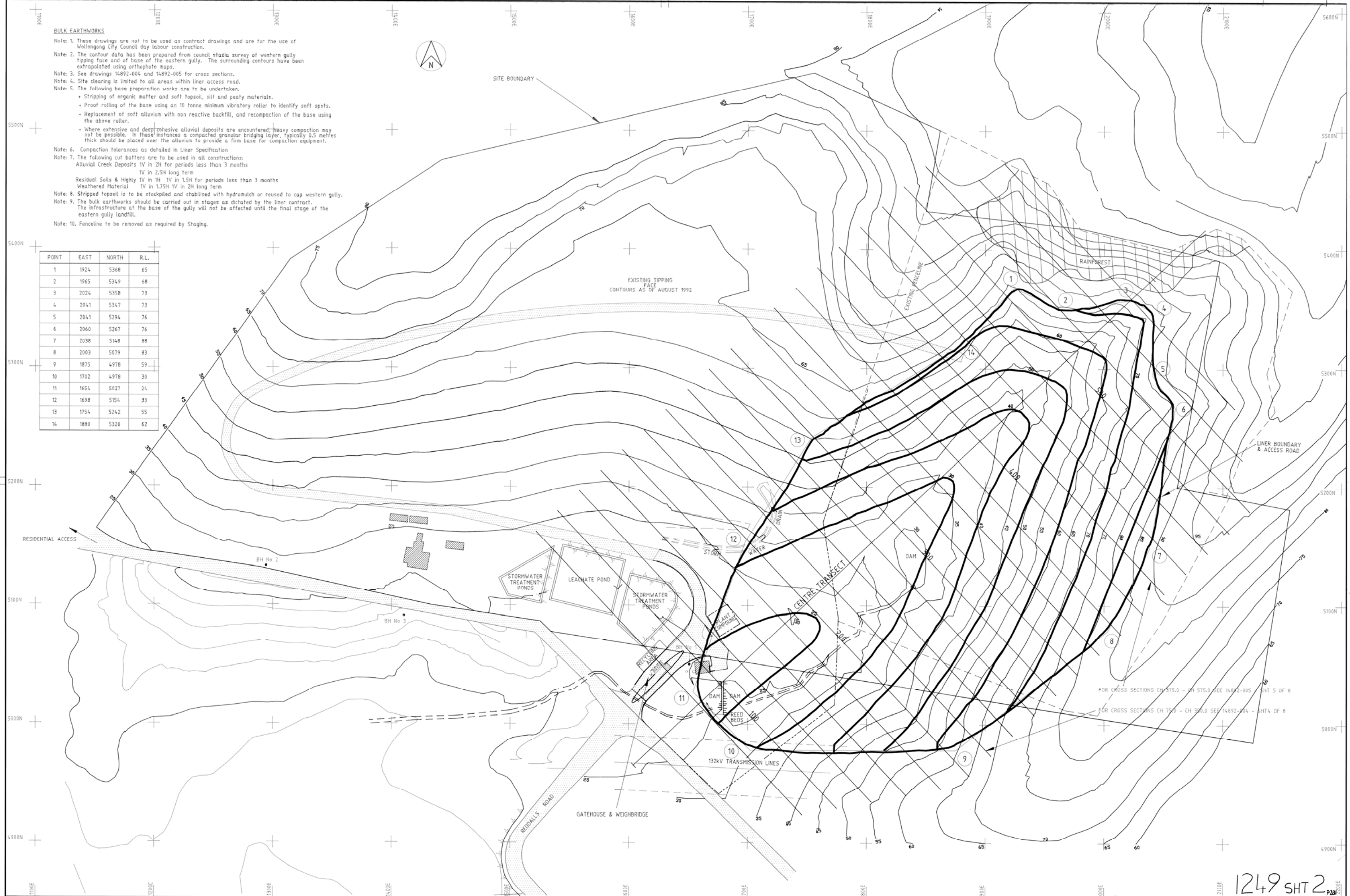


BULK EARTHWORKS

- 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 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 IV 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.

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



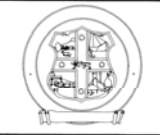
FOR CROSS SECTIONS CH 375.0 - CH 575.0 SEE 14892-005 - SHT 5 OF 8
 FOR CROSS SECTIONS CH 75.0 - CH 350.0 SEE 14892-004 - SHT 4 OF 8

REV.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
01	11.11.92	GENERAL REVISION		

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

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN	P. JOY		
DESIGNED	E. HADEN		
APPROVED	S. HADFIELD		

MAUNSELL PROPRIETARY LIMITED
 A.C.N. 004 816 824

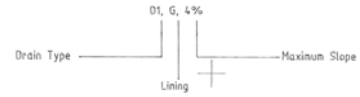


PROJECT TITLE	WHYTES GULLY LANDFILL WOLLONGONG BULK EARTHWORKS CONTOURS	DATE OF ISSUE	23.10.92	SHEET	A0
DRAWING TITLE	WHYTES GULLY LANDFILL WOLLONGONG BULK EARTHWORKS CONTOURS	DATE PLOTTED	23.10.92	REV	01
DWG NO.	14892-002	DWG STATUS	FINAL		

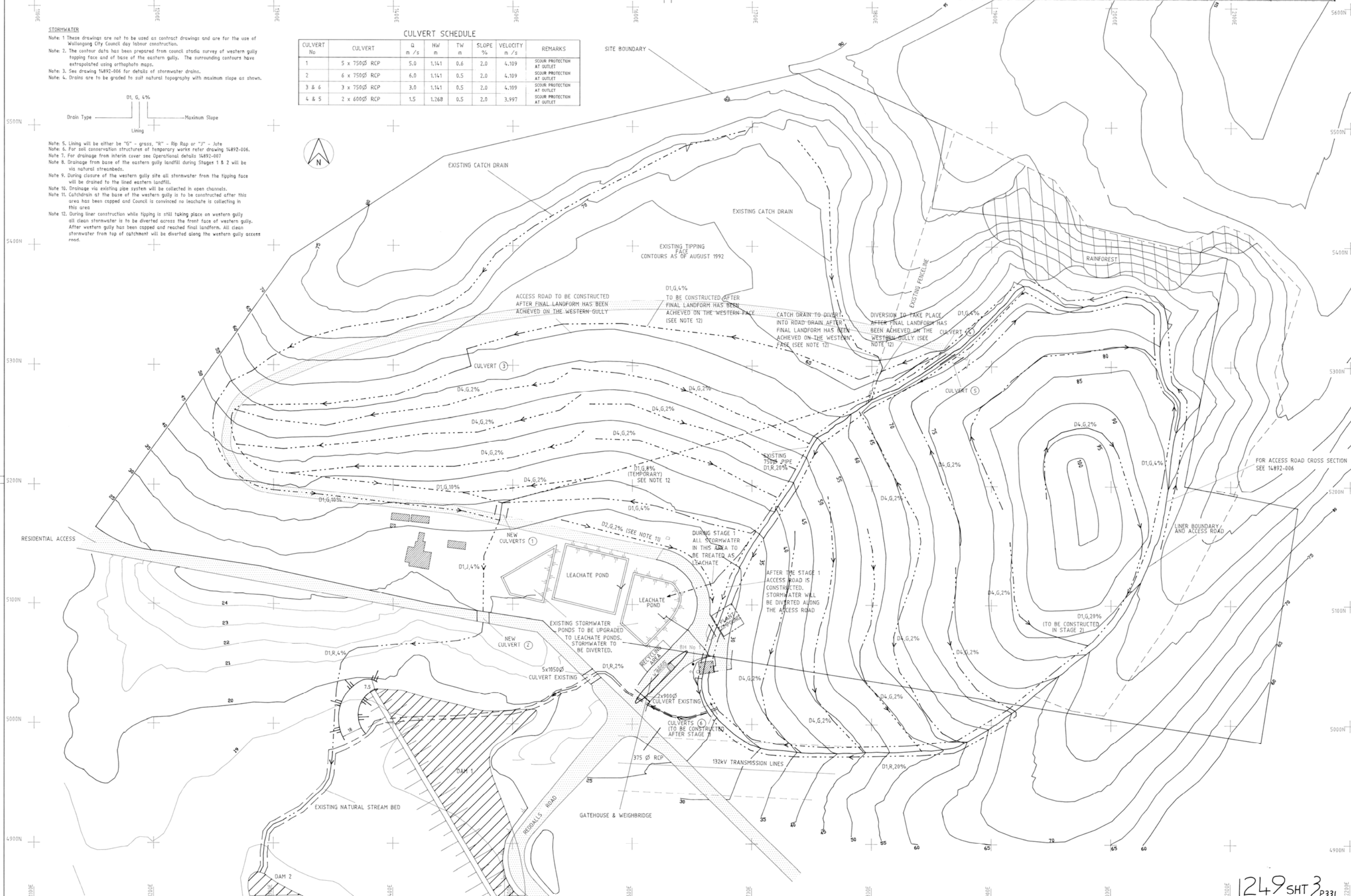
1249 SHT 2 of 8

STORMWATER
 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 extrapolated using orthophoto maps.
 Note 3. See drawing 14892-006 for details of stormwater drains.
 Note 4. Drains are to be graded to suit natural topography with maximum slope as shown.

CULVERT No	CULVERT	Q m ³ /s	HW m	TW m	SLOPE %	VELOCITY m/s	REMARKS
1	5 x 750Ø RCP	5.0	1.141	0.6	2.0	4.109	SCOUR PROTECTION AT OUTLET
2	6 x 750Ø RCP	6.0	1.141	0.5	2.0	4.109	SCOUR PROTECTION AT OUTLET
3 & 4	3 x 750Ø RCP	3.0	1.141	0.5	2.0	4.109	SCOUR PROTECTION AT OUTLET
4 & 5	2 x 600Ø RCP	1.5	1.268	0.5	2.0	3.997	SCOUR PROTECTION AT OUTLET



Note 5. Lining will be either "G" - grass, "R" - Rip Rap or "J" - Jute
 Note 6. For soil conservation structures of temporary works refer drawing 14892-006.
 Note 7. For drainage from interim cover see operational details 14892-007
 Note 8. Drainage from base of the eastern gully landfill during Stages 1 & 2 will be via natural streambeds.
 Note 9. During closure of the western gully site all stormwater from the tipping face will be drained to the lined eastern landfill.
 Note 10. Drainage via existing pipe system will be collected in open channels.
 Note 11. Catchdrain at the base of the western gully is to be constructed after this area has been capped and Council is convinced no leachate is collecting in this area.
 Note 12. During liner construction while tipping is still taking place on western gully all clean stormwater is to be diverted across the front face of western gully. After western gully has been capped and reached final landform, all clean stormwater from top of catchment will be diverted along the western gully access road.

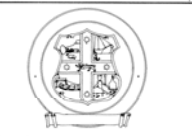


REV.	DATE	DESCRIPTION	DWR	P.D.
01	3.11.92	GENERAL DIVISION		

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

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN	P. POY		
CHECKED	E. MADEW		
APPROVED	D. PEARCE		

MAUNSELL PROPRIETARY LIMITED
 A.C.N. 004 846 824



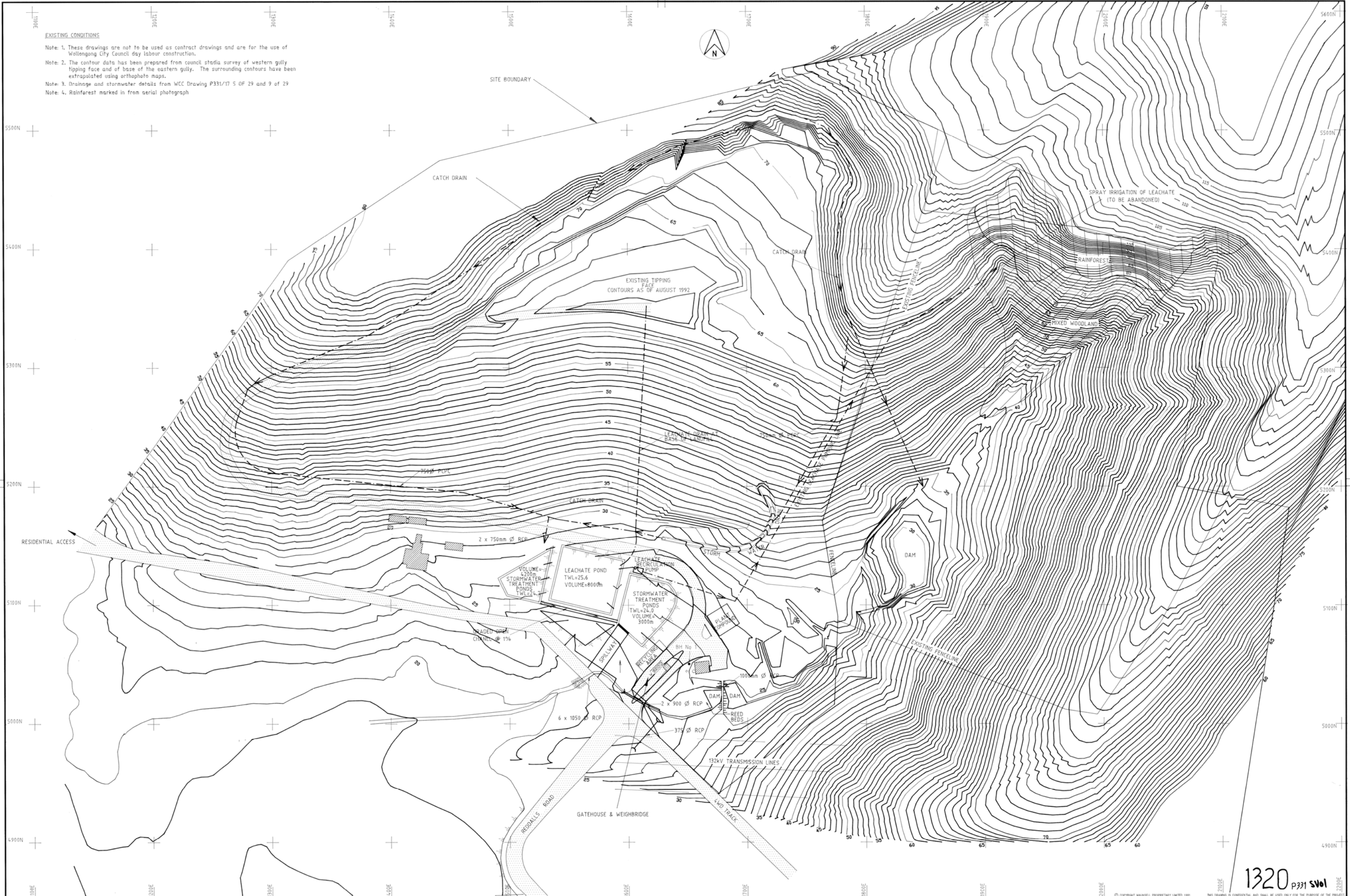
PROJECT TITLE: WHYTES GULLY LANDFILL WOLLONGONG DRAINAGE
 DATE OF ISSUE: 23.10.92
 DRAWING NO: 14892-003
 SHEET NO: 3 OF 8
 STATUS: FOR APPROVAL

1249 SHT 3

8403-1

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

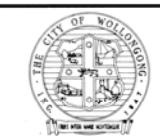


REV	DATE	DESCRIPTION	DWN No.	P.D.
01	10.2.93	GENERAL DIVISION		
02	3.11.93	GENERAL DIVISION		

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

QUALITY CHECK	NAME	SIGNATURE	DATE
QUALITY CHECK	P.P.O'BY		
DESIGNER CHECK	E.HADEW		
PROJECT DIRECTOR APPROVAL	D.HALLEED		

MAUNSELL PROPRIETARY LIMITED
A.C.N. 004 816 824



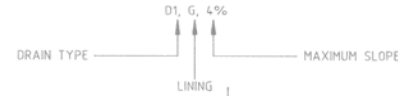
WHYTES GULLY LANDFILL
SITE PLAN : EXISTING FACILITIES

10.2.93
10.2.93
14892-001
PRELIMINARY

1320 P331 SWOL

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 ORTHOPHO TO 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



CULVERT SCHEDULE

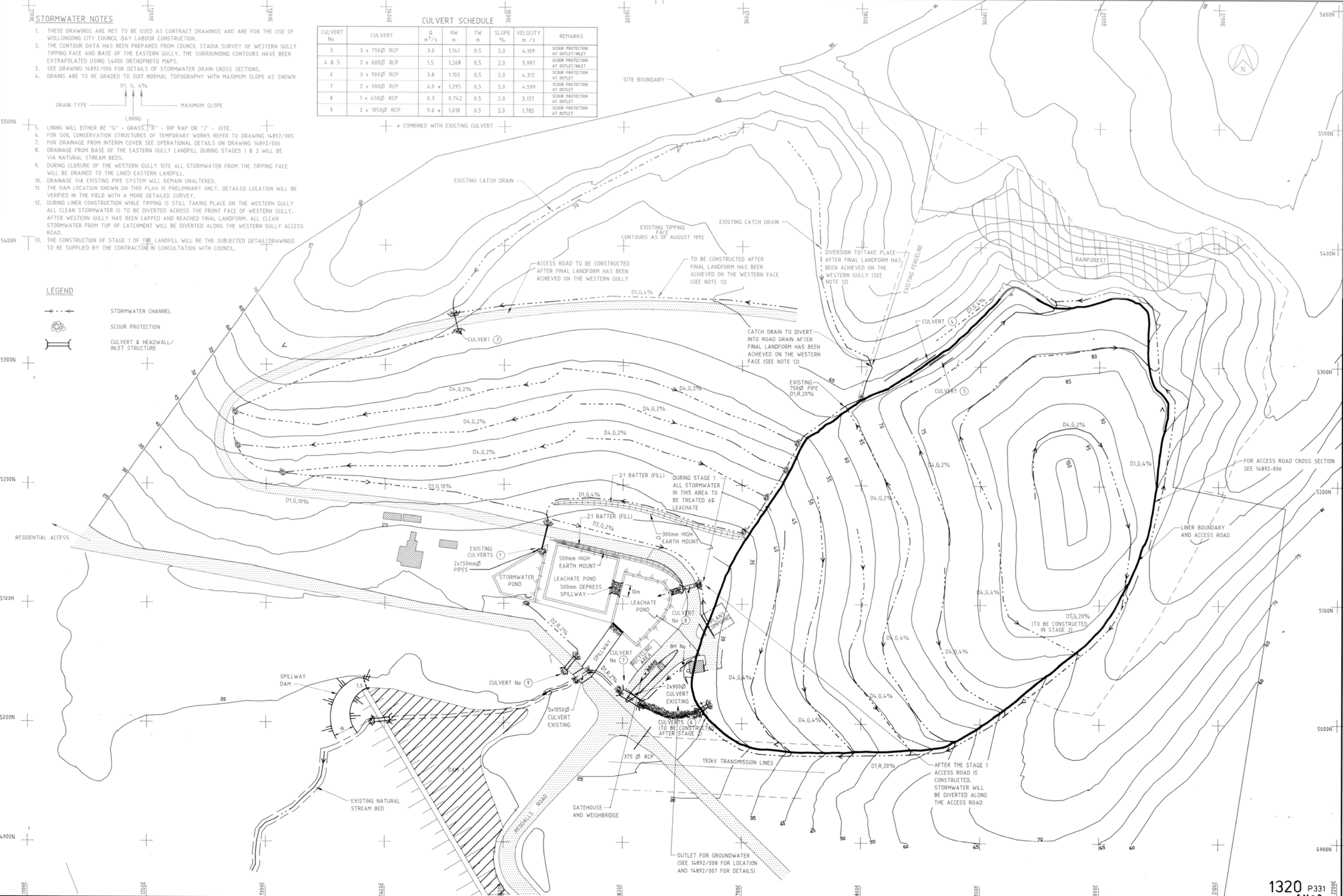
CULVERT No	CULVERT	D m	HW m	TW m	SLOPE %	VELOCITY m/s	REMARKS
3	3 x 750 RCP	3.0	1.141	0.5	2.0	4.109	SCOUR PROTECTION AT OUTLET/INLET
4 & 5	2 x 600 RCP	1.5	1.268	0.5	2.0	3.997	SCOUR PROTECTION AT OUTLET/INLET
6	3 x 900 RCP	3.8	1.103	0.5	2.0	4.312	SCOUR PROTECTION AT OUTLET
7	2 x 900 RCP	6.0	1.295	0.5	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

5. LINING WILL EITHER BE "G" - GRASS, "R" - RIP RAP OR "J" - JUTE.
6. FOR SOIL CONSERVATION STRUCTURES OF TEMPORARY WORKS REFER TO DRAWING 14892/005
7. FOR DRAINAGE FROM INTERIM COVER SEE OPERATIONAL DETAILS ON DRAWING 14892/006
8. DRAINAGE FROM BASE OF THE EASTERN GULLY LANDFILL DURING STAGES 1 & 2 WILL BE VIA NATURAL STREAM BEDS.
9. DURING CLOSURE OF THE WESTERN GULLY SITE ALL STORMWATER FROM THE TIPPING FACE WILL BE DRAINED TO THE LINED EASTERN LANDFILL.
10. DRAINAGE VIA EXISTING PIPE SYSTEM WILL REMAIN UNALTERED.
11. THE DAM LOCATION SHOWN ON THIS PLAN IS PRELIMINARY ONLY. DETAILED LOCATION WILL BE VERIFIED IN THE FIELD WITH A MORE DETAILED SURVEY.
12. DURING LINER CONSTRUCTION WHILE TIPPING IS STILL TAKING PLACE ON THE WESTERN GULLY ALL CLEAN STORMWATER IS TO BE DIVERTED ACROSS THE FRONT FACE OF WESTERN GULLY. AFTER WESTERN GULLY HAS BEEN CAPPED AND REACHED FINAL LANDFORM. ALL CLEAN STORMWATER FROM TOP OF CATCHMENT WILL BE DIVERTED ALONG THE WESTERN GULLY ACCESS ROAD.
13. THE CONSTRUCTION OF STAGE 1 OF THE LANDFILL WILL BE THE SUBJECTED DETAIL DRAWINGS TO BE SUPPLIED BY THE CONTRACTOR IN CONSULTATION WITH COUNCIL.

LEGEND

- > STORMWATER CHANNEL
- ⊗ SCOUR PROTECTION
- ⊕ CULVERT & HEADWALL/INLET STRUCTURE

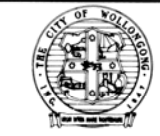


REV.	DATE	DESCRIPTION	DWR No.	P.D.
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P2	13.12.97	GENERAL REVISION		

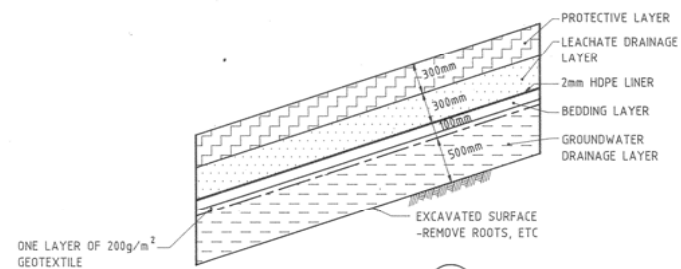
CO-ORDINATES ARE BASED ON INTEGRATED SURVEY GRID (ISG) VALUES.

QUALITY RECORD	NAME	SIGNATURE	DATE
DESIGNER CHECK	A.MELFORD		
DESIGNER CHECK	E.MACEW		
PROJECT DIRECTOR APPROVAL	G.MACLEOD		

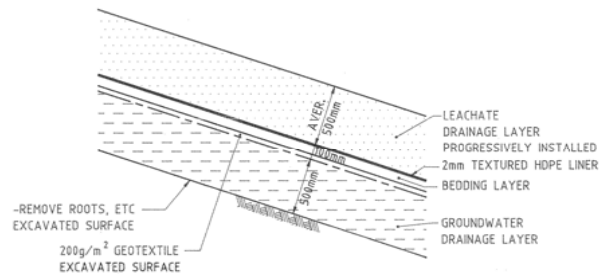
MAUNSELL PROPRIETARY LIMITED
A.C.N. 604 846 824



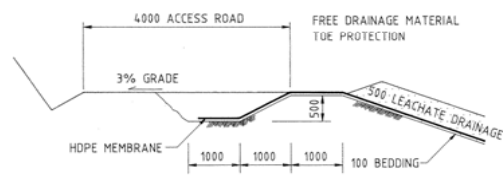
1320 P331
WHYTES GULLY LANDFILL
DRAINAGE PLAN
ULTIMATE LANDFORM
14892-003 02
DESIGN COMPLETE



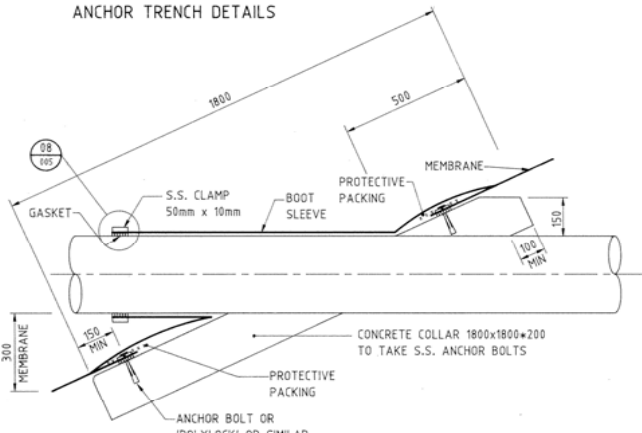
DETAIL 01
1:25
LINER SYSTEM DETAILS - FLAT SLOPES
IE: 1 IN 4



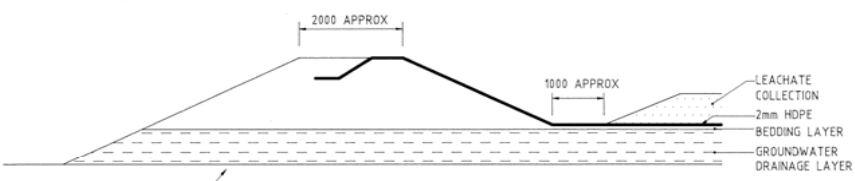
SECTION B
1:25
LINER SYSTEM DETAILS - STEEP SLOPES
IE: 1 IN 4 OR STEEPER



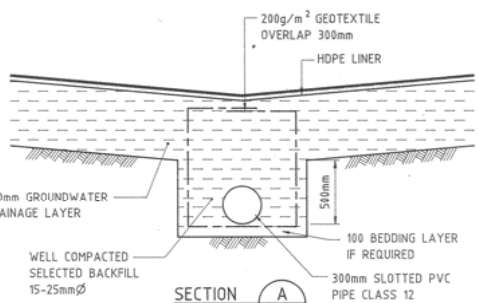
DETAIL 03
1:50
ANCHOR TRENCH DETAILS



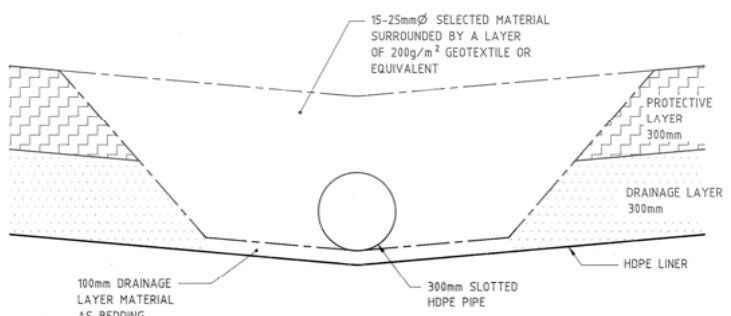
DETAIL 04
1:10
MEMBRANE/PIPE PENETRATION DETAIL



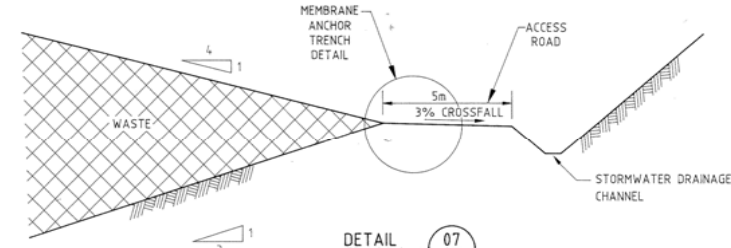
DETAIL 12
1:50
EDGE OF LINER DETAIL



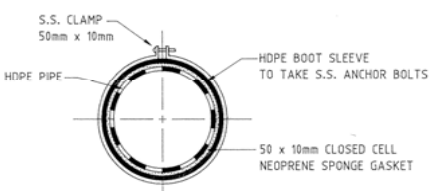
SECTION A
1:20
GROUNDWATER DRAIN



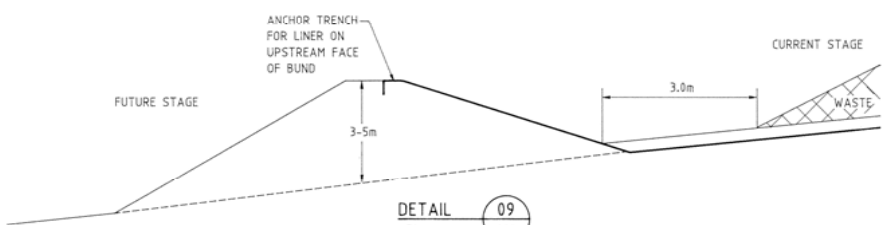
DETAIL 06
1:10
LEACHATE DRAIN DETAIL



DETAIL 07
1:100
PERIMETER ACCESS ROAD



DETAIL 08
1:1
CLAMP DETAIL

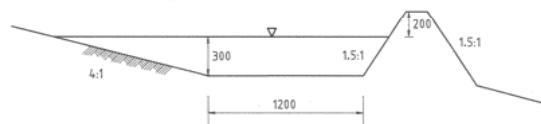


DETAIL 09
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TEMPORARY BUND DETAIL

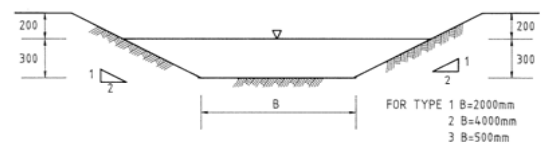
LINER & LEACHATE COLLECTION CONSTRUCTION DETAILS

LEGEND

MATERIAL TYPES	LINE TYPES
GROUNDWATER DRAINAGE	TEXTURED 2mm HDPE LINE
BEDDING	GEOTEXTILE
FREE DRAINING MATERIAL	LEACHATE PIPELINE
LEACHATE DRAINAGE	GROUNDWATER PIPELINE
PROTECTIVE LAYER	
VEGETATIVE LAYER	
CLAY LAYER	



DETAIL 10
1:20
CONTOUR DRAIN DETAIL - TYPE 4

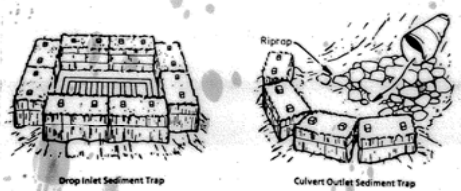
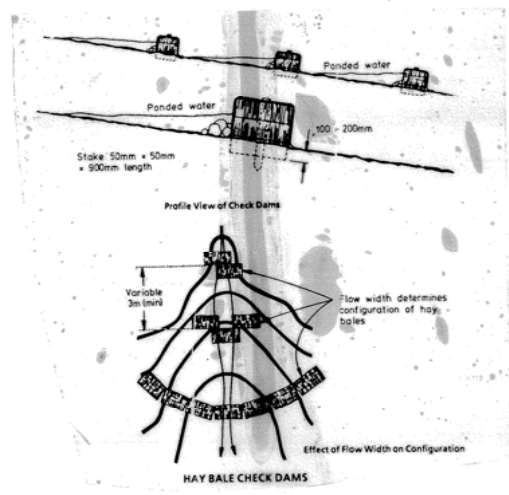


DETAIL 11
1:20
STORMWATER DRAIN DETAIL - TYPE 1, 2 & 3

NOTE:
THESE LININGS FOR STORMWATER DRAINS
* RIP RAP
* GRASS
* JUTE

STORMWATER DRAIN DETAILS

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



NOTE:
1. All bales embedded to a depth of 100 to 200mm.
2. Bales to be staked with stakes 50mm square and 900mm in length.

TEMPORARY HAY BALE SEDIMENT TRAPS AT CULVERT INLETS AND OUTLETS

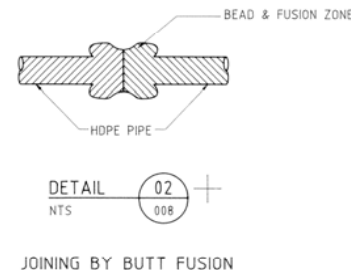
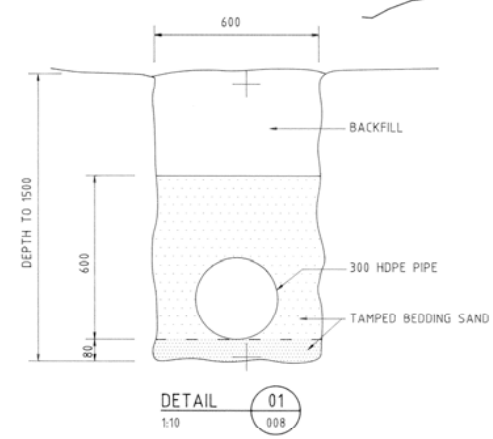
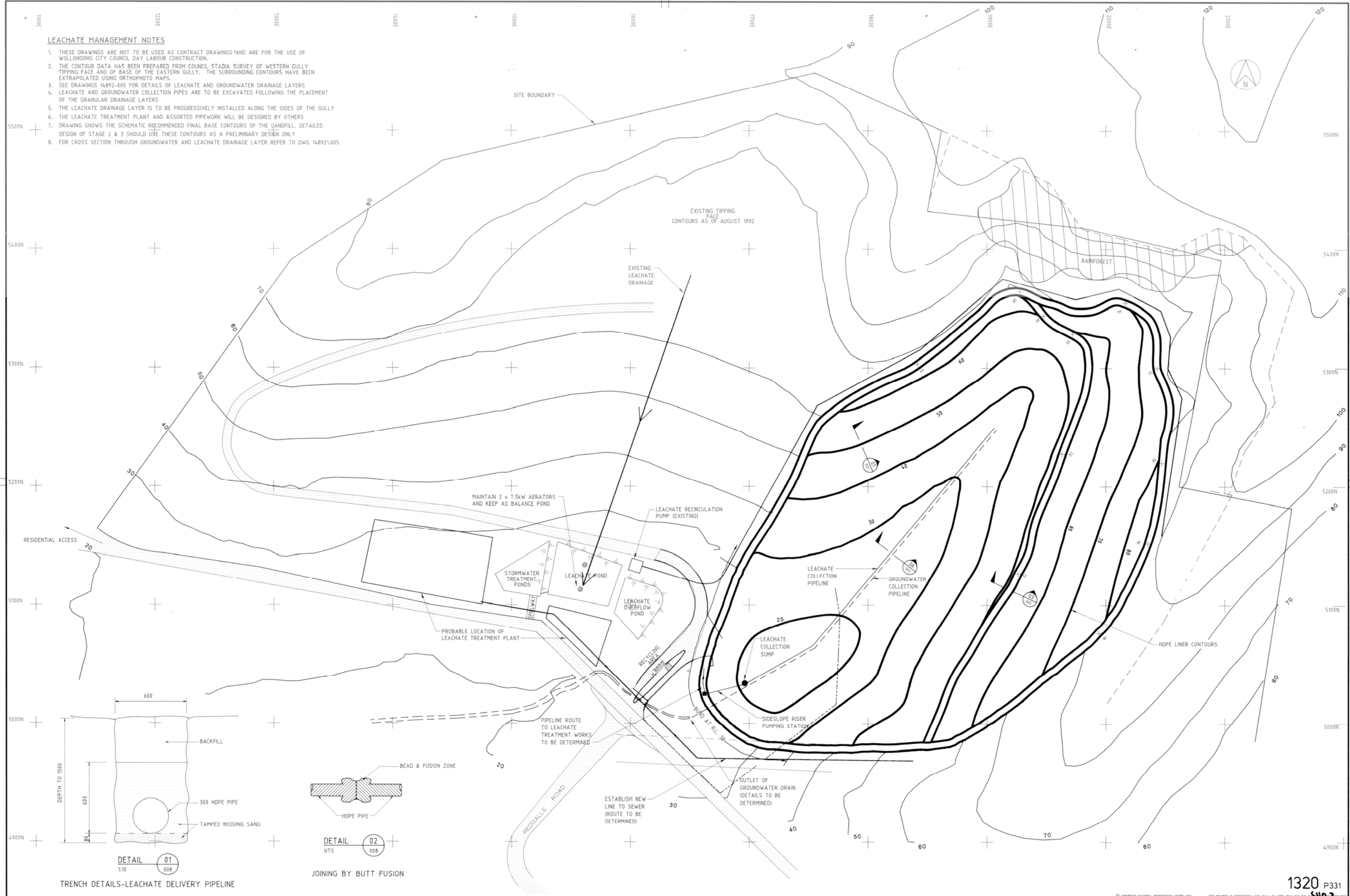
TEMPORARY SOIL CONSERVATION WORKS FOR EASTERN GULLY

<p>16.2.93 GENERAL REVISION</p> <p>3.11.92 GENERAL REVISION</p>	<p>SCALE: AS SHOWN</p> <p>QUALITY RECORD</p> <p>DESIGNER CHECK: E. MAJDEW</p> <p>PROJECT DIRECTOR APPROVAL: D. McLEOD</p>	<p>MAUNSELL PROPRIETARY LIMITED</p> <p>A.C.N. 004 546 824</p>	<p>PROJECT: WHYTES GULLY LANDFILL</p> <p>DRAWING TITLE: CONSTRUCTION DETAILS</p> <p>DATE OF ISSUE: 16.2.93</p> <p>DATE PLOTTED: 16.2.93</p> <p>REF: 14892-005 02</p> <p>DESIGN COMPLETE</p>
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1320 SHS P331

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.



TRENCH DETAILS-LEACHATE DELIVERY PIPELINE

JOINING BY BUTT FUSION

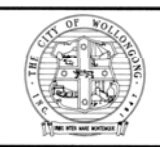
CO-ORDINATES ARE BASED ON INTEGRATED SURVEY GRID (ISG) VALUES.

REV.	DATE	DESCRIPTION	DWG. NO.	P.D.
03	23.2.93	GENERAL REVISION		
02	14.2.93	GENERAL REVISION		
01	3.11.92	GENERAL REVISION		

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN	A. MILFORD		
CHECKED	E. MADEW		
DESIGNER			
PROJECT DIRECTOR	D. MACLEOD		

MAUNSELL PROPRIETARY LIMITED

A.C.N. 004 846 824



1320 P331

WHYTES GULLY LANDFILL

LEACHATE AND GROUND WATER COLLECTION SYSTEM ULTIMATE LANDFORM

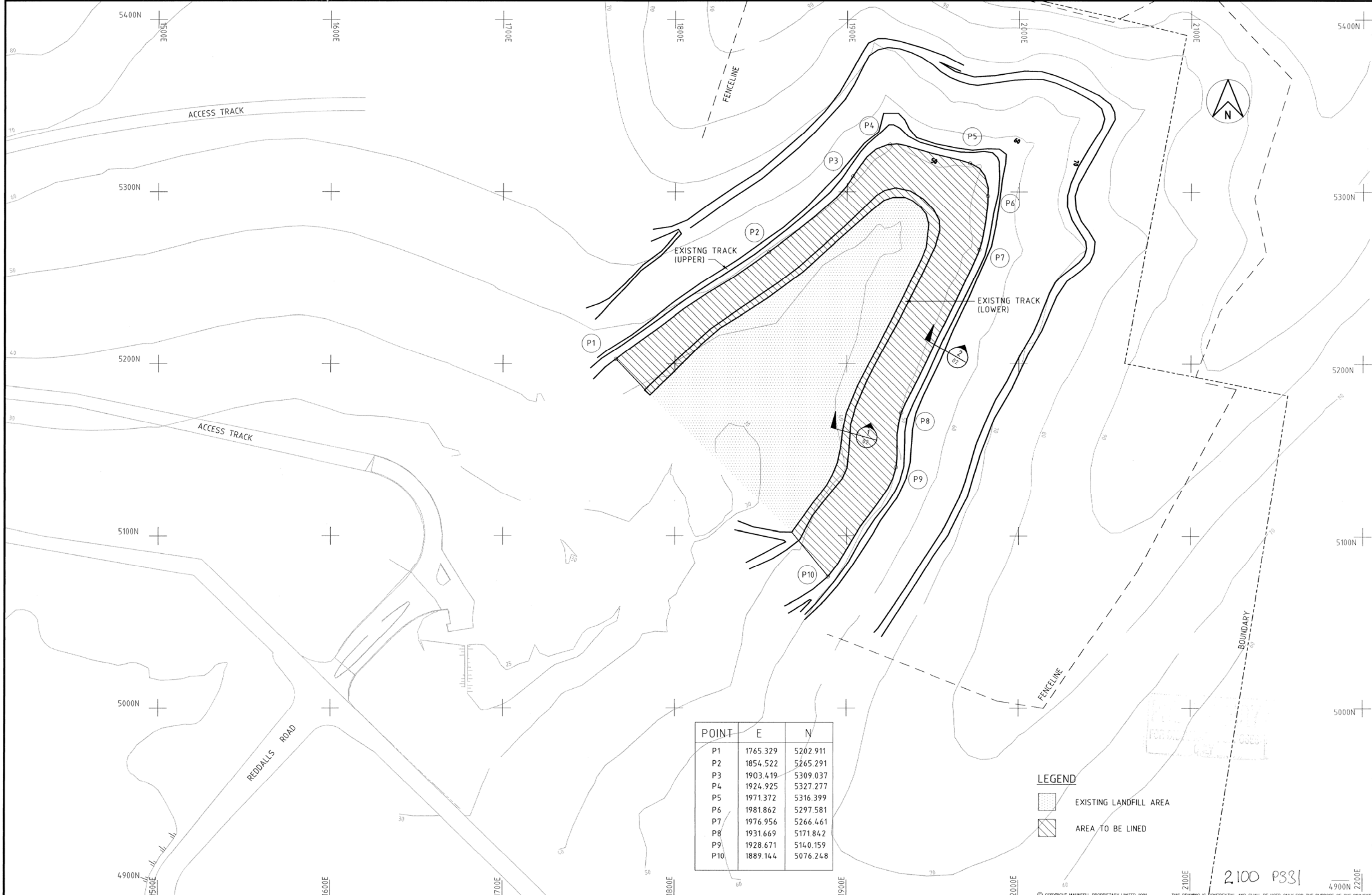
DATE OF ISSUE: 23.2.93

DATE PLOTTED: 23.2.93

PROJECT NO: 14892-007

REV: 03

DESIGN COMPLETE



POINT	E	N
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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

2100 P331

REV.	DATE	DESCRIPTION	DVR No.	P.D.

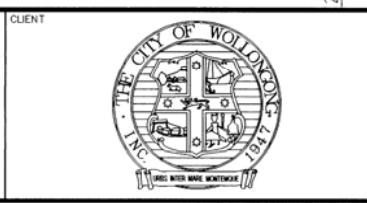
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAFTER CHECK	B.G.J.		
DESIGNER CHECK	S.D.G.		
PROJECT DIRECTOR APPROVAL			

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

SCALE 1:1000

MAUNSELL PROPRIETARY LIMITED

A.C.N 004 846 824



CLIENT

PROJECT TITLE: WHYTES GULLY LANDFILL

DRAWING TITLE: STAGE 1B EXTENSION OF LINER TO RL50 GENERAL ARRANGEMENT

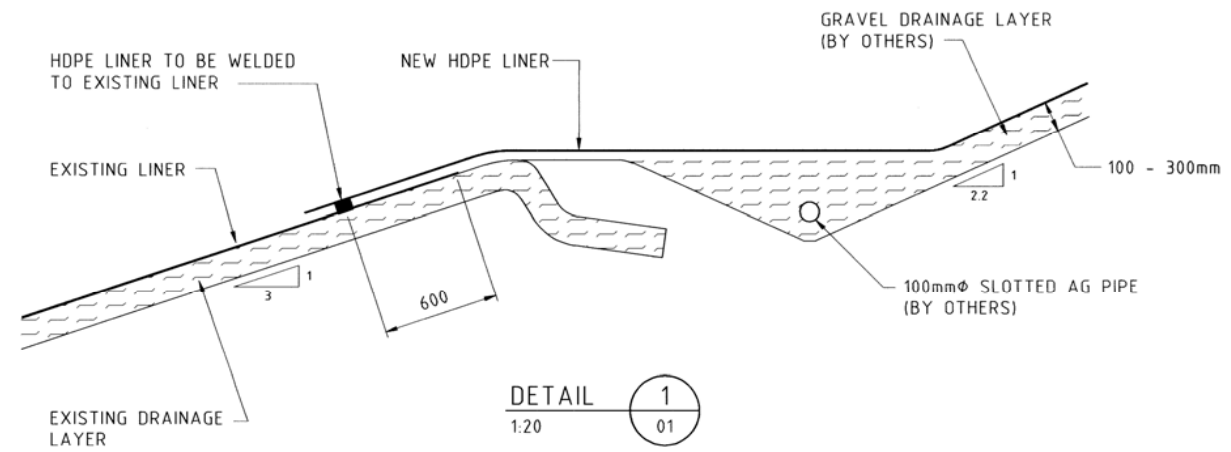
DATE OF ISSUE	SIZE
12/07/94	A1

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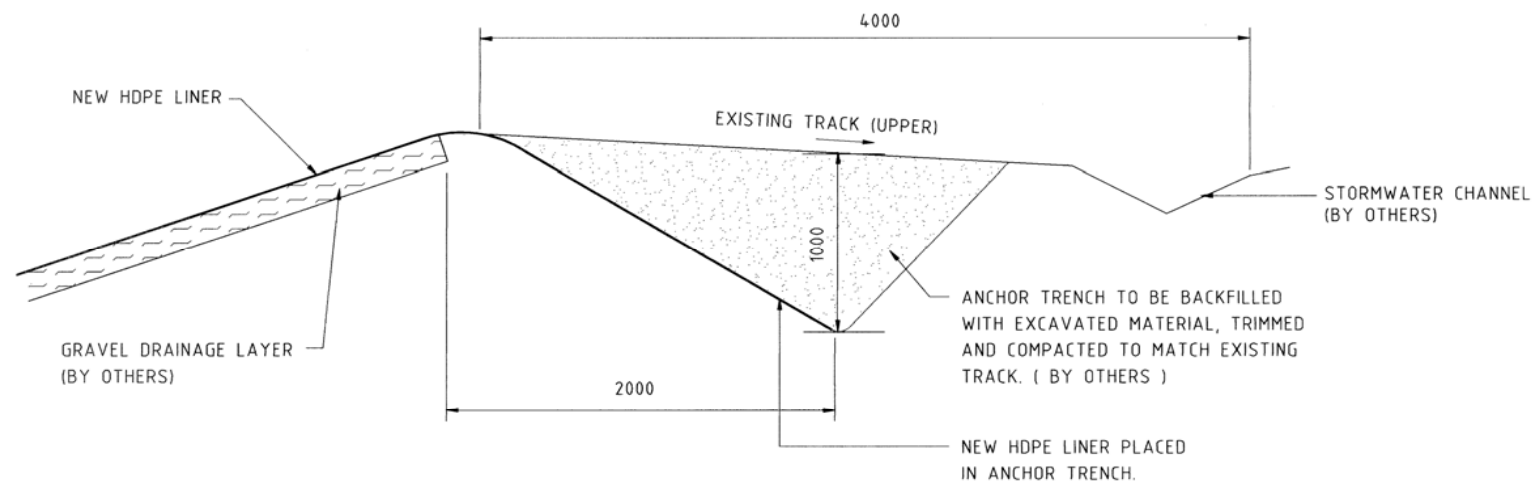
DRG No.	REV.
47594/01	0

DRG. STATUS: PRELIMINARY

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LINER CONNECTION



ANCHOR TRENCH DETAILS

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY

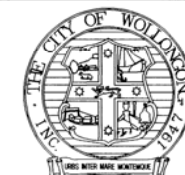
2100 P331

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			



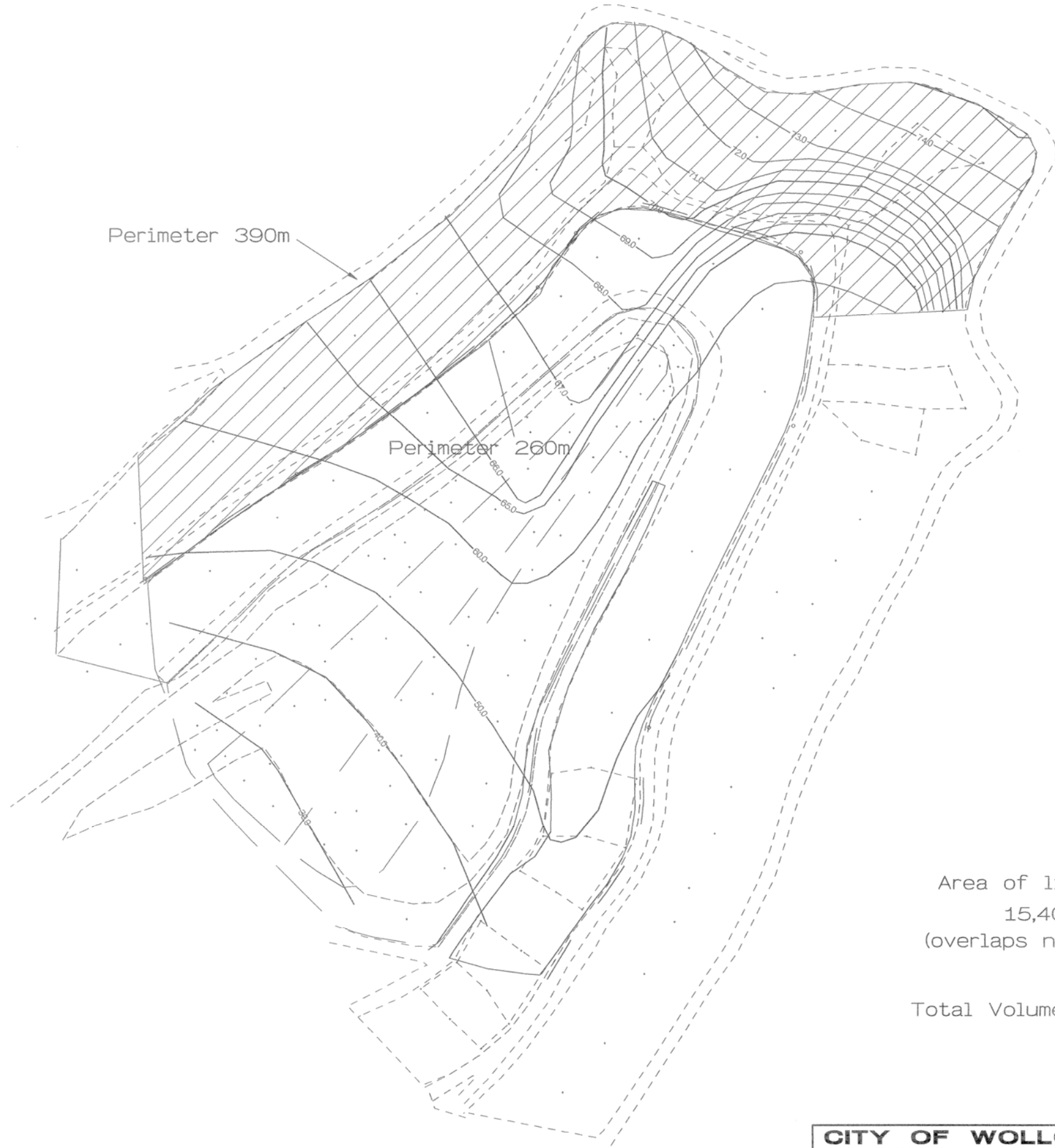
MAUNSELL
PROPRIETARY
LIMITED
A.C.N 004 846 824



© COPYRIGHT MAUNSELL PROPRIETARY LIMITED 1991 THIS DRAWING IS CONFIDENTIAL AND SHALL BE USED ONLY FOR THE PURPOSE OF THE PROJECT

PROJECT TITLE	WHYTES GULLY LANDFILL
DRAWING TITLE	STAGE 1B EXTENSION OF LINER TO RL50 LINER DETAILS

DATE OF ISSUE	29.07.94	SIZE	A1
CAD REFERENCE	J:\47594\SK002	REV.	0
DRG No.	47594/02	DRG. STATUS	PRELIMINARY



Perimeter 390m

Perimeter 260m

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 FILE NO.

DRAWING NO.

