



Curragh
Resources Inc.

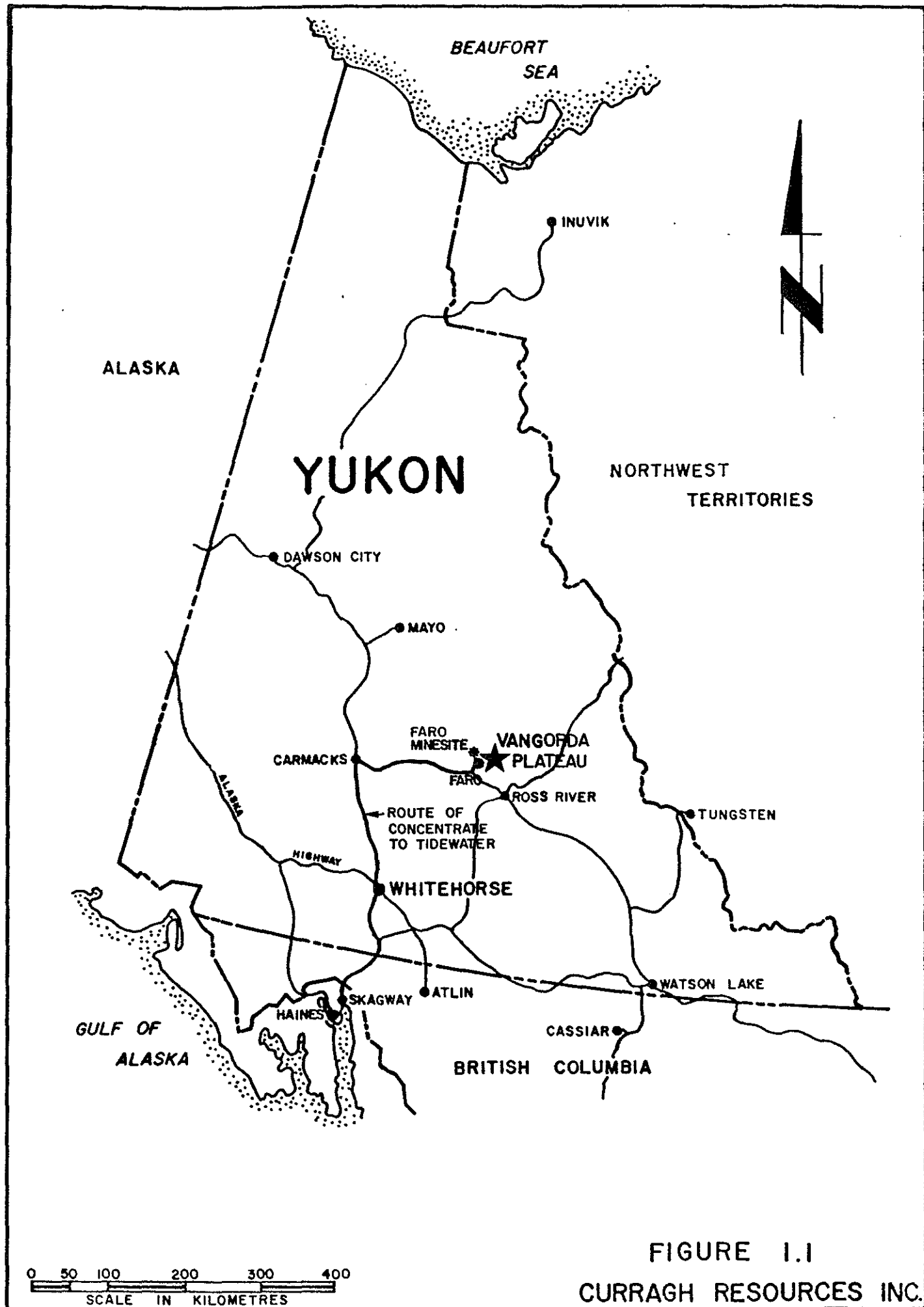
VANGORDA PLATEAU DEVELOPMENT

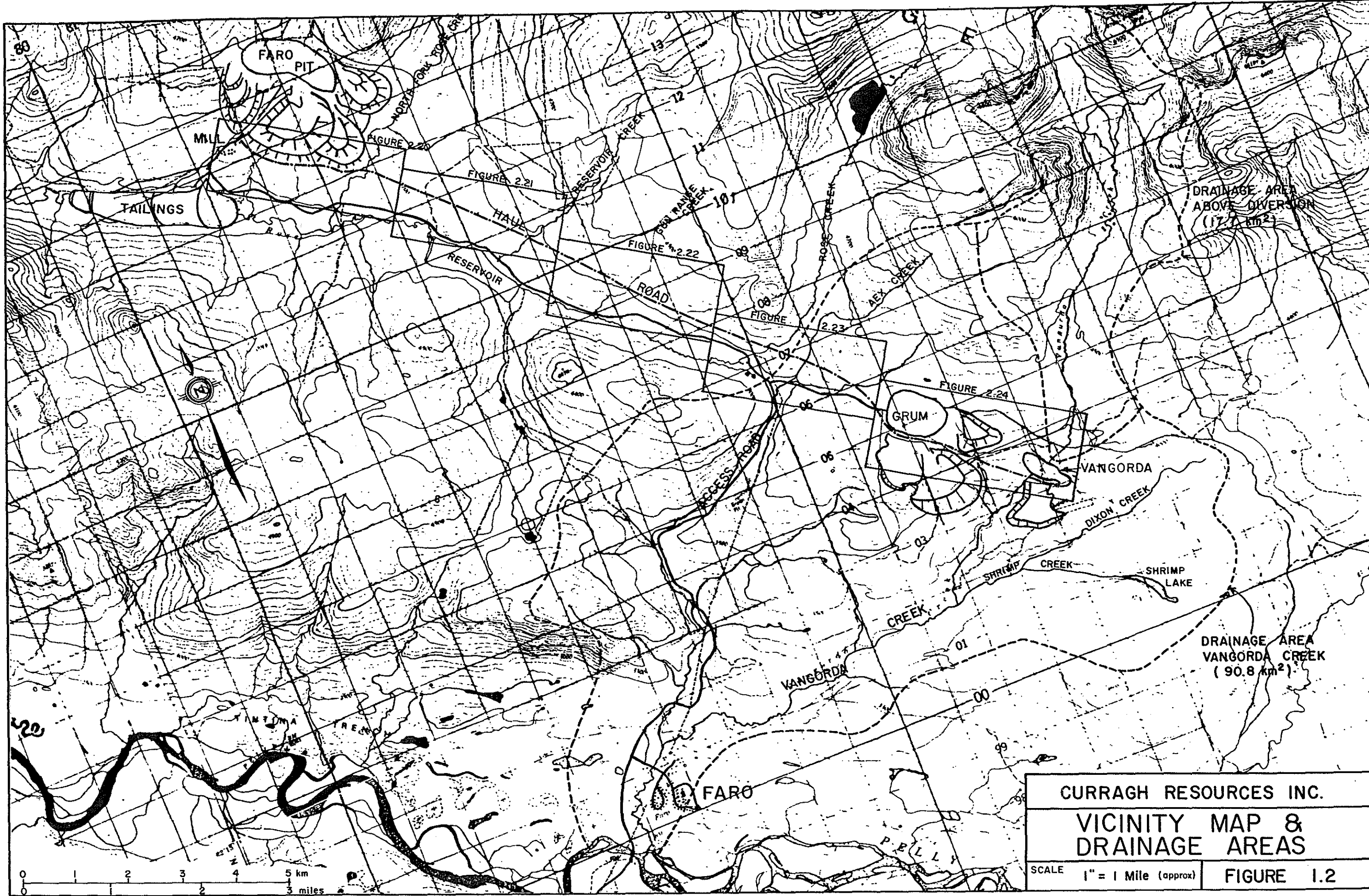
WATER LICENCE APPLICATION

VOLUME III - FIGURES

DECEMBER 1989







CURRAGH RESOURCES INC.

VICINITY MAP &
DRAINAGE AREAS

SCALE 1" = 1 Mile (approx)

FIGURE 1.2

CURRAGH RESOURCES INC.

GEOLOGY OF THE ANVIL RANGE LEAD-ZINC-SILVER DISTRICT

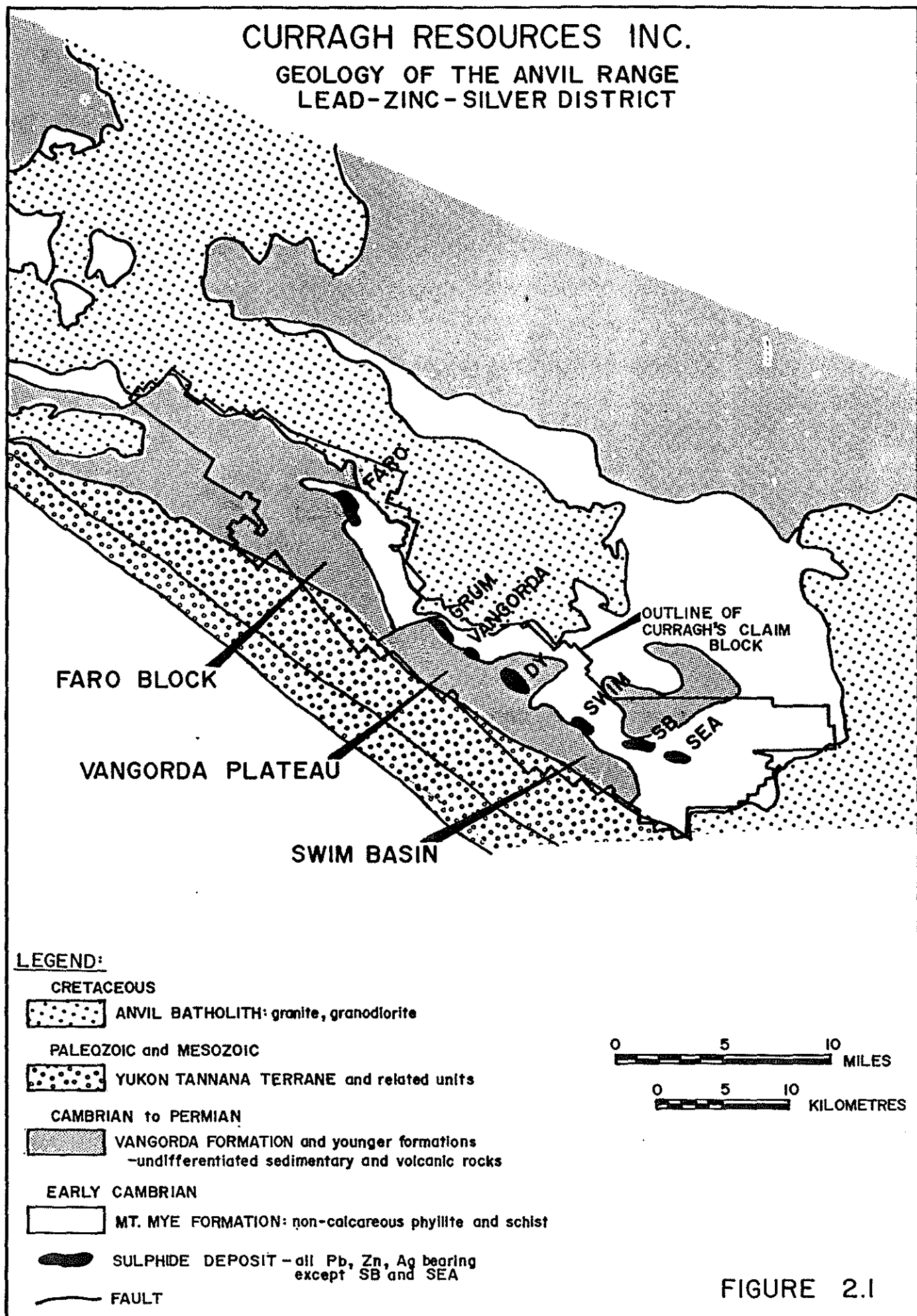
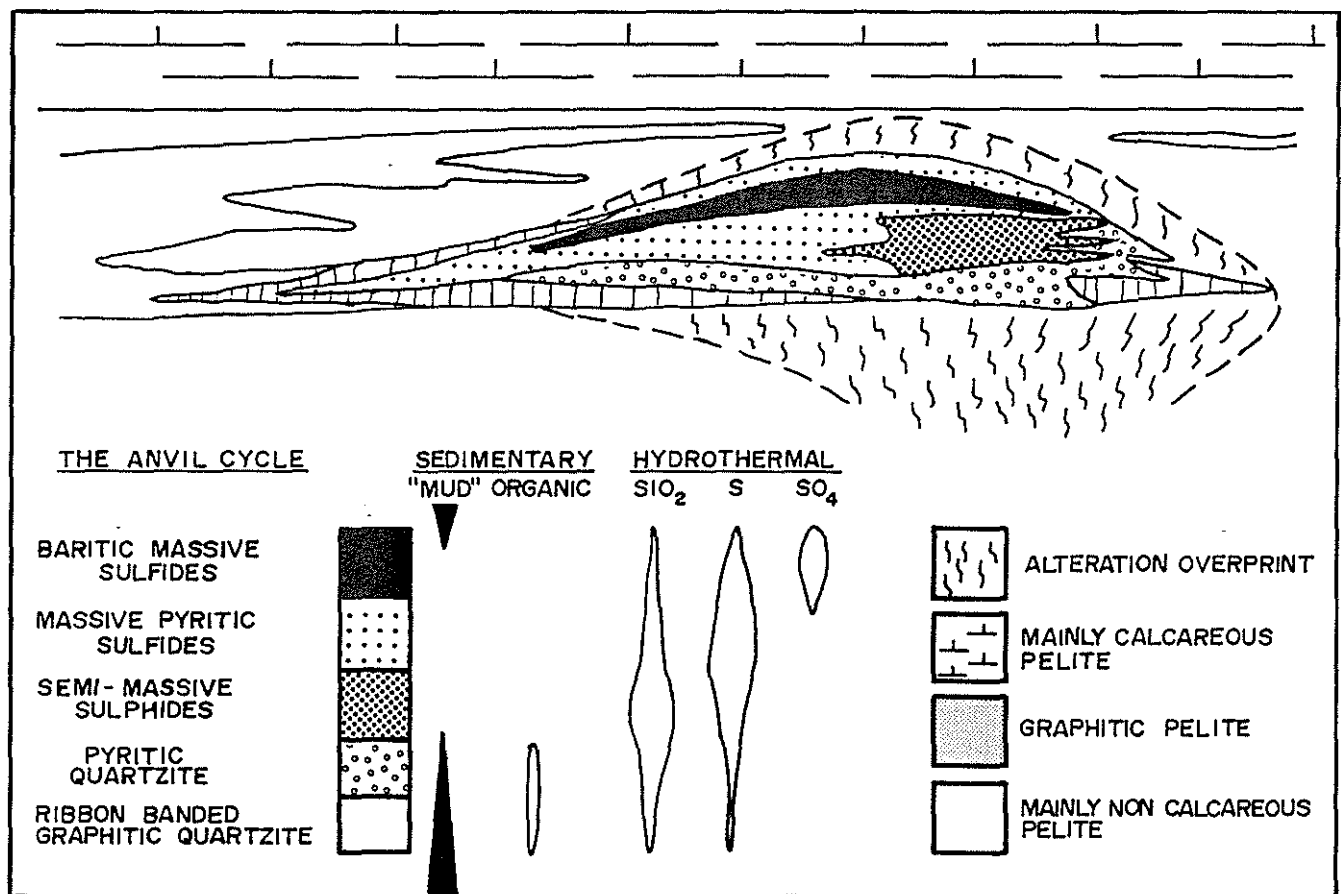
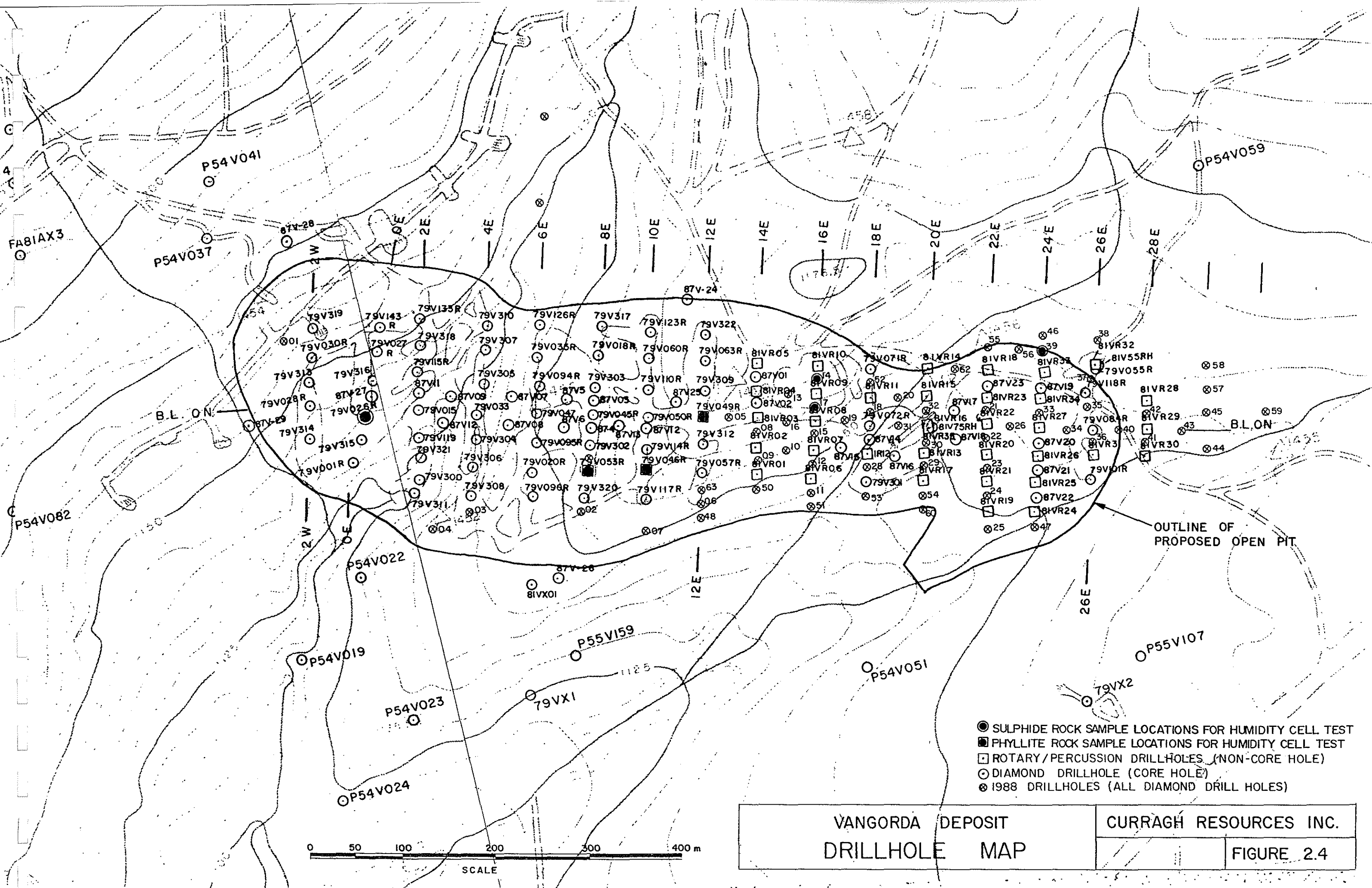


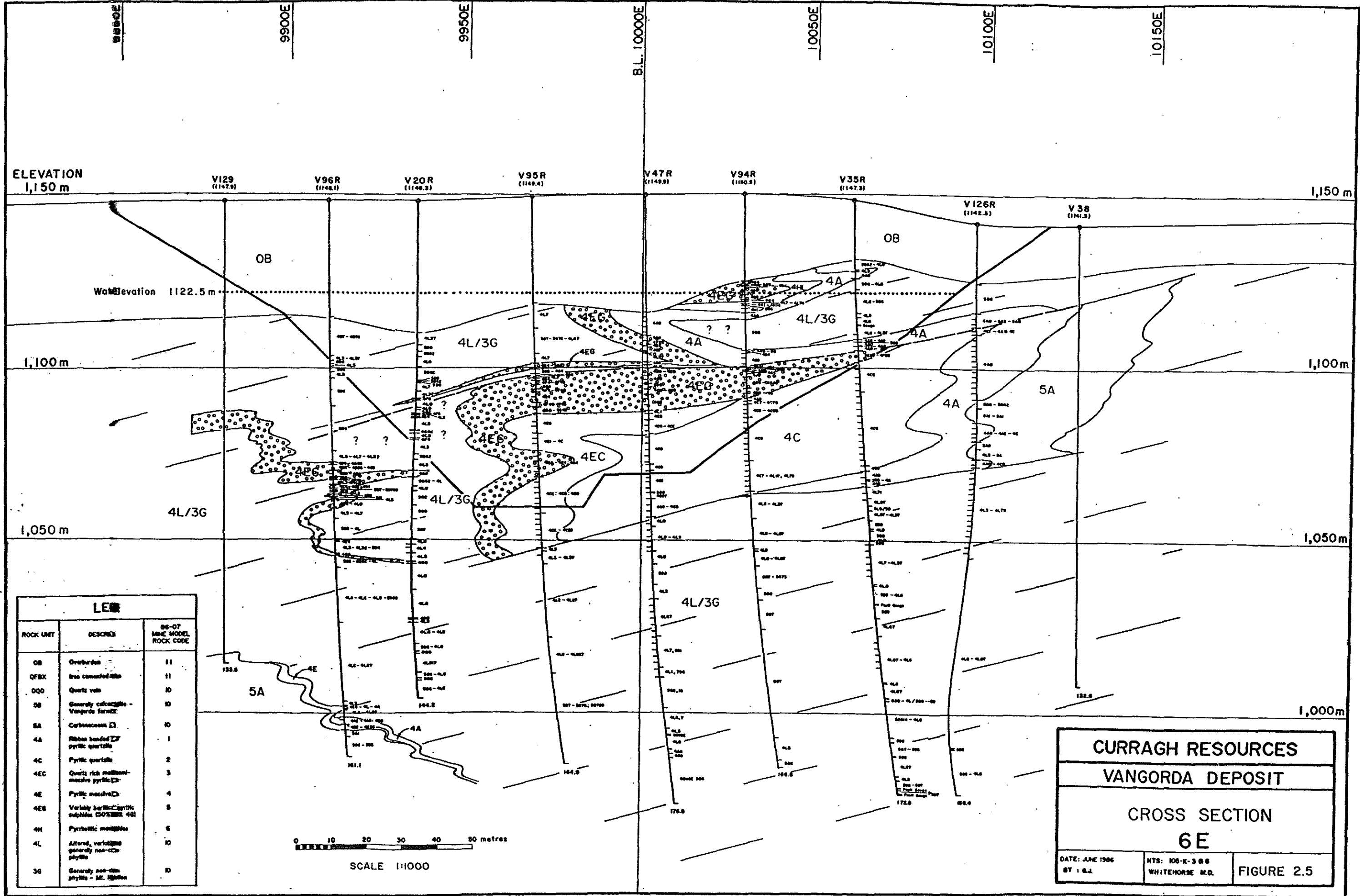
FIGURE 2.1

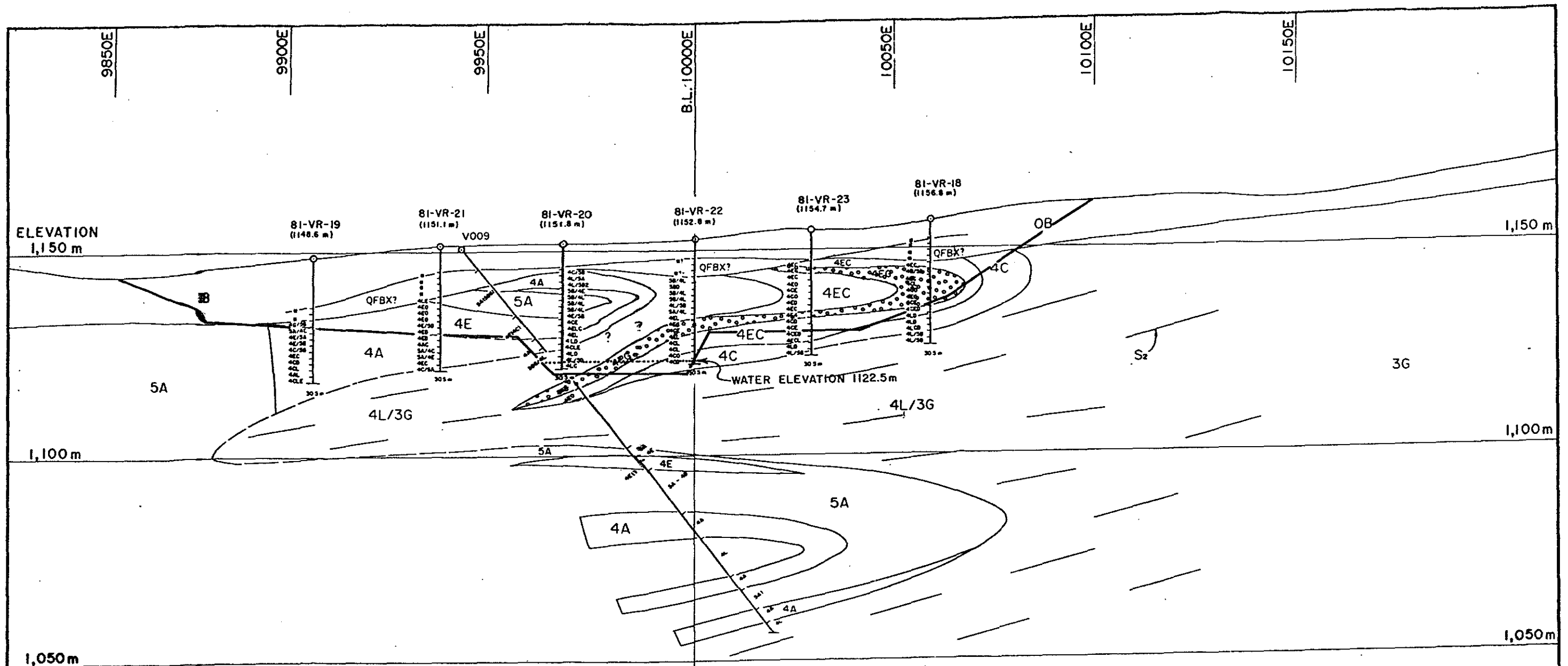


B C B Drafting Service

IDEALIZED ANVIL CYCLE

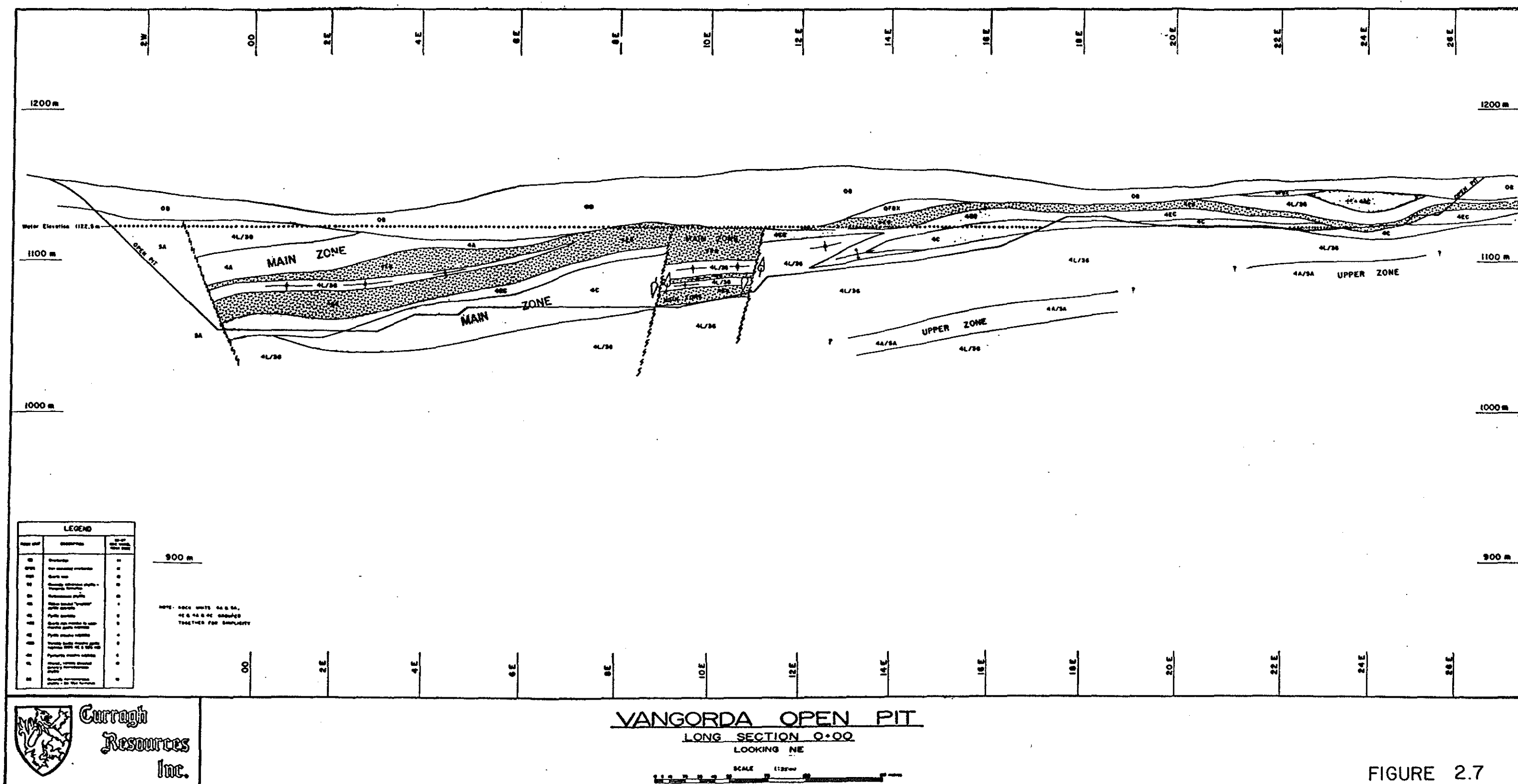


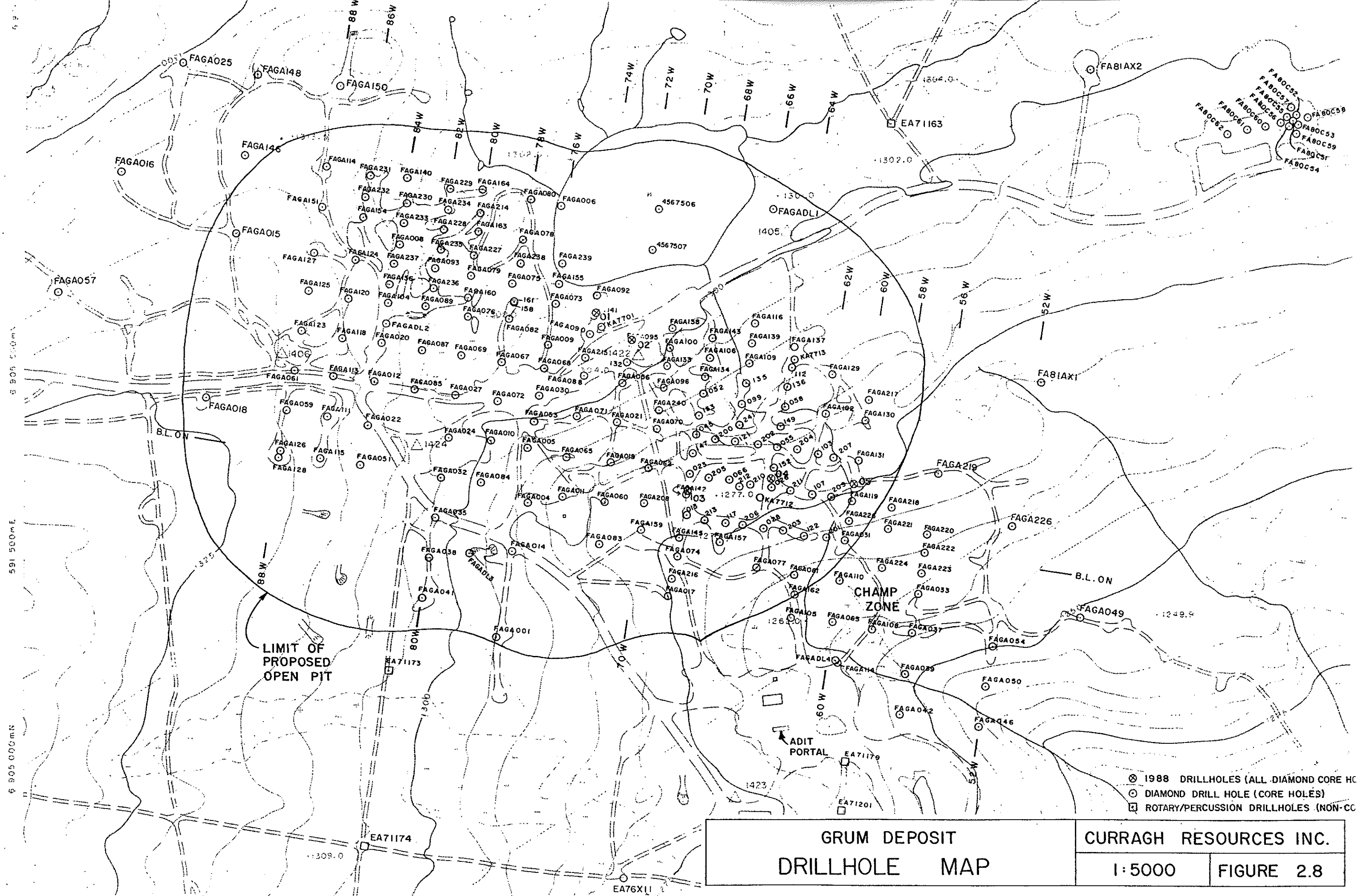


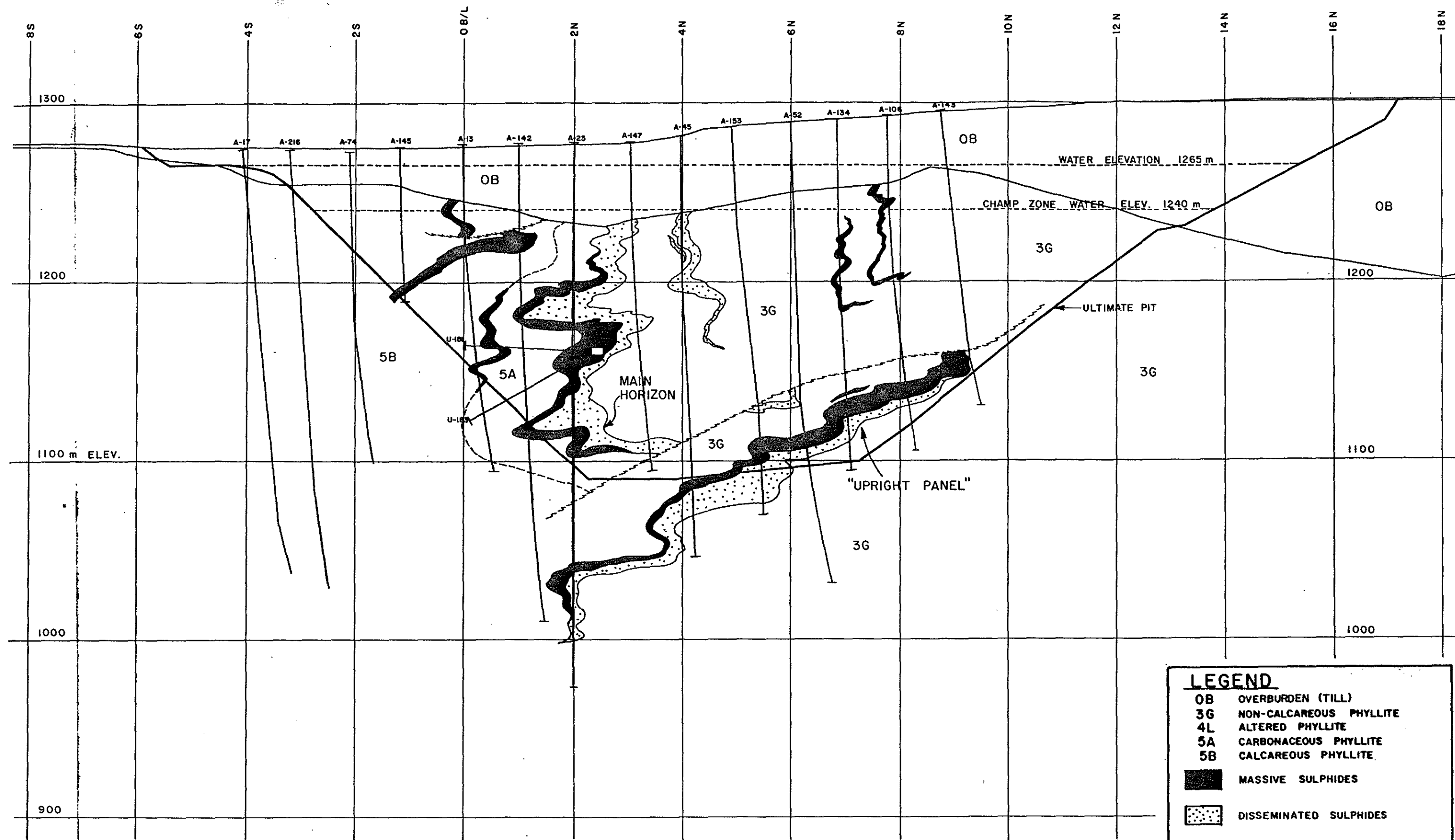


LEGEND		
ROCK UNIT	DESCRIPTION	86-07 MINE MODEL ROCK CODE
OB	Overburden	11
QFBX	Iron cemented overburden	11
5A	Carbonaceous phyllite	10
4A	Ribbon banded pyritic quartzite	1
4C	Pyritic quartzite	2
4EC	Quartz rich massive to massive pyritic sulphide	3
4E	Pyritic massive sulphide	4
4EG	Variably banded massive sulphides (50% 4E)	5
4H	Pyrrhotitic massive sulphide	6
4L	Altered, variably bleached, generally non-calcareous phyllite	10
3G	Generally non-calcareous phyllite - Mt. Mee Fels	10

