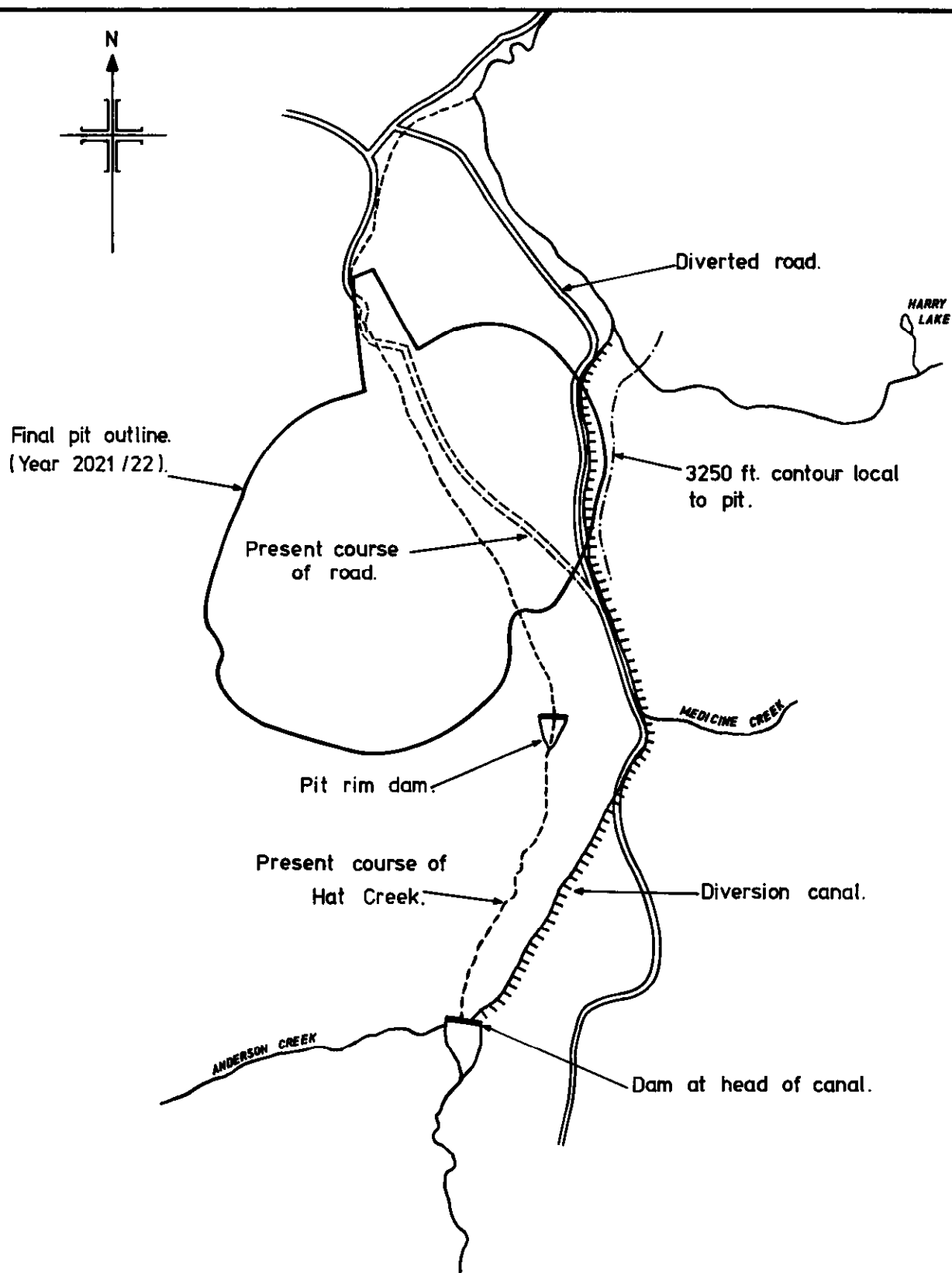
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Eng'r J.B.	Date MAR 77	Dwg No. 605/9736