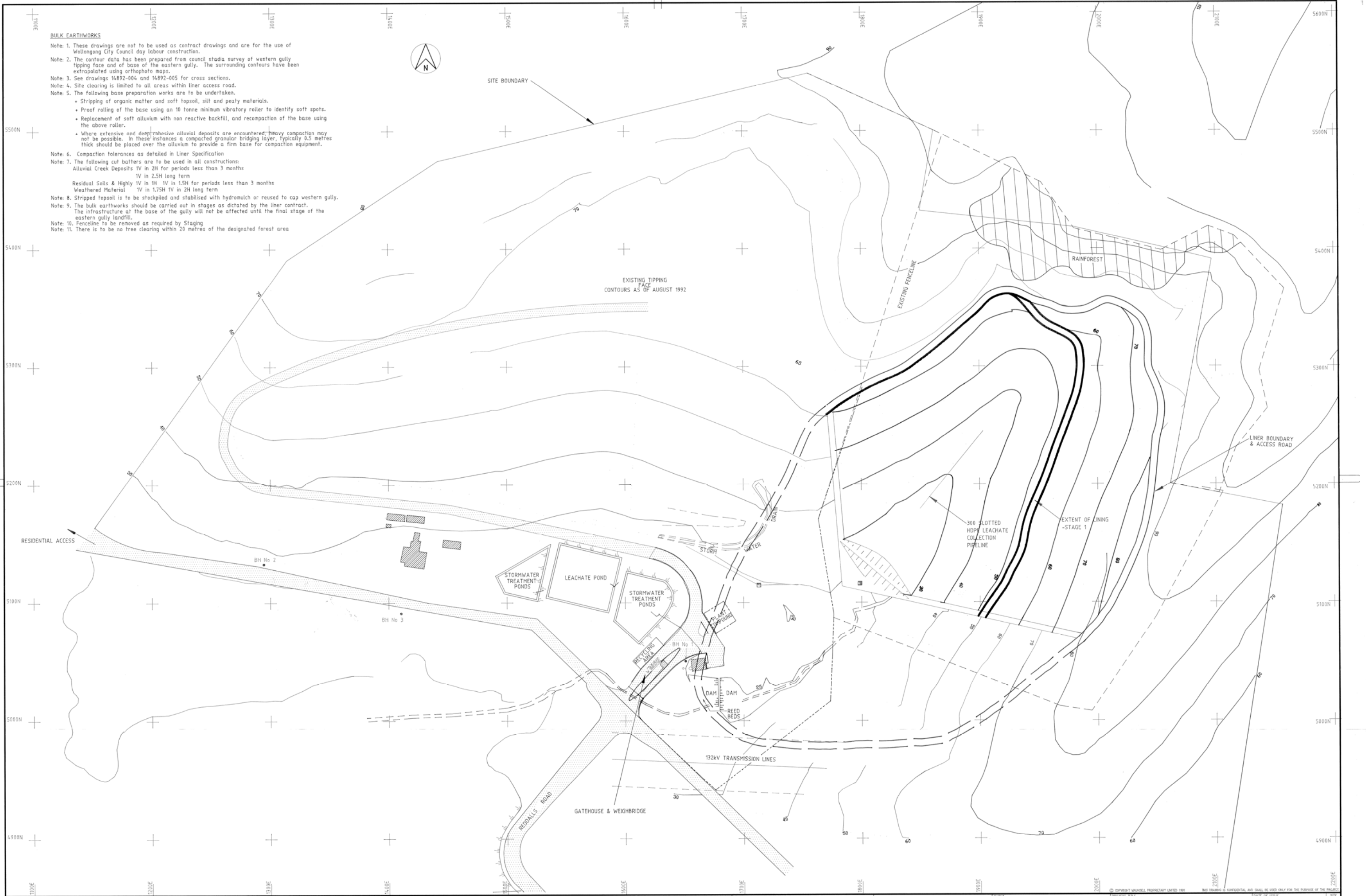
2100

ISSUE

A

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 batters are to be used in all constructions:
- | | |
|----------------------------|---|
| Alluvial Creek Deposits | 1V in 2H for periods less than 3 months |
| Residual Soils & Highly 1V | 1V in 2.5H long term |
| Weathered Material | 1V in 1.5H for periods less than 3 months |
| | 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



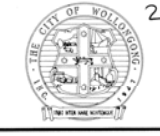
REV.	DATE	DESCRIPTION	DWR	P.D.
02	5.2.93	GENERAL REVISION		
01	3.11.92	GENERAL REVISION		

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

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

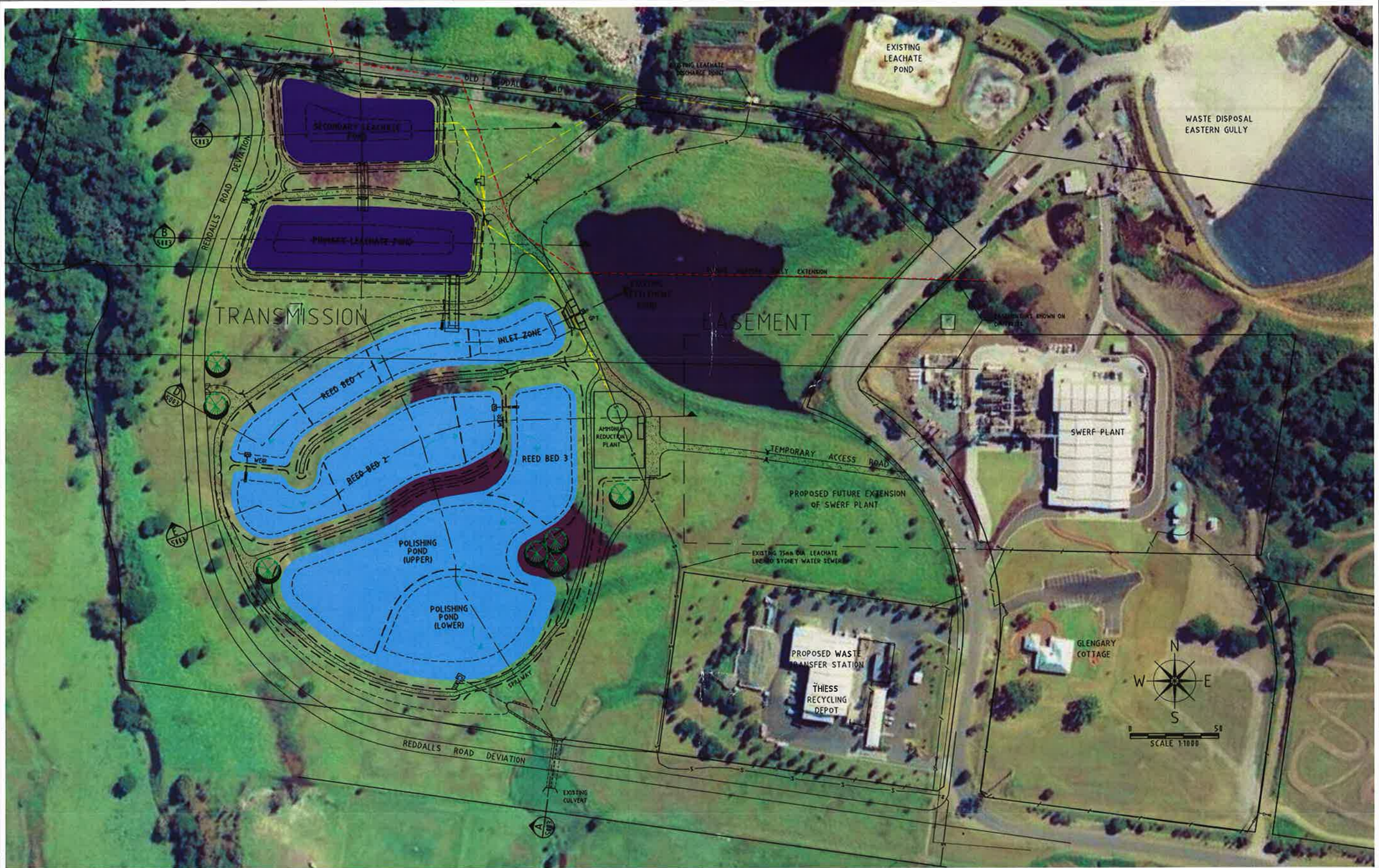
MAUNSELL PROPRIETARY LIMITED

A.C.N. 004 846 824



PROJECT NO.	2926	DATE OF ISSUE	5.2.93	ISSUE	A0
PROJECT TITLE	WHYTES GULLY LANDFILL	CAD REFERENCE	FLANDR.DWG	DATE PLOTTED	23.10.92
DRAWING TITLE	STAGE 1 EXTENT OF LINER AND LEACHATE DRAIN	DRG NO.	14892-008	REV.	0
		DRG STATUS			PRELIMINARY

DO NOT SCALE IF IN DOUBT ASK



File Path: U:\1999\1999-45 WHITES GULLY - DETAILED DESIGN\DRAWING\BUILD\5112-SITE MASTER PLAN.DWG
 September 12, 2013 4:34:41 p.m.
 Xref: 1999-5-aerial photo.DWG 1999-5-base.DWG

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 12/17/13
 By: Hothers & Associates
 Survey Supplied 23/14/13

SCALE:
 (an A1 Original)
 1:1000

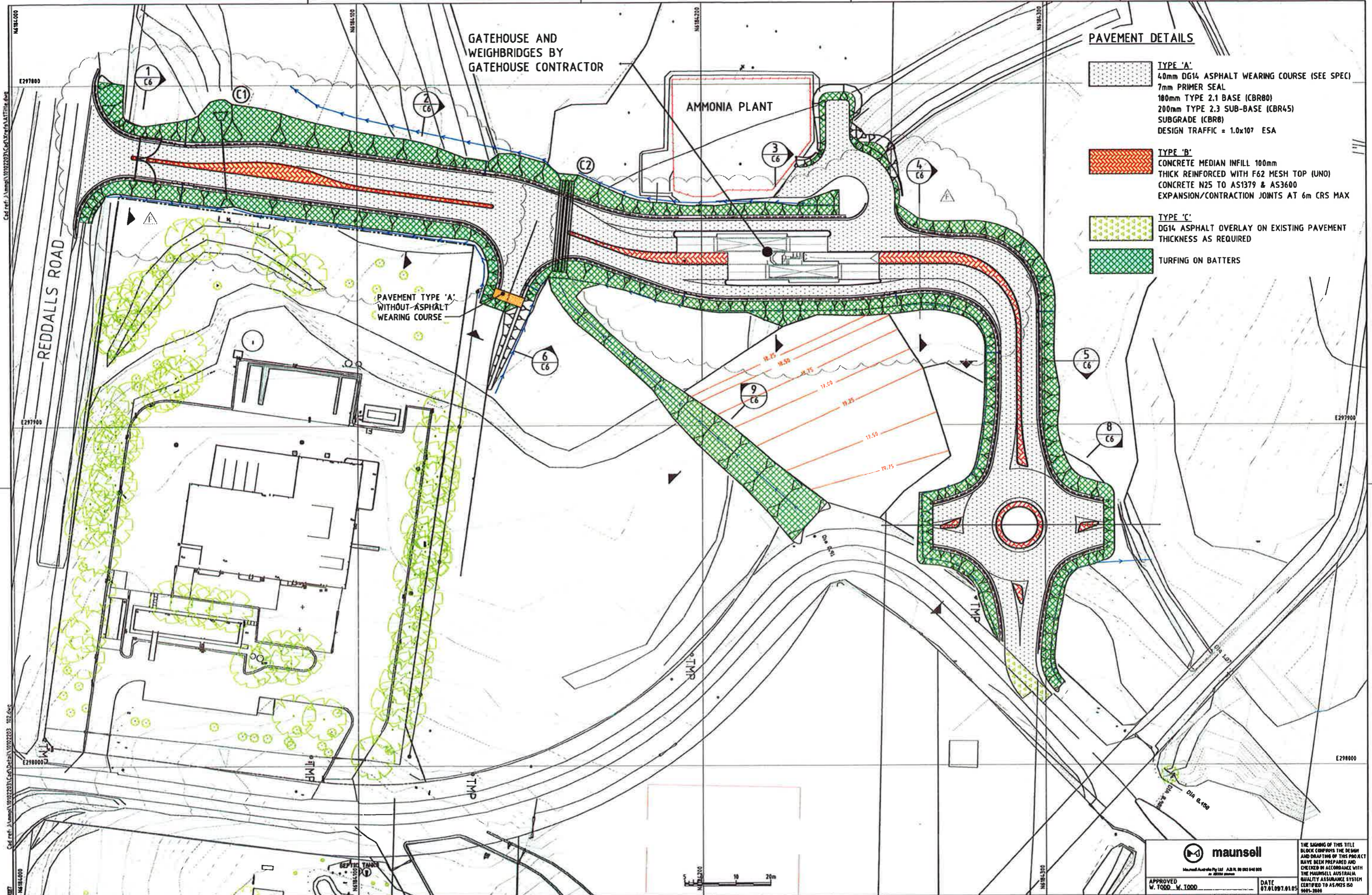
DATUM
 MGA/AHD

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



PAVEMENT DETAILS

	TYPE 'A' 40mm DG14 ASPHALT WEARING COURSE (SEE SPEC) 7mm PRIMER SEAL 100mm TYPE 2.1 BASE (CBR80) 200mm TYPE 2.3 SUB-BASE (CBR45) SUBGRADE (CBR8) DESIGN TRAFFIC = 1.0x10 ⁷ ESA
	TYPE 'B' CONCRETE MEDIAN INFILL 100mm THICK REINFORCED WITH F62 MESH TOP (UNO) CONCRETE N25 TO AS1379 & AS3600 EXPANSION/CONTRACTION JOINTS AT 6m CRS MAX
	TYPE 'C' DG14 ASPHALT OVERLAY ON EXISTING PAVEMENT THICKNESS AS REQUIRED
	TURFING ON BATTERS

ISSUE	DESCRIPTION	DRAWN	APPR'D	DATE
E	CONSTRUCTION ISSUE	TMC	G.A.T.	13.09.05
D	AMENDED TOE OF BATTER CH. 10 - 120 (HCA) RHS	JPC	G.A.T.	23.08.04
C	CULVERT C2 AMENDED	JPC	A. CHAN	01.06.05
B	KERB & CHANNEL, DRAINAGE WORKS, AMMONIA PLANT ACCESS ROAD AMENDED	JPC	A. CHAN	04.05.05
F	ENTRY AND GATEHOUSE/WEIGHBRIDGE AREA AMENDED	PH		11.04.06

DRAWN	DATE	CHECKED	DATE
RHS	Nov-04	RHS	07.01.05
PH	Dec-04	PH	08.01.06

DATE	APPROVED	FOR COUNCIL USE ONLY
13/4/06		

INTERNATIONAL QUALITY MANAGEMENT SYSTEM

SCALES: AS NOTED

NORTH POINT:

CITY OF WOLLONGONG

WHYTES GULLY WASTE TRANSFER STATION
WEST DAPTO ACCESS ROAD
LAYOUT PLAN

DESIGN PCS No.	DESIGN No.	SHEET No.
FILE NUMBER	3299	C2
SHEET 2 OF 26		

maunsell

MAUNSELL AUSTRALIA PTY LTD ABN 88 005 048 805

APPROVED: W. TODD, W. TODD DATE: 07.01.05

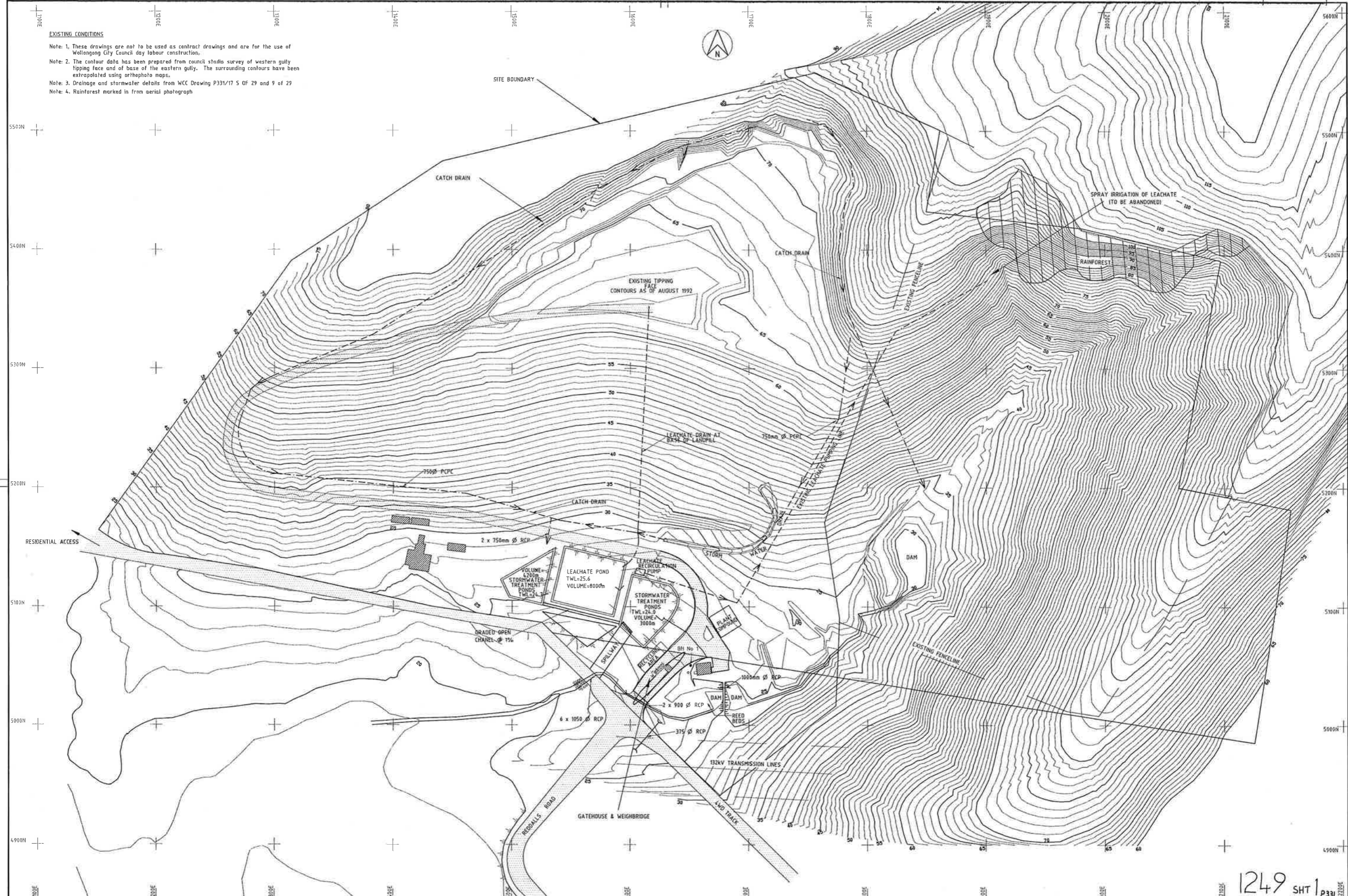
THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE MAUNSELL AUSTRALIA QUALITY ASSURANCE SYSTEM CERTIFIED TO AS/NZS ISO 9001:2004

DESIGN DIVISION Ph. 02 42277111

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

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 S OF 29 and 9 of 29
- Note 4: Rainforest marked in from aerial photograph



REV	DATE	DESCRIPTION	DWG No.	P.D.
1	3/11/12	GENERAL REVISION		

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

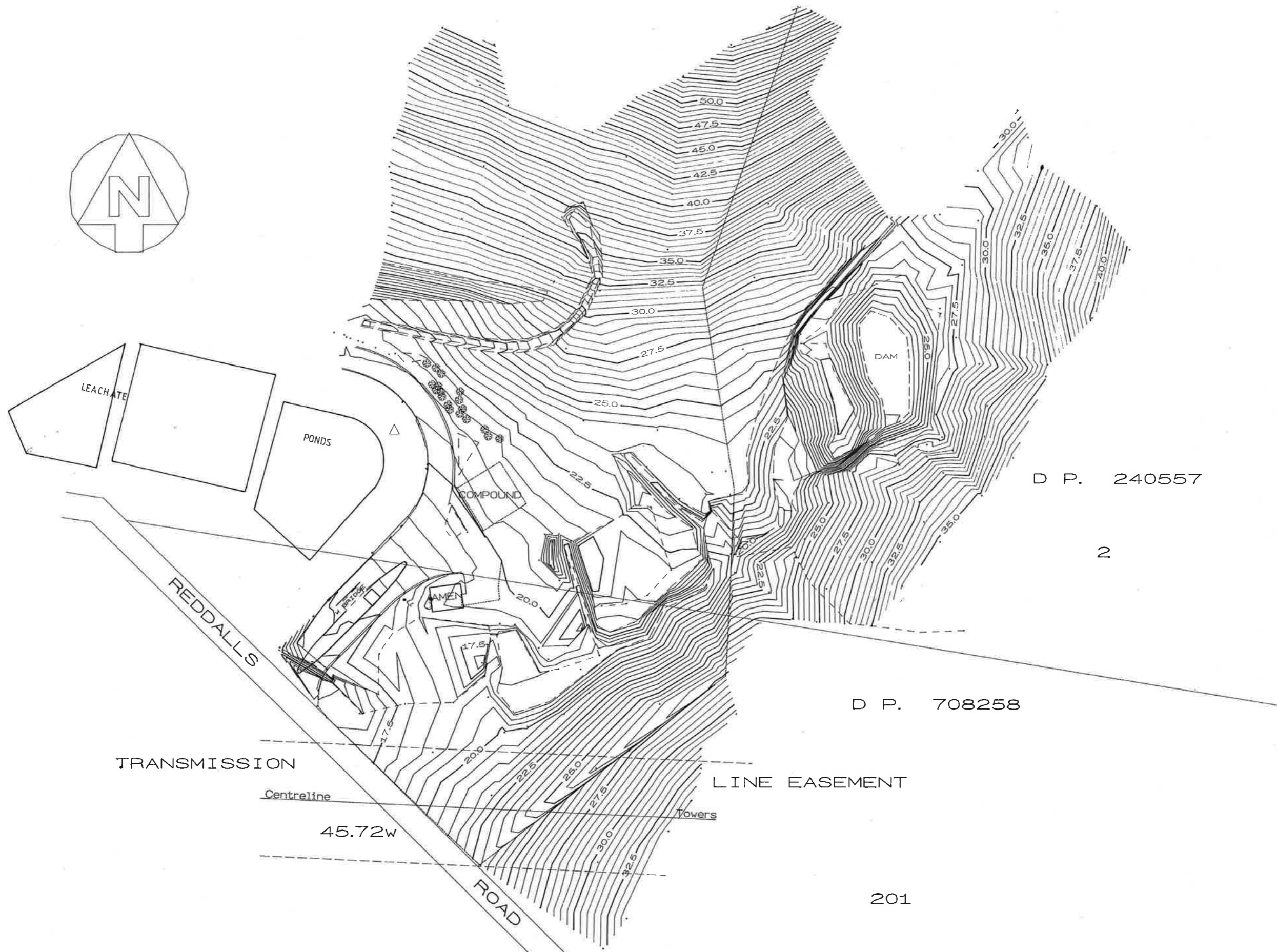
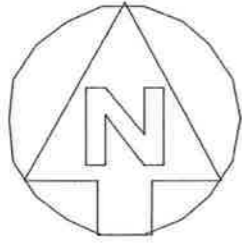
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN CHECK	P.FOY		
DESIGNER CHECK	E.HADW		
PROJECT DIRECTOR APPROVAL	D.HACLED		

MAUNSELL PROPRIETARY LIMITED
A.C.N. 004 848 824

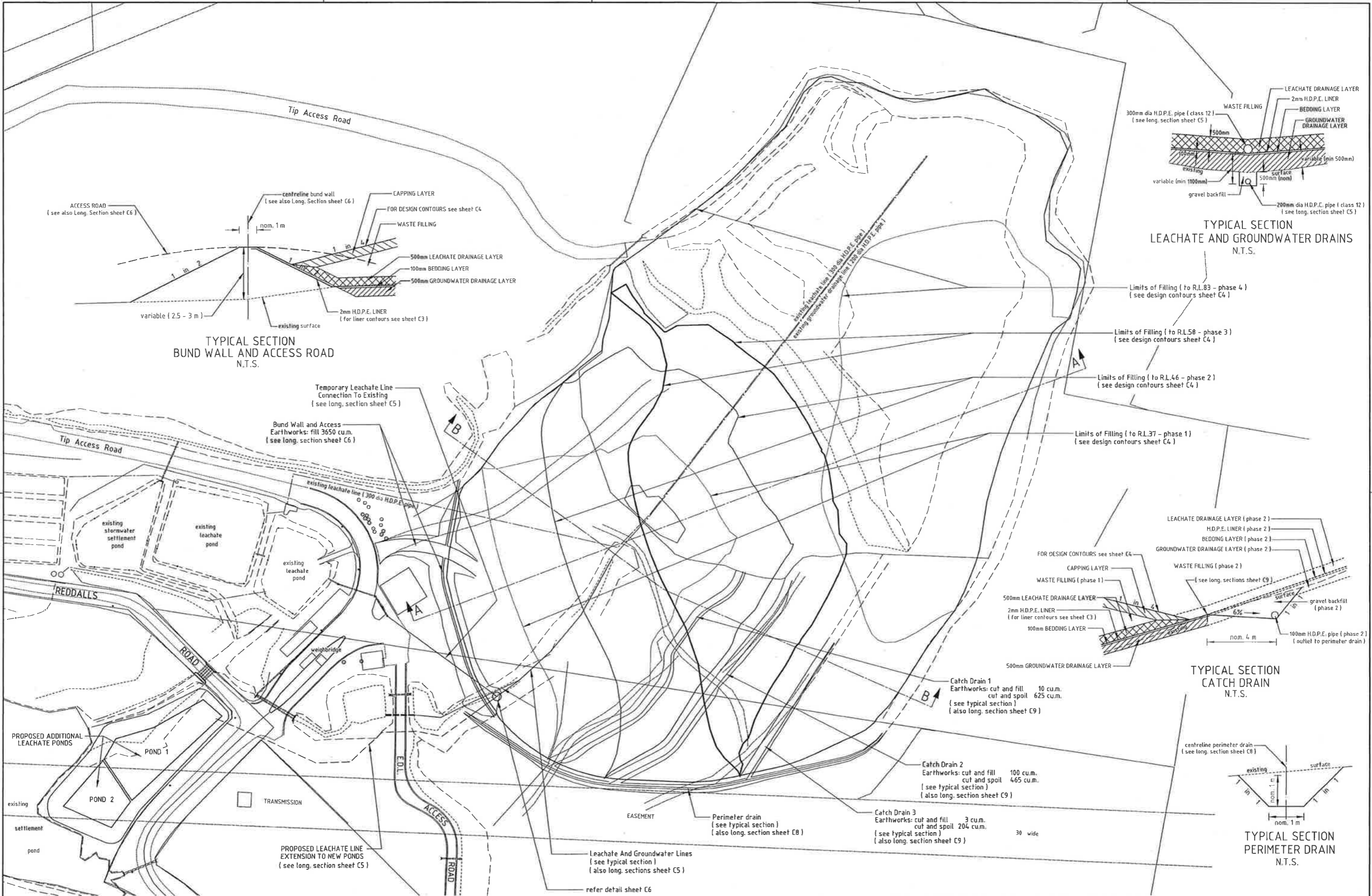


PROJECT TITLE	EASTERN GULLY MANAGEMENT	DATE OF ISSUE	SWR A0
DRAWING TITLE	WHYTES GULLY LANDFILL WOLLONGONG KEMBLA GRANGE	DATE PLOTTED	23.10.12
PLANNING NO.	14892-001	REV	01
DWG STATUS	FINAL		

1249 SHT 1 P331



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



TYPICAL SECTION
BUND WALL AND ACCESS ROAD
N.T.S.

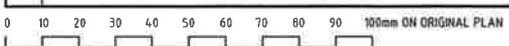
TYPICAL SECTION
LEACHATE AND GROUNDWATER DRAINS
N.T.S.

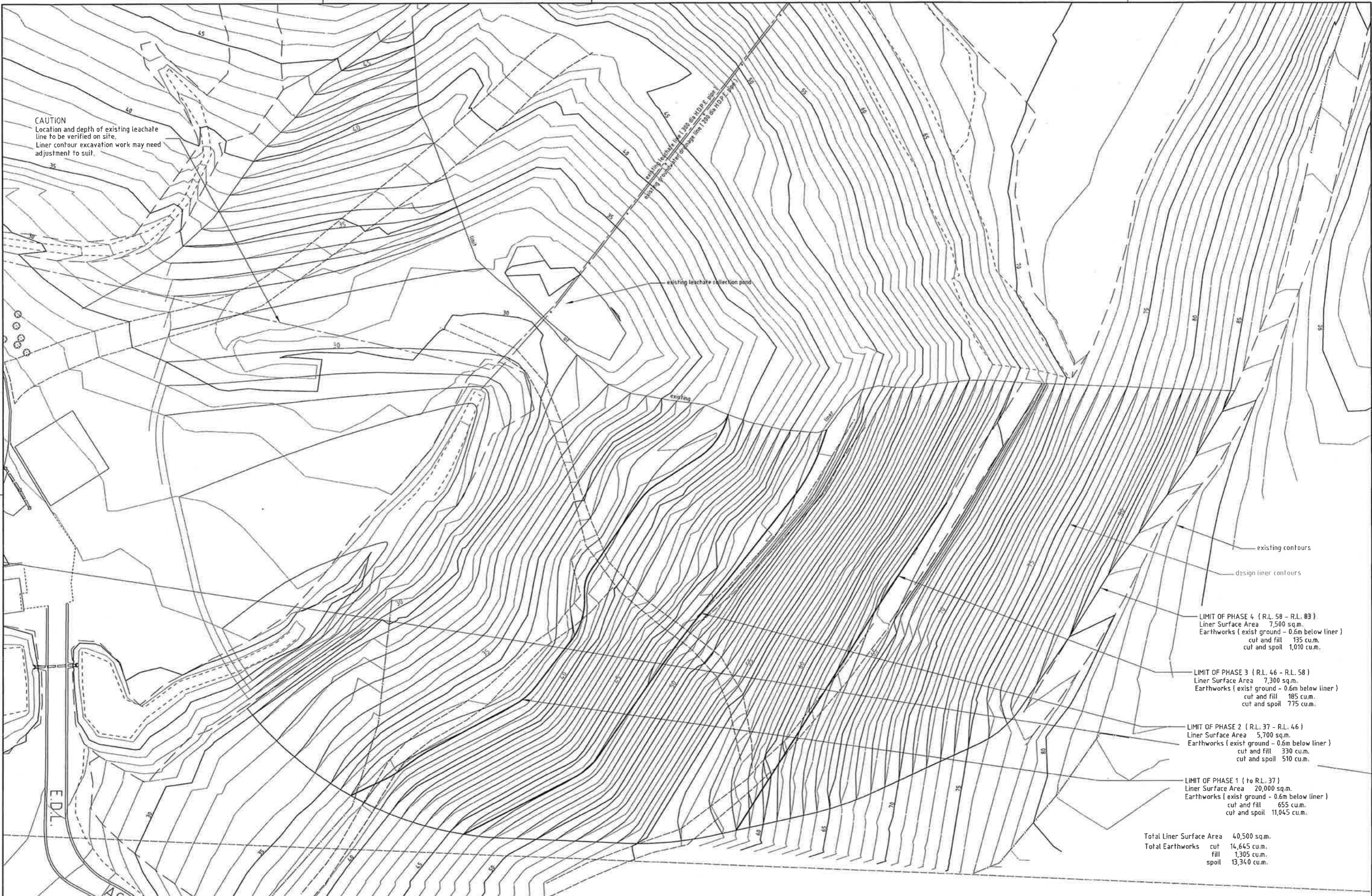
TYPICAL SECTION
CATCH DRAIN
N.T.S.

TYPICAL SECTION
PERIMETER DRAIN
N.T.S.

PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

DATUM: AHD SURVEYOR: B.Hogan/M.Kubik DRAWN: R.Pittaway DATE: Nov 99		APPROVED (FOR COUNCIL USE ONLY) SENIOR DESIGN ENGINEER: _____ MANAGER DESIGN: _____		SCALES 1: 1000	NORTH POINT 	CITY OF WOLLONGONG WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 LAYOUT PLAN	DESIGN OFFICE No: DES3791 FILE NUMBER: SU16391 SHEET 1 OF 14 SHEETS DRAWING No.: 2761 SHEET No.: C1	A1 ORIGINAL ISSUE 1
AZIMUTH: ISG FIELD BOOKS: F83/1, F93/1 RELATED PLANS: 1475, 1320, 2565 DESIGNED: R.Pittaway CHECKED: _____		CHECKED: _____ DATE: Nov 99		DATE: _____ DATE: _____		WOLLONGONG City of Innovation DESIGN DIVISION Ph. 02 42 271111	1 Issued for discussion R.P. DEC 99	1 ISSUE





CAUTION
Location and depth of existing leachate line to be verified on site.
Liner contour excavation work may need adjustment to suit.

existing leachate collection pond
existing
line

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.

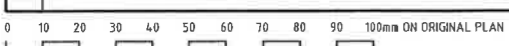
LIMIT OF PHASE 2 (R.L. 37 - R.L. 46)
Liner Surface Area 5,700 sq.m.
Earthworks (exist ground - 0.6m below liner)
cut and fill 330 cu.m.
cut and spoil 510 cu.m.

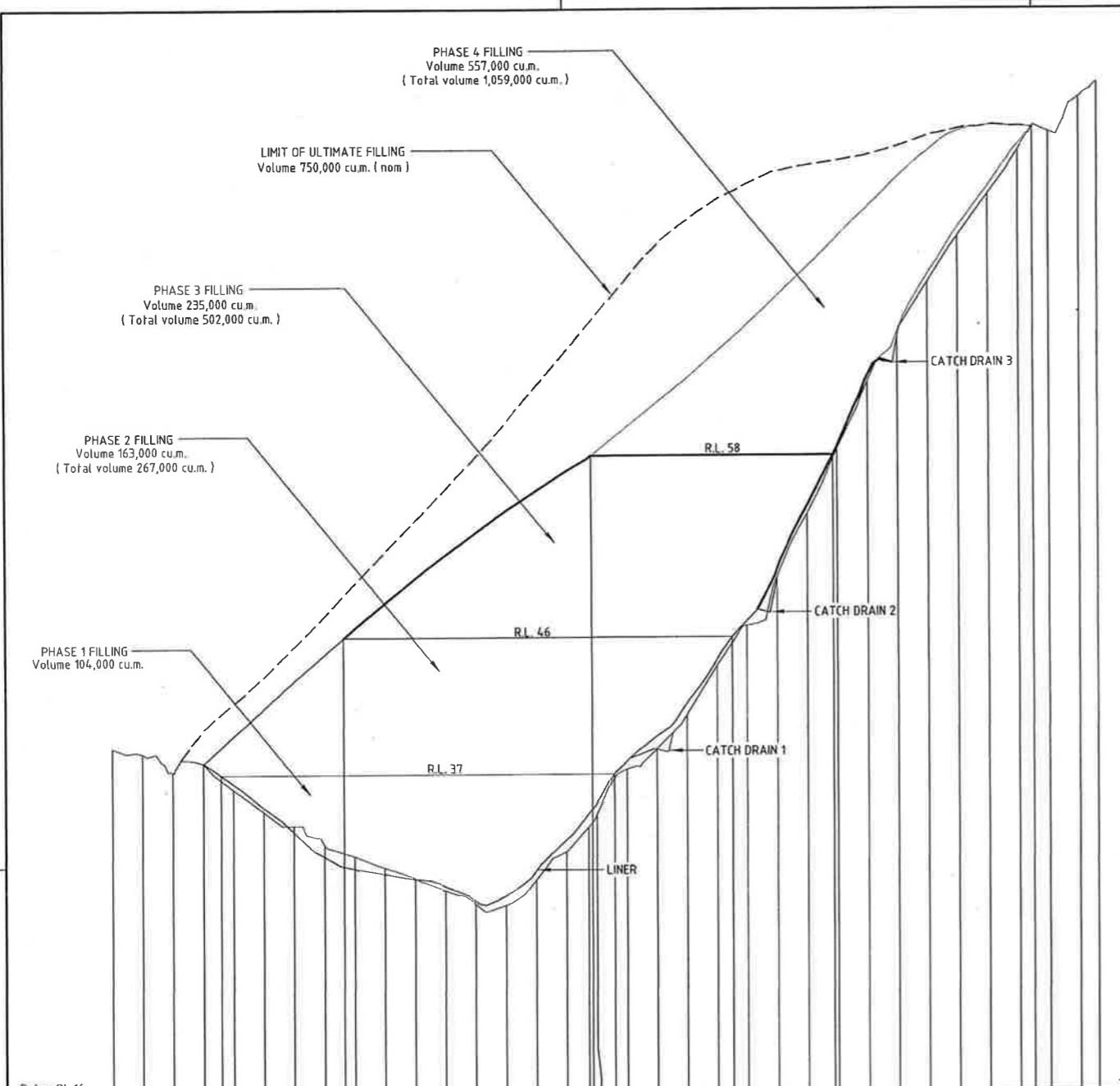
LIMIT OF PHASE 1 (to R.L. 37)
Liner Surface Area 20,000 sq.m.
Earthworks (exist ground - 0.6m below liner)
cut and fill 655 cu.m.
cut and spoil 11,045 cu.m.

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

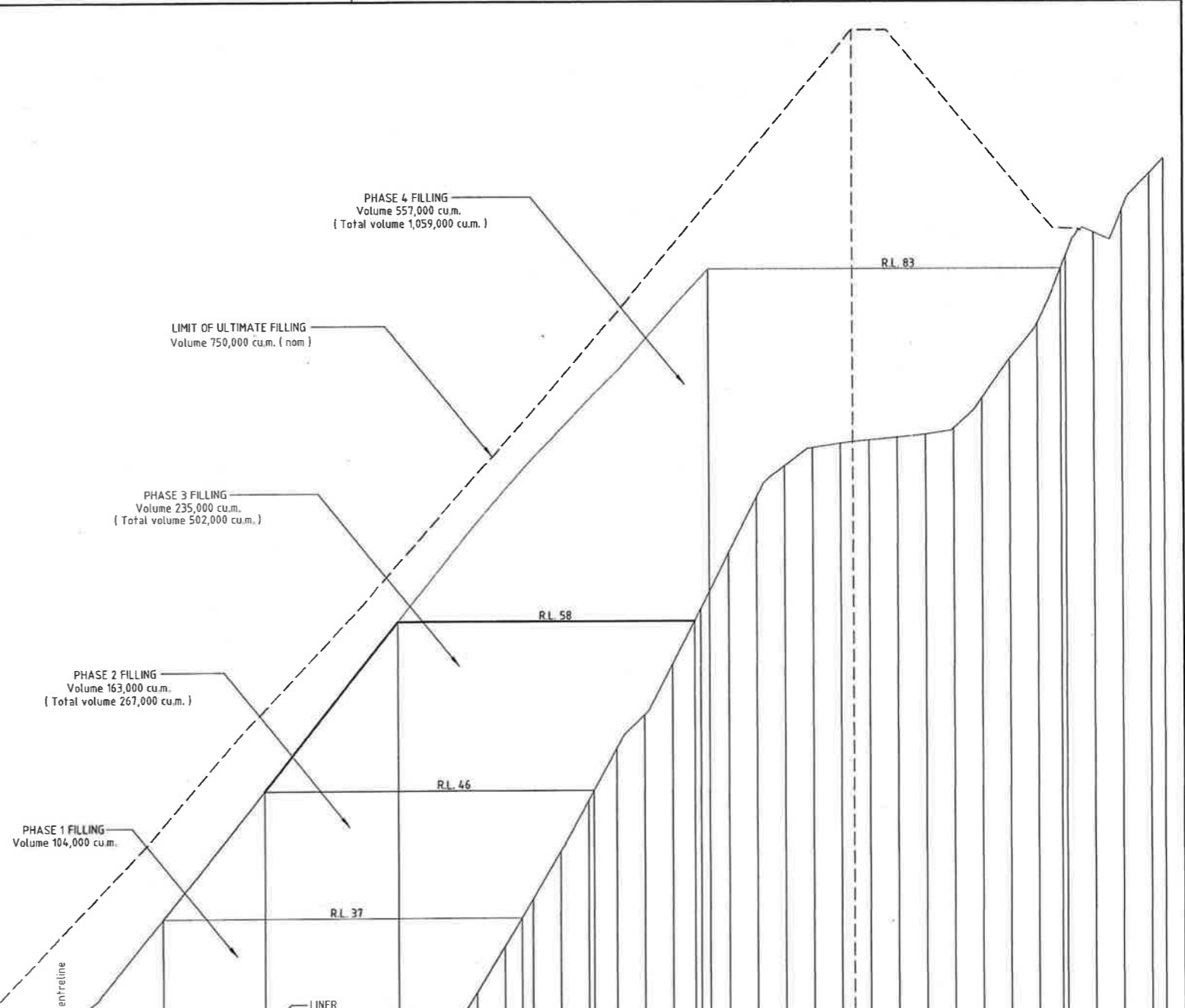
ISSUE		DESCRIPTION		DRAWN	APPR'D	DATE	DATUM AHD AZIMUTH ISG SURVEYOR B.Hogan/M.Kubik FIELD BOOKS F83/1/F93/1 RELATED PLANS 14,75,1920,2565 DRAWN R.Pittaway CHECKED DESIGNED R.Pittaway CHECKED DATE Nov 99 DATE Nov 99 DATE DATE APPROVED (FOR COUNCIL USE ONLY) SENIOR DESIGN ENGINEER MANAGER DESIGN SCALES 1:500 NORTH POINT  CITY OF WOLLONGONG WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 LINER CONTOURS DESIGN DIVISION Ph. 02 42 271111	DESIGN OFFICE No DES3791 FILE NUMBER SU16391 SHEET 3 OF 14 SHEETS DRAWING No. 2761 SHEET No. C3	A1 ORIGINAL ISSUE 1
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Datum RL 16	
FINISHED LEVEL	38.756, 38.401, 37.192, 37.767, 37.000, 36.047, 34.554, 33.639, 32.395, 31.629, 30.879, 30.158, 29.35, 28.477, 28.397, 30.033, 31.88, 33.49, 34.325, 37.306, 38.639, 40.843, 44.06, 46.733, 49.971, 54.114, 58.351, 62.791, 65.72, 69.3, 72.337, 75.117, 78.02, 80.715, 79.244, 81.504, 82.467
EXISTING LEVEL	38.756, 38.401, 37.192, 37.767, 37.000, 36.047, 34.554, 33.639, 32.395, 31.629, 30.879, 30.158, 29.35, 28.477, 28.397, 30.033, 31.88, 33.49, 34.325, 37.306, 38.639, 40.843, 44.06, 46.733, 49.971, 54.114, 58.351, 62.791, 65.72, 69.3, 72.337, 75.117, 78.02, 80.715, 79.244, 81.504, 82.467
CHAINAGE	0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 326.09

TYPICAL SECTION B

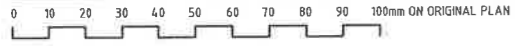


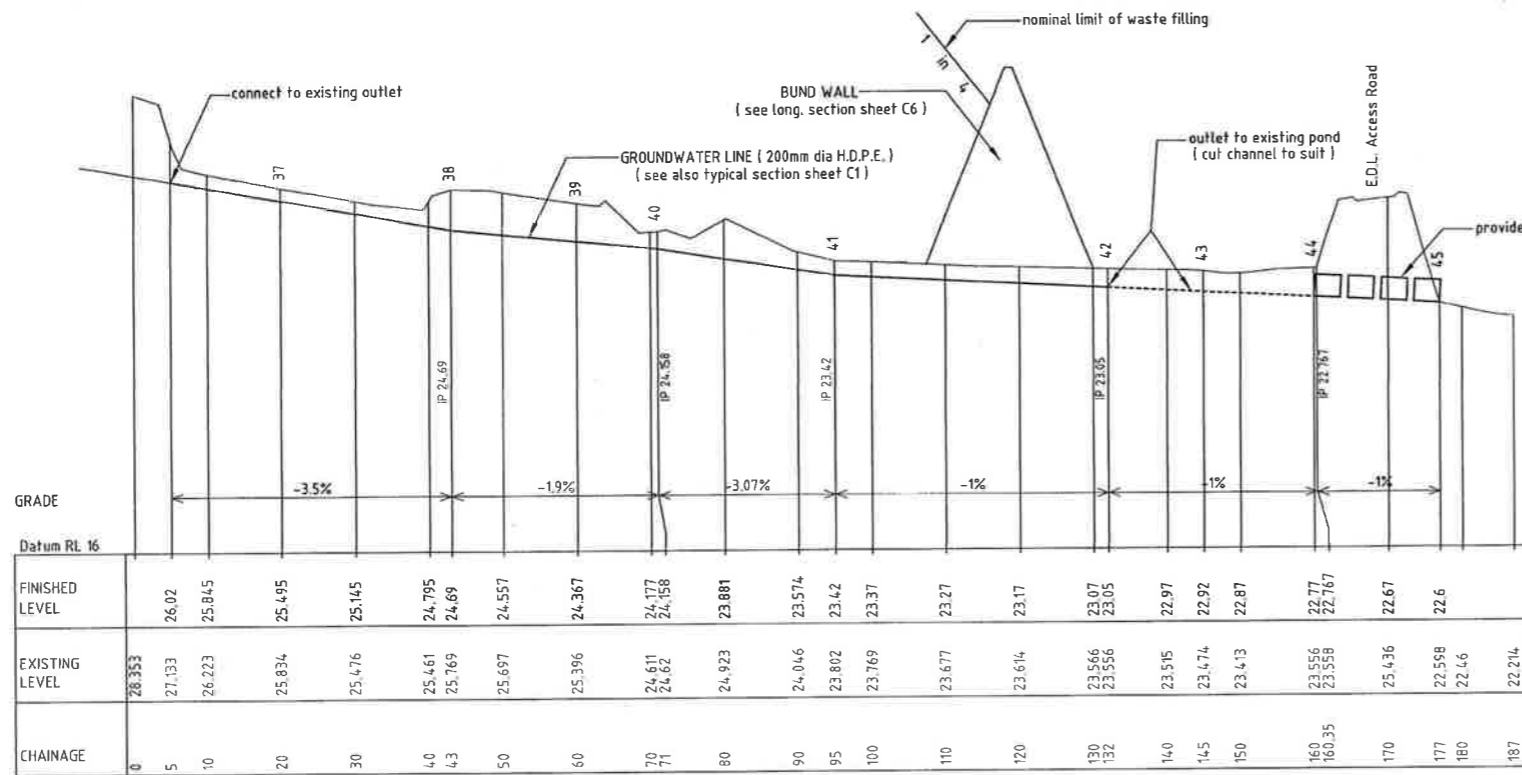
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TYPICAL SECTION A

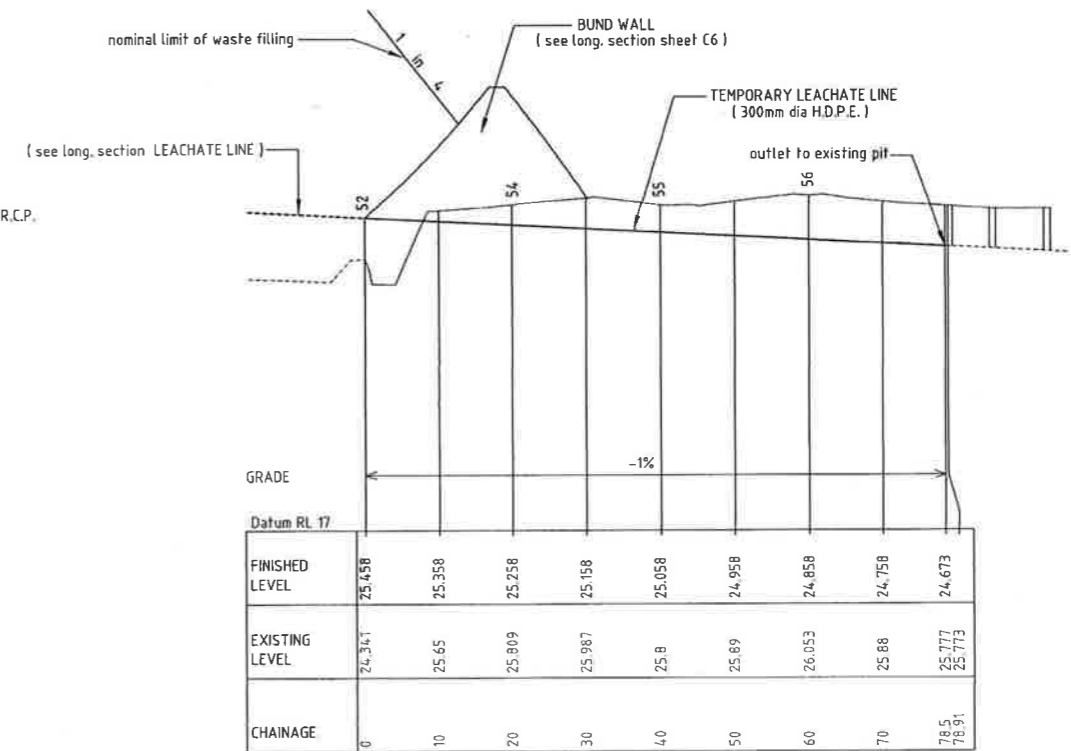
PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

DATUM AHD: B.Hogan/M.Kubik SURVEYOR: B.Hogan/M.Kubik DRAWN: R.Pittaway DATE: Nov 99		APPROVED FOR CONSTRUCTION ONLY SENIOR DESIGN ENGINEER: _____ MANAGER DESIGN: _____ DATE: _____		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	
RELATED PLANS: 1475, 1320, 2565 DESIGNED: R.Pittaway CHECKED: _____ DATE: Nov 99		DATE: _____ DATE: _____		DATE: _____ DATE: _____		DESIGN DIVISION Pn. 02 42 277111		2761		C7	

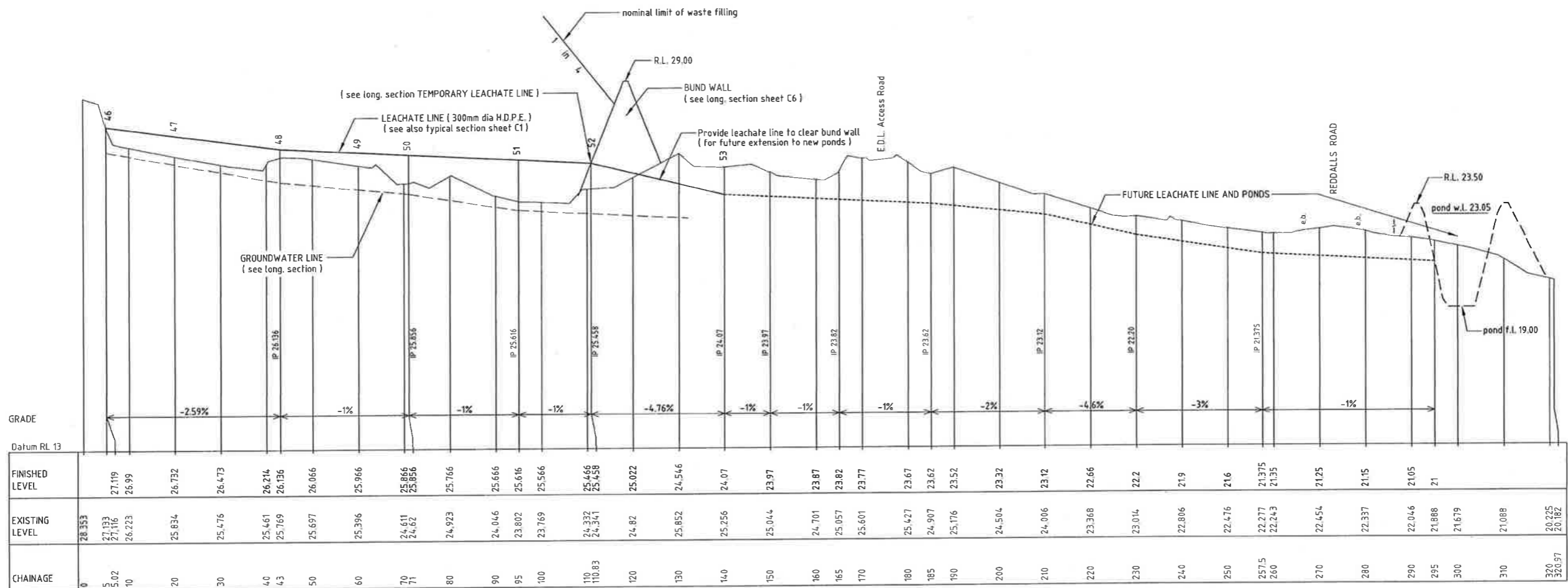




LONGITUDINAL SECTION GROUNDWATER LINE



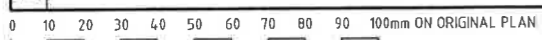
LONGITUDINAL SECTION TEMPORARY LEACHATE LINE



LONGITUDINAL SECTION LEACHATE LINE

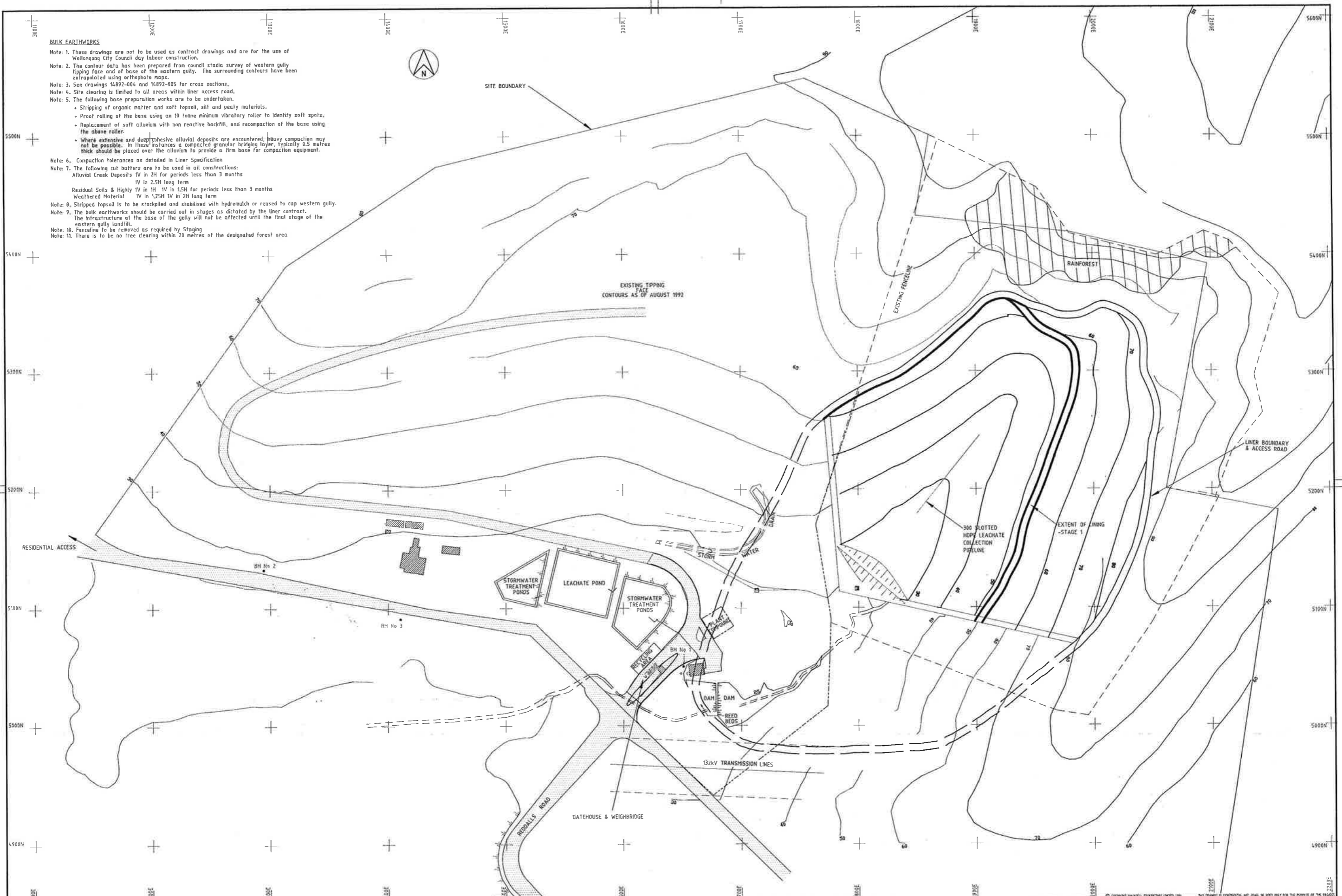
PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

1 Issued for discussion ISSUE DESCRIPTION DRAWN APPR'D DATE	DATUM AHD B.Hogan/M.Kubik AZIMUTH ISG FIELD BOOKS F83/1,F93/1	DRAWN R.Pittaway CHECKED	DATE Nov 99	APPROVED (FOR COUNCIL USE ONLY)		SCALES HOR 1:500 VERT 1:100	NORTH POINT	CITY OF WOLLONGONG WHYTES GULLY WASTE DEPOT REDDALLS ROAD WEST DAPTO EASTERN GULLY LANDFILL STAGE 3 LONG. SECTIONS (Groundwater and Leachate)	 WOLLONGONG City of Innovation DESIGN DIVISION Ph. 02 42 277111	DESIGN OFFICE No DES3791	A1 ORIGINAL ISSUE
				FILE NUMBER SU16391	SHEET 5 OF 14 SHEETS						
	RELATED PLANS 1475,1320,2565	DESIGNED R.Pittaway CHECKED	DATE Nov 99	SENIOR DESIGN ENGINEER	MANAGER DESIGN				DRAWING No. 2761	SHEET No. C5	1



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
 - Residual Soils & Highly IV in 1H; IV in 1.5H for periods less than 3 months
 - Weathered Material 1V 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 of 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

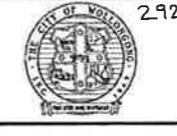


NO	DATE	GENERAL REVISION
01	3.11.97	GENERAL REVISION
02	04.01.98	GENERAL REVISION

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

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWING CHECK	P.P.O.Y		
DESIGN CHECK	E.HADEW		
PROJECT DIRECTOR APPROVAL	D.HACLED		

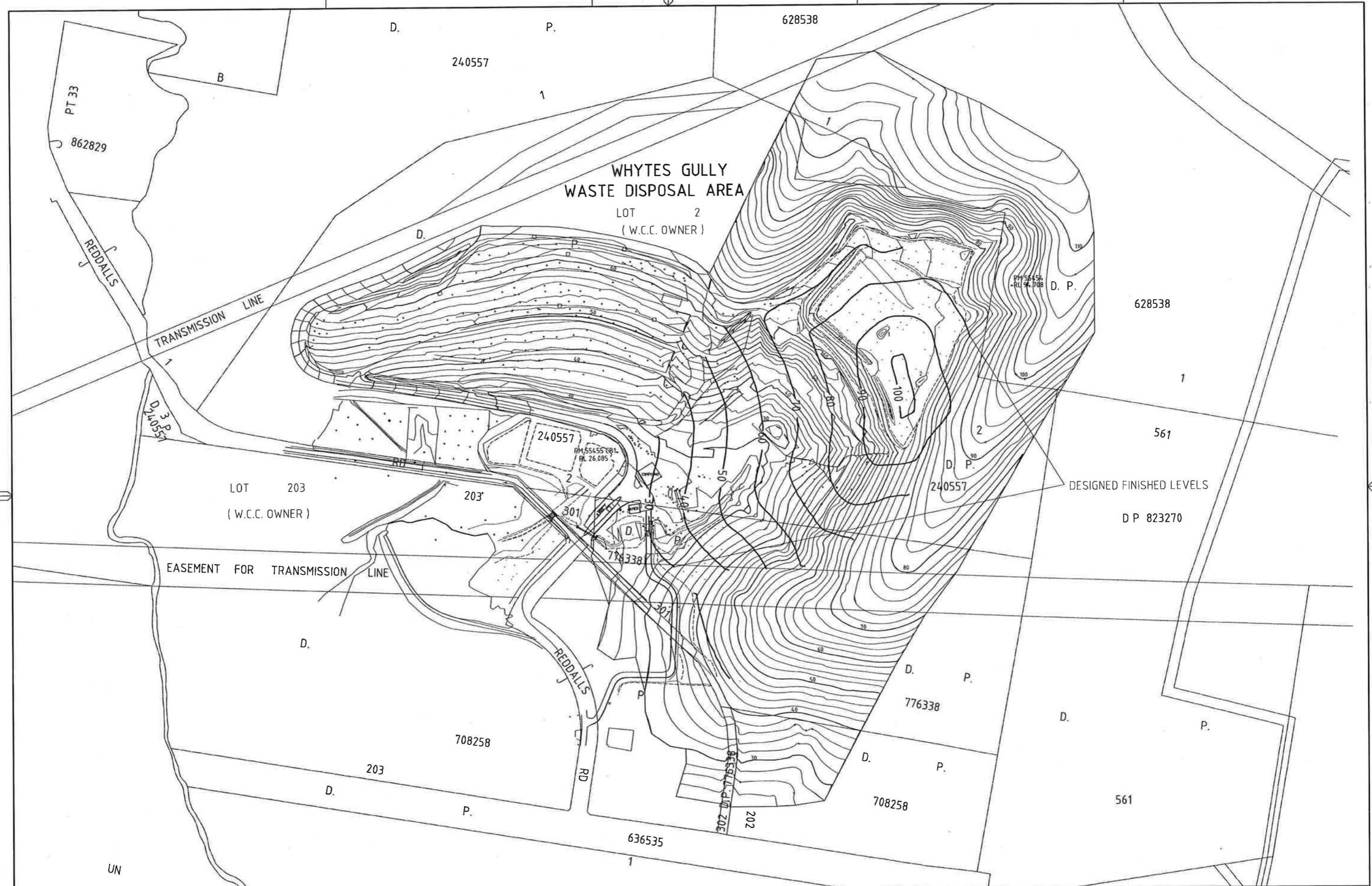
MAUNSELL PROPRIETARY LIMITED
A.C.N. 004 848 824



2926
PROJECT FILE: WHYTES GULLY LANDFILL
STAGE 1
EXTENT OF LINER AND LEACHATE DRAIN

DATE OF ISSUE	5.2.93	REV.	A0
DATE PLOTTED	23.10.92		
DWG NO.	14892-008	REV.	0
DWG STATUS	PRELIMINARY		

2926



WHYTES GULLY
WASTE DISPOSAL AREA

LOT 2
(W.C.C. OWNER)

LOT 203
(W.C.C. OWNER)

DESIGNED FINISHED LEVELS
D P 823270

PLAN NOT FOR CONSTRUCTION

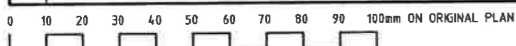
CITY OF WOLLONGONG
WHYTES GULLY WASTE DISPOSAL AREA
WEST DAPTO
CONTOURS AT 19th JUNE 2000



DESIGN OFFICE NUMBER DES5346
FILE NUMBER SU16245
SHEET 1 OF 1 SHEETS
DRAWING No. 2882 SHEET No. SV1

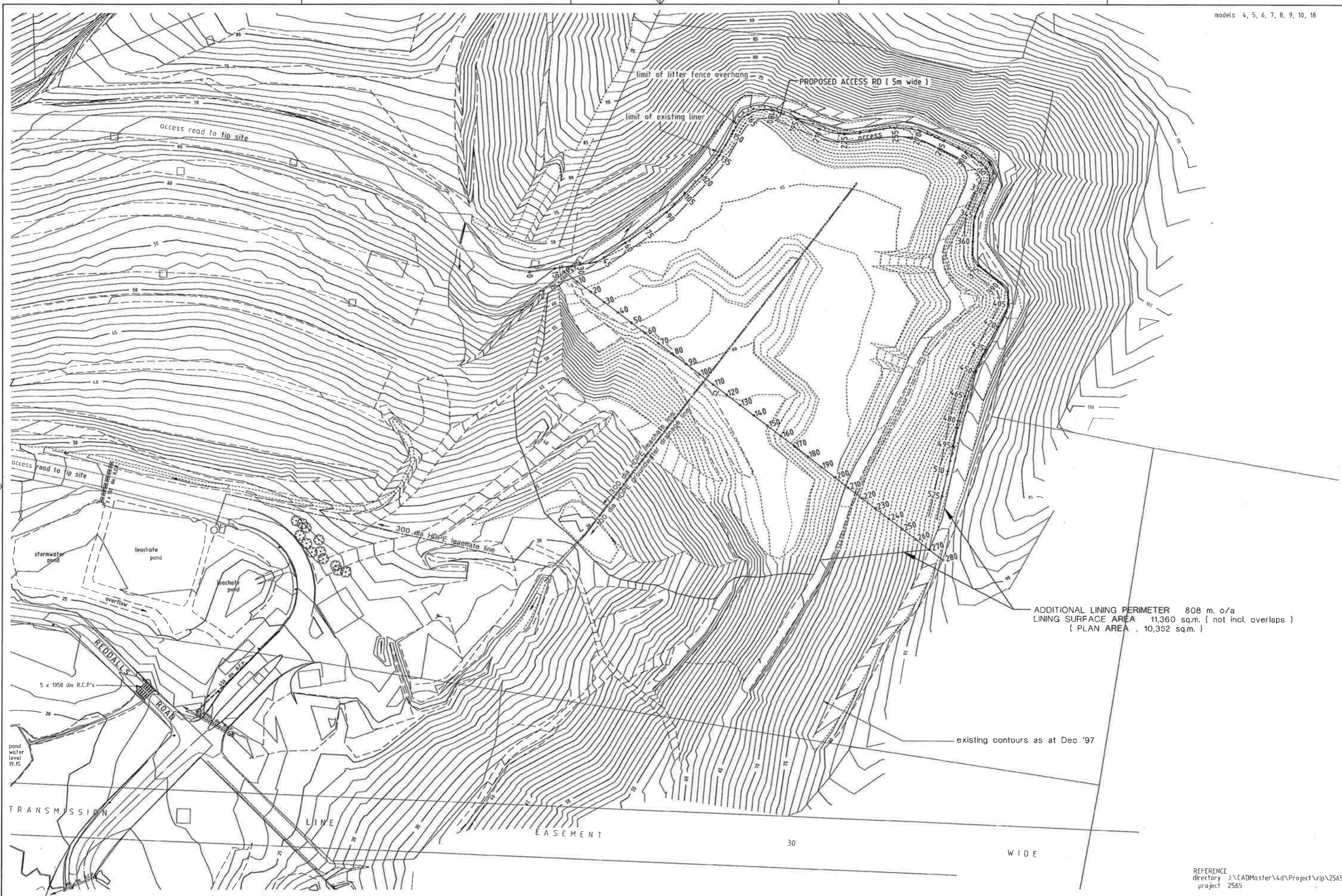
A1 ORIGINAL
ISSUE

DATE JUNE/2000		APPROVED		SCALES	NORTH POINT
DATE JUNE/2000	DATE JUNE/2000	SENIOR DESIGN ENGINEER	MANAGER DESIGN	1 : 2000	
DATE	DATE	DATE	DATE		
DATE	DATE	DATE	DATE		



ISSUE	DESCRIPTION	M.K.	B.H.	JUNE/00
A	ISSUED TO EPA			
DRAWN	APPR'D	DATE		

DATUM	SURVEYOR	DRAWN	DATE
AHD	B.HOGAN	M.K. <i>Mike Kidal</i>	JUNE/2000
AZMUTH	FIELD BOOKS	CHECKED	DATE
	F.B.W.G.	B.H. <i>B. Hogan</i>	JUNE/2000
RELATED PLANS	DESIGNED		
331			
	CHECKED		



ADDITIONAL LINING PERIMETER 808 m. o/a
 LINING SURFACE AREA 11,360 sq.m. (not incl. overlaps)
 (PLAN AREA , 10,352 sq.m.)