CURRAGH RESOURCES		
VANGORDA DEPOSIT		
VERTICAL CROSS SECTION 22 E		
DATE: JUNE 1986 BY: G.J.	NTS. 105-K-3 & 6 WHITEHORSE M.D.	FIGURE 2.6

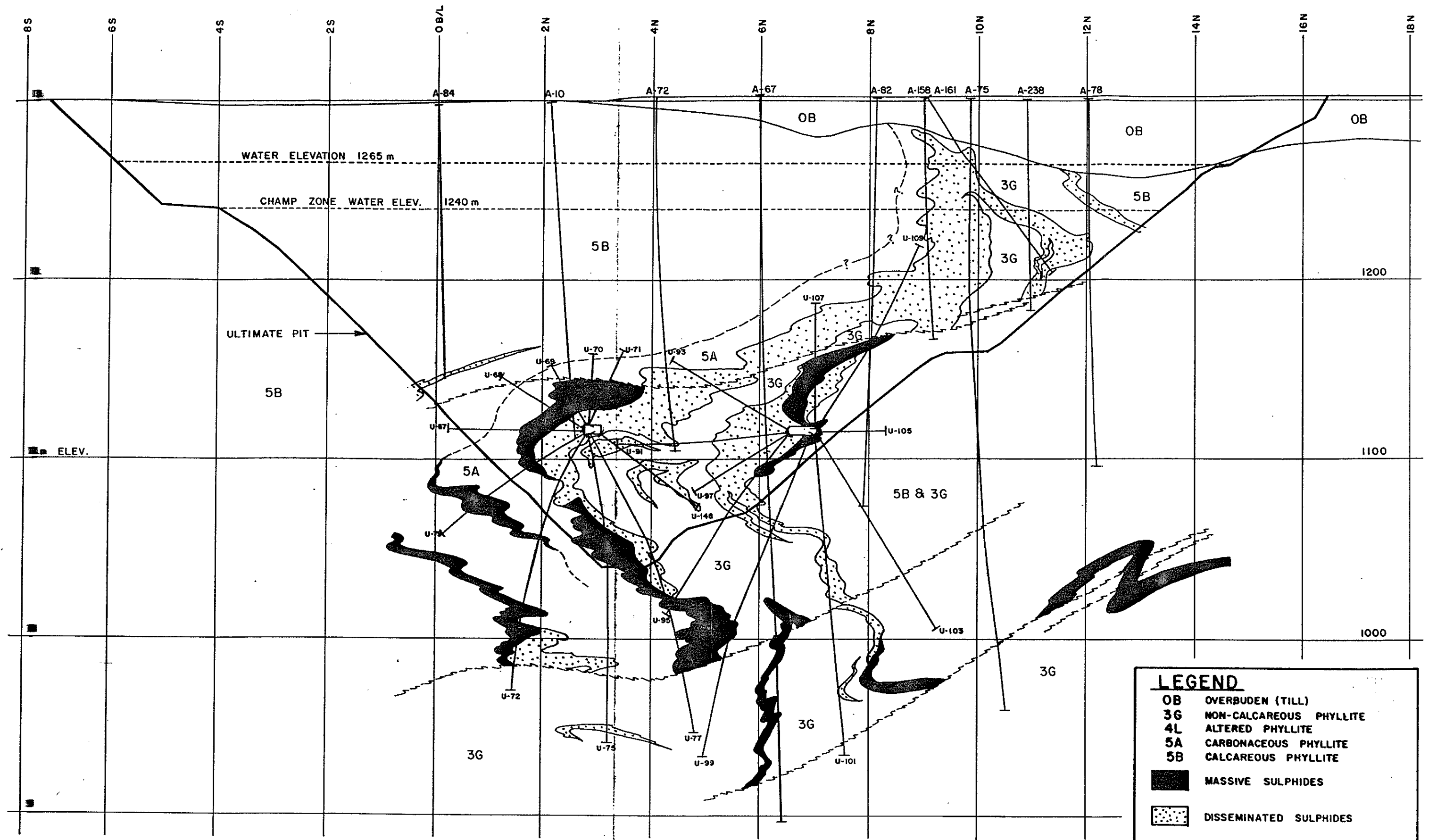






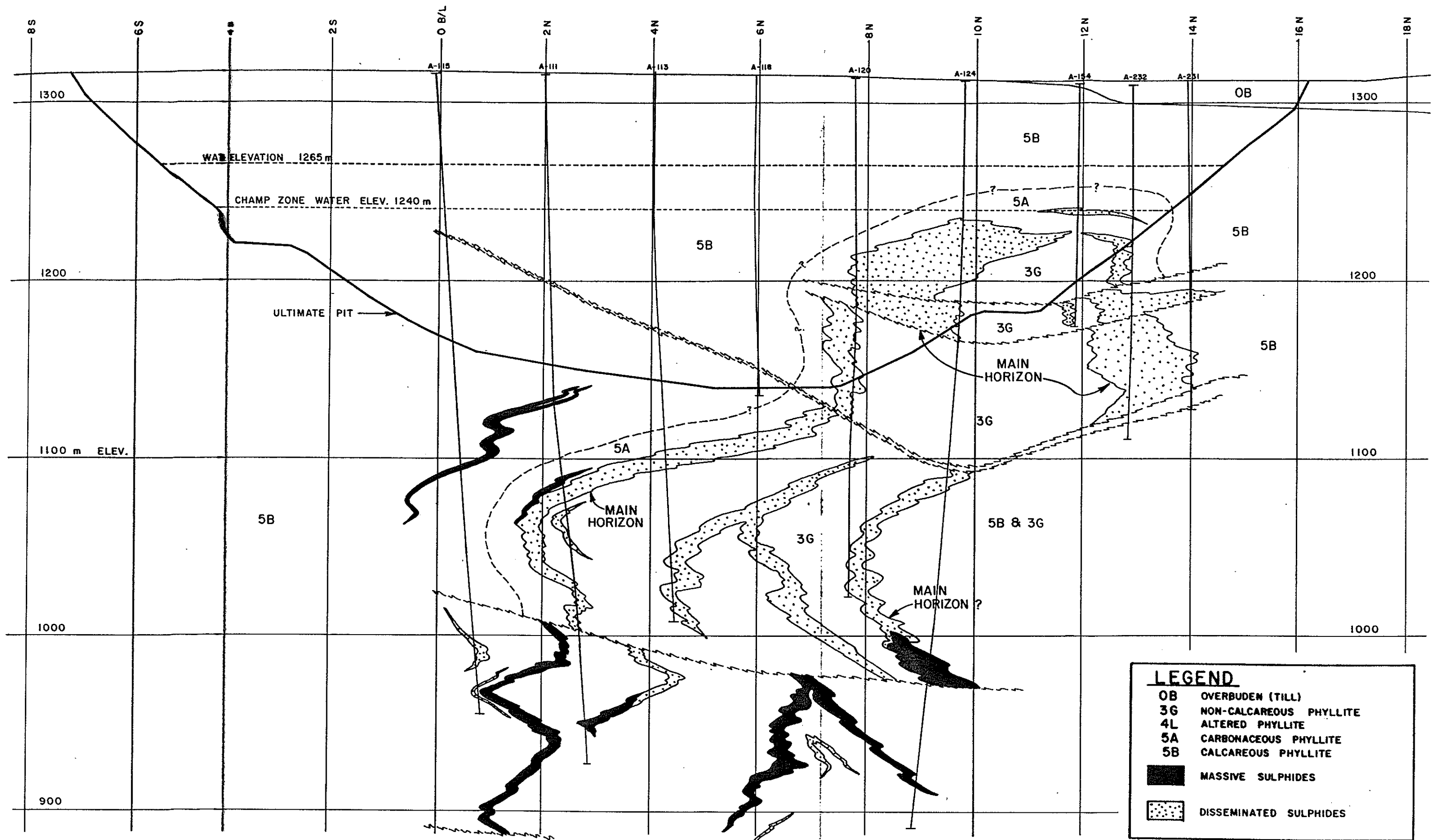
LEGEND

OB	OVERBURDEN (TILL)
3G	NON-CALCAREOUS PHYLLITE
4L	ALTERED PHYLLITE
5A	CARBONACEOUS PHYLLITE
5B	CALCAREOUS PHYLLITE
	MASSIVE SULPHIDES
	DISSEMINATED SULPHIDES



LEGEND

OB	OVERBUDEN (TILL)
3G	NON-CALCAREOUS PHYLLITE
4L	ALTERED PHYLLITE
5A	CARBONACEOUS PHYLLITE
5B	CALCAREOUS PHYLLITE
	MASSIVE SULPHIDES
	DISSEMINATED SULPHIDES



LEGEND

OB

OVERBUDEN (TILL)

3G

NON-CALCAREOUS PHYLLITE

4L

ALTERED PHYLLITE

5A

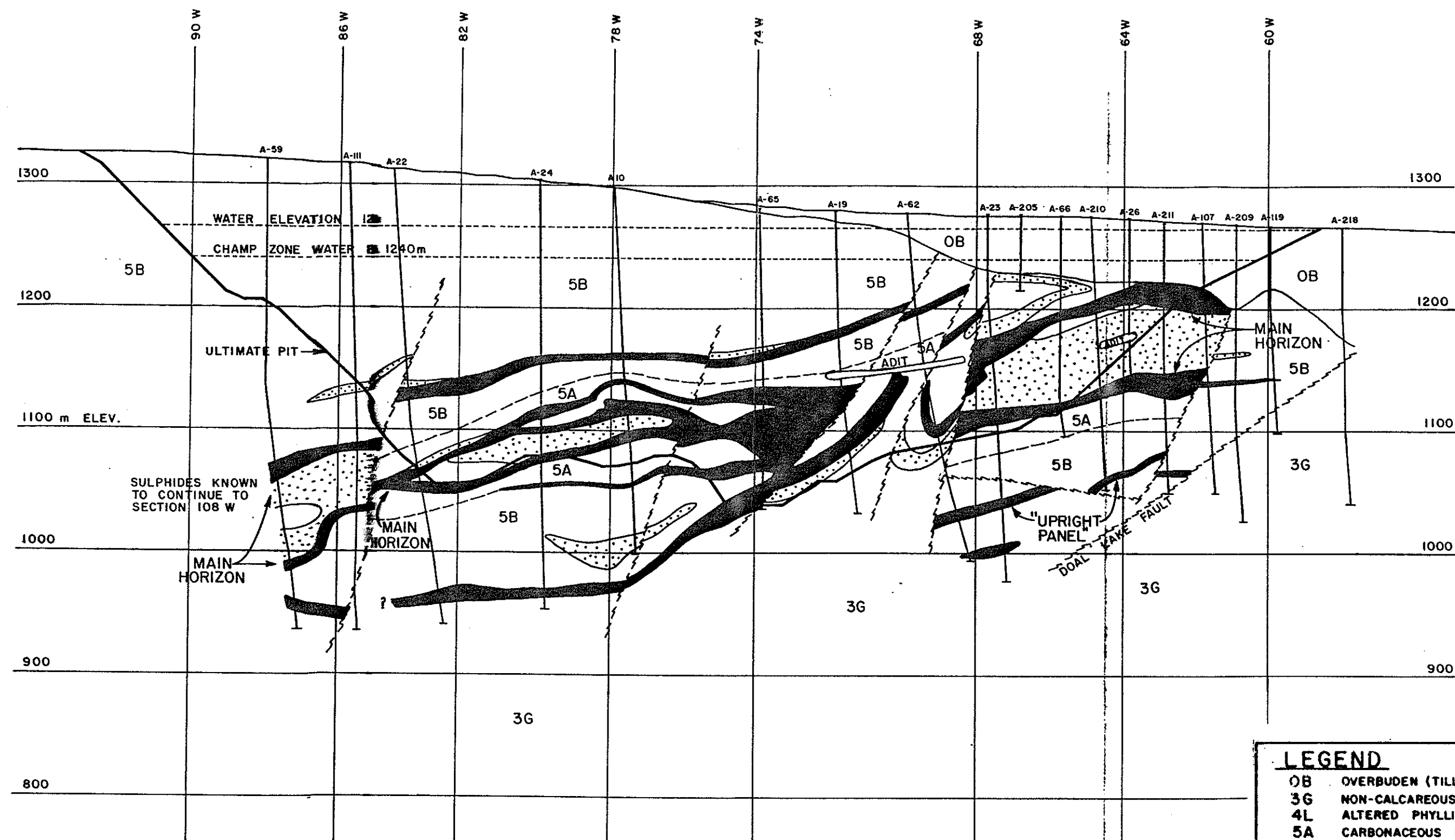
CARBONACEOUS PHYLLITE

5B

CALCAREOUS PHYLLITE

MASSIVE SULPHIDES

DISSEMINATED SULPHIDES



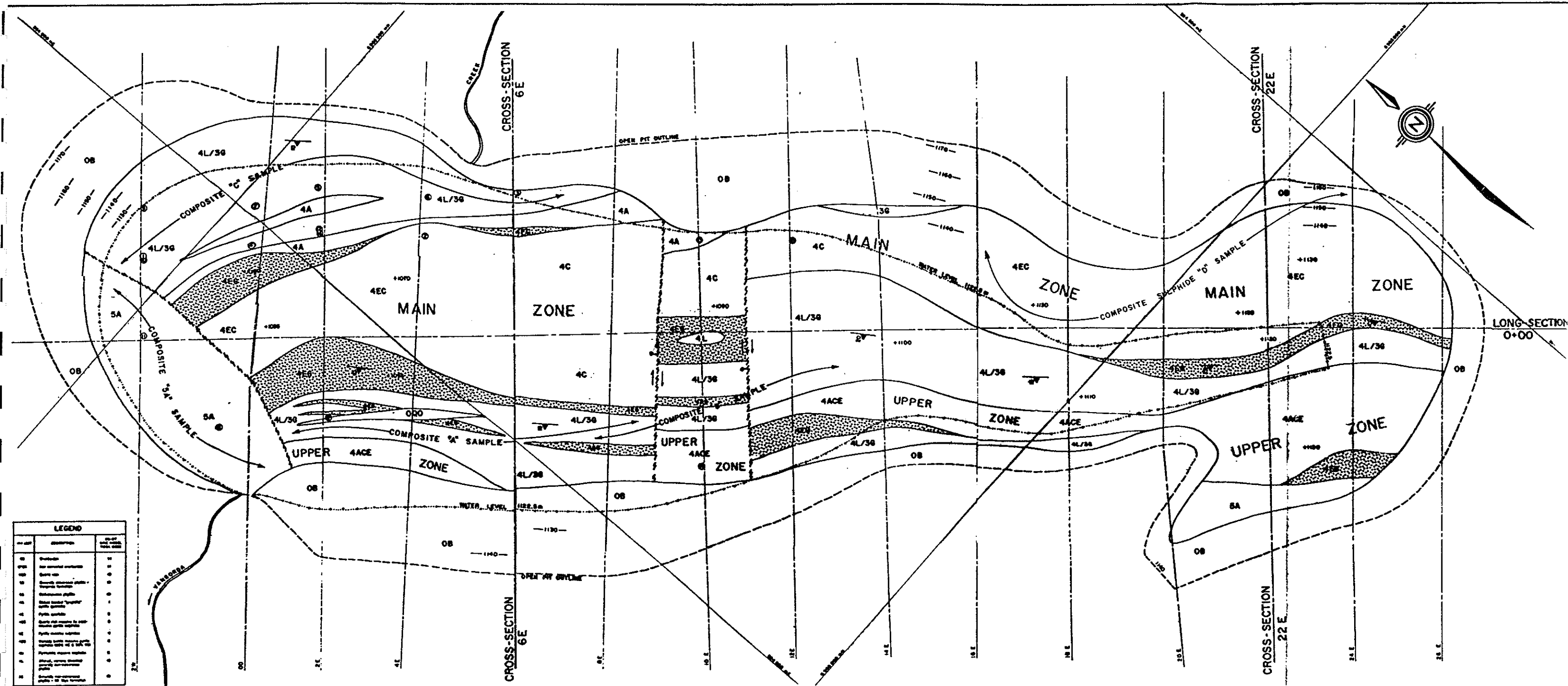
LEGEND	
OB	OVERBUDEN (TILL)
3G	NON-CALCAREOUS PHYLLITE
4L	ALTERED PHYLLITE
5A	CARBONACEOUS PHYLLITE
5B	CALCAREOUS PHYLLITE
	MASSIVE SULPHIDES
	DISSEMINATED SULPHIDES

GRUM DEPOSIT
LONG SECTION 02N

CURRAGH RESOURCES INC.

1:3500

FIGURE 2.13



LEGEND	
●	SLAKE TEST SAMPLE
—●—	COMPOSITE "X" SAMPLE
○	GENERAL LOCATION OF BULK SAMPLES FOR ACID/BASE TESTING
+1130	ELEVATION IN METRES
—1130—	



VANGORDA OPEN PIT GEOLOGY

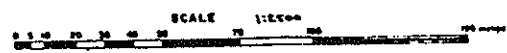
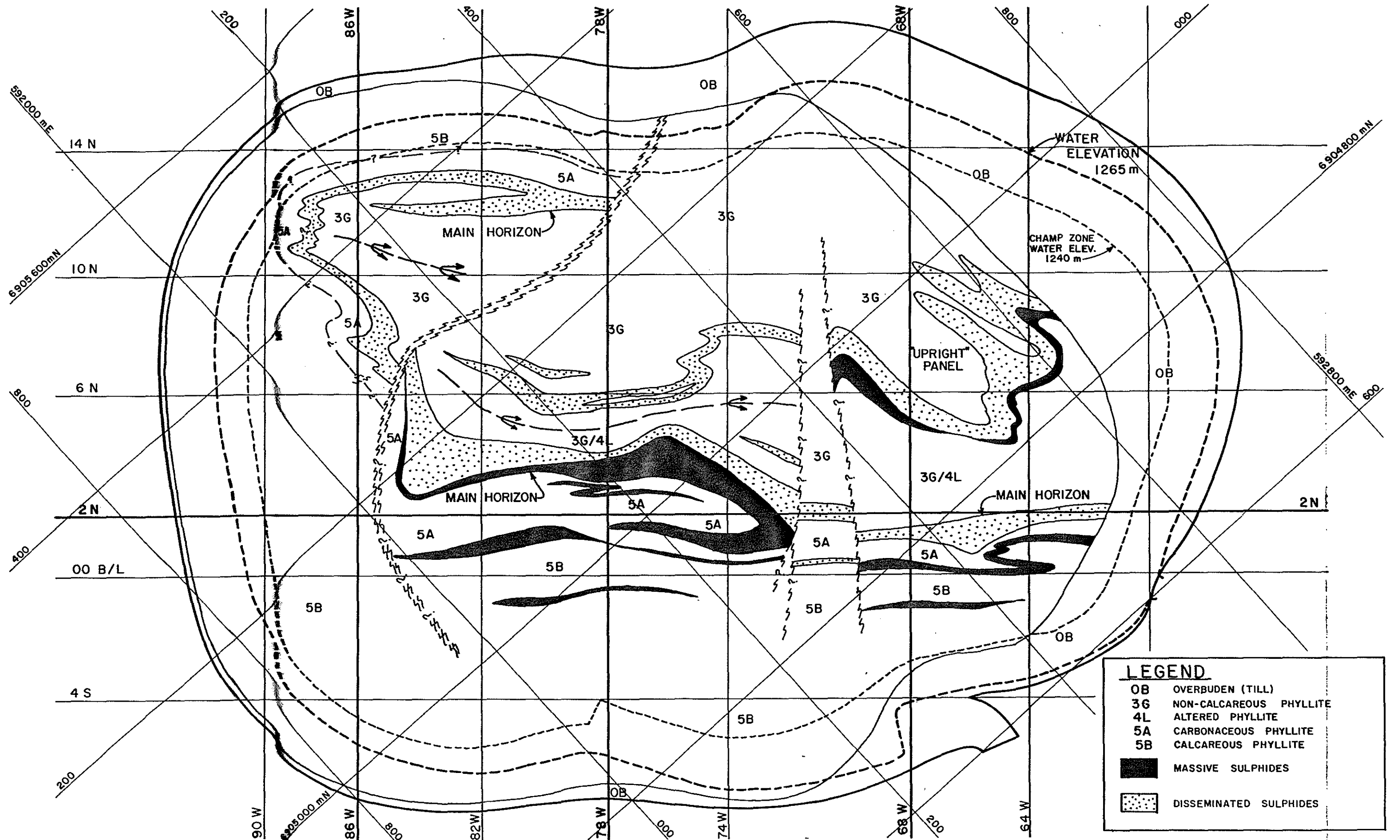


FIGURE 2.14



GRUM OPEN PIT
GEOLOGY

CURRAGH RESOURCES INC.