CUMULATIVE CAPACITY OF WASTE DUMPS



HAT CREEK DIVERSION CANAL AND ROAD REROUTING

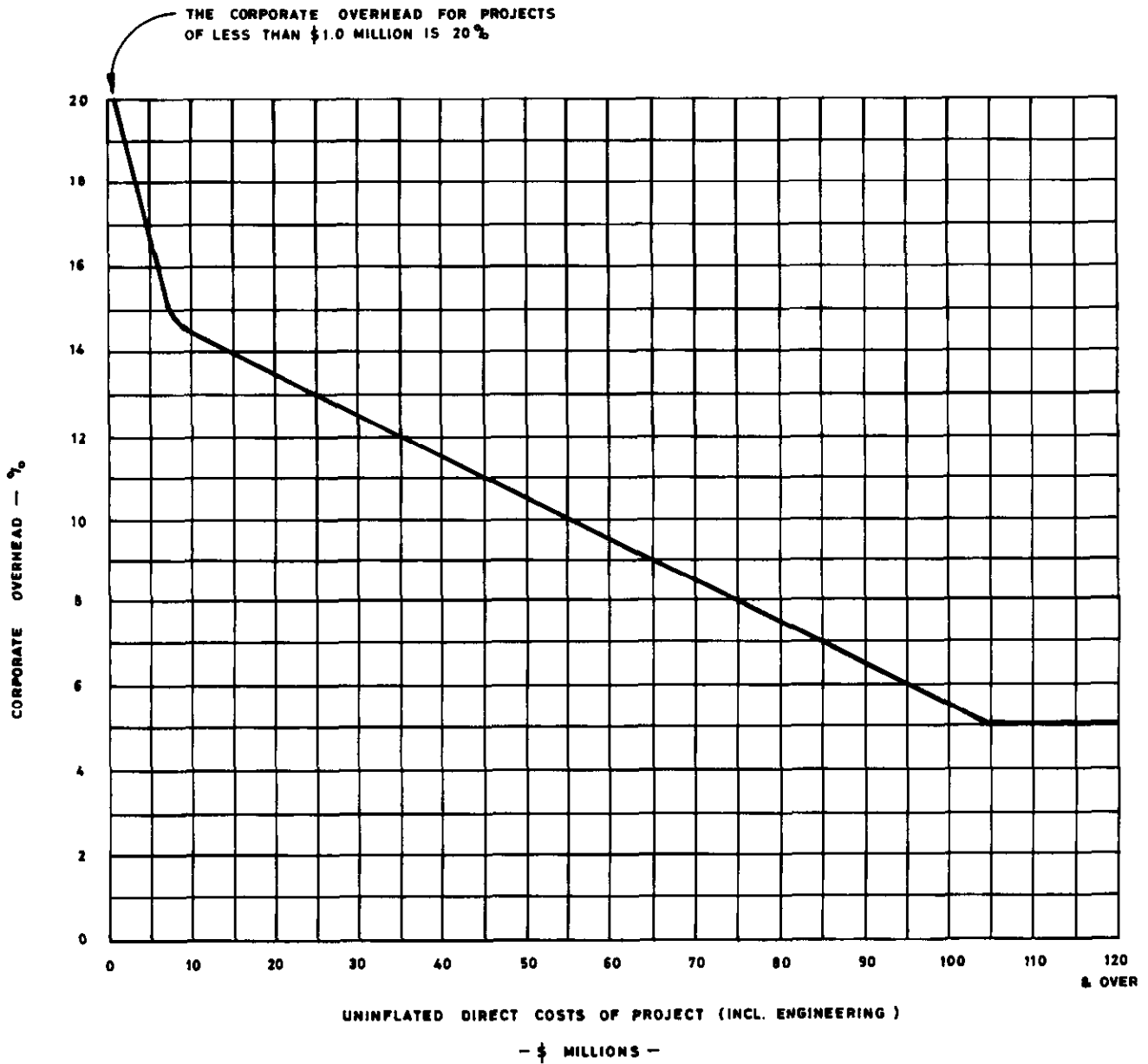
Scale 1:50000



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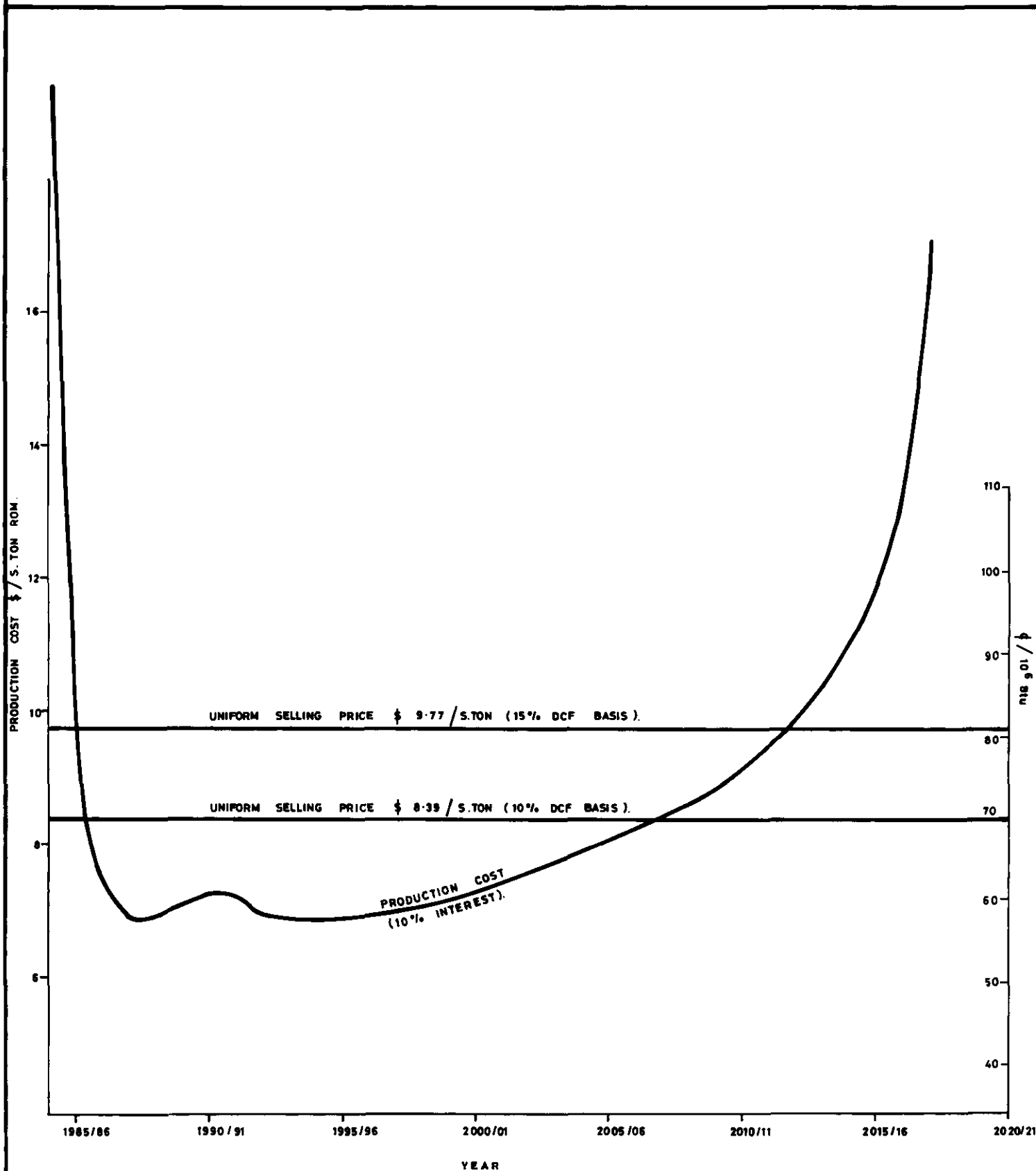
CORPORATE OVERHEAD RATES



CORPORATE OVERHEAD (TO THE NEAREST 0.5%) TO BE ADDED TO THE UNINFLATED DIRECT COSTS OF PROJECTS TO OBTAIN THE TOTAL COSTS BEFORE INTEREST DURING CONSTRUCTION AND BEFORE INFLATION.

PRODUCTION COST AND UNIFORM SELLING PRICE

From tables XXXI & XXXII



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Eng'r. M. A.	Date. Apr. 77	Drg. No. 605/9/40
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