REFERENCE directory J:\CADMaster\4d\Project\rip\2565 project 2565

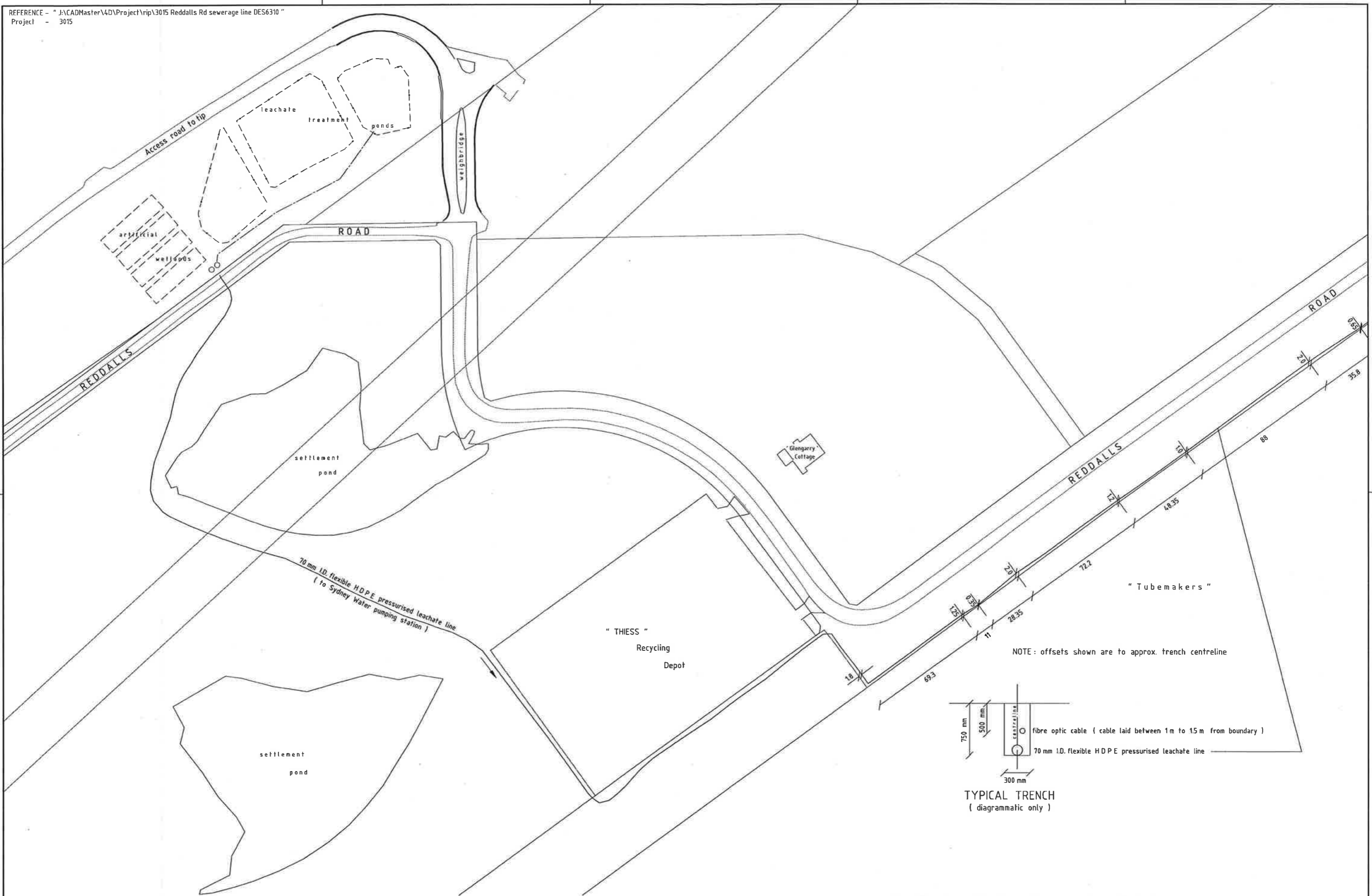
NO.	AMENDMENTS	DRAWN	APPRD.	DATE

DATUM	FIELD BOOKS	DRAWN	DATE	APPROVED FOR CONSTRUCTION	
A.H.D.		R.Pittaway	Jan '98	CHECKED	DATE
SURVEYOR	RELATED PLANS	DESIGNED	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN
B. Hogan	1475	CHECKED	DATE	DATE	DATE

SCALES	NORTH POINT
1 : 1000	

CITY OF WOLLONGONG
 WHYTES GULLY
 WASTE DISPOSAL AREA
 STAGE II - 2 (eastern gully)

DESIGN OFFICE NUMBER DES 2127
 FILE NUMBER
 SHEET 2 OF 3 SHEETS
 DRAWING NO. SHEET No.
2565 C2
 WOLLONGONG City of Diversity
 DRAWING TYPE **R**
 ISSUE **1**



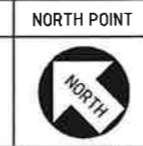
PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

ISSUE	DESCRIPTION	DRAWN	APPR'D	DATE
1	Issued for discussion	R.P.		Feb 01

DATUM	SURVEYOR	DRAWN	DATE
AHD	B.Hogan	R.Pitlaway	Feb 2001
AZIMUTH	FIELD BOOKS	CHECKED	DATE
ISG	F83/1 F92/1		
RELATED PLANS	DESIGNED	DATE	
CHECKED	DATE		

APPROVED (FOR COUNCIL USE ONLY)	
SENIOR DESIGN ENGINEER	MANAGER DESIGN
DATE	DATE

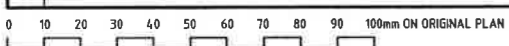
SCALES
1: 1000

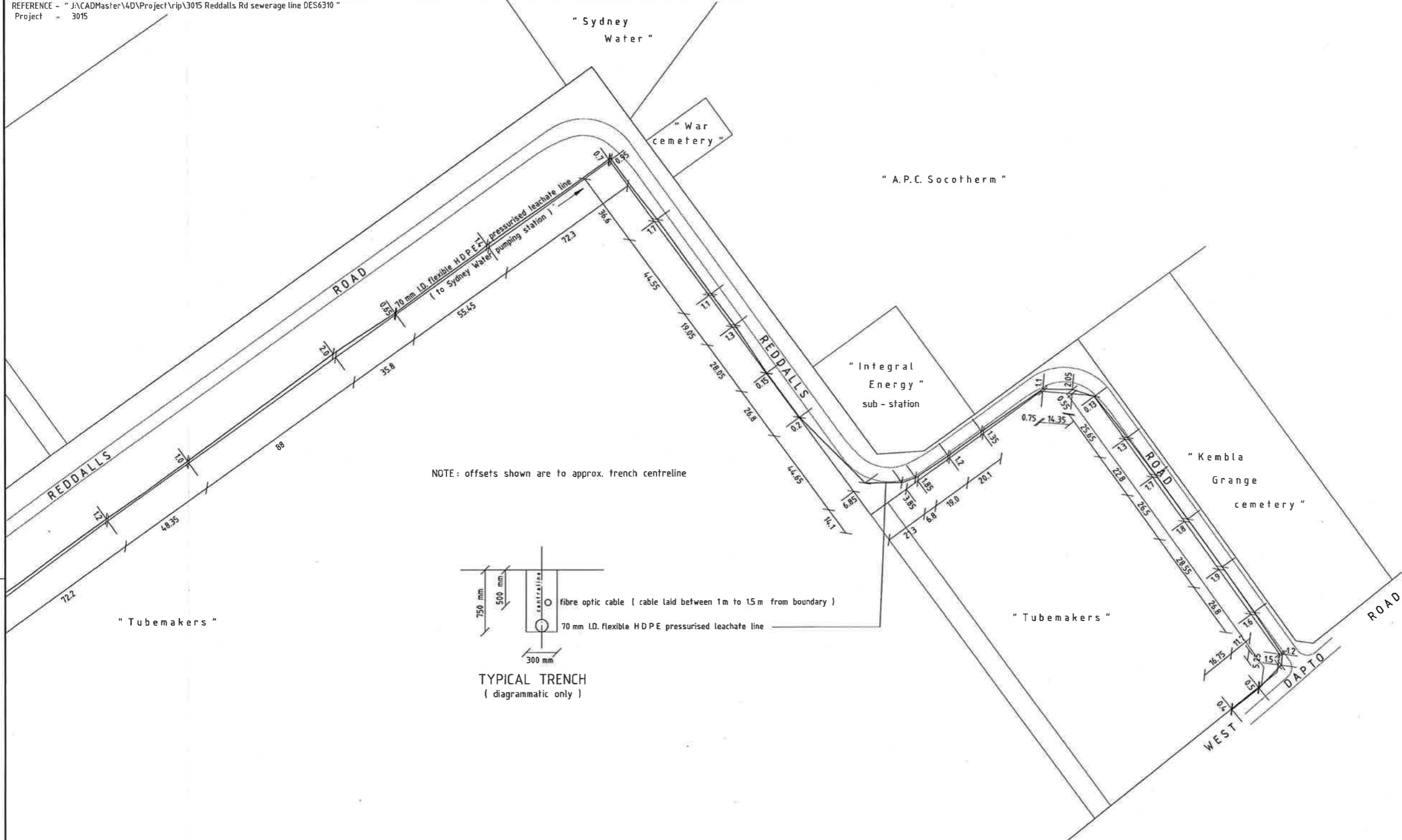


CITY OF WOLLONGONG
 Sketch plan showing location of sewerage line from Whytes Gully treatment ponds to West Dapto Road Reddalls Road West Dapto

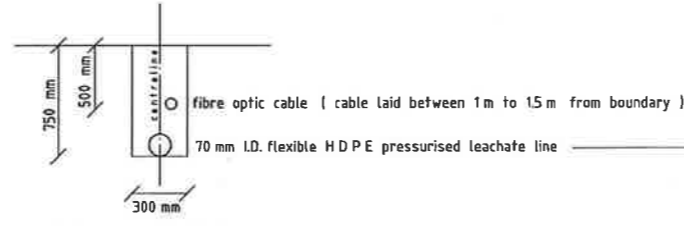


DESIGN OFFICE No	DES6310	A1
FILE NUMBER	SU7663	ORIGINAL
SHEET 1 OF 2 SHEETS		ISSUE
DRAWING No.	SHEET No.	
3015	SK1	1





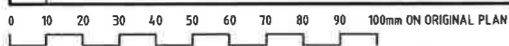
NOTE: offsets shown are to approx. trench centreline

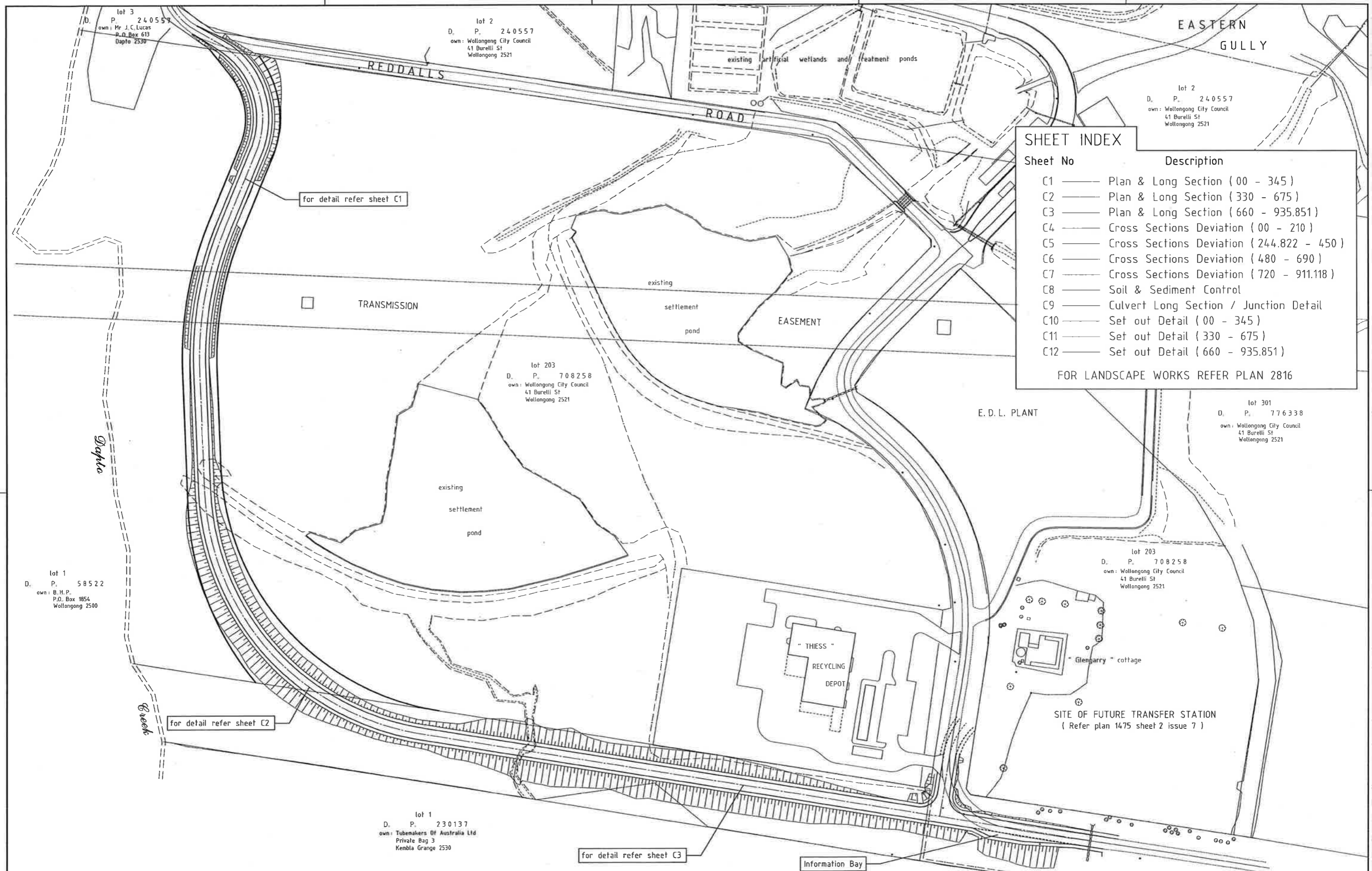


TYPICAL TRENCH
(diagrammatic only)

PRELIMINARY PLAN ONLY - NOT FOR CONSTRUCTION

				DATUM AHD	SURVEYOR B.Hogan	DRAWN R.Pittaway	DATE Feb 2001	APPROVED <small>(FOR COUNCIL USE ONLY)</small>		SCALES	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 OFFICE No DES6310	A1 ORIGINAL
				AZIMUTH ISG	FIELD BOOKS F83/1F93/1	CHECKED	DATE	SENIOR DESIGN ENGINEER	MANAGER DESIGN	1 : 1000			FILE NUMBER SUI7663	
				RELATED PLANS		DESIGNED	DATE					DRAWING No.	SHEET No.	ISSUE
1	Issued for discussion	R.P.	Feb 01			CHECKED	DATE	DATE	DATE			3015	SK2	1





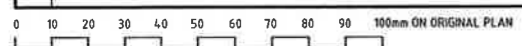
SHEET INDEX	
Sheet No	Description
C1	Plan & Long Section (00 - 345)
C2	Plan & Long Section (330 - 675)
C3	Plan & Long Section (660 - 935.851)
C4	Cross Sections Deviation (00 - 210)
C5	Cross Sections Deviation (244.822 - 450)
C6	Cross Sections Deviation (480 - 690)
C7	Cross Sections Deviation (720 - 911.118)
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

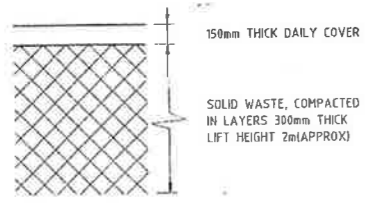
REFERENCE: J:\CADMaster\4D\Project\rip\2991 Reddalls Rd Deviation DES6246
PROJECT: Cover sheet

APPROVED FOR CONSTRUCTION

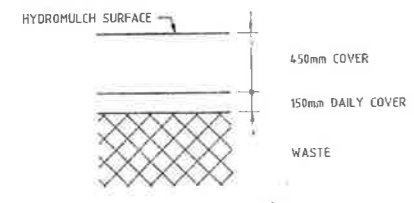
DATUM AHD SURVEYOR B.Hogan/M.Kubik DRAWN R.Pittaway DATE Jan 2001		APPROVED (FOR COUNCIL USE ONLY) SENIOR DESIGN ENGINEER MANAGER DESIGN DATE 22/4/01 DATE 23/4/01		SCALES 1:1000	NORTH POINT 	CITY OF WOLLONGONG WHYTES GULLY WASTE DISPOSAL AREA REDDALLS ROAD WEST DAPTO Deviation West Of Thiess Recycling Depot COVER SHEET	DESIGN OFFICE No. DES4246 FILE NUMBER SUT7558 SHEET 0 OF 12 SHEETS DRAWING No. 2991 SHEET No. C0 DESIGN DIVISION Ph. 02 42 271111	A1 ORIGINAL ISSUE A
RELATED PLANS 1475/2633		CHECKED S.Walsh DESIGNED R.Pittaway CHECKED K.Hatfield						
A Issued for construction R.P. K.M. Apr '01	DRAWN APPR'D DATE							



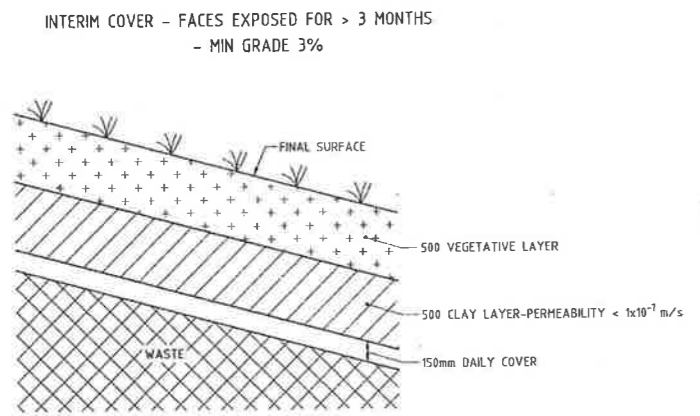
DAM 1	DAM SPECIFICATIONS (M)					L	CREST LEVEL
	FREEBOARD	INLET	OUTLET	x	Ø		
	0.75	7.5	18	1.9	0.15	19	19.75



DETAIL 01
1:20
DAILY COVER

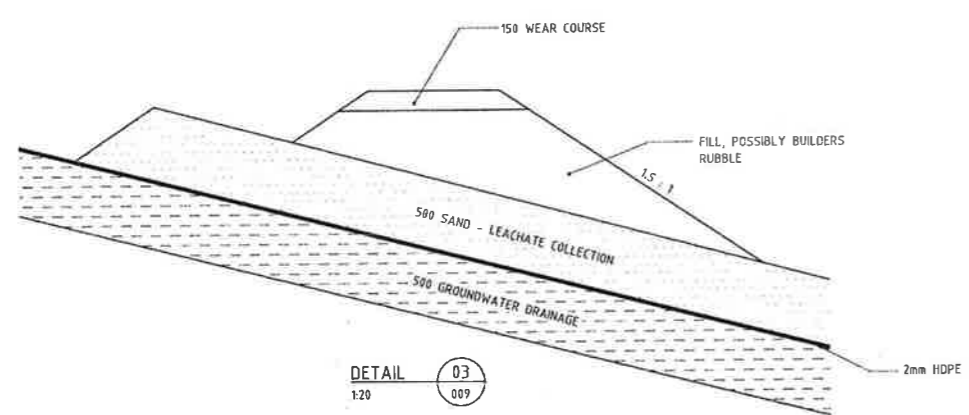


DETAIL 02
1:20
INTERIM COVER - FACES EXPOSED FOR > 3 MONTHS - MIN GRADE 3%

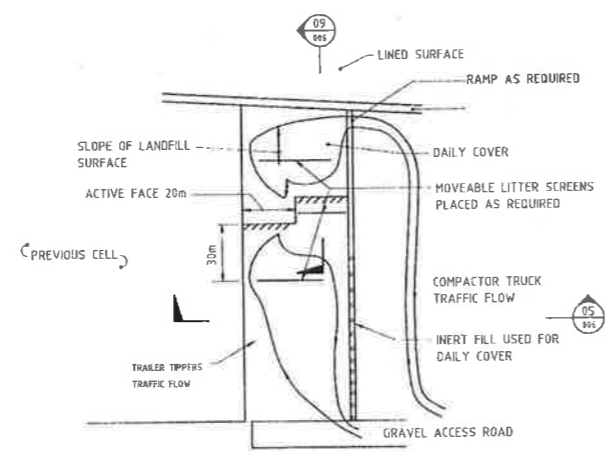


DETAIL 03
1:20
FINAL CAP DETAILS

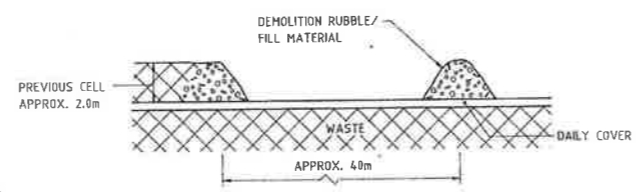
COVER DETAILS



DETAIL 04
1:20
TEMPORARY ACCESS ROAD DETAIL

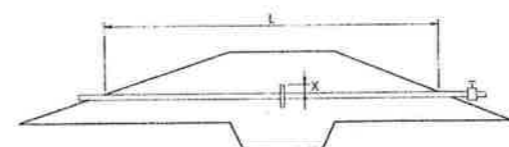


DETAIL 05
NTS
TYPICAL CELL LAYOUT

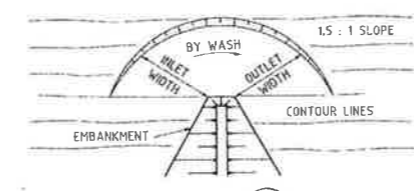


DETAIL 06
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CELL SEPARATION BERM

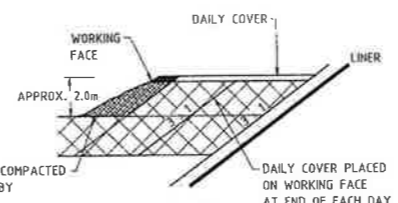
CELL LAYOUT DETAILS



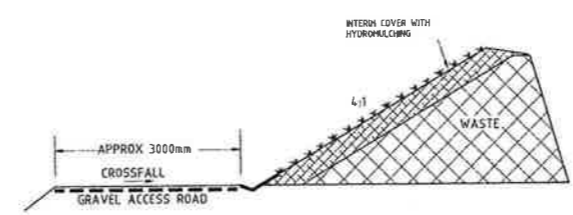
DETAIL 07
NTS
TYPICAL EMBANKMENT DETAILS



DETAIL 08
NTS
TYPICAL SPILLWAY DETAIL

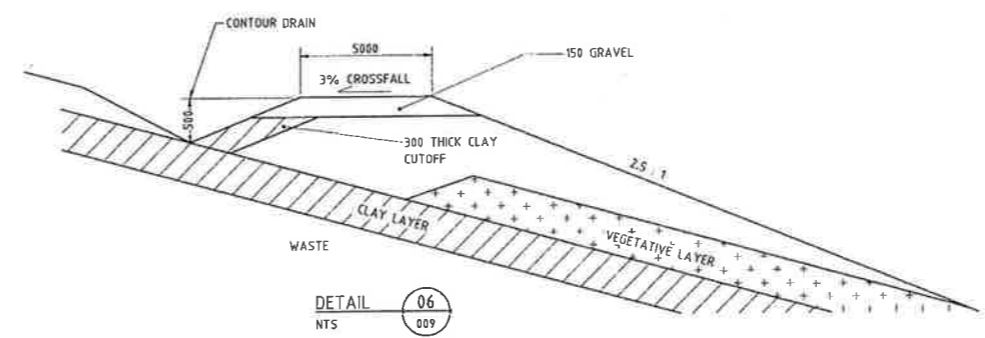


DETAIL 09
NTS
TYPICAL FILLING SEQUENCE

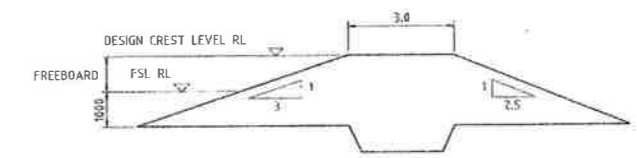


DETAIL 10
NTS
DRAINAGE AND ACCESS FROM INTERIM COVER

FILLING SEQUENCE TO INTERIM COVER

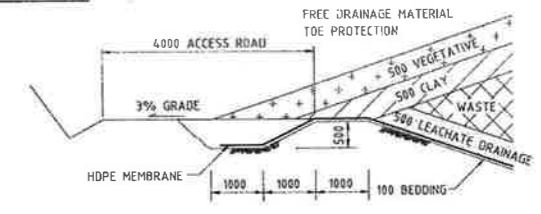


DETAIL 11
NTS
ACCESS ROAD DETAIL - FINAL COVER

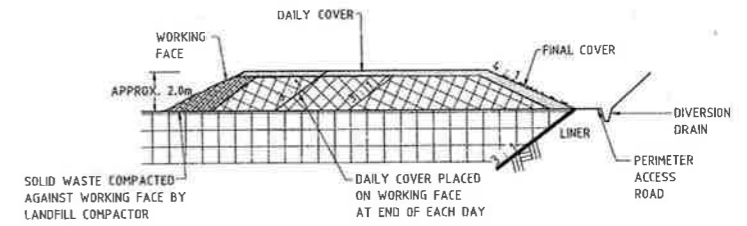


DETAIL 12
NTS
TYPICAL EMBANKMENT CROSS SECTION

SEDIMENT DAM DETAILS

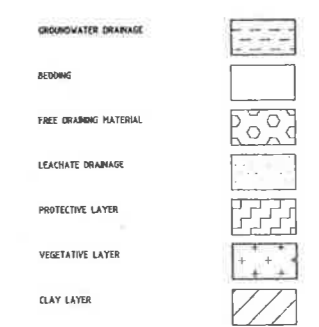


DETAIL 13
1:50
EDGE DETAILS



DETAIL 14
NTS
TYPICAL FILLING FOR FINAL COVER - BACK FACE FILLING SEQUENCE TO FINAL COVER

MATERIAL TYPES

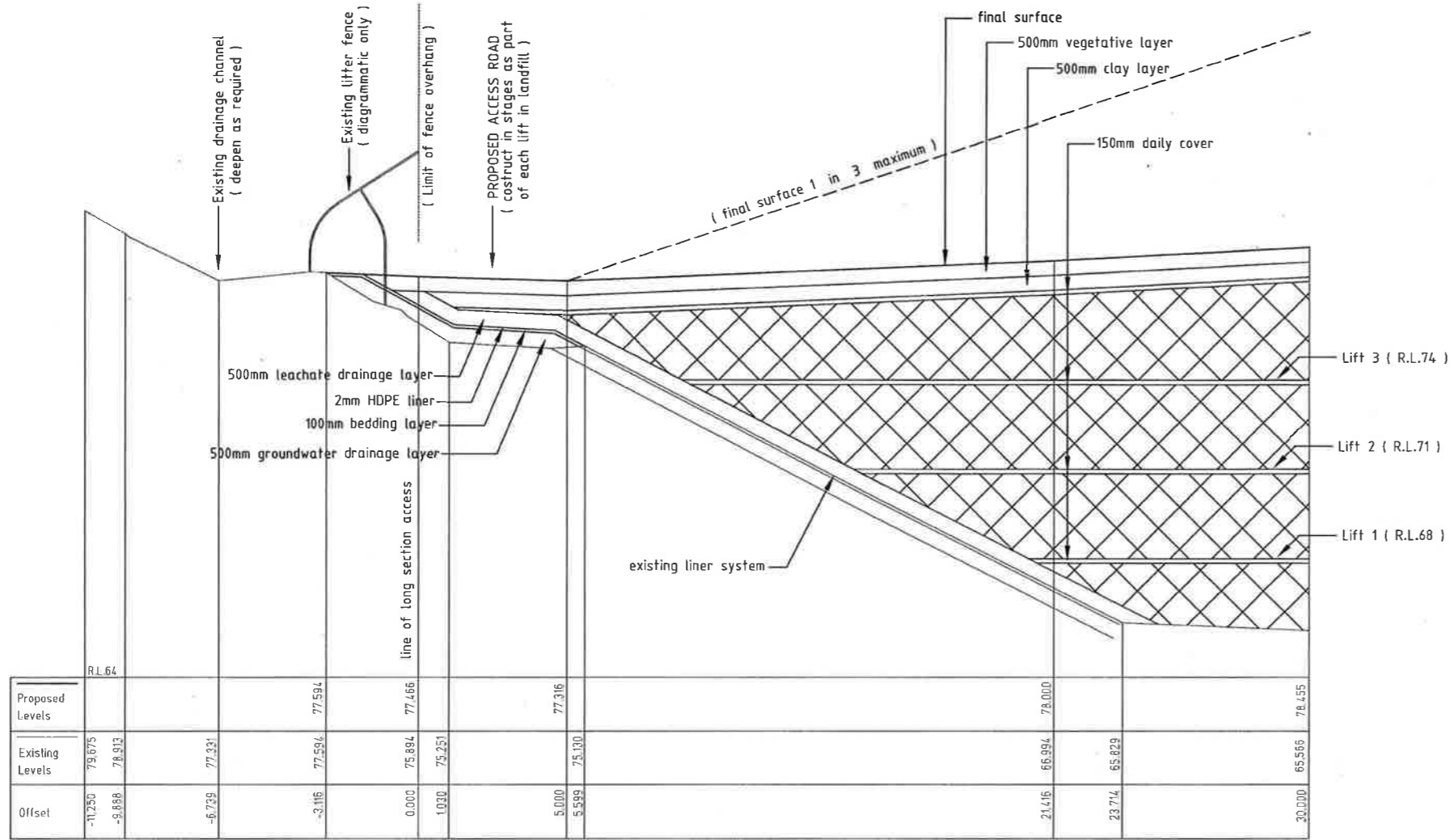


OPERATION DETAIL NOTES

- 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 WHYTES GULLY LANDFILL MANAGEMENT PLAN.

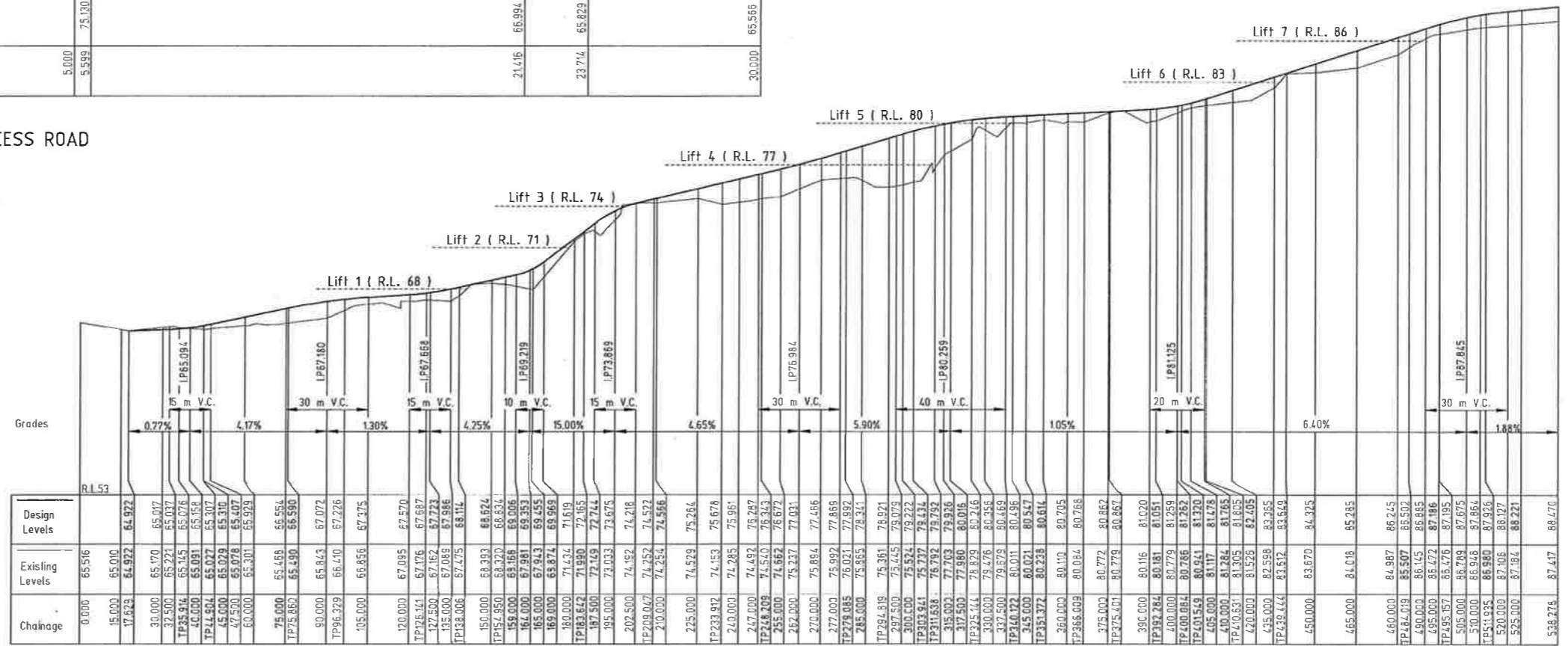
1320 P331

<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>CHKD</th> <th>APPD</th> </tr> <tr> <td>01</td> <td>18.3.93</td> <td>GENERAL REVISION</td> <td></td> <td></td> <td></td> </tr> <tr> <td>02</td> <td>18.3.93</td> <td>GENERAL REVISION</td> <td></td> <td></td> <td></td> </tr> </table>	NO.	DATE	DESCRIPTION	BY	CHKD	APPD	01	18.3.93	GENERAL REVISION				02	18.3.93	GENERAL REVISION				<p>QUALITY RECORD</p> <table border="1"> <tr> <th>NO.</th> <th>NAME</th> <th>SIGNATURE</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>AMR.FORD</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>S.MADEW</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>D.MCLEOD</td> <td></td> <td></td> </tr> </table>	NO.	NAME	SIGNATURE	DATE	1	AMR.FORD			2	S.MADEW			3	D.MCLEOD			<p>MAUNSELL PROPRIETARY LIMITED</p> <p>A.C.N. 004 840 854</p>	<p>WHYTES GULLY LANDFILL</p> <p>OPERATIONAL DETAILS</p>	<p>DATE OF ISSUE: 17.3.93</p> <p>DATE PLOTTED: 18.3.93</p> <p>SCALE: 1:20</p> <p>PROJECT NO: 14892-006</p> <p>REV: 02</p> <p>STATUS: DESIGN COMPLETE</p>
NO.	DATE	DESCRIPTION	BY	CHKD	APPD																																	
01	18.3.93	GENERAL REVISION																																				
02	18.3.93	GENERAL REVISION																																				
NO.	NAME	SIGNATURE	DATE																																			
1	AMR.FORD																																					
2	S.MADEW																																					
3	D.MCLEOD																																					



Proposed Levels	Existing Levels	Offset
RL.64		
79.675	78.913	-0.762
77.331	77.331	0.000
77.594	77.594	0.000
77.486	75.884	-1.602
77.316	75.251	-2.065
78.000	75.300	-2.700
78.994	66.994	-12.000
78.829	65.829	-13.000
78.455	65.566	-12.889

TYPICAL SECTION ACCESS ROAD
Scale 1 : 100



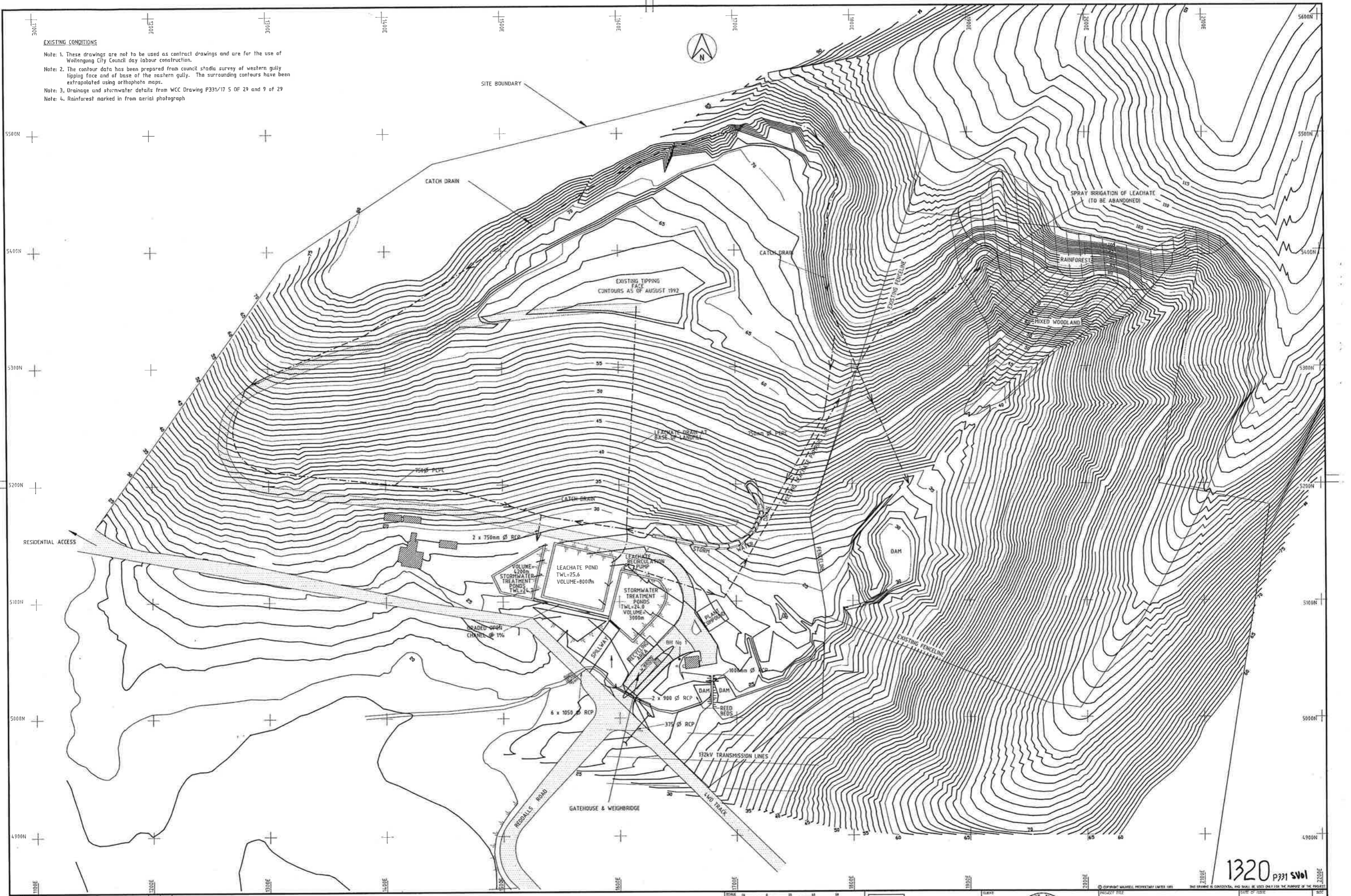
Chainage	Existing Levels	Design Levels
0.000	65.516	
15.000	65.010	
17.673	64.922	64.922
30.000	65.170	65.017
32.500	65.221	65.037
TP35.514	65.145	65.076
40.000	65.091	65.158
TP44.504	65.027	65.307
45.000	65.029	65.310
47.500	65.078	65.407
60.000	65.301	65.929
75.000	65.456	66.554
TP75.865	65.490	66.590
90.000	65.843	67.072
TP96.329	66.410	67.226
105.000	66.856	67.375
120.000	67.095	67.570
TP126.441	67.176	67.697
127.500	67.162	67.723
135.000	67.089	67.986
TP138.006	67.475	68.114
150.000	68.383	68.624
TP152.950	68.320	68.634
158.000	68.166	68.906
164.000	67.981	69.353
165.000	67.943	69.455
169.000	68.874	69.969
180.000	71.434	71.619
TP183.642	71.990	72.165
187.500	72.169	72.744
195.000	73.033	73.675
202.500	74.192	74.218
TP208.017	74.262	74.522
210.000	74.234	74.596
225.000	74.529	75.264
TP233.312	74.153	75.678
240.000	74.285	75.951
247.000	74.432	76.287
TP248.029	74.540	76.343
255.000	74.562	76.672
262.500	75.237	77.031
270.000	75.884	77.456
277.000	75.992	77.859
TP278.085	76.021	77.992
285.000	75.865	78.341
TP284.519	76.361	78.921
297.500	75.445	79.079
300.000	75.524	79.222
TP303.341	75.737	79.434
TP311.638	75.792	79.792
315.000	77.763	79.926
317.500	77.980	80.016
TP325.144	78.629	80.216
330.000	79.476	80.356
337.500	79.679	80.469
TP340.122	80.011	80.496
345.000	80.021	80.547
TP351.372	80.238	80.614
360.000	80.110	80.795
TP366.029	80.084	80.768
375.000	80.772	80.862
TP375.401	80.779	80.867
390.000	80.116	81.020
TP392.384	80.181	81.051
400.000	80.729	81.259
TP400.094	80.766	81.262
TP400.549	80.941	81.350
405.000	81.117	81.478
410.000	81.284	81.765
TP410.331	81.305	81.805
420.000	81.529	82.405
435.000	82.598	83.355
TP439.444	83.612	83.649
450.000	83.670	84.325
465.000	81.618	85.235
480.000	84.987	86.215
TP484.019	85.507	86.502
490.000	86.145	86.855
495.000	85.472	87.186
TP495.157	85.476	87.195
505.000	86.789	87.675
510.000	86.948	87.864
TP511.935	86.980	87.926
520.000	87.406	88.127
525.000	87.164	88.221
538.276	87.417	88.470

LONGITUDINAL SECTION ALONG access

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



1320 p331 SWOL

REV	DATE	DESCRIPTION	DWG No.	P.D.
01	10.2.93	GENERAL REVISION		
02	10.2.93	GENERAL REVISION		

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

QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN BY	F.P.O.Y.		
DESIGNED BY	E.HADEW		
PROJECT DIRECTOR APPROVAL	D.MACLEOD		

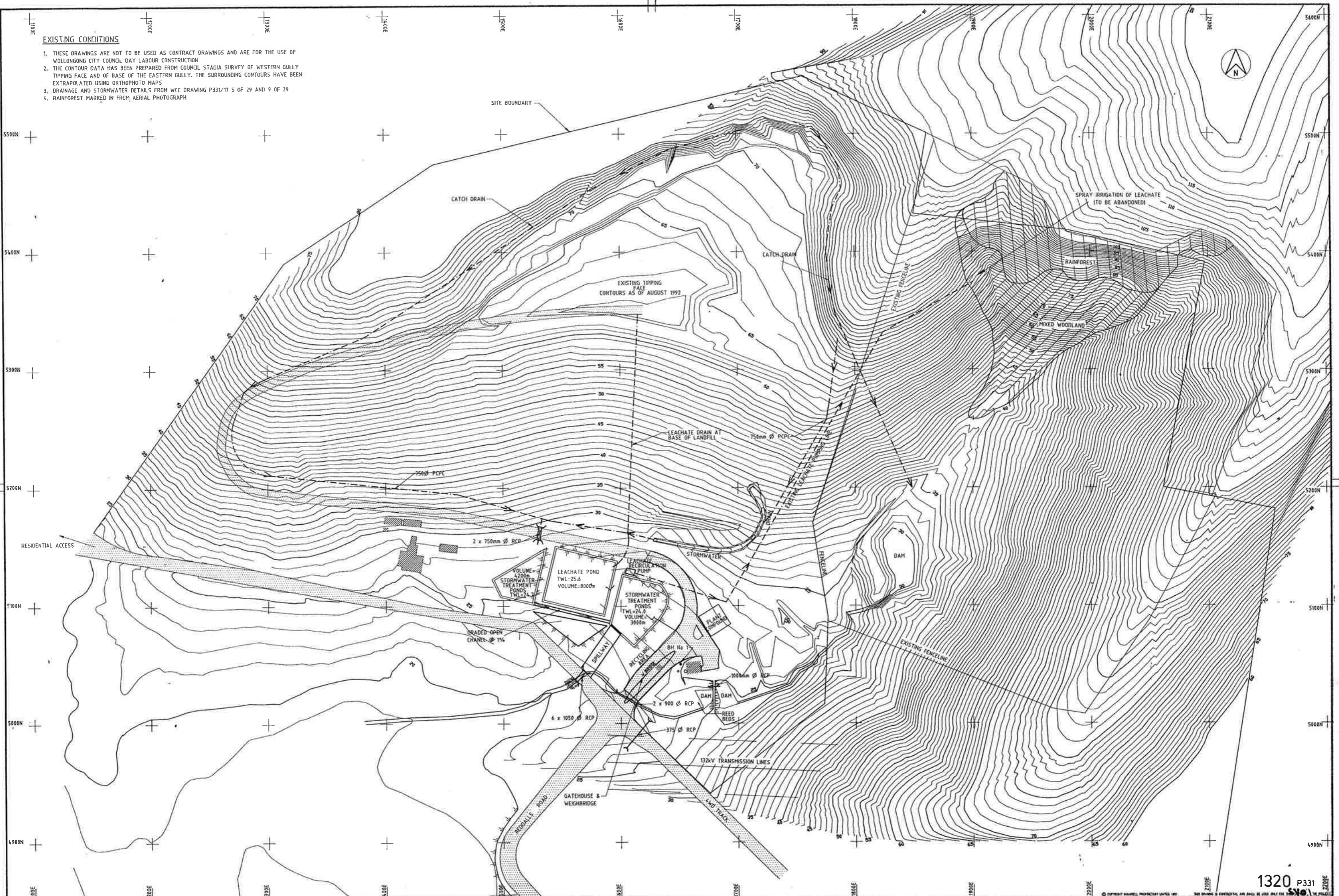
MAUNSELL PROPRIETARY LIMITED
A.C.N. 004 846 844



WHYTES GULLY LANDFILL
PROJECT NO. 14892-001
DATE ISSUED: 10.2.93
DATE PLANNED: 10.2.93
1 OF 9
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



REV	DATE	DESCRIPTION	BY	CHK
#1	24.11.93	GENERAL REVISION		
#2	13.12.93	GENERAL REVISION		

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

SCALE	AS SHOWN		
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN BY	A. M. FORD		
CHECKED BY	E. HADRY		
APPROVED BY	D. PALLEDI		

MAUNSELL PROPRIETARY LIMITED
A.C.N. 904 848 884

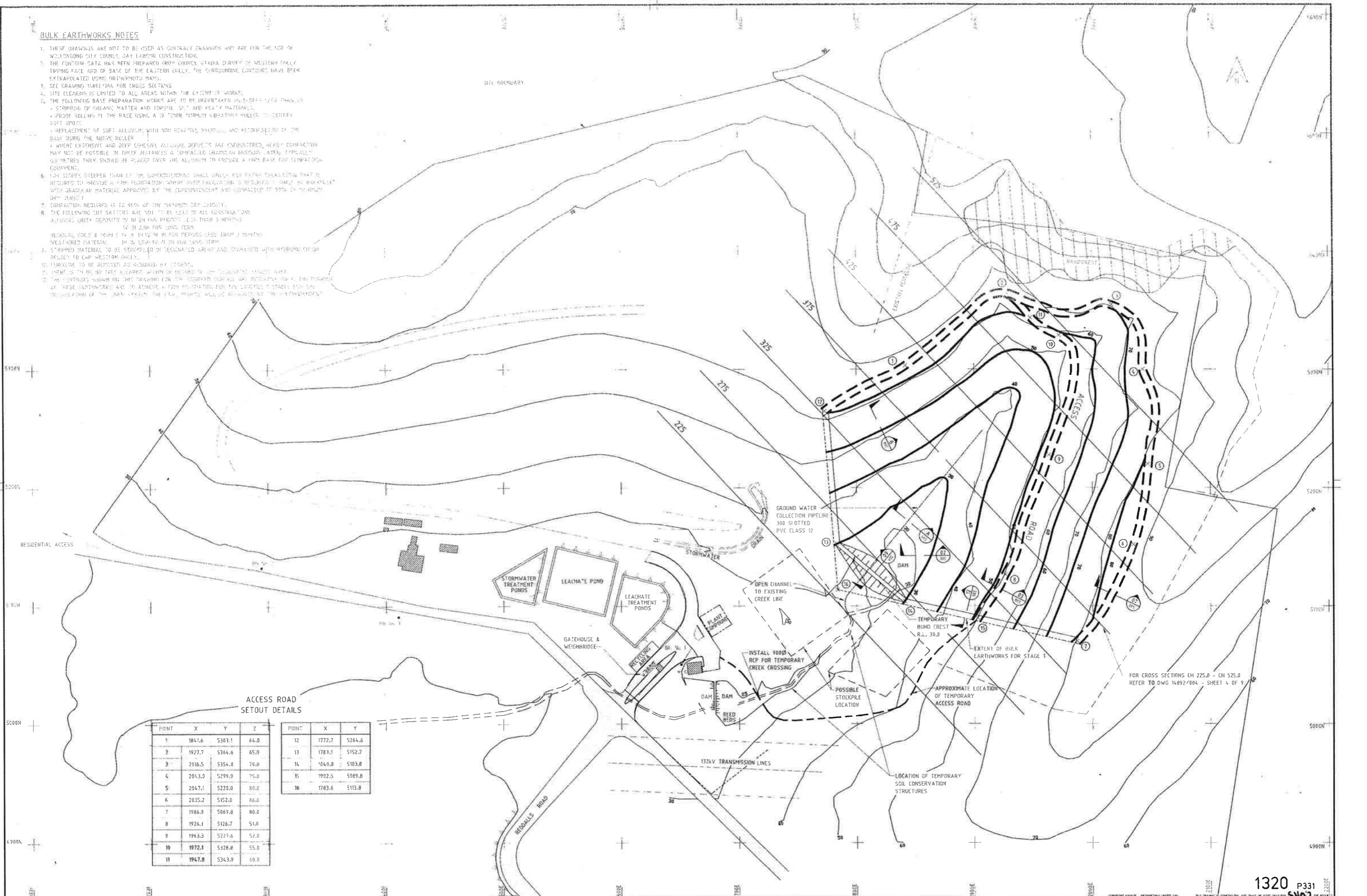


PROJECT TITLE	WHYTES GULLY LANDFILL	DATE OF ISSUE	29.3.93	SCALE	A0
DRAWING TITLE	PLANS/DWG	DATE PLOTTED	28.12.93		
DWG. NO.	14892-001	REV.	02		
DWG. STATUS	DESIGN COMPLETE				

1320 P331

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 FACE AND OF BASE 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 ON SLOPES STEEPER THAN 1:1:
 - STRIPPING OF ORGANIC MATTER AND TOPSOIL 50mm AND HEAVY MATERIALS.
 - PROOF ROLLING IN THE BASE USING A 10 TONNE MINIMUM VIBRATORY ROLLER TO IDENTIFY SPT SPOTS.
 - REPLACEMENT OF SOFT ALLUVIUM WITH NON REACTIVE BANKFILL AND RECONSTRUCTION OF THE BASE USING THE ABOVE ROLLER.
6. WHERE EXTENSIVE AND DEEP COHESIVE ALLUVIAL DEPOSITS ARE ENCOUNTERED, HEAVY COMPACTION MAY NOT BE POSSIBLE. IN THESE INSTANCES A COMPACTED GRANULAR BRUSHING LAYER, TYPICALLY 150 METRES THICK SHOULD BE PLACED OVER THE ALLUVIUM TO PROVIDE A FIRM BASE FOR COMPACTION EQUIPMENT.
7. FOR SLOPES STEEPER THAN 1:1 THE SUPERSEDING SHALL APPLY EXCEPT WHERE NOTED OTHERWISE THAT IS REQUIRED TO PROVIDE A FIRM FOUNDATION. WHERE DEEP EXCAVATION IS REQUIRED, SHALL BE BACKFILLED WITH GRANULAR MATERIAL APPROVED BY THE SUPERINTENDENT AND COMPACTION TO 95% OF MAXIMUM DRY DENSITY.
8. COMPACTION REQUIRED IS TO 95% OF THE MAXIMUM DRY DENSITY.
9. THE FOLLOWING CUT SLOPES ARE NOT TO BE USED IN ALL CIRCUMSTANCES:
 - ALLUVIAL CLAY DEPOSITS TO 10m FOR PERIODS LESS THAN 1 MONTH.
 - REDUCED SOILS & HIGHLY TO 1:1 IN 10m FOR PERIODS LESS THAN 1 MONTH.
 - STRIPPED MATERIAL TO BE STOCKPILED IN DESIGNATED AREAS AND CHARACTERISED WITH HYDROPHOBIC POLYMER TO CAP WATER RISK.
10. EXCAVATION TO BE REMOVED AS REQUIRED BY STAFF.
11. THERE IS TO BE NO TREE CLEARING WITHIN OR ADJACENT TO THE PROPOSED TIPPING AREA.
12. THE HIGHLIGHTS SHOWN ON THIS DRAWING FOR THE EXCAVATION ARE INDICATED BY THE POSITION OF THESE EARTHWORKS ARE TO ACHIEVE A FIRM FOUNDATION FOR THE EXISTING STADIA SURVEY. THE RECONSTRUCTION OF THE BANK SYSTEMS THE EXCAVATION WILL BE APPROVED BY THE SUPERINTENDENT.



ACCESS ROAD SETOUT DETAILS

POINT	X	Y	Z	POINT	X	Y
1	1841.6	5383.1	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	1948.3	5277.6	52.0			
10	1972.1	5326.8	55.0			
11	1947.8	5343.9	60.0			

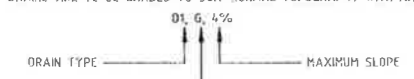
<p>1320 P331</p>		<p>MAUNSELL PROPRIETARY LIMITED</p>		<p>WHYTES GULLY LANDFILL</p>	
<p>DATE OF ISSUE: 19.2.93</p>		<p>PROJECT NO: 14892-002</p>		<p>DATE PLOTTED: 17.3.03</p>	
<p>GENERAL REVISION</p>		<p>DESIGNER: E. HADEN</p>		<p>PLANNED DWG: 17.3.03</p>	
<p>GENERAL REVISION</p>		<p>PROJECT DIRECTOR APPROVAL: D. MACLEOD</p>		<p>REVISION NO: 03</p>	
<p>GENERAL REVISION</p>		<p>SCALE: 1:100</p>		<p>DESIGN STATUS: DESIGN COMPLETE</p>	

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.
5. LINING WILL EITHER BE "G" - GRASS, "R" - RIP RAP OR "J" - JUTE.
6. FOR SOIL CONSERVATION STRUCTURES OF TEMPORARY WORKS REFER TO DRAWING 14892/005.
7. FOR DRAINAGE FROM INTERIM COVER SEE OPERATIONAL DETAILS ON DRAWING 14892/006.
8. DRAINAGE FROM BASE OF THE EASTERN GULLY LANDFILL DURING STAGES 1 & 2 WILL BE VIA NATURAL STREAM BEDS.
9. DURING CLOSURE OF THE WESTERN GULLY SITE ALL STORMWATER FROM THE TIPPING FACE WILL BE DRAINED TO THE LINED EASTERN LANDFILL.
10. DRAINAGE VIA EXISTING PIPE SYSTEM WILL REMAIN UNALTERED.
11. THE DAM LOCATION SHOWN ON THIS PLAN IS PRELIMINARY ONLY. DETAILED LOCATION WILL BE VERIFIED IN THE FIELD WITH A MORE DETAILED SURVEY.
12. DURING LINER CONSTRUCTION WHILE TIPPING IS STILL TAKING PLACE ON THE WESTERN GULLY ALL CLEAN STORMWATER IS TO BE DIVERTED ACROSS THE FRONT FACE OF WESTERN GULLY. AFTER WESTERN GULLY HAS BEEN CAPPED AND REACHED FINAL LANDFORM. ALL CLEAN STORMWATER FROM TOP OF CATCHMENT WILL BE DIVERTED ALONG THE WESTERN GULLY ACCESS ROAD.
13. THE CONSTRUCTION OF STAGE 1 OF THE LANDFILL WILL BE THE SUBJECT OF DETAILED DRAWINGS TO BE SUPPLIED BY THE CONTRACTOR IN CONSULTATION WITH COUNCIL.

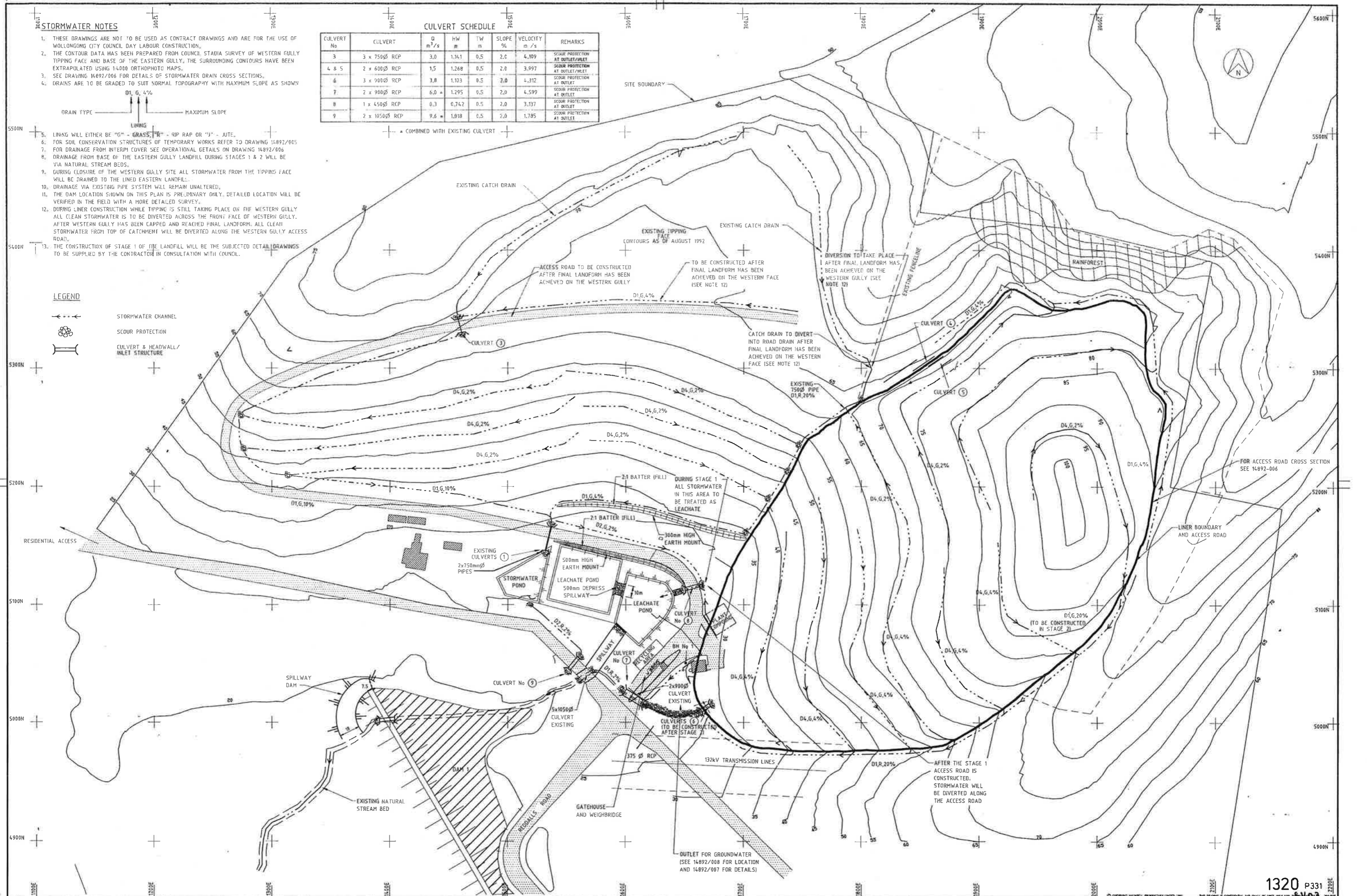
CULVERT SCHEDULE

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



LEGEND

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



REV.	DATE	DESCRIPTION	BY	CHECKED
01	26.3.93	GENERAL REVISION		
02	21.3.97	GENERAL REVISION		

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

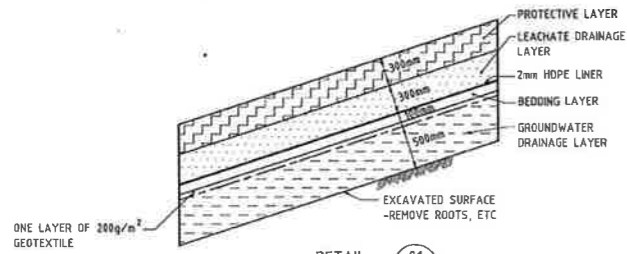
QUALITY RECORD	NAME	SIGNATURE	DATE
DRAWN	A.HALFORD		
CHECKED	E.HADEW		
PROJECT DIRECTOR	D.HACKLEO		

MAUNSELL PROPRIETARY LIMITED
A.C.N. 006 848 824

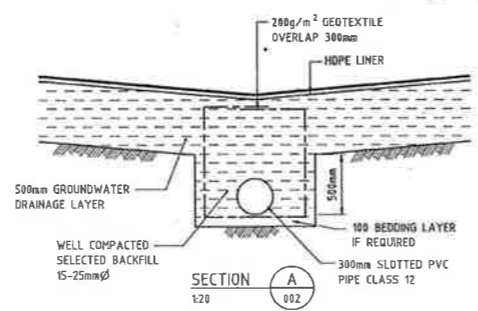


PROJECT TITLE	WHYTES GULLY LANDFILL
DATE OF ISSUE	26.3.93
DRAWING TITLE	PLANS.DWG
DATE PLOTTED	21.3.97
DWG No.	14892-003
REV.	02
DRG. STATUS	DESIGN COMPLETE

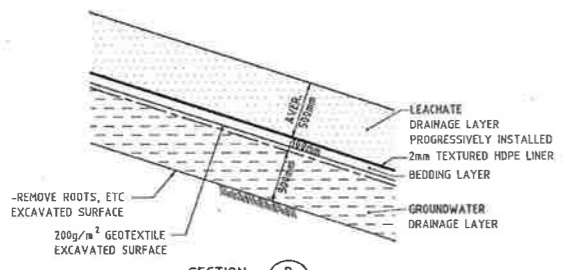
1320 P331



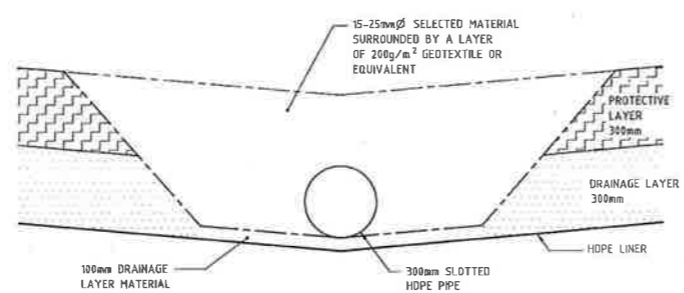
DETAIL 01
1:25
LINER SYSTEM DETAILS - FLAT SLOPES
IE: 1 IN 4



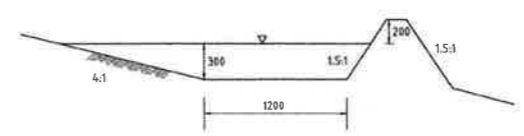
SECTION A
1:20
GROUNDWATER DRAIN



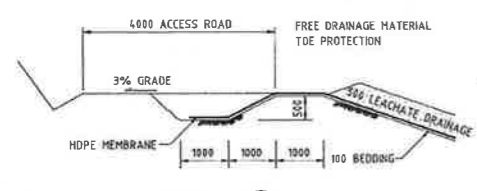
SECTION B
1:25
LINER SYSTEM DETAILS - STEEP SLOPES
IE: 1 IN 4 OR STEEPER



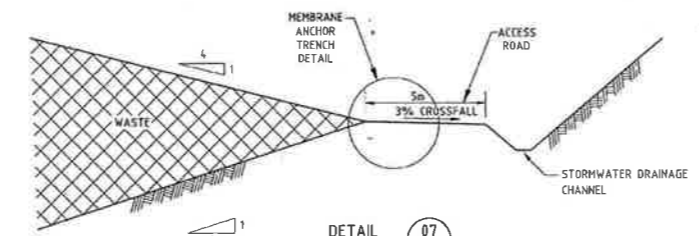
DETAIL 06
1:10
LEACHATE DRAIN DETAIL



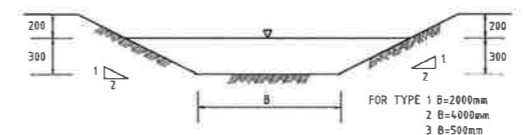
DETAIL 10
1:20
CONTOUR DRAIN DETAIL - TYPE 4



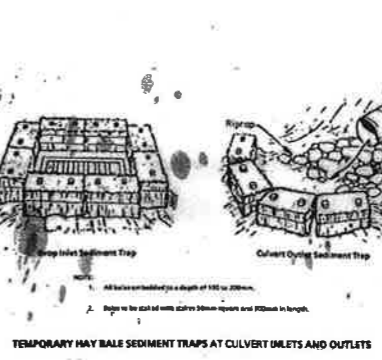
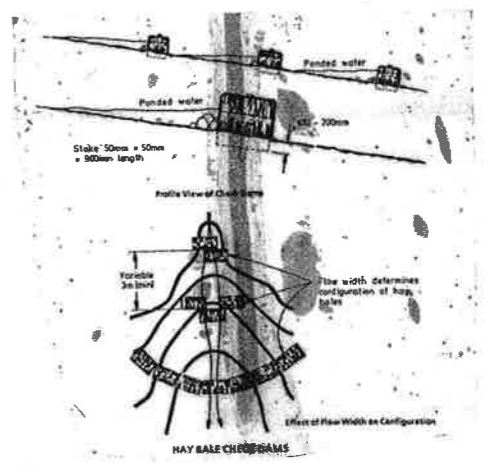
DETAIL 03
1:50
ANCHOR TRENCH DETAILS



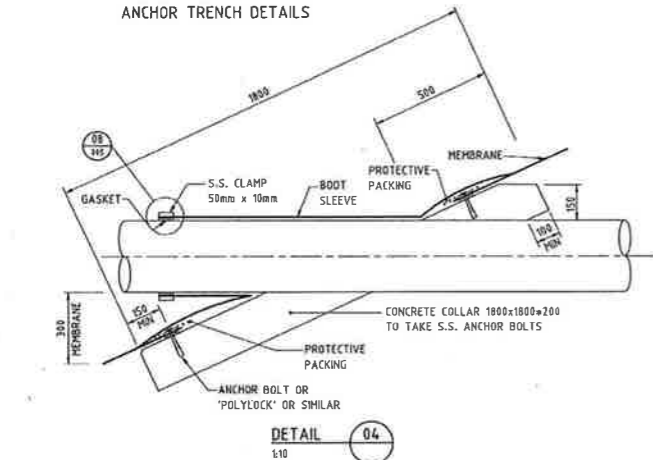
DETAIL 07
1:100
PERIMETER ACCESS ROAD



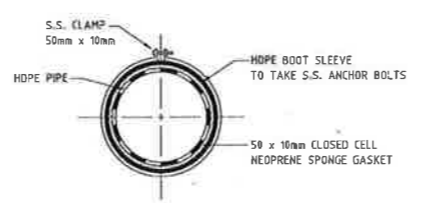
DETAIL 11
1:20
STORMWATER DRAIN DETAIL - TYPE 1, 2 & 3



TEMPORARY HAY BALE SEDIMENT TRAPS AT CULVERT INLETS AND OUTLETS

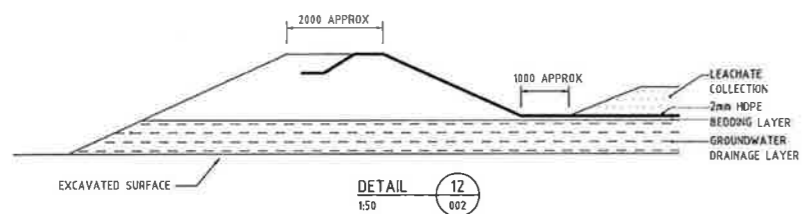


DETAIL 04
1:10
MEMBRANE/PIPE PENETRATION DETAIL

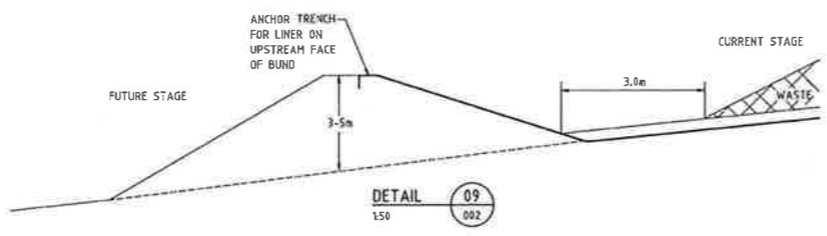


DETAIL 08
1:1
CLAMP DETAIL

- CONSTRUCTION DETAIL 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. LINER CONSTRUCTION DETAILS ARE PRELIMINARY TO GIVE INDICATION OF SCHEME OF WORKS AND TYPE OF DRAINAGE LAYERS REQUIRED.
 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.