1:3500

FIGURE 2.15

**CURRAGH RESOURCES INC.
PLATEAU DEVELOPMENT ACTIVITIES**

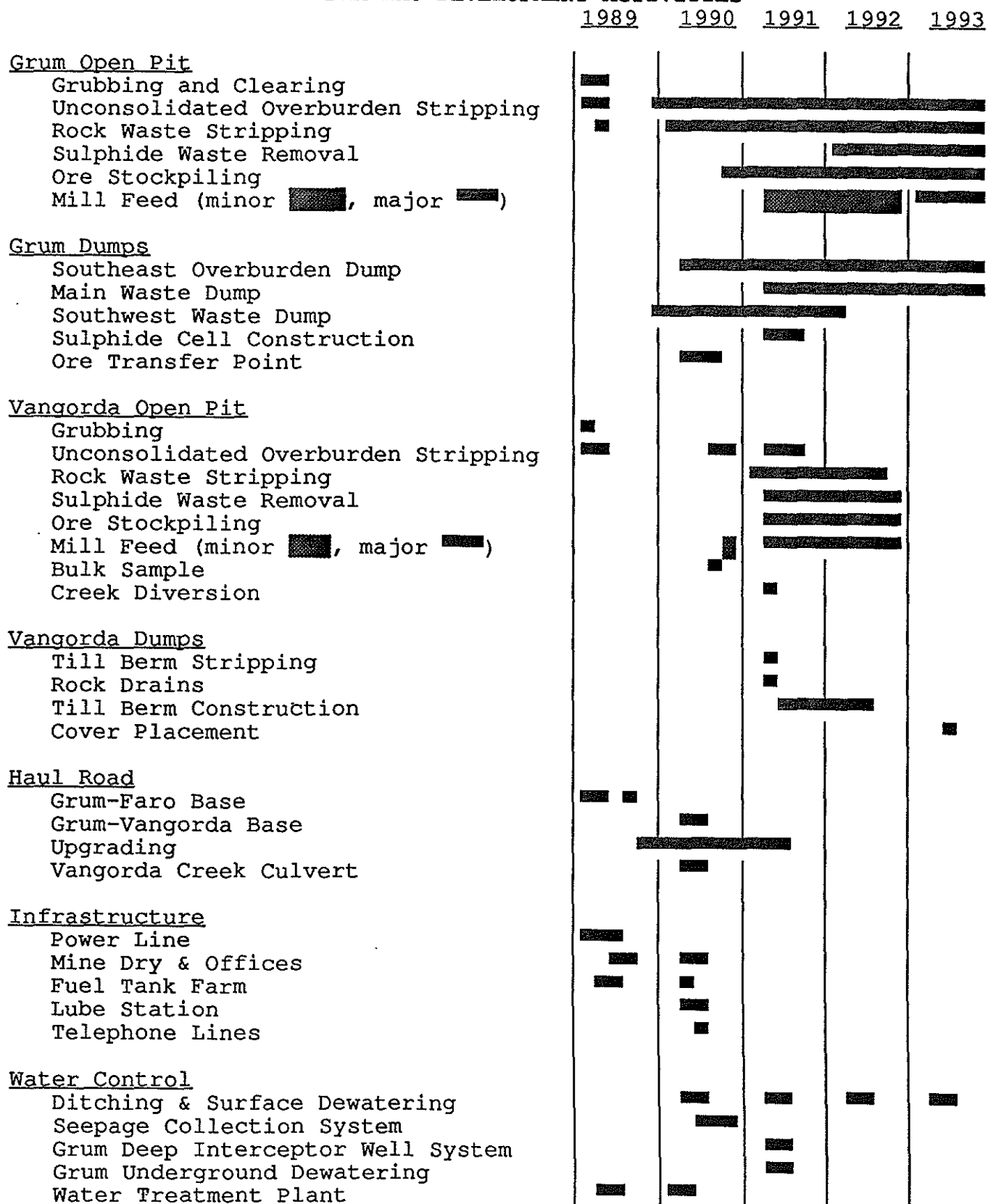


FIGURE 2.17

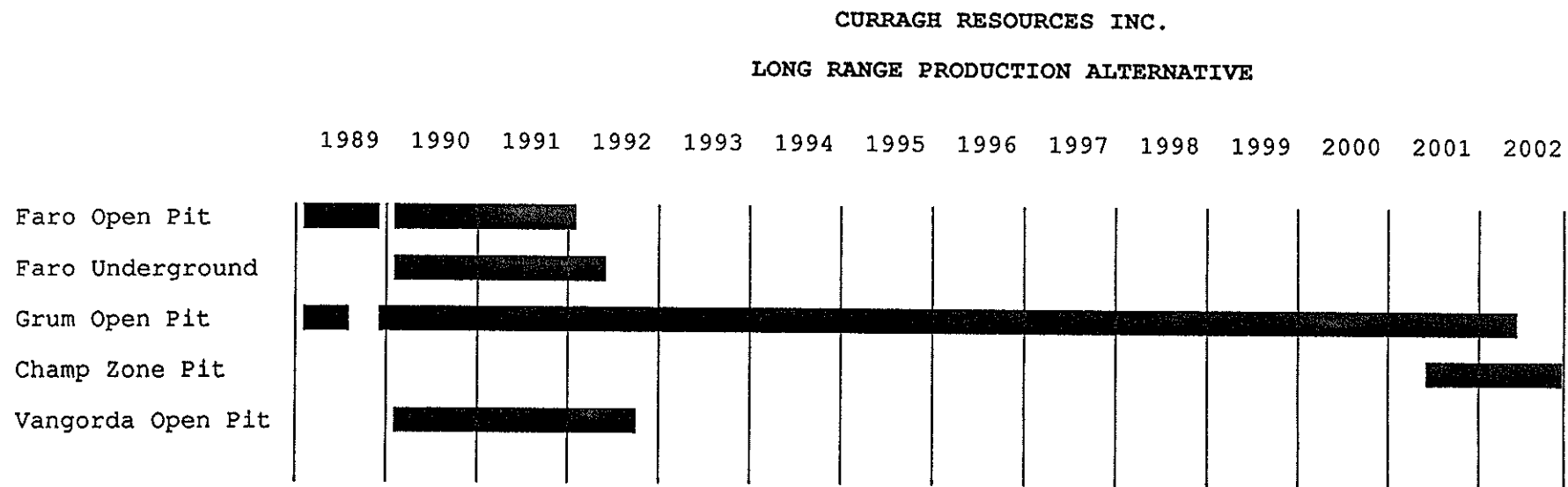
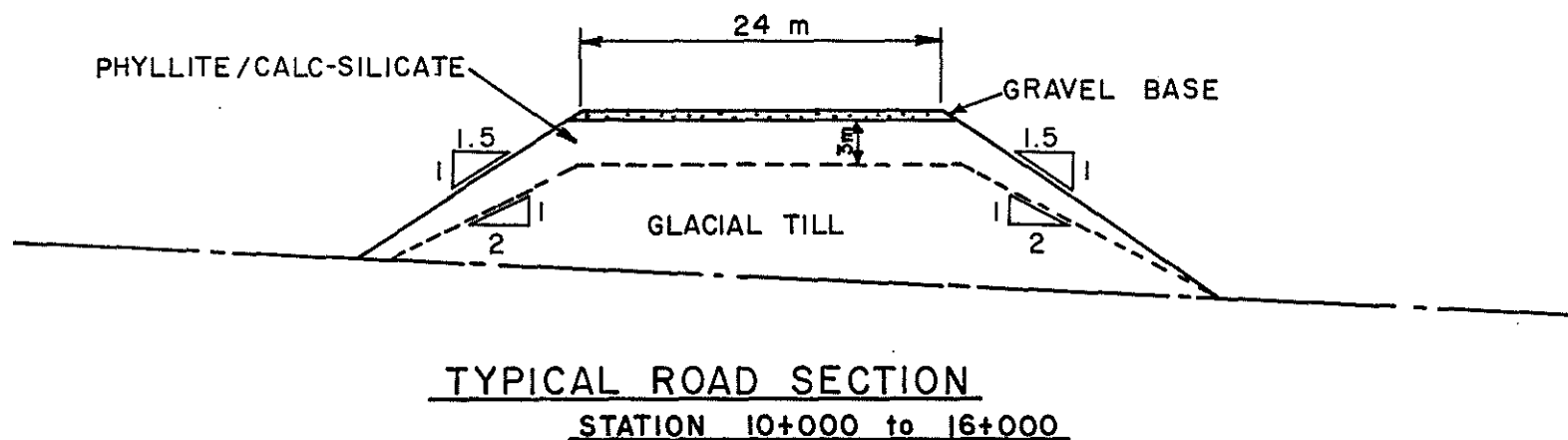
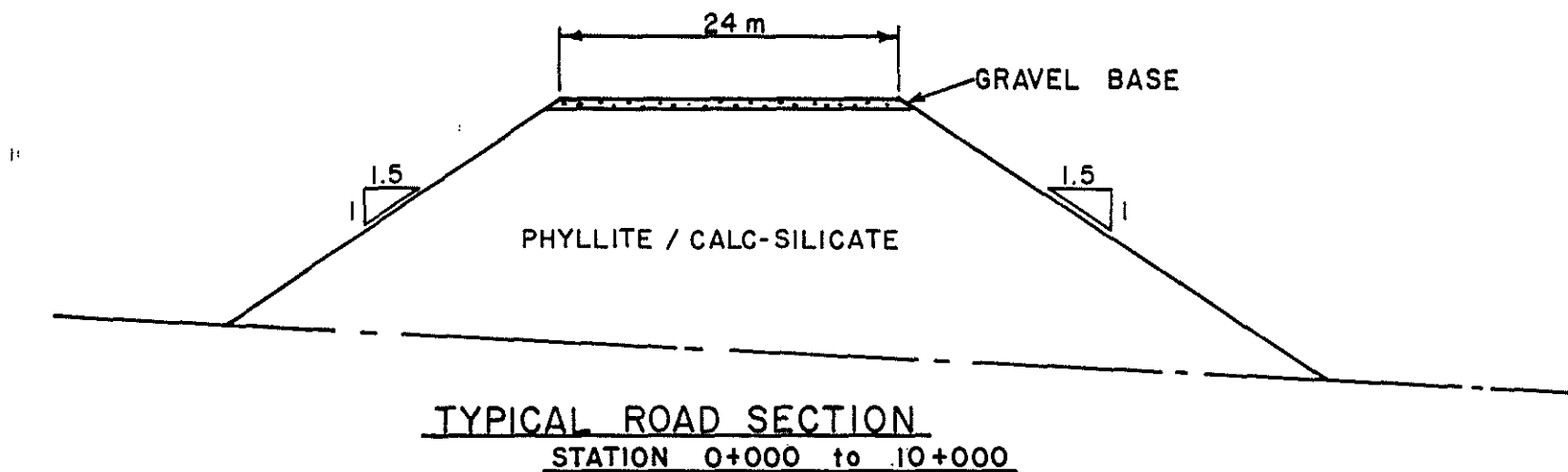
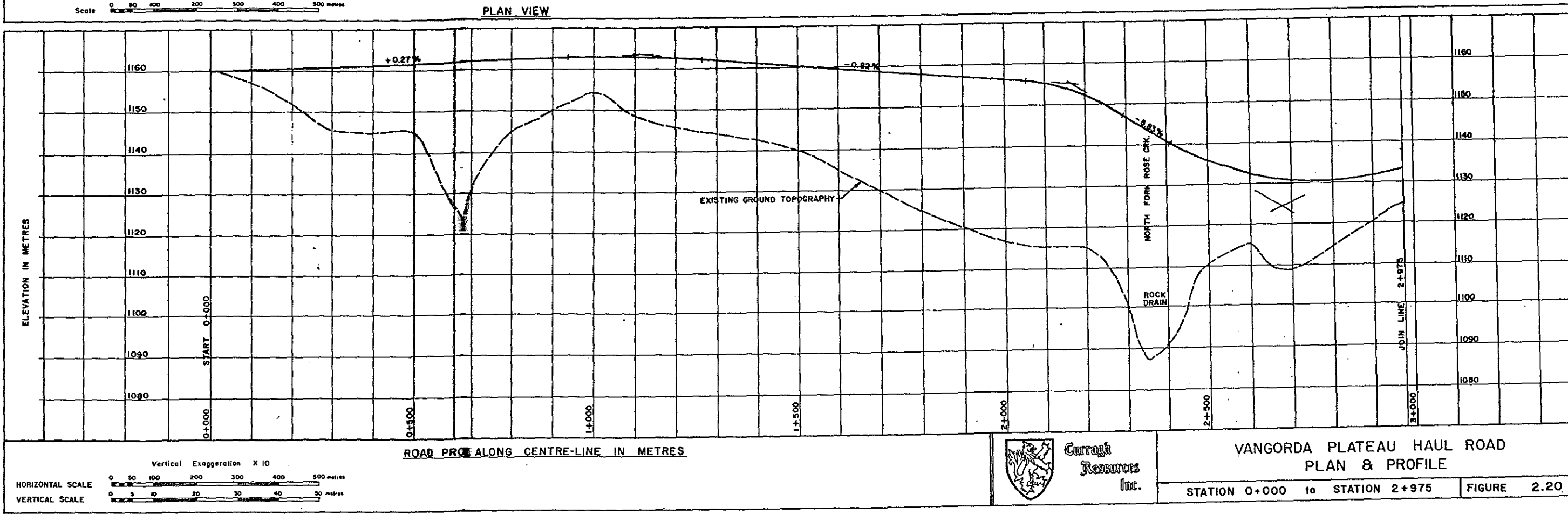
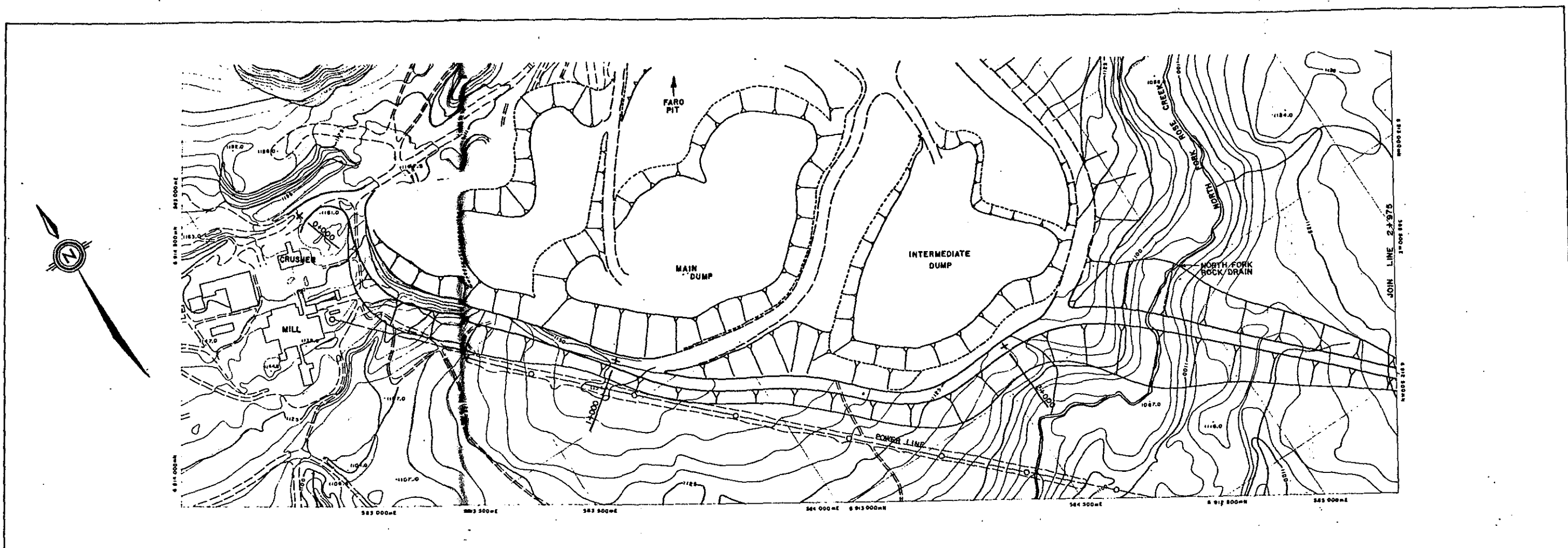
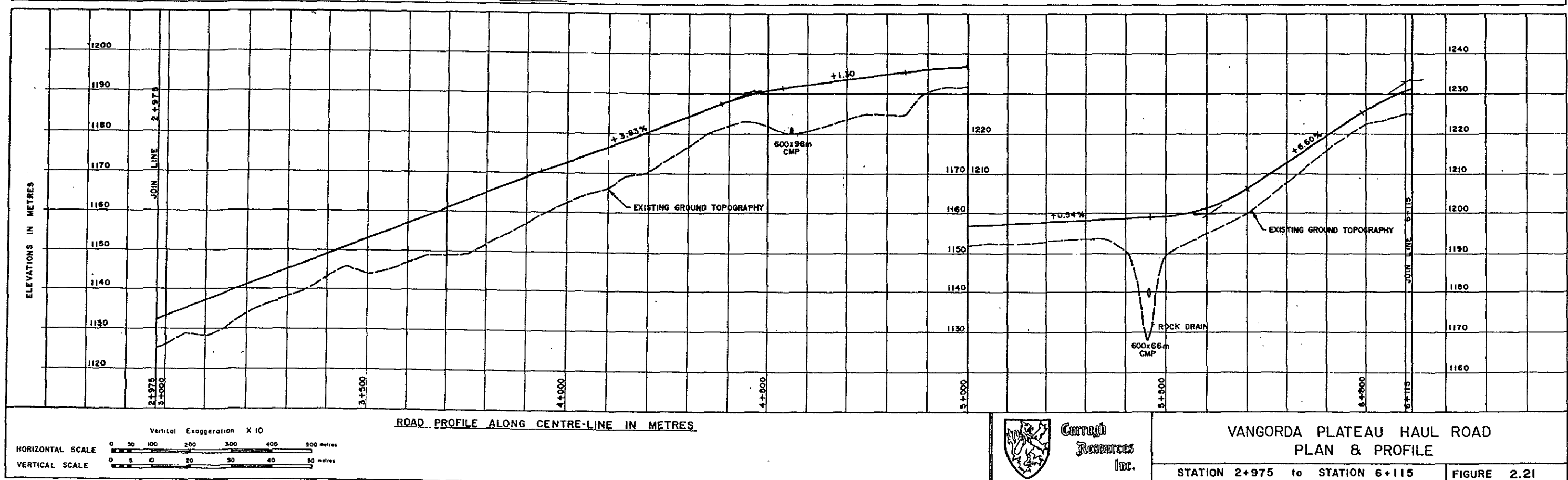
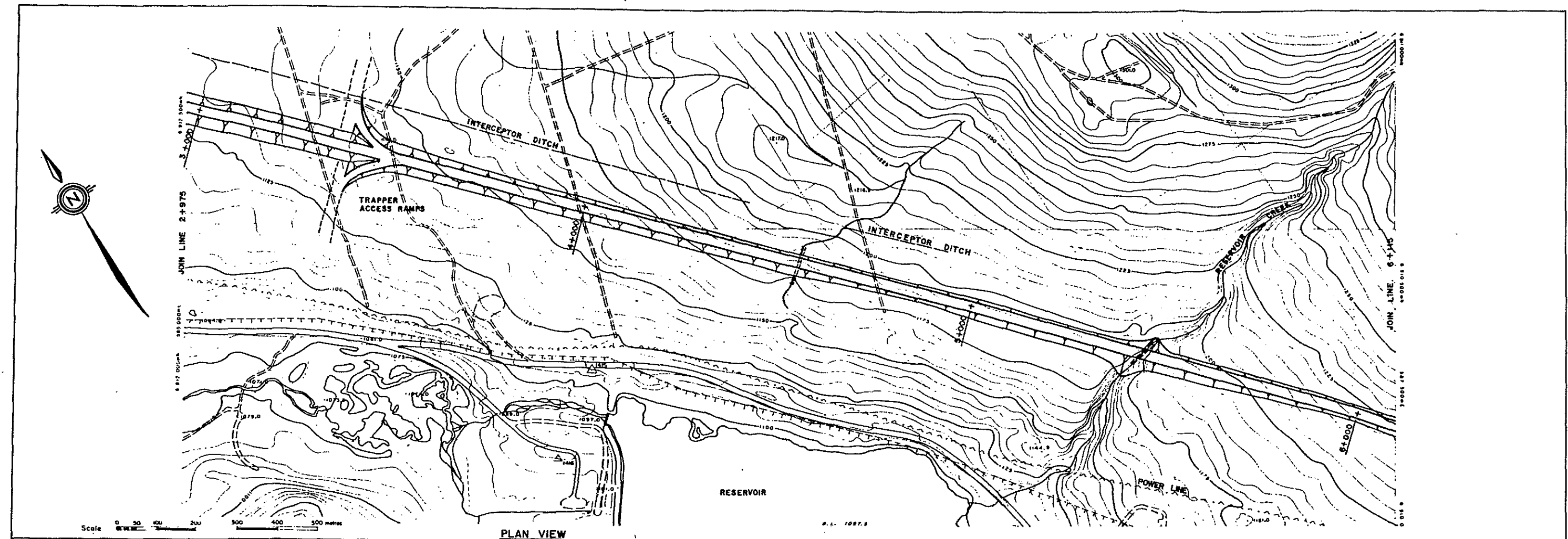


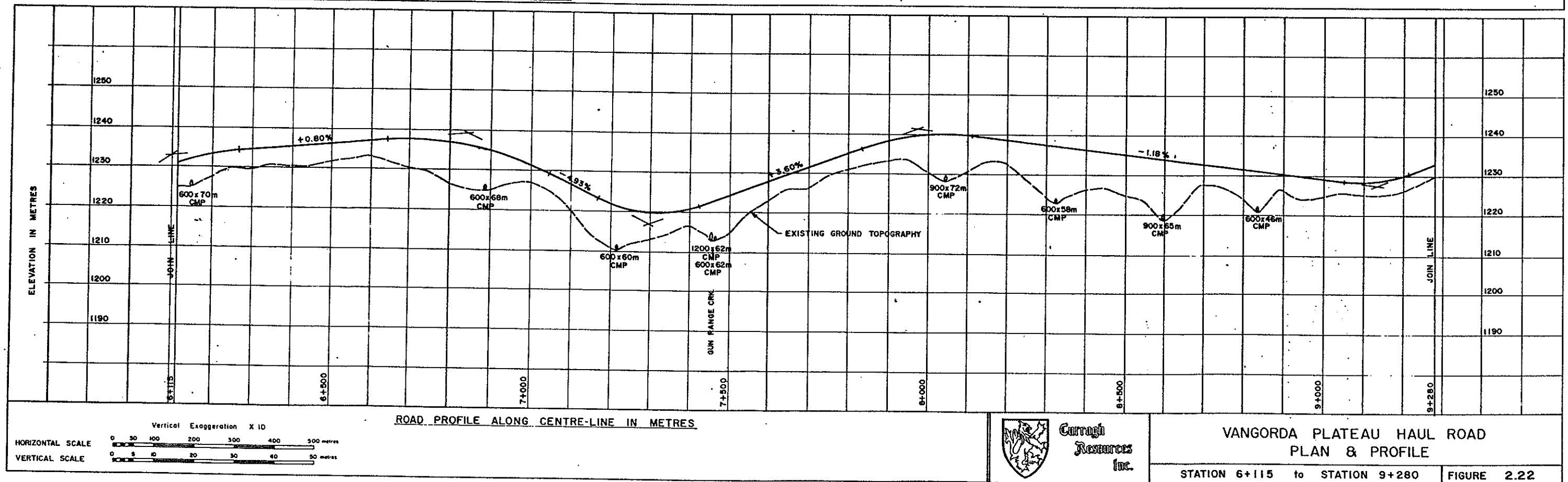
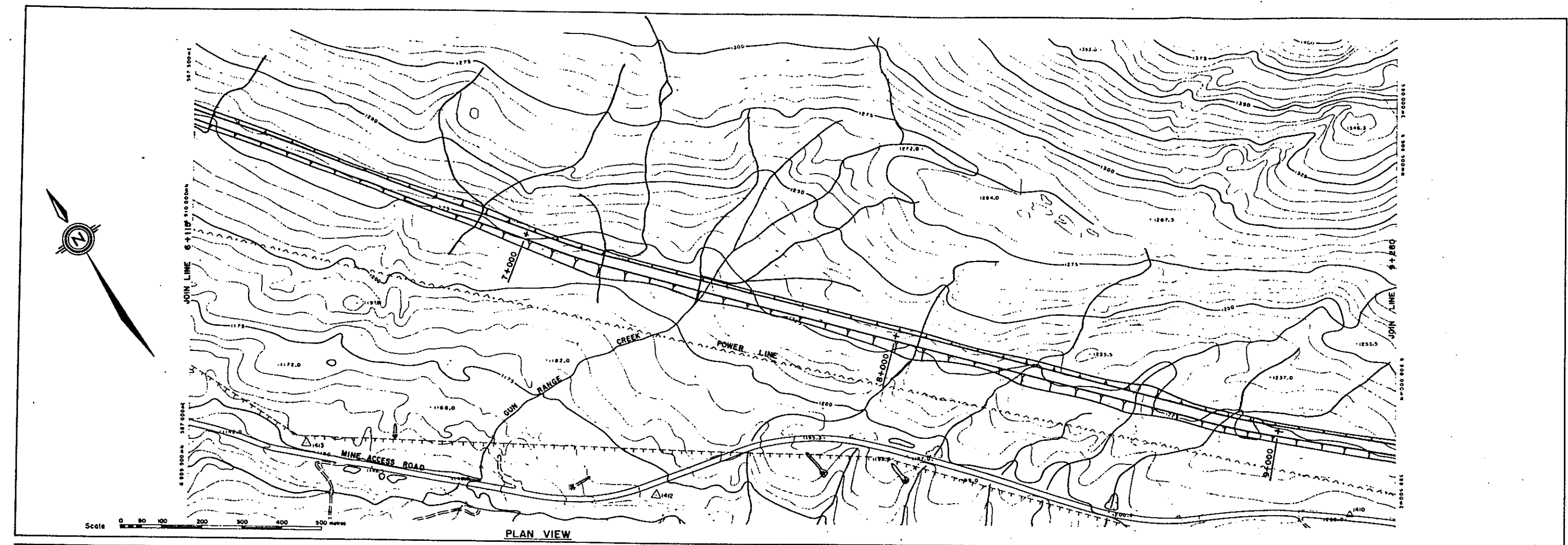
FIGURE 2.18



TYPICAL HAUL ROAD SECTIONS	CURRAGH RESOURCES INC.	
	1:500	FIGURE 2.19



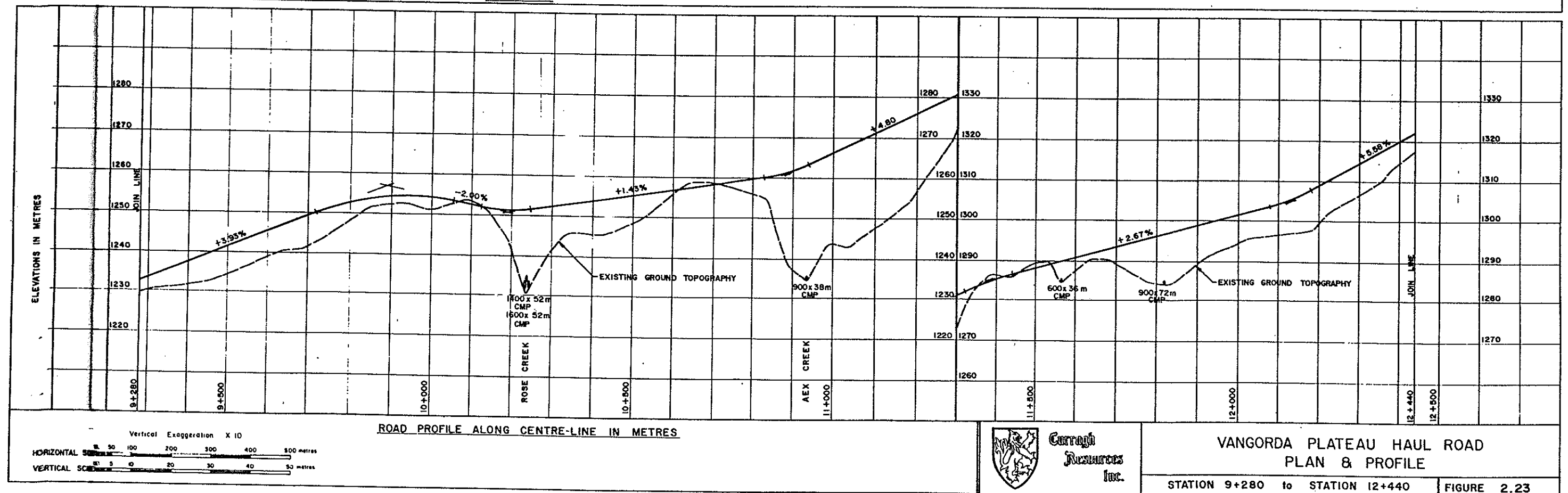
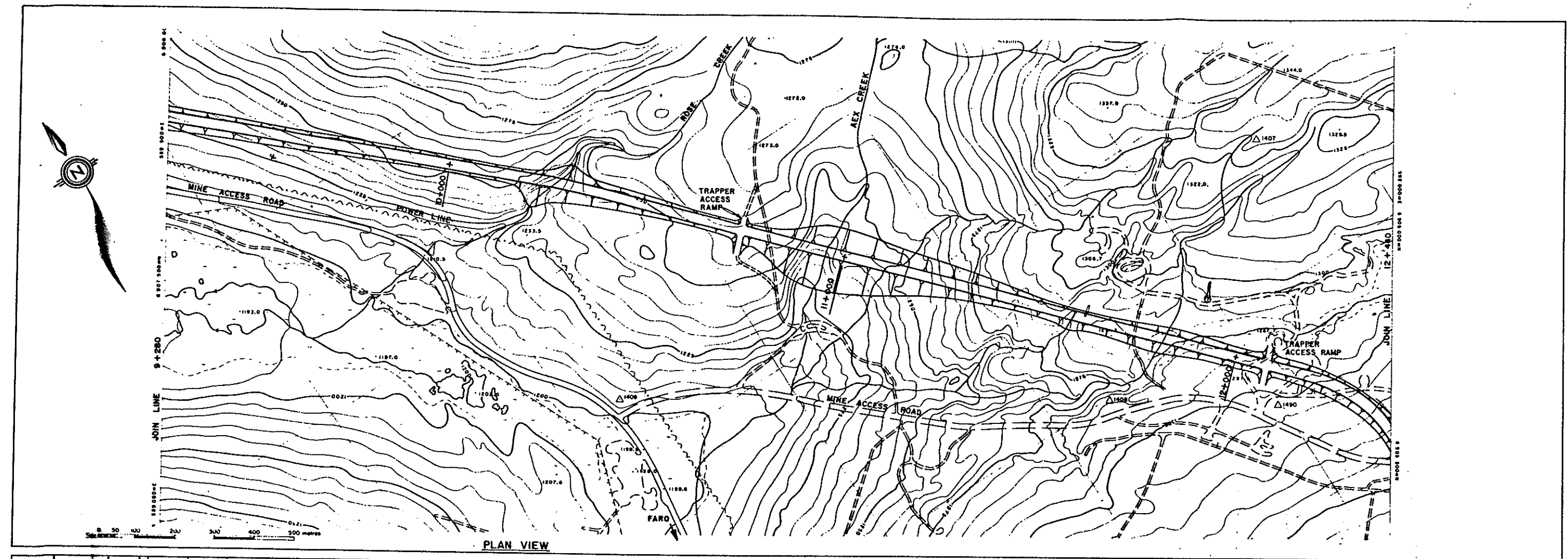




**Carruth
Resources
Inc.**

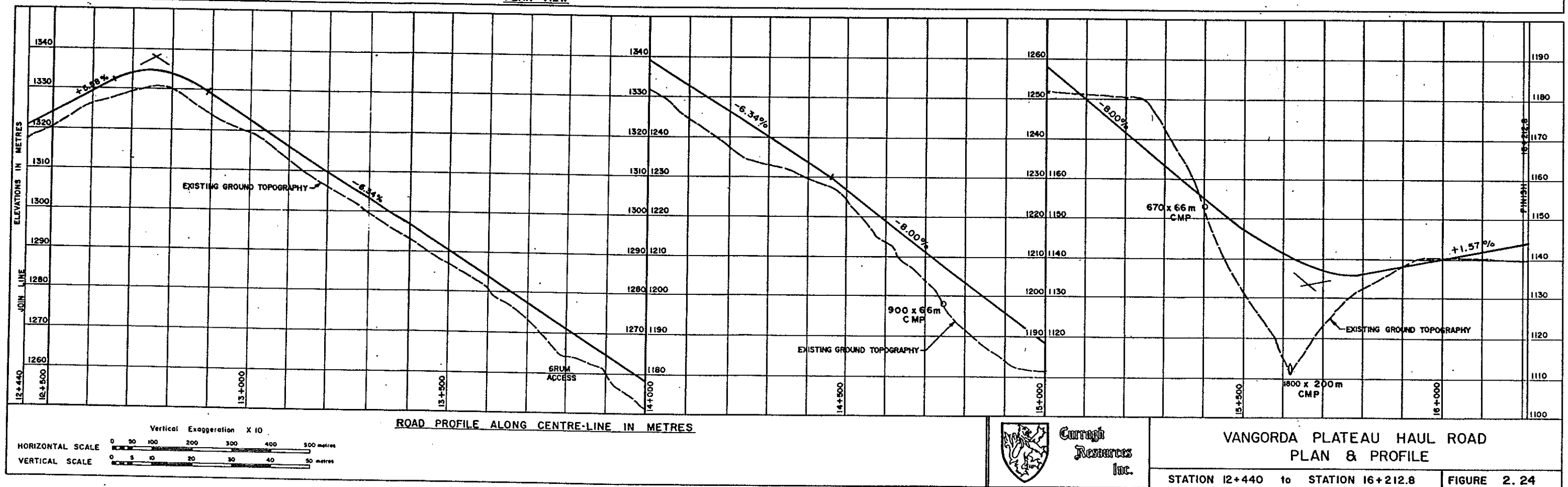
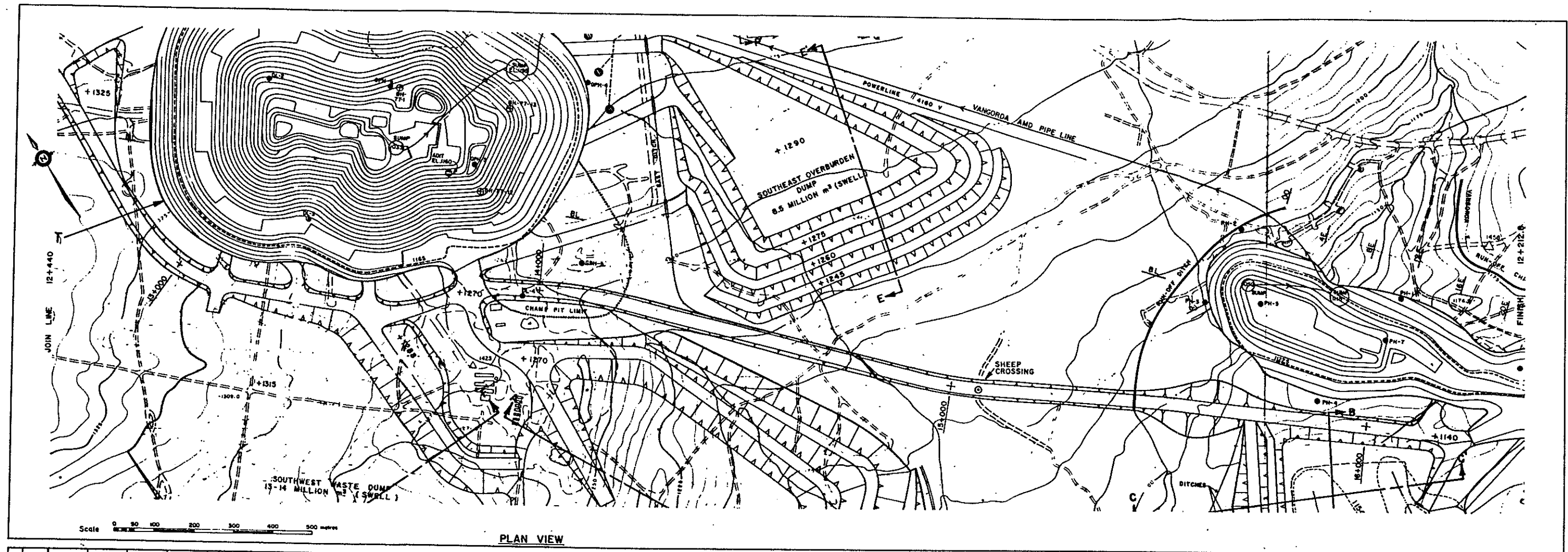
**VANGORDA PLATEAU HAUL ROAD
PLAN & PROFILE**

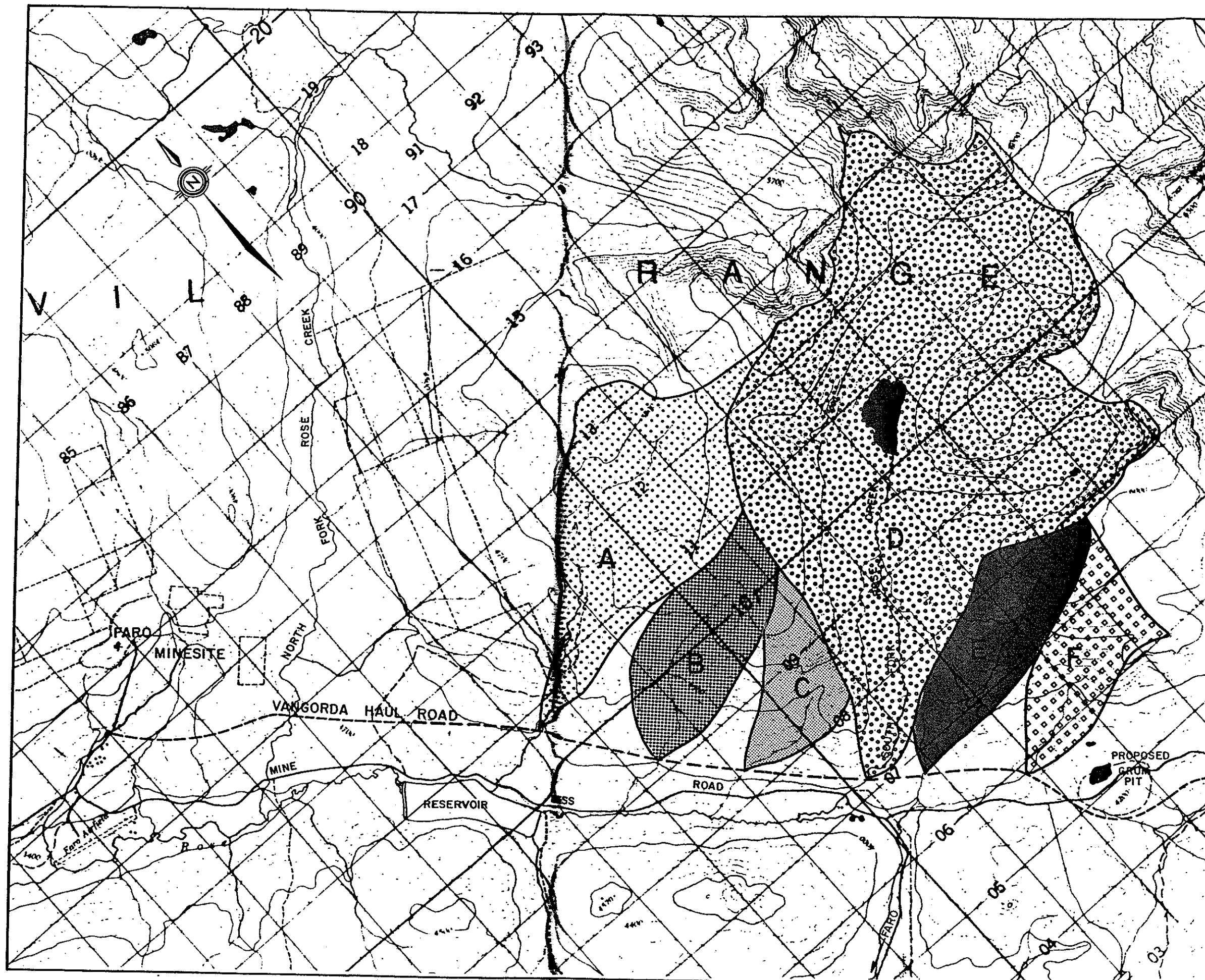
STATION 6+115 to STATION 9+280 **FIGURE 2.22**



**VANGORDA PLATEAU HAUL ROAD
PLAN & PROFILE**

STATION 9+280 to STATION 12+440 **FIGURE 2.23**





WATERSHED AREAS

WATERSHED	AREA (km ²)
A RESERVOIR CREEK	7.6
B GUN RANGE CREEK	3.4
C UN-NAMED CREEK	1.9
D SOUTH FORK ROSE CREEK	24.9
E AEX CREEK	3.3
F SOUTH FORK AEX CREEK	2.7

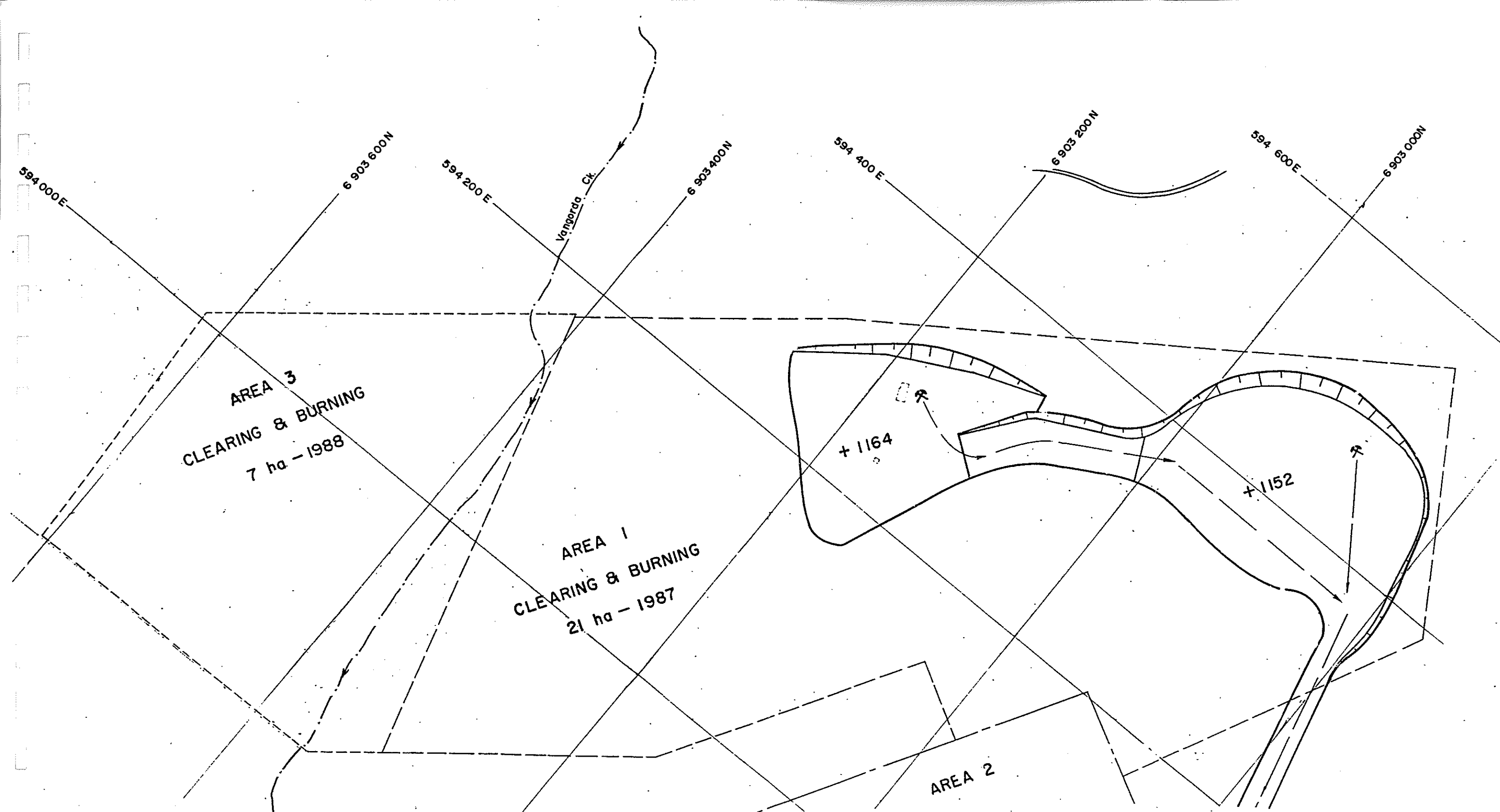
CURRAGH RESOURCES INC.

