

Note: 1. These drawings are not to be used as contract drawings and are for the use of Wollongong City Council day labour construction.

Note: 2. The contour data has been prepared from council stadia survey of western gully tipping face and of base of the eastern gully. The surrounding contours have been extrapolated using orthophoto maps.

Note: 3. See drawings 14892-004 and 14892-005 for cross sections.

Note: 4. Site clearing is limited to all areas within liner access road.

Note: 5. The following base preparation works are to be undertaken.

- + Stripping of organic matter and soft topsoil, silt and peaty materials.
- + Proof rolling of the base using an 10 tonne minimum vibratory roller to identify soft spots.
- + Replacement of soft alluvium with non reactive backfill, and recompaction of the base using the above roller.
- + Where extensive and deep cohesive alluvial deposits are encountered, heavy compaction may not be possible. In these instances a compacted granular bridging layer, typically 0.5 metres thick should be placed over the alluvium to provide a firm base for compaction equipment.

Note: 6. Compaction tolerances as detailed in Liner Specification

Note: 7. The following cut batters are to be used in all constructions:

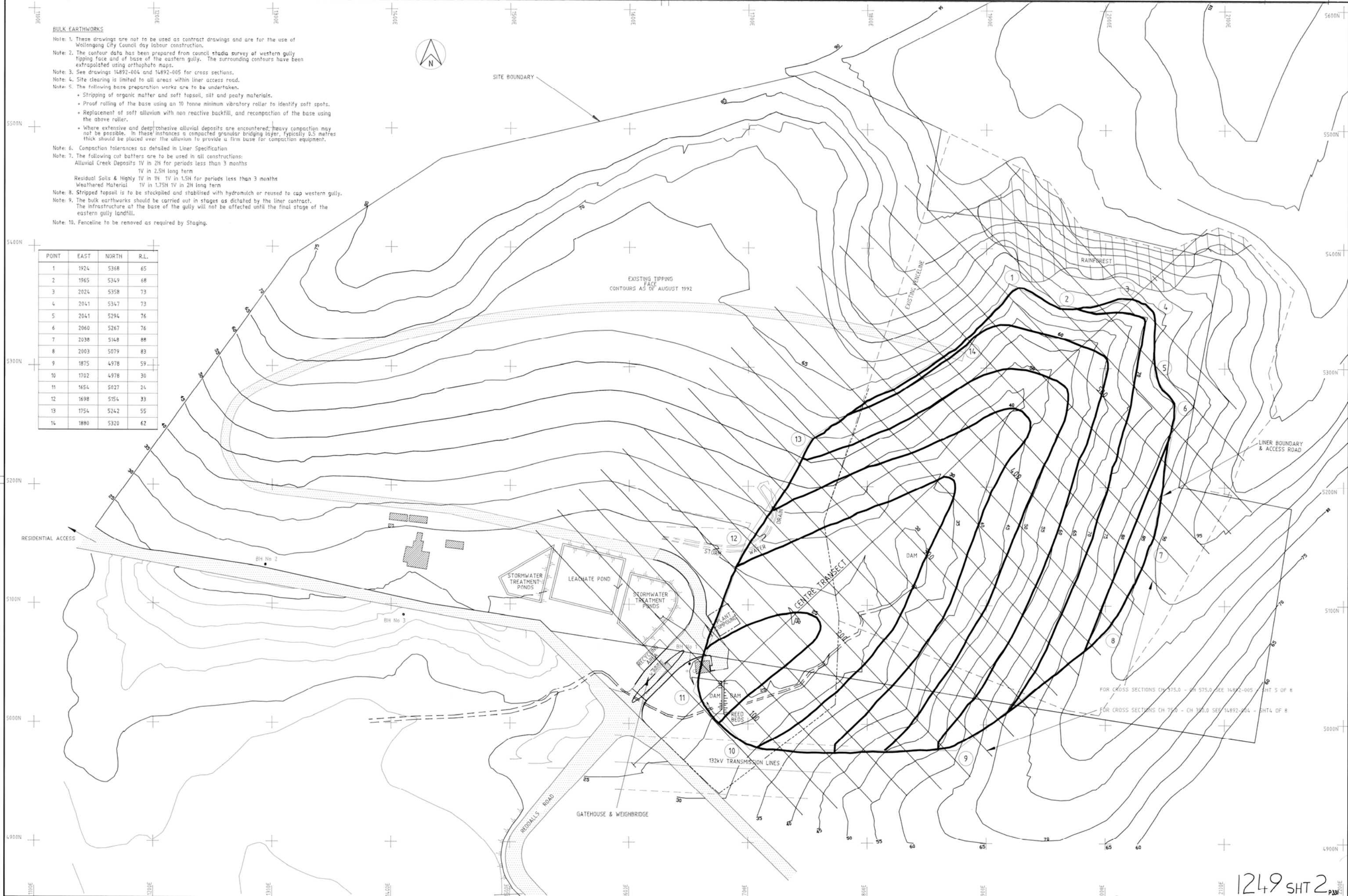
Alluvial Creek Deposits	IV	in 2H	for periods less than 3 months
	IV	in 2.5H	long term
Residual Soils & Highly IV	in 1H	IV in 1.5H	for periods less than 3 months
Weathered Material	IV	in 1.75H	IV in 2H long term

Note: 8. Stripped topsoil is to be stockpiled and stabilised with hydromulch or reused to cap western gully.

Note: 9. The bulk earthworks should be carried out in stages as dictated by the liner contract. The infrastructure at the base of the gully will not be affected until the final stage of the eastern gully landfill.

Note: 10. Fenceline to be removed as required by Staging.

POINT	EAST	NORTH	R.L.
1	1924	5368	65
2	1965	5349	68
3	2024	5358	73
4	2041	5347	73
5	2041	5294	76
6	2060	5267	76
7	2038	5148	88
8	2003	5079	83
9	1875	4978	59
10	1702	4978	30
11	1654	5027	24
12	1698	5154	33
13	1754	5242	55
14	1880	5320	62



CO-ORDINATES ARE BASED ON
INTERGRATED SURVEY GRID (ISG)
VALUES.

01	3.11.92	GENERAL REVISION		
REV.	DATE	DESCRIPTION	DVR No.	P.D.

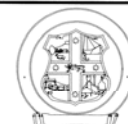
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAFTER CHECK	P.P.OY		
DESIGNER CHECK	E.HADEW		
PROJECT DIRECTOR APPROVAL	D.HACLEDD		

COMPLETION OF THE QUALITY RECORD IS EVIDENCE THAT THE DESIGN AND DRAWING HAVE BEEN VERIFIED AS CONFORMING WITH THE REQUIREMENTS OF THE CLIENT BRIEF.



MAUNSELL
PROPRIETARY
LIMITED

A.C.N. 004 846 824



THIS DRAWING IS CONFIDENTIAL AND SHALL BE USED ONLY FOR THE PURPOSE OF THE PROJECT.

	DATE OF ISSUE	PAGE
		A0

WHYTES GULLY LANDFILL
WOLLONGONG
BULK EARTHWORKS CONTOURS

CAO REFERENCE	DATE PLOTTED
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PLAN02.DWG	23.10.92
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ORD No.	REV.
11.892-002	01

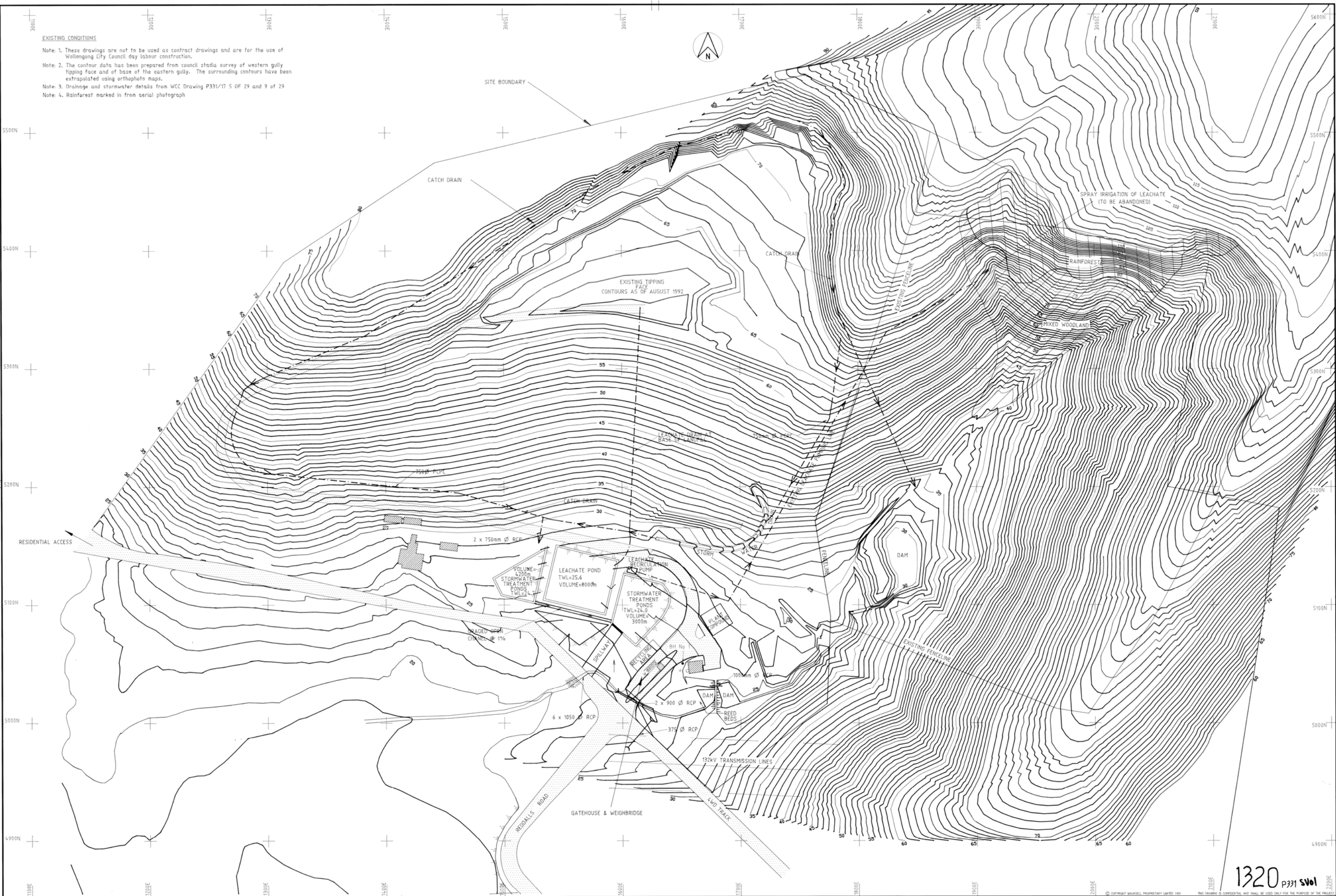
14072-002	01
ORG. STATUS	

FINAL

5162-1

EXISTING CONDITIONS

- Note: 1. These drawings are not to be used as contract drawings and are for the use of Wollongong City Council day labour construction.
- Note: 2. The contour data has been prepared from council stadia survey of western gully tipping face and of base of the eastern gully. The surrounding contours have been extrapolated using orthophoto maps.
- Note: 3. Drainage and stormwater details from WCC Drawing P331/17 5 OF 29 and 9 of 29
- Note: 4. Rainforest marked in from aerial photograph



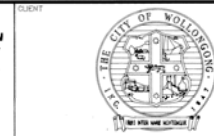
REV	DATE	DESCRIPTION	DWN	P.D.
02	18.2.93	GENERAL REVISION		
01	3.11.92	GENERAL REVISION		

CO-ORDINATES ARE BASED ON INTERGRATED SURVEY GRID (ISG) VALUES.

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN CHECK	P.P.D.Y.		
DESIGNER CHECK	E.HADEW		
PROJECT DIRECTOR APPROVAL	D.HACLED		

MAUNSELL PROPRIETARY LIMITED

A.C.N.004 846 824



PROJECT NAME	WHYTES GULLY LANDFILL	DATE OF ISSUE	10.2.93	SCALE	A0
DRAWING TITLE	PLANS/DIMS	DATE PLOTTED	10.2.93		
DWG NO.	14892-001	REV	02		
DWG STATUS	PRELIMINARY				

STORMWATER NOTES

1. THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAY LABOUR CONSTRUCTION.
2. THE CONTOUR DATA HAS BEEN PREPARED FROM COUNCIL STADIA SURVEY OF WESTERN GULLY TIPPING FACE AND BASE OF THE EASTERN GULLY. THE SURROUNDING CONTOURS HAVE BEEN EXTRAPOLATED USING 1:4000 ORTHOPHOTO MAPS.
3. SEE DRAWING 14892/006 FOR DETAILS OF STORMWATER DRAIN CROSS SECTIONS.
4. DRAINS ARE TO BE GRADED TO SUIT NORMAL TOPOGRAPHY WITH MAXIMUM SLOPE AS SHOWN

DRAIN TYPE
LINING
MAXIMUM SLOPE

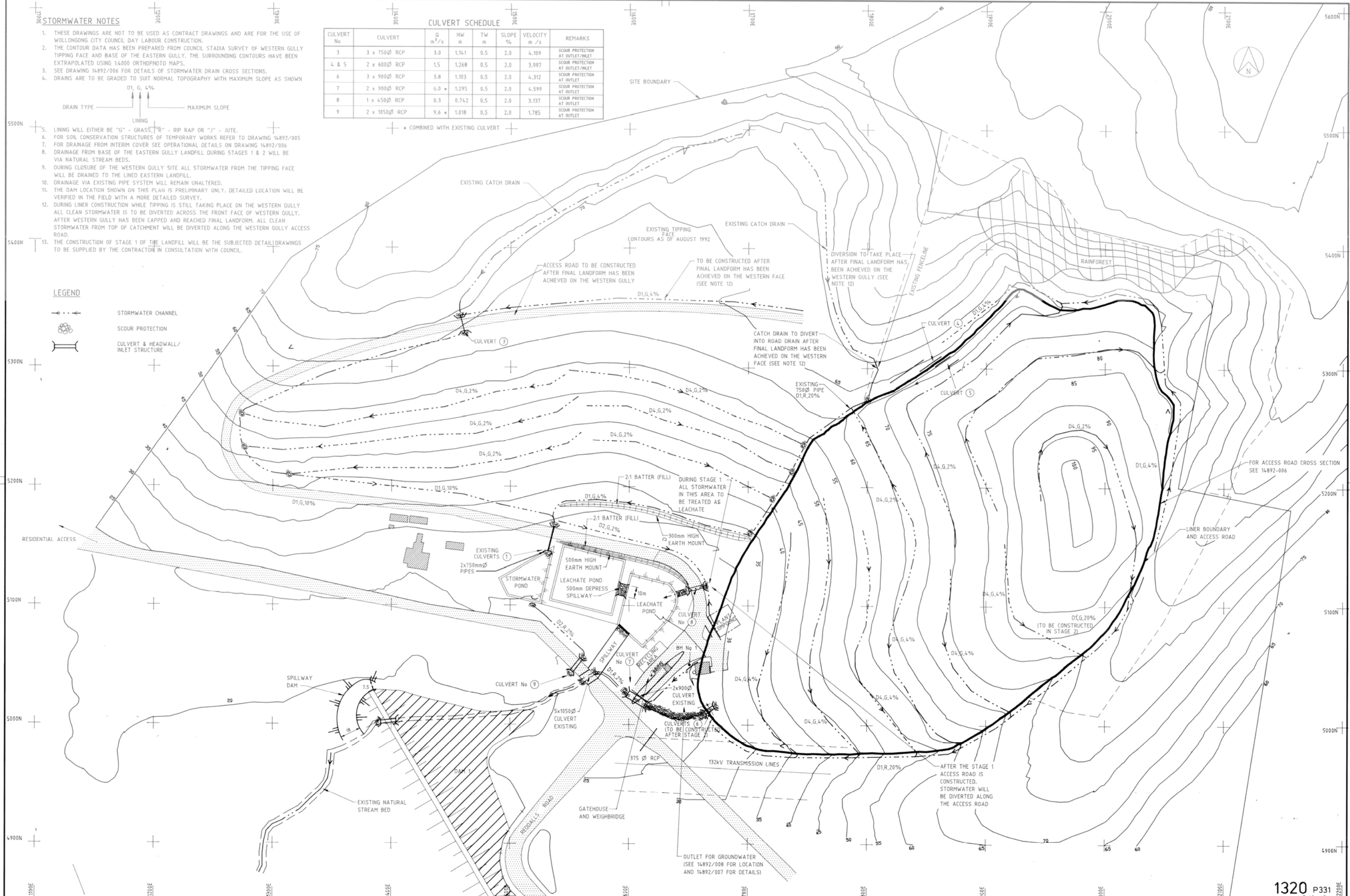
CULVERT SCHEDULE

CULVERT No	CULVERT	Q m ³ /s	HW m	TW m	SLOPE %	VELOCITY m/s	REMARKS
3	3 x 750Ø RCP	3.0	1.141	0.5	2.0	4.109	SCOUR PROTECTION AT OUTLET/INLET
4 & 5	2 x 600Ø RCP	1.5	1.268	0.5	2.0	3.997	SCOUR PROTECTION AT OUTLET/INLET
6	3 x 900Ø RCP	3.8	1.103	0.5	2.0	4.312	SCOUR PROTECTION AT OUTLET
7	2 x 900Ø RCP	6.0	1.295	0.5	2.0	4.599	SCOUR PROTECTION AT OUTLET
8	1 x 450Ø RCP	0.3	0.742	0.5	2.0	3.137	SCOUR PROTECTION AT OUTLET
9	2 x 1050Ø RCP	9.6	1.018	0.5	2.0	1.785	SCOUR PROTECTION AT OUTLET

* COMBINED WITH EXISTING CULVERT

LEGEND

- STORMWATER CHANNEL
SCOUR PROTECTION
CULVERT & HEADWALL/INLET STRUCTURE



CO-ORDINATES ARE BASED ON
INTERGRATED SURVEY GRID (ISG)
VALUES.

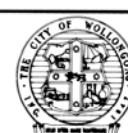
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01	24.3.93	GENERAL REVISION		
02	14.10.93	GENERAL REVISION		

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN BY	A. HILFORD		
CHECKED BY	E. MACLEOD		
APPROVED BY	D. MACLEOD		



MAUNSELL
PROPRIETARY
LIMITED

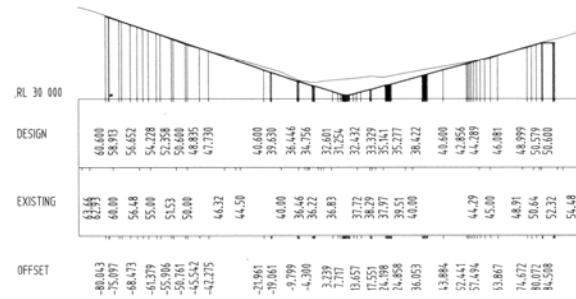
A.C.N. 004 846 884



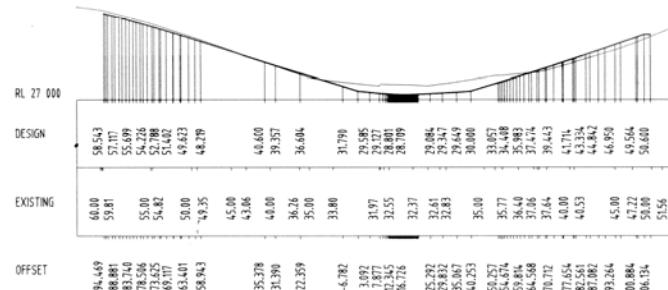
PROJECT TITLE
WHYTES GULLY LANDFILL
DRAWING TITLE
DRAINAGE PLAN
ULTIMATE LANDFORM

DATE OF ISSUE	26.3.93	REV.	A0
CAD REFERENCE	PLAN03.DWG	DATE PLOTTED	26.3.93
DWG No.	14892-003	REV.	02
DWG STATUS	DESIGN COMPLETE		

1320 P331
6403

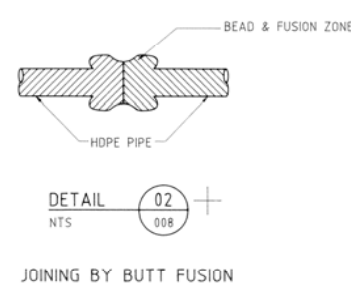
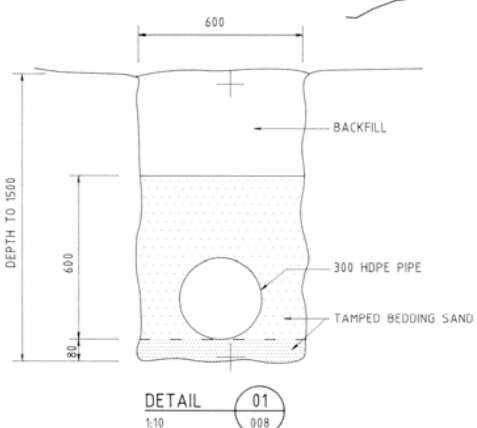
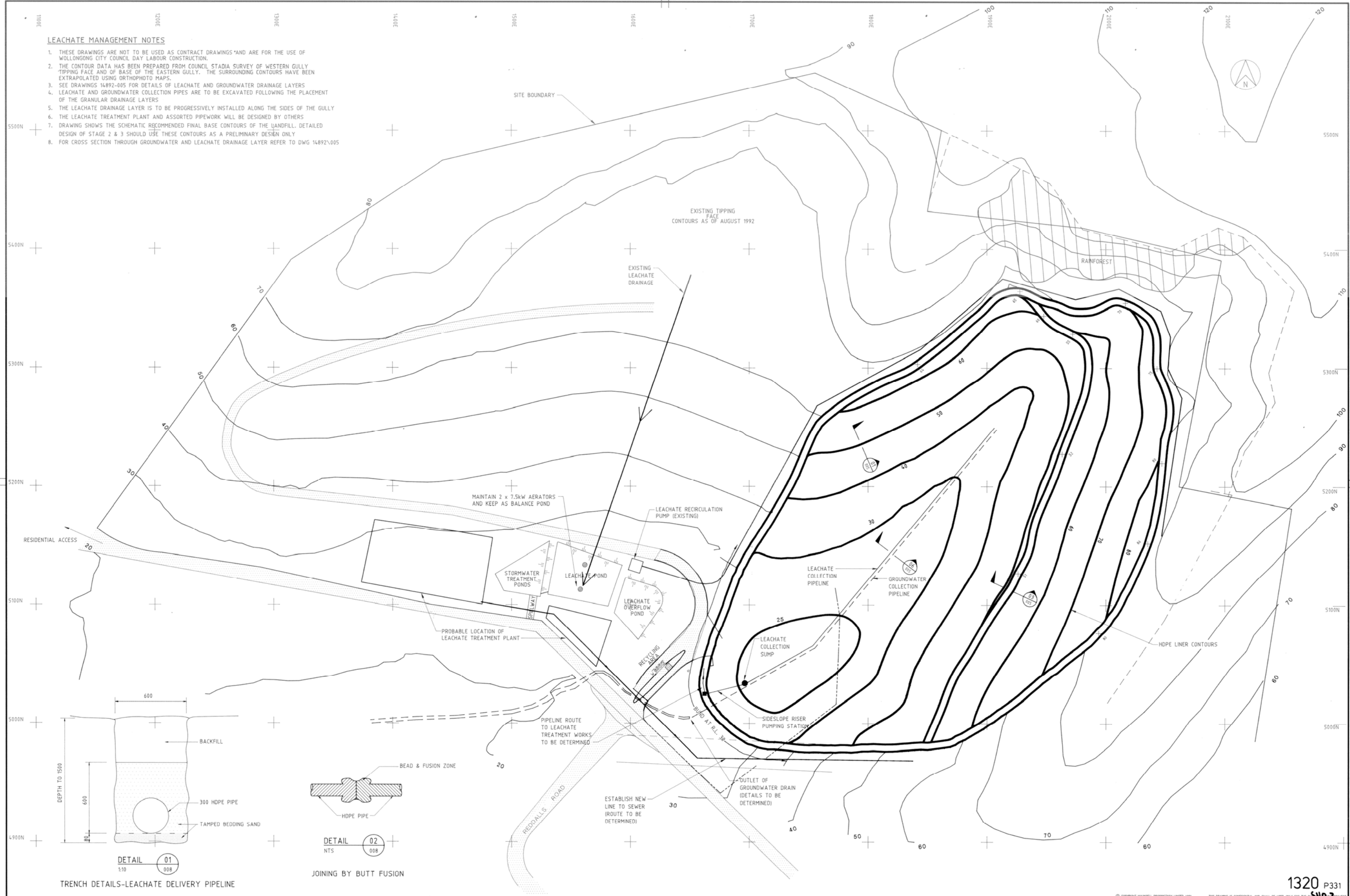


375



LEACHATE MANAGEMENT NOTES

1. THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAY LABOUR CONSTRUCTION.
2. THE CONTOUR DATA HAS BEEN PREPARED FROM COUNCIL STADIA SURVEY OF WESTERN GULLY TIPPING FACE AND OF BASE OF THE EASTERN GULLY. THE SURROUNDING CONTOURS HAVE BEEN EXTRAPOLATED USING ORTHOPHOTO MAPS.
3. SEE DRAWINGS 14892-005 FOR DETAILS OF LEACHATE AND GROUNDWATER DRAINAGE LAYERS.
4. LEACHATE AND GROUNDWATER COLLECTION PIPES ARE TO BE EXCAVATED FOLLOWING THE PLACEMENT OF THE GRANULAR DRAINAGE LAYERS.
5. THE LEACHATE DRAINAGE LAYER IS TO BE PROGRESSIVELY INSTALLED ALONG THE SIDES OF THE GULLY.
6. THE LEACHATE TREATMENT PLANT AND ASSORTED PIPEWORK WILL BE DESIGNED BY OTHERS.
7. DRAWING SHOWS THE SCHEMATIC RECOMMENDED FINAL BASE CONTOURS OF THE LANDFILL. DETAILED DESIGN OF STAGE 2 & 3 SHOULD USE THESE CONTOURS AS A PRELIMINARY DESIGN ONLY.
8. FOR CROSS SECTION THROUGH GROUNDWATER AND LEACHATE DRAINAGE LAYER REFER TO DWG 14892\005.



REV.	DATE	DESCRIPTION	DWG. NO.	P.D.
01	23.2.93	GENERAL REVISION		
02	16.2.93	GENERAL REVISION		
03	3.11.92	GENERAL REVISION		

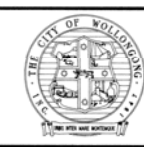
CO-ORDINATES ARE BASED ON INTEGRATED SURVEY GRID (ISG) VALUES.

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAFTER CHECK	A. MILFORD		
DESIGNER CHECK	E. MADEW		
PROJECT DIRECTOR APPROVAL	D. MACLEOD		

COMPLETION OF THE QUALITY RECORD IS EVIDENCE THAT THE DESIGN AND DRAWING HAVE BEEN REVIEWED AS CONFORMING WITH THE REQUIREMENTS OF THE CLIENT BRIEF.

MAUNSELL PROPRIETARY LIMITED

A.C.N. 004 846 824



1320 P331

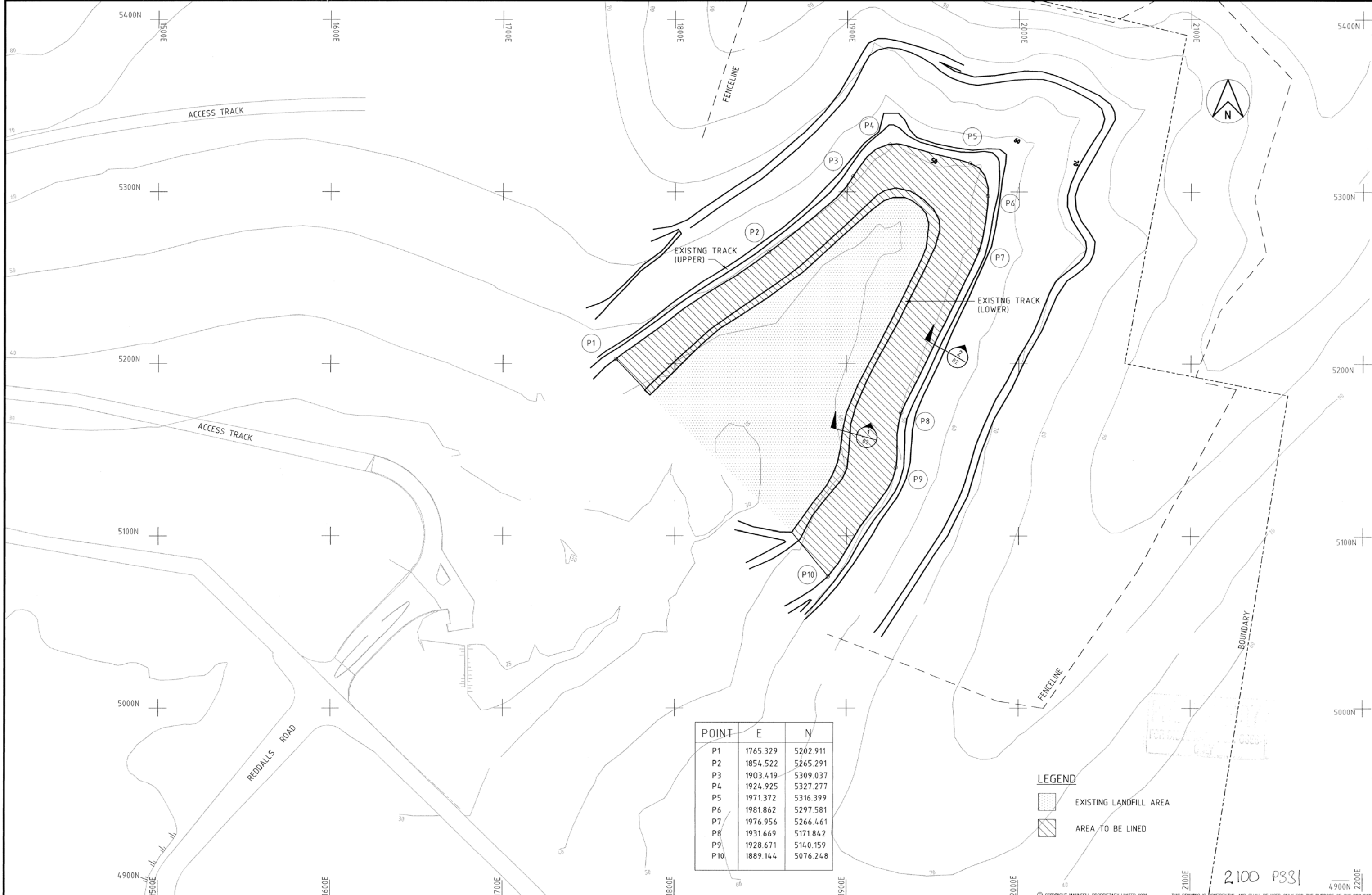
WHYTES GULLY LANDFILL

LEACHATE AND GROUND WATER COLLECTION SYSTEM ULTIMATE LANDFORM

DATE OF ISSUE: 23.2.93
DATE PLOTTED: 23.2.93

DWG. NO. 14892-007
REV. 03

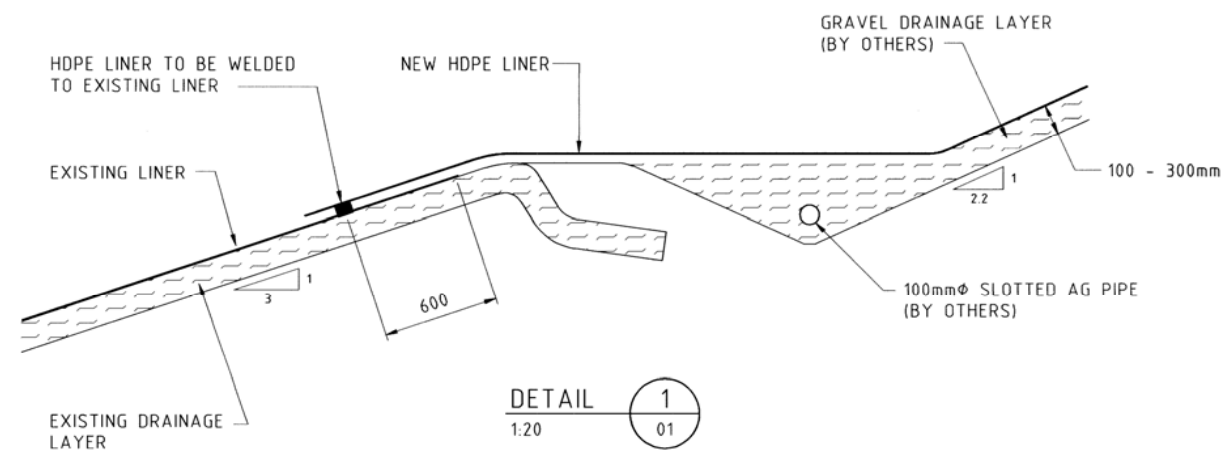
DESIGN COMPLETE



POINT	E	N
P1	1765.329	5202.911
P2	1854.522	5265.291
P3	1903.419	5309.037
P4	1924.925	5327.277
P5	1971.372	5316.399
P6	1981.862	5297.581
P7	1976.956	5266.461
P8	1931.669	5171.842
P9	1928.671	5140.159
P10	1889.144	5076.248

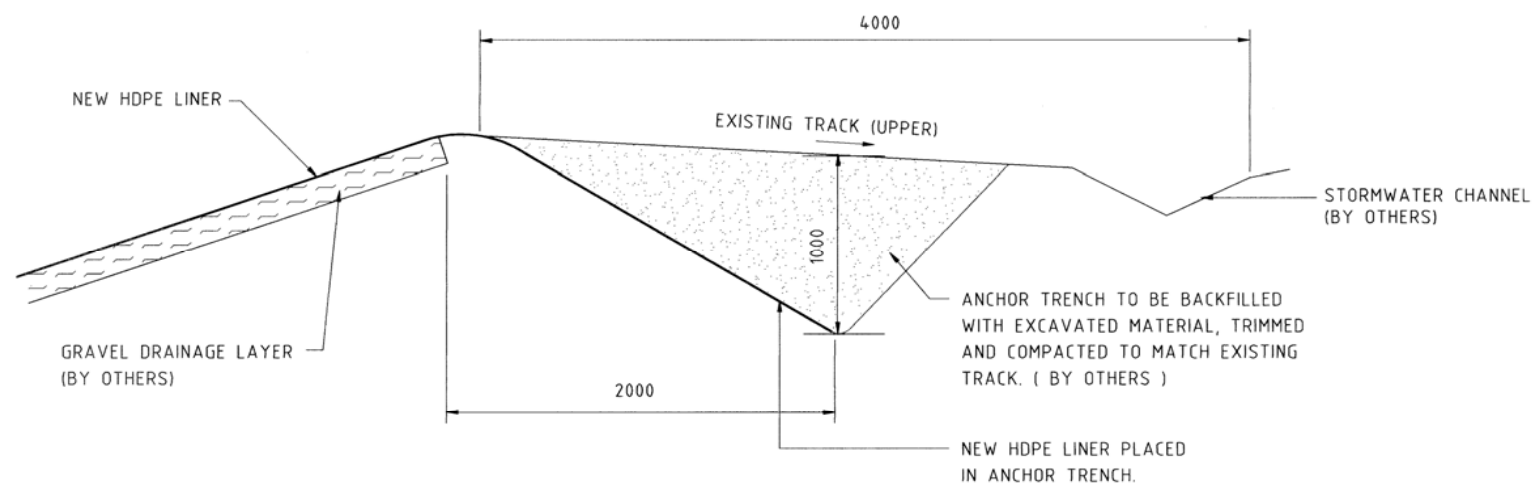
- LEGEND**
- EXISTING LANDFILL AREA
 - AREA TO BE LINED

REV. DATE DESCRIPTION		DVR No.	P.D.	SCALE 1:1000		MAUNSELL PROPRIETARY LIMITED		CLIENT		PROJECT TITLE		DATE OF ISSUE		SIZE	
				METRES		A.C.N 004 846 824				WHYTES GULLY LANDFILL				A1	
										DRAWING TITLE		CAD REFERENCE		DATE PLOTTED	
										STAGE 1B		J:\47594\SK001		12/07/94	
										EXTENSION OF LINER TO RL50		DRG No.		REV.	
										GENERAL ARRANGEMENT		47594/01		0	
												DRG STATUS		PRELIMINARY	



DETAIL 1
1:20 01

LINER CONNECTION



DETAIL 2
1:20 01

ANCHOR TRENCH DETAILS

PRELIMINARY
FOR DISCUSSION PURPOSES

2100 P331

REV.	DATE	DESCRIPTION	DVR No.	P.D.

SCALE AS SHOWN			
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAFTER CHECK	A.M.		
DESIGNER CHECK	S.D.G.		
PROJECT DIRECTOR APPROVAL			
COMPLETION OF THE QUALITY RECORD IS EVIDENCE THAT THE DESIGN AND DRAWING HAVE BEEN VERIFIED AS CONFORMING WITH THE REQUIREMENTS OF THE CLIENT BRIEF.			

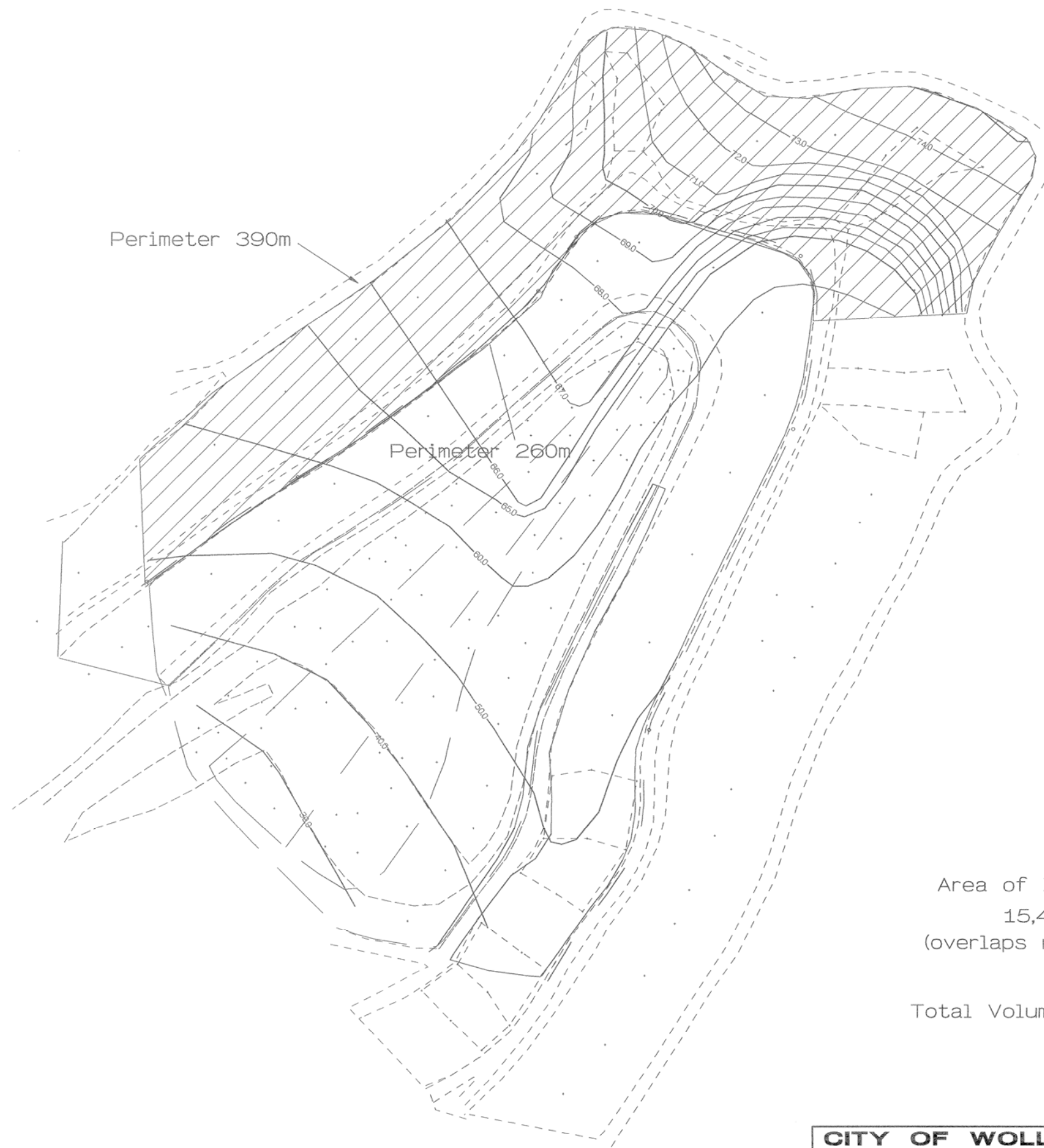
MAUNSELL
PROPRIETARY
LIMITED

A.C.N 004 846 824

CLIENT

STAGE 1B
EXTENSION OF LINER TO RL50
LINER DETAILS

PROJECT TITLE WHYTES GULLY LANDFILL	DATE OF ISSUE 29.07.94	SIZE A1
DRAWING TITLE STAGE 1B EXTENSION OF LINER TO RL50 LINER DETAILS	CAD REFERENCE J:\47594\SK002	REV. 0
DRG. STATUS PRELIMINARY		



Area of lining shown
15,4000 M2
(overlaps not included)



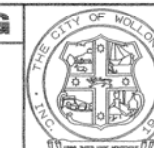
Total Volume Lift 3A = 296,000 m3

SCALES

1 : 750

CITY OF WOLLONGONG

WHYTES GULLY
EASTERN GULLY
CONTOURS LIFT 3A



SHEET 1 OF 1

DRAWING NO.

2100

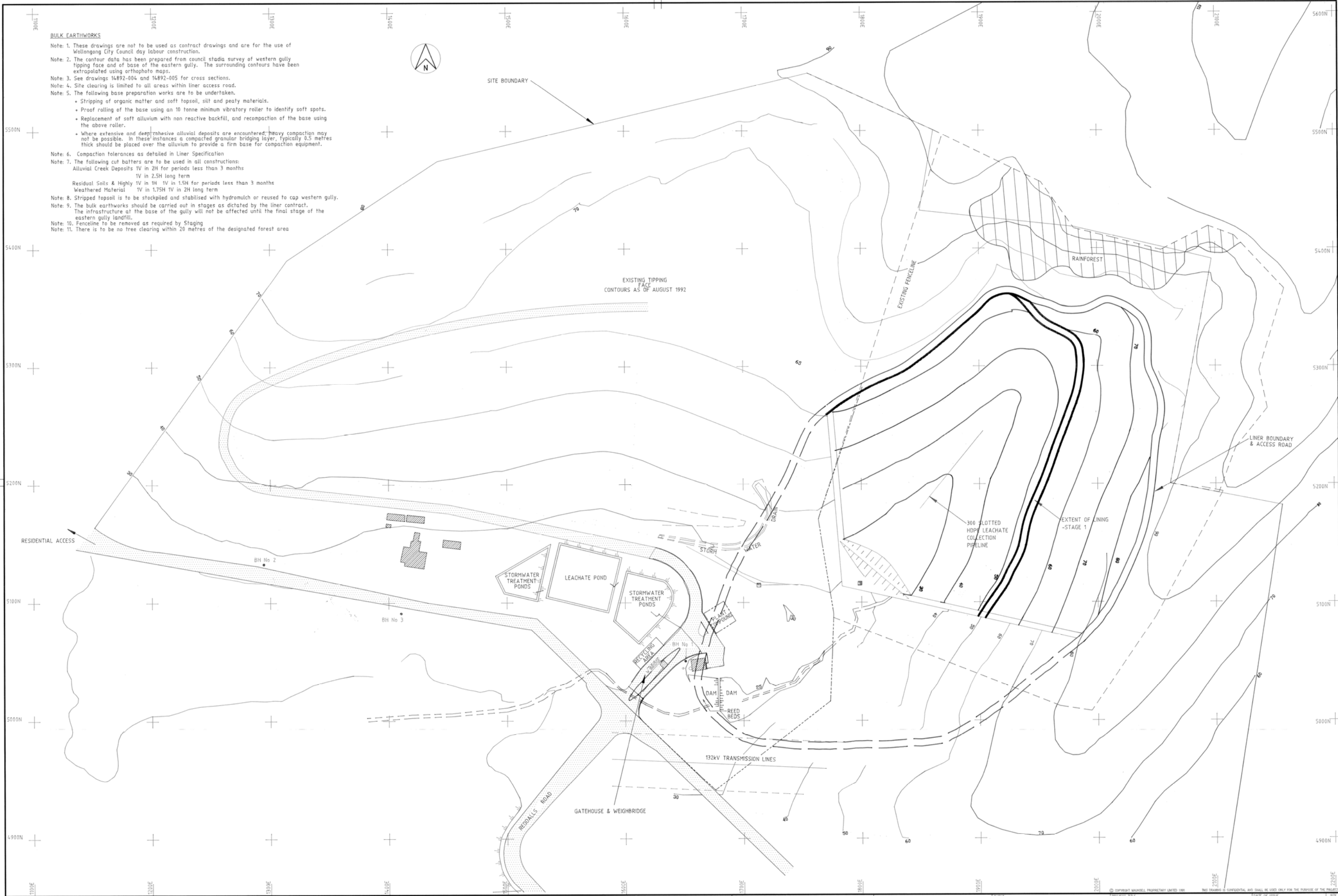
FILE NO.

ISSUE

A

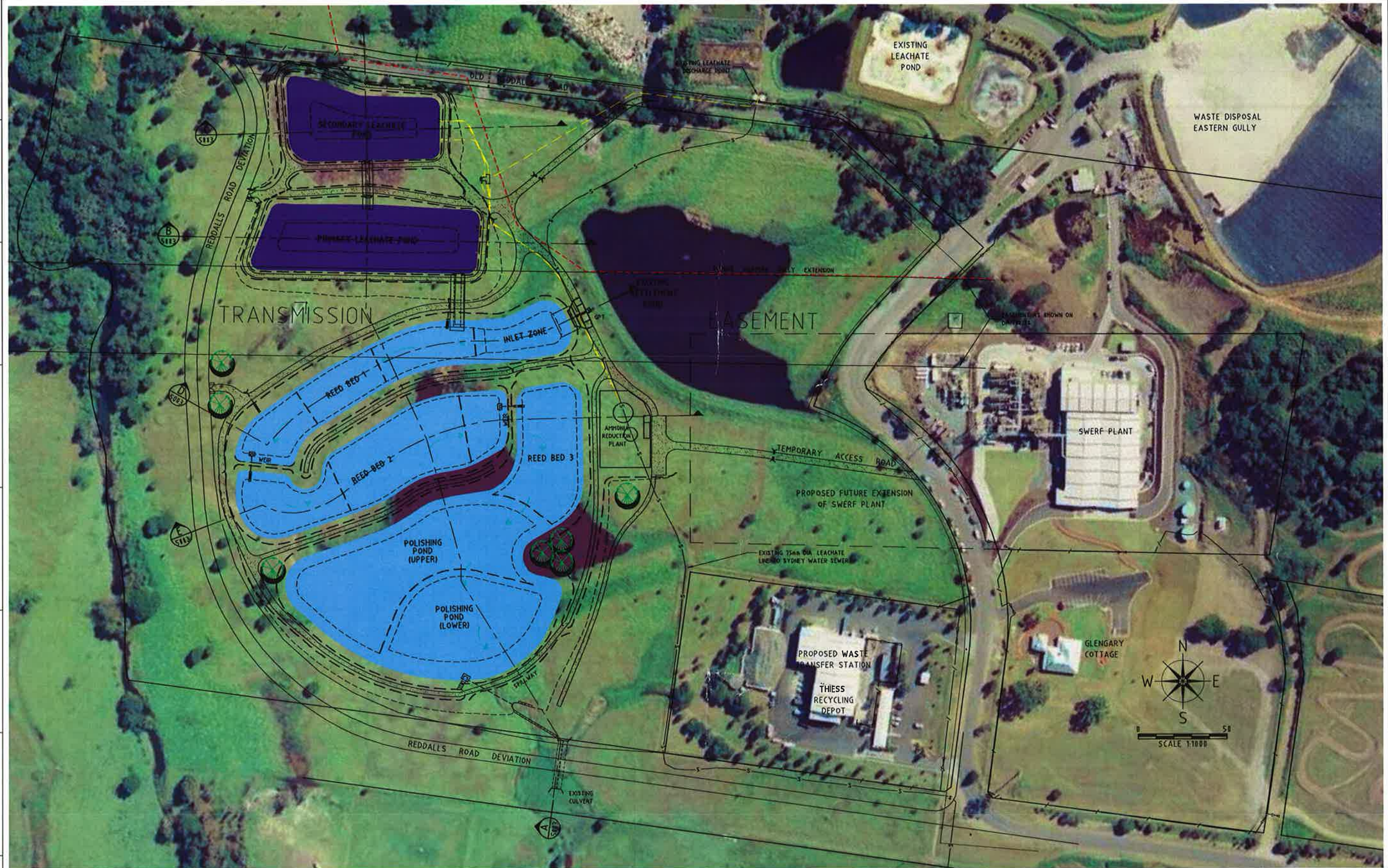
BULK EARTHWORKS

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- Note: 2. The contour data has been prepared from council stadia survey of western gully tipping face and of base of the eastern gully. The surrounding contours have been extrapolated using orthophoto maps.
- Note: 3. See drawings 14892-004 and 14892-005 for cross sections.
- Note: 4. Site clearing is limited to all areas within liner access road.
- Note: 5. The following base preparation works are to be undertaken.
- Stripping of organic matter and soft topsoil, silt and peaty materials.
 - Proof rolling of the base using an 10 tonne minimum vibratory roller to identify soft spots.
 - Replacement of soft alluvium with non reactive backfill, and recompaction of the base using the above roller.
 - Where extensive and deep cohesive alluvial deposits are encountered, heavy compaction may not be possible. In these instances a compacted granular bridging layer, typically 0.5 metres thick should be placed over the alluvium to provide a firm base for compaction equipment.
- Note: 6. Compaction tolerances as detailed in Liner Specification
- Note: 7. The following cut batters are to be used in all constructions:
- Alluvial Creek Deposits 1V in 2H for periods less than 3 months
- 1V in 2.5H long term
- Residual Soils & Highly 1V in 1H 1V in 1.5H for periods less than 3 months
- Weathered Material 1V in 1.75H 1V in 2H long term
- Note: 8. Stripped topsoil is to be stockpiled and stabilised with hydromulch or reused to cap western gully.
- Note: 9. The bulk earthworks should be carried out in stages as dictated by the liner contract. The infrastructure at the base of the gully will not be affected until the final stage of the eastern gully landfill.
- Note: 10. Fenceline to be removed as required by Staging
- Note: 11. There is to be no tree clearing within 20 metres of the designated forest area



CO-ORDINATES ARE BASED ON INTERGRATED SURVEY GRID (ISG) VALUES.		QUALITY RECORD		MAUNSELL PROPRIETARY LIMITED		2926		WHYTES GULLY LANDFILL		DATE OF ISSUE		A0	
REV. DATE DESCRIPTION		DRAFTER CHECK P.F.O.Y		DESIGNER CHECK E.HADEW		PROJECT DIRECTOR APPROVAL D.HACLEDG		STAGE 1		CAD REFERENCE PLAN08.DWG		DATE PLOTTED 23.10.92	
								EXTENT OF LINER AND LEACHATE DRAIN		14892-008		REV. 0	
										8 of 9		PRELIMINARY	

DO NOT SCALE IF IN DOUBT ASK



REV	DATE	BY	APP.	DETAILS

DRAWING STATUS			
DESIGN BY	PCF	08/07/03	
DRAWN BY	PCF/ES	08/07/03	
DRAFTING CHECK	E.H.Rigby	05/09/03	
DESIGN CHECK	E.H.Rigby	05/09/03	
FINAL APPROVAL	E.H.Rigby	05/09/03	
FOR APPROVAL			

SURVEY INFORMATION
By Wollongong City Council
Survey Supplied 12/07/13
By Hosters & Associates
Survey Supplied 23/04/13

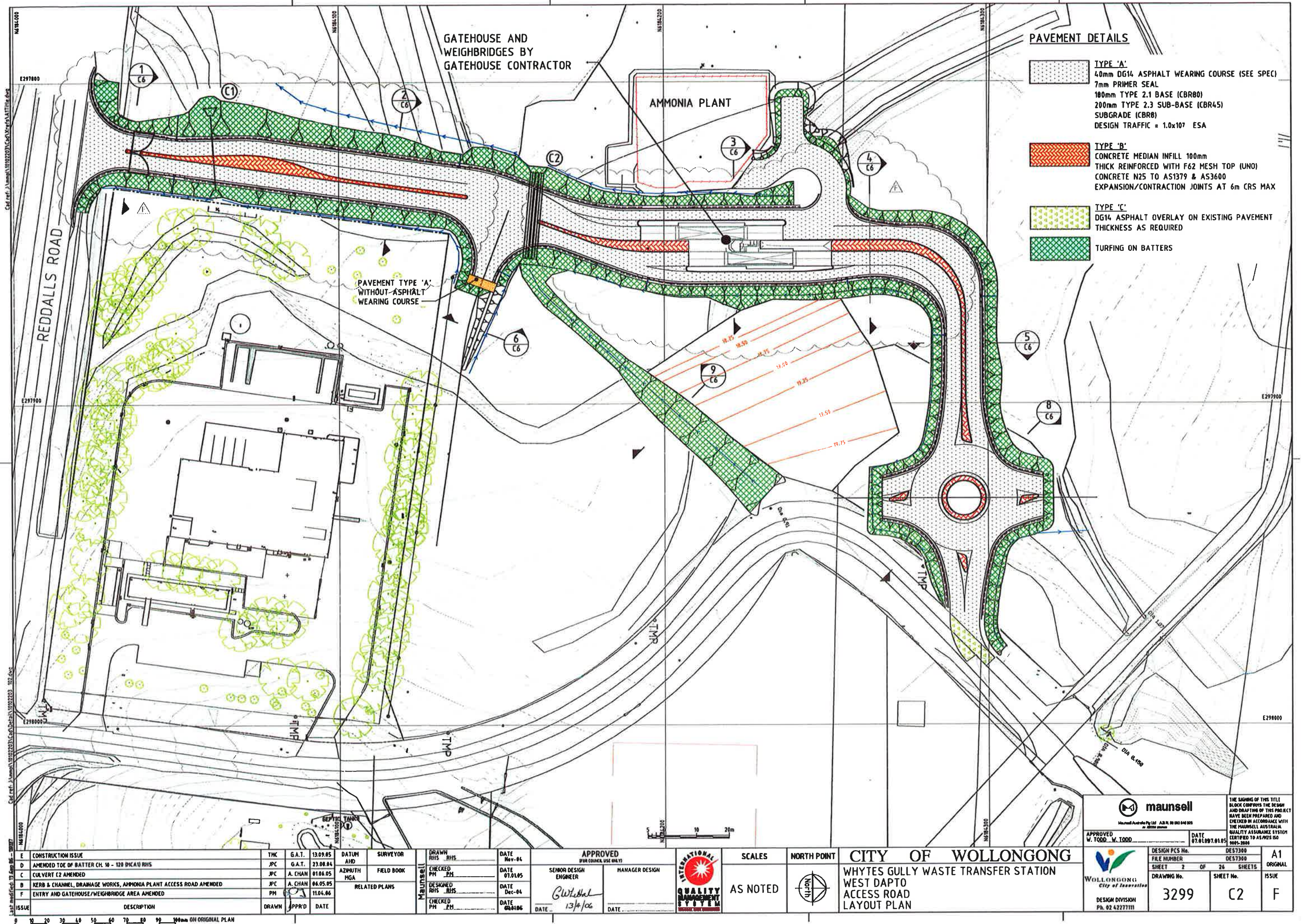
SCALE:
(on A1 Original)
1:1000

DATUM
MGA/AHD

FORBES RIGBY PTY LTD
Engineers Planners & Scientists
Quality Endorsed Company, ISO 9001 LIC QEC 10606, Standards Australia
278 KEIRA STREET, WOLLONGONG, NSW 2500
Ph: (02) 4228 4133 Facsimile: (02) 4228 8811 ACN 003 936 981
This drawing is subject to COPYRIGHT. It remains the property of Forbes Rigby Pty Ltd

PROJECT TITLE
LEACHATE & STORMWATER
PONDS DESIGN
WHYTES GULLY WASTE DEPOT
for
WOLLONGONG CITY COUNCIL

DRAWING TITLE			
SITE MASTER PLAN			
Project No.	Com No.	Drawing No.	REV
99095	5	5002	P2



DATE	DESCRIPTION	DATE	DATE	DATE	DATE
13/09/05	CONSTRUCTION ISSUE	13/09/05	13/09/05	13/09/05	13/09/05
13/09/05	AMENDED TOE OF BATTER CH. 10 - 120 (HCA) RHS	13/09/05	13/09/05	13/09/05	13/09/05
13/09/05	CULVERT (2 AMENDED	13/09/05	13/09/05	13/09/05	13/09/05
13/09/05	KERB & CHANNEL DRAINAGE WORKS, AMMONIA PLANT ACCESS ROAD AMENDED	13/09/05	13/09/05	13/09/05	13/09/05
13/09/05	ENTRY AND GATEHOUSE/WEIGHBRIDGE AREA AMENDED	13/09/05	13/09/05	13/09/05	13/09/05
13/09/05	ISSUE	13/09/05	13/09/05	13/09/05	13/09/05

Mausell	DRAWN RHS	DATE Nov-04
	CHECKED PH	DATE 07.01.05
	DESIGNED RHS	DATE Dec-04
	CHECKED PH	DATE 03.01.06

APPROVED (FOR COUNCIL, USE ONLY)	
SENIOR DESIGN ENGINEER	MANAGER DESIGN
	
DATE <u>13/4/06</u>	DATE _____



SCALES
AS NOTED

	NORTH POINT
0	

T	CITY OF WOLLONGONG
	WHYTES GULLY WASTE TRANSFER STATION WEST DAPTO ACCESS ROAD LAYOUT PLAN



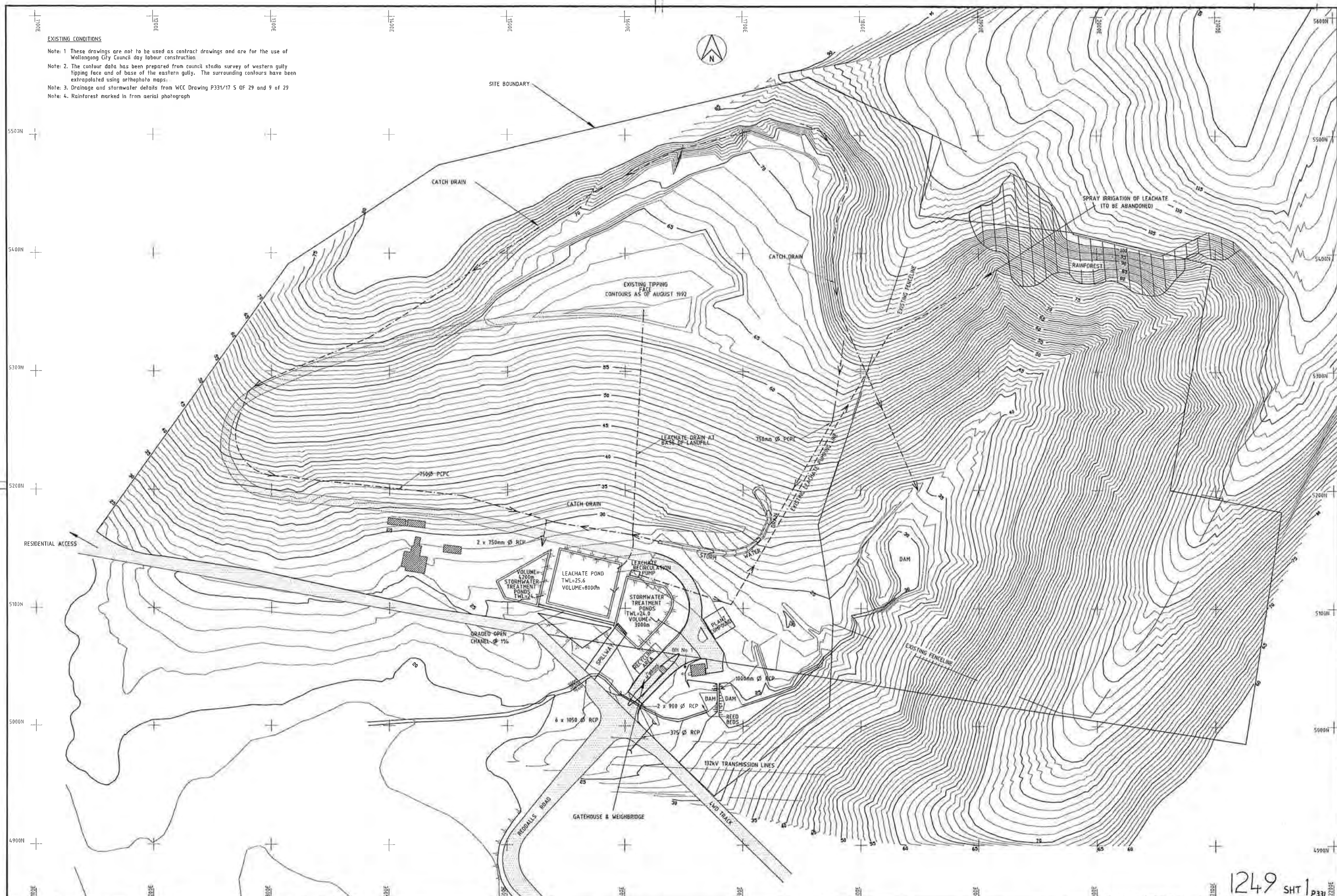
DESIGN PCS No.	DES7360	A1 ORIGINAL
FILE NUMBER	DES7360	
SHEET 2 OF 26 SHEETS		
DRAWING No.	SHEET No.	ISSUE
3299	C2	F

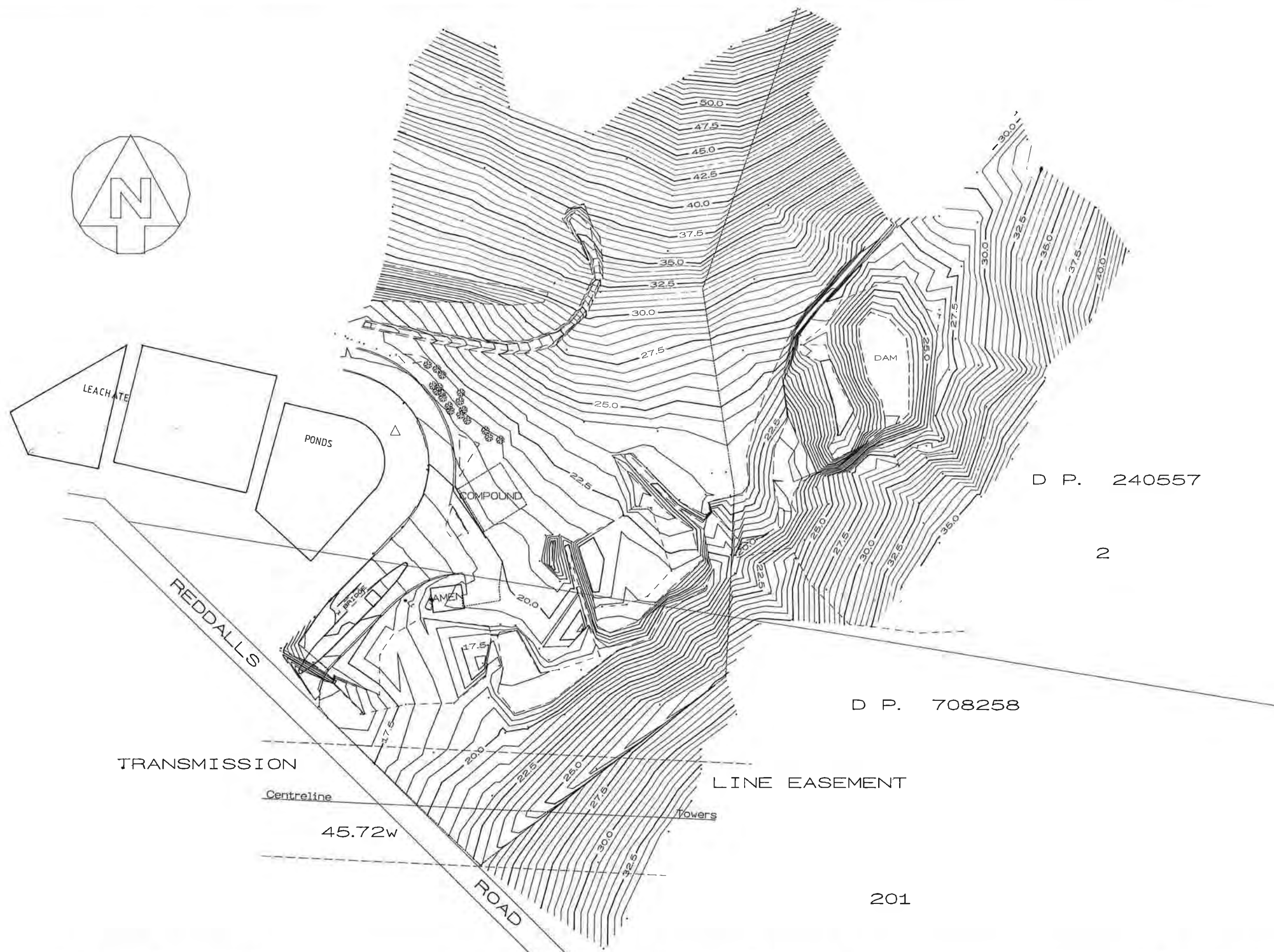
Note: 1 These drawings are not to be used as contract drawings and are for the use of Wanglong City Council day labour construction

Note: 2 The contour data has been prepared from council stadia survey of western gully tipping face and of base of the eastern gully. The surrounding contours have been extrapolated using orthophoto maps.