DETAIL 12
1:50
EDGE OF LINER DETAIL



DETAIL 09
1:50
TEMPORARY BUND DETAIL

LINER & LEACHATE COLLECTION CONSTRUCTION DETAILS

LEGEND

MATERIAL TYPES	LINE TYPES
GROUNDWATER DRAINAGE	TEXTURED 2mm HDPE LINER
BEDDING	GEOTEXTILE
FREE DRAINAGE MATERIAL	LEACHATE PIPELINE
LEACHATE DRAINAGE	GROUNDWATER PIPELINE
PROTECTIVE LAYER	
VEGETATIVE LAYER	
CLAY LAYER	

NO.	DATE	DESCRIPTION	BY	CHECKED
1	14/09/2014	GENERAL REVISION		
2	14/09/2014	GENERAL REVISION		

QUALITY ASSURED	NAME	SIGNATURE	DATE
DESIGNER CHECKED	A. HILFORD		
DESIGNER CHECKED	E. HADEV		
PROJECT DIRECTOR APPROVED	D. HILFORD		

MAUNSELL PROPRIETARY LIMITED
A.O.N. 004 848 888



PROJECT TITLE	WHYTES GULLY LANDFILL	DATE OF ISSUE	16.2.93	SCALE	A0
DRAWING TITLE	CONSTRUCTION DETAILS	DATE PLOTTED		PLANS DWG	102
USER NO.	14892-005	DESIGNER		DATE	
DESIGN COMPLETE					

1320 P331

1320 SHS P331



STAGE 1 (Approx. 15 year life)

WOLLONGONG COUNCIL

WHYTE'S GULLY

PROPOSED LANDFILL SITE.

ULTIMATE LANDFORM AS FILLED

P331/1

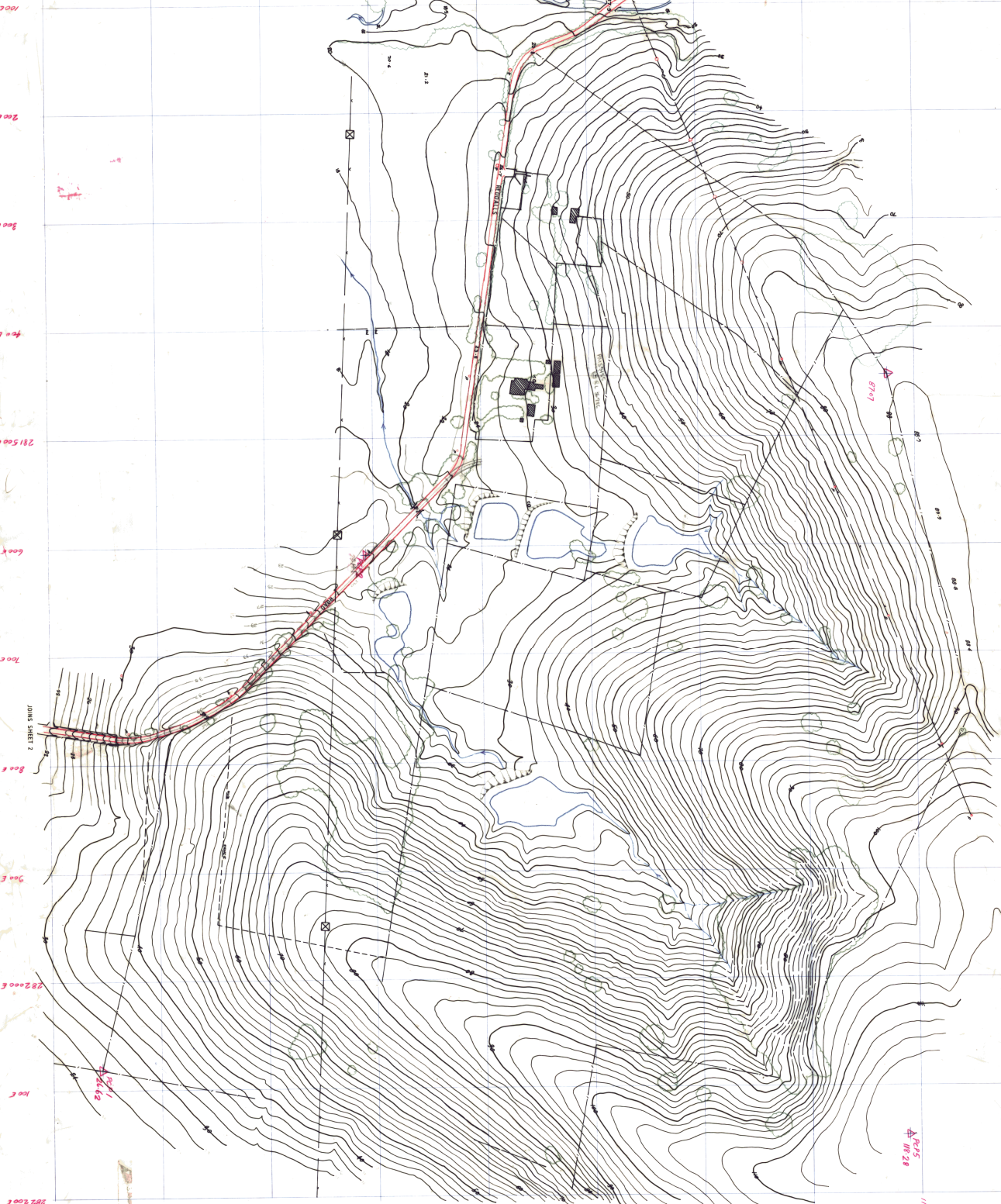
2684.1

<p>SCOTT & FURPHY ENGINEERS PTY. LTD. CONSULTING ENGINEERS & PLANNERS C.M.L. BUILDING DARWIN PLACE, CANBERRA CITY A.C.T. 2601 DRIVING PLACE: CANBERRA CITY A.C.T. 2601 AND 41 MELBOURNE STREET, SYDNEY, NSW AND LANCASTER</p>		<p>SCOTT & FURPHY CONSULTING GROUP</p>		<p>1:2000 (APPROX.) SHEET NO. 5H DRAWN BY: P.A. DATE: 1/11/11</p>	
<p>WOLLONGONG COUNCIL</p>		<p>WHYTE'S GULLY</p>		<p>PROPOSED LANDFILL SITE.</p>	
<p>ULTIMATE LANDFORM AS FILLED</p>		<p>P331/1</p>		<p>2684.1</p>	

X - 281000
Y - 115500

X - 283200
Y - 115700

X - 281000
Y - 117800



WINTERS GULCH - W. DUNN B.
1:1500
2nd V.I.

SMB-1
P 331/2
Sheet 1 of 2

SEARCHED
INDEXED

X - 281700
Y - 1181700

118700

118800

118900

119000

119100

119200

119300

119400

119500

119600

119700

119800

119900

120000

120100

120200

120300

120400

120500

120600

120700

120800

120900

121000

121100

121200

121300

121400

121500

121600

121700

121800

121900

122000

122100

122200

122300

122400

122500

122600

122700

122800

122900

123000

115500

115600

115700

115800

115900

116000

116100

116200

116300

116400

116500

116600

116700

116800

116900

117000

117100

117200

117300

117400

117500

117600

117700

117800

117900

118000

118100

118200

118300

118400

118500

118600

118700

118800

118900

119000

119100

119200

119300

119400

119500

119600

119700

119800

119900

120000

120100

120200

120300

120400

120500

120600

120700

120800

120900

121000

121100

121200

121300

121400

121500

121600

121700

121800

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122500

122600

122700

122800

122900

123000

JOINS SHEET 1



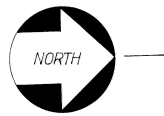
Total length of long section = 1342.92

WHYTES GULLY - W DARTO RD EXTN 1:1500

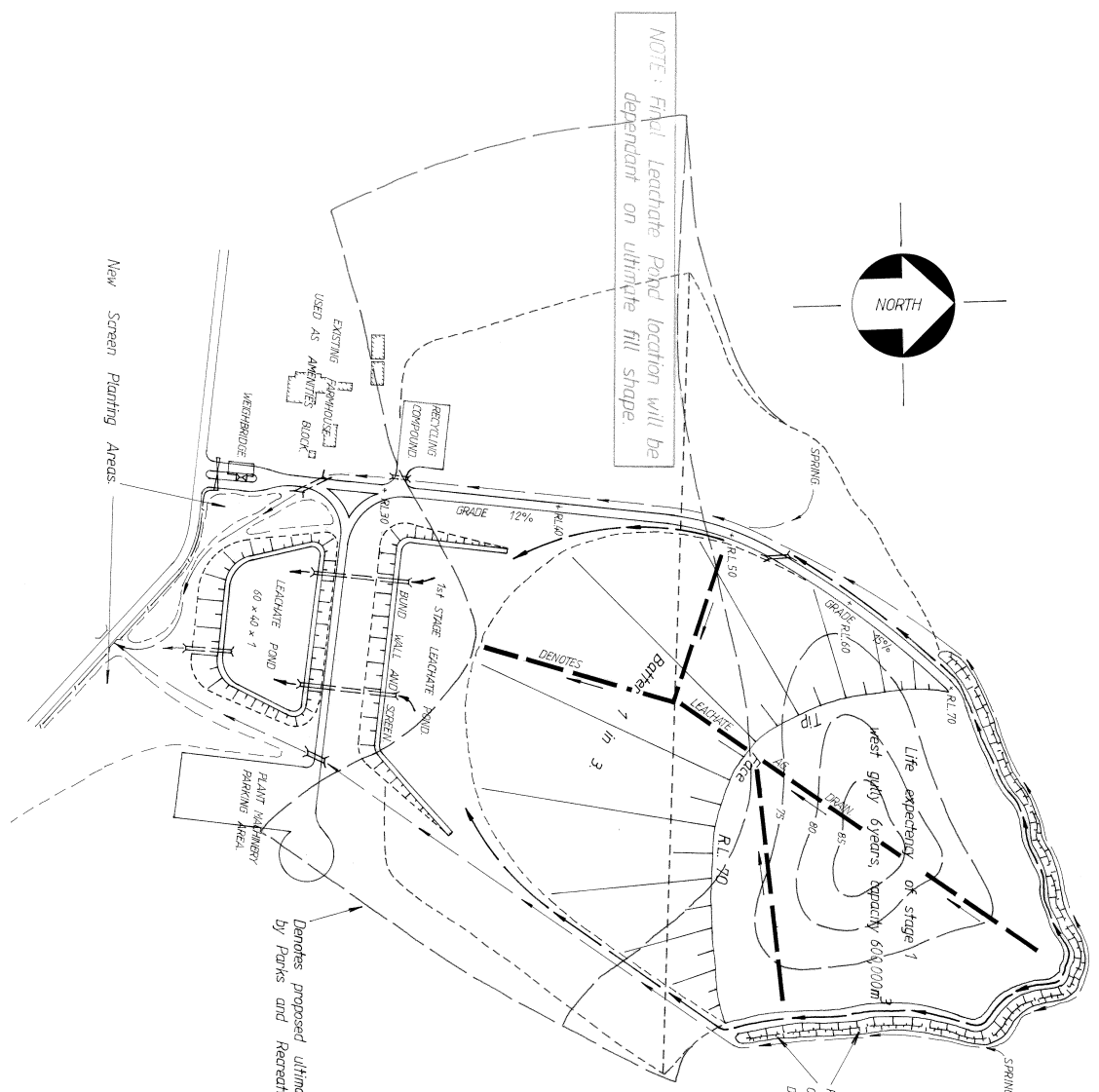
P 331/2-S102-1
Sheet 2 of 2

CANNED BY PLAN ROOM

281600 700 800 900 282000 1000 2000 3000 4000 5000 6000 7000 1184700 1184800 1184900



NOTE: Final Leachate Pond location will be dependant on ultimate fill shape.



SCHEDULE OF ULTIMATE LANDFILL DETAILS.

VOLUME OF GARBAGE	1,175,000m ³
AREA OF GARBAGE	9.6ha
QUANTITY OF TOPSOIL TO BE STOCKPILED	20,000m ³
QUANTITY OF POROUS MATERIAL STOCKPILED	40,000m ³

- Stormwater Catch Drain
- Denotes Leachate Catch Drain

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

SCALES		FIELD INSPECTION	
1 : 1500		DESIGN ENGINEER	
DATE	SURVEYOR	DATE	RELATED PLANS
A.H.D.		8-92	
FILE No.	BOOKS	CHECKED	DATE

ESTIMATE No.		AMENDMENTS	

COUNCIL APPROVAL	
DATE	MINUTE No.
CITY ENGINEER	

CITY OF WOLLONGONG

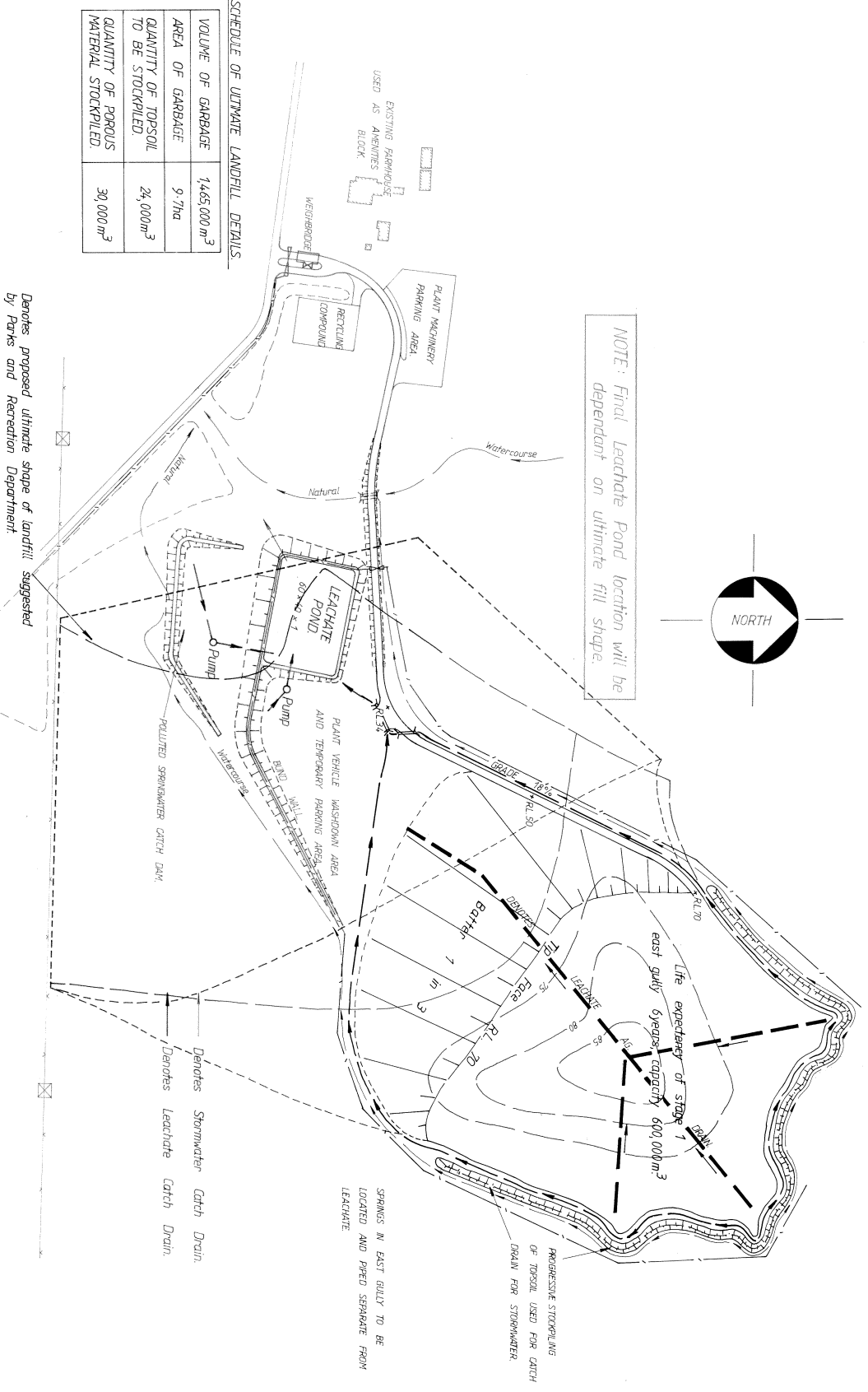
WHITES GULLY REFUSE SITE
WEST GULLY STAGE 1 DEVELOPMENT
GENERAL ARRANGEMENT
METHOD 1

INDEX BASE No.	
No. OF SHEETS	SHEET No.
4	1

DRAWING No. **P331/3**



NOTE: Final Leachate Pond location will be dependant on ultimate fill shape.



SCHEDULE OF ULTIMATE LANDFILL DETAILS.

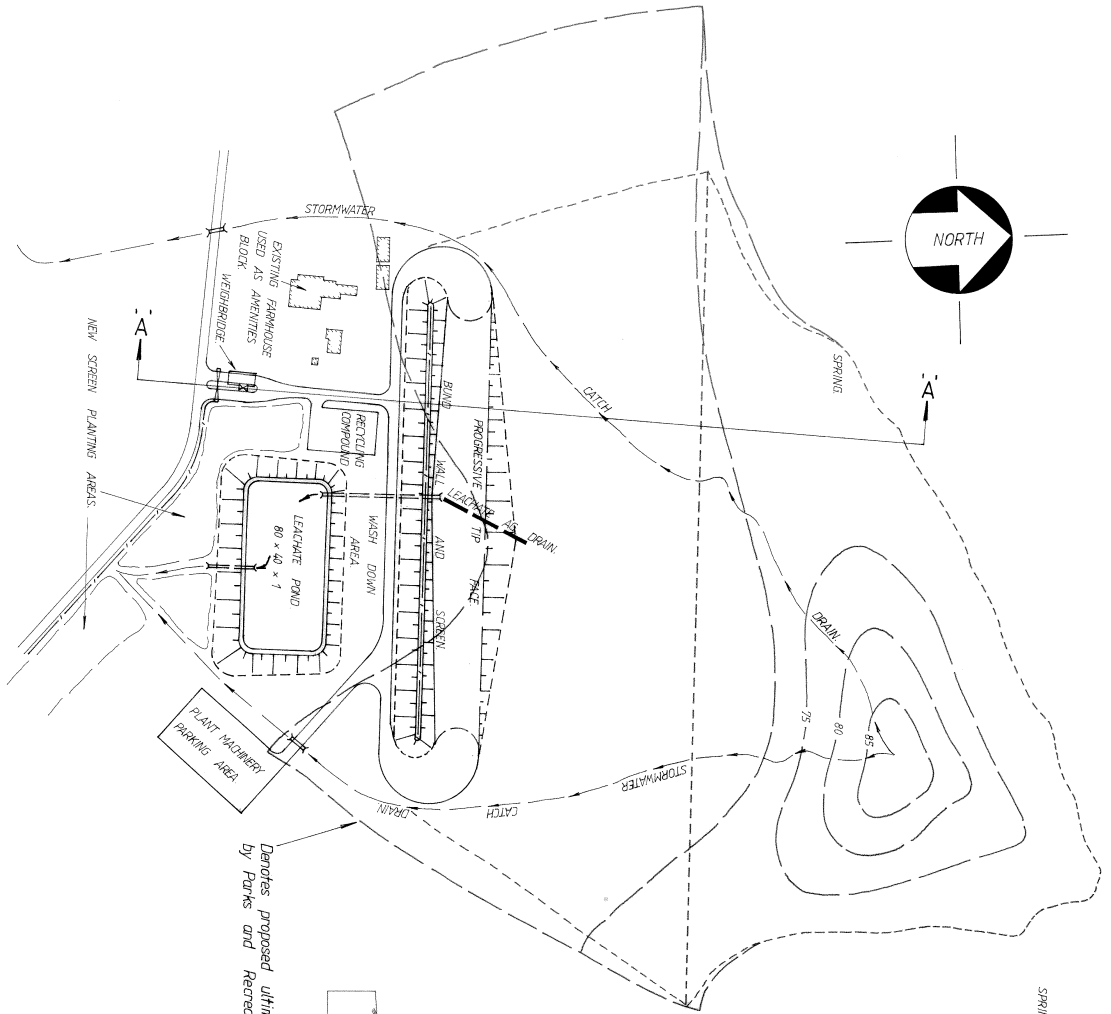
VOLUME OF GARBAGE	1,465,000 m ³
AREA OF GARBAGE	9.7ha
QUANTITY OF TOPSOIL TO BE STOCKPILED	24,000m ³
QUANTITY OF POROUS MATERIAL STOCKPILED	30,000m ³

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

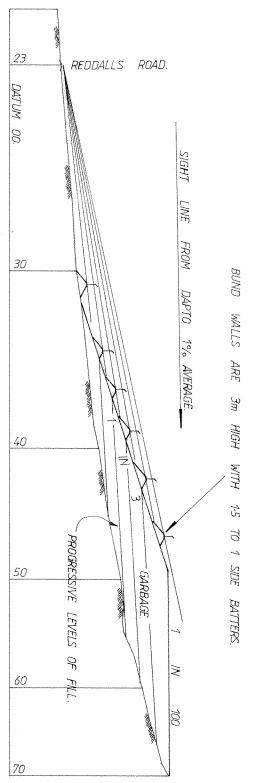
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SCALES		FIELD INSPECTION	
DATUM	DATE	DESIGN ENGINEER	
A.H.D.	8-82		
FILE NO.	BOOKS	CHECKED	DATE
DRAWN		RELATED PLANS	
L.J.			
ESTIMATE NO.		AMENDMENTS	
COUNCIL APPROVAL		CITY ENGINEER	
DATE	MANU. No.	DATE	
WHYTES GULLY REFUSE SITE		CITY OF WOLLONGONG	
EAST GULLY STAGE 1 DEVELOPMENT			
GENERAL ARRANGEMENT.			
METHOD 1			
INDEX BASE NO.		SHEET No.	
DRAWING No.		2	
P331/3			

A2



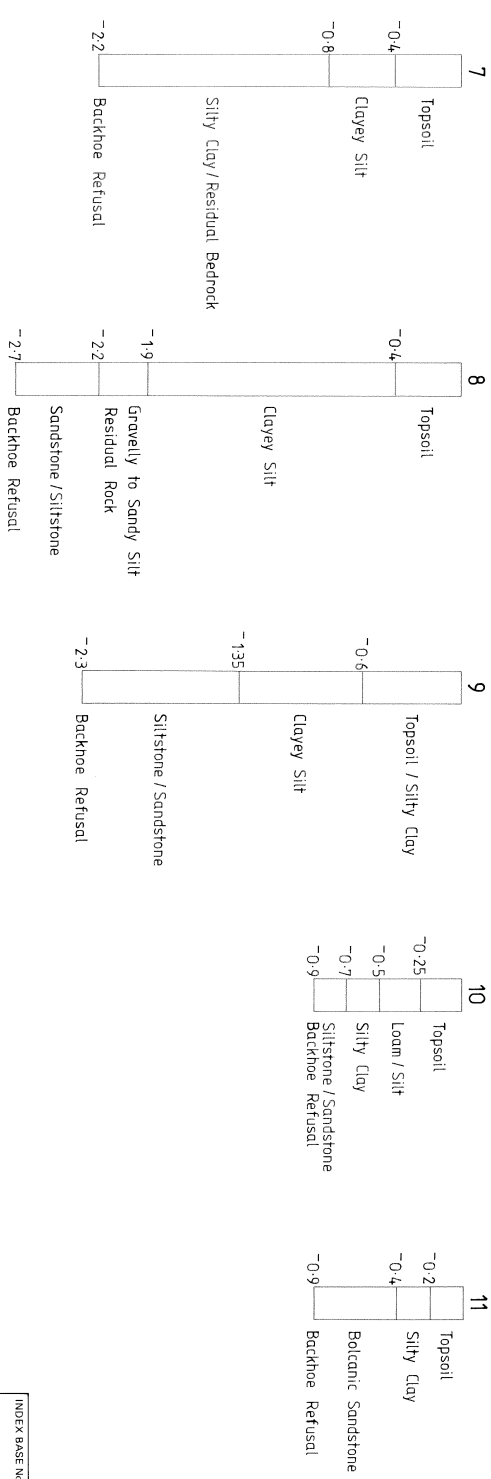
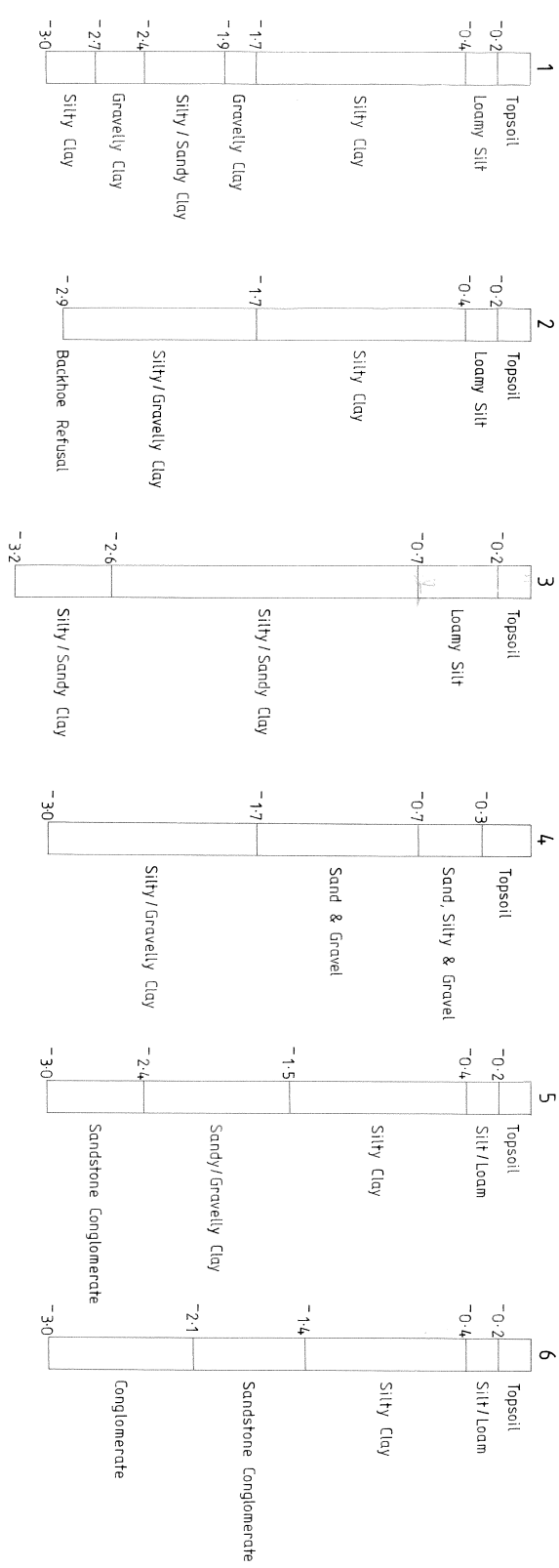
Denotes proposed ultimate shape of landfill suggested by Parks and Recreation Department



SECTION 'A - A'
SCALE 1:1500 NATURAL

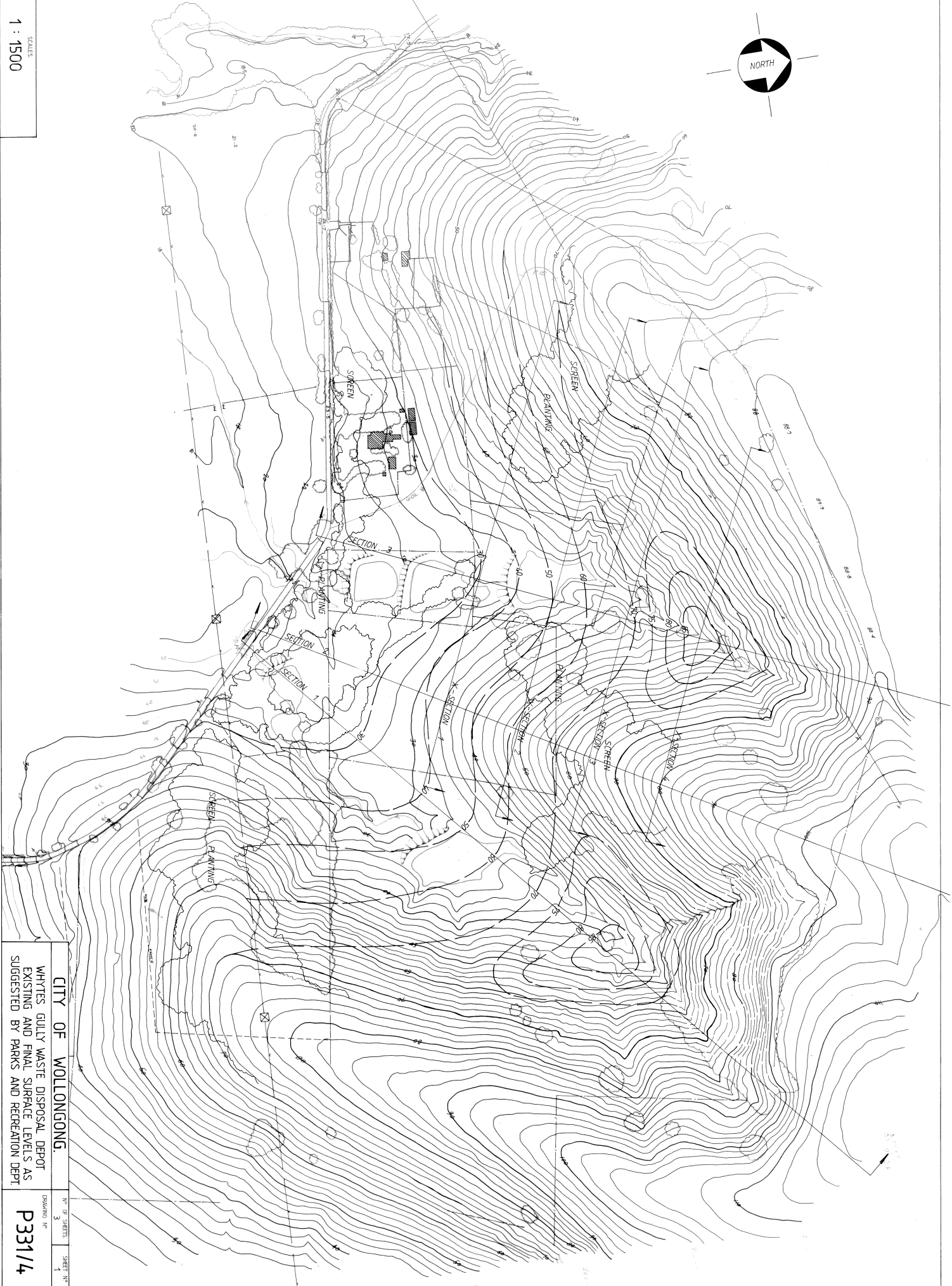
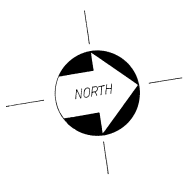
- Denotes Stormwater Catch Drain
- Denotes Leachate Catch Drain

SCALES		FIELD INSPECTION		COUNCIL APPROVAL		CITY OF WOLLONGONG		INDEX BASE No.	
DATUM	SUPERVISOR	DESIGN ENGINEER	DATE	DATE	DATE	MINUTE No.	WHYTES GULLY REFUSE SITE WEST GULLY SIGHT SCREENING PROVISIONS FOR FILLING METHOD 2.	No. OF SHEETS	SHEET No.
A.H.D.	BOOKS	PLANS	882		CITY ENGINEER			4	3
FILE No.	CHECKED	ESTIMATE No.	DATE	DATE	DATE	DATE	P331/3		
568x396mm	200								
TRIMMING EDGE								A2	



SCALES 1 : 20		FIELD INSPECTION DESIGN ENGINEER		DATE		DATE		DATE		DATE		DATE		DATE					
DATUM	SURVEYOR	DRAWN	RELATED PLANS	ESTIMATE No.	AMENDMENTS	DRAWN	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE				
FILE No.	BOOKS	CHECKED	DATE																
CITY OF WOLLONGONG				COUNCIL APPROVAL				CITY ENGINEER				CITY OF WOLLONGONG							
WHYTES GULLY REFUSE SITE				BORNE HOLE DETAILS				DRAWING No.				DRAWING No.							
P 331/3				No. OF SHEETS				SHEET No.				No. OF SHEETS				SHEET No.			
P 331/3				4				4				4				4			

locations in plan not shown to 27/8/82



SCALES
1 : 1500

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

DRAWING NO
P331/4

NO OF SHEETS	3
SHEET NO	1

TRIMMING EDGE

564 x 801 mm

1:1500 Nat.

SCALES

300

200

100

50

1

2

3

4

5

6

7

8

9

10

11

12

13

14

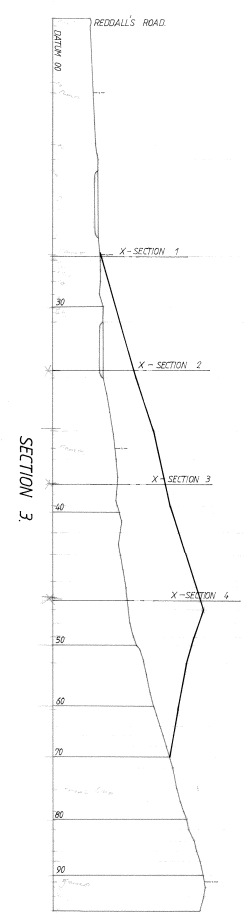
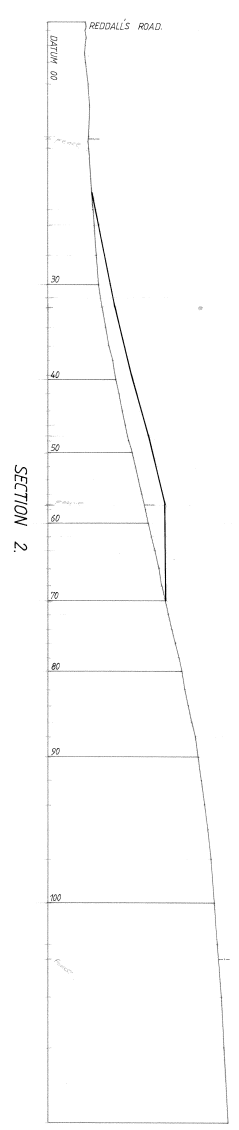
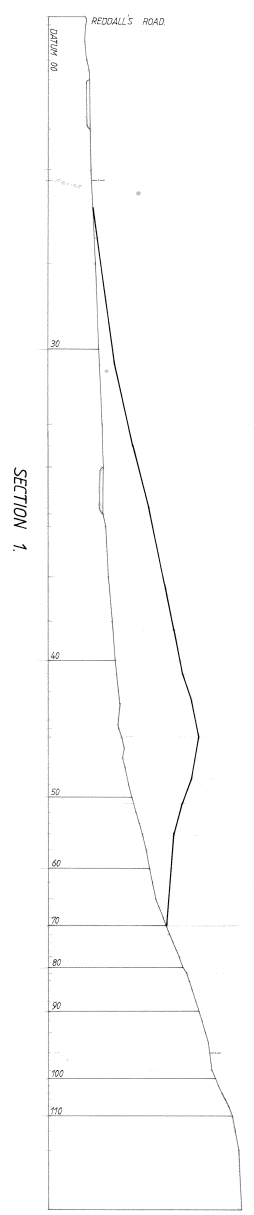
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16

17

18

19



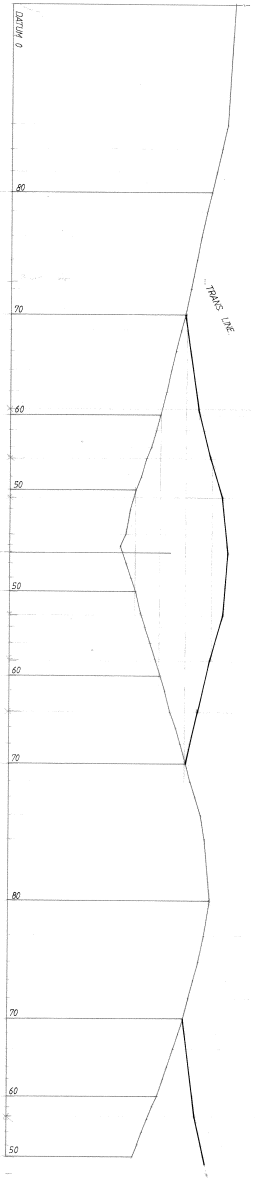
INDEX BASE No.

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

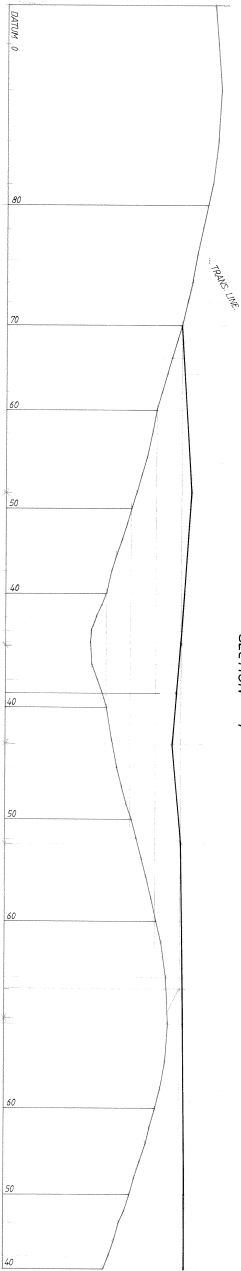
NO. OF SHEETS 3
 DRAWING No. P331/4
 SHEET No. 2

MAGX

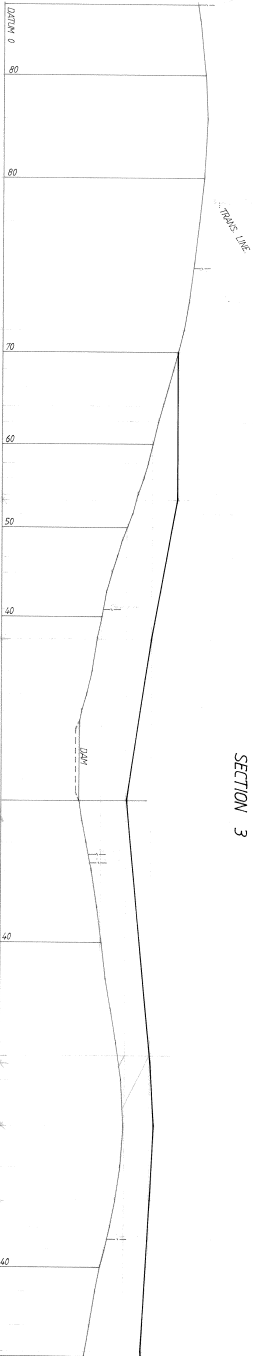
A1/2



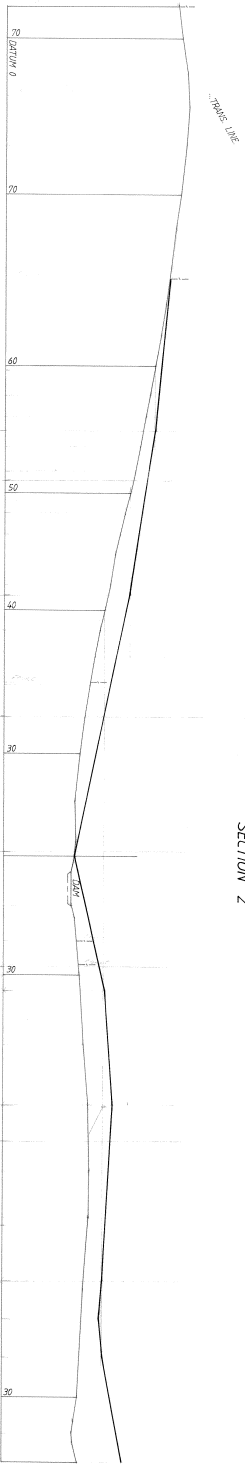
SECTION 4



SECTION 3



SECTION 2



SECTION 1

SCALES
1:1000 Nat.

300

300

300

300

300

300

300

300

INDEX BASE No.

CITY OF WOLLONGONG
WHYTES GULLY
WASTE DISPOSAL DEPOT
CROSS-SECTIONS WEST GULLY

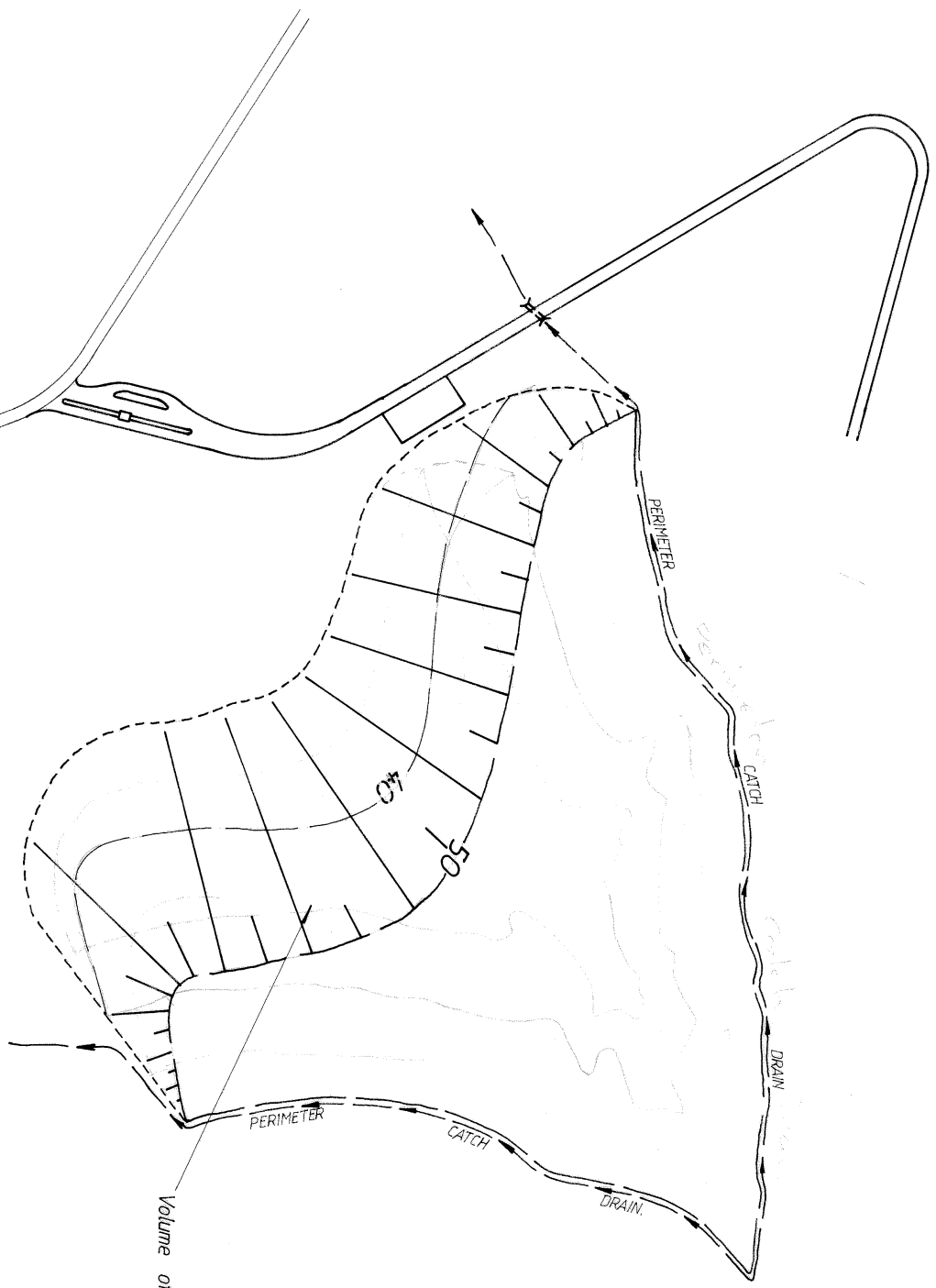
NO. OF SHEETS
3
DRAWING No.
P331/4
SHEET No.
3

MAGX

A1/2

TRIMMING EDGE

394x 283mm 150 100 50 2 3 4 5 6 8 A3



Volume of garbage for rise from RL40 to 50
232,000m³

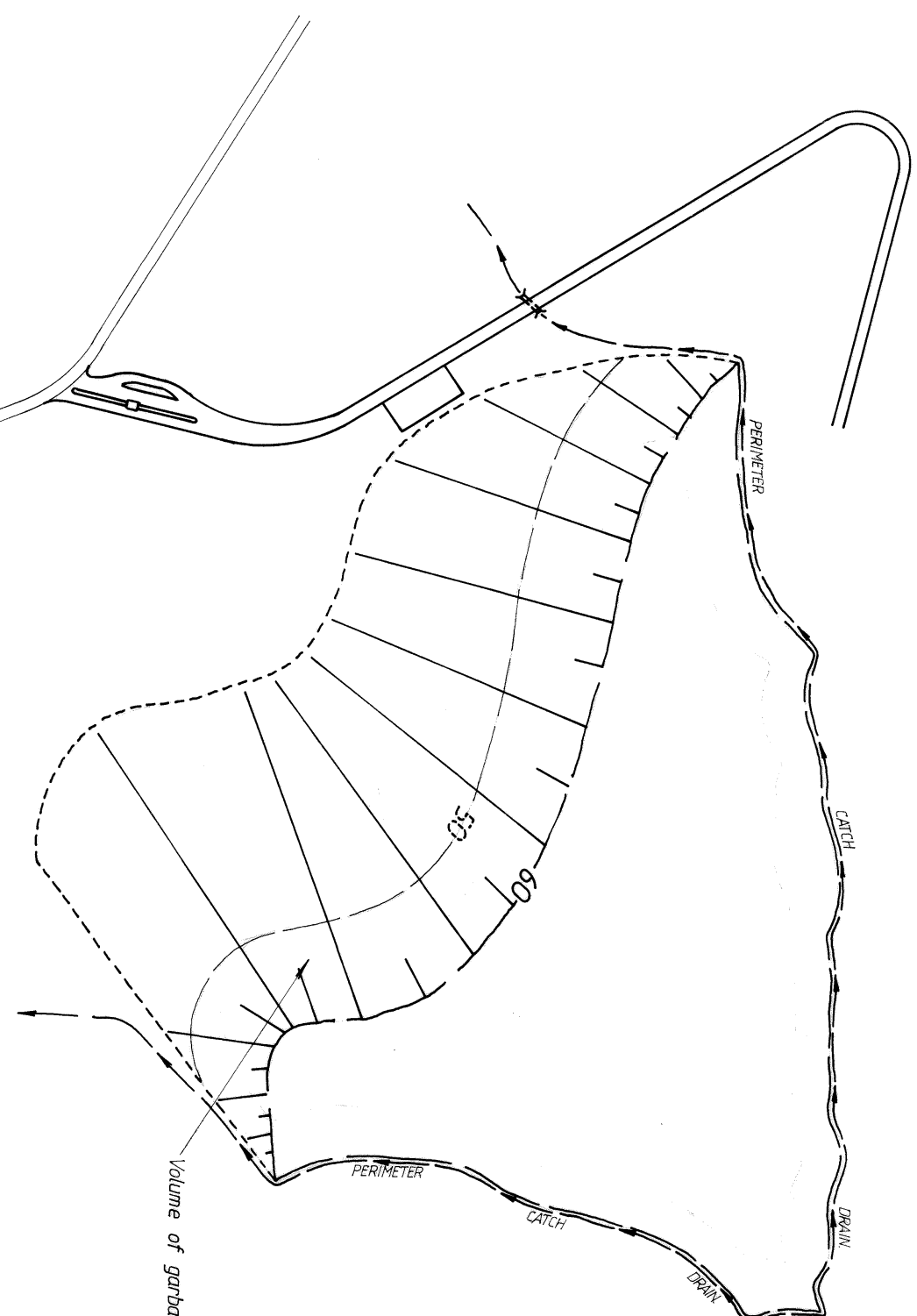
DATE COUNCILS APPROVAL	SCALE 1:1500	FILE No.
MINUTE No.	DRAWN L.J.	DATE 11-10-82
CITY ENGINEER	CHECKED	DATE
DATE	RELATED PLANS ESTIMATE No.	P331/5

CITY OF WOLLONGONG
WHYTES GULLY
PROGRESSIVE FILL OVERLAY.

INDEX BASE No.	No. OF SHEETS 4	SHEET No. 1
DRAWING No. P331/5		

TRIMMING EDGE

384x283mm 150 100 50 2 3 4 5 6 8 A3



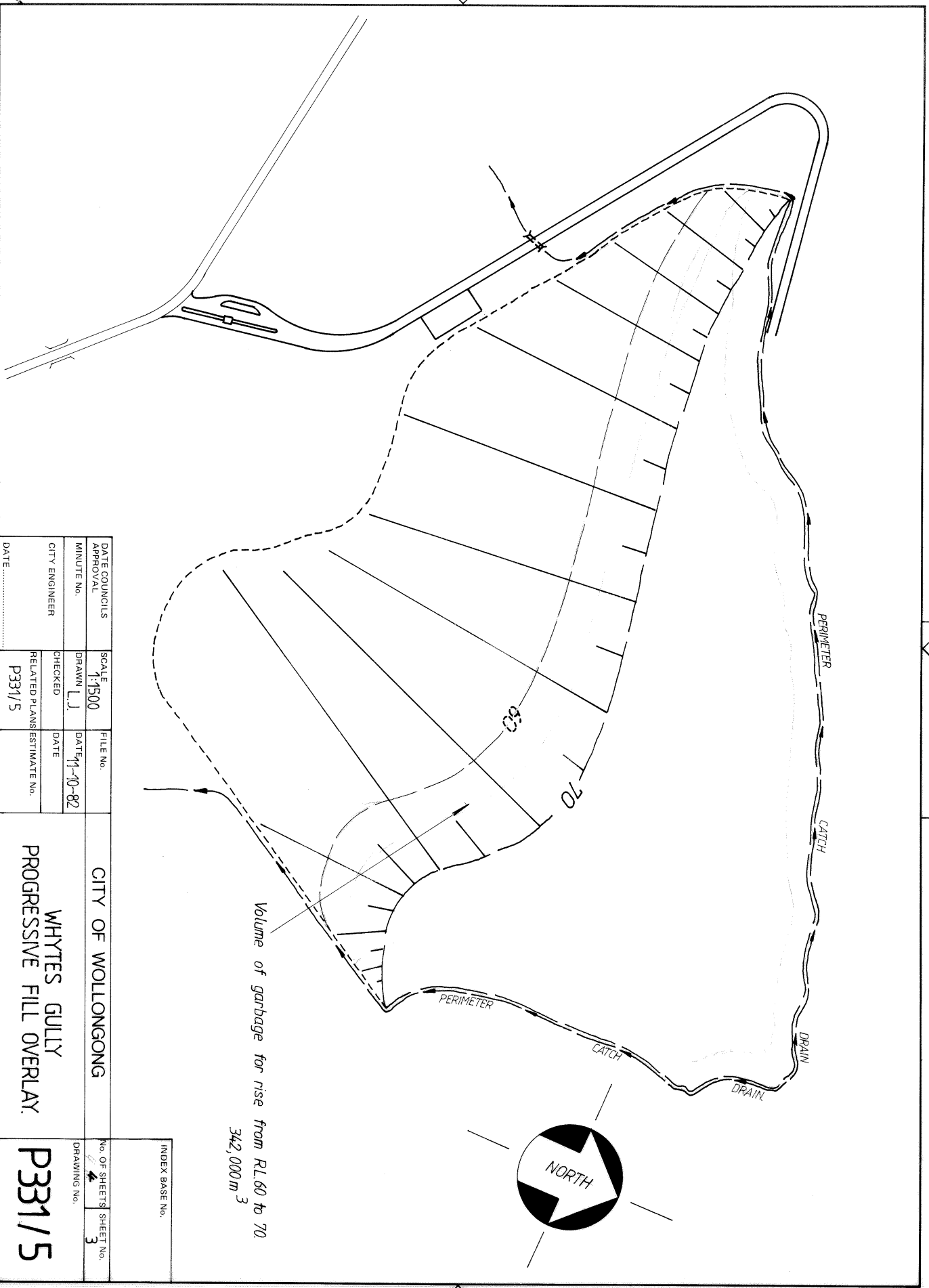
DATE COUNCILS APPROVAL	SCALE 1:1500	FILE No.
MINUTE No.	DRAWN L.J.	DATE 11-10-82
CITY ENGINEER	CHECKED	DATE
DATE	RELATED PLANS ESTIMATE No.	
	P331/5	

CITY OF WOLLONGONG
 WHYTES GULLY
 PROGRESSIVE FILL OVERLAY.

INDEX BASE No.
 No. OF SHEETS 4
 SHEET No. 2
 DRAWING No.
P331/5

TRIMMING EDGE

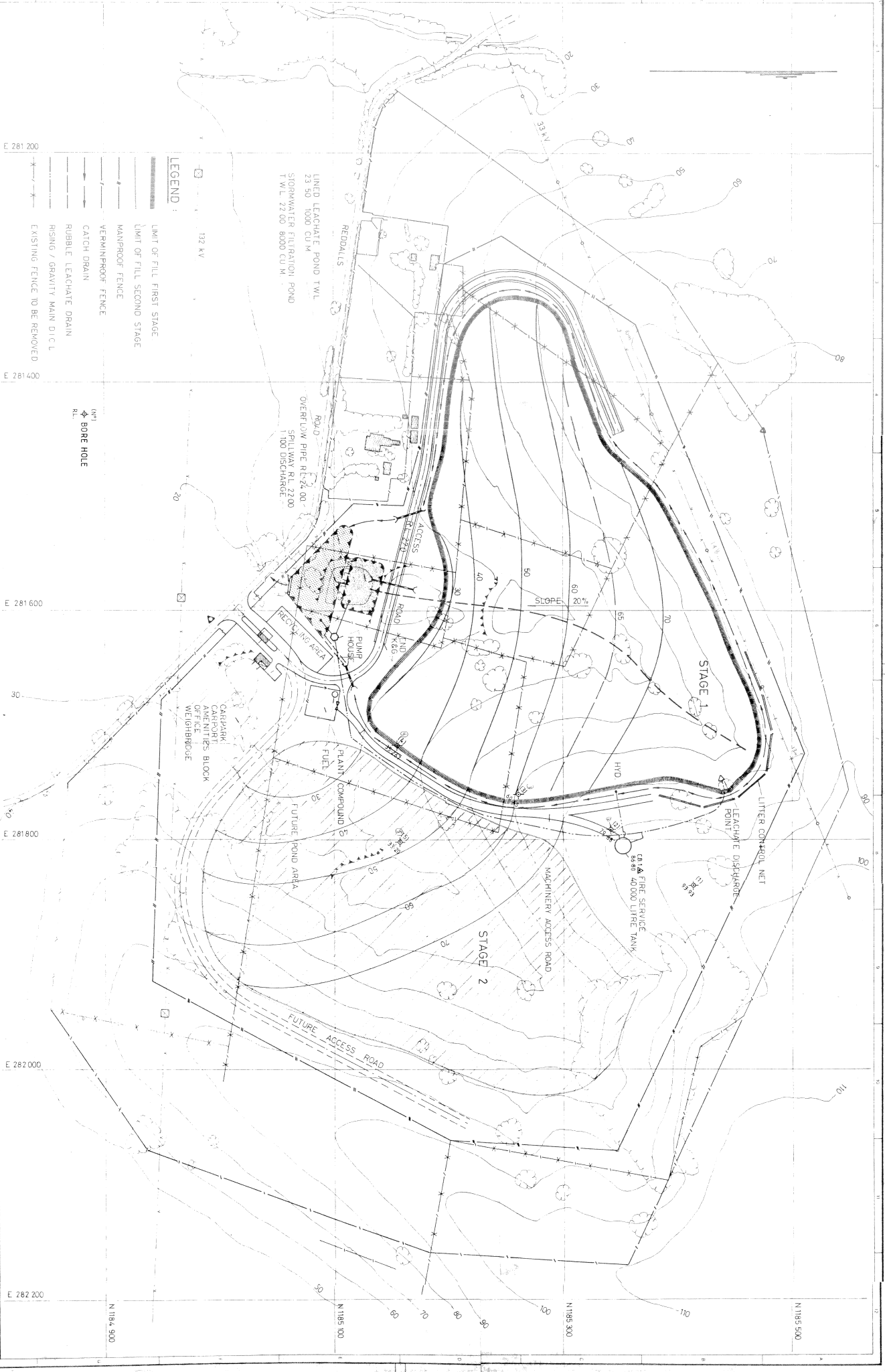
394x283mm 150 100 50 1 2 3 4 5 6



DATE COUNCILS APPROVAL	SCALE 1:1500	FILE No.	CITY OF WOLLONGONG	No. OF SHEETS SHEET No. 4 3
MINUTE No.	DRAWN L.J.	DATE 11-10-82		
CITY ENGINEER	CHECKED	DATE	WHYTES GULLY PROGRESSIVE FILL OVERLAY.	DRAWING No. P331/5
DATE	RELATED PLANS ESTIMATE No. P331/5			

INDEX BASE No.