WATERSHED AREAS
of
CREEK & STREAMS
crossing
VANGORDA HAUL ROAD

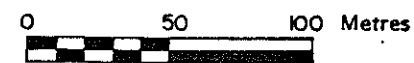
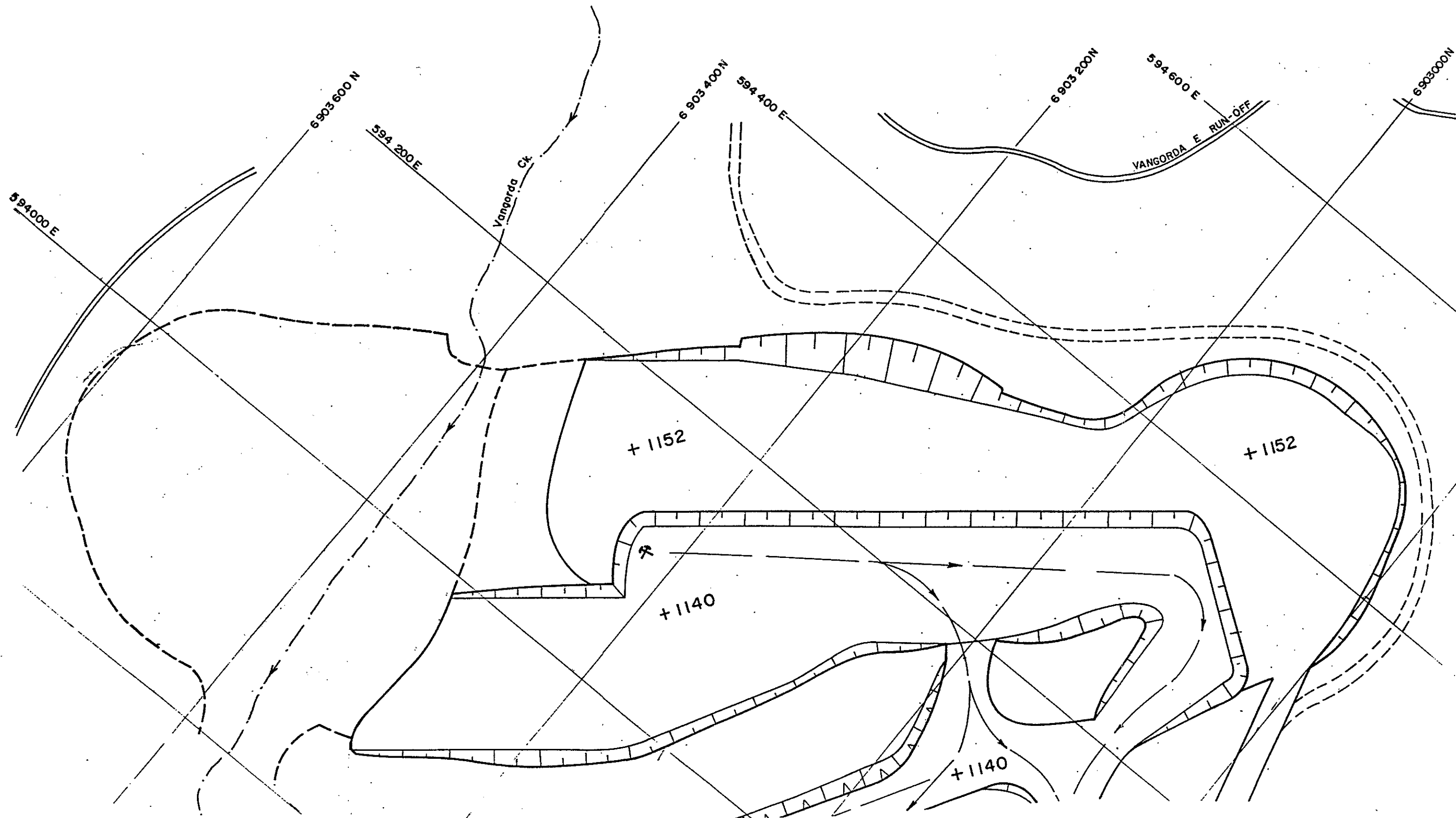
SCALE
1:50 000

DATE
88-06-29

FIGURE 2.25

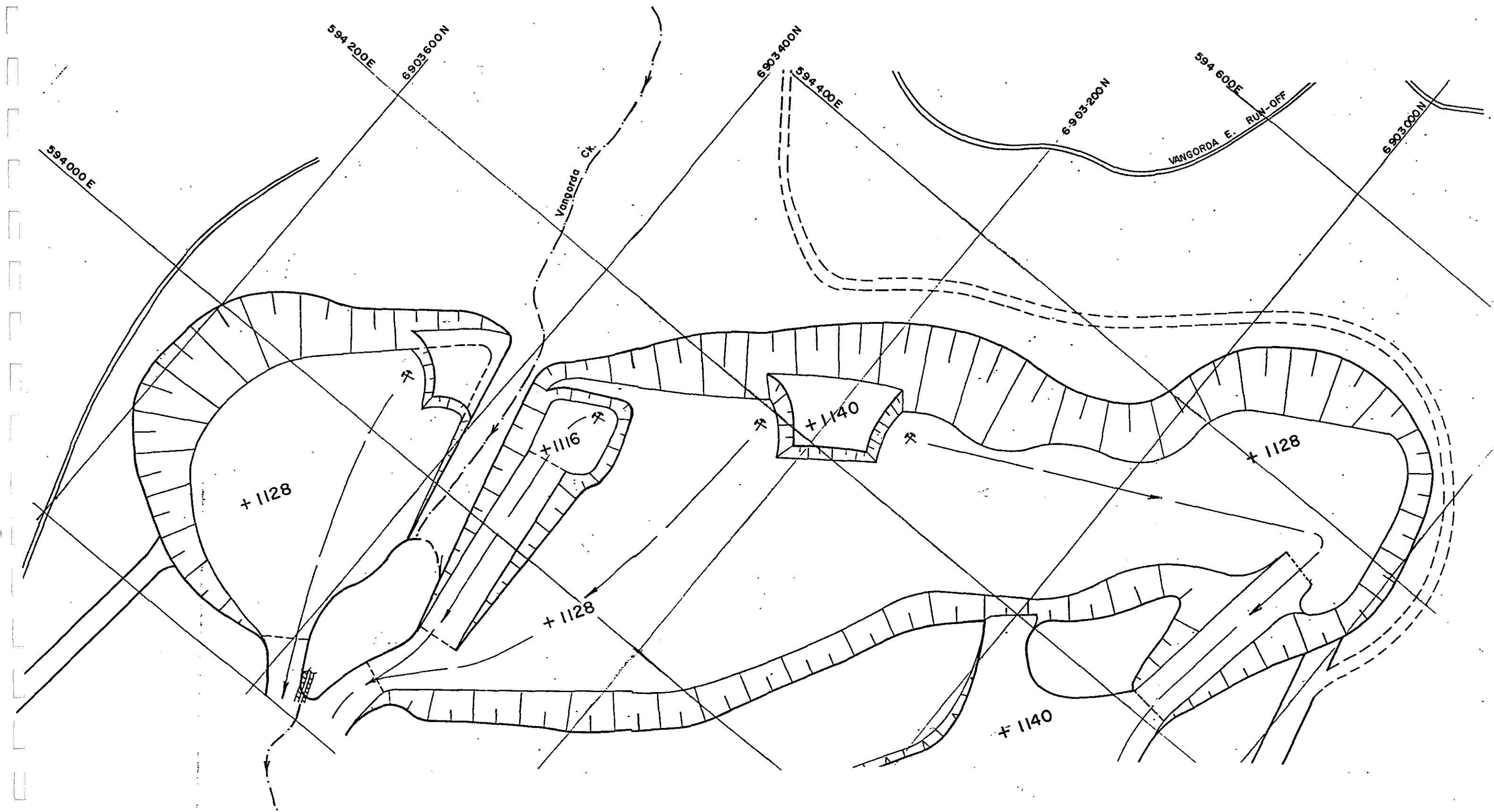


VANGORDA PIT PHASE I OF 14		CURRAGH RESOURCES INC.	
SCALE: NOT TO SCALE		FIGURE 2.26	

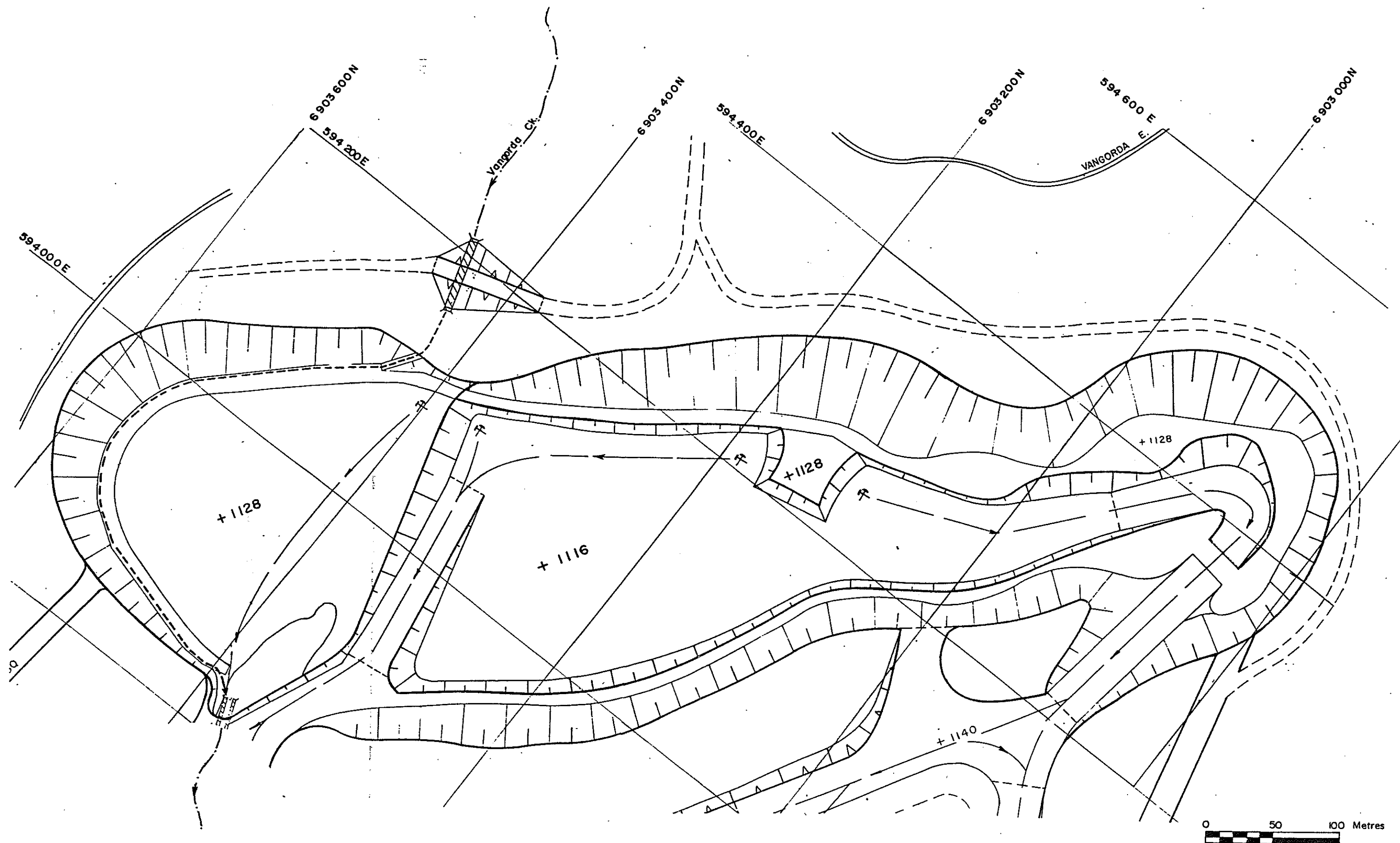


VANGORDA PIT
PHASE 3 OF 14

CURRAGH RESOURCES INC.	
SCALE: NOT TO SCALE	FIGURE 2.27



VANGORDA PIT PHASE 5 OF 14		CURRAGH RESOURCES INC.
SCALE: NOT TO SCALE		FIGURE 2.28

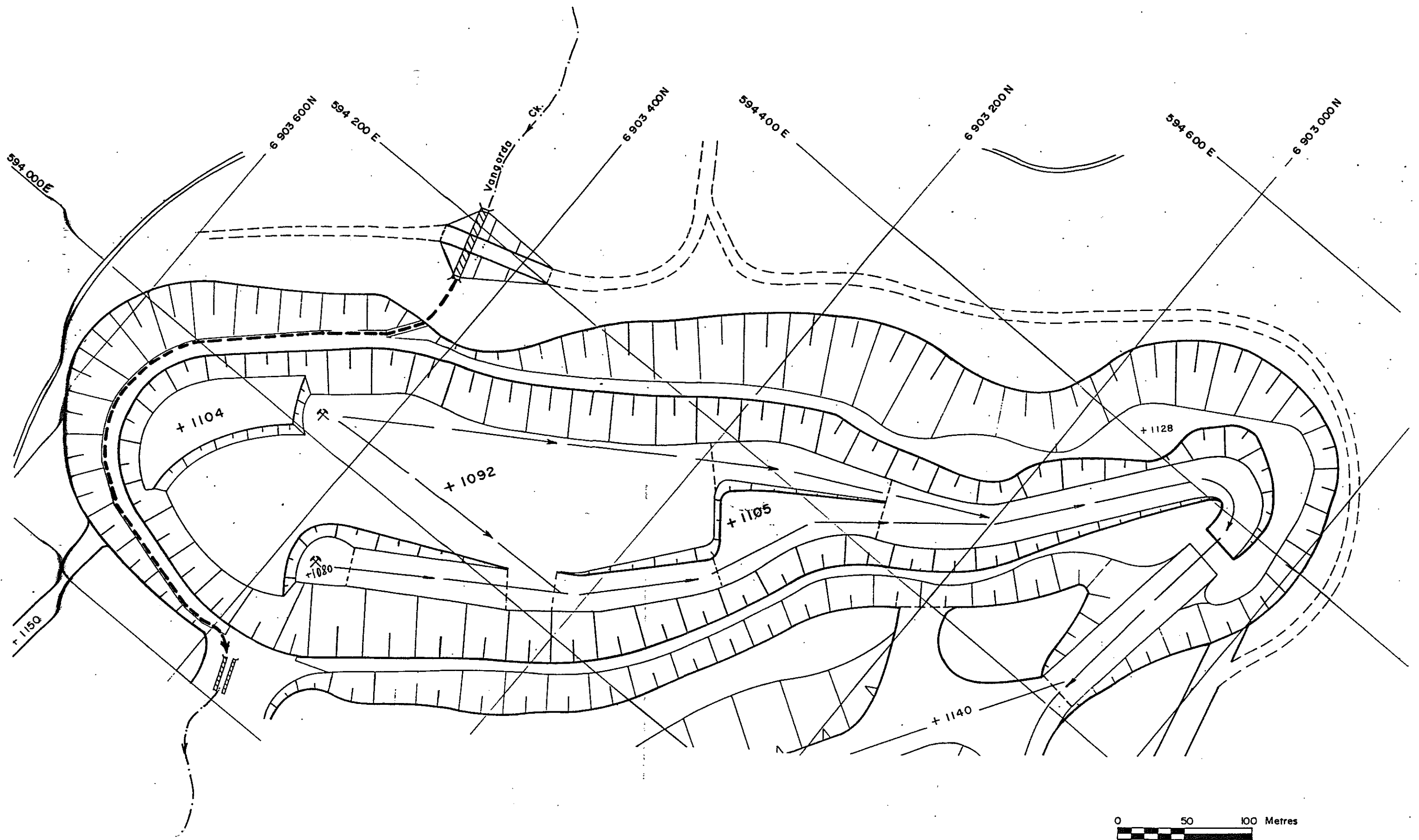


VANGORDA PIT
PHASE 6 OF 14

CURRAGH RESOURCES INC.

SCALE:
NOT TO SCALE

FIGURE 2.29



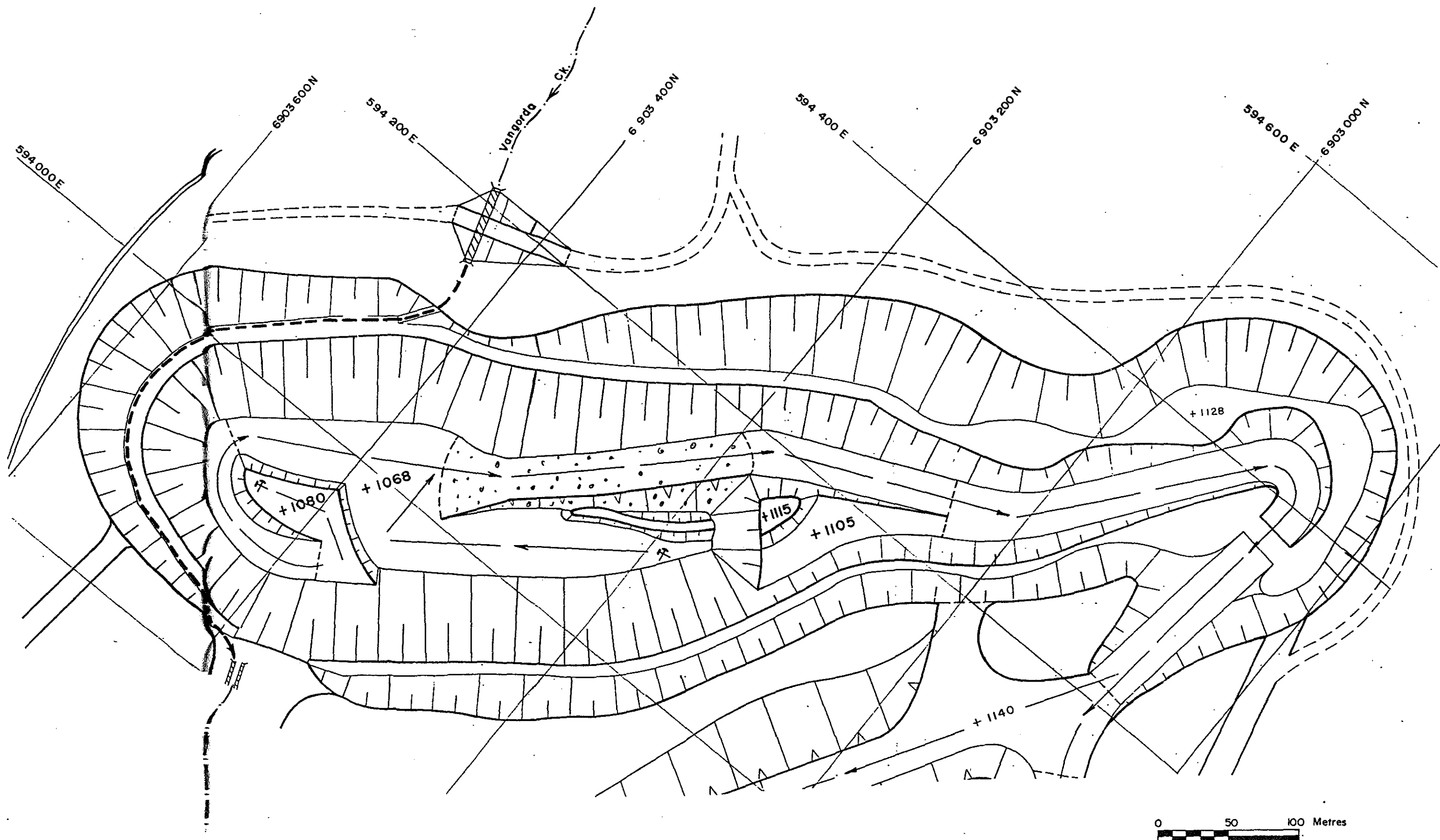
0 50 100 Metres

VANGORDA PIT
PHASE 9 OF 14

CURRAGH RESOURCES INC.

SCALE :
NOT TO SCALE

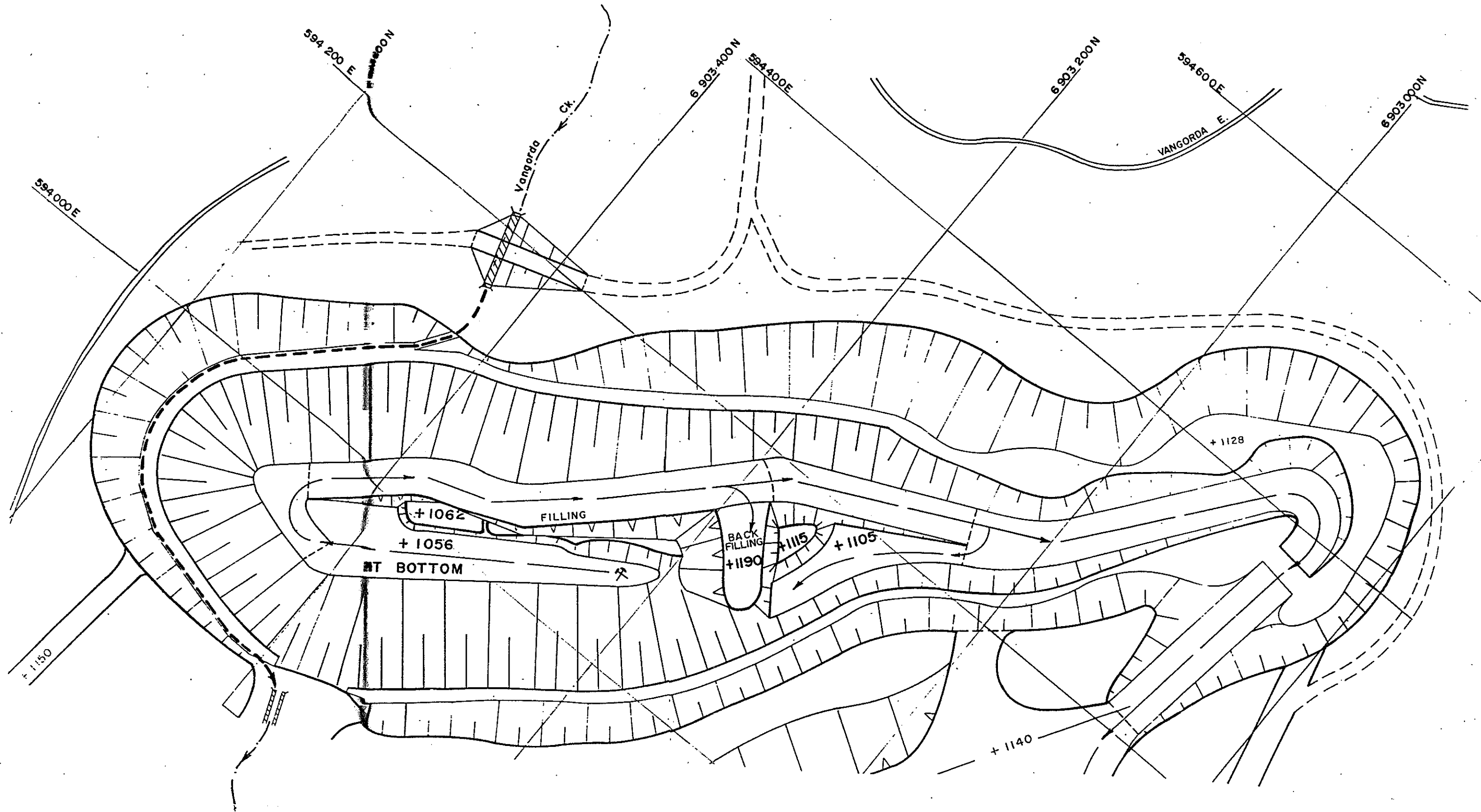
FIGURE 2.30



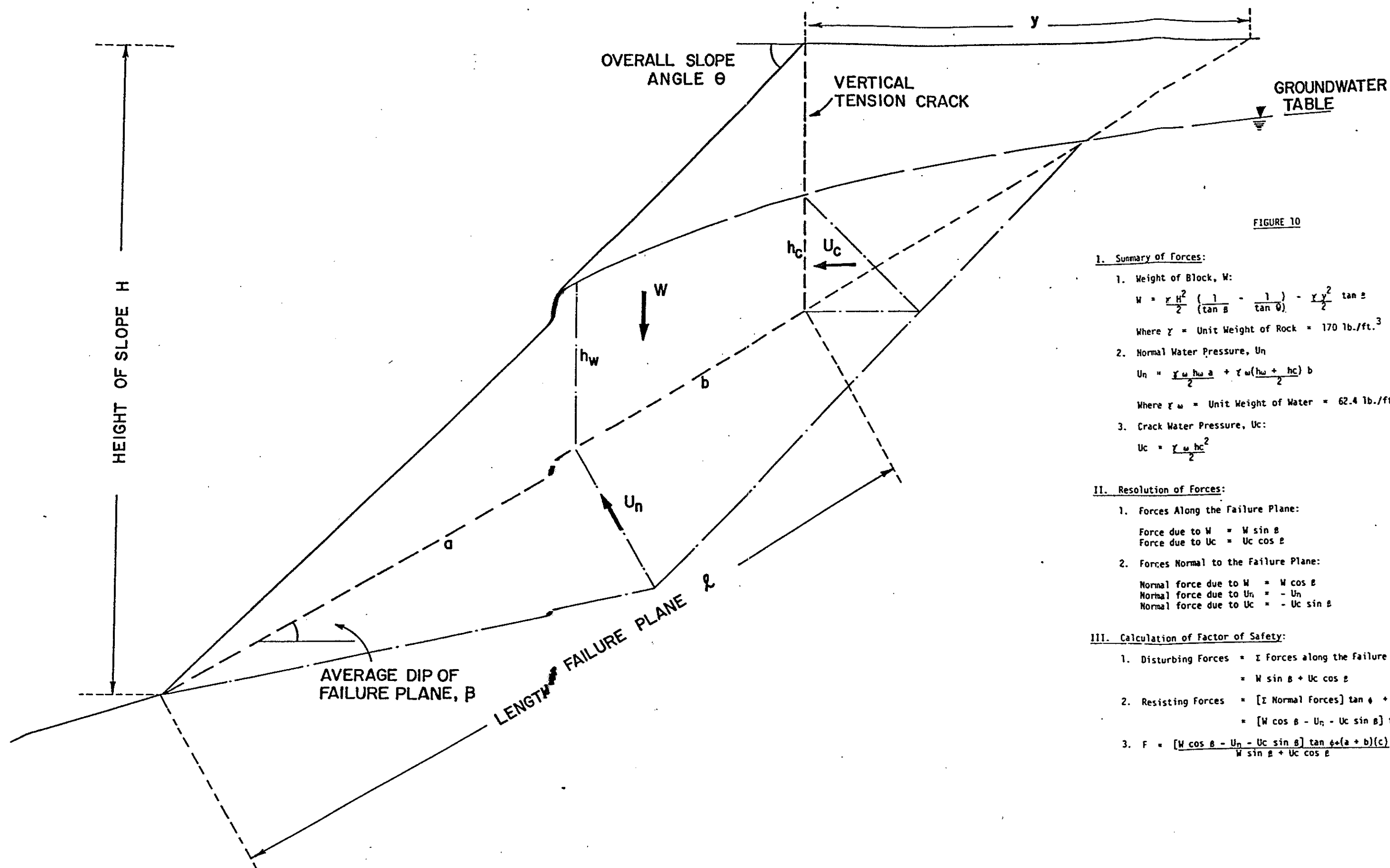
0 50 100 Metres

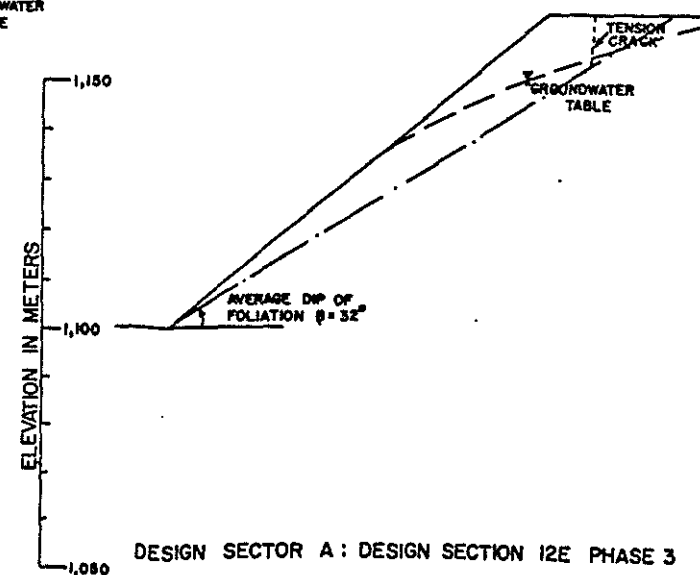
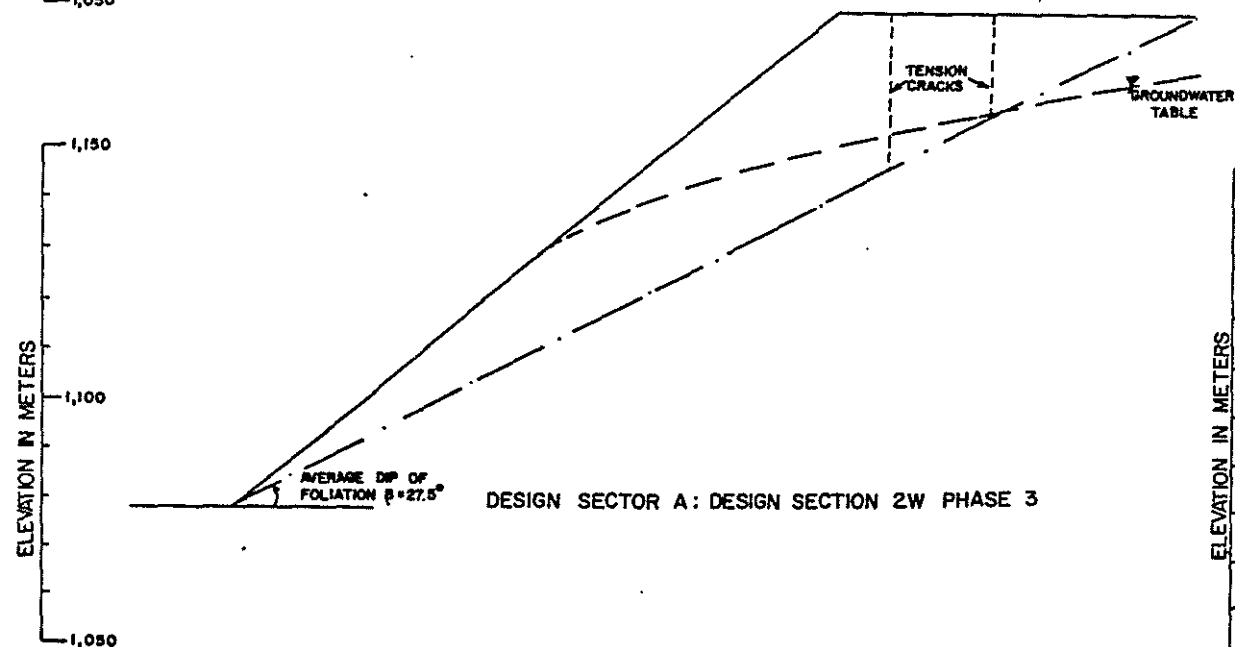
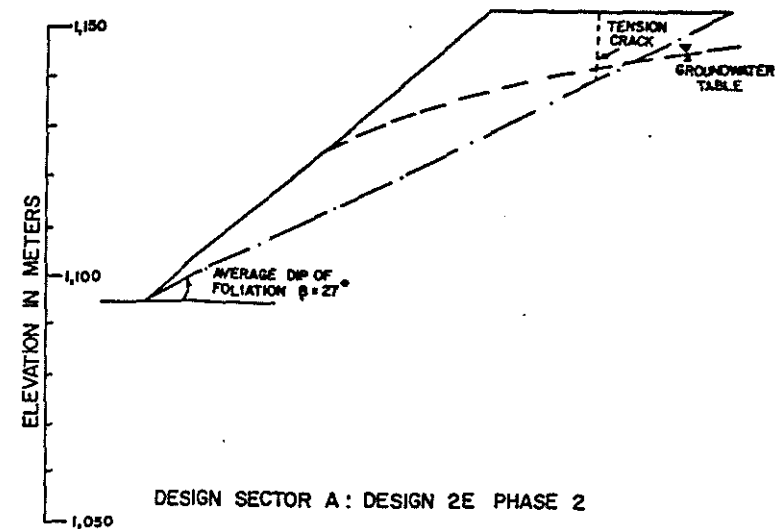
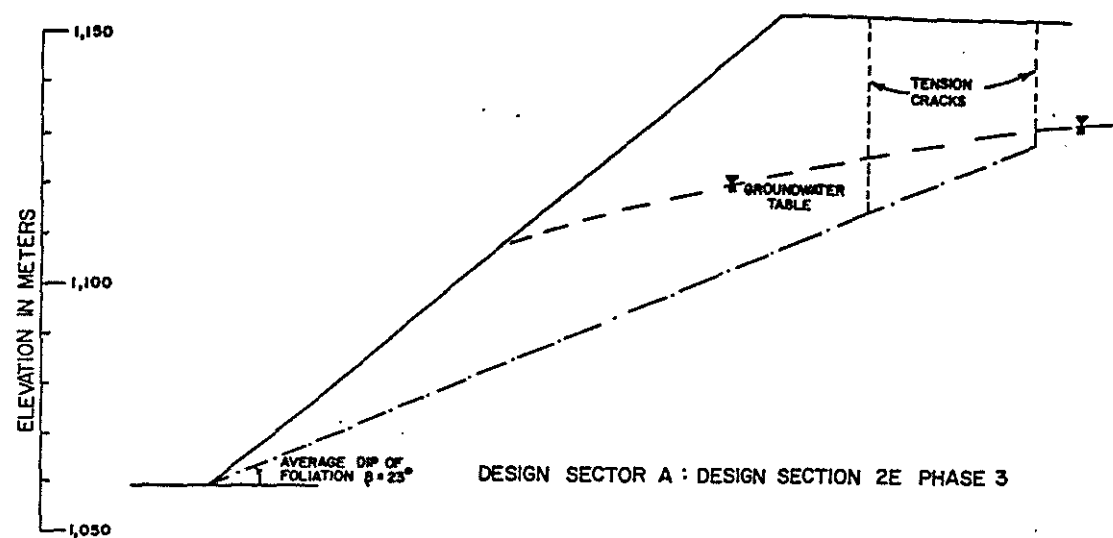
VANGORDA PIT
PHASE 12 OF 14