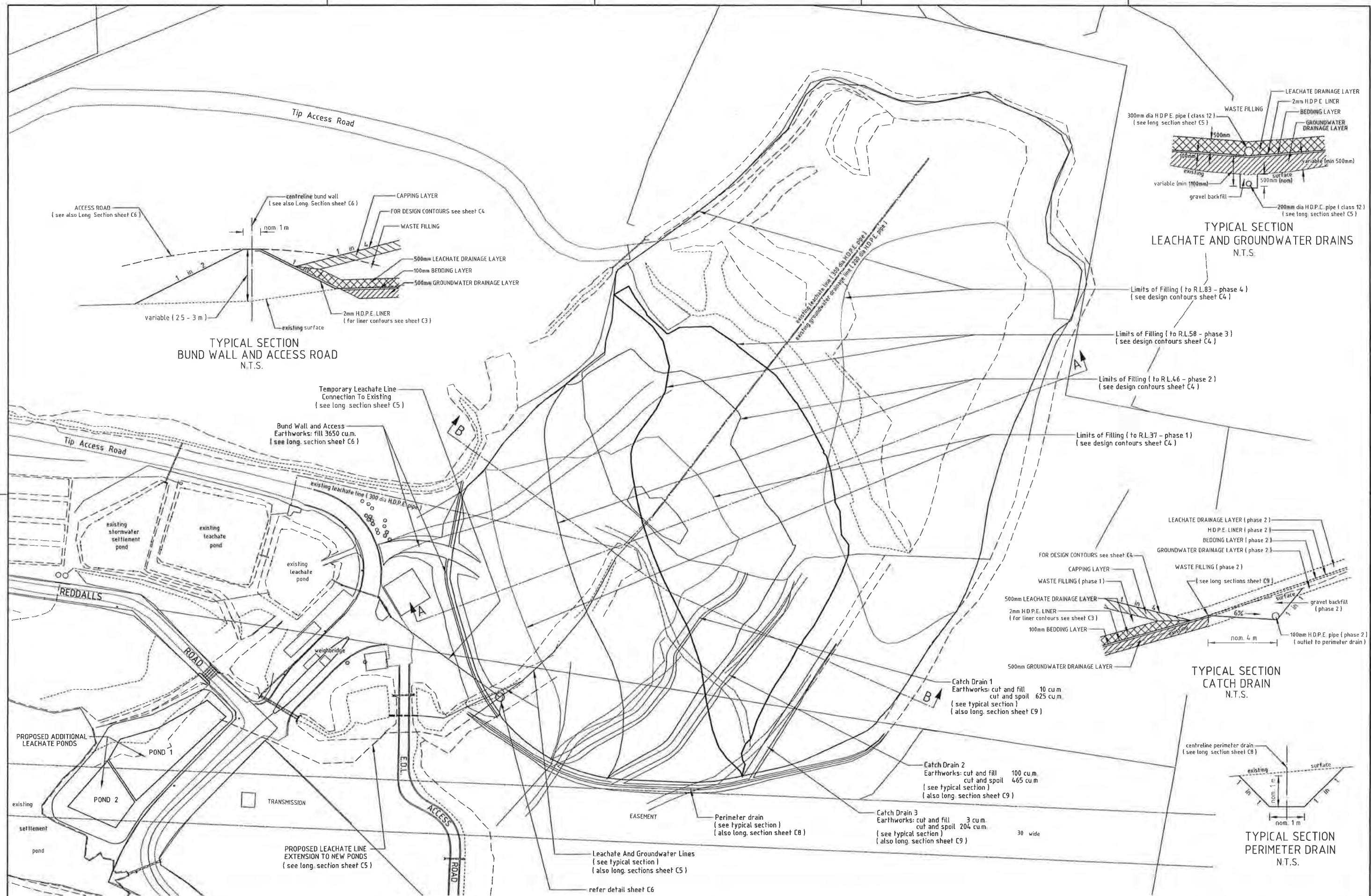
Note: 3 Drainage and stormwater details from WCC Drawing P331/17 S OF 29 and 9 of 29

Note: 4 Rainforest marked in from aerial photographs

[illegible]



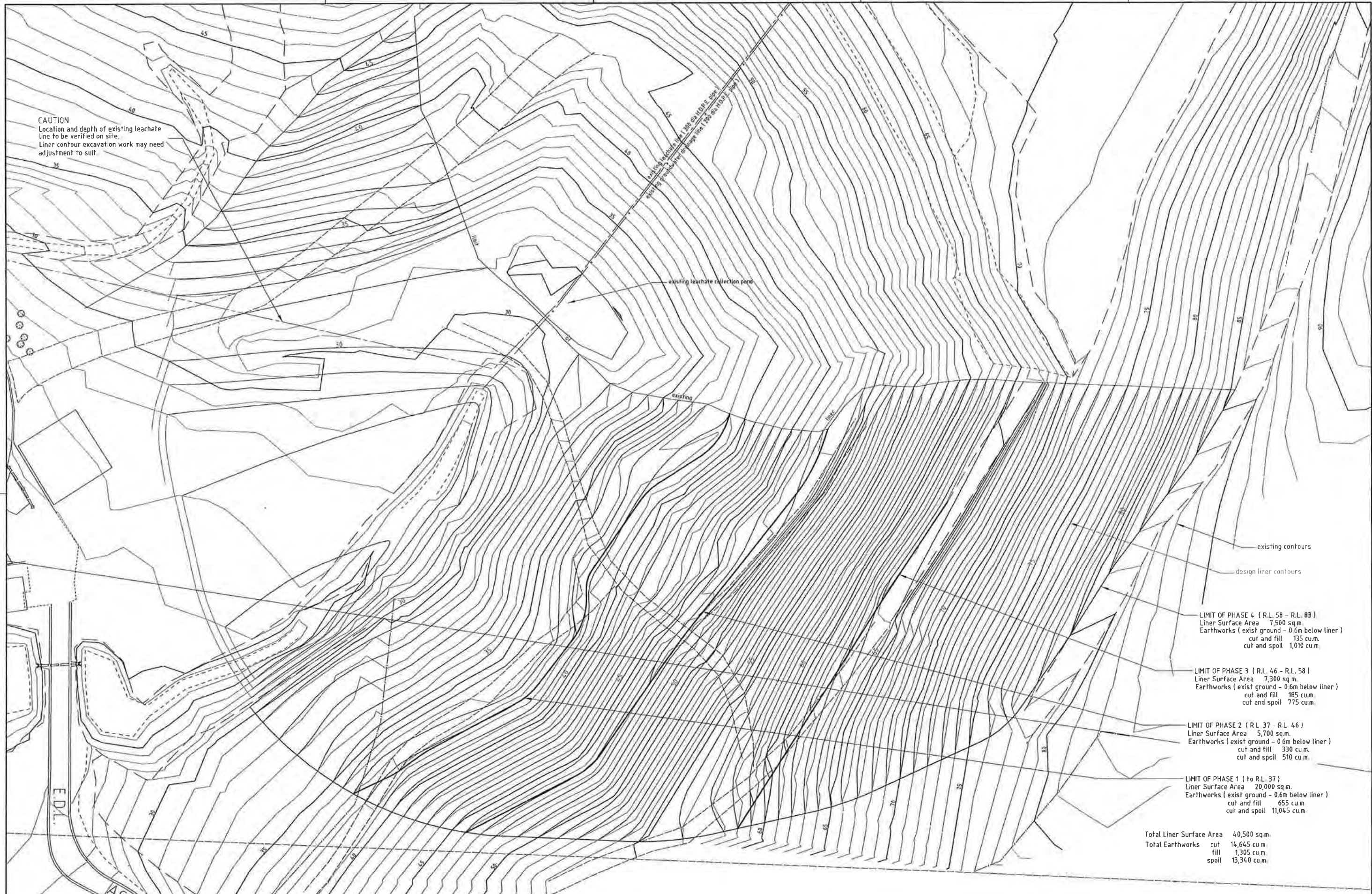
SCALES 1 : 750	DATUM A.H.D.	RELATED PLANS							DRAWN DESIGNED	CHECKED CHECKED	RECOMMENDED MANAGER	APPROVED DIRECTOR WORKS & TECHNICAL SERVICES	CITY OF WOLLONGONG WHYTES GULLY WASTE DEPOT WEST DAPTO	SHEET OF	FILE NO.	DRAWING NO. 943	ISSUE 1
	SURVEYOR B.H. 2/92																
	BOOKS L 91/12	ESTIMATE No.															
	NO.	AMENDMENTS	DRAWN	APPRD	DATE	PASSED	DATE	DATE	DATE								



PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

				DATUM AHD	SURVEYOR B.Hogan/M.Kubik	DRAWN R.Pittaway	DATE Nov 99	APPROVED (FOR COUNCIL USE ONLY)		SCALES	NORTH POINT	CITY OF WOLLONGONG		DESIGN OFFICE No FILE NUMBER		DES3791 SU16391		A1
				AZIMUTH ISG	FIELD BOOKS F83/1F93/1	CHECKED	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN	1 : 1000		WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 LAYOUT PLAN		SHEET 1 OF 14 SHEETS		SHEET No		ORIGINAL
1 Issued for discussion						DESIGNED R.Pittaway	DATE Nov 99							WOLLONGONG City of Innovation		2761	C1	1
ISSUE				DESCRIPTION	DRAWN	APPR'D	DATE	RELATED PLANS 1475,1320,2565		CHECKED				DESIGN DIVISION Ph. 02 42 277111				

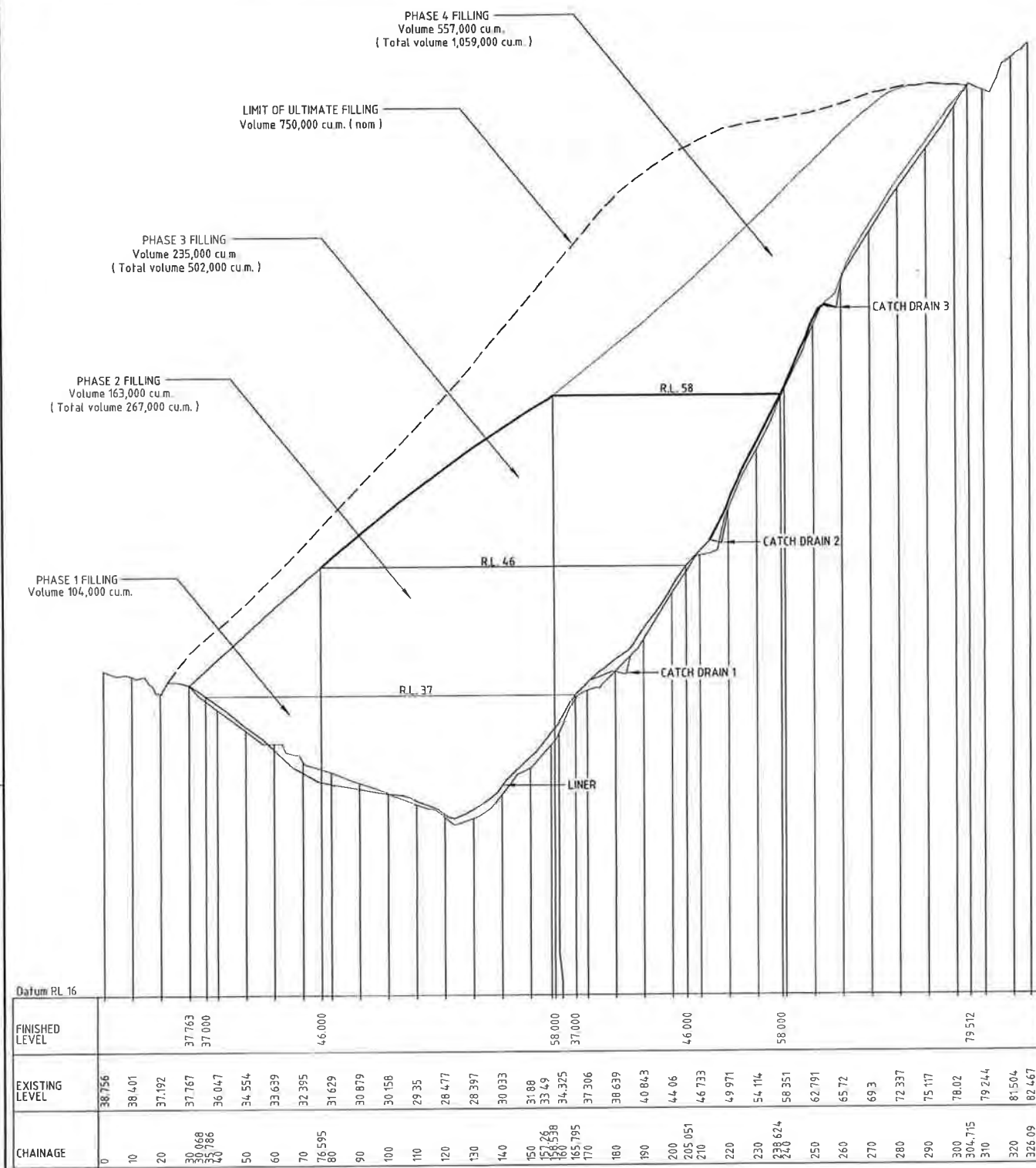
0 10 20 30 40 50 60 70 80 90 100mm ON ORIGINAL PLAN



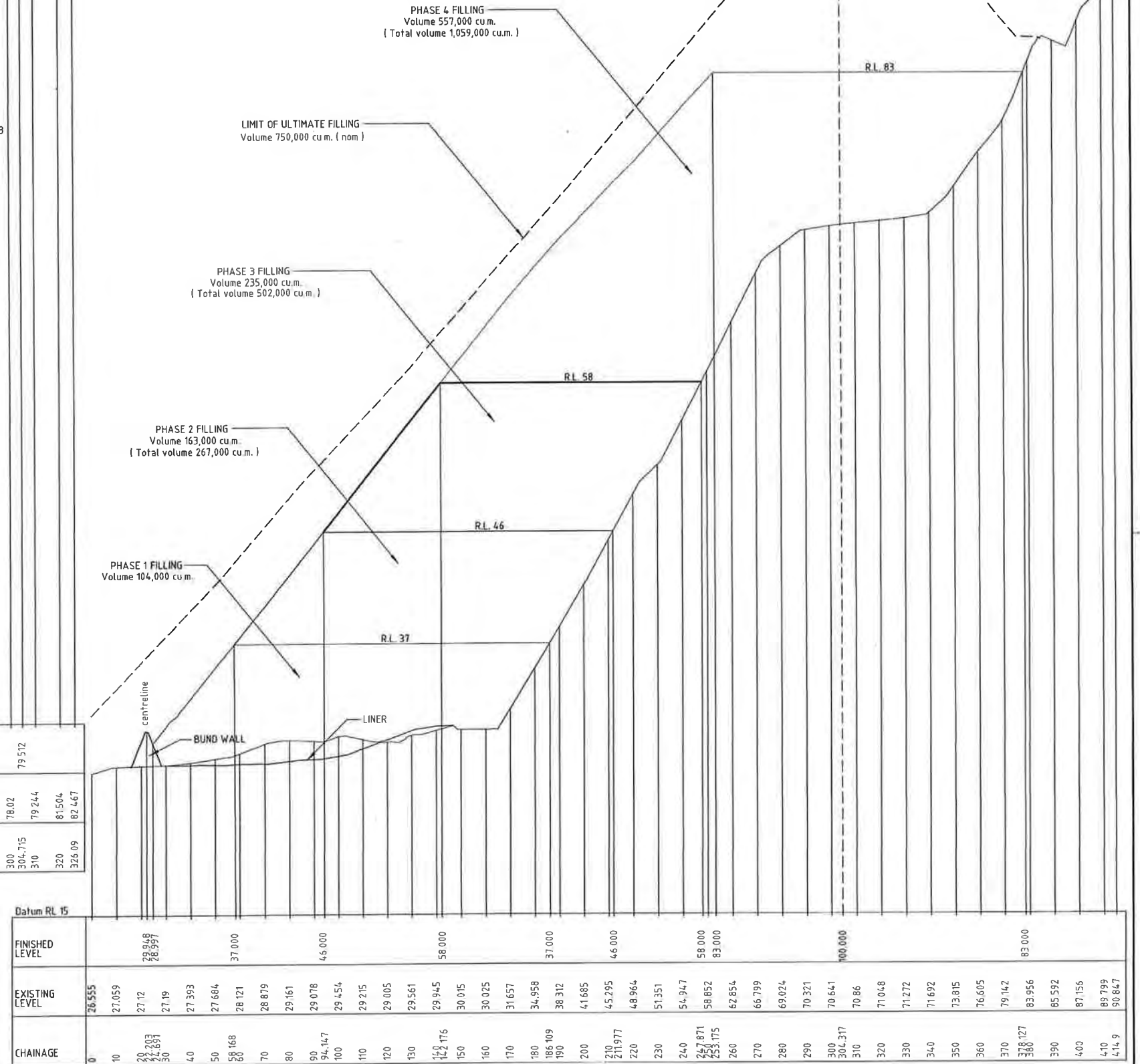
LIMIT OF PHASE 4 (R.L. 58 - R.L. 83)		
Liner Surface Area	7,500 sq.m.	
Earthworks (exist ground - 0.6m below liner)		
cut and fill	135 cu.m.	
cut and spoil	1,010 cu.m.	
LIMIT OF PHASE 3 (R.L. 46 - R.L. 58)		
Liner Surface Area	7,300 sq.m.	
Earthworks (exist ground - 0.6m below liner)		
cut and fill	185 cu.m.	
cut and spoil	775 cu.m.	
LIMIT OF PHASE 2 (R.L. 37 - R.L. 46)		
Liner Surface Area	5,700 sq.m.	
Earthworks (exist ground - 0.6m below liner)		
cut and fill	330 cu.m.	
cut and spoil	510 cu.m.	
LIMIT OF PHASE 1 (to R.L. 37)		
Liner Surface Area	20,000 sq.m.	
Earthworks (exist ground - 0.6m below liner)		
cut and fill	655 cu.m.	
cut and spoil	11,045 cu.m.	
Total Liner Surface Area		
40,500 sq.m.		
Total Earthworks		
cut	14,645 cu.m.	
fill	1,305 cu.m.	
spoil	13,340 cu.m.	

PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

				DATUM AHD	SURVEYOR B Hogan/M Kubik	DRAWN R.Pittaway	DATE Nov 99	APPROVED (FOR COUNCIL USE ONLY)		SCALES	NORTH POINT	CITY OF WOLLONGONG		DESIGN OFFICE No DES3791		A1 ORIGINAL
				AZIMUTH ISG	FIELD BOOKS F83/1/F93/1	CHECKED	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN					FILE NUMBER SU16391		
				RELATED PLANS 14,75,1920,2565		DESIGNED R.Pittaway	DATE Nov 99			1 : 500		WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 LINER CONTOURS		SHEET 3 OF 14 SHEETS		ISSUE
						CHECKED	DATE									
																1



TYPICAL SECTION B

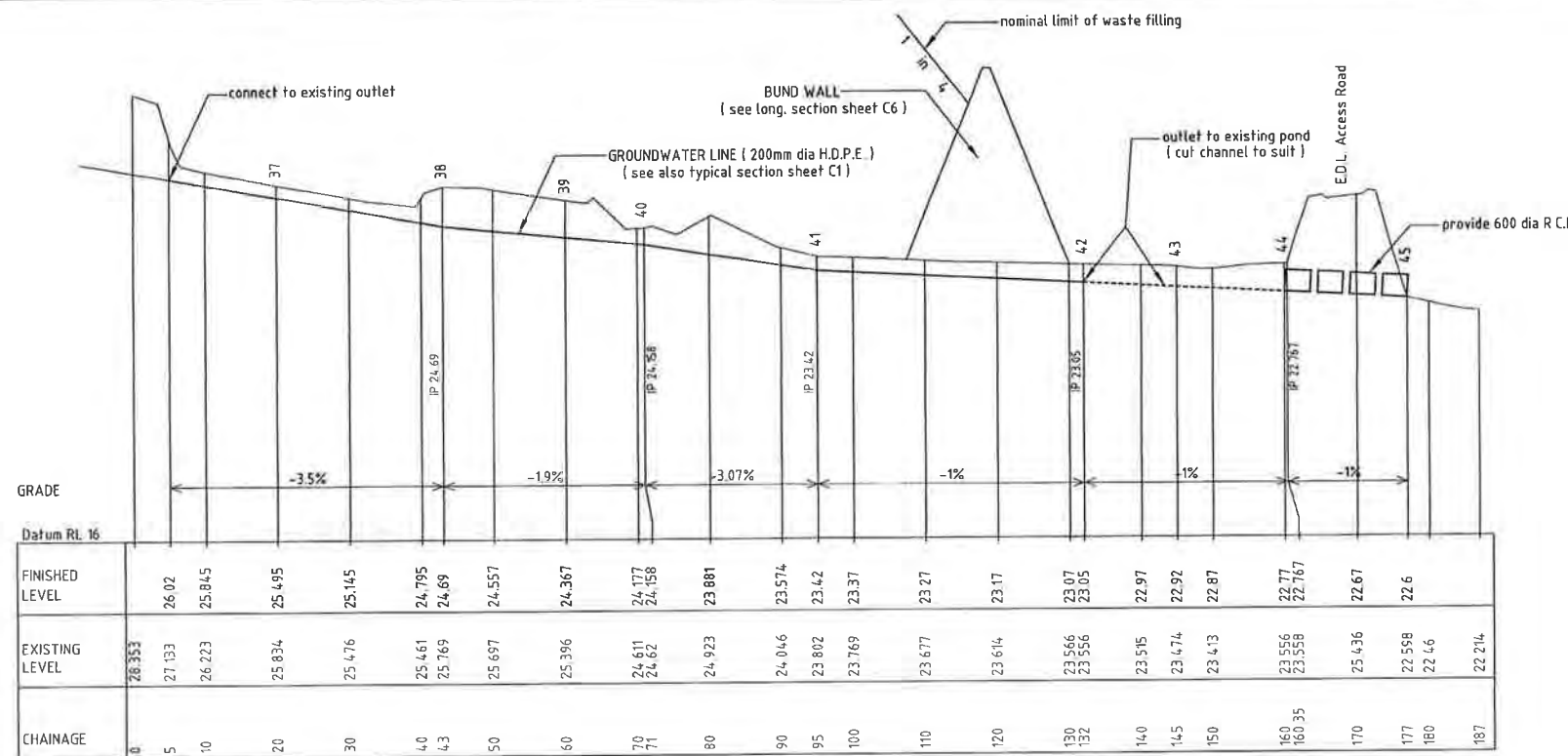


TYPICAL SECTION A

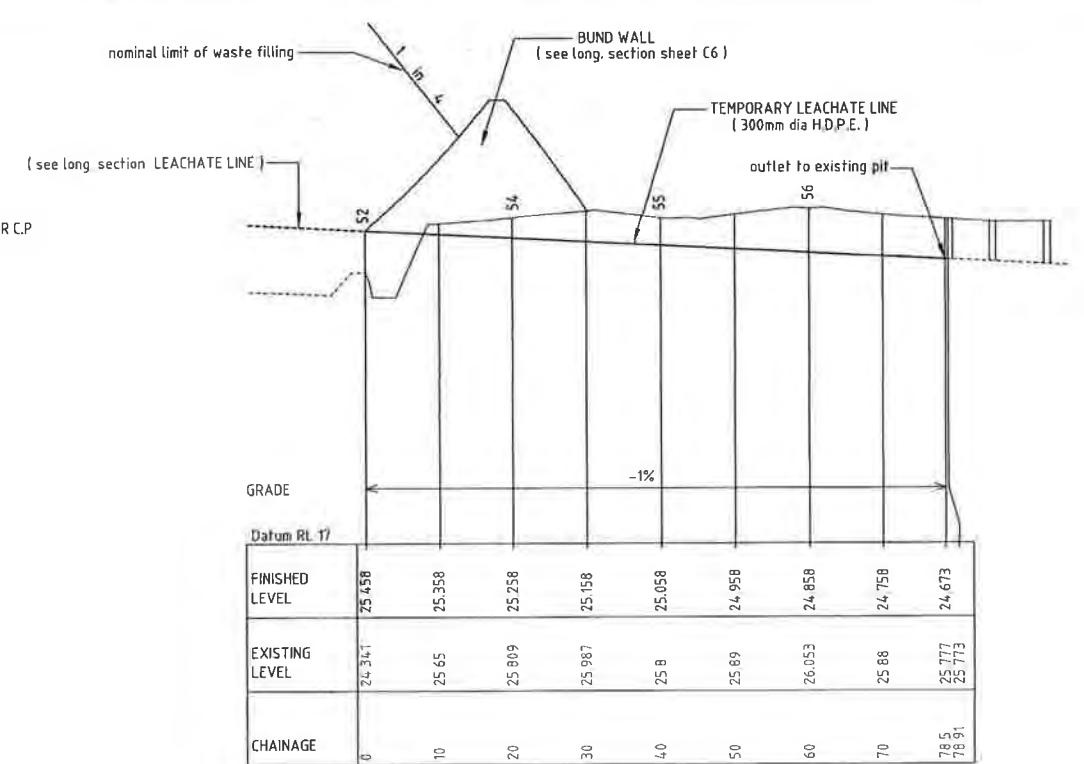
PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

1		Issued for discussion		R.P.	DEC 99	DATUM AHD SURVEYOR B. Hogan/M. Kubik DRAWN R. Pittaway DATE Nov 99 AZIMUTH ISG FIELD BOOKS FB3/1, FB3/1 CHECKED RELATED PLANS 1475, 1320, 2565 DESIGNED R. Pittaway CHECKED 		APPROVED SENIOR DESIGN ENGINEER MANAGER DESIGN 		SCALES HOR 1 : 1000 VERT 1 : 200 		NORTH POINT 		CITY OF WOLLONGONG WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 TYPICAL SECTIONS (A and B) 		DESIGN OFFICE No DES3791 FILE NUMBER SU16391 SHEET 7 OF 14 SHEETS DRAWING No. 2761 SHEET No. C7 		A1 ORIGINAL ISSUE 1 	
---	--	-----------------------	--	------	--------	--	--	--	--	--	--	-----------------	--	--	--	---	--	----------------------------------	--

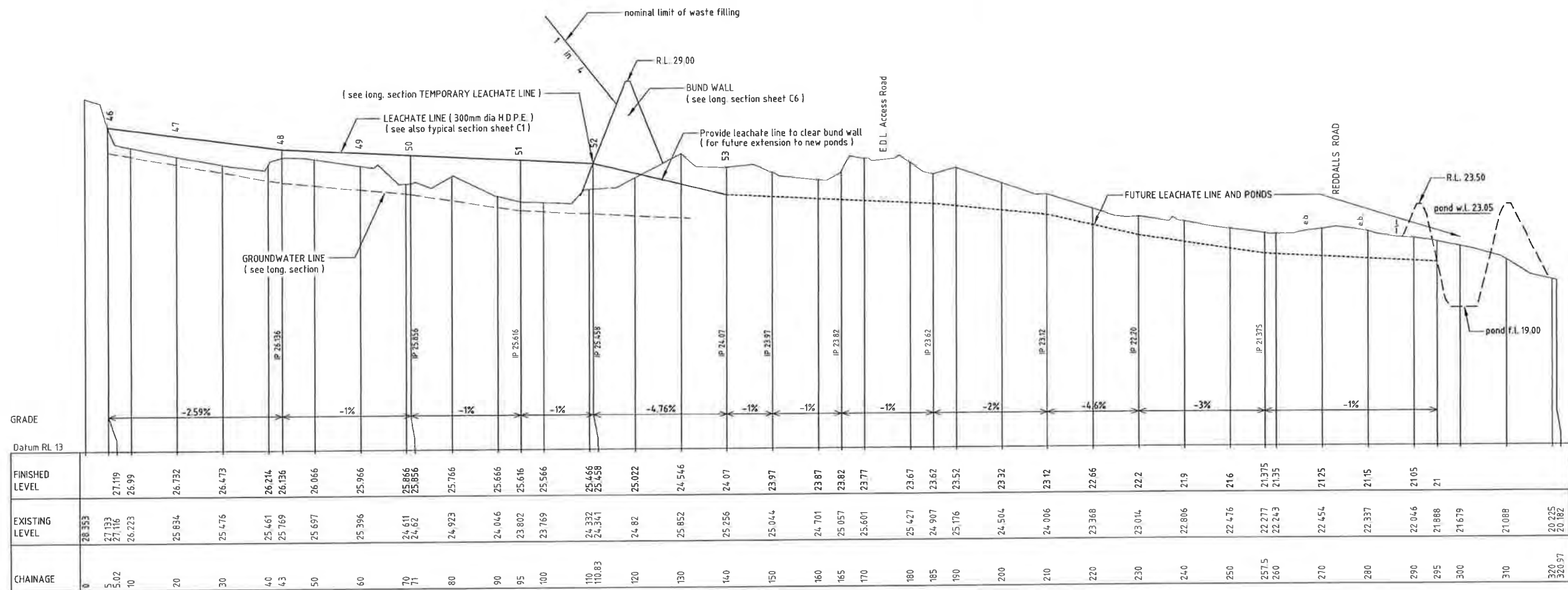
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LONGITUDINAL SECTION GROUNDWATER LINE



LONGITUDINAL SECTION TEMPORARY LEACHATE LINE

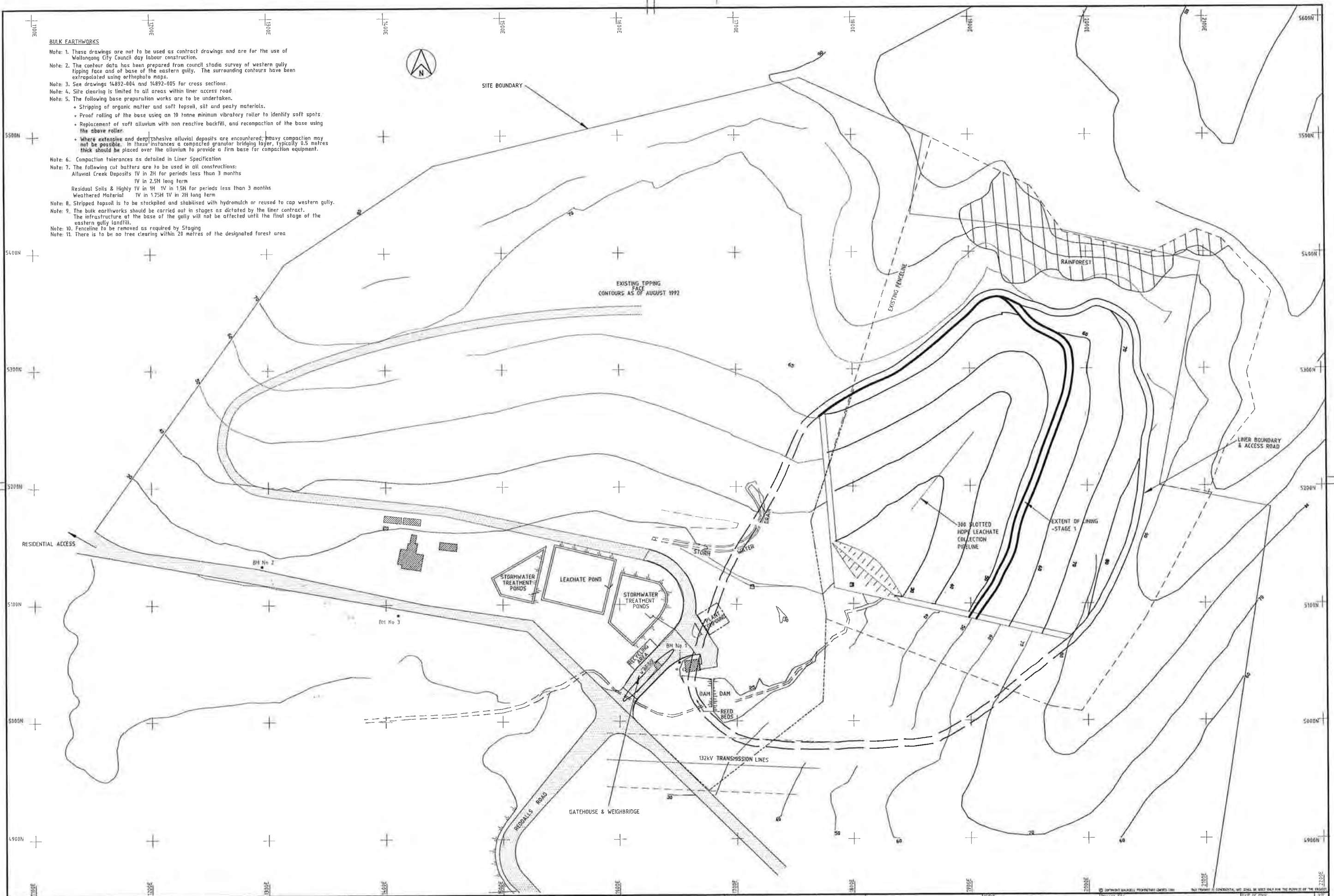


LONGITUDINAL SECTION LEACHATE LINE

PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

1 Issued for discussion		R.P.	DEC 99	DATUM AHD	SURVEYOR B. Hogan/M. Kubik	DRAWN R. Pittaway	DATE Nov 99	APPROVED (FOR COUNCIL USE ONLY)		SCALES	NORTH POINT	CITY OF WOLLONGONG		DESIGN OFFICE No DES3791	A1 ORIGINAL
ISSUE		DESCRIPTION	DRAWN	APPROVED	DATE	DATE	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN	HOR 1:500 VERT 1:100		WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 LONG. SECTIONS (Groundwater and Leachate)		FILE NUMBER S016391	
														SHEET 5 OF 14 SHEETS	
														DRAWING No 2761	SHEET No. C5
														ISSUE 1	

0 10 20 30 40 50 60 70 80 90 100mm ON ORIGINAL PLAN



- BULK EARTHWORKS**
- Note: 1. These drawings are not to be used as contract drawings and are for the use of Wollongong City Council day labour construction.
- Note: 2. The contour data has been prepared from council stadia survey of western gully tipping face and of base of the eastern gully. The surrounding contours have been extrapolated using orthophoto maps.
- Note: 3. See drawings 14892-004 and 14892-005 for cross sections.
- Note: 4. Site clearing is limited to all areas within liner access road.
- Note: 5. The following base preparation works are to be undertaken.
- + Stripping of organic matter and soft topsoil, silt and peaty materials.
 - + Proof rolling of the base using an 10 tonne minimum vibratory roller to identify soft spots.
 - + Replacement of soft alluvium with non reactive backfill, and recompaction of the base using the above roller.
 - + Where extensive and deep cohesive alluvial deposits are encountered, heavy compaction may not be possible. In these instances a compacted granular bridging layer, typically 0.5 metres thick should be placed over the alluvium to provide a firm base for compaction equipment.
- Note: 6. Compaction tolerances as detailed in Liner Specification
- Note: 7. The following cut buffers are to be used in all constructions:
- Alluvial Creek Deposits 1V in 2H for periods less than 3 months
 - 1V in 2.5H long term
 - Residual Soils & Highly 1V in 4H 1V in 15H for periods less than 3 months
 - Weathered Material 1V in 1.75H 1V in 2H long term
- Note: 8. Stripped topsoil is to be stockpiled and stabilised with hydromulch or reused to cap western gully.
- Note: 9. The bulk earthworks should be carried out in stages as dictated by the liner contract. The infrastructure at the base of the gully will not be affected until the final stage of the eastern gully landfill.
- Note: 10. Fenceline to be removed as required by Staging
- Note: 11. There is to be no tree clearing within 20 metres of the designated forest area

11	0.2X3	GENERAL REVISION
12	0.2X3	GENERAL REVISION
REV	DATE	DESCRIPTION

CO-ORDINATES ARE BASED ON INTEGRATED SURVEY GRID (ISG) VALUES.

QUALITY CHECK	NAME	SIGNATURE	DATE
DRAWN	P. POY		
DESIGNED	E. HADEN		
PROJECT DIRECTOR	D. HALL		

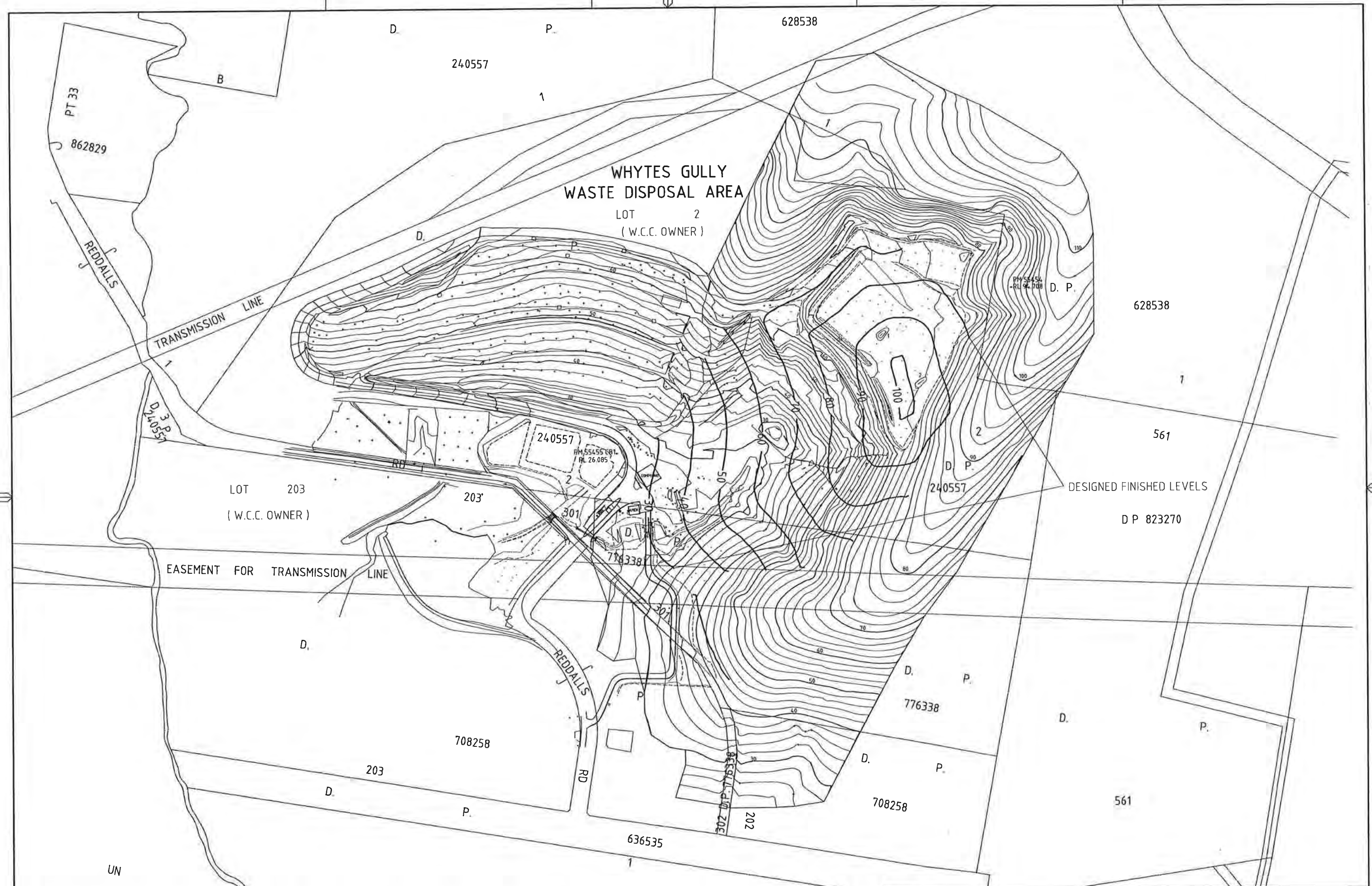
COMPLETION OF THE QUALITY CHECK IS EVIDENCE THAT THE DESIGN AND DRAWING HAVE BEEN REVIEWED AS REQUIRED BY THE REQUIREMENTS OF THE CLIENT BODY

MAUNSELL PROPRIETARY LIMITED
A.C.N. 004 848 934

2926

PROJECT FILE	WHYTES GULLY LANDFILL	DATE OF ISSUE	5.2.93	REV.	A0
DRAWING TITLE	STAGE 1 EXTENT OF LINER AND LEACHATE DRAIN	DATE PLOTTED	23.10.92	REV.	0
PROJECT NO.	14892-008	DATE STATUS			
PRELIMINARY					

2926



PLAN NOT FOR CONSTRUCTION

CITY OF WOLLONGONG

WHYTES GULLY WASTE DISPOSAL AREA
WEST DAPTO
CONTOURS AT 19th JUNE 2000

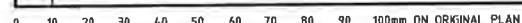


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FILE NUMBER SU16245	
SHEET 1 OF 1 SHEETS	
DRAWING No.	SHEET No.

2882	SV
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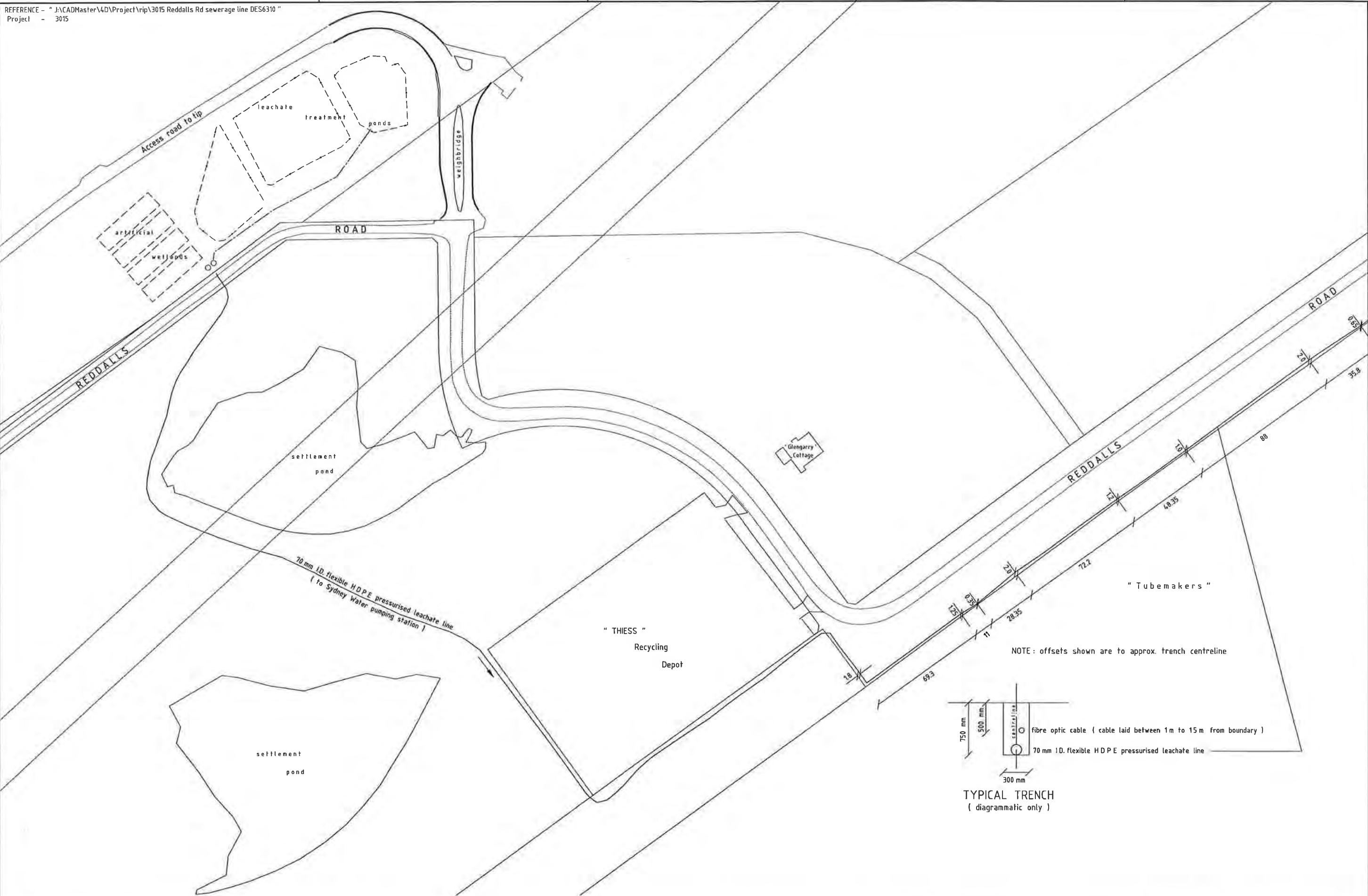
A1
ORIGINAL
ISSUE
A

				DATUM AHD	SURVEYOR B.HOGAN	DRAWN M.K. <i>[Signature]</i>	DATE JUNE/2000	APPROVED	
				AZIMUTH	FIELD BOOKS F.B.W.G.	CHECKED B.H. <i>[Signature]</i>	DATE JUNE/2000	SENIOR DESIGN ENGINEER	MANAGER DESIGN
				RELATED PLANS		DESIGNED	DATE		
				331		CHECKED	DATE	DATE	DATE
A	ISSUED TO EPA	M.K.	B.H.	JUNE/00					





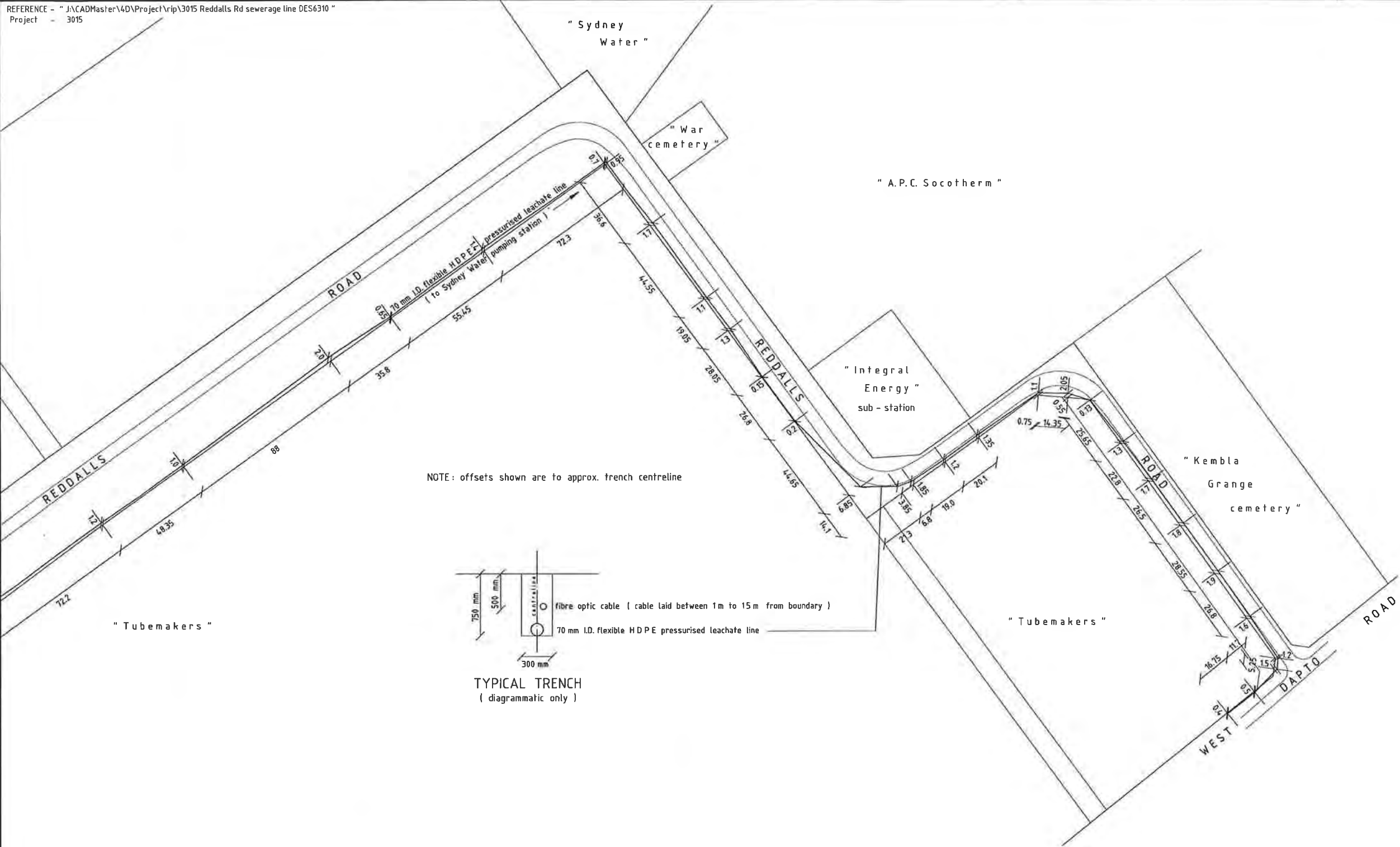
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				A.H.D.		R. Pittaway	Jan '98			1 : 1000		WHYTES GULLY WASTE DISPOSAL AREA STAGE II - 2 (eastern gully)		FILE NUMBER		R		
						CHECKED	DATE	SENIOR DESIGN ENGINEER				SHEET 2 OF 3 SHEETS				ISSUE		
				SURVEYOR	RELATED PLANS	DESIGNED	DATE					DRAWING NO.		SHEET No.				
NO.	AMENDMENTS			DRAWN	APPROD	DATE	B. Hogan	1475	CHECKED	DATE	DATE	2565		C2		1		



PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

				DATUM AHD	SURVEYOR B.Hogan	DRAWN R.Pittaway	DATE Feb 2001	APPROVED (FOR COUNCIL USE ONLY)		SCALES	NORTH POINT	CITY OF WOLLONGONG		DESIGN OFFICE No. DES6310		A1
				AZIMUTH ISG	FIELD BOOKS F83/1 F93/1	CHECKED	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN	1 : 1000		Sketch plan showing location of sewerage line from Whytes Gully treatment ponds to West Dapto Road Reddalls Road West Dapto		FILE NUMBER SUT7663		ORIGINAL
				RELATED PLANS		DESIGNED	DATE					DRAWING No. 3015	SHEET No. SK1	SHEET 1 OF 2 SHEETS		ISSUE
1 Issued for discussion				DRAWN	APPR'D	DATE	DATE	DATE	DATE					DRAWING No. 3015		1

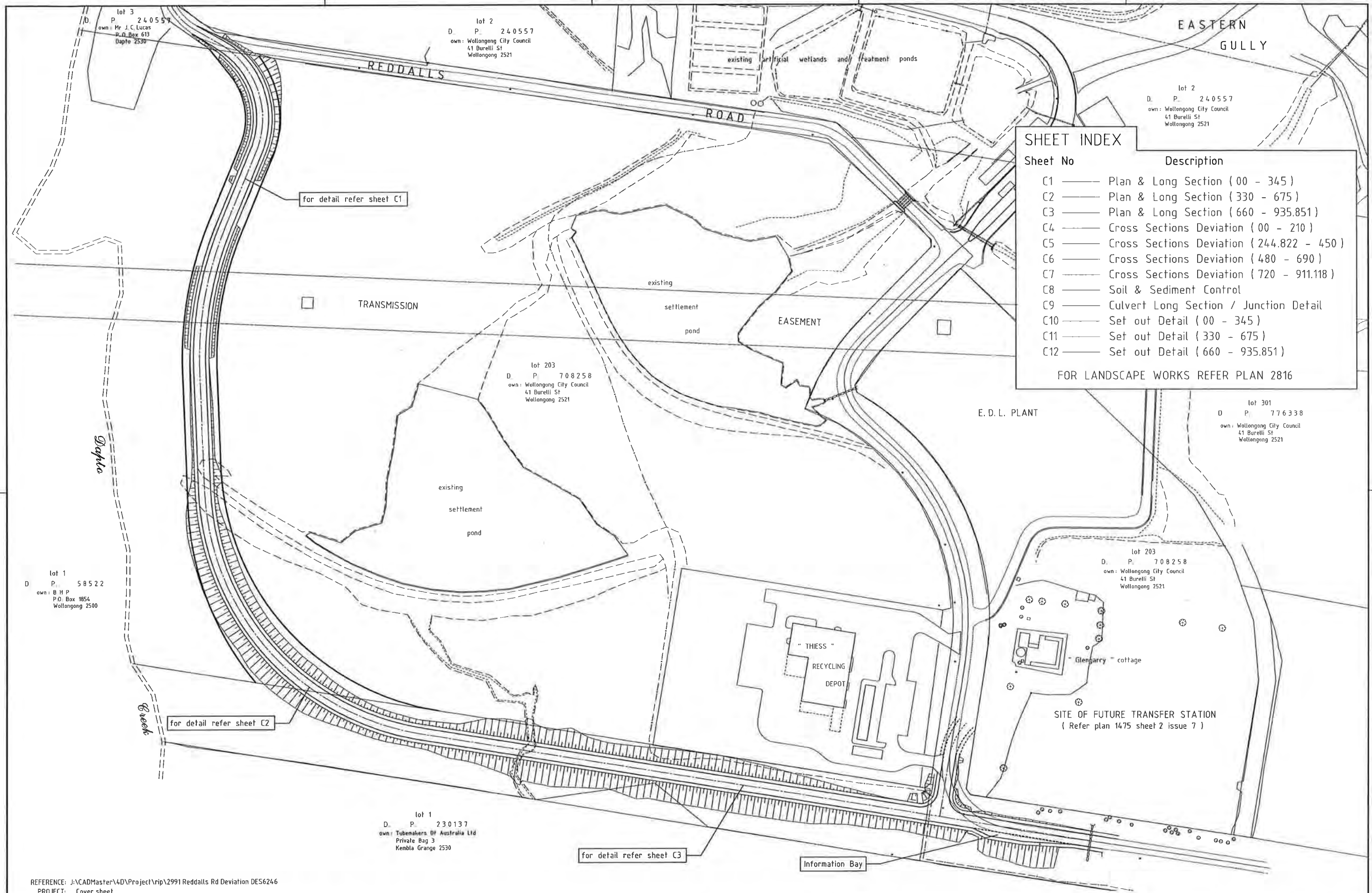
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PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

				DATUM AHD	SURVEYOR B.Hogan	DRAWN R.Pittaway	DATE Feb 2001	APPROVED (FOR COUNCIL USE ONLY)		SCALES 1 : 1000	NORTH POINT 	CITY OF WOLLONGONG Sketch plan showing location of sewerage line from Whytes Gully treatment ponds to West Dapto Road Reddalls Road West Dapto	 DESIGN DIVISION Ph. 02 42 277111	DESIGN OFFICE No DES6310	A1	
				AZIMUTH ISG	FIELD BOOKS F83/1 F93/1	CHECKED	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN					FILE NUMBER S017663	ORIGINAL	
				RELATED PLANS		DESIGNED	DATE							SHEET 2 OF 2 SHEETS		
1	Issued for discussion	R.P.	Feb 01			CHECKED	DATE	DATE	DATE					DRAWING No. 3015	SHEET No. SK2	ISSUE 1
ISSUE		DESCRIPTION		DRAWN	APPR'D	DATE			DATE	DATE						

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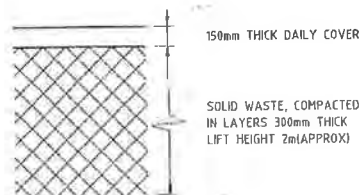
SHEET INDEX	
Sheet No	Description
C1	Plan & Long Section (00 - 345)
C2	Plan & Long Section (330 - 675)
C3	Plan & Long Section (660 - 935.851)
C4	Cross Sections Deviation (00 - 210)
C5	Cross Sections Deviation (244.822 - 450)
C6	Cross Sections Deviation (480 - 690)
C7	Cross Sections Deviation (720 - 911.118)
C8	Soil & Sediment Control
C9	Culvert Long Section / Junction Detail
C10	Set out Detail (00 - 345)
C11	Set out Detail (330 - 675)
C12	Set out Detail (660 - 935.851)
FOR LANDSCAPE WORKS REFER PLAN 2816	

REFERENCE: J:\CADMaster\4D\Project\rip\2991 Reddalls Rd Deviation DES6246
PROJECT: Cover sheet

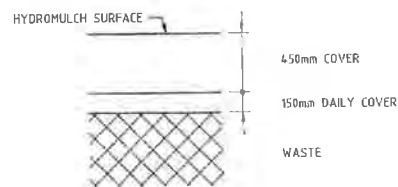
APPROVED FOR CONSTRUCTION

				DATUM AHD	SURVEYOR B.Hogan/M.Kubik	DRAWN R.Pittaway	DATE Jan 2001	APPROVED (FOR COUNCIL USE ONLY)		SCALES	NORTH POINT	CITY OF WOLLONGONG WHYTES GULLY WASTE DISPOSAL AREA REDDALLS ROAD WEST DAPTO Deviation West Of Thieess Recycling Depot COVER SHEET	 DESIGN DIVISION Ph. 02 42 277111	DESIGN OFFICE No DES6246	A1 ORIGINAL
				AZIMUTH ISG	FIELD BOOKS F83/1 F93/1	CHECKED S.Walsh	DATE Apr 2001	SENIOR DESIGN ENGINEER MANAGER DESIGN		1 : 1000				FILE NUMBER SUT7558	
A Issued for construction				RP.	K.M.	Apr '01	RELATED PLANS 1475/2633		DESIGNED R.Pittaway	DATE Jan 2001					
ISSUE	DESCRIPTION			DRAWN	APPR'D	DATE			CHECKED K.Harrison	DATE Apr 2001	DATE 23/4/01	DATE 23/8/01			

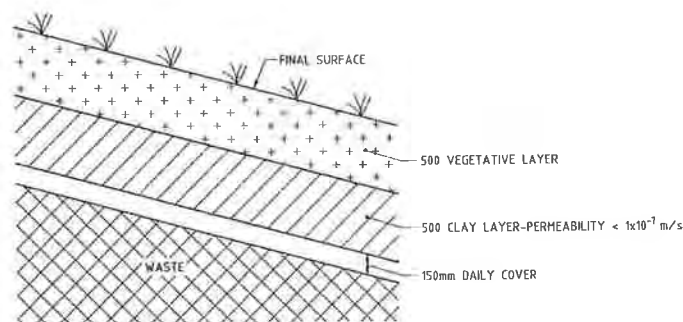
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DETAIL 01
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DAILY COVER

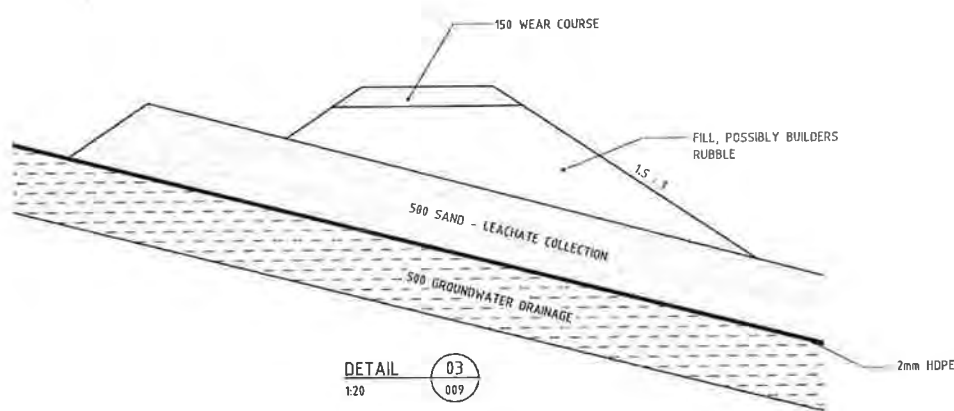


DETAIL 02
1:20
INTERIM COVER - FACES EXPOSED FOR > 3 MONTHS - MIN GRADE 3%

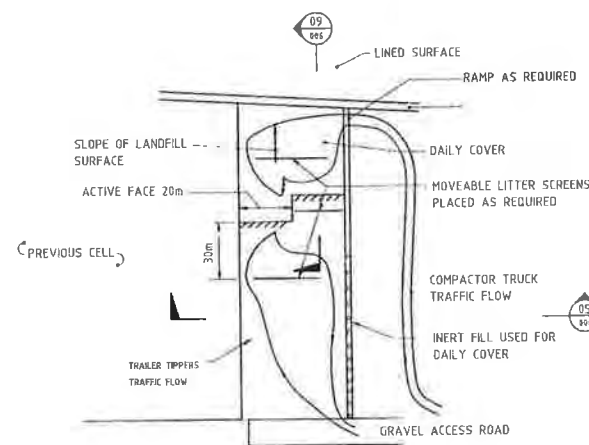


DETAIL 03
1:20
FINAL CAP DETAILS

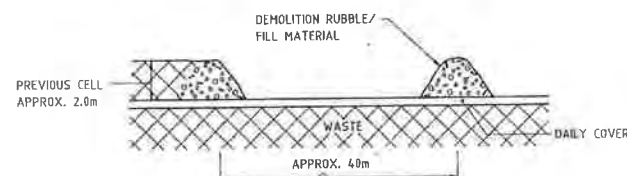
COVER DETAILS



DETAIL 04
1:20
TEMPORARY ACCESS ROAD DETAIL

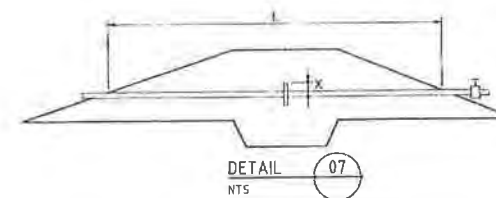


DETAIL 05
NTS
TYPICAL CELL LAYOUT

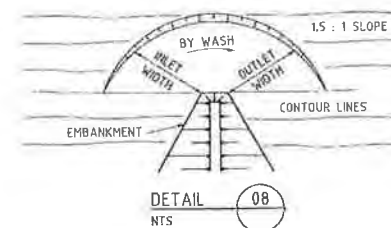


DETAIL 06
NTS
CELL SEPARATION BERM

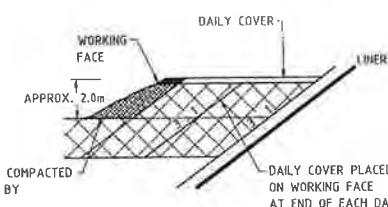
CELL LAYOUT DEATILS



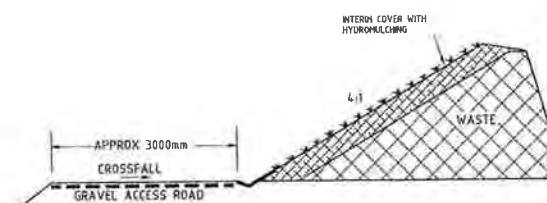
DETAIL 07
NTS
TYPICAL EMBANKMENT DETAILS



DETAIL 08
NTS
TYPICAL SPILLWAY DETAIL

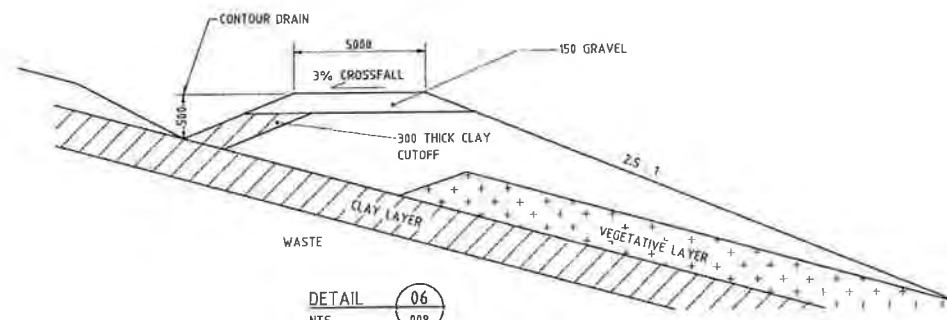


DETAIL 09
NTS
TYPICAL FILLING SEQUENCE



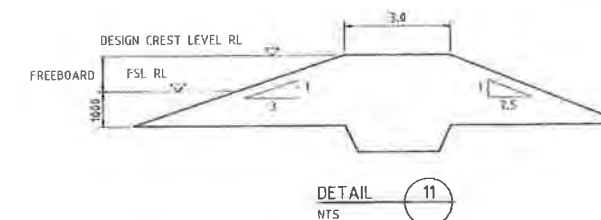
DETAIL 10
NTS
DRAINAGE AND ACCESS FROM INTERIM COVER

FILLING SEQUENCE TO INTERIM COVER



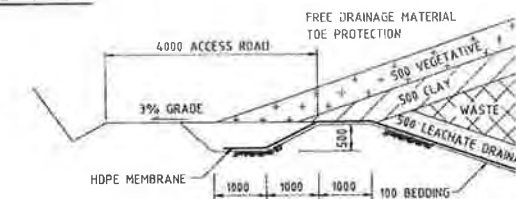
DETAIL 11
NTS
ACCESS ROAD DETAIL - FINAL COVER

	DAM SPECIFICATIONS (M)					
	FREEBOARD	INLET	OUTLET	x	Ø	L
DAM 1	0.75	7.5	18	1.9	0.15	19

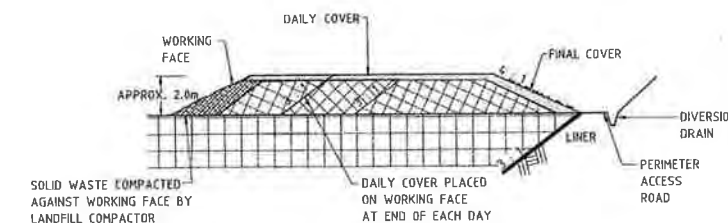


DETAIL 12
NTS
TYPICAL EMBANKMENT CROSS SECTION

SEDIMENT DAM DETAILS



DETAIL 13
1:50
EDGE DETAILS



DETAIL 14
NTS
TYPICAL FILLING FOR FINAL COVER - BACK FACE

FILLING SEQUENCE TO FINAL COVER

MATERIAL TYPES

GROUNDWATER DRAINAGE	
BEDDING	
FREE DRAINAGE MATERIAL	
LEACHATE DRAINAGE	
PROTECTIVE LAYER	
VEGETATIVE LAYER	
CLAY LAYER	

OPERATION DETAIL NOTES

- THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAY LABOUR CONSTRUCTION.
- OPERATIONAL DETAILS ARE FURTHER OUTLINED IN THE WHITES GULLY LANDFILL MANAGEMENT PLAN.

1320 P331

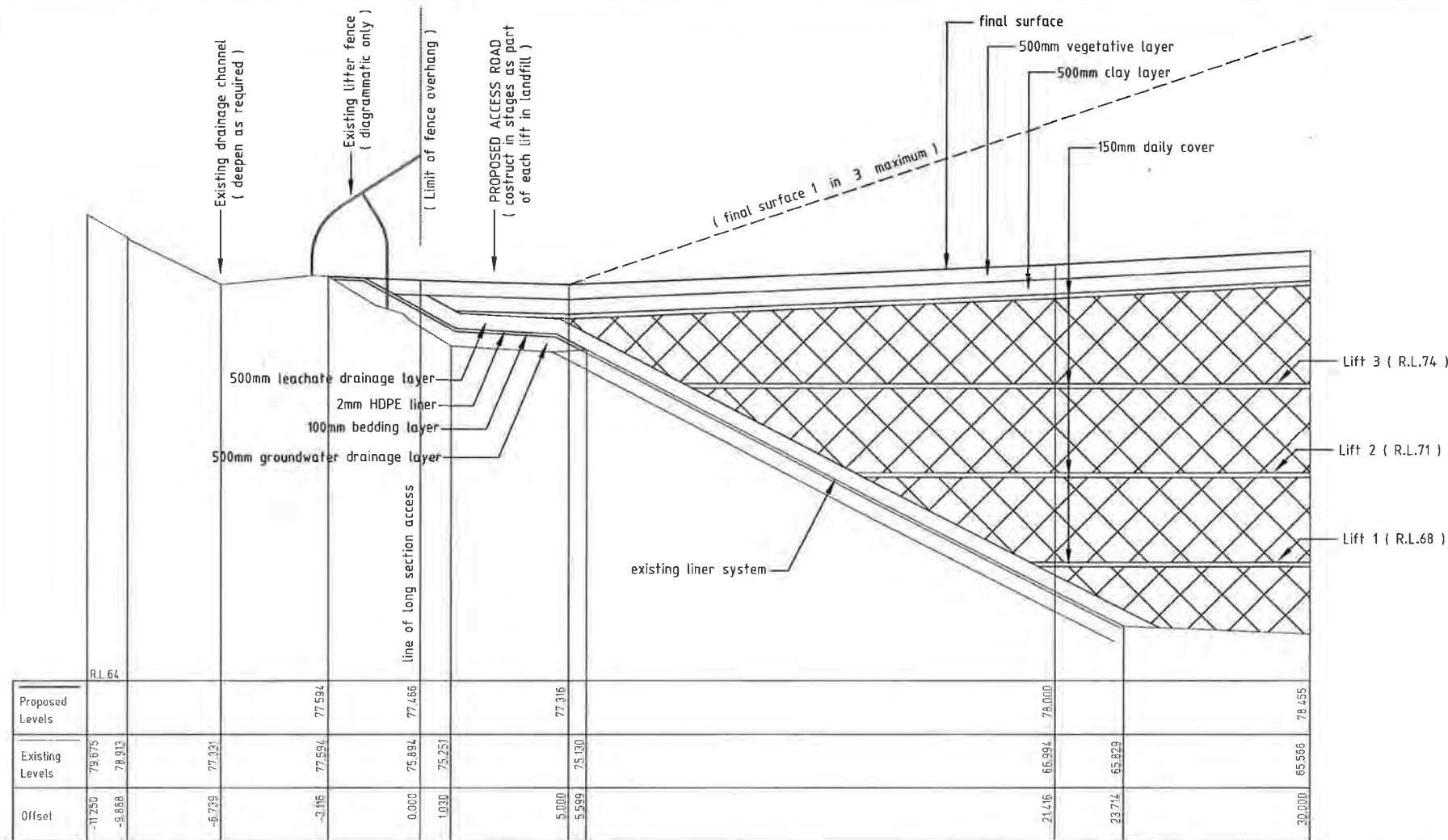
REV	DATE	DESCRIPTION	BY	CHK
01	18.3.93	GENERAL REVISION		
02	18.3.93	GENERAL REVISION		

QUALITY REVIEW	NAME	SIGNATURE	DATE
QUALITY CHECK	A.M. JORD		
DESIGNER CHECK	S. MADEM		
PROJECT DIRECTOR APPROVAL	D. MALEDO		

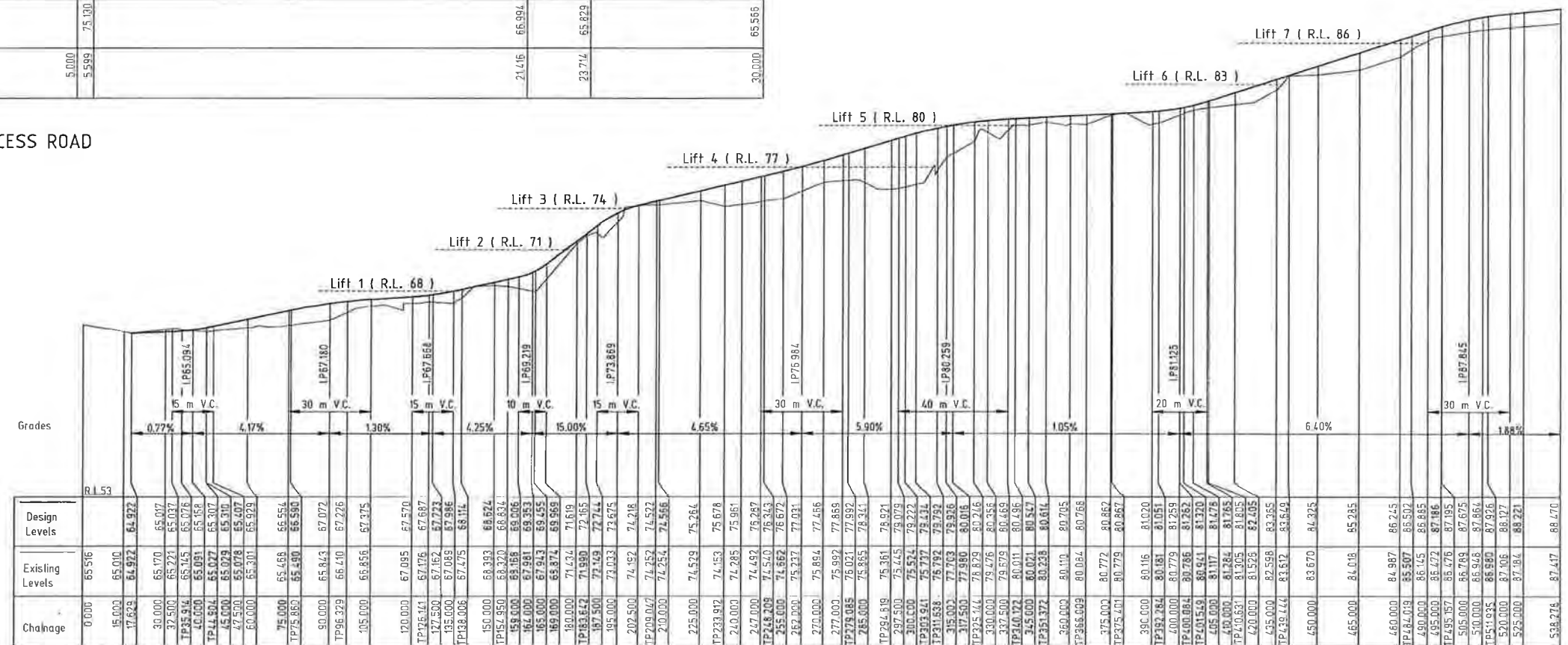
MAUNSELL
PROPRIETARY
LIMITED
A.C.N. 004 846 854



PROJECT TITLE	WHITES GULLY LANDFILL	DATE OF ISSUE	17.3.93	SHEET	A0
DRAWING TITLE	OPERATIONAL DETAILS	DATE PLOTTED	18.3.93	REV	02
DESIGNER	14892-006	DESIGN STATUS	DESIGN COMPLETE		



TYPICAL SECTION ACCESS ROAD
Scale 1 : 100



LONGITUDINAL SECTION ALONG access

SCALES		CITY OF WOLLONGONG		DESIGN OFFICE NUMBER DES 2127		DRAWING TYPE R	
Horiz 1 : 1000		WHYTES GULLY		FILE NUMBER		SHEET 3 OF 3 SHEETS	
Vert 1 : 200		WASTE DISPOSAL AREA		DRAWING NO.		SHEET No.	
		STAGE II - 2 (eastern gully)		2565		C3	
				1			



Note: 1. These drawings are not to be used as contract drawings and are for the use of Wollongong City Council day labour construction.

Note: 2. The contour data has been prepared from council stadia survey of western gully tipping face and of base of the eastern gully. The surrounding contours have been extrapolated using orthophoto maps.

Note: 3. Drainage and stormwater details from WCC Drawing P331/17 S 0F 29 and 9 of 29

Note: 4. Reinforest marked in from aerial photograph



REV.	DATE:	DESCRIPTION:	DWR	PAGE
02	12.1.11	GENERAL REVISION		
01	1.11.11	GENERAL REVISION		

CO-ORDINATES ARE BASED ON
INTERGRATED SURVEY GRID (ISG)
VALUES.

FEET			
QUALITY RECORD	NAME	DATE	SCALE
DRAWER CHECK	P. POY		
DESIGNER CHECK	E. MACLEW		
PROJECT DIRECTOR APPROVAL	D. MACLEOD		
COMPLETION OF THE QUALITY RECORD IS EVIDENCE THAT THE DESIGN AND DRAWINGS HAVE BEEN VERIFIED AS CONFORMING WITH THE REQUIREMENTS OF THE CLIENT ORDER.			



MAUNSELL
PROPRIETARY
LIMITED



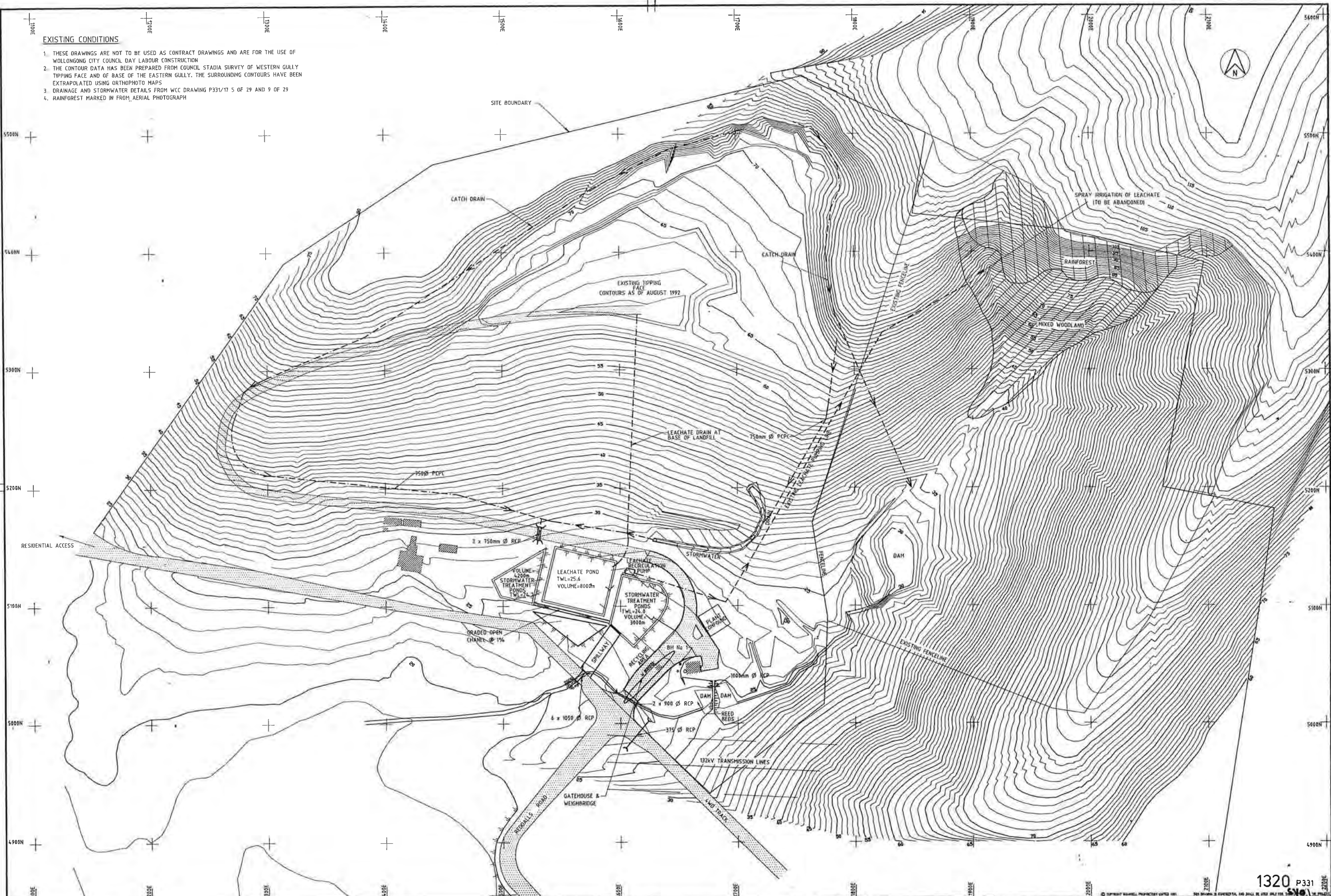
PROJECT TITLE
WHYTES GULLY LANDFILL

DRAWING NO.
SITE PLAN : EXISTING FACILITIES

DATE OF ISSUE	10.2.93	SEC	A0
CMS REFERENCE	PLAN10DWG	DATE EXPIRE	10.2.93
CMS NO	14892-001	REV	01
CMS STATUS	PRELIMINARY		

EXISTING CONDITIONS

1. THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAY LABOUR CONSTRUCTION
2. THE CONTOUR DATA HAS BEEN PREPARED FROM COUNCIL STADIA SURVEY OF WESTERN GULLY TIPPING FACE AND OF BASE OF THE EASTERN GULLY. THE SURROUNDING CONTOURS HAVE BEEN EXTRAPOLATED USING ORTHOPHOTO MAPS
3. DRAINAGE AND STORMWATER DETAILS FROM WCC DRAWING P331/17 5 OF 29 AND 9 OF 29
4. RAINFOREST MARKED IN FROM AERIAL PHOTOGRAPH



NO.	DATE	REVISION
1	29/09/93	GENERAL REVISION
2	14/09/93	GENERAL REVISION

CO-ORDINATES ARE BASED ON INTEGRATED SURVEY GRID (ISG) VALUES.

NAME	PROJECT	DATE
MAUNSELL PROPRIETARY LIMITED	WHYTES GULLY LANDFILL	29/09/93
DESIGNED BY	ENGINEER	DATE
APPROVED BY	ENGINEER	DATE

MAUNSELL PROPRIETARY LIMITED

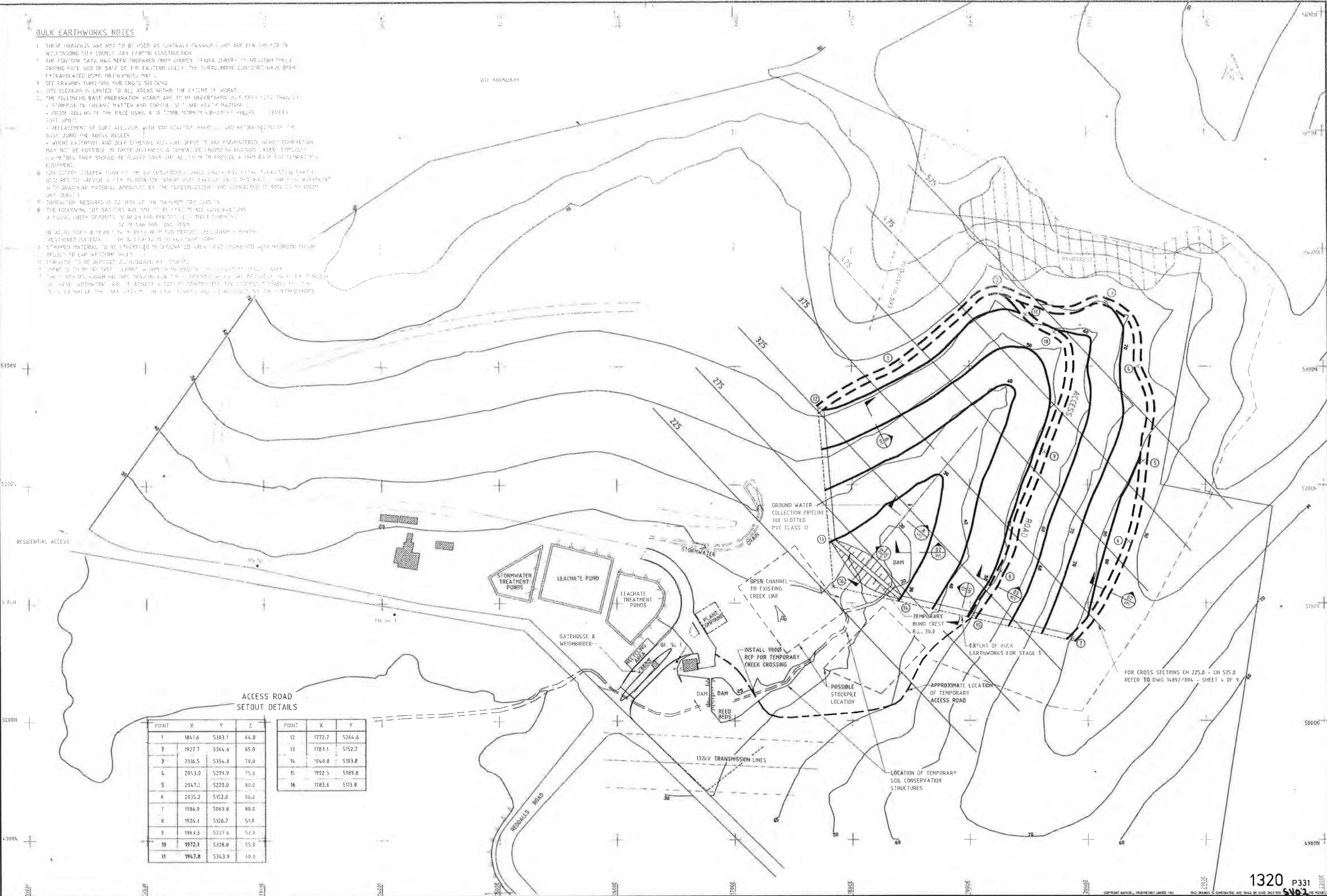
1320 P331

14892-001 02

DESIGN COMPLETE

BULK EARTHWORKS NOTES

1. THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAY LABOUR CONSTRUCTION.
2. THE CONTOUR DATA HAS BEEN PREPARED FROM COUNCIL STADIA SURVEY OF WESTERN GULLY TIPPING RATE AND OF BANK OF THE EASTERN GULLY. THE SURROUNDING CONTOURS HAVE BEEN EXTRAPOLATED USING ORTHOPHOTO MAPS.
3. SEE DRAWING 14892/004 FOR CROSS SECTIONS.
4. SITE CLEARING IS LIMITED TO ALL AREAS WITHIN THE EXTENT OF WORKS.
5. THE FOLLOWING BASE PREPARATION WORKS ARE TO BE UNDERTAKEN IN 500mm LAYERS:
 - a. STOPPING OF ORGANIC MATTER AND TOPSOIL SPOT AND HEAVY MATERIALS.
 - b. PROOF ROLLING OF THE BASE USING A 10 TONNE MINIMUM VIBRATORY ROLLER. CENTRE SPOT SPOTS.
 - c. REPLACEMENT OF SOFT ALLUVIUM WITH NON REACTIVE MATERIAL AND ROLLING SECTION OF THE BASE USING THE ABOVE ROLLER.
 - d. WHERE EXTENSIVE AND DEEP COMBING ALLUVIAL DEPOSITS ARE ENCOUNTERED HEAVY COMPACTION MAY NOT BE POSSIBLE IN THESE INSTANCES A COMPACTED GRANULAR BASE LAYER (TYPICALLY 100mm THICK) SHOULD BE PLACED OVER THE ALLUVIUM TO PROVIDE A FIRM BASE FOR COMPACTION REQUIREMENT.
 - e. FOR DEEPER STEEPER THAN 1:1 THE SUBSOILS SHOULD BE EXPOSED AND EXCAVATED TO THAT LEVEL TO PROVIDE A FIRM FOUNDATION WHERE DEEP EXCAVATION IS NOT FEASIBLE. THE EXCAVATION SHOULD BE FILLED WITH GRANULAR MATERIAL APPROVED BY THE SUPERVISOR AND COMPACTION TO 95% OF MAXIMUM DRY DENSITY.
 - f. COMPACTION REQUIRED IS TO 95% OF THE MAXIMUM DRY DENSITY.
6. THE FOLLOWING CUT BANKS ARE NOT TO BE MADE IN ALL DIRECTIONS:
 - a. RIVALS CREEK DEPOSITS IN 24 HOUR PERIODS E.G. THIS IS THE MAIN RIVALS CREEK.
 - b. IN 1:1 TO 1:1.5 FOR PERIODS LESS THAN 1 MONTH.
 - c. IN 1:1 TO 1:1.5 FOR PERIODS LESS THAN 1 MONTH.
7. STORMWATER MATERIAL TO BE STOCKPILED IN DESIGNATED AREA AND TREATED WITH HYDROLYTIC PRODUCT TO CAP WESTERN WIND.
8. EXISTING TO BE REMOVED AS REQUIRED BY STAKE.
9. THERE IS NO DEEP CUTS. EXISTING WITHIN THE BOUNDARY OF THE PROJECT AREA.
10. THE BOUNDARY SHOWN ON THIS DRAWING IS THE BOUNDARY OF THE PROJECT AREA. THE BOUNDARY OF THE BULK EARTHWORKS ARE TO BE ADJUSTED AS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT.



ACCESS ROAD SETOUT DETAILS

POINT	X	Y	Z	POINT	X	Y
1	1841.6	5303.1	64.0	12	1772.7	5264.6
2	1927.7	5364.6	65.0	13	1783.1	5152.7
3	2016.5	5354.8	70.0	14	1840.8	5103.8
4	2043.0	5299.9	75.0	15	1922.5	5089.8
5	2047.1	5220.0	80.0	16	1783.6	5113.8
6	2035.2	5152.0	86.0			
7	1986.9	5069.8	80.0			
8	1926.1	5126.7	51.0			
9	1963.3	5227.6	52.0			
10	1972.1	5328.8	55.0			
11	1947.8	5343.9	60.0			

REV	DATE	DESCRIPTION	BY	CHKD
01	15.03.01	GENERAL REVISION		
02	19.03.01	GENERAL REVISION		
03	13.03.01	GENERAL REVISION		

QUALITY RECORD	NAME	SIGNATURE	DATE
CHARTER CHECK	A. MCFORD		
DESIGNER CHECK	E. HADLOW		
PROJECT DIRECTOR APPROVAL	D. MACLEOD		

MAUNSELL PROPRIETARY LIMITED

A.C.N. 004 848 824



PROJECT FILE	WHYTES GULLY LANDFILL	DATE OF ISSUE	19.2.93	REV	A0
DWG REFERENCE	PLANDWG	DATE PLOTTED	17.3.93		
DWG NO.	14892-002	REV	03		
DWG STATUS	DESIGN COMPLETE				

1320 P331

STORMWATER NOTES

1. THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAY LABOUR CONSTRUCTION.
2. THE CONTOUR DATA HAS BEEN PREPARED FROM COUNCIL STADIA SURVEY OF WESTERN GULLY TIPPING FACE AND BASE OF THE EASTERN GULLY. THE SURROUNDING CONTOURS HAVE BEEN EXTRAPOLATED USING 1:4000 ORTHOPHOTO MAPS.
3. SEE DRAWING 14892/006 FOR DETAILS OF STORMWATER DRAIN CROSS SECTIONS.
4. DRAINS ARE TO BE GRADED TO SUIT NORMAL TOPOGRAPHY WITH MAXIMUM SLOPE AS SHOWN.

RAIN TYPE
DRAIN TYPE
MAXIMUM SLOPE

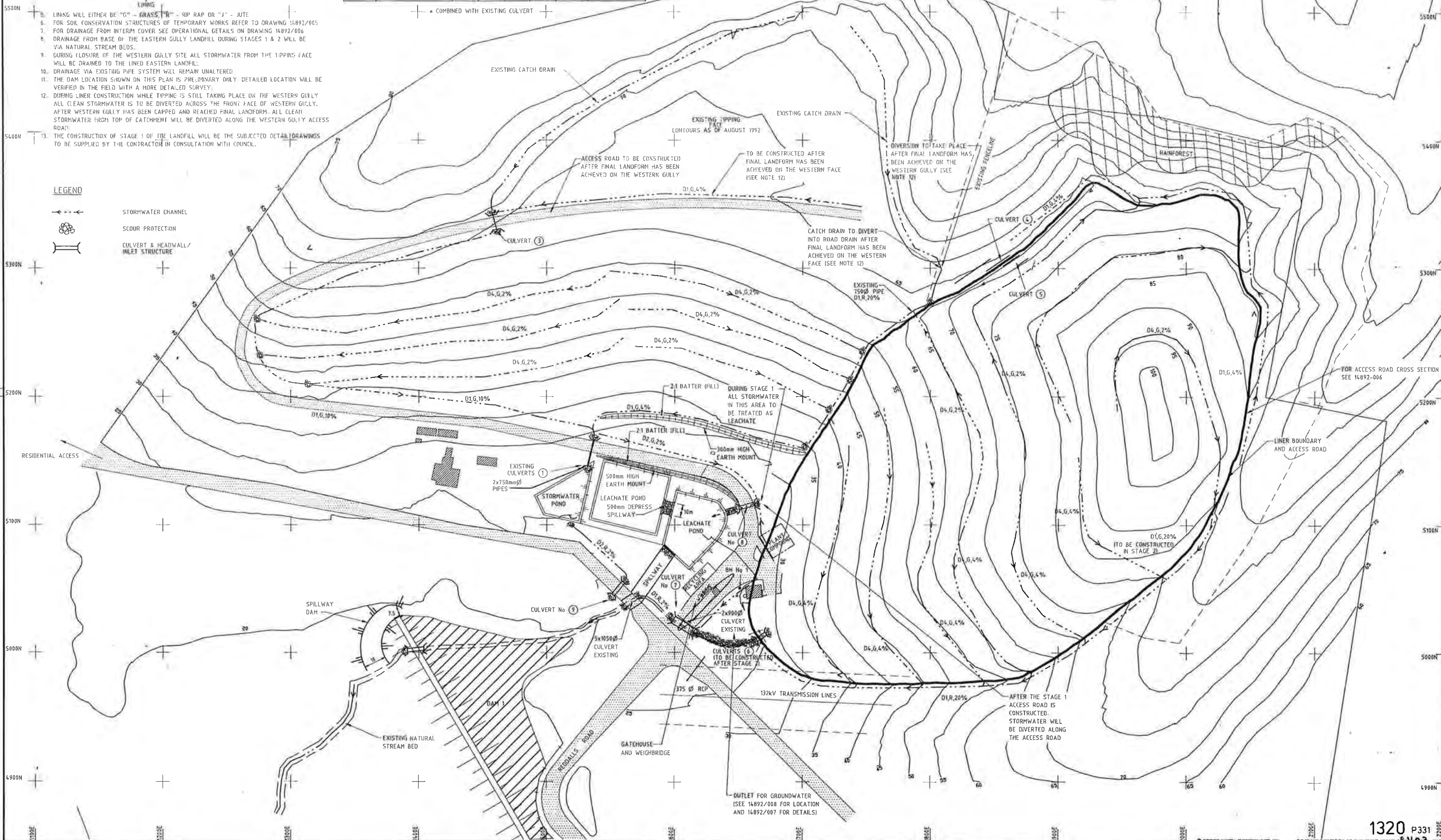
CULVERT SCHEDULE

CULVERT No	CULVERT	D m ² /s	HW m	TW m	SLOPE %	VELOCITY m/s	REMARKS
3	3 x 750 RCP	3.0	1.141	0.5	2.0	4.109	SCOUR PROTECTION AT OUTLET/INLET
4 & 5	2 x 600 RCP	1.5	1.268	0.5	2.0	3.997	SCOUR PROTECTION AT OUTLET/INLET
6	3 x 900 RCP	3.8	1.103	0.5	2.0	4.312	SCOUR PROTECTION AT OUTLET
7	2 x 900 RCP	6.0	1.295	0.5	2.0	4.599	SCOUR PROTECTION AT OUTLET
8	1 x 450 RCP	0.3	0.742	0.5	2.0	3.137	SCOUR PROTECTION AT OUTLET
9	2 x 1050 RCP	9.6	1.018	0.5	2.0	1.785	SCOUR PROTECTION AT OUTLET

▲ COMBINED WITH EXISTING CULVERT

LEGEND

- STORMWATER CHANNEL
- SCOUR PROTECTION
- CULVERT & HEADWALL/INLET STRUCTURE



CO-ORDINATES ARE BASED ON INTEGRATED SURVEY GRID (ISG) VALUES.

REV.	DATE	DESCRIPTION	BY	CHKD.
1	20.03.93	GENERAL DIVISION		
2	21.03.93	GENERAL DIVISION		

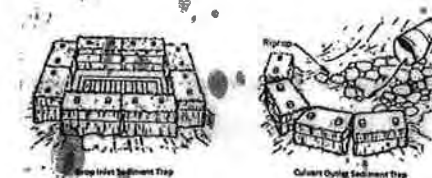
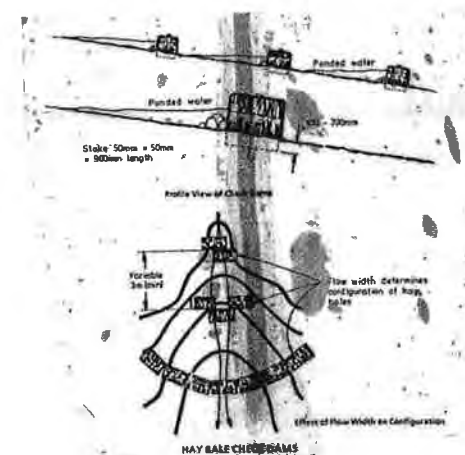
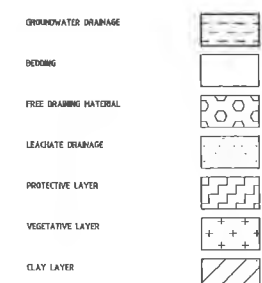
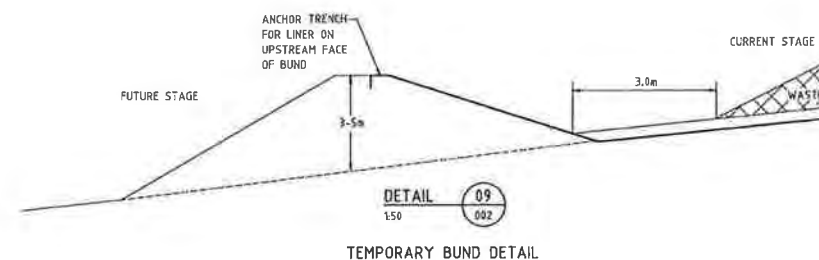
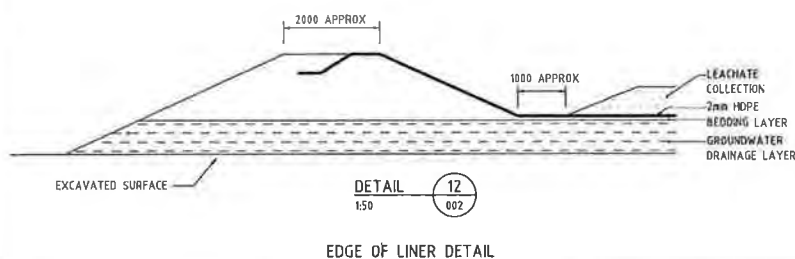
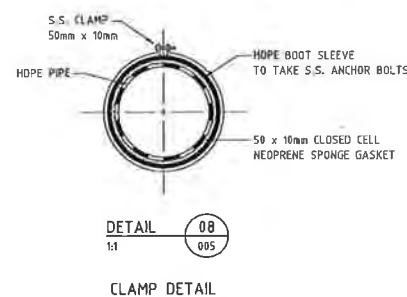
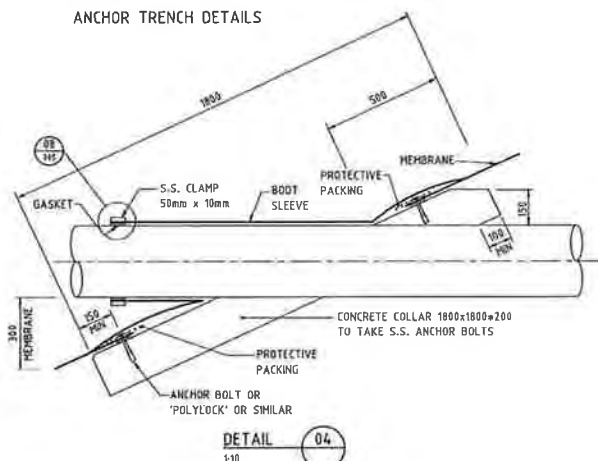
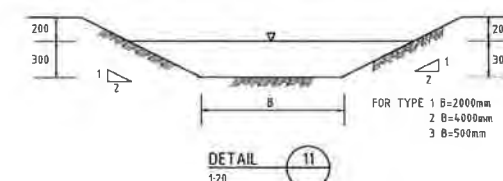
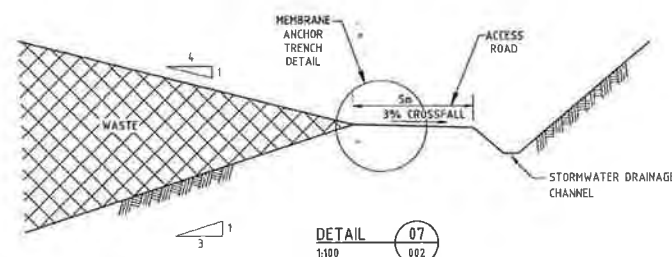
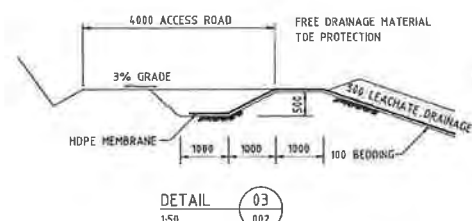
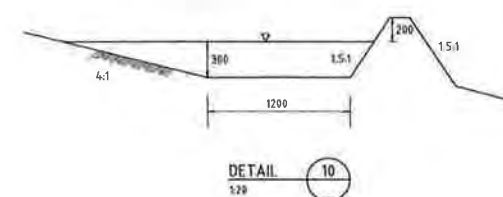
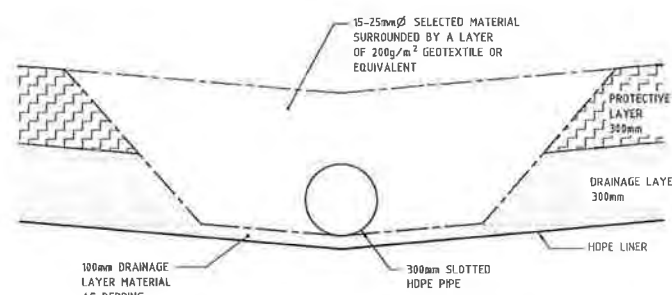
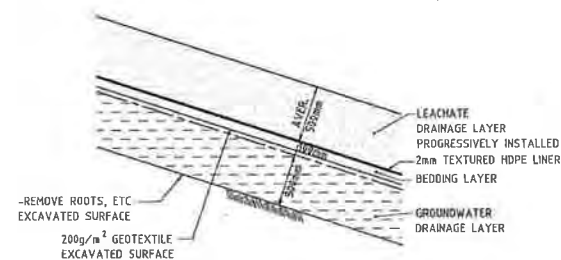
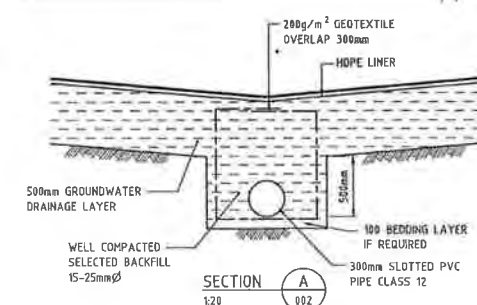
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN BY	A. HILFORD		
CHECKED BY	E. HADEW		
PROJECT DIRECTOR	D. HADFIELD		

MAUNSELL
PROPRIETARY
LIMITED
A.C.N. 004 948 824



PROJECT TITLE	WHYTES GULLY LANDFILL	DATE OF ISSUE	26.3.93	REV.	A0
DRAWING TITLE	PLANS.DWG	DATE PLOTTED	28.3.93	REV.	
PROJECT NUMBER	14892-003	REV.	02	DESIGN STATUS	DESIGN COMPLETE

1320 P331



TEMPORARY MAY BALE SEDIMENT TRAPS AT CULVERT INLETS AND OUTLETS

CONSTRUCTION DETAIL NOTES

1. THESE DRAWINGS ARE NOT TO BE USED AS CONTRACT DRAWINGS AND ARE FOR THE USE OF WOLLONGONG CITY COUNCIL DAM LABOUR CONSTRUCTION
2. LINER CONSTRUCTION DETAILS ARE PRELIMINARY TO GIVE INDICATION OF SCHEME OF WORKS AND TYPE OF DRAINAGE LAYERS BEING CONSTRUCTED
3. FOR SPECIFICATION OF DRAINAGE LAYER SEE THE LANDFILL MANAGEMENT PLAN OR CONSULTANTS SPECIFICATION
4. THE NEED FOR DAM 2 SHOULD BE EVALUATED AFTER DAM 1 HAS BEEN CONSTRUCTED.
5. THE VELOCITY ON THE SPILLWAY OF DAMS IS TO BE LIMITED TO 2m/s

82	82.93	GENERAL DIVISION		
87	87.11	GENERAL REVISION		
REV	DATE	DESCRIPTION	ISSUED BY	APPROVED BY

SCALE <u>AS SHOWN</u>			
QUALITY RECORD	NAME	LOCATION	DATE
UNIFORM CHECK	A. HILFORD		
DESIGNER CHECK	E. MADEW		
PROJECT DIRECTOR APPROVAL	D. McLEOD		

COMPLETION OF THE QUALITY RECORD IS EVIDENCE THAT THE DESIGN AND DRAWING HAVE BEEN REVIEWED AND APPROVED WITH THE REQUIREMENTS OF THE CLIENT BODY



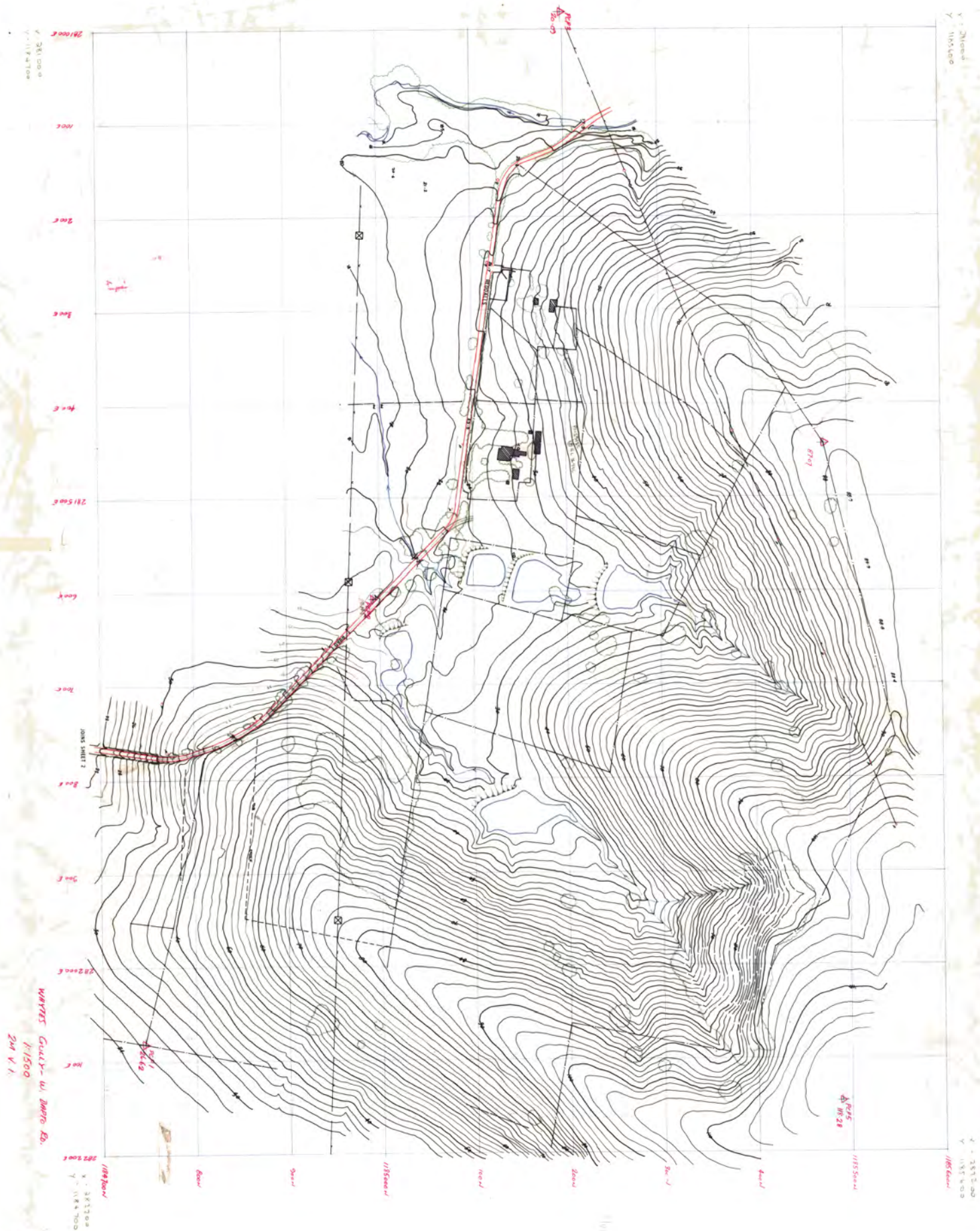
COPYRIGHT MATERIAL PROTECTED UNDER US PAT. & COPYRIGHT LAWS		THIS DRAWING IS CONFIDENTIAL. IT IS TO BE USED ONLY FOR THE PROJECT IDENTIFIED HEREON.	
PROJECT TITLE WHYTES GULLY LANDFILL		DATE OF ISSUE 16.2.93	
DRAWING TITLE CONSTRUCTION DETAILS		END PROJECT PLANNING	
		DATE PLANNED 16.2.93	
		URS NO. 14892-005	
		DESIGN STATUS DESIGN COMPLETE	

[illegible]

STATE : (Average, 15 year life)

P331/1

ULTIMATE LANDFORM AS FILLED



281600E 700E 800E 900E 282000E 100E 200E 1184700N 282300E

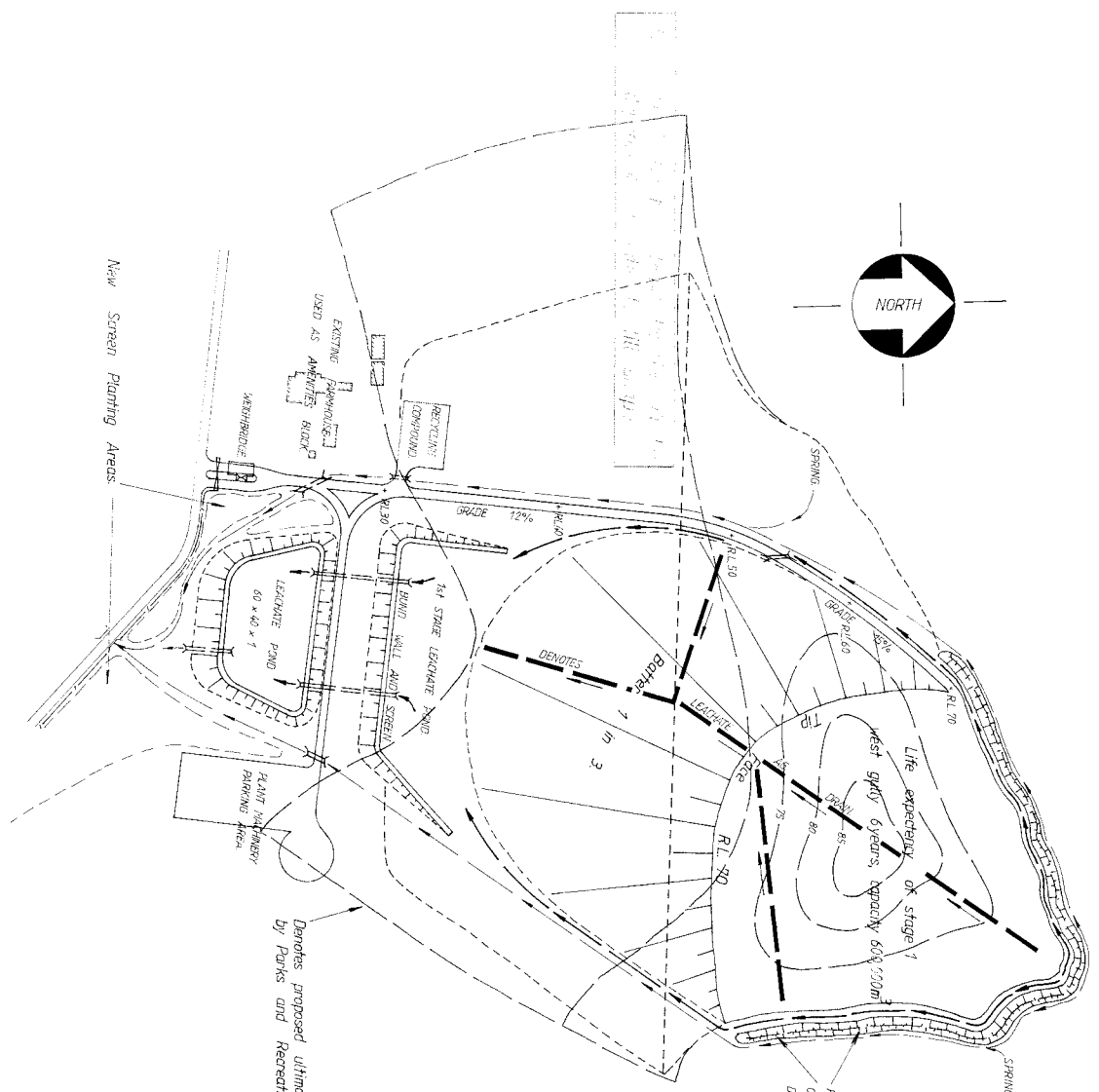
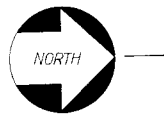
WHYTES GULCH - W. DARTO RD EXTN 1:1500



Total length of long Section = 1342.92

P 331/2-S102-1
Sheet 2 of 2

CANNED BY
PLAN ROOM



SCHEDULE OF ULTIMATE LANDFILL DETAILS

VOLUME OF GARBAGE	1,115,000m ³
AREA OF GARBAGE	9.6ha
QUANTITY OF TOPSOIL TO BE STOCKPILED	20,000m ³
QUANTITY OF POROUS MATERIAL STOCKPILED	40,000m ³

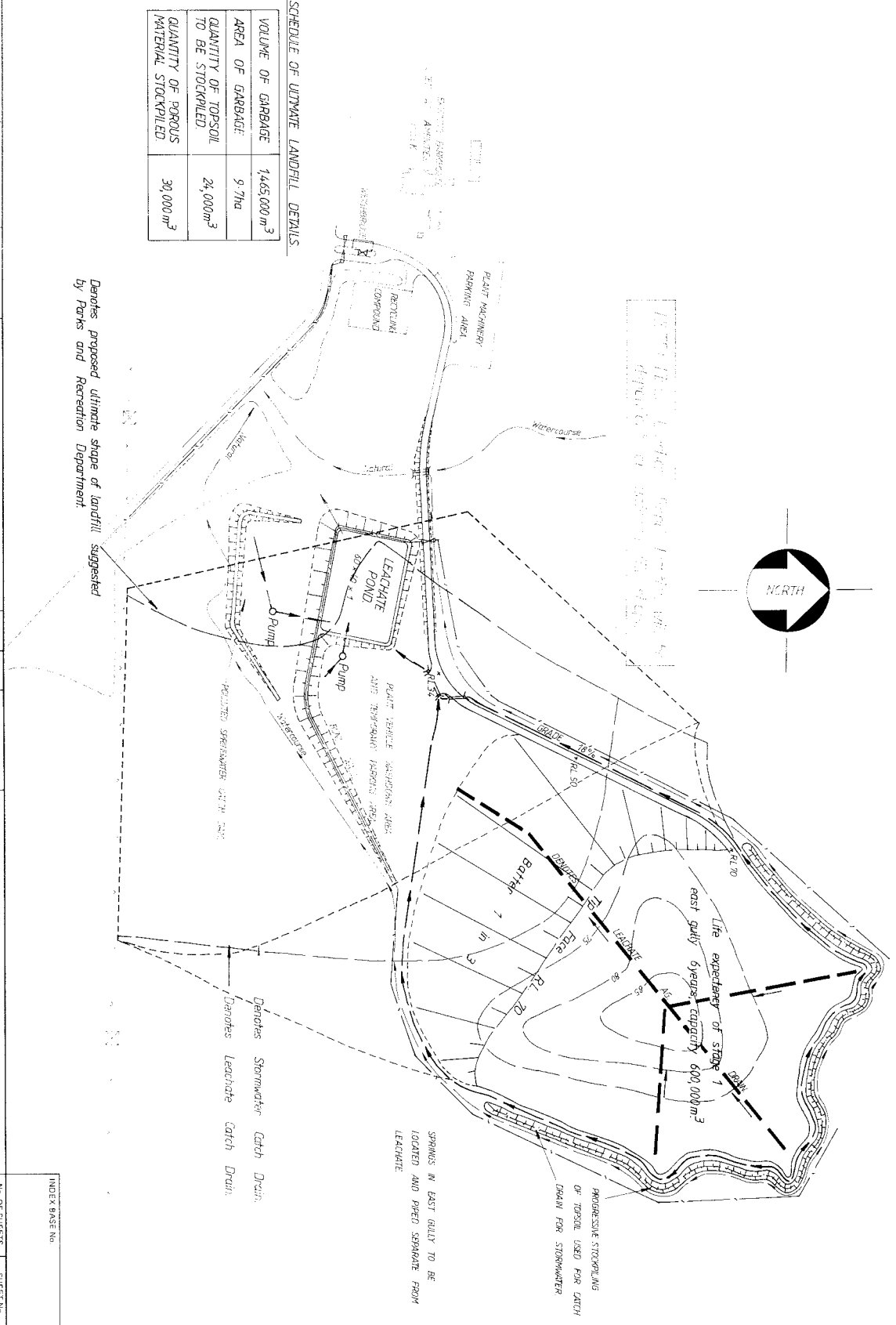
Denotes Stormwater Catch Drain
Denotes Leachate Catch Drain

SCALES		FIELD INSPECTION	
1:1500		DESIGN ENGINEER	
DATUM	SURVEYOR	DATE	RELATED PLANS
A.H.D.	L.J.	8-92	
FILE No.	BOOKS	CHECKED	DATE
ESTIMATE No.		AMENDMENTS	
COUNCIL APPROVAL		DATE	
MINUTE No.		CITY ENGINEER	
DATE		DATE	
CITY OF WOLLONGONG		WHYTES GULLY REFUSE SITE	
		WEST GULLY STAGE 1 DEVELOPMENT	
		GENERAL ARRANGEMENT	
METHOD 1		P331/3	
INDEX BASE No.		No. OF SHEETS	
		4	
		SHEET No.	
		1	



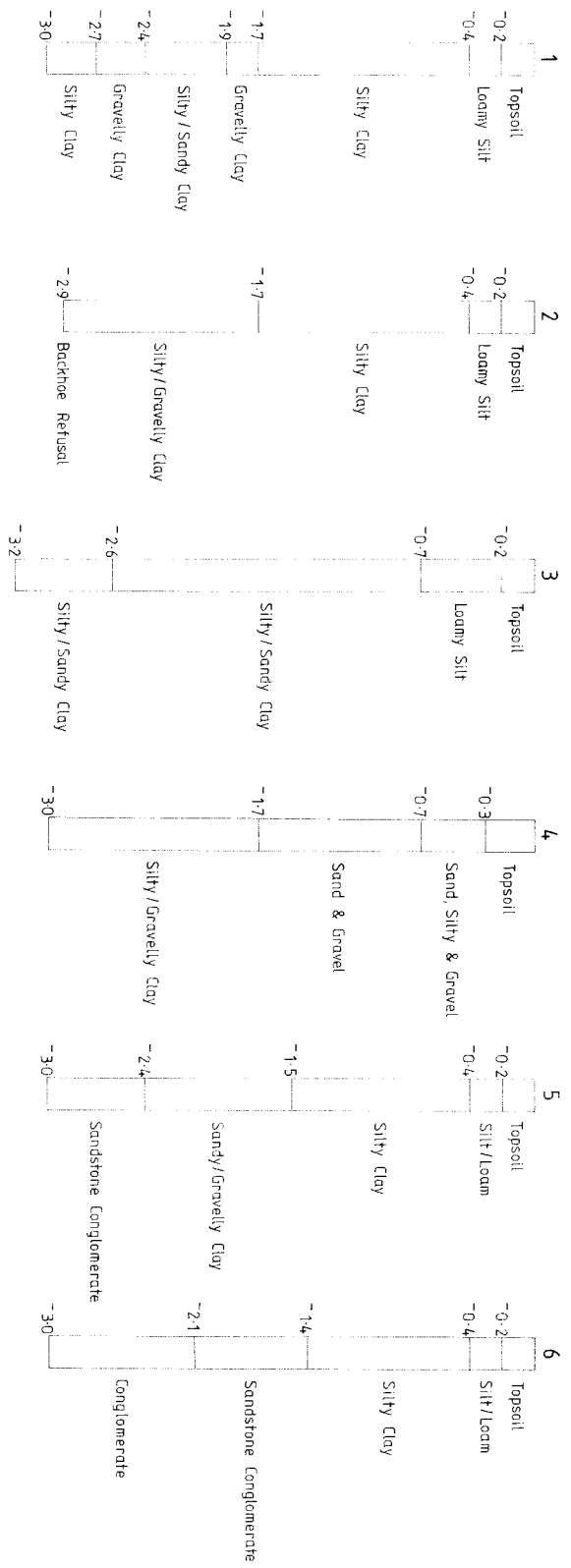
SCHEDULE OF UTMATE LANDFILL DETAILS		
VOLUME OF GARBAGE	1,465,000 m ³	
AREA OF GARBAGE	9.7 ha	
QUANTITY OF TOPSOIL TO BE STOCKPILED	24,000 m ³	
QUANTITY OF POROUS MATERIAL STOCKPILED	30,000 m ³	

Denotes proposed ultimate shape of landfill suggested by Parks and Recreation Department.