A3



- LEGEND:**
- LIMIT OF FILL FIRST STAGE
 - LIMIT OF FILL SECOND STAGE
 - MANPROOF FENCE
 - VERMINPROOF FENCE
 - CATCH DRAIN
 - RIBBLE LEACHATE DRAIN
 - RISING / GRAVITY MAIN D.I.C.L.
 - EXISTING FENCE TO BE REMOVED

132 KV

(N1)
 BORE HOLE

E 281 200
 E 281 400
 E 281 600
 E 281 800
 E 282 000

N 1184 900
 N 1185 000
 N 1185 500

NO.	DESCRIPTION	DATE	BY	REVISION
1	ISSUED FOR TENDERS			
2	REVISED TO SHOW			
3	REVISED TO SHOW			
4	REVISED TO SHOW			
5	REVISED TO SHOW			
6	REVISED TO SHOW			
7	REVISED TO SHOW			
8	REVISED TO SHOW			
9	REVISED TO SHOW			
10	REVISED TO SHOW			

BORE HOLES 14/2/91
SURVEYOR: B HOGAN
BOOK NO: L91/1

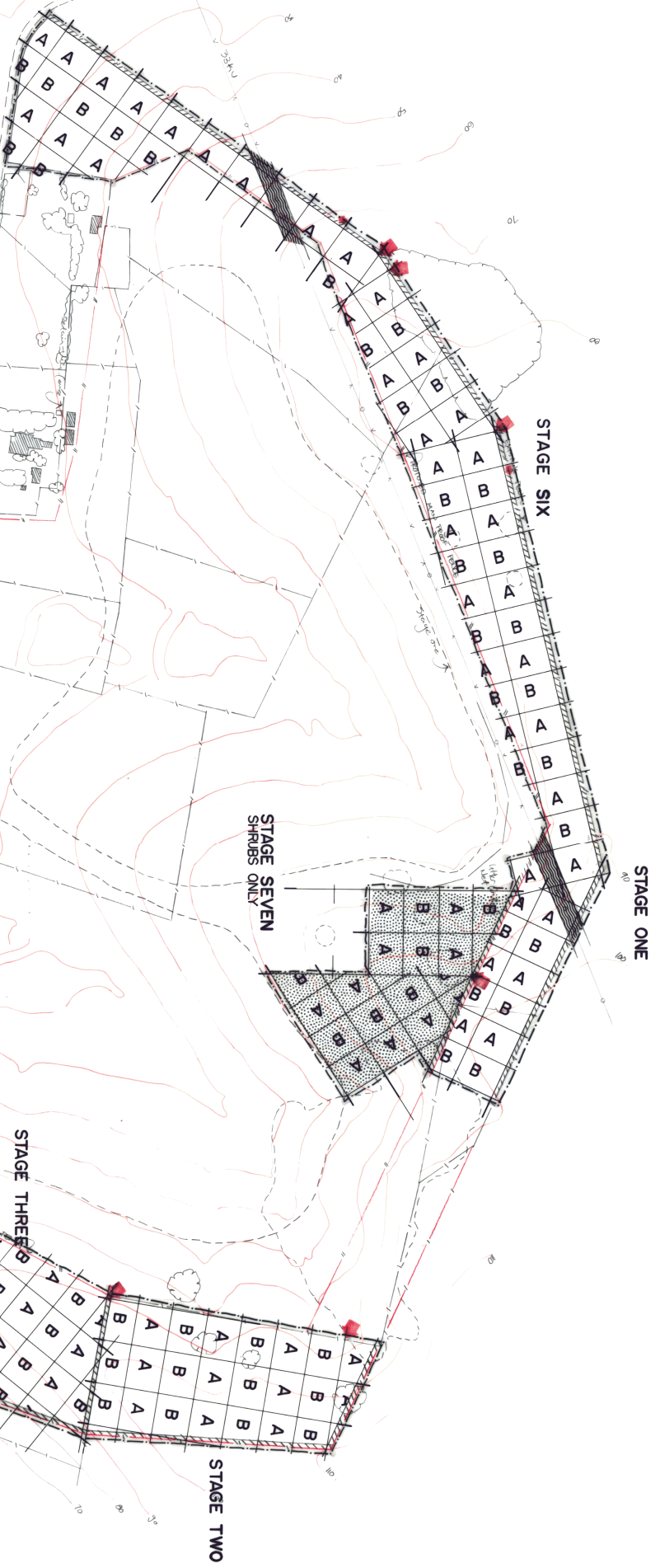
SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2617
 TELEPHONE (062) 512077
 AND AT MELBOURNE, SYDNEY, PERTH, HOUSTON AND LANCASTER

SCOTT & FURPHY CONSULTING ENGINEERS & PLANNERS

1:1500
 SCALE: 1:1500
 SHEET: S.H.
 DRAWING: D.G.
 DATE:

WOLLONGONG CITY COUNCIL
WHITES' GULLY LANDFILL SITE
GENERAL LAYOUT PLAN

P331/6



NOTE: STAGES ARE RELATED TO LAND OWNERSHIP & RESPECTIVE FENCELINES.

LEGEND

- CONTOUR LINES.
- - - VERMIM PROOF FENCE
- ||| MANPROOF FENCE
- ||||| 3m CLEARANCE ALONG FENCES AS INDICATED
- NO PLANTING
- STARTING LINE - GRID PATTERN
- END - GRID PATTERN
- EXISTING VEGETATION
- STARTING POINT - GRIDS

NOTE: GRIDS ARE 25m SQUARE. REFER TO SHEET, NO. 2. DIRECTION OF GRIDS TO CHANGE ON OLD FENCE LINES OR AS INDICATED TO CONFORM WITH TOPOGRAPHY

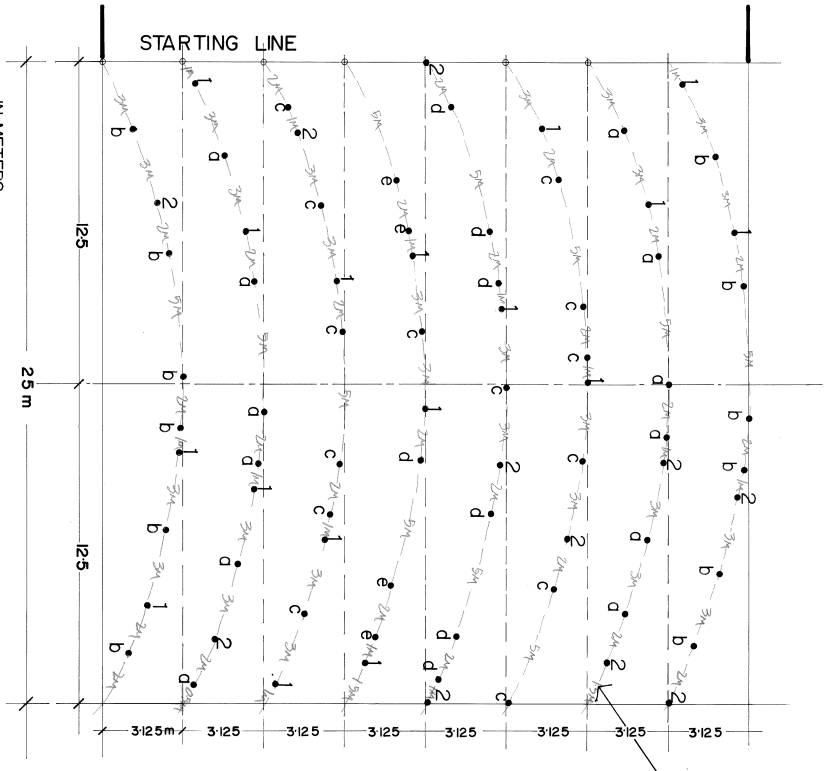


DRAWING NO. **H.S.MIT** FILE NO. _____
 DATE **FEB 84**
 CONTROLLED BY _____
 DATE **2.7.84** MANUTE NO. _____
 SCALE **1:1500**

Amendments Revised Staging NO. 1 DATE 17.5.84
S&F 2798-01-2

PROJECT **WHYTES' GULLY LANDFILL SITE PLANTING PLAN**
 NO. OF SHEETS **2** SHEET NO. **1**
 DRAWING NO. **P 331/7** Loc. - 1

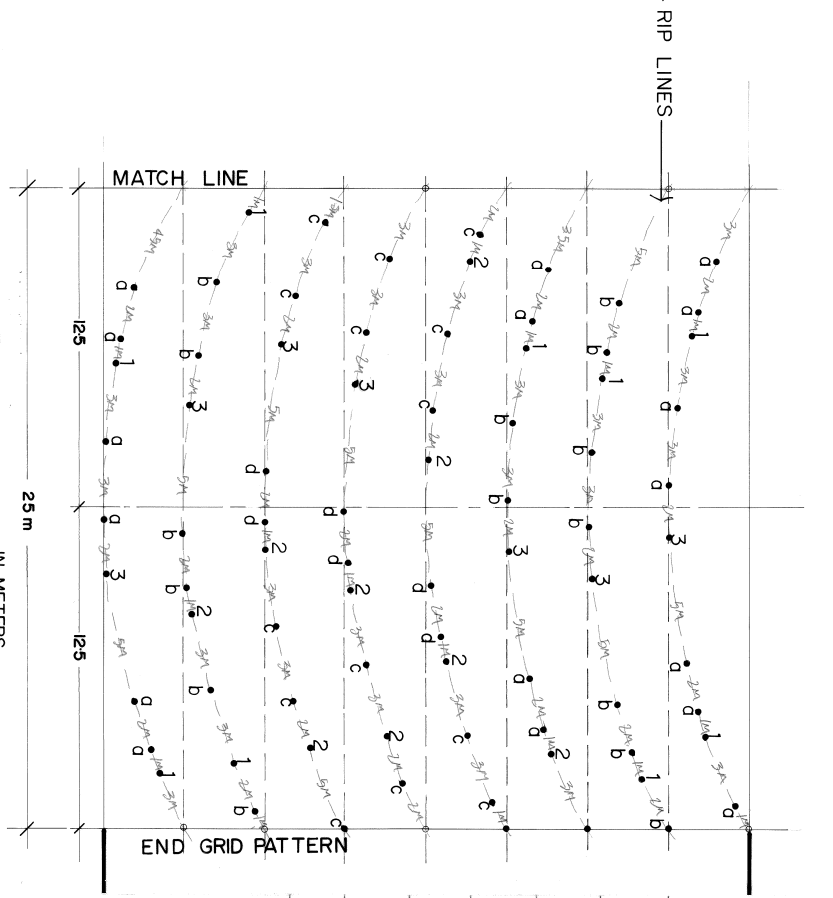
PROJECTED BY **PLANNING ROOM**
 WOLLONGONG CITY COUNCIL
 PARKS AND RECREATION DEPARTMENT



IN METERS
1:3.3.25.2. PATTERN FOR SPACING PLANTS ALONG RIP LINES.
GRID-A

KEY:

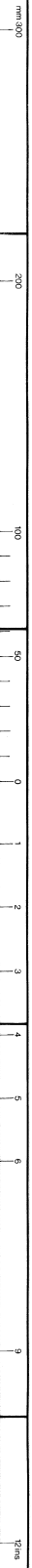
PLANT	TERETICORNIS	SIEBERI	BINERVATA	MEARNsii	SALIGNUS	TRIQUETRA	MYRTIFOLIA	GRID-A TOTAL
1 EUCALYPTUS	17							
2 EUCALYPTUS		11						
d ACACIA			12					
b ACACIA				12				
c CALLISTEMON					14			
d DODONAEA						7		
e BACKHOUSIA							4	
GRID-A TOTAL	17	11	12	12	14	7	4	77



IN METERS
1:3.3.25.2.
GRID-B

KEY:

PLANT	TERETICORNIS	QUADRANGULATA	STYPHELOIDES	BINERVATA	MEARNsii	IMPLEXA	SMITHII	GRID-B TOTAL
1 EUCALYPTUS	9							
2 EUCALYPTUS		9						
3 MELALEUCA			7					
d ACACIA				17				
b ACACIA					15			
c ACACIA						14		
d ACMENNA							7	
GRID-B TOTAL	9	9	7	17	15	14	7	78

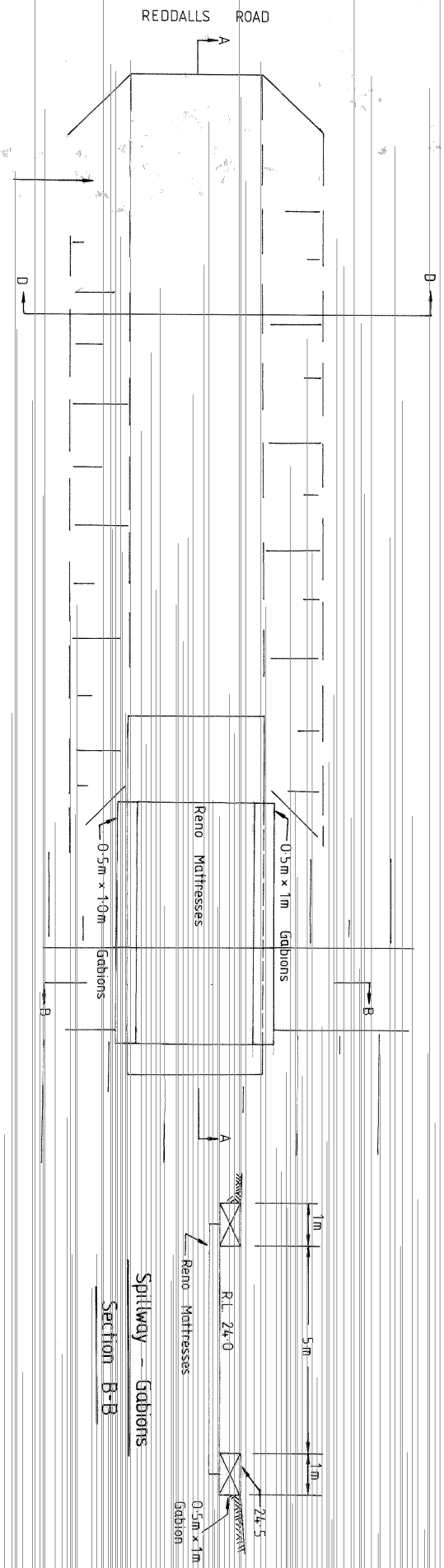


NOS OF	GRID	STAGE 1		STAGE 2		STAGE 3		STAGE 4		STAGE 5		STAGE 6		
		As	Bs	12	10	20	23	21	13	7	6	12	14	
ACACIA binervata	12	17	456	544	144	178	248	340	252	221	84	102	144	204
ACACIA mearnsii	12	15	456	480	144	150	240	300	252	195	84	90	144	210
ACACIA implexa	14	14	532	448	168	140	280	280	294	182	98	84	168	196
ACMENNA smithii	-	7	-	224	-	70	-	140	-	91	-	42	-	98
DODONAEA triquetra	7	-	266	-	84	-	140	-	147	-	49	-	84	-
CALLISTEMON salignus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EUCALYPTUS tereticornis	17	9	646	288	-	-	340	180	397	117	119	54	204	126
quadrangulata	-	9	-	288	-	-	-	180	-	117	-	54	-	126
sieberi	11	-	418	-	-	-	220	-	231	-	77	-	132	-
MELALEUCA stypheleoides	-	7	-	224	-	-	-	140	-	91	-	42	-	98
BACKHOUSIA myrtifolia	4	-	152	-	48	-	80	-	84	-	28	-	48	-
TOTAL	77	78	2926	2496	588	530	1540	1560	1617	1014	539	468	924	1098
	155	5422	1110	3100	2631	1007	1982	15260						

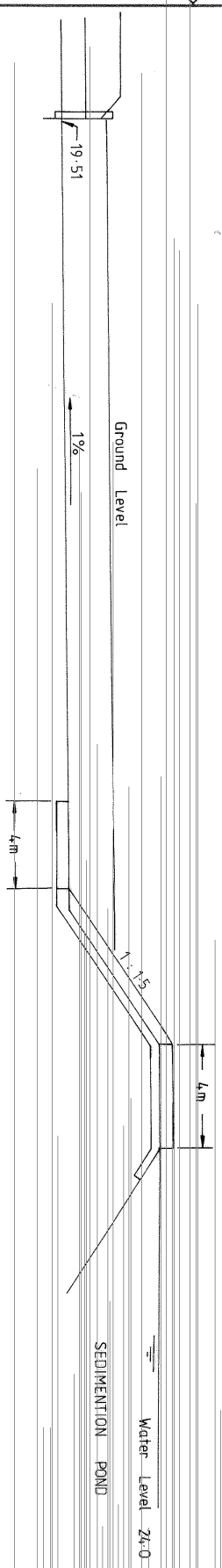
PROJECT: WHYTES GULLY LANDFILL SITE LANDSCAPE PLAN
 DRAWING NO: P331/7
 NO. OF SHEETS: 2 SHEET NO. 2
 WOLLONGONG CITY COUNCIL PARKS AND RECREATION DEPARTMENT

DATE: 28.3.84
 SCALE: 1:200
 PREPARED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 DATE: [Signature]
 INDEX BASE NO. [] NO. [] DATE []
 AMENDMENTS: [] NO. [] DATE []

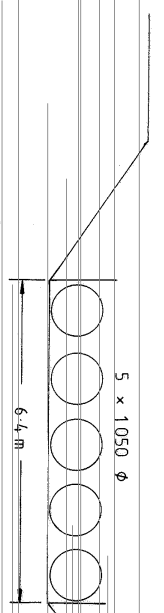




Gross Channel From Spillway To Pipe Culvert



Section A-A

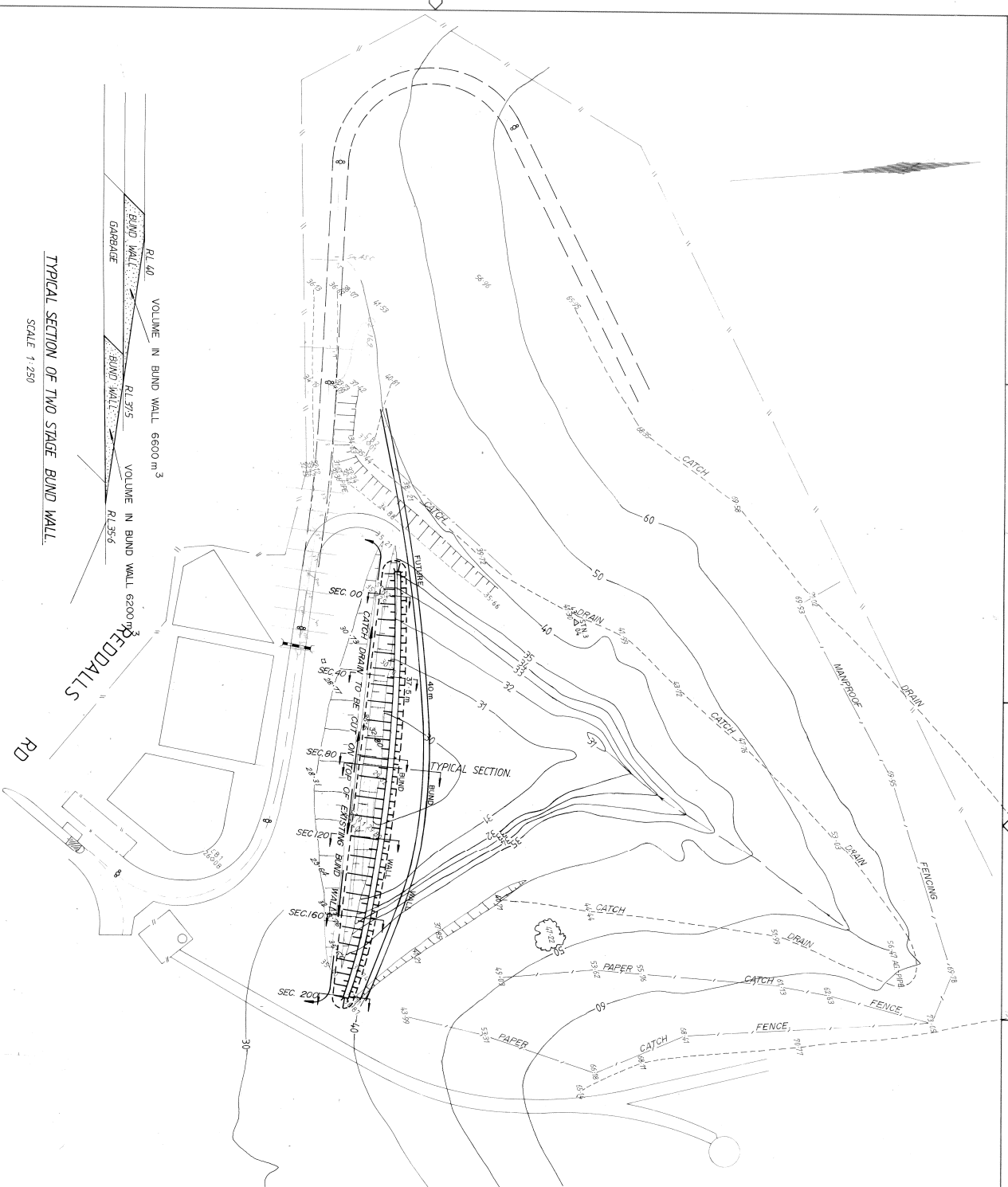


Section D-D

DATE COUNCILS APPROVAL	SCALE N/S	FILE No.
MINUTE No.	DRAWN S.A.D.	DATE 7/78
CITY ENGINEER	CHECKED	RELATED PLANS ESTIMATE No.
DATE		

CITY OF WOLLONGONG
 Sketch of Proposed
 Spillway & Grassed Channel
 Whyte's Gully Land Fill

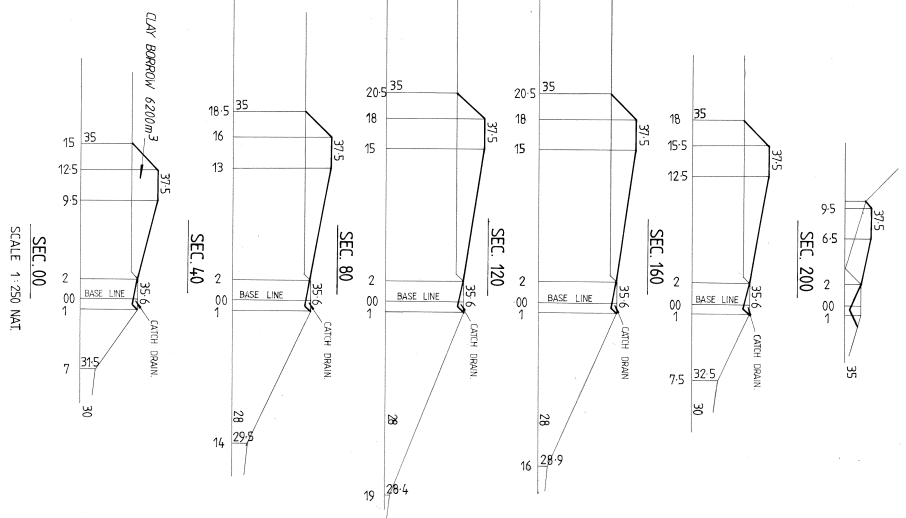
INDEX BASE No.	No. OF SHEETS SHEET No.
	DRAWING No.
	P331/9



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

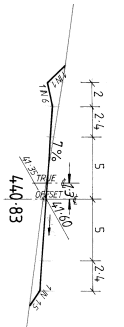
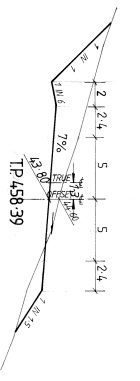
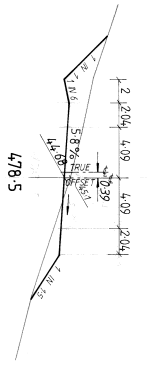
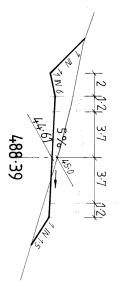
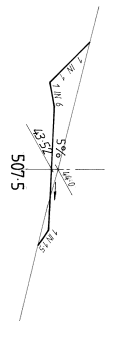
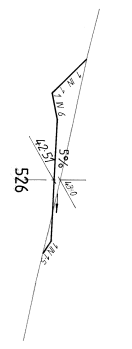
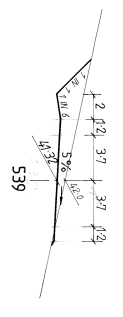
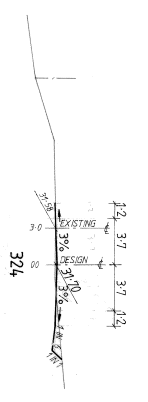
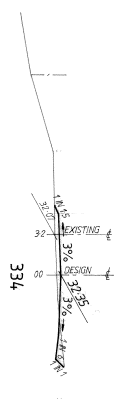
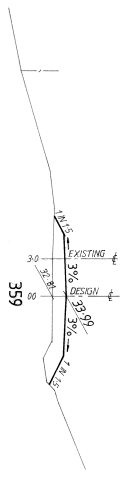
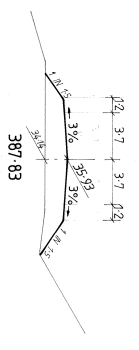
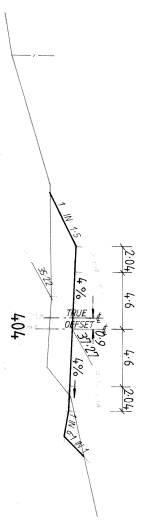
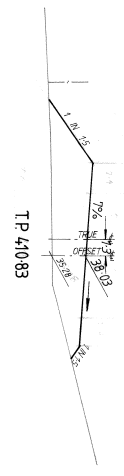
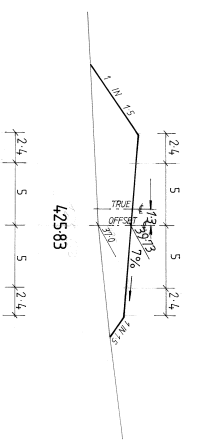
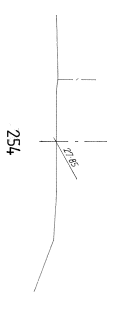
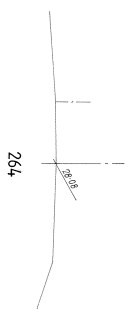
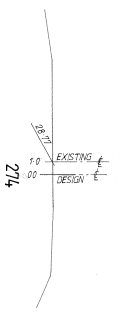
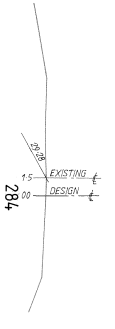
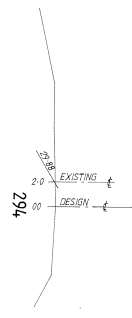
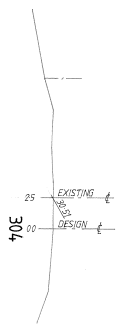
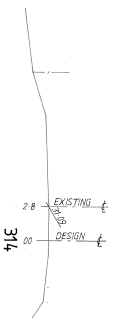
Volume of second lift to RL 375 = 49800m³ L.J. 25/3/85
Volume of first lift to RL 35 = 41270m³ M.J.T. 25/3/84

RL 40 VOLUME IN BOUND WALL 6600m³
RL 375 VOLUME IN BOUND WALL 6200m³
RL 35.6 VOLUME IN BOUND WALL 6200m³



PLAN		SCALE 1:1000		DESIGNER		DATE	
LONG SECTION	VERT			RELATED PLANS		DATE	
DATE	SUBSCRIPTION	DRAWN	CHECKED	DATE	DATE	DATE	DATE
A	R	1	1	1	1	1	1
FILE NO.	BOOKS	DATE	DATE	ESTIMATE NO.	DATE	DATE	DATE
Q 1301/132	RM 3/84	13/9/71	22/3/85				

STARTING DATE OF TIP 24-10-84		CITY OF WOLLONGONG	
WHITES GULLY		ASSOCIATED WORKS TO LIFT RL 375 P 331/10/1	
INDEX	BASE	NO.	NO.



SCALES
1:200 Nat.



CITY OF WOLLONGONG

WHITES GULLY
ACCESS ROAD TO TIP FACE TO
SUIT LIFT RL40. CROSS SECTIONS

NO. OF SHEETS 2
SHEET NO. 2
DRAWING NO. P 331/10/2

MAGX 2020/02
AI/2



Volume of first lift to R.L.35=41270m N.A.T. 2.8.84

PLAN		SCALE: 1:1000		FIELD INSPECTION	
LONG SECTION	VERT	DATE	DESIGNED	DATE	DESIGN ENGINEER
SURVEYOR		DRAWN		RELATED PLANS	
A.H.D. R. MORRIS		CHECKED		ESTIMATE No.	
G.130/172 RM 384		DATE		DATE	
AMENDMENTS		DATE		DATE	
COUNCIL APPROVAL		DATE		DATE	
CITY OF WOLLONGONG		DATE		DATE	
P 331/10		DATE		DATE	
MAGX		DATE		DATE	
AI		DATE		DATE	

STARTING DATE OF TIP 24-10-84

INDEX BASE No.

NO. OF SHEETS
DRAWING No.
P 331/10

SHEET No.

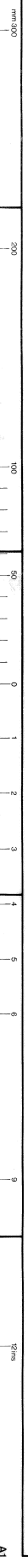
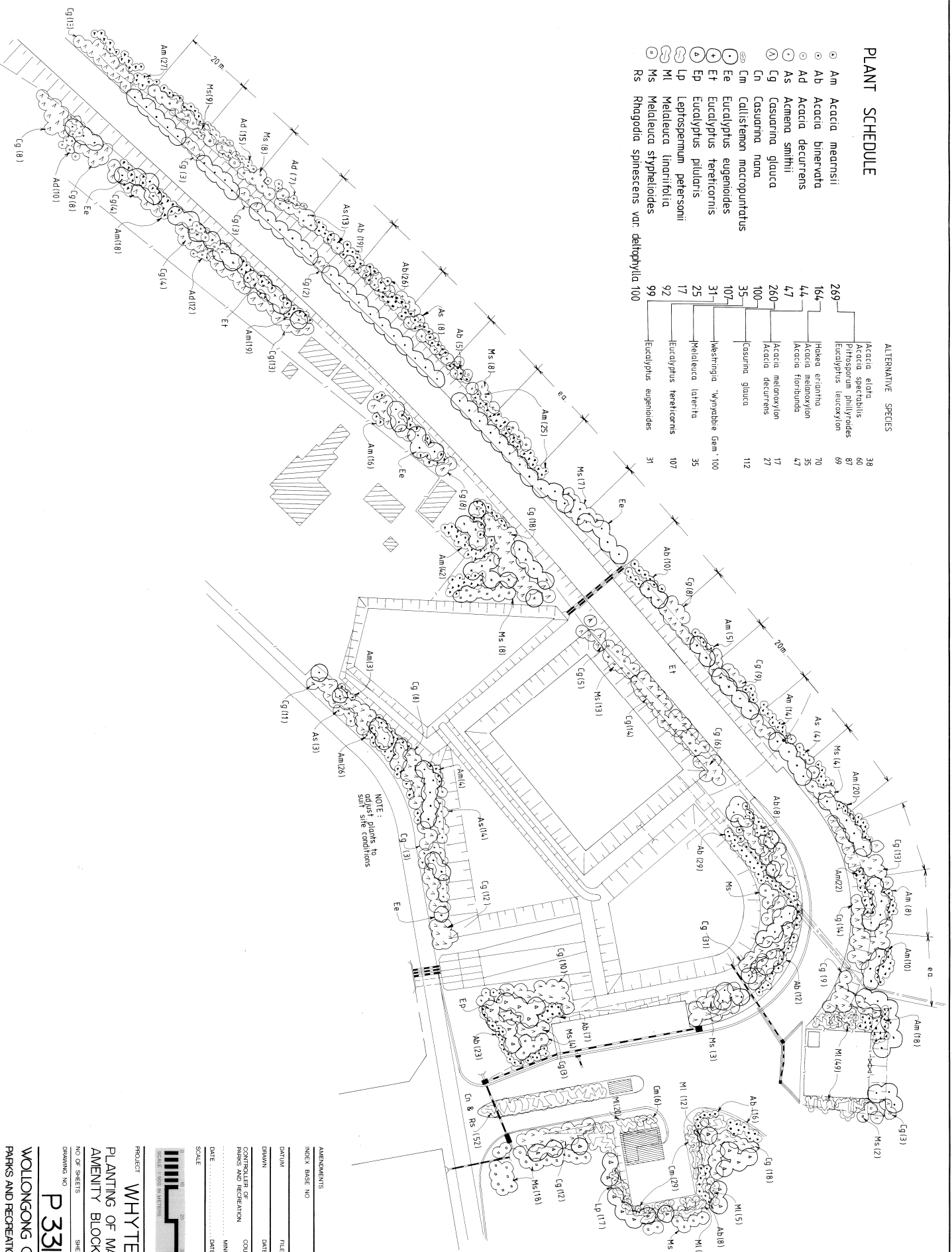
FINISHING EDGE

FINISHING EDGE

PLANT SCHEDULE

Symbol	Species Name	Alternative Species	Quantity
○	Am <i>Acacia meansii</i>	<i>Acacia elata</i>	38
○	Ab <i>Acacia binervata</i>	<i>Acacia spectabilis</i>	60
○	Ad <i>Acacia decurrens</i>	<i>Pitrospermum phillyroides</i>	87
○	As <i>Acacia smithii</i>	<i>Eucalyptus leucocylon</i>	69
○	Cg <i>Casuarina glauca</i>	<i>Hakea eriantha</i>	70
○	Cn <i>Casuarina nana</i>	<i>Acacia melanoxylon</i>	35
○	Cm <i>Callistemon macropanitatus</i>	<i>Acacia floribunda</i>	47
○	Ee <i>Eucalyptus eugenoides</i>	<i>Acacia melanoxylon</i>	17
○	Et <i>Eucalyptus tereticornis</i>	<i>Acacia decurrens</i>	100
○	Ep <i>Eucalyptus ptilularis</i>	<i>Casuarina glauca</i>	112
○	Lp <i>Leptospermum petersonii</i>		
○	Ml <i>Melaleuca linariifolia</i>		
○	Ms <i>Melaleuca stypelioides</i>		
○	Rs <i>Rhagodia spinescens</i> var. <i>deltophylla</i> 100		

Alternative Species	Quantity
<i>Acacia elata</i>	38
<i>Acacia spectabilis</i>	60
<i>Pitrospermum phillyroides</i>	87
<i>Eucalyptus leucocylon</i>	69
<i>Hakea eriantha</i>	70
<i>Acacia melanoxylon</i>	35
<i>Acacia floribunda</i>	47
<i>Acacia melanoxylon</i>	17
<i>Acacia decurrens</i>	100
<i>Casuarina glauca</i>	112
<i>Callistemon macropanitatus</i>	
<i>Eucalyptus eugenoides</i>	
<i>Eucalyptus tereticornis</i>	
<i>Eucalyptus ptilularis</i>	
<i>Leptospermum petersonii</i>	
<i>Melaleuca linariifolia</i>	
<i>Melaleuca stypelioides</i>	
<i>Rhagodia spinescens</i> var. <i>deltophylla</i> 100	



WHITES GULLY
PLANTING OF MAIN ENTRANCE
AMENITY BLOCK & BATTERS

PROJECT: WHITES GULLY
 SCALE: 1:500 IN METERS

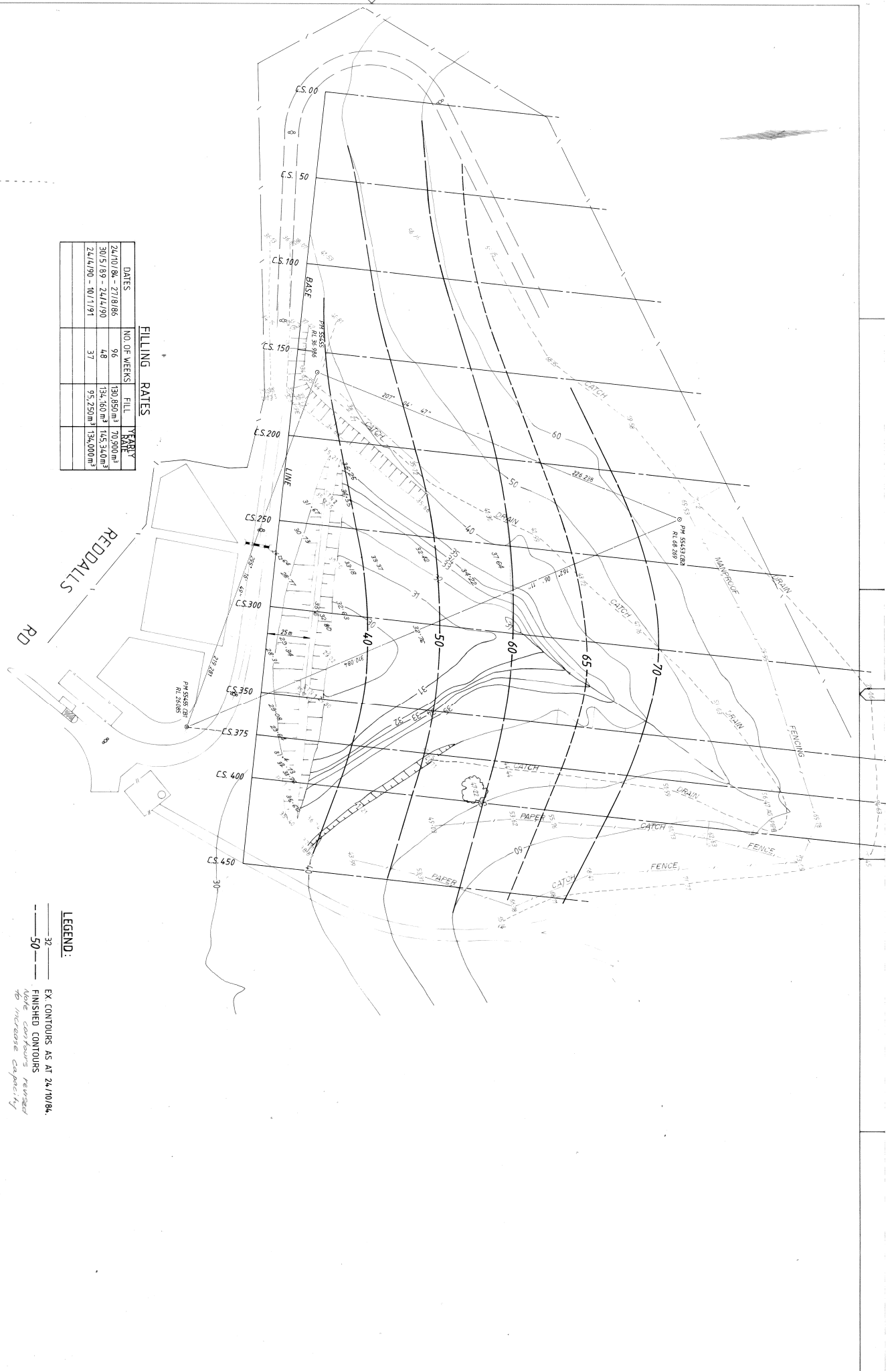
NO. OF SHEETS: 11
 SHEET NO: P 331 / 11

WOLLONGONG CITY COUNCIL
 PARKS AND RECREATION DEPARTMENT

AMENDMENTS	NO.	DATE
INDEX BASE NO.		
DRAWN	FILE NO.	DATE
DATE	DATE	DATE
DATE	DATE	DATE

CONTROLLER OF PLANS AND INSPECTION: _____
 COUNCIL APPROVAL: _____





FILLING RATES

DATES	NO. OF WEEKS	FILL RATE	YEARLY RATE
24/10/84 - 27/8/86	96	130,850m ³	70,920m ³
30/5/89 - 24/4/90	48	134,160m ³	105,340m ³
24/4/90 - 10/1/91	37	95,250m ³	134,000m ³

LEGEND:

- 32 — EX. CONTOURS AS AT 24/10/84.
- 50 — FINISHED CONTOURS
- — — — — Note contours revised to increase capacity

Volume of first lift of R-55-4270m³ M.S. Park

DATE: 1/30/11/92		CHECKED: KIRVINE		DESIGNED: DATE		RELATER PLAN: DATE		ESTIMATE No: DATE	
DRAWN: DATE		CHECKED: DATE		DESIGNED: DATE		RELATER PLAN: DATE		ESTIMATE No: DATE	

STARTING DATE OF TIP 24-10-84

CITY OF WOLLONGONG

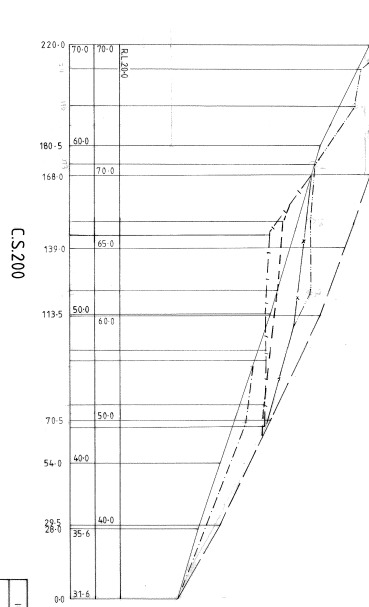
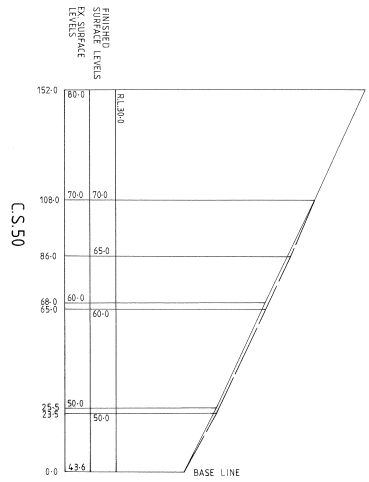
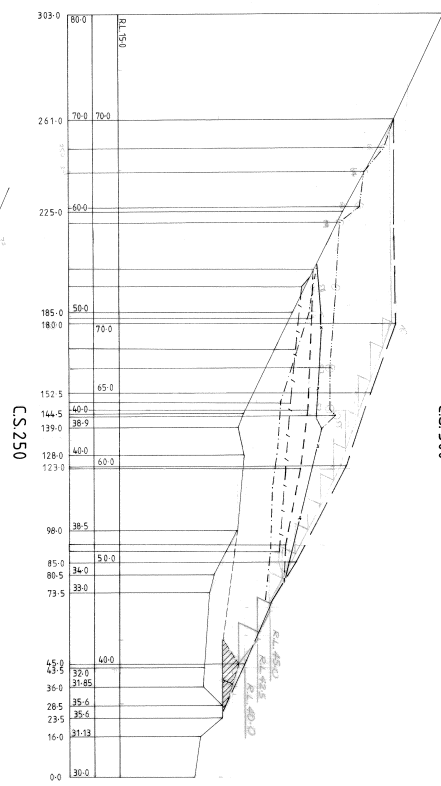
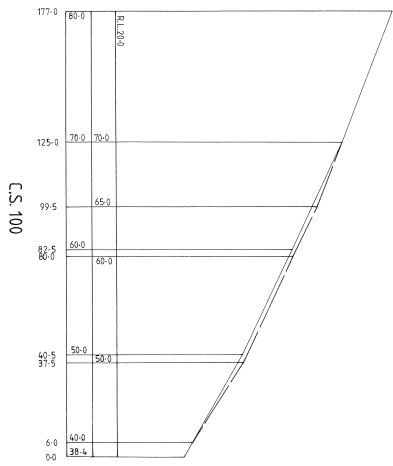
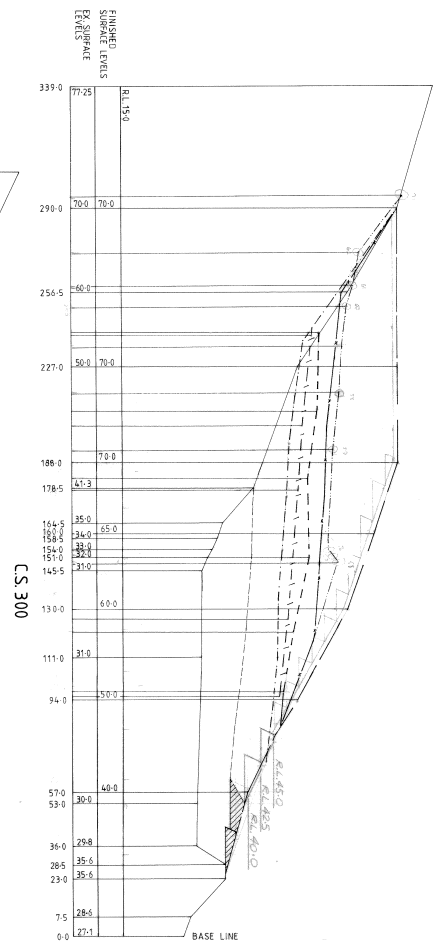
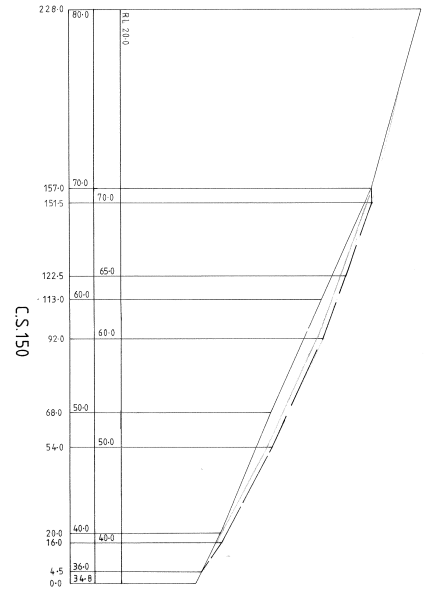
WHYTES GULLY WASTE DISPOSAL DEPOT

FILL CONTROL PLAN

P 331/12

MAGX

INDEX BASE No



SCALES
 HORIZ. 1:1000
 VERT. 1:500

FINISHED LEVELS
 EX. SURFACE
 FUTURE SURFACE

- SURVEYED 10/11/91
- SURVEYED 24/4/90
- SURVEYED 30/5/89
- SURVEYED 4/11/88
- SURVEYED 31/3/88
- SURVEYED 27/8/85

LEGEND:
 BUND WALL AS CONSTRUCTED
 FUTURE BUND WALL

DRAWN: K. IRVINE 9/86

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

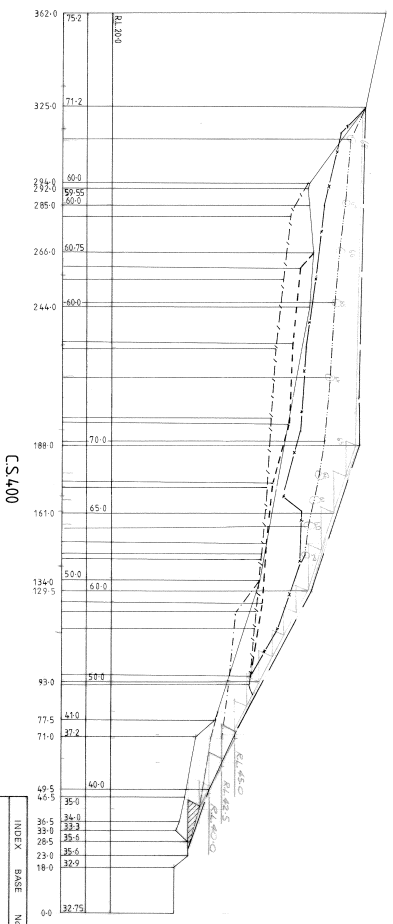
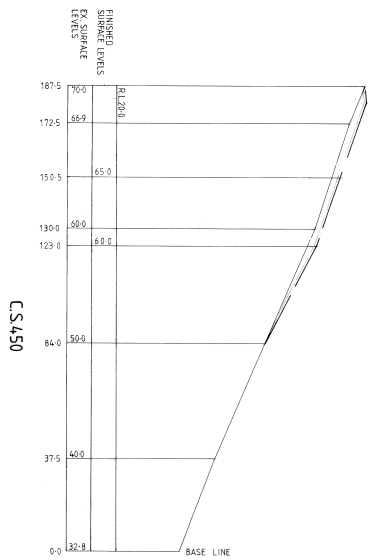
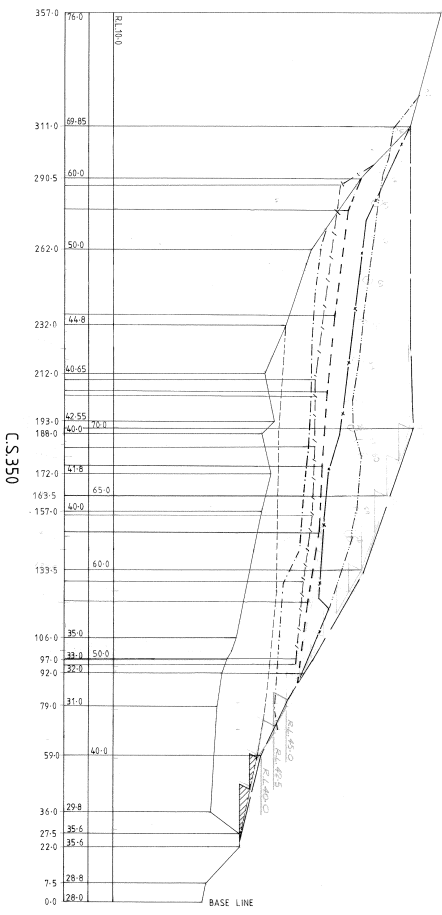
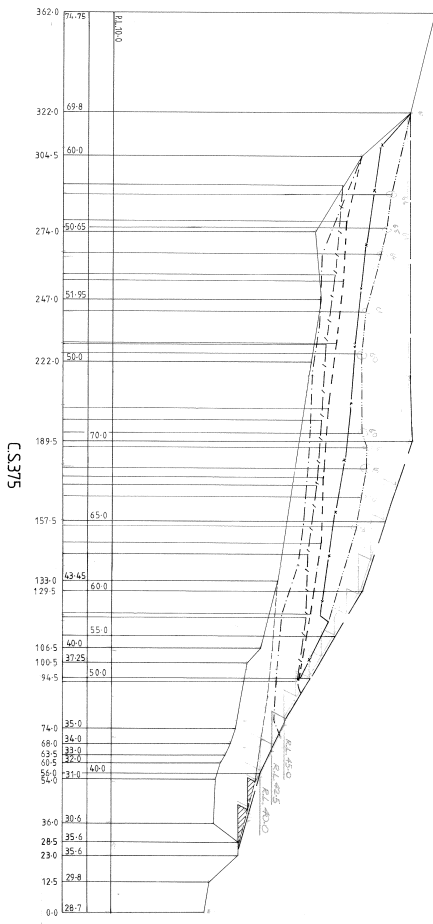
INDEX	BASE	NO.

NO. OF SHEETS 3
 SHEET NO. 2

DRAWING NO. P331/12



MAGX

A1/2



SCALES
HORIZ. 1:1000
VERT. 1:500

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

LEGEND:
 BIND WALL AS CONSTRUCTED
 FUTURE BIND WALL.

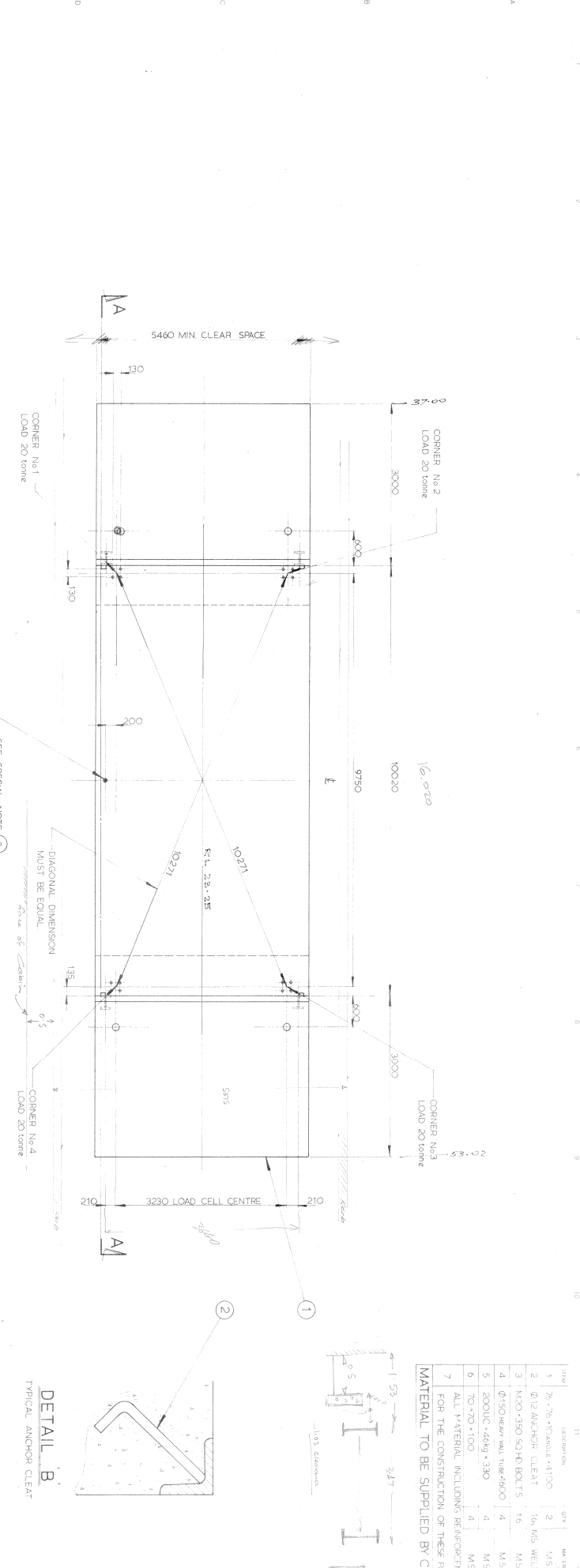
DRAWN: K. IRVINE 9186

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

INDEX	BASE	No.
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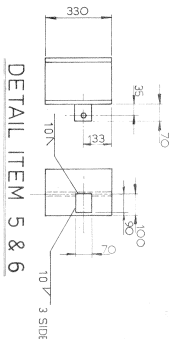
MAGX

A1/2

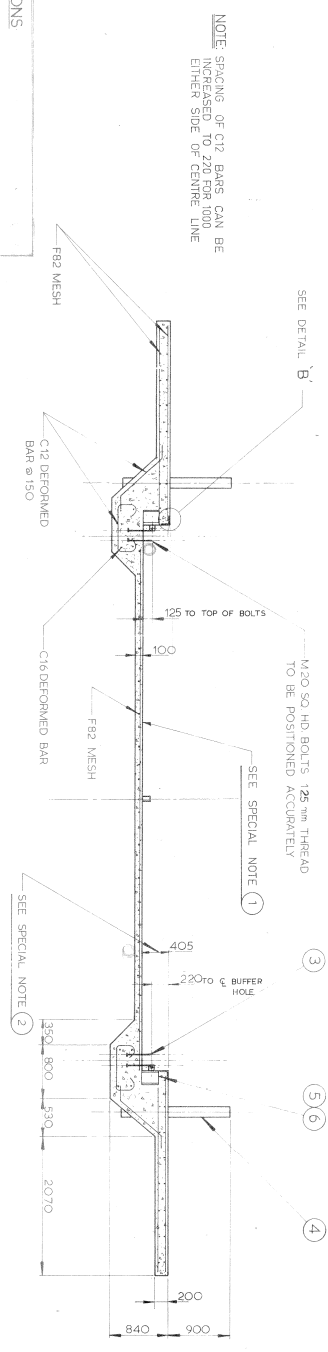


ITEM	DESCRIPTION	QTY	UNIT	REMARKS
1	75 x 75 x 4100	2	M5	
2	Ø12 ANCHOR CLEAR	16	M5	
3	M20 x 90 SO HD BOLTS	4	M5	
4	Ø150 HEAVY WALL THIR-6000	4	M5	
5	200UC x 46kg x 390	4	M5	
6	70 x 70 x 100	4	M5	
7	ALL MATERIAL INCLUDING REINFORCEMENT REQD			

MATERIAL TO BE SUPPLIED BY CUSTOMER

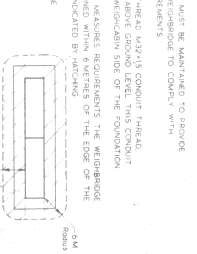


NOTE: THESE MUST BE TWO RH BUFFERS (AS DRAWN) & TWO LH BUFFERS COLUMN TO BE ACCURATELY POSITIONED & SET INTO FOUNDATION WALL.



- SPECIAL NOTATIONS**
- FOUNDATION BASE TO BE LINED TO PREVENT THE ACCUMULATION OF WATER BETWEEN THE WEIRBOARDS.
 - THIS DIMENSION IS MINIMAL & MUST BE MAINTAINED TO PROVIDE 450mm CLEARANCE BETWEEN WEIRBOARDS TO COMPLY WITH WEIRBOARDS & WEIRBOARDS REQUIREMENTS.
 - Ø200 STEEL CONDUIT SHALL BE USED FOR ALL ELECTRICAL CABLES. THE CONDUIT SHALL BE POSITIONED ON THE WEIRBOARD SIDE OF THE FOUNDATION WEIRBOARD PLATFORM AS INDICATED BY DIMENSIONS NOT LESS THAN 200mm.
 - TO COMPLY WITH WEIGHTS & MEASURES REQUIREMENTS THE WEIRBOARD INDICATORS SHALL BE POSITIONED WITHIN 6 METRES OF THE EDGE OF THE WEIRBOARD PLATFORM AS INDICATED BY DIMENSIONS NOT LESS THAN 200mm.

NOTE: SPACING OF C12 BARS CAN BE INCREASED TO 220 FOR 1000 EITHER SIDE OF CENTRE LINE



- FOUNDATION BASE TO BE LINED TO PREVENT THE ACCUMULATION OF WATER BETWEEN THE WEIRBOARDS.
- THIS DIMENSION IS MINIMAL & MUST BE MAINTAINED TO PROVIDE 450mm CLEARANCE BETWEEN WEIRBOARDS TO COMPLY WITH WEIRBOARDS & WEIRBOARDS REQUIREMENTS.
- Ø200 STEEL CONDUIT SHALL BE USED FOR ALL ELECTRICAL CABLES. THE CONDUIT SHALL BE POSITIONED ON THE WEIRBOARD SIDE OF THE FOUNDATION WEIRBOARD PLATFORM AS INDICATED BY DIMENSIONS NOT LESS THAN 200mm.
- TO COMPLY WITH WEIGHTS & MEASURES REQUIREMENTS THE WEIRBOARD INDICATORS SHALL BE POSITIONED WITHIN 6 METRES OF THE EDGE OF THE WEIRBOARD PLATFORM AS INDICATED BY DIMENSIONS NOT LESS THAN 200mm.