CURRAGH RESOURCES INC.	
SCALE: NOT TO SCALE	FIGURE 2.31



VANGORDA PIT PHASE 14 OF 14		CURRAGH RESOURCES INC.	
		SCALE: NOT TO SCALE	FIGURE 2.32



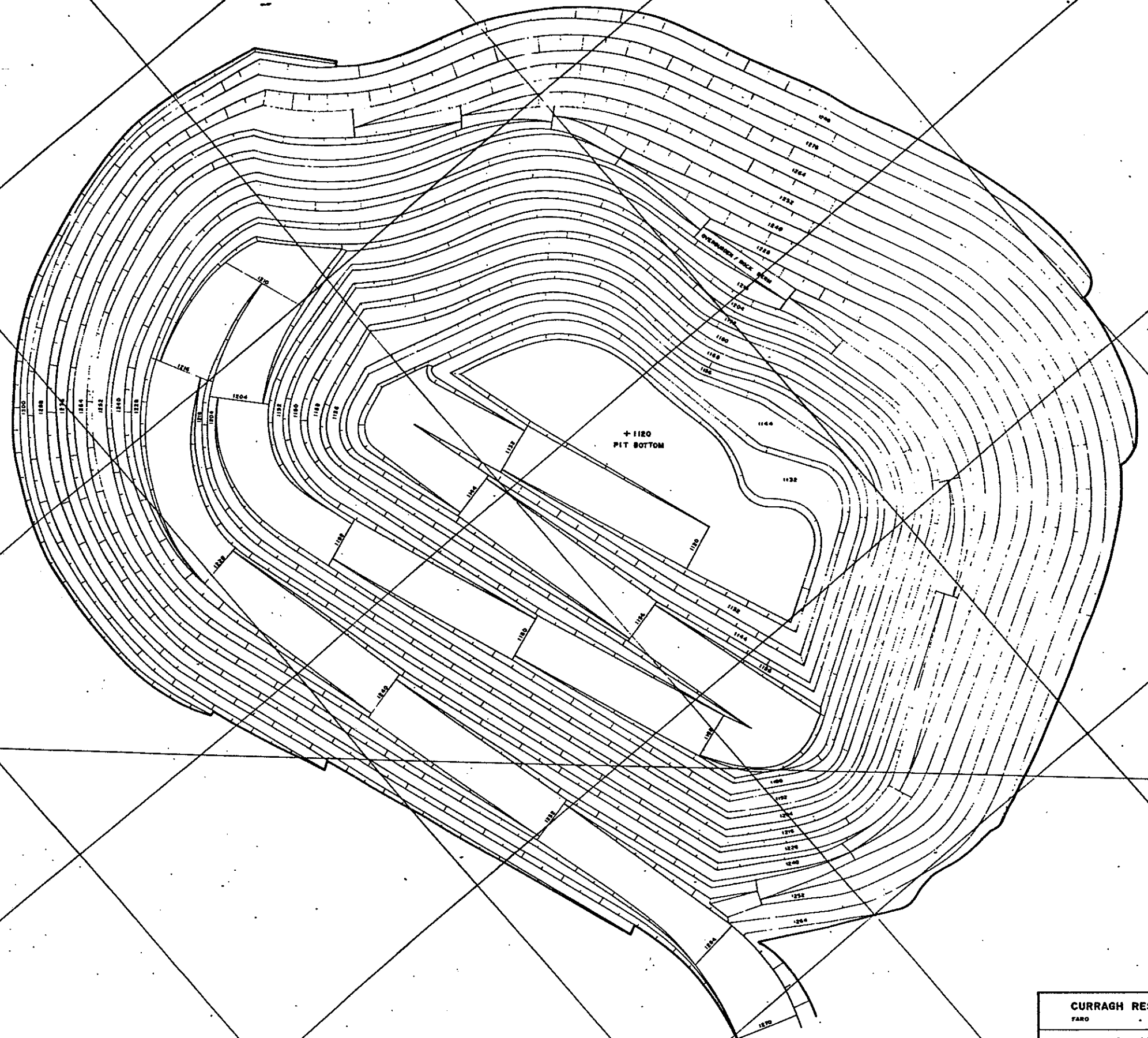


0 10 20 30 40 50 Meters
SCALE

ROCK STABILITY ANALYSIS
FAILURE PLANES

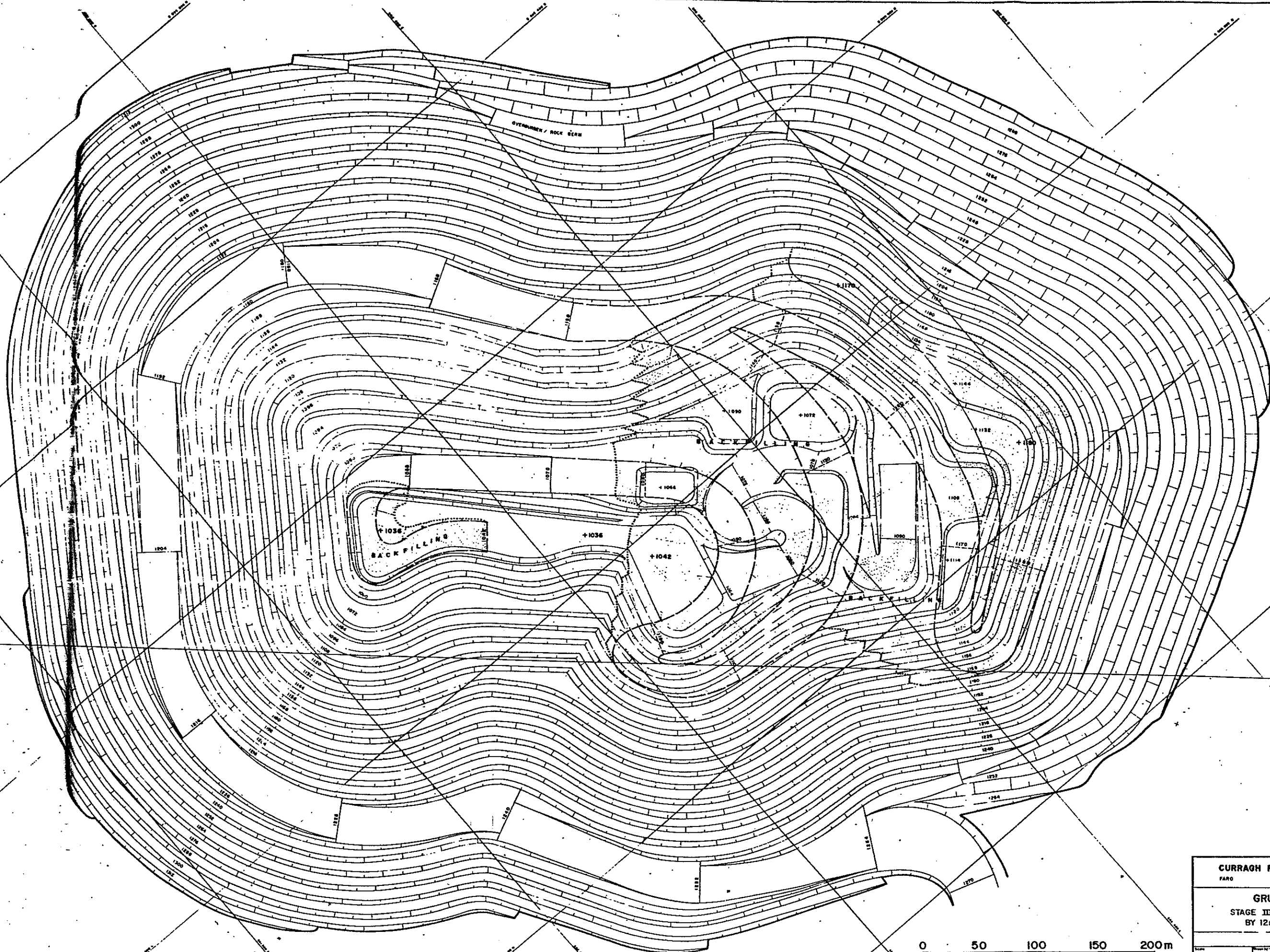
CURRAGH RESOURCES INC.

FIGURE 2.34

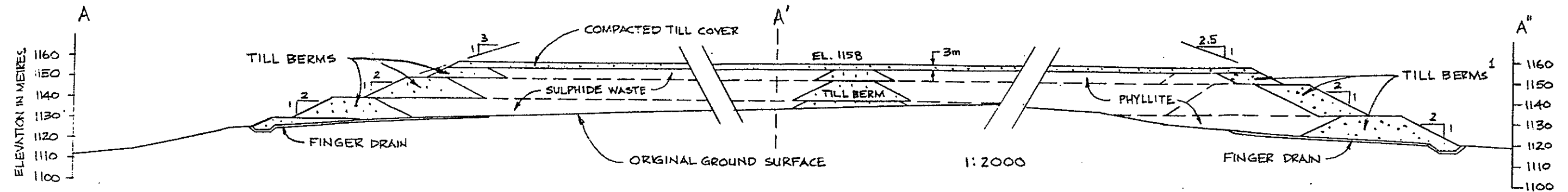




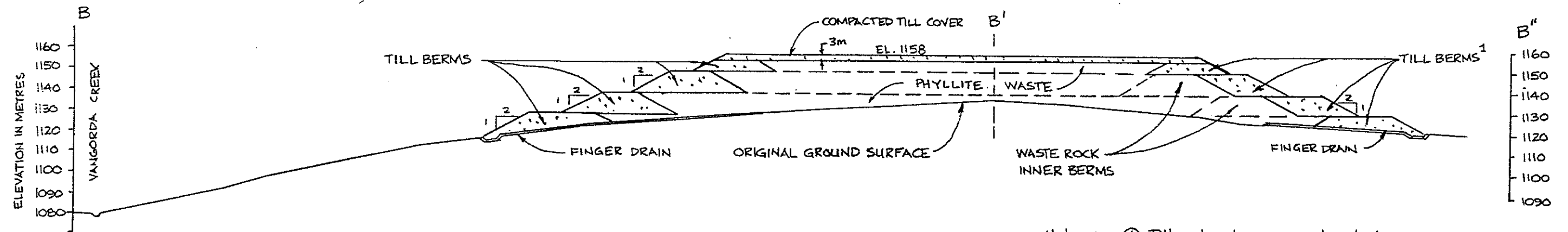
CURRAGH RESOURCES INC.	
FARM	YUKON TERRITORY
GRUM PIT	
STAGE II PIT LIMITS	
BY 12m BENCHS	
Scale 1:1000	Drawn by B C BOORSE
Date MAY 1988	Checked by I VINTILA
FIGURE 2.36	



CURRAGH RESOURCES INC.	
FARO	YUKON TERRITORY
GRUM PIT	
STAGE III PIT LIMITS	
BY 12m BENCHS	
Scale 1:1000	Drawn by B. C. BOORSE
May 1988	Checked by J. VINTELA
FIGURE 2.37	



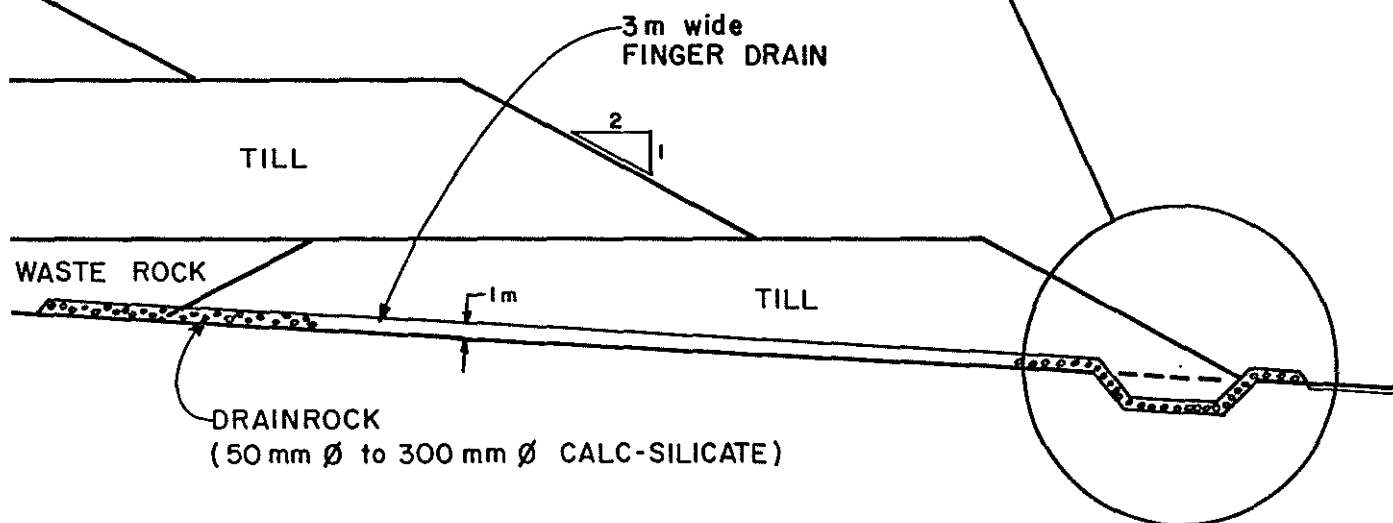
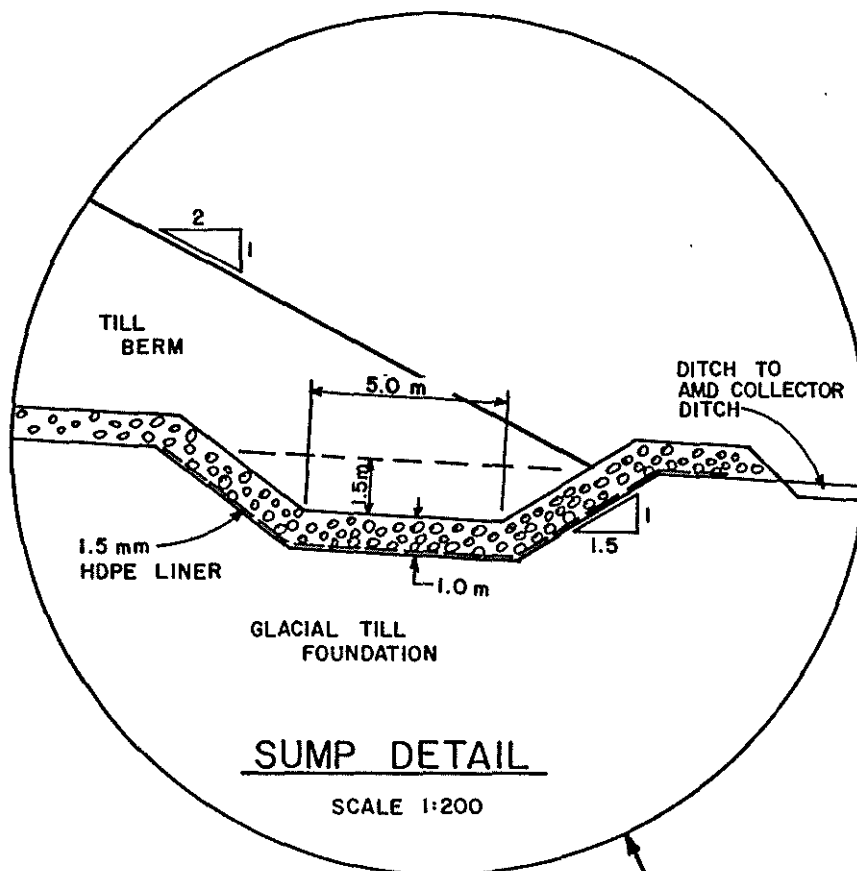
SECTION A-A'A''



SECTION B-B'B''
1:2000

Notes: ① Till outer berms constructed simultaneously with wasterock inner berms as shown.

CURRAGH RESOURCES INC. VANGORDA PLATEAU DEVELOPMENT		DATE DEC.1989
VANGORDA WASTE DUMP ALTERNATIVE 1.4 SECTIONS		PROJ. NO. 60609
		APPROVED
		NO. 2.40

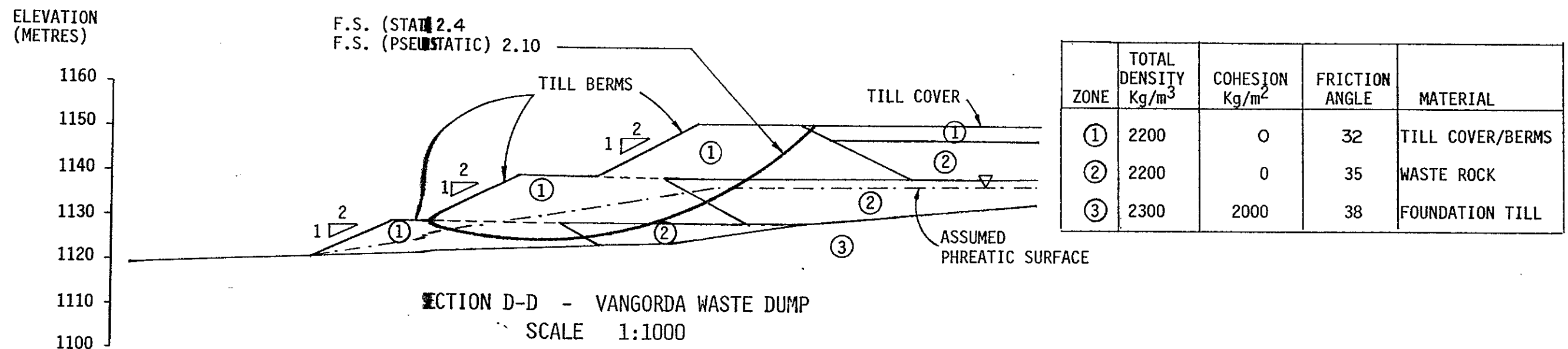
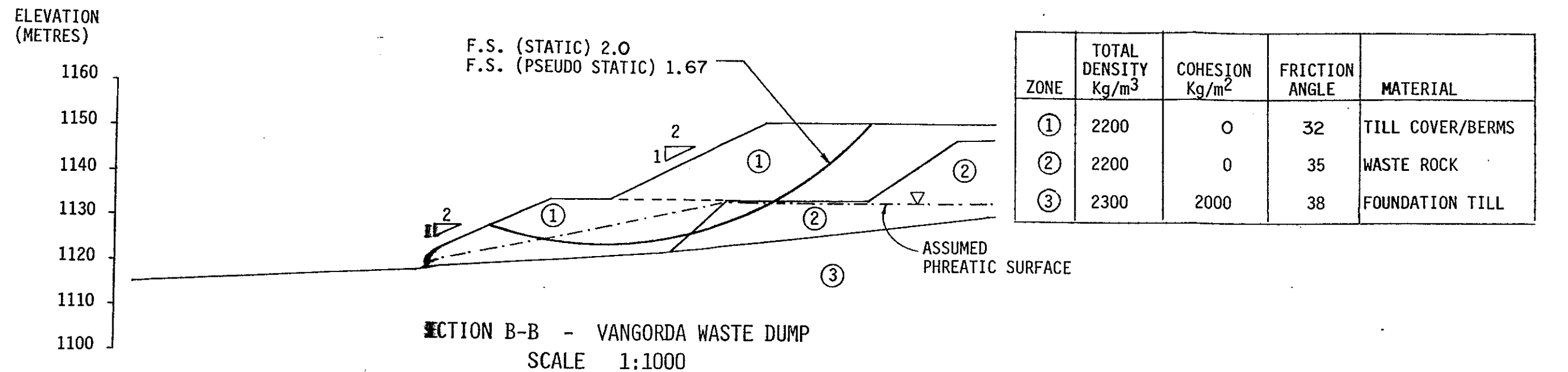


TYPICAL DETAILS
FINGER DRAIN & SUMP

CURRAGH RESOURCES INC.

1:500

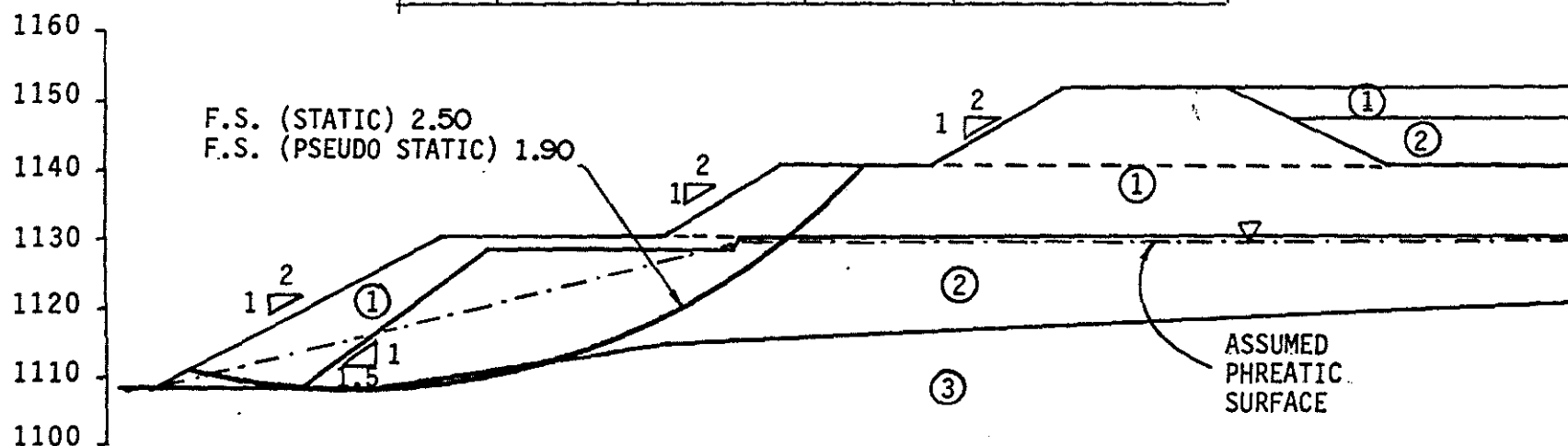
FIGURE 2.41



STABILITY ANALYSES
VANGORDA WASTE DUMPS
SECTIONS B-B AND D-D

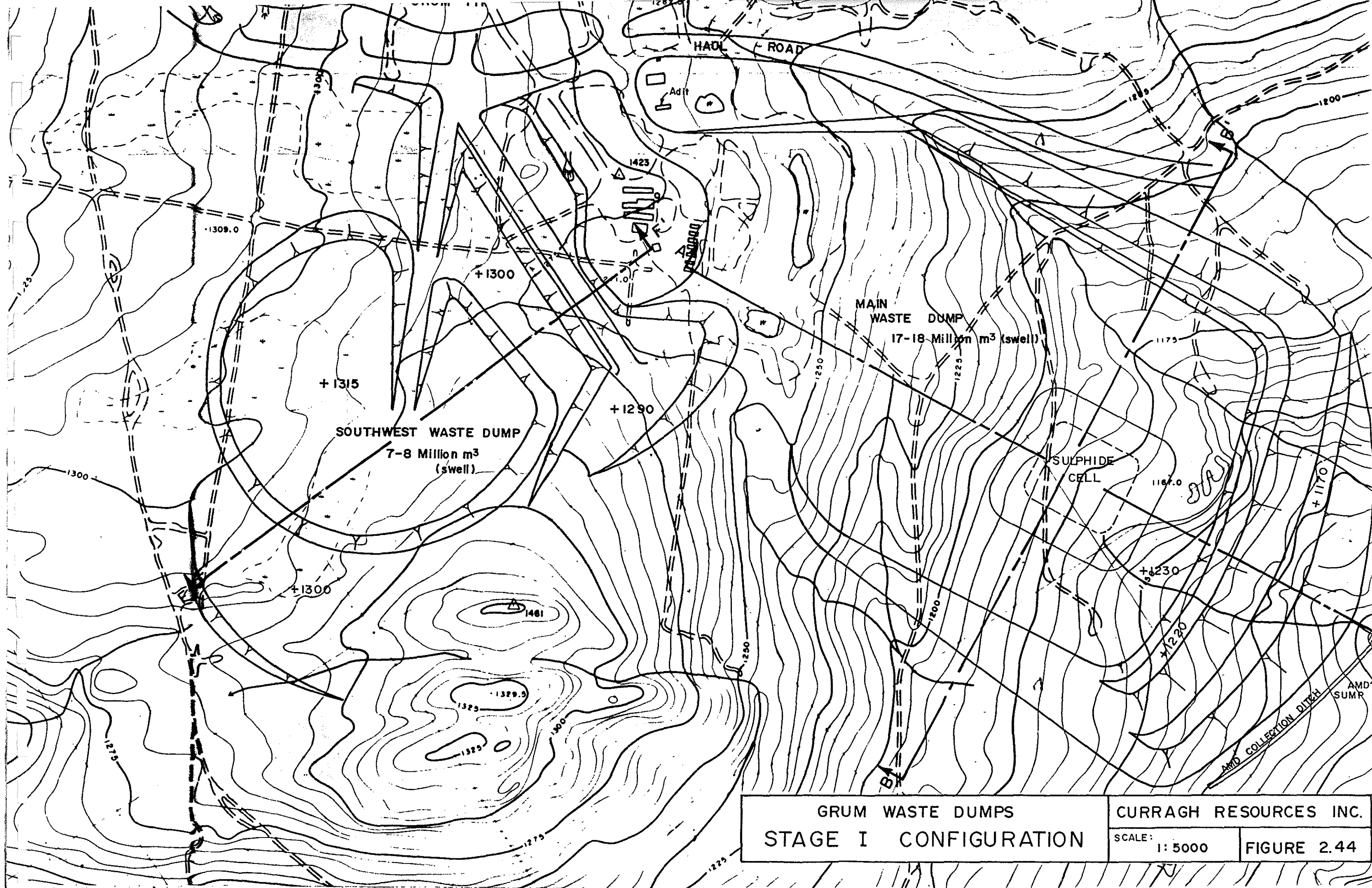
ZONE	TOTAL DENSITY Kg/m ³	COHESION Kg/m ²	FRICTION ANGLE	MATERIAL
1	2200	0	32	TILL COVER/BERMS
2	2200	0	35	WASTE ROCK
3	2300	2000	38	FOUNDATION TILL

