



EIS 615

AB019348


Tahmoor Mine : washery rejects disposal and emplacements  
management plan.

NSW DEPT PRIMARY INDUSTRIES  
AB039248

# Mining, Rehabilitation and Environmental Management Plan for the

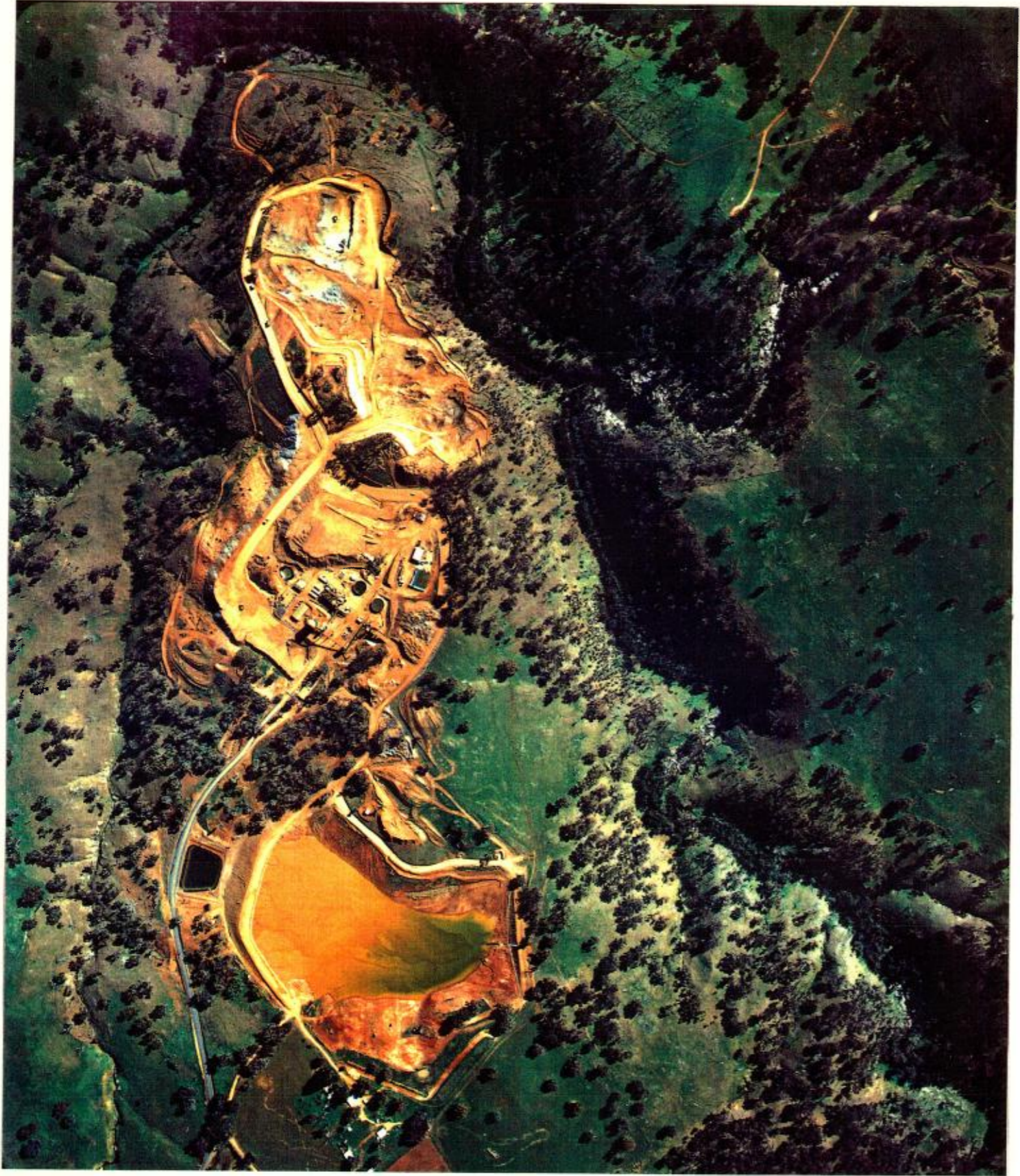


ENVIRONMENTAL GEOLOGY SEC 104  
GEOLOGICAL SURVEY OF N.S.W.

Prepared by:  R.W. Corkery & Co Pty Limited.

EIS  
608  
Vol 2

1786/0746



# Mining, Rehabilitation and Environmental Management Plan for the Sheahan-Grants Gold Mine Annual Report 1989

ENVIRONMENTAL GEOLOGY SECTION  
GEOLOGICAL SURVEY OF N.S.W.

Prepared by:  
R. W. Corkery & Co. Pty Limited  
Geological and Environmental Consultants  
P.O. Box 80  
ORANGE N.S.W. 2800

On behalf of:  
Climax Mining Limited  
Cyprus Gold Australia Corporation  
Hudspeth and Company Limited  
Joint Venture  
P.O. Box 51  
LYNDHURST N.S.W. 2797

Telephone: (063) 62 5411  
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Frontispiece: Aerial view of Sheahan-Grants Gold Mine. Scale 1:8 000. (July 1988)

May 1989

NSW DEPARTMENT OF  
MINERALS AND ENERGY  
14 NOV 1989  
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Plans

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\* Plan revised for Annual Report, 1989

VOLUME 2

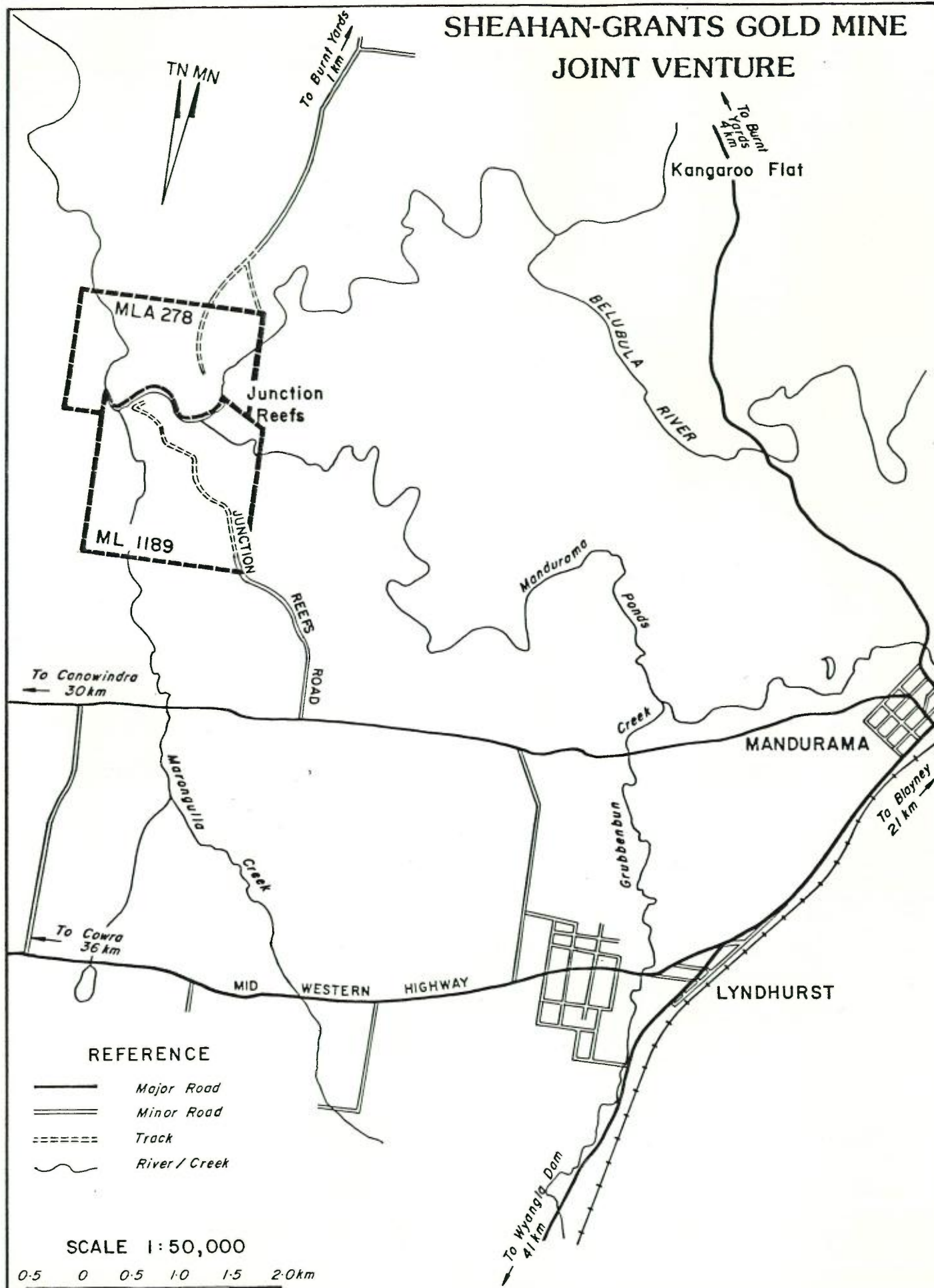
Plates

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Frontispiece	Aerial view of Sheahan Grants Gold Mine. Scale 1:8 000 (July 1988)
Plate 1	View of the pit and mining activity, looking west (May 1989) (Ref: 127K/ 12,13).
Plate 2	View of the pit looking south from the Junction Reefs recreation reserve. Note tree planting programme on the northern slope (white specks are tree seedling guards) (Ref: 12K/21, 22).
Plate 3	View of the waste rock emplacement looking southeast. Note level 610 m berm, level 624 m berm and final level 635 m (May 1989) (Ref: 127K/ 19,20).
Plate 4	View of the tailings disposal facility looking southwest from the saddle dam. Waste rock stockpiles for later spreading during rehabilitation is evident to the north and south (May 1989) (Ref: 127K/5, 6, 7).
Plate 5	Stable grass cover established on soil stockpile No. 3 south of the pit (May 1989) (Ref: 127K/18).
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Plate 10	Hydromulching trials were undertaken using either native shrubs or grasses on the more visually exposed waste rock batter (April 1989) (Ref: 127J/10).

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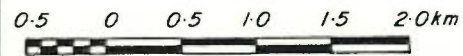
SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



REFERENCE

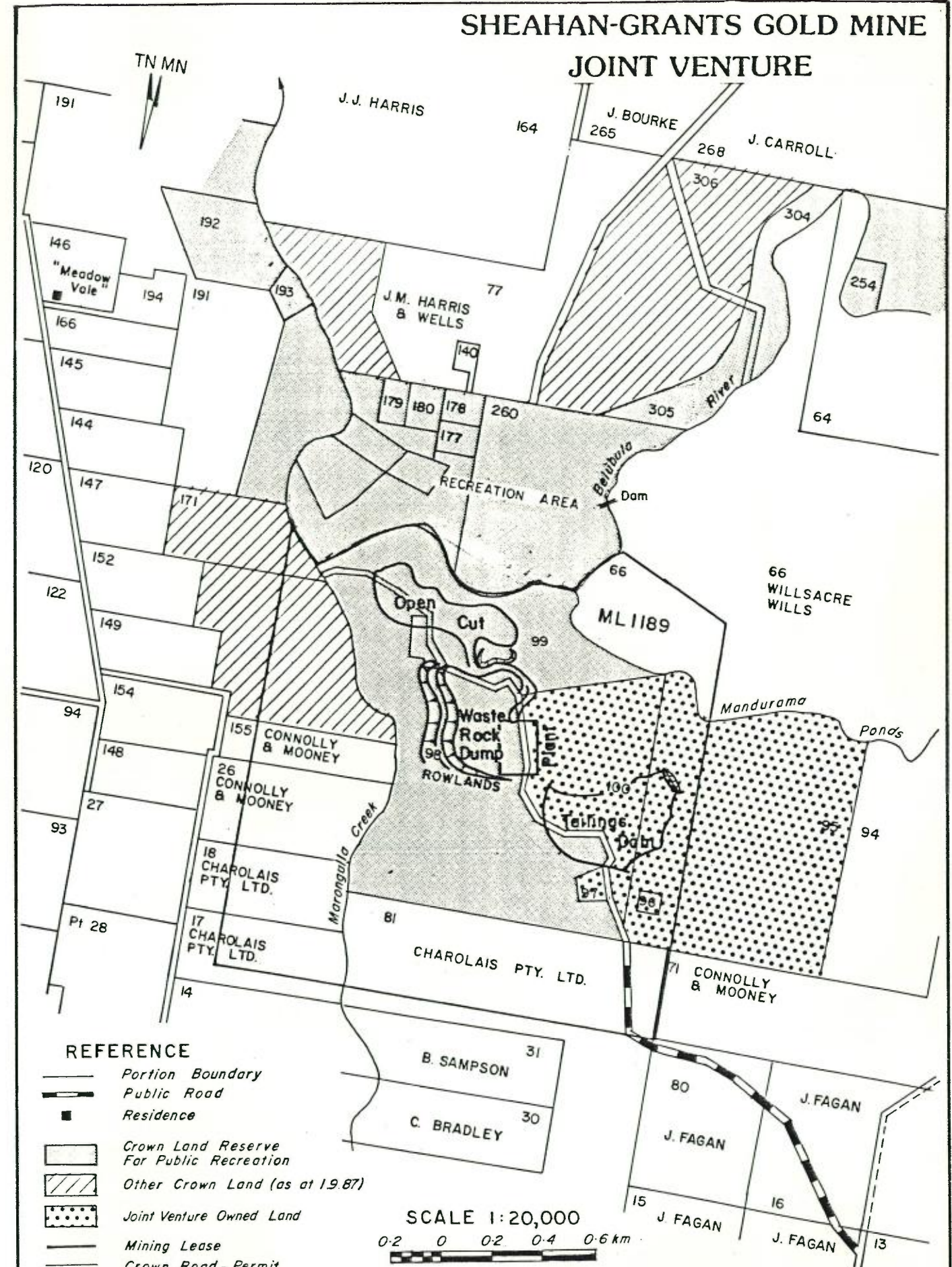
- Major Road
- Minor Road
- Track
- River / Creek

SCALE 1:50,000



PLAN 1  
LOCAL SETTING

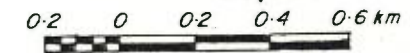
SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