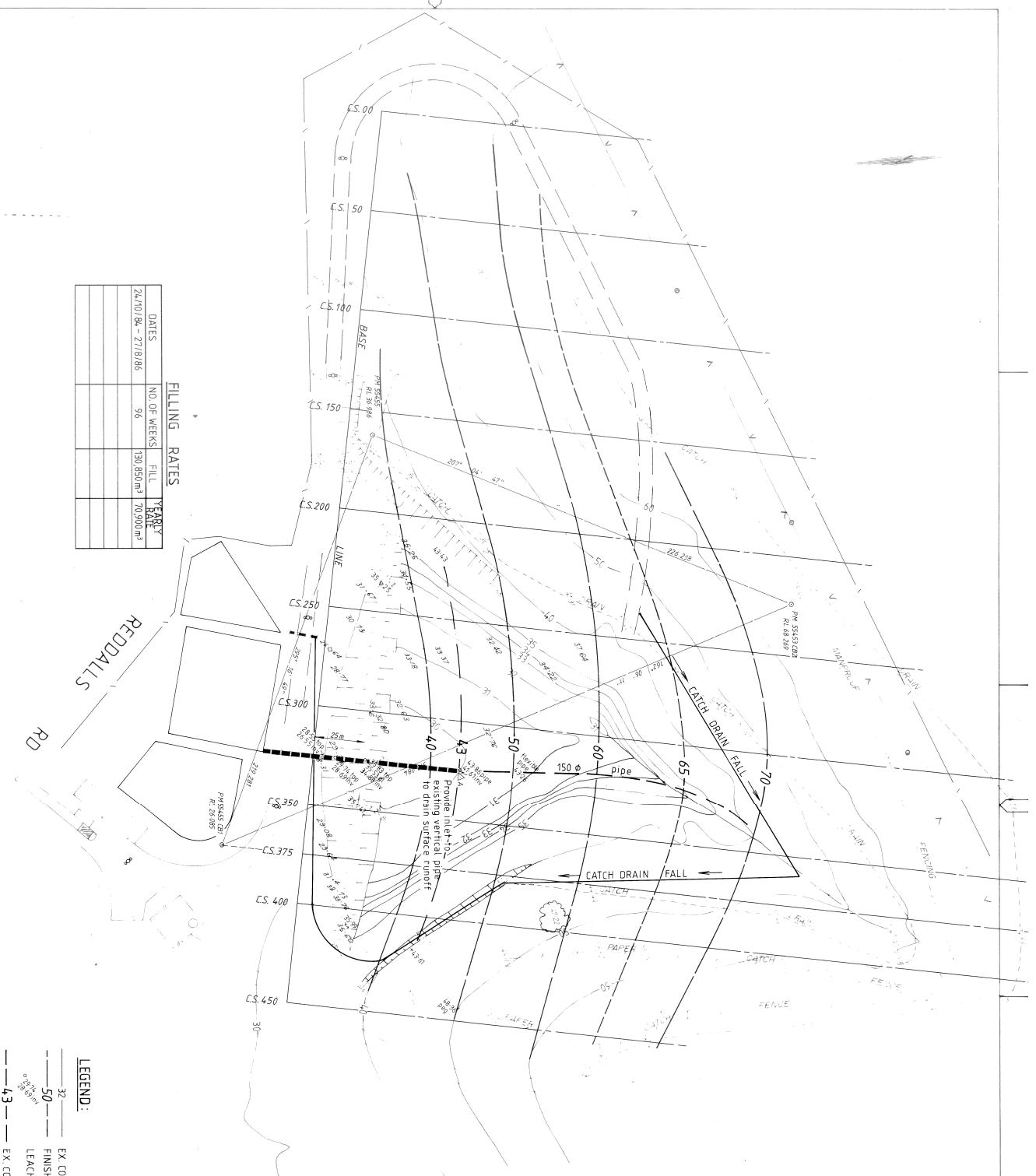
SECTION A-A

FIELD REQUIREMENTS TO ULTIMATE REVISIONS: 28.7.82

NO.	DATE	BY	CHKD	DESCRIPTION
1	28.7.82	ARK	ARK	ISSUED FOR CONSTRUCTION

AVERY AUSTRALIA LIMITED
 ON DRAWING FOR A 5452
 PIT L.I.S. WEIRBRIDGE
 PLATFORM 3000 x 3000 STEEL DECK
 SCALE 1:32
 DRAWING NO. 5452/207
 MACHINE NO. 8/10/9251
 7.2.9 (1/11)
P331/13

FILLING RATES			
DATES	NO. OF WEEKS	FILL RATE	TOTAL VOLUME
24/10/84 - 27/8/86	96	130 850m ³	70 900m ³



- NOTES:
- 150 ϕ subsoil pipe to be laid on existing surface and covered with 300mm slag sand, before covering with fresh garbage.
 - Tip surface to be worked so that fall is toward the 150 ϕ subsoil pipe, and from north to south so that runoff from tip surface can reach new inlet to vertical pipe adjacent to Station A.

- LEGEND:
- 32 --- EX. CONTOURS AS AT 24/10/84.
 - 50 --- FINISHED CONTOURS
 - LEACHATE PIPE LEVELS 12/87
 - 43 --- EX. CONTOUR AT 12/87

SCALE: 1:1000

DATE	REVISION	BY	DATE
FILE NO.	R. MOORE	D.E.M.	12/87
	BOOKS		
	18617		

ESTIMATED COST	DATE

DATE	BY

DATE	BY

DATE	BY

DATE	BY

DATE	BY

DATE	BY

DATE	BY

DATE	BY

DATE	BY

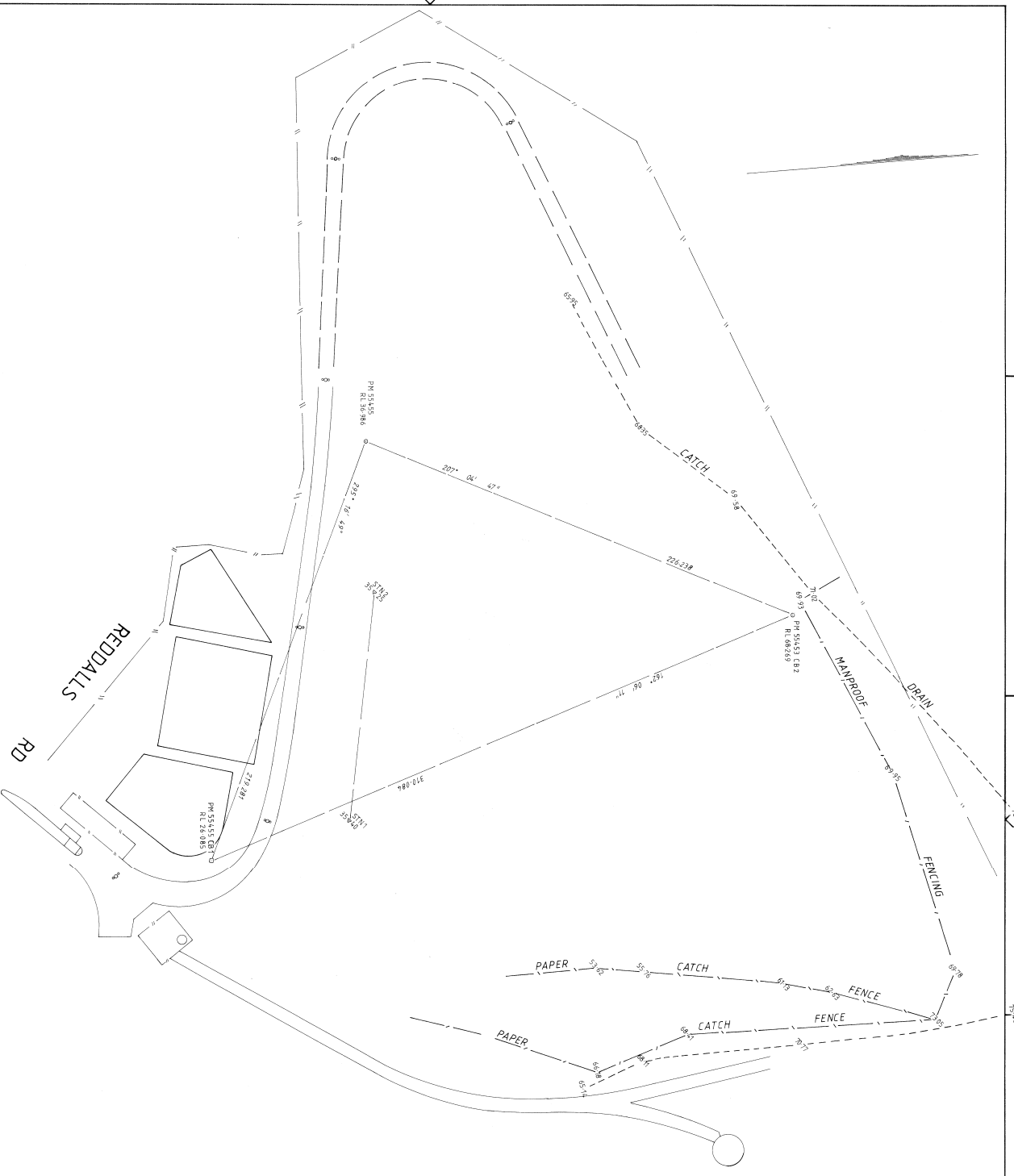
CITY OF WOLLONGONG

WHITES GULLY WASTE DISPOSAL DEPOT
FILL CONTROL PLAN
LEACHATE LINE

P 331/14

MAGX

A1



SCALES: 1:1000

HORIZ. _____
VERT. _____

FIELD INSPECTION
DESIGN ENGINEER _____
DATE _____

RELATED PLANS
DATE _____

ESTIMATE No. _____
DATE _____

AMENDMENTS

DATE _____
CITY ENGINEER _____

DATE _____
CITY ENGINEER _____

DATE _____
CITY ENGINEER _____

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DATE _____
CITY ENGINEER _____

CITY OF WOLLONGONG

WHYTES GULLY WASTE DISPOSAL DEPOT

DRAWING No. **P 331/15**

SHEET No. **A1**

INDEX BASE No.

MAGX

A1

DRAWING EDGE

PLAN	LONG. SECTION	SCALE: 1:1000
DATE	DATE	DATE
A.H.D.	DATE	DATE
FILE NO.	BOOKS	CHECKED

DATE	DATE	DATE
DATE	DATE	DATE
DATE	DATE	DATE

ESTIMATE NO.	DATE
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AMENDMENTS

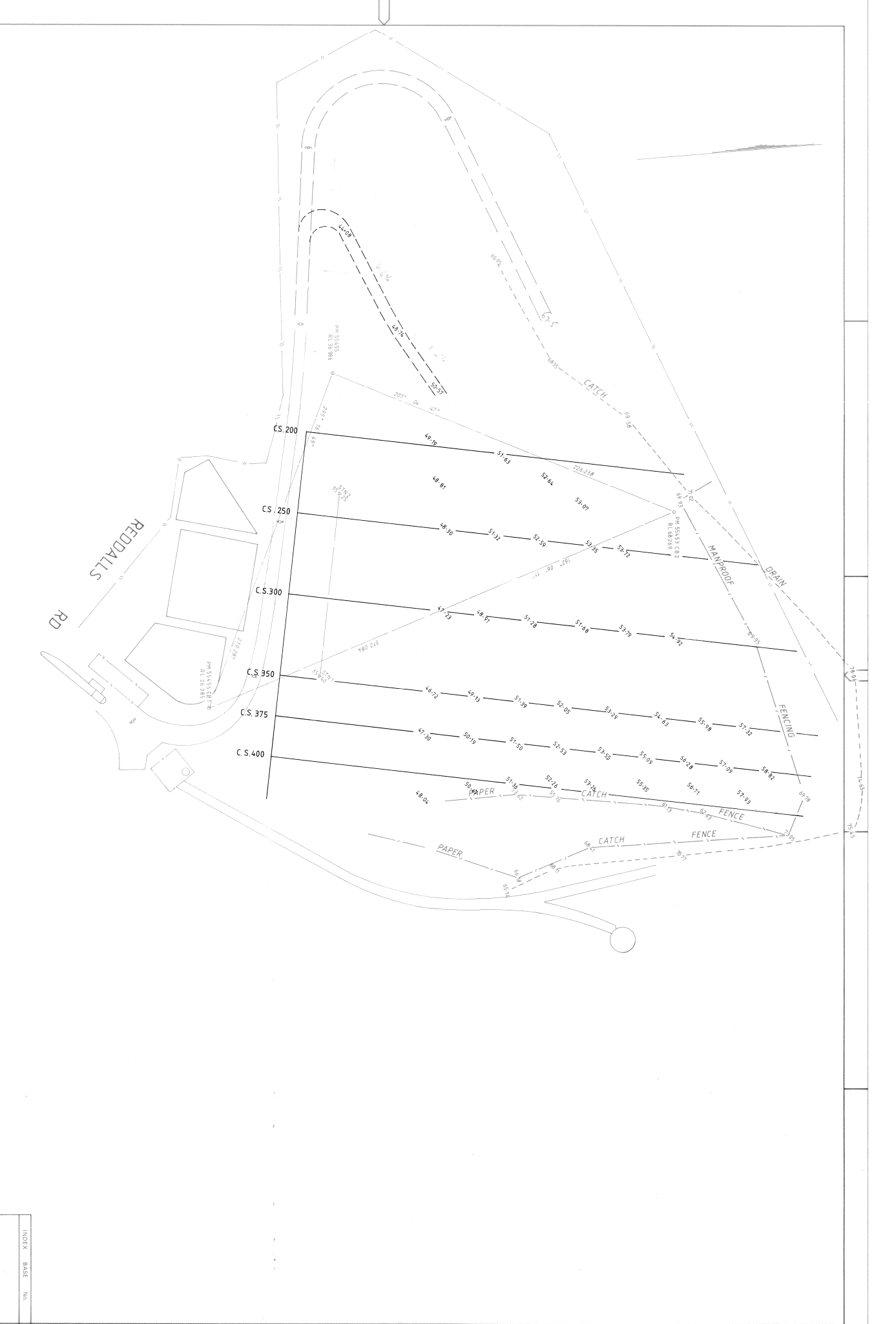
DATE	DATE
DATE	DATE

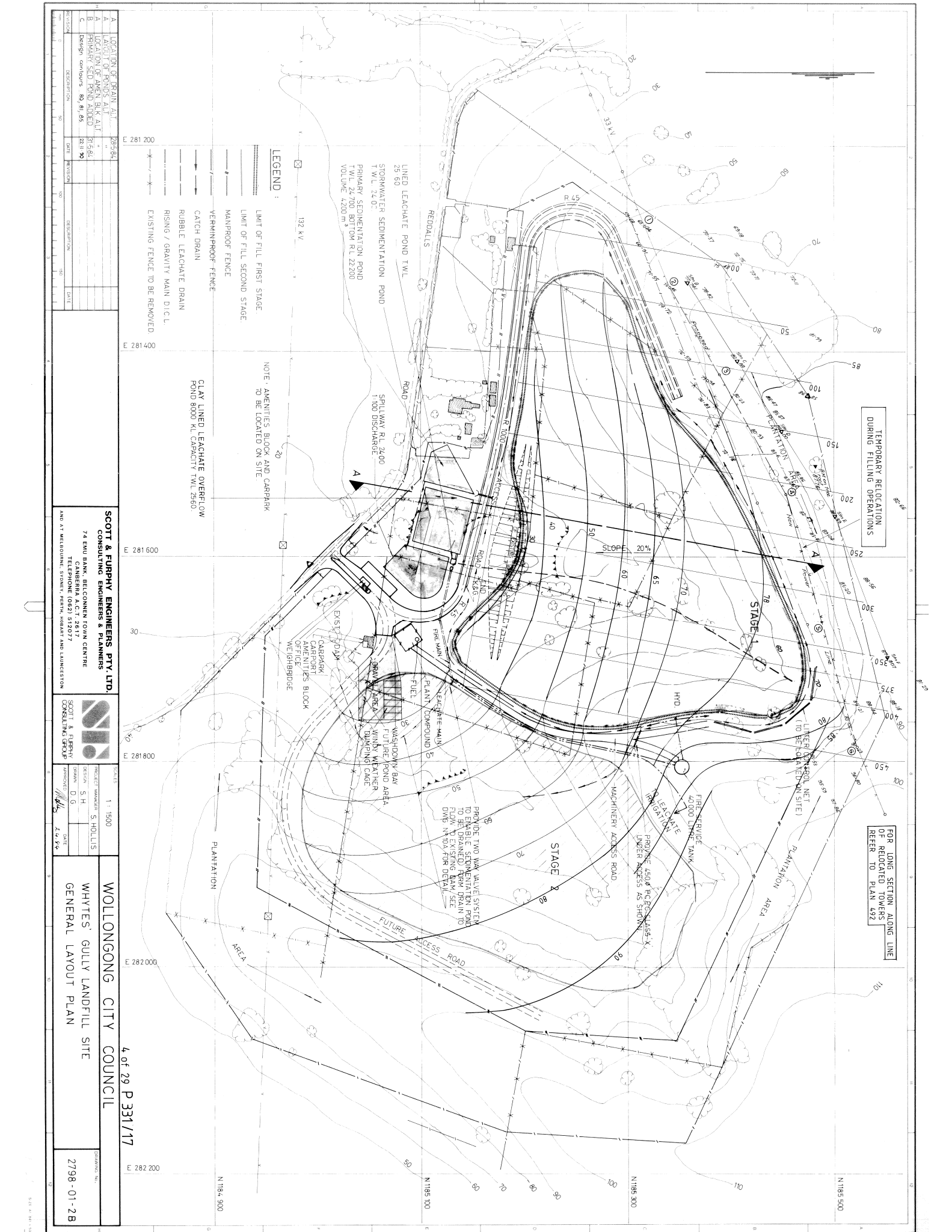
DATE	DATE
DATE	DATE

DATE	DATE
DATE	DATE

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

DRAWING NO.
P 331/16
 SHEET NO.
3





TEMPORARY RELOCATION DURING FILLING OPERATIONS

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

LEGEND :

- LIMIT OF FILL FIRST STAGE
- LIMIT OF FILL SECOND STAGE
- MANPROOF FENCE
- VERMINPROOF FENCE
- CATCH DRAIN
- RUBBLE LEACHATE DRAIN
- RISING / GRAVITY MAIN D.I.C.L.
- EXISTING FENCE TO BE REMOVED

NOTE: AMENITIES BLOCK AND CARPARK TO BE LOCATED ON SITE

CLAY LINED LEACHATE OVERFLOW POND 8000 KL CAPACITY T.W.L. 25.60

PROPOSE TWO NEW TANKS SYSTEM TO ENABLE SEDIMENTATION POND TO BE DRAINED/ FLOW DRAIN TO FLOW TO EXISTING BAY, SEE DWG N 103 FOR DETAIL

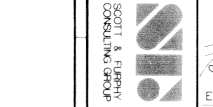
PROPOSE 4500 P.C.P. CLASS 4 UNDER ACCESS AS SHOWN

FIRE SERVICE 40,000 LITRE TANK

LINER CONTROL NET (TO BE LOCATED ON SITE)

NO.	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE
A	LOCATION OF DRAIN ALT.	25-5-84			
A	LOCATION OF POND ALT.	25-5-84			
B	LOCATION OF AMEN. BLK. ALT.	31-3-86			
B	PRIMARY SED. POND ADDED	25-11-90			
C	Design changes 80, 81, 85	25-11-90			

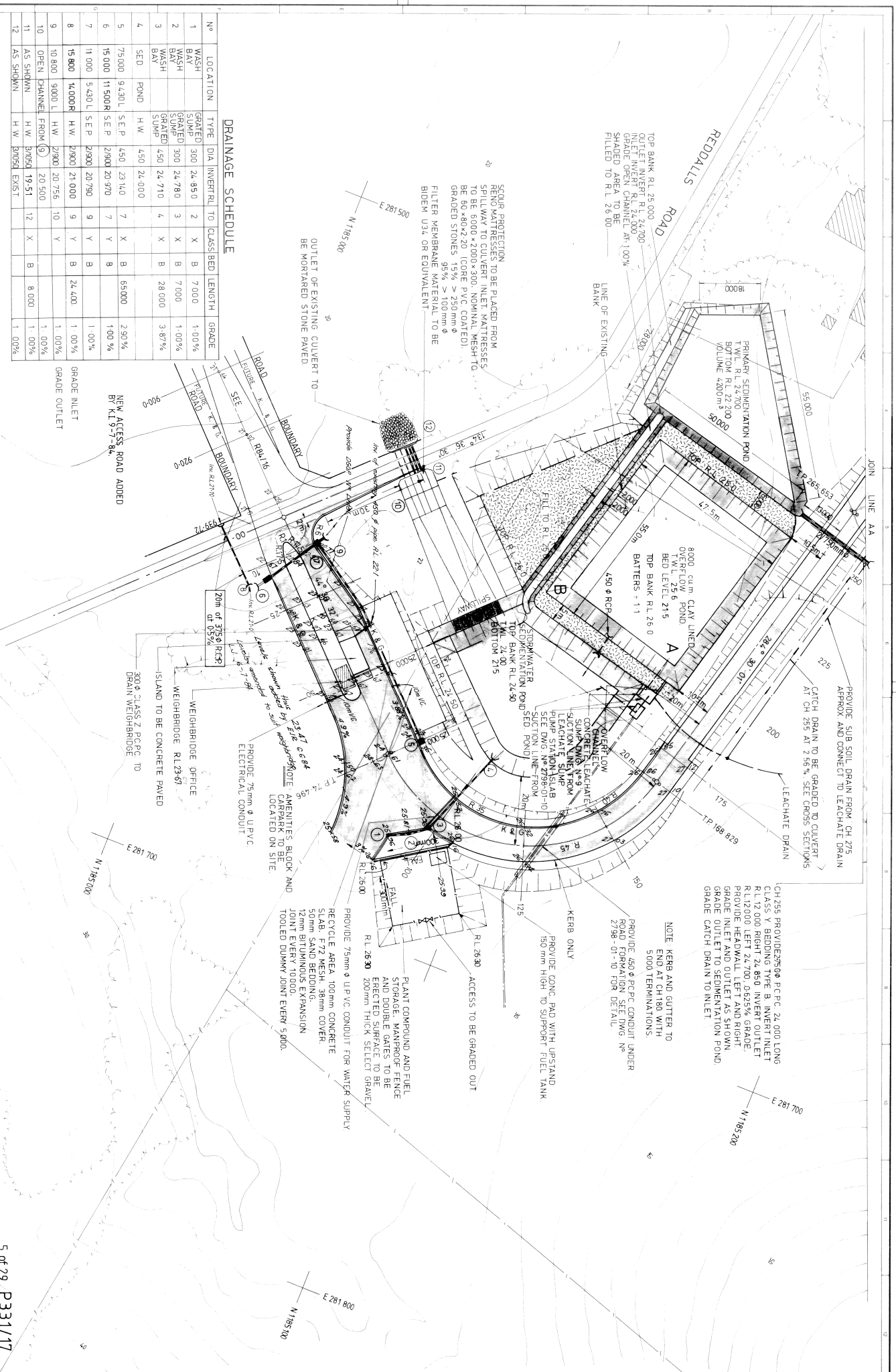
SCOTT & PURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EDU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2617
 TELEPHONE (062) 512077
 AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LANCESTON



NO.	REVISION	DATE
1	1:1500	
2	1:1500	
3	1:1500	
4	1:1500	
5	1:1500	
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8	1:1500	
9	1:1500	
10	1:1500	

WOLLONGONG CITY COUNCIL
 WHITES GULLY LANDFILL SITE
 GENERAL LAYOUT PLAN

4 of 29 P 331/17
 DRAWING NO. 2798-01-28



DRAINAGE SCHEDULE

No	LOCATION	TYPE	DIA	INVERT	TO	CLASS	BED	LENGTH	GRADE
1	WASH BAY	GRADED	300	24.85.0	2	X	B	7.000	1.00%
2	WASH BAY	GRADED	300	24.78.0	3	X	B	7.000	1.00%
3	WASH BAY	GRADED	450	24.71.0	4	X	B	28.000	3.87%
4	SEED BAY	H.W.	450	24.00.0					
5	75.000	S.E.P.	450	23.14.0	7	X	B	65.000	2.90%
6	15.000	S.E.P.	250	20.97.0	7	Y	B		1.00%
7	11.000	S.E.P.	250	20.79.0	9	Y	B		1.00%
8	15.800	H.W.	250	21.00.0	9	Y	B	24.400	1.00%
9	10.800	H.W.	250	20.75.6	10	Y			1.00%
10	OPEN CHANNEL FROM (9)			20.50.0					1.00%
11	AS SHOWN	H.W.	800	19.51	12	X	B	8.000	1.00%
12	AS SHOWN	H.W.	800	EXIST.	12	X	B	8.000	1.00%

SCOUR PROTECTION RENO MATRESSES TO BE PLACED FROM SPILLWAY TO CULVERT INLET. MATRESSES TO BE 6000x2000x300. NOMINAL MESH TO BE 80x80x2.0 (CORE PVC COATED). GRADED STONES 15% > 250mm φ 95% > 100mm φ FILTER MEMBRANE MATERIAL TO BE BIDEN U34 OR EQUIVALENT.

OUTLET OF EXISTING CULVERT TO BE MORTARED STONE PAVED.

NEW ACCESS ROAD ADDED BY KL 9-7-84.

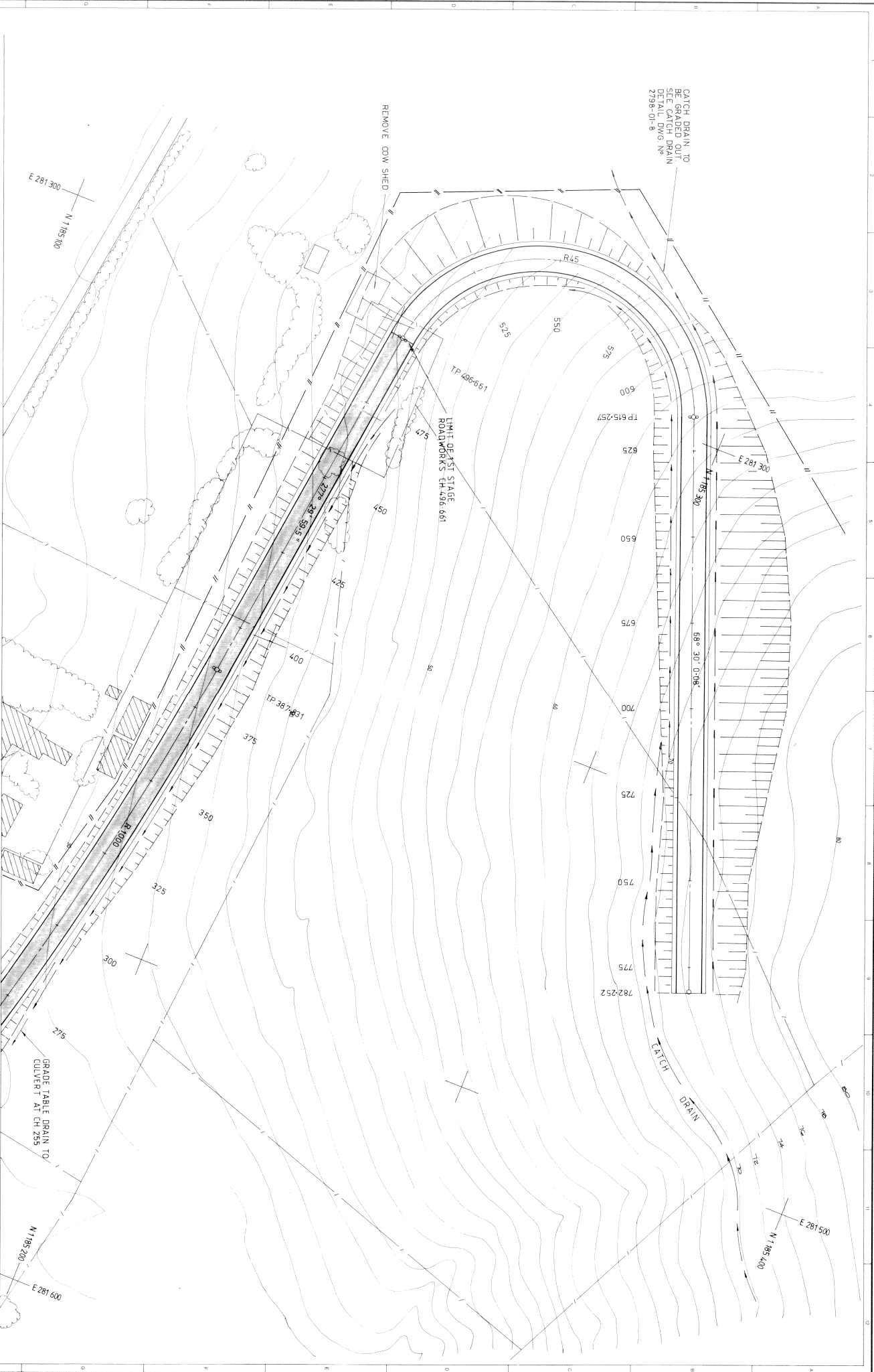
REVISION	DESCRIPTION	DATE	BY	CHKD	APP'D
A	DRAINAGE LAYOUT ALT.	21-84			
B	SHAPE OF PONDS ALT.	11-84			
C	SEED POND REDUCED	28-84			
D	CONDUITS ADDED	28-84			
E	PRIMARY SEDIM. PD ADDED	15-84			

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 ENDU BANK, BELCONNEN TOWN CENTRE
TELEPHONE (062) 510277
AND AT MELBOURNE, SYDNEY, PERTH, JOHANNESBURG AND LAUNCESTON



NO.	NAME	DESIGNATION	DATE
1-300	S. HOLLIS	PROJECT MANAGER	
	D. G.	DESIGNER	
		APPROVER	

WOLLONGONG CITY COUNCIL
WHITES' GULY LANDFILL SITE
DETAIL PLAN OF ENTRY AREA
5 of 29 P331/17
DRAWN: 2798-01-3D



REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE

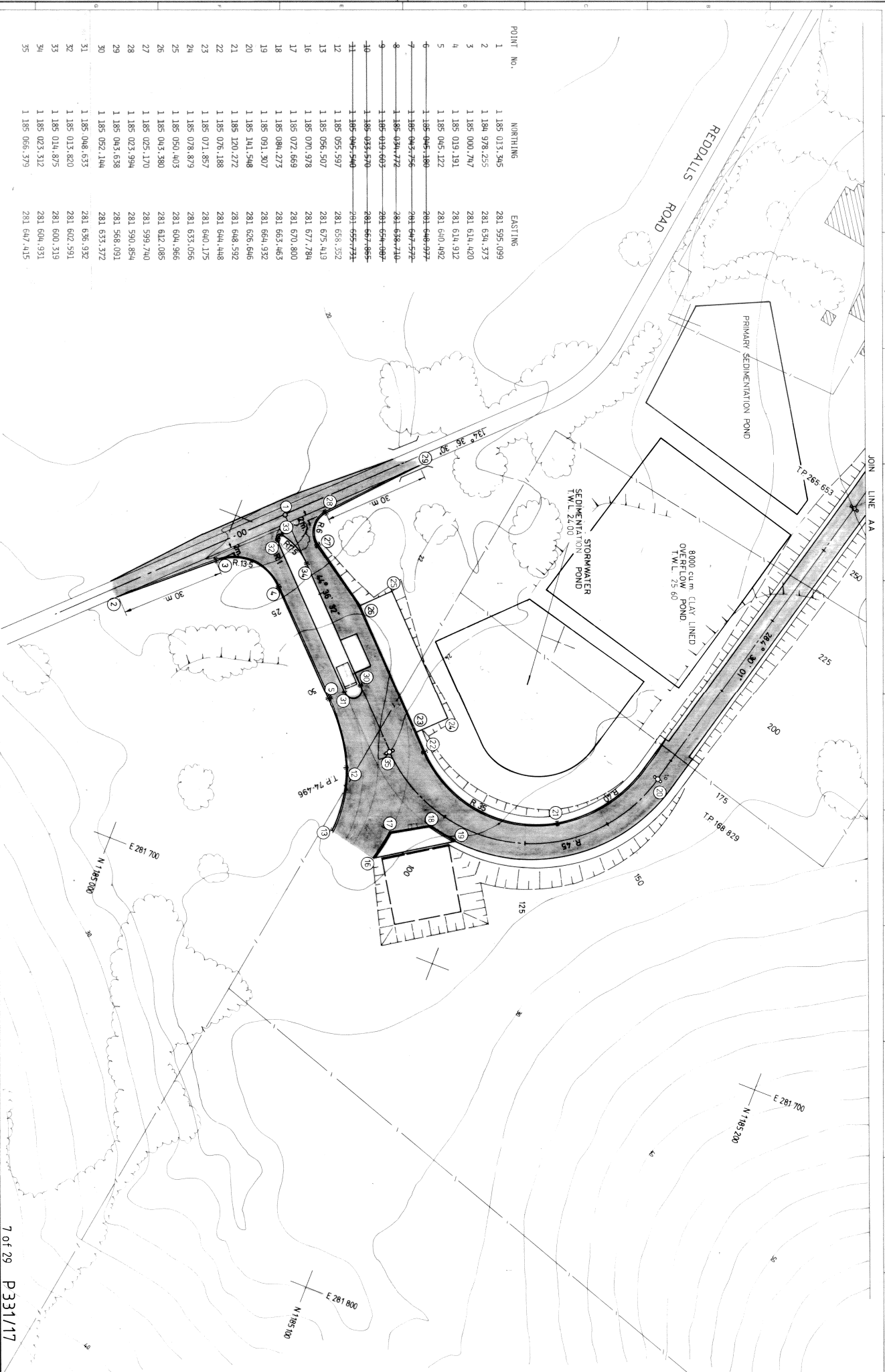
LIMIT OF ROADWORKS CH 458.661 DATE: 15/03/94

SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2617
 TELEPHONE (062) 519077
 AND AT MELBOURNE, SYDNEY, PERTH, HOIARI AND LAUNCESTON



PROJECT MANAGER: S. HOLLIS DESIGNER: S.H. DRAWN: D.G. APPROVED: [Signature] DATE: 15/03/94
--

WOLLONGONG CITY COUNCIL
 6 of 29 P331/17
WHYTES' GULLY LANDFILL SITE
 DETAIL PLAN
 DRAWING NO. 2798-01-4 A



POINT NO.	NORTHING	EASTING
1	1 185 013,345	281 595,089
2	1 184 978,255	281 634,373
3	1 185 000,747	281 614,420
4	1 185 019,191	281 614,912
5	1 185 045,122	281 640,492
6	1 185 046,180	281 646,977
7	1 185 045,756	281 647,572
8	1 185 034,772	281 638,710
9	1 185 033,609	281 634,087
10	1 185 033,570	281 637,885
11	1 185 046,540	281 655,773
12	1 185 035,597	281 636,352
13	1 185 035,507	281 675,419
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	1 185 043,538	281 568,091
28	1 185 052,144	281 633,372
29	1 185 046,633	281 636,932
30	1 185 013,620	281 602,591
31	1 185 014,875	281 600,319
32	1 185 023,312	281 604,931
33	1 185 066,379	281 647,415
34		
35		

REVISION	DESCRIPTION	DATE	PERSON	DESCRIPTION	DATE
1	SECOND POND REDUCED	29/5/04			
2	ADDED BLOCK REDUCED	24/6/04			
3	ADDED 500 TONN REDUCED	24/6/04			

SCOTT & FURRY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS
 74 ERU BANK, BENDIGO TOWN CENTRE
 CANBERRA ACT 2617
 TELEPHONE (062) 512077
 AND AT MELBOURNE, STONEY, PERTH, HOBART AND LAUNCESTON

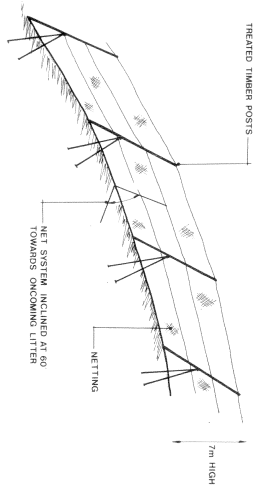


PROJECT MANAGER	S. HOLLIS
DESIGN	S. H.
DRAWN	D. G.
APPROVED	[Signature]
DATE	2/11/04

WOLLONGONG CITY COUNCIL
 WHYTES' GULLY LANDFILL SITE
 SETOUT PLAN

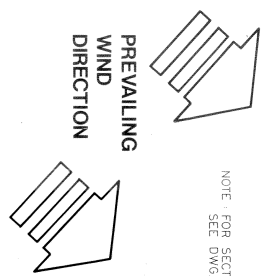
7 of 29 P331/17

DRAWING NO. 2798-01-5B



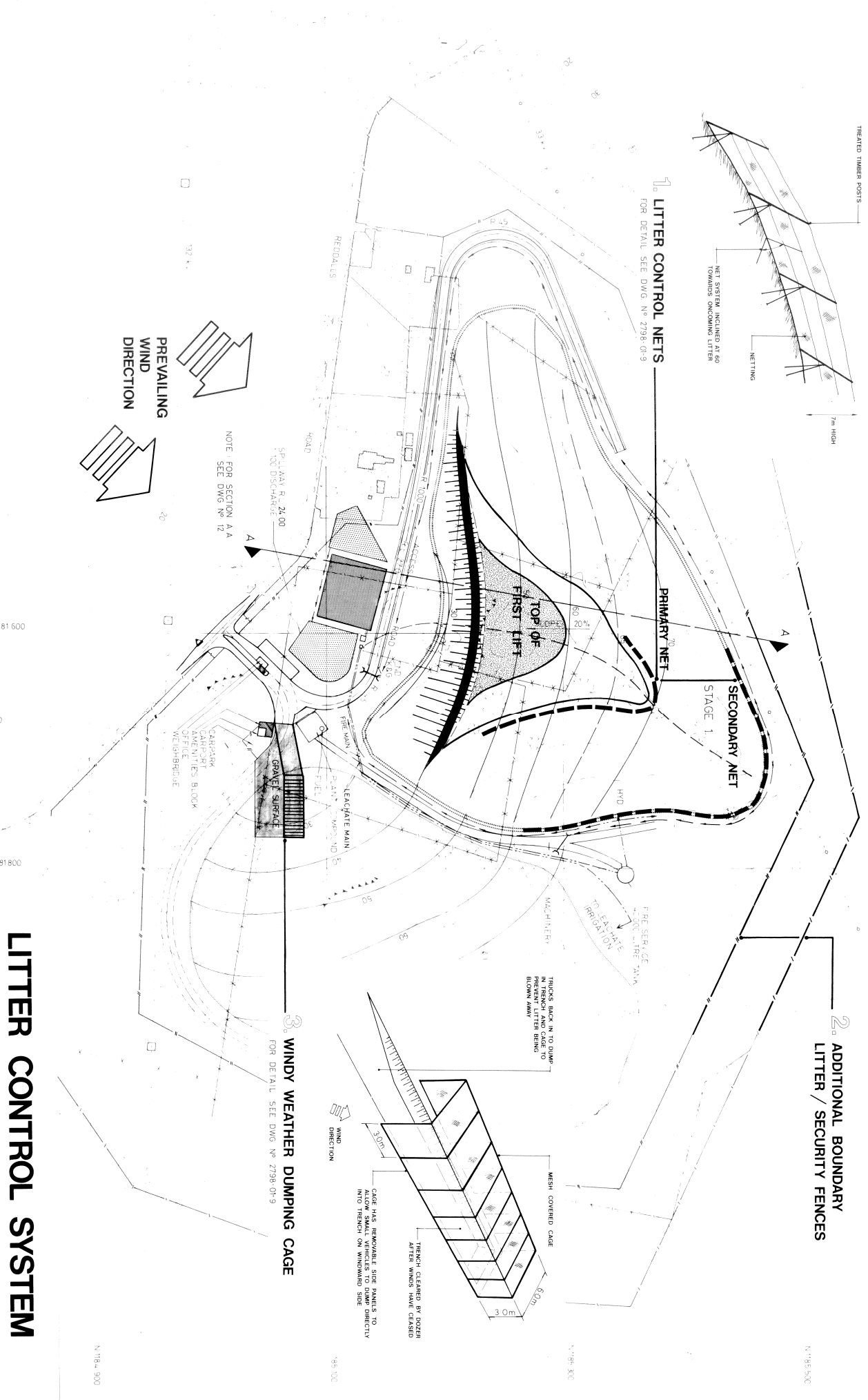
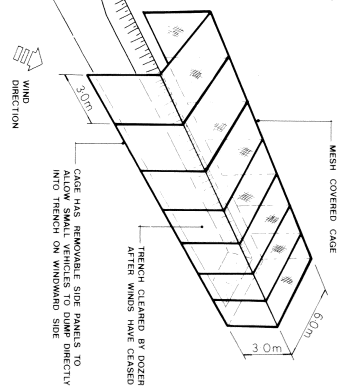
1. LITTER CONTROL NETS
FOR DETAIL SEE DWG. NO 2798-01-9

2. ADDITIONAL BOUNDARY LITTER / SECURITY FENCES



NOTE FOR SECTION A-A
SEE DWG. NO 12

3. WINDY WEATHER DUMPING CAGE
FOR DETAIL SEE DWG. NO 2798-01-9



LITTER CONTROL SYSTEM

8 of 29 P331/17

WOLLONGONG CITY COUNCIL

WHYTES' GULLY LANDFILL SITE
GENERAL LAYOUT PLAN

2798-01-6B

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2517
TELEPHONE (062) 512077
FAX (062) 512078
110 A1 WELBORN, STONEY MOUNT, INDIAN AND LANKESBORO

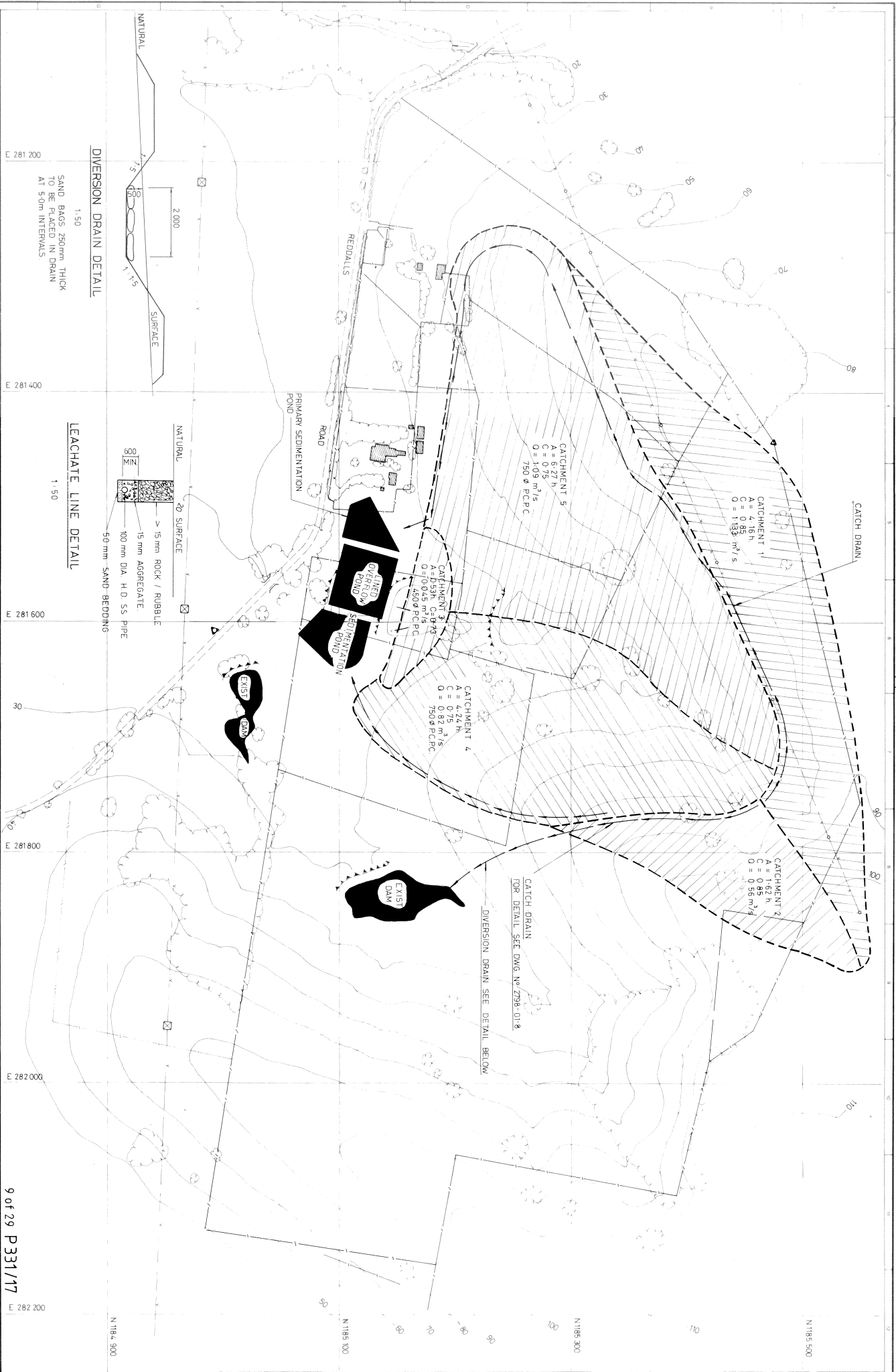


1:500
S. HOLLIS
5/11/00
D.G.
2/4/00

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2517
TELEPHONE (062) 512077
FAX (062) 512078
110 A1 WELBORN, STONEY MOUNT, INDIAN AND LANKESBORO



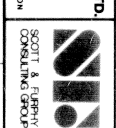
Scale: Project Referenced	28/5/04
Boundary and Pond Area	28/5/04
Author	D.G.
Check	D.G.
Drawn	D.G.
Approved	D.G.
Date	2/4/00



NO.	REVISION	DATE	BY	CHKD.
1	ISSUED FOR TENDERS	15/08/17	SH	SH
2	REVISED	15/08/17	SH	SH
3	REVISED	15/08/17	SH	SH
4	REVISED	15/08/17	SH	SH
5	REVISED	15/08/17	SH	SH

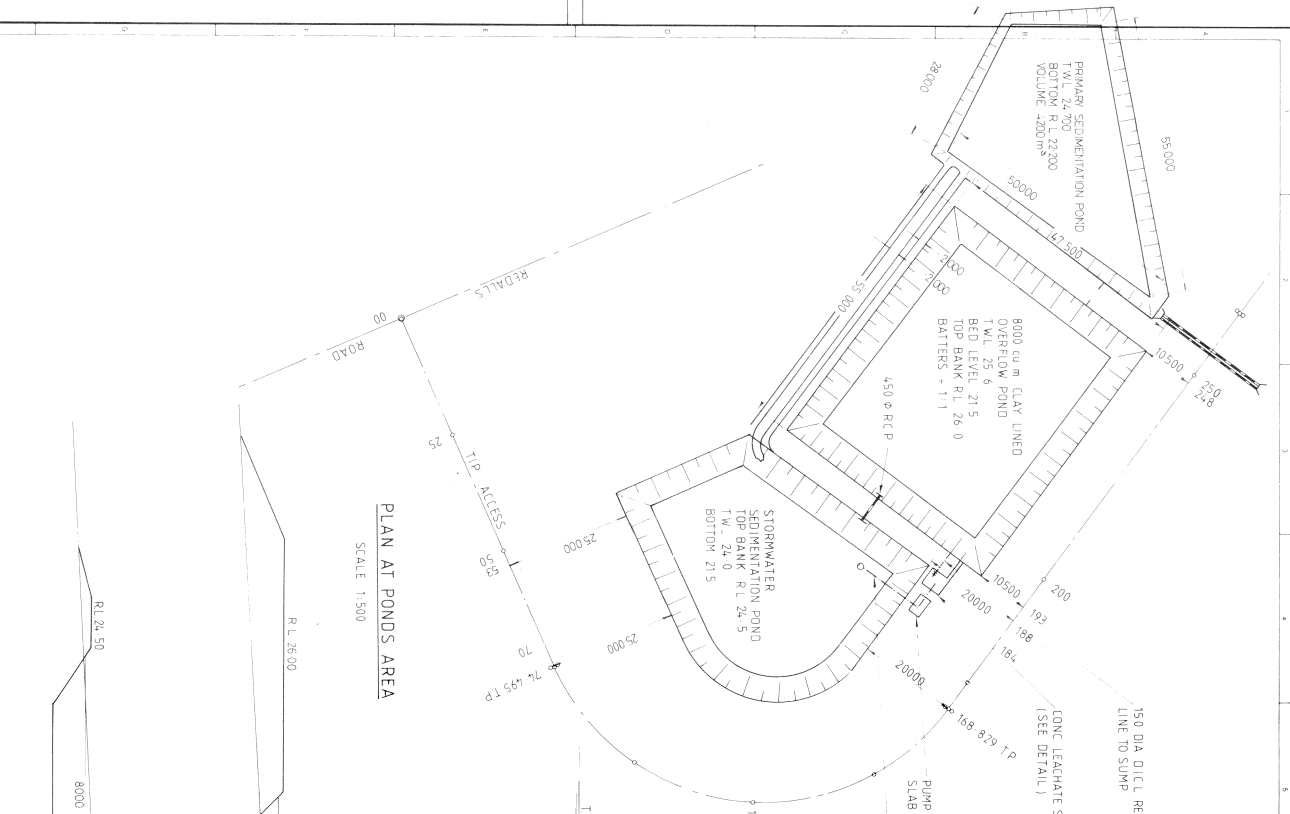
NO.	REVISION	DATE	BY	CHKD.
1	ISSUED FOR TENDERS	15/08/17	SH	SH
2	REVISED	15/08/17	SH	SH
3	REVISED	15/08/17	SH	SH
4	REVISED	15/08/17	SH	SH
5	REVISED	15/08/17	SH	SH

SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 TELEPHONE (08) 1 26 077
 AND AT WILSONS, STONE, MERU, HOBART AND LAUNCESTON



NO.	REVISION	DATE	BY	CHKD.
1	ISSUED FOR TENDERS	15/08/17	SH	SH
2	REVISED	15/08/17	SH	SH
3	REVISED	15/08/17	SH	SH
4	REVISED	15/08/17	SH	SH
5	REVISED	15/08/17	SH	SH

WOLLONGONG CITY COUNCIL
 9 of 29 P331/17
WHITES' GULLY LANDFILL SITE
CATCHMENT PLAN
 DRAWING NO. 2798 - 01 - 7B



NO.	DESCRIPTION	DATE	REVISION	NO.	DESCRIPTION	DATE
1	AS SHOWN	17/5/17				
2	PROJECT MANAGER S. HOLLIS					
3	DESIGN S.H.					
4	DRAWN D.G.					
5	CHECKED L.N.E.					
6	APPROVED					

NO.	DESCRIPTION	DATE
1	AS SHOWN	17/5/17
2	PROJECT MANAGER S. HOLLIS	
3	DESIGN S.H.	
4	DRAWN D.G.	
5	CHECKED L.N.E.	
6	APPROVED	

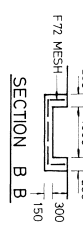
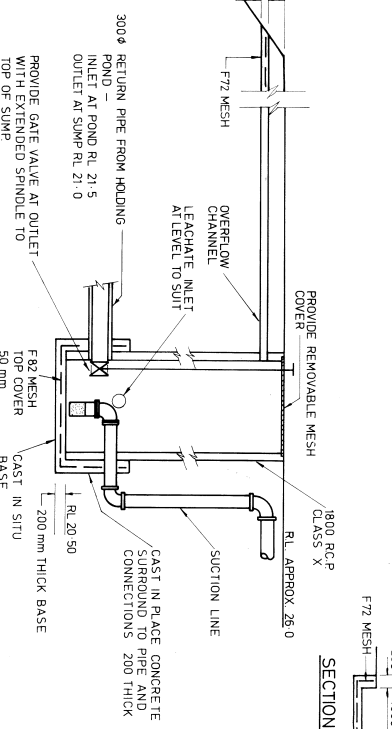
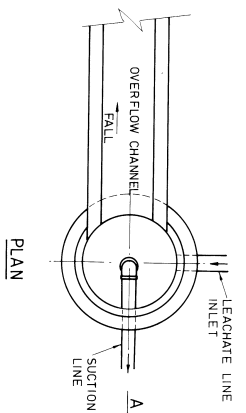
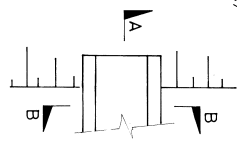
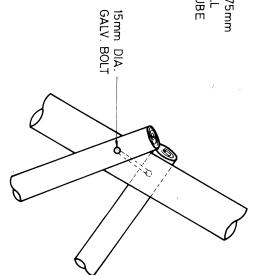
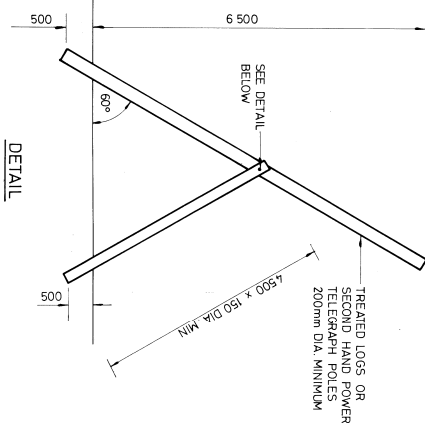
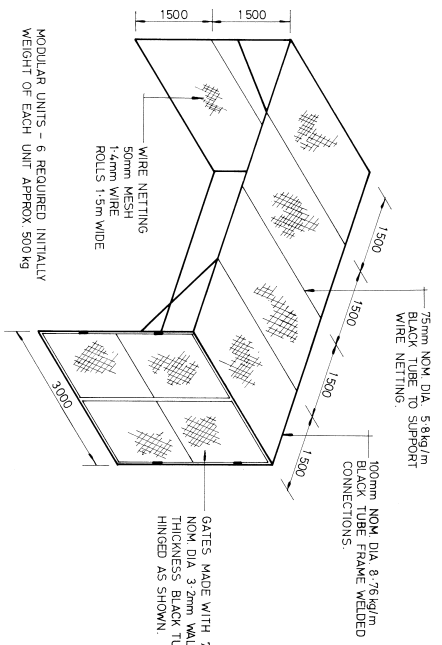
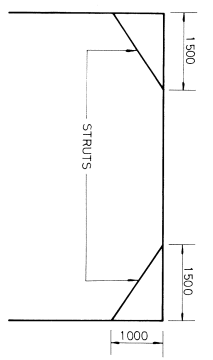
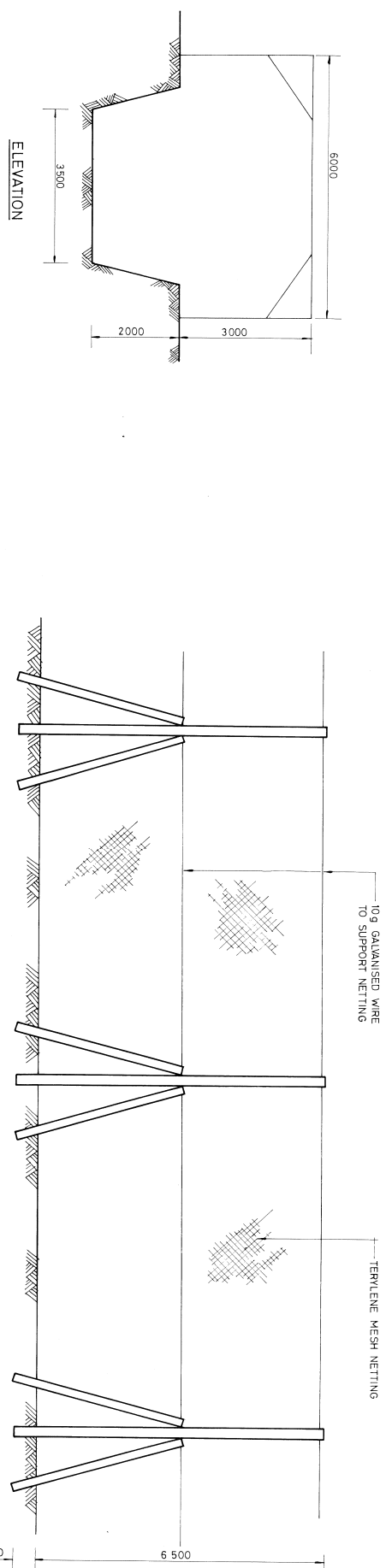
DESIGNED BY: 2798-01-8-B

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2817
TELEPHONE (062) 512077
4th & 1st FLOOR, 250-251, HANCOCK AND LANGSTON



WOLLONGONG CITY COUNCIL

WHITES GOULY LANDFILL SITE
FILTRATION, LEACHATE POND DETAIL



WINDY WEATHER DUMPING CAGE DETAILS

LITTER CONTROL NET DETAILS

LEACHATE SUMP

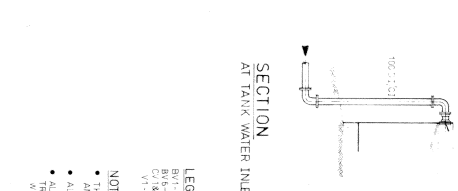
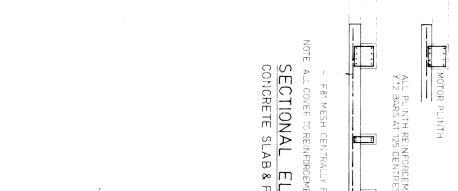
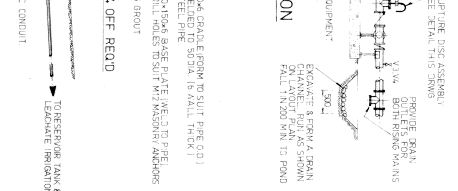
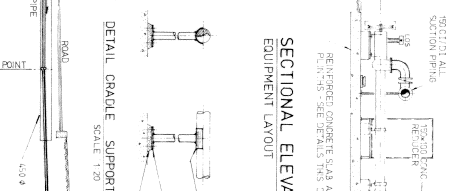
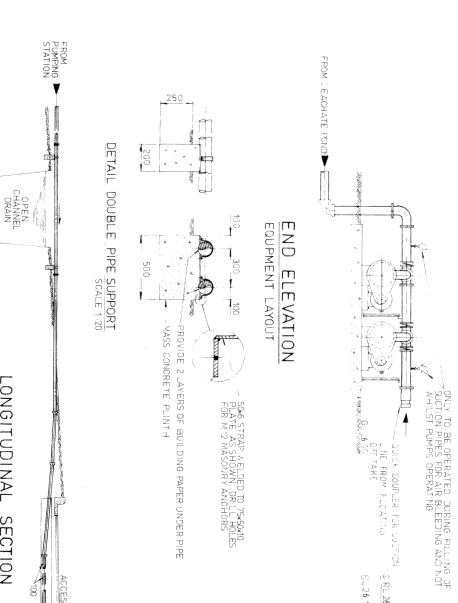
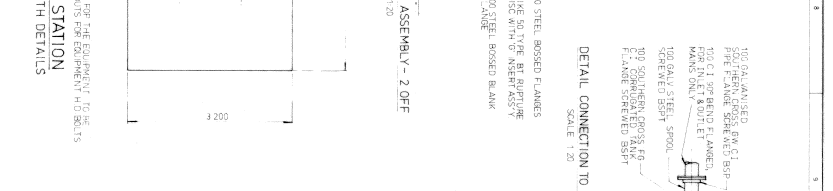
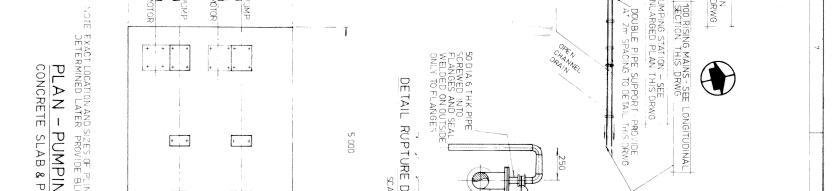
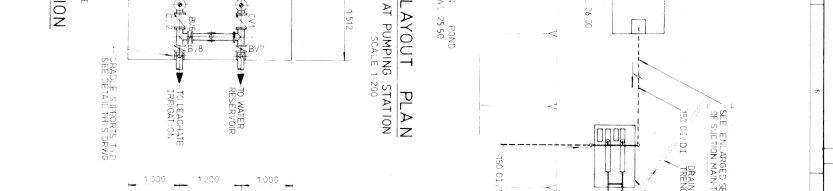
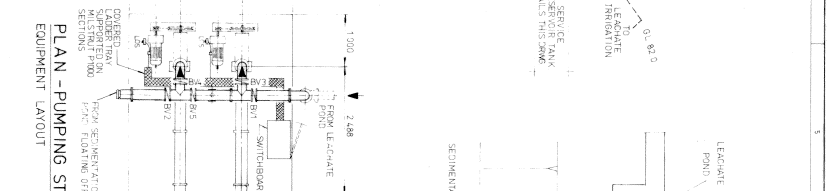
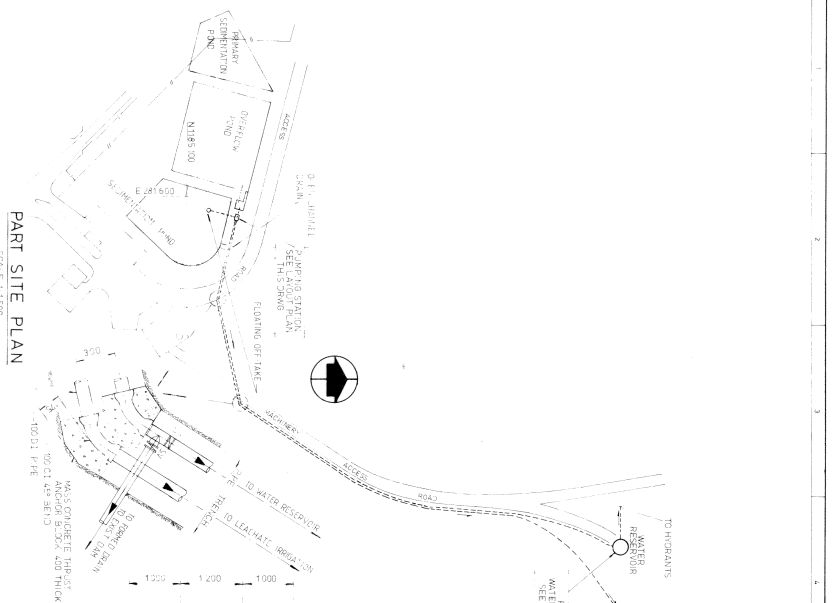
11 of 29 P 331/177

NO.	DESCRIPTION	DATE	REVISION	DATE	REVISION	DATE
1	LEACHATE SUMP APPROVED FOR SA					
2						
3						
4						
5						
6						
7						
8						
9						
10						

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2817
TELEPHONE (062) 515077
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON

PROJECT NUMBER	DESIGN	CHECK	DATE
S. HOLLIS	S. H.	D. Z.	2.7.97

WOLLONGONG CITY COUNCIL
WHYTES GULLY LANDFILL SITE
LEACHATE SUMP, LITTER CONTROL NET AND
WINDY WEATHER DUMPING CAGE DETAILS
DRAWING NO. 2798-01-9A



LEGEND

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING N2798-01 AND SPECIFICATION FOR WATERS GULLY PUMPING STATION
- ALL REDUCED LEVELS TO AUSTRALIAN HEIGHT DATUM
- ALL BARRETT PIPES TO HAVE 50% MINIMUM COVER WITH MANUFACTURERS SPECIFICATION

NOTES

12 OF 29 P331/17

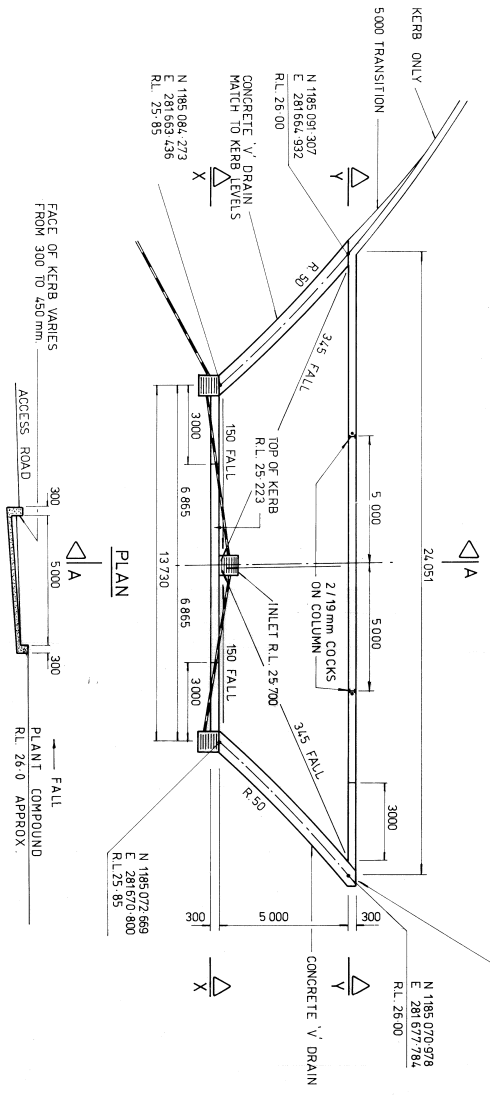
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NO. 101	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 102	UNLESS SHOWN OTHERWISE	SCALE	AS SHOWN
NO. 103	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 104	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 105	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 106	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 107	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 108	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 109	UNLESS SHOWN OTHERWISE	DATE	27/9/17
NO. 110	UNLESS SHOWN OTHERWISE	DATE	27/9/17

SCOTT & RUPBY ENGINEERS PTY LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMB BANK, BELCONNEN TOWN CENTRE
CANBERRA ACT 2617
TEL: (06) 251 1111
AND AT MELBOURNE, SYDNEY, PERTH, ADELAIDE AND LONDON

WOLLONGONG CITY COUNCIL
WHYTES GULLY LANDFILL SITE
PUMPING ARRANGEMENT

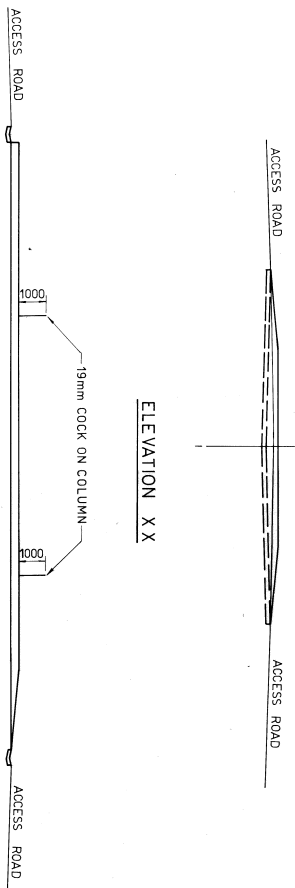
DRAWING NO. 2798-01-10A

NOTE : WASHDOWN BAY 150 mm THICK 20 MPa CONCRETE ON 50 mm SAND BEDDING REINFORCED WITH F82 FOUNDATION MATERIAL SHALL BE APPROVED BY THE ENGINEER FOR A MINIMUM BEARING CAPACITY OF 100 kPa BEFORE ANY CONCRETE IS POURED.