ELEVATION,
METRES



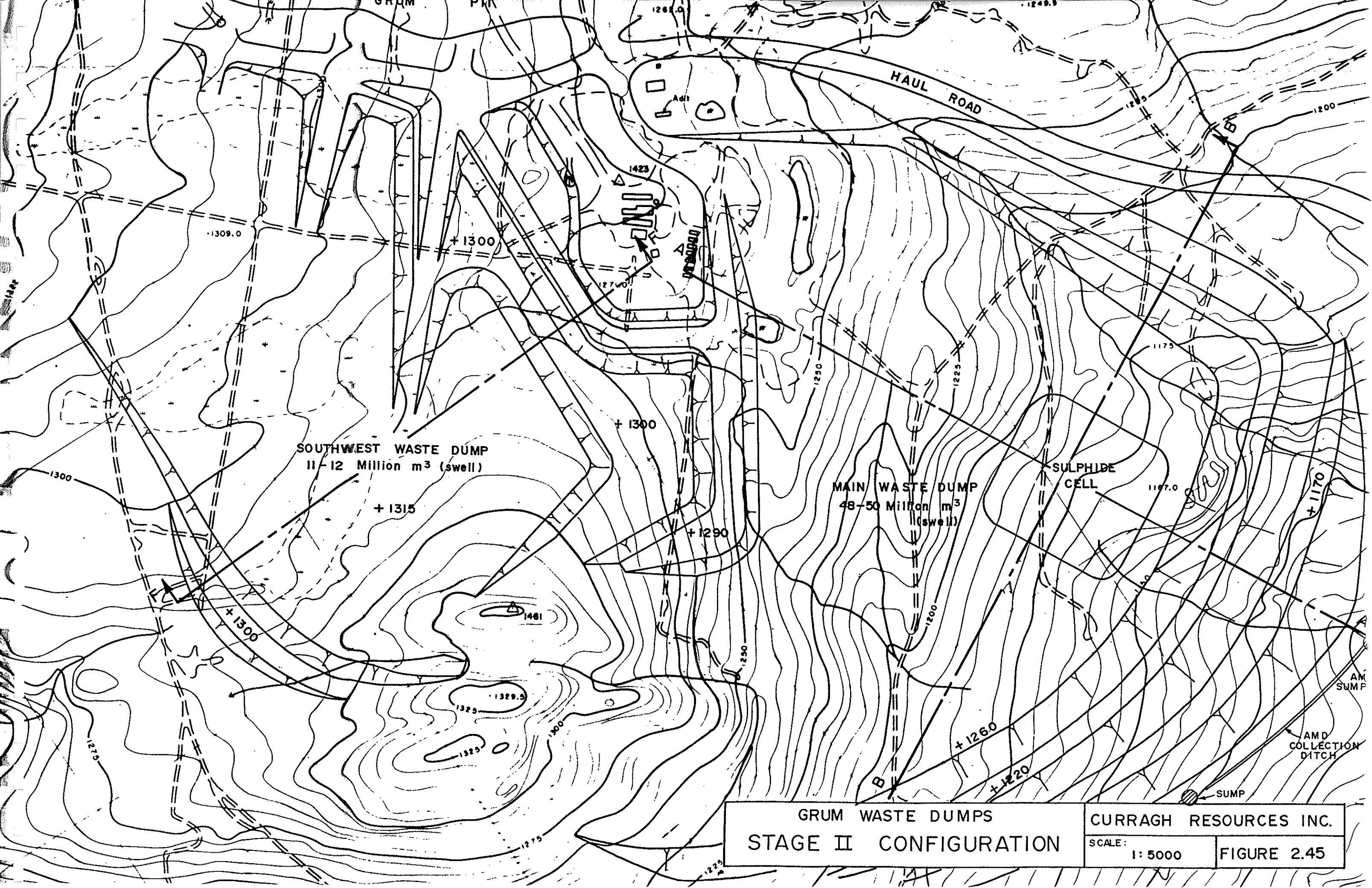
STABILITY ANALYSES
VANGORDA WASTE DUMP
SECTION C-C

FIGURE 2.43



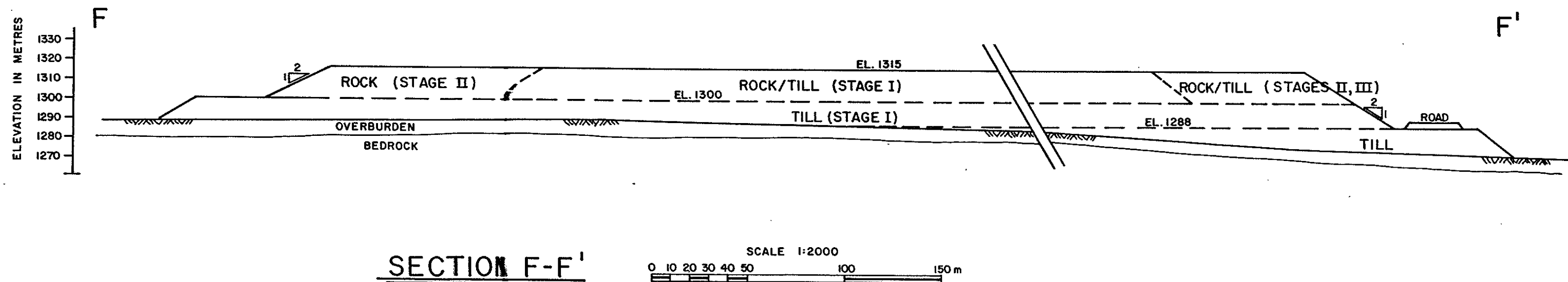
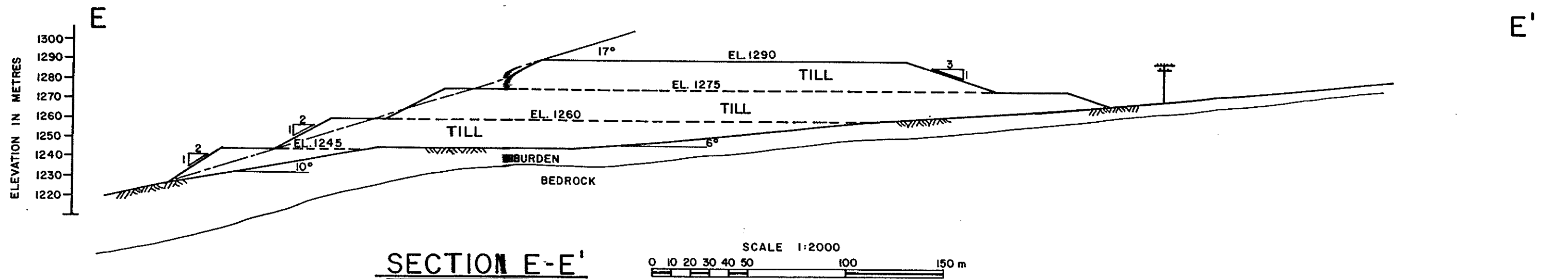
GRUM WASTE DUMPS
STAGE I CONFIGURATION

CURRAGH RESOURCES INC.	
SCALE: 1: 5000	FIGURE 2.44



GRUM WASTE DUMPS
STAGE II CONFIGURATION

CURRAGH RESOURCES INC.	
SCALE:	FIGURE 2.45
1:5000	



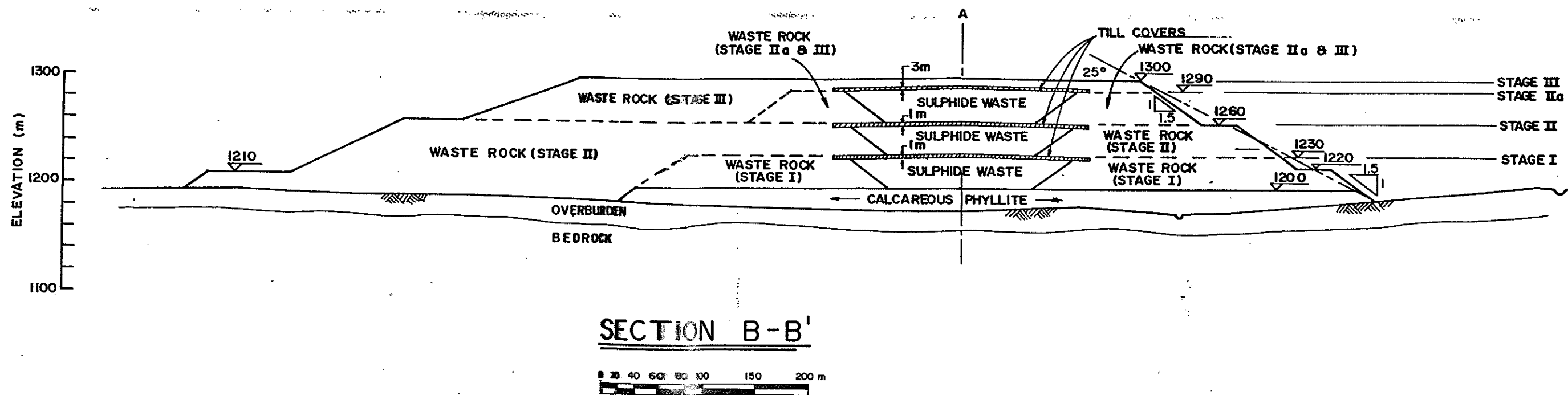
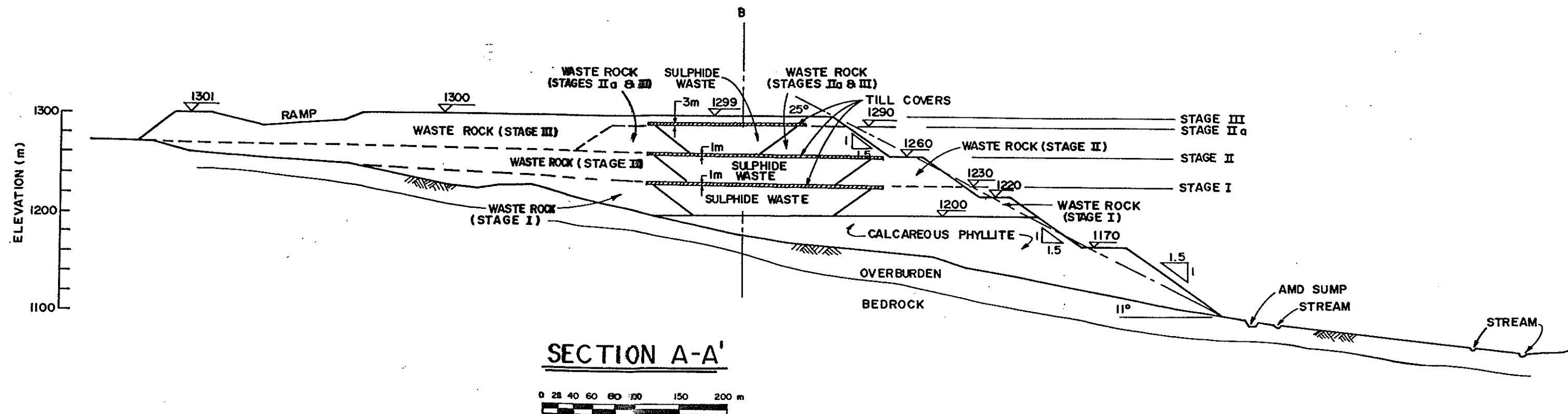
NOTE: SEE FIGURE 2.16
FOR LOCATION OF SECTIONS

GRUM WASTE DUMPS
SECTIONS E-E, F-F

CURRAGH RESOURCES INC.

SCALE: AS SHOWN

FIGURE 2.46

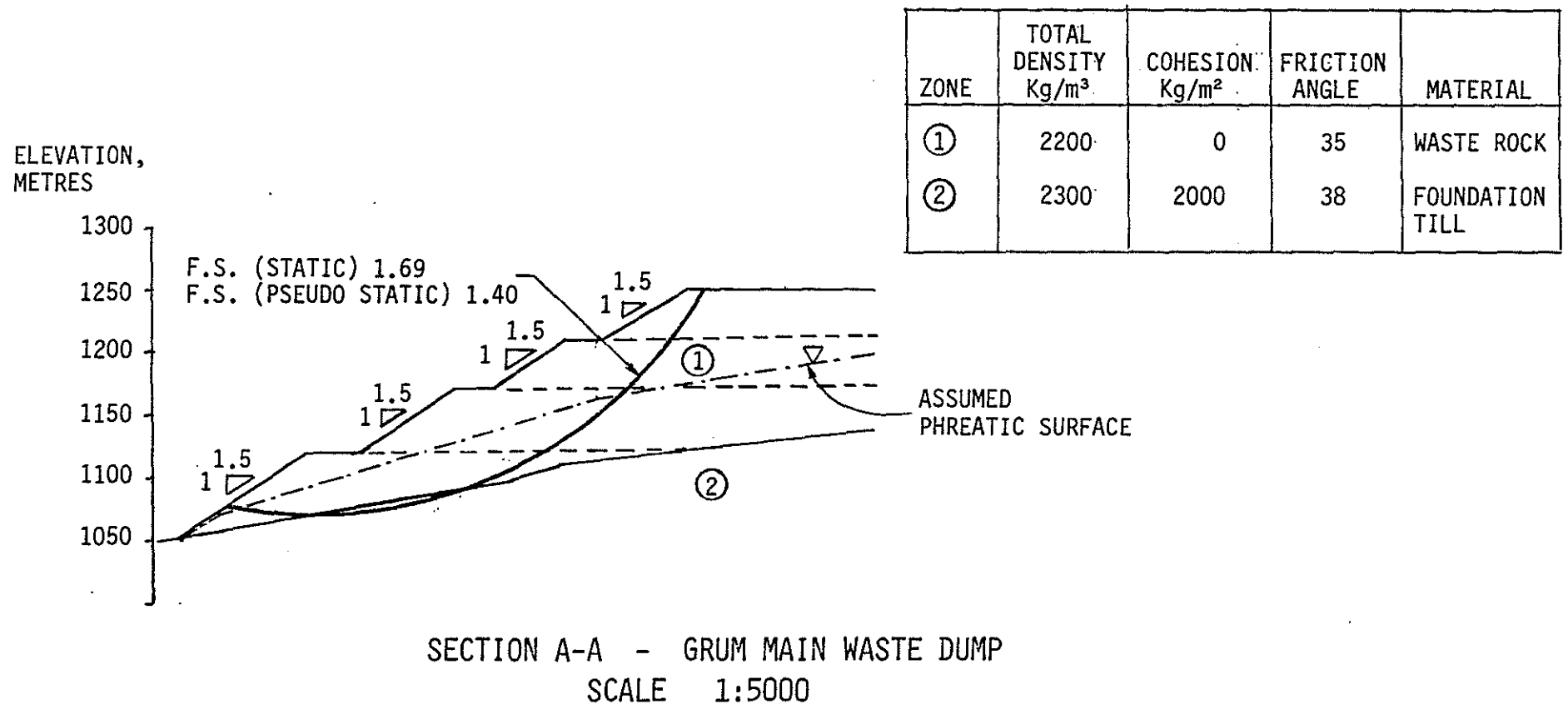


GRUM WASTE DUMPS
SECTIONS A-A' AND B-B'

CURRAGH RESOURCES INC.

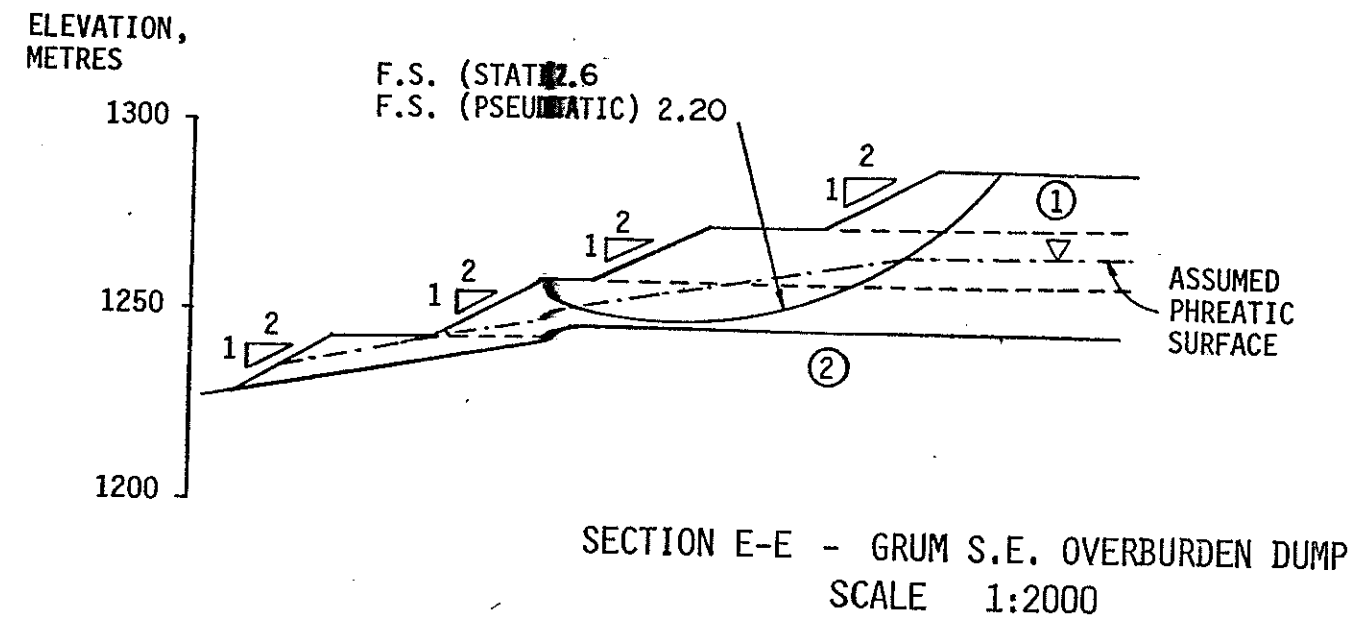
AS SHOWN

FIGURE 2.47

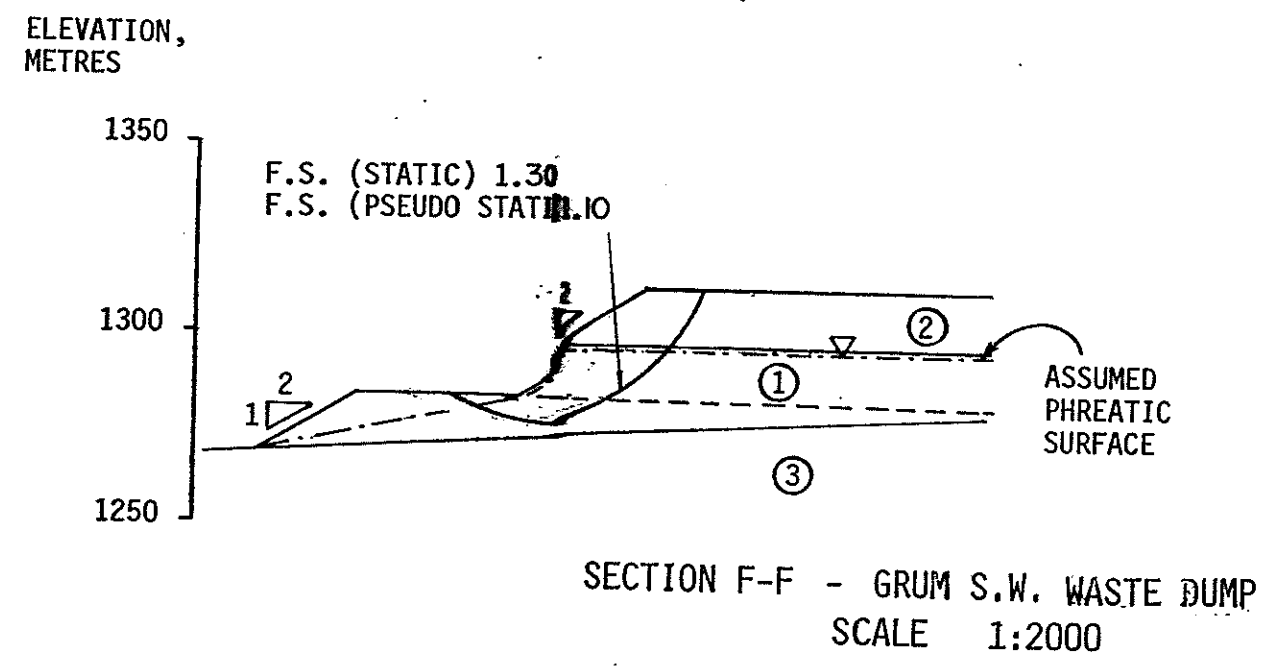


STABILITY ANALYSES
GRUM WASTE DUMP
SECTION A-A

FIGURE 2.48



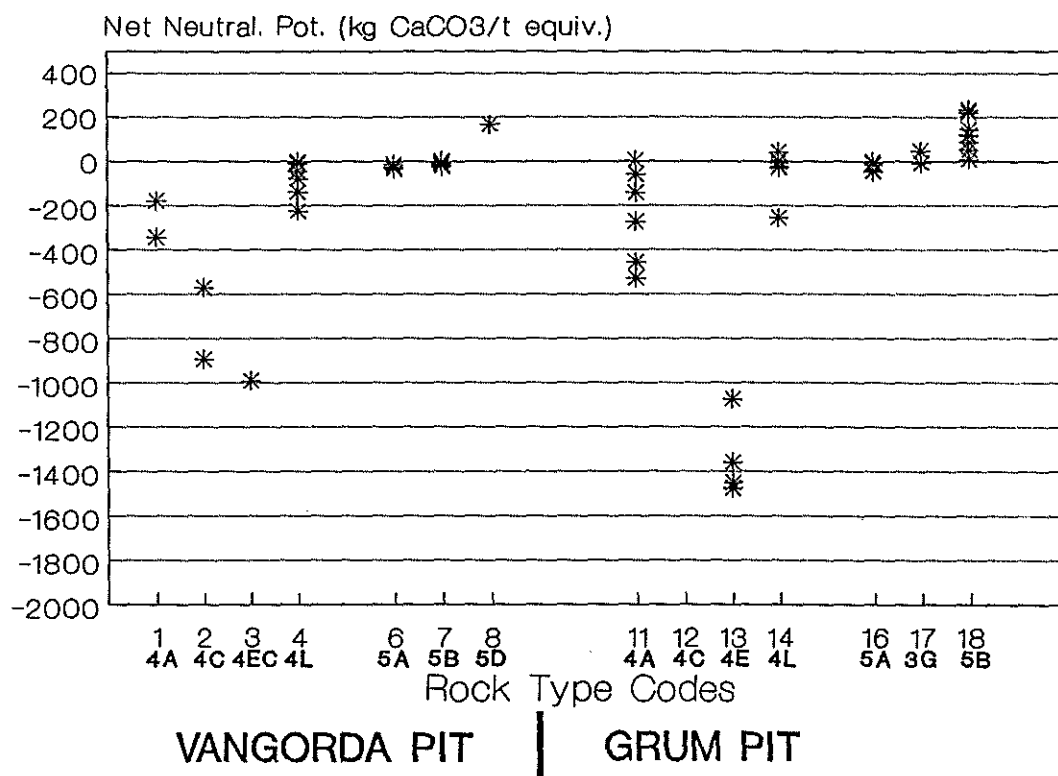
ZONE	TOTAL DENSITY Kg/m ³	COHESION Kg/m ²	FRICTION ANGLE	MATERIAL
①	2200	0	32	TILL COVER/BERMS
②	2300	2000	38	FOUNDATION TILL



ZONE	TOTAL DENSITY Kg/m ³	COHESION Kg/m ²	FRICTION ANGLE	MATERIAL
①	2200	1760	30	TILL COVER/BERMS
②	2200	0	35	WASTE ROCK
③	2300	2000	30	FOUNDATION TILL

STABILITY ANALYSES
GRUM WASTE AND OVERBURDEN DUMPS
SECTIONS E-E AND F-F

NET NEUTRALIZATION VS ROCK TYPE

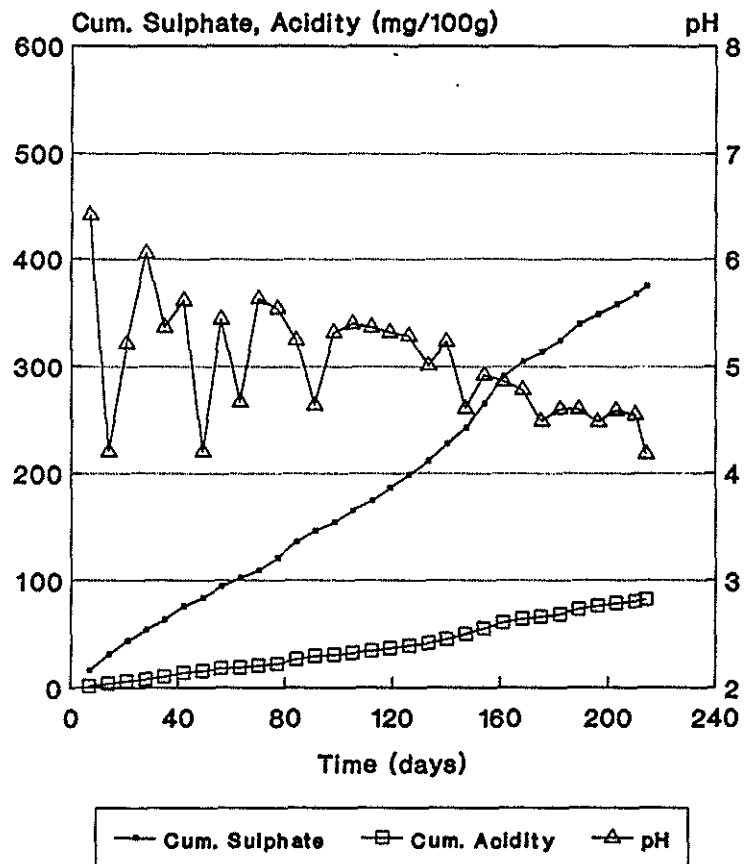


Note: See Table 2.15 in Volume I for Code Definitions

FIGURE 2.50

HUMIDITY CELL TEST RESULTS - SULPHIDE COMPOSITES

**HUMIDITY CELL TEST
SULPHIDE COMPOSITE**



**HUMIDITY CELL TEST
SULPHIDE COMPOSITE II (Inoculated)**

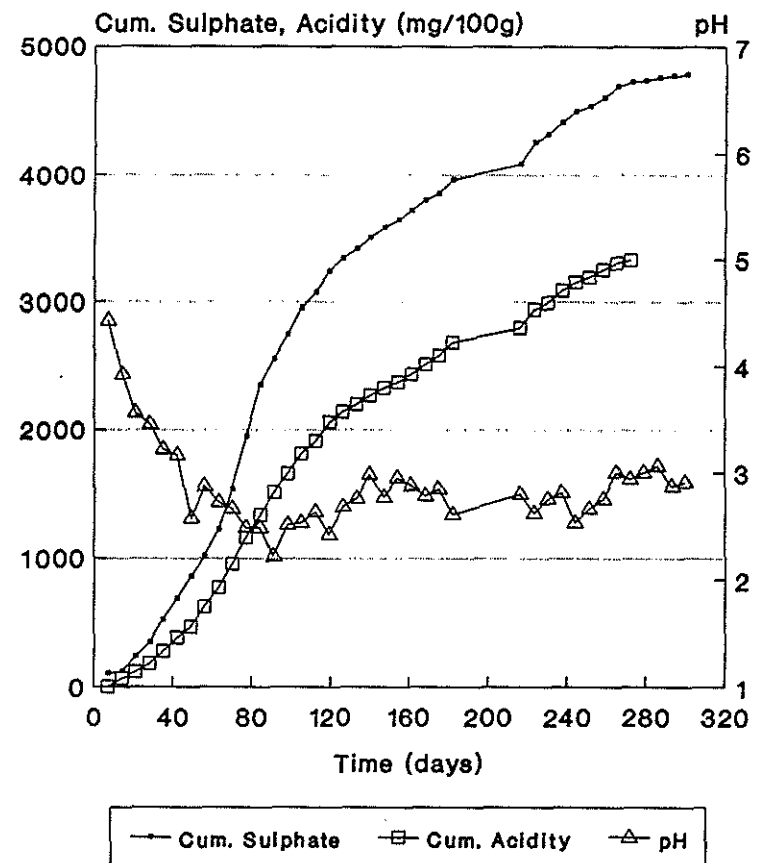
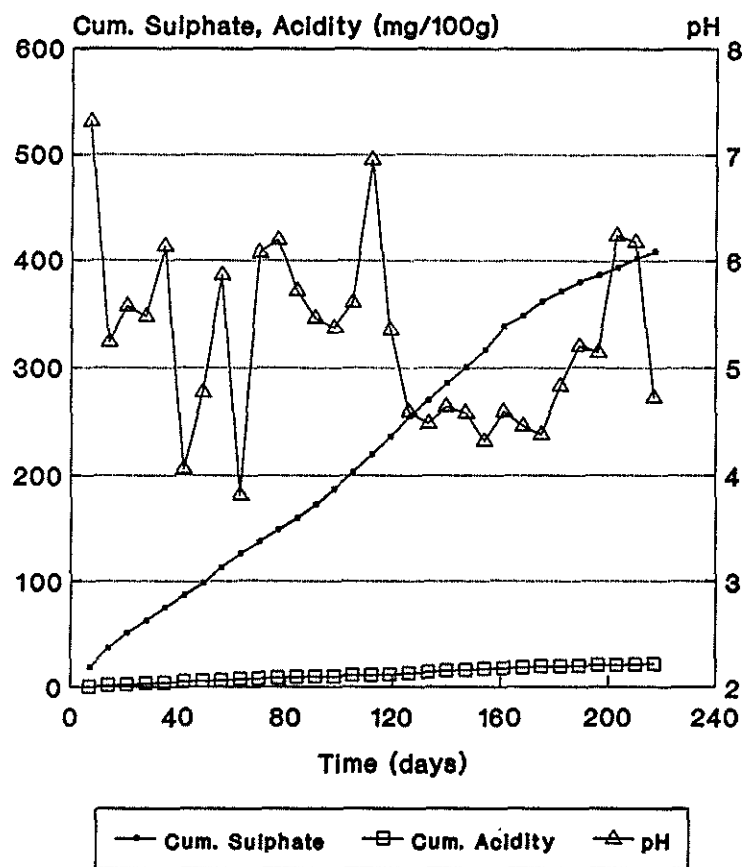


FIGURE 2.51

HUMIDITY CELL TEST RESULTS - PHYLLITE COMPOSITES

**HUMIDITY CELL TEST
PHYLLITE COMPOSITE**



**HUMIDITY CELL TEST
PHYLLITE COMPOSITE II (Inoculated)**

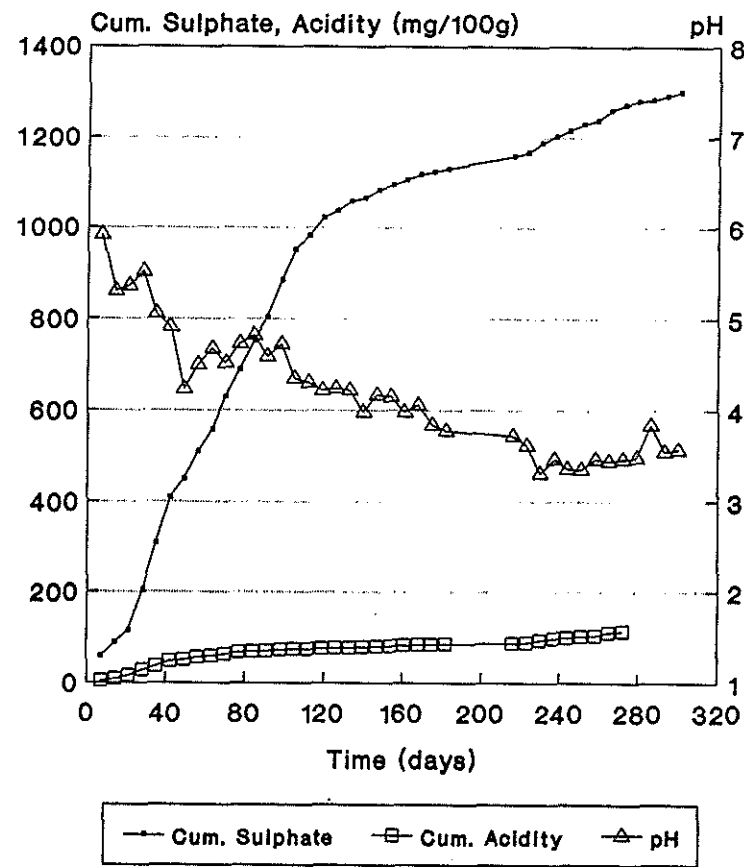
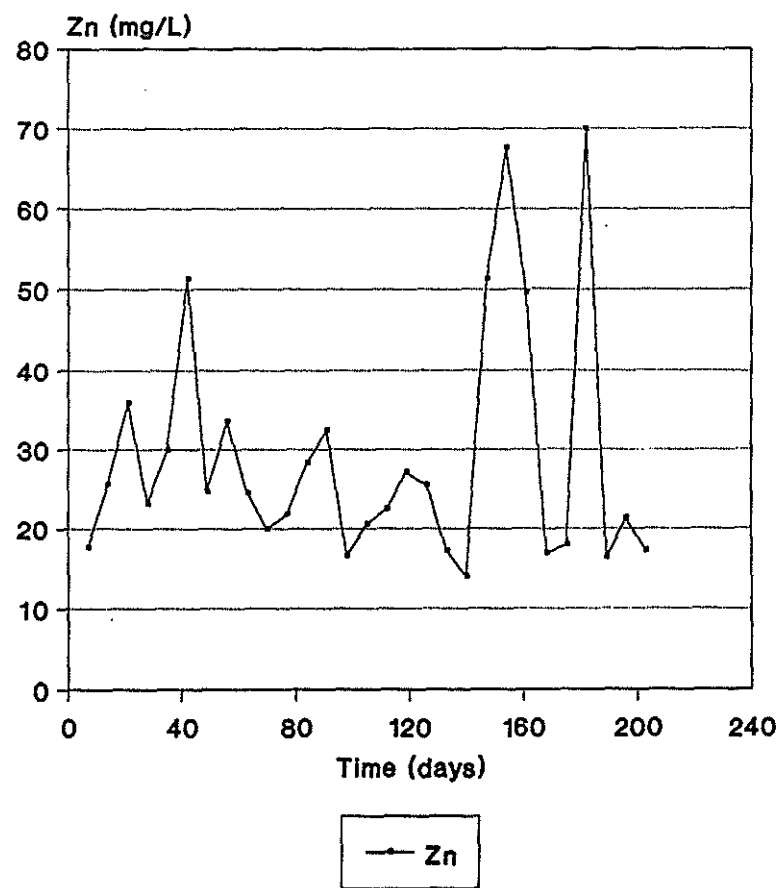


FIGURE 2.52

HUMIDITY CELL TEST
SULPHIDE COMPOSITE



HUMIDITY CELL TEST
SULPHIDE COMPOSITE II (Inoculated)

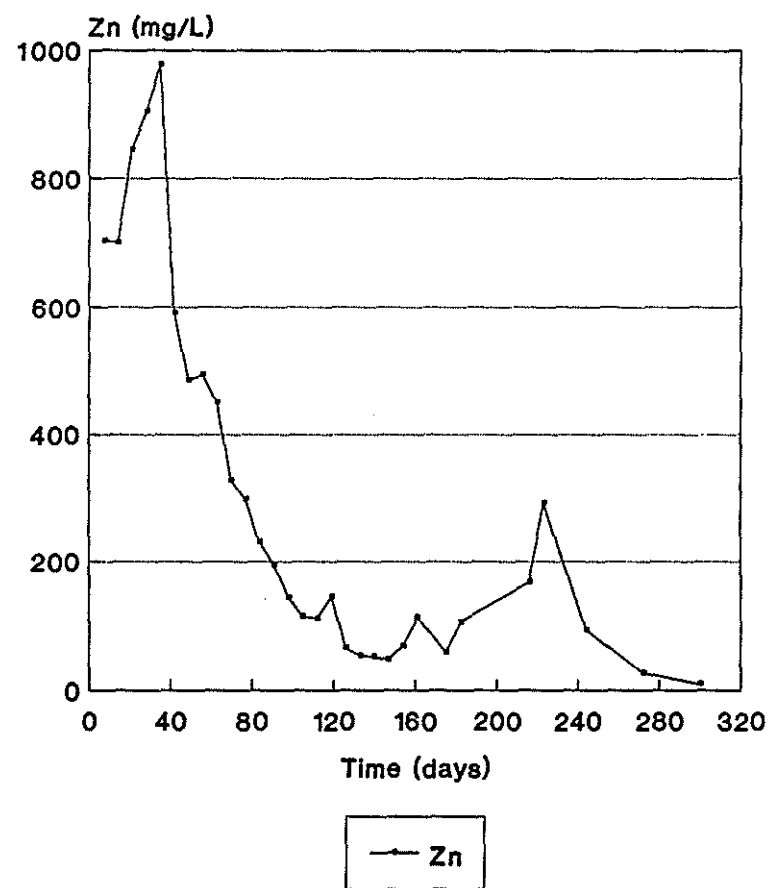
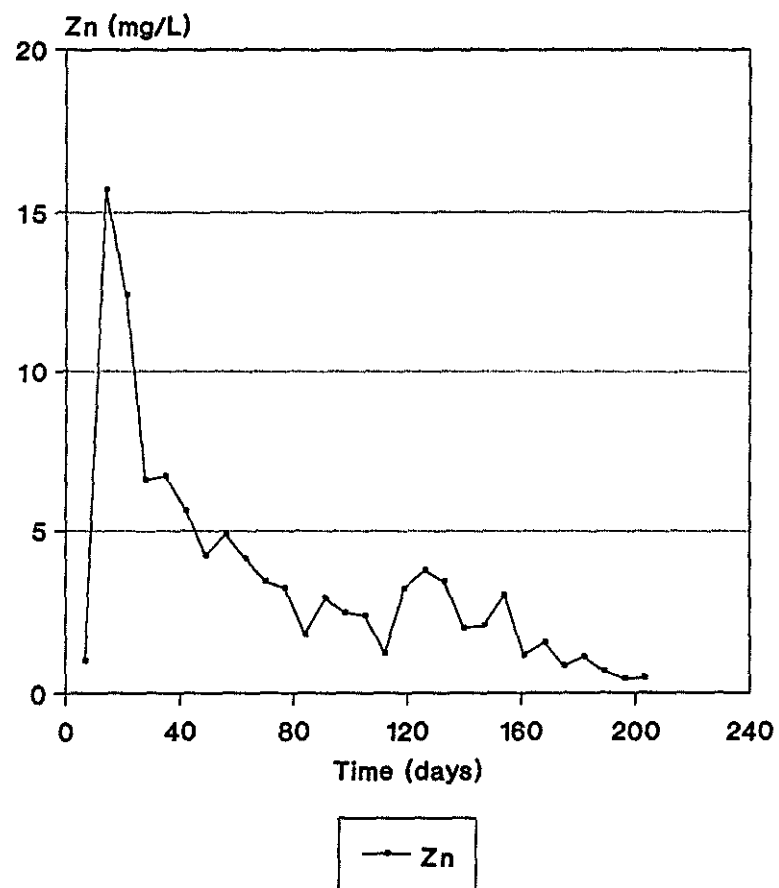


FIGURE 2.53 A

HUMIDITY CELL TEST
PHYLLITE COMPOSITE



HUMIDITY CELL TEST
PHYLLITE COMPOSITE II (Inoculated)

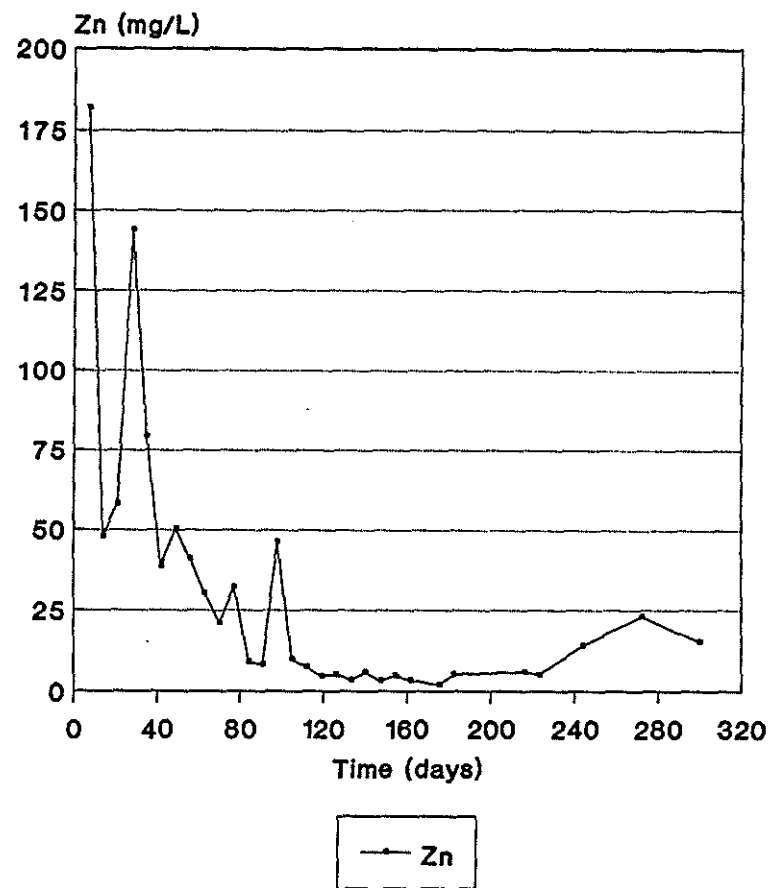
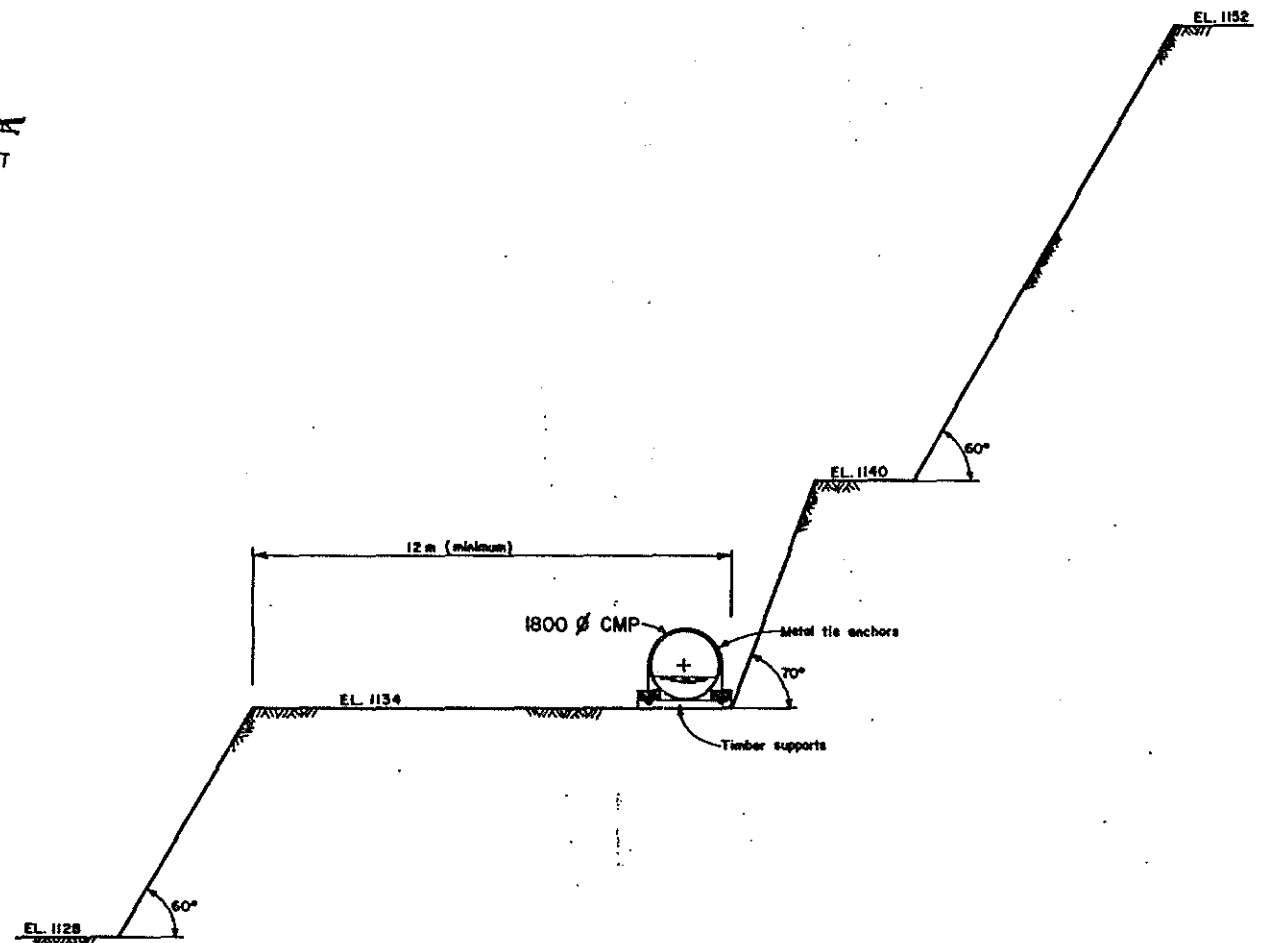
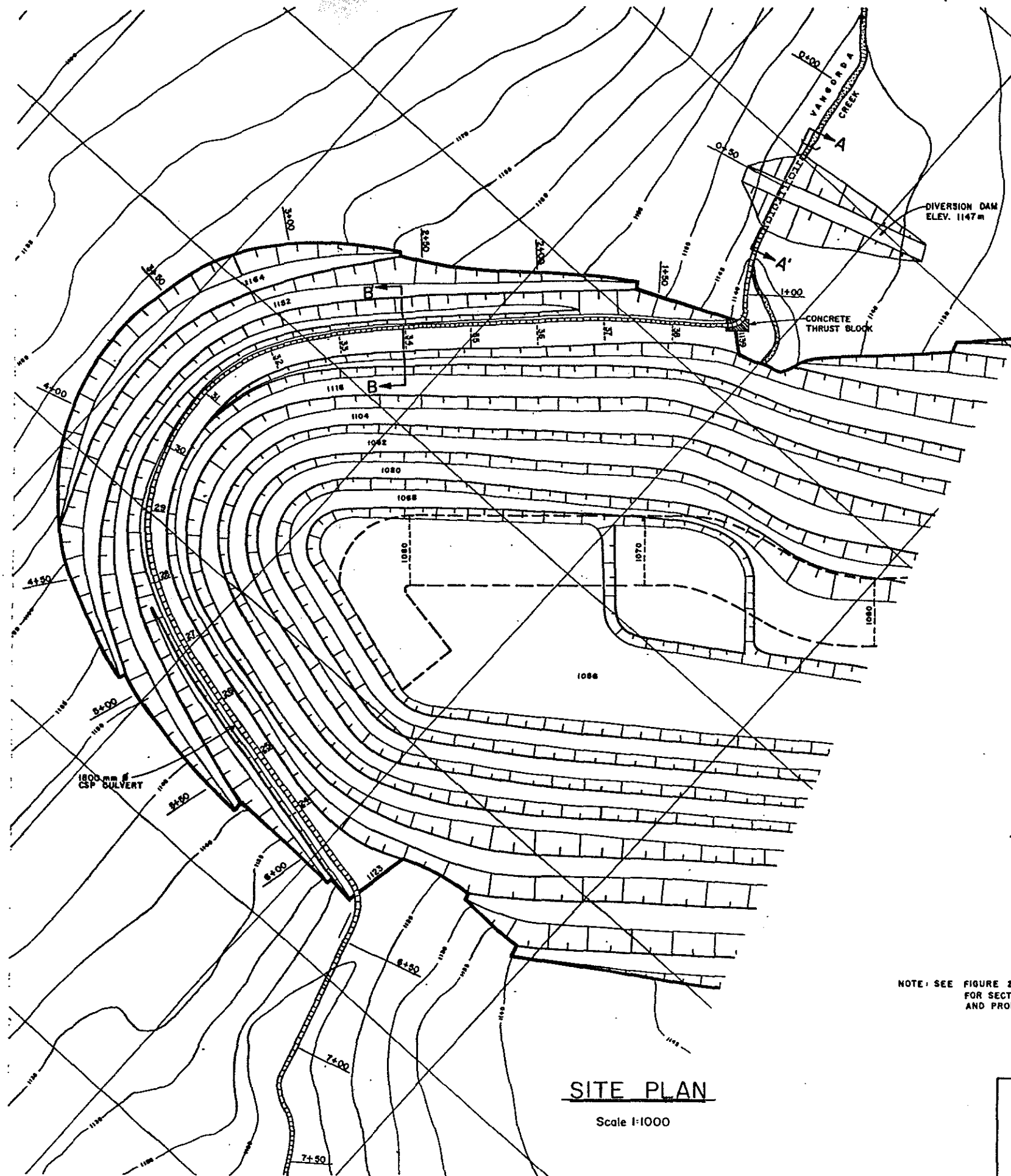
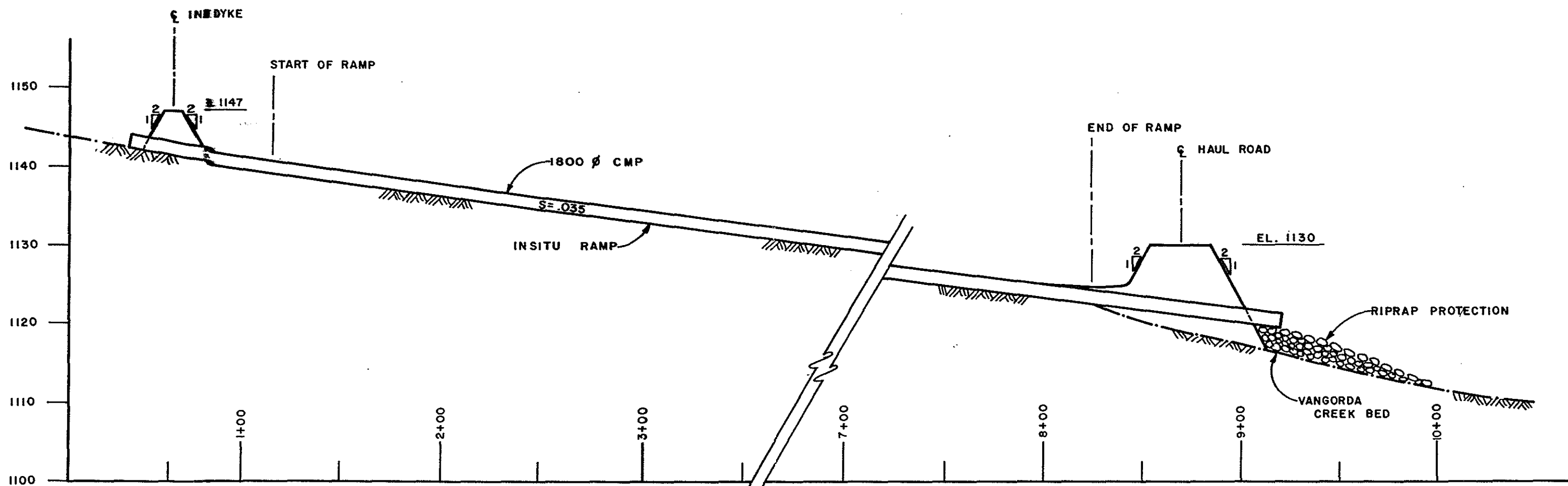
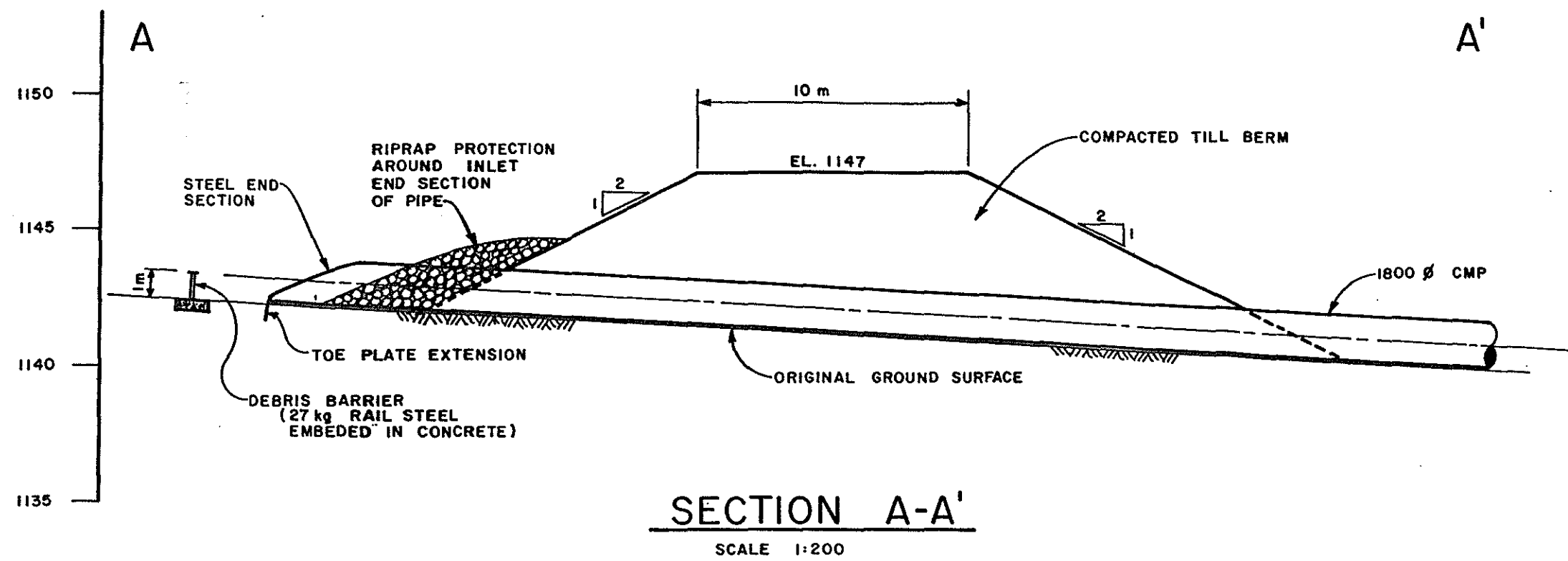


FIGURE 2.53 B



NOTE: SEE FIGURE 2.39
FOR SECTION A-A'
AND PROFILE

VANGORDA CREEK DIVERSION CULVERT SITE PLAN & SECTION B-B'		CURRAGH RESOURCES INC.	
		DATE:	89-01-07
		SCALE:	As shown
		FIGURE 2.54	



PROFILE ALONG CULVERT C

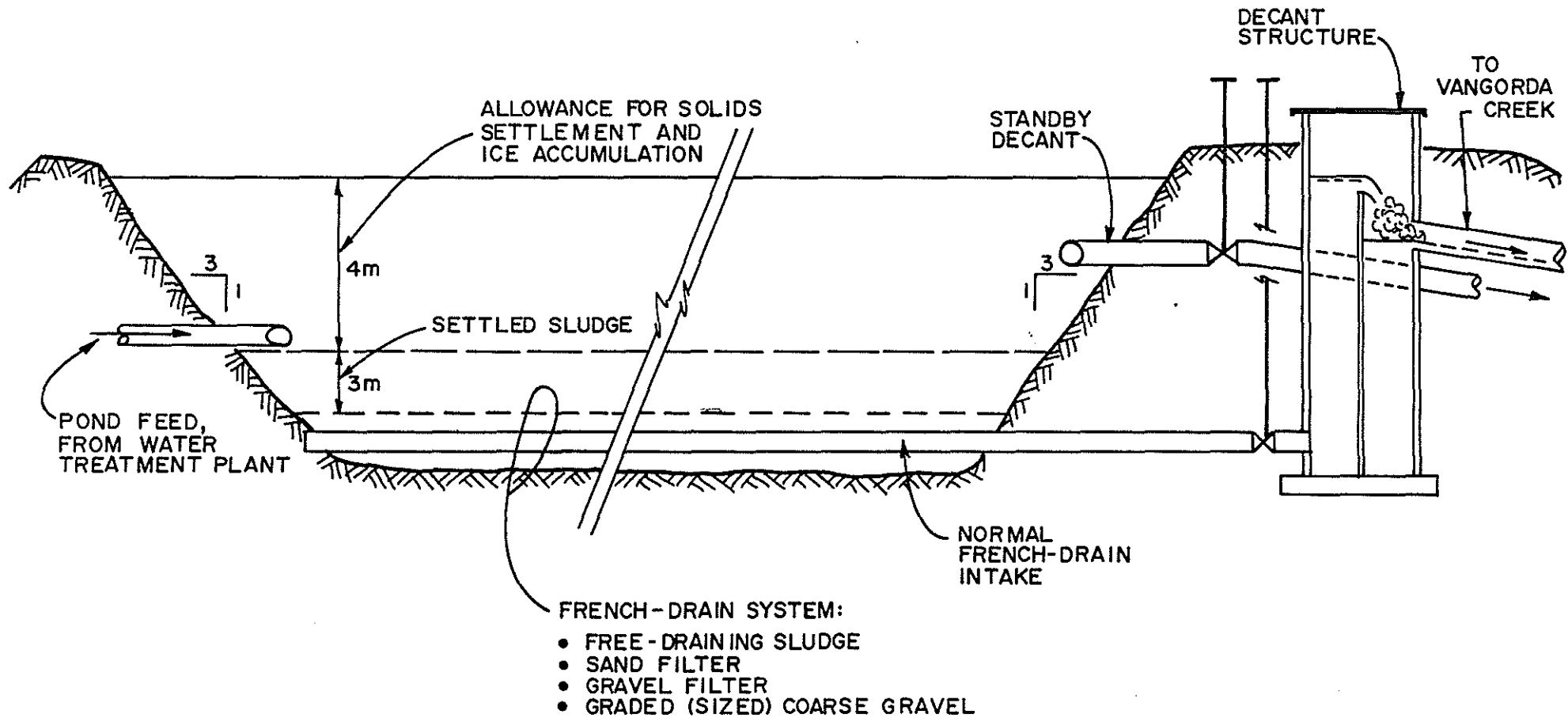
VERTICAL SCALE 1:500
 HORIZONTAL SCALE 1:2000

VANGORDA CREEK DIVERSION CULVERT
 PROFILE & SECTION

CURRAGH RESOURCES INC.

SCALE: AS SHOWN

FIGURE 2.55

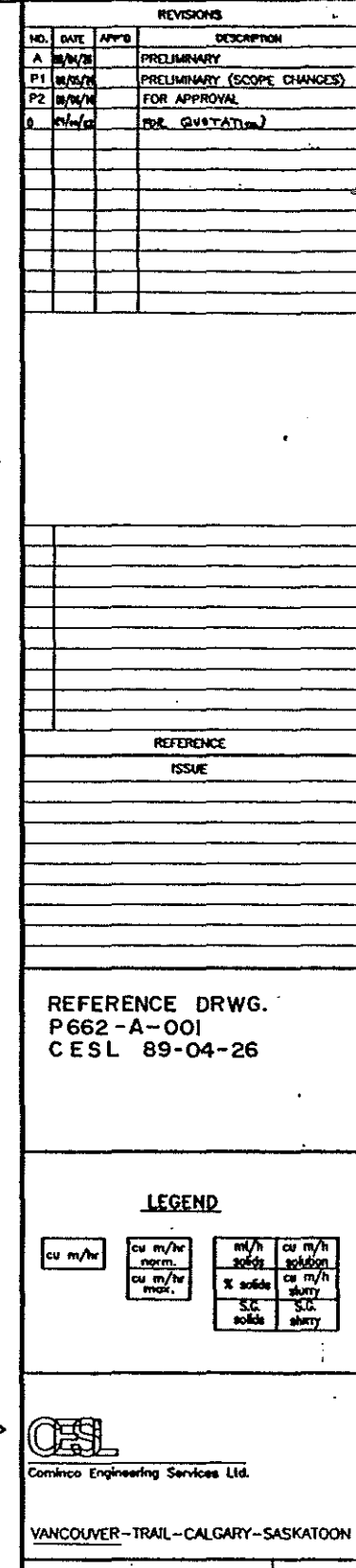


SLUDGE SETTLING/STORAGE POND
TYPICAL SECTION

CURRAGH RESOURCES INC.

SCALE : NOT TO SCALE

FIGURE 2.56



DRAWN BY	SES I	89/04/25
CHECKED BY		
DESIGNED BY		
SCALE	N.T.S.	
TITLE PROCESS FLOWSHEET CURRAGH RESOURCES INC. GRUM/VANGORDA WATER TREATMENT PLANT		
DRAWING NO.		
2.57		

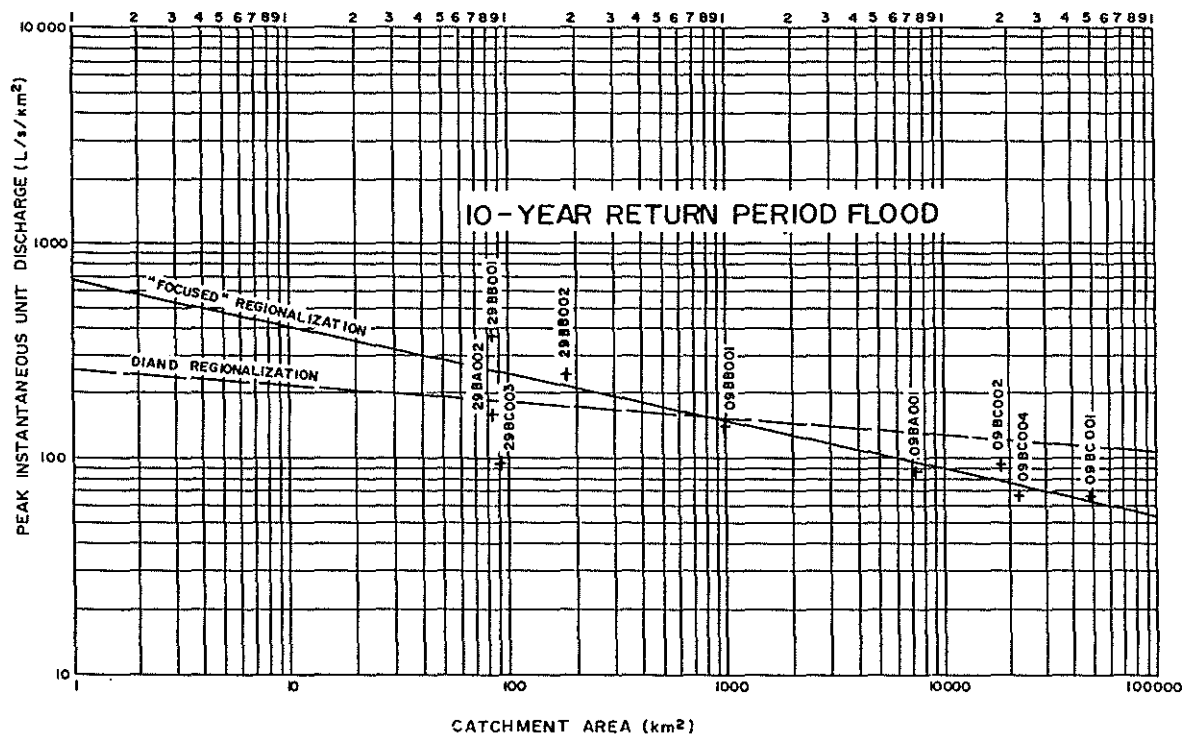
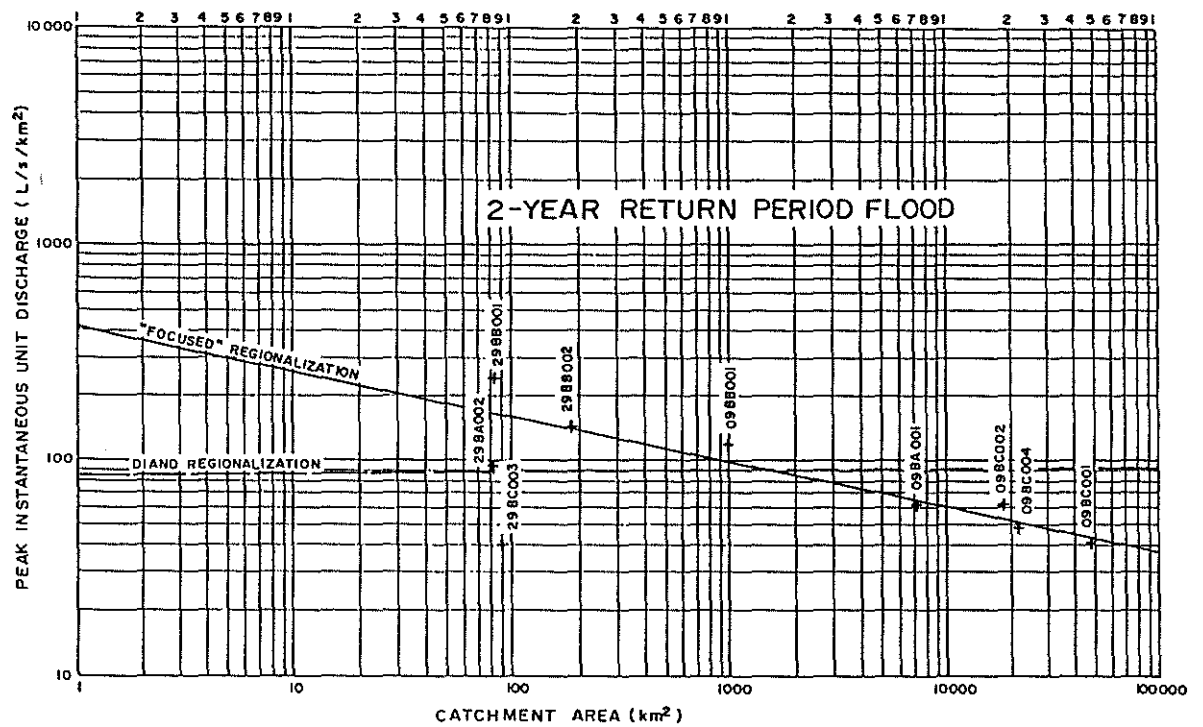


FIG. 3.1 REGIONAL RELATIONSHIPS BETWEEN FLOOD HYDROLOGY AND CATCHMENT AREA

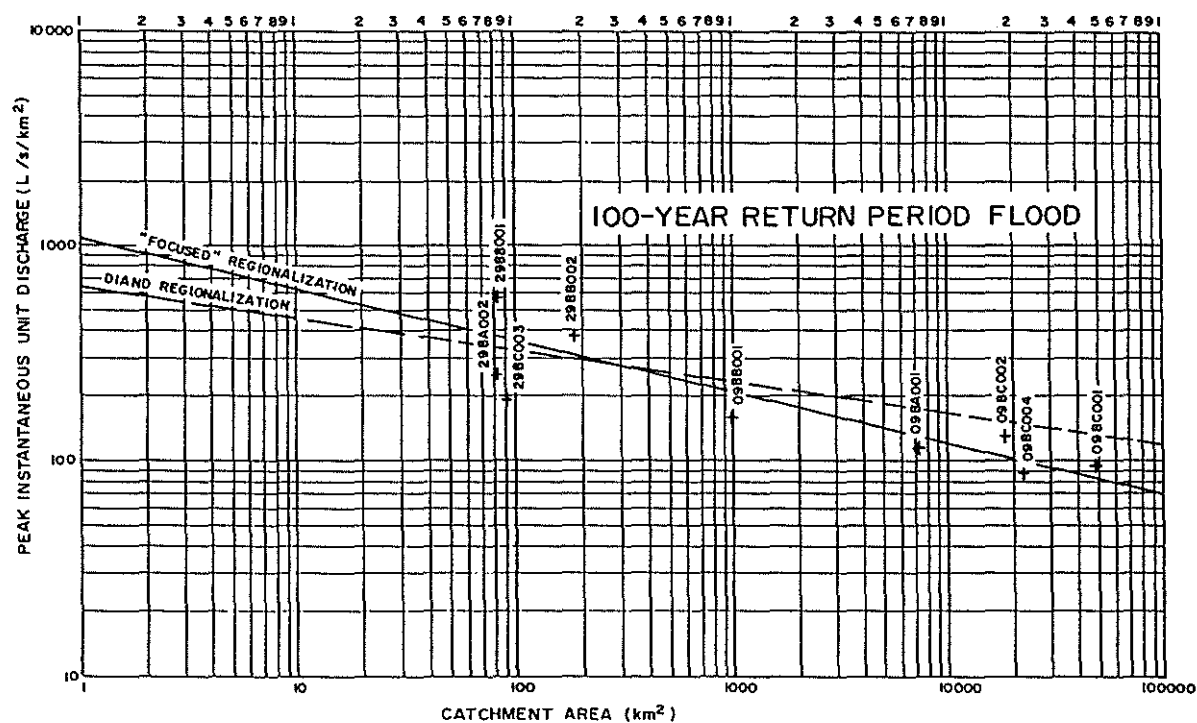
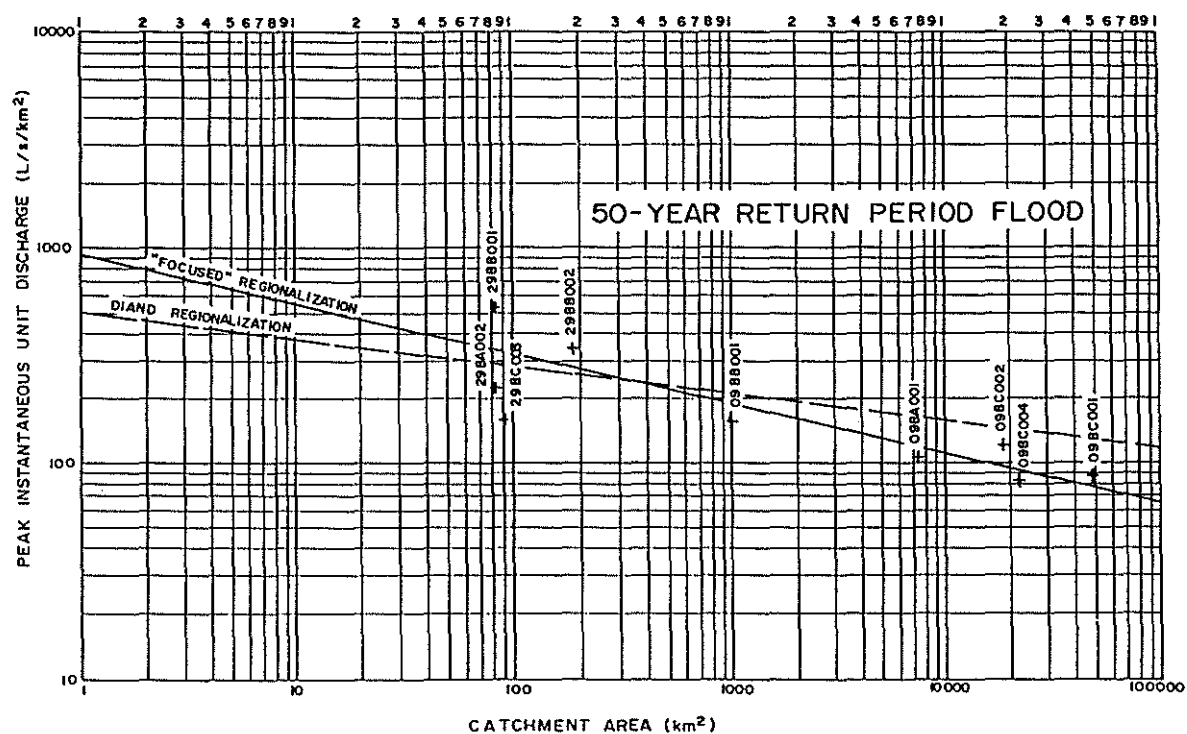


FIG. 3.2 REGIONAL RELATIONSHIPS BETWEEN FLOOD HYDROLOGY AND CATCHMENT AREA

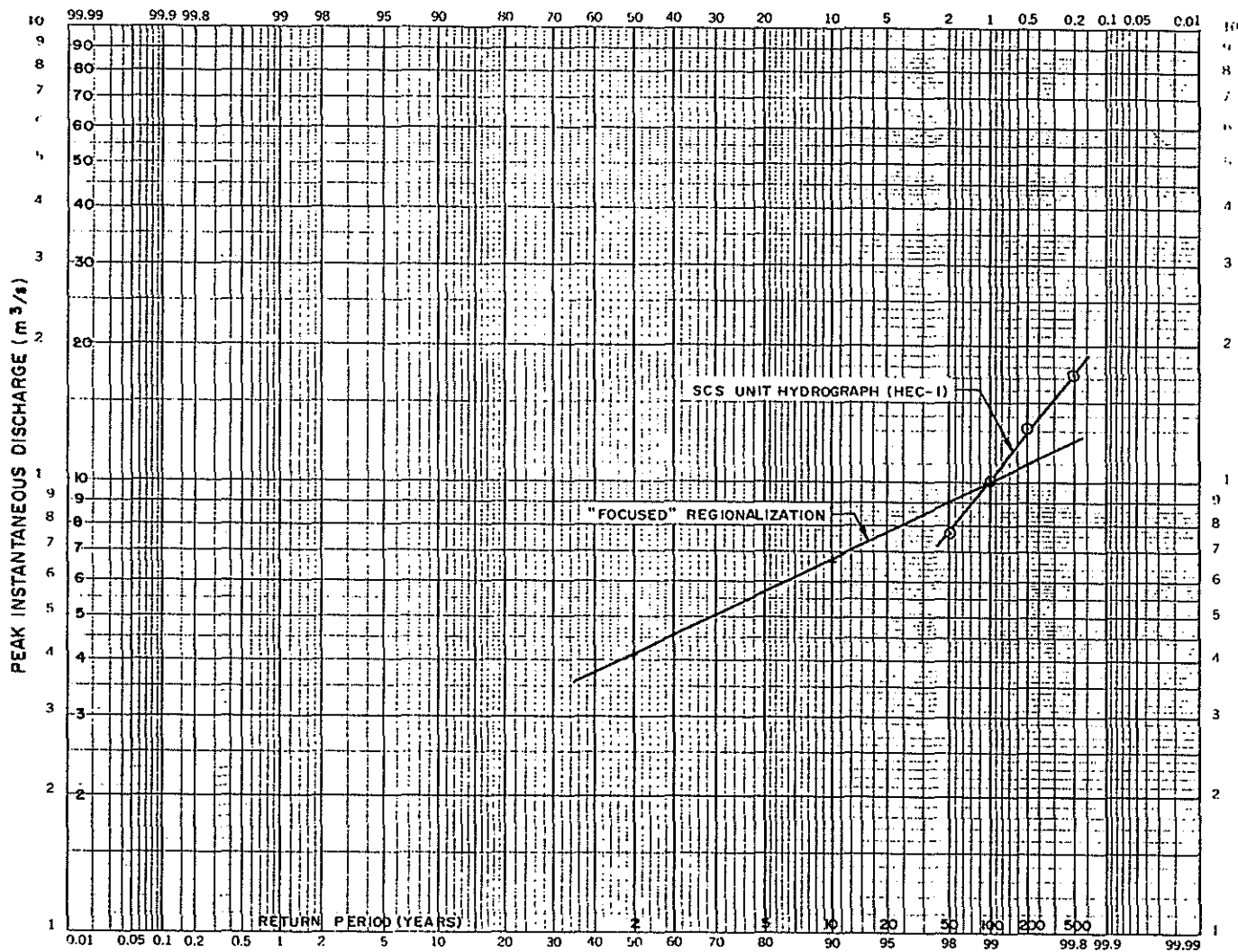


FIG. 3.3 ESTIMATED PEAK INSTANTANEOUS FLOOD DISCHARGES FOR VANGORDA CREEK AT DIVERSION SITE

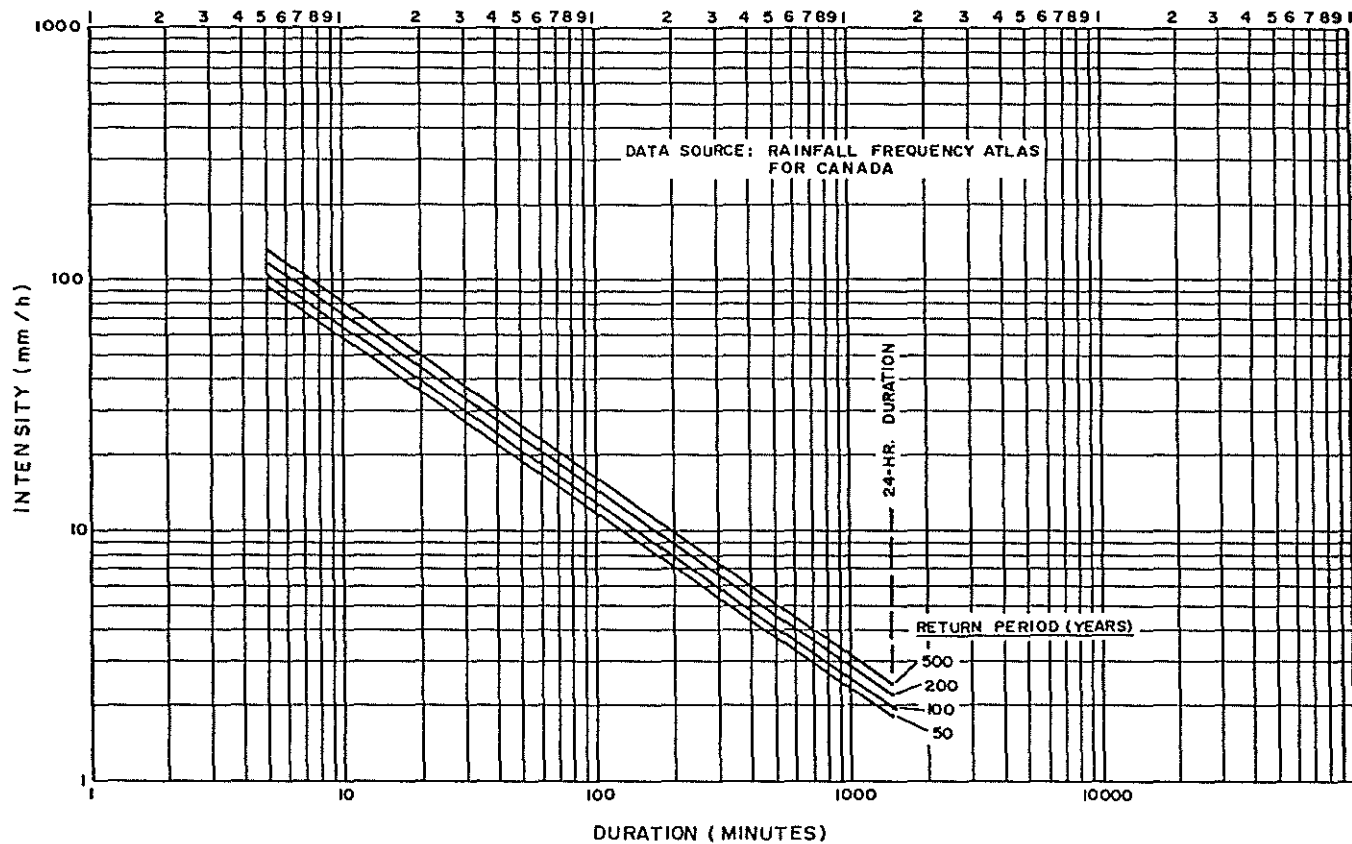


FIG. 3.4 ESTIMATED RAINFALL INTENSITY-DURATION-FREQUENCY CURVES FOR PROJECT AREA

WATER QUALITY MONITORING SITES

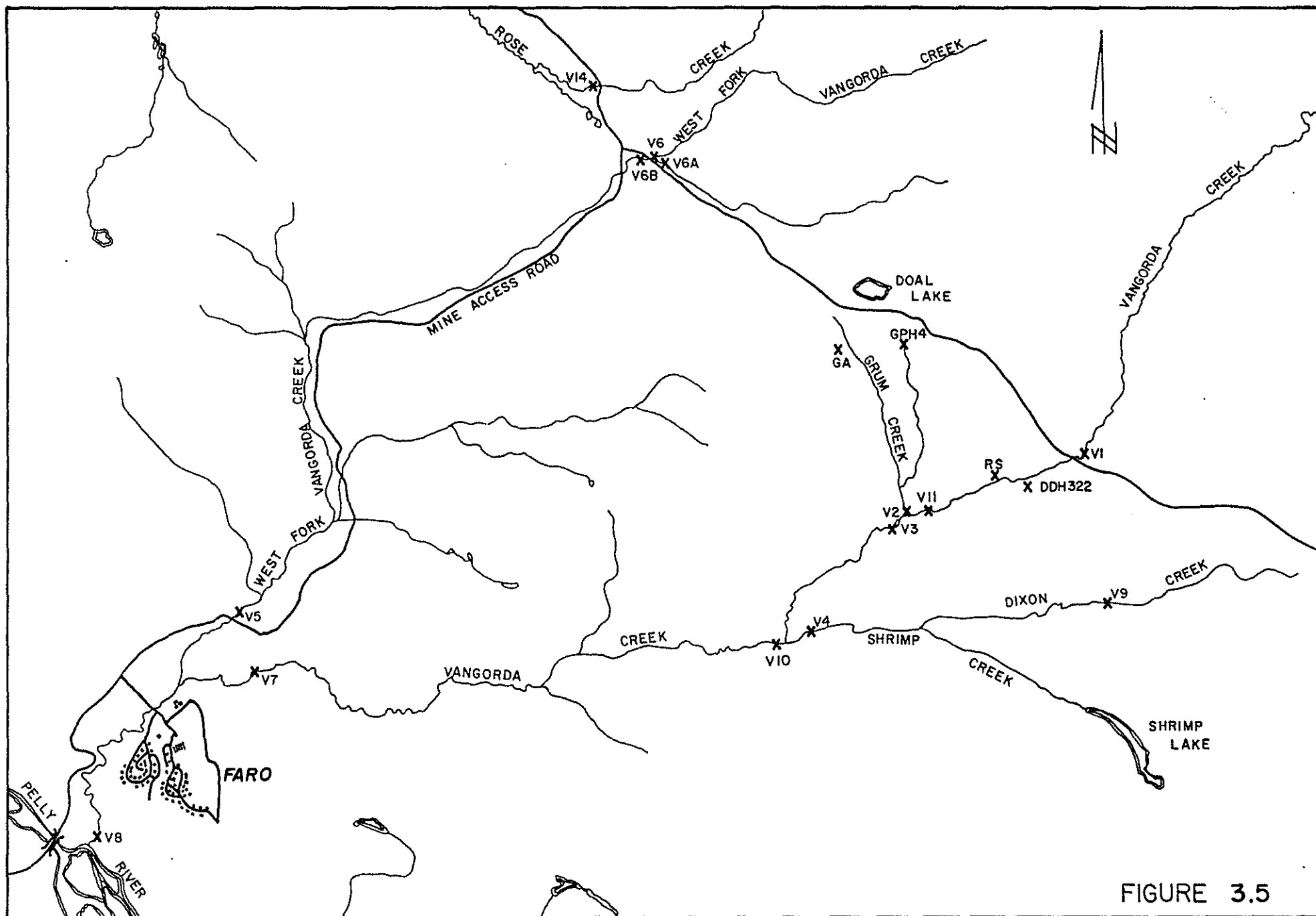
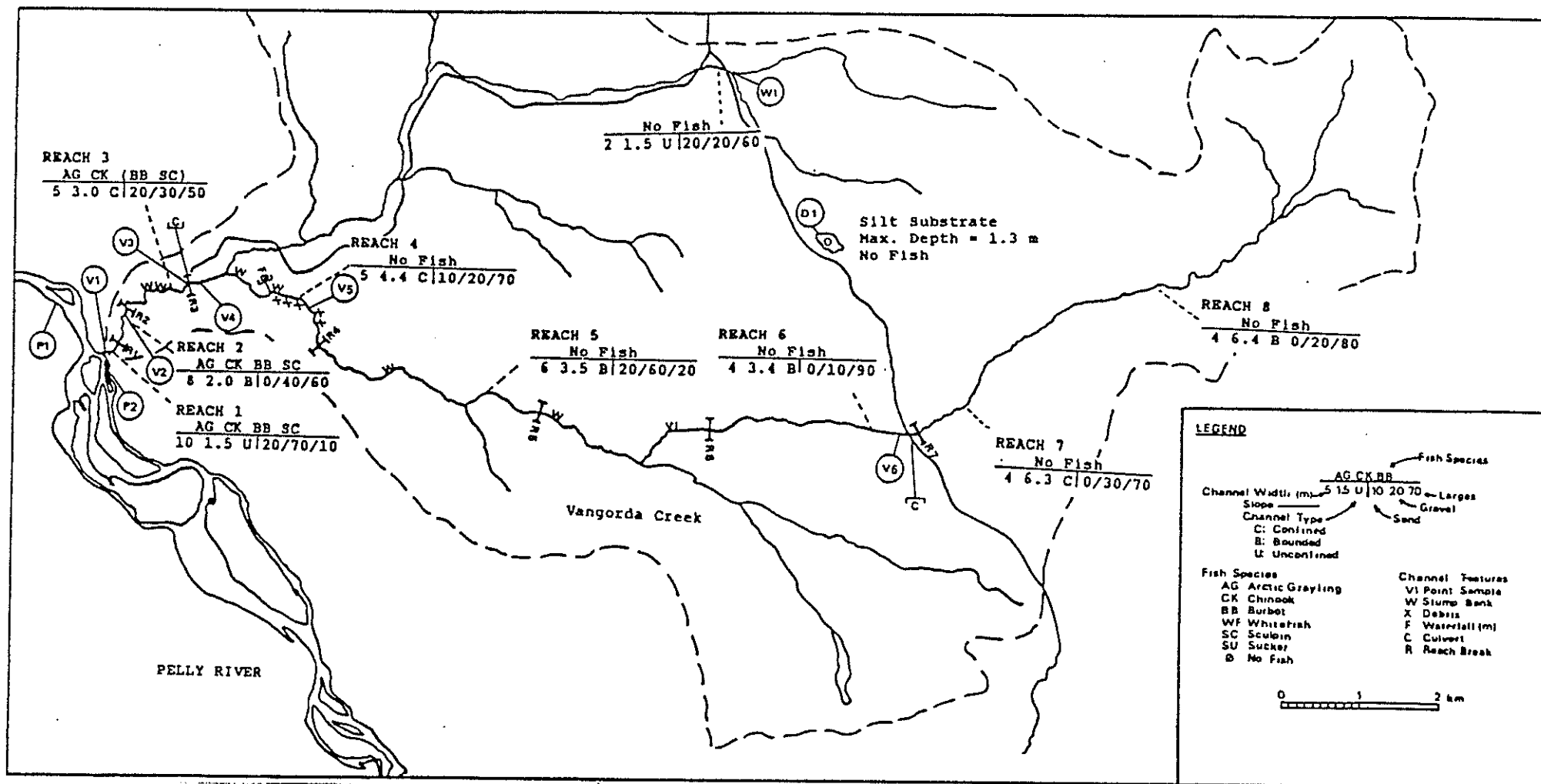


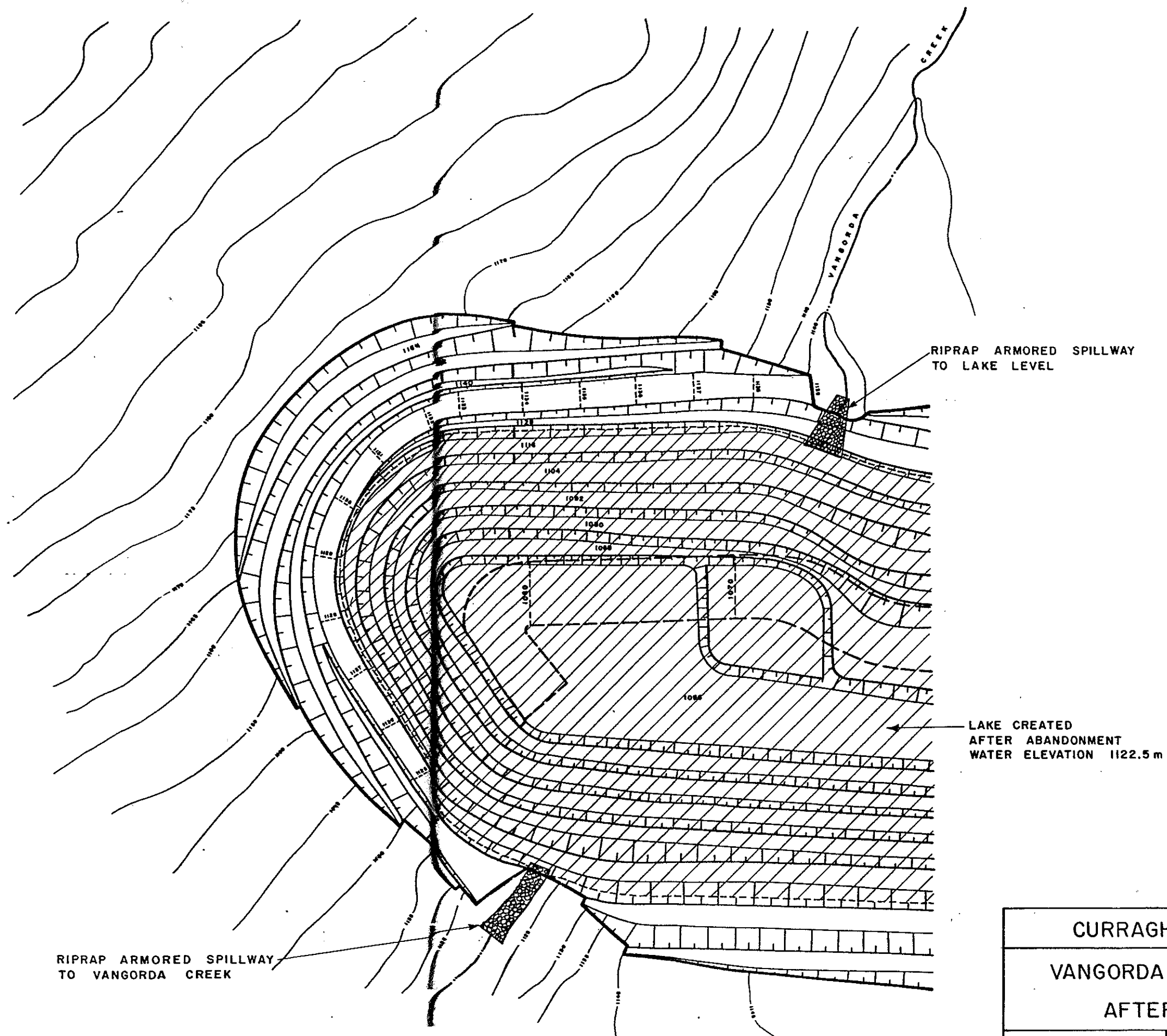
FIGURE 3.5



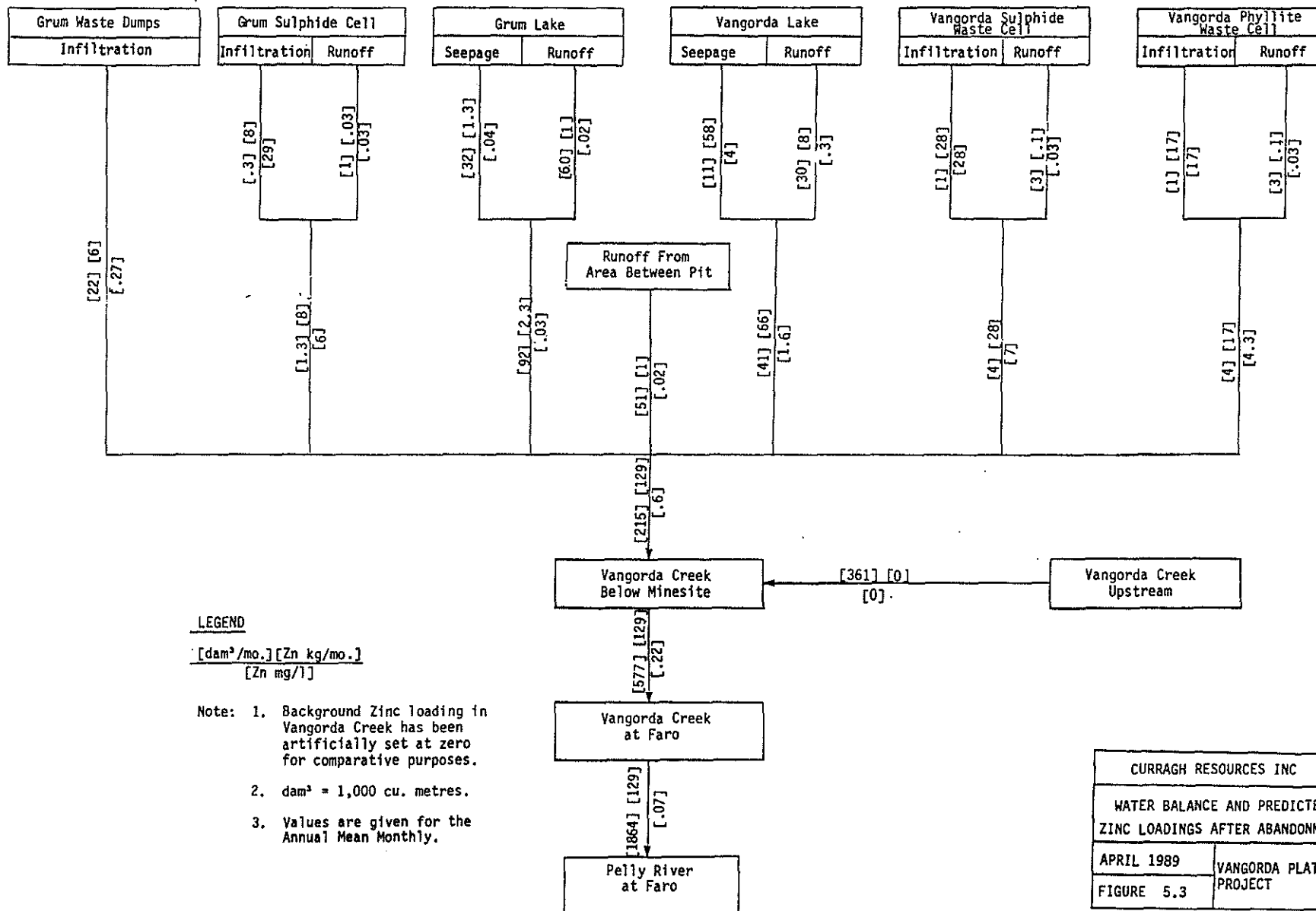
FISH SAMPLING SITE LOCATIONS & BIO-PHYSICAL DATA SUMMARY

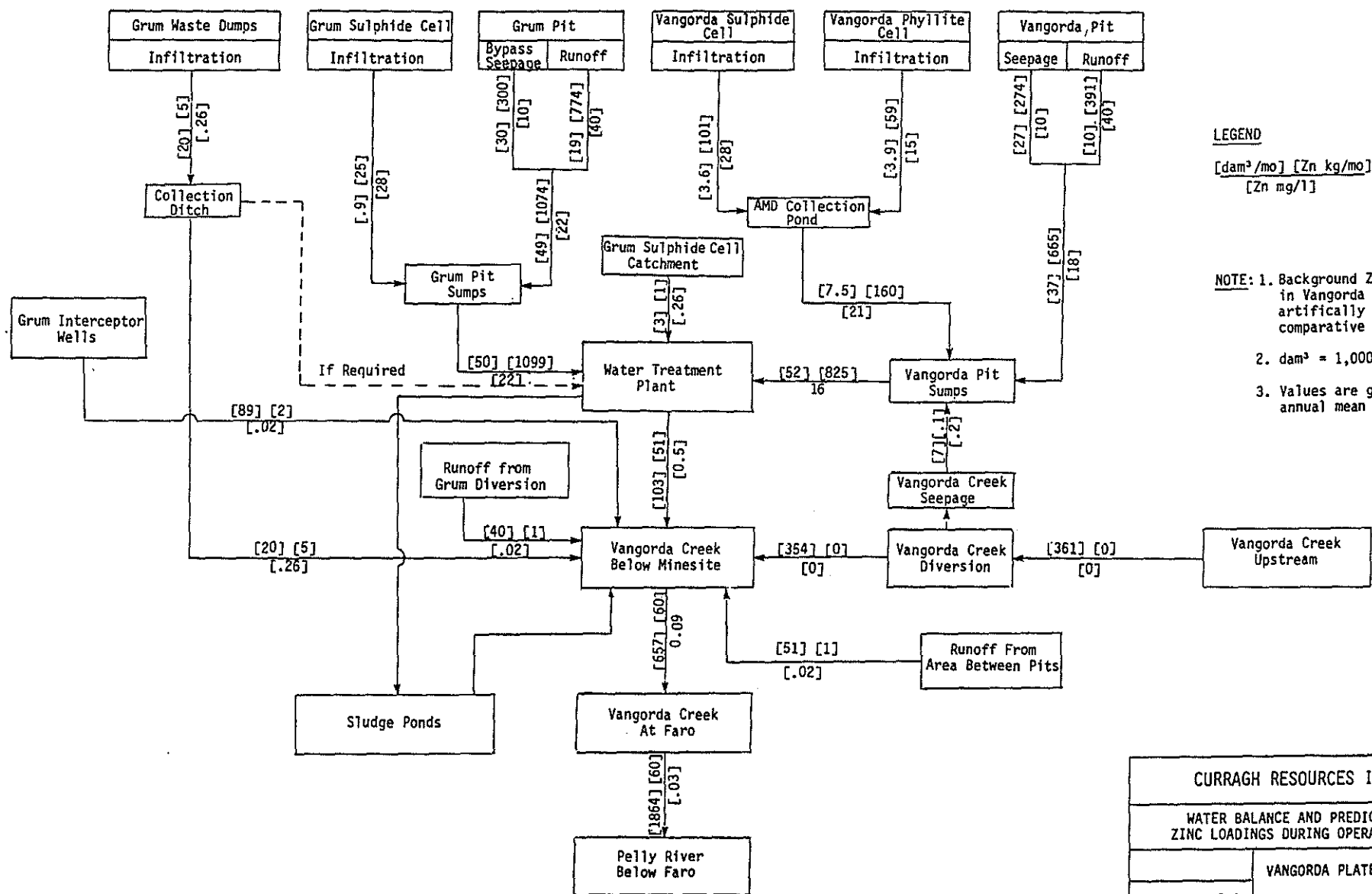
(From P.A. HARDER & ASSOC. 1987)

FIGURE 3.6



CURRAGH RESOURCES INC.		
VANGORDA CREEK REHABILITATION AFTER ABANDONMENT		
	1:2000	FIGURE 4.1





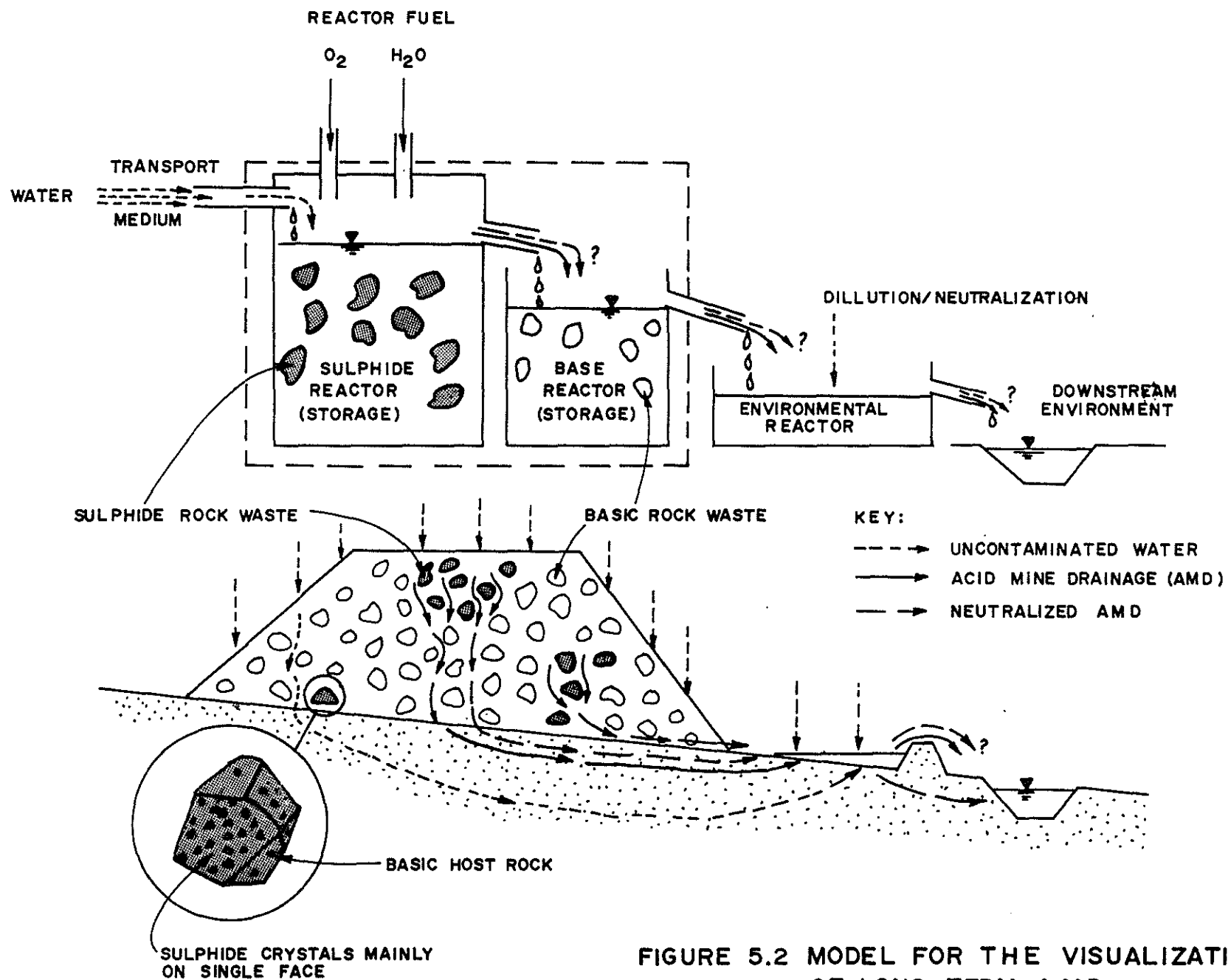


FIGURE 5.2 MODEL FOR THE VISUALIZATION OF LONG TERM AMD