REFERENCE

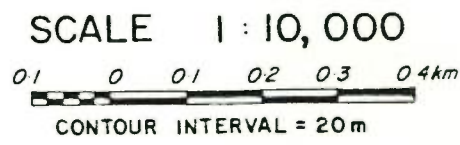
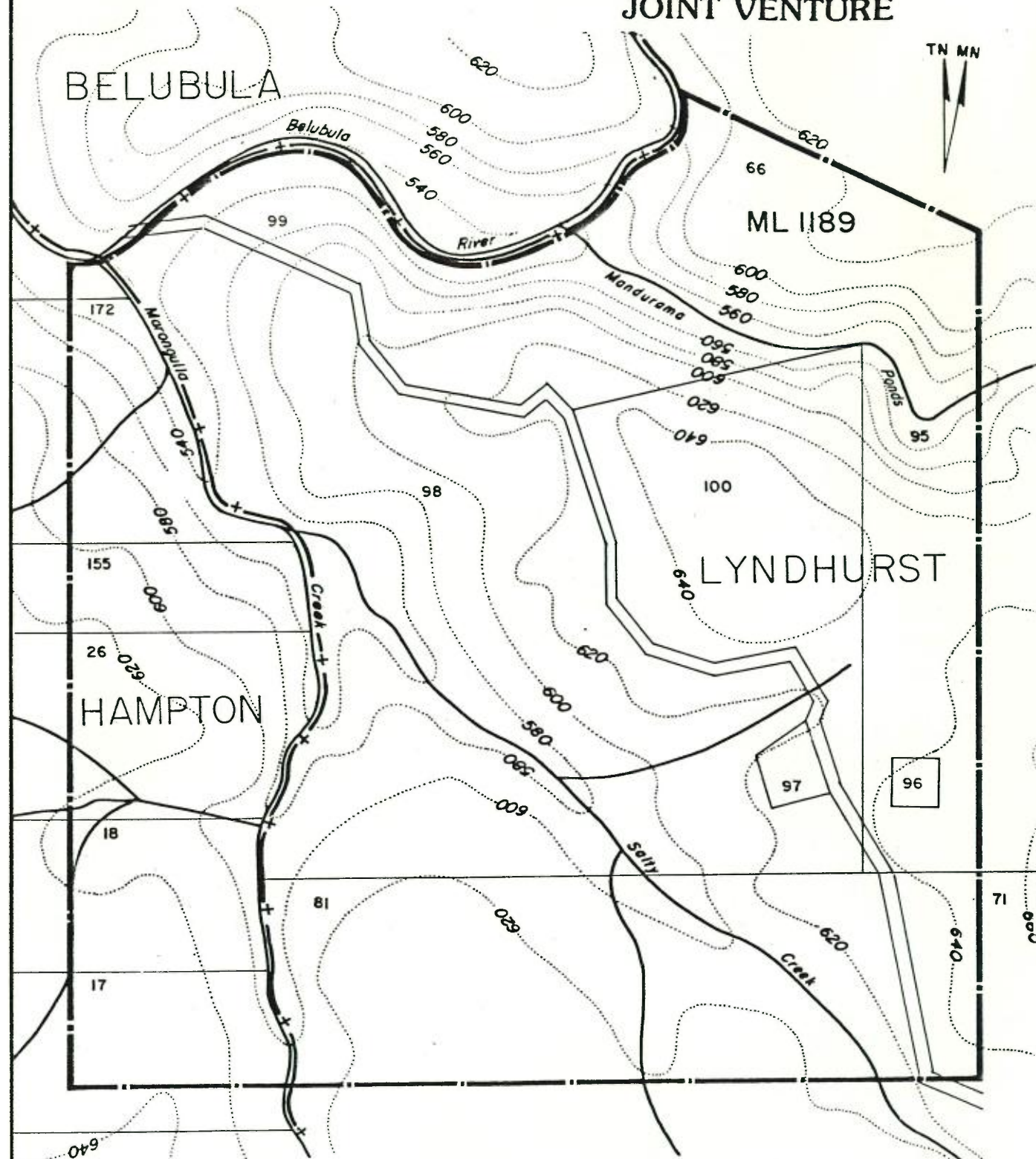
- Portion Boundary
- Public Road
- Residence
- Crown Land Reserve For Public Recreation
- Other Crown Land (as at 1.9.87)
- Joint Venture Owned Land
- Mining Lease
- Crown Road - Permit

SCALE 1:20,000



PLAN 2  
LANDOWNERS

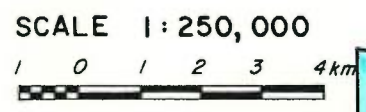
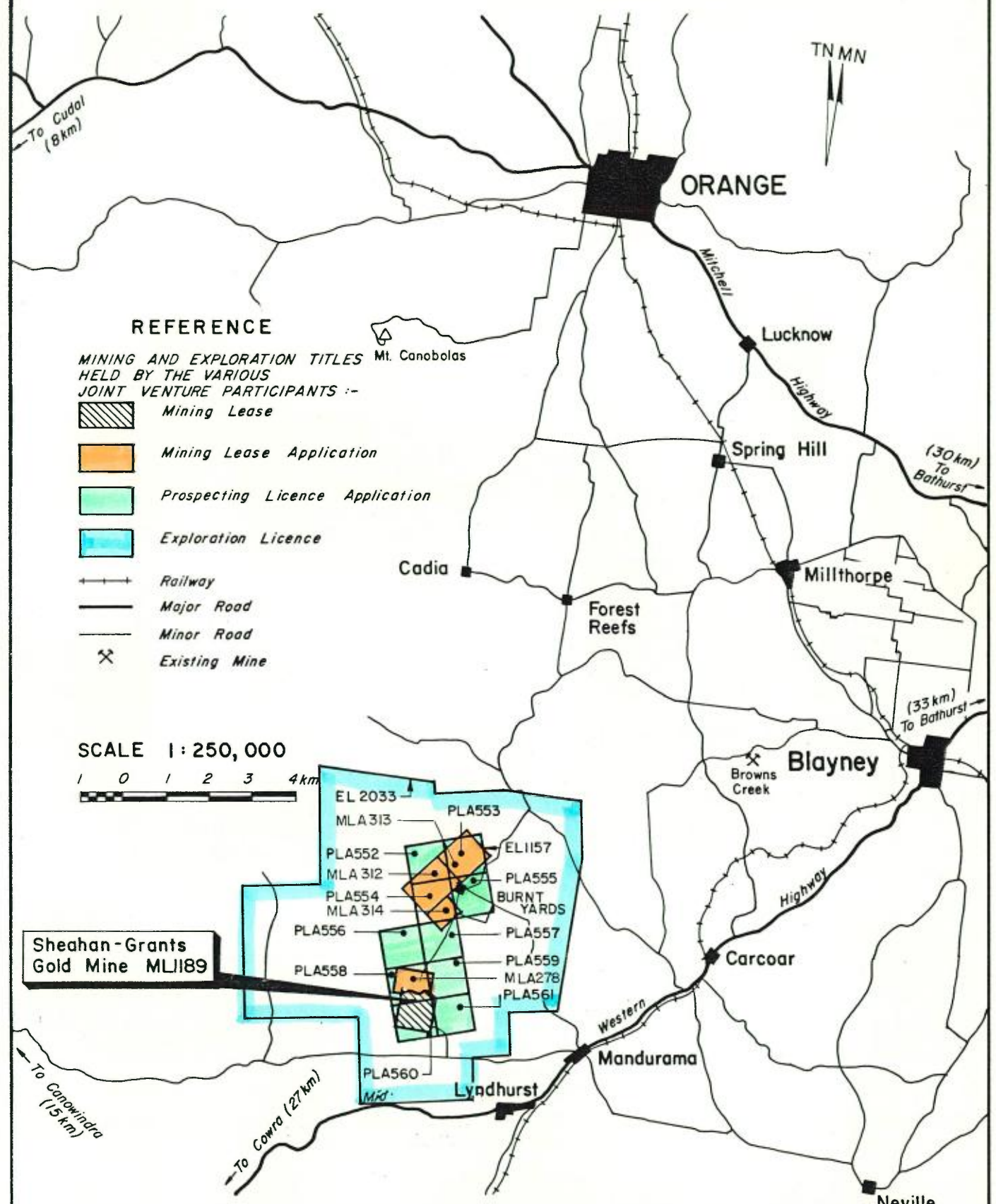
SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



REFERENCE  
 ~ Existing Contour  
 ~ Stream  
 ▨ Mining Lease  
 -+ Parish Boundary  
**R.W. CORKERY & CO. PTY. LIMITED**  
 GEOLOGICAL AND ENVIRONMENTAL CONSULTANTS