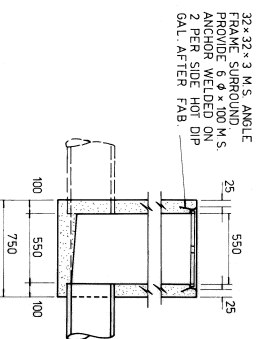


PLANT AREA TO DRAIN TO THIS POINT

SECTION A A

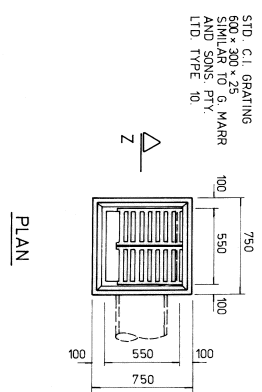


ELEVATION YY
SCALE 1:100
WASH DOWN BAY



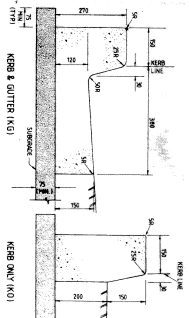
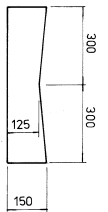
SECTION ZZ

GRATED SUMP
SCALE 1:20



PLAN

CONCRETE V DRAIN
SCALE 1:10



NO.	LEVELS APPROVED	DATE	REVISION	DESCRIPTION	DATE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

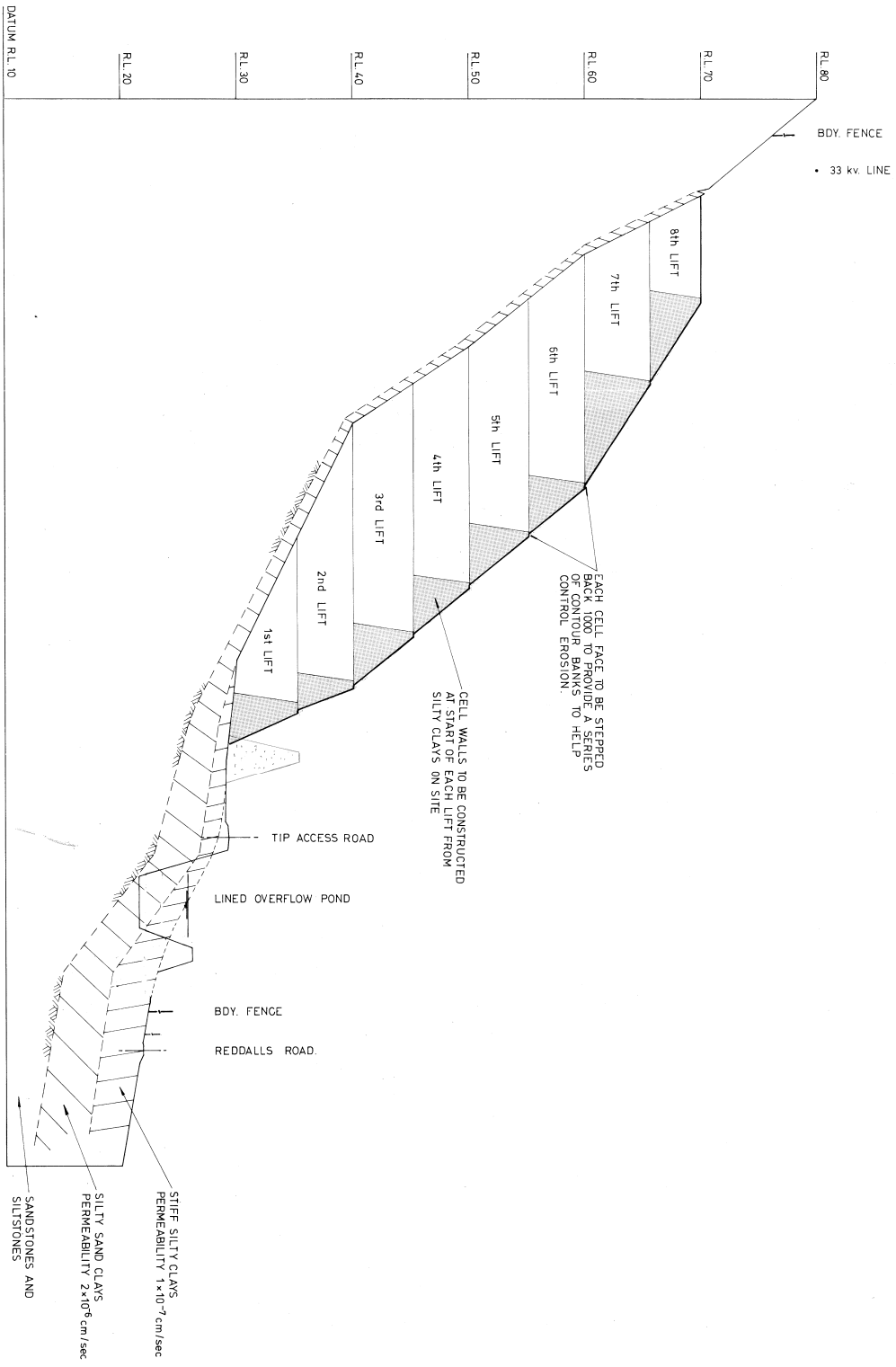
SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 512077
AND AT MELBOURNE, SYDNEY, PERTH, HOBART AND LAUNCESTON



PROJECT MANAGER S. HOLLIS
DESIGN S.H.
DRAWN D.G.
CHECKED J.M.S.
DATE 1/2/14

WOLLONGONG CITY COUNCIL
WHITES GULLY LANDFILL SITE
WASH DOWN BAY AND
GRATED SUMP DETAILS

DRAWING NO. 2798-01-11A



SECTION A-A

REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE

SCOTT & FURPHY ENGINEERS PTY. LTD.
 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 NUMBER: S.HOLLIS
 DESIGN: S.H.
 DRAWN: D.G.
 APPROVED: [Signature]
 DATE: 2.4.92



WOLLONGONG CITY COUNCIL
 WHITES' GULLY LANDFILL SITE
 SECTION THROUGH SITE 'A-A'

1# of 29 P331/17
 DRAWING NO. 2798-01-12

28-6-94 - Grading Changed between Ch. 150 & 315 E.U.R.

REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE
0					

NO.	DATE	DESCRIPTION
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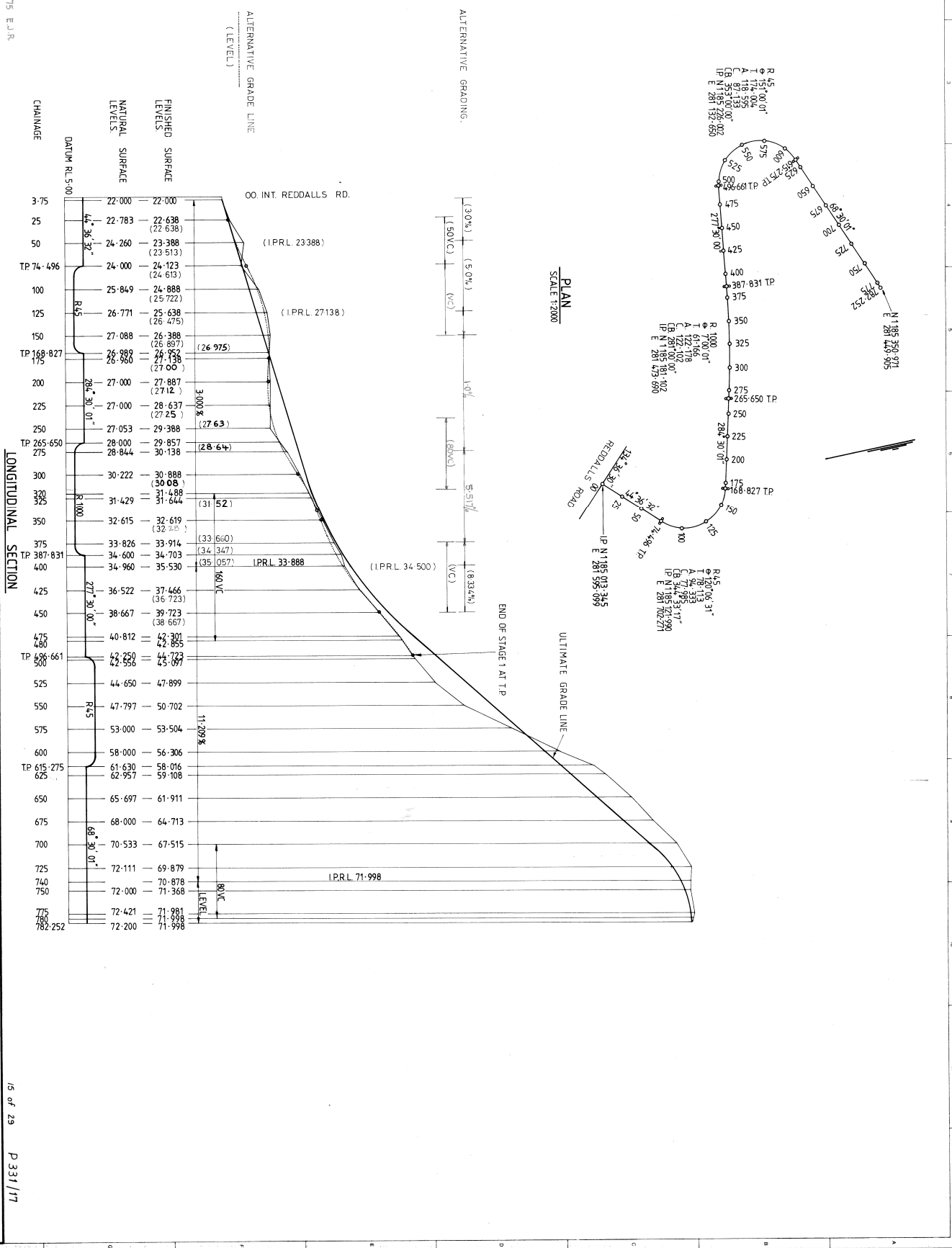
SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 ENU BANK, BELMONT TOWN CENTRE
 CANBERRA ACT. 2617
 TELEPHONE (063) 529277
 AND AT MELBOURNE, STONEY, PERTH, HOBART AND LAUNCESTON

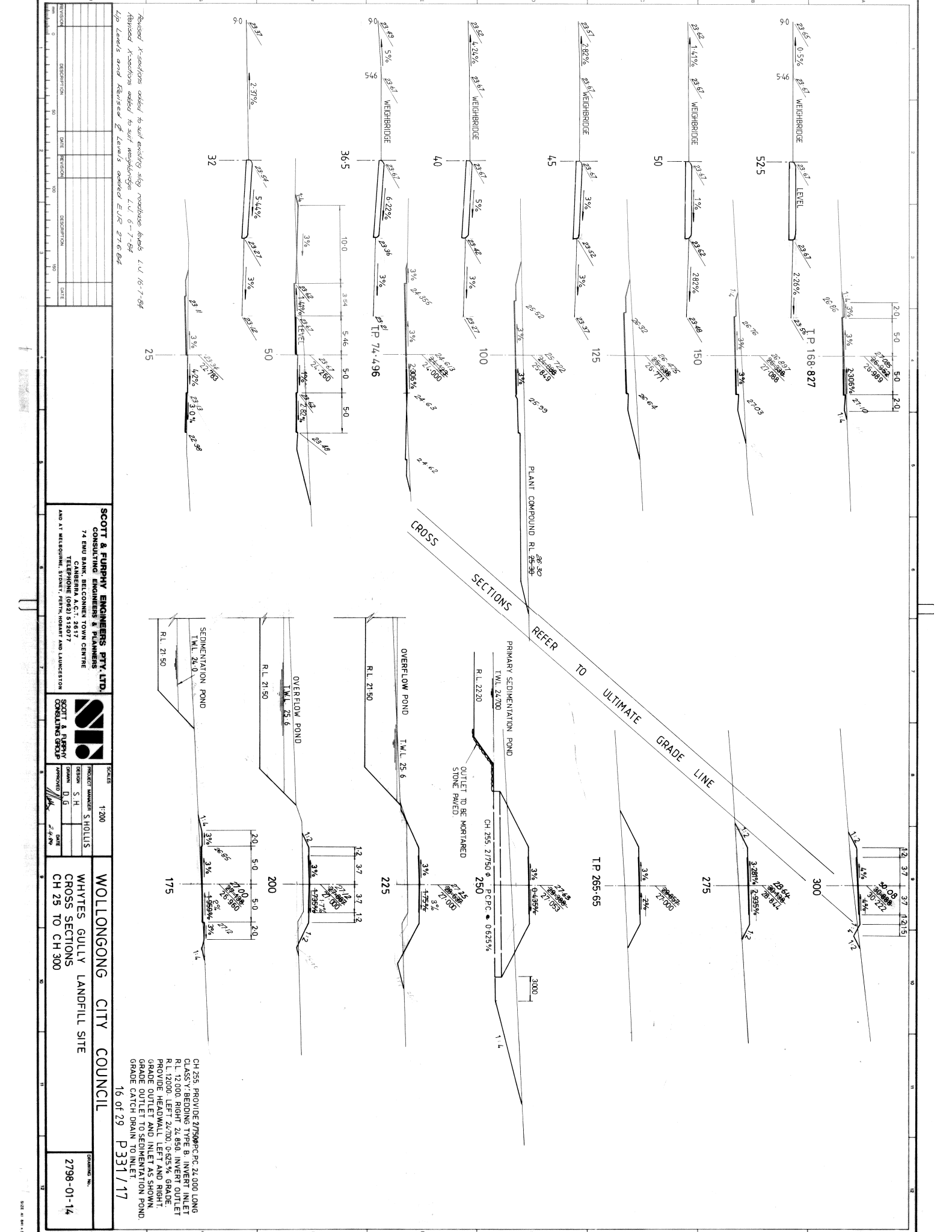


SCALE	PROJECT NUMBER	DESIGNER	DATE
1:200 VERT 1:2000 HOR	11200	S.HOLLIS	2-4-84

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

15 of 29 P 331/17
 DRAWING NO. 2798-01-13A





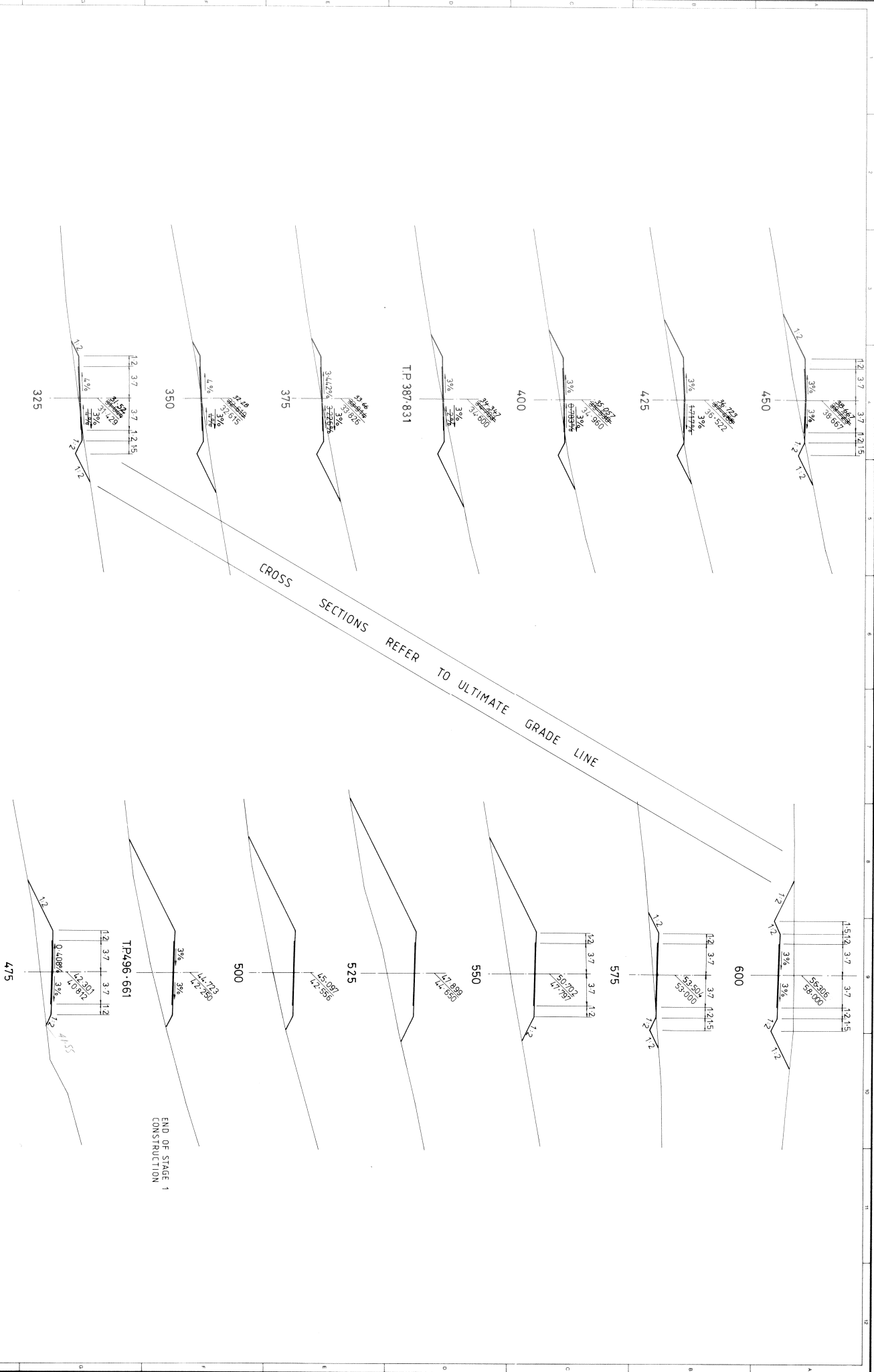
SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2617
 TELEPHONE (062) 512077
 AND AT MELBOURNE, SYDNEY, PERTH, MOUNTAINT AND LAUNCESTON



PROJECT NUMBER	1200
DESIGN	S.H.
DRAWN	D.J.G.
APPROVED	[Signature]
DATE	27/4/94

WOLLONGONG CITY COUNCIL
 WHITES GULLY LANDFILL SITE
 CROSS SECTIONS
 CH 25 TO CH 300

DRAWING NO.
2798-01-14



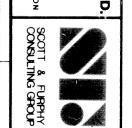
CROSS SECTIONS REFER TO ULTIMATE GRADE LINE

END OF STAGE 1
CONSTRUCTION

REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE

NO.	DESCRIPTION	DATE

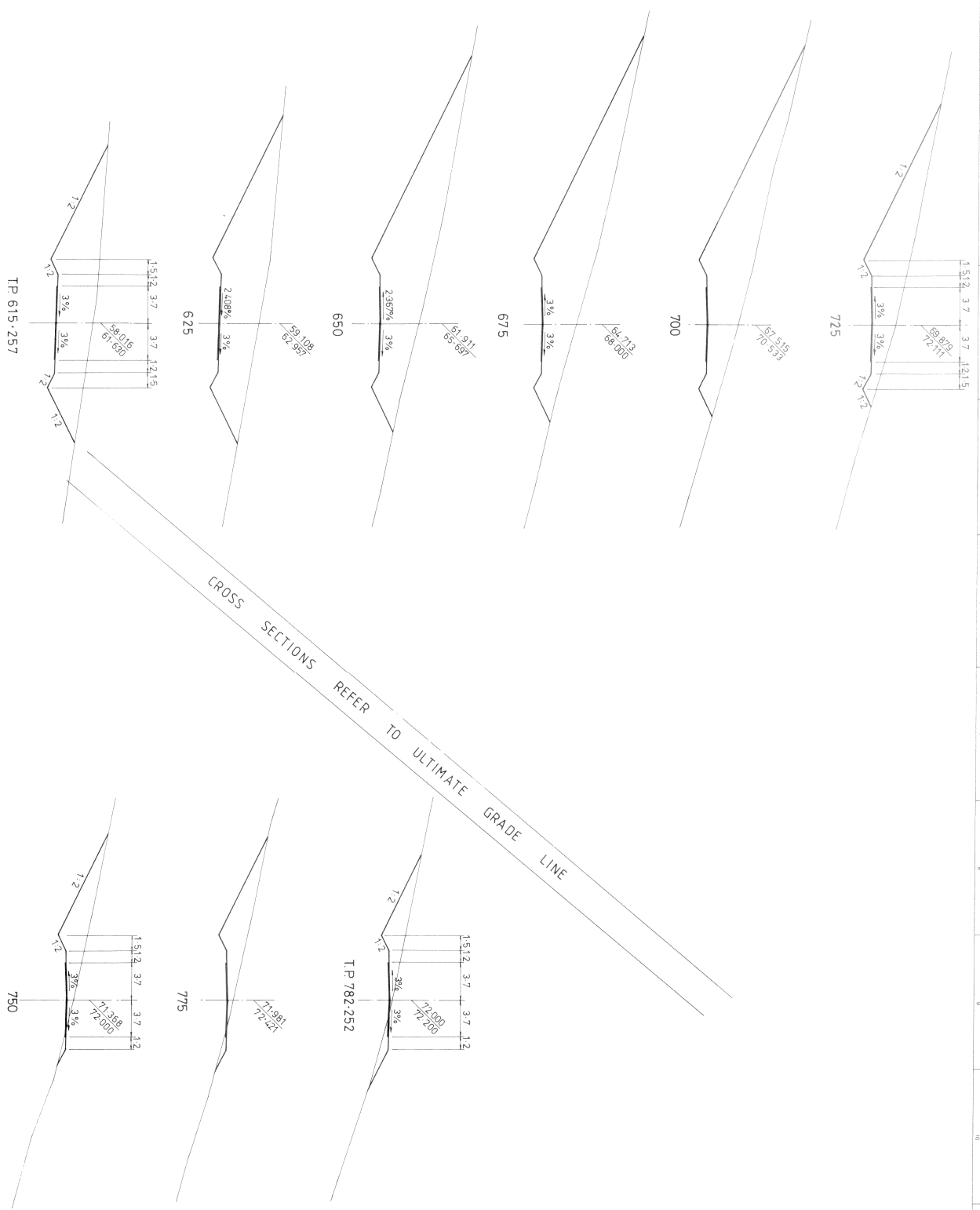
SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
TELEPHONE (082) 433077
AND AT MELBOURNE, SYDNEY, PERTH, ROBERT AND LAUNCESTON



PROJECT NUMBER	SCALE
S.HOLLIS	1:200

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

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



REVISION	DESCRIPTION	NO	DATE	REVISION	NO	DATE

TP 615.257

SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2817
 TELEPHONE (062) 812017 AND LANSHES TOW
 AND AT MELBOURNE, SYDNEY, BRISBANE AND LAUNCESTON



SCALE: 1:200
 PROJECT MANAGER: S. HOLLIS
 DESIGNER: S. H.
 DRAWN: D.G.
 APPROVED: [Signature]
 DATE: 27/1/20

WOLLONGONG CITY COUNCIL
 WHITES GULLY LANDFILL SITE
 CROSS SECTIONS
 CH T P 615.257 TO CH T P 782.252

18 of 29 P331 / 17
 DRAWING NO: 2798-01-16

E 281 200

E 281 400

E 281 600

E 281 800

E 282 000

N 1185 500

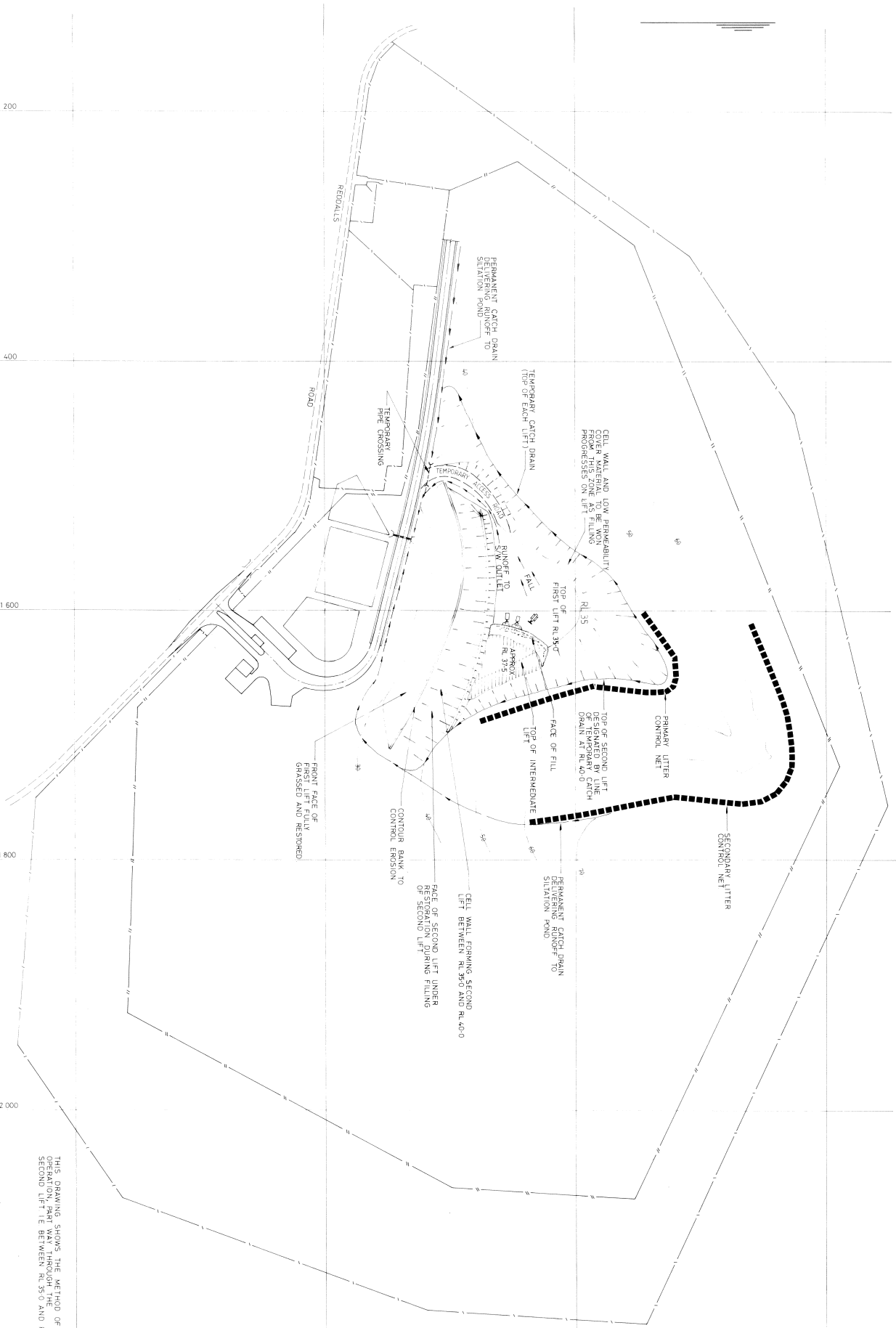
N 1185 300

N 1185 100

N 1184 900

THIS DRAWING SHOWS THE METHOD OF SECOND LIFT LIFT LINE BETWEEN RL 350 AND RL 400

19 of 29 P331/17



SCALE OF POINTS AFFECTED	25 5 54
DATE	19/01/00
REVISION	
DESCRIPTION	
DATE	

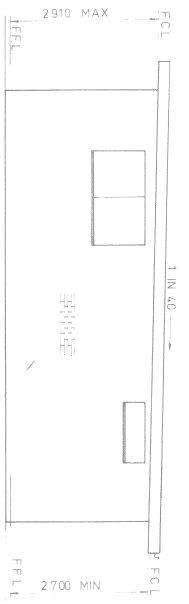
SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 BMD BANK, BELCONNEN TOWN CENTRE
 TELEPHONE (0623) 513077
 AND AT MELBOURNE, STONEY, BERTH, HOIARY AND LAMINGTON



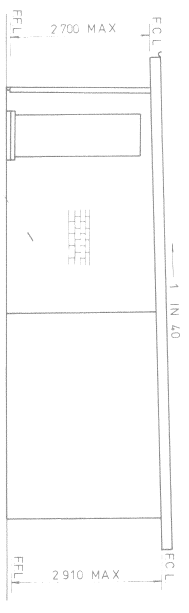
PROJECT NUMBER	S 30115
DESIGNER	SH
DRAWN	DR
DATE	14/01/00

WOLLONGONG CITY COUNCIL
 WHITES GULLY LANDFILL SITE
 OPERATING DIAGRAM

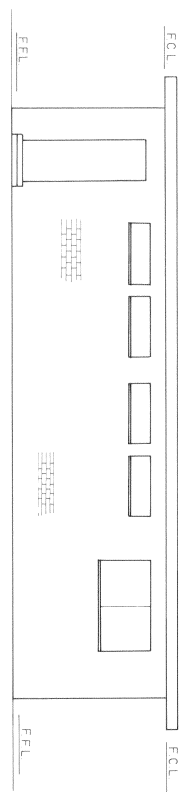
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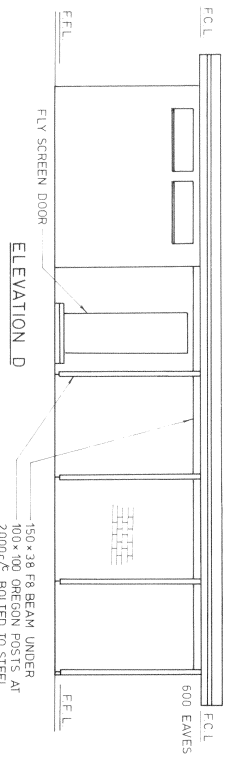
ELEVATION A
SELECTED FACE BRICKWORK



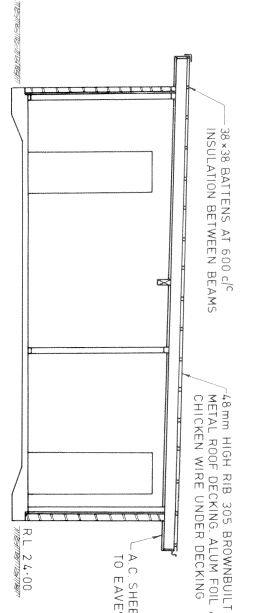
ELEVATION B



ELEVATION C

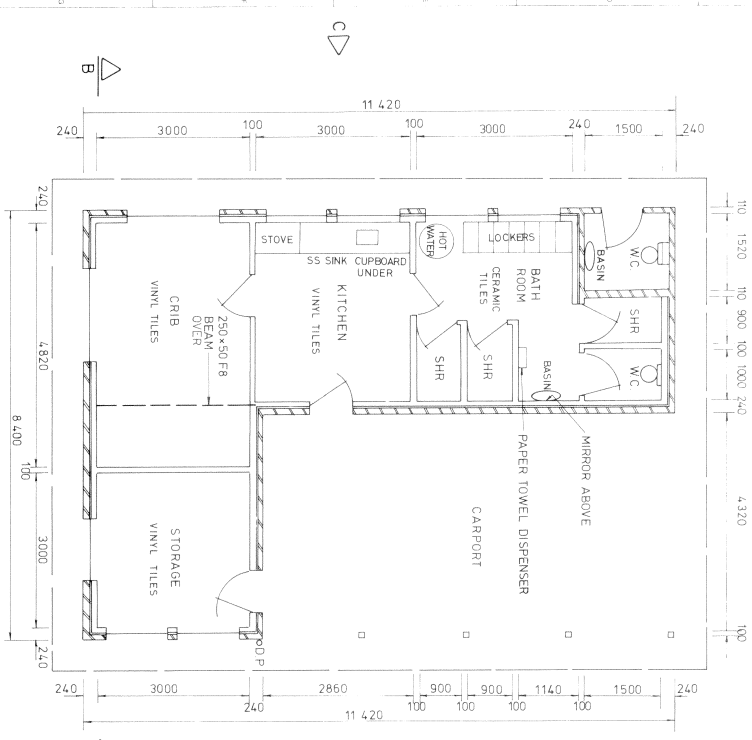


ELEVATION D



SECTION B-B

NOTE WUNDERLICH WINDOWS
SERIES 500 D
53-101B, 5H0412



PLAN

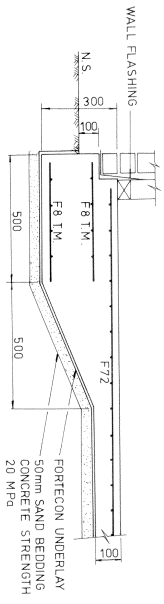
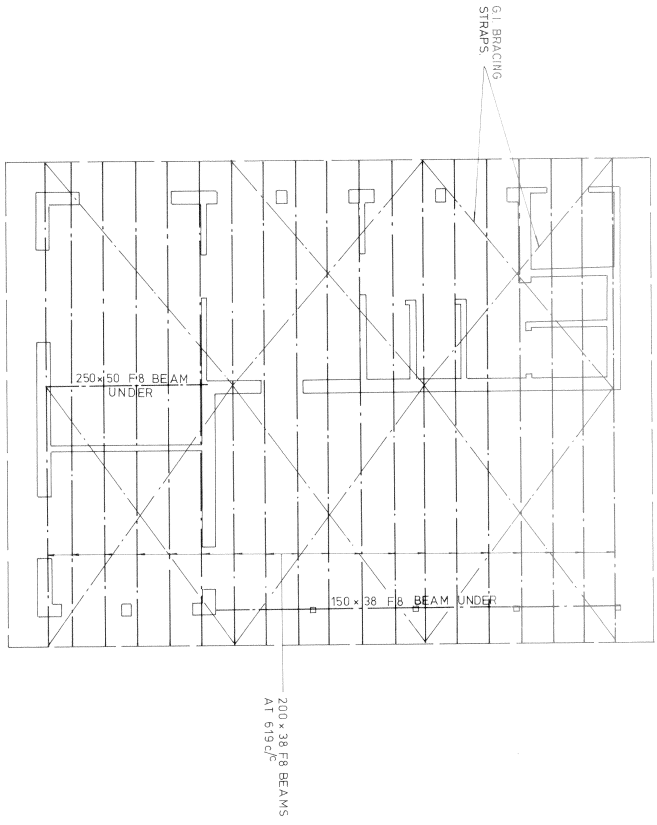
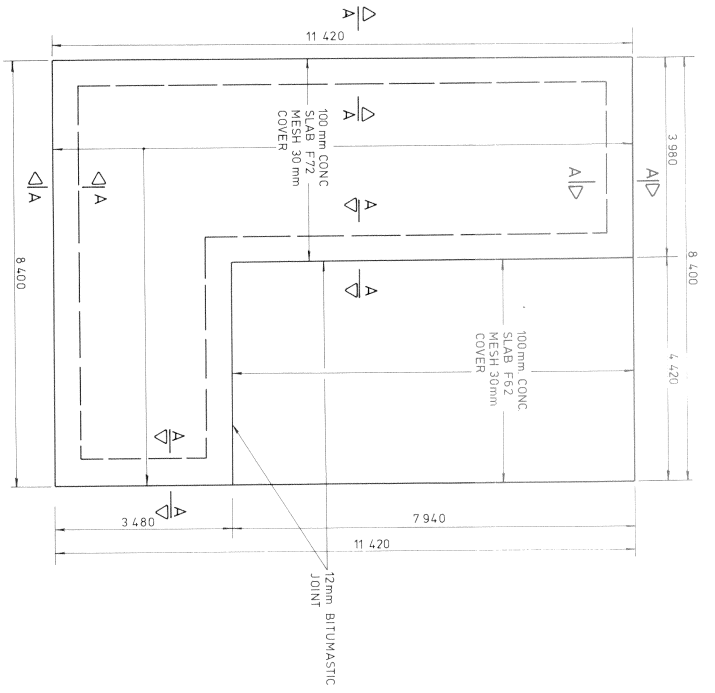
REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK BELGONGONG TOWN CENTRE
CANBERRA ACT 2604
TELEPHONE (062) 512077
AND AT MELBOURNE, SYDNEY, PERTH, HOBBART AND LANCASTER

PROJECT NUMBER	1 500
DESIGNER	S. HOLLIS
CHECKED BY	S. H.
DATE	2 6/14

WOLLONGONG CITY COUNCIL
WHITES GULLY LANDFILL SITE
PROPOSED AMENITIES BLOCK
DRAWING No. 2798-01-18

20 of 29 P331/17



- NOTES:
1. ROOF BEAMS TO BE TIED DOWN TO FLOOR SLAB WITH METAL STRAPS OR M.S BOLTS.
 2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH A.S. 1684-1979 'LIGHT TIMBER FRAMING CODE'.
 3. DECKING TO BE FIXED TO BEAMS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND TO SATISFY THE WIND LOAD REQUIREMENTS WITHIN A TERRAIN CATEGORY 3 WIND AREA.

REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE

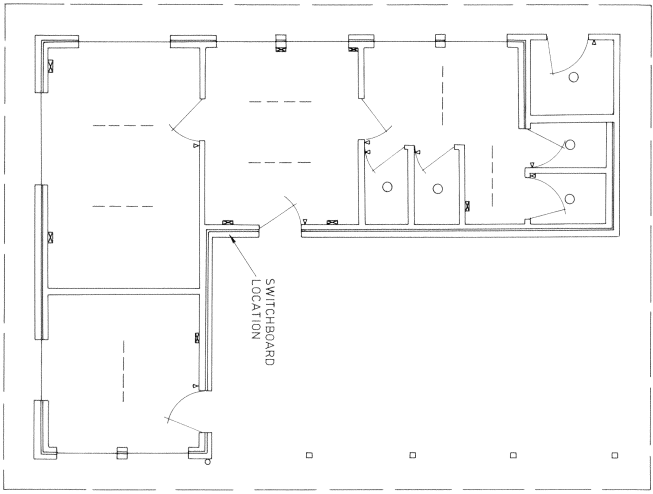
SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2617
 TELEPHONE (062) 512017
 AND AT MELBOURNE, SYDNEY, PERTH, ADELAIDE AND LAUNCESTON

PROJECT MANAGER	S. HOLLIS
DESIGN	S. H.
DRAWN	D. G.
APPROVED	<i>[Signature]</i>
DATE	2.4.16

WOLLONGONG CITY COUNCIL
 WHYTES GULLY LANDFILL SITE
 PROPOSED AMENITIES BLOCK

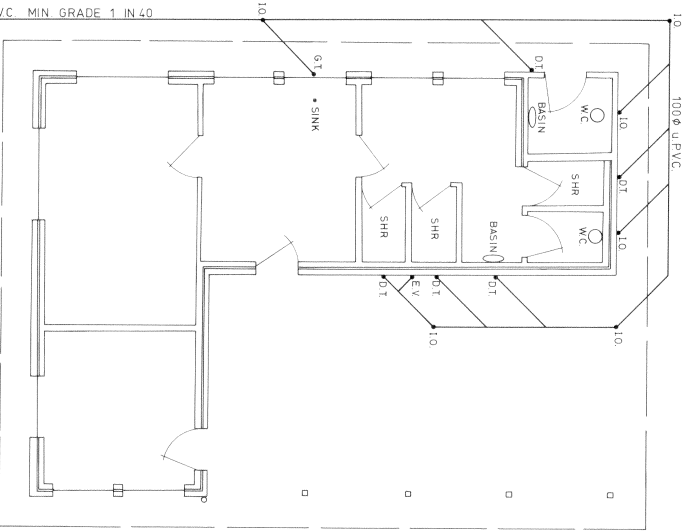
21 of 29 P331/17

DRAWING NO. 2789-01-19



ELECTRICAL LAYOUT

- LEGEND
- 40 W FLUORESCENT LIGHT FITTINGS
 - INCANDESCENT LIGHT FITTINGS
 - ⋄ LIGHT SWITCHES
 - ⊞ DOUBLE POWER POINTS



DRAINAGE PLAN

- LEGEND
- D.T. DISCONNECTOR TRAP
 - G.T. GULLY TRAP
 - I.O. INSPECTION OPENING
 - EV EDUCUT VENT

NO.	DESCRIPTION	DATE	REVISION	NO.	DESCRIPTION	DATE

NO.	DESCRIPTION	DATE

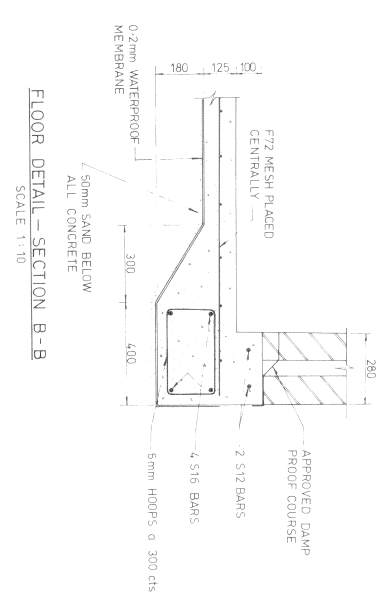
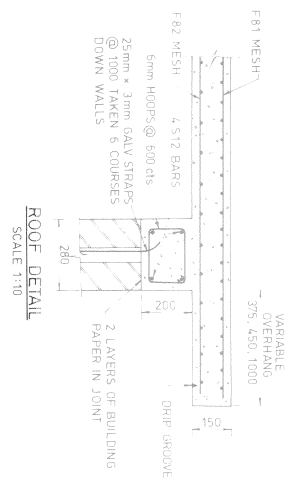
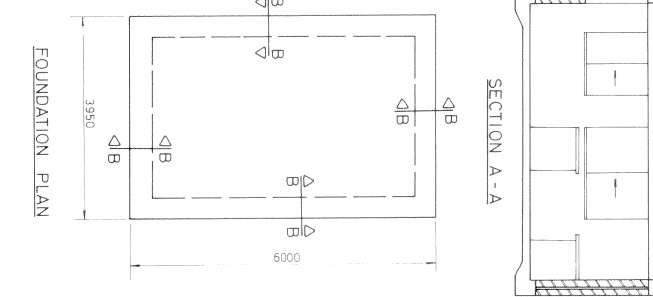
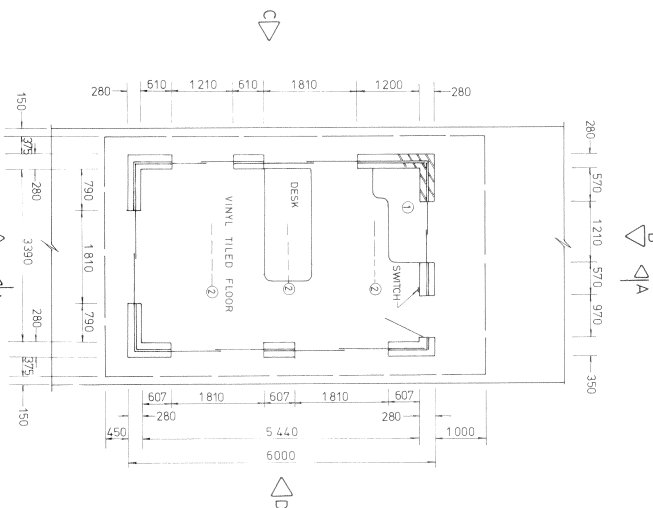
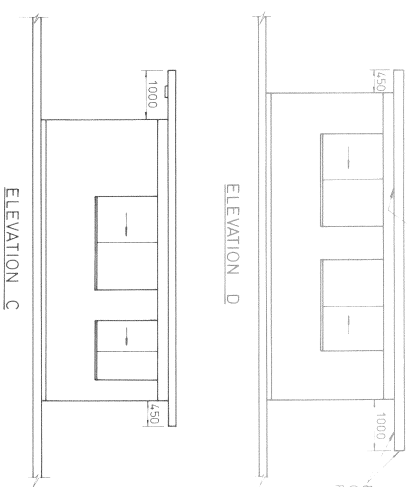
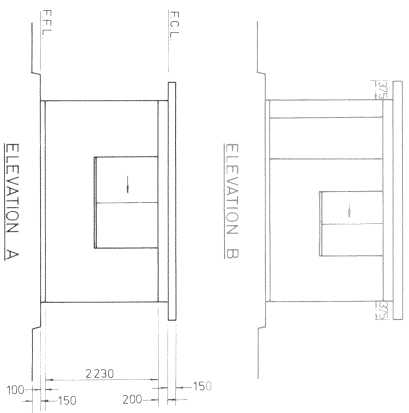
SCOTT & FURRY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 EMU BANK, BELCONNEN TOWN CENTRE
 CANBERRA A.C.T. 2617
 TELEPHONE (062) 320177
 AND AT MELBOURNE, SYDNEY, PERTH, BRISBANE AND LANSINGTON



NO.	DESCRIPTION	DATE

WOLLONGONG CITY COUNCIL
 WHYTES GULLY LANDFILL SITE
 PROPOSED AMENITIES BLOCK
 ELECTRICAL LAYOUT AND DRAINAGE PLAN

22 of 29 P331/17



NOTES

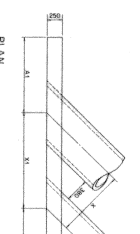
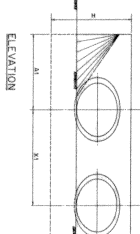
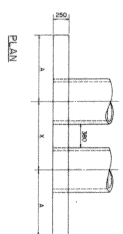
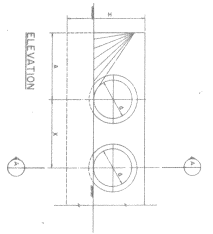
ALL WINDOWS SHALL HAVE ALUMINIUM FRAMES, SUITABLY FLASHED AND FITTED WITH 60mm THICK LAMINATED GLASS USING HIGH IMPACT INTERLAY AND APPROVED INTERNAL LOCKING DEVICE. THE DOOR SHALL BE SOLID CORE FITTED WITH ABCO OR SIMILAR DEADLOCK AND SEPARATE LATCH HANDLE AND DOOR CLOSURES. ALL CONCRETE SHALL BE GRADE 20 MPa. REINFORCING BARS SHALL HAVE A MINIMUM LAP OF 25 x DIA. REINFORCING MESH SHALL HAVE A 300mm MINIMUM LAP. ALL WALLS, INTERNAL AND EXTERNAL, SHALL BE FACE BRICKWORK IN 1:2.9 MORTAR WITH JOINTS TOOLED. Z1S2 DENOTES 2 BARS - STRUCTURAL DEFORMED - 12mm DIA. ⓐ DENOTES 2 BARS - STRUCTURAL DEFORMED - 12mm DIA. ⓑ DENOTES 40W FLUORESCENT LIGHT FITTINGS. ⓓ DENOTES BENCH TOPS TO BE FACED WITH FORMICA OR SIMILAR WITH ALL OTHER EXPOSED SURFACES OF CUPBOARDS OF SOLID OR VENEERED TIMBER.

REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE

SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2817
TELEPHONE (062) 519077
AND AT MELBOURNE, SYDNEY, PERTH, HOKIATI AND LAUNCESTON

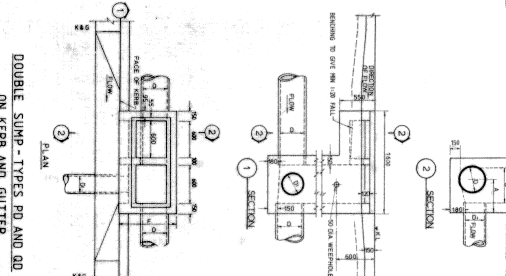
SCALE	PROJECT NUMBER	DESIGNER	CHECKER	DATE
1:50, 1:10	S.HOLLIS	S.H.	S.H.	11/10

WOLLONGONG CITY COUNCIL
WHITES GULLY LANDFILL SITE
DETAILS OF WEIGHBRIDGE OFFICE
23 of 29 P 3311/17
DRAWING No. 2798-01-21

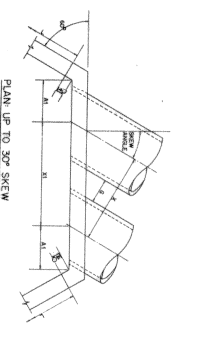
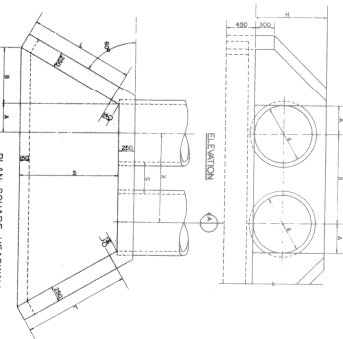


ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
400	1	m ²	1.20	1.20	2.40	2.40
401	1	m ²	1.20	1.20	2.40	2.40
402	1	m ²	1.20	1.20	2.40	2.40
403	1	m ²	1.20	1.20	2.40	2.40
404	1	m ²	1.20	1.20	2.40	2.40
405	1	m ²	1.20	1.20	2.40	2.40
406	1	m ²	1.20	1.20	2.40	2.40
407	1	m ²	1.20	1.20	2.40	2.40
408	1	m ²	1.20	1.20	2.40	2.40
409	1	m ²	1.20	1.20	2.40	2.40
410	1	m ²	1.20	1.20	2.40	2.40
411	1	m ²	1.20	1.20	2.40	2.40
412	1	m ²	1.20	1.20	2.40	2.40
413	1	m ²	1.20	1.20	2.40	2.40
414	1	m ²	1.20	1.20	2.40	2.40
415	1	m ²	1.20	1.20	2.40	2.40
416	1	m ²	1.20	1.20	2.40	2.40
417	1	m ²	1.20	1.20	2.40	2.40
418	1	m ²	1.20	1.20	2.40	2.40
419	1	m ²	1.20	1.20	2.40	2.40
420	1	m ²	1.20	1.20	2.40	2.40

0 - 1.00M METRES OF CONCRETE REQUIRED FOR TWO SIDEWALKS FOR PAVEMENT ONLY.
 ALL CONCRETE SHALL BE CLASS 30/30M/25MM.

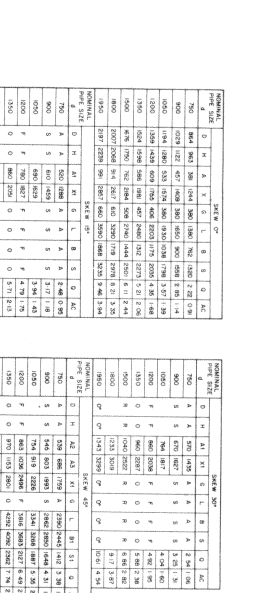
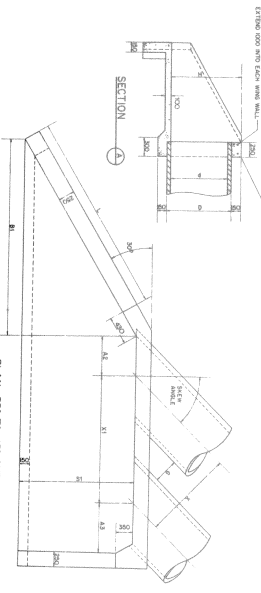


ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
421	1	m ²	1.20	1.20	2.40	2.40
422	1	m ²	1.20	1.20	2.40	2.40
423	1	m ²	1.20	1.20	2.40	2.40
424	1	m ²	1.20	1.20	2.40	2.40
425	1	m ²	1.20	1.20	2.40	2.40
426	1	m ²	1.20	1.20	2.40	2.40
427	1	m ²	1.20	1.20	2.40	2.40
428	1	m ²	1.20	1.20	2.40	2.40
429	1	m ²	1.20	1.20	2.40	2.40
430	1	m ²	1.20	1.20	2.40	2.40

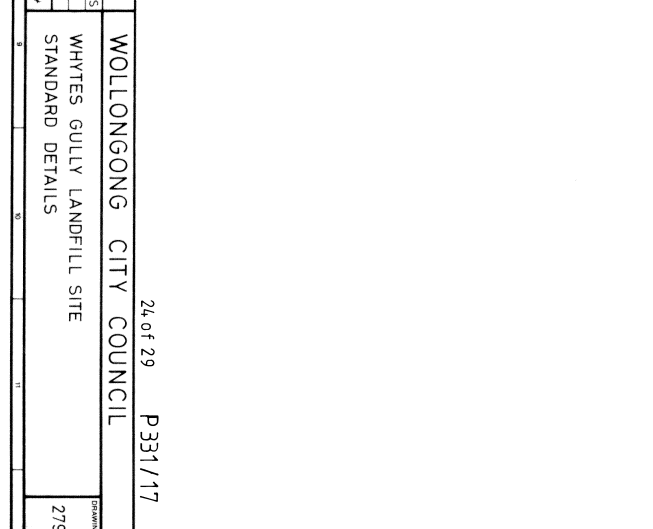


ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
431	1	m ²	1.20	1.20	2.40	2.40
432	1	m ²	1.20	1.20	2.40	2.40
433	1	m ²	1.20	1.20	2.40	2.40
434	1	m ²	1.20	1.20	2.40	2.40
435	1	m ²	1.20	1.20	2.40	2.40
436	1	m ²	1.20	1.20	2.40	2.40
437	1	m ²	1.20	1.20	2.40	2.40
438	1	m ²	1.20	1.20	2.40	2.40
439	1	m ²	1.20	1.20	2.40	2.40
440	1	m ²	1.20	1.20	2.40	2.40

ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
441	1	m ²	1.20	1.20	2.40	2.40
442	1	m ²	1.20	1.20	2.40	2.40
443	1	m ²	1.20	1.20	2.40	2.40
444	1	m ²	1.20	1.20	2.40	2.40
445	1	m ²	1.20	1.20	2.40	2.40
446	1	m ²	1.20	1.20	2.40	2.40
447	1	m ²	1.20	1.20	2.40	2.40
448	1	m ²	1.20	1.20	2.40	2.40
449	1	m ²	1.20	1.20	2.40	2.40
450	1	m ²	1.20	1.20	2.40	2.40



ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
451	1	m ²	1.20	1.20	2.40	2.40
452	1	m ²	1.20	1.20	2.40	2.40
453	1	m ²	1.20	1.20	2.40	2.40
454	1	m ²	1.20	1.20	2.40	2.40
455	1	m ²	1.20	1.20	2.40	2.40
456	1	m ²	1.20	1.20	2.40	2.40
457	1	m ²	1.20	1.20	2.40	2.40
458	1	m ²	1.20	1.20	2.40	2.40
459	1	m ²	1.20	1.20	2.40	2.40
460	1	m ²	1.20	1.20	2.40	2.40



ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
461	1	m ²	1.20	1.20	2.40	2.40
462	1	m ²	1.20	1.20	2.40	2.40
463	1	m ²	1.20	1.20	2.40	2.40
464	1	m ²	1.20	1.20	2.40	2.40
465	1	m ²	1.20	1.20	2.40	2.40
466	1	m ²	1.20	1.20	2.40	2.40
467	1	m ²	1.20	1.20	2.40	2.40
468	1	m ²	1.20	1.20	2.40	2.40
469	1	m ²	1.20	1.20	2.40	2.40
470	1	m ²	1.20	1.20	2.40	2.40

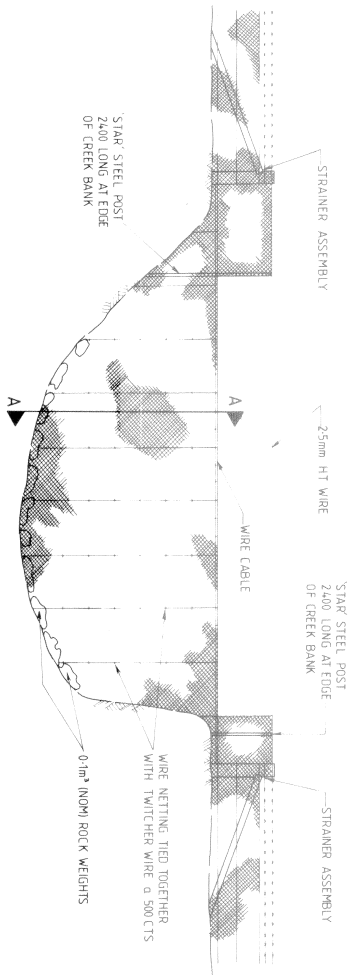
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			L	B	S	AL
471	1	m ²	1.20	1.20	2.40	2.40
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473	1	m ²	1.20	1.20	2.40	2.40
474	1	m ²	1.20	1.20	2.40	2.40
475	1	m ²	1.20	1.20	2.40	2.40
476	1	m ²	1.20	1.20	2.40	2.40
477	1	m ²	1.20	1.20	2.40	2.40
478	1	m ²	1.20	1.20	2.40	2.40
479	1	m ²	1.20	1.20	2.40	2.40
480	1	m ²	1.20	1.20	2.40	2.40

ITEM NO.	QTY	UNIT	SKIRM 0°			
			L	B	S	AL
481	1	m ²	1.20	1.20	2.40	2.40
482	1	m ²	1.20	1.20	2.40	2.40
483	1	m ²	1.20	1.20	2.40	2.40
484	1	m ²	1.20	1.20	2.40	2.40
485	1	m ²	1.20	1.20	2.40	2.40
486	1	m ²	1.20	1.20	2.40	2.40
487	1	m ²	1.20	1.20	2.40	2.40
488	1	m ²	1.20	1.20	2.40	2.40
489	1	m ²	1.20	1.20	2.40	2.40
490	1	m ²	1.20	1.20	2.40	2.40

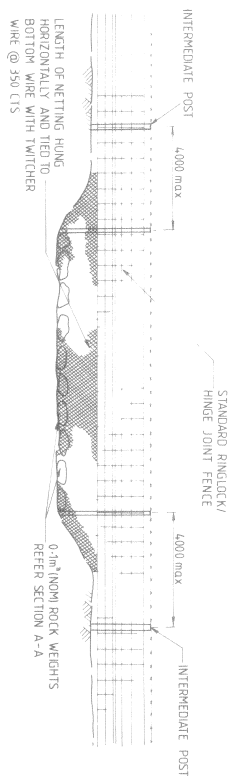
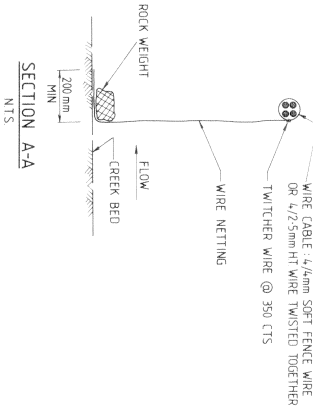
REVISION	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE
1					
2					
3					

SCOTT & FURPHY ENGINEERS PTY LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 BUN BARR, BELCONNEN TOWN CENTRE
 AND AT MELBOURNE, STONEY, PERTH, HOBART AND LAUNCESTON
 PROJECT MANAGER: S. HOLLIS
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

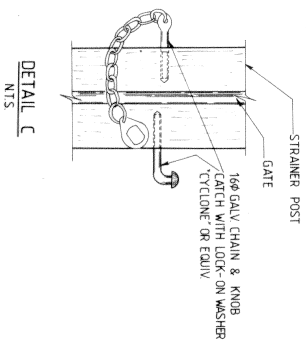
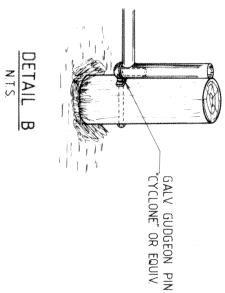
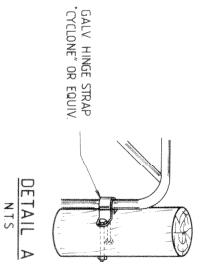
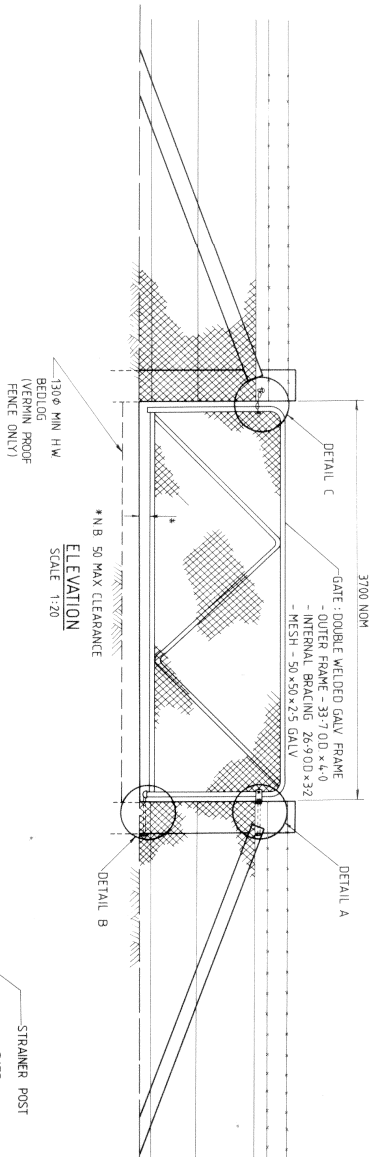
WOLLONGONG CITY COUNCIL
 WHITES GULLY LANDFILL SITE
 STANDARD DETAILS
 24.04.29 P331/17
 DRAWING NO. 2798-01-22



FLOODGATE FOR STOCK & VERMIN PROOF FENCE
 (DEEP CREEK - 750mm DEEP)
 (IF 750mm DEEP USE SHALLOW
 CREEK STANDARD)
 SCALE 1:50



FLOODGATE FOR RINGLOCK/HINGEJOINT FENCE
 (SHALLOW CREEK - < 750mm DEEP)
 (IF > 750mm DEEP USE DEEP
 CREEK STANDARD)
 SCALE 1:50



FIELD GATE ASSEMBLY

- NOTES**
- 1 REFER SHEET N^o1 FOR GENERAL NOTES.
 - 2 GATE ERECTION DETAILS TO MANUFACTURERS SPECIFICATIONS.