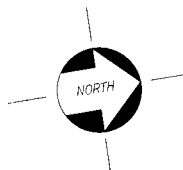


1:1500

SCALES		FIELD INSPECTION		COUNCIL APPROVAL		CITY OF WOLLONGONG		INDEX BASE No.	
DATE: 8-82		DESIGN ENGINEER		DATE: 8-82		WHYTES GULLY REFUSE SITE		No. OF SHEETS	
FILE No.		DRAWN: L.J.		DATE: 8-82		EAST GULLY STAGE 1 DEVELOPMENT		SHEET No.	
BOOKS		CHECKED: DATE		DATE: 8-82		GENERAL ARRANGEMENT		DRAWING No.	
ESTIMATE No.		AMENDMENTS		DATE: 8-82		METHOD 1		P331/3	
DATE: 8-82		DATE: 8-82		DATE: 8-82		DATE: 8-82		DATE: 8-82	

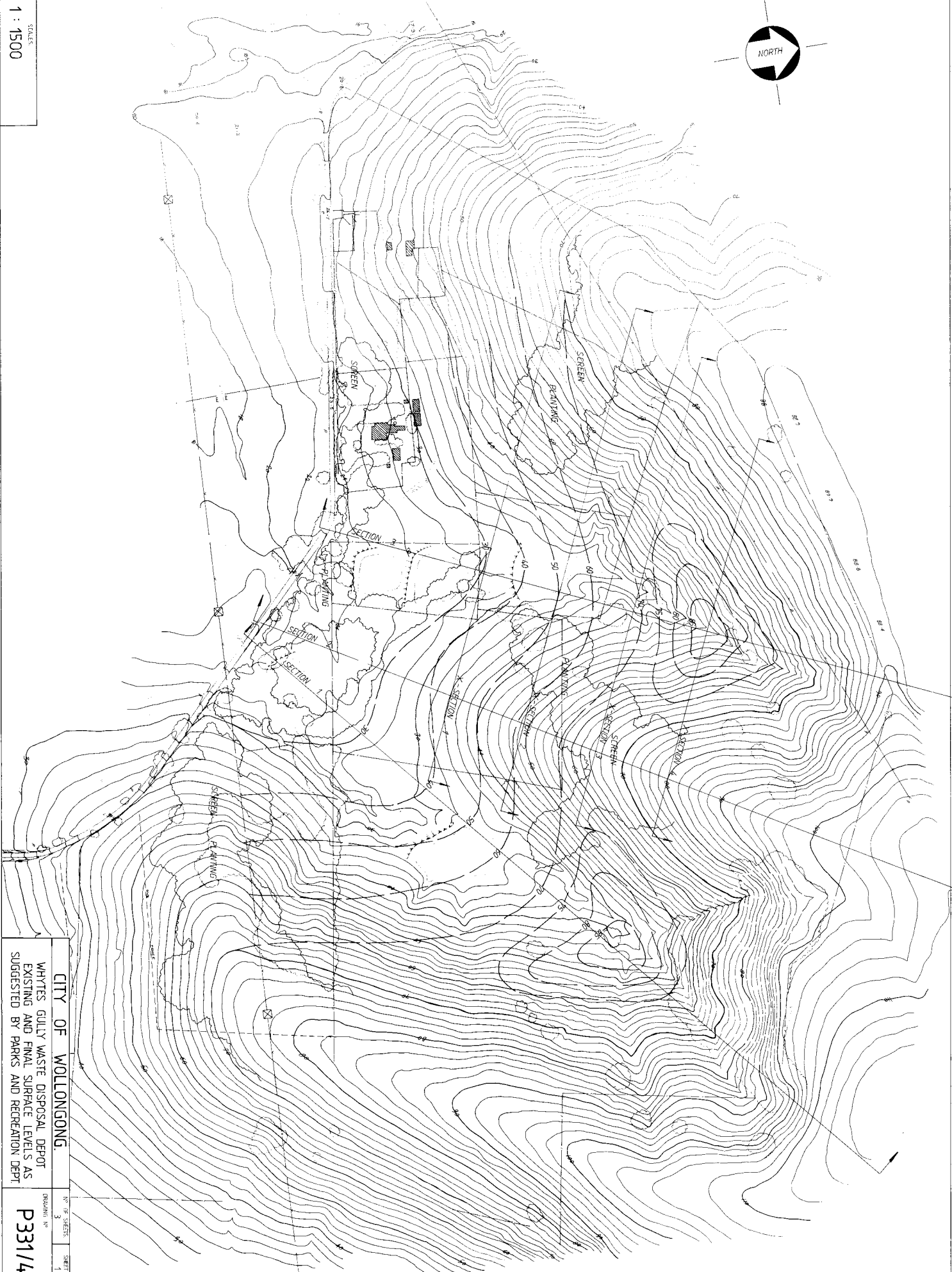


SCALES		FIELD INSPECTION		DESIGN ENGINEER		COUNCIL APPROVAL		CITY OF WOLLONGONG		WHYTES GULLY REFUSE SITE		BORE HOLE DETAILS		INDEX BASE No.	
1 : 20		DATE		DATE		DATE		CITY ENGINEER		DRAWING No.		P 331/3		No. OF SHEETS	
SURVEYOR		DRAWN		DATE		DATE		MINUTE No.		4		4		SHEET No.	
S.A.B.		S.A.B.		8/82		8/82		CITY ENGINEER		4		4		4	
BOOKS		CHECKED		DATE		DATE		CITY ENGINEER		4		4		4	
FILE No.		ESTIMATE No.		AMENDMENTS		AMENDMENTS		AMENDMENTS		AMENDMENTS		AMENDMENTS		AMENDMENTS	



1 : 1500

SCALE



CITY OF WOLLONGONG.
WHITES GULLY WASTE DISPOSAL DEPOT
EXISTING AND FINAL SURFACE LEVELS AS
SUGGESTED BY PARKS AND RECREATION DEPT

NO. OF SHEETS 3
SHEET NO. 1

DRAWING NO.
P331/4

1:1500 Nat.

SCALES

INDEX	BASE	NO.
-------	------	-----

CITY OF WOLLONGONG

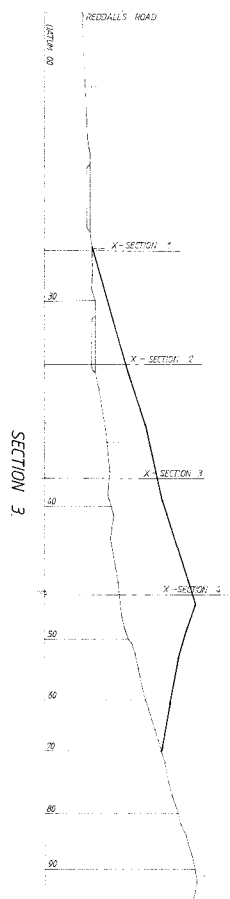
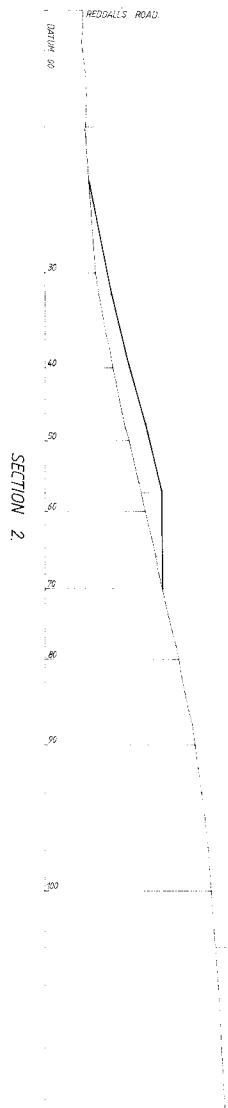
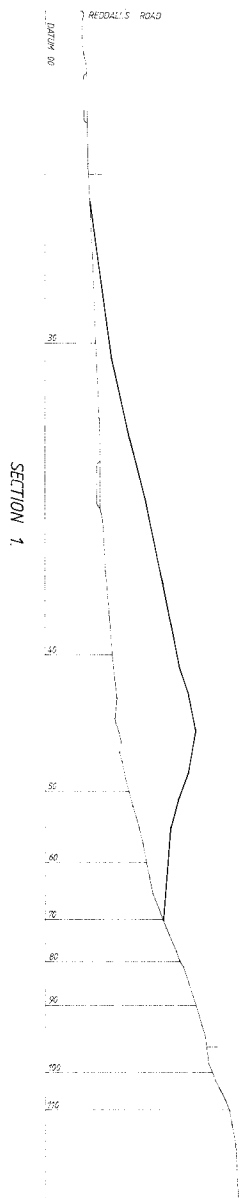
NO. OF SHEETS	SHEET NO.
3	2

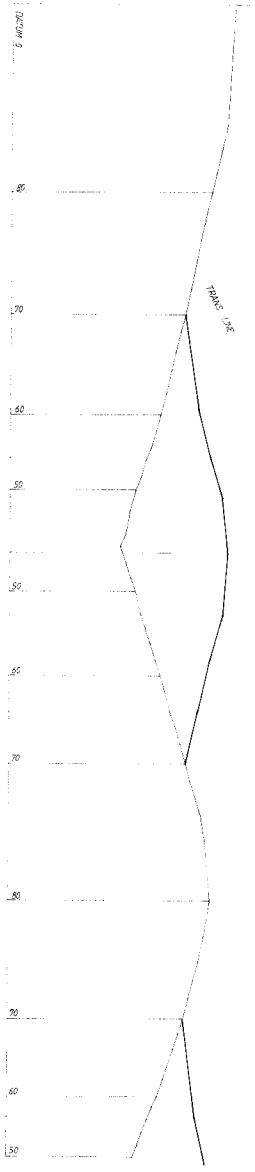
DRAWING NO.

WHYTES GULLY WASTE DISPOSAL DEPOT
EXISTING AND FINAL SURFACE LEVELS AS
SUGGESTED BY PARKS AND RECREATION DEPT.

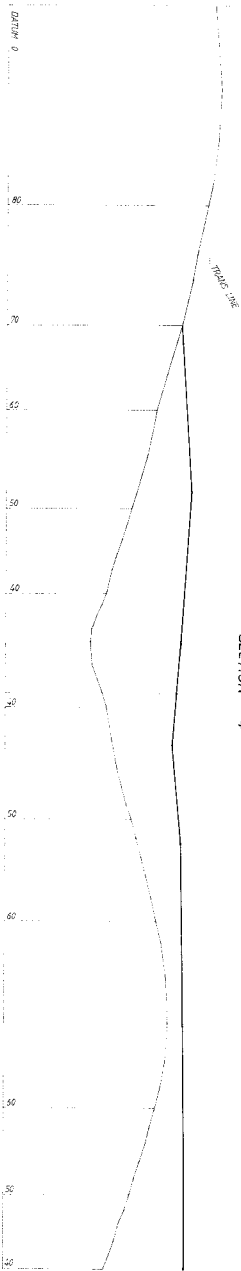
MAGX

A1/2

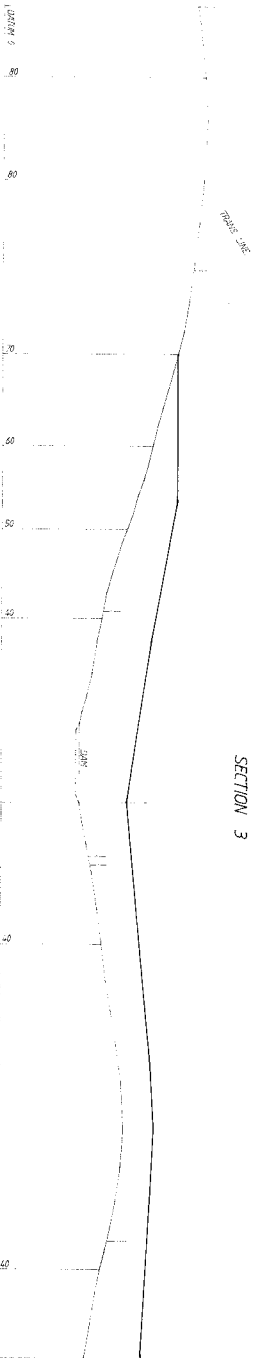




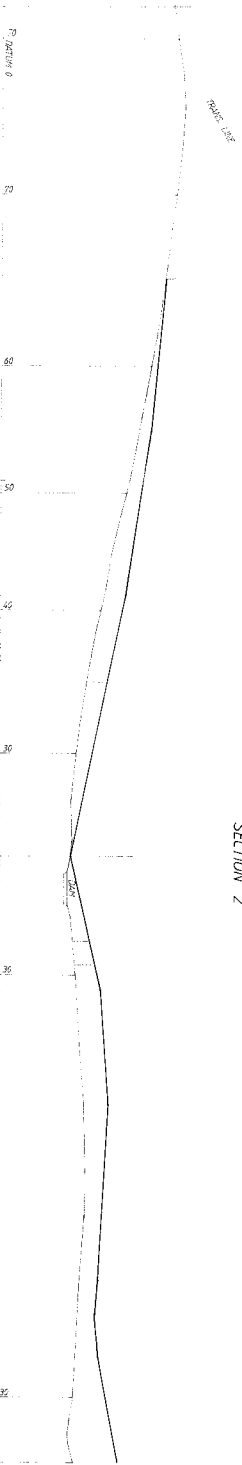
SECTION 4



SECTION 3



SECTION 2



SECTION 1

1:1000 Nat.

SCALE

INDEX BASE NO.

CITY OF WOLLONGONG

WHITES GULLY

WASTE DISPOSAL DEPOT

CROSS-SECTIONS WEST GULLY

SECTION NO.

3

DRAWING NO.

3

P331/4

MAGX

A1/2

TRIMMING EDGE

394 x 283mm

150

100

50

0

50

100

150

200

250

300

350

400

450

500

550

600

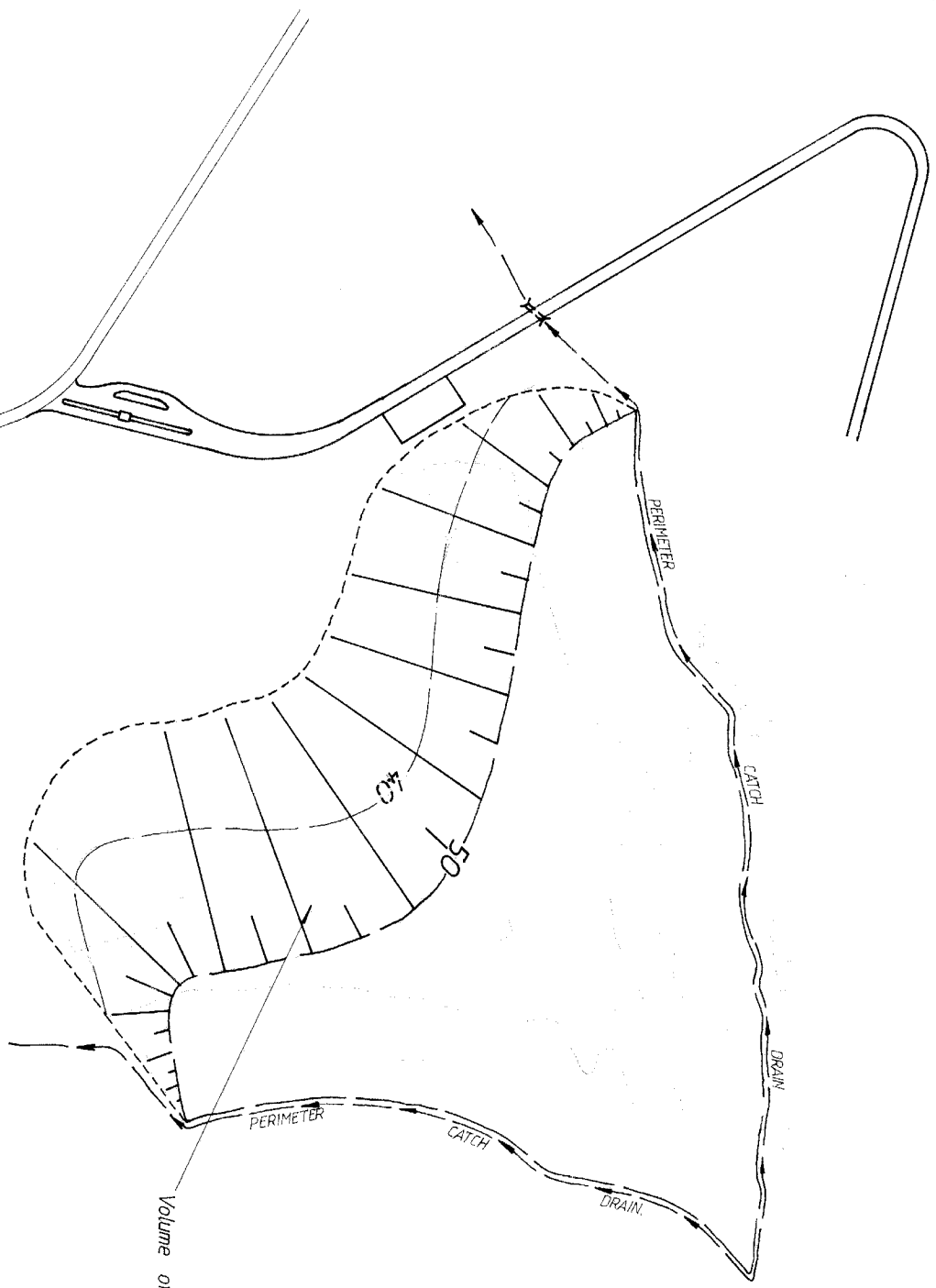
650

700

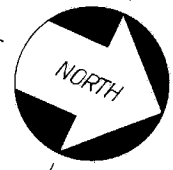
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MINUTE No.	DRAWN L.J.	DATE 11-10-82
CITY ENGINEER	CHECKED	DATE
DATE	RELATED PLANS ESTIMATE No.	
	P331/5	

CITY OF WOLLONGONG	No. OF SHEETS 4	SHEET No. 1
WHITES GULLY	DRAWING No.	
PROGRESSIVE FILL OVERLAY.	P331/5	

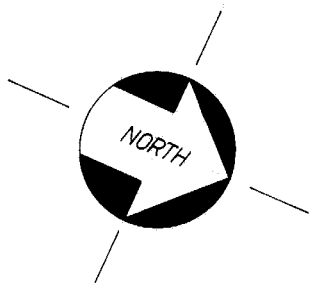
INDEX BASE No.



Volume of garbage for rise from RL40 to 50
232,000m.3

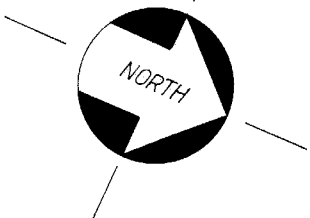


A3



Volume of garbage for rise from R.L. 50 to 60
277,000 m³

DATE COUNCIL'S APPROVAL	SCALE 1"=500'	FILE NO.	CITY OF WOLLONGONG	NO. OF SHEETS 4	SHEET NO. 2
MINUTE NO.	DRAWN L.J.	DATE 11-10-82	WHYTES GULLY PROGRESSIVE FILL OVERLAY.	DRAWING NO.	P331/5
CITY ENGINEER	CHECKED	DATE			
DATE	RELATED PLANS	ESTIMATE NO.			



INDEX BASE No.

DATE FOR CIVILS APPROVAL	SCALE 1:1500	FILE NO.	CITY OF WOLLONGONG	NO. OF SHEETS 4	SHEET NO. 3
MINUTE NO.	DRAWN []	DATE 11-10-82	WHYTES GULLY PROGRESSIVE FILL OVERLAY.	P331/5	
CITY ENGINEER	CHECKED	DATE			
DATE	RELATED PLANS ESTIMATE NO. P331/5				

TRIMMING EDGE

-394 × 283 mm

150

Age	Percent
18-24	10
25-34	25
35-44	45
45-54	65
55-64	80
65-74	90
75+	100

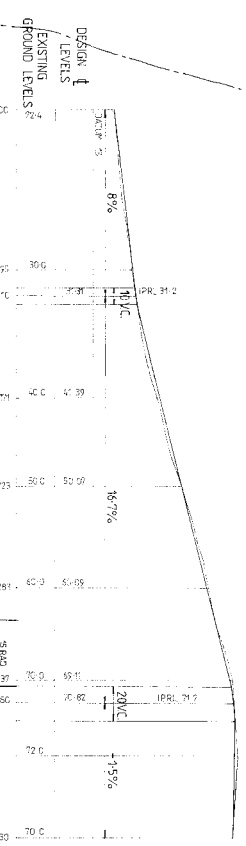
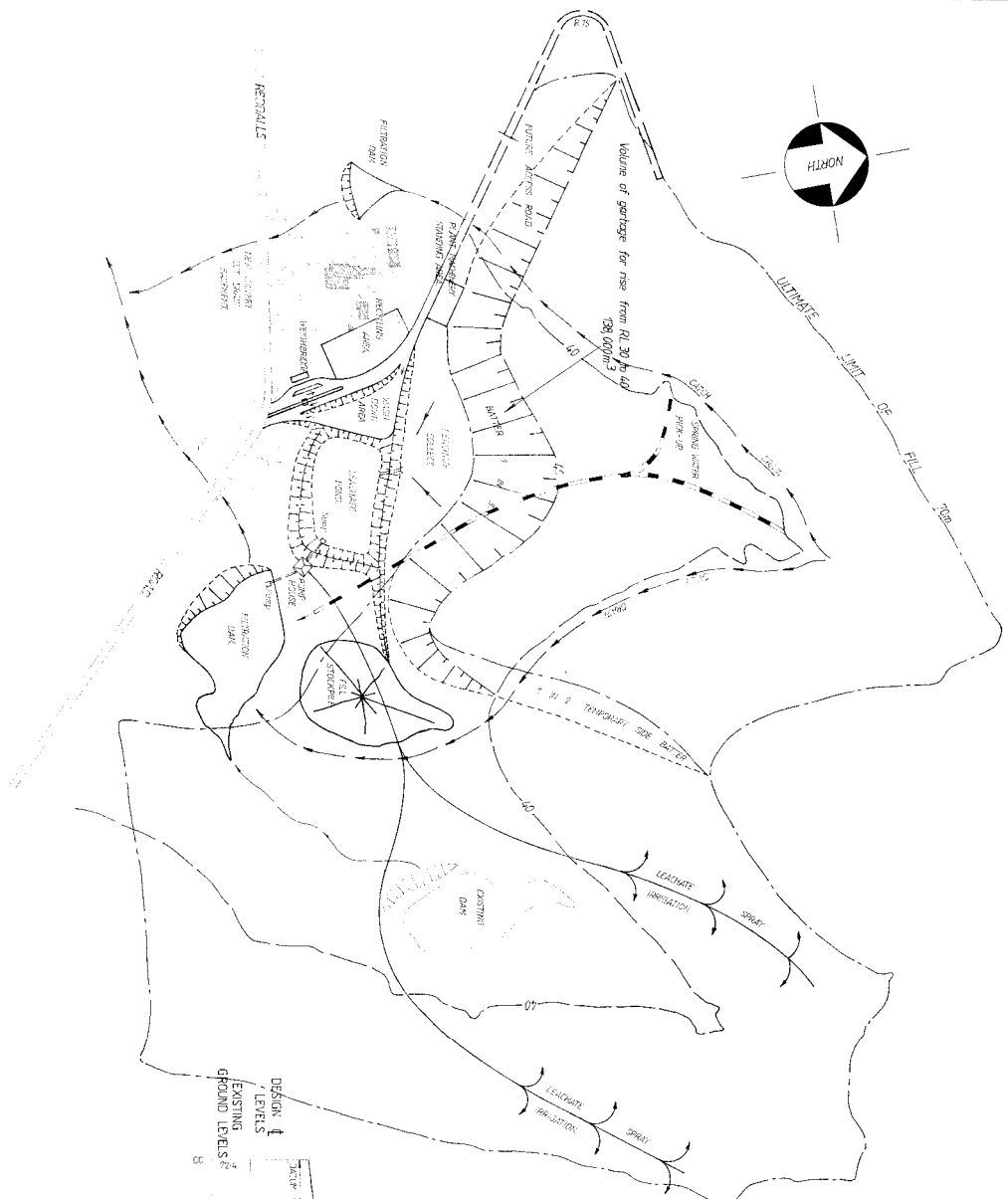
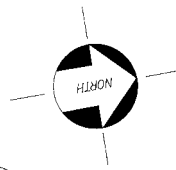
50

五

1

1

A3



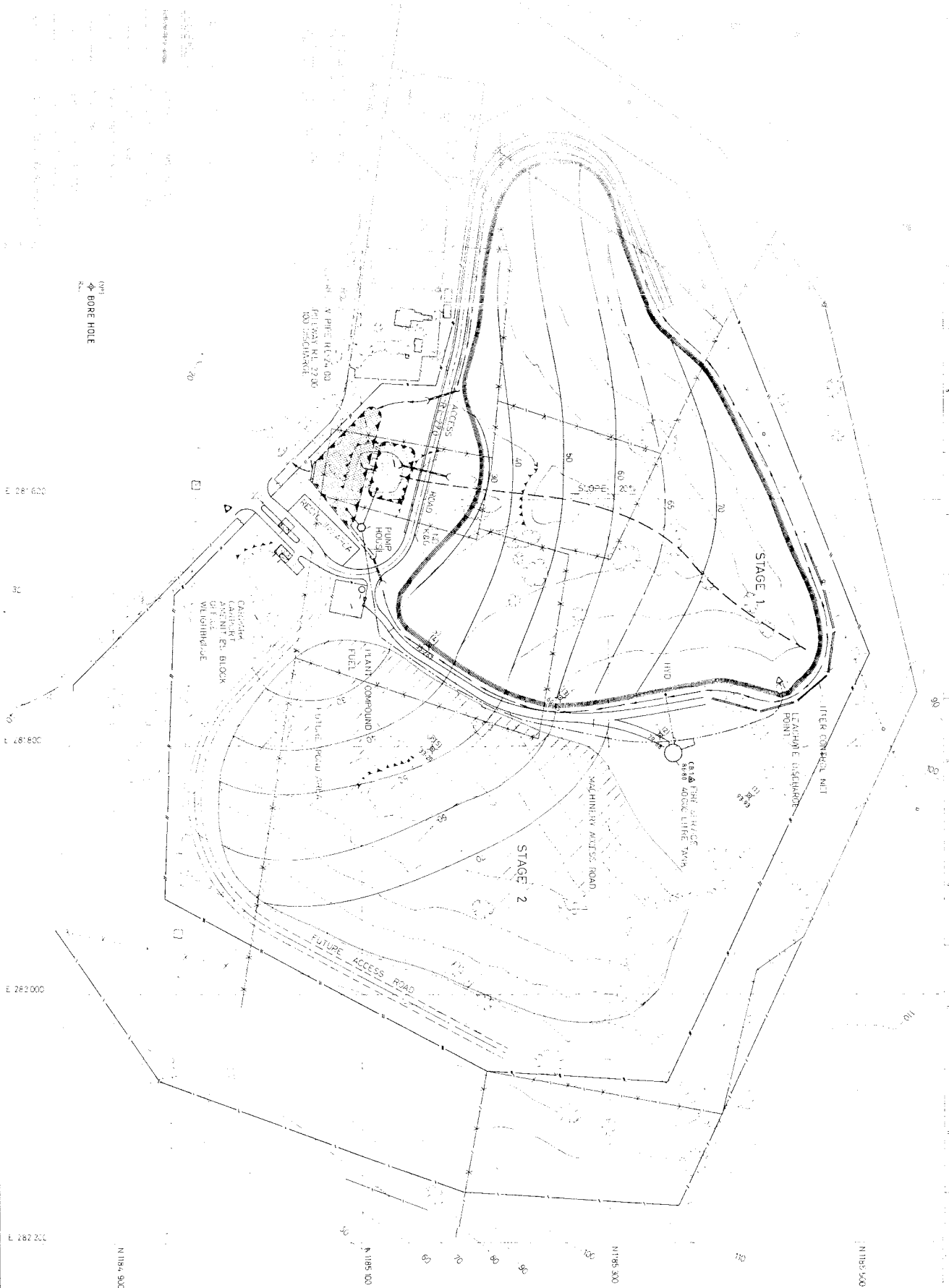
1st LIFT TO 40m

1:1500

ESTIMATE 1137 (Prelim only)
CITY OF WOLLONGONG
WHYTES GULLY
OPERATIONS
DIAGRAM
FOR WEST GULLY
DRAWING No. P331/5

MAGX

A1/2



BORE HOLES 14/2/91
SURVEYOR: B. HOGAN
BOOK N°: L91/1

SCOTT & FURPHY ENGINEERS PTY. LTD
CONSULTING ENGINEERS & PLANNERS

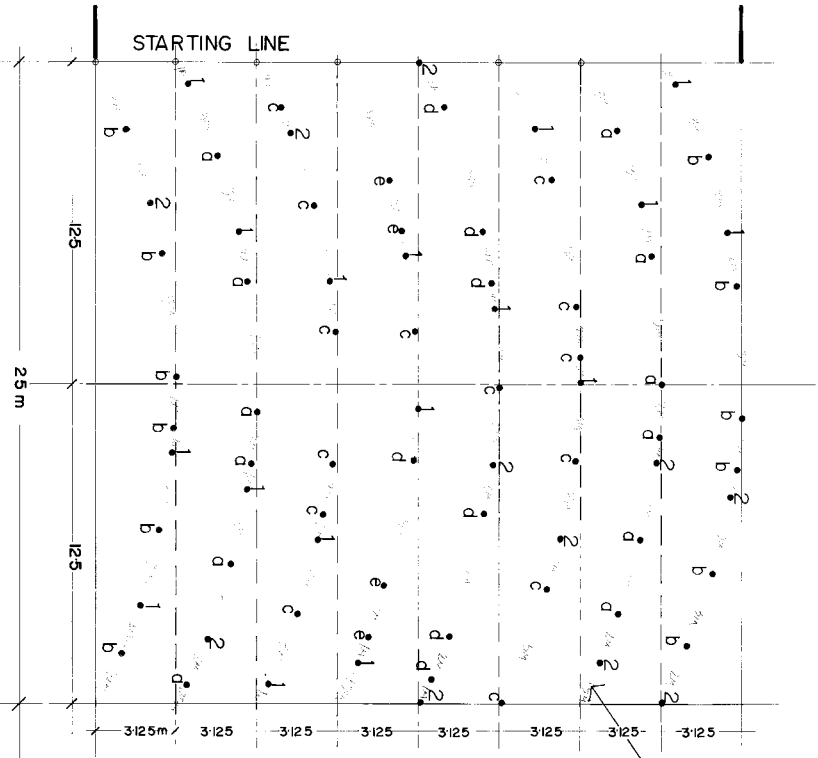
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 512077
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON

**SCOTT & FURTER
CONSULTING GROUP**

DATE	10/10/10
TIME	10:10
LOCATION	10:10
STATUS	10:10
REMARKS	10:10

WHYTES' GULLY LANDFILL SITE
GENERAL LAYOUT PLAN

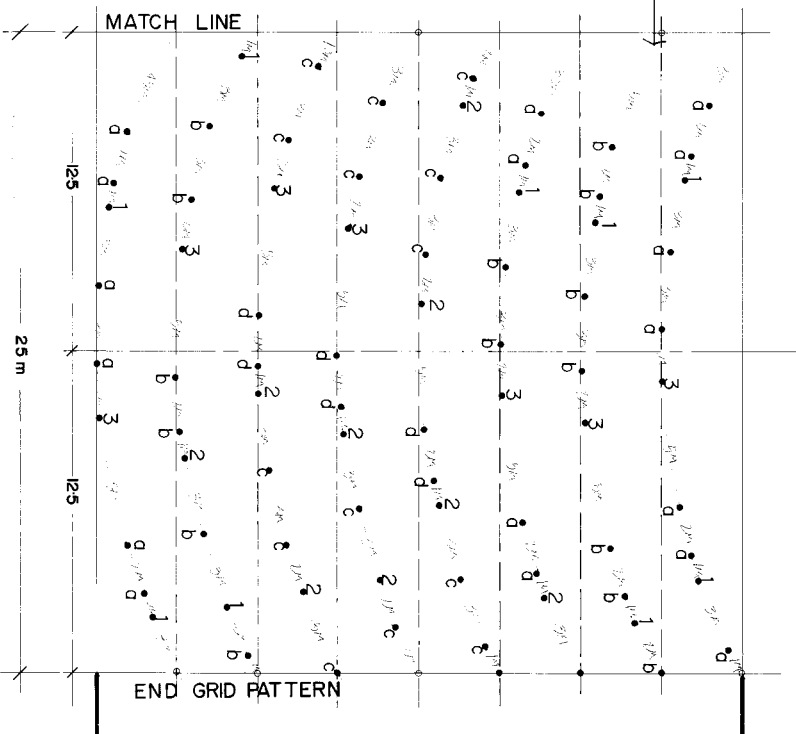
P331/6



IN METERS
1:3.3:2.5:2
PATTERN FOR SPACING
PLANTS ALONG RIP LINES
GRID-A

KEY: NUMBER

1	EUCALYPTUS	tereticornis	17
2	EUCALYPTUS	sieberi	11
3	ACACIA	binervata	12
4	ACACIA	meursii	12
5	ACACIA	salignus	14
6	DODONAEA	triquetra	7
7	BACKHOUSIA	myrtifolia	4
GRID-A TOTAL			77



IN METERS
1:3.3:2.5:2
GRID-B

KEY: NUMBER

1	EUCALYPTUS	tereticornis	9
2	EUCALYPTUS	quadrangulata	9
3	MELALEUCA	stypelioides	7
4	ACACIA	binervata	17
5	ACACIA	meursii	15
6	ACACIA	implexa	14
7	ACMENA	smithii	7
GRID-B TOTAL			78

GRID	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6
VOL OF	38	32	12	10	20	2
ACACIA binervata	12	17	456	444	144	120
ACACIA meursii	12	13	456	380	144	50
ACACIA salignus	13	14	532	448	168	40
ACACIA sieberi	7	7	224	72	110	91
DODONAEA triquetra	7	266	84	140	147	49
EUCALYPTUS salignus	7	266	84	140	147	49
EUCALYPTUS tereticornis	7	266	84	140	147	49
EUCALYPTUS quadrangulata	7	266	84	140	147	49
MELALEUCA stypelioides	7	266	84	140	147	49
ACMENA smithii	7	266	84	140	147	49
BACKHOUSIA myrtifolia	7	266	84	140	147	49
TOTAL	155	1422	1110	910	2601	1007

P331/7

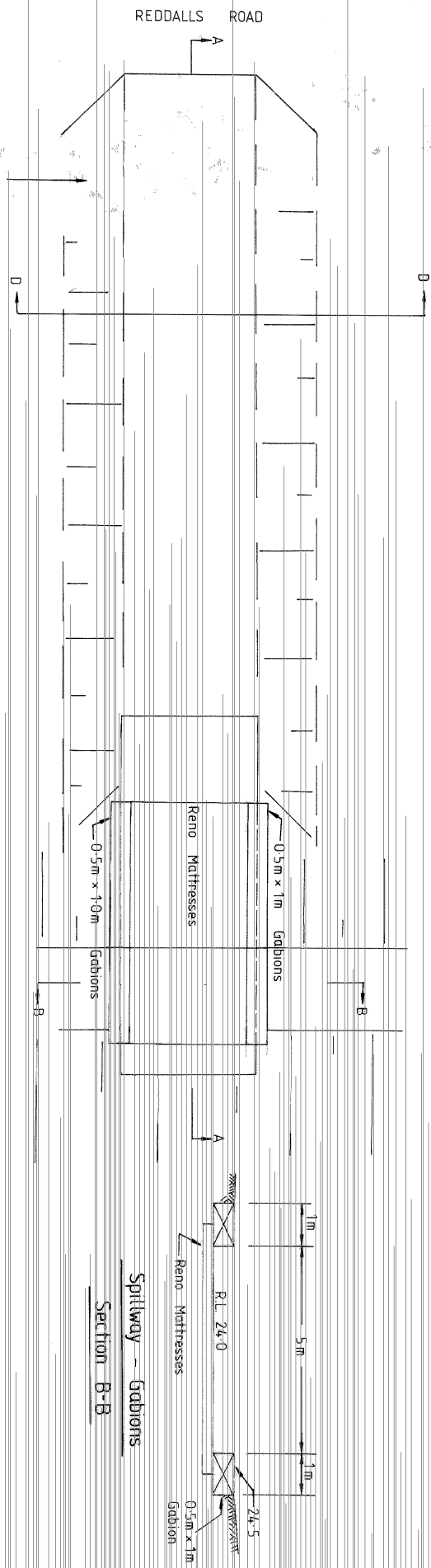
WOLLONGONG CITY COUNCIL
PARKS AND RECREATION DEPARTMENT

PROJECT
WHYTES GULLY
LANDFILL SITE
LANDSCAPE PLAN
DATE 12.12.00
SCALE 1:200

NO OF SHEETS 2
SHEET NO. 2

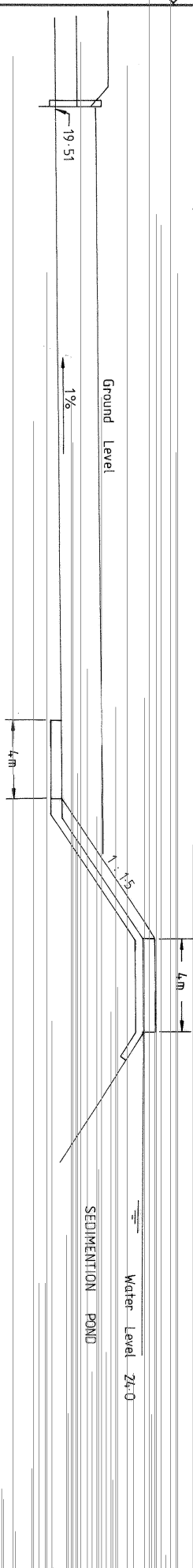
AMENDMENTS
INDEX BASE NO
DATE



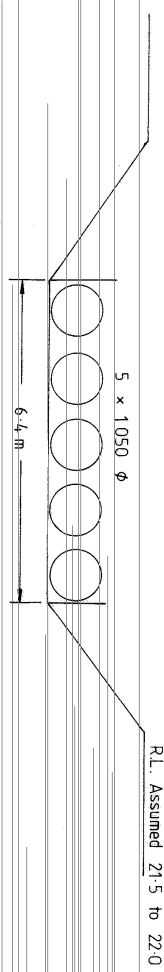


REDDALLS ROAD

Gross Channel From Spillway To Pipe Culvert



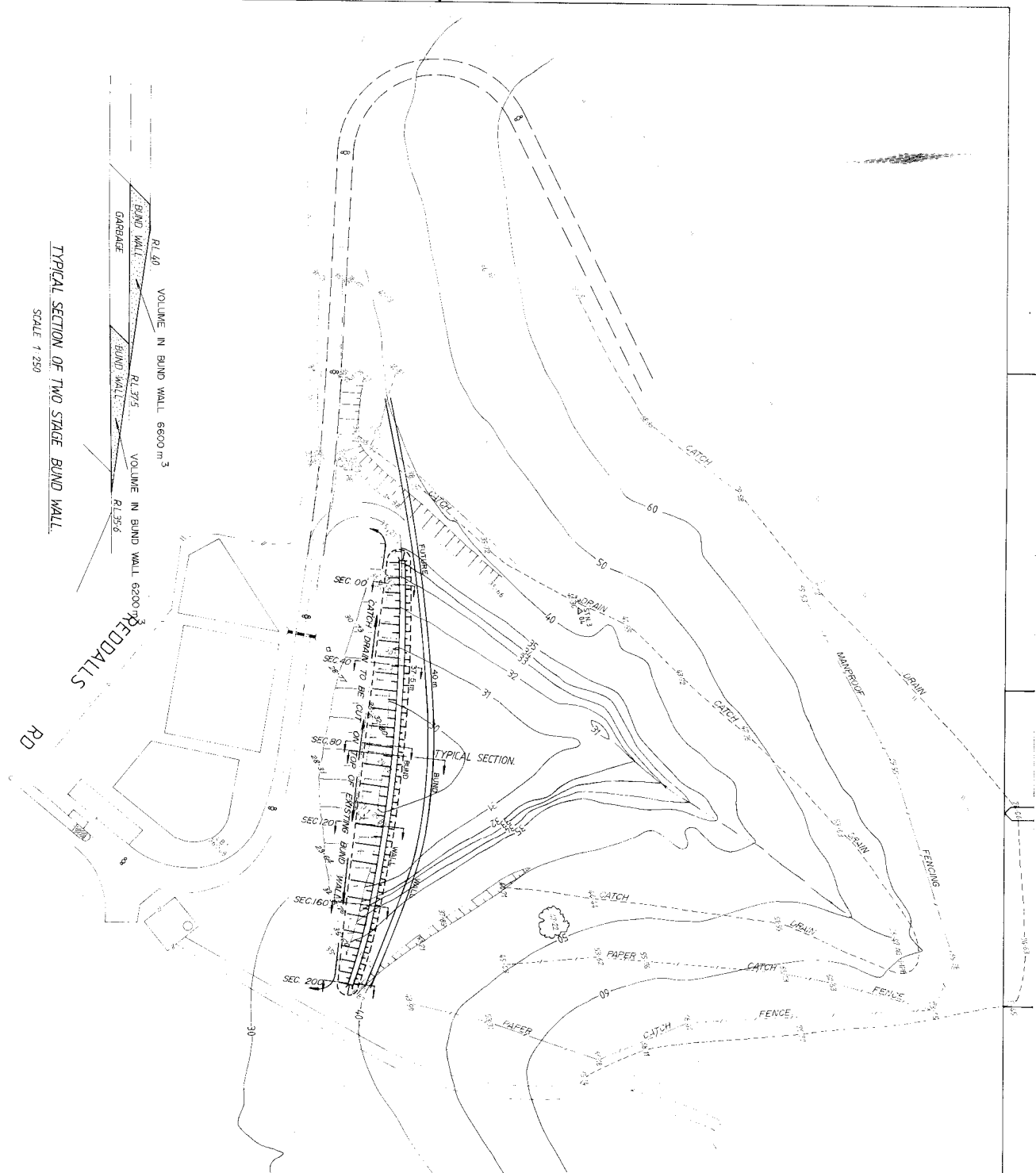
Section A-A



Section D-D

DATE COUNCILS APPROVAL	SCALE N.S.	FILE No.	CITY OF WOLLONGONG	INDEX BASE No.
MINUTE No.	DRAWN S.A.D.	DATE 7/7/84		No. OF SHEETS SHEET No.
CITY ENGINEER	CHECKED	DATE		DRAWING No.
DATE	RELATED PLANS	ESTIMATE No.		
Sketch of Proposed Spillway & Grassed Channel Whyte's Gully Land Fill				P3331/9

TYPICAL SECTION OF TWO STAGE BUND WALL.
SCALE 1:250



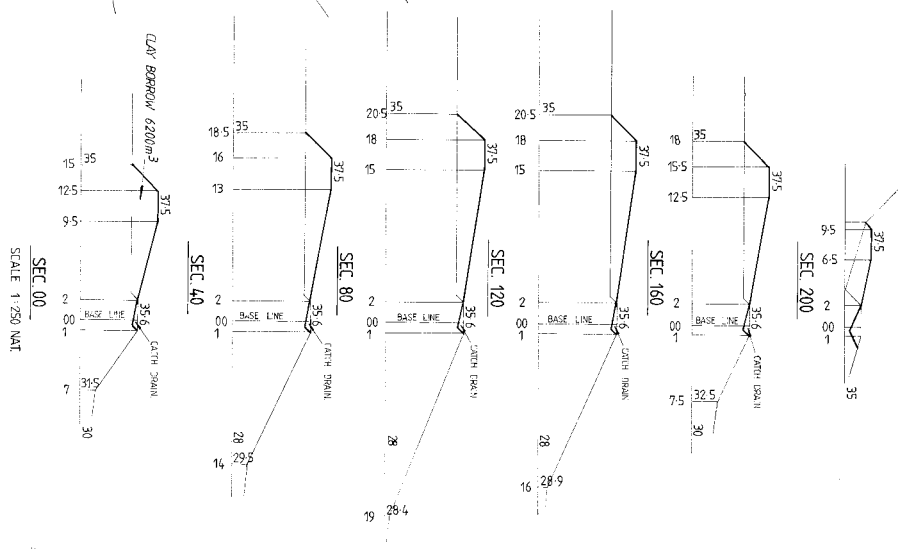
RL 40 VOLUME IN BUND WALL 6600 m³
GARDAGE
RL 37.5 VOLUME IN BUND WALL 6200 m³
RL 35.6

Value of second lift to RL 37.5 = 4380 m³ U 25/3/85
Value of first lift to RL 35.6 = 2700 m³ U 25/3/85

DATE	1/10/85	DESIGNED BY	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85

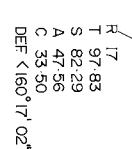
DATE	1/10/85	DESIGNED BY	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85

DATE	1/10/85	DESIGNED BY	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85
BY	R. M. G. S.	CHECKED	13/9/85	DATE	22/3/85



STARTING DATE OF TIP 24.0.84
CITY OF WOLLONGONG

WHITES GULLY
ASSOCIATED WORKS TO LIFT RL 37.5 P 331/10/1



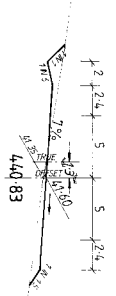
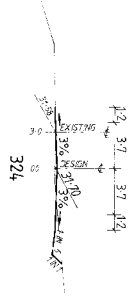
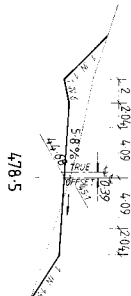
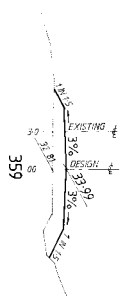
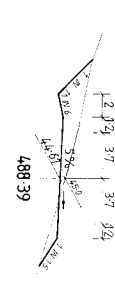
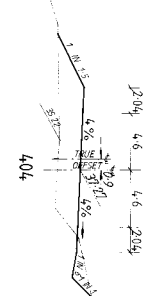
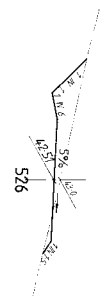
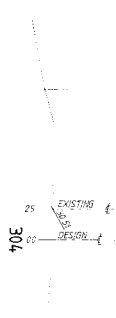
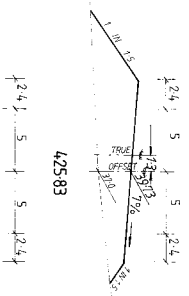
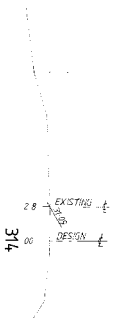
SCALE 1:250

Levels marked thus 3379 indicate limit of garbage fill.



H.S.	1:1000
V.S.	1:200

A1



1:200 Nat.

CITY OF WOLLONGONG
WHITES GULLY
ACCESS ROAD TO TIP FACE TO
SUIT LIFT RL40 CROSS SECTIONS

DRAWING NO. P 331/10/2

INDEX BASE NO.

2

MAGX

A1/2



STARTING DATE OF TIP 24.10.84

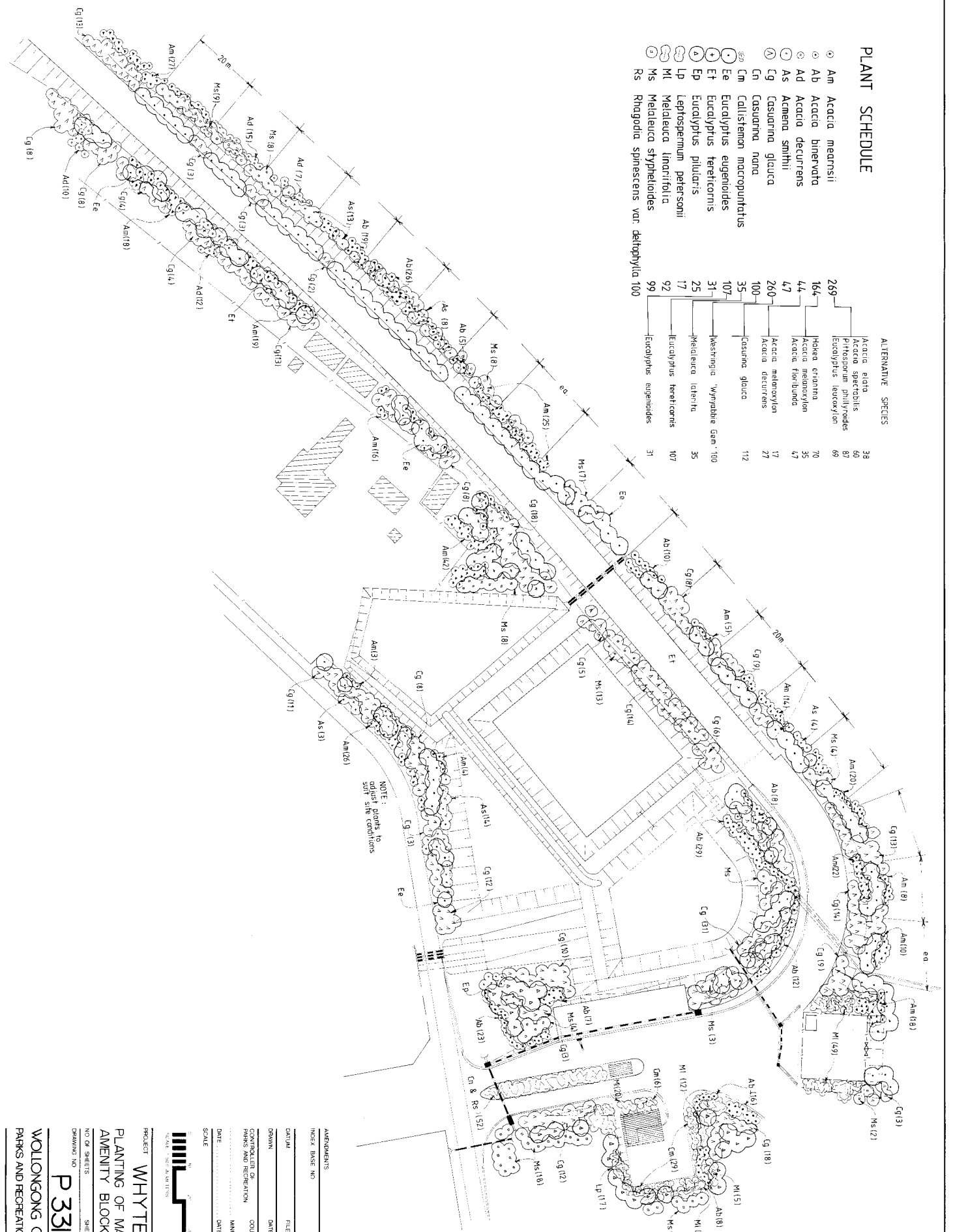
P 331/10

MAGX

A1

PLANT SCHEDULE

PLANT SCHEDULE	ALTERNATIVE	SPECIES
Am	269	Acacia mearnsii
Ab	164	Acacia biervadia
Ad	44	Acacia decurrens
As	47	Acacia smithii
Cg	260	Casuarina glauca
Cn	100	Casuarina nana
Cm	35	Callistemon macropanthus
Ee	107	Eucalyptus eugenoides
Et	31	Eucalyptus tenerricornis
Ep	25	Eucalyptus pilularis
Lp	17	Leptospermum petersonii
Ml	92	Melaleuca linariifolia
Ms	99	Melaleuca styphelioides
Rs	100	Rhagodia spinescens var. deltophylla

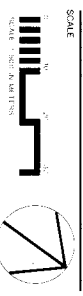


PROJECT
WHITES GULLY
PLANTING OF MAIN ENTRANCE
AMENITY BLOCK & BATTERS

DRAWING NO
P 331/11

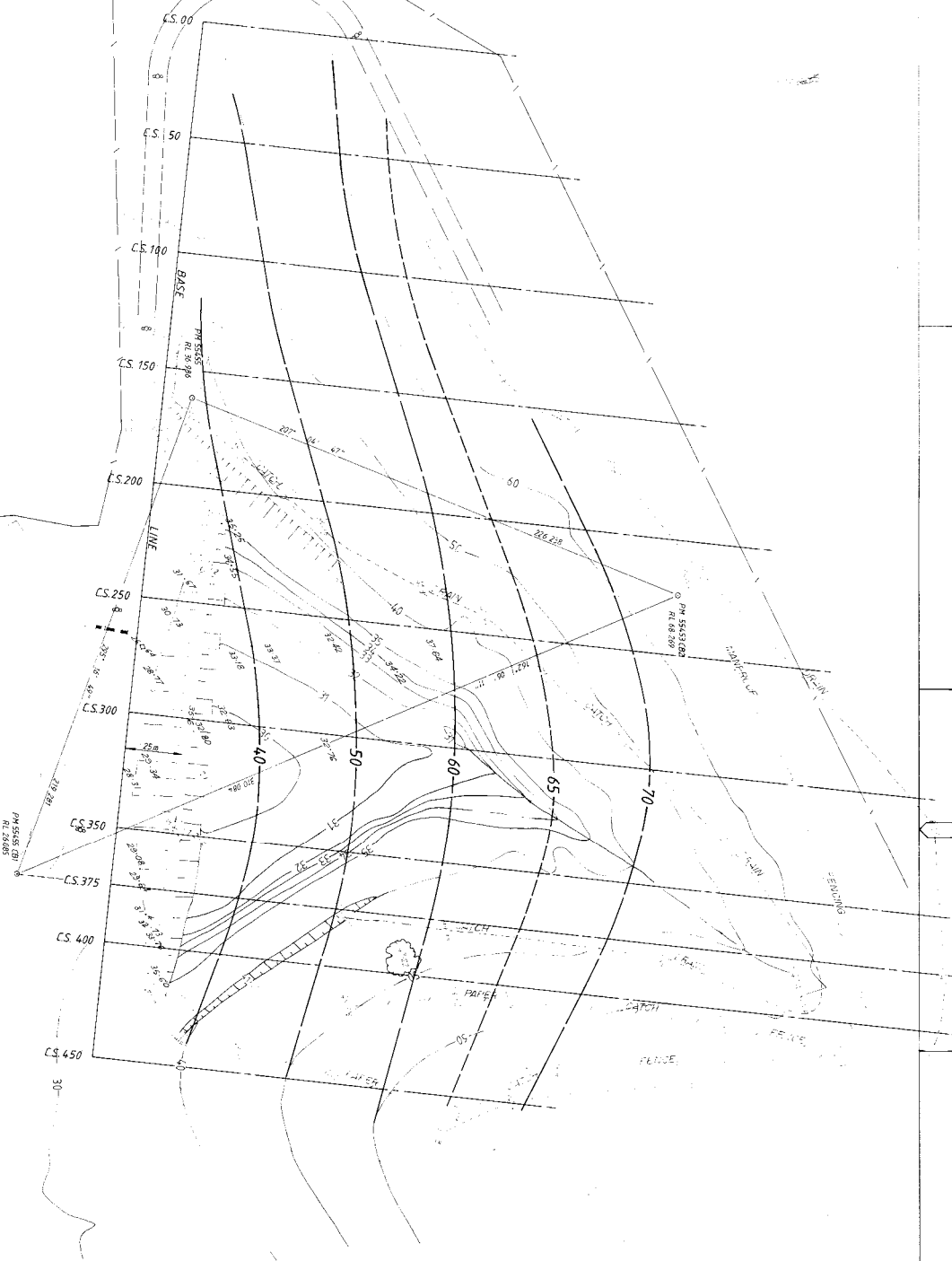
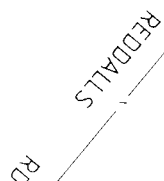
WOLLONGONG CITY COUNCIL
PARKS AND RECREATION DEPARTMENT

AMENDMENTS	NO	DATE
INDEX BASE NO		
DATE		
DRAWN		
DATE		
CONTROLLER OF PARKS AND RECREATION		
COUNCIL APPROVAL		
DATE		
MANUTE NO		
SCALE		



DATES	NO. OF WEEKS	FILL RATE	YEARLY RAIL
24/10/84 - 27/18/86	96	130,650 m ³	70,500 m ³
30/5/89 - 24/4/90	48	134,460 m ³	75,34.0 m ³
24/4/90 - 10/1/91	37	95,250 m ³	135,000 m ³

FILLING RATES



LEGEND:

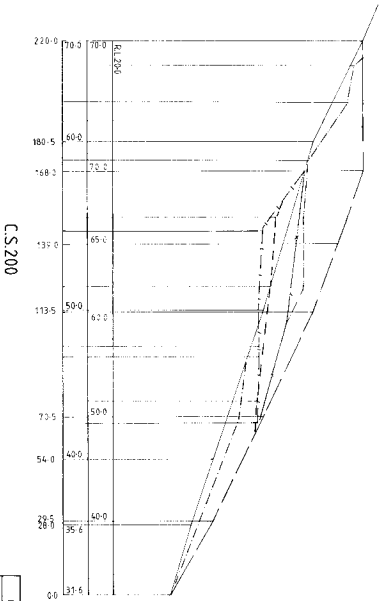
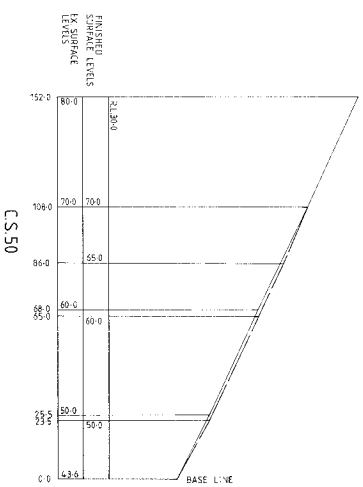
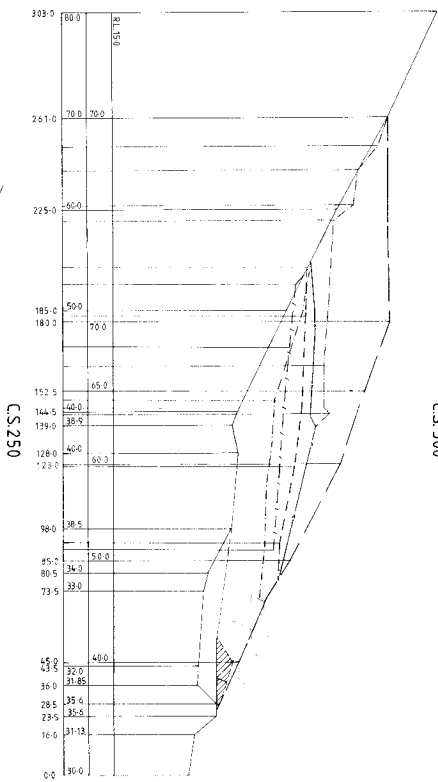
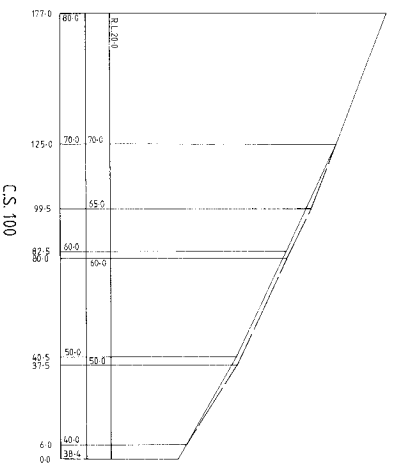
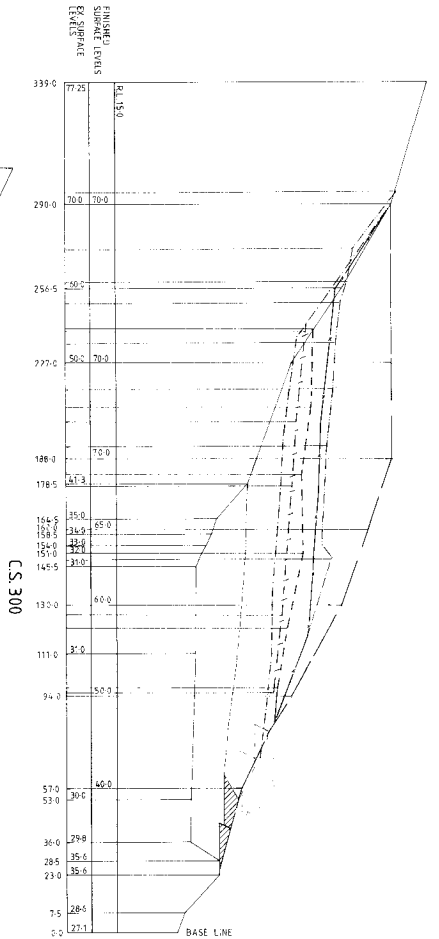
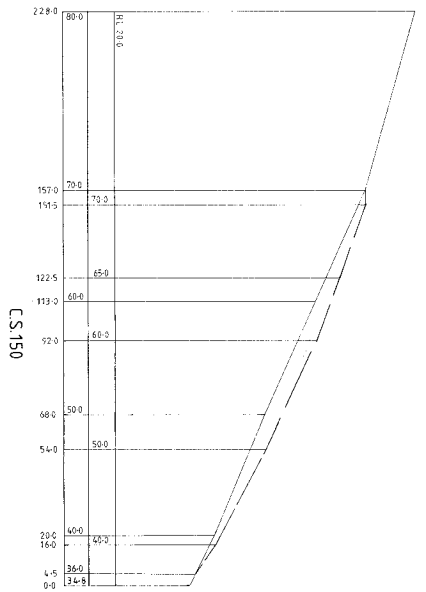
32 —————
 50 —————
 EX. CONTOURS AS AT 24/10/84
 FINISHED CONTOURS
 Made available: post-2000
 of inverse compatibility

STARTING DATE OF TIP	24-90-84
----------------------	----------

CITY OF WOLLONGONG

WHYTES GULLY WASTE DISPOSAL DEPOT
FILL CONTROL PLAN

P 331/12



SCALES
HORIZ
1:100
VERT
1:500

SURVEYED 10/1/91
SURVEYED 24/6/90
SURVEYED 30/5/89
SURVEYED 4/11/88
SURVEYED 3/3/86

DRAWN: K. IRVINE 9/86

LEGEND:



BLIND WALL AS CONSTRUCTED.



FUTURE BLIND WALL.

CITY OF WOLLONGONG

WHITES GULLY WASTE DISPOSAL DEPOT
CROSS SECTIONS THROUGH TIPPING AREA

P331/12

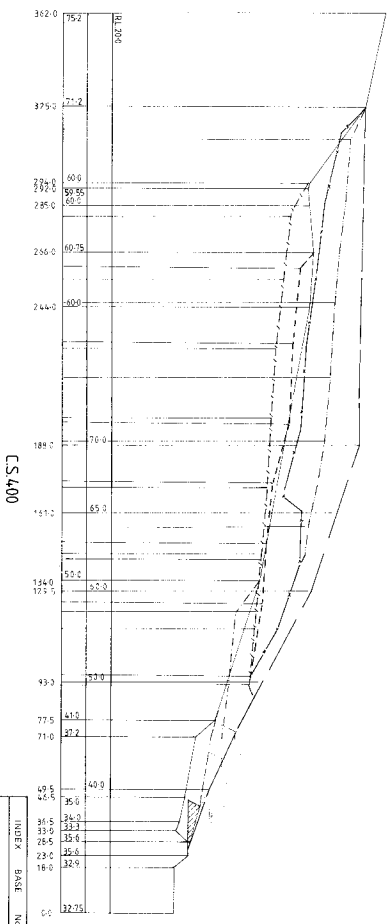
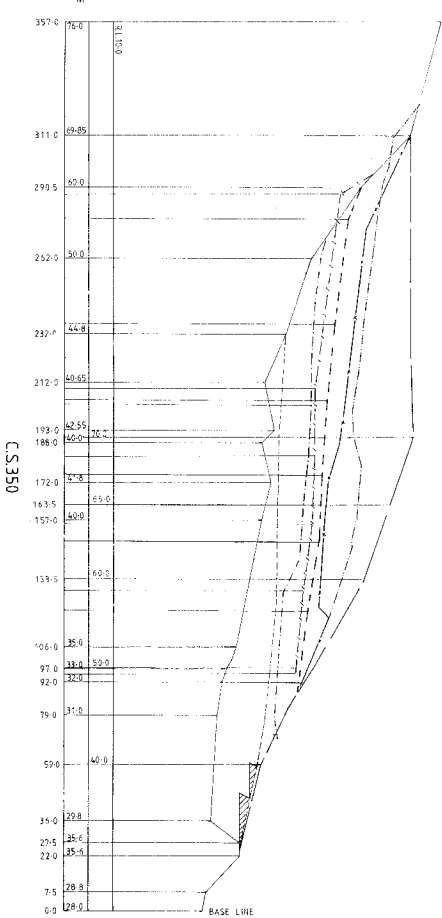
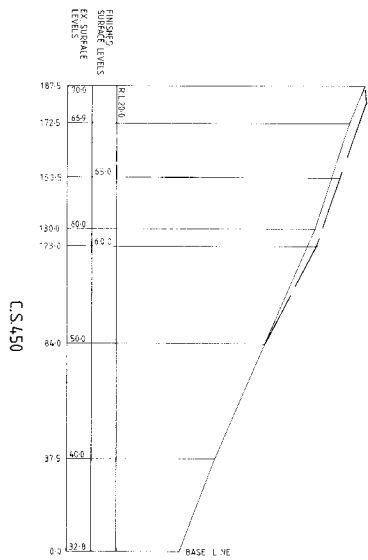
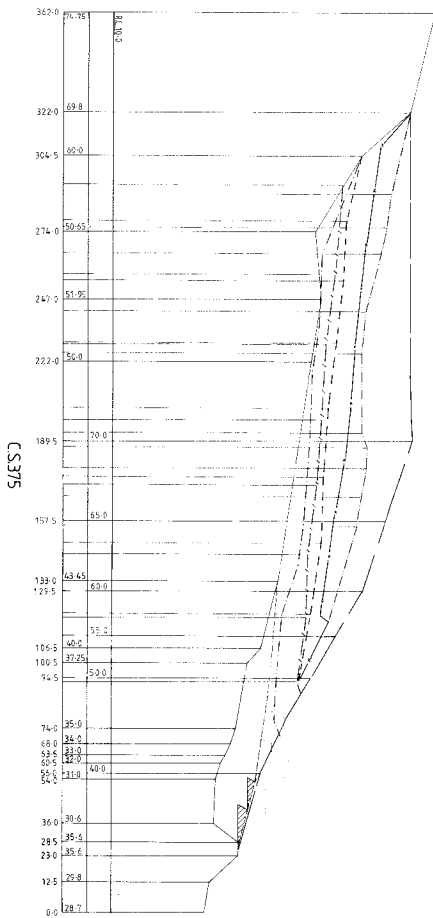
INDEX: PAGE No.

DRAWING No.

Sheet No.

MAGX

A1/2



LEGEND:
 BUND WALL AS CONSTRUCTED
 FUTURE BUND WALL

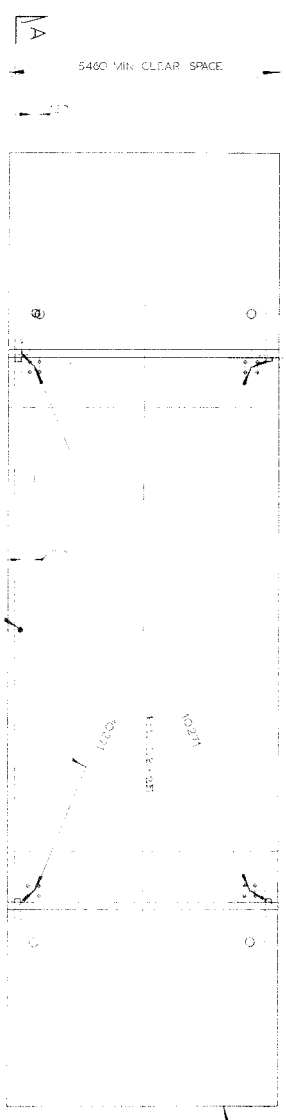
SURVEYED 10/1/91
 SURVEYED 24/4/90
 SURVEYED 3/3/88
 SURVEYED 30/5/89
 SURVEYED 4/11/88
 SURVEYED 27/8/86

CITY OF WOLLONGONG
 WHITES GULLY WASTE DISPOSAL DEPOT
 CROSS SECTIONS THROUGH TIPPING AREA
P331/12

SCALE
 HORIZ. 1:1000
 VERT. 1:500

CHUTE
LOAD
LOAD

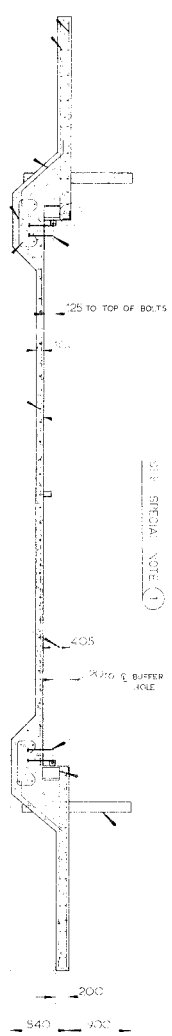
1000
9750



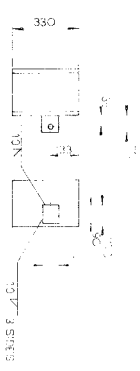
DETAIL B

SECTION B

NOTE: SECTION B CHUTE CAN BE
DESIGNED TO 72" FOR WOOD
OR 12" FOR STEEL LINE



DETAIL ITEM 5 & 6



SECTION A-A

SECTION A-A



NOTE

1. CHUTE CAN BE DESIGNED TO 72" FOR WOOD OR 12" FOR STEEL LINE

MACHINE NO. 2100000000

MAKING OF THE GARAGE 7100

P331/13

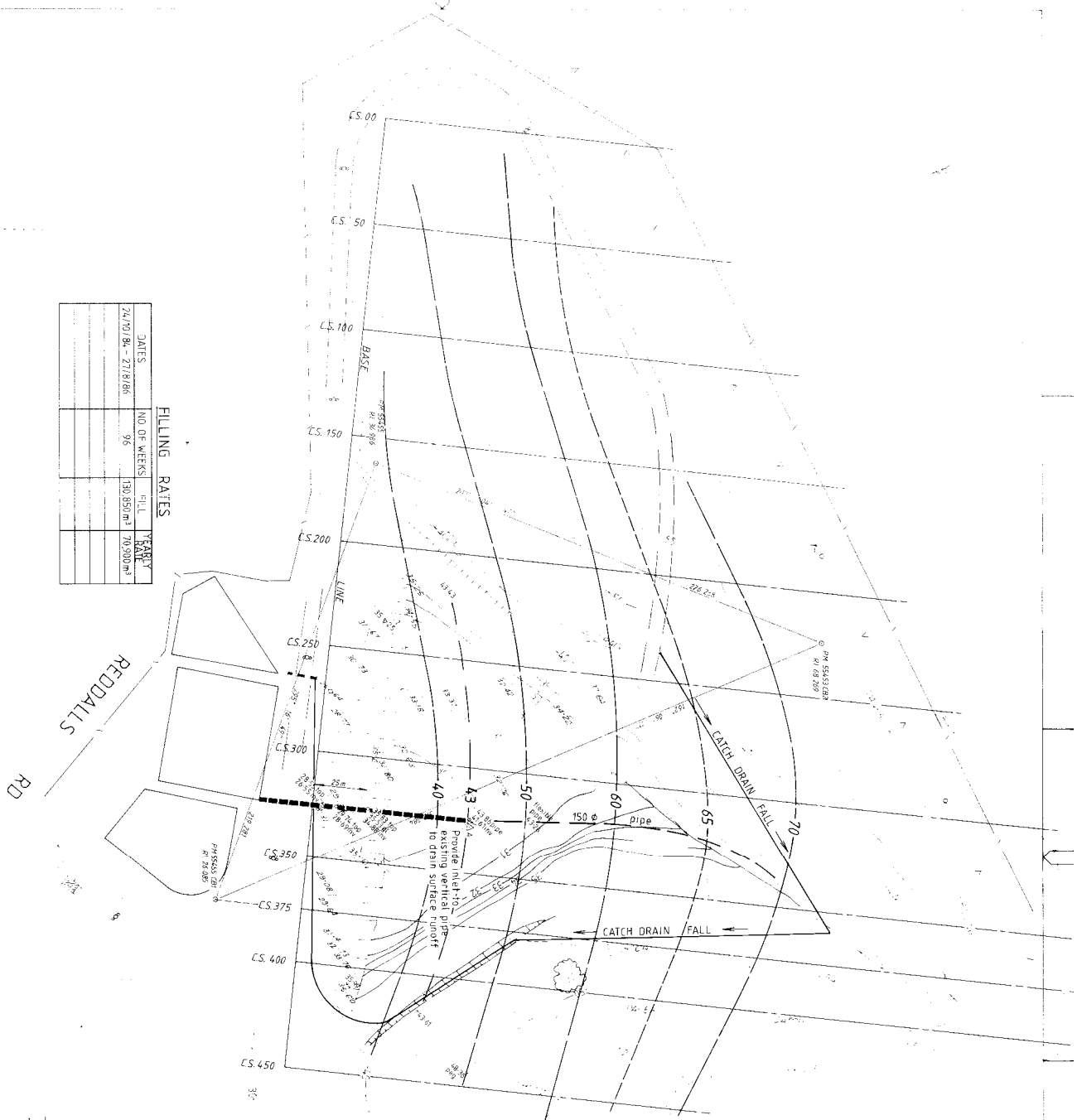
MAKING OF THE GARAGE 7100

DATE: 12/87
 DRAWN BY: R. MORRIS
 CHECKED BY: J. MORRIS
 FILE NO: 186/7

SCALE: 1:1000

FILLING RATES

DATES	NO. OF WEEKS	FILL RATE	TOTAL
24/10/84 - 27/10/84	96	130.850m ³	79,000m ³



LEGEND:

— 32 — EX. CONTOURS AS AT 24/10/84.

— 50 — FINISHED CONTOURS

— 4.3 — LEACHATE PIPE LEVELS 12/87

— 4.3 — EX. CONTOUR AT 12/87

NOTES:

1. 150mm subsoil pipe to be laid on existing surface and covered with 300mm slag sand, before covering with fresh garbage.

2. Tip surface to be worked so that fall is toward the 150mm subsoil pipe, and from north to south so that runoff from tip surface can reach new inlet to vertical pipe adjacent to Station A.

CITY OF WOLLONGONG

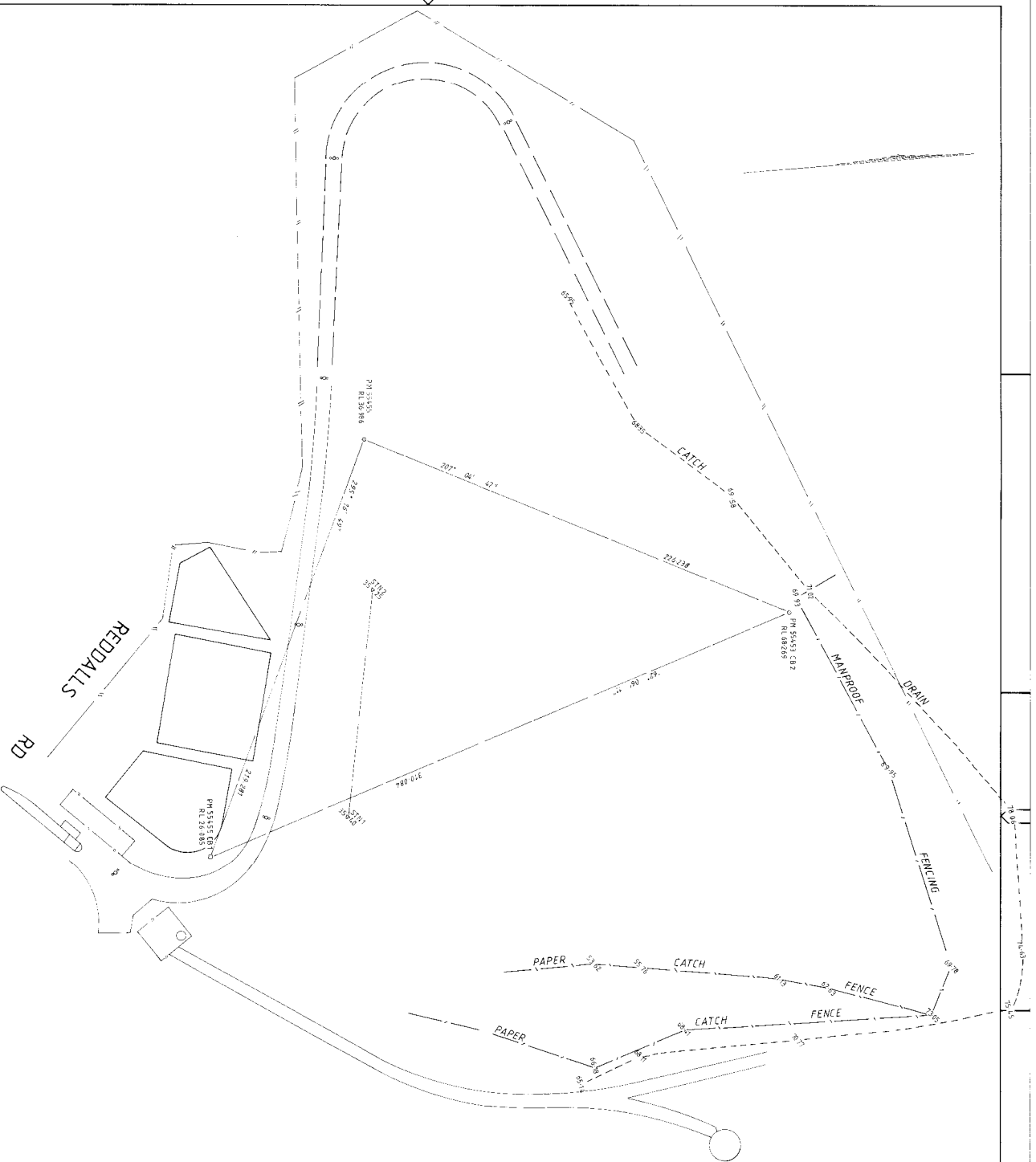
WHITES GULLY WASTE DISPOSAL DEPOT

FILL CONTROL PLAN

LEACHATE LINE

P 331/14

MAGX



PLAN				SCALES				FIELD INSPECTION			
LONG. SECTION				1:1000				DESIGN ENGINEER			
VERT.								DATE			
AHD								RELATED PLANS			
FILE NO.								ESTIMATE NO.			
BOOKS								DATE			
CHECKED											
DATE											
DESIGNED											
DATE											
DRAWN											
DATE											
ADJUSTMENTS											
DATE											
DATE											

CITY OF WOLLONGONG
WHYTES GULLY WASTE DISPOSAL DEPOT

DRAWING NO.
P331/15

MAGX A1

SET 0331/12
FOR SECTIONS

21

Axioms 2024, 13, 897

100

5

— 2 —

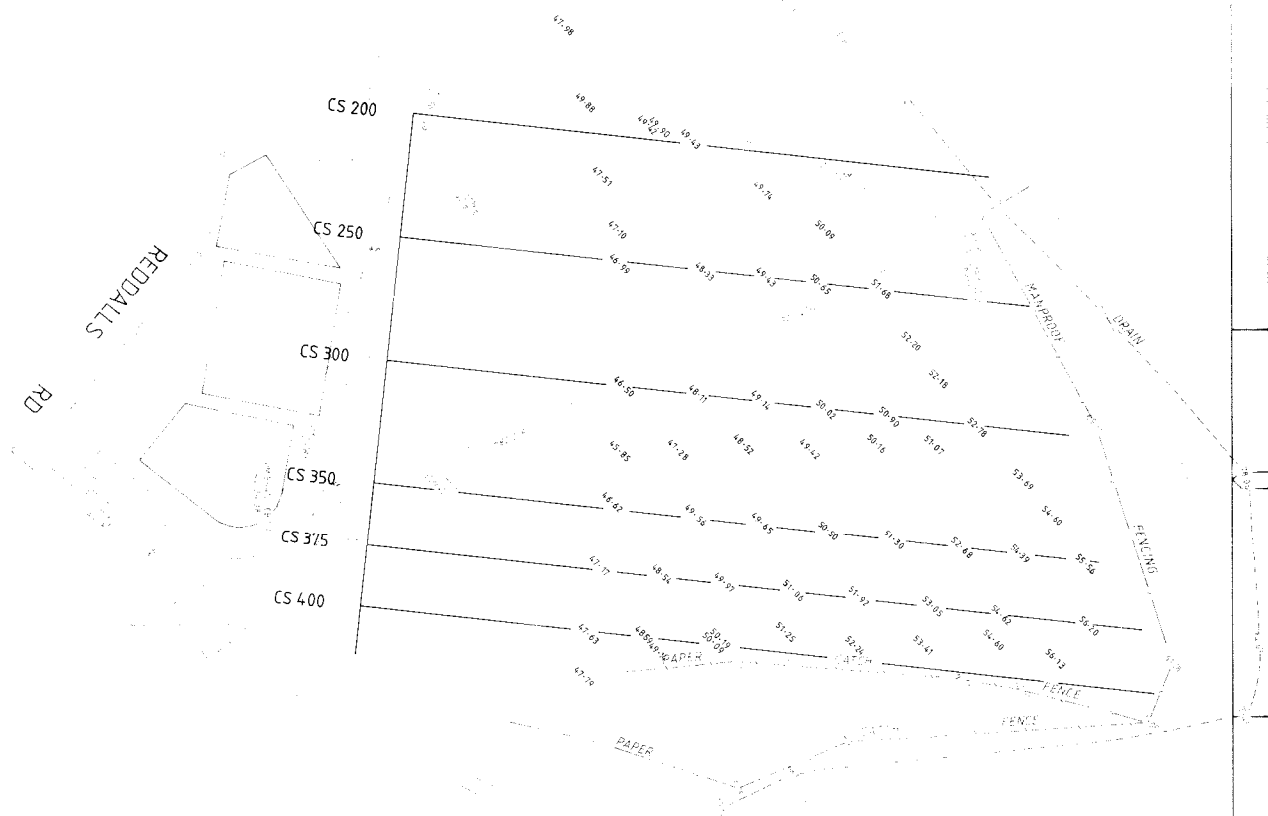
CITY OF WOLLONGONG

WHYTES GULLY WASTE DISPOSAL DEPOT
LEVELS AS AT 4/11/88

P 331/16

MAGX

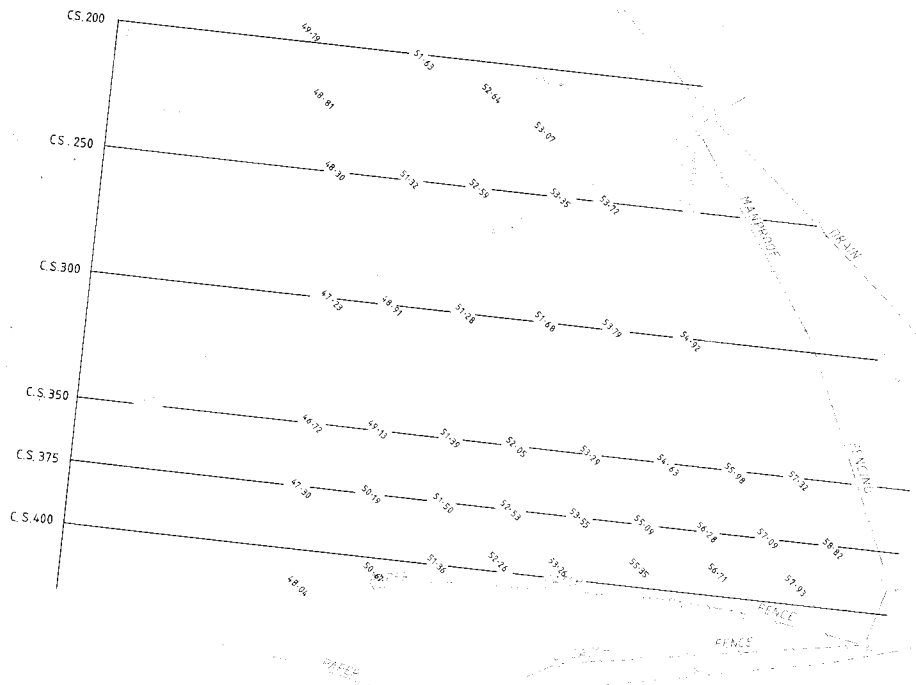
A



FB

SEE PAGE 12
FOR SECTIONS

REDDALLS
RD



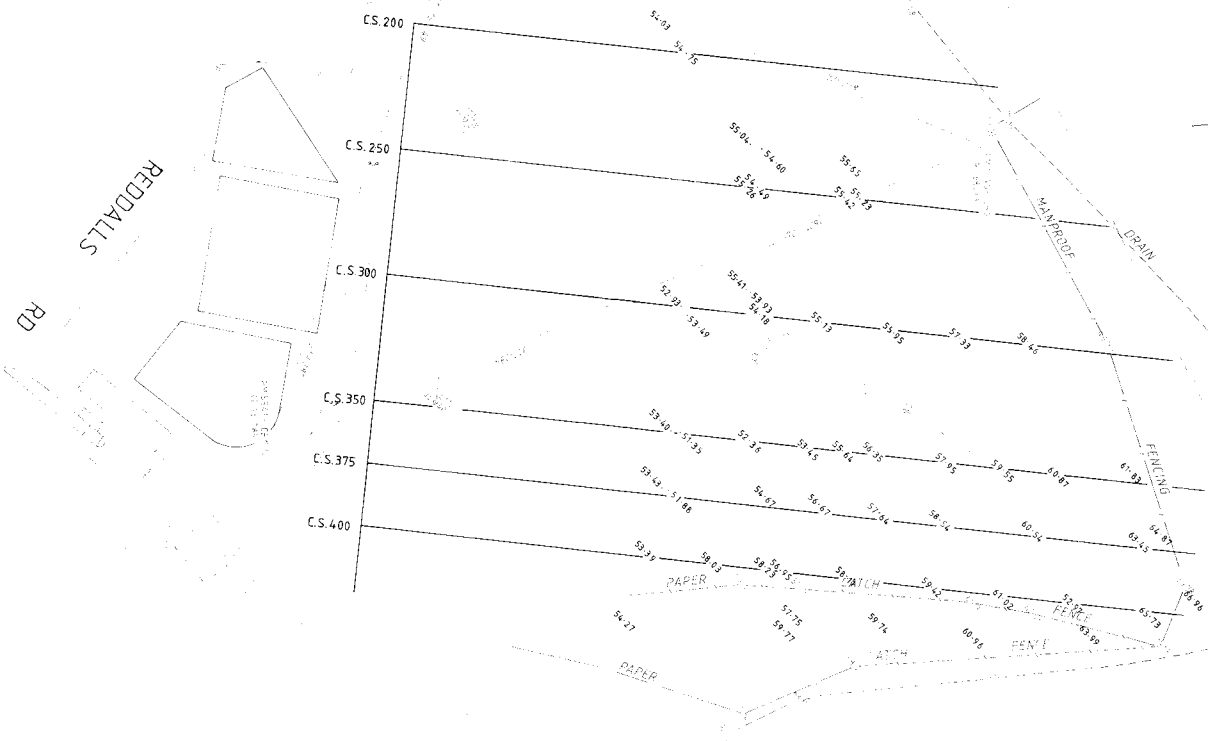
CITY OF WOLLONGONG

WHITES GULLY WASTE DISPOSAL DEPOT
LEVELS AS AT 30/5/89

P 331/16

MAGX

A1



B HOGAN
1987/2

M.A.P. 6/90

P331/12 for
cross sections

DATE

AMERICAN

DATE

DATE

WHITES GULLY WASTE DISPOSAL DEPOT
LEVELS AS AT 24/4/90

MAGX

P331/16

CITY OF WOLLONGONG

4

TEMPORARY RELOCATION
DURING FILLING OPERATIONS

FOR LONG SECTION ALONG LINE
OF BRIDGED TOWERS
REFER TO PLAN 492

- LEGEND :**
- 102 M²
 - LIMIT OF FILL FIRST STAGE
 - LIMIT OF FILL SECOND STAGE
 - MOUND PROOF FENCE
 - VERMIN-PROOF FENCE
 - TATCH DRAIN
 - LEACHATE DRAIN
 - MOUND GRAVITY MAIN DRAIN
 - FILLING TOWER TO BE REMOVED

NOTE: AMENITIES BLOCK AND CARPARK
TO BE LOCATED ON SITE

CLAY LINED LEACHATE OVERFLOW
POND 8000 ML CAPACITY T.W. 2560

E 281 400

E 281 600

E 281 800

E 282 000

E 282 200

N 184 900

N 185 100

N 185 300

N 185 500

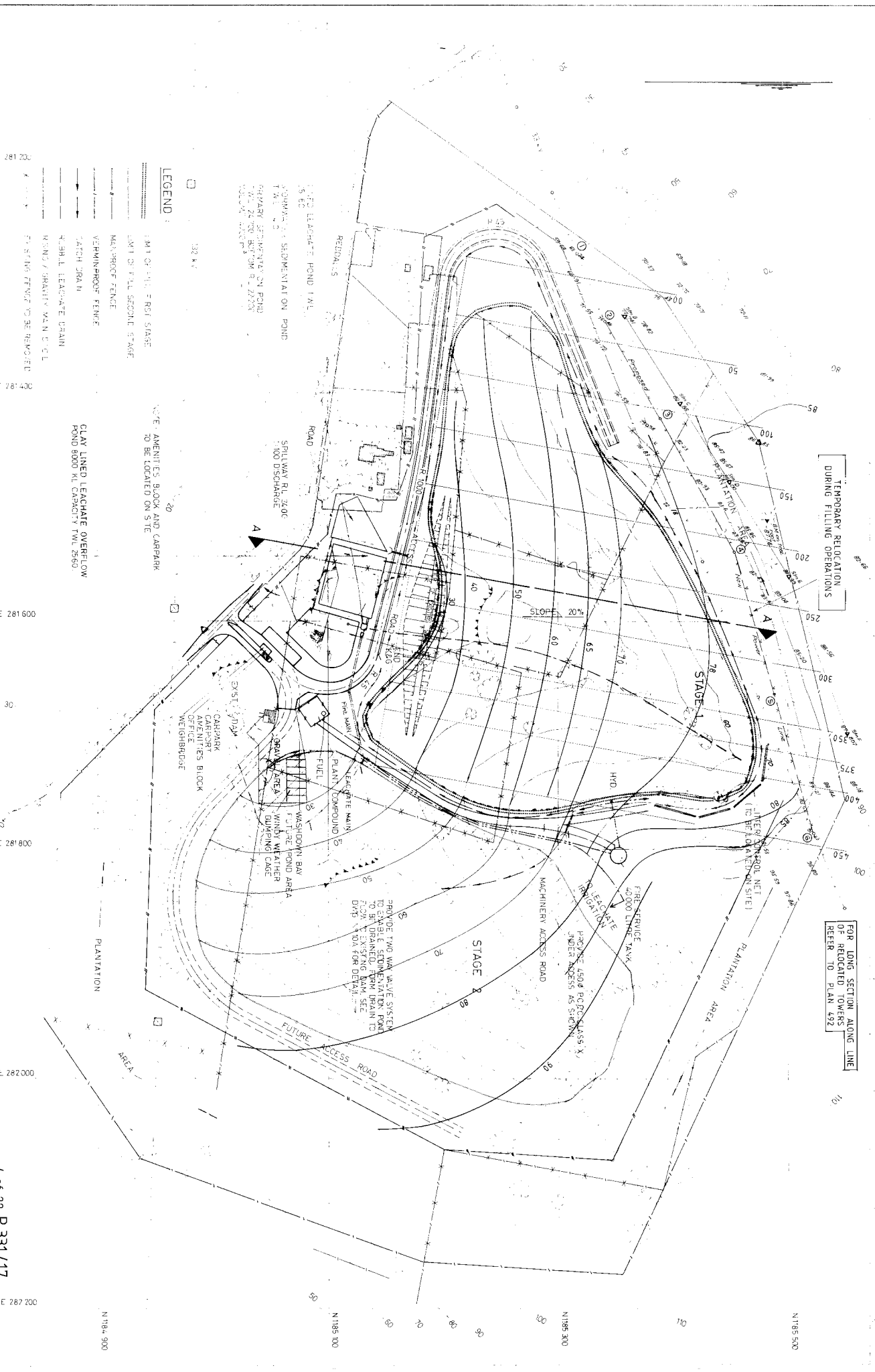
4. of 29 P 331/17

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 END BARR, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 510077
AND AT MELBOURNE, SYDNEY, ADELAIDE, PERTH, DARWIN AND LAKEVIEW

SCOTT & FURPHY
CONSULTING ENGINEERS

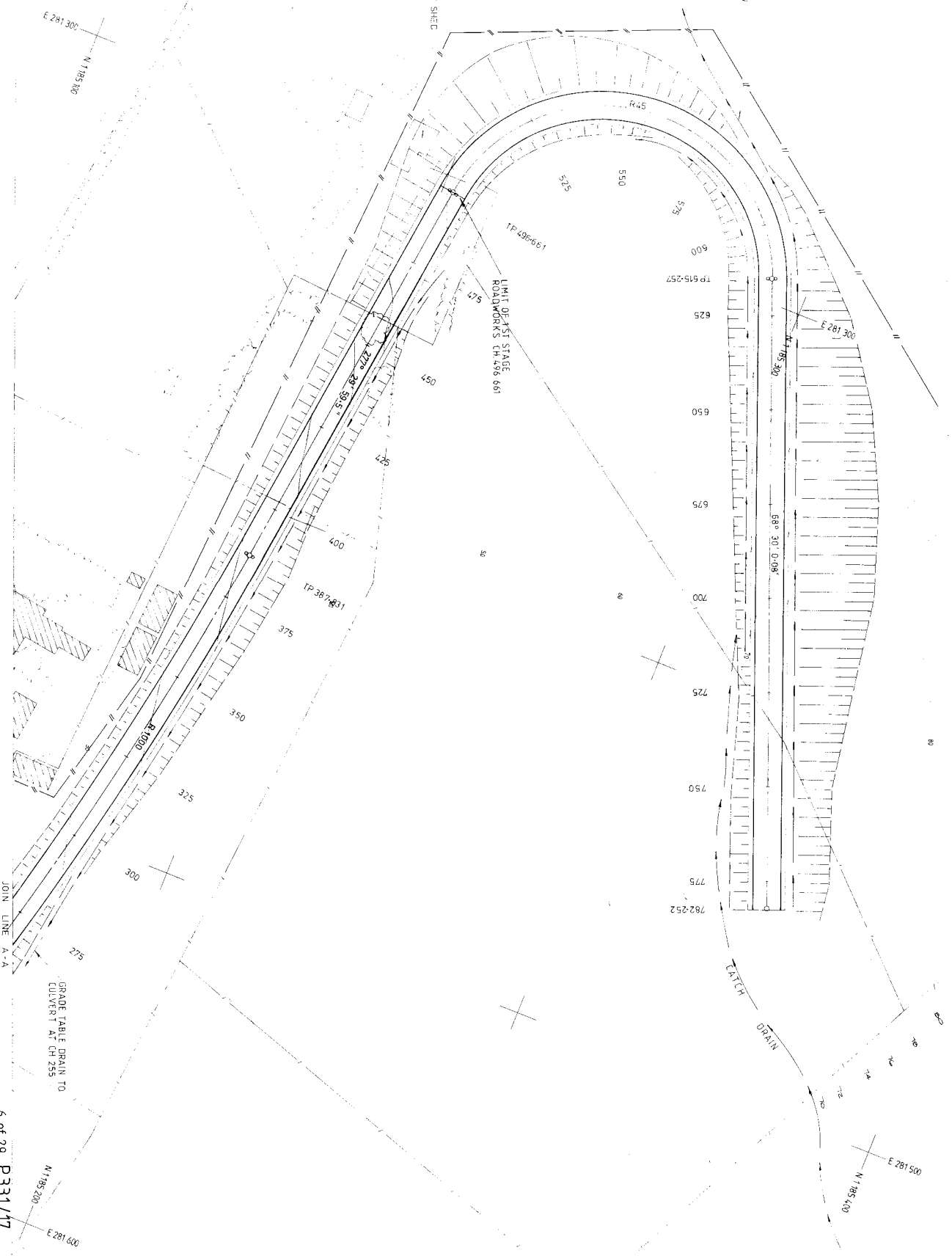
1:1500
S.H. 1/1500
C.G. 1/1500

WOLLONGONG CITY COUNCIL
WHITES' GULLY LANDFILL SITE
GENERAL LAYOUT PLAN
2798-01-28



CATCH DRAIN TO
SOUTH DRAIN
SEE CATCH DRAIN
DETAIL DWG No
2798-01-4

REMOVE COW SHED



JOIN LINE A-A

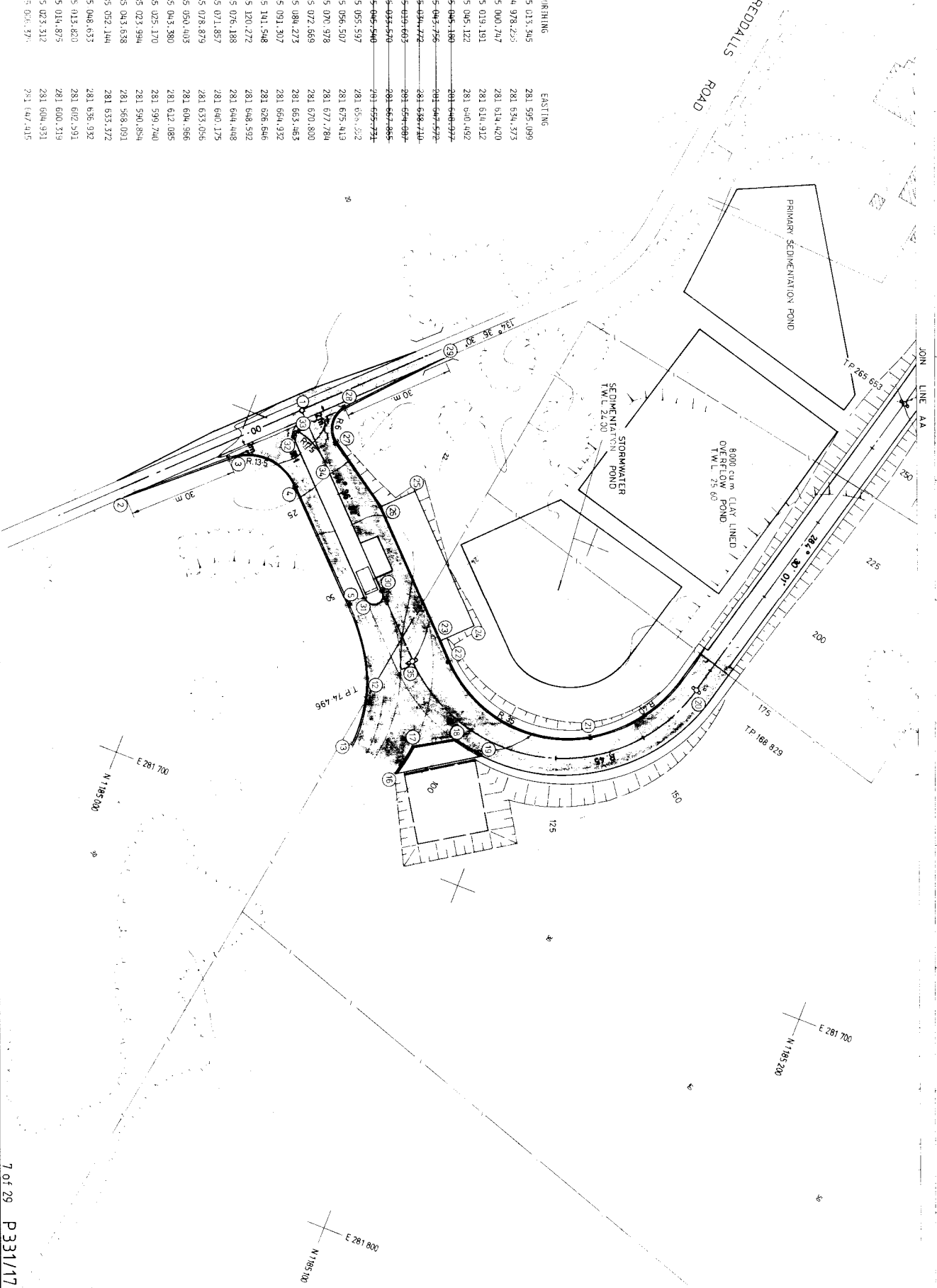
GRADE TABLE DRAIN TO
CULVERT AT CH 255

E 281 600
N 1785 200

E 281 500
N 1785 400

UNIT OF SCALING: 1:500 DATE: 27/01/17 PROJECT: WHYTES' GULLY LANDFILL SITE SCALE: 1:500 DATE: 27/01/17	SCOTT & FURPHY ENGINEERS PTY. LTD. CONSULTING ENGINEERS & PLANNERS 74 END BANK, BELCONNEN TOWN CENTRE CANBERRA ACT 2617 TELEPHONE (062) 515077 AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAunceSTON	SCOTT & FURPHY CONSULTING GROUP DESIGN: S. HOLLIS CHECK: S.H. DRAWN: D.G. APPROVED: 7/1/17 DATE: 27/01/17	WOLLONGONG CITY COUNCIL 6 of 29 P331/17 WHYTES' GULLY LANDFILL SITE DETAIL PLAN 2798-01-4 A
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POINT NO.	NORTHING	EASTING
1	1 185 013.345	281 595.099
2	1 186 978.255	281 634.373
3	1 185 000.747	281 614.420
4	1 185 019.191	281 610.912
5	1 185 045.122	281 640.492
6	1 185 045.180	281 640.977
7	1 185 045.756	281 647.572
8	1 185 034.772	281 638.710
9	1 185 033.603	281 634.007
10	1 185 033.570	281 637.885
11	1 185 045.540	281 655.775
12	1 185 055.597	281 655.552
13	1 185 055.507	281 675.413
14	1 185 070.978	281 677.784
15	1 185 072.669	281 670.800
16	1 185 084.273	281 663.463
17	1 185 091.307	281 654.932
18	1 185 141.548	281 626.646
19	1 185 120.272	281 648.592
20	1 185 076.188	281 644.448
21	1 185 071.857	281 640.175
22	1 185 078.879	281 633.056
23	1 185 050.403	281 604.966
24	1 185 043.380	281 612.085
25	1 185 025.170	281 599.740
26	1 185 023.994	281 590.854
27	1 185 043.638	281 568.091
28	1 185 052.144	281 633.372
29	1 185 046.633	281 636.932
30	1 185 015.620	281 602.591
31	1 185 014.875	281 600.319
32	1 185 023.312	281 604.931
33	1 185 044.371	281 647.415



SECTION	POINT NO.	DATE	REVISION	DESCRIPTION	DATE
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3	3	1985-04-15			
4	4	1985-04-15			
5	5	1985-04-15			
6	6	1985-04-15			
7	7	1985-04-15			
8	8	1985-04-15			
9	9	1985-04-15			
10	10	1985-04-15			
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14	14	1985-04-15			
15	15	1985-04-15			
16	16	1985-04-15			
17	17	1985-04-15			
18	18	1985-04-15			
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26	26	1985-04-15			
27	27	1985-04-15			
28	28	1985-04-15			
29	29	1985-04-15			
30	30	1985-04-15			
31	31	1985-04-15			
32	32	1985-04-15			
33	33	1985-04-15			
34	34	1985-04-15			
35	35	1985-04-15			

SCOTT & FLIPPY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS
74 END RIVER ROAD, CANBERRA ACT 2617
TELEPHONE (062) 512077
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAunceston

SCOTT & FLIPPY CONSULTING GROUP

PROJECT: **WHYTES' GULLY LANDFILL SITE**
DRAWN: **D.G.**
CHECKED: **S.H.**
DATE: **27/9/80**

WOLLONGONG CITY COUNCIL
WHYTES' GULLY LANDFILL SITE
SETOUT PLAN

7 of 29 P331/17

2798-01-5B

TREATED TIMBER POSTS

2m HIGH

NETTING

NET SYSTEM INCLINED ALONG
TOWARDS DOWNWIND LITTER

LITTER CONTROL NETS

PLAN 2791 2011 1:500 10/10/13

PRIMARY NET

SECONDARY NET

STAGE 1

TOP OF
FIRST LIFT

20.00

NOTE FOR SECTION A-A
SEE DWG NO 72

PREVAILING
WIND
DIRECTION



ADDITIONAL BOUNDARY
LITTER / SECURITY FENCES

TRUCKS BACK IN TO DUMP
TO PREVENT LITTER BEING
BLOWN AWAY

MESH COVERED CAGE

TRENCH CLEARED BY DOZER
AFTER WINDS HAVE CEASED

CAGE HAS REMOVABLE SIDE PANELS TO
BE OPENED TO DIRECTLY
INTO TRENCH ON WINDWARD SIDE

WIND
DIRECTION

WINDY WEATHER DUMPING CAGE

FOR DE A-C SEE DWG NO 2798 01/9

LITTER CONTROL SYSTEM

8 of 29 P331/17

Technical Drawing Details
Company: City of Wollongong

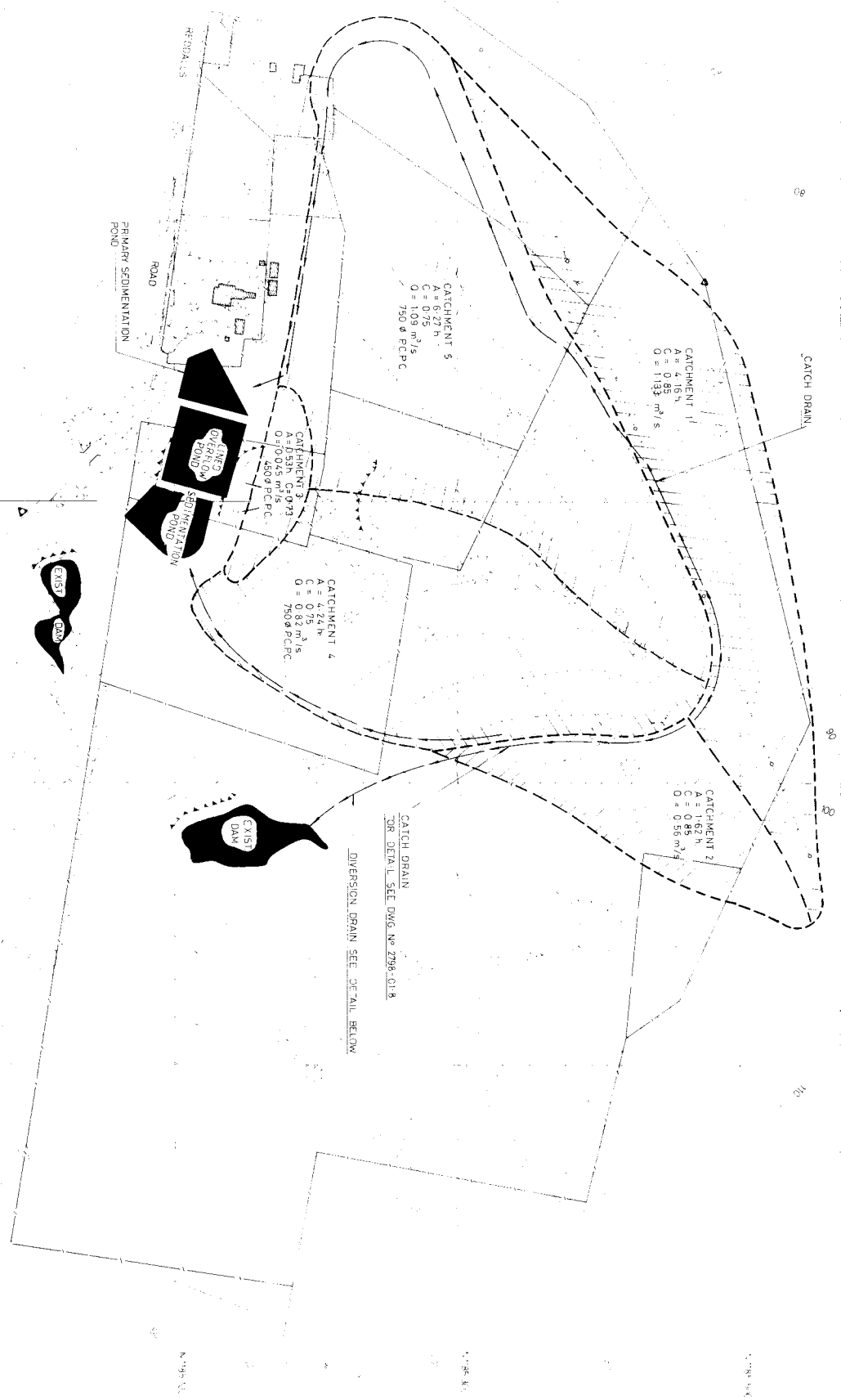
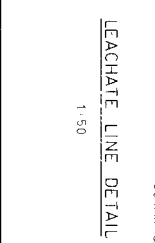
10/10/13
2:55 PM

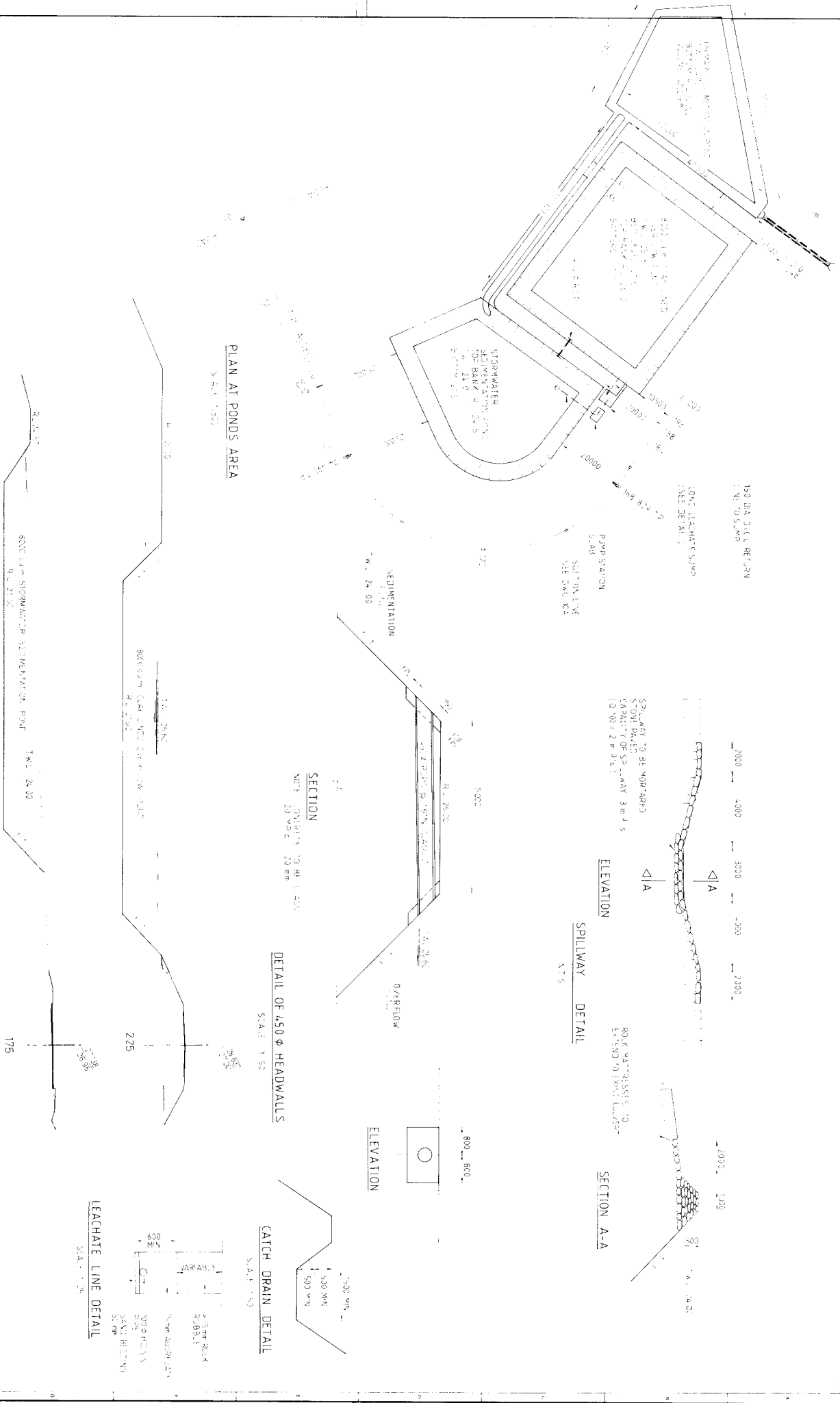
SCOTT & FURPHY ENGINEERS PTY LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 51007
AND AT BELCONNEN, SYDNEY & OTHER INDUSTRY AND LANDLORDS

WOLLONGONG CITY COUNCIL

WHITES' GULLY LANDFILL SITE
GENERAL LAYOUT PLAN

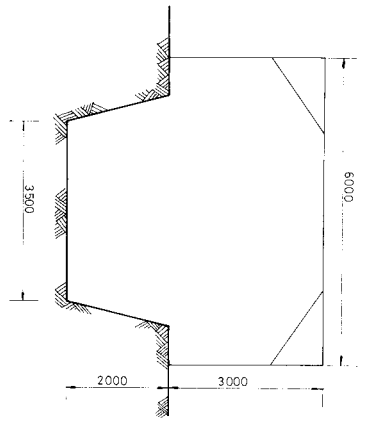
2798-01-6B

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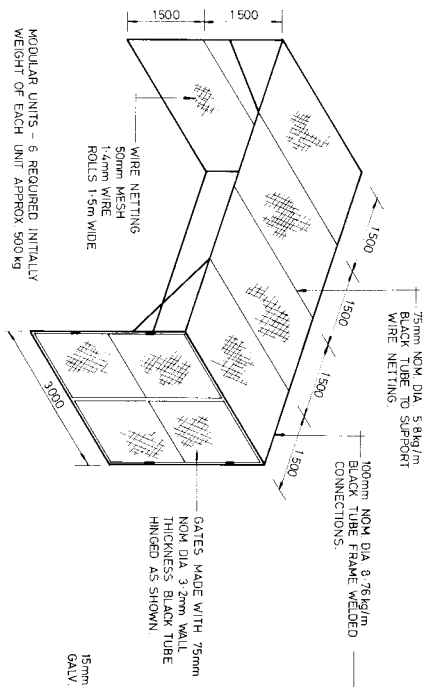
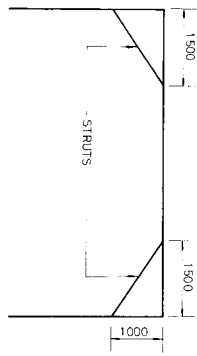


PROJECT NO.	74 ECU BANK, BELCONNEN TOWN CENTRE	SCOTT & PURPHY ENGINEERS PTY. LTD.	CONSULTING ENGINEERS & PLANNERS
CLIENT	CANBERRA A.C.T. 2617	74 ECU BANK, BELCONNEN TOWN CENTRE	CONSULTING ENGINEERS & PLANNERS
DATE	2017	TELEPHONE (02) 819277	AND 17 MELBOURNE, SYDNEY, PERTH, ADELAIDE AND LONDON
DESCRIPTION	WOLLONGONG CITY COUNCIL	WHITES GULLY LANDFILL SITE	FILTRATION, LEACHATE POND DETAIL
DATE	2017	2798-01-8-B	

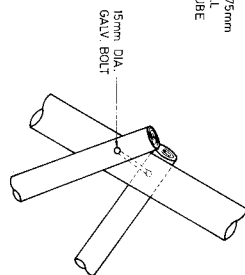
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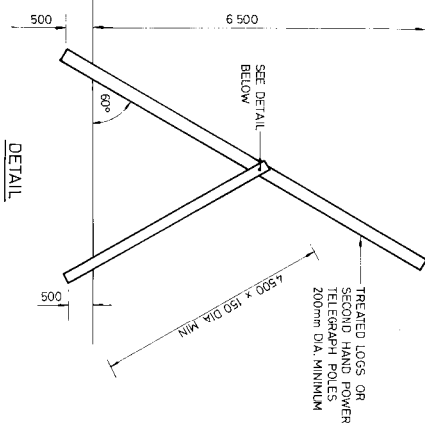
DETAIL



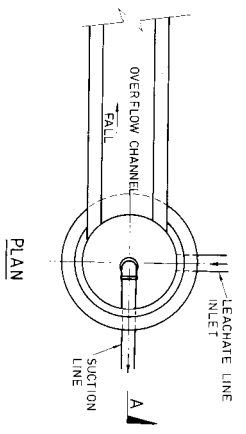
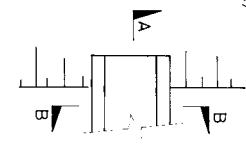
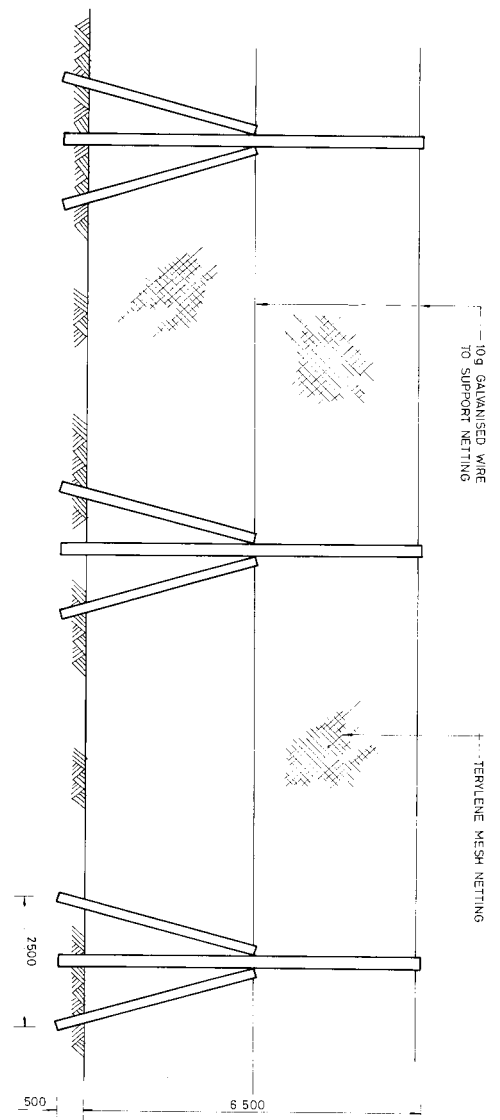
WINDY WEATHER DUMPING CAGE DETAILS



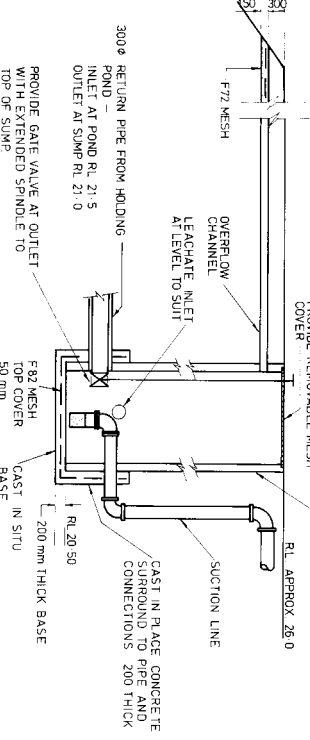
DETAIL



ELEVATION



SECTION B B



SECTION A-A

LEACHATE SUMP

11 of 29 P 331/17

LITTER CONTROL NET DETAILS

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 31977
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON

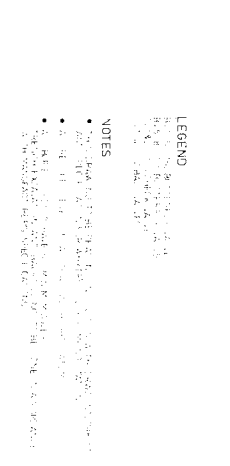
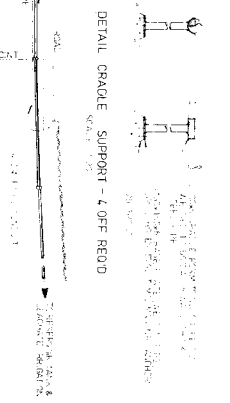
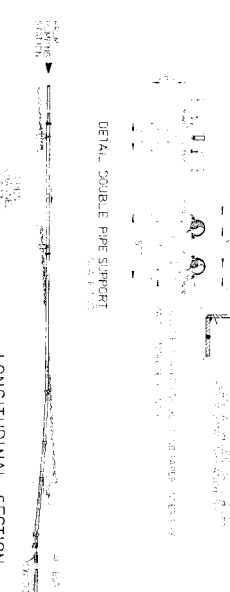
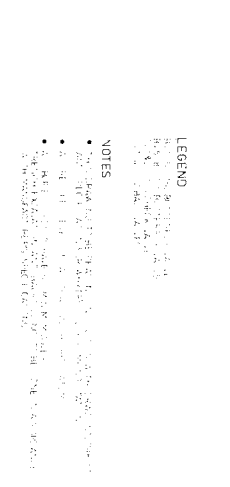
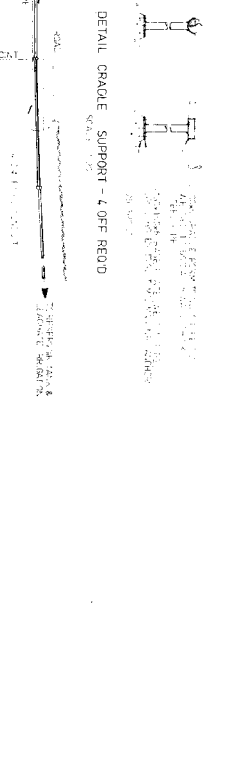
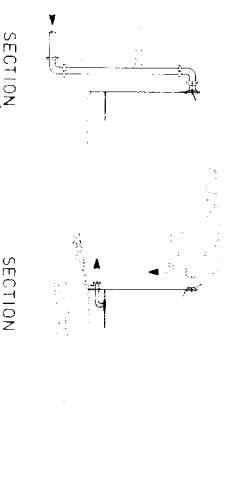
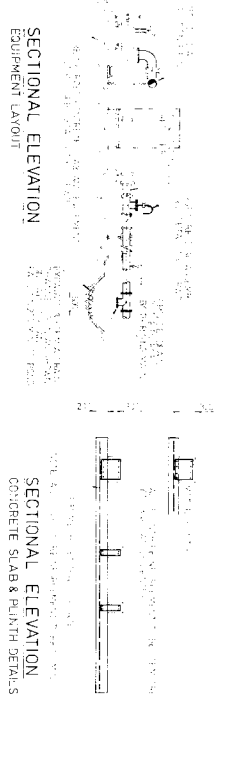
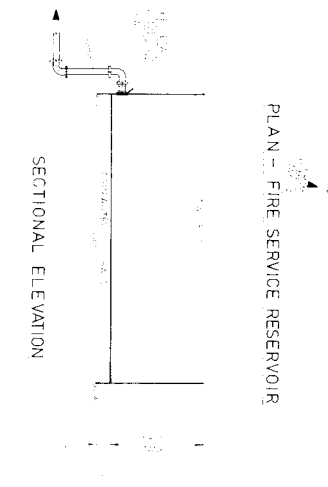
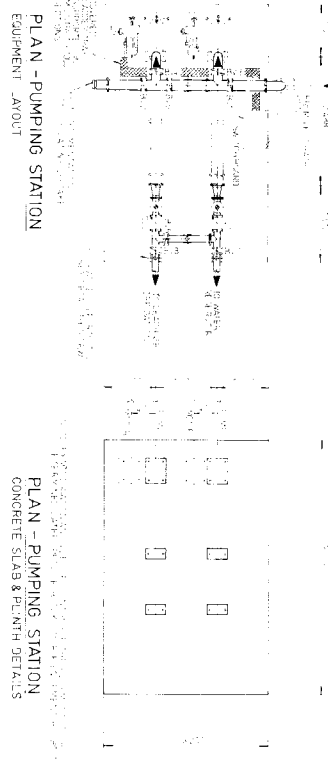
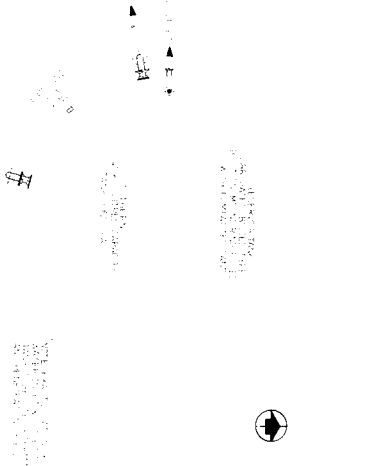
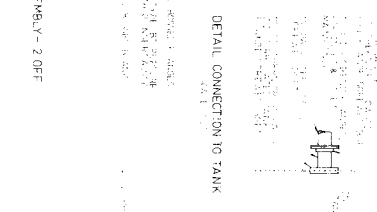
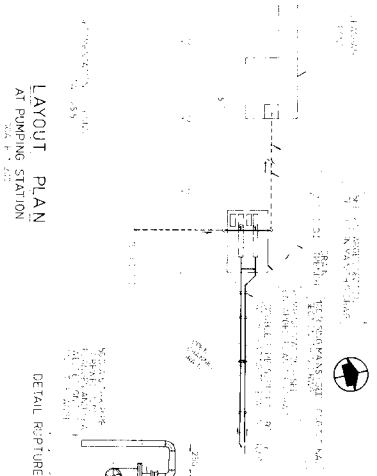


PROJECT NUMBER S. HOLLIS
DESIGN S. H.
DRAWN D. Z.
CHECKED
DATE
SCALE 1:50

WOLLONGONG CITY COUNCIL
WHYTES GULLY LANDFILL SITE
LEACHATE SUMP, LITTER CONTROL NET AND
WINDY WEATHER DUMPING CAGE DETAILS

DRAWING NO.

2798-01-9 A



NOTES

- 1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- 2. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
- 3. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
- 4. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
- 5. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.

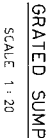
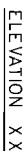
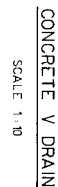
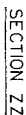
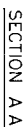
LEGEND

- 1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- 2. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
- 3. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.
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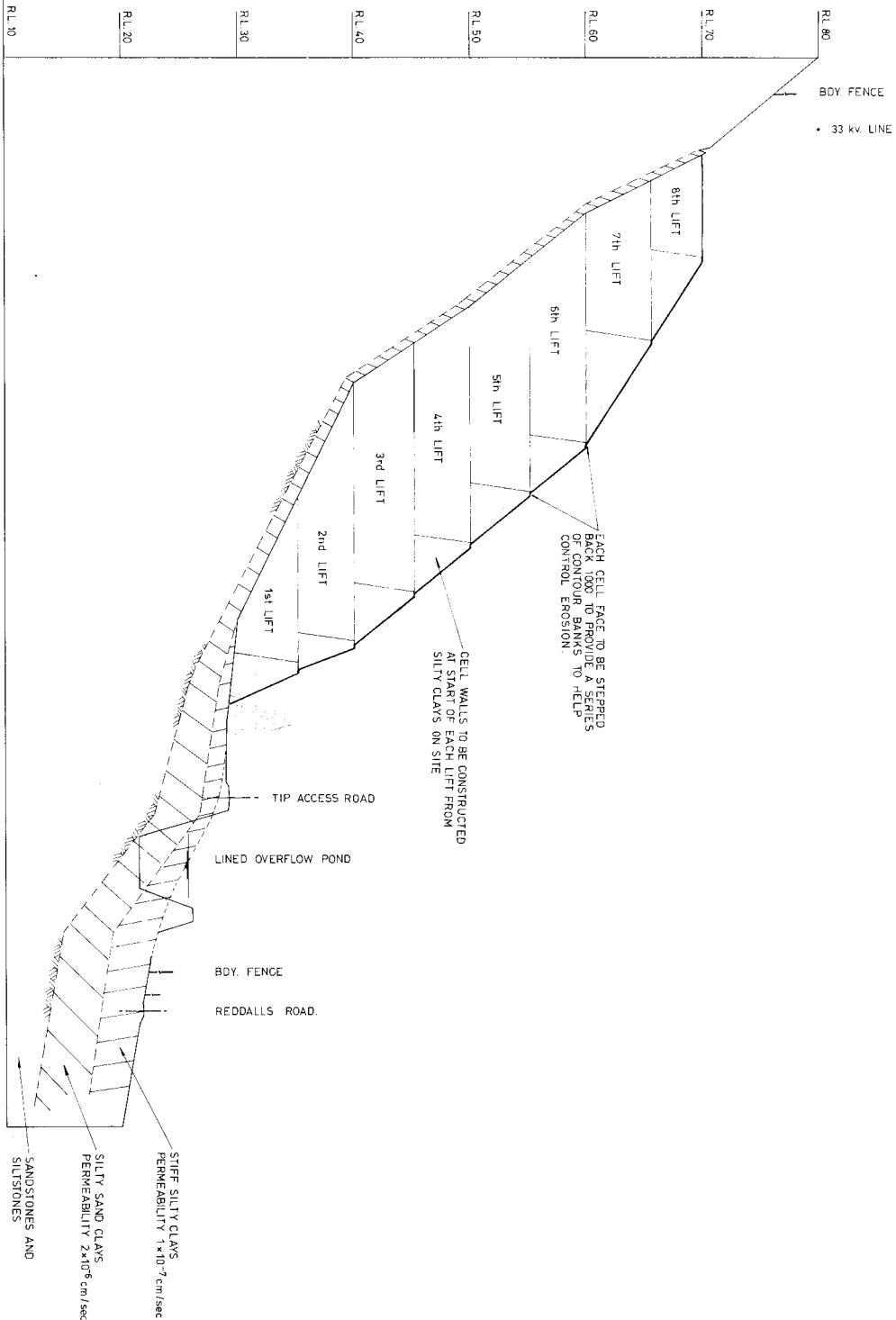
12 of 29 P 331/17

7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977	7. TOWN PLANNING ACT 1977
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PLANT AREA TO DRAIN
TO THIS POINT.



DRAWINGS No. 2798-01-11A



SECTION A-A

SCOTT & FURPHY ENGINEERS PTY. LTD. CONSULTING ENGINEERS & PLANNERS 74 EMBANKMENT, BELCONNEN TOWN CENTRE TELEPHONE (062) 512077 AND AT MELBOURNE, SYDNEY, PERTH, INDIANAT AND LANCASTER			SCALE: HOR 1:1000 VER 1:200 PROJECT MANAGER: S. HOLLIS DESIGN: D. G. DRAWN: J. G. DATE: 2.6.94	WOLLONGONG CITY COUNCIL WHITES' GULLY LANDFILL SITE SECTION THROUGH SITE 'A-A'	DRAWING NO.: 2798-01-12
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SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 END BANK BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (063) 512077
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAunceSTON

WOLLONGONG CITY COUNCIL
WHITES' GULLY LANDFILL SITE
PLAN AND LONGITUDINAL SECTION

15 of 29 P 331/17
2798-01-13A

LONGITUDINAL SECTION

CHAMBER

DATUM RL 5.00

3-75 22-000 22-000 00 INT REDDALLS RD.

25 22-783 22-638 (22 638)

50 24-260 23-388 (23 513)

TP 74-496 24-000 24-123 (24 613)

100 25-849 24-888 (25 722)

125 26-771 25-638 (26 475)

150 27-088 26-388 (26 897)

TP 168-827 26-889 26-950 (27 000)

175 27-000 27-887 (27 112)

200 27-000 28-637 (27 250)

225 27-053 29-388 (29 388)

TP 265-650 28-000 29-857 (29 857)

275 28-844 30-138 (30 138)

300 30-222 30-888 (30 888)

325 31-429 31-488 (31 488)

350 32-615 32-619 (32 619)

375 33-826 33-914 (33 914)

TP 387-831 34-600 34-703 (34 703)

400 34-960 35-530 (35 530)

425 36-522 37-466 (37 466)

450 38-667 39-723 (39 723)

475 40-812 42-301 (42 301)

TP 426-661 42-250 44-723 (44 723)

500 42-556 45-097 (45 097)

525 44-650 47-899 (47 899)

550 47-797 50-702 (50 702)

575 53-000 53-504 (53 504)

600 58-000 56-306 (56 306)

TP 615-275 61-630 58-076 (58 076)

625 62-957 59-108 (59 108)

650 65-697 61-911 (61 911)

675 68-000 64-713 (64 713)

700 70-533 67-515 (67 515)

725 72-111 69-879 (69 879)

740 72-000 70-878 (70 878)

750 72-000 71-368 (71 368)

775 72-421 71-981 (71 981)

782-252 72-200 71-998 (71 998)

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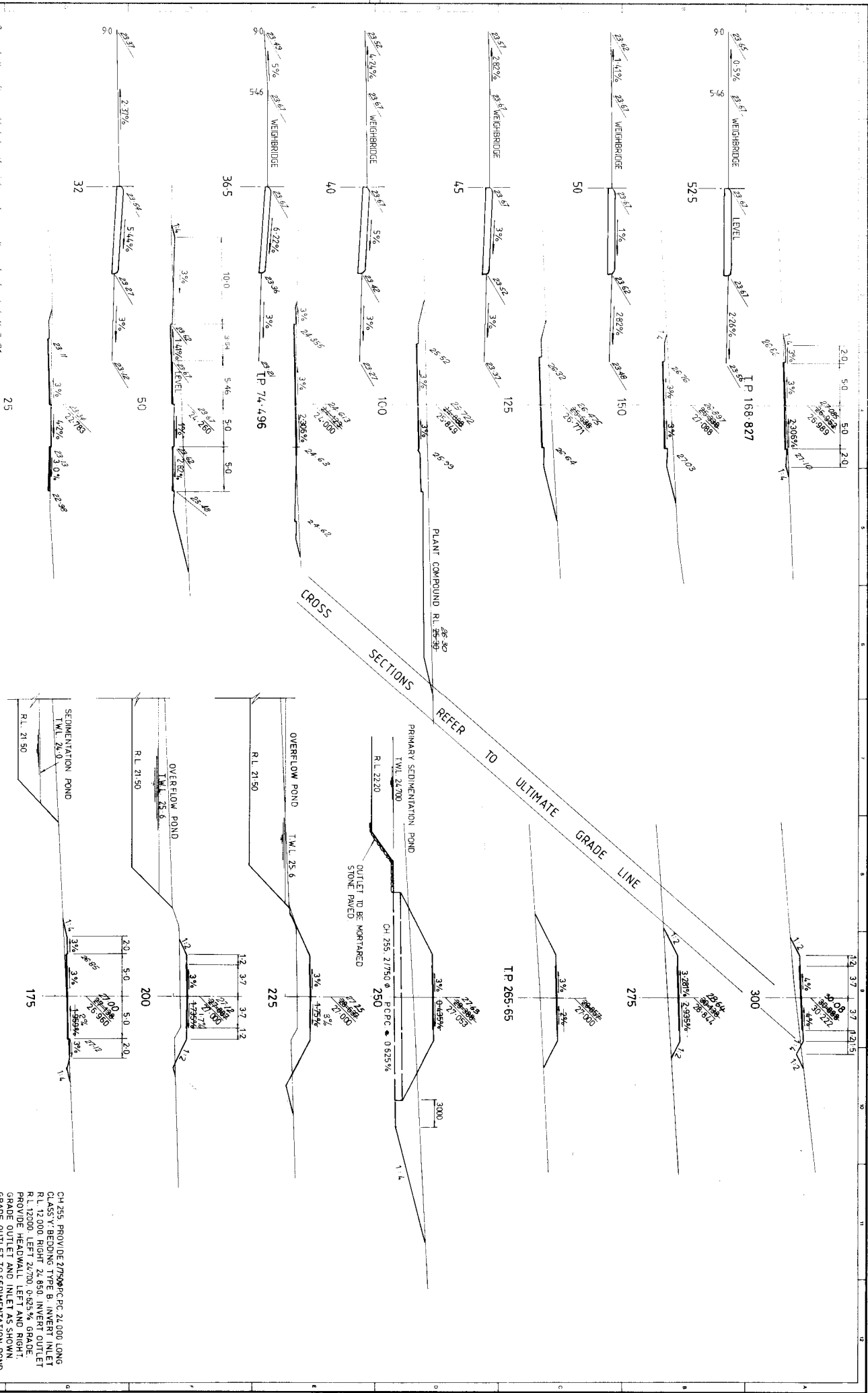
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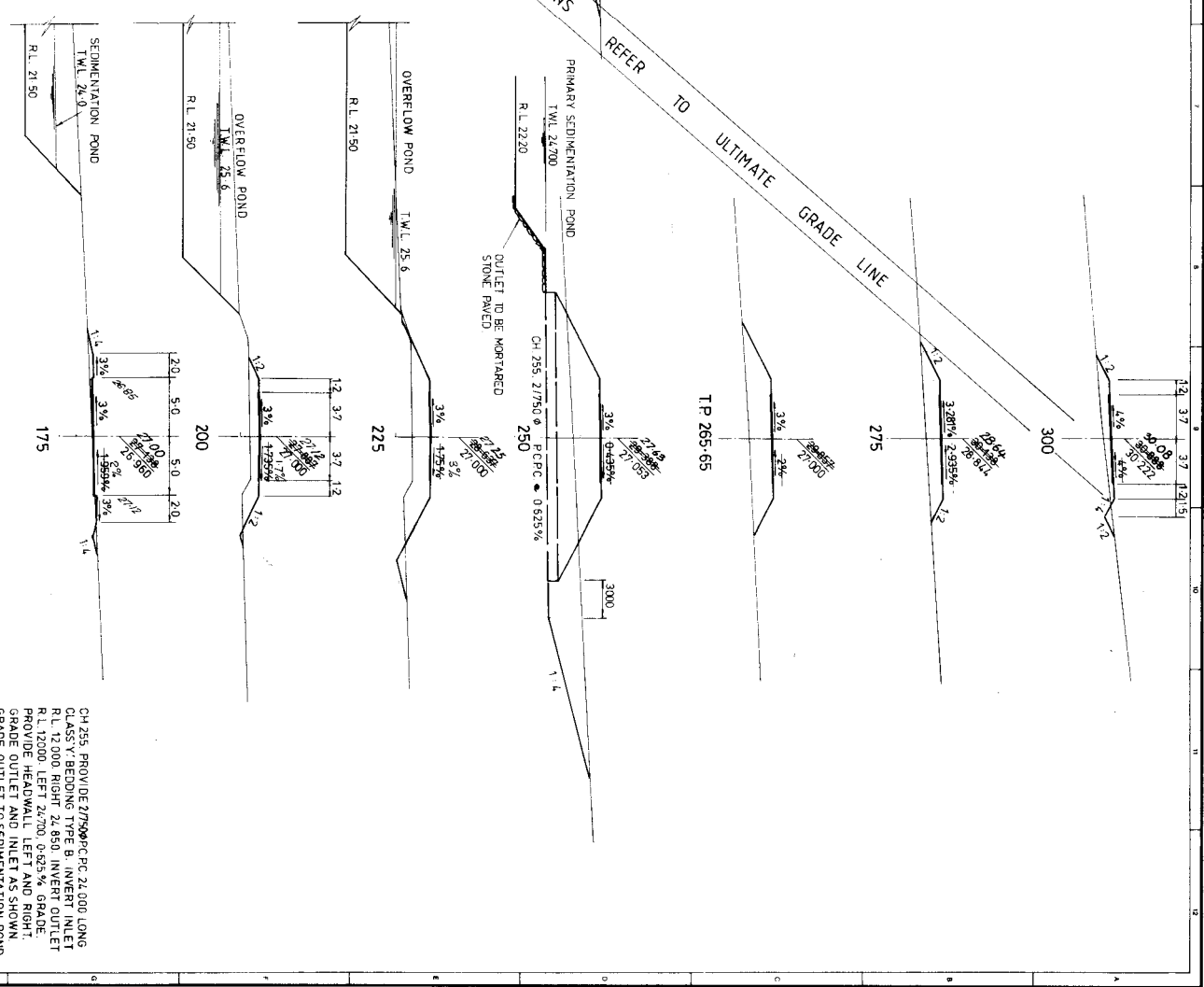
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ALTERNATIVE GRADING (LEVEL)



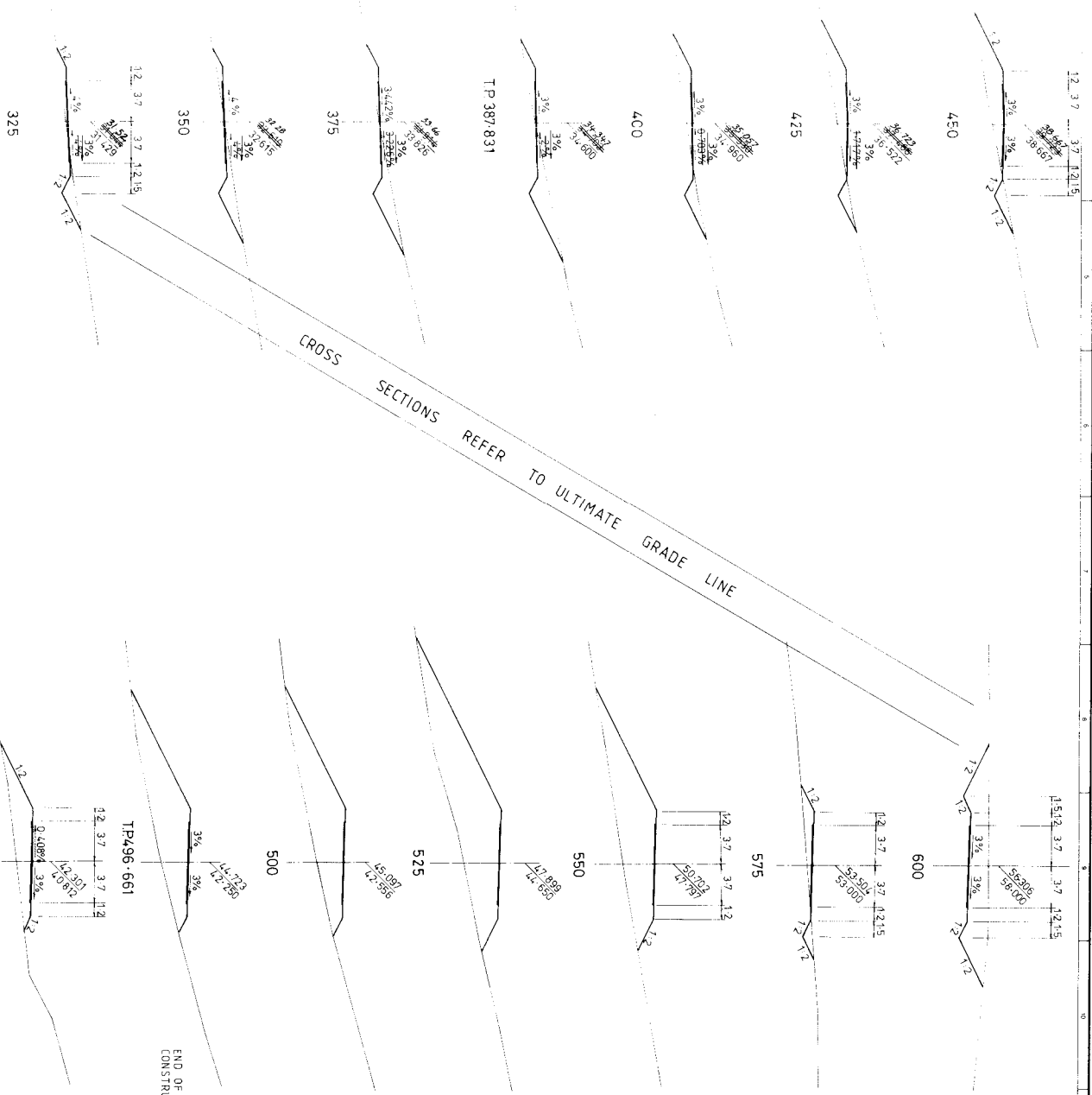
Revised cross-sections added to suit existing ridge and bridge. LUL 16-7-84
 Revised cross-sections added to suit existing ridge and bridge. LUL 16-7-84
 Lip levels and revised E levels added E/L 27-6-84

25



16 of 29 P331/17

SCOTT & FURPHY ENGINEERS PTY. LTD.			
CONSULTING ENGINEERS & PLANNERS			
74 EMU BANK, BELCONNEN TOWN CENTRE			
CANBERRA A.C.T. 2617			
TELEPHONE (062) 512077			
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON			
SCOTT & FURPHY CONSULTING GROUP			
PROJECT NUMBER S.H.0115			
DESIGN S.H.			
CHECKED D.G.			
DATE 27/4/84			
WOLLONGONG CITY COUNCIL			
WHITES GULLY LANDFILL SITE			
CROSS SECTIONS			
CH 25 TO CH 300			
DRAWING NO. 2798-01-14			



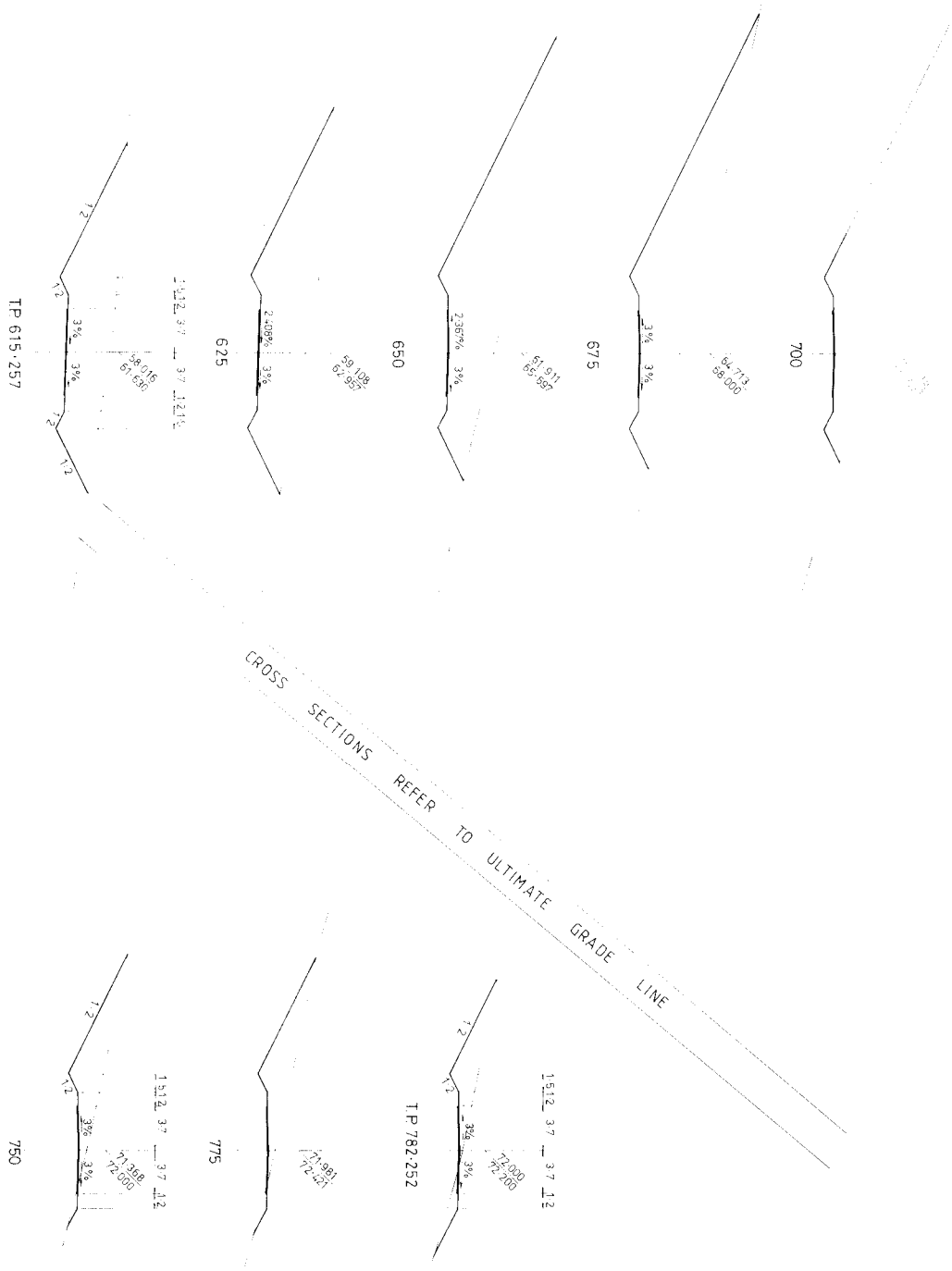
SCOTT & FURRY ENGINEERS PTY LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
TELEPHONE (082) 513077
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON



PROJECT MANAGER S. HOLLIS
DRAWN S.H.
CHECKED D.G.
DATE 2/6/94

WOLLONGONG CITY COUNCIL
WHYTES GULLY LANDFILL SITE
CROSS SECTIONS
CH 325 TO CH 600

17 of 29 P331/17
DRAWING No. 2798-01-15



PROJECT NO. _____ DATE _____		SHEET NO. _____ DATE _____	
SCOTT & FURPHY ENGINEERS PTY. LTD. CONSULTING ENGINEERS & PLANNERS 74 EMU BANK, BELCONNEN TOWN CENTRE CANBERRA A.C.T. 2617 TELEPHONE (062) 51207 AND AT MELBOURNE, SYDNEY, PERTH, ADELAIDE AND LONDON			
SCOTT & FURPHY CONSULTING GROUP		PROJECT NO. 11200 SHEET NO. S.H. 1 DATE 1/1/80	
WHYTES GULLY LANDFILL SITE CROSS SECTIONS CH TP 615.257 TO CH TP 782.252		DRAWN BY _____ CHECKED BY _____ 2798-01-16	



THIS DRAWING SHOWS THE METHOD OF OPERATION, PART WAY THROUGH THE SECOND LIFT. BETWEEN RELEASE AND RELEASE

1966, 1967

102, 58, 1

205

N 1165 50

SCOTT & FURPHY ENGINEERS PTY. LTD
CONSULTING ENGINEERS & PLANNERS

CONSULTING ENGINEERS & PLANNERS

74 EMU BANK, BELCONNEN TOWN CENTRE

TELEPHONE (062) 512077

AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON

Вопросы, связанные с применением

WOLLONGONG CITY COUNCIL

WHYTES GULLY LANDFILL SITE
OPERATING DIAGRAM

2798-01-17A

19 of 29 P 331/17

⊲B



Figure 1

36" x 8" RAFTERS AT 50" O.C.
 INSULATION BETWEEN BEAMS
 48" HIG. x 18" x 3/8" BROWN/BLUE METAL ROOF DECKING ALUM. FOL. AND CHICKEN WIRE UNDER DECKING
 1" x 6" C SHEET PILING TO EAVES
 R-12 G-10

- 20 of 29 P331/17

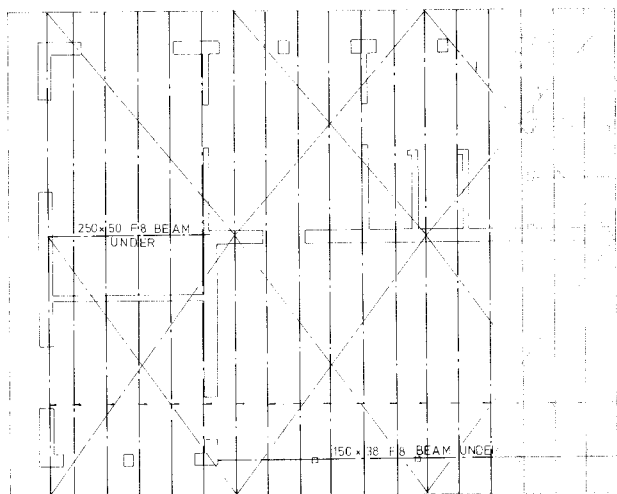
1

SCOTT & FURPHY
CONSULTING GROUP

2798-01-18



BEAM PLAN



WALL FLASHING

N.S.

300

100

F81M

F72

500

500

100

FORBICON UNDERLAY

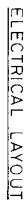
50mm SAND BEDDING

CONCRETE 20mm THICK

SECTION A-A
SCALE 1:10

NOTES

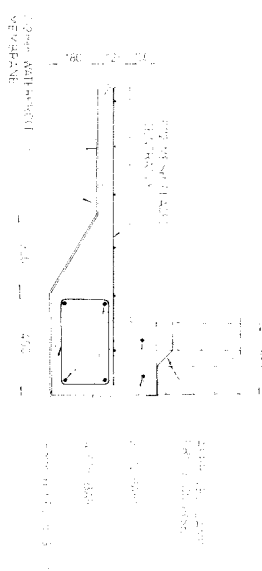
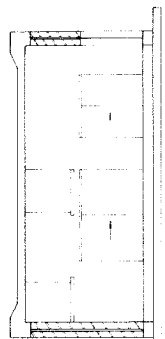
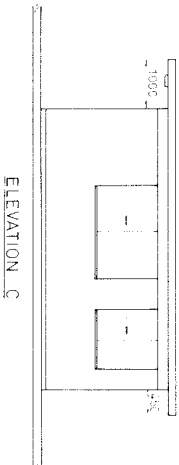
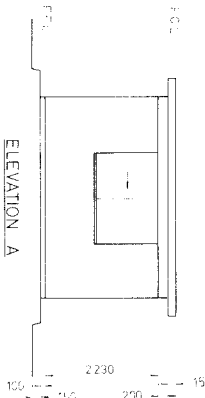
- * ROOF BEAMS TO BE TIED DOWN TO FLOOR SLAB WITH METAL STRAPS OR BOLTS
- 2 ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH A.S. 1684-1978 LIGHT TIMBER FRAMING CODE.
- 3 DECIDING TO BE FIXED TO BEAMS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND TO SATISFY THE WIND LOAD REQUIREMENTS WITHIN A TERRAIN CATEGORY 3 WIND AREA.



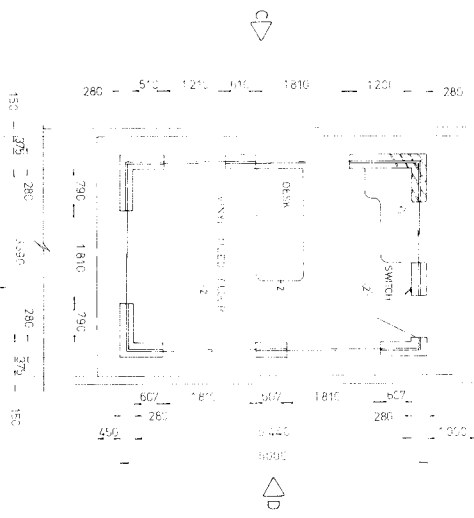
TO SEPTIC TANK

LEGEND

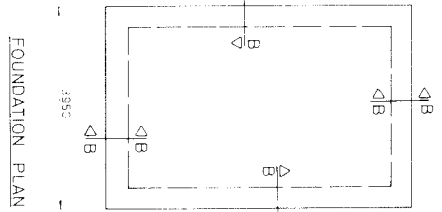
DT	DISCONNECT TRAP
GT	GULLY TRAP
IO	INSPECTION OPENING
EV	EDUCT VENT



FLOOR DETAIL - SECTION B-B



FLOOR PLAN



FOUNDATION PLAN

ROOF DETAIL

SCALE 1:10

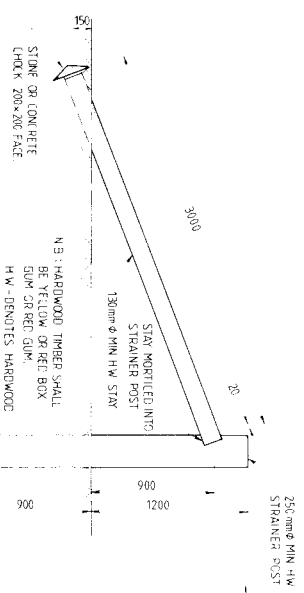
SECTION A-A

SCALE 1:10

SHADING FENCE WIRES

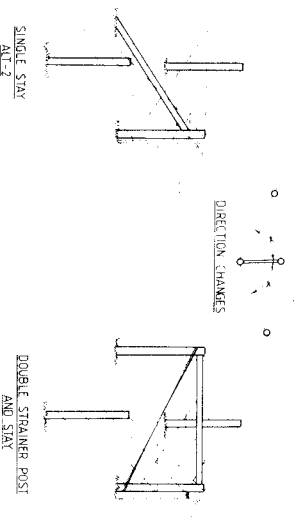
FENCE END / STRAINER ASSEMBLY - ALTERNATIVE N°1

NB REFER ELSEWHERE FOR ALTERNATIVES
OF WIRE ASSEMBLY

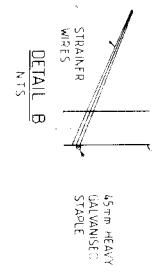


FENCE END / STRAINER ASSEMBLY - ALTERNATIVE N°2

SCALE 1:20

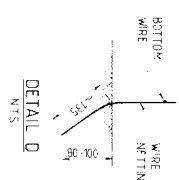
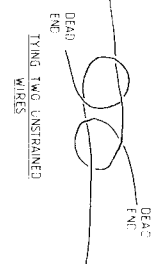
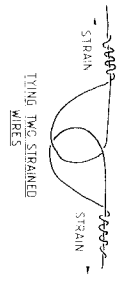


SINGLE STAY
ALZ
STRAINER ASSEMBLY ALTERNATIVES N°1 AND N°2
LOCATION 200M MAX ON STRAIGHTS
AT CHANGES IN DIRECTION
AT FENCE ENDS: AT GATEWAYS



DETAIL B

N.T.S.

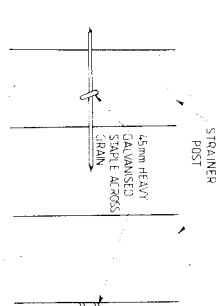
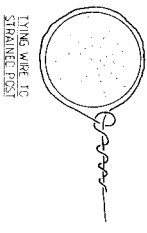


DETAIL D

N.T.S.

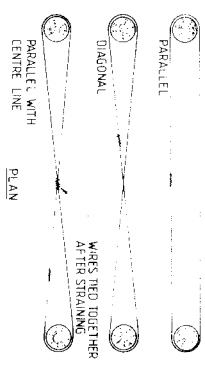
WIRE TYING DETAILS

N.T.S.



STAPLE DETAIL

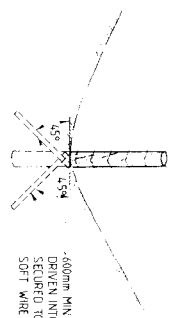
N.T.S.



STRAINER WIRE ASSEMBLY ALTERNATIVES

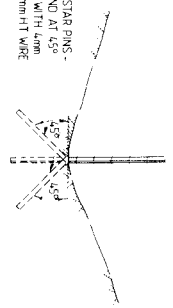
SECURING OF TIMBER POSTS IN HOLLOW

N.T.S.

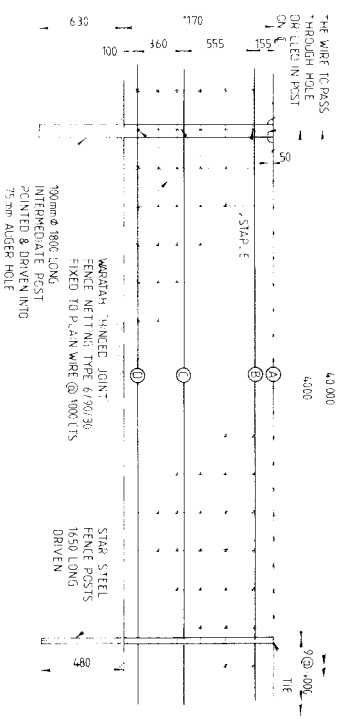


SECURING STAR STEEL FENCE POSTS IN HOLLOW

N.T.S.



SLOTT & VERMIN PROOF FENCE



RINGLOCK / HINGE JOINT FENCE

SCALE 1:20

WIRE TYPES

- ① 16mm HT GALV BARBED WIRE
- ② 25mm HT GALV FENCE WIRE (SECURATIVE OR CARRY WIRE)
- ③ 25mm HT GALV TREASY FENCE WIRE (BELLY WIRE)
- ④ 75mm HT GALV TREASY FENCE WIRE (BOTTOM WIRE)
- HT - DENOTES HIGH TENSION

NOTES

- WHERE INDICATED OTHERWISE ALL TIMBER POSTS TO BE PULPS RADIATA PREPARED BY THE TANALUTH PROCESS
- POST CHARACTERISTICS ARE MINIMUM & SMALLER
- PLAIN WIRES TO RUN THROUGH HOLES ON STAR STEEL POSTS
- STAR STEEL POSTS TO BE BLACK VARNISHED
- WIRE TENSIONS
 - 4mm SOFT FENCE WIRE = 2.75kN
 - 25mm HT FENCE WIRE = 3.0kN
 - 25mm TREASY HT FENCE WIRE = 2.0kN
 - 16mm HT BARBED WIRE = 1.5kN
- WIRE NETTING & HINGED FENCING TO BE FIXED BY TWITCHER WIRE (GERARD) RING FASTENERS NOT PERMITTED
- GATEWAYS

FOR DETAILS REFER SHEET 2.

SCOTT & FURPHY ENGINEERS PTY. LTD.

CONSULTING ENGINEERS & PLANNERS
74 END BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 912077
AND AT WINDONG STATION, WINDONG AND LAKEVIEW



AS SHOWN
DATE 24.4.80

WOLLONGONG CITY COUNCIL

STANDARD FENCING DETAILS

SHEET 1

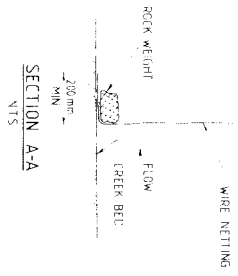
25 of 29 P331/17

2798-01-23



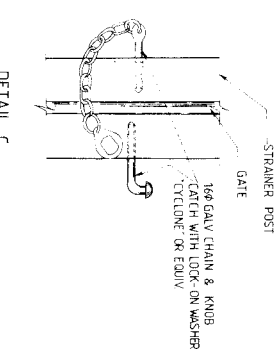
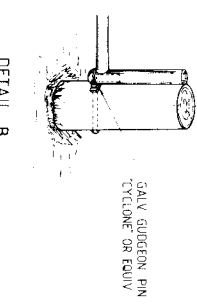
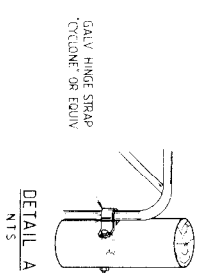
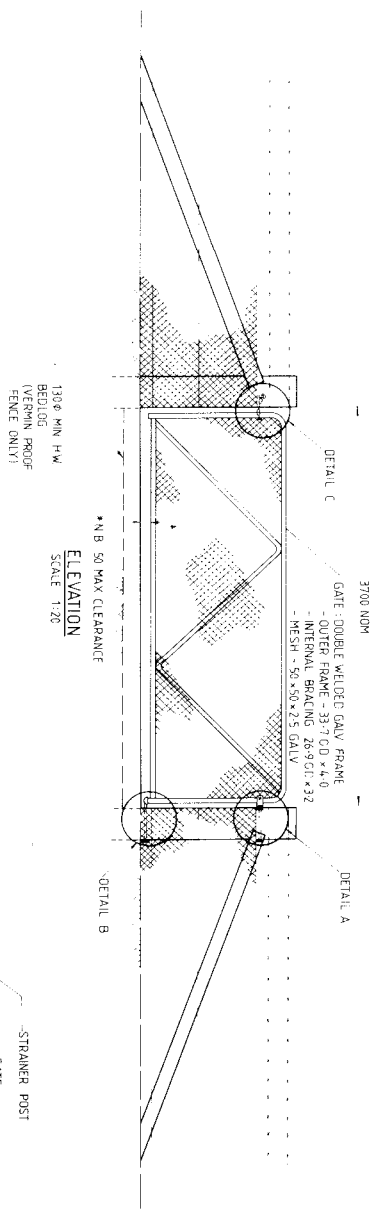
FLOODGATE FOR STOCK & VERMIN PROOF FENCE

DEEP CREEK 750mm DEEP
 F. 750mm DEEP USE SHALLOW CREEK STANDARD
 SCALE 1:50
 WIRE TABLE 4mm SQ. FENCE WIRE OR 4.75mm² WIRE TWISTED TOGETHER
 TWISTED WIRE @ 900mm



FLOODGATE FOR RINGLOCK/HINGEJOINT FENCE

SHALLOW CREEK - < 750mm DEEP
 F. > 750mm DEEP USE DEEP CREEK STANDARD
 SCALE 1:50



FIELD GATE ASSEMBLY

NOTES
 1 REFER SHEET N-1 FOR GENERAL NOTES.
 2 GATE ERECTION DETAILS TO MANUFACTURERS SPECIFICATIONS

PROJECT: 10/10/10 DRAWN: J. B. 10/10/10 CHECKED: J. B. 10/10/10 DATE: 10/10/10	SCOTT & FLIPPY ENGINEERS PTY. LTD. CONSULTING ENGINEERS & PLANNERS 74 END BARRACLOUGH AVENUE WOLLONGONG NSW 2520 TELEPHONE (0692) 910077 AND AT WOLLONGONG STREET, PERTH, MELBOURNE AND LAUNCESTON	SCOTT & FLIPPY CONSULTING GROUP	AS SHOWN STANDARD FENCING DETAILS SHEET 2	WOLLONGONG CITY COUNCIL 26 of 29 P331/17 DRAWN: J. B. 27/98-01-24
--	---	---	--	--

TYPE 3A TYPE 3B



DETAIL OF CONNECTION OF WIRE
MESH TO TERMINAL POSTS



STAY AND BRACE POSITIONS



DETAIL AT BARBED SELVAGE



ALTERNATIVE POST HOLE WHEN
ROCK NEAR SURFACE

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 08-29-2007 BY 60322 UCBAW/SAB

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS

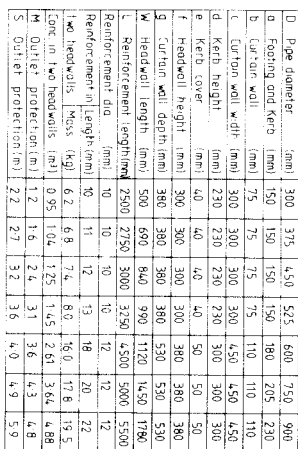
CONSULTING ENGINEERS & PLANNERS

74 EMU BANK, BELCONNEN TOWN CENTRE

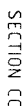
TELEPHONE (062) 51207

AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON

SCOTT & BURNETT
CONSULTING GROUP



* 200mm for 300, 375, 450 & 525; ϕ and 600mm for 600, 750 & 900 ϕ



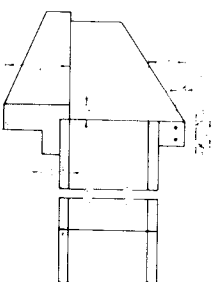
D	Pipe diameter (mm)	1050	1200	1350	1500	1800
h	Headwall height (mm)	1300	1550	1700	1900	2250
g	Headwall bed depth (mm)	600	700	700	750	750
c	Criplan wall width (mm)	700	700	900	900	900
f	Headwall height (mm)	450	450	530	530	600
W	Headwall length (mm)	1930	2300	2450	2850	3400
L	Long run two headwalls (m)	7.3	8.7	10.3	13.3	16.9
M	Outlet projection (m)	5.5	6.1	6.7	7.3	8.3
S	Outlet protection (m)	8.8	9.8	10.5	11.6	13.5

WOLLONGONG CITY COUNCIL

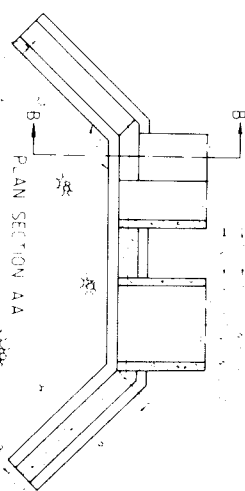
CONCRETE HEADWALLS FOR
TRIPLE PIPE CULVERTS

Reg.No

76	12	1800	2150	3150	8	25.20	22.38
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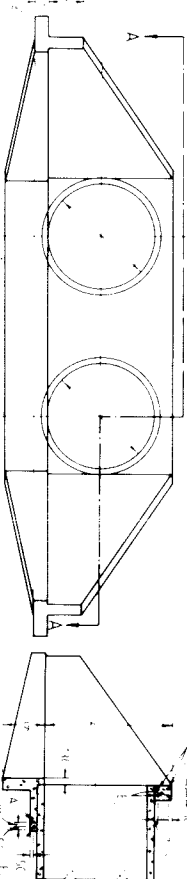


LONGITUDINAL SECTION BB

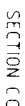
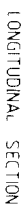


PLAN SECTION AA

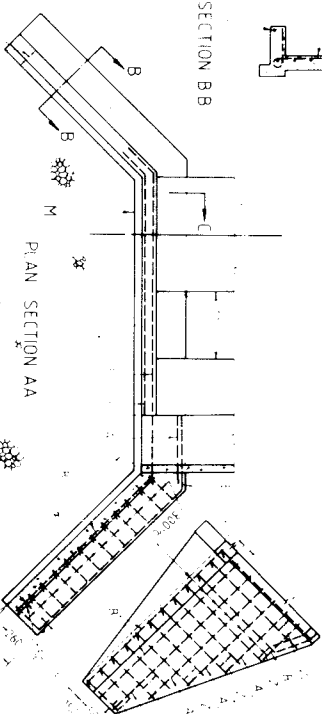
PIPE DIAMETERS 300 TO 900



ELEVATION



SECTION B B



PLAN SECTION AA

PIPE DIAMETERS 1050 TO 1800

CONCRETE GRADE 15MPa
ALL DIMENSIONS ARE IN MILLIMETERS

	mm	cm	mm	cm	mm	cm	mm	cm
1. Stigdale	70	105	70	130	140	180	140	180
2. Hedden	60	90	60	100	100	130	100	130
3. Luffon wall depth	1 mm	6.6	6.6	70	70	50	50	50
4. Luffon wall width	1 mm	6.6	70	70	70	80	90	90
5. Hedden wall	7 mm	55	55	58	58	55	55	55
6. Hedden wall height	1 mm	98	240	240	280	280	280	280
7. Form in the head wall	1 cm	6.0	8.2	9.3	9.3	9.3	9.3	9.3
8. Output production	mm	5.5	6	6	6	6	6	6
9. Output direction	mm	5.5	6	6	6	6	6	6

[illegible]

REINFORCEMENT FOR HEADWALLS



SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & ARCHITECTS

CONSULTING ENGINEERS & PLANNERS:

74 EMU BANK, BELCONNEN TOWN CENTRE

TELEPHONE (062) 512077

AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON

SCOTT & FURPHY
CONSULTING GROUP

PROJECT MANAGER S. HOLLIS
DESIGN S. H.

CONTINUED
D.6.

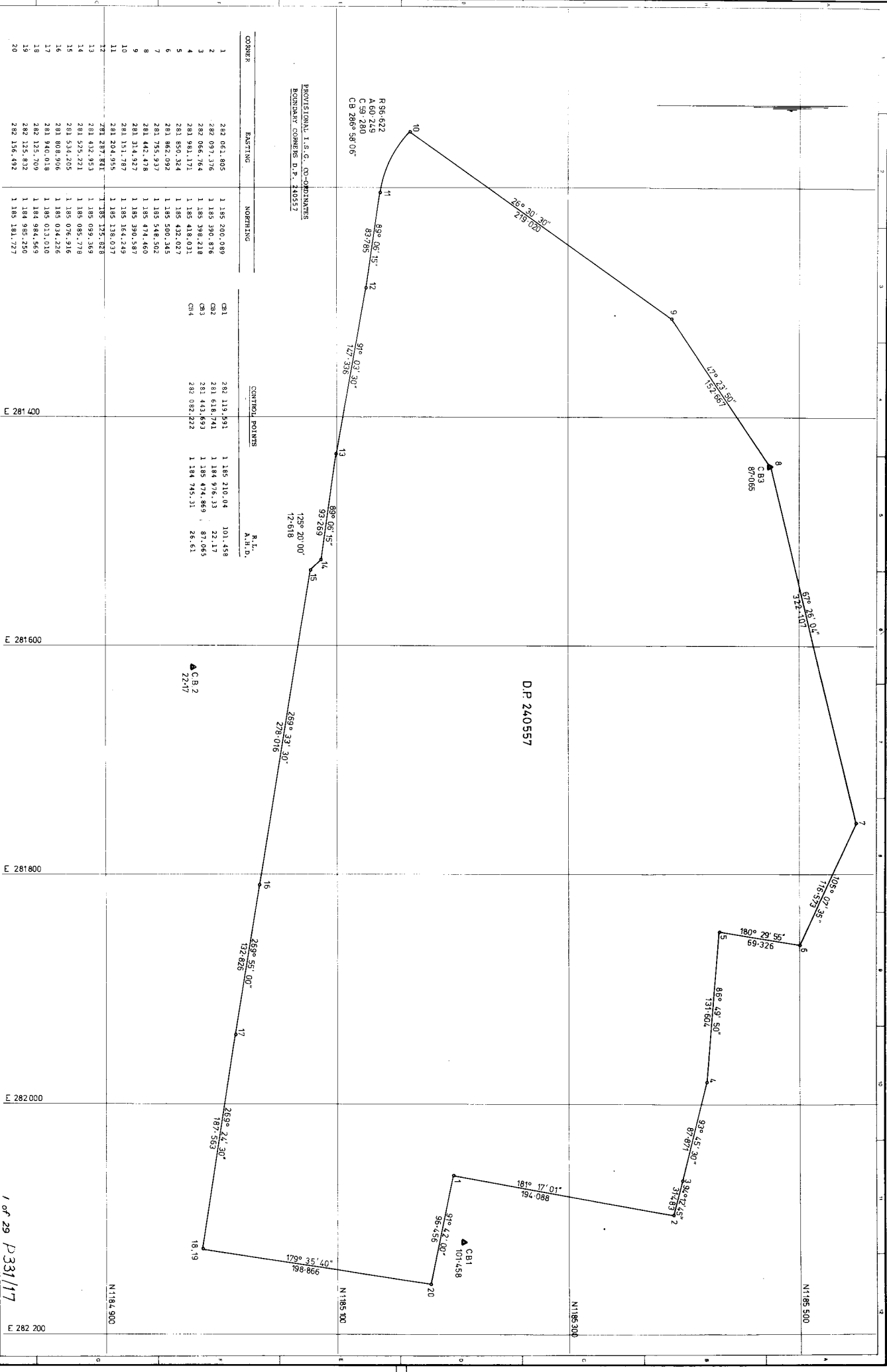
D. O.	
APPROVED	DATE

WOLLONGONG CITY COUNCIL

29 of 29 P 331/17

WHYTES GULLY LANDFILL SITE
HEADWALL DETAILS FOR 2/750 & 2/900 P.C.P.C.

DRAWING NO.
2798-01-27

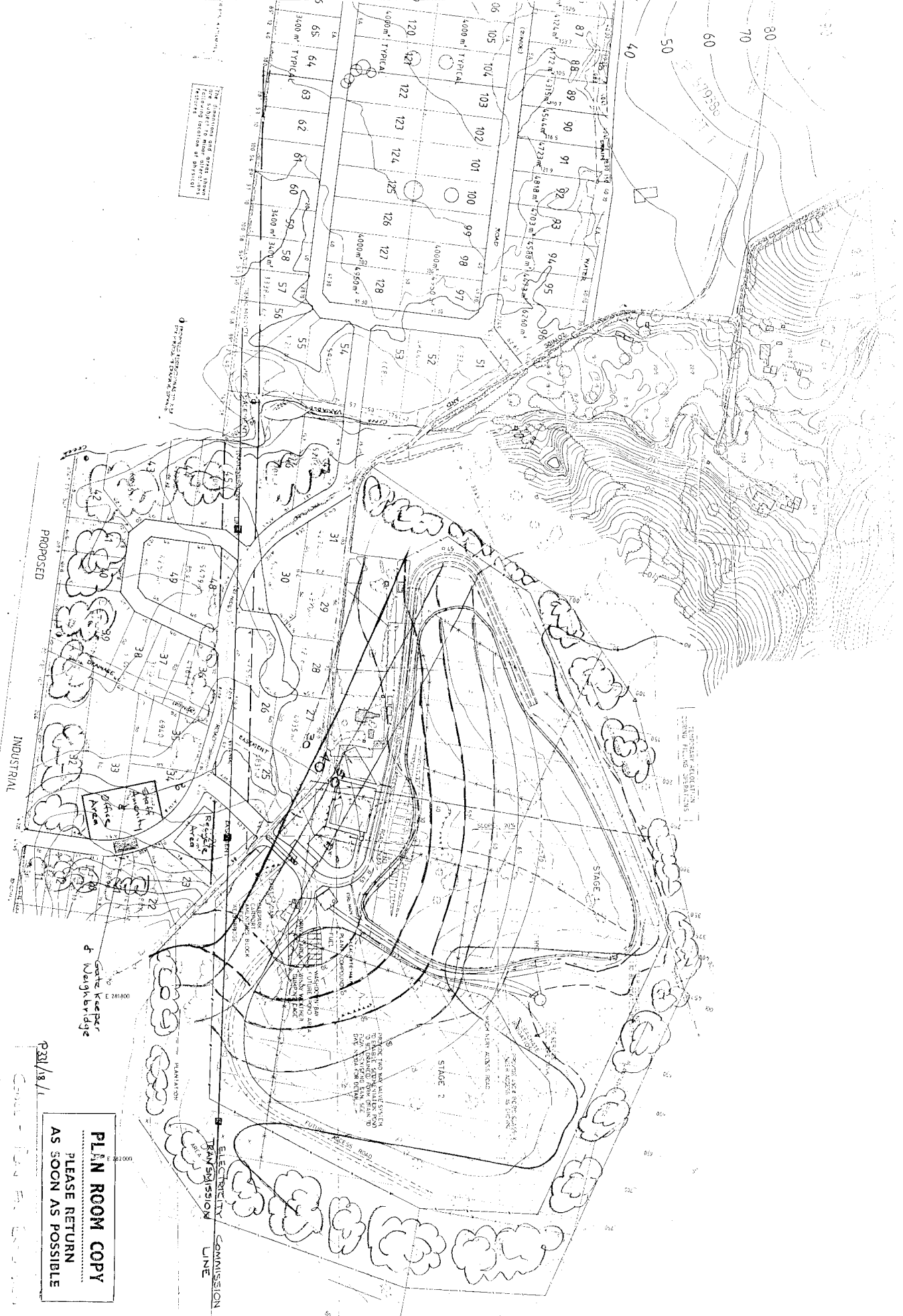


NO.	DESCRIPTION	DATE	REVISION	NO.	DESCRIPTION	DATE
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2				2		
3				3		
4				4		
5				5		
6				6		
7				7		
8				8		
9				9		
10				10		
11				11		
12				12		
13				13		
14				14		
15				15		
16				16		
17				17		
18				18		
19				19		
20				20		

CORNER	EASTING	NORTHING	CONTROL POINTS	R.L.	A.H.D.
1	282 061.805	1 185 200.089	CB1	282 119.591	101.458
2	282 097.176	1 185 190.876	CB2	281 618.741	22.17
3	282 066.764	1 185 198.218	CB3	281 443.693	87.065
4	281 981.171	1 185 432.031	CB4	282 082.222	26.61
5	281 850.324	1 185 432.037			
6	281 862.092	1 185 500.345			
7	281 755.937	1 185 548.502			
8	281 442.478	1 185 474.460			
9	281 314.527	1 185 390.587			
10	281 151.787	1 185 164.249			
11	281 204.955	1 185 128.037			
12	281 287.841	1 185 125.828			
13	281 432.953	1 185 099.369			
14	281 525.221	1 185 085.778			
15	281 534.265	1 185 076.916			
16	281 808.906	1 185 034.226			
17	281 940.018	1 185 013.010			
18	282 125.709	1 184 984.569			
19	282 125.832	1 184 985.250			
20	282 156.492	1 185 181.727			

NO.	DESCRIPTION	DATE
1		
2		
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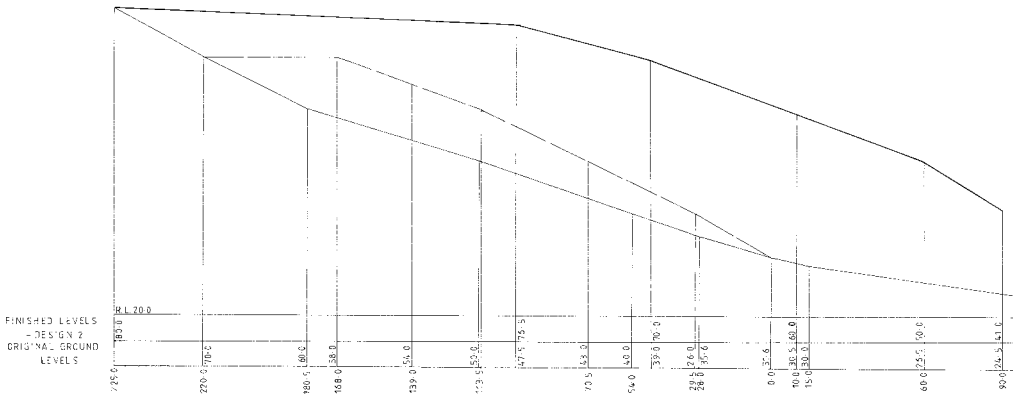
SCOTT & FURPHY ENGINEERS PTY. LTD.	SCOTT & FURPHY CONSULTING GROUP	WOLLONGONG CITY COUNCIL
CONSULTING ENGINEERS & PLANNERS	74 EMU BANK, BELCONNEN TOWN CENTRE	WHYTES GULLY LANDFILL SITE
CANBERRA A.C.T. 2617	TELEPHONE (061) 512017	PLAN OF BOUNDARY
AND AT WILSONVILLE, SYDNEY, PERTH, MELBOURNE AND LAUNCESTON		
PROJECT MANAGER S. HOLLIS	DRAWN D. G.	DRAWING NO. 2798-01-1
CHECKED D. G.	DATE 1/11/17	
APPROVED 1/11/17		



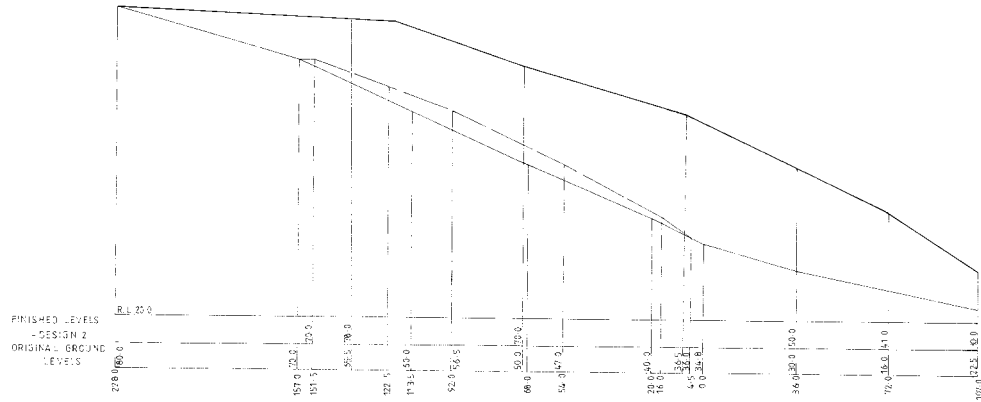
PLAN ROOM COPY
PLEASE RETURN
AS SOON AS POSSIBLE

P31/18/1

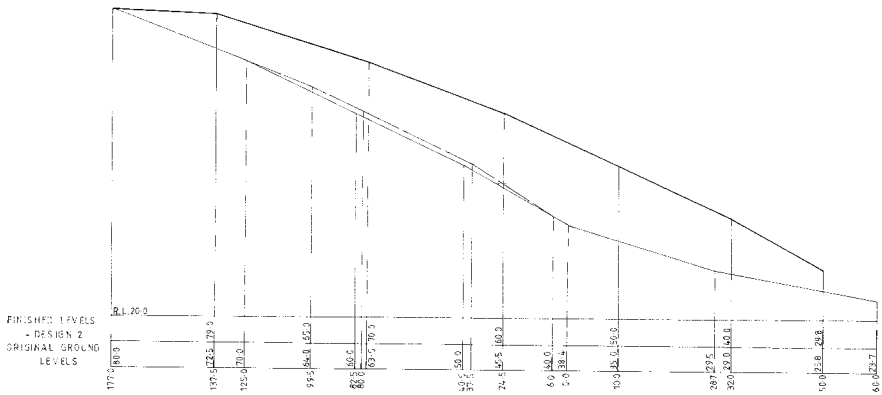
CHARTERED BY THE CITY OF



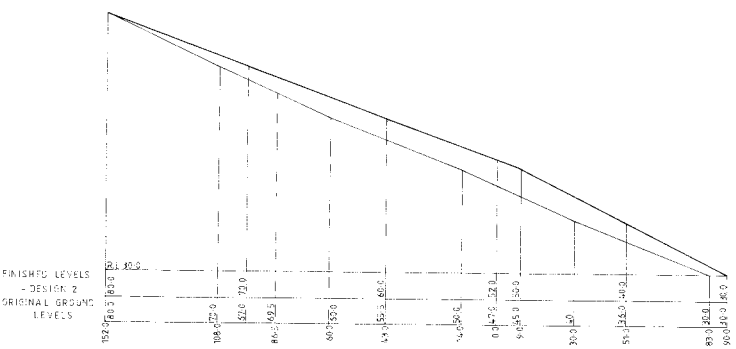
C.S. 200



C.S. 150



C.S. 100



C.S. 50

SCALE: 1:1000
HORIZ. 1:1000
VERT. 1:500

DRAWN: J. SCHULTZ 9/11/88

CITY OF WOLLONGONG
ADDITIONAL VOLUME INVESTIGATION
FOR EXPANSION OF
WHITES GULLY WASTE DEPOT, 1988

DRAWING No. P331/18

INDEX BASED No.

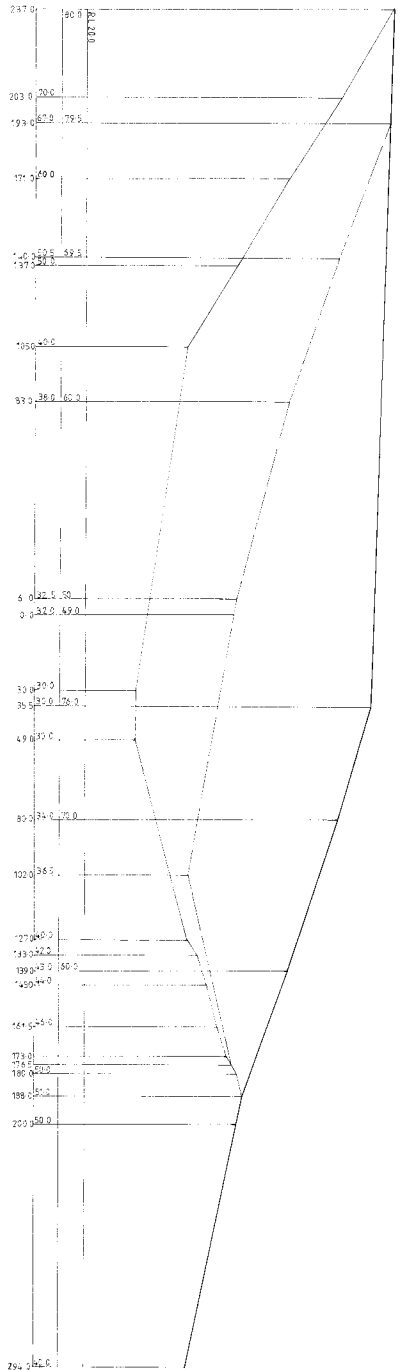
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2

MAGX

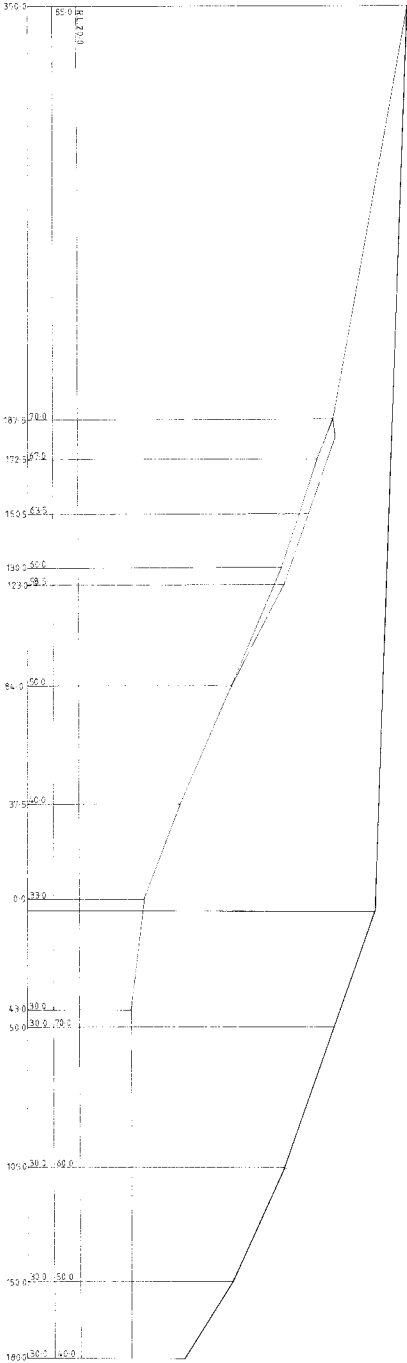
A1/2

FINISHED LEVELS
- DESIGN 2
ORIGINAL: GROUND
LEVELS



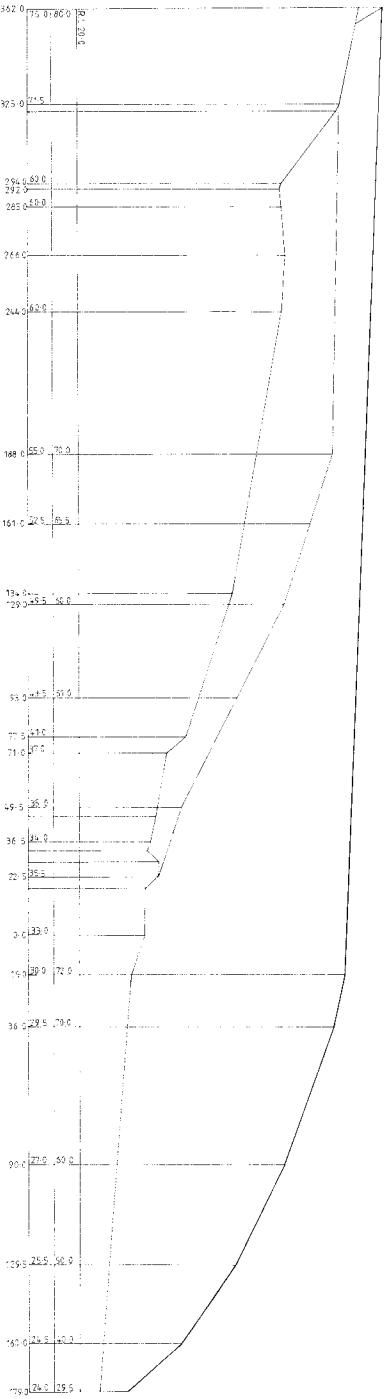
C.S. 550

FINISHED LEVELS
- DESIGN 2
ORIGINAL: GROUND
LEVELS



C.S. 450

FINISHED LEVELS
- DESIGN 2
ORIGINAL: GROUND
LEVELS



C.S. 400

SCALES
HORIZ 1:1000
VERT 1:500

DRAWN: J. SCHULTZ 9/11/88

CITY OF WOLLONGONG
ADDITIONAL VOLUME INVESTIGATION
FOR EXPANSION OF
WHITES GULLY WASTE DEPOT, 1988

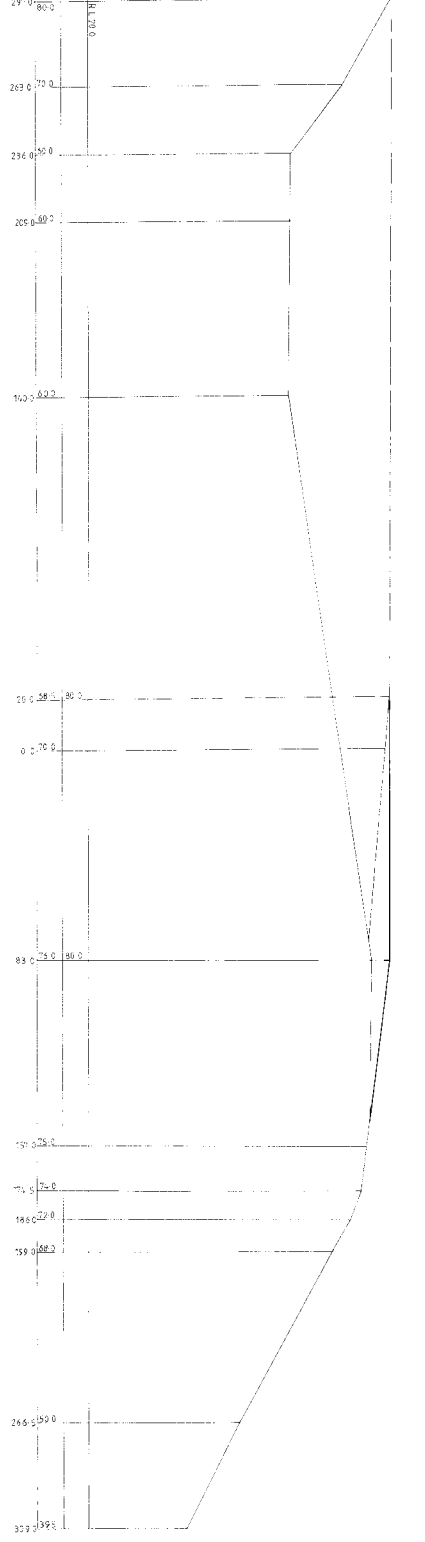
INDEX	BASE	NO.
5	4	

DIAGRAM NO.
P331 / 18

MAGX

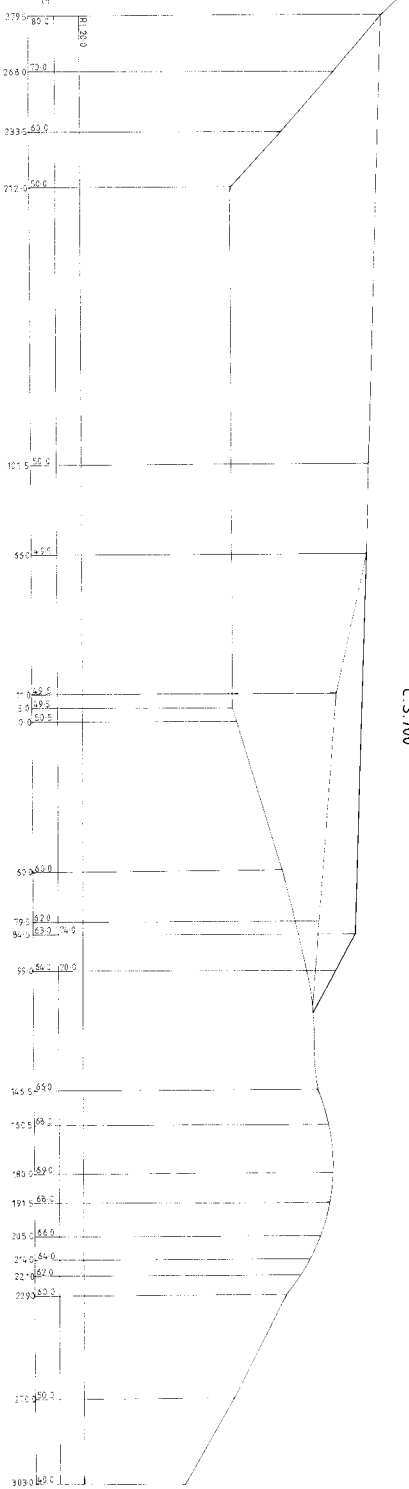
A1/2

FINISHED ELEVATIONS
 20' (6.10 M)
 10' (3.05 M)
 0' (0.00 M)
 ELEVATIONS



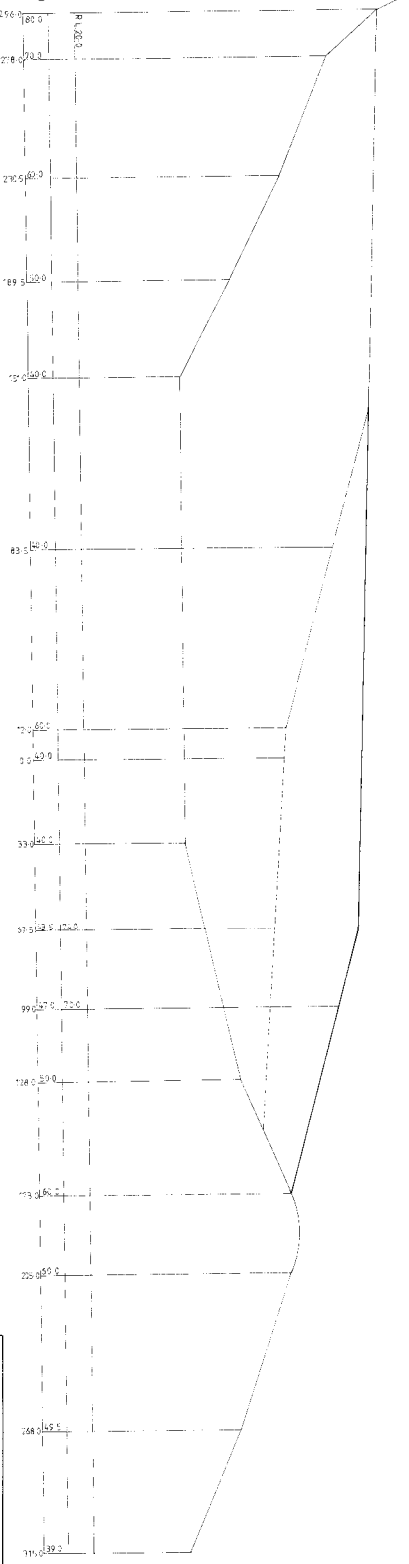
C.S. 700

FINISHED ELEVATIONS
 20' (6.10 M)
 10' (3.05 M)
 0' (0.00 M)
 ELEVATIONS



C.S. 650

FINISHED ELEVATIONS
 20' (6.10 M)
 10' (3.05 M)
 0' (0.00 M)
 ELEVATIONS



C.S. 600

SCALE
 HORIZ. 1" = 100'
 VERT. 1" = 50'

DRAWN: J. SCHULTZ 9/11/88

CITY OF WOLLONGONG
 ADDITIONAL VOLUME INVESTIGATION
 FOR EXPANSION OF
 WHITES GULLY WASTE DEPOT, 1988

INDEX PAGE No.
 5

P331 / 18

MAGX


$$\pm \text{estimate } 1137 \text{ (Pelton only)}$$

1:1500

converts to be calculated (Saves shown for Budget est only)

INDEX BASE NO

CITY OF WOLLONGONG

WHYTES GULLY OPERATIONS FOR WEST GULLY.

[illegible]

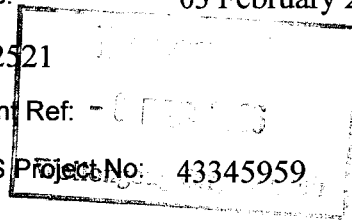
P331-SK01-1

MAGX

A1/2

To: Lindsay Dunstan
 Organisation: City of Wollongong Council
 Address: Locked Bag 8821, South Coast Mail Centre 2521
 Transmittal No: 1
 Project Name: Whytes Gully Leachate Treatment Plant

From: Jacinta Mc Mahon
 Date: 03 February 2006
 Client Ref: -
 URS Project No: 43345959



We are sending you the following:

No. of Copies	Description	Reference	Rev.
2	Whytes Gully Leachate Treatment Plant Drawings For Work As Executed	Final.	B

Delivery Method: (Mark with X)	Comments
☐ Courier	
☒ Mail	
☐ Express Post	
☐ Hand Deliver	
☐ Electronically	

Sent By: JM Mahon

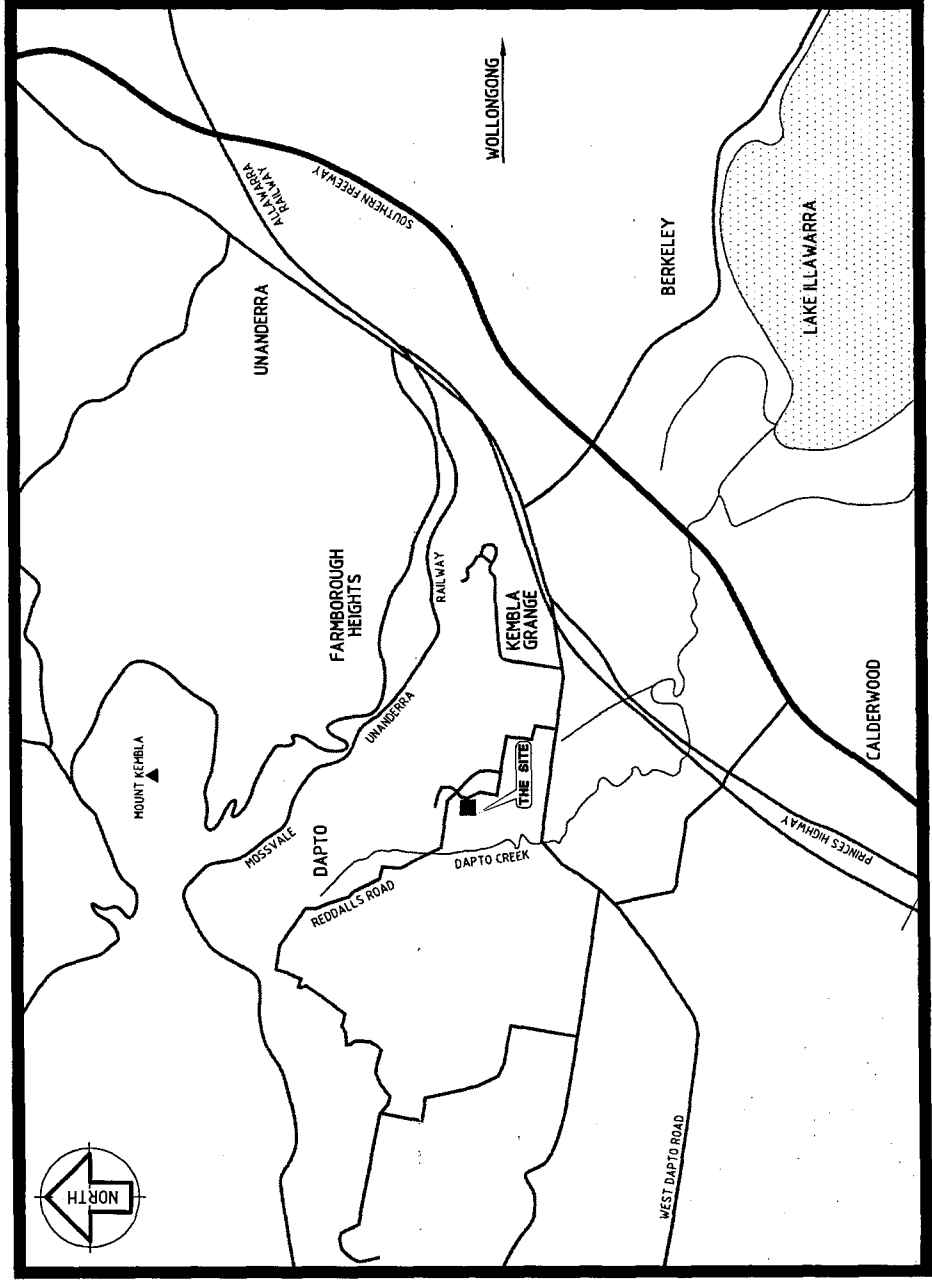
Date: 3/2/06

Received: _____

Date: _____

**Please acknowledge receipt by signing and either faxing or mailing a copy to the originator.
 Thank You**

WHYTES GULLY LEACHATE TREATMENT PLANT DRAWINGS FOR WORK AS EXECUTED



SITE LOCATION PLAN

WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05 of the Work-As-Executed.

Signed:

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

WORK AS EXECUTED

CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT
COVER SHEET

URS
Level 3, 116 MILLER STREET,
NEWCASTLE, NSW 2300.
Telephone: (02) 89235500
Facsimile: (02) 89235535

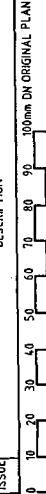
PET
PROCESS ENGINEERING
TECHNOLOGIES
OUR HEADQUARTERS IS IN AUSTRALIA
LEVEL 3, 116 MILLER STREET,
NEWCASTLE, NSW 2300
Telephone: (02) 89235500
Facsimile: (02) 89235535

DESIGN PCS No.
FILE NUMBER
SHEET 1 OF 1 SHEETS
DRAWING No.
3512
SHEET No.
00
ISSUE
B

WOLLONGONG
City of Innovation
DESIGN DIVISION
Ph: 02 42271111

DRAWING SCHEDULE	
DRG. No.	TITLE
3512-00	COVER SHEET
3512-01	GENERAL NOTES
3512-02	PROCESS AND INSTRUMENT DIAGRAM
3512-03	GENERAL ARRANGEMENT
3512-04	GENERAL PLANT ELEVATIONS
3512-05	STAGE 1 BULK EARTHWORKS
3512-06	STAGE 2 BULK EARTHWORKS
3512-07	STAGE 3 BULK EARTHWORKS, TANK PAD FOUNDATION & BUND WALL
3512-08	BULK EARTHWORKS SECTIONS
3512-09	CAUSTIC LOADING BAY
3512-10	DRAINAGE PLAN AND PIT DETAILS
3512-11	SEQUENCING BATCH REACTOR FABRICATION DETAILS
3512-12	EFFLUENT BALANCE TANK FABRICATION DETAILS
3512-13	FOOTING DETAILS
3512-14	SBR ACCESS PLATFORM DETAILS SHEET 1 OF 2
3512-15	SBR ACCESS PLATFORM DETAILS SHEET 2 OF 2
3512-16	DECANT PIPEWORK DETAILS
3512-17	WASTE TREATMENT SYSTEM SINGLE LINE DIAGRAM
3512-18	WASTE TREATMENT SYSTEM POWER AND DISTRIBUTION (1 OF 2)
3512-19	WASTE TREATMENT SYSTEM POWER AND DISTRIBUTION (2 OF 2)
3512-20	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-21	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-22	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-23	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
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3512-91	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-92	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
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3512-96	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-97	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-98	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-99	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM

DESCRIPTION	
ISSUE	DESCRIPTION
B	WORK AS EXECUTED
A	FOR CONSTRUCTION



GENERAL

- DO NOT SCALE DRAWINGS. NO RESPONSIBILITY WILL BE TAKEN BY URS FOR DIMENSIONS OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
- ALL DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNO..
- ALL REDUCED LEVELS ARE IN METRES UNO..

STRUCTURAL CONCRETE

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS3600.
- THE CONCRETE SHALL BE COMPACTED USING HIGH FREQUENCY VIBRATORS.
- CURING OF ALL CONCRETE SURFACE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL FORMWORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS3600.
- THE FOLLOWING ABBREVIATIONS ARE USED.

T	TOP
B	BOTTOM
LV	LENGTH VARIES
EF	EACH FACE
EW	EACH WAY

CONCRETE

- AD MIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF THE URS ENGINEER.
- ALL CEMENT SHALL BE TYPE SR SPECIFICATION, SULPHATE RESISTING CEMENT, UNO.
- MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 20mm.
- CONCRETE SHALL HAVE THE FOLLOWING SLUMP DURING PLACING (UNO.):
 - BEAMS, SLABS AND FOOTINGS 40mm TO 60mm
 - COLUMNS AND WALLS 50mm TO 80mm
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL ELEMENTS SHALL HAVE AS A MINIMUM THE FOLLOWING 28 DAYS COMPRESSIVE CONCRETE STRENGTH:

ELEMENTS	F _{ck} AT 28 DAYS (MPa)	56 DAY DRYING SHRINKAGE
SLAB/BEAMS	32	650 MICROSTRAIN
WALLS	32	650 MICROSTRAIN

STRENGTH SHALL BE VERIFIED BY PROJECT CONTROL TESTING REFER SPECIFICATION.

PILING

- ALL PILING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 2159: PILING CODE - 1995.
- ALL GROUT INJECTED BORED PILES SHALL BE INSTALLED IN ACCORDANCE WITH CLAUSE 7.5 OF AS 2159: PILING CODE - 1995.
- ALL PILES SHALL BE INSTALLED TO A MINIMUM OF 200mm ABOVE CUT OF LEVEL.

TANK BITUMEN SAND MIX

THE BITUMEN SAND MIX SHALL BE MADE FROM THE FOLLOWING COMPONENTS:

- THE SAND SHALL BE CLASS 370 RESIDUAL BITUMEN COMPLYING WITH AS 2008.
- CUTTING OIL
- THE CUTTING OIL SHALL BE A SUITABLE COMPATIBLE PRODUCT SUCH AS DIESEL OIL OR POWER KEROSENE.
- SAND
- SHALL BE NATURAL SAND COMPLYING WITH AS2758.
- FILLER
- FILLER IN THE FORM OF HYDRATED LIME WILL ALSO BE ADDED TO THE MIX AT MINIMUM QUANTITY OF 1% BY WEIGHT.

MIX DESIGN TO BE AS FOLLOWS BY WEIGHT:

- SAND 85%
- BITUMEN 8%
- CUTTING OIL 2%
- FILLER 1%

THESE PROPORTIONS ARE GIVEN AS GUIDELINES ONLY AND SHALL BE DETERMINED BY TRIAL MIXES.

THE MIX WILL BE UNDERTAKEN AT A TEMPERATURE OF APPROX. 95°C.

REINFORCEMENT

- CLEAR CONCRETE COVER TO REINFORCEMENT INCLUDING TIES AND STIRRUPS, SHALL BE AS NOTED ON THE DRAWINGS BUT NOT LESS THAN AS FOLLOWS:

ELEMENTS	COVER (mm)
SLAB	50 TOP 60 BTH
BEAM	50
WALLS	50
PILE CAPS	50 GENERAL
PILES	50

- COVER TO REINFORCEMENT SHALL BE OBTAINED BY THE USE OF CONCRETE BLOCKS OR PLASTIC BAR CHAIRS FOR BOTTOM REINFORCEMENT AND PLASTIC TIPPED WIRE BAR CHAIRS FOR TOP REINFORCEMENT. ALL CHAIRS TO BE SPACED 750mm CRS. MAXIMUM.

REINFORCEMENT SYMBOLS

N - DENOTES GRADE 500N HOT ROLLED DEFORMED BAR TO AS 4671

R - DENOTES GRADE 230R HOT ROLLED PLAIN BAR TO AS4671

NUMBER OF BARS IN GROUP
17N20-750 BAR GRADE AND TYPE
NOMINAL BAR SIZE IN mm
SPACING IN mm

THE NUMBER AND DISTRIBUTION OF BARS ARE INDICATED AS FOLLOWS (BY EXAMPLE):

20N32 INDICATES 20 GRADE 500N 32mm DIAMETER BARS.

N20-200 INDICATES GRADE 500N 20mm DIAMETER

AT 200mm SPACING FOR THE EXTENT INDICATED.

UN24-200 INDICATES 10 GRADE 500N 24mm DIAMETER

BARS AT 200mm SPACING.

- REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

- SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITION SHOWN. THE WRITTEN APPROVAL OF THE URS ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES. SPLICES SHALL BE DEVELOPED THE FULL STRENGTH OF THE REINFORCEMENT.

- WELDING OF THE REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

- ALL BAR SUPPORTS SHALL BE GALVANISED OR EPOXY COATED. BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACE SHALL ALSO HAVE PLASTIC TIPS.

CONSTRUCTION JOINT

- CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE URS ENGINEER
- ALL CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED, CLEANED AND HOSTENED IMMEDIATELY PRIOR TO PLACING NEW CONCRETE.

STRUCTURAL STEELWORK

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100 AND AS 1554 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

- UNLESS SHOWN OTHERWISE ALL STEEL SHALL BE IN ACCORDANCE WITH AS 3678 AND AS1379 GRADE 500N HOT ROLLED AND WELDED STRUCTURAL STEEL. ALL ROUNDED BARS SHALL BE AS1379 GRADE 350 FOR CHS SECTIONS. ALL STEEL PLATE FOR LIQUID STORAGE TANKS SHALL BE TO AS 3678 GRADE 350 LYS.

- SHOP DRAWINGS FOR APPROVAL SHALL BE SUBMITTED IN TRIPLICATE TO THE URS ENGINEER FOR APPROVAL. FABRICATION SHALL NOT COMMENCE UNTIL APPROVAL HAS BEEN GIVEN.

- ALL WELDS SHALL BE 6mm CONTINUOUS FILLET-SPECIAL PURPOSE. ALL BOLTS TO BE 20mm DIAMETER 8.8/5.2 PER CONNECTION (UNO.). ALL GUSSET PLATES TO BE 10mm THICK (UNO.) ON THE DRAWINGS.

- BOLTS DESIGNATION TO COMMERCIAL BOLTS OF STRENGTH 4.6/5

GRADE 10.9 TO AS1111 TIGHTENED TO A SNUG TIGHT CONDITION

8.8/5 REFERS TO HIGH STRENGTH STRUCTURAL BOLTS

OF GRADE 8.8 TO AS1552 TIGHTENED TO A SNUG

TIGHT CONDITION.

8.8/7B REFERS TO TIGHT STRENGTH STRUCTURAL BOLTS

OF GRADE 8.8 TO AS1552 FULLY TENSIONED TO

AS1511 AS A BEARING JOINT.

8.8/7F REFERS TO HIGH STRENGTH STRUCTURAL BOLTS

OF GRADE 8.8 TO AS1552 FULLY TENSIONED TO

AS4100 AS A FRICTION JOINT.

- HIGH STRENGTH BOLTED JOINTS SHALL BE IN ACCORDANCE WITH AS4100. THE SPECIFIED BOLT TENSION SHALL BE OBTAINED BY THE USE OF APPROVED LOAD INDICATING WASHER.

- EXAMINATION OF WELDS SHALL BE -

ALL WELDS - 100% VISUAL

10% MAG. PARTICLE (SHOP WELDS)

20% MAG. PARTICLE (SITE WELDS)

BUTT WELDS - 100% VISUAL

10% ULTRASONIC AT LOCATIONS

NOMINATED IN SPECIFICATION

FILLET WELDS - 100% VISUAL

SUBSTITUTIONS FOR STEEL SECTIONS SHOWN ON DRAWINGS SHALL

NOT BE MADE WITHOUT THE APPROVAL OF THE URS ENGINEER.

THE CONTRACTOR SHALL PROVIDE ALL CLEATS AND DRILL ALL

HOLES NECESSARY FOR FIXING STEEL THIMER AND OTHER ELEMENTS

TO STEEL WHETHER OR NOT DETAILD ON THE DRAWINGS.

THE FABRICATION AND ERECTION OF THE STRUCTURAL STEELWORK

SHALL BE SUPERVISED BY A QUALIFIED ENGINEER EXPERIENCED TO

SUCH SUPERVISION TO ENSURE THAT ALL REQUIREMENTS OF THE

DESIGN ARE MET.

STEELWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE

WITH THE RELEVANT ASSOCIATION OF CONSULTING STRUCTURAL

ENGINEERS OF NSW STANDARD SPECIFICATIONS EXCEPT WHERE

VARIED BY THE CONTRACT DOCUMENTS.

ALL CONCRETE ENCASED STEELWORK SHALL BE THOROUGHLY

CLEANED DOWN PRIOR TO ENCASEING AND WRAPPED WITH WIRE AT

150 CENTRES. AND SHALL HAVE A MINIMUM OF 50 CONCRETE COVER

UNLESS NOTED OTHERWISE.

ALL STEELWORK NOT ENCASED IN CONCRETE SHALL BE SURFACE

CLEANED AND PAINTED AND/OR GALVANISED AS SPECIFIED.

EARTHWORKS

- PRIOR TO COMMENCING BACKFILL ALL AREAS SHALL BE STRIPPED OF LOOSE AND UNSUITABLE MATERIAL TO A MINIMUM DEPTH OF 150mm. ALL AREAS TO BE BACKFILLED SHALL BE INSPECTED BY URS GEOTECHNICAL ENGINEER PRIOR TO BACKFILLING. REPLACE WITH CLASS A MATERIAL AND COMPACT IN ACCORDANCE WITH NOTE 4. TO THE SPECIFIED SURFACE LEVELS.

- THE CONTRACTOR SHALL BACKFILL AREAS WITH APPROVED MATERIAL TYPES AS SHOWN ON THE DRAWINGS.

- CLASS A MATERIAL SHALL COMPRISE A WELL GRADED GRANULAR MATERIAL, WITH 90% OF PARTICLES (BY MASS) < 75mm AND 10% OF GREATER THAN 30% AT 98% SHDD.

- CLASS B MATERIAL SHALL CONFORM TO RTA 3051 DOB 20 OR APPROVED EQUIVALENT.

- ALL BACKFILL MATERIALS SHALL BE FREE OF CONTAMINANTS SUCH AS PEAT, VEGETABLE MATTER, THIMER, ORGANIC, SOLUBLE, PERISHABLE MATERIALS OR CONSTRUCTION DEBRIS.

- BACKFILL MATERIALS SHALL BE PLACED IN UNIFORM COMPACTED LAYERS NOT EXCEEDING 200mm LOOSE THICKNESS AND SHALL BE COMPACTED TO AT LEAST 98% OF THE SHDD AT +/- 2% OF OPTIMUM MOISTURE CONTENT (OR TO A MINIMUM DENSITY INDEX OF 75% TO AUSTRALIAN STANDARD AS 1285-5-1-1. COMPACTION IS TO BE CARRIED OUT USING A MINIMUM 5 TONNE/m WIDTH OF DRUM COMPACTOR. VIBRATING MODE OF THE COMPACTOR SHALL NOT BE USED UNLESS INSTRUCTED BY THE URS GEOTECHNICAL ENGINEER.

- FOR SLOPING AREAS OF FILL, THE SLOPE SHALL BE PREPARED BY OVERFILLING AND CUTTING BACK AFTER COMPACTING. OVERFILLING SHALL EXTEND BEYOND THE DESIGN FINISHED SURFACE BY A HORIZONTAL DISTANCE OF AT LEAST 1.0m.

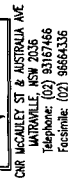
- ALL REQUIREMENTS FOR QUALITY CONTROL AND TESTING FOR THE WORKS, INCLUDING MAXIMUM LOT SIZES AND MINIMUM TEST FREQUENCIES, SHALL BE AS FOR TYPE 4 EARTHWORKS AS STATED IN AS3798-1996.

- IN AREAS WITH ACCESS CONSTRAINTS SUCH AS CLOSE TO WALLS OR EXISTING SERVICES, COMPACTION SHALL BE CARRIED OUT USING A HAND HELD VIBRATING PLATE COMPACTOR AS INSTRUCTED BY THE URS GEOTECHNICAL ENGINEER. THE MAXIMUM LOOSE LAYER THICKNESS IN AREAS WHERE HAND HELD COMPACTING EQUIPMENT IS USED SHALL BE LIMITED TO 100mm.

WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05 of the Work As Executed

Signed.....
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.



URS AUSTRALIA PTY LTD
Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone (02) 89255500
Facsimile (02) 89255555



PET PROCESS ENGINEERING TECHNOLOGIES
URS AUSTRALIA PTY LTD
Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone (02) 89255500
Facsimile (02) 89255555

WORK AS EXECUTED

CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT

GENERAL NOTES

NORTH POINT

SCALES

APPROVED

MANAGER DESIGN

SENIOR DESIGN

ENGINEER

DATE

DATE

DRAWN

CHECKED

SURVEYOR

FIELD BOOK

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

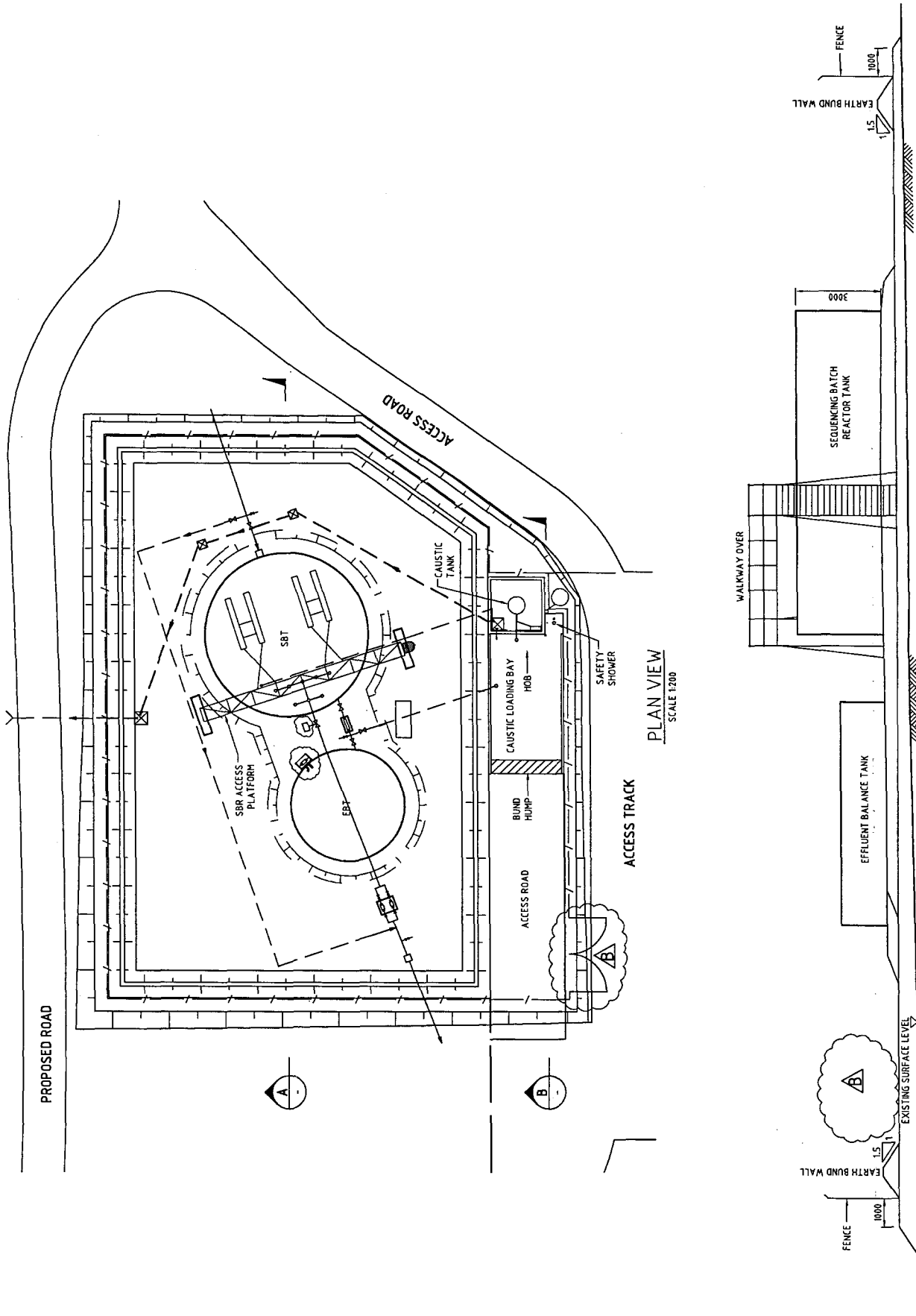
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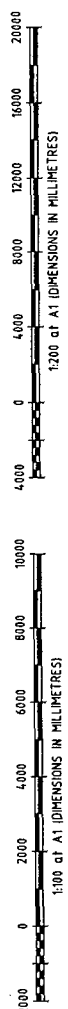
DATE



ACCESS TRACK

SECTION
SCALE: 1:100

SECTION
SCALE: 1:100

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WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05
of the Works-as-Executed.

Signed, 

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

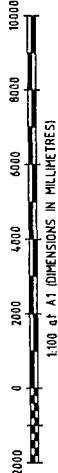
URS Level 3, 115 MILLER STREET, NORTH SYDNEY, N.S.W. 2060 Telephone: (02) 89255500 Facsimile: (02) 89255555	PET PROCESSING TECHNOLOGIES OUR HEADQUARTERS IS IN AUSTRALIA AT 100/102 MILLER STREET, NORTH SYDNEY Telephone: (02) 81617465 Facsimile: (02) 96864336	DESIGN P/C'S No.
--	--	-------------------------



1. CLEAR AREA AS INDICATED OF ALL OBSTRUCTIONS, VEGETATION, DEBRIS, SOFT OR OTHERWISE UNSUITABLE MATERIAL TO A DEPTH OF 1500mm BELOW NATURAL SURFACE LEVEL OR AS DIRECTED BY THE URS GEOTECHNICAL ENGINEER.

1. CLEAR AREA IS INDICATED OF ALL OBSTRUCTIONS, VEGETATION, DEBRIS, SOFT OR UNSUITABLE MATERIAL TO A DEPTH OF 150MM BELOW NATURAL SURFACE LEVEL OR AS DIRECTED BY THE URS GEOTECHNICAL ENGINEER.
2. PLACE SELECTED CLASS A MATERIAL (REFER GENERAL NOTES) IN MAXIMUM 200MM LOOSE LAYERS AND COMPACT TO 98% STANDARD DENSITY. BRING COMPACT FILL UP TO MATCHING EXISTING SURFACE LEVEL UNDO.
3. EXISTING LEACHATE LINE TO BE REMOVED AND REDIRECTED PRIOR TO BULK EARTHWORK EXCAVATION.

	PROPOSED FINISHED SURFACE LEVEL TO MATCH EXISTING AFTER PLACEMENT OF COMPACTED FILL.
	PROPOSED FINISHED SURFACE LEVEL FOR BULK EARTHWORKS
	EXISTING SURFACE LEVEL

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WORK AS EXECUTED

~~These drawings are an accurate representation as at 22/03/05 of the Work-As-Executed.~~

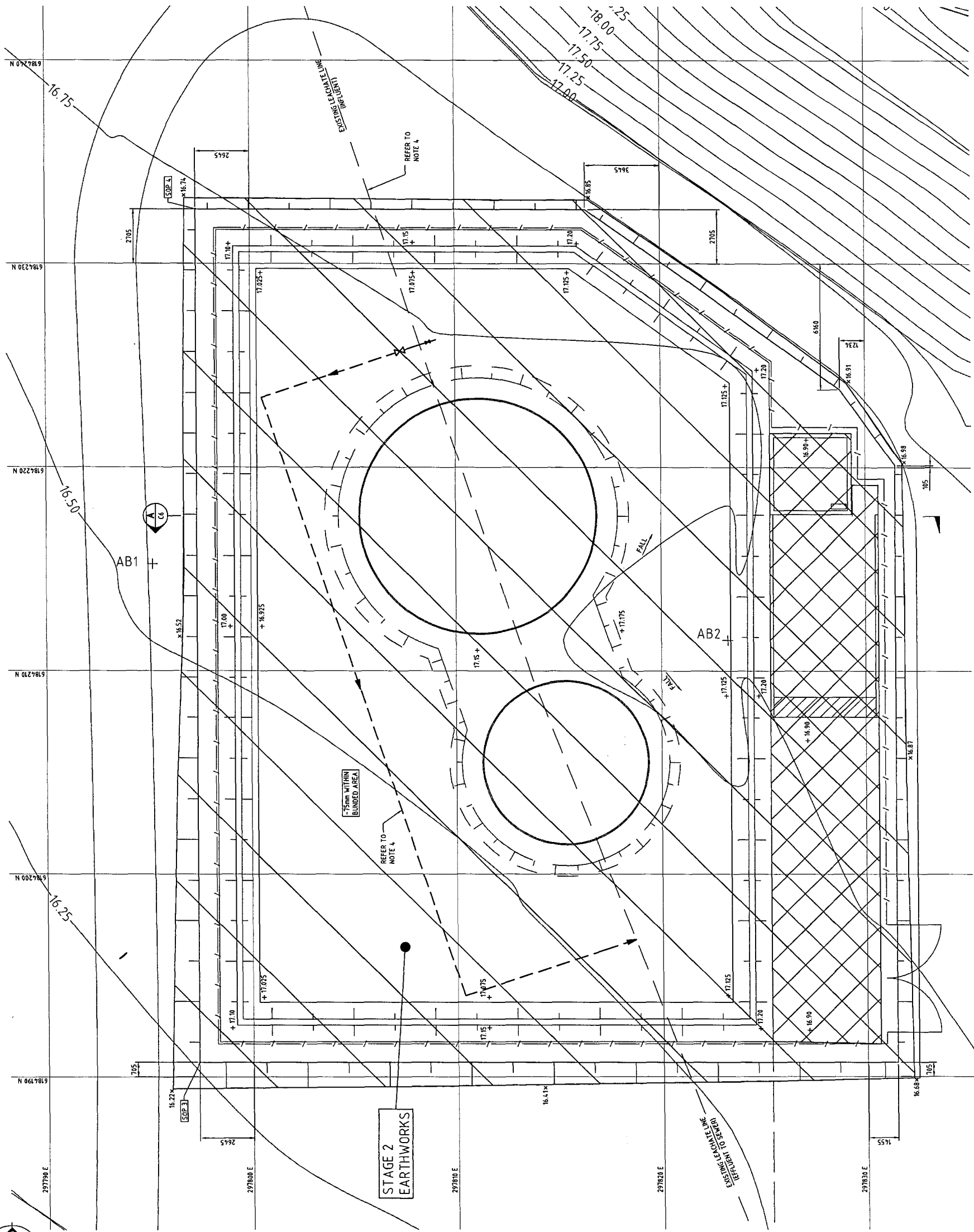
Signed.....

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd

DRS

CHR McCauley ST & AUSTRALIA A
MATRIVILLE, NSW 2036
Telephone: (02) 93167466
Facsimile: (02) 96664336

	WOLLONGONG <i>City of Innovation</i>	DESIGN DIVISION Ph. 02 42277111
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ISSUE		DESCRIPTION									
0	10	20	30	40	50	60	70	80	90	100mm ON ORIGINAL PLAN	
B WORK AS EXECUTED											
A FOR CONSTRUCTION											

[illegible]

	SCALES	NORTH POINT
PAGER DESIGN 1. THE PAGER DESIGN SHALL BE THE PROPERTY OF THE COMPANY AND SHALL REMAIN THE PROPERTY OF THE COMPANY EVEN IF THE PAGER IS LOANED TO AN EMPLOYEE OR CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE EMPLOYEE OR CONTRACTOR TO RETURN THE PAGER TO THE COMPANY AT THE END OF THE PROJECT. 2. THE PAGER DESIGN SHALL BE THE PROPERTY OF THE COMPANY AND SHALL REMAIN THE PROPERTY OF THE COMPANY EVEN IF THE PAGER IS LOANED TO AN EMPLOYEE OR CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE EMPLOYEE OR CONTRACTOR TO RETURN THE PAGER TO THE COMPANY AT THE END OF THE PROJECT.	AS SHOWN	

WORK AS EXECUTED

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
STAGE 2 BULK EARTHWORKS

FOR CONSTRUCTION		DESCRIPTION										
A	ISSUE	0	10	20	30	40	50	60	70	80	90	100mm ON ORIGINAL PLAN

SUBGRADE PREPARATION
STAGE 2 EARTHWORKS

1. CLEAR AREA (EXCEPT STAGE 1 AREA) OF ALL OBSTRUCTIONS, VEGETATION, DEBRIS, SOIL OR OTHERWISE UNSUITABLE MATERIAL TO A DEPTH OF AT LEAST 300mm DR AS DIRECTED BY THE ENGINEER.
2. PLACE SELECTED FILL CLASS A MATERIAL (REFER GENERAL NOTES) IN MAXIMUM 200mm LOOSE LAYER SAND COMPACTED TO 98% STANDARD DENSITY. BRING COMPACTED FILL UP TO MATCH EXISTING SURFACE LEVEL UND.
3. IN AREA DENOTED BY ☒ FINISHED SURFACE LEVEL (STAGE 2 EARTHWORKS) TO BE 300mm BELOW FINAL SURFACE LEVEL.
4. EXISTING LEACHATE LINE TO BE REMOVED AND REDIRECTED PRIOR TO BULK EARTHWORK EXCAVATION.
5. FOS SET OUT POINTS (ISOP 1 & ISOP4) REFER DRG. NO. 3502-C1.

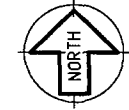
EXISTING SURFACE LEVEL	× 16.64
PROPOSED SURFACE LEVEL FOR BULK EARTHWORKS	+ 17.90
STAGE 2 EARTHWORKS TO SPECIFIED SURFACE LEVELS	
STAGE 1 EARTHWORKS	
STAGE 2 EARTHWORKS PROPOSED SURFACE LEVEL -300mm BELOW FINAL SURFACE LEVEL	

Signed.....
 LINC Australia Pty Ltd / Director Engineering Technologies Division



CNR McCAULEY ST & AUSTRALIA AVE
MAYRAVILLE, NSW 2036
Telephone: (02) 93167466
Facsimile: (02) 96664336

	DESIGN DIVISION		PH. 02 42277111	
	DRAWING No.		3512	
	SHEET NO.	C4		
	SHEET 4 OF 8 SHEETS			
	FILE NUMBER			
	DESIGN P/S No.			
PROJECT: (U) 89252503		ISSUE: (U) 00000000		A1 ORIGINAL



NOTES

1. TANK PAD TOLERANCES
THE FINISHED SURFACE LEVEL UNDER THE TANK WALL SHOULD NOT VARY BY MORE THAN 20mm IN 300mm OF THE CIRCUMFERENCE AND WITHIN 40mm IN THE TOTAL CIRCUMFERENCE MEASURED FROM THE AVERAGE ELEVATION.
2. PROTECTION OF TANK PAD SHOULDER
PROTECT SHOULDER WITH SAND/BITUMEN/CEMENT MIX (ILE, WET SAND) OR CEMENT MODIFIED SAND AFTER CONSTRUCTION OF PAD FOUNDATION AND EXCESS FILL MATERIAL HAS BEEN CUT BACK.
3. PLACEMENT OF BITUMEN/SAND MIX
PLACE MIX IMMEDIATELY AFTER COMPLETION OF TANK PAD FOUNDATION TO SPECIFIED THICKNESS.
BITUMEN SAND SPECIFICATION
A LAYER OF BITUMEN SAND MIX SHALL BE APPLIED TO THE TANK FOUNDATION AS SHOWN. A SUITABLE MIX CAN BE PRODUCED BY PILING SAND AND BITUMEN AS DESCRIBED IN THE GENERAL NOTES ON DRG NO. 1000. VARIATIONS OF THESE PROPORTIONS MAY BE NECESSARY TO SUIT SOME VARIATIONS OF THESE PROPORTIONS MAY BE NECESSARY TO SUIT AMBIENT TEMPERATURE CONDITIONS, LOCALLY AVAILABLE MATERIALS, ETC., AND IT IS RECOMMENDED THAT TRIAL MIXES BE MADE IN ORDER TO ACHIEVE THE CORRECT PROPORTIONS TO SUIT THE PARTICULAR CASE.
4. TANK PAD SET OUT
FOR SET OUT POINTS OF TANKS (SOP1 & SOP2) AND REFER DRG. No. 3512-C1.
5. ASPHALT SURFACE TO BE BITUMEN SPAY OVER 75mm COMPACTED DGB 20 (CLASS B MATERIAL) COVER SURFACE WITH STONE DUST.

LEGEND

- ✕ 16.64 EXISTING SURFACE LEVEL
⊙ 17.90 PROPOSED FINISHED SURFACE LEVEL

SETTING OUT POINTS OF TANK PAD SURFACE	
POINT	NORTHING
SOP 1	1237809.115
SOP 2	1237810.521
SOP 3	1237816.666
SOP 4	1237818.072
SOP 5	1237820.072
SOP 6	1237821.072
SOP 7	1237822.072
SOP 8	1237823.072

WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05 of the Work As Executed.

Signed: *[Signature]*
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.



Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 88255000
Facsimile: (02) 88644306



WOLLONGONG City of Wollongong	DESIGN DIVISION Ph. 02 42277111
----------------------------------	------------------------------------

DESIGN PCS No.	FILE NUMBER	SHEET	OF	SHEETS	ORIGINAL
		3512		5	A1

WOLLONGONG City of Wollongong	DESIGN DIVISION Ph. 02 42277111
----------------------------------	------------------------------------

WORK AS EXECUTED

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
STAGE 3 BULK EARTHWORKS
TANK PAD FOUNDATION & BUND WALL

AS SHOWN

APPROVED
FOR COUNCIL USE ONLY
MANAGER DESIGN
ENGINEER

DATE
19/09/03
DATE
19/09/03
DATE
19/09/03
DATE
19/09/03

DRAWN
J.M.C.
CHECKED
P.R.
DESIGNED
J.N.
CHECKED
A.E.

SURVEYOR
FIELD BOOK
RELATED PLANS
DATE
22/03/05
DATE
19/09/03
DATE
19/09/03
DATE
19/09/03

DATUM
AND
AZIMUTH
MGA

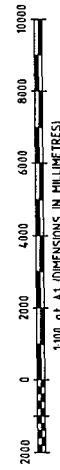
TT
J.M.C.
A.E.
A.E.
A.E.

WORK AS EXECUTED
FOR CONSTRUCTION
ISSUE

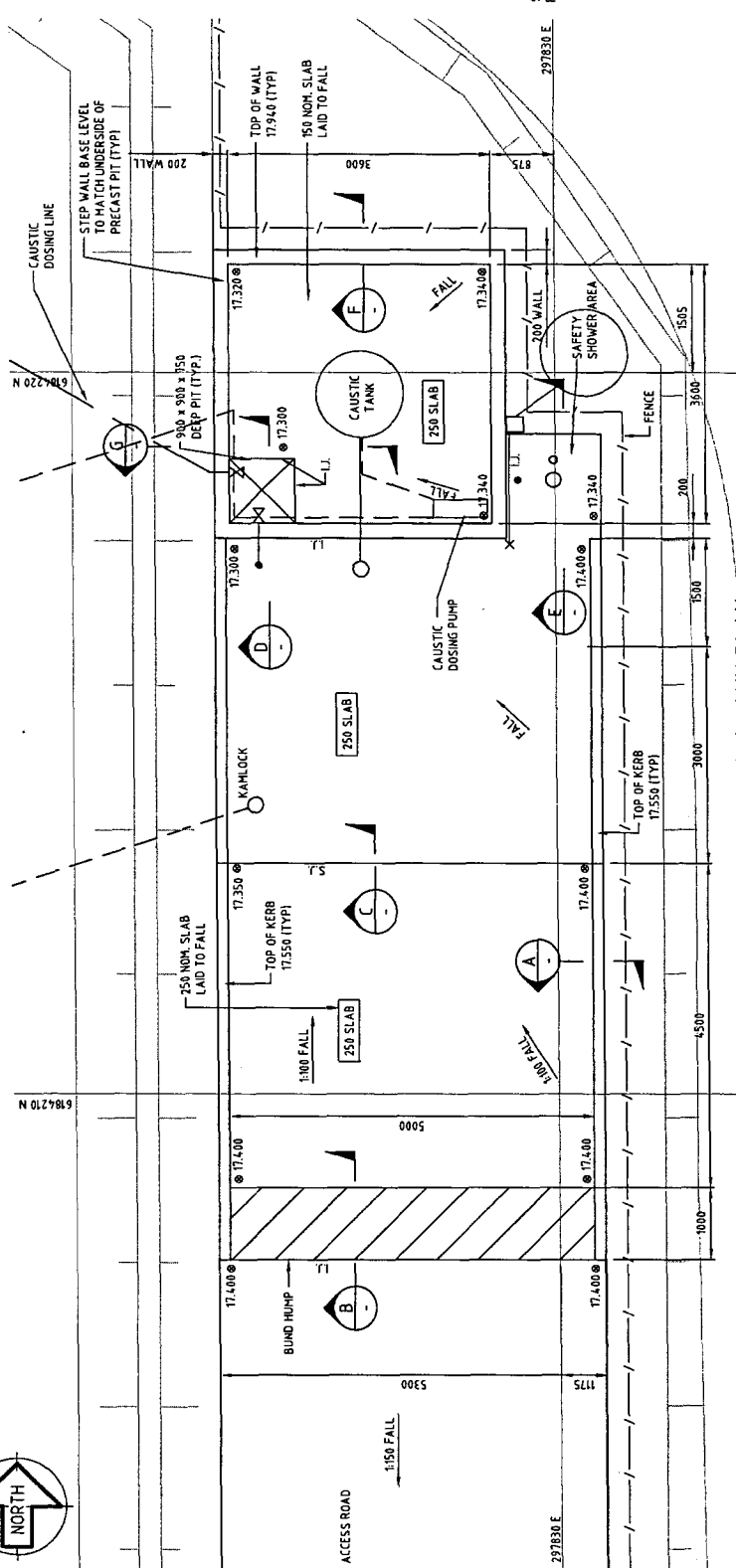
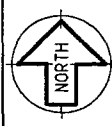
DESCRIPTION
DATE
DATE
DATE
DATE

PLAN - TANK FOUNDATION PAD AND BUND WALL

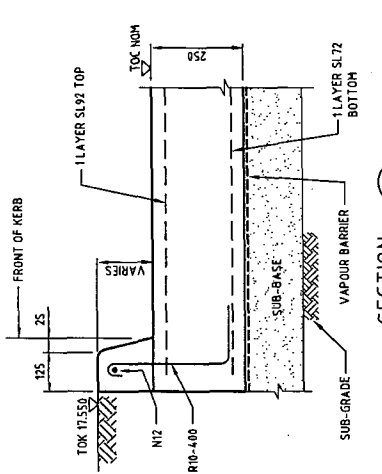
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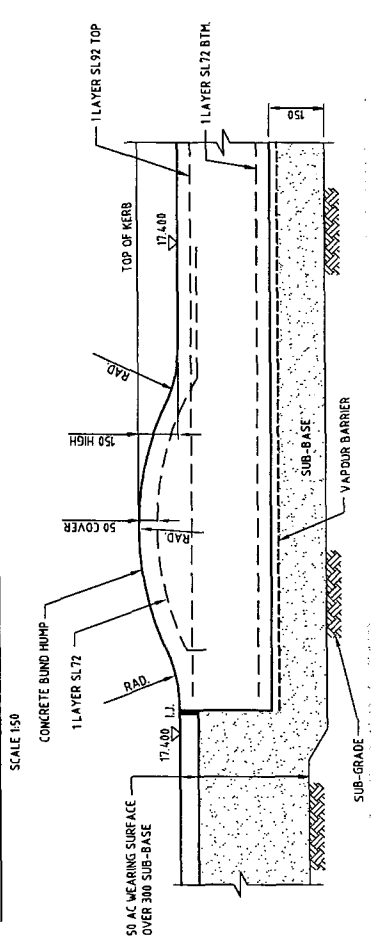
0 10 20 30 40 50 60 70 80 90 100mm ON ORIGINAL PLAN



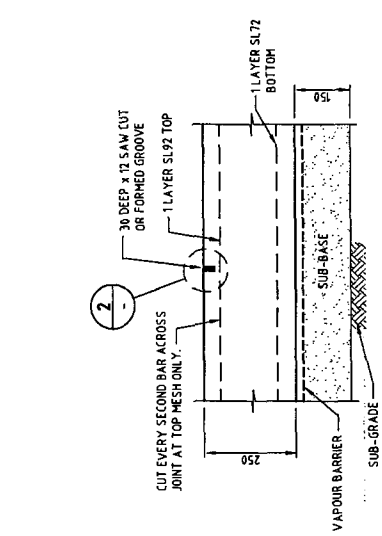
CAUSTIC BAY/CAUSTIC TANK PLAN



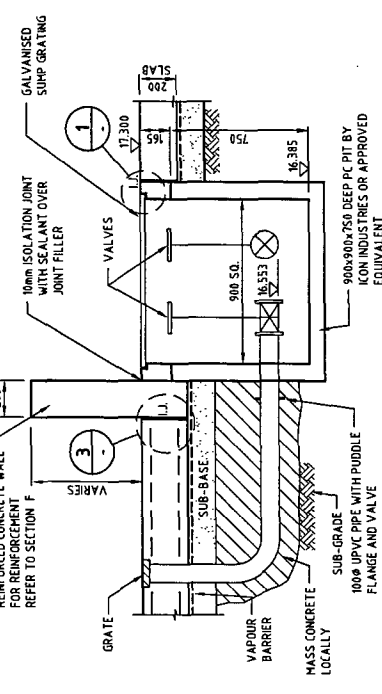
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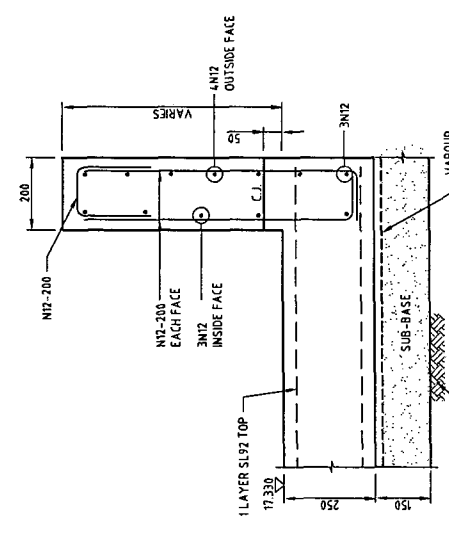
SECTION B
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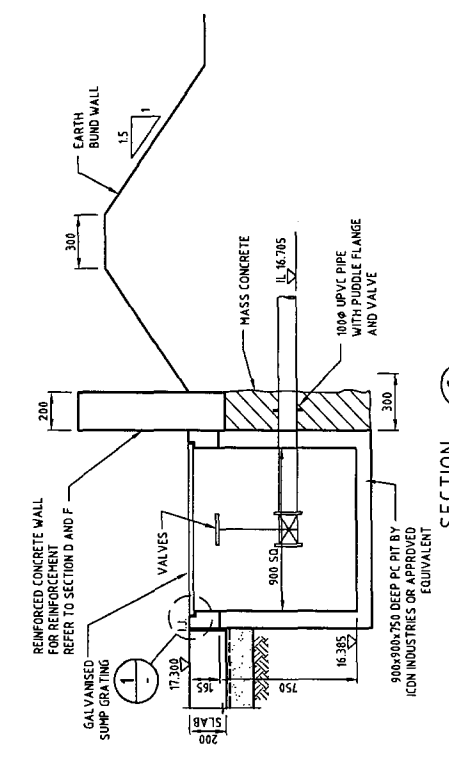
SECTION C
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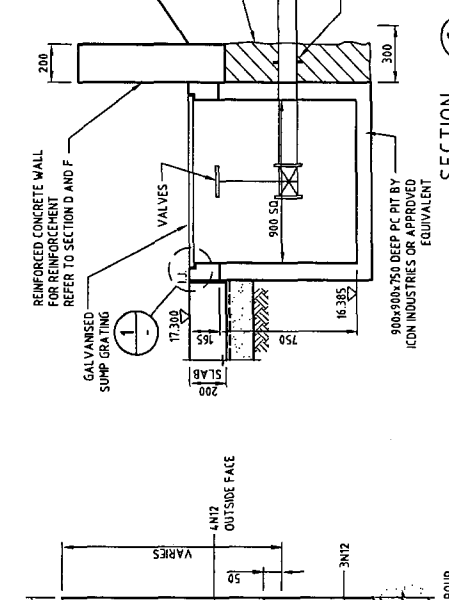
SECTION D
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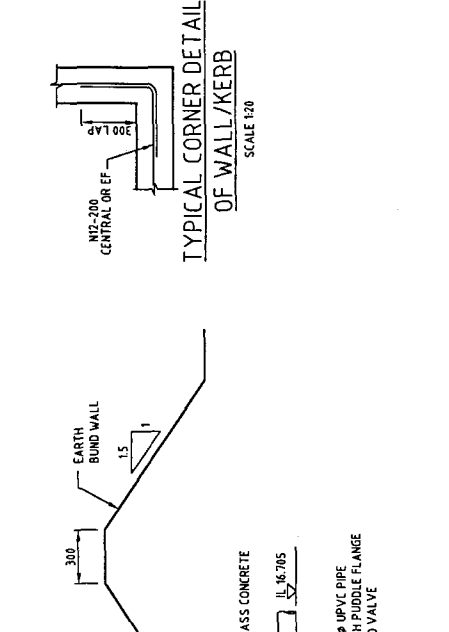
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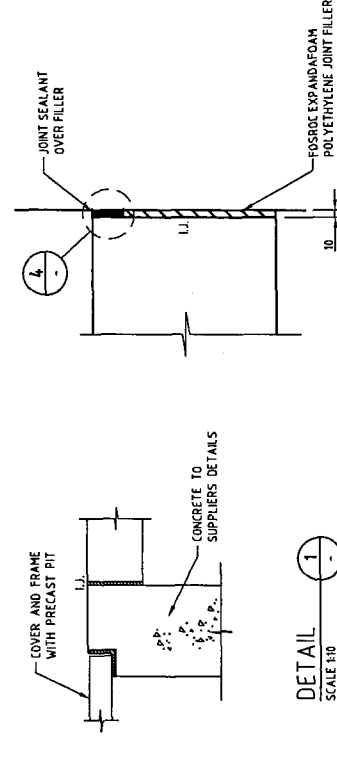
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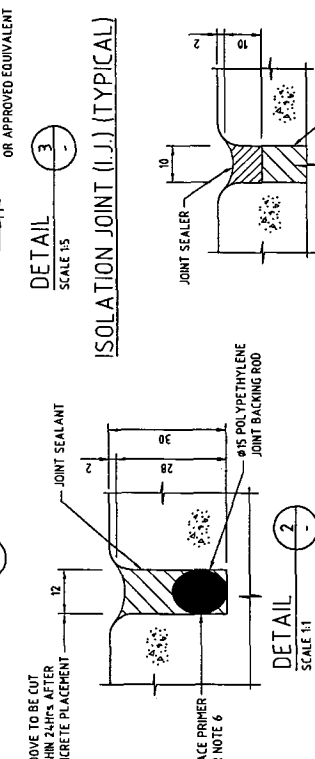
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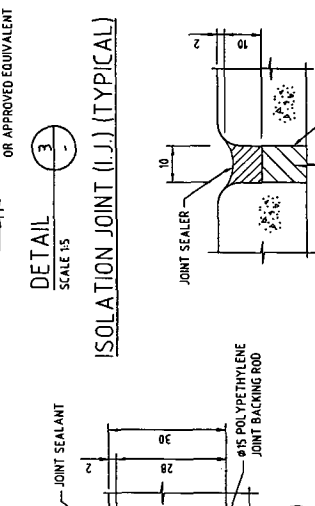
TYPICAL CORNER DETAIL
OF WALL/KERB
SCALE 1:20



DETAIL 1
SCALE 1:10



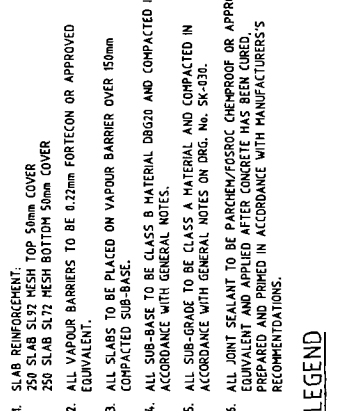
DETAIL 2
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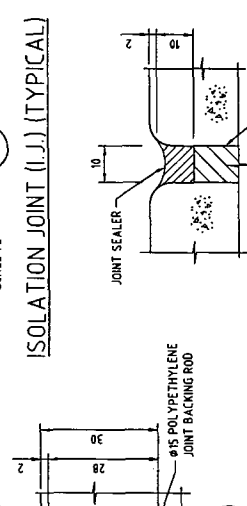
DETAIL 3
SCALE 1:5



DETAIL 4
SCALE 1:1



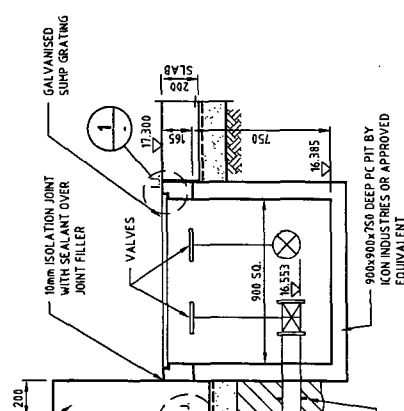
DETAIL 5
SCALE 1:5



DETAIL 6
SCALE 1:1



DETAIL 7
SCALE 1:1



DETAIL 8
SCALE 1:1

NOTES

1. SLAB REINFORCEMENT: TOP 50mm COVER
2. 250 SLAB SL72 MESH BOTTOM 50mm COVER
3. ALL VAPOUR BARRIERS TO BE 0.2mm FORTICOM OR APPROVED EQUIVALENT.
4. ALL SUB-BASES TO BE CLASS B MATERIAL DB630 AND COMPACTED IN ACCORDANCE WITH GENERAL NOTES.
5. ALL SUB-BASES TO BE CLASS A MATERIAL DB630 AND COMPACTED IN ACCORDANCE WITH GENERAL NOTES ON DRG. No. SC-030.
6. ALL JOINT SEALANT TO BE PARACHEM/FSROSC CHEMPROOF OR APPROVED EQUIVALENT AND APPLIED AFTER CONCRETE HAS BEEN CURED, PREPARED AND PRIMED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

LEGEND

- VAPOUR BARRIER
- 17.90 PROPOSED FINISHED SURFACE LEVEL
- SJ SHRINKAGE JOINT
- IJ ISOLATION JOINT

WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05 of the Work As Executed.

Signed: *[Signature]*

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

URS

Level 3, 118 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060
Telephone: (02) 89255500
Facsimile: (02) 89255553

PET

URS AUSTRALIA PTY LTD
118 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060
Telephone: (02) 89255500
Facsimile: (02) 89255553

DESIGN PCS No.	FILE NUMBER	7	OF	8	SHEETS	ORIGINAL
DRAWING No.	3512	C7	ISSUE	B		

WORK AS EXECUTED

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
CAUSTIC LOADING BAY

APPROVED	MANAGER DESIGN
SENIOR DESIGN ENGINEER	

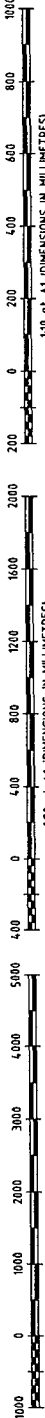
DATE	19/09/03
DATE	19/09/03
DATE	19/09/03
DATE	19/09/03

DRAWN	JHCL
CHECKED	RR
DESIGNED	JN
CHECKED	AE

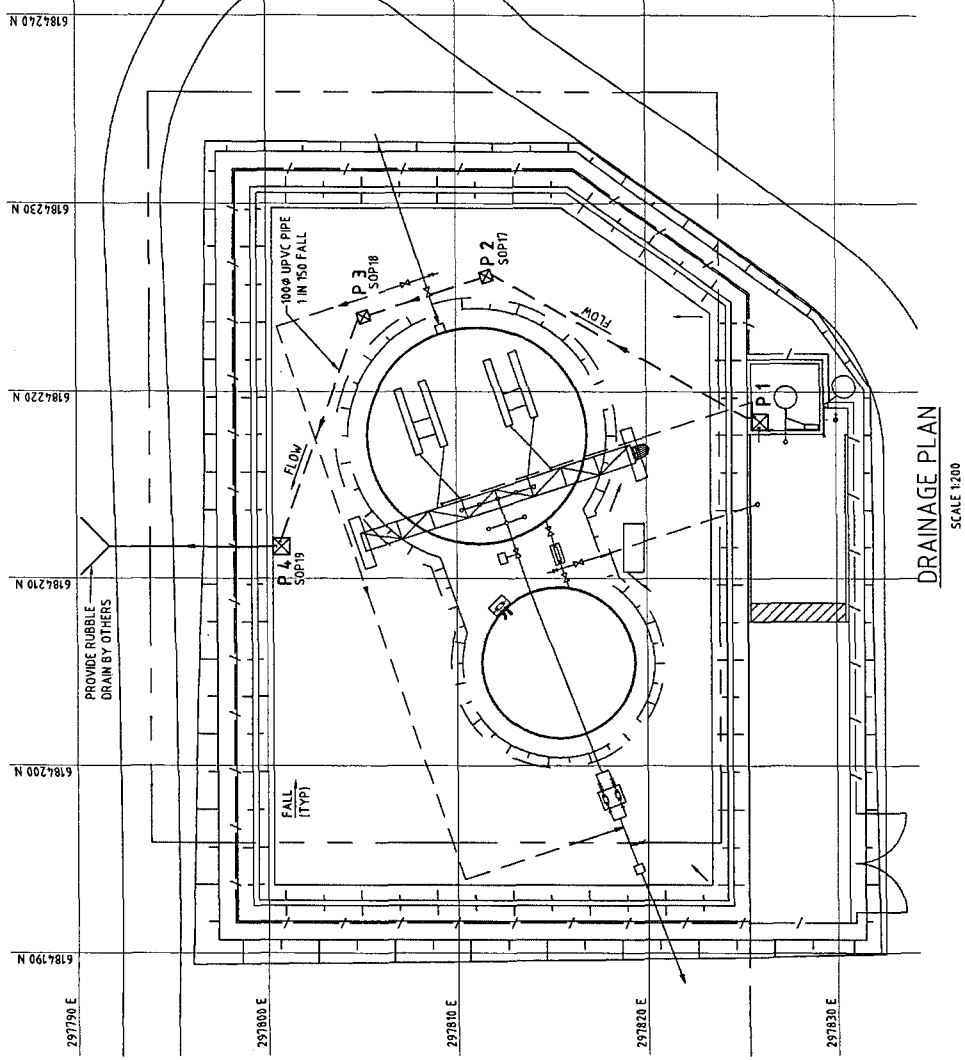
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AS/WHICH	1:10
ISG	1:10
RELATED PLANS	

DATE	19/09/03
DATE	19/09/03
DATE	19/09/03
DATE	19/09/03

DESCRIPTION	
WORK AS EXECUTED	
FOR CONSTRUCTION	

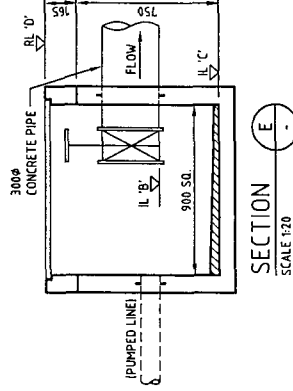
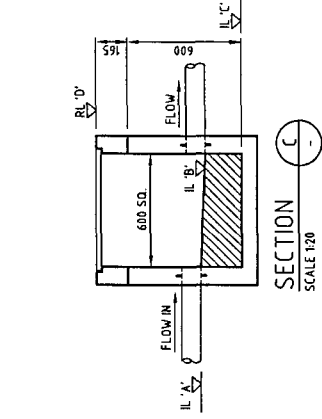
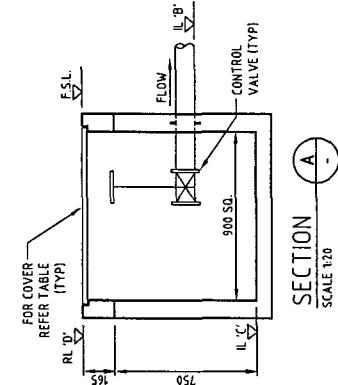
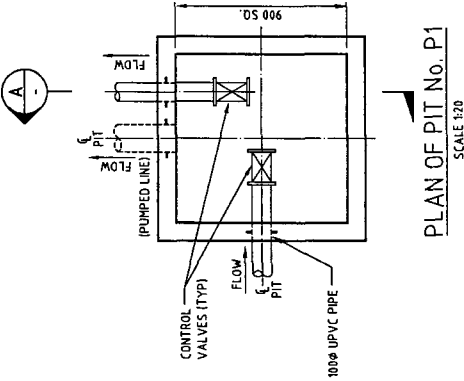
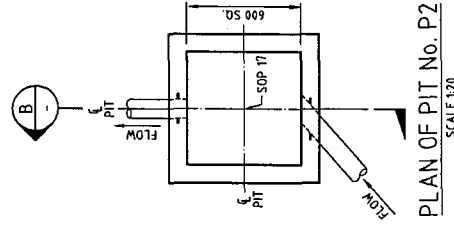
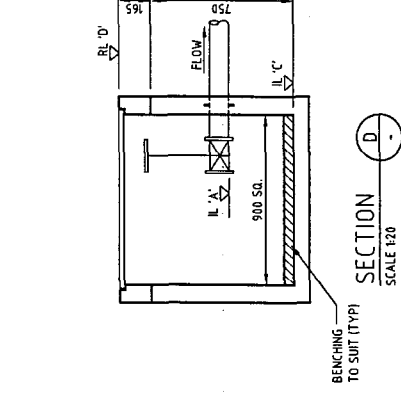


100mm ON ORIGINAL PLAN



PIT SCHEDULE						
PIT No.	SIZE	INLET IN. "A"	OUTLET IN. "B"	IL PIT IN. "C"	F.S. L. REL. "D"	
P1	900x900x750 DEEP	N/A	16.705	16.351	17.116	
P2	600x600x600 DEEP	16.400	16.575	17.116	17.116	
P3	600x600x600 DEEP	16.533	16.508	16.317	17.082	
P4	900x900x750 DEEP	16.425	16.400	16.085	17.000	

SETTING OUT POINTS OF PITS		
PIT No.	EASTING	NORTHING
P1	N/A	N/A
P2 (SOP17)	297811.581	6184226.109
P3 (SOP18)	297805.125	6184223.967
P4 (SOP19)	297800.755	6184231.704



These drawings are an accurate representation as at 22/03/05
of the Work-As-Executed.

Signed .

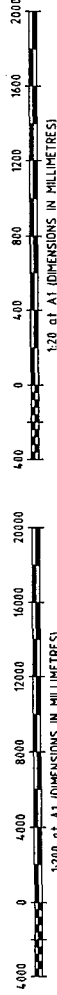
1. ALL PITS PRECAST TO DIMENSIONS SHOWN.
2. ALL PIT COVERS SUPPLIED AS PRE-CAST UNITS OR GRATING AS SPECIFIED BY PIT SUPPLIER.
3. KNOCK OUT PANELS IN PIT WALLS TO BE 375x375 MAX TO TAKE 150Ø PIPE.

URS
 Level 3, 116 MILLER STREET,
 NORTH STONEY, N.S.W. 2060.
 Telephone: (02) 89255500
 Facsimile: (02) 89255555

PET
 PROCESS
 PETROLEUM
 REFINERIES
 Cnr McCauley St & Australia
 Waynville, NSW 2038
 Telephone: (02) 31767466
 Facsimile: (02) 98681336

	DESIGN DIVISION		Ph. 02 42277111	
	WOLLONGONG <i>City of Innovation</i>		3512	
	DRAWING No.	SHEET No.	C8	
SHEET	B	OF	8	SHEETS
FILE NUMBER		DESIGN PCS No.		
A1		ORIGINAL		
B		ISSUE		

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
DRAINAGE PLAN AND PIT DETAILS

[illegible]

1. FOR GENERAL NOTES REFER TO DRG. NO. 3512-MT
2. PLATES SHALL BE GRADE 350.15 IN ACCORDANCE WITH AS 3678.
3. ALL STEEL SHOULD BE GRADE 300 FOR ROLLED SECTIONS.
4. FLAT AND ROUND BAR IN ACCORDANCE WITH AS 3678 & AS 3679, UNQJ.
5. SITE WELDING SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF AS 1554, WELD CATEGORY SP, ALL VERTICAL SHELL WELDS SHALL BE FULL PENETRATION BUTT WELDS. ALL BUTT WELDS SHALL BE SQUARE BUTT WELD, FABRICATION, ERECTION, INSPECTION AND TESTING TO BE IN ACCORDANCE WITH API STANDARD 650.

(BY ALTEX COATINGS LIMITED OR APPROVED EQUIVALENT)

SURFACE PREPARATION FOR ALL SURFACES (INTERNAL, EXTERNAL AND UNDER SIDE OF BOTTOM PLATES) TO BE IN ACCORDANCE WITH ALTEX COATINGS LIMITED PRINTED INSTRUCTIONS.

UNDER SIDE OF BOTTOM PLATES

COATING SYSTEM - FIRST COAT DEVTAR SA	- 150um DFT
- SECOND COAT DEVTAR SA	- 150um DFT

(REFER WELD MARGIN AT JOINT SPLICE DETAIL)

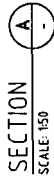
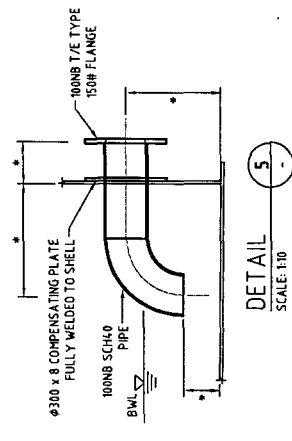
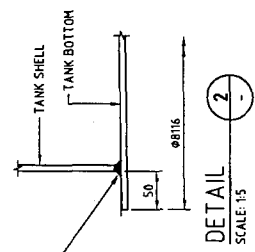
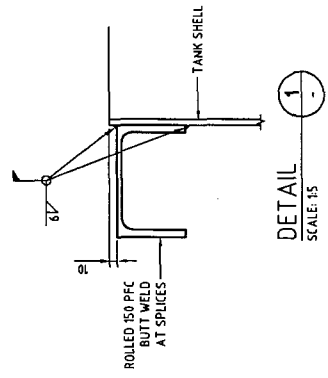
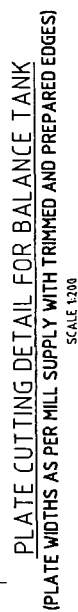
**ON SITE COATING
(AFTER TANK ERECTED)
INSIDE STEEL TANK SURFACES.**

SECOND COAT DEVICHEM 253 - 150um DFT

COATING SYSTEM- FIRST COAT BAR-RUST 236 - 150um DFT
SECOND COAT DEVTHANE 359HS - 125um DFT

NOTE:
ALL PLATES SHALL BE SUPPLIED UNPAINTED TO SITE EXCEPT FOR THE UNDERSIDE OF THE BOTTOM PLATES WHICH ARE TO BE SHOP PAINTED.
THE UNDERSIDE FLOOR PLATE SHOP COATINGS SHALL BE INSPECTED FOR DAMAGE AND PATCH REPAIRED ON SITE AS NECESSARY IN ACCORDANCE WITH THE COATING MANUFACTURERS PRINTED INSTRUCTIONS PRIOR TO INSTALLATION.

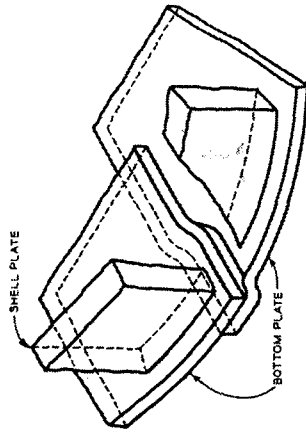
6. MANHOLES IN TANK WALLS TO BE INSTALLED IN ACCORDANCE WITH API 650, CLAUSE 3.7.



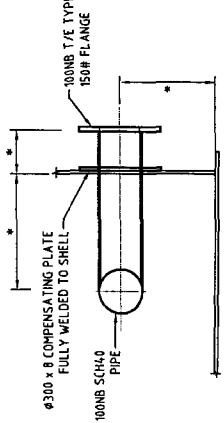
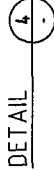
* EFFLUENT DISCHARGE PUMP
CONNECTION FLANGE FINAL POSITION AND
DIAMETER TO BE CONFIRMED BEFORE FABRICATION

These drawings are an accurate representation as at 22/03/05

Signed.....
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.



—Method for Preparing Lap-Welded Bottom Plates Under Tank Shell.

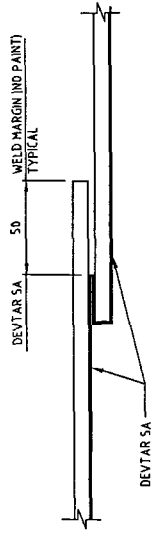


DETAIL

SCALE: 1:10

5

(HORIZONTAL BEND)



SHOP PAINTING DETAIL AT BOTTOM PLATE JOINT SPlice

[illegible]

WUHS AS EXERCISED

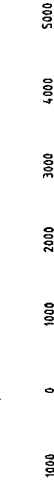
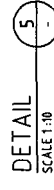
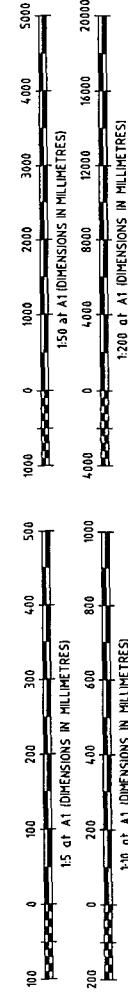
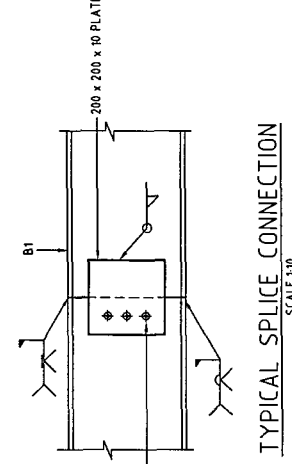
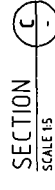
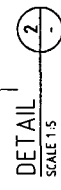
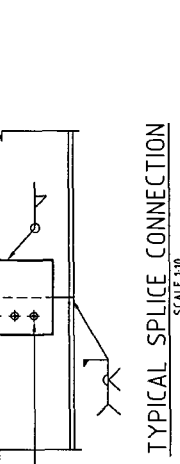
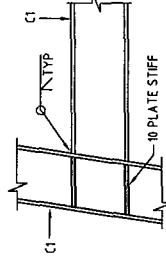
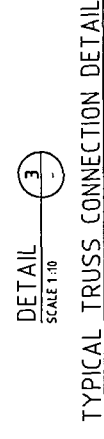
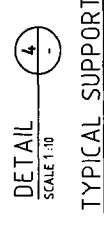
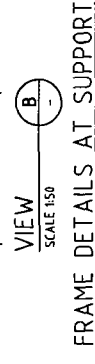
CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT
EFFLUENT BALANCE TANK
FABRICATION DETAILS

	WOLLONGONG City of Innovation		SHEET NO. 01	
	DESIGN DIVISION		3512	
	DRAWING NO.		S2	
	DESIGN P/L'S No. FILE NUMBER	SHEET 2 OF 6	SHEETS	
FACSIMILE: (02) 89233333		TELEPHONE: (02) 89804336		A1 ORIGINAL
				ISSUE
				B

1. FOR GENERAL NOTES REFER TO DRG. No. 3512-N1
2. ALL PLATES 10mm UNO.
3. ALL WELDS 6mm FW UNO.
4. ALL BOLTS M20 8.8/5 UNO.
5. ALL SITE WELDS TO BE PATCH PAINTED WITH 2 COATS OF GALPANT.

MEMBER SCHEDULE	
B1	310 UB 40
B2	150 PFC
BR1	FULLY WELDED
	FULLY WELDED
C1	75 X 75 EA 6
	REFER DETAIL 2 & 4
BR2	150 UC 30
	REFER DETAIL 2 & 3



WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05 of the Work as Executed.

Signed.....

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

URS

Level 3, 116 MILLER STREET, NORTH STONEY, N.S.W. 2060. Telephone: (02) 89955500 Facsimile: (02) 89255555	CNR MACGILL ST & AUSTRALIA AVE WATSONVILLE, NSW 2036 Telephone: (02) 83167466 Facsimile: (02) 96664336
---	---



WELLINGTON
City of Innovation

DESIGN DIVISION
PH. 02 42277111

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
SBR ACCESS PLATFORM DETAILS
SHEET 1 OF 2

AS SHOWN	SCALES
----------	--------

APPROVED (COUNCIL USE ONLY)	MANAGER DESIGN
--------------------------------	----------------

ATE	19/09/03
ATE	19/09/03
ATE	19/09/03

RAWN	7	CHECKED	R	DESIGNED	W
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SURVEY	FIELD	PLANS
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50/00/22	22/03/05
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			II	TT
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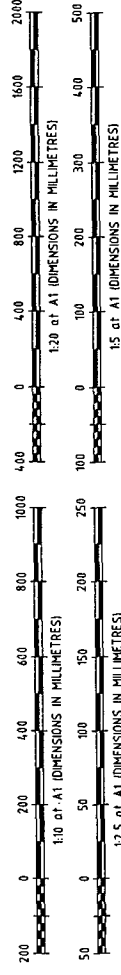
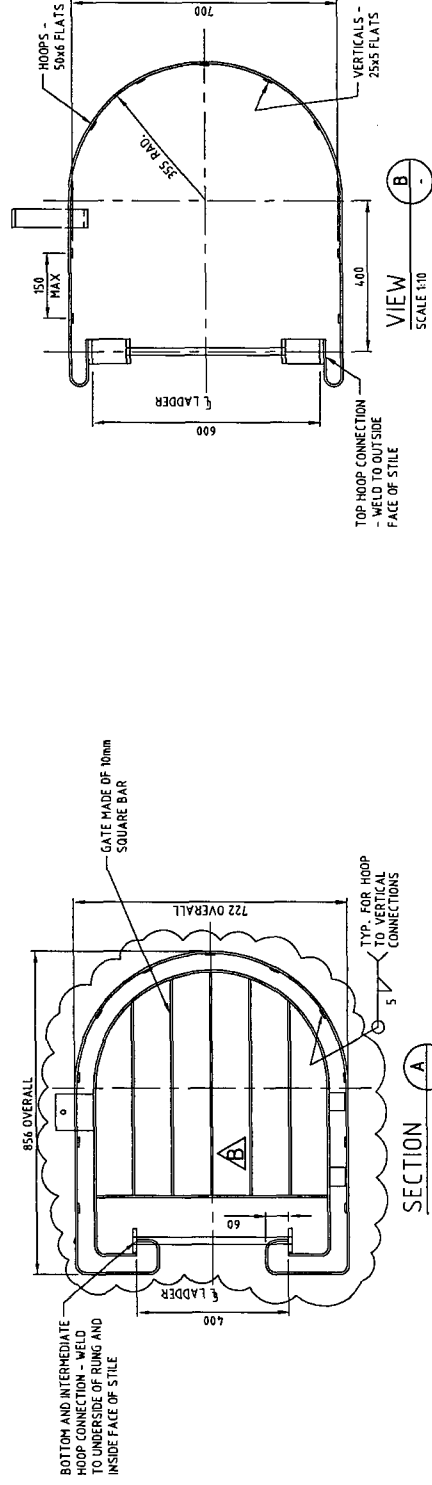
The diagram illustrates a 1D lattice chain. It consists of a horizontal line with several vertical segments representing lattice sites. The sites are connected by horizontal bonds. The diagram is labeled with 'a' for the lattice constant and 'L' for the total length of the chain.

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[illegible]

WORK AS EXERCISE

1. FOR NOTES REFER TO DRG. NO. 3512-N1
2. FOR SAFETY GATE USE MONOWILLS SELF CLOSING GATE.



CITY OF WOLLOONGONG										NORTH POINT		SCALES		APPROVED (FOR COUNCIL USE ONLY)		AS SHOWN		SHEET No. 5		S5		ISSUE B	
WHYTES GULLY LEACHATE TREATMENT PLANT																							
SBR ACCESS PLATFORM DETAILS																							
SHEET 2 OF 2																							
DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03		19/09/03	
DRAWN J.M.H.		CHECKED R.R.		DESIGNED J.M.		CHECKED A.E.		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
SURVEYOR		FIELD BOOK		RELATED PLANS		CHECKED		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
DUTY		AZIMUTH		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
TT		A.E.		22/03/05		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
B		A.E.		09/03		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
WORK AS EXECUTED		FOR CONSTRUCTION		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
DRAWN		APPROD		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
DESCRIPTION		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	

WORK AS EXECUTED

These drawings are an accurate representation as at 22/03/05
of the Work-As-Executed

Signed.....
 PERS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

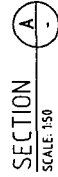
SP

Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 89255500
Facsimile: (02) 89255555

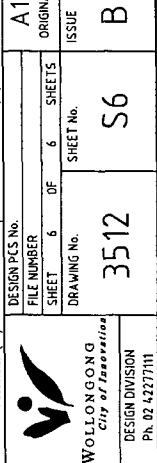


WOLLONGONG
City of Innovation

DESIGN DIVISION

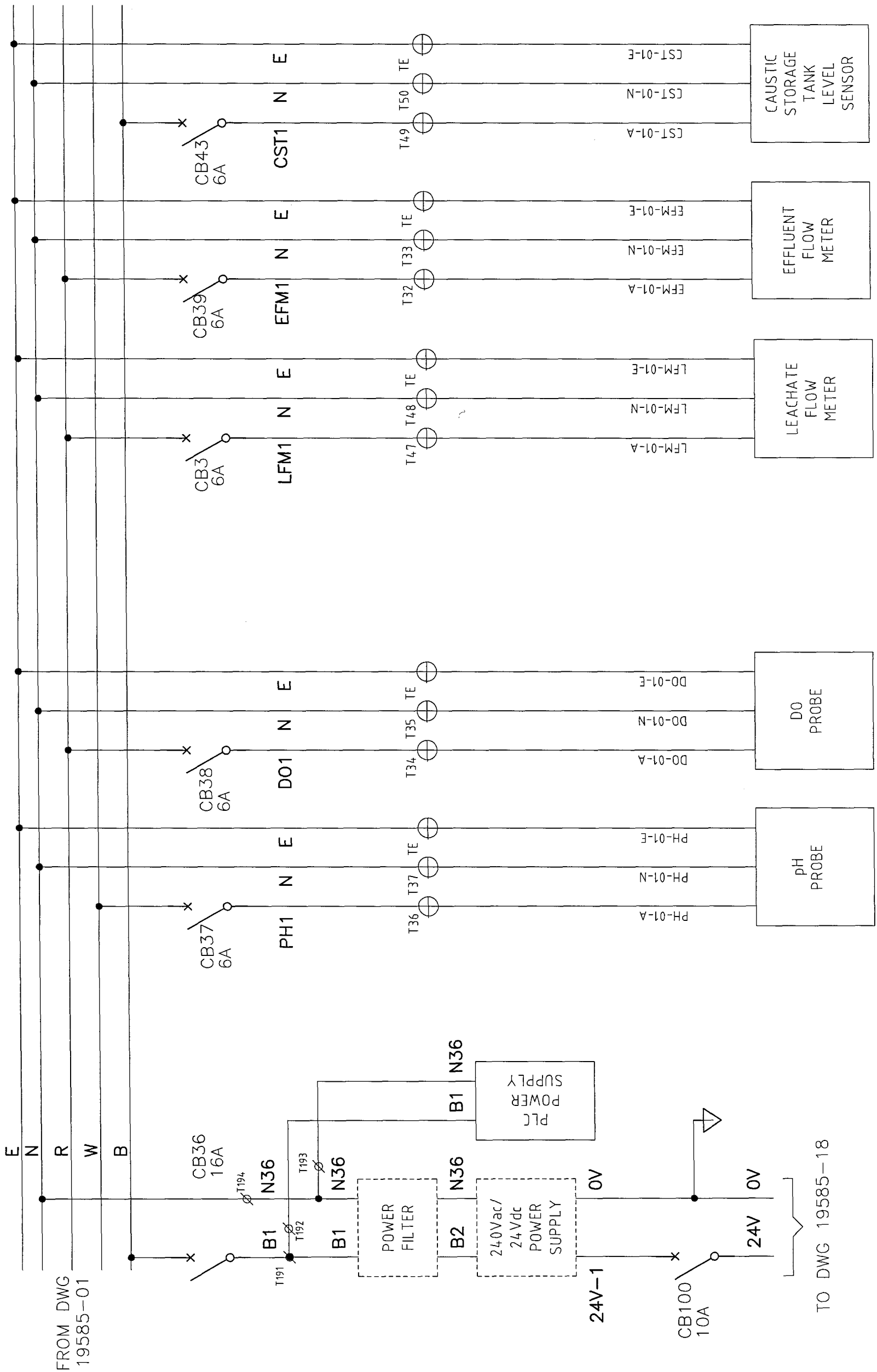


URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.



CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
DECANT PIPEWORK DETAILS

[illegible]



WORK AS EXECUTED
These drawings are an accurate representation as at 19/01/04 of the Work as Executed.
Signed: *[Signature]*
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

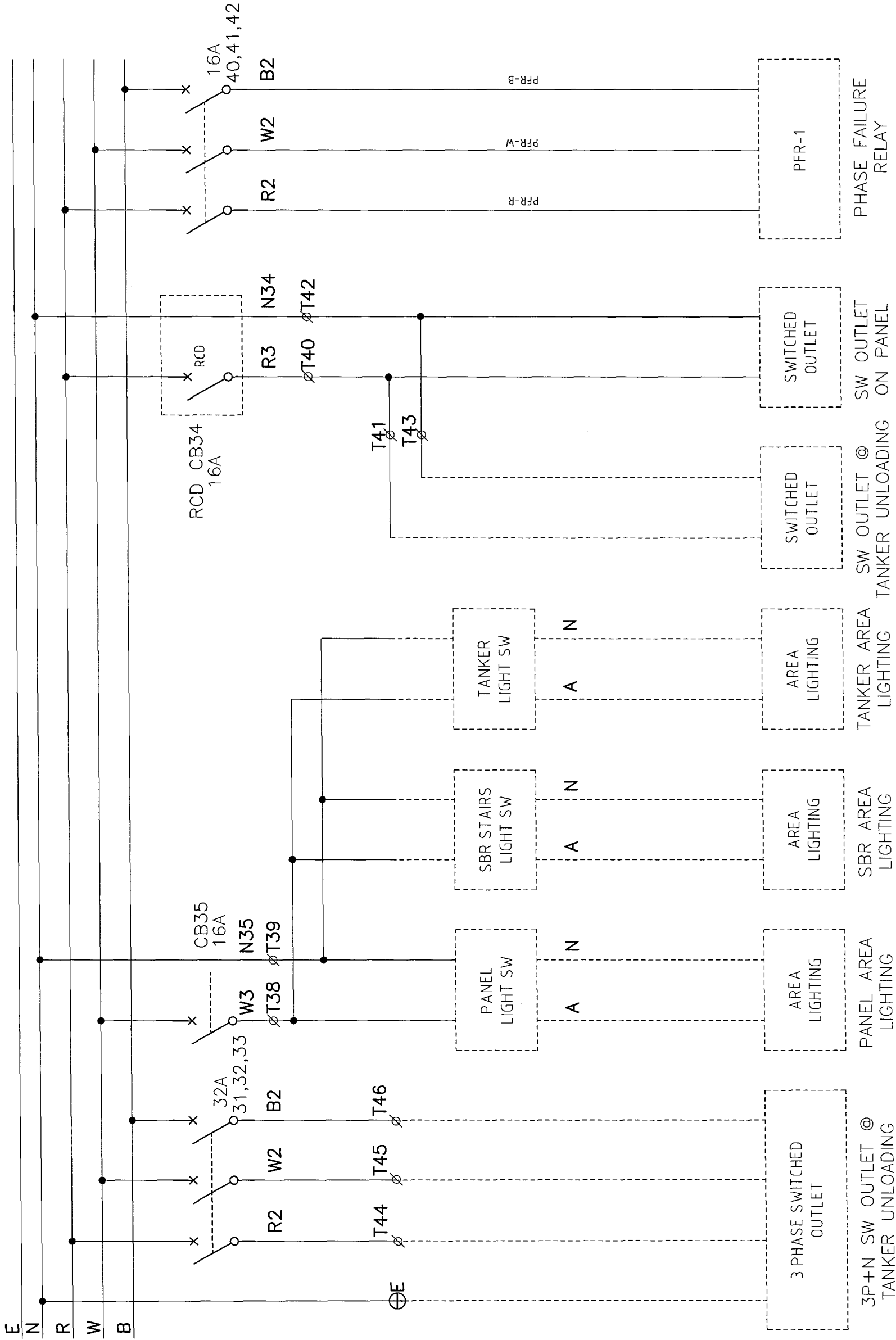
URS
Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 8925500
Facsimile: (02) 8925555

 WOLLONGONG City of Innovation										DESIGN PCS No.		FILE NUMBER		SHEET		OF		SHEETS		ORIGINAL			
												4		6				6		A1			
										DRAWING No.		3512		E2				E2		B			
										DESIGN DIVISION		Ph. 02 42277111											
CITY OF WOLLONGONG												NORTH POINT		SCALES		APPROVED (FOR CONSOLE, USE ONLY)							
WHYTES GULLY LEACHATE TREATMENT PLANT																MANAGER DESIGN		SENIOR DESIGN ENGINEER		DATE		DATE	
WASTE TREATMENT SYSTEM																							
POWER & DISTRIBUTION (1 OF 2)																							
				DRAWN		PHKP		DATE															
				CHECKED		MR		DATE															
B		WORK AS EXECUTED		DESIGNED		PHKP		DATE															
A		FOR CONSTRUCTION		CHECKED		MR		DATE															
ISSUE		DESCRIPTION		DRAWN		APPRD		DATE															
				TT		AE		01/03/05															
				JMKL		AE		09/03															

TO DWG
19585-03

FROM DWG
19585-01

TO DWG 19585-18



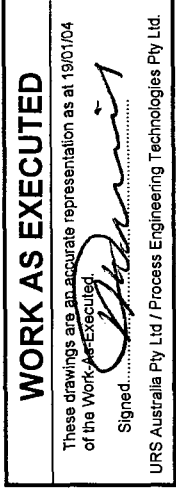
WORK AS EXECUTED
These drawings are an accurate representation as at 19/01/04
of the Work as Executed
Signed: *[Signature]*
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

URS
Level 3, 115 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 89255500
Facsimile: (02) 89255535

PET
PROCESS ENGINEERING
TECHNOLOGIES
Level 3, 115 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 89255500
Facsimile: (02) 89255535

DESIGN P.C.S. No.	FILE NUMBER	SHEET 4 OF 6	SHEETS	A1	ORIGINAL
DRAWING No.	3512	E3	ISSUE	B	
WOLLONGONG City of Wollongong	DESIGN DIVISION	Ph. 02 42277111			

WORK AS EXECUTED										CITY OF WOLLONGONG										A1 ORIGINAL									
APPROVED FOR CONSULT USE ONLY										MANAGER DESIGN										DESIGN P/S No.									
DATE										DATE										SHEET 4 OF 6 SHEETS									
DATE										DATE										DRAWING No.									
DATE										DATE										3512									
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DATE										DATE										DESIGN DIVISION									
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These drawings are an accurate representation as at 19/01/04
of the Work-As-Executed

Signed _____

Signed.....
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

WASTE TREATMENT SYSTEM

DESIGN DIVISION

PH. 02 42277117

DESIGN PCS No.	A1
FILE NUMBER	

SHEET 4 OF 6 SHEETS	ISSUE
	ORIGINAL

DRAWING NO.	SHEET NO.	ISSUE
2540	1	13302

3512	E6	B
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P

CNR McCauley St & Australia Ave
Matraville, NSW 2036
Telephone: (02) 93167466
Facsimile: (02) 96664336

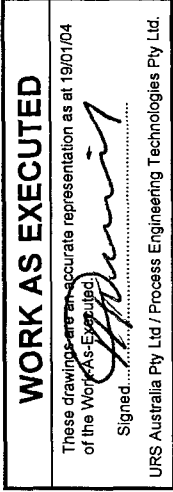
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IF	6	SHEETS	ORIGIN
		SHEET N°	ISSUE

SHEET NO. 13302

67

[illegible]



These drawings are an accurate representation as at 19/01/04 of the Work-As-Executed.

Signed _____

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 89255500
Facsimile: (02) 89255555

CNR McCauley St & Australia Ave
Matraville, NSW 2036
Telephone: (02) 93167466
Facsimile: (02) 96664336

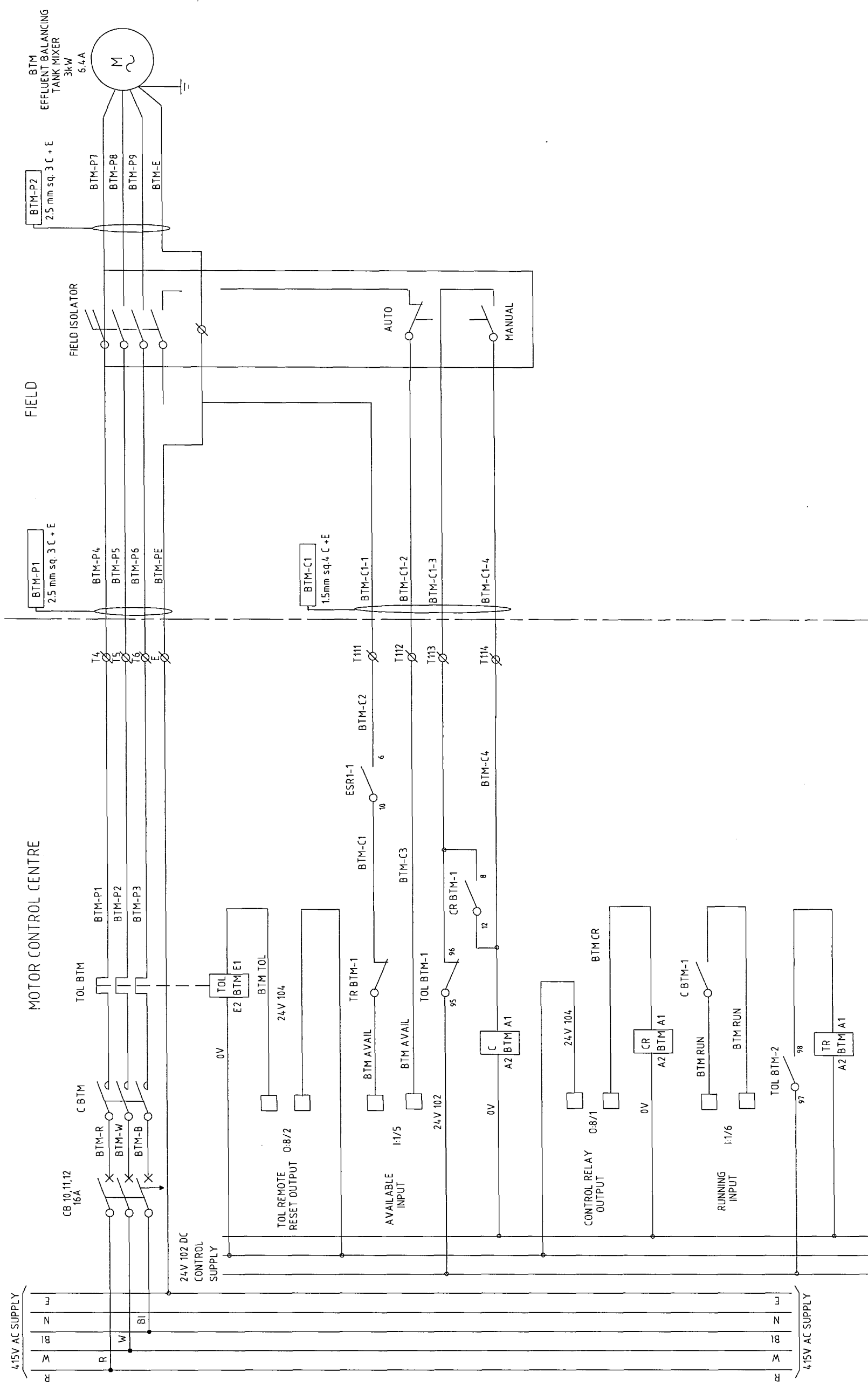
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	DRAWING No.		3512	E7
	SHEET No.		B	
DESIGN PICS No.	FILE NUMBER	SHEETS		A1 ORIGINAL
SHEET 4	OF 6	SHEETS		ISSUE

CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT
WASTE TREATMENT SYSTEM
STARTER CIRCUIT DIAGRAM

APPROVED (FOR LICENSE USE ONLY)										Scales		North Point	
Senior Design Engineer										Manager Design			
DATE		DRAWN		SURVEYOR		PH/CP		DATE					
DATE		CHECKED		FIELD BOOK		MR		DATE					
DATE		DESIGNED		RELATED PLANS		PH/CP		DATE					
DATE		CHECKED		DATE		DATE		DATE					
B		WORK AS EXECUTED		22/03/05		TT		MR					
A		FOR CONSTRUCTION		09/03		JHCL		AE					
DESCRIPTION		DRAWN		APPR'D		DATE		DATE					

0 10 20 30 40 50 60 70 80 90 100mm ON ORIGINAL PLAN



WORK AS EXECUTED

These drawings are an accurate representation as at 19/01/04 of the Work-As-Executed.

Signed: *[Signature]*

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

URS
Level 3, 116 MILLER STREET,
NORTH STONEY, N.S.W. 2060.
Telephone: (02) 89255500
Facsimile: (02) 89255555

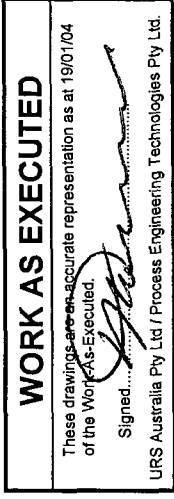
PET
PROCESS ENGINEERING TECHNOLOGIES
OUR MILLER STREET,
NORTH STONEY, N.S.W. 2060.
Telephone: (02) 93161466
Facsimile: (02) 96664336

WOLONGONG
City of Wollongong
DESIGN DIVISION
Ph. 02 42277111

DESIGN PCS No.
FILE NUMBER
SHEET 4 OF 6
DRAWING No.
3512

ORIGINAL
SHEETS
SHEET No.
E8
ISSUE
B

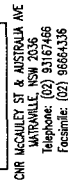
WORK AS EXECUTED										CITY OF WOLLONGONG	
WHYTES GULLY LEACHATE TREATMENT PLANT WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM										NORTH POINT	
APPROVED (FOR COMPLY USE ONLY)		SENIOR DESIGN ENGINEER		MANAGER DESIGN		SCALES		DATE		DATE	
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These drawings are an accurate representation as at 19/01/04 of the Works Executed.

Signed.....
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

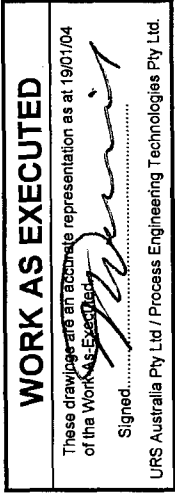
WHYTES GULLY LEACHATE TREATMENT PLANT WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM



WOLLONGONG
City of Innovation

DESIGN PCS No.			A
FILE NUMBER			
SHEET 4	OF 6	SHEETS	B
DRAWING No.	SHEET No.		
3512	E10		ISSUE

DESCRIPTION	
ISSUE	
A	FOR CONSTRUCTION
B	WORK AS EXECUTED

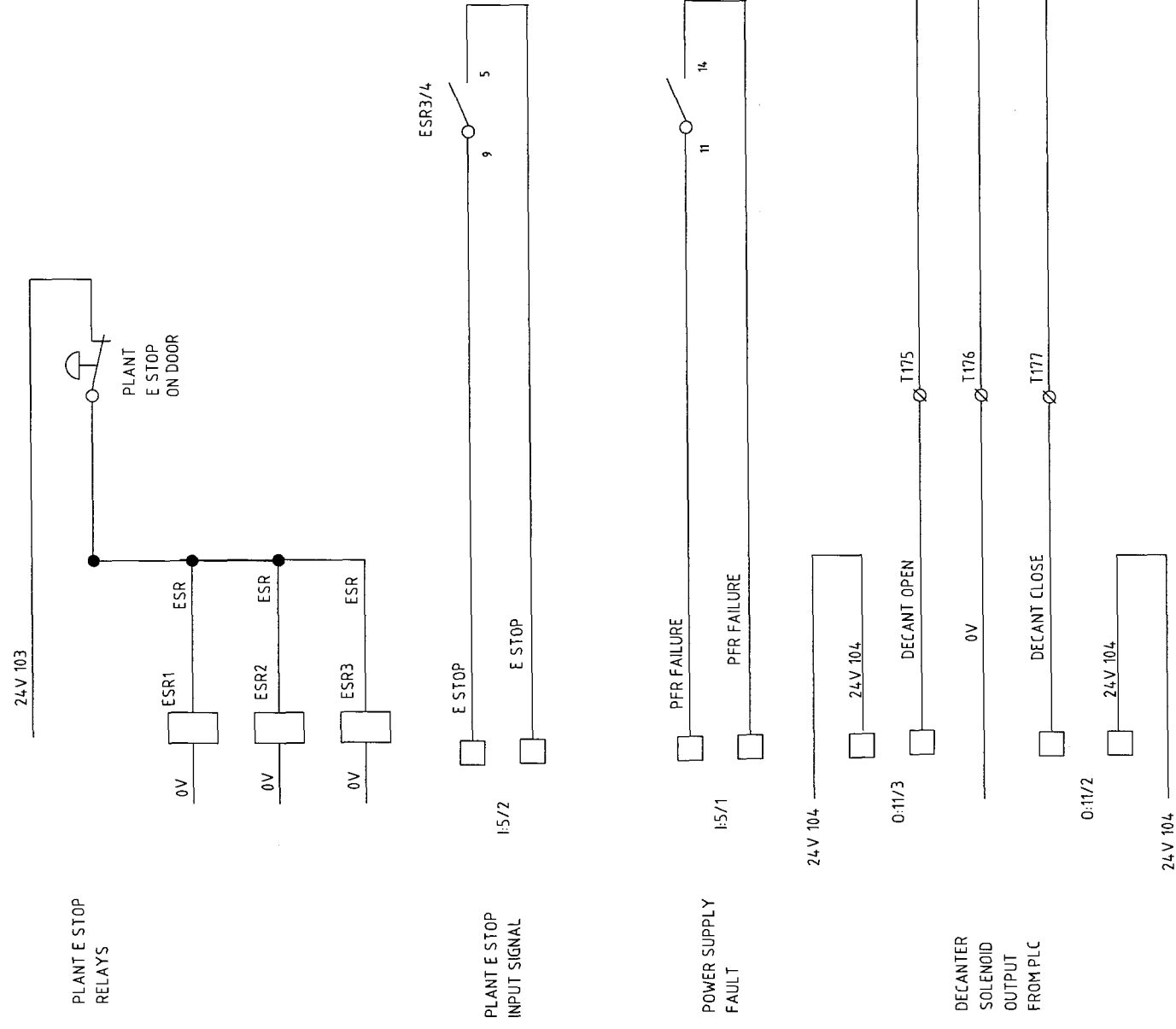


	WOLLONGONG <i>City of Innovation</i>		DESIGN PCS No. 3512	SHEET 4 OF 6 SHEET No. E11	ISSUE B
	SHEET 4 OF 6 SHEET No. E11				
Level 3, 116 WILDER STREET, NORTH STONEY, N.S.W. 2060. Telephone: (02) 89255300 Facsimile: (02) 89255555			OUR HCAULEY ST & AUSTRALIAN AVE WATFOLVILLE, NSW 2038 Telephone: (02) 83157466 Facsimile: (02) 86664336		

WORK AS EXECUTED										CITY	OF	WOLLONGONG
										NORTH POINT		
										APPROVED	Scales	
										(FOR CONSTRUCTION ONLY)		
										SENIOR DESIGN ENGINEER	MANAGER DESIGN	
										DATE	DRAWN	PMCP
										DATE	CHECKED	MR
										DATE	DESIGNED	PMCP
										DATE	CHECKED	
											SURVEYOR	
										DATUM		
										AZIMUTH		FIELD BOOK
												RELATED PLANS
										TT	MR	22/03/05
										AE	AE	09/03
										JMCL		
										FOR CONSTRUCTION		
										DATE	APPROV'D	DATE
										RECEIVED		

CONTROL PANEL SAFE AREA

FIELD HAZARDOUS AREA



WORK AS EXECUTED

These drawings are an accurate representation as at 19/01/04
of the Works as Executed.

Signed: 

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

WORK AS EXECUTED

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
WASTE TREATMENT SYSTEM
DIGITAL I/O SHEET 2

100

SCALES	NORTH POINT
--------	-------------

APPROVED

(FOR COUNCIL USE ONLY)		MANAGER DESIGN
IGN		

DATE

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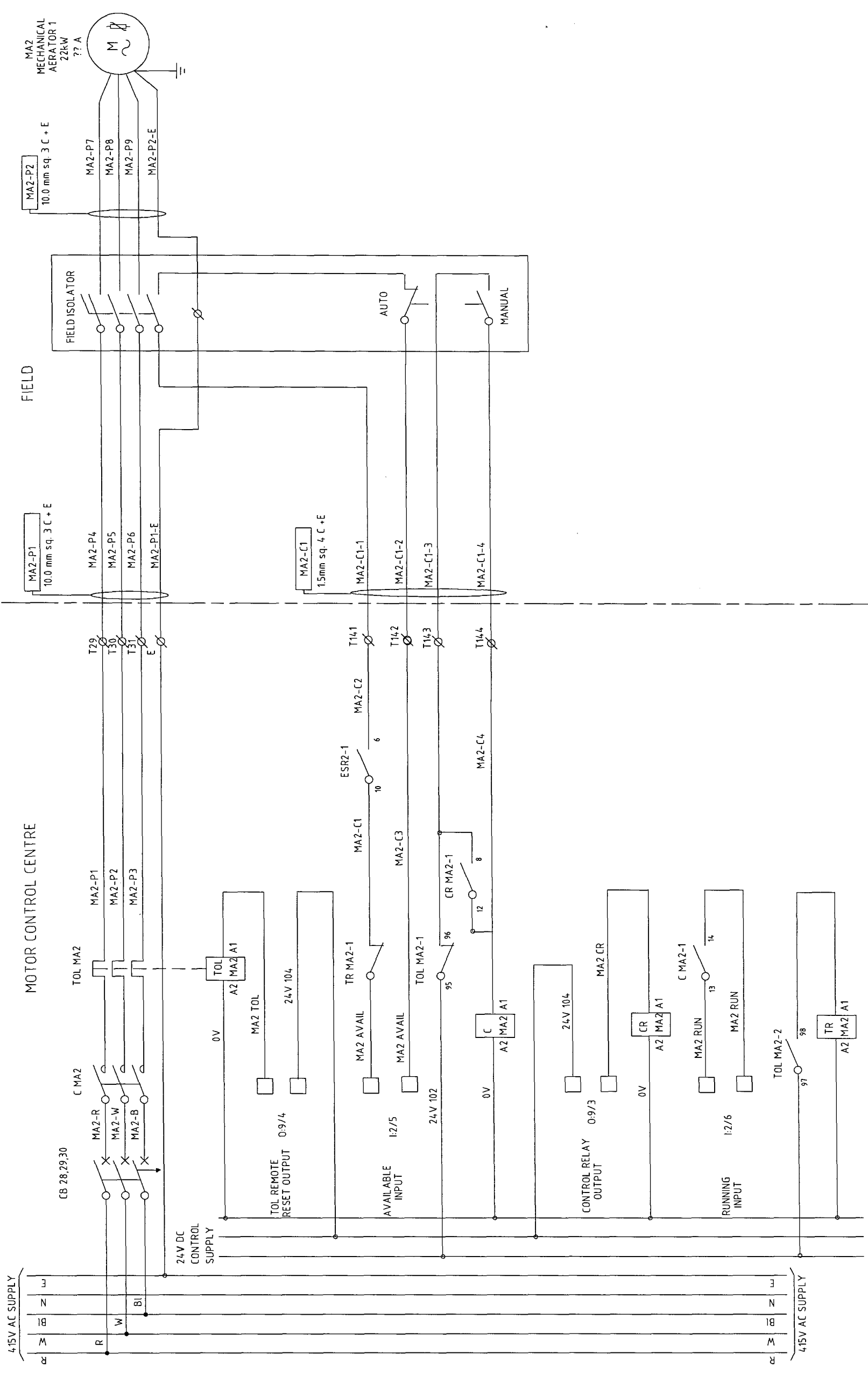
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WORK AS EXECUTED

These drawings are an accurate representation as at 19/01/04 of the Work As Executed.

Signed: _____

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.



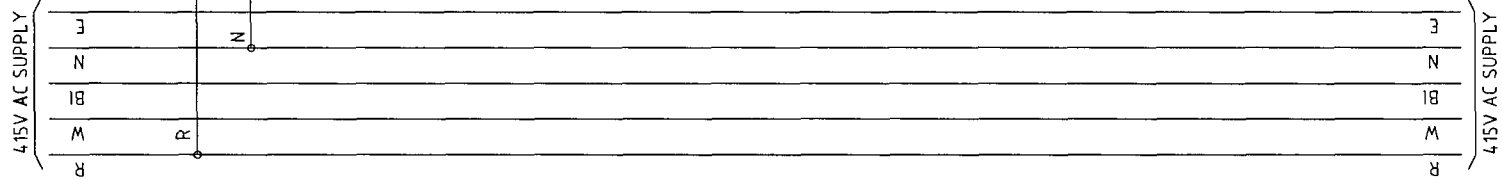
Level 3, 116 MILLER STREET,
NORTH SYDNEY, N.S.W. 2060.
Telephone: (02) 89255500
Facsimile: (02) 89255555



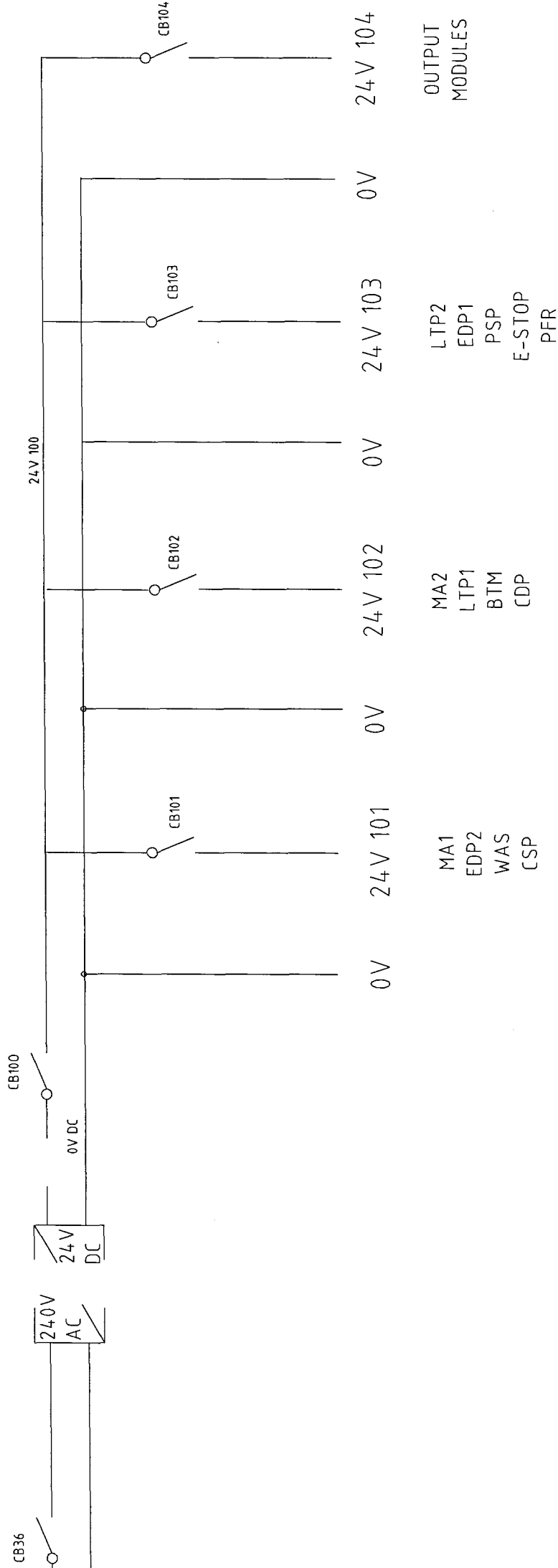
PET
PROCESS ENGINEERING TECHNOLOGIES

CNR MCQUEEN ST & AUSTRALIA AVE
MURRAYVILLE, NSW 2035
Telephone: (02) 93167465
Facsimile: (02) 96654336

ISSUE	DESCRIPTION										CITY OF WOLLONGONG	NORTH POINT	SCALES	APPROVED (FOR QUANTITY USE ONLY)				DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE</
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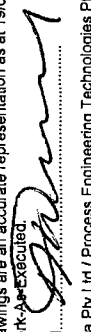


MOTOR CONTROL CUBICLE



WORK AS EXECUTED

These drawings are an accurate representation as at 19/01/04 of the Work As Executed.

Signed: 

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

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MOTOR CONTROL AND MONITORING

LEACHATE FEED PUMPS	
PUMP 1	PUMP 2
DUTY	STANDBY
AVAILABLE	AVAILABLE
1873 Hrs	1721 Hrs
DUTY SELECTOR	
PUMP 1	PUMP 2

STATUS

HOURS RUN

MECHANICAL AERATORS	
AERATOR 1	AERATOR 2
DUTY	STANDBY
AVAILABLE	AVAILABLE
1873 Hrs	1721 Hrs
DUTY SELECTOR	
AERATOR 1	AERATOR 2

EFFLUENT TRANSFER	
PUMP 1	PUMP 2
DUTY	STANDBY
AVAILABLE	AVAILABLE
1873 Hrs	1721 Hrs
DUTY SELECTOR	
PUMP 1	PUMP 2

STATUS

HOURS RUN

EFFLUENT BALANCING TANK MIXER
RUNNING
234 Hrs

STATUS

HOURS RUN

WASTE ACTIVATED SLUDGE
RUNNING
234 Hrs

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STATUS

HOURS RUN

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EFFLUENT BALANCING TANK MIXER	RUNNING	234 Hrs
WASTE ACTIVATED SLUDGE	RUNNING	234 Hrs
CAUSTIC DOSING PUMP	RUNNING	234 Hrs

WEEKLY TOTALS

WHYTES GULLY TREATMENT PLANT EQUIPMENT MONITORING

These drawings are an accurate representation as at 19/01/04
of the Work-as-Executed.

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WORK AS EXECUTED	These drawings are an accurate representation as at 19/01/04 of the Work As Executed Signed:
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