**PLAN 3**  
**MINING LEASE 1189**

SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



Sheahan-Grants  
Gold Mine MLI189

**PLAN 4** May 1989  
**MINING AND  
EXPLORATION TITLES**

**R.W. CORKERY & CO. PTY. LIMITED**  
GEOLOGICAL AND ENVIRONMENTAL CONSULTANTS

1

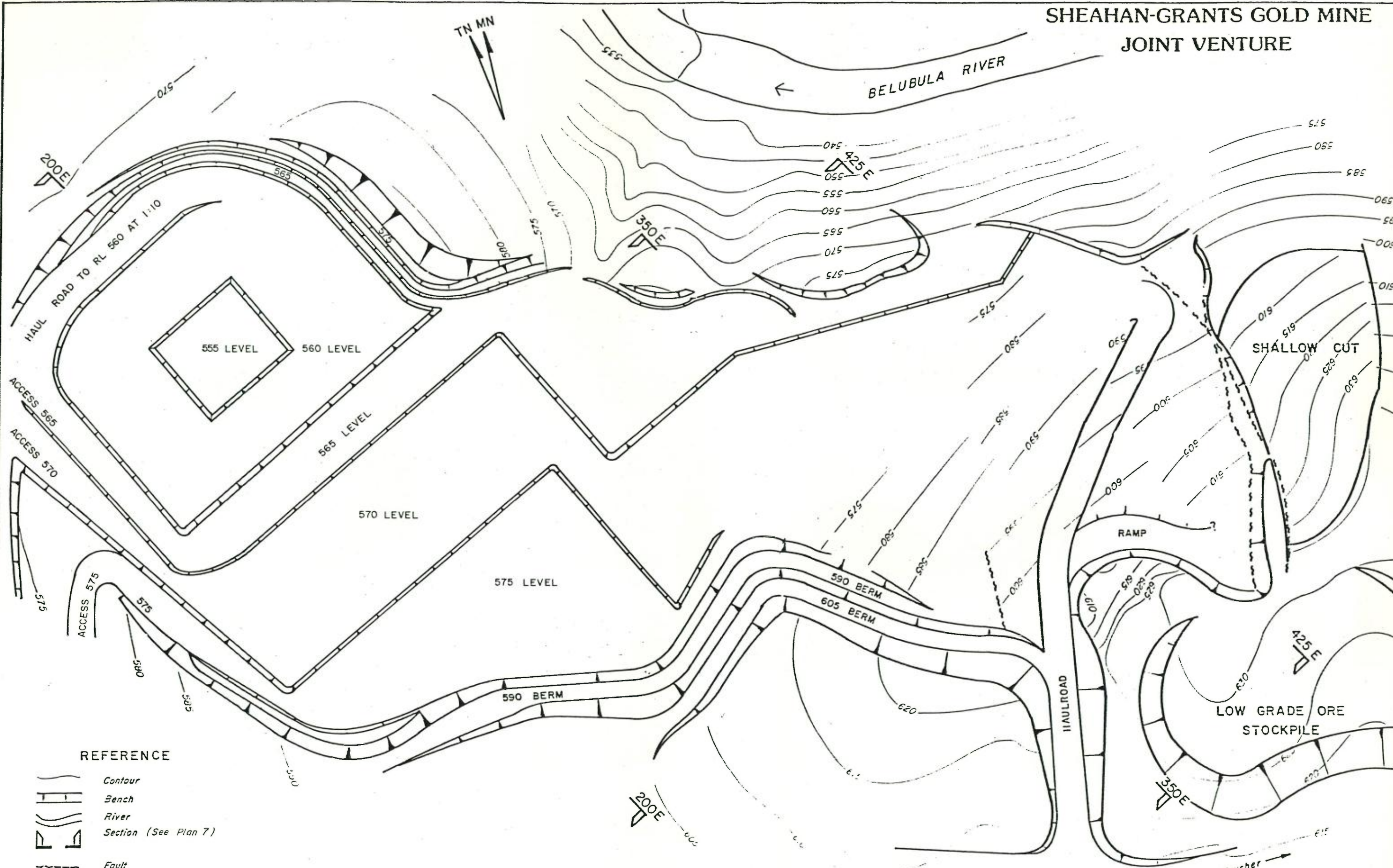
**REMOVED**

**PLANS**

SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



BELUBULA RIVER








SHALLOW CUT

RAMP

LOW GRADE ORE STOCKPILE

To Crusher

REFERENCE

-  Contour
-  Bench
-  River
-  Section (See Plan 7)
-  Fault

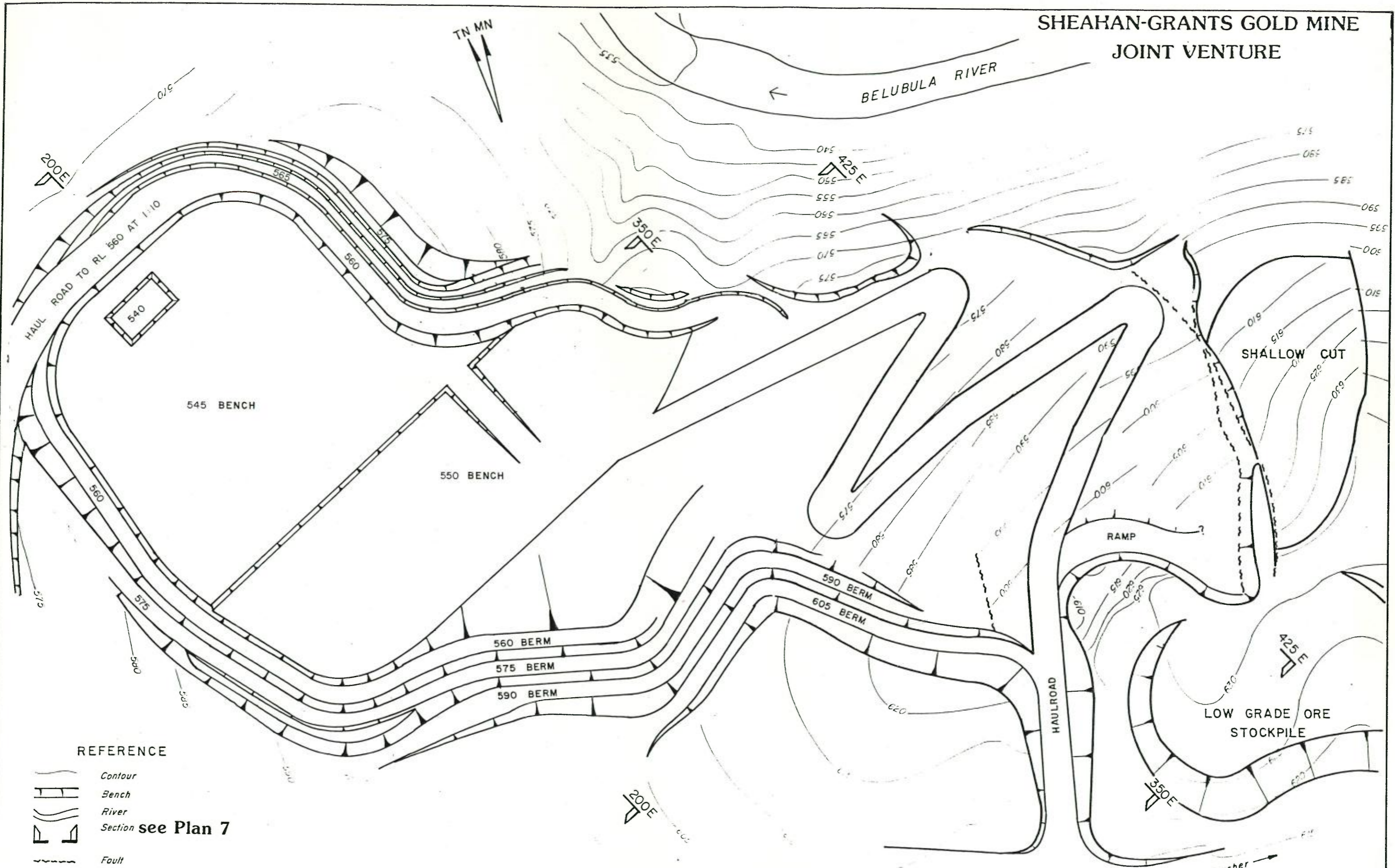
SCALE



**PLAN 6A**  
**OPEN CUT LAYOUT**  
**MAY 1989**

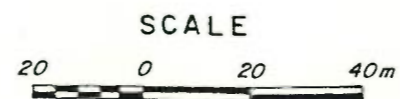


SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



REFERENCE

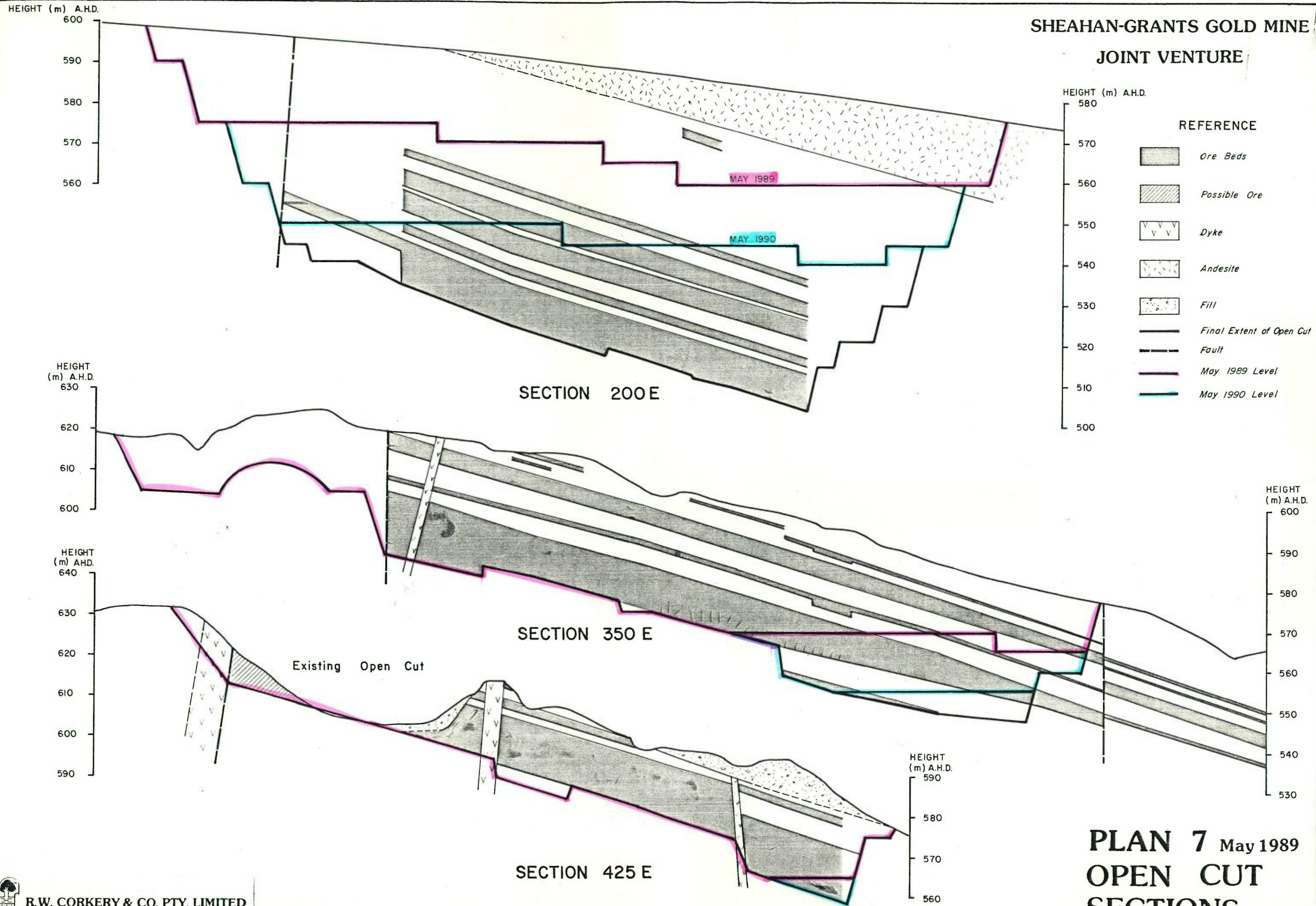
-  Contour
-  Bench
-  River
-  Section **see Plan 7**
-  Fault



**PLAN 6B**  
**OPEN CUT LAYOUT**  
**MAY 1990**

SHEAHAN-GRANTS GOLD MINE

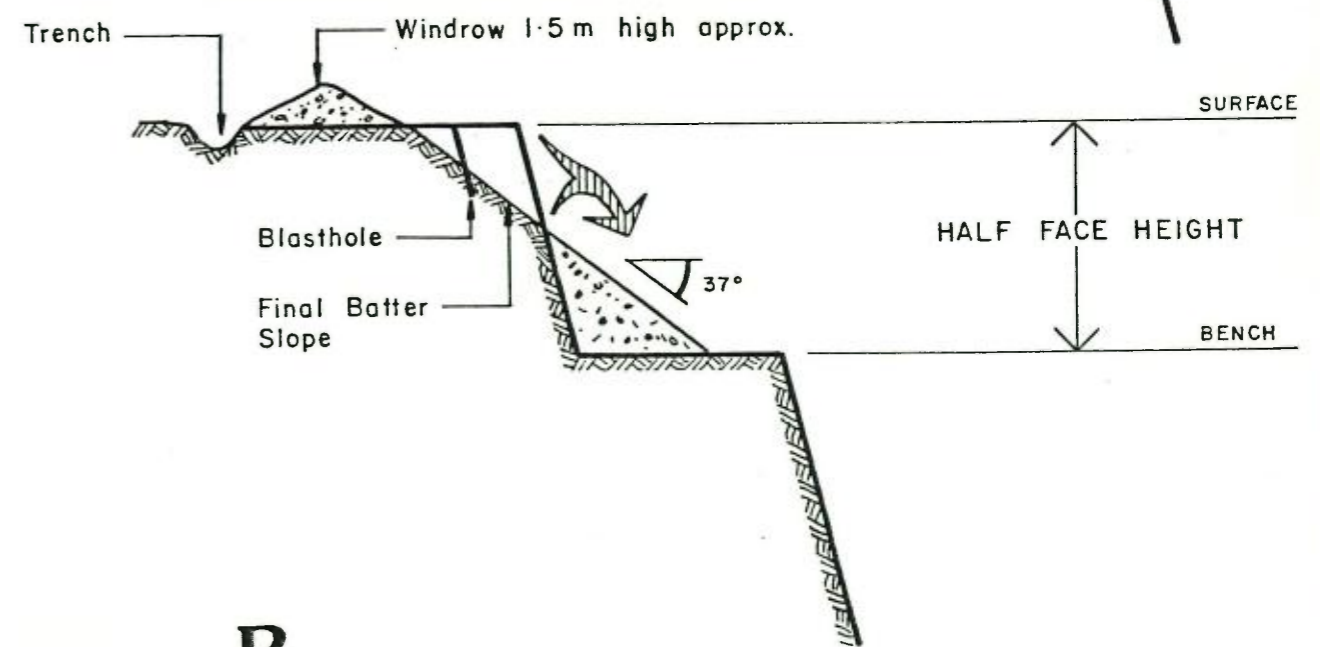
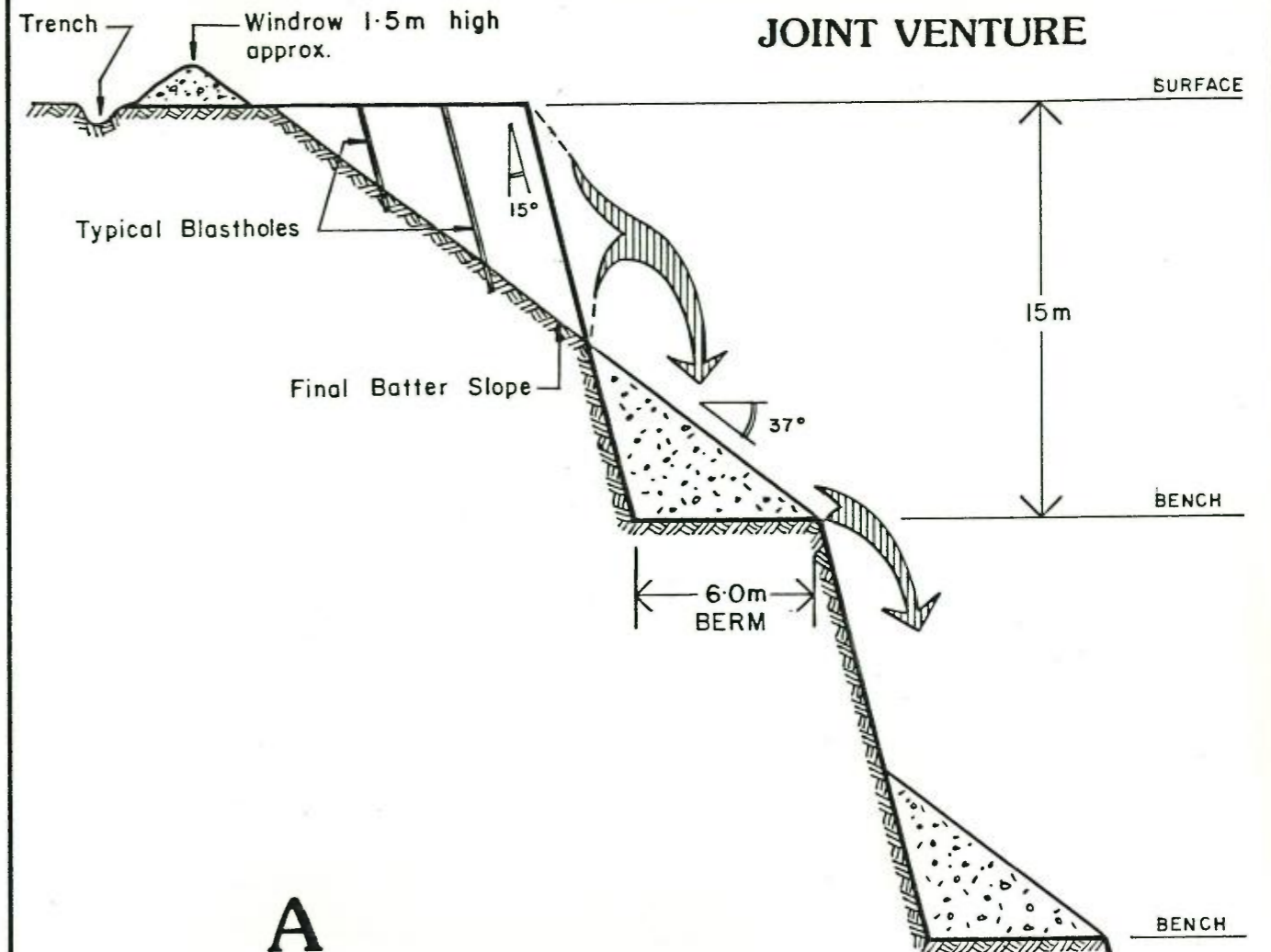
JOINT VENTURE



**PLAN 7** May 1989  
**OPEN CUT**  
**SECTIONS**

SHEAHAN-GRANTS GOLD MINE

JOINT VENTURE



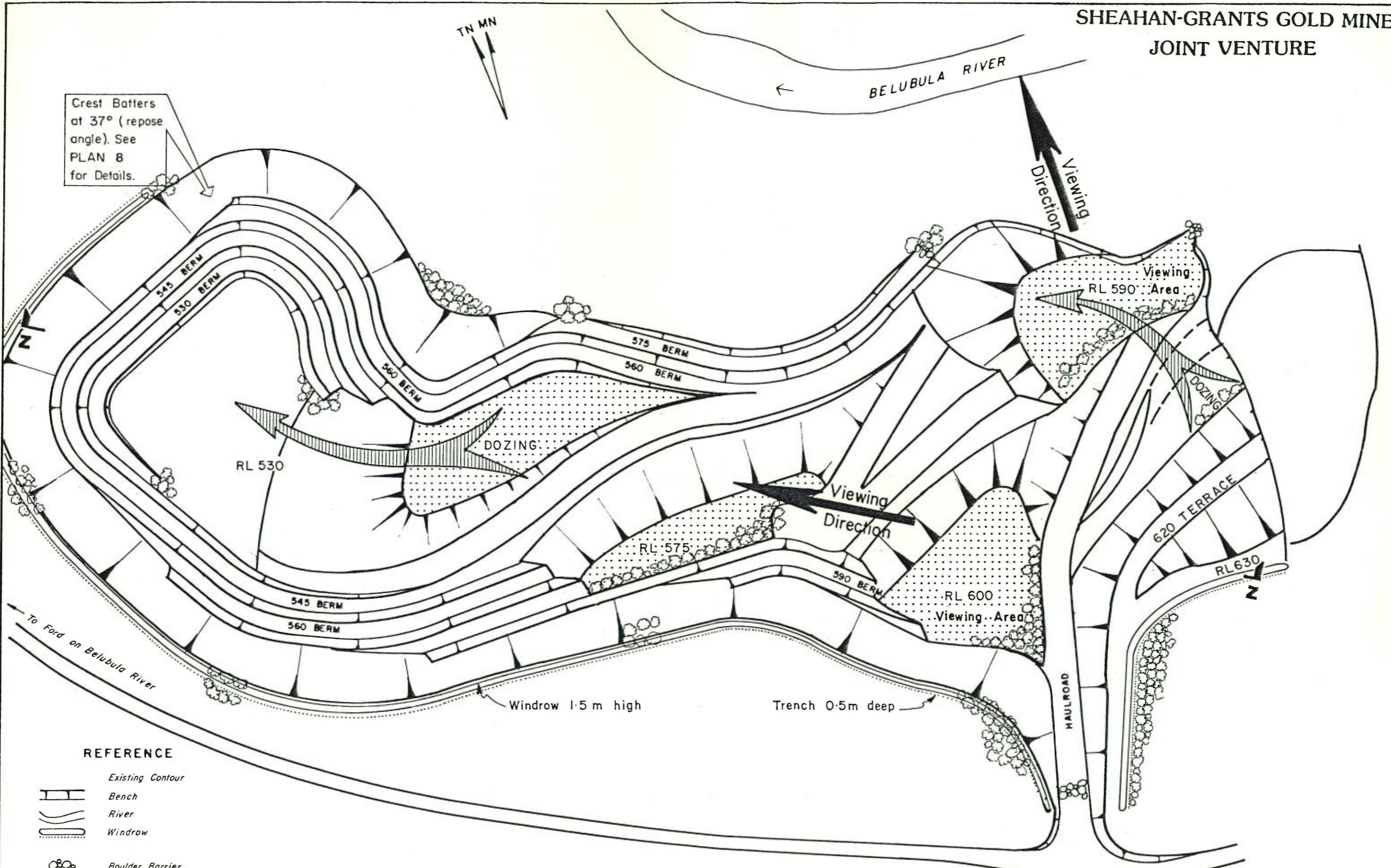
PLAN 8  
PIT CREST BATTERS

SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE









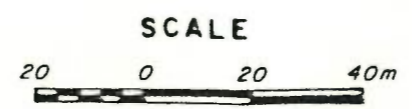
BELUBULA RIVER

Crest Batters  
at 37° (repose  
angle). See  
PLAN 8  
for Details.



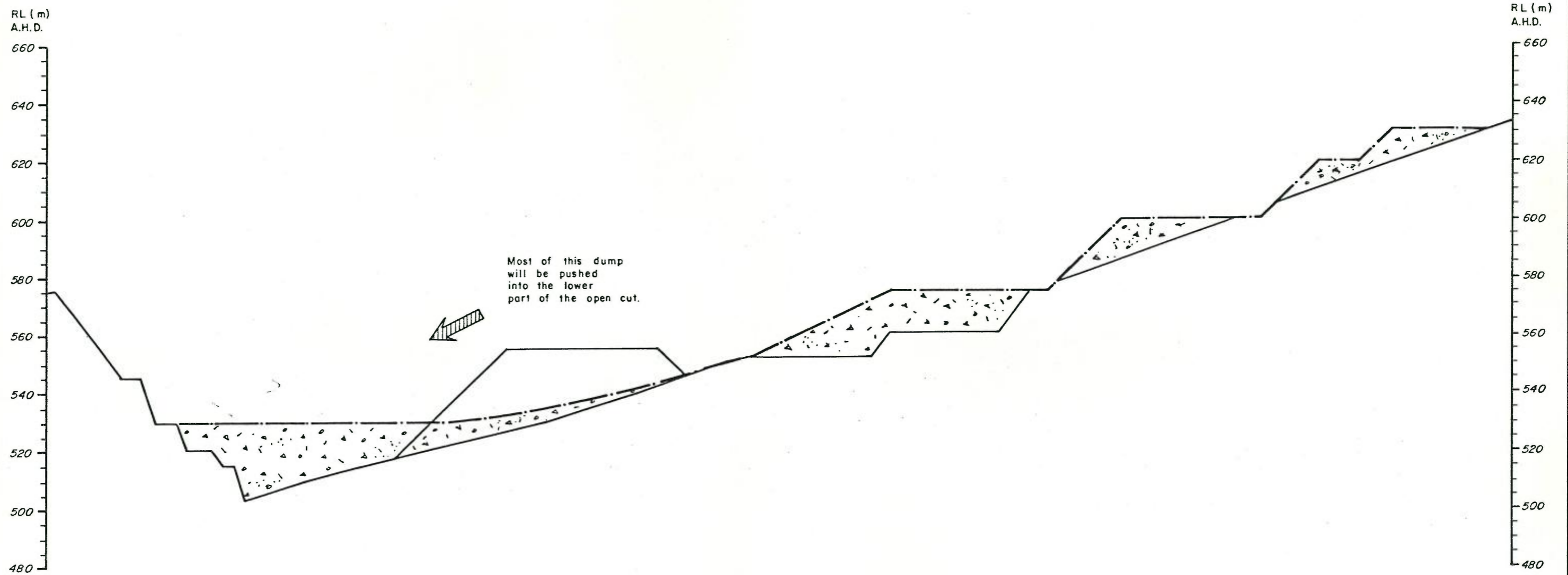
REFERENCE

-  Existing Contour
-  Bench
-  River
-  Windrow
-  Boulder Barrier
-  Waste Rock



PLAN 9  
FINAL LANDFORM

SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE

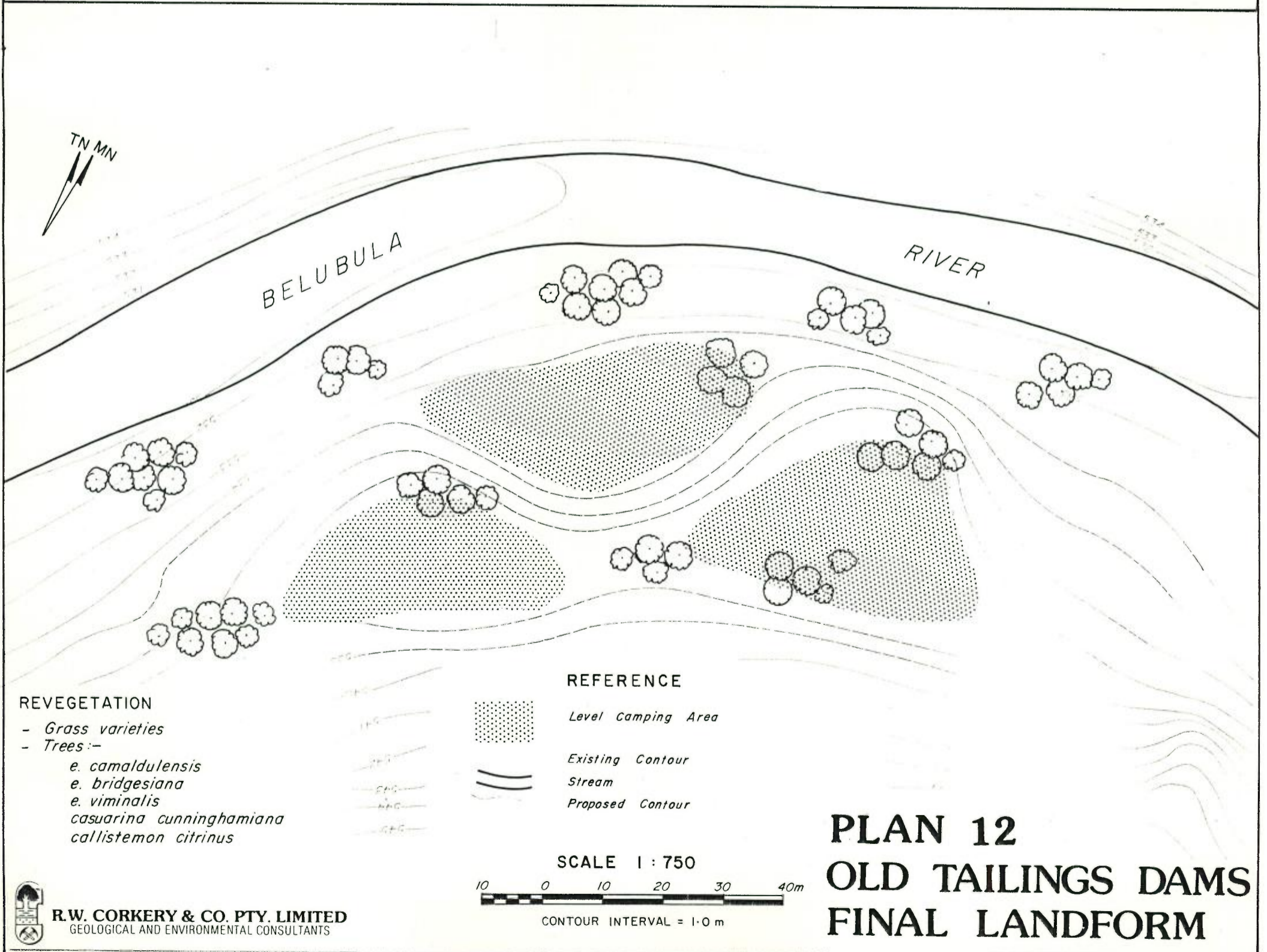
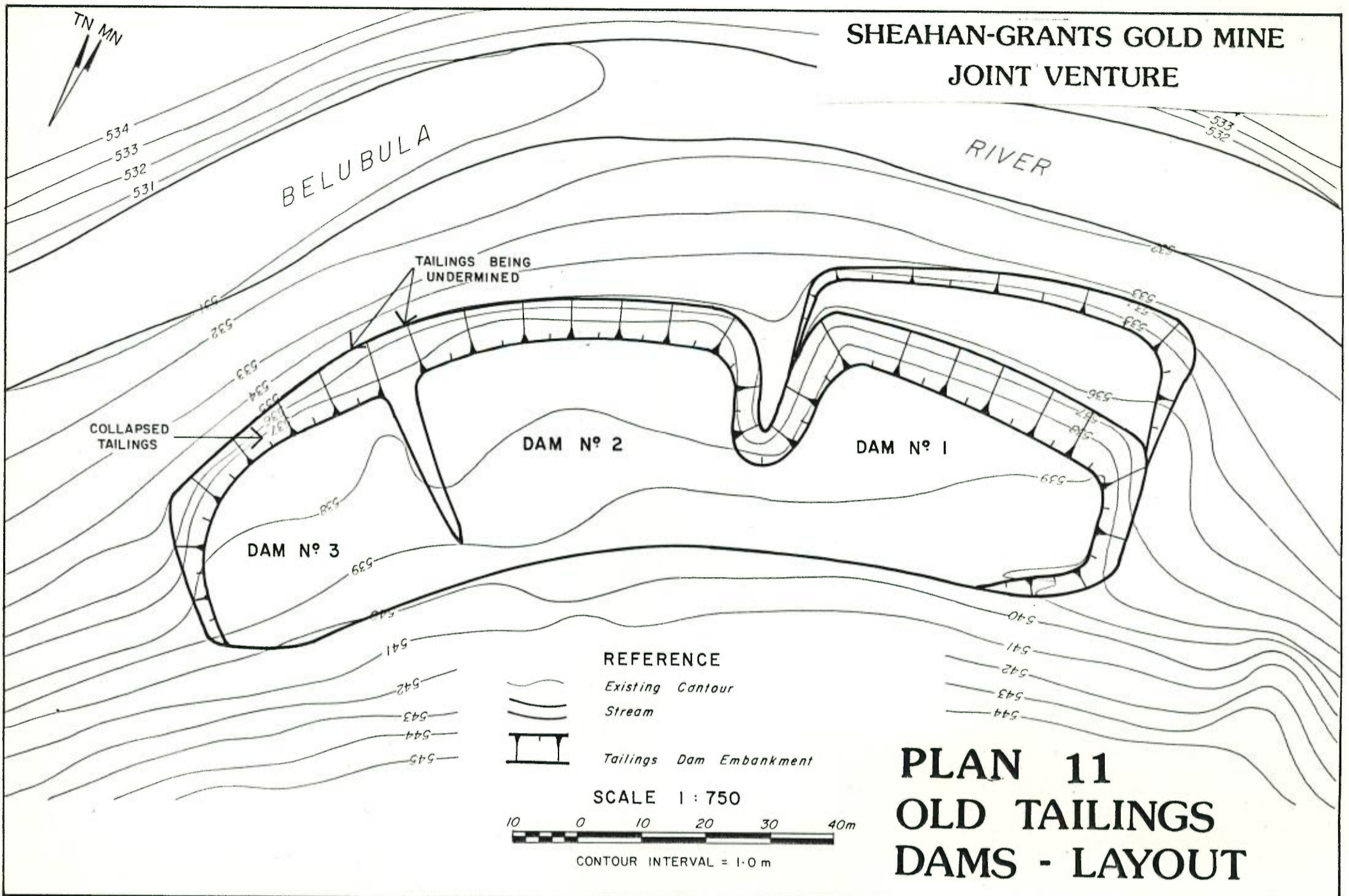


- REFERENCE
- Final Pit Landform
  - - - Final Landform after Rehabilitation
  - ▨ Waste Rock

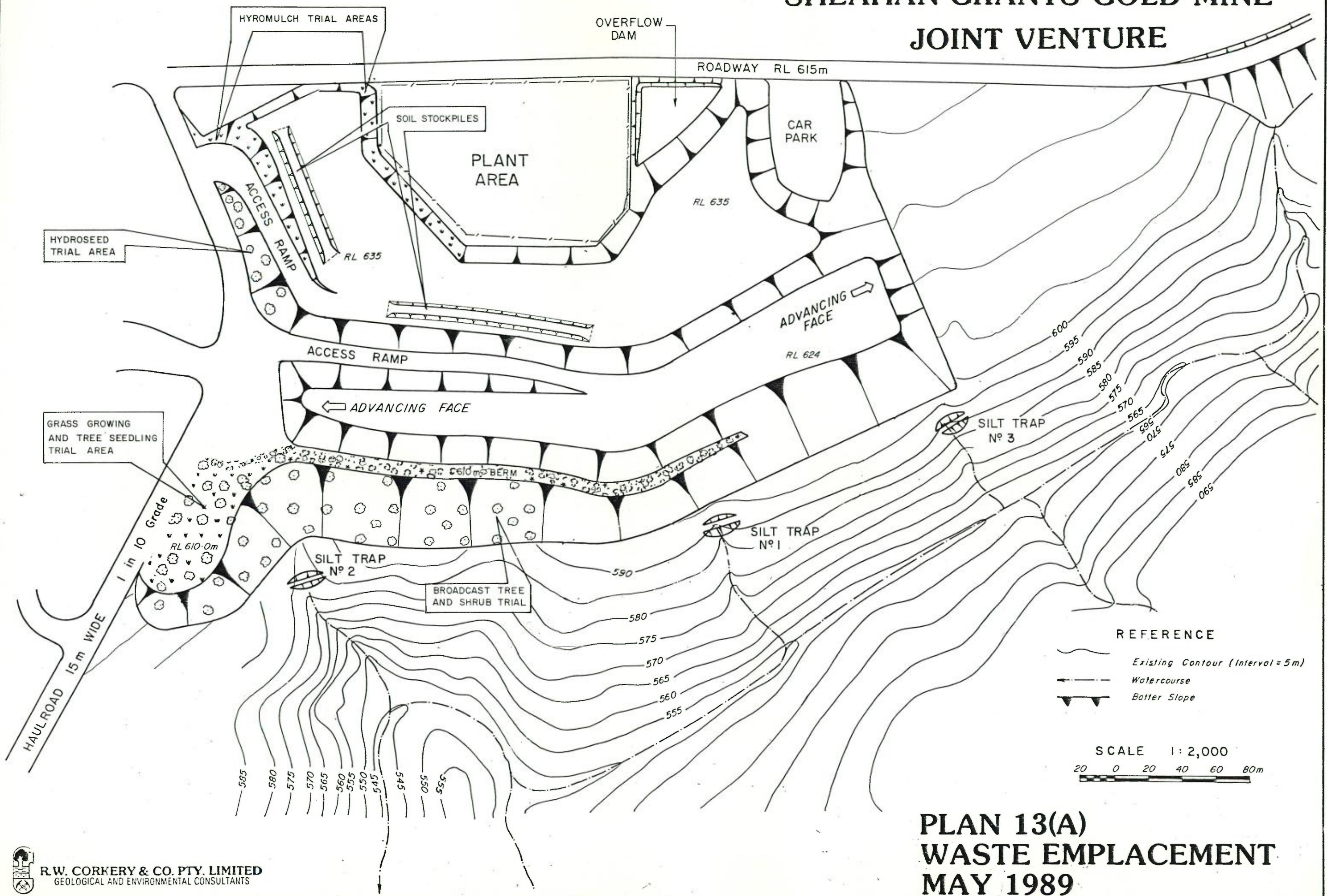
SCALES  
Vertical 1:1,380 approx.  
Horizontal 1:1,380 approx.

**PLAN 10**  
**Pit Cross Section ZZ'**  
(SEE PLAN 9)

SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



# SHEAHAN-GRANTS GOLD MINE JOINT VENTURE



**REFERENCE**

Existing Contour (Interval = 5m)

Watercourse

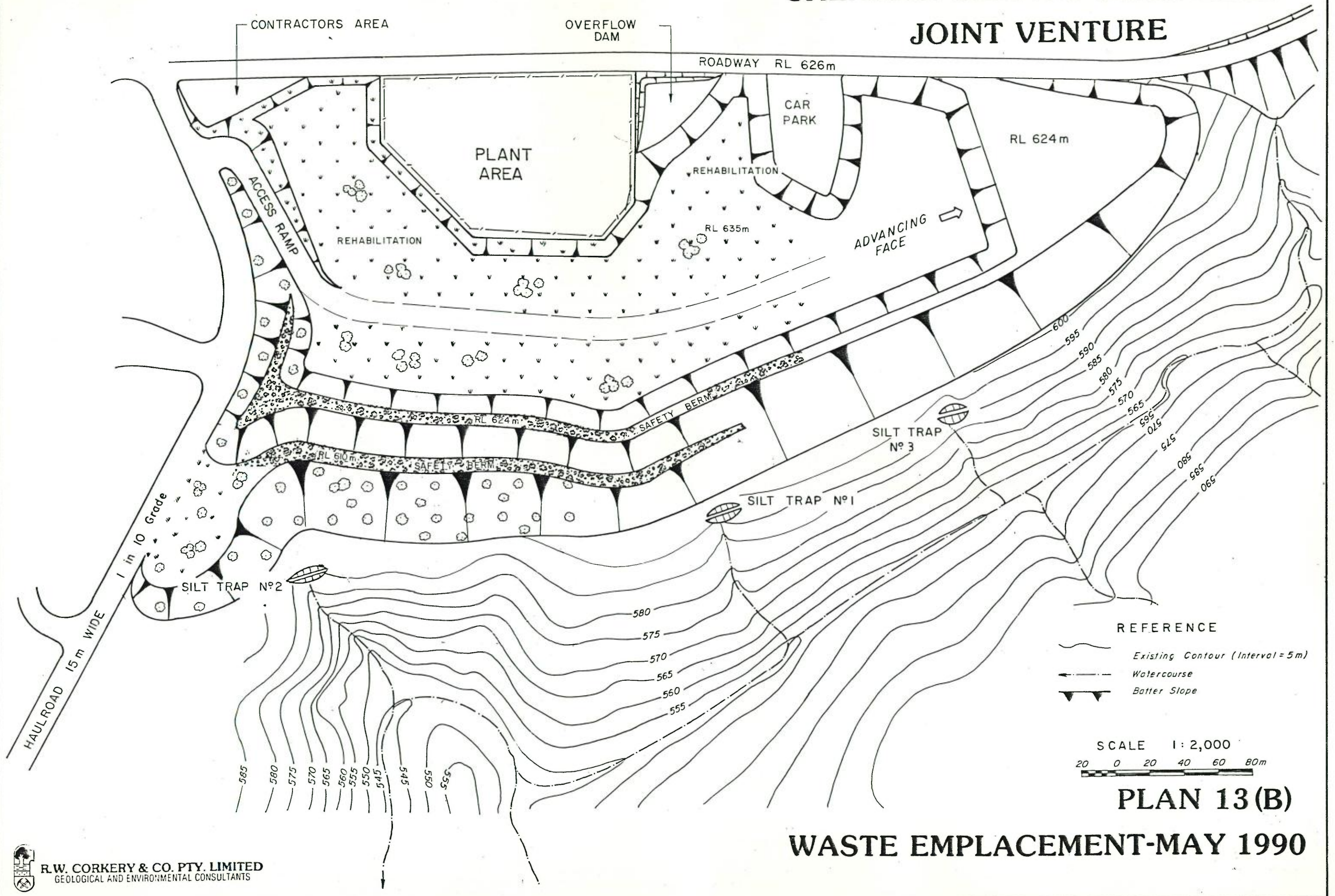
Batter Slope

**SCALE 1:2,000**

0 20 40 60 80m

**PLAN 13(A)  
WASTE EMPLACEMENT  
MAY 1989**

# SHEAHAN-GRANTS GOLD MINE JOINT VENTURE



**PLAN 13(B)**

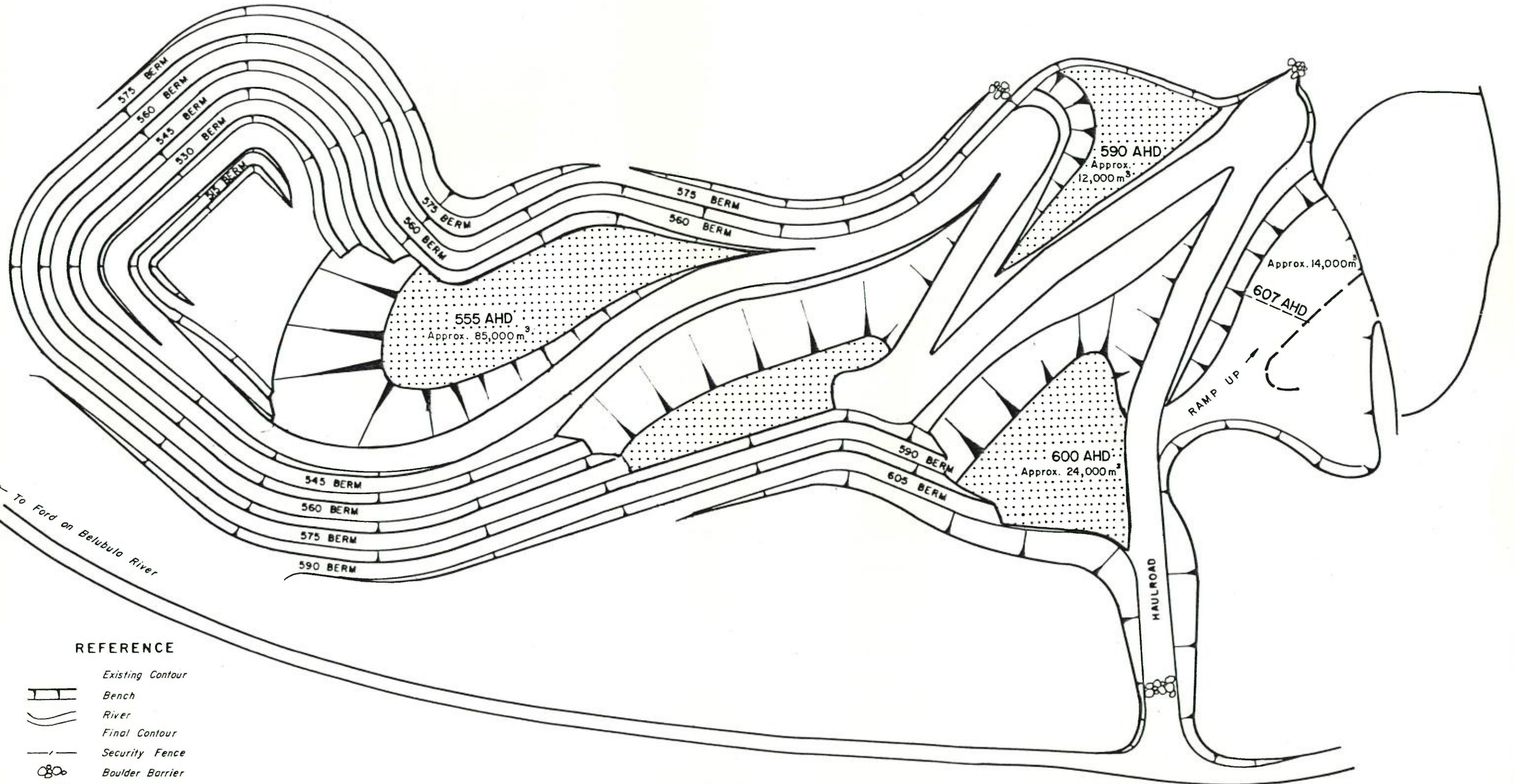
**WASTE EMPLACEMENT-MAY 1990**



SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



BELUBULA RIVER



REFERENCE

- Existing Contour
- Bench
- River
- Final Contour
- Security Fence
- Boulder Barrier
- Waste Rock

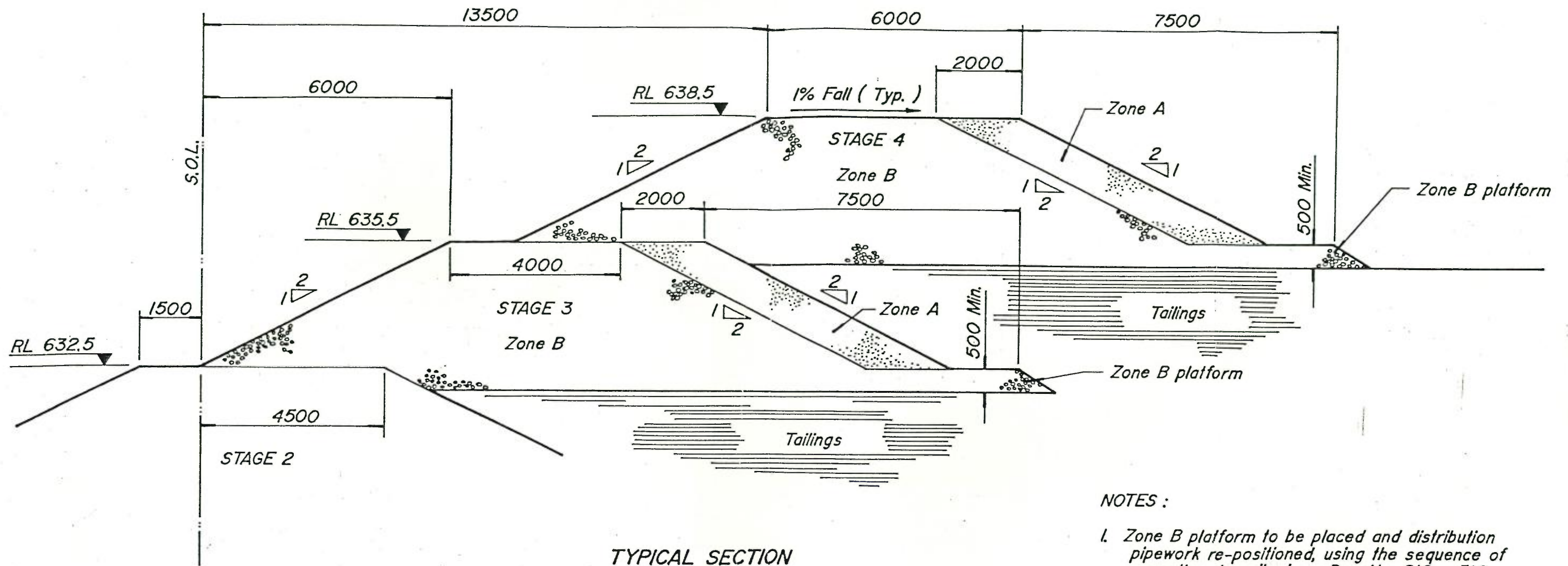


R.W. CORKERY & CO. PTY. LIMITED  
GEOLOGICAL AND ENVIRONMENTAL CONSULTANTS

SCALE



PLAN 14  
IN-PIT WASTE DUMPS



TYPICAL SECTION

**ZONE A:** Selected weathered waste rock placed in 300 mm layers. Moisture conditioned and compacted. Oversize rock raked into Zone B.

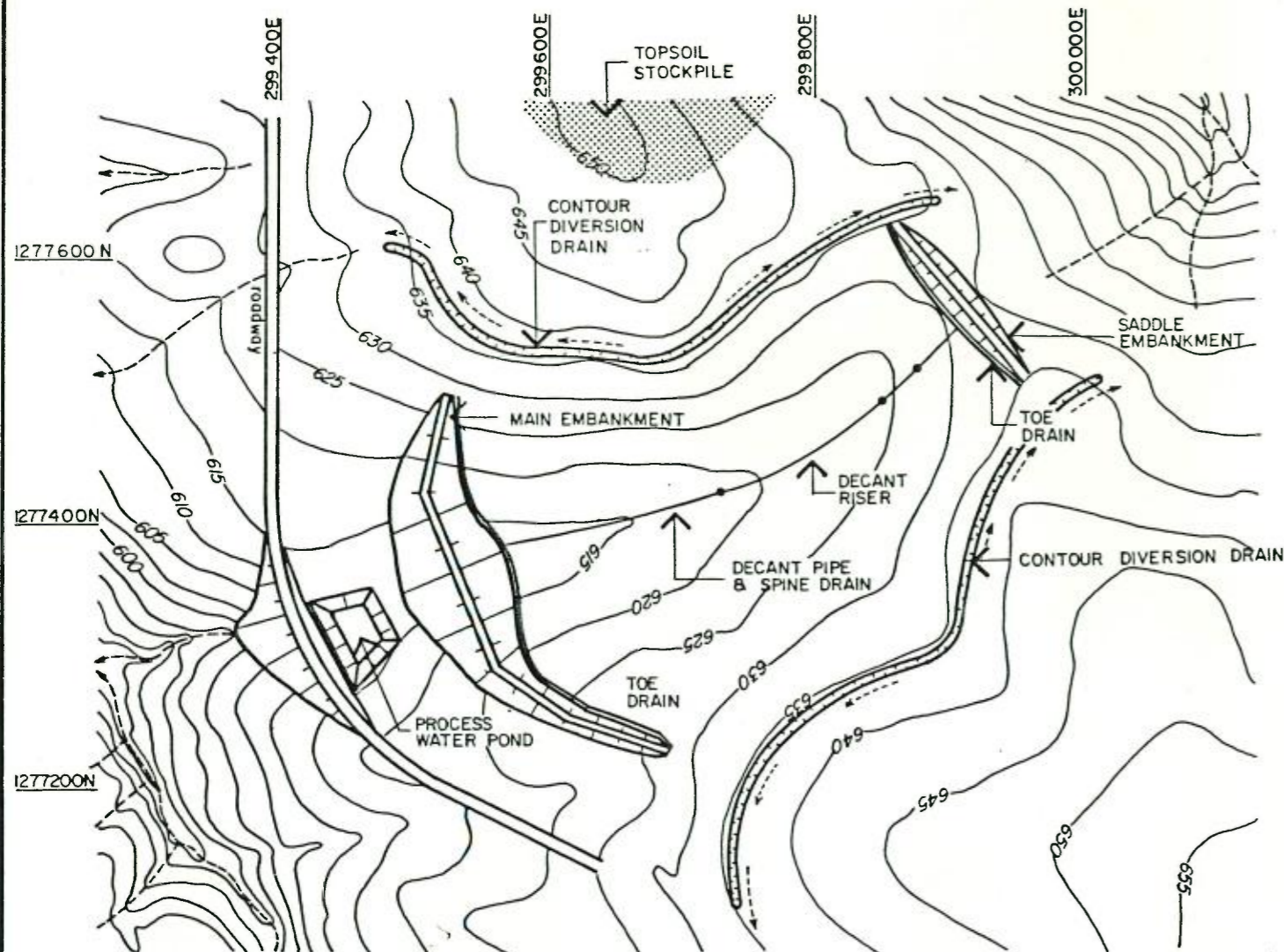
**ZONE B:** Weathered to fresh waste rock placed in 600 mm layers and compacted. Moisture conditioning generally not required. Oversize rock raked onto downstream slope.

NOTES :

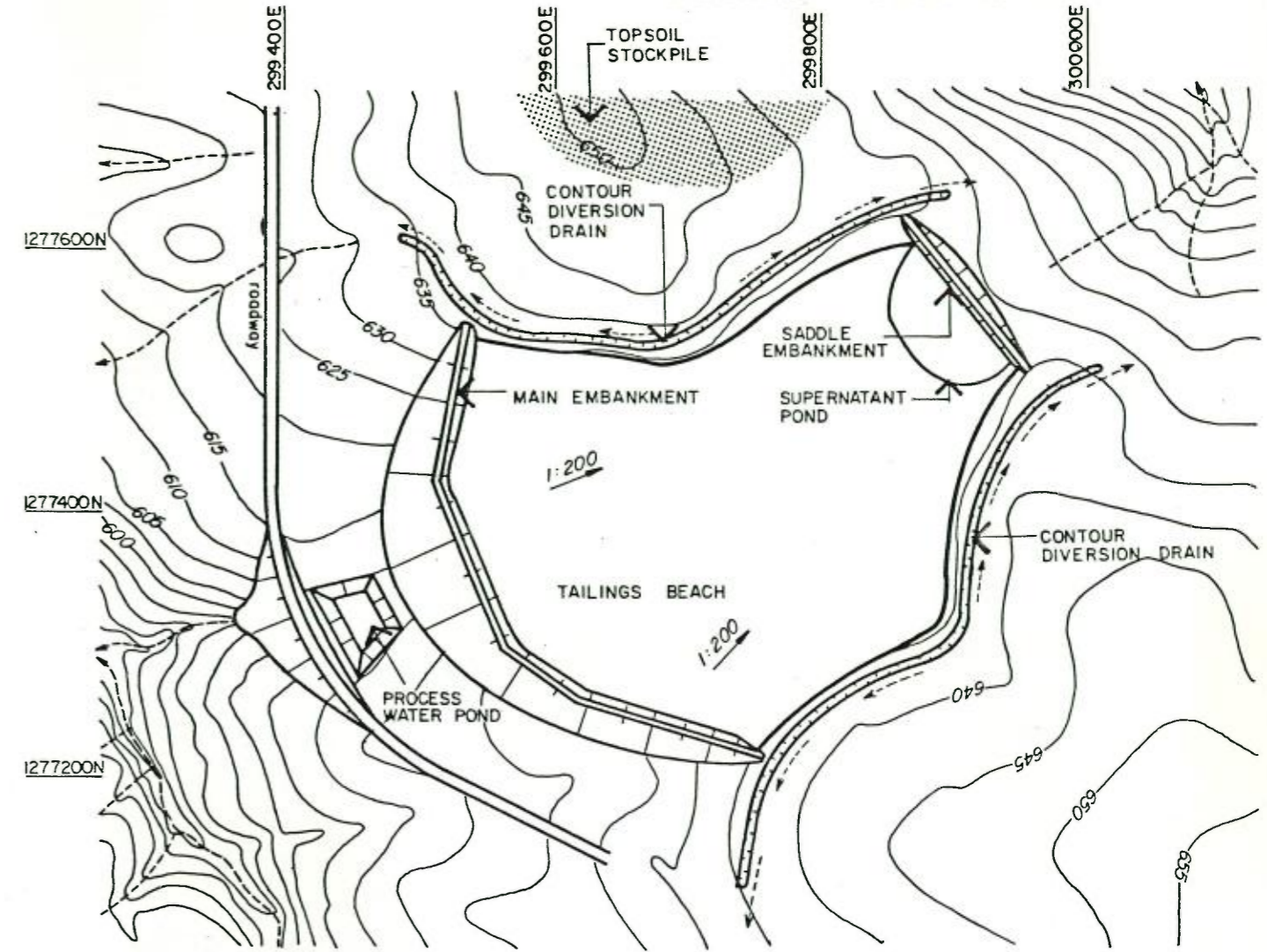
1. Zone B platform to be placed and distribution pipework re-positioned, using the sequence of operation described on Drg. No. 210 - 516 Rev. 0, prior to constructing zoned embankment.
2. Zones A and B to be constructed simultaneously using maximum 400mm layer thickness compacted to a minimum of 93% modified maximum dry density.

BASE PLAN SUPPLIED BY WLP CONSULTANTS  
DRWG N° 210-517 Rev. 0

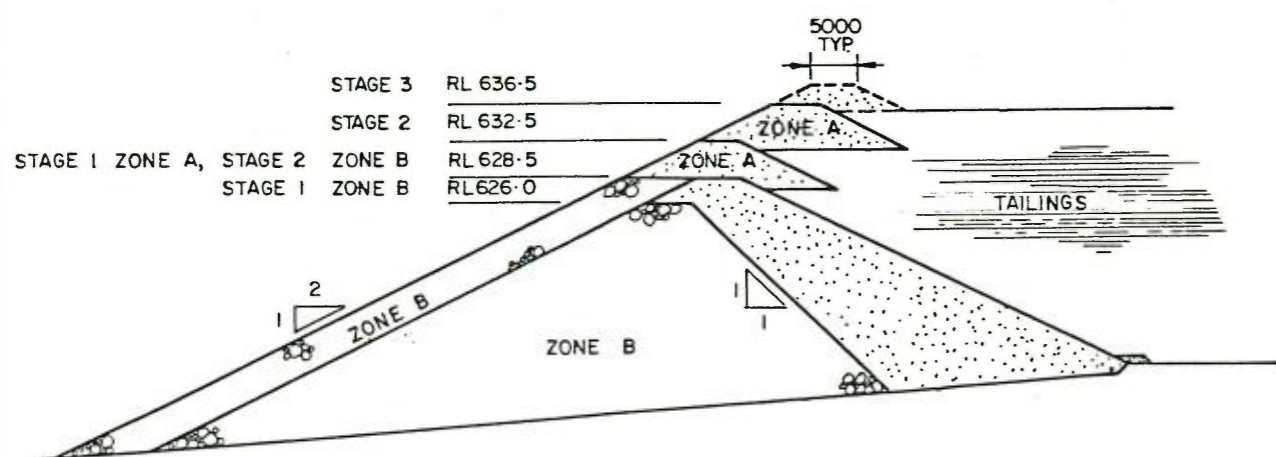
# SHEAHAN-GRANTS GOLD MINE JOINT VENTURE



STAGE I



FINAL STAGE



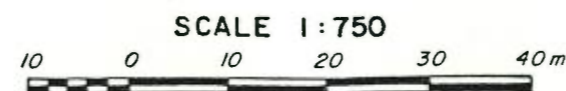
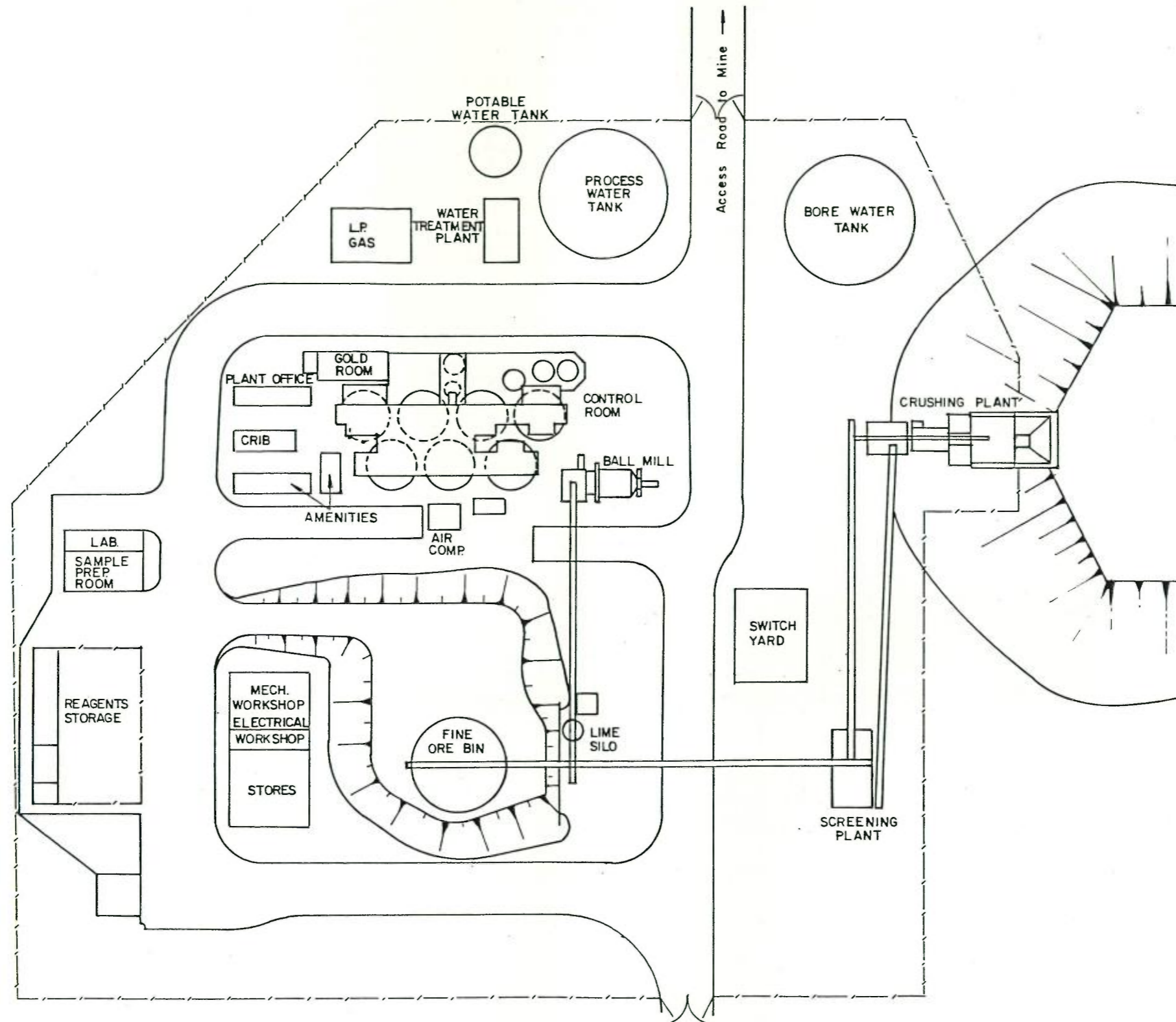
STAGE CONSTRUCTION OF EMBANKMENT - SECTION

**ZONE A:** Selected weathered waste rock placed in 300 mm layers. Moisture conditioned and compacted. Oversize rock raked into Zone B.

**ZONE B:** Weathered to fresh waste rock placed in 600 mm layers and compacted. Moisture conditioning generally not required. Oversize rock raked onto downstream slope.

## PLAN 15 TAILINGS FACILITY

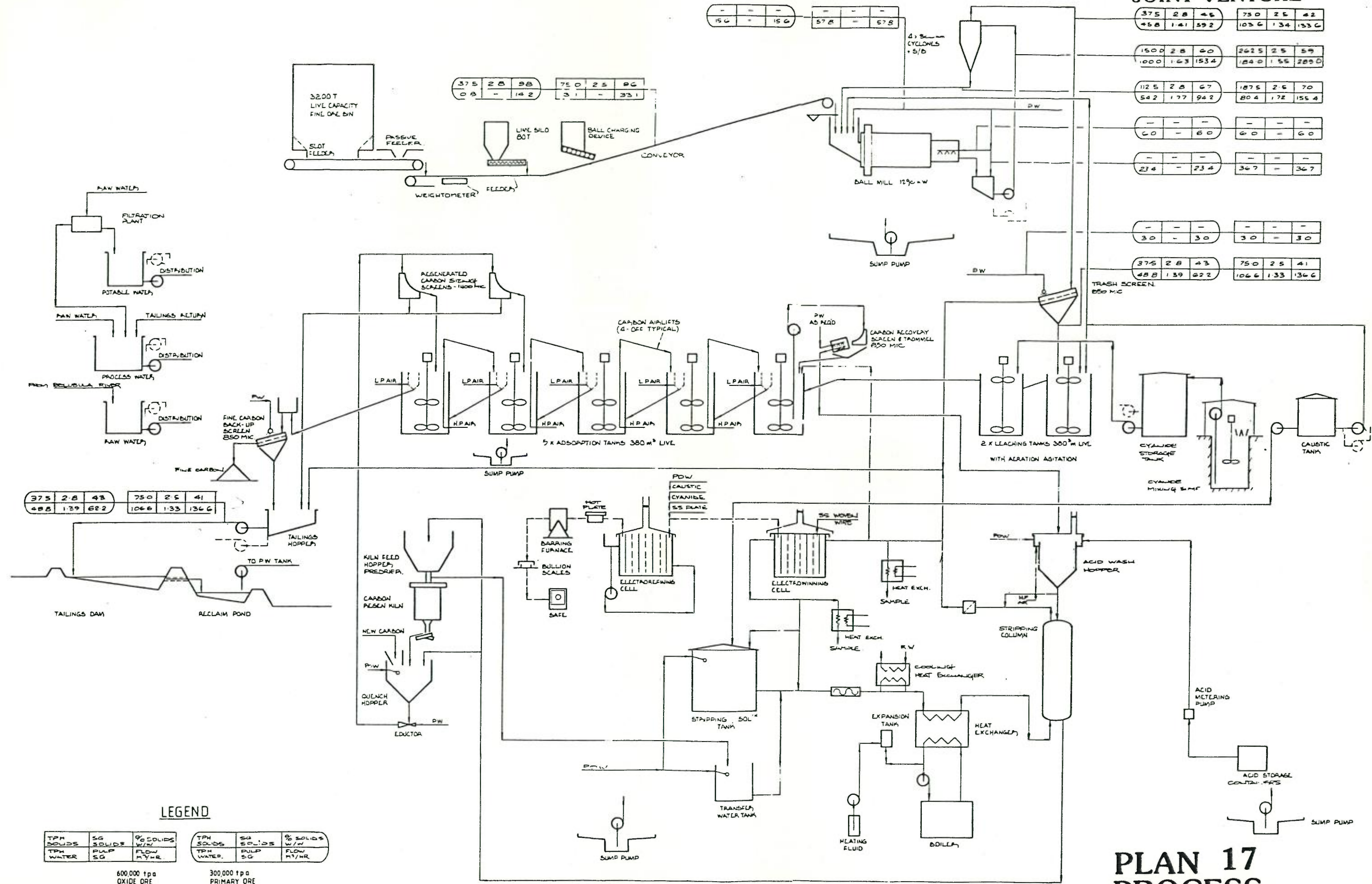
SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE



**PLAN 16**  
**TREATMENT PLANT LAYOUT**

SHEAHAN-GRANTS GOLD MINE

JOINT VENTURE



375	28	46	750	25	42
488	141	592	1036	134	1336
1500	28	60	2425	25	59
1000	163	1534	1840	156	2850
1125	28	67	1875	25	70
542	177	942	804	172	1554
-	-	-	-	-	-
60	-	60	60	-	60
-	-	-	-	-	-
234	-	234	367	-	367
-	-	-	-	-	-
30	-	30	30	-	30
375	28	43	750	25	41
488	139	622	1066	133	1366

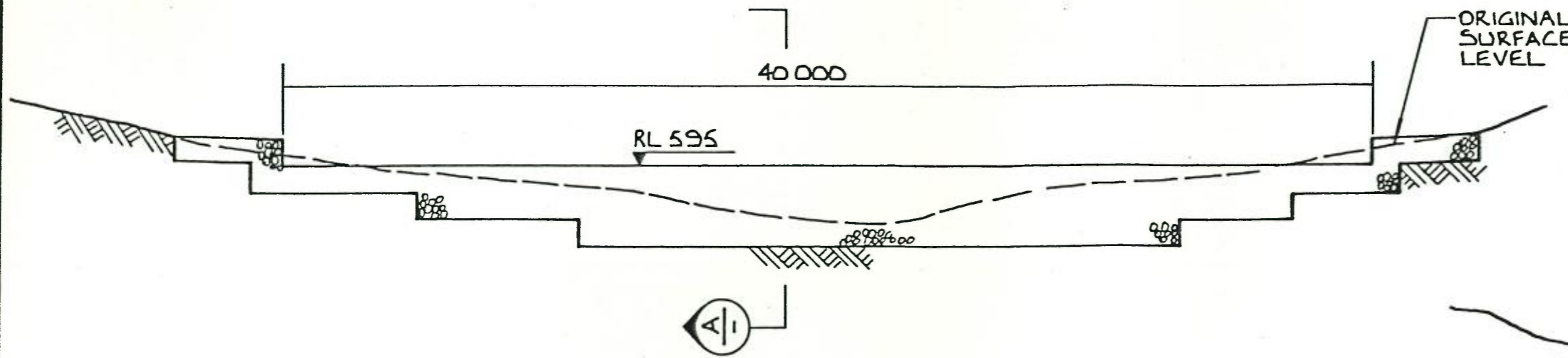
375	28	43	750	25	41
488	139	622	1066	133	1366

LEGEND

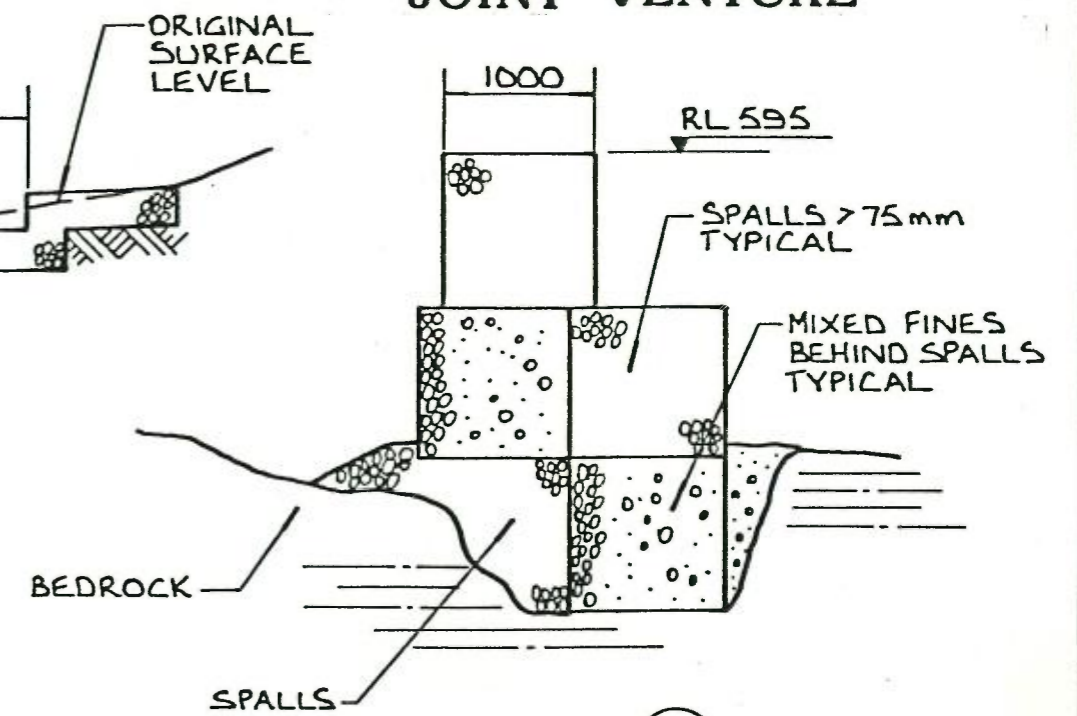
TPH SOLIDS	SG SOLIDS	% SOLIDS W/W	TPH SOLIDS	SG SOLIDS	% SOLIDS W/W
TPH WATER	PULP SG	FLOW M <sup>3</sup> /HR	TPH WATER	PULP SG	FLOW M <sup>3</sup> /HR
600,000 tpa			300,000 tpa		
OXIDE ORE			PRIMARY ORE		

PLAN 17  
PROCESS  
FLOWSHEET

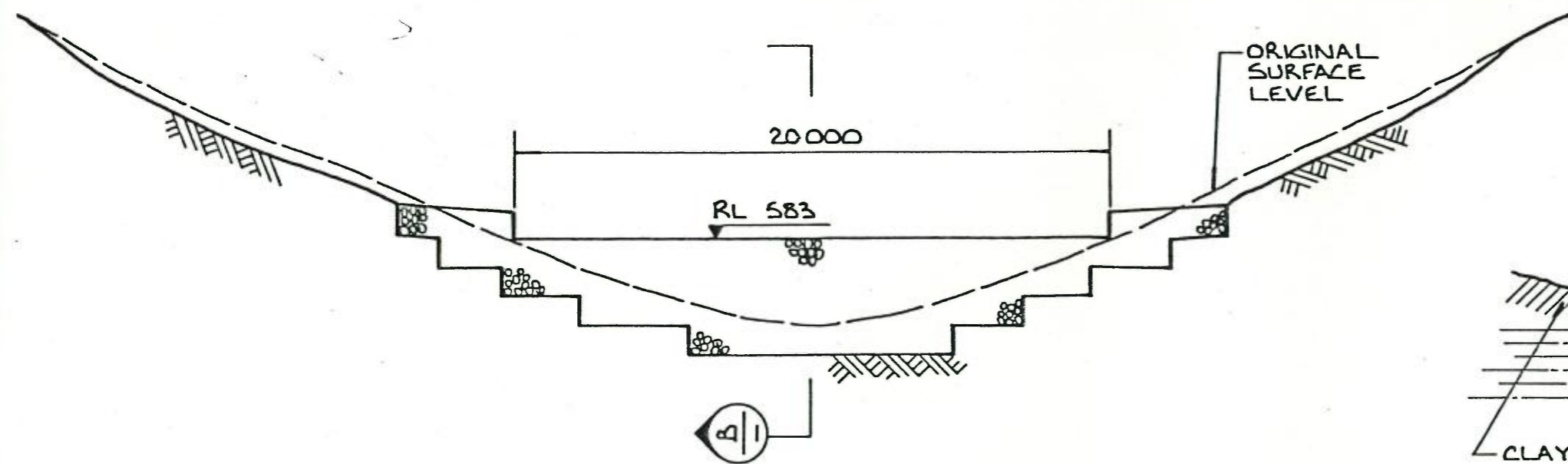
**SHEAHAN-GRANTS GOLD MINE  
JOINT VENTURE**



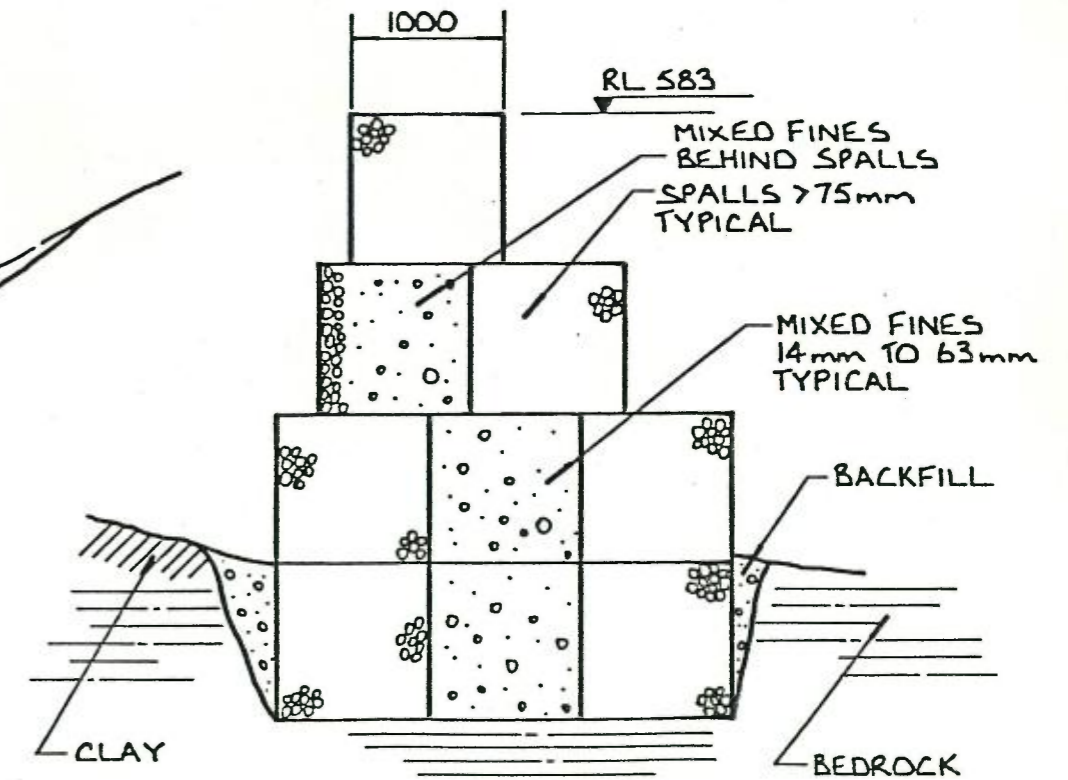
**SILT TRAP No.1 - LONG SECTION**  
SCALE 1:200



**SECTION (A)**  
SCALE 1:50



**SILT TRAP No.2 - LONG SECTION**  
SCALE 1:200

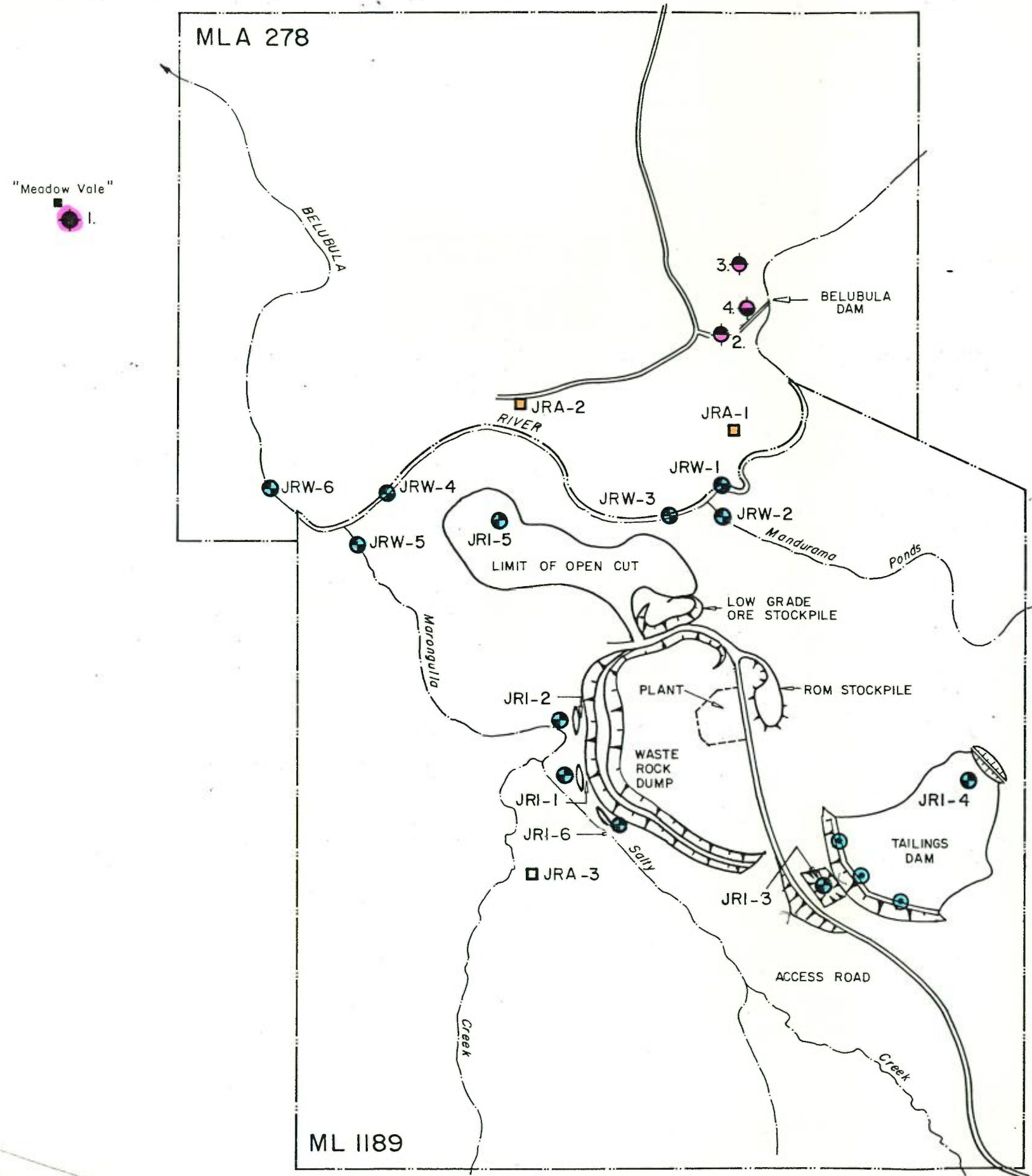


**SECTION (B)**  
SCALE 1:50



# SHEAHAN-GRANTS GOLD MINE

## JOINT VENTURE



### REFERENCE

- Road
  - Watercourse
  - Residence
  - Noise and Blast Monitoring Site
  - Dust Monitoring Site (Discontinued May 1988)
  - Water and Stream Sediment Monitoring Site
  - Internal Water Monitoring Site
  - Piezometers in Tailings Dam Wall
- 2,3 Noise Only  
 4 Blast Only

NOTE: Water monitoring at upstream sites (JRW-1, JRW-2, JRW-3) discontinued April 1989.

Internal water monitoring site JRI-6 (at silt trap N°3) has been added, May 1989.

## PLAN 19

REVISED MAY 1989

# ENVIRONMENTAL MONITORING



R.W. CORKERY & CO. PTY. LIMITED  
 GEOLOGICAL AND ENVIRONMENTAL CONSULTANTS  
 PROJECT N°127

# SHEAHAN-GRANTS GOLD MINE JOINT VENTURE

## FRENCHMANS

1. Several adits
2. Smelter or roaster

## BELUBULA DAM

3. Belubula Dam, 1897

## WATER RACES AND STEEL PIPING

4. Upper water race, 1879-1880
5. Upper water race -  
Steel piping diverges
6. Steel water pipe junction
7. Steel piping to M.T. 7
8. Steel water pipe Junction
9. Steel piping
10. Lower water race








## CORNISHMENS

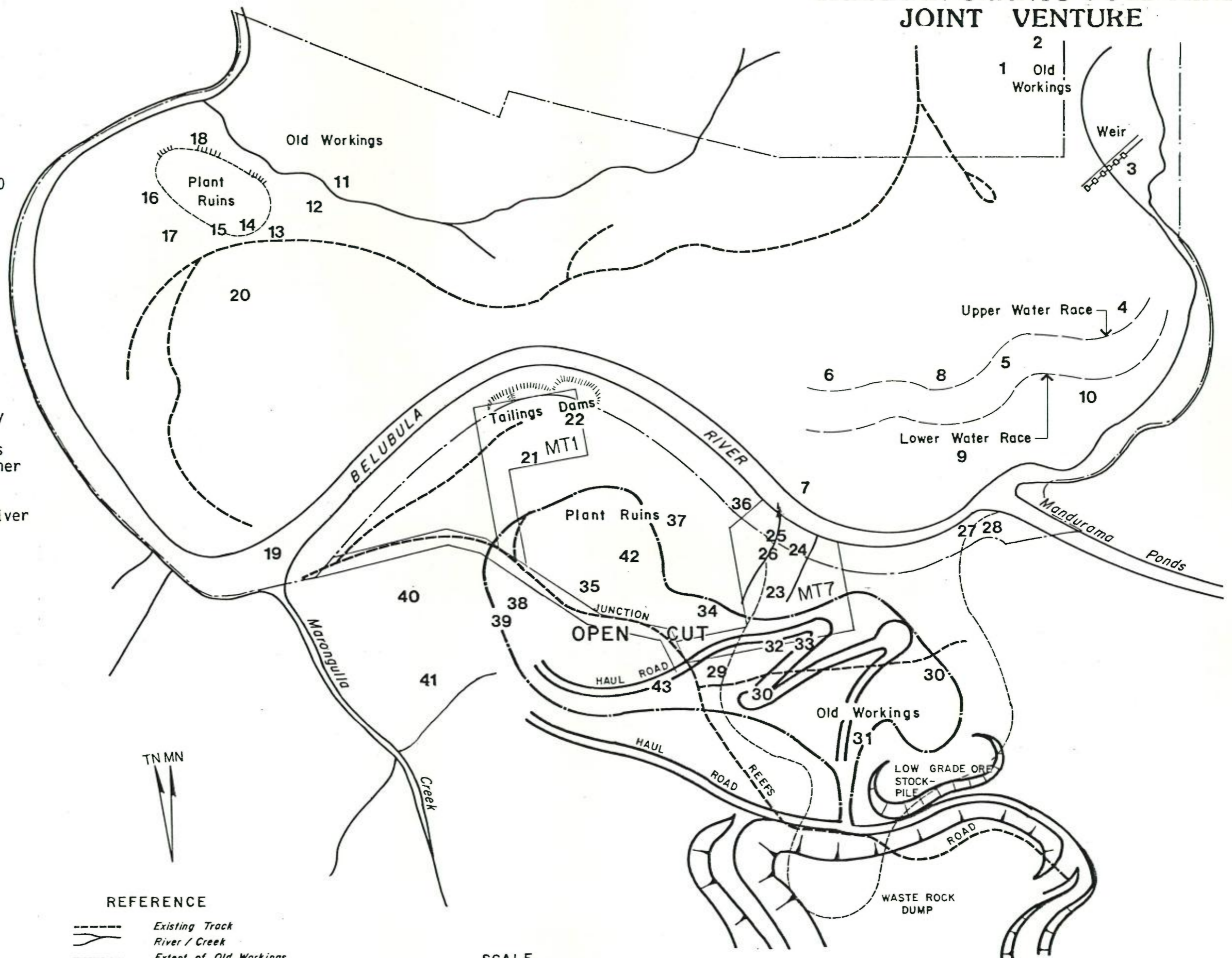
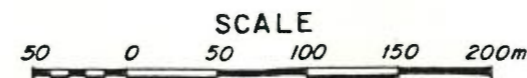
11. Several adits
12. Location of water-wheel,  
1879-1880
13. Location of stamper battery
14. Part of boiler
15. Cyanide plant: cyanide vats
16. Cyanide plant: Dorr thickener
17. Tailings dams
18. Smelter, or roaster ruins
19. Causeway across Belubula River
20. House sites

## THE JUNCTION

21. Plant ruins
22. Tailings dams
23. Ore shoot
24. Huntington mill site
25. Cyanide vat
26. Other machinery at M.T. 7
27. Pelton wheel
28. Electrical generator
29. Huntington mill base site
30. Several adits
31. Open cut
32. Tramway at adit entrance
33. Machine beds
34. Machine beds
35. Machine beds
36. Plant ruin
37. Loading stage
38. Workshop
39. Site of building
40. Site of building
41. Site of building
42. Site of building
43. Site of building

## REFERENCE

- |   |  |
|---|--|
|  | Existing Track                                   |
|  | River / Creek                                    |
|  | Extent of Old Workings                           |
|  | Proposed Open Cut                                |
|  | Proposed Haul Road                               |
|  | Batter Slope                                     |
|  | Boundary of Interim<br>Conservation Order N° 678 |



# PLAN 20 HISTORICAL FEATURES





Plate 1: View of the pit and mining activity, looking west (May 1989). (Ref: 127K/12,13)

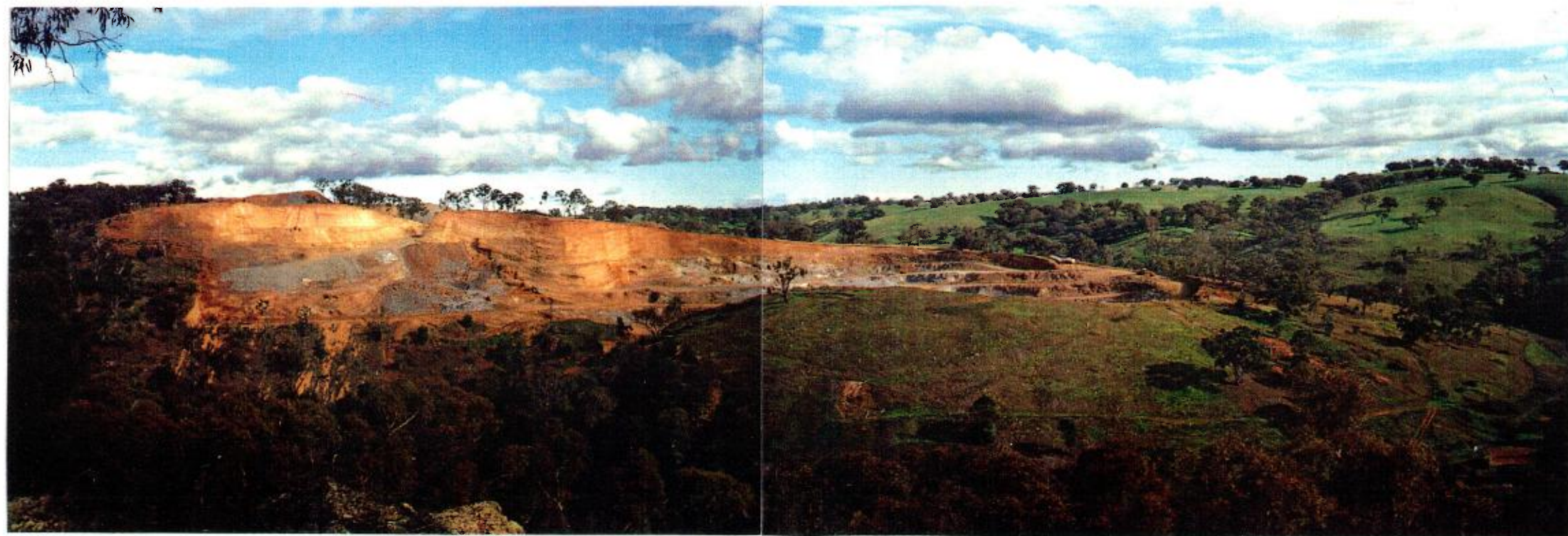


Plate 2: View of the pit looking south from the Junction Reefs recreation reserve. Note tree planting programme on the northern and northwestern slope (white specks are tree seedling guards) (May 1989). (Ref: 127K/21,22)

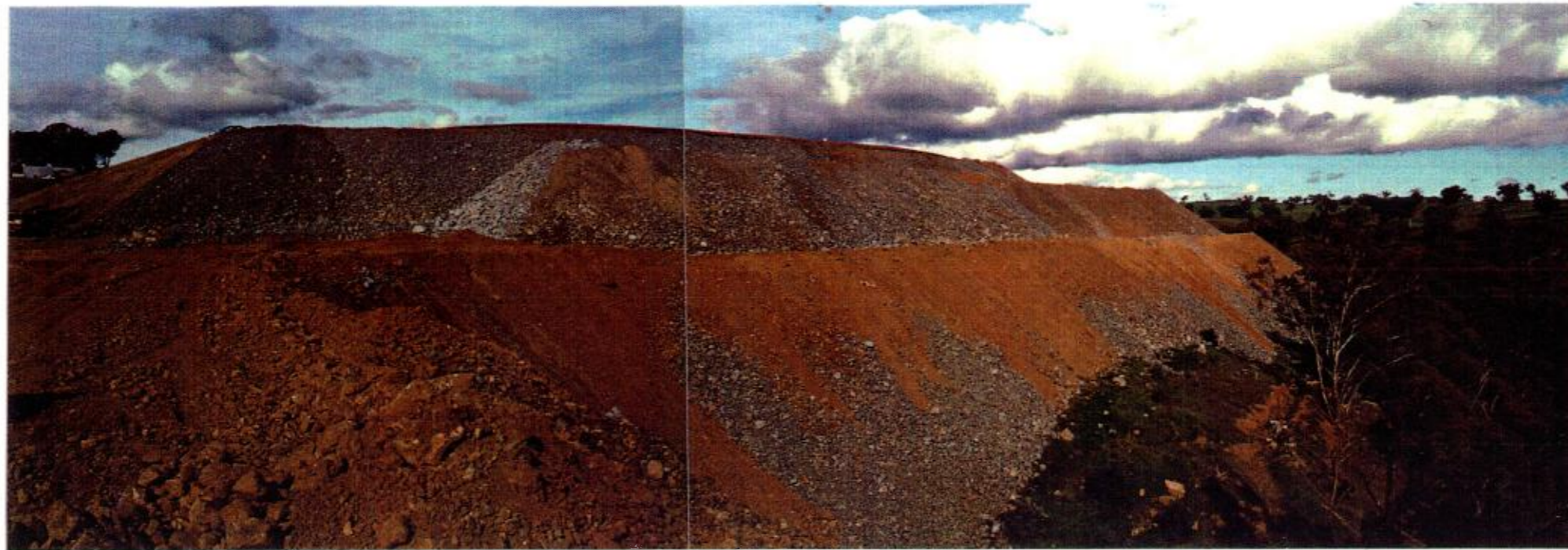


Plate 3: View of the waste rock emplacement looking southeast. Note level 610 m berm, level 624 m berm and final level 635 m (May 1989). (Ref: 127K/19,20)



Plate 4: View of the tailings disposal facility looking southwest from the saddle dam. Waste rock stockpiled for later spreading during rehabilitation, is evident to the north and south (May 1989). (Ref: 127K/5,6,7)



Plate 5: Stable grass cover established on soil stockpile no. 3 south of the pit (May 1989). (Ref: 127K/18)



Plate 6: Good tree and shrub growth along the access to the mine. Planted in Autumn 1988 (May 1989). (Ref: 127K/10)

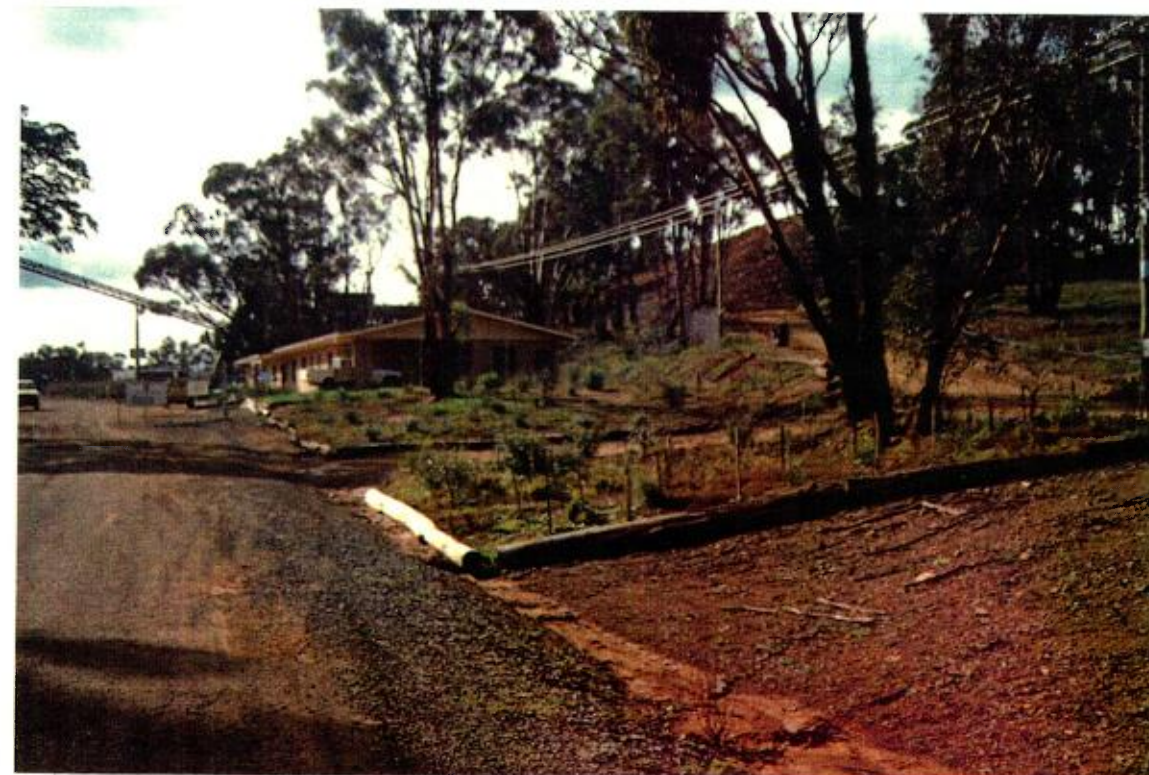


Plate 7: Tree planting and landscaping around the offices and entrance (May 1989). (Ref: 127K/8)



Plate 8: Hydromulching (native shrub seed and wood pulp) trial on exposed waste rock batter (April 1989). (Ref: 127J/18)

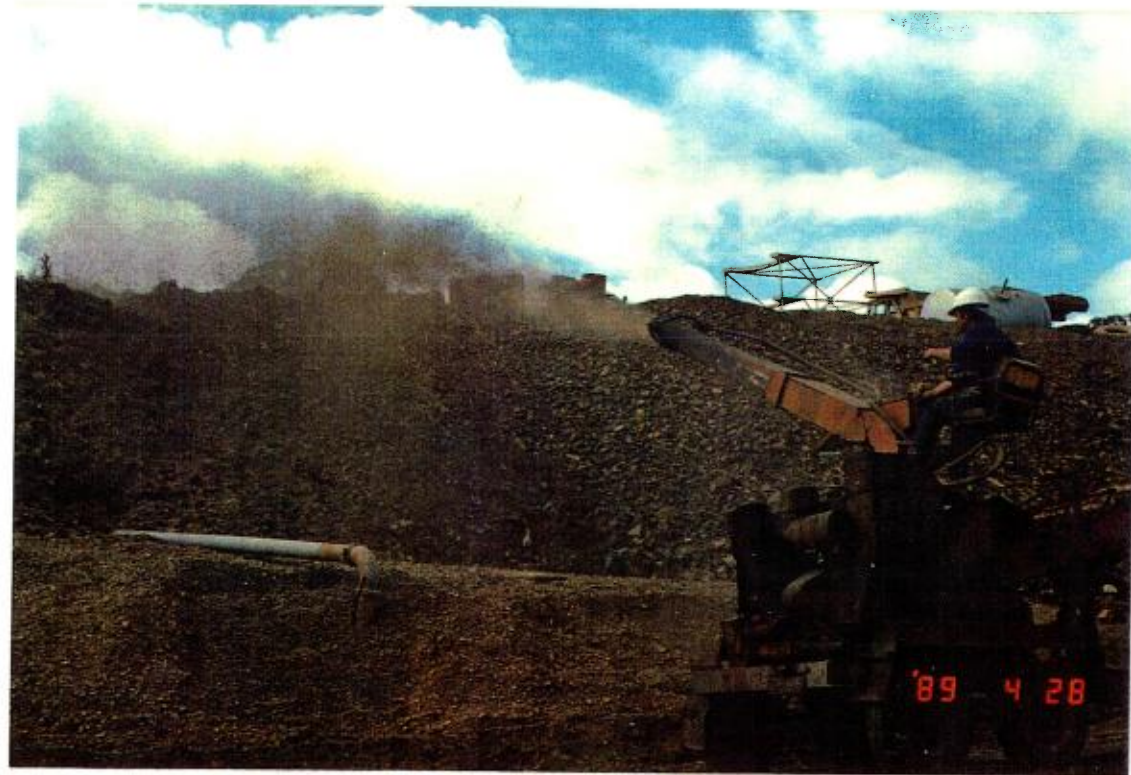


Plate 9: Hydromulching (straw and grass seed) trial on exposed waste rock batter (April 1989). (Ref: 127J/21)

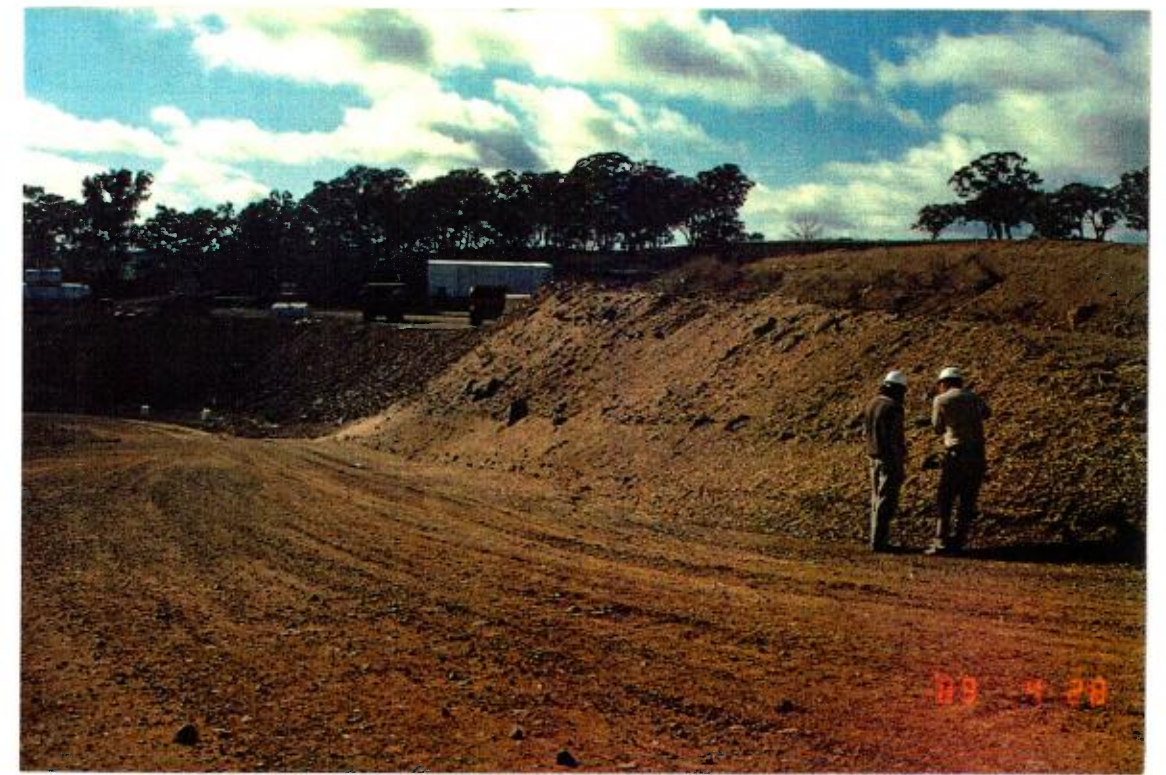


Plate 10: Hydromulching trials were undertaken using either native shrubs or grasses on the more visually exposed waste rock batters (April 1989). (Ref: 127J/10)

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EIS

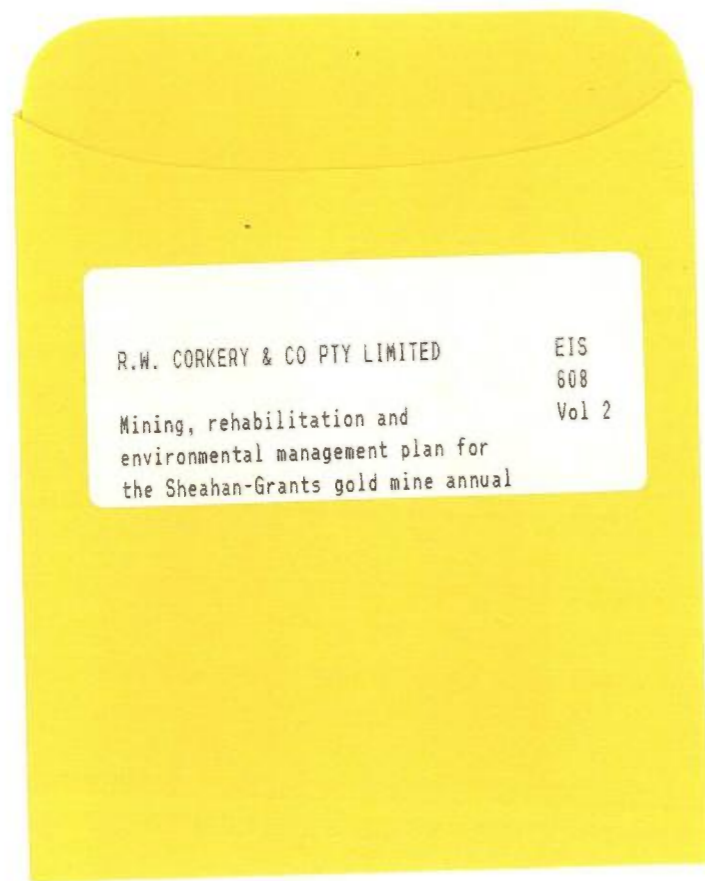
608

Mining, rehabilitation and  
environmental management plan for  
the Sheahan-Grants gold mine annual

Vol 2

Borrower's name	Date	Ex


**RAECO**



R.W. CORKERY & CO PTY LIMITED  
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environmental management plan for  
the Sheahan-Grants gold mine annual

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