REVISION	DESCRIPTION	DATE

REVISION	DESCRIPTION	DATE

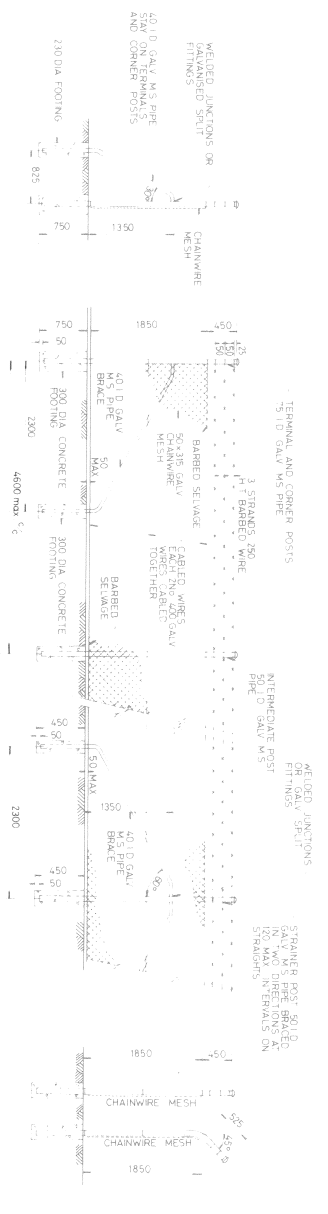
SCOTT & FURPHY ENGINEERS PTY. LTD.
 CONSULTING ENGINEERS & PLANNERS
 74 END BANK, BELCONVIEW & DAWN CENTRE
 AND 47 WILSON STREET, PERTH, WESTERN AUSTRALIA

SCOTT & FURPHY CONSULTING GROUP

PROJECT APPROVED: AS SHOWN
 DESIGN APPROVED: D.B.
 DATE:

WOLLONGONG CITY COUNCIL
 STANDARD FENCING DETAILS
 SHEET 2

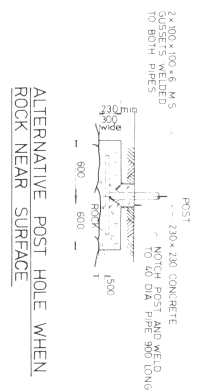
DRAWING NO. 2798-01-24



TYPES 3A & 3B



DETAIL OF CONNECTION OF WIRE MESH TO TERMINAL POSTS



ALTERNATIVE POST HOLE WHEN ROCK NEAR SURFACE



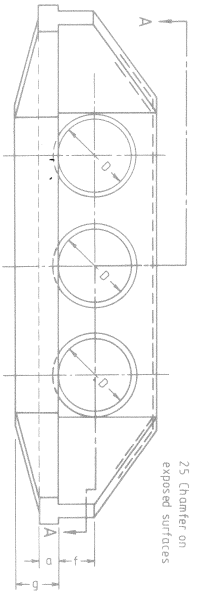
STAY AND BRACE POSITIONS



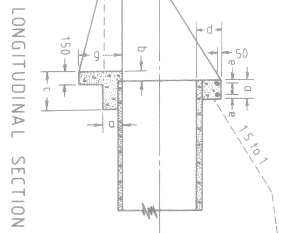
DETAIL AT BARBED SELVAGE

- NOTES:
- 1 ALL PIPE DIAMETERS SHOWN ARE NOMINAL BORES.
 - 2 FOR ALL POSTS AND BRACES ARE MEDIUM DUTY CONFORMING.
 - 3 ALL POSTS SHALL BE FITTED WITH APPROVED CAPS.
 - 4 ALL WELDED CONNECTIONS SHALL HAVE 5mm CONTIGUOUS WITH TWO (2) COATS OF APPROVED GALVANISED ZINC PRIMER SPECIFICATIONS.
 - 5 GATES TO BE ERRECTED ACCORDING TO MANUFACTURERS SPECIFICATIONS.
 - 6 TIP TYPE FENCE
 - a DELETE BARBED WIRE
 - b REPLACE CHAINWIRE BY STANDARD 50mm MESH

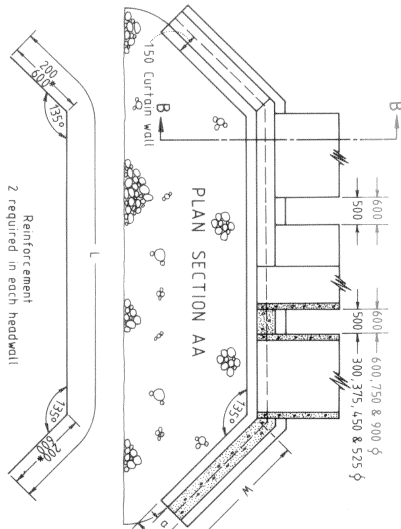
SCOTT & FURPHY ENGINEERS PTY. LTD. CONSULTING ENGINEERS & PLANNERS 74 EMI BANK, BELCONNEN TOWN CENTRE CANBERRA A.C.T. 2817 TELEPHONE (062) 512977 AND AT MELBOURNE, STONEY, PERTH, HOBART AND LANCASTER			PROJECT NUMBER DESIGN NUMBER DRAWING NUMBER DATE
DATE REVISION DATE REVISION DATE	WOLLONGONG CITY COUNCIL MANROOF FENCING DETAILS		DRAWN BY: N.S. 2798-01-25



ELEVATION



LONGITUDINAL SECTION BB

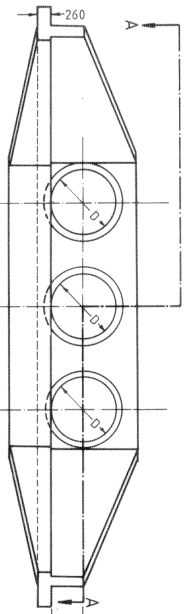


PLAN SECTION AA

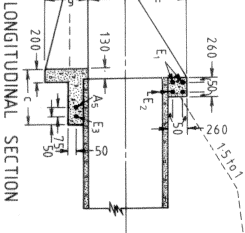
Reinforcement 2 required in each headwall
 *200mm for 300, 375, 450 & 525 ϕ and 600mm for 600, 750 & 900 ϕ

D	Pipe diameter (mm)	300	375	450	525	600	750	900
a	Footing and Kerb (mm)	150	150	150	180	205	220	230
b	Curtn wall (mm)	75	75	75	110	110	110	110
c	Curtn wall width (mm)	300	300	300	450	450	450	450
d	Kerb height (mm)	230	230	230	300	300	300	300
e	Kerb cover (mm)	40	40	40	50	50	50	50
f	Headwall height (mm)	300	300	300	380	380	380	380
g	Curtn wall depth (mm)	380	380	380	530	530	530	530
h	Headwall length (mm)	500	690	840	990	1120	1450	1790
i	Reinforcement length (mm)	2500	2750	3000	3250	4500	5000	5500
j	Reinforcement dia (mm)	10	10	10	12	12	12	12
k	Reinforcement in Length (mm)	70	11	10	12	13	18	20
l	Reinforcement in Mass (kg)	6.2	6.8	7.4	8.0	16.0	17.8	19.5
m	Conc in two headwalls (m ³)	0.95	1.04	1.25	1.45	2.61	3.64	4.88
n	M Outlet protection (m)	1.2	1.6	2.4	3.1	3.6	4.3	4.8
o	M Outlet protection (m)	2.2	2.7	3.2	3.6	4.0	4.9	5.9

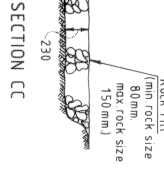
PIPE DIAMETERS 300 TO 900



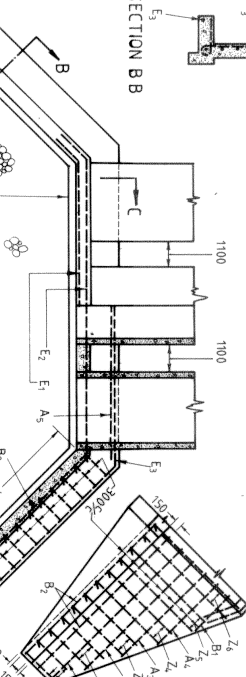
ELEVATION



LONGITUDINAL SECTION CC



SECTION CC



SECTION BB

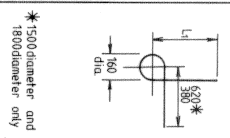
D	Pipe diameter (mm)	1050	1200	1350	1500	1800
g	Headwall height (mm)	1350	1550	1700	1900	2210
h	Curtn wall depth (mm)	600	600	700	700	750
i	Curtn wall width (mm)	700	700	900	900	900
j	Headwall height (mm)	450	450	530	530	600
k	Headwall length (mm)	1930	2300	2490	2850	3400
l	Conc in two headwalls (m ³)	7.3	8.7	10.3	13.3	16.9
m	M Outlet protection (m)	5.5	6.1	6.7	7.3	8.5
n	M Outlet protection (m)	8.8	9.9	10.5	11.6	13.3

PIPE DIAMETERS 1050 TO 1800

DESIGNED A STUART
 CHECKED J O'LEARY
 Concrete Grade 15MPa
 All dimensions are in millimetres

REINFORCEMENT FOR HEADWALLS

SHAPE	MARK	D/A	PIPE DIA	L ₁	LENGTH REQD	N ^o	TOTAL LENGTH	MASS
			mm	mm	mm		mm	kg
	A ₁	12	1050	1850	1850	4	7400	657
			1200	2250	2250	4	9000	799
			1350	2400	2400	4	9600	852
			1500	2800	2800	4	11200	995
			1800	3300	3300	4	13200	1172
	A ₂	12	1050	1200	1200	4	4800	426
			1200	1500	1500	4	6200	551
			1350	1900	1900	4	7600	675
			1500	2350	2350	4	9400	835
			1800	2950	2950	4	11800	1048
	A ₃	12	1350	1250	1250	4	5000	444
			1500	1700	1700	4	6800	604
		1800	2350	2350	4	9400	835	
		1800	1750	1750	4	7000	622	
		1500	1800		2			
B ₁	12	1050	650	950	4	3800	337	
		1200	1000	1300	4	5200	462	
		1350	700	1000	4	4000	355	
		1500	1100	1400	4	5600	497	
		1800	1100	1400	4	5600	497	
B ₂	12	1050	1950	2250	8	18000	1598	
		1200	2350	2650	8	21200	1883	
		1350	2525	2825	8	22800	2025	
		1500	2850	3150	8	25200	2236	
		1800	3450	3750	8	30000	2664	
E ₁	12	1050	5800	7300	4	29200	2593	
		1200	6250	7750	4	31000	2728	
		1350	6700	8270	4	33000	2938	
		1500	7230	8720	4	34600	3101	
		1800	8230	9720	4	38800	3453	
E ₂	12	1050	6000	7500	4	30000	2664	
		1200	6450	7950	4	31800	2824	
		1350	6970	8470	4	33780	3009	
		1500	7430	8930	4	35772	3172	
		1800	8420	9920	4	39664	3424	
E ₃	12	1050	6270	10470	2	20874	1849	
		1200	6690	11490	2	22296	2041	
		1350	7200	12600	2	25200	2238	
		1500	7810	13810	2	27642	2453	
		1800	8800	16000	2	32400	2842	
Z ₁	12	1050	580	1340	4	5360	476	
		1200	600	1360	4	5520	496	
		1350	700	1450	8	11600	1030	
		1500	650	1650	8	13200	1172	
		1800	740	1750	8	15120	1344	
Z ₂	12	1050	740	1520	8	12160	1080	
		1200	900	1650	8	13200	1172	
		1350	1000	1750	8	14400	1243	
		1500	950	1950	8	15600	1385	
		1800	1000	2000	8	16800	1488	
Z ₃	12	1050	1010	1790	8	14320	1272	
		1200	1200	1950	8	15600	1385	
		1350	1300	2050	8	16560	1456	
		1500	1250	2250	8	18000	1598	
		1800	1320	2700	8	21600	1920	
Z ₄	12	1200	1500	2250	8	18000	1598	
		1350	1575	2325	8	18600	1652	
		1500	1500	2500	8	20000	1776	
		1800	1600	2600	8	20800	1847	
		1500	1800	2800	8	22400	1989	
		1800	1850	2850	8	22800	2025	
Z ₅	12	1500	1800	2800	8	22400	1989	
		1800	1850	2850	8	22800	2025	
Z ₆	12	1800	2150	3150	8	25200	2238	

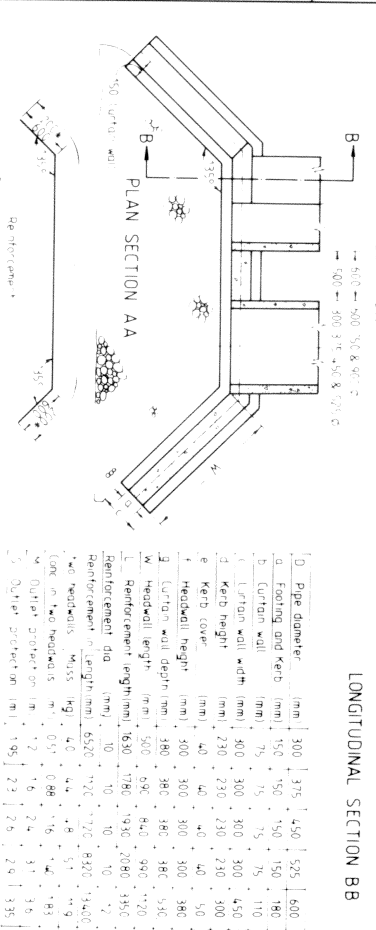
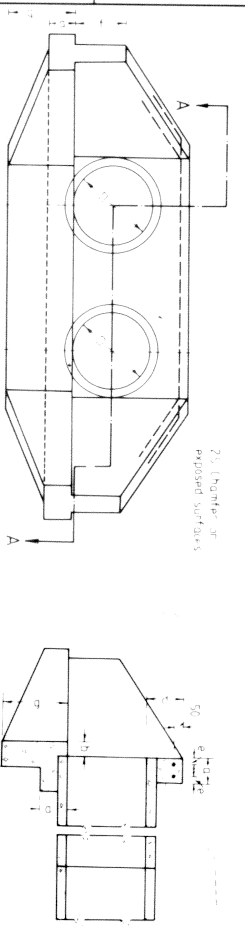


*1500diameter and 1800diameter only

WOLLONGONG CITY COUNCIL
 CONCRETE HEADWALLS FOR
 TRIPLE PIPE CULVERTS

FILE NO. 28 of 29 P331/17
 NO. OF SHEETS SHEET NO.
 Reg. No. 2798-01-26

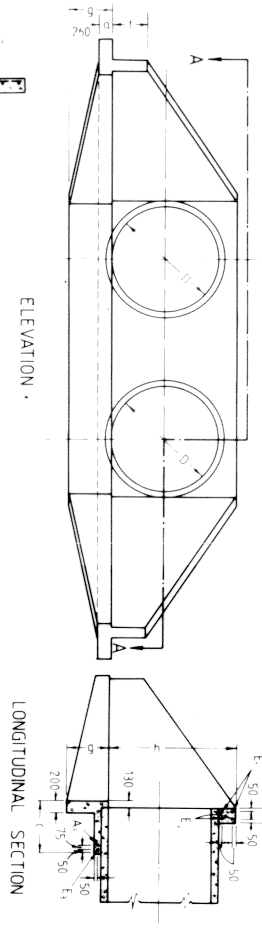




PIPE DIAMETERS 300 TO 900

* 200 mm for 400, 450 & 500, 250 and 600 mm for 500, 750 & 900.

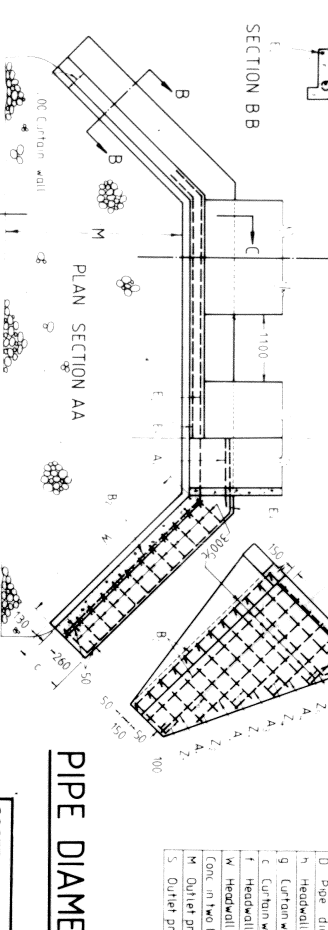
D. Pipe diameter (mm)	300	375	450	525	600	750	900
a. Footing and kerb (mm)	150	150	150	180	205	230	230
b. Curtain wall (mm)	75	75	75	75	110	110	110
c. Curtain wall width (mm)	400	300	300	450	450	450	450
d. Kerb height (mm)	230	230	230	300	300	300	300
e. Kerb cover (mm)	40	40	40	50	50	50	50
f. Headwall height (mm)	300	300	300	380	380	380	380
g. Curtain wall depth (mm)	380	380	380	380	530	530	530
h. Headwall length (mm)	500	500	500	500	500	500	500
i. Reinforcement length (mm)	650	780	930	1080	1230	1480	1780
Reinforcement dia (mm)	10	10	10	10	12	12	12
Reinforcement length (mm)	6520	7720	8420	13400	14800	19800	23800
Reinforcement mass (kg)	42	54	77	134	150	210	270
Concrete mass (kg)	0.57	0.68	0.76	1.14	1.18	1.63	2.07
Concrete mass (kg/m)	1.9	1.8	1.7	1.5	1.6	2.1	2.4
Outer protection (mm)	195	220	230	230	230	230	230



CONCRETE GRADE 15MPa

ALL DIMENSIONS ARE IN MILLIMETERS

D. Pipe diameter (mm)	300	375	450	525	600	750	900
a. Footing and kerb (mm)	150	150	150	180	205	230	230
b. Curtain wall (mm)	75	75	75	75	110	110	110
c. Curtain wall width (mm)	400	300	300	450	450	450	450
d. Kerb height (mm)	230	230	230	300	300	300	300
e. Kerb cover (mm)	40	40	40	50	50	50	50
f. Headwall height (mm)	300	300	300	380	380	380	380
g. Curtain wall depth (mm)	380	380	380	380	530	530	530
h. Headwall length (mm)	500	500	500	500	500	500	500
i. Reinforcement length (mm)	650	780	930	1080	1230	1480	1780
Reinforcement dia (mm)	10	10	10	10	12	12	12
Reinforcement length (mm)	6520	7720	8420	13400	14800	19800	23800
Reinforcement mass (kg)	42	54	77	134	150	210	270
Concrete mass (kg)	0.57	0.68	0.76	1.14	1.18	1.63	2.07
Concrete mass (kg/m)	1.9	1.8	1.7	1.5	1.6	2.1	2.4
Outer protection (mm)	195	220	230	230	230	230	230



PIPE DIAMETERS 1050 TO 1800

SHAPE	MARK	D.A.	PIER	3-M	4-M	5-M	6-M	7-M	8-M	9-M	10-M	11-M	12-M
	1	1050	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300
	2	1200	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500
	3	1350	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700
	4	1500	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900
	5	1650	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050	3100
	6	1800	2800	2850	2900	2950	3000	3050	3100	3150	3200	3250	3300
	7	1950	3000	3050	3100	3150	3200	3250	3300	3350	3400	3450	3500
	8	2100	3200	3250	3300	3350	3400	3450	3500	3550	3600	3650	3700
	9	2250	3400	3450	3500	3550	3600	3650	3700	3750	3800	3850	3900
	10	2400	3600	3650	3700	3750	3800	3850	3900	3950	4000	4050	4100
	11	2550	3800	3850	3900	3950	4000	4050	4100	4150	4200	4250	4300
	12	2700	4000	4050	4100	4150	4200	4250	4300	4350	4400	4450	4500

REINFORCEMENT FOR HEADWALLS

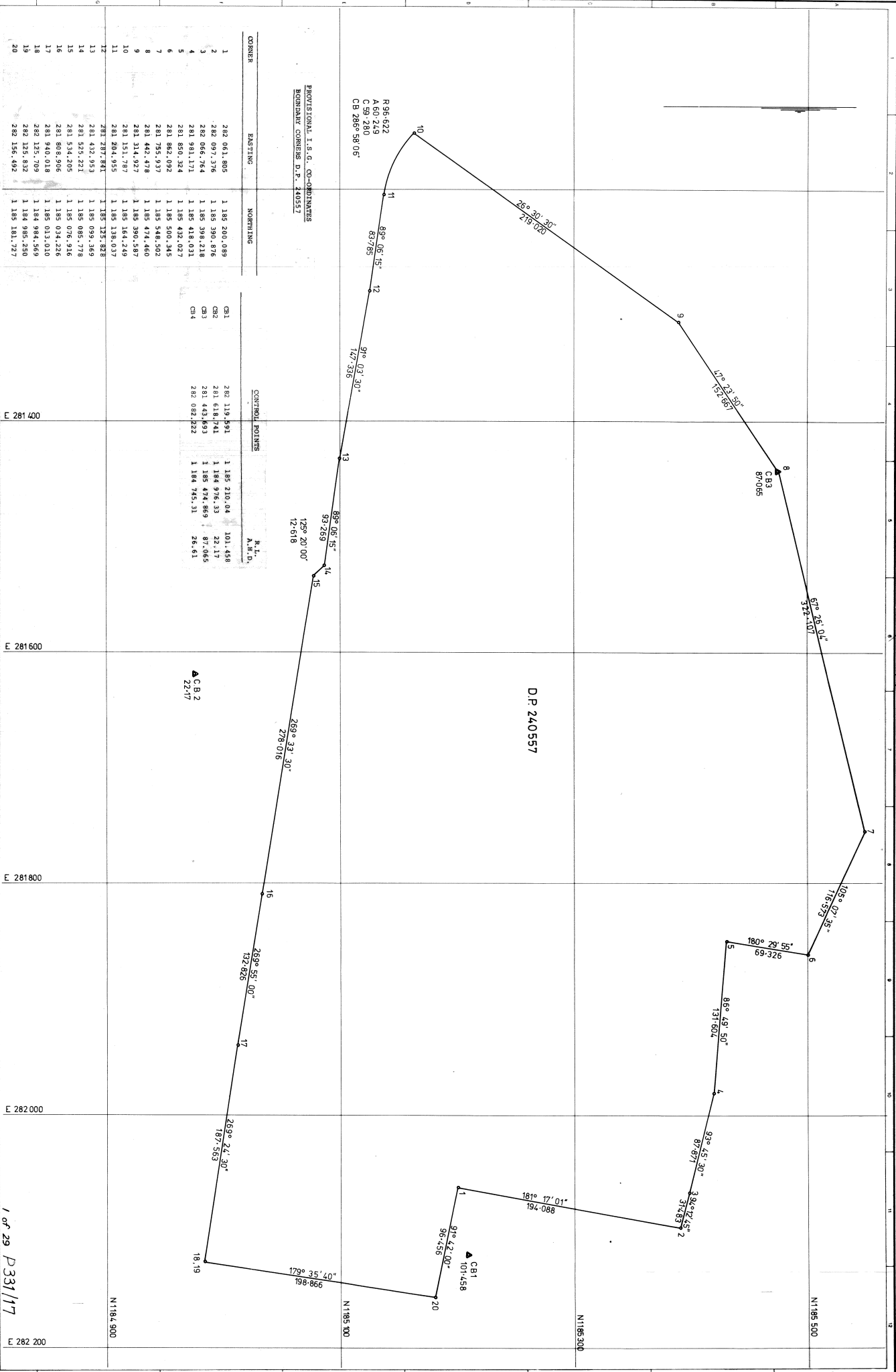


SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2817
TELEPHONE (062) 512077
AND AT MELBOURNE, SYDNEY, PERTH, HOBBART AND LAUNCESTON

SCOTT & FURPHY CONSULTING GROUP
MEMBER ENGINEERS SYDNEY
DESIGN S.H.
DRAWN D.G.
APPROVED
DATE

WOLLONGONG CITY COUNCIL
WHITES GULLY LANDFILL SITE
HEADWALL DETAILS FOR 21/750 & 21/900 PCPC.
2798-01-27
DRAWING NO.

27of 29 P 331/17



PROVISIONAL I.S.G. CO-ORDINATES
BOUNDARY CORNERS D.P. 240557

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	1 185 390.876	CB2	281 618.741	22.17
3	282 066.764	1 185 398.218	CB3	281 443.693	87.065
4	281 991.171	1 185 418.031	CB4	282 082.222	26.61
5	281 850.324	1 185 432.027			
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	281 314.927	1 185 390.587			
10	281 151.787	1 185 184.249			
11	281 204.955	1 185 138.037			
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	281 534.205	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	1 184 985.280			
20	282 156.492	1 185 181.727			

D.P. 240557

A.C.B.2
22.17

E 281 400
E 281 600
E 281 800
E 282 000

N 185 500
N 185 300

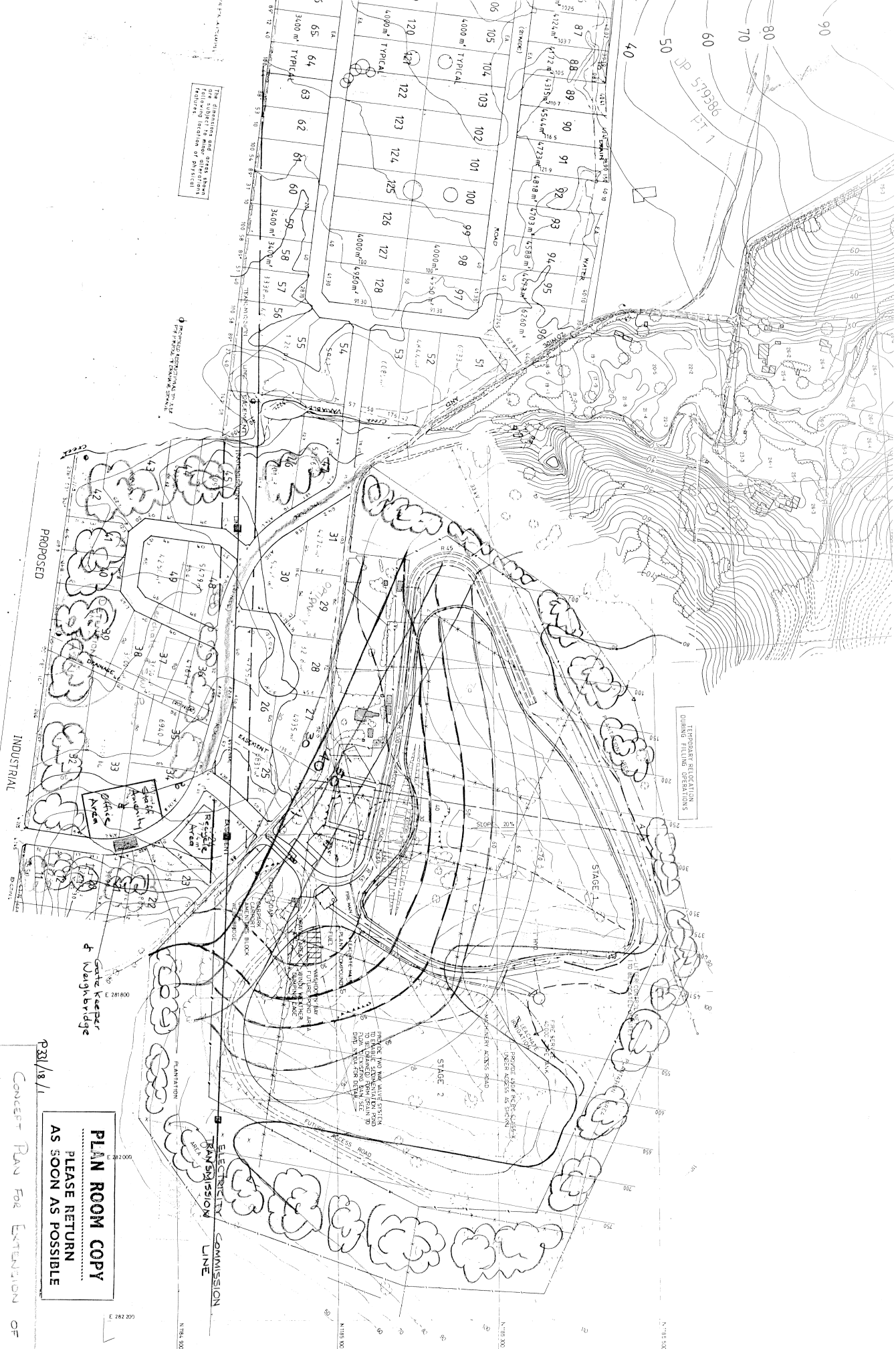
SCOTT & FURPHY ENGINEERS PTY. LTD.
CONSULTING ENGINEERS & PLANNERS
74 EMU BANK, BELCONNEN TOWN CENTRE
CANBERRA A.C.T. 2617
TELEPHONE (062) 312017
AND AT MELBOURNE, SYDNEY, PERTH, INDIAN HILLS AND LINGSTON



SCALES 1:4500
PROJECT MANAGER S. HOLLIS
DRAWN S. H.
CHECKED D. G.
DATE 2.12.17

WOLLONGONG CITY COUNCIL
WHYTES GULLY LANDFILL SITE
PLAN OF BOUNDARY
DRAWING NO. 2798-01-1

1 of 29 P331/17



THE DIMENSIONS AND SPACING OF THE FOLLOWING AREAS SHALL BE AS SHOWN UNLESS OTHERWISE SPECIFIED

TEMPORARY SILENCING DURING FILLING OPERATIONS

PLAN ROOM COPY
 PLEASE RETURN
 AS SOON AS POSSIBLE

P31/8/1

CONCEPT PLAN FOR EXTENSION OF
 WHITES GULL WASTE DEPOSIT
 Scale 1:2000 Prepared Nov '99

SCALES
 HORIZ. 1:1000
 VERT. 1:500

360 x 80 mm

300

200

100

50

1

2

3

4

5

6

7

8

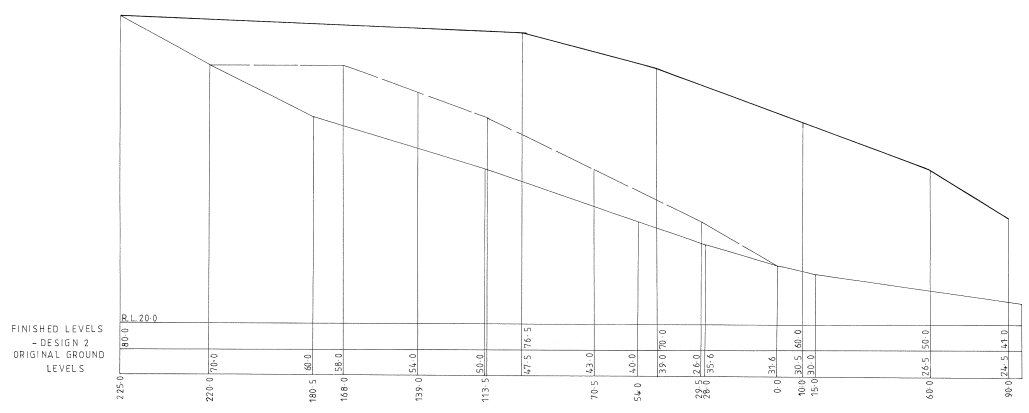
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10

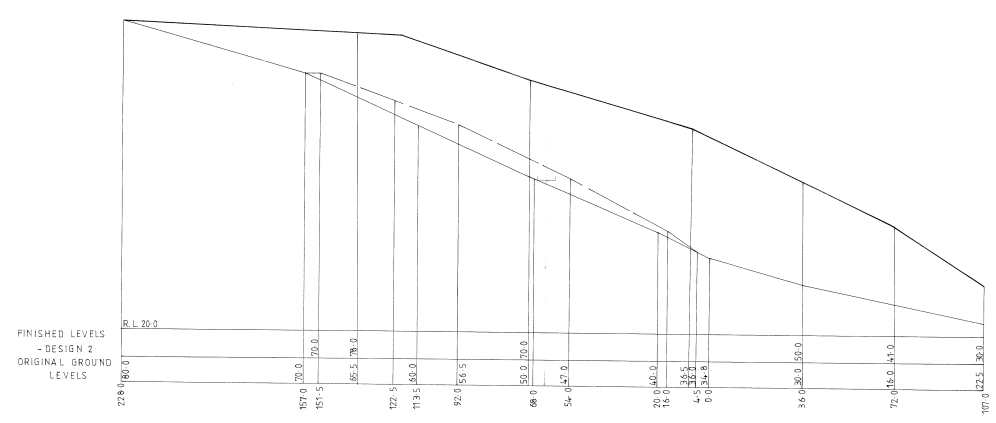
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12

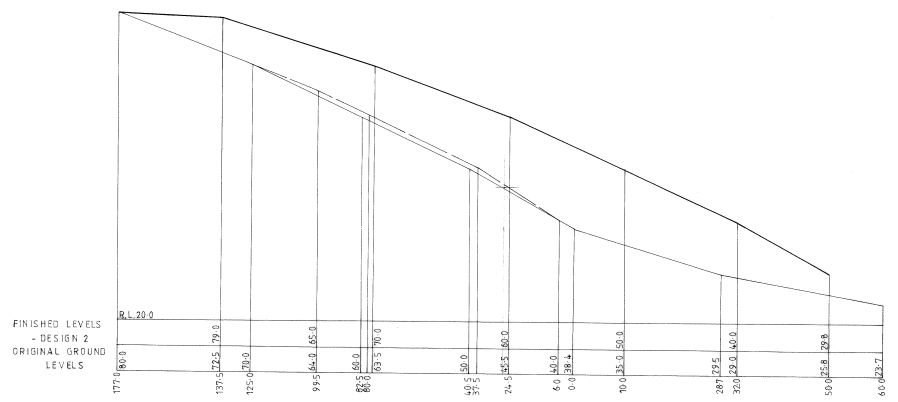
DRAWN: J. SCHULTZ 9/11/88



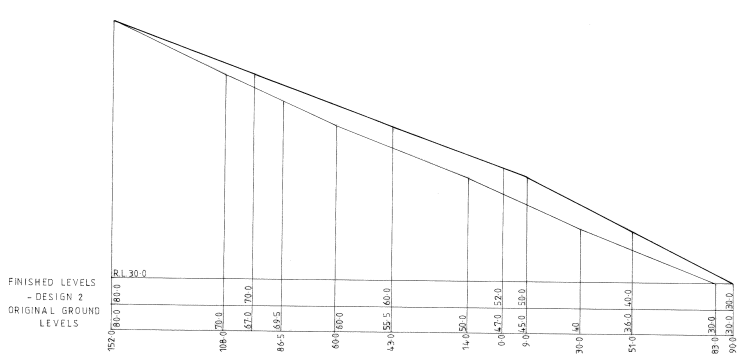
C.S. 200



C.S. 150



C.S. 100



C.S. 50

41/15

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

INDEX	BASE	NO.

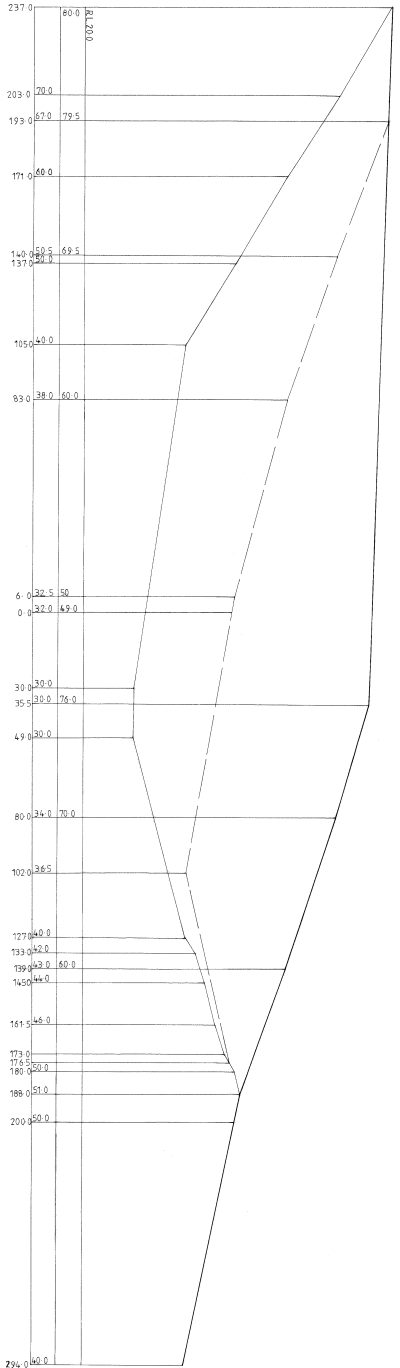
NO. OF SHEETS
 5
 SHEET NO.
 2

DRAWING NO.
P331/18

MAGX

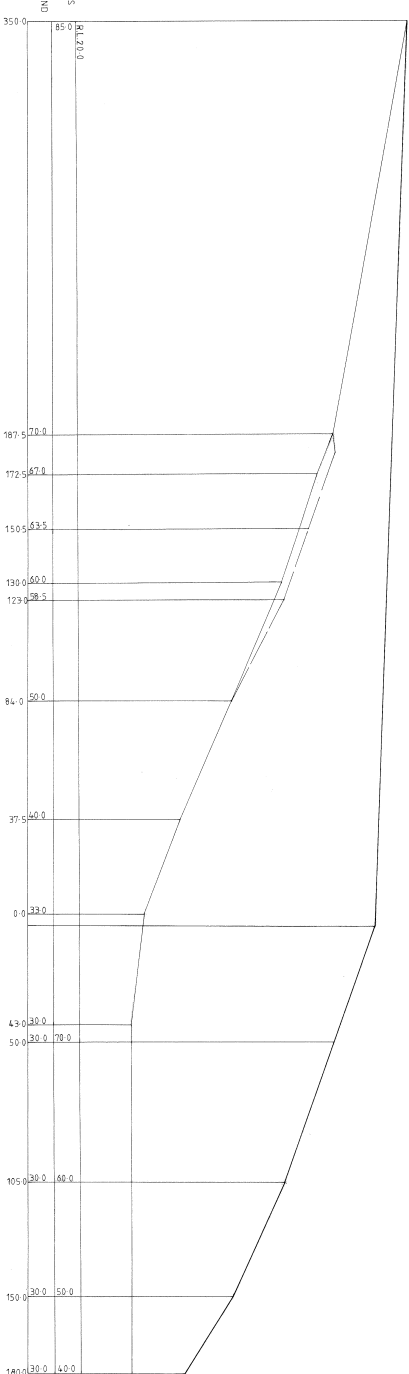
A1/2

FINISHED LEVELS
- DESIGN 2
ORIGINAL GROUND
LEVELS



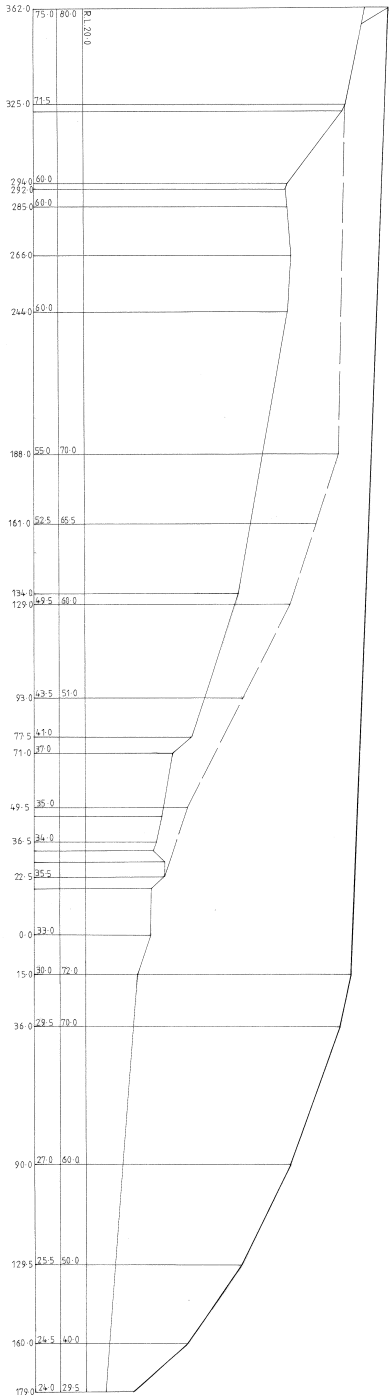
C.S. 550

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

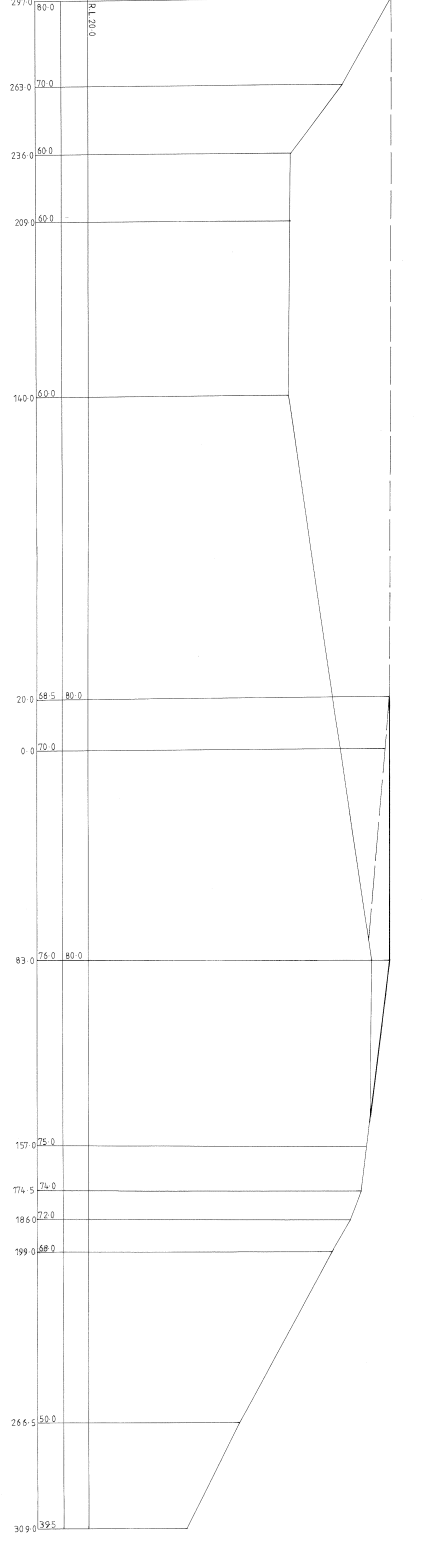
CITY OF WOLLONGONG
ADDITIONAL VOLUME INVESTIGATION
FOR EXPANSION OF
WHITES GULLY WASTE DEPOT, 1988

INDEX	BASE	No.
No. of SHEETS		
5		
DRAWING No.		
P 331 / 18		
SHEET No.		
4		

MAGX

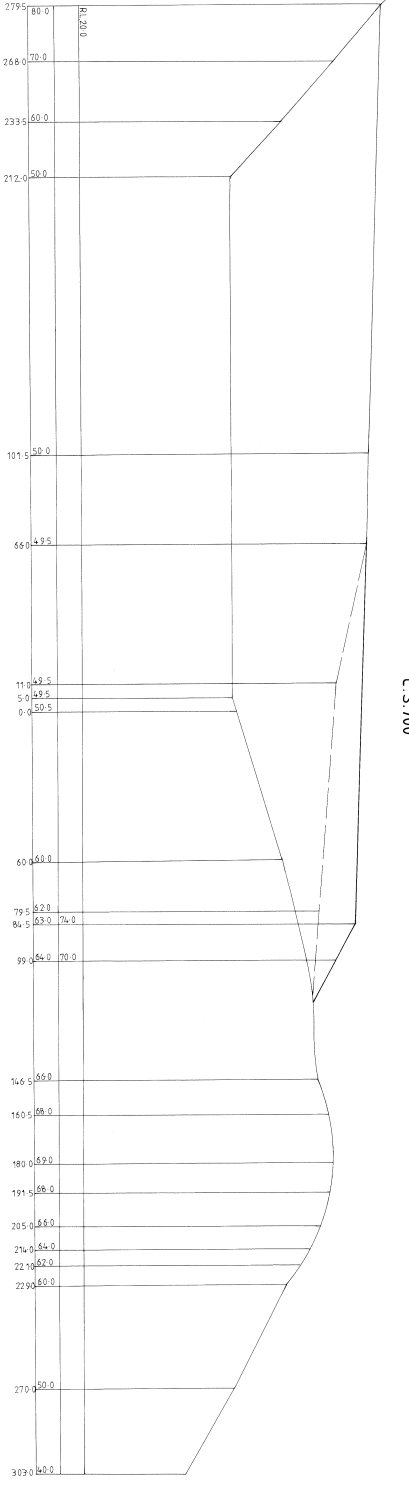
A1/2

FINISHED LEVELS
ORIGINAL GROUND
LEVELS



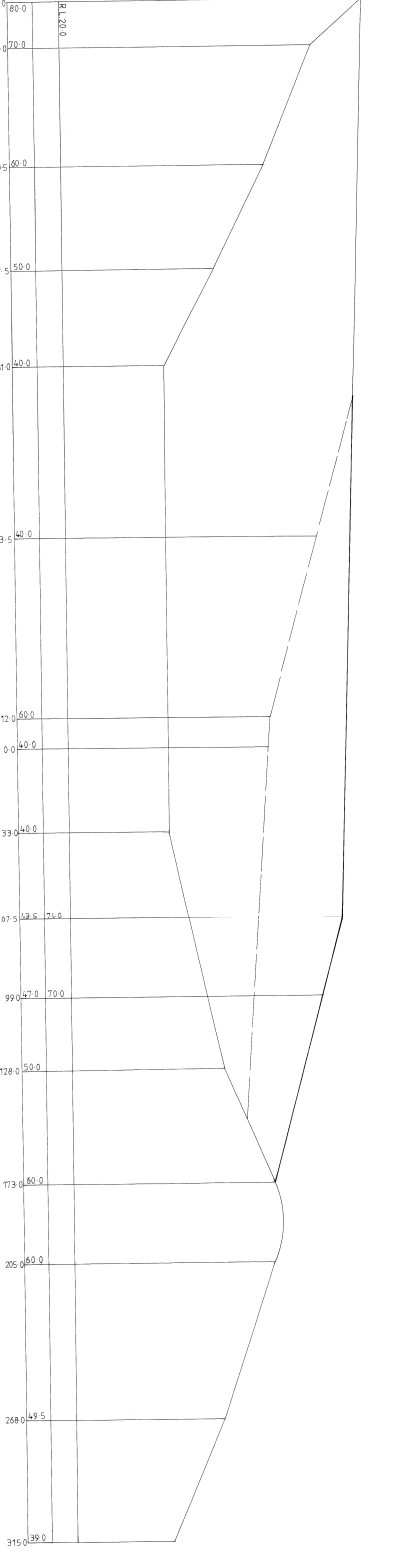
C.S. 700

FINISHED LEVELS
ORIGINAL GROUND
LEVELS



C.S. 650

FINISHED LEVELS
ORIGINAL GROUND
LEVELS



C.S. 600

SCALES
HORIZ. 1:1000
VERT. 1:500

FINISHING EDGE

300

200

100

50

1

2

3

4

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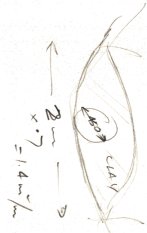
DRAWN: J. SCHULTZ 9/17/88

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

NO. OF SHEETS 5
DRAWING NO. P331 / 18
SHEET NO. 5

MAGX

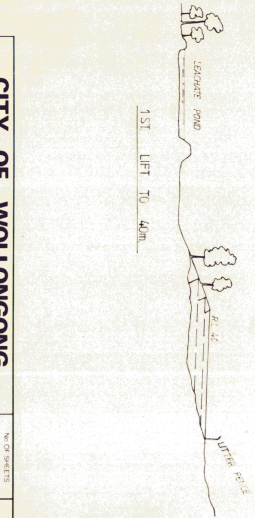
A1/2



Estimate 1137. (Palm only)

1:1500

Notes
Changes to be calculated (Sizes shown for Budget estimate only)



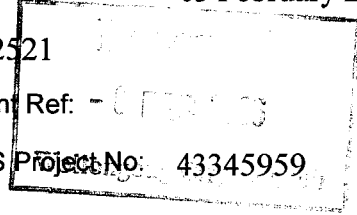
SCANNED BY PLAN ROOM

INDEX BASE NO.	NO. OF SHEETS	SHEET NO.
CITY OF WOLLONGONG	WHYTES GULLY OPERATIONS DIAGRAM FOR WEST GULLY	P331-360-1
MAGX		AI/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: - 073113
 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
<input type="checkbox"/> Courier	
<input checked="" type="checkbox"/> Mail	
<input type="checkbox"/> Express Post	
<input type="checkbox"/> Hand Deliver	
<input type="checkbox"/> Electronically	

Sent By: JM Mahon

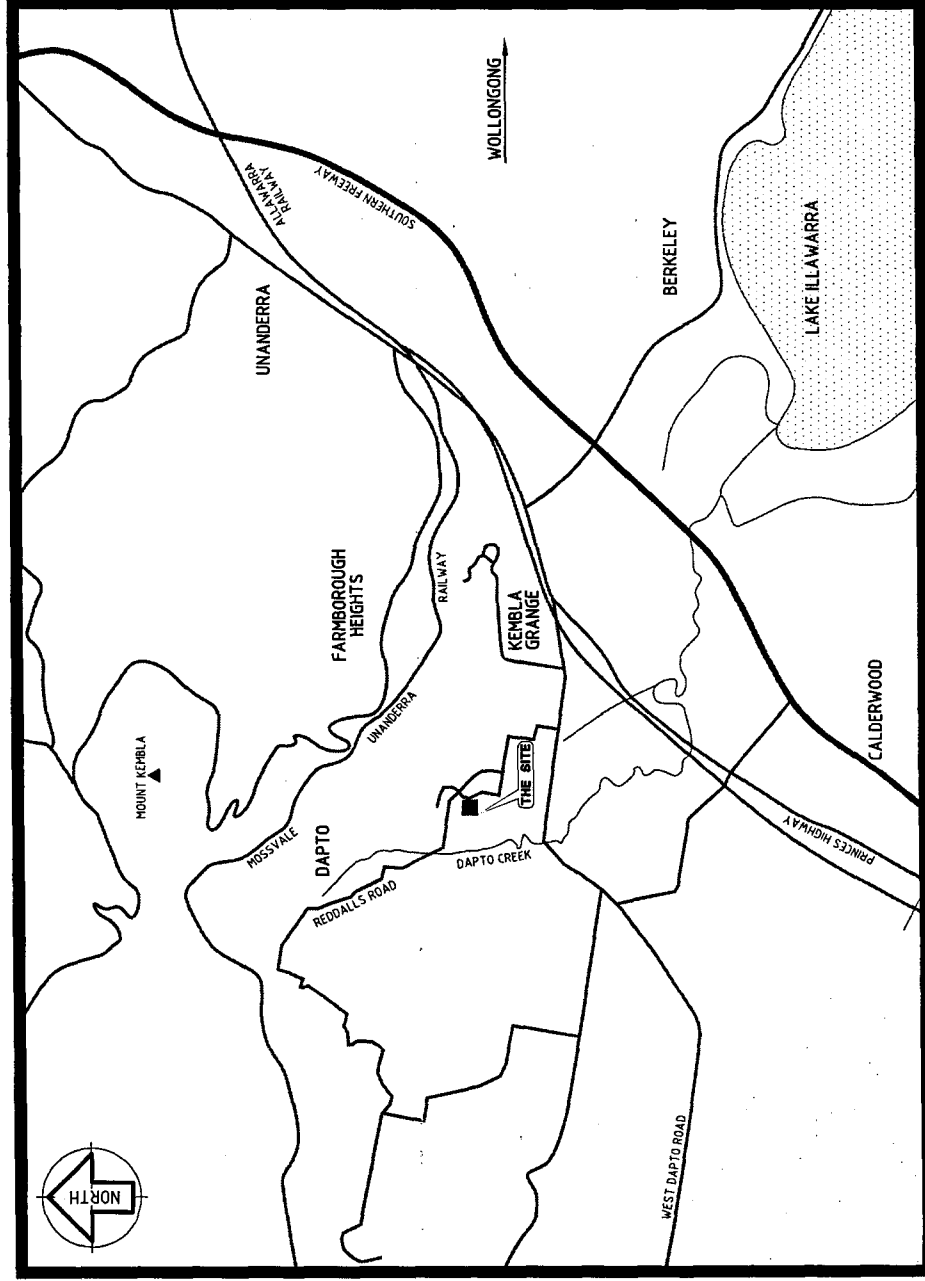
Date: 3/2/06

Received: _____

Date: _____

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

WHYTES GULLY LEACHATE TREATMENTS DRAWINGS FOR WORK AS EXECUTED



SITE LOCATION PLAN

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
3512-24	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-25	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-26	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-27	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-28	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-29	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-30	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-31	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-32	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-33	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
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3512-42	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-43	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-44	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-45	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-46	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-47	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-48	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-49	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-50	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
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3512-70	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-71	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-72	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-73	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-74	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-75	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
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3512-82	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-83	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-84	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-85	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-86	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-87	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-88	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-89	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-90	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-91	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-92	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-93	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-94	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
3512-95	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM
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
3512-100	WASTE TREATMENT SYSTEM STARTER CIRCUIT DIAGRAM

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.

WORK AS EXECUTED
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 COVER SHEET

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DESIGN PCS No.	FILE NUMBER	SHEET 1	OF 1	SHEETS	ORIGINAL
	DRAWING No.	3512		SHEET No.	00
	DESIGN DIVISION			ISSUE	B
	Ph: 02 42271111				

DATE	APPROVED FOR COUNCIL USE ONLY	SCALE	NORTH POINT
19/09/03	MANAGER DESIGN	AS SHOWN	
19/09/03	SENIOR DESIGN ENGINEER		
19/09/03	ENGINEER		
19/09/03	DATE		

DATE	DRAWN	SURVEYOR	DATUM	RELATED PLANS	DATE
19/09/03	J.McI.	J.McI.	A 2400TH		
19/09/03	AE	AE			
19/09/03	AE	AE			
19/09/03	AE	AE			

DATE	DESCRIPTION
19/09/03	WORK AS EXECUTED
19/09/03	FOR CONSTRUCTION
19/09/03	ISSUE

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

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 U.N.O..
- ALL REDUCED LEVELS ARE IN METRES U.N.O..

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 AS3300.
- THE FOLLOWING ABBREVIATIONS ARE USED:
 T TOP
 B BOTTOM
 L LENGTH VARIES
 LF EACH FACE
 EW EACH WAY

CONCRETE

- ADMIXTURES SHALL NOT BE USED WITHOUT THE WRITTEN APPROVAL OF THE URS ENGINEER.
- ALL CEMENT SHALL BE TYPE SR SPECIFICATION, SULPHATE RESISTING CEMENT, U.N.O.
- MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 20mm.
- CONCRETE SHALL HAVE THE FOLLOWING SLUMP DURING PLACING (U.N.O.):
 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 _c 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 SANDER SHALL BE CLASS 370 RESIDUAL BITUMEN COMPLYING WITH AS 2048.
 THE CUTTING OIL SHALL BE A SUITABLE COMPATIBLE PRODUCT SUCH AS DIESEL OIL OR POWER KEROSENE.
 THE MIX SHALL BE NATURAL SAND COMPLYING WITH AS 2758.8.
 THE MIX AT MINIMUM QUANTITY OF 1% BY WEIGHT.
 THE MIX DESIGN TO BE AS FOLLOWS BY WEIGHT:
 SANDER 82%
 CUTTING OIL 8%
 FILLER 1%
 THESE PROPORTIONS ARE GIVEN PROPORTIONING TO BE DETERMINED BY TRIAL MIXES.
 THE MIX WILL BE UNDERTAKEN AT A TEMPERATURE OF APPROX. 95°C.

THE SAND FILLER SHALL BE WELL GRADED WITHIN THE FOLLOWING RANGE:

AS SIEVE SIZE (mm)	% PASSING (BY WEIGHT)
9.5	100
0.075	5-15

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 AS 4671

- NUMBER OF BARS IN GROUP
 12N20-750 _____ BAR GRADE AND TYPE
 _____ SPACING IN mm
- NOMINAL BAR SIZE IN mm
 THE NUMBER AND DISTRIBUTION OF BARS ARE INDICATED AS FOLLOWS (BY EXAMPