



Curragh  
Resources Inc.

000061

# **VANGORDA PLATEAU DEVELOPMENT**

## **INITIAL ENVIRONMENTAL EVALUATION**

### **VOLUME III STAGE II FIGURES**

**JULY 1989**

**VANGORDA PLATEAU**

**DEVELOPMENT**

**INITIAL ENVIRONMENTAL EVALUATION**

**VOLUME III**

**STAGE II FIGURES**

Prepared for:

**CURRAGH RESOURCES INC.**

117 Industrial Road  
Whitehorse, Yukon  
Y1A 2Tb

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July 1989

**CURRAGH RESOURCES INC.**  
**VANGORDA PLATEAU DEVELOPMENT**  
**INITIAL ENVIRONMENTAL EVALUATION**

**VOLUME III**  
**STAGE II FIGURES**

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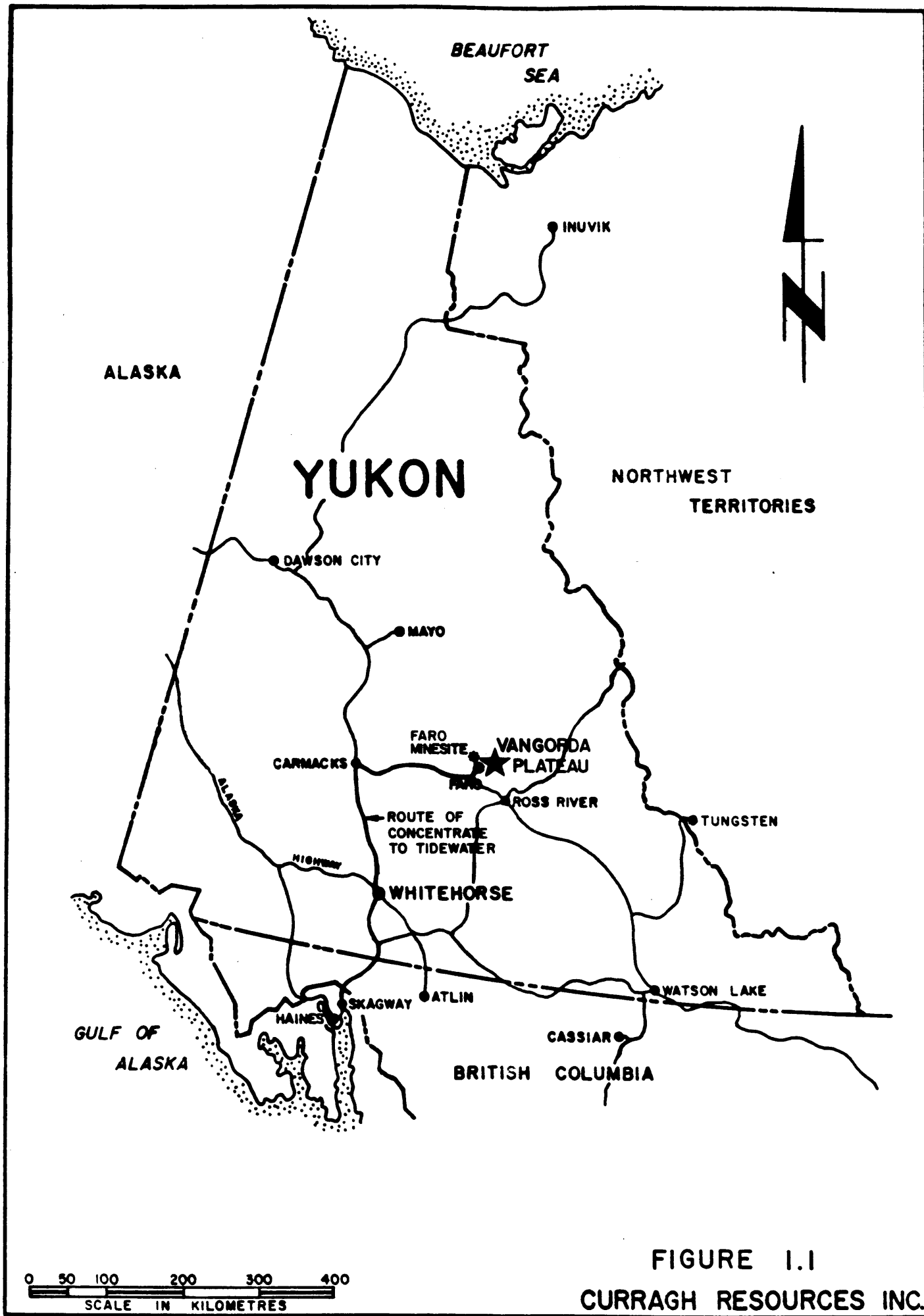
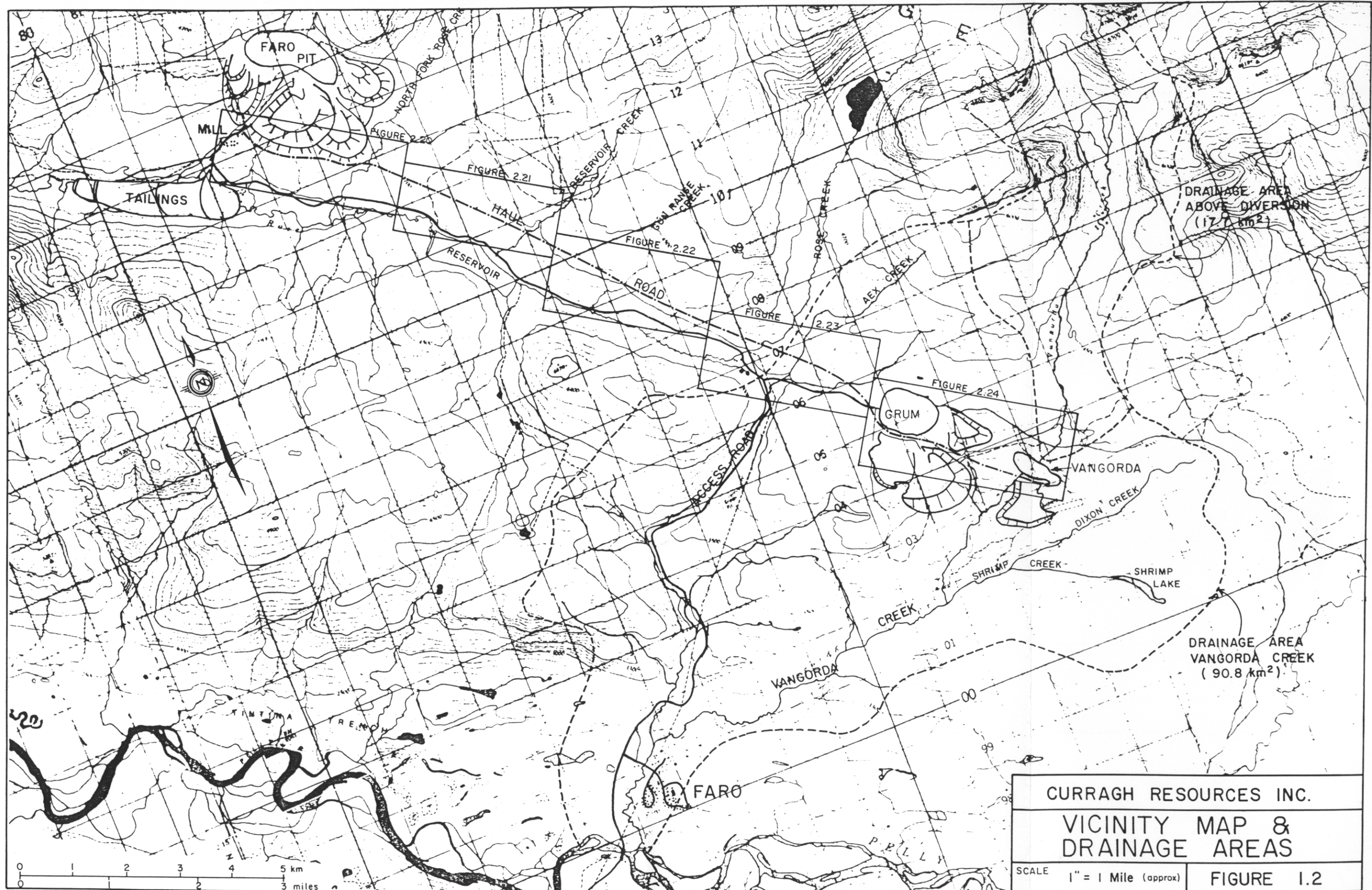
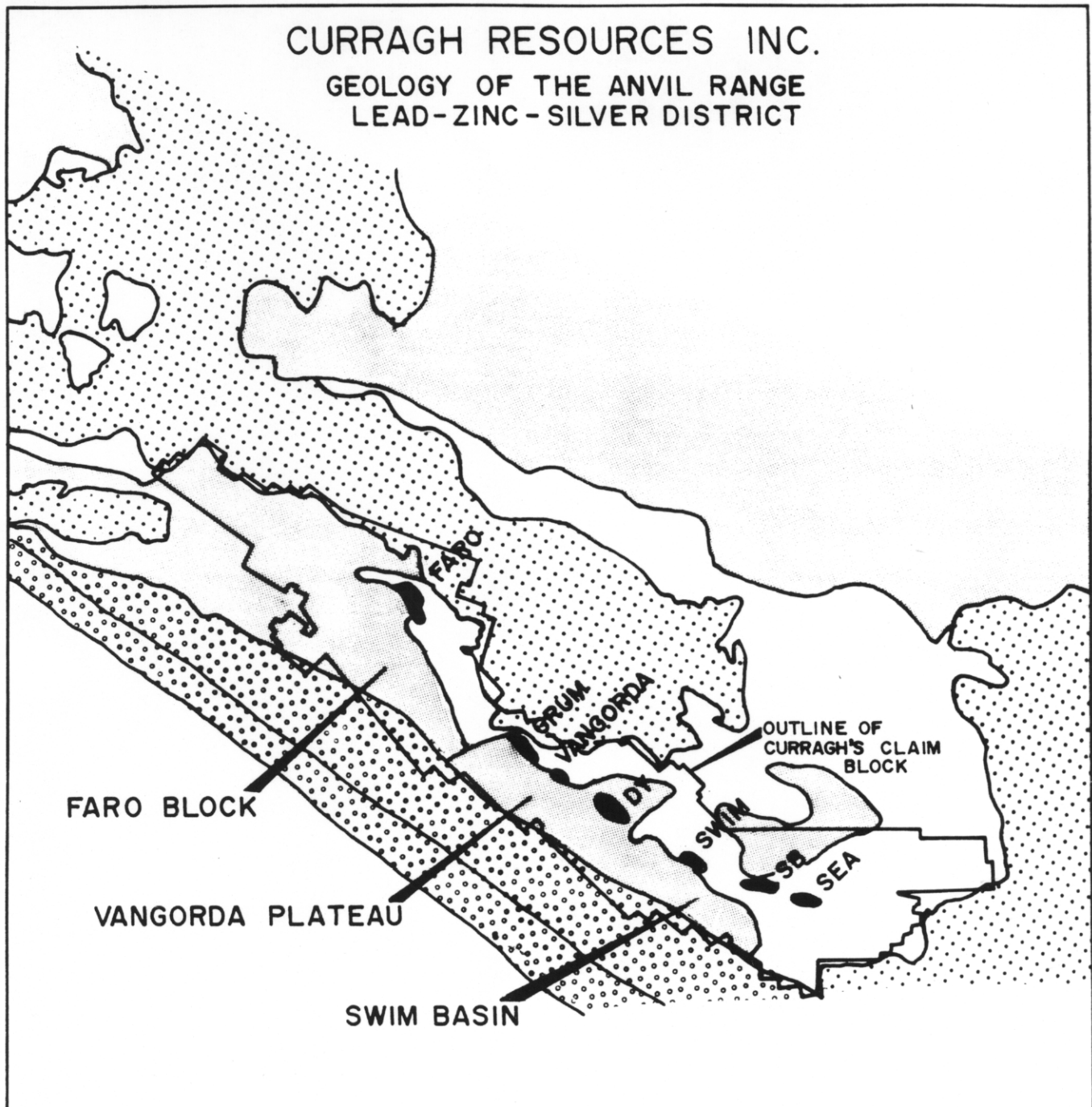


FIGURE 1.1  
CURRAGH RESOURCES INC.



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



LEGEND:

- CRETACEOUS**  
 ANVIL BATHOLITH: granite, granodiorite
- PALEOZOIC and MESOZOIC**  
 YUKON TANNANA TERRANE and related units
- CAMBRIAN to PERMIAN**  
 VANGORDA FORMATION and younger formations  
 -undifferentiated sedimentary and volcanic rocks
- EARLY CAMBRIAN**  
 MT. MYE FORMATION: non-calcareous phyllite and schist
- SULPHIDE DEPOSIT - all Pb, Zn, Ag bearing  
 except SB and SEA
- FAULT

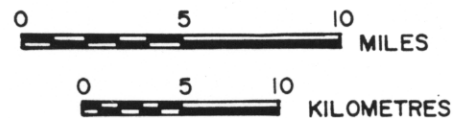
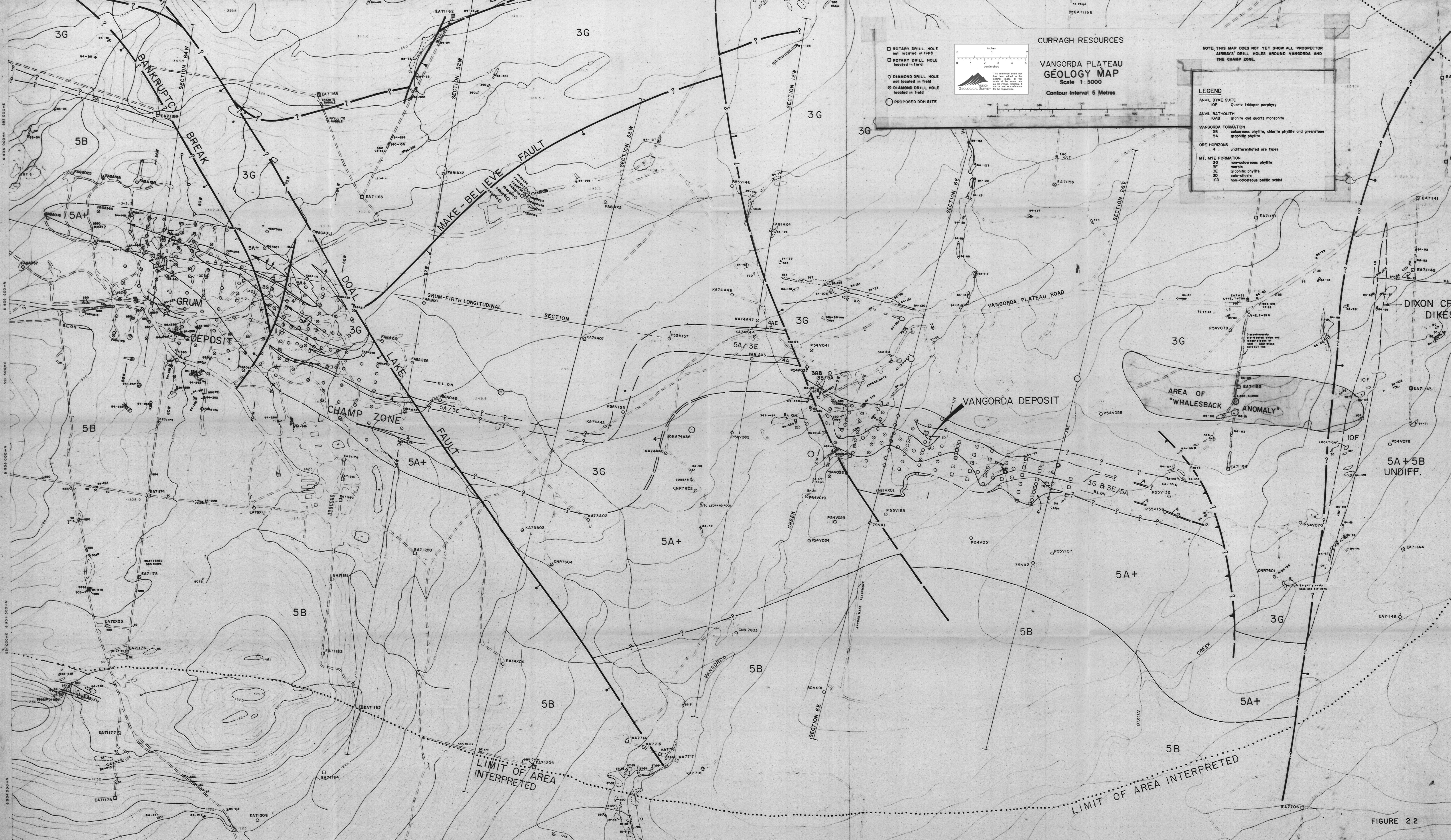


FIGURE 2.1

ADJOINS SHEET MF-6-3 W 1/2



**CURRAGH RESOURCES**

**VANGORDA PLATEAU  
GEOLOGY MAP**  
Scale 1:5000  
Contour Interval 5 Metres

ROTARY DRILL HOLE  
not located in field  
 ROTARY DRILL HOLE  
located in field  
 DIAMOND DRILL HOLE  
not located in field  
 DIAMOND DRILL HOLE  
located in field  
 PROPOSED DDH SITE

This reference grid for  
 the map is based on the  
 U.T.M. Zone 50N, Easting  
 500000, Northing 5000000  
 and is based on the datum  
 of the Australian Geodetic  
 Survey.

NOTE: THIS MAP DOES NOT YET SHOW ALL PROSPECTOR AIRBORNE DRILL HOLES AROUND VANGORDA AND THE CHAMP ZONE.

**LEGEND**

ANVIL DYKE SUITE  
10F Quartz feldspar porphyry

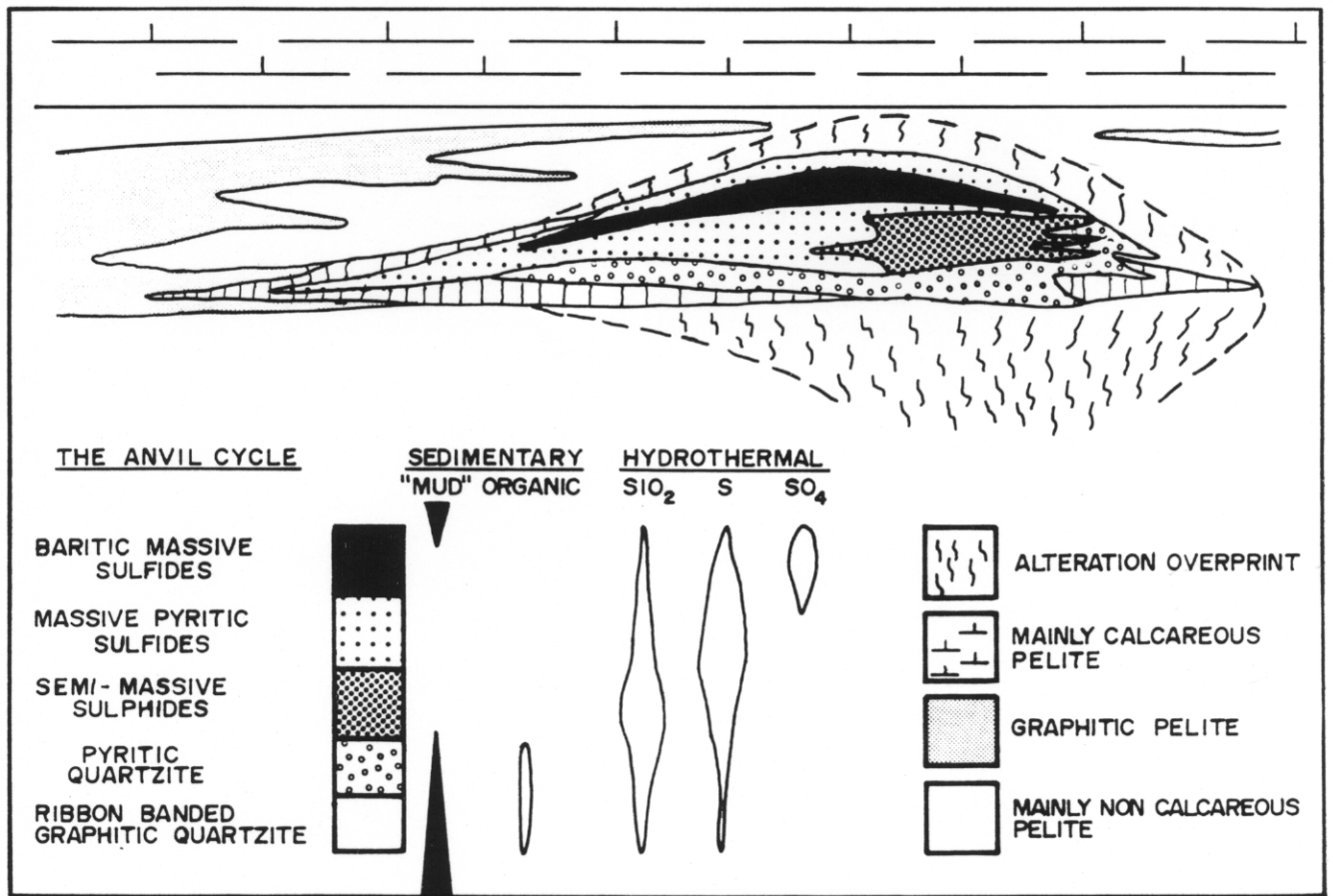
ANVIL BATHOLITH  
10AB granite and quartz monzonite

VANGORDA FORMATION  
5B calcareous phyllite, chlorite phyllite and greenstone  
5A graphitic phyllite

ORE HORIZONS  
4 undifferentiated ore types

MT. MYE FORMATION  
3G non-calcareous phyllite  
3F marble  
3E graphitic phyllite  
3D calc-silicate  
1CD non-calcareous pelitic schist

FIGURE 2.2

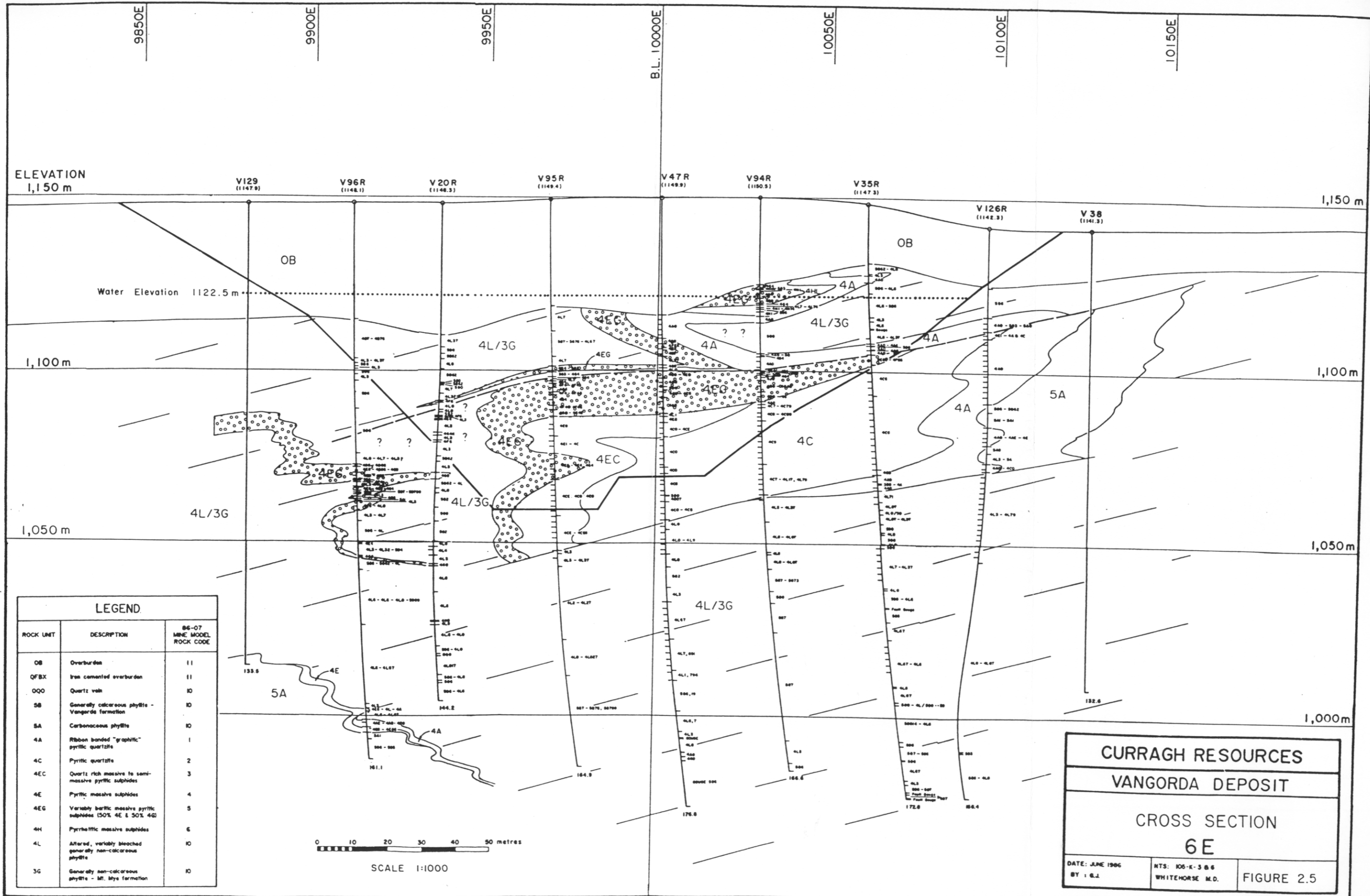


B C B Drafting Service

IDEALIZED ANVIL CYCLE

FIGURE 2.3





ELEVATION  
1,150 m

1,150 m

1,100 m

1,100 m

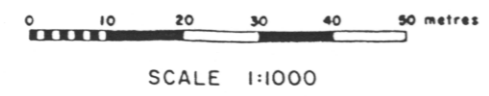
1,050 m

1,050 m

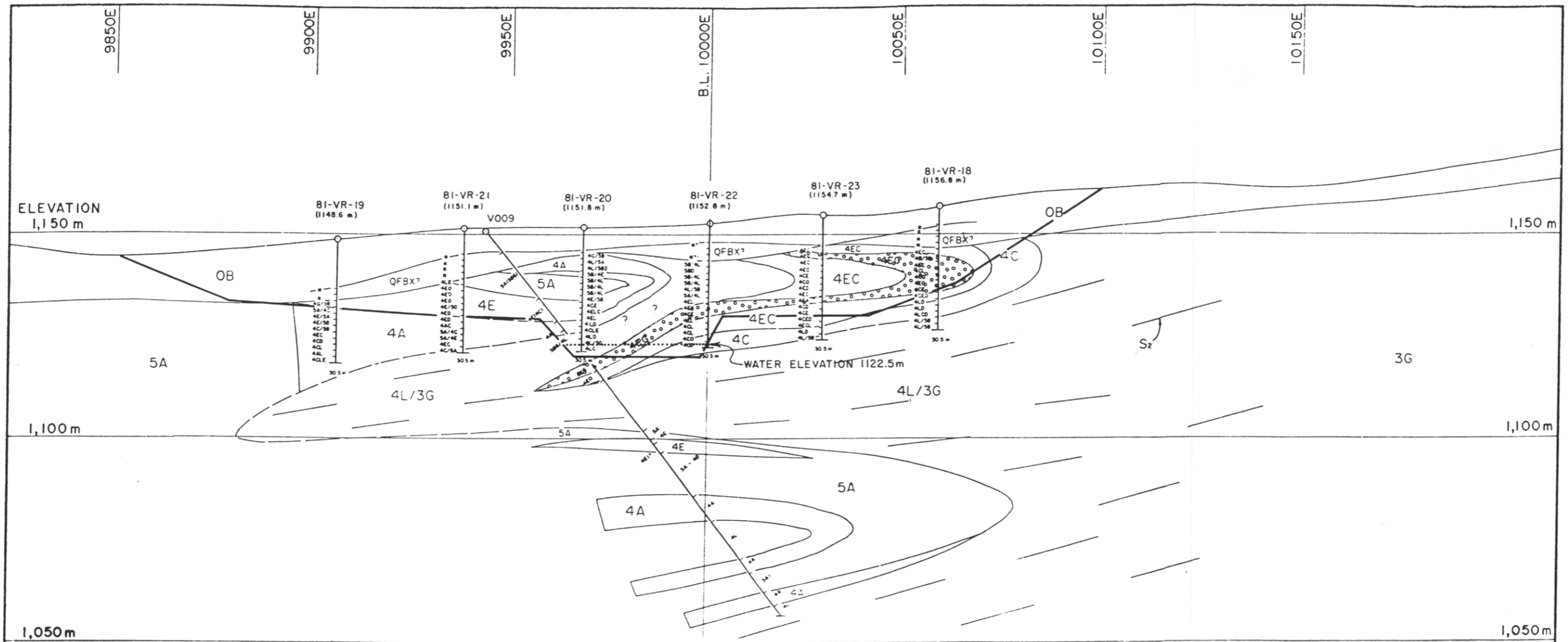
1,000 m

Water Elevation 1122.5 m

LEGEND		
ROCK UNIT	DESCRIPTION	86-07 MINE MODEL ROCK CODE
OB	Overburden	11
QFBX	Iron cemented overburden	11
QOO	Quartz vein	10
5B	Generally calcareous phyllite - Vangorda formation	10
5A	Carbonaceous phyllite	10
4A	Ribbon banded "graphitic" pyritic quartzite	1
4C	Pyritic quartzite	2
4EC	Quartz rich massive to semi-massive pyritic sulphides	3
4E	Pyritic massive sulphides	4
4EG	Variably baritic massive pyritic sulphides (50% 4E & 50% 4G)	5
4H	Pyrrhotitic massive sulphides	6
4L	Alterred, variably bleached generally non-calcareous phyllite	10
3G	Generally non-calcareous phyllite - Mt. Mys formation	10



CURRAGH RESOURCES		
VANGORDA DEPOSIT		
CROSS SECTION 6E		
DATE: JUNE 1986	NTS: 106-K-3 & 6	FIGURE 2.5
BY: G.J.	WHITEHORSE M.D.	



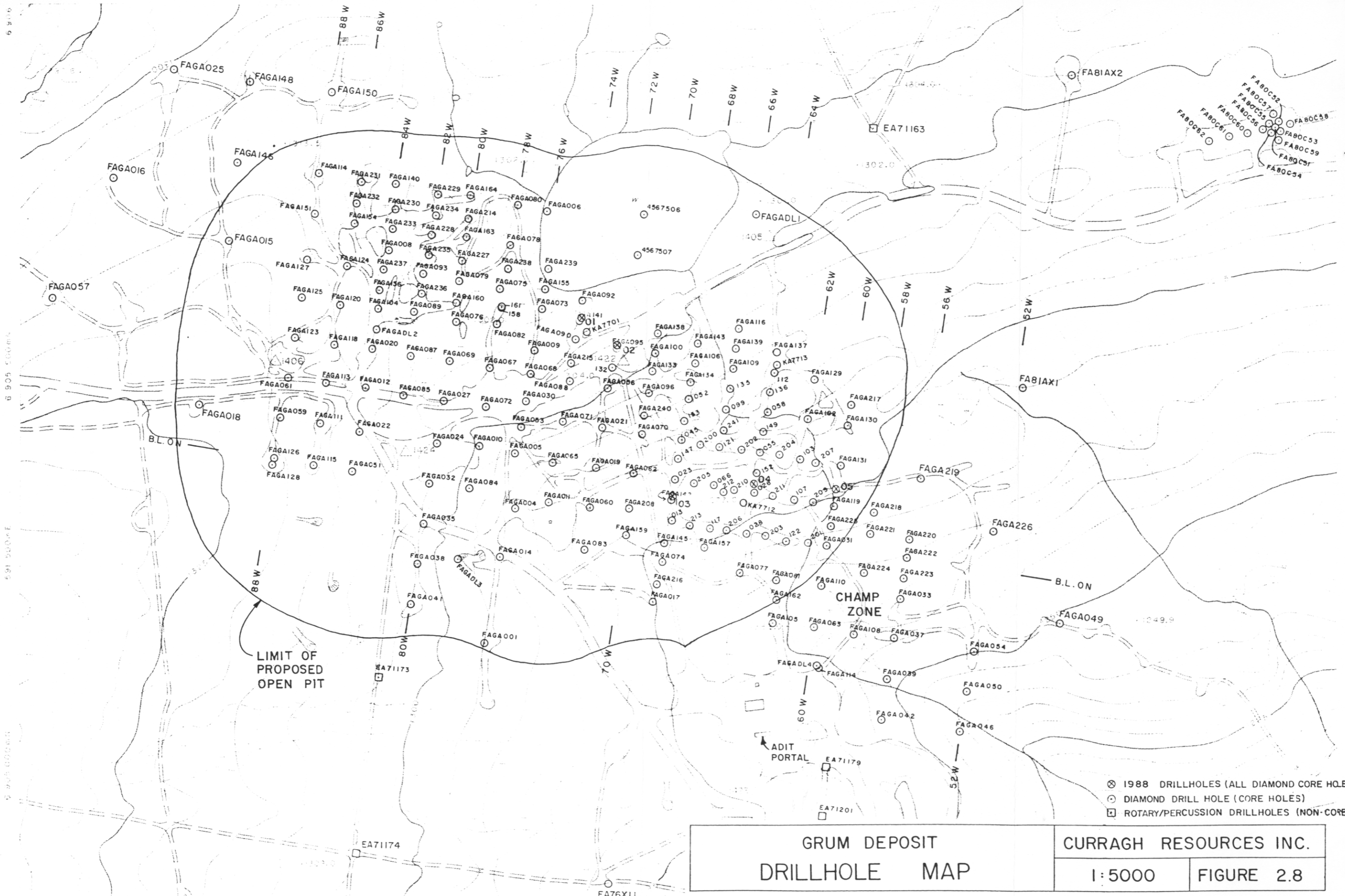
LEGEND		
ROCK UNIT	DESCRIPTION	86-07 MINE MODEL ROCK CODE
OB	Overburden	11
QFBX	Iron cemented overburden	11
QOQ	Quartz vein	10
5B	Generally calcareous phyllite - Vangorda formation	10
5A	Carbonaceous phyllite	10
4A	Ribbon banded "graphitic" pyritic quartzite	1
4C	Pyritic quartzite	2
4EC	Quartz rich massive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



SCALE 1:1000

<b>CURRAGH RESOURCES</b>		
<b>VANGORDA DEPOSIT</b>		
<b>VERTICAL CROSS SECTION</b>		
<b>22 E</b>		
DATE JUNE 1986	NTS 105-K-386	<b>FIGURE 2.6</b>
BY: GJ	WHITEHORSE M.D.	

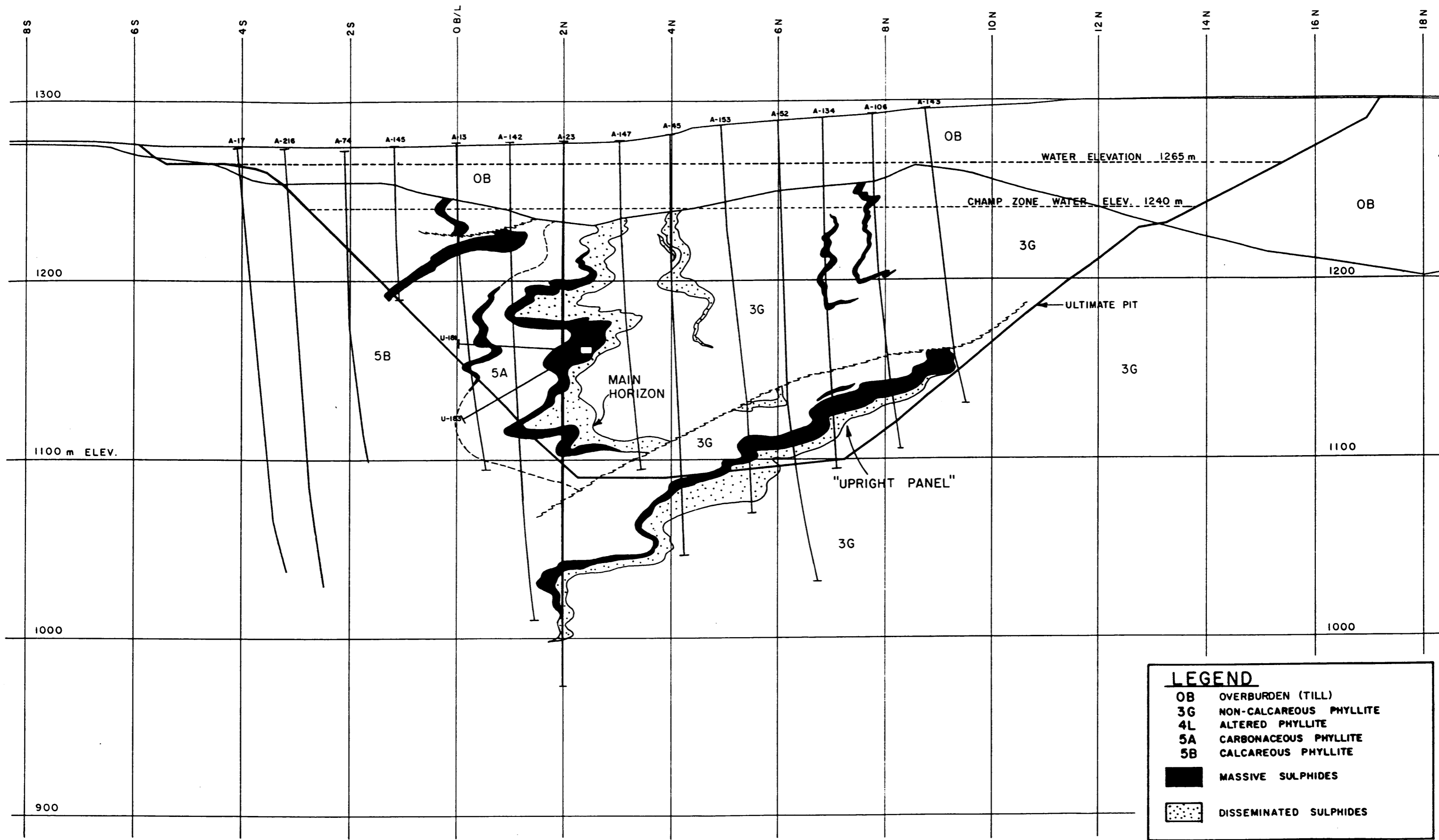






**GRUM DEPOSIT  
DRILLHOLE MAP**

<b>CURRAGH RESOURCES INC.</b>	
1:5000	FIGURE 2.8

- ⊗ 1988 DRILLHOLES (ALL DIAMOND CORE HOLES)
- DIAMOND DRILL HOLE (CORE HOLES)
- ROTARY/PERCUSSION DRILLHOLES (NON-CORE)

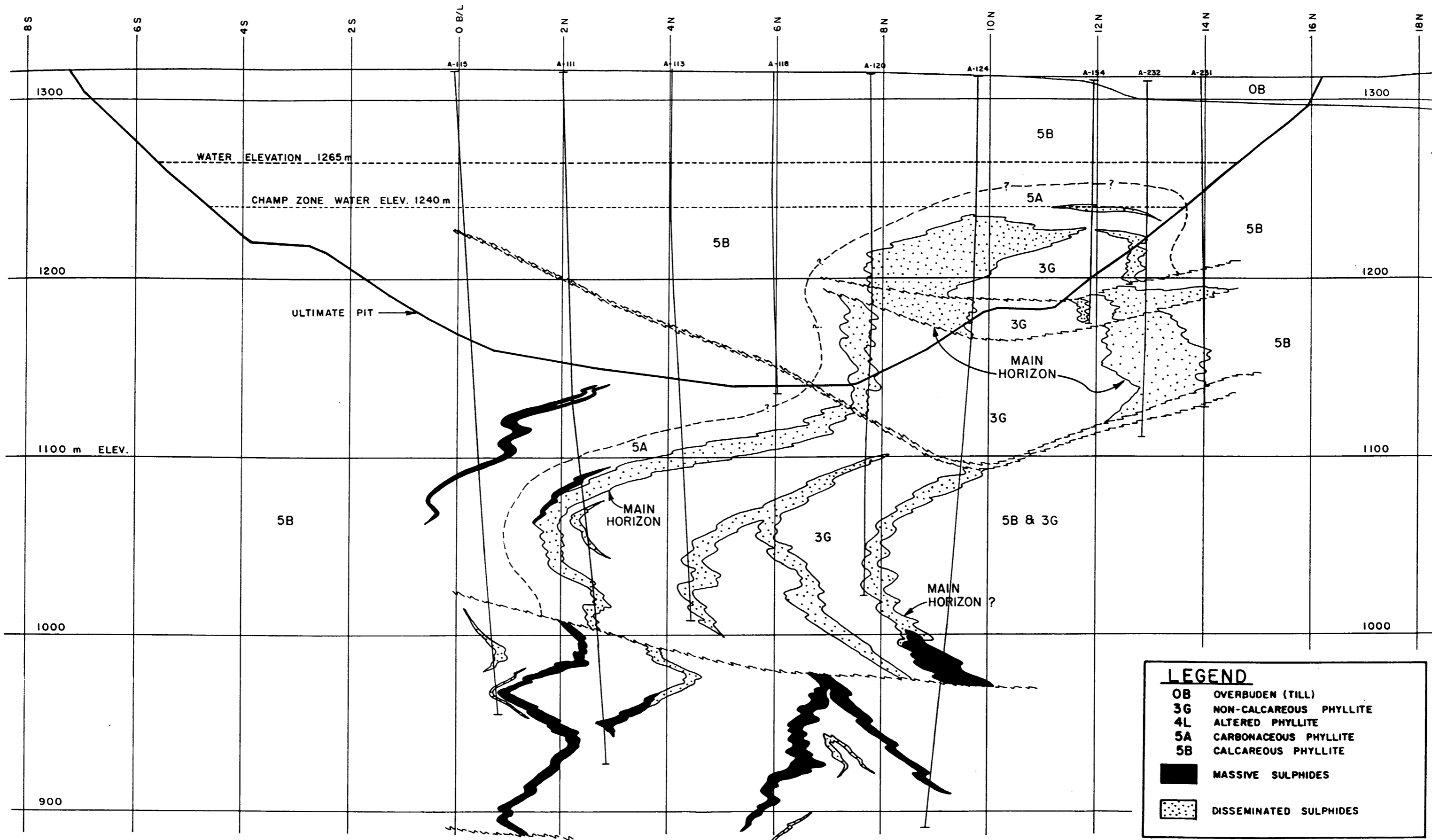




LEGEND	
OB	OVERBURDEN (TILL)
3G	NON-CALCAREOUS PHYLLITE
4L	ALTERED PHYLLITE
5A	CARBONACEOUS PHYLLITE
5B	CALCAREOUS PHYLLITE
	MASSIVE SULPHIDES
	DISSEMINATED SULPHIDES

GRUM DEPOSIT  
CROSS SECTION 68W

CURRAGH RESOURCES INC.  
1:2000      FIGURE 2.9

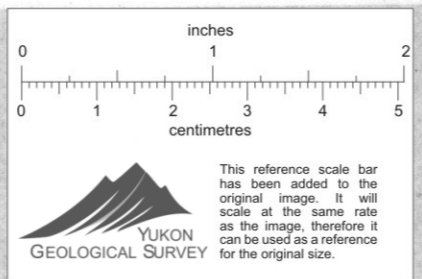




LEGEND	
OB	OVERBUDEN (TILL)
3G	NON-CALCAREOUS PHYLLITE
4L	ALTERED PHYLLITE
5A	CARBONACEOUS PHYLLITE
5B	CALCAREOUS PHYLLITE
	MASSIVE SULPHIDES
	DISSEMINATED SULPHIDES

GRUM DEPOSIT  
CROSS SECTION 86W

CURRAGH RESOURCES INC.  
1:2000      FIGURE 2.11



**CURRAGH RESOURCES INC.**  
**ANVIL AREA**  
**GEOLOGY MAP**  
 Showing  
**CONTOURS of THICKNESS of GLACIAL OVERBURDEN**

NOTE THIS MAP DOES NOT YET SHOW ALL PROSPECTOR AIRWAYS' DRILL HOLES AROUND VANORDA AND THE CHAMP ZONE.

OVERBURDEN THICKNESS in meters

LINE DELIMITING AREAS of THIN GLACIAL COVER on BEDROCK FROM THICKER TILL COVER

- ROTARY DRILL HOLE not located in field
- ROTARY DRILL HOLE located in field
- DIAMOND DRILL HOLE not located in field
- DIAMOND DRILL HOLE located in field

Scale 1:5000

ADJOINS SHEET NF F-6-3 W 1/2

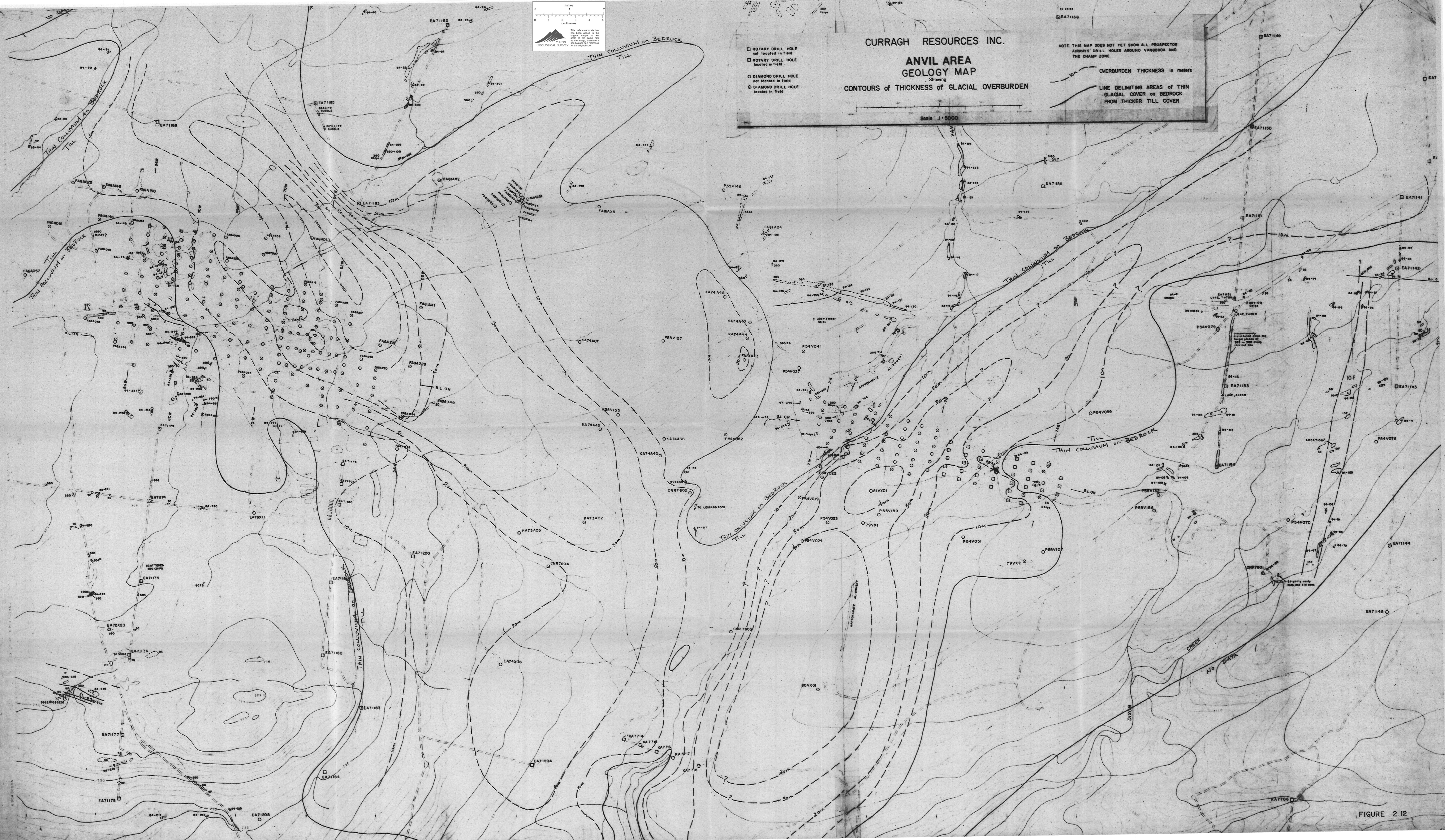
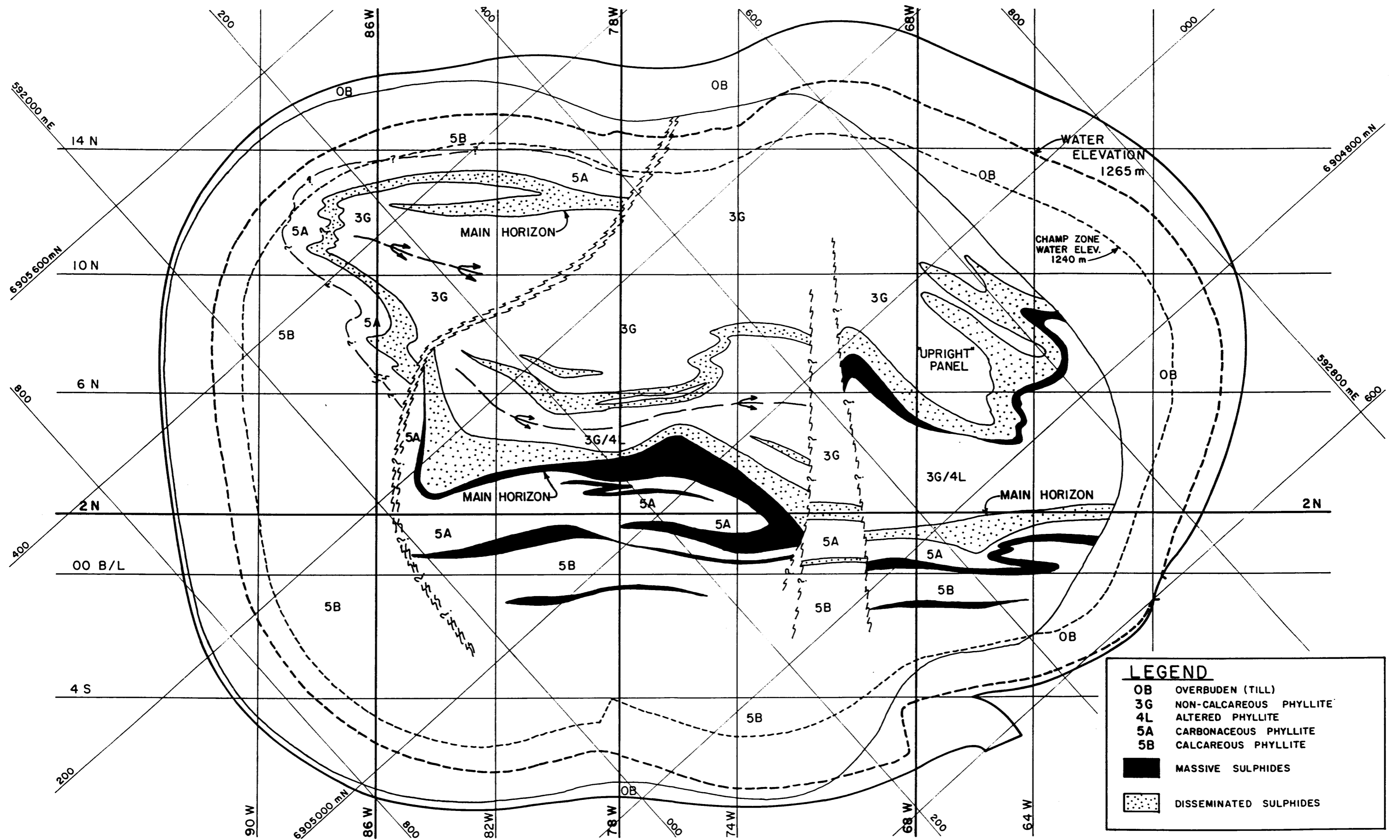




FIGURE 2.12







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

GRUM OPEN PIT GEOLOGY		CURRAGH RESOURCES INC.	
		1:3500	FIGURE 2.15

**CURRAGH RESOURCES INC.  
PLATEAU DEVELOPMENT ACTIVITIES**

1989    1990    1991    1992    1993

Grum Open Pit

- Grubbing and Clearing
- Unconsolidated Overburden Stripping
- Rock Waste Stripping
- Sulphide Waste Removal
- Ore Stockpiling
- Mill Feed (minor [redacted], major [redacted])

Grum Dumps

- Southeast Overburden Dump
- Main Waste Dump
- Southwest Waste Dump
- Sulphide Cell Construction
- Ore Transfer Point

Vangorda Open Pit

- Grubbing
- Unconsolidated Overburden Stripping
- Rock Waste Stripping
- Sulphide Waste Removal
- Ore Stockpiling
- Mill Feed (minor [redacted], major [redacted])
- Bulk Sample
- Creek Diversion

Vangorda Dumps

- Till Berm Stripping
- Rock Drains
- Till Berm Construction
- Cover Placement

Haul Road

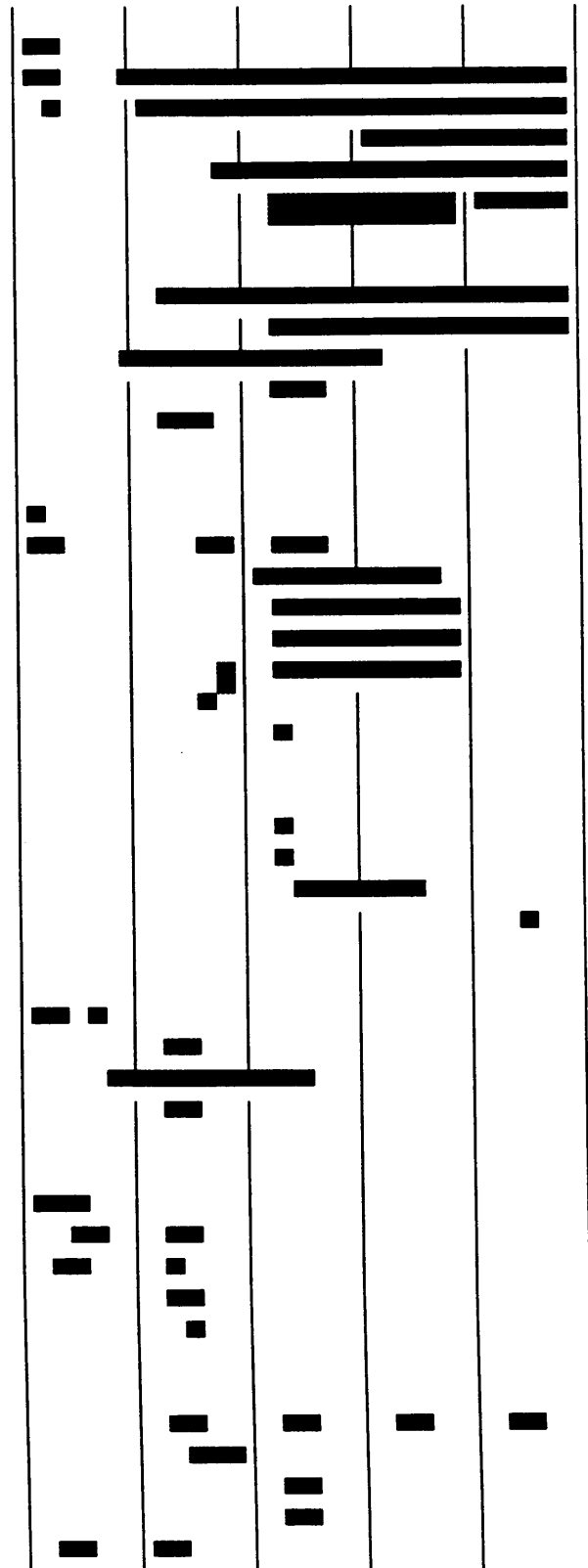
- Grum-Faro Base
- Grum-Vangorda Base
- Upgrading
- Vangorda Creek Culvert

Infrastructure

- Power Line
- Mine Dry & Offices
- Fuel Tank Farm
- Lube Station
- Telephone Lines

Water Control

- Ditching & Surface Dewatering
- Seepage Collection System
- Grum Deep Interceptor Well System
- Grum Underground Dewatering
- Water Treatment Plant



**FIGURE 2.17**

CURRAGH RESOURCES INC.

LONG RANGE PRODUCTION ALTERNATIVE

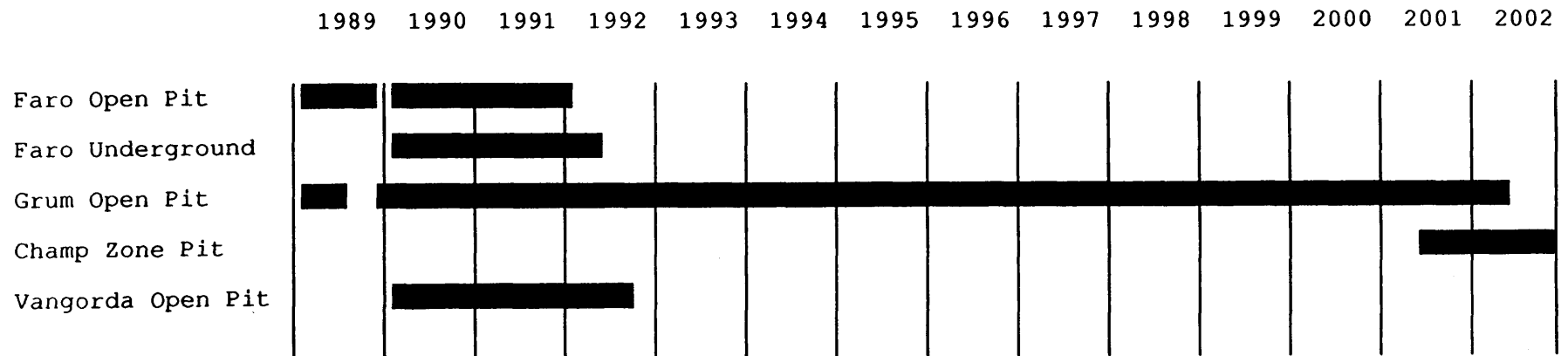
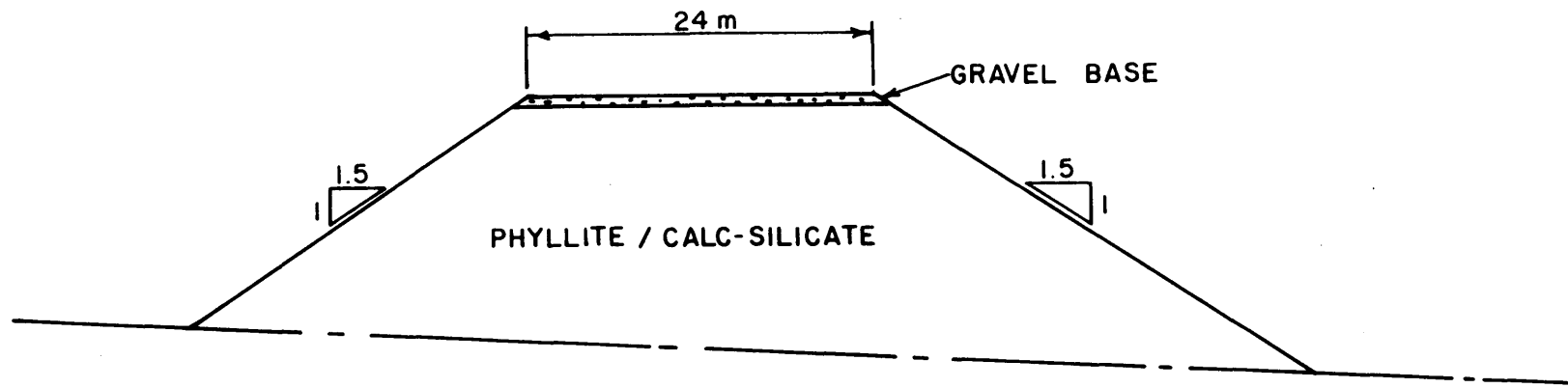
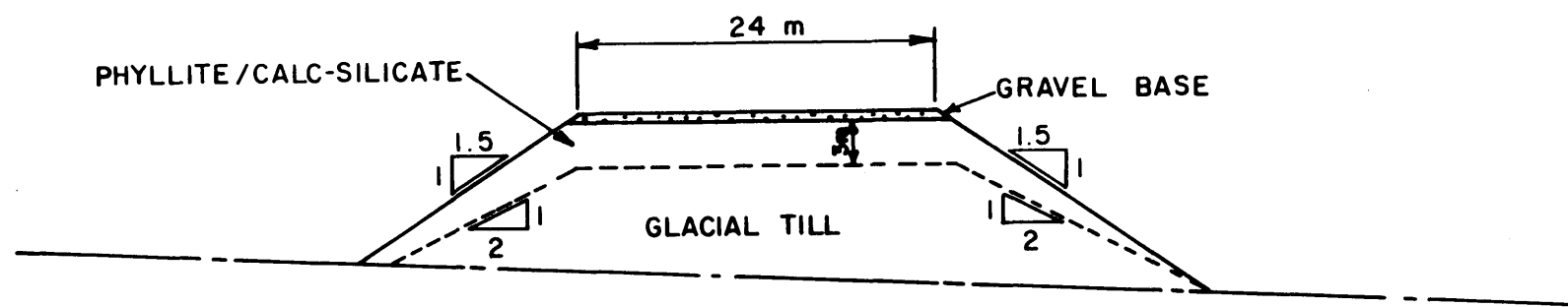


FIGURE 2.18

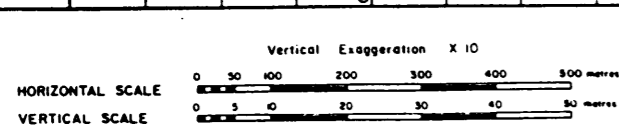
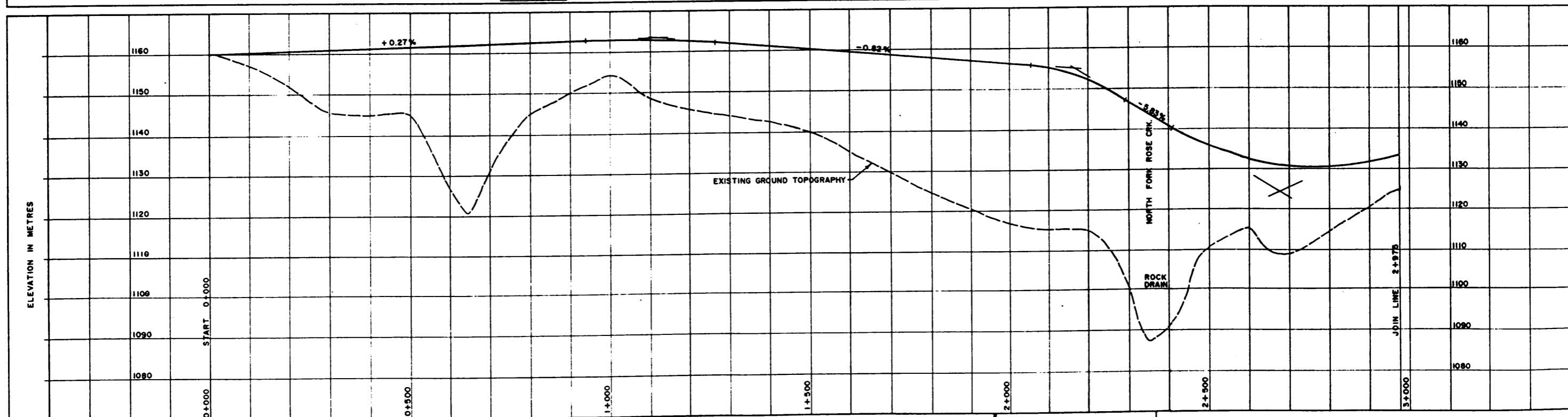
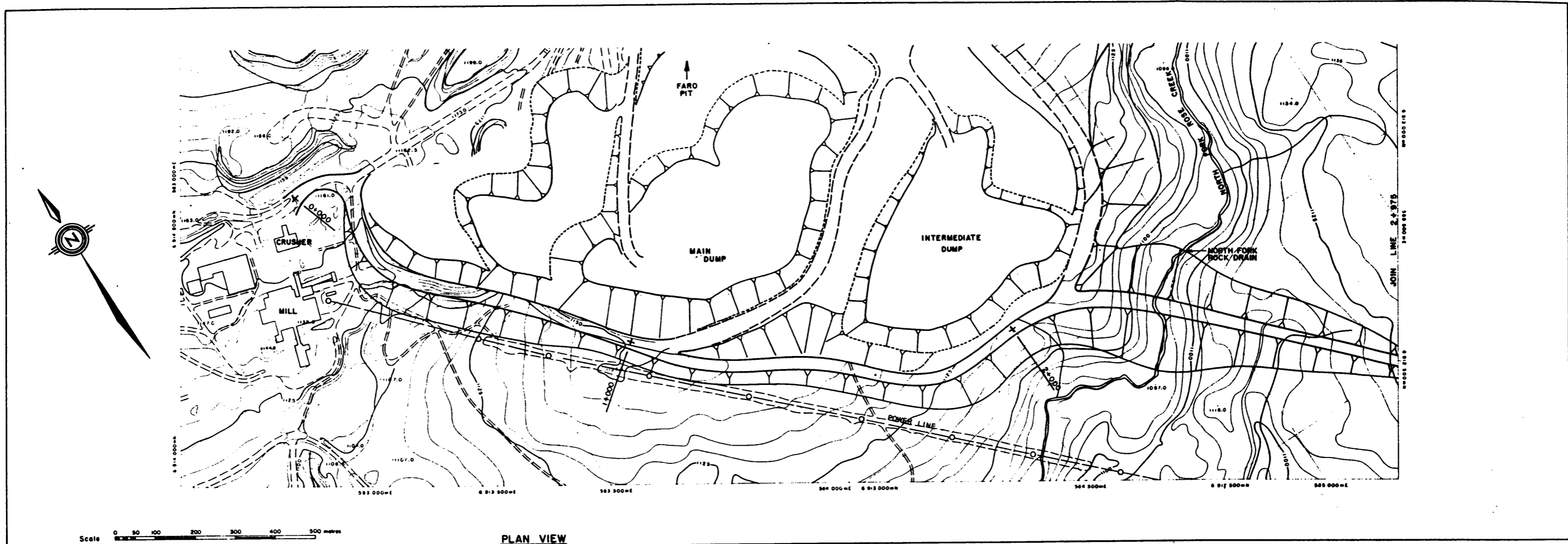


TYPICAL ROAD SECTION  
STATION 0+000 to 10+000



TYPICAL ROAD SECTION  
STATION 10+000 to 16+000

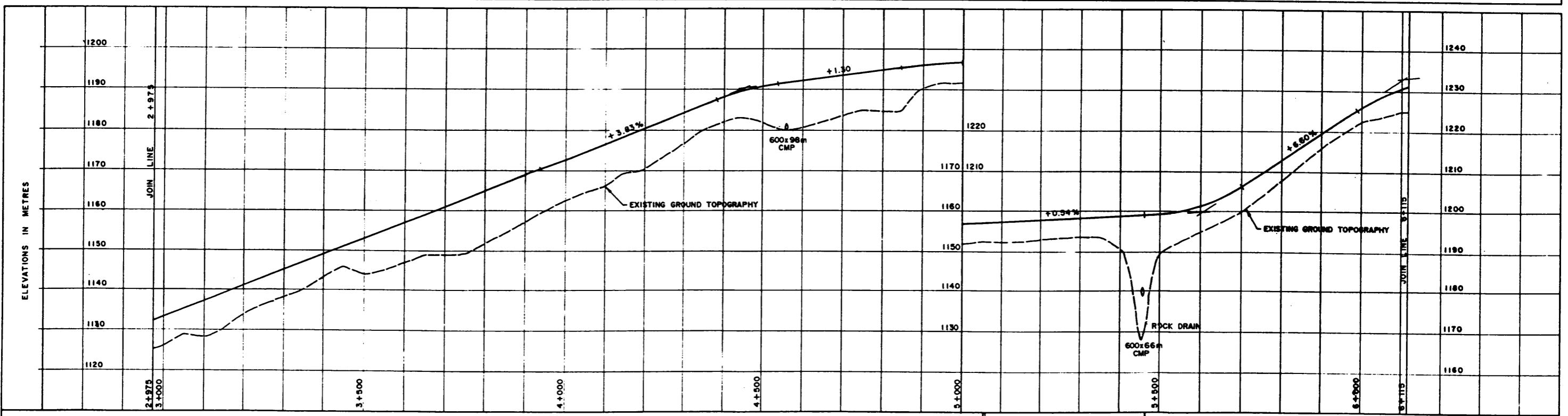
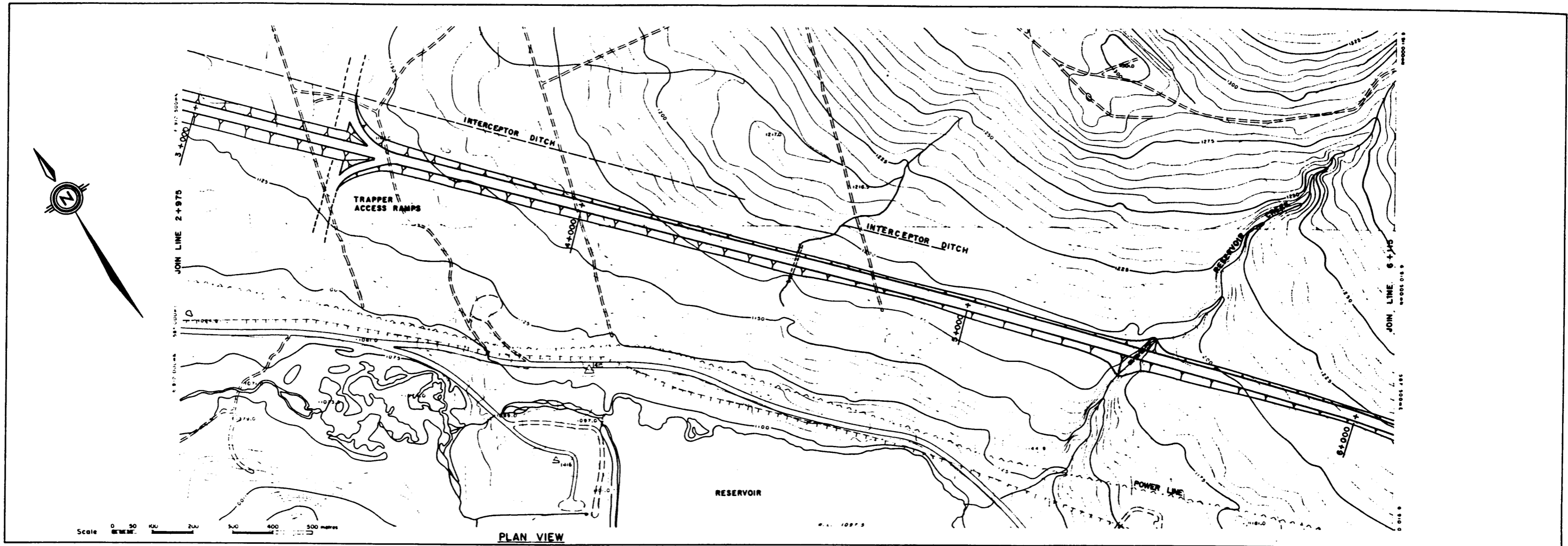
TYPICAL HAUL ROAD SECTIONS	CURRAGH RESOURCES INC.	
	1:500	FIGURE 2.19



VANGORDA PLATEAU HAUL ROAD  
PLAN & PROFILE

STATION 0+000 to STATION 2+975


FIGURE 2.20



Vertical Exaggeration X 10

HORIZONTAL SCALE 0 50 100 200 300 400 500 metres

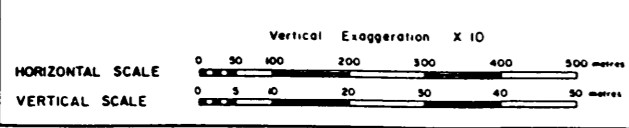
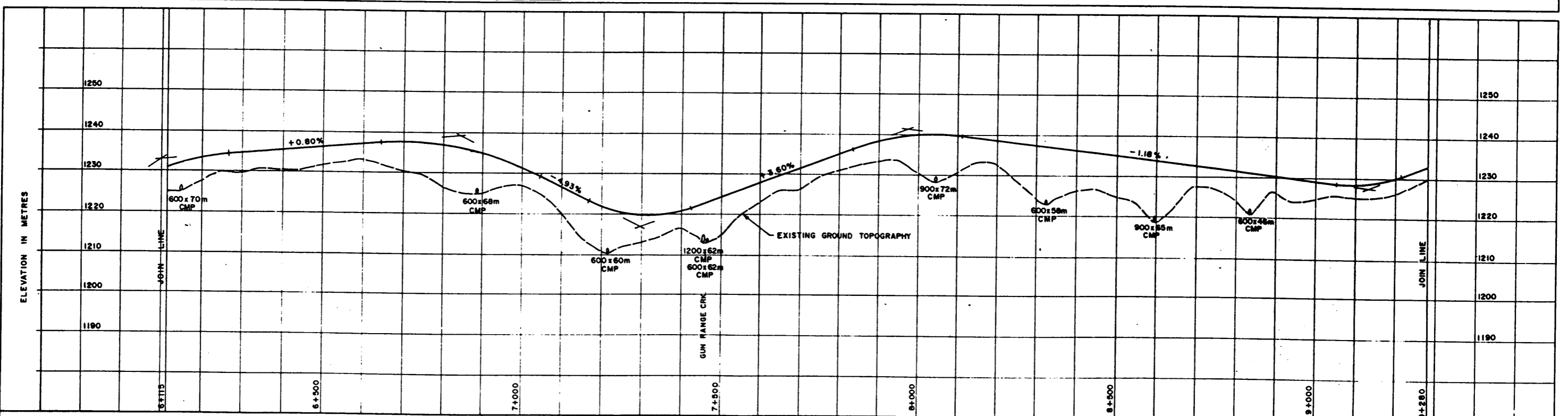
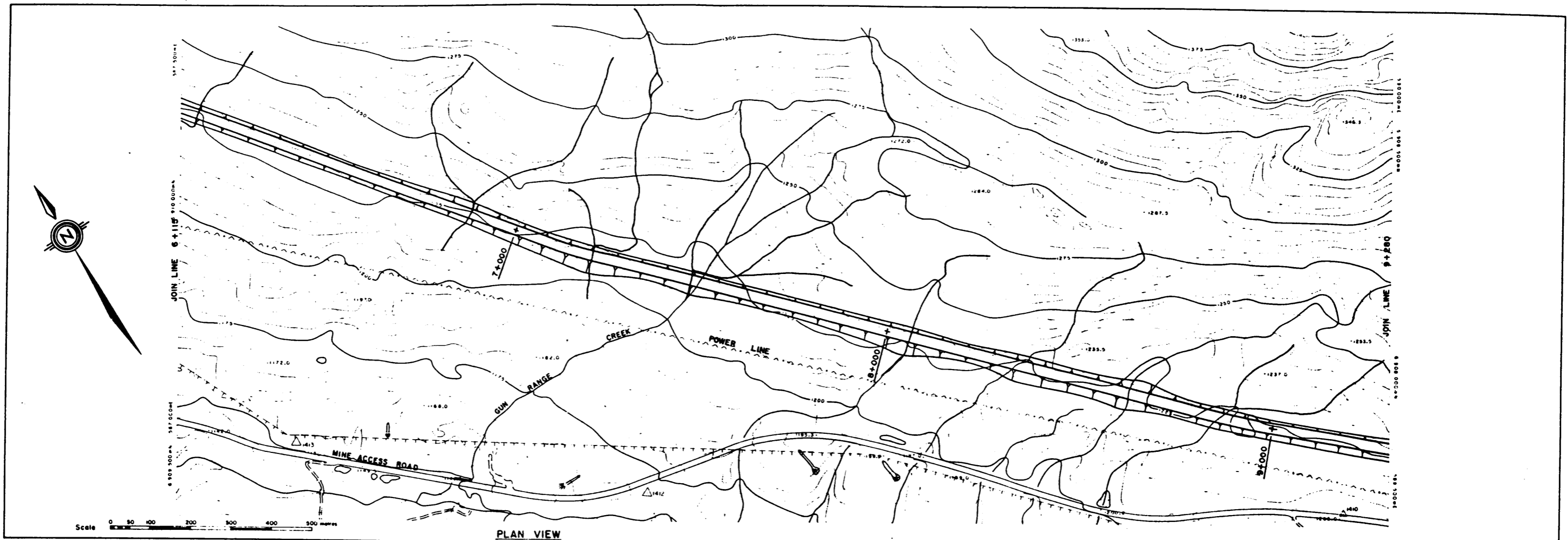
VERTICAL SCALE 0 5 10 20 30 40 50 metres

 Carruth Resources Inc.

**VANGORDA PLATEAU HAUL ROAD PLAN & PROFILE**

STATION 2+975 to STATION 6+115

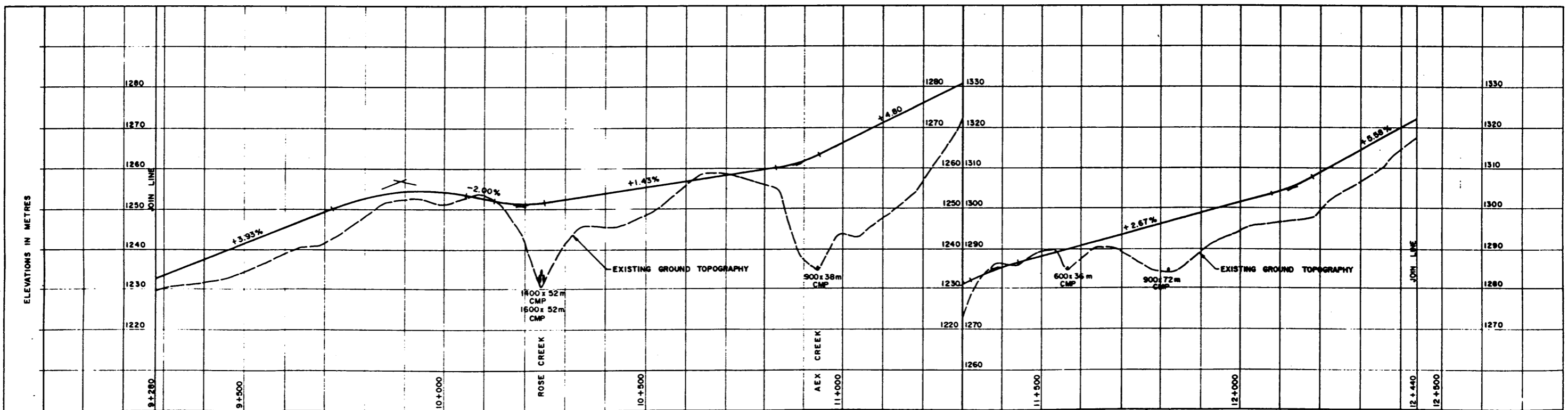
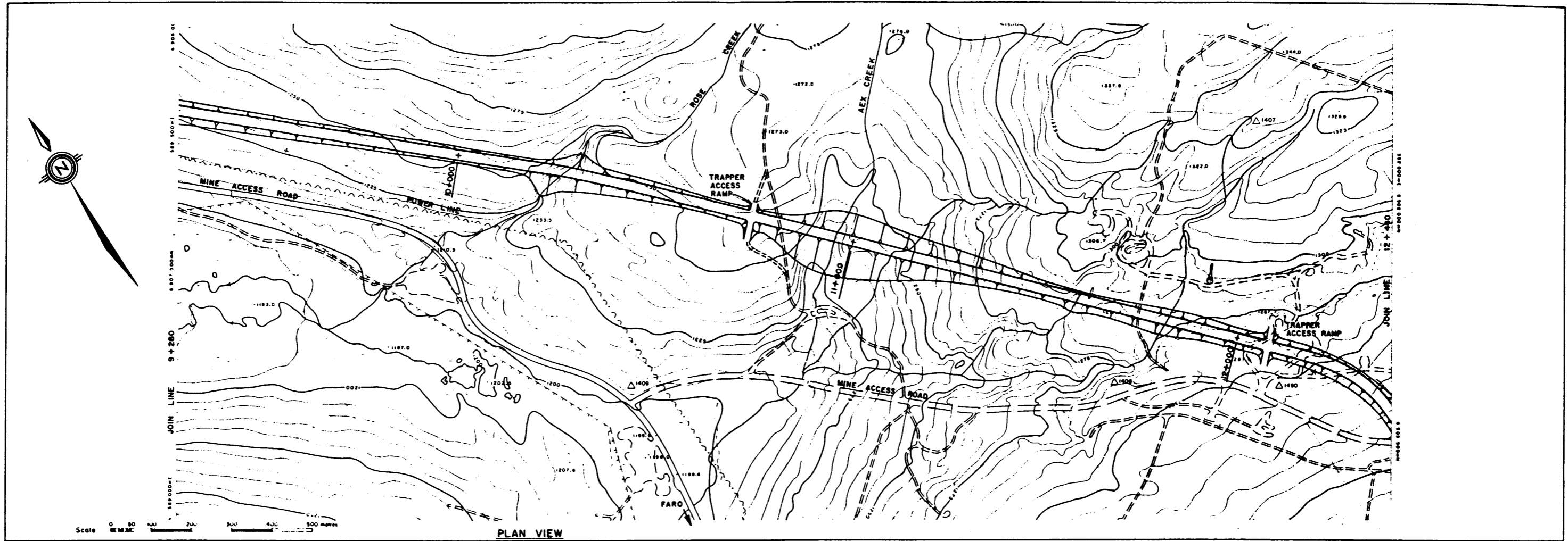
FIGURE 2.21



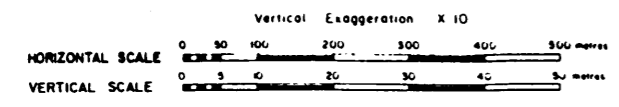
VANGORDA PLATEAU HAUL ROAD  
PLAN & PROFILE

STATION 6+115 to STATION 9+280

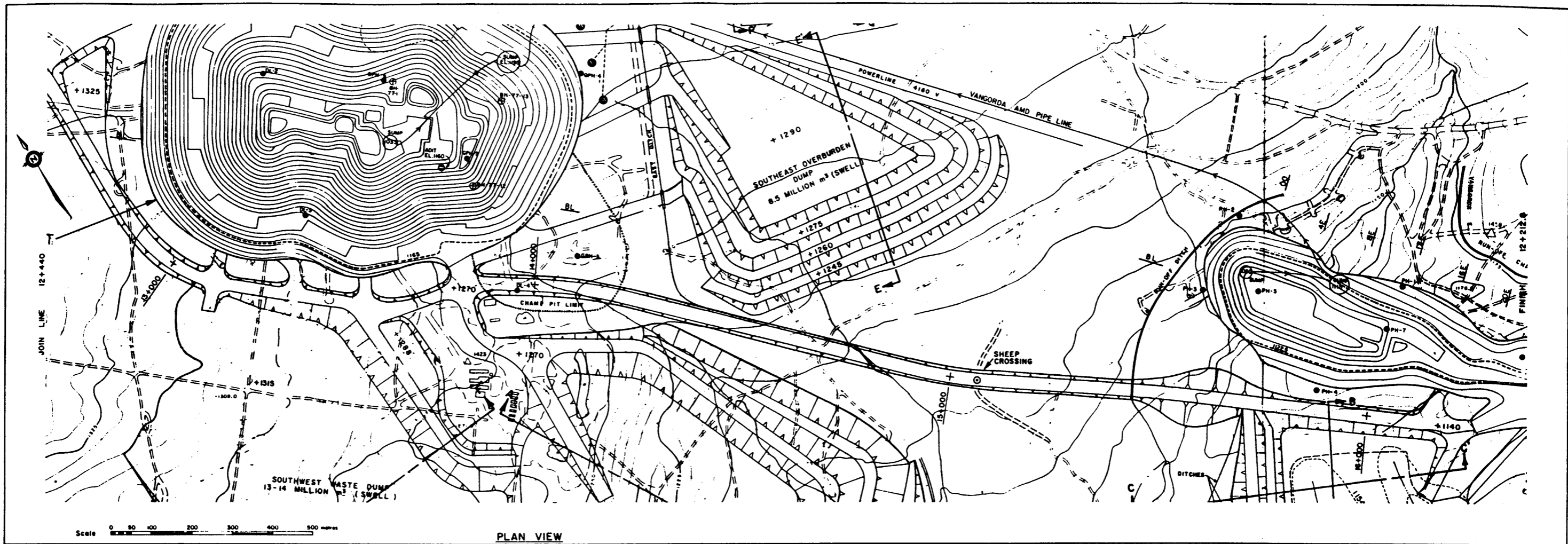
FIGURE 2.22



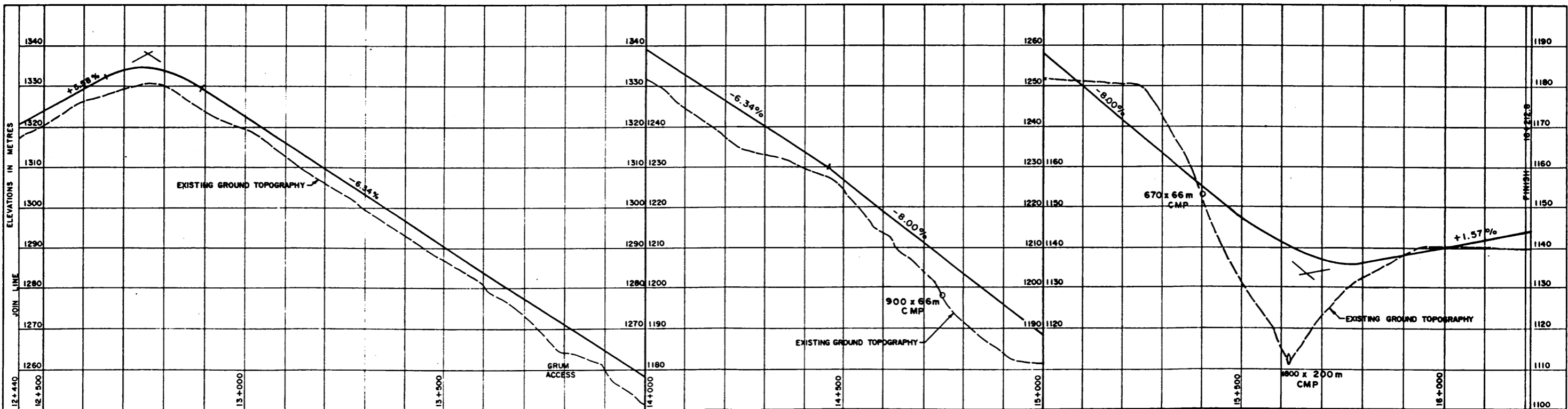
**ROAD PROFILE ALONG CENTRE-LINE IN METRES**



**VANGORDA PLATEAU HAUL ROAD  
 PLAN & PROFILE**  
 STATION 9+280 to STATION 12+440 **FIGURE 2.23**



PLAN VIEW

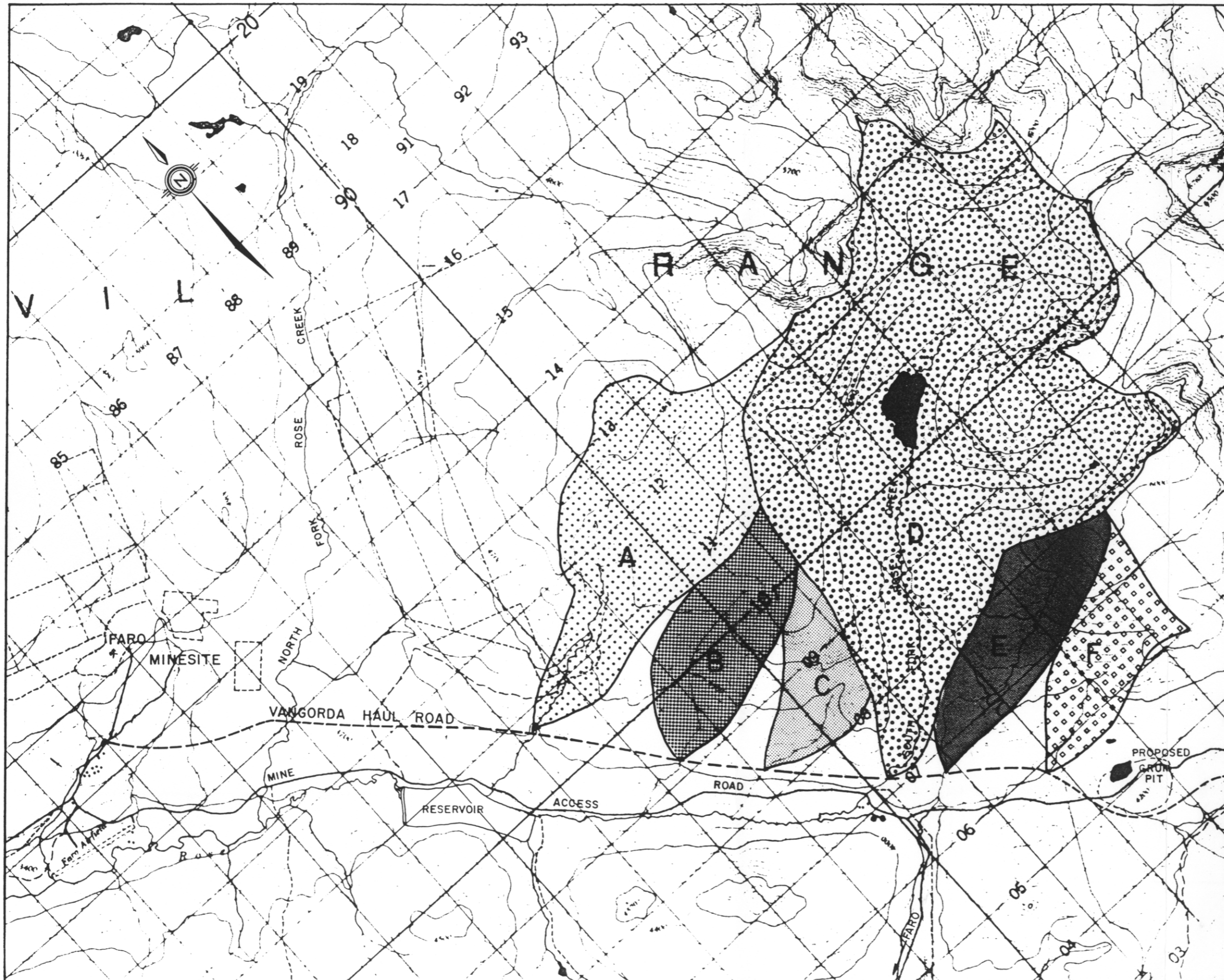


ROAD PROFILE ALONG CENTRE-LINE IN METRES



VANGORDA PLATEAU HAUL ROAD  
PLAN & PROFILE

STATION 12+440 to STATION 16+212.6 FIGURE 2.24

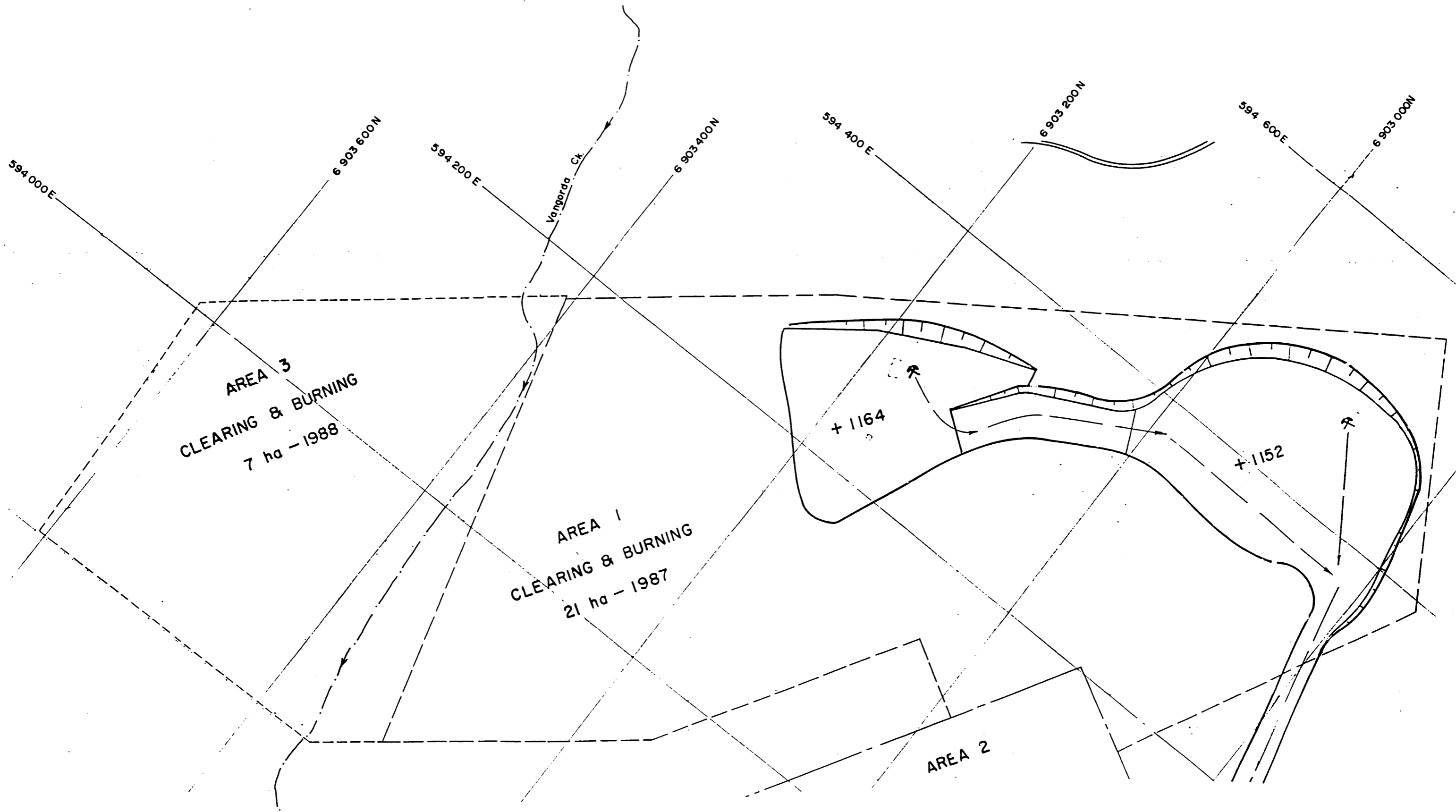


**WATERSHED AREAS**

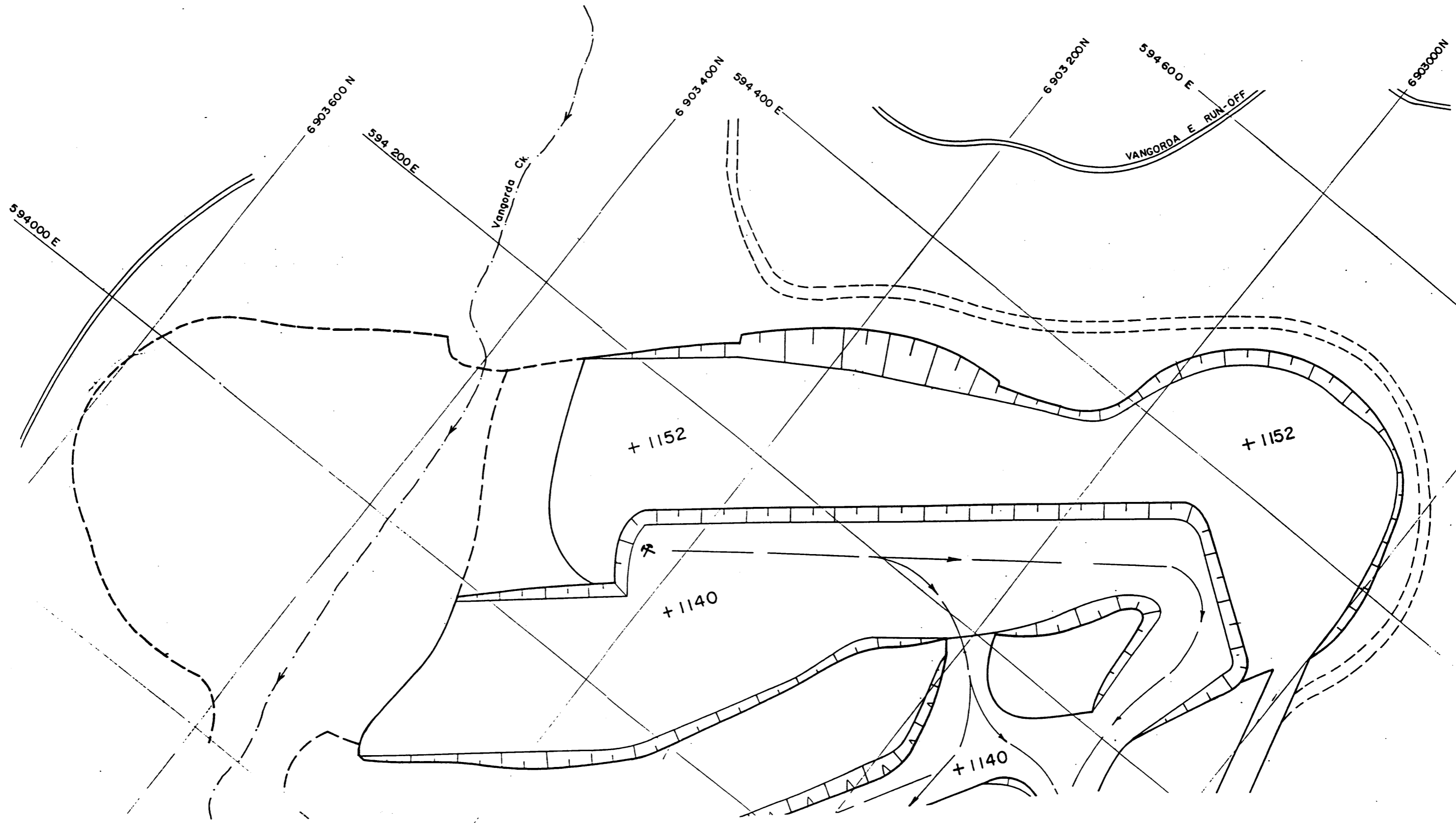
WATERSHED	AREA (km <sup>2</sup> )
A RESERVOIR CREEK	7.6
B GUN RANGE CREEK	3.4
C UN-NAMED CREEK	1.9
D SOUTH FORK ROSE CREEK	24.9
E AEX CREEK	3.3
F SOUTH FORK AEX CREEK	2.7

CURRAGH RESOURCES INC.

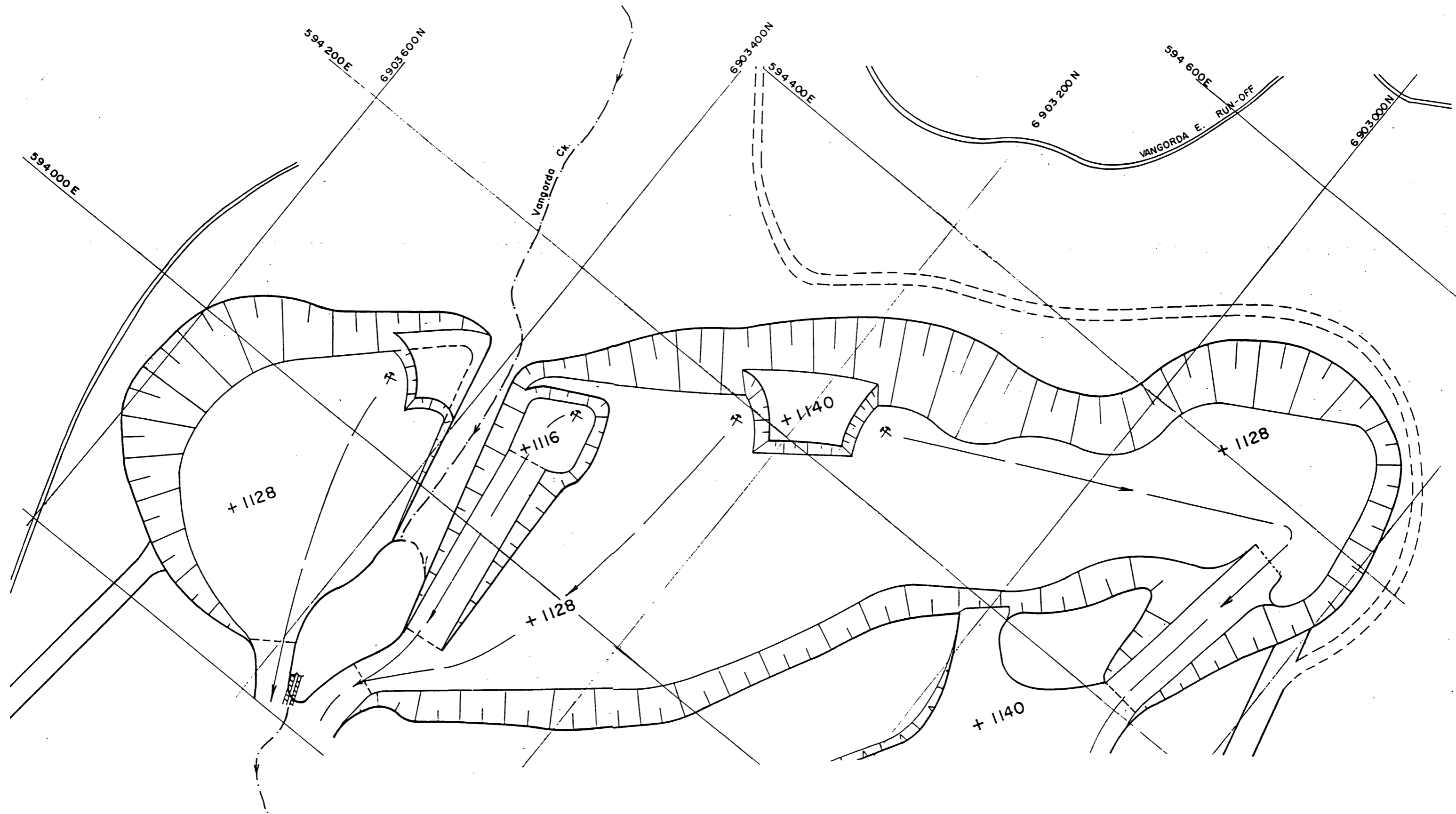
**WATERSHED AREAS  
of  
CREEK & STREAMS  
crossing  
VANGORDA HAUL ROAD**



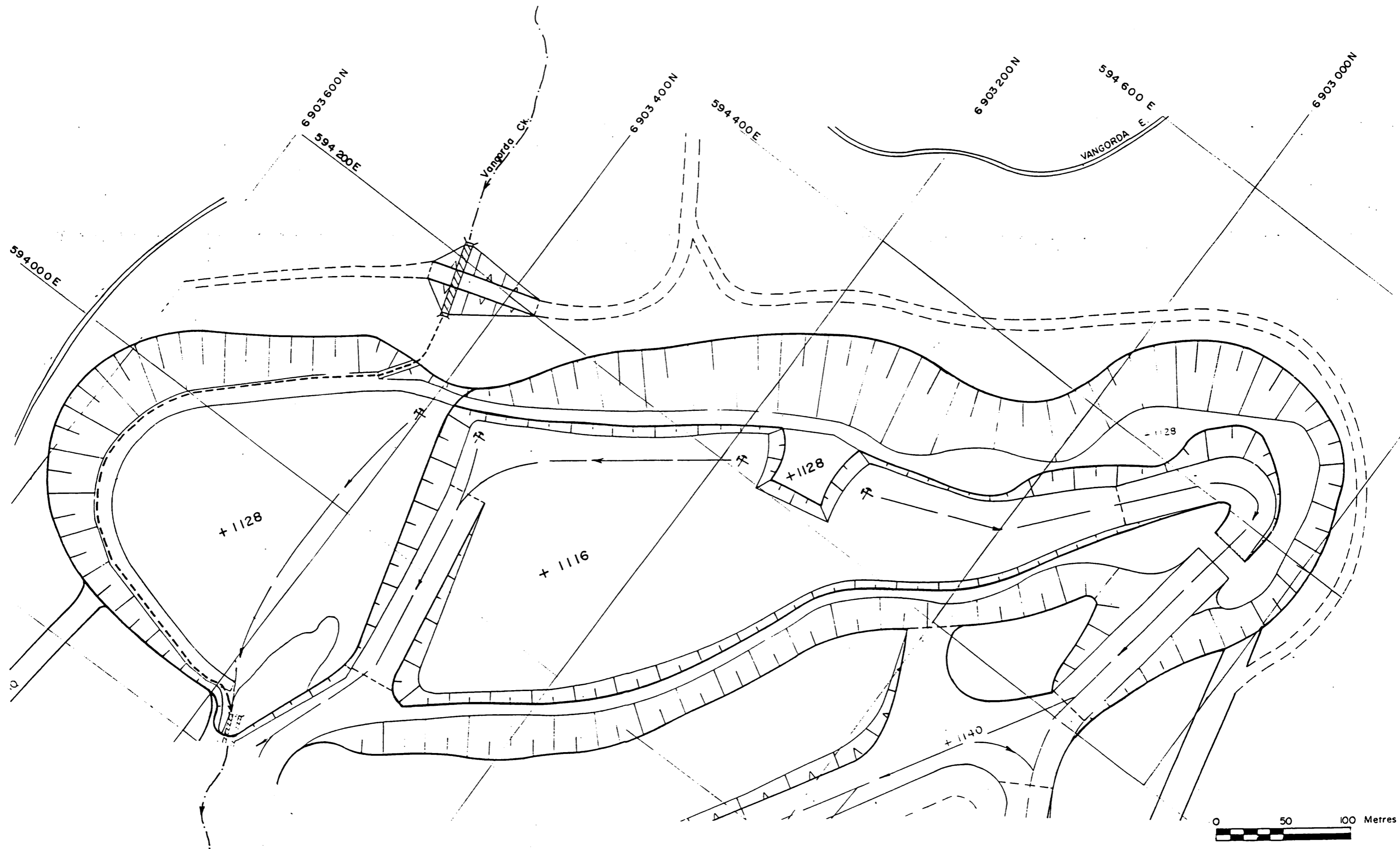
VANGORDA PIT PHASE 1 OF 14		CURRAGH RESOURCES INC.	
SCALE: NOT TO SCALE		FIGURE 2.26	



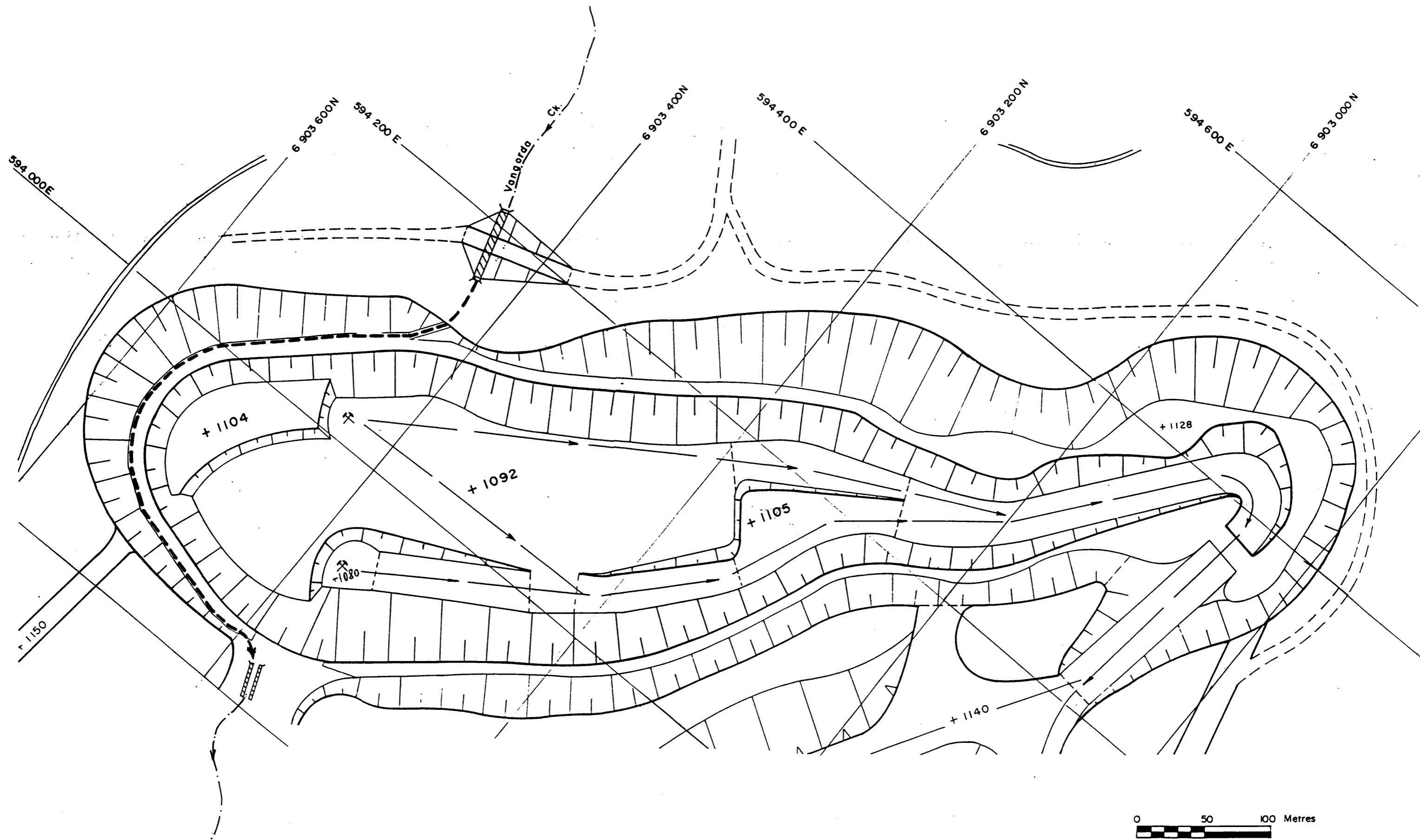
<p>VANGORDA PIT PHASE 3 OF 14</p>		<p>CURRAGH RESOURCES INC.</p>	
<p>SCALE: NOT TO SCALE</p>		<p>FIGURE 2.27</p>	



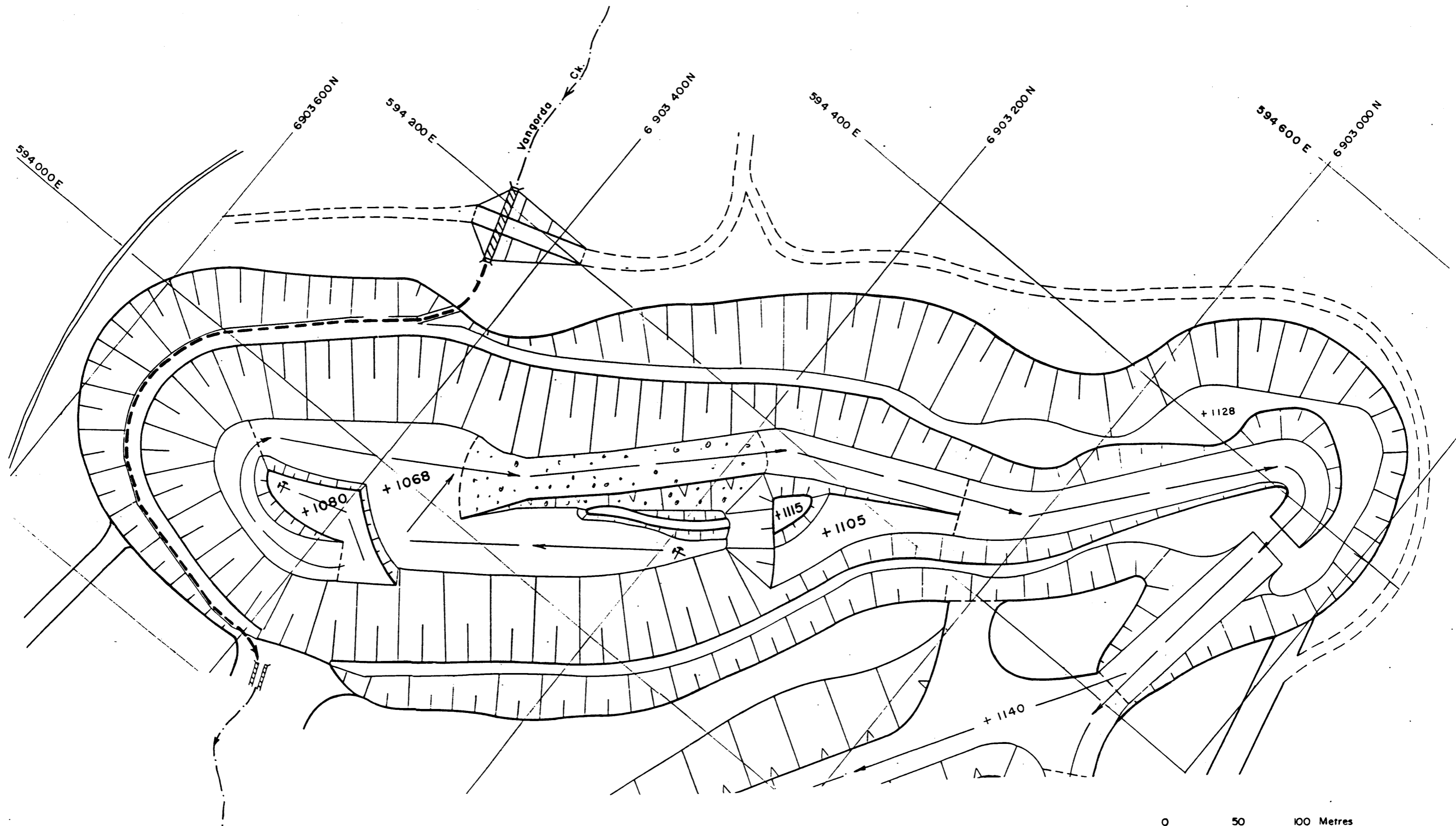
<p>VANGORDA PIT PHASE 5 OF 14</p>		<p>CURRAGH RESOURCES INC.</p>	
<p>SCALE: NOT TO SCALE</p>		<p>FIGURE 2.28</p>	



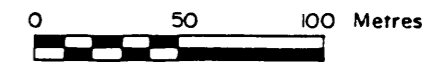
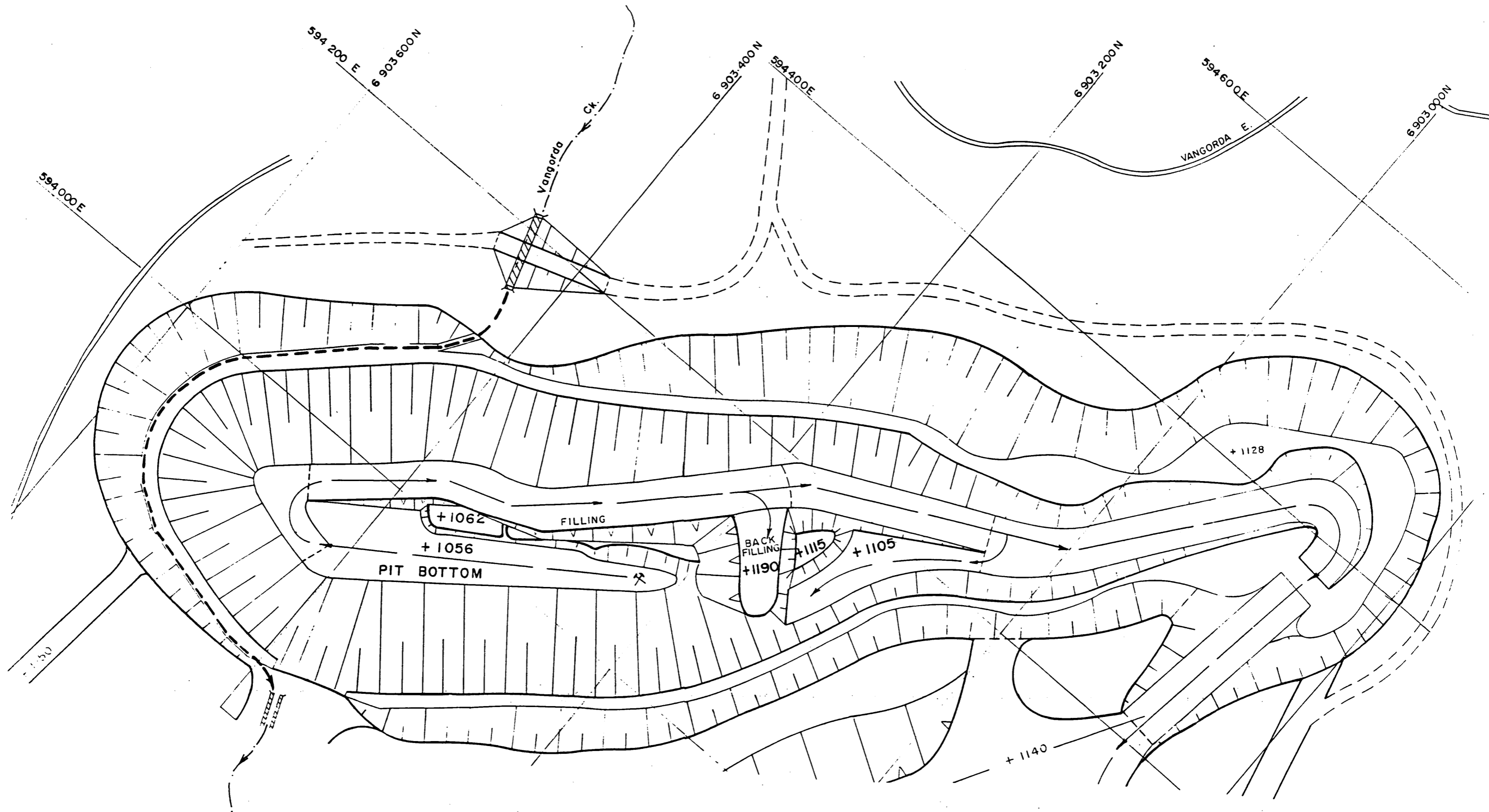
<p>VANGORDA PIT PHASE 6 OF 14</p>	<p>CURRAGH RESOURCES INC. SCALE: NOT TO SCALE    FIGURE 2.29</p>
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VANGORDA PIT PHASE 9 OF 14		CURRAGH RESOURCES INC.	
		SCALE: NOT TO SCALE	FIGURE 2.30



<b>VANGORDA PIT</b> <b>PHASE 12 OF 14</b>		<b>CURRAGH RESOURCES INC.</b>	
SCALE: NOT TO SCALE		<b>FIGURE 2.31</b>	



<p>VANGORDA PIT PHASE 14 OF 14</p>		<p>CURRAGH RESOURCES INC.</p>	
<p>SCALE: NOT TO SCALE</p>		<p>FIGURE 2.32</p>	

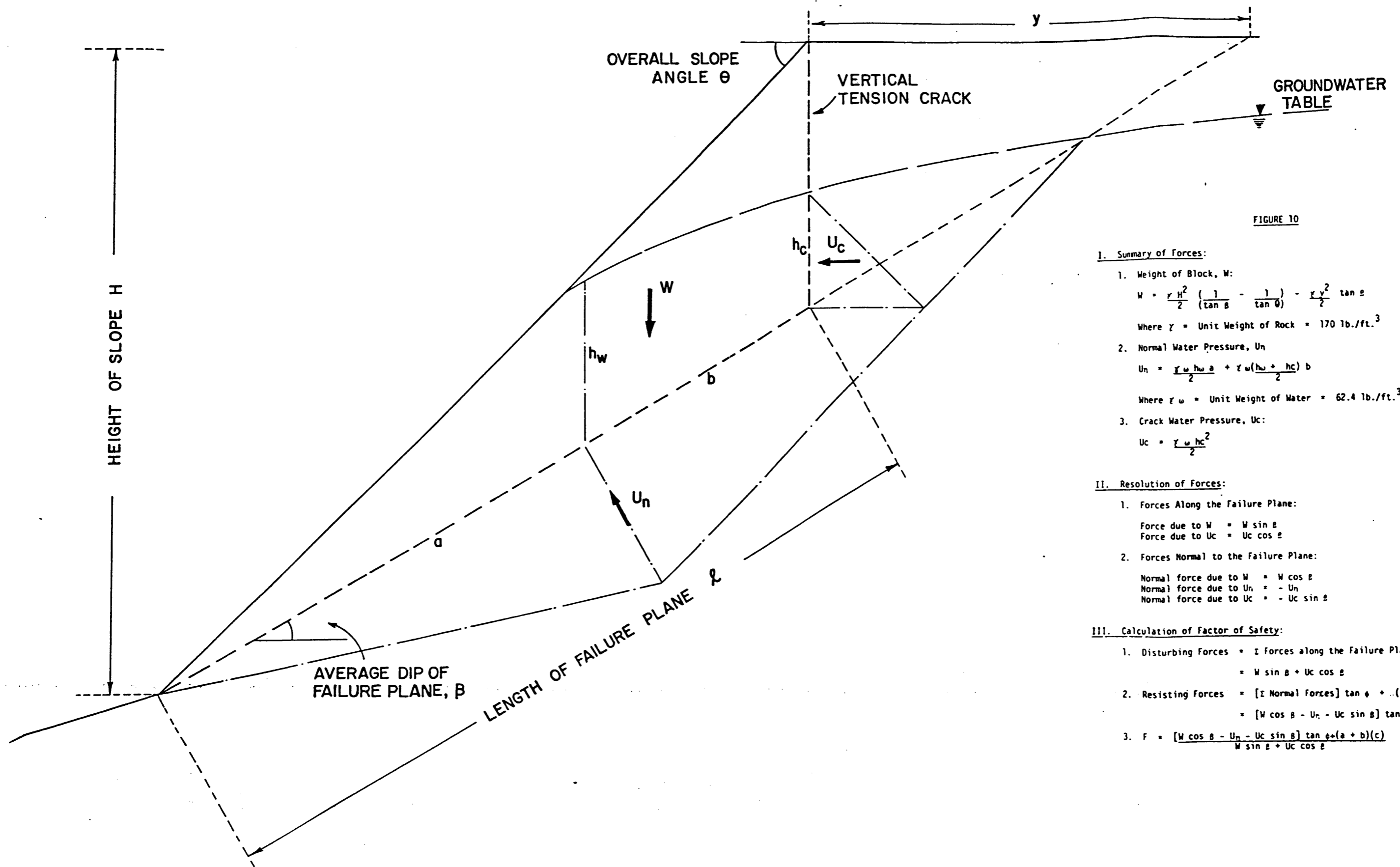


FIGURE 10

I. Summary of Forces:

1. Weight of Block,  $W$ :  

$$W = \frac{\gamma H^2}{2} \left( \frac{1}{\tan \beta} - \frac{1}{\tan \theta} \right) - \frac{\gamma y^2}{2} \tan \theta$$
 Where  $\gamma$  = Unit Weight of Rock = 170 lb./ft.<sup>3</sup>
2. Normal Water Pressure,  $U_n$   

$$U_n = \frac{\gamma_w h_w a}{2} + \gamma_w \left( \frac{h_w + h_c}{2} \right) b$$
 Where  $\gamma_w$  = Unit Weight of Water = 62.4 lb./ft.<sup>3</sup>
3. Crack Water Pressure,  $U_c$ :  

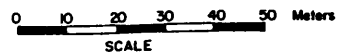
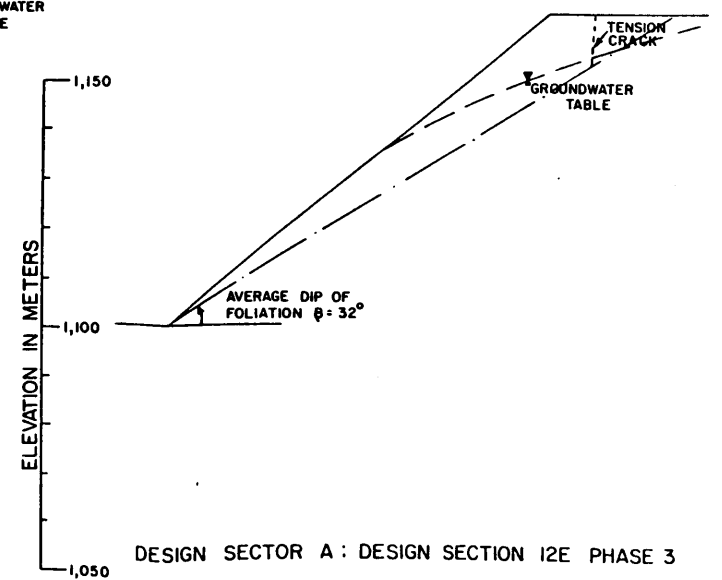
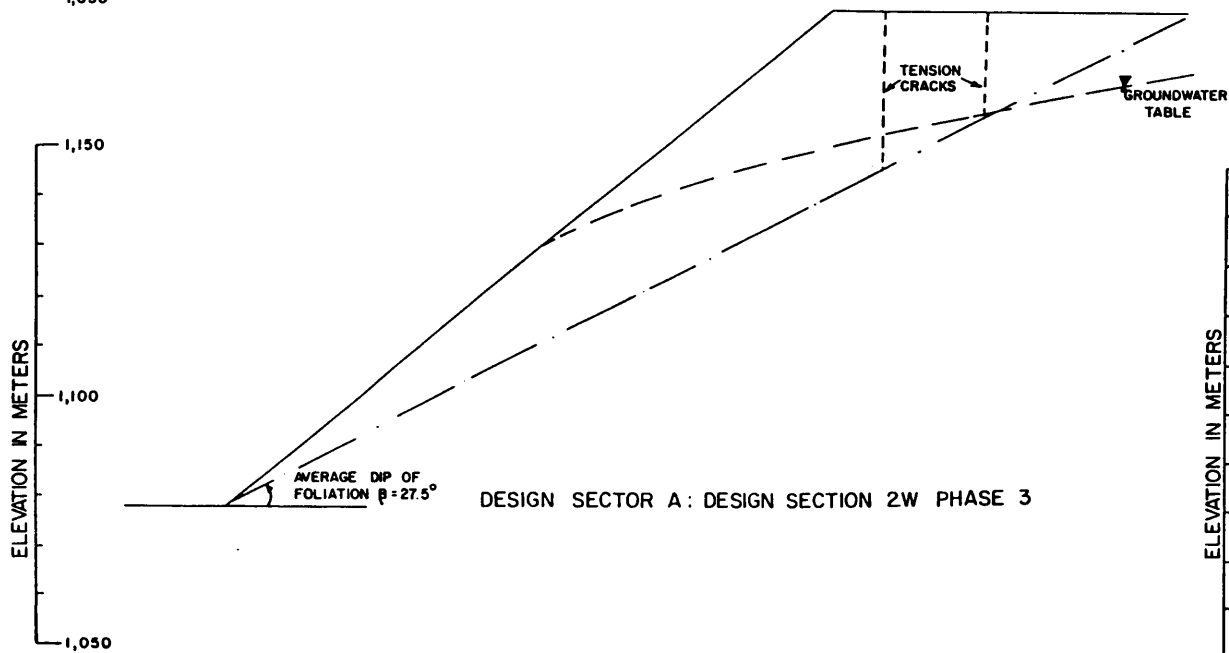
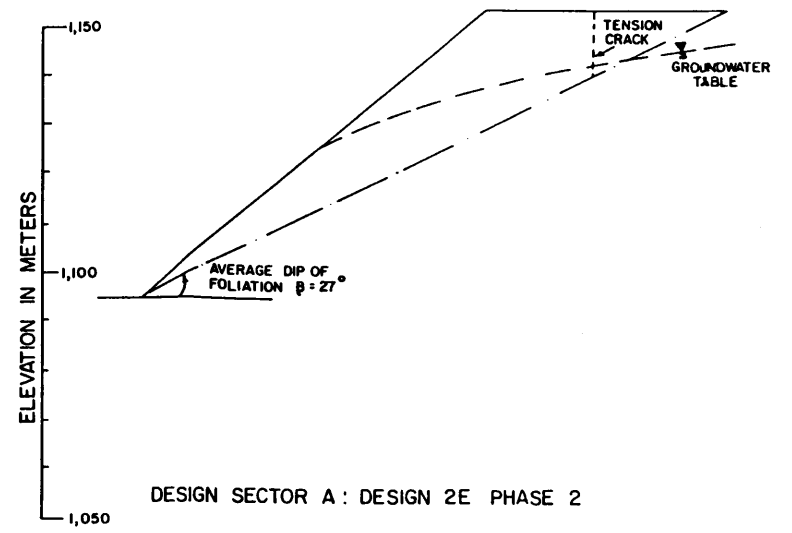
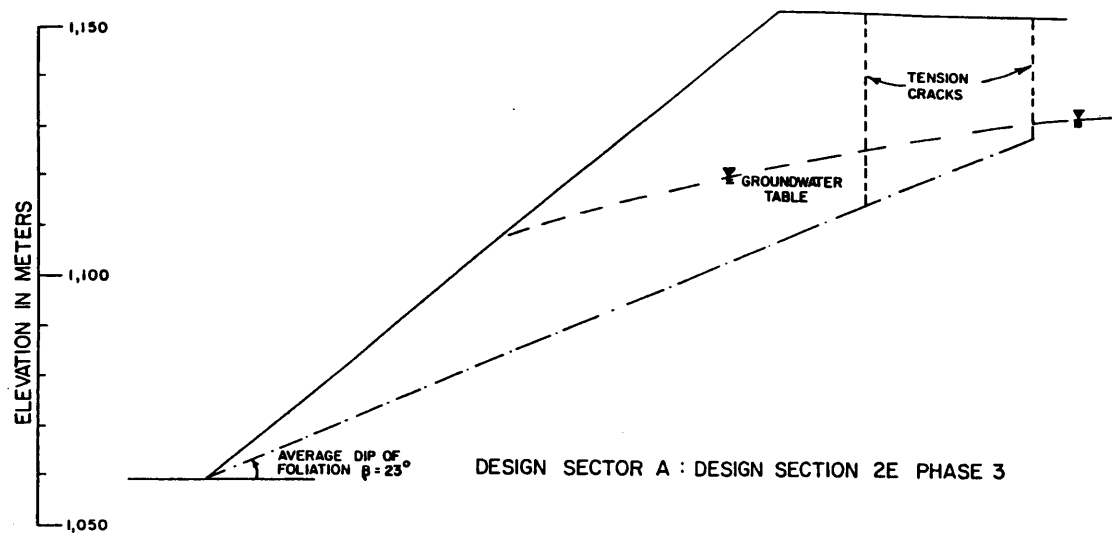
$$U_c = \frac{\gamma_w h_c^2}{2}$$

II. Resolution of Forces:

1. Forces Along the Failure Plane:  
 Force due to  $W$  =  $W \sin \beta$   
 Force due to  $U_c$  =  $U_c \cos \beta$
2. Forces Normal to the Failure Plane:  
 Normal force due to  $W$  =  $W \cos \beta$   
 Normal force due to  $U_n$  =  $-U_n$   
 Normal force due to  $U_c$  =  $-U_c \sin \beta$

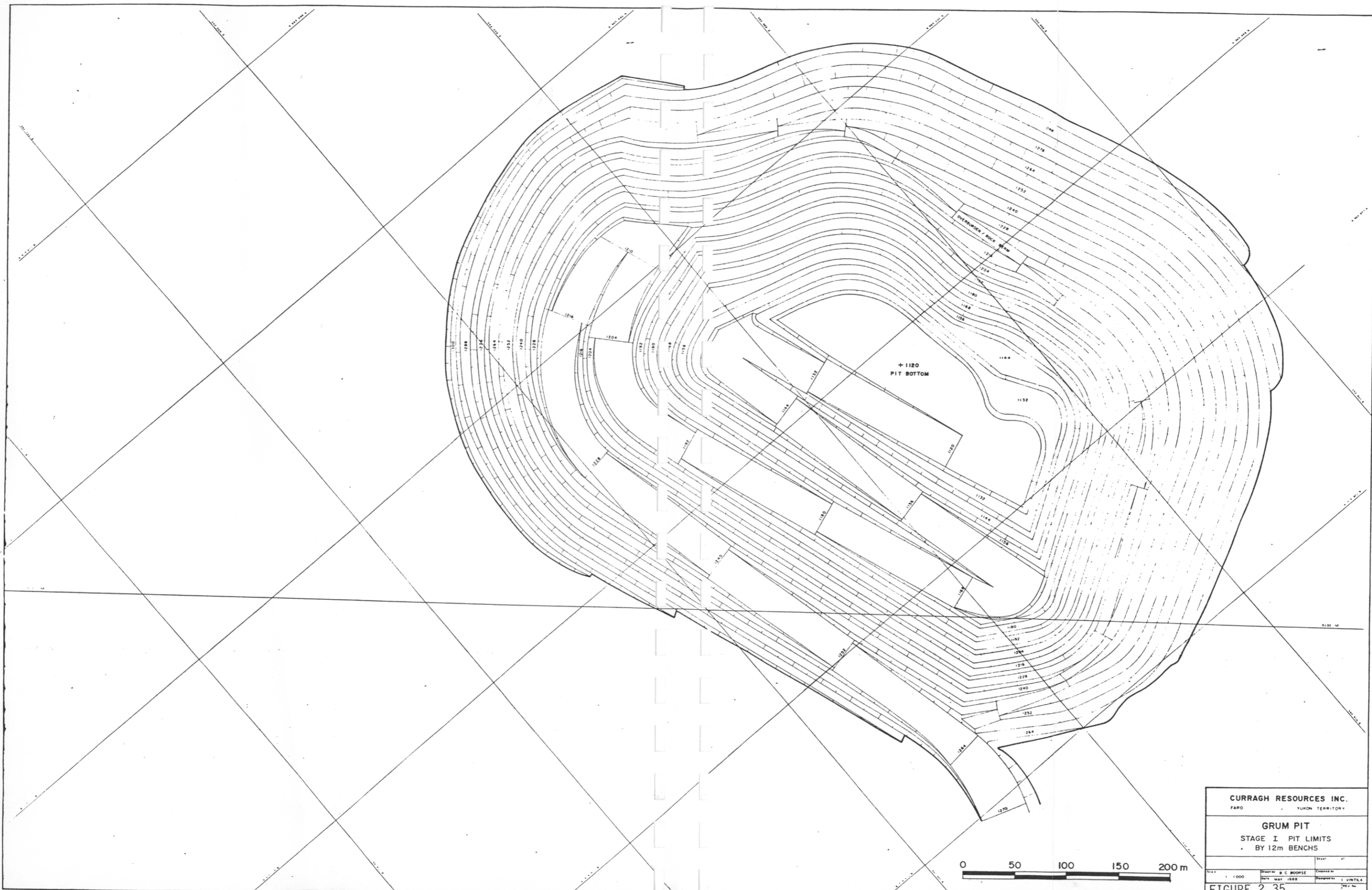
III. Calculation of Factor of Safety:

1. Disturbing Forces =  $\Sigma$  forces along the Failure Plane  
 =  $W \sin \beta + U_c \cos \beta$
2. Resisting Forces =  $[\Sigma \text{ Normal Forces}] \tan \phi + \dots(c)$   
 =  $[W \cos \beta - U_n - U_c \sin \beta] \tan \phi + (a + b)(c)$
3.  $F = \frac{[W \cos \beta - U_n - U_c \sin \beta] \tan \phi + (a + b)(c)}{W \sin \beta + U_c \cos \beta}$

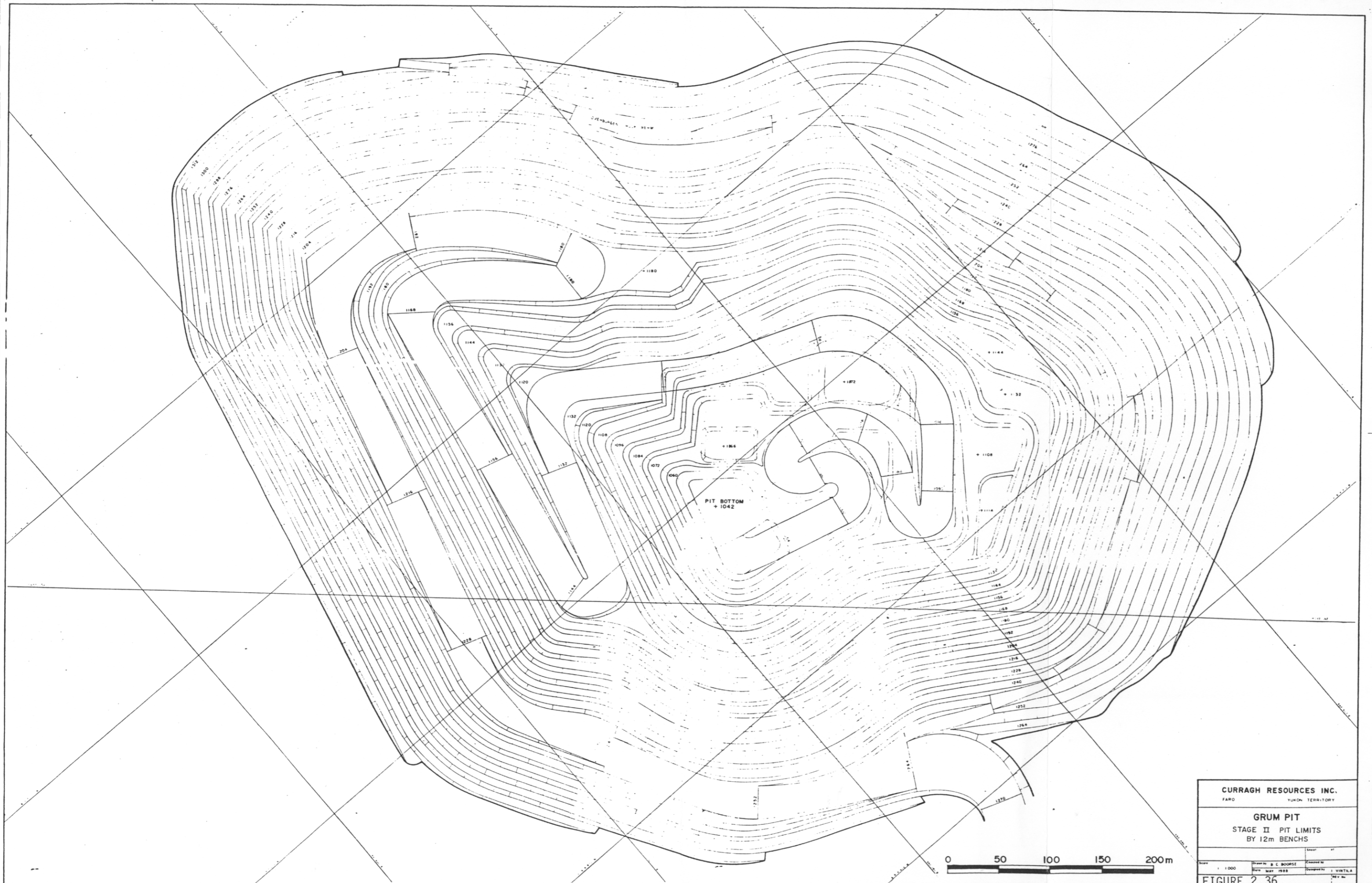


ROCK STABILITY ANALYSIS  
FAILURE PLANES

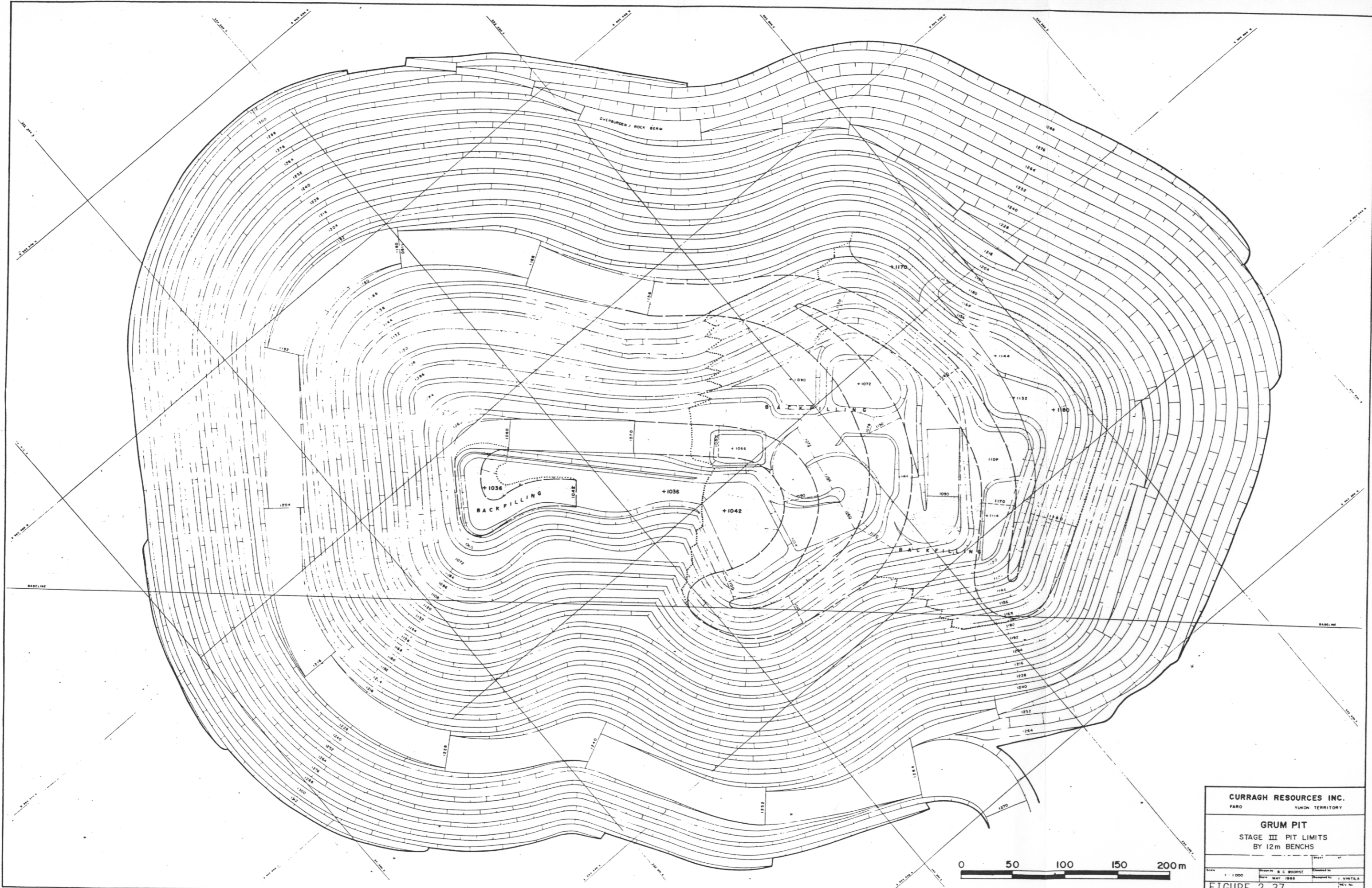
CURRAGH RESOURCES INC.  
FIGURE 2.34



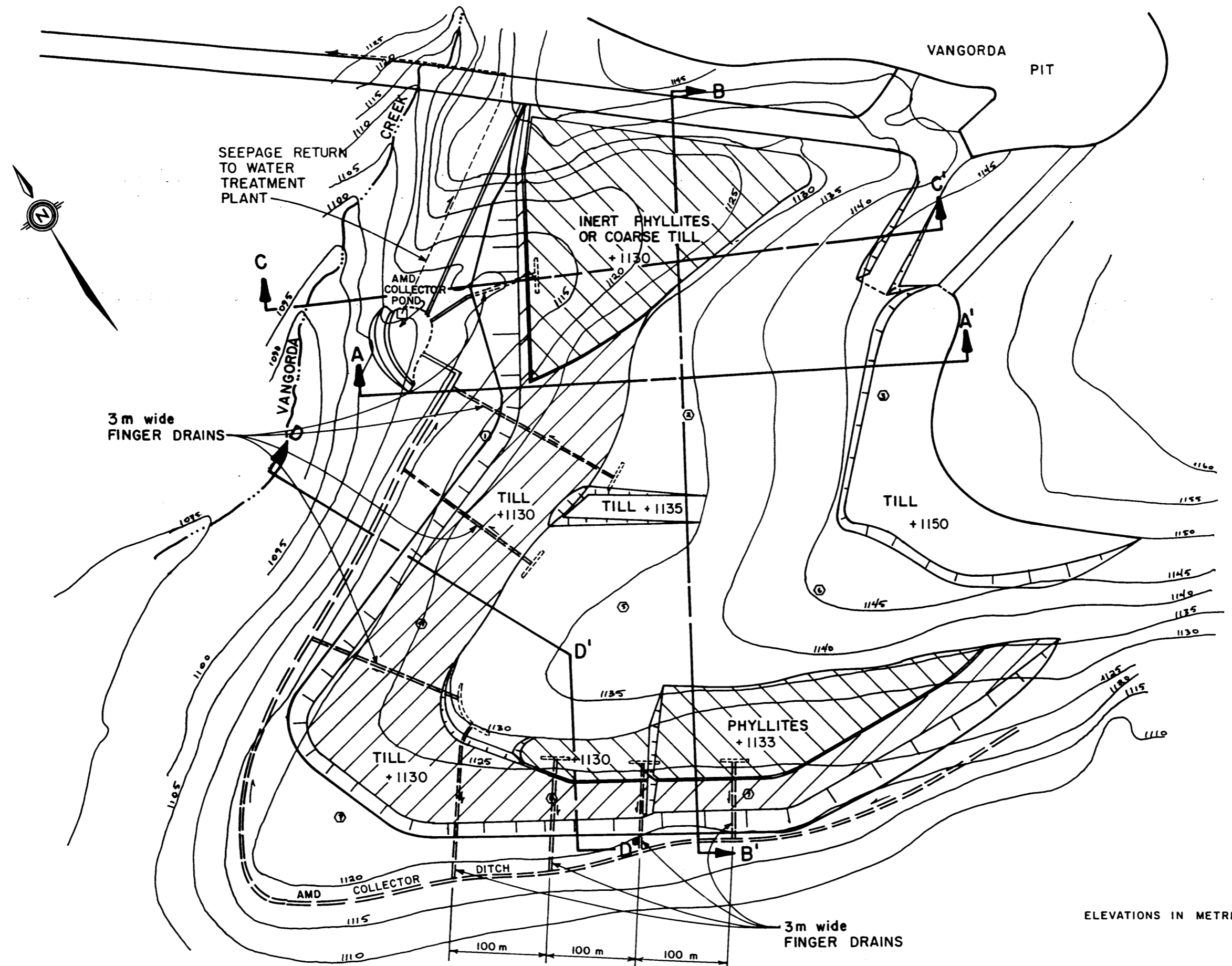
CURRAGH RESOURCES INC.	
FARO YUKON TERRITORY	
<b>GRUM PIT</b>	
STAGE I PIT LIMITS BY 12m BENCHS	
Scale: 1:1000	Drawn by: B. C. BOORSE
Date: MAY 1988	Checked by: J. J. J. J.
<b>FIGURE 2.35</b>	



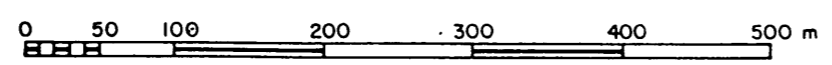
CURRAGH RESOURCES INC.	
FARO	YUKON TERRITORY
<b>GRUM PIT</b>	
STAGE II PIT LIMITS BY 12m BENCHS	
Scale: 1:1000	Drawn by: B. C. BOORSE
Date: MAY 1983	Designed by: J. VINTILA
<b>FIGURE 2.36</b>	



CURRAGH RESOURCES INC.		
FARO	YUKON TERRITORY	
<b>GRUM PIT</b>		
STAGE III PIT LIMITS BY 12m BENCHS		
Scale: 1:1000	Drawn by: B. C. BOORSE	Checked by: J. VINTILA
DATE: MAY 1988		
FIGURE 2.37		



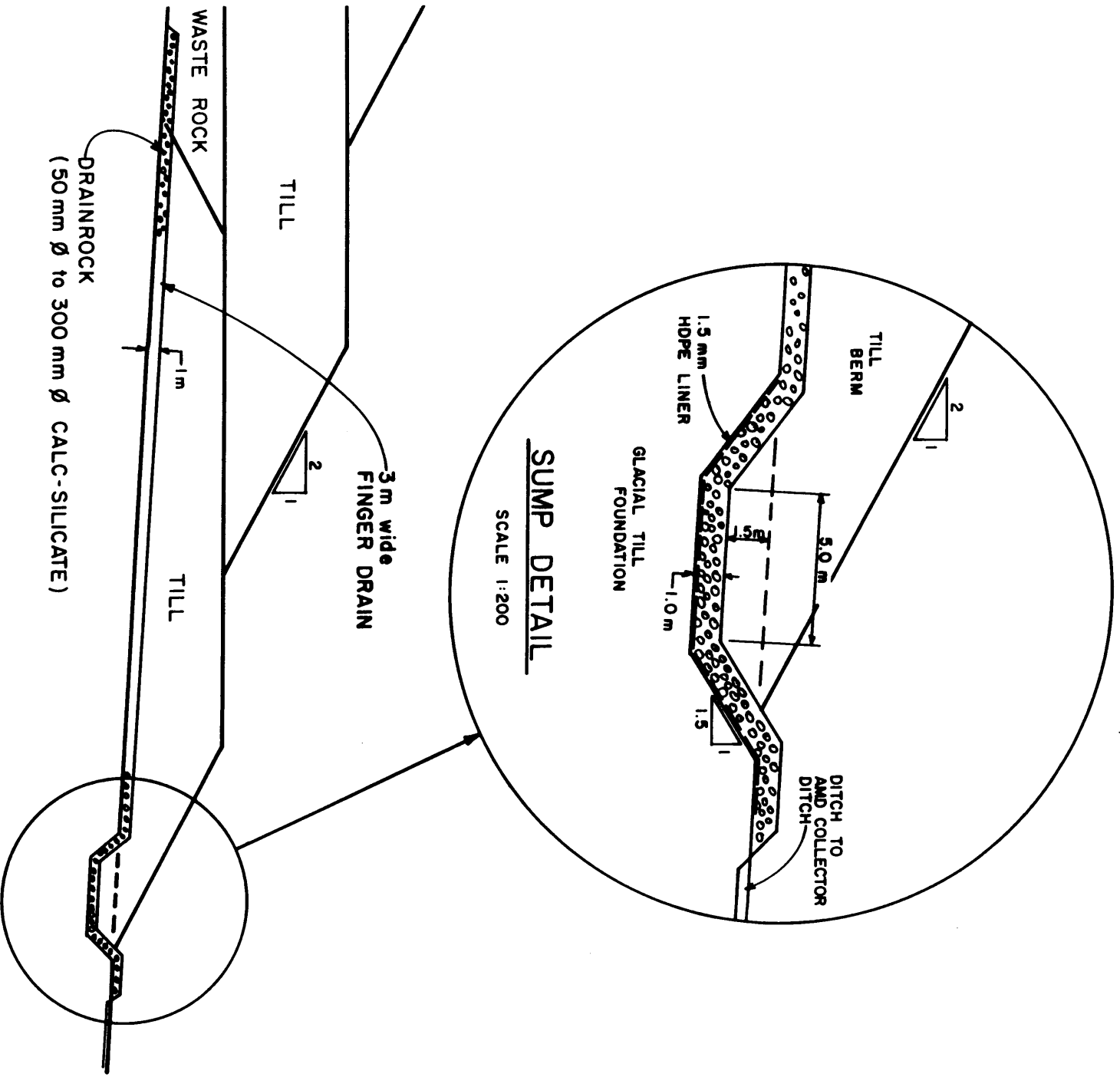
ELEVATIONS IN METRES



<b>VANGORDA WASTE DUMP STAGE I at ELEV. 1130</b>		<b>CURRAGH RESOURCES INC.</b>	
		SCALE 1:5000	FIGURE 2.38





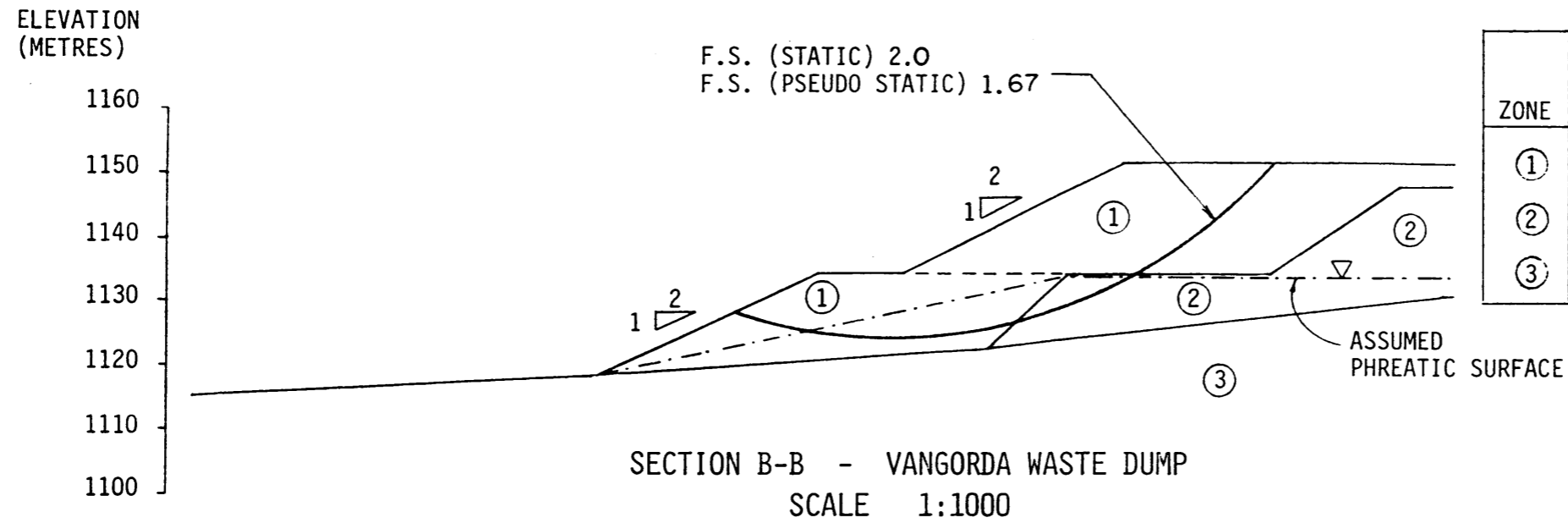


**TYPICAL DETAILS  
FINGER DRAIN & SUMP**

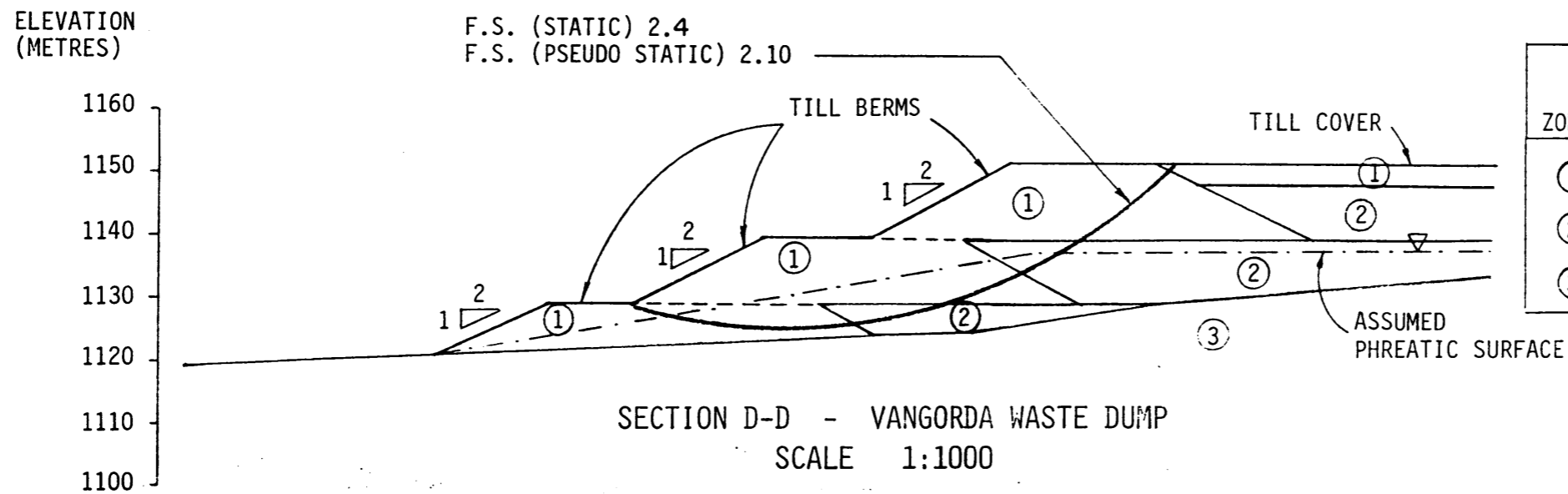
**CURRAGH RESOURCES INC.**

1:500

FIGURE 2.41



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

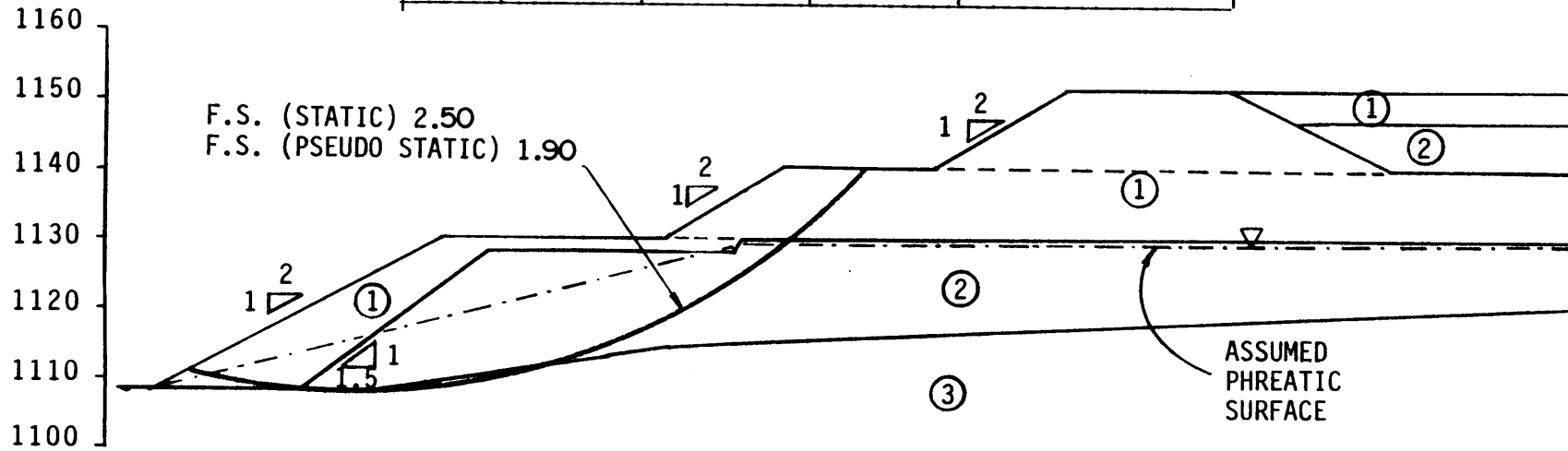


ZONE	TOTAL DENSITY Kg/m <sup>3</sup>	COHESION Kg/m <sup>2</sup>	FRICTION ANGLE	MATERIAL
①	2200	0	32	TILL COVER/BERMS
②	2200	0	35	WASTE ROCK
③	2300	2000	38	FOUNDATION TILL

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

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

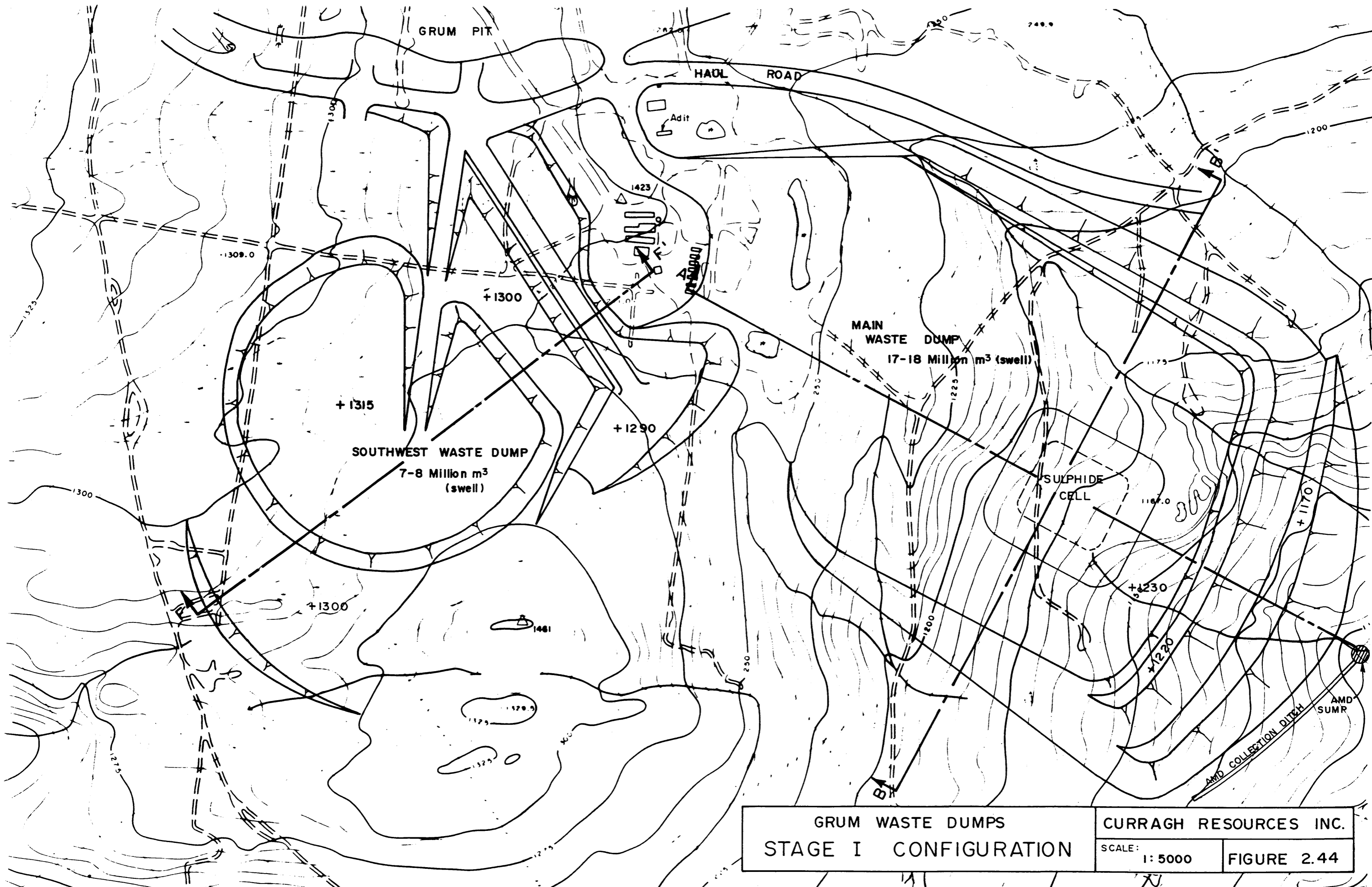
ELEVATION,  
METRES



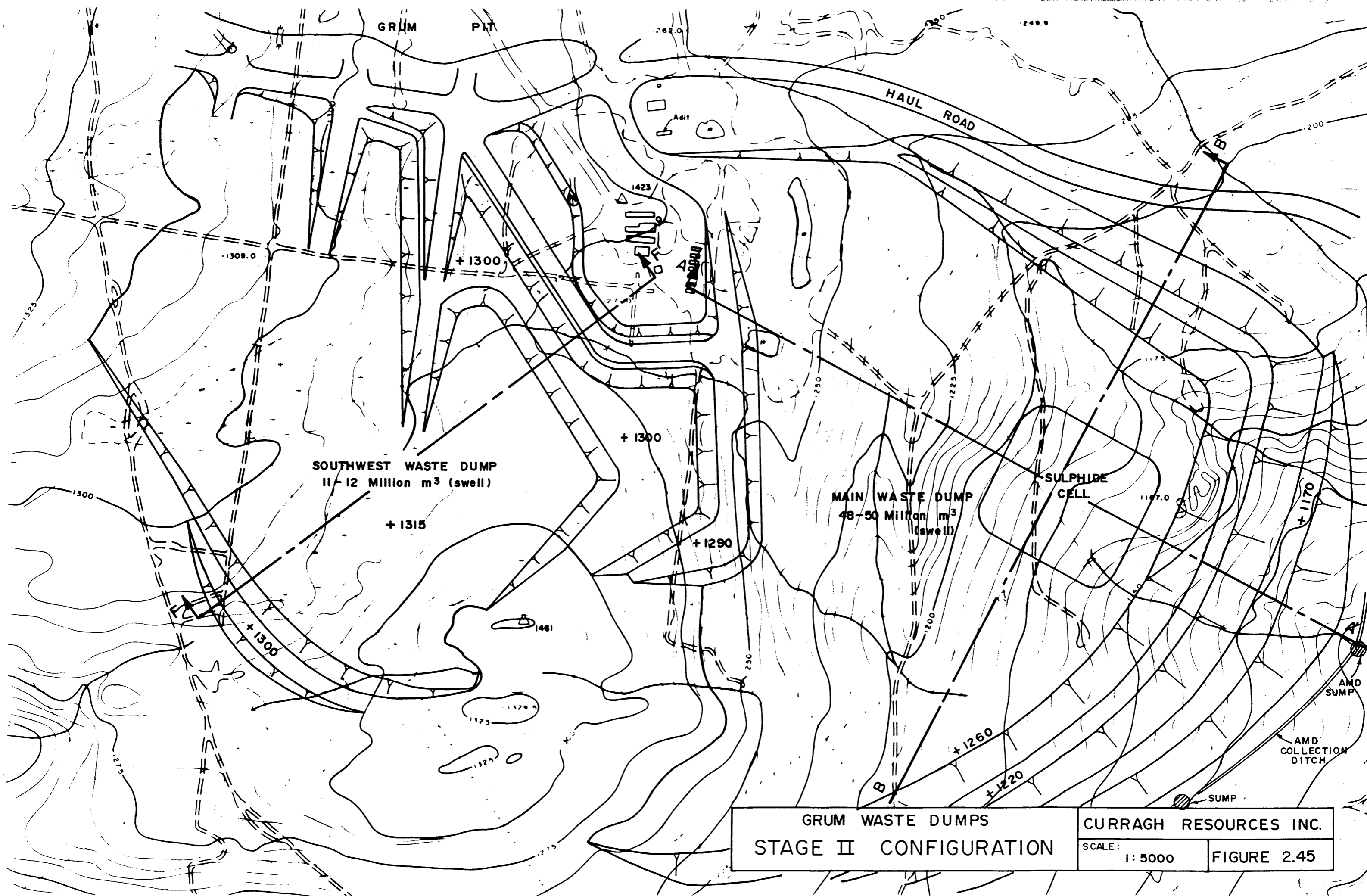
SECTION C-C - VANGORDA WASTE DUMP  
SCALE 1:1000

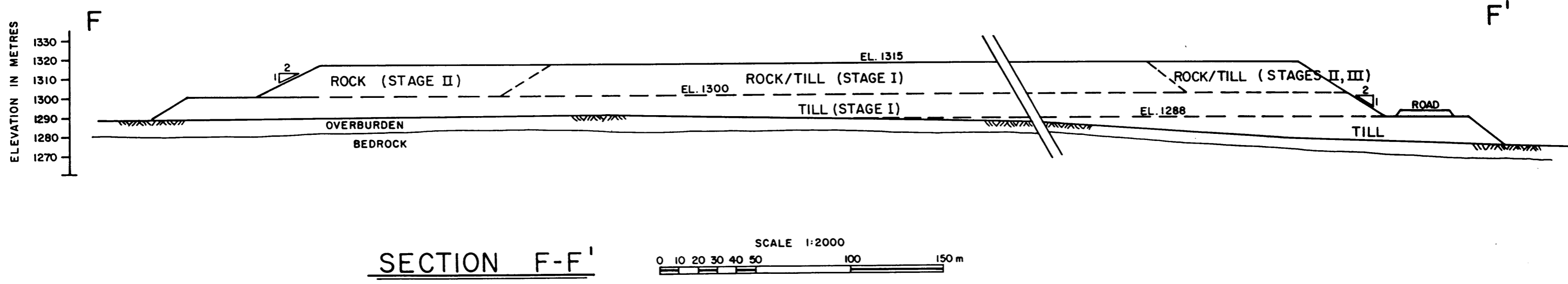
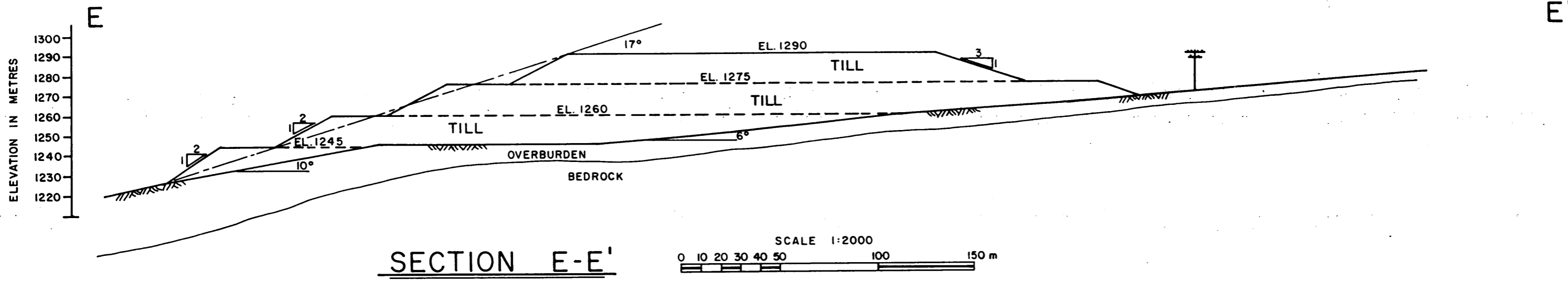
STABILITY ANALYSES  
VANGORDA WASTE DUMP  
SECTION C-C

FIGURE 2.43



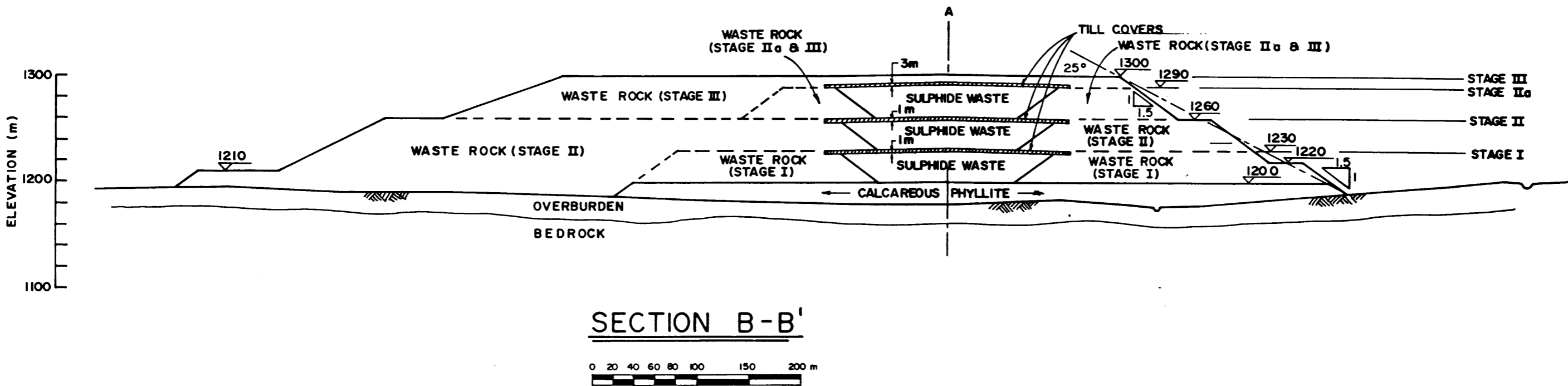
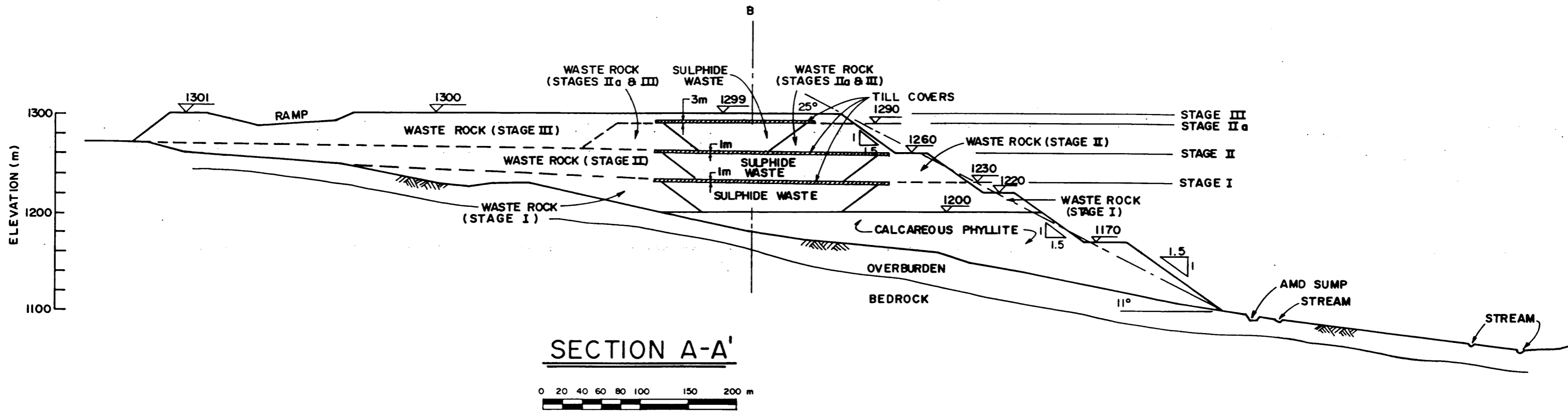
GRUM WASTE DUMPS		CURRAGH RESOURCES INC.	
STAGE I CONFIGURATION		SCALE:	FIGURE 2.44
		1: 5000	





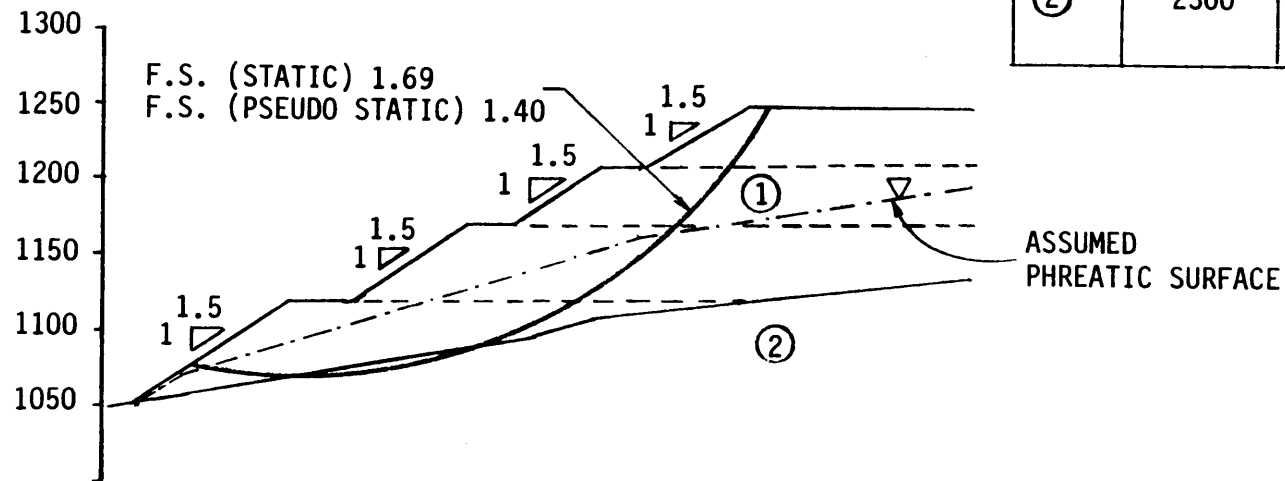
NOTE: SEE FIGURE 2.16  
FOR LOCATION OF SECTIONS

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

ELEVATION,  
METRES



F.S. (STATIC) 1.69

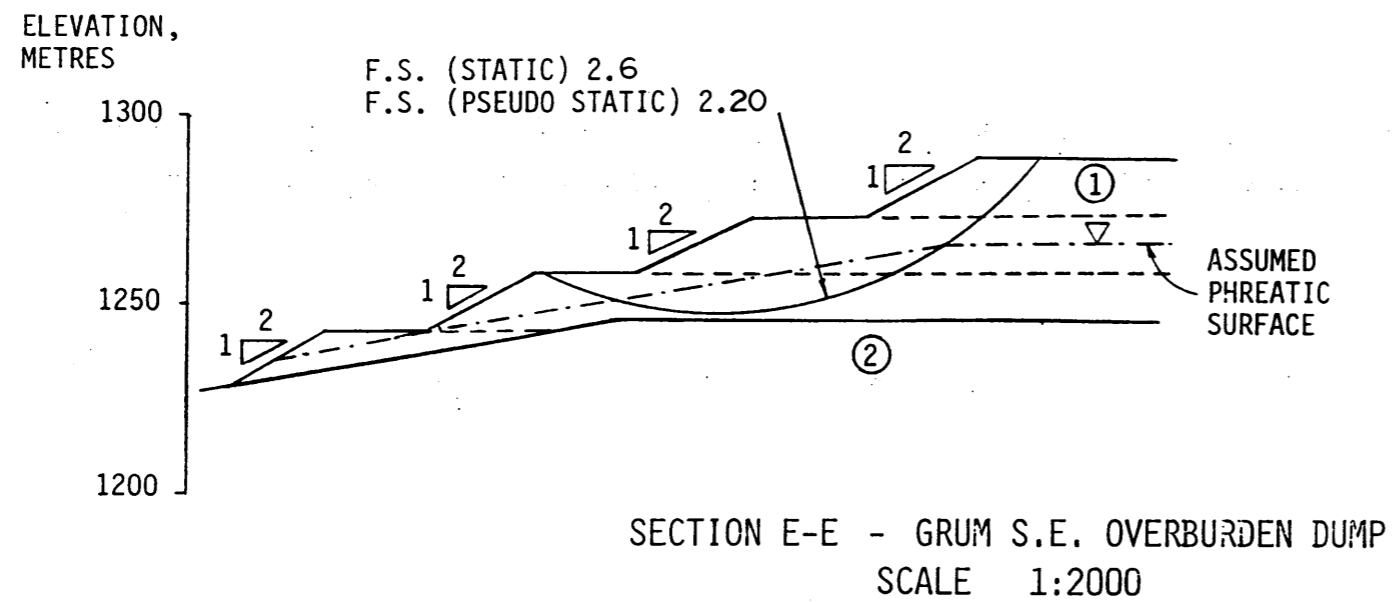
F.S. (PSEUDO STATIC) 1.40

SECTION A-A - GRUM MAIN WASTE DUMP  
SCALE 1:5000

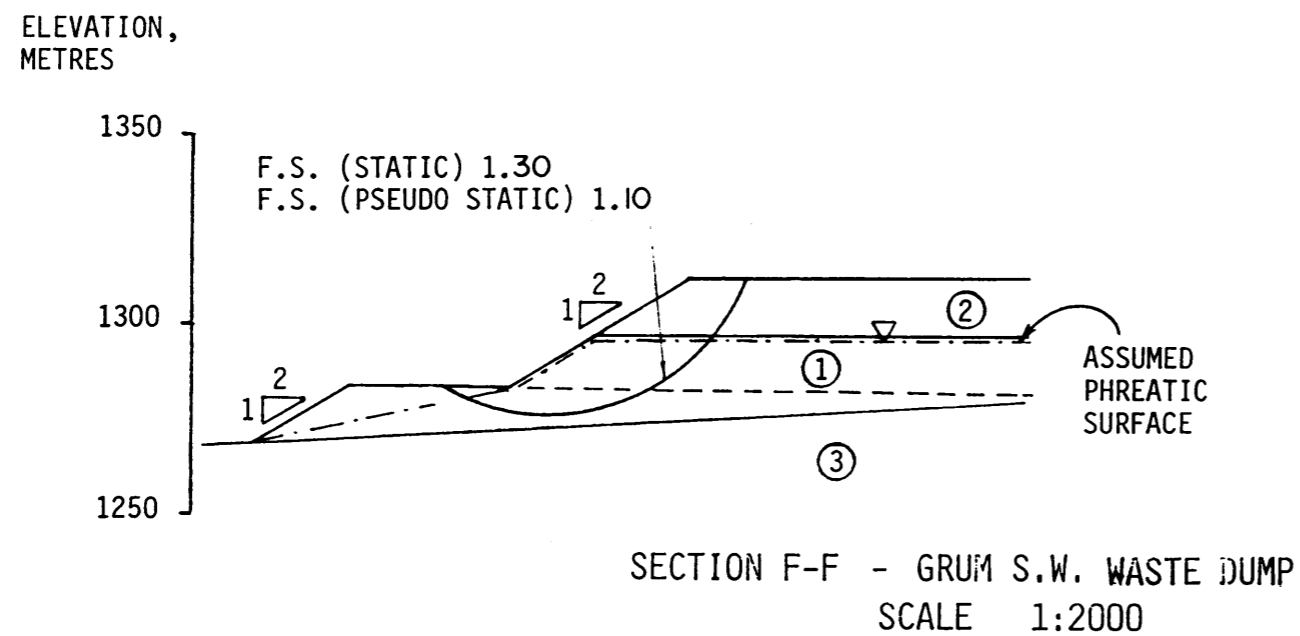
ZONE	TOTAL DENSITY Kg/m <sup>3</sup>	COHESION Kg/m <sup>2</sup>	FRICTION ANGLE	MATERIAL
①	2200	0	35	WASTE ROCK
②	2300	2000	38	FOUNDATION TILL

STABILITY ANALYSES  
GRUM WASTE DUMP  
SECTION A-A

FIGURE 2.48



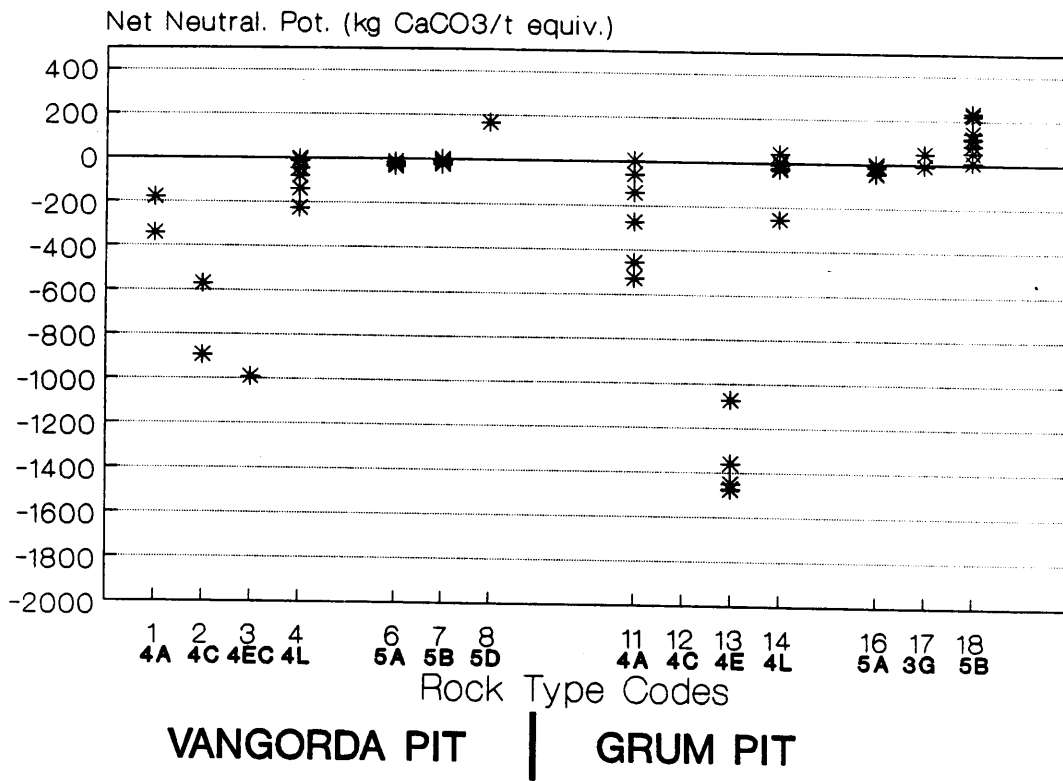
ZONE	TOTAL DENSITY Kg/m <sup>3</sup>	COHESION Kg/m <sup>2</sup>	FRICTION ANGLE	MATERIAL
①	2200	0	32	TILL COVER/BERMS
②	2300	2000	38	FOUNDATION TILL



ZONE	TOTAL DENSITY Kg/m <sup>3</sup>	COHESION Kg/m <sup>2</sup>	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

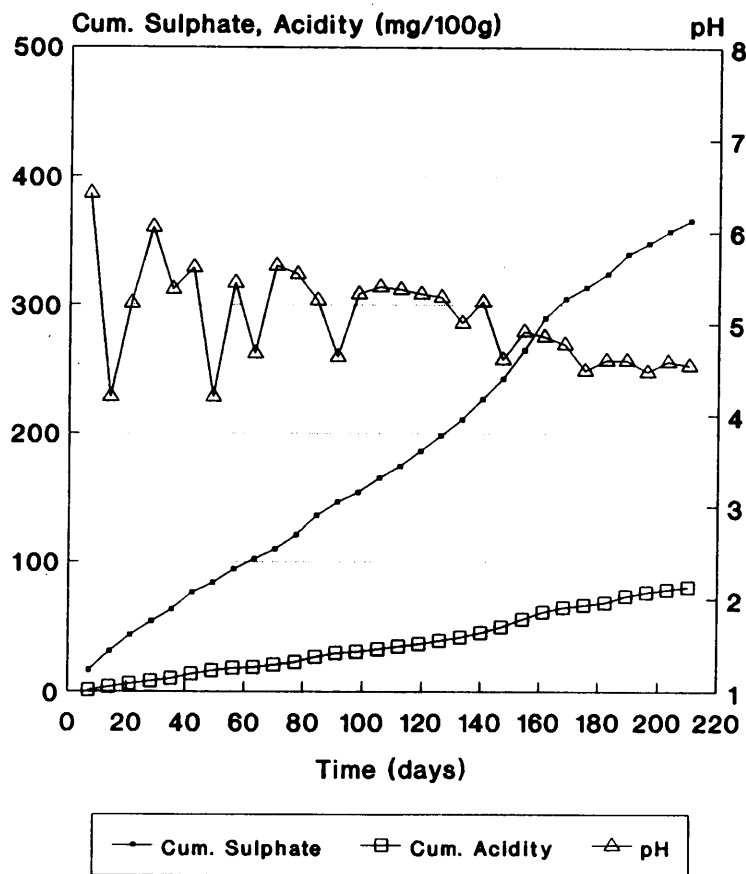


Note: See Table 2.15 in Volume I for Code Definitions

FIGURE 2.50

HUMIDITY CELL TEST RESULTS - SULPHIDE COMPOSITES

HUMIDITY CELL TEST  
SULPHIDE COMPOSITE



HUMIDITY CELL TEST  
SULPHIDE COMPOSITE II (Inoculated)

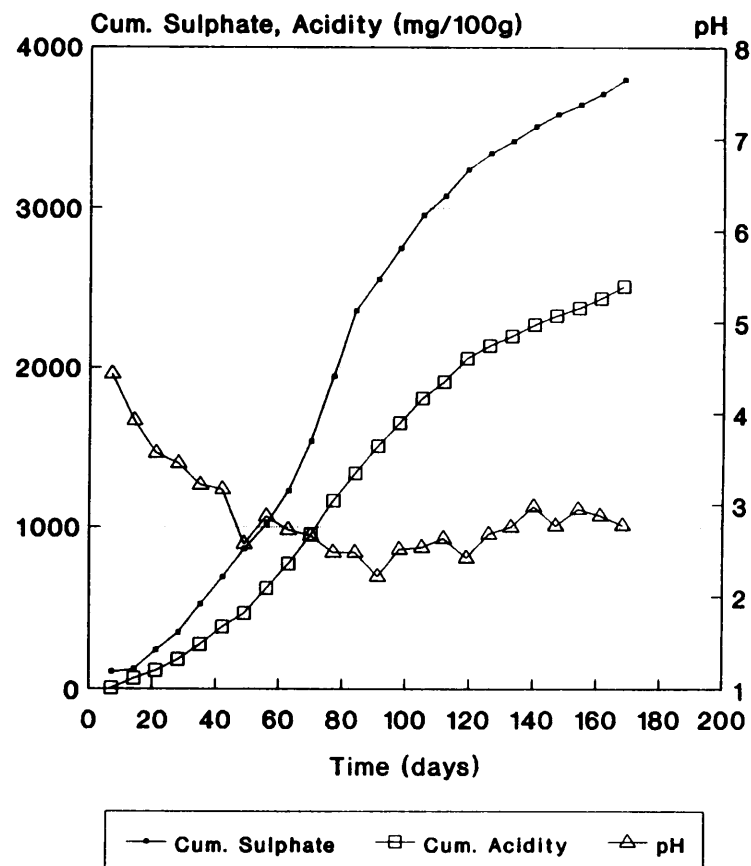
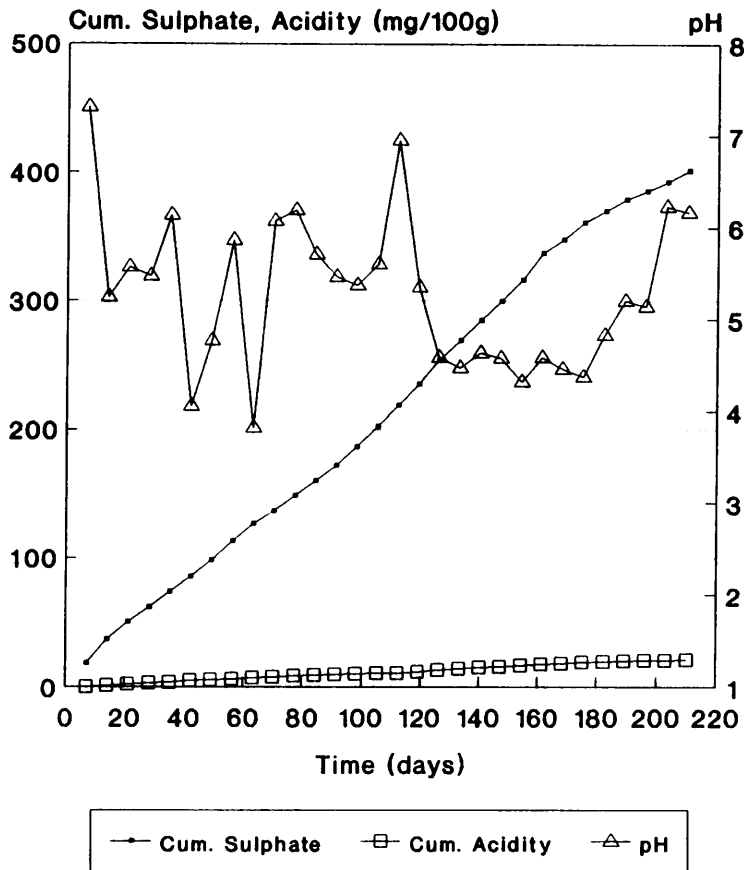


FIGURE 2.51

HUMIDITY CELL TEST RESULTS - PHYLLITE COMPOSITES

HUMIDITY CELL TEST  
PHYLLITE COMPOSITE



HUMIDITY CELL TEST  
PHYLLITE COMPOSITE II (Inoculated)

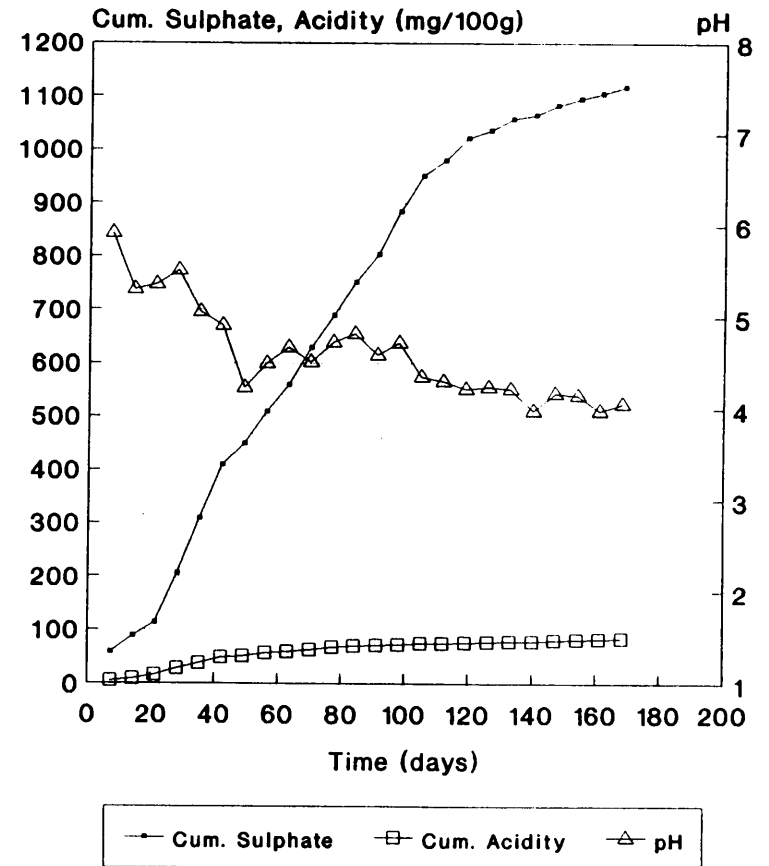
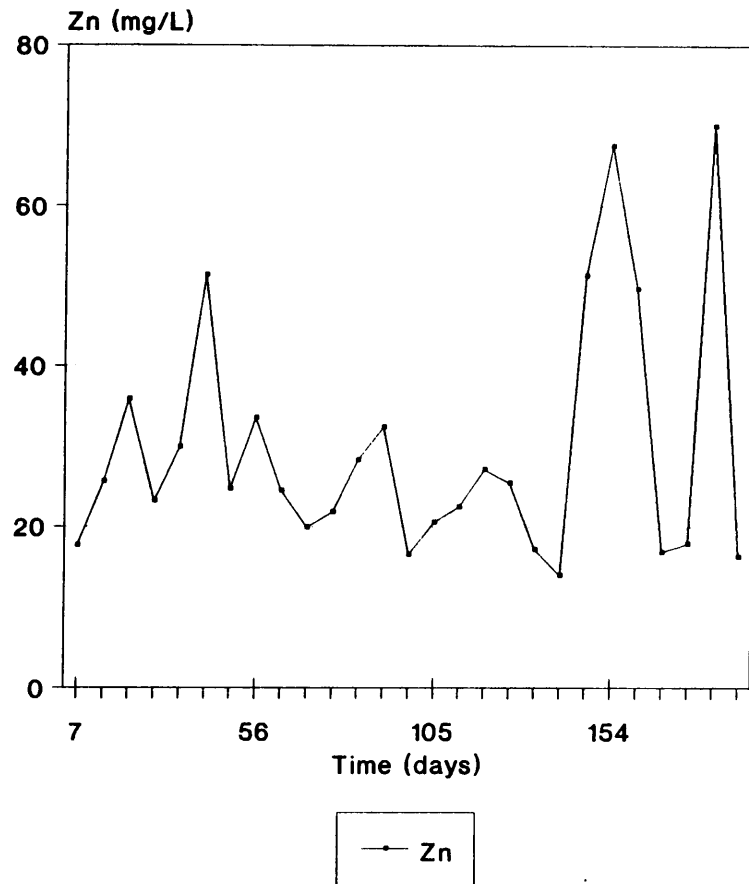


FIGURE 2.52

HUMIDITY CELL TEST  
SULPHIDE COMPOSITE



HUMIDITY CELL TEST  
SULPHIDE COMPOSITE II (Inoculated)

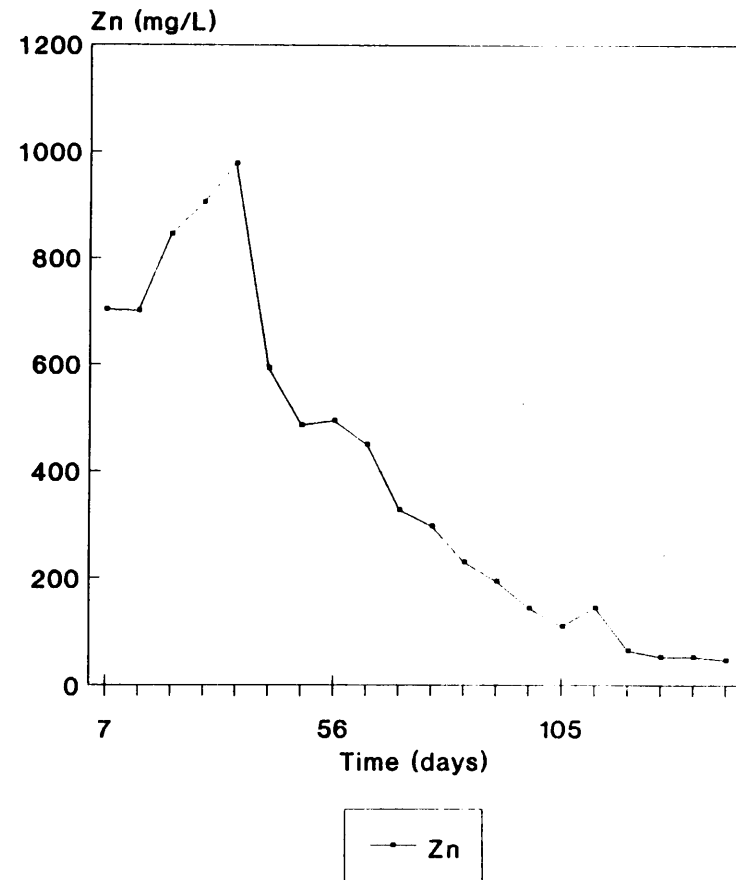
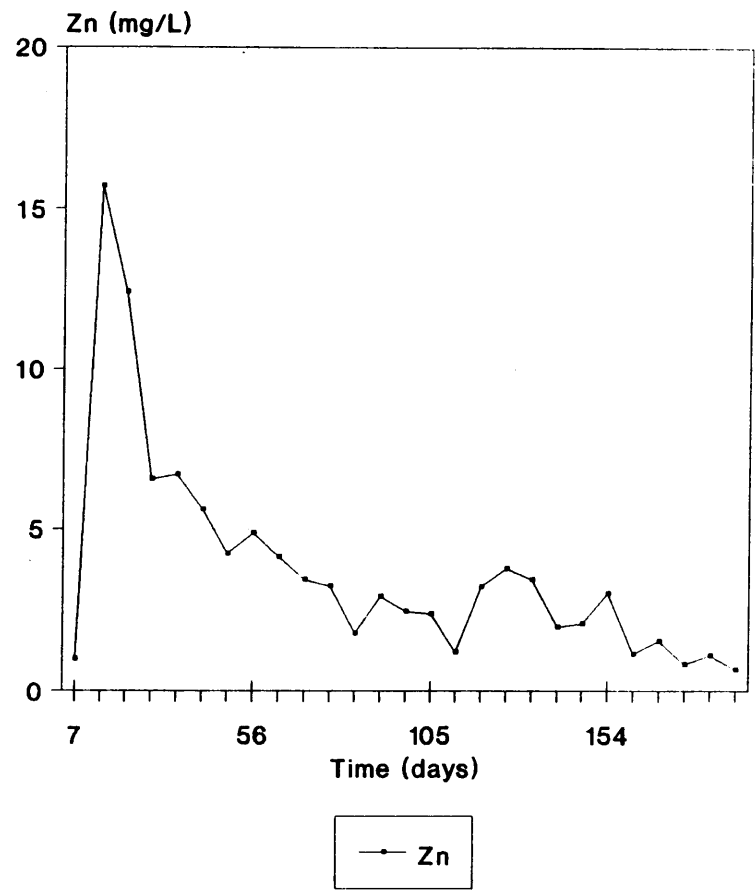


FIGURE 2.53A

HUMIDITY CELL TEST  
PHYLLITE COMPOSITE



HUMIDITY CELL TEST  
PHYLLITE COMPOSITE II (Inoculated)

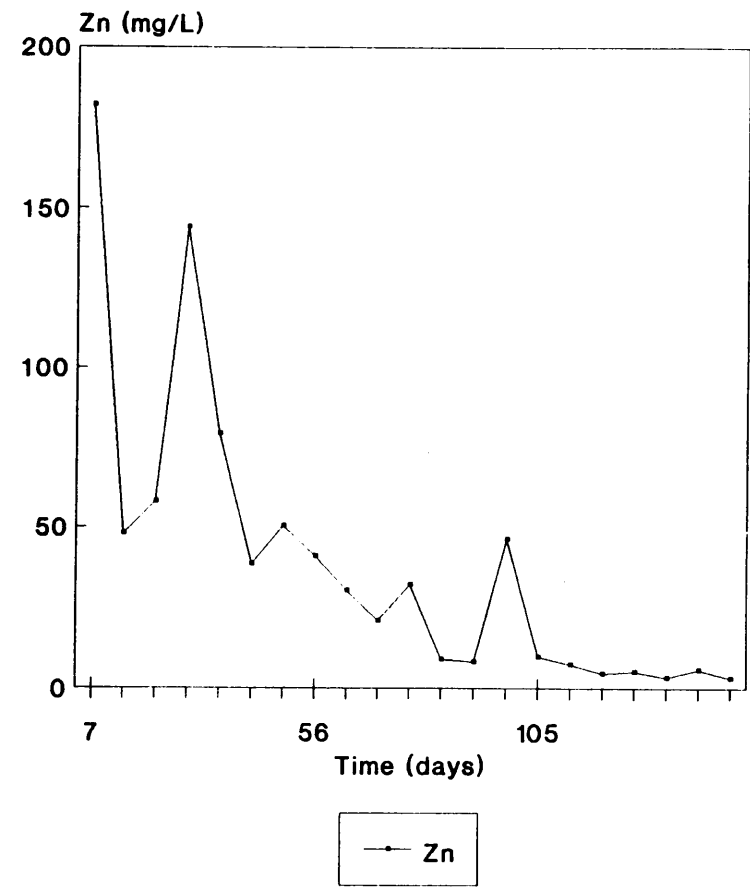
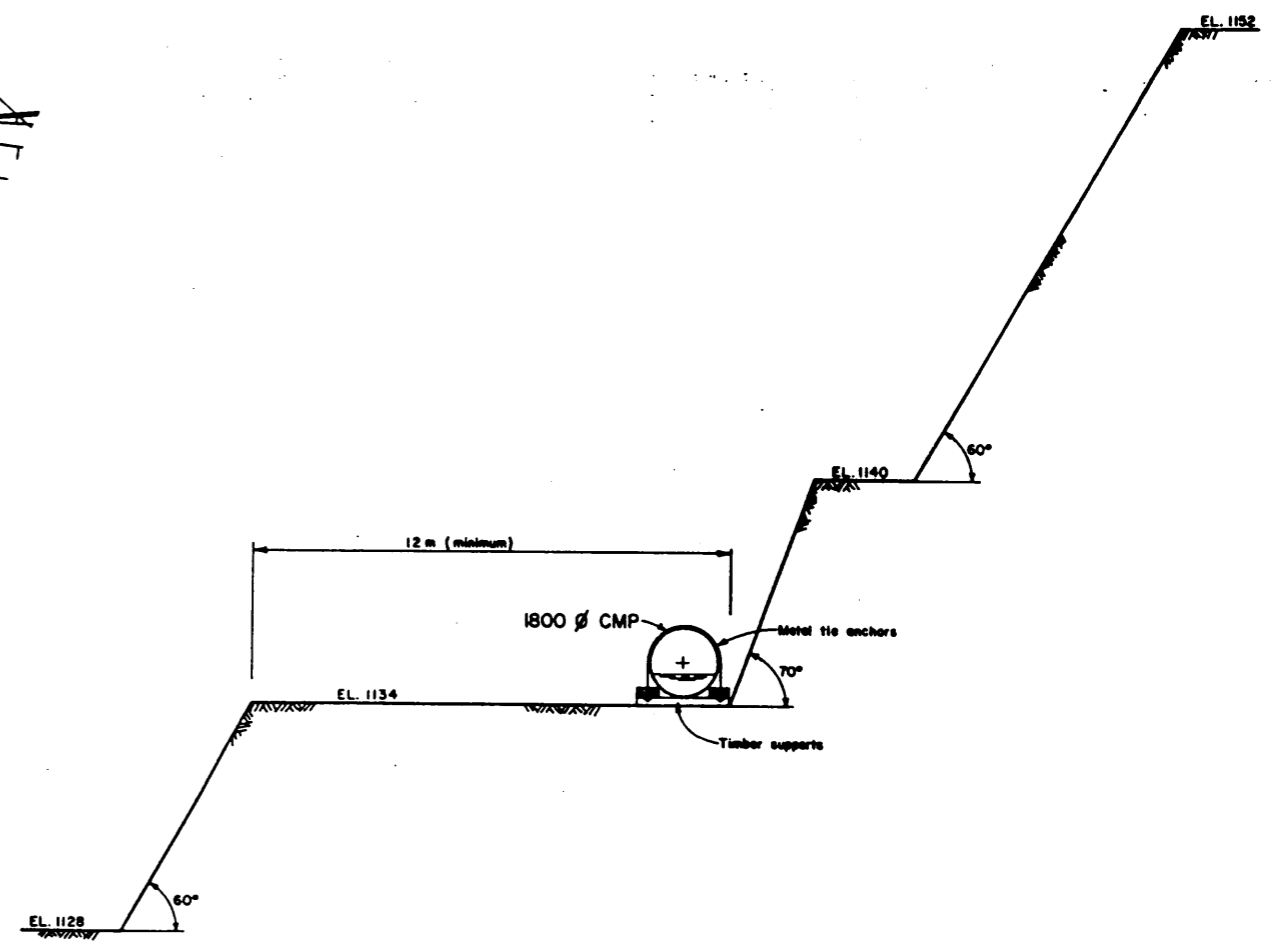
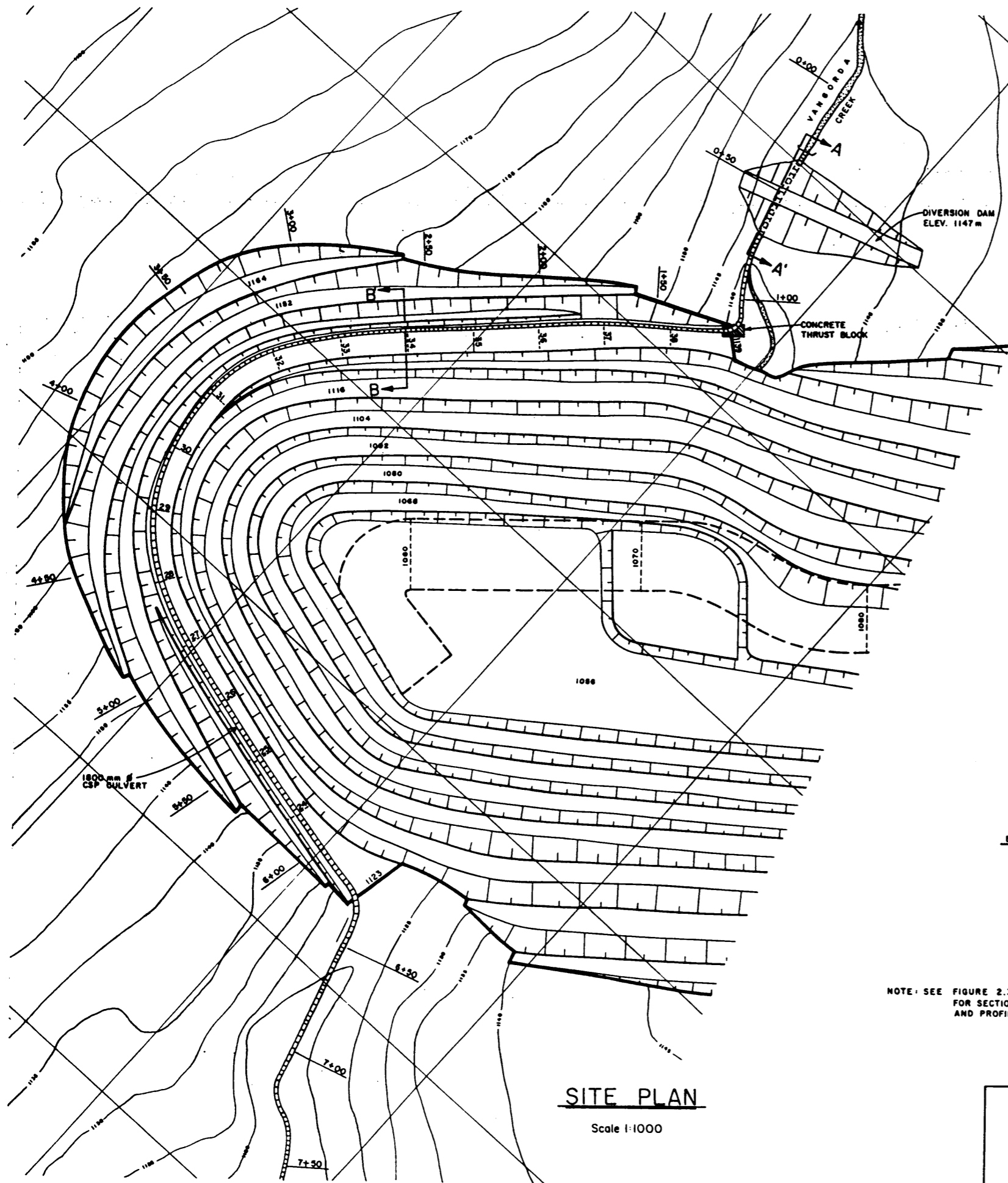
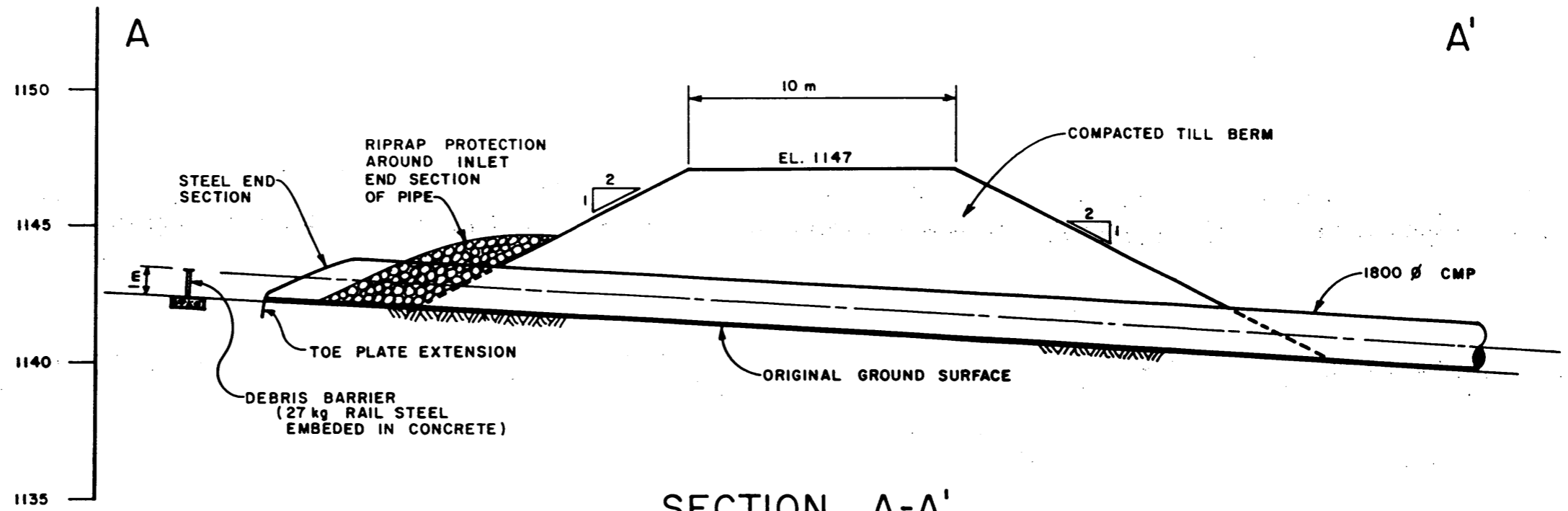


FIGURE 2.53B

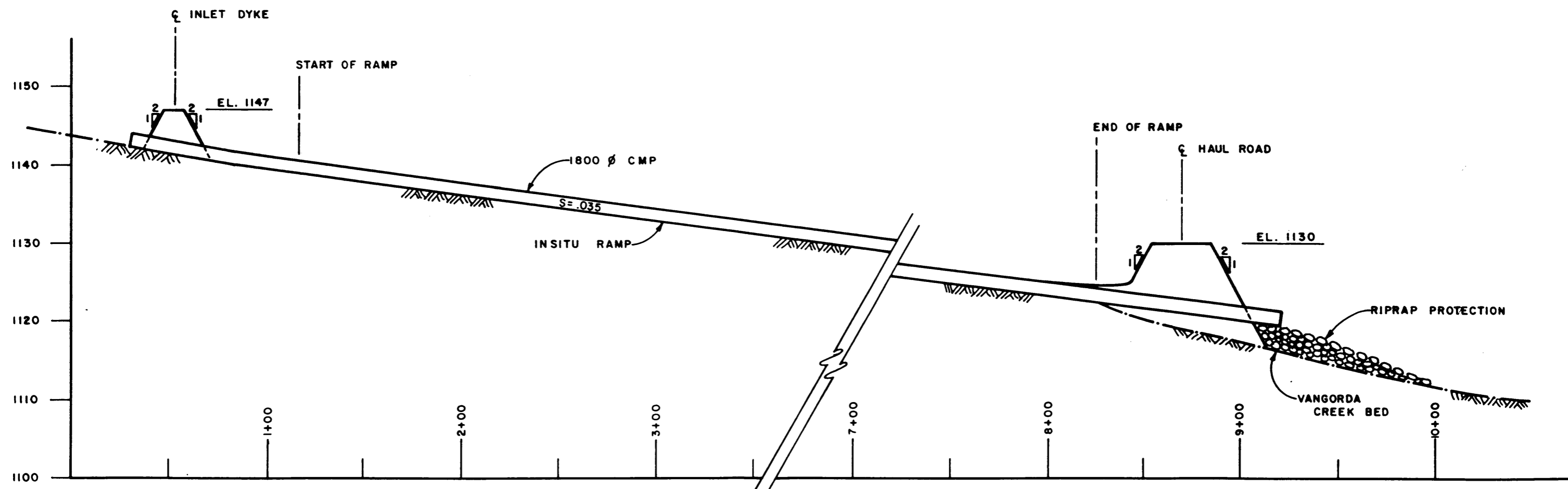


NOTE: SEE FIGURE 2.39 FOR SECTION A-A' AND PROFILE

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



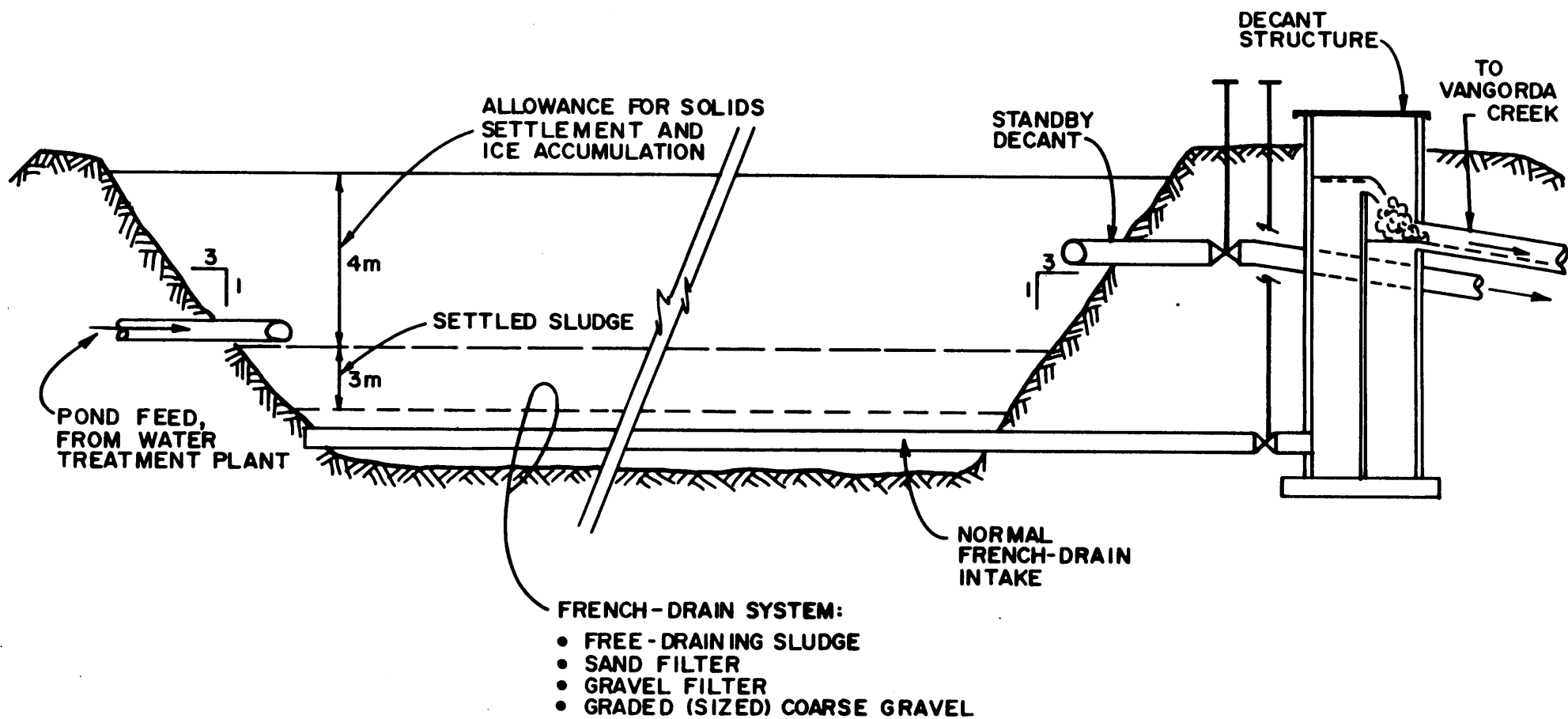
**SECTION A-A'**  
SCALE 1:200



**PROFILE ALONG CULVERT C**

VERTICAL SCALE 1:500  
HORIZONTAL SCALE 1:2000

VANGORDA CREEK DIVERSION CULVERT		CURRAGH RESOURCES INC.	
PROFILE & SECTION		SCALE: AS SHOWN	FIGURE 2.55

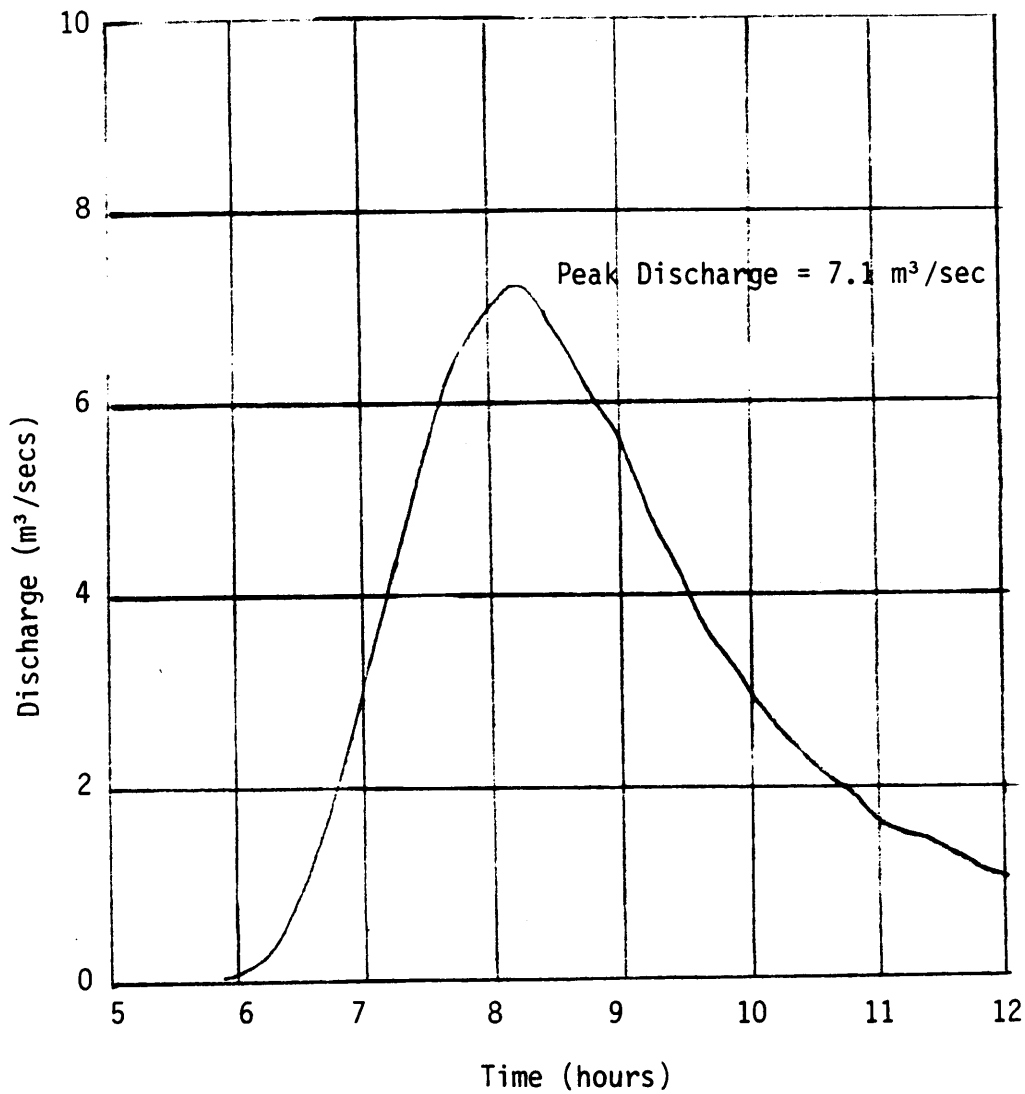


SLUDGE SETTLING/STORAGE POND  
 TYPICAL SECTION

CURRAGH RESOURCES INC.

SCALE : NOT TO SCALE | FIGURE 2.56





Catchment Area = 17.7 square kilometres  
24-hour 100-year Rainfall = 40 mm  
Hydrograph developed from the HEC-1 Computer Package.

FLOOD HYDROGRAPH  
FOR 100 YEAR STORM

FIGURE 3.1

# WATER QUALITY MONITORING SITES

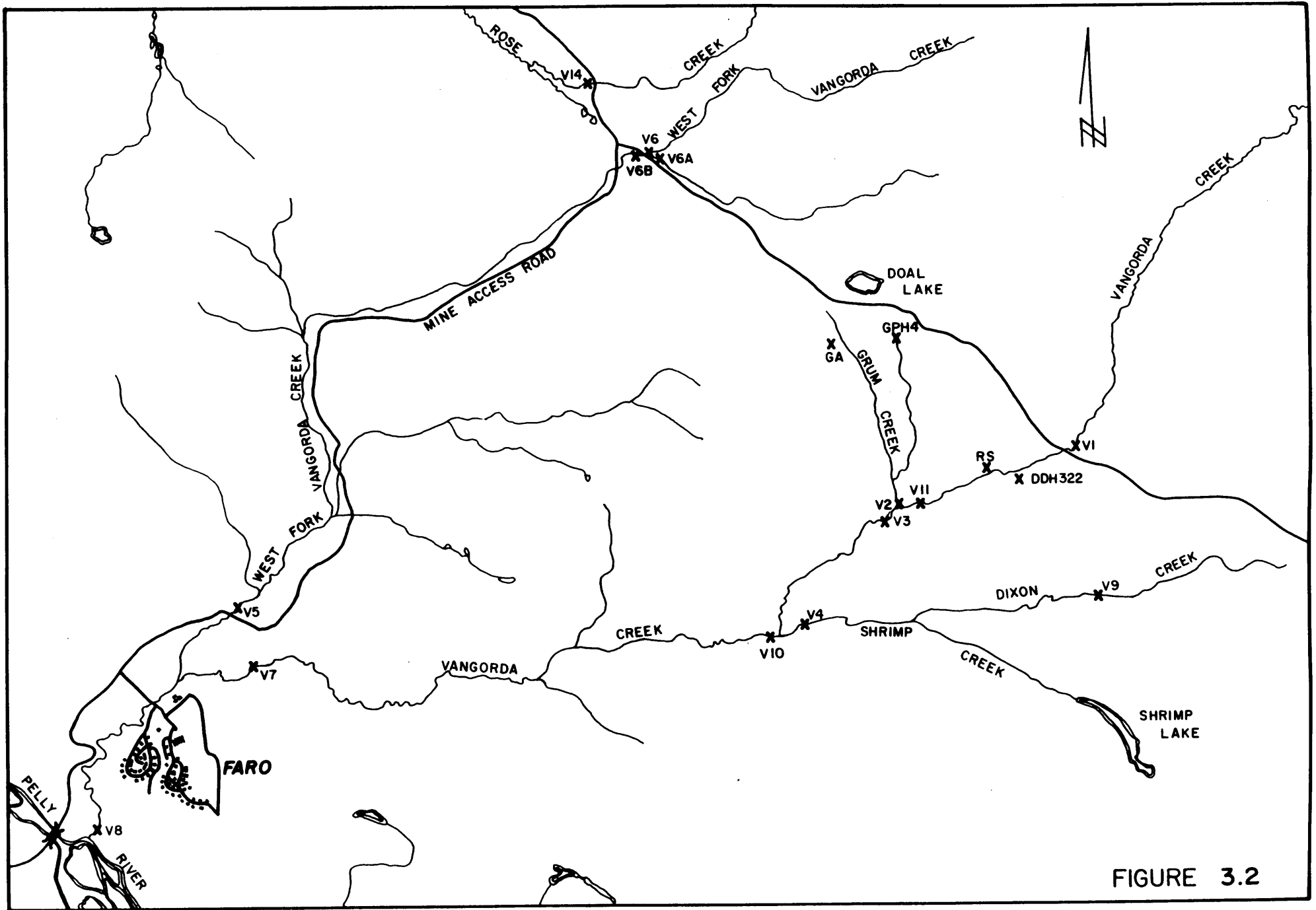
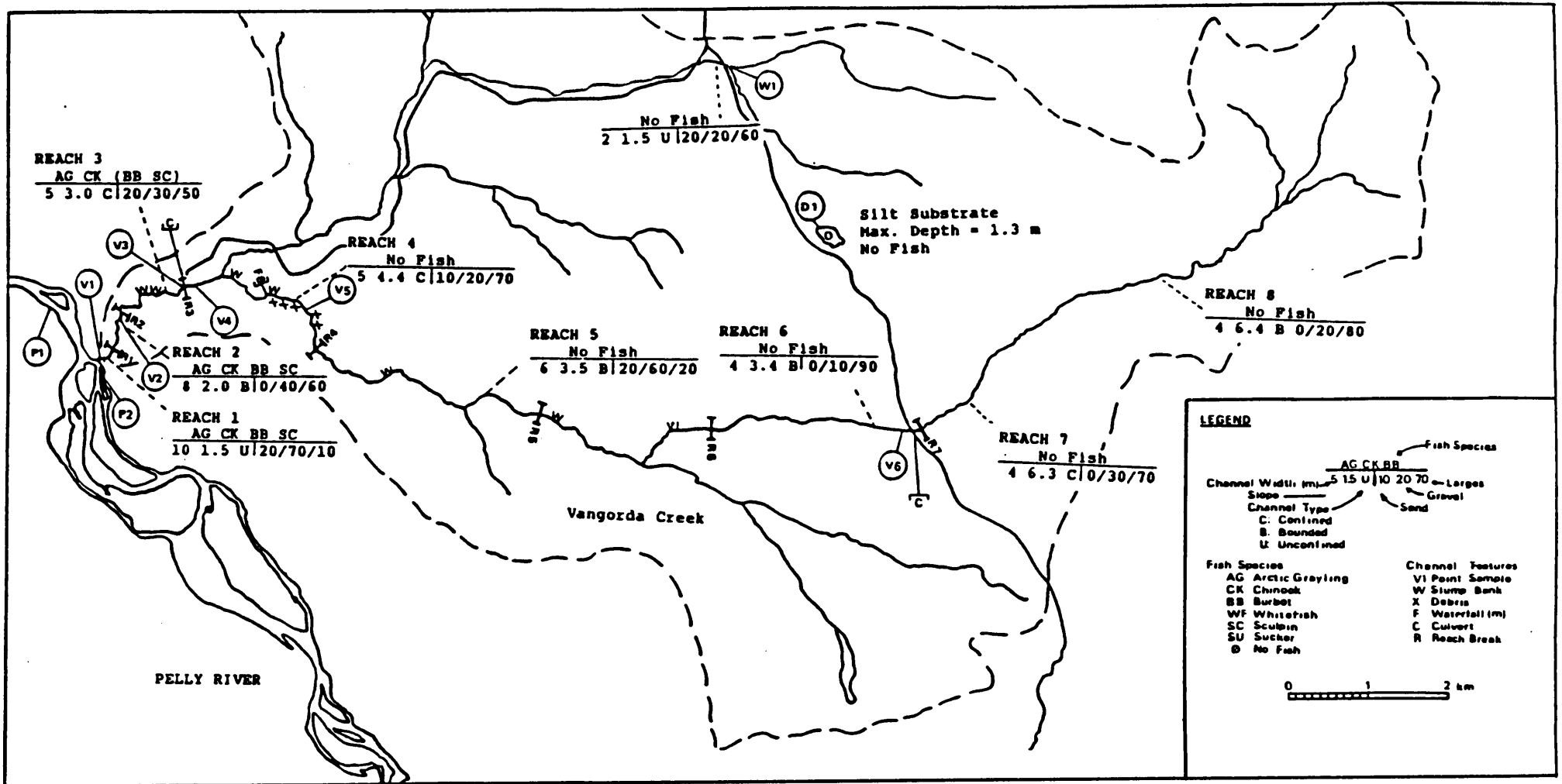


FIGURE 3.2

SCALE 1:50 000

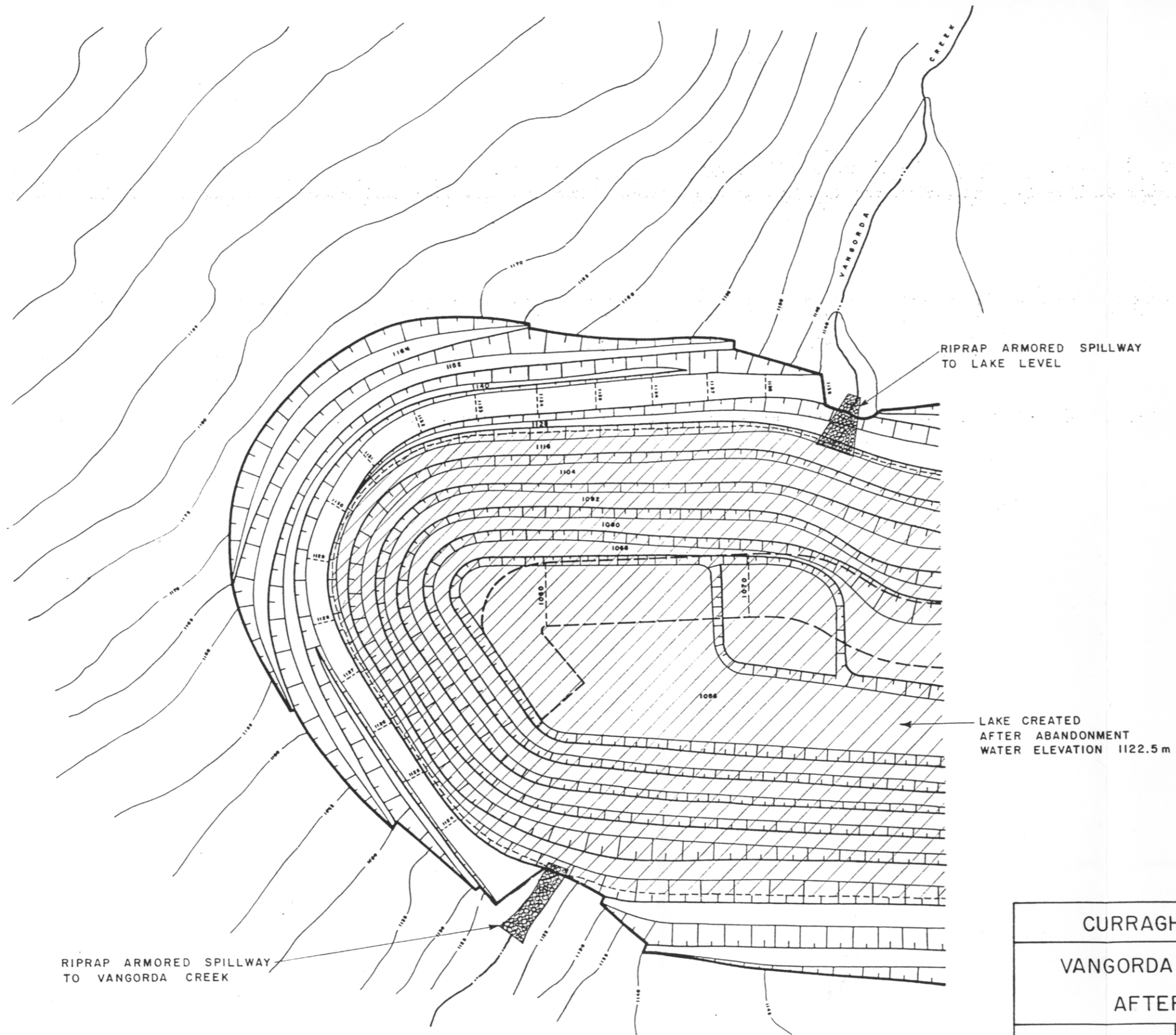
CURRAGH RESOURCES INC.



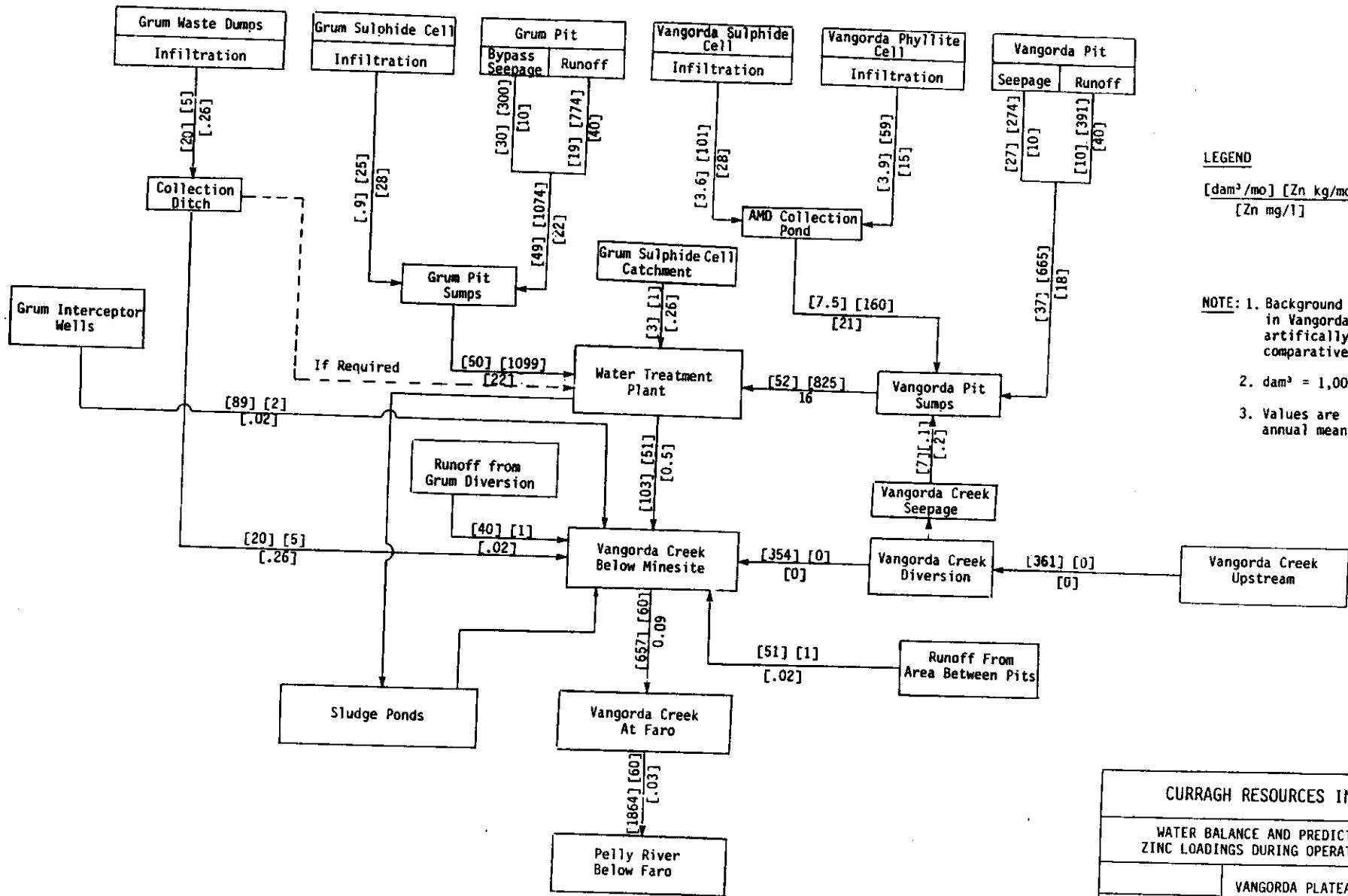
FISH SAMPLING SITE LOCATIONS  
&  
BIO-PHYSICAL DATA SUMMARY

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

FIGURE 3.3



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



**LEGEND**  
 [dam<sup>3</sup>/mo] [Zn kg/mo]  
 [Zn mg/l]

**NOTE:** 1. Background Zinc Loading in Vangorda Creek is artificially zero for comparative purposes.  
 2. dam<sup>3</sup> = 1,000 cubic metres  
 3. Values are given for annual mean monthly.

CURRAGH RESOURCES INC.	
WATER BALANCE AND PREDICTED ZINC LOADINGS DURING OPERATION	
VANGORDA PLATEAU PROJECT	
Figure No. 5.1	

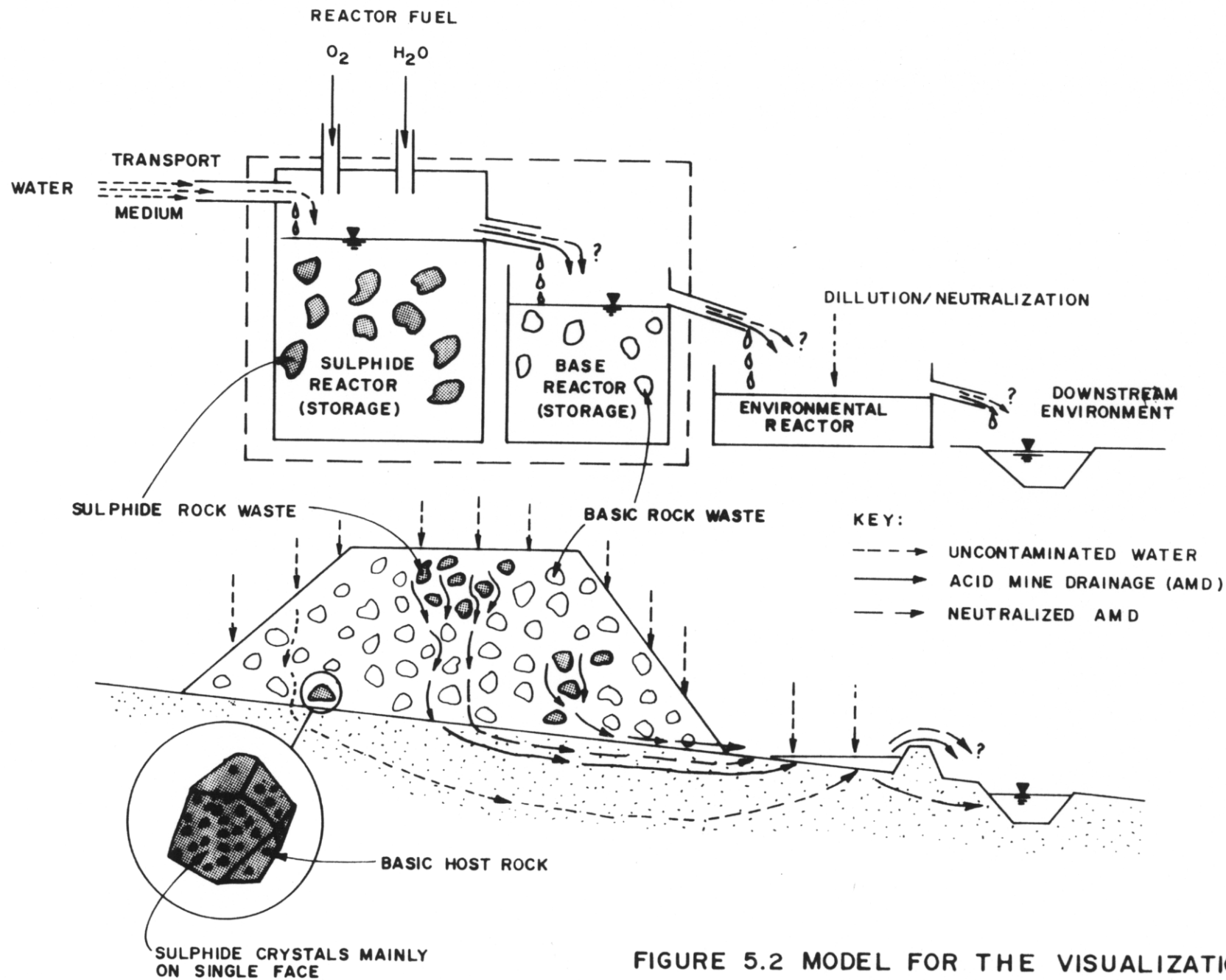
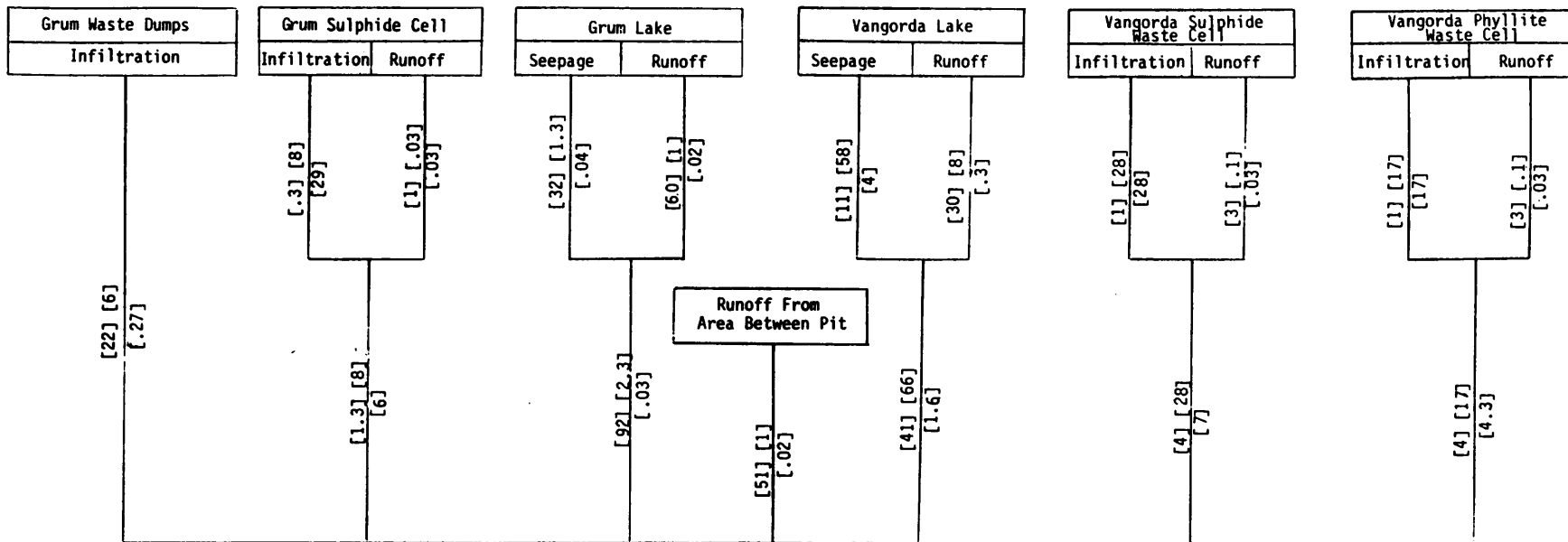


FIGURE 5.2 MODEL FOR THE VISUALIZATION OF LONG TERM AMD



[22] [6]  
[.27]

[.3] [8]  
[29]

[1] [.03]  
[.03]

[32] [1.3]  
[.04]

[60] [1]  
[.02]

[11] [58]  
[4]

[30] [8]  
[.3]

[1] [28]  
[28]

[3] [.1]  
[.03]

[1] [17]  
[17]

[3] [.1]  
[.03]

Runoff From  
Area Between Pit

[1.3] [8]  
[6]

[92] [2.3]  
[.03]

[51] [1]  
[.02]

[41] [66]  
[1.6]

[4] [28]  
[7]

[4] [17]  
[4.3]

[215] [129]  
[.6]

Vangorda Creek  
Below Minesite

[361] [0]  
[0]

Vangorda Creek  
Upstream

[577] [129]  
[.22]

Vangorda Creek  
at Faro

[1864] [129]  
[.07]

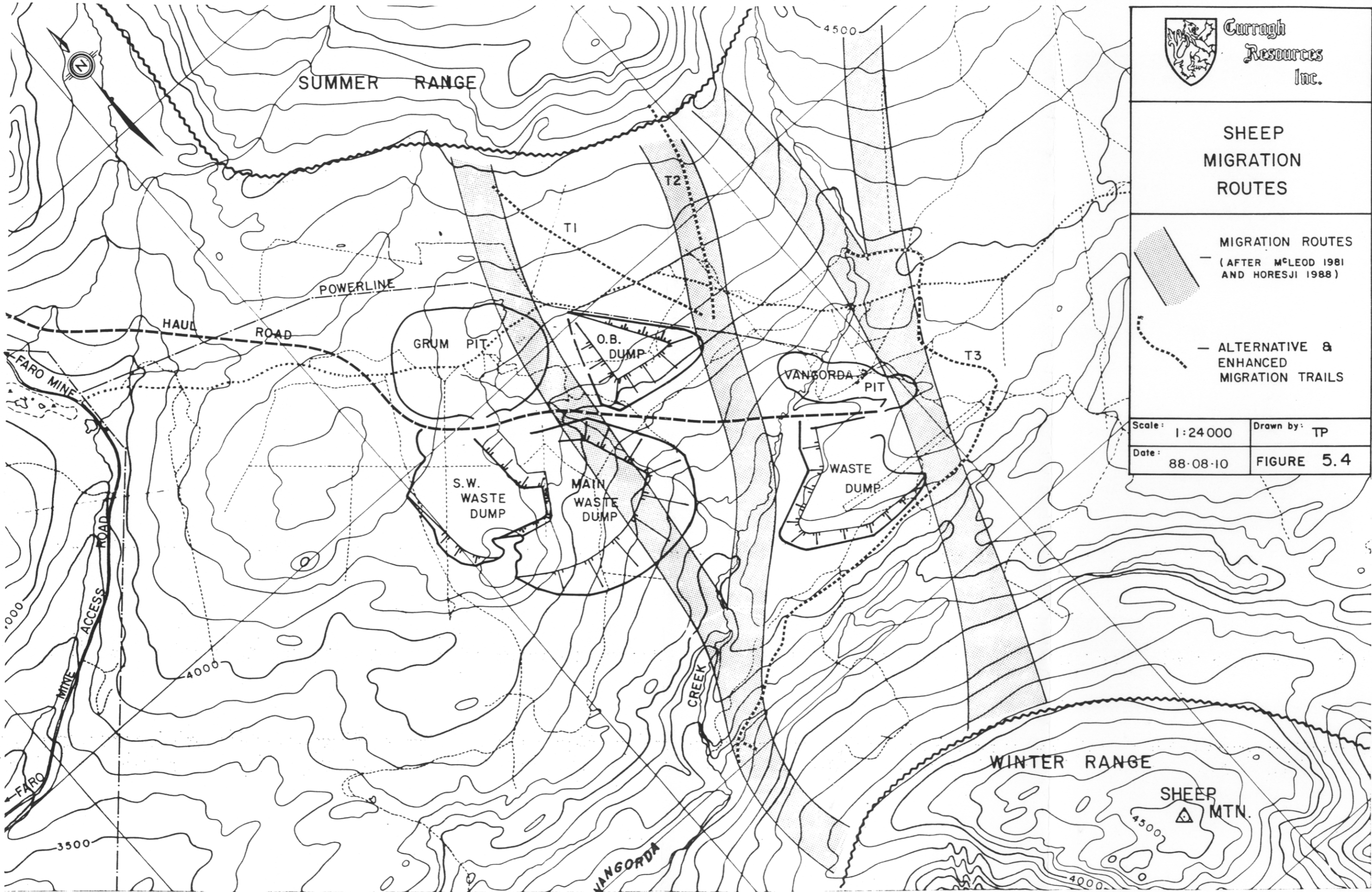
Pelly River  
at Faro

**LEGEND**

[dam³/mo.] [Zn kg/mo.]  
[Zn mg/l]

- Note:
1. Background Zinc loading in Vangorda Creek has been artificially set at zero for comparative purposes.
  2. dam³ = 1,000 cu. metres.
  3. Values are given for the Annual Mean Monthly.

CURRAGH RESOURCES INC	
WATER BALANCE AND PREDICTED ZINC LOADINGS AFTER ABANDONMENT	
APRIL 1989	VANGORDA PLATEAU PROJECT
FIGURE 5.3	



Curragh  
Resources  
Inc.

SHEEP  
MIGRATION  
ROUTES



MIGRATION ROUTES  
(AFTER MCLEOD 1981  
AND HORESJI 1988)



ALTERNATIVE &  
ENHANCED  
MIGRATION TRAILS

Scale: 1:24 000

Drawn by: TP

Date: 88-08-10

FIGURE 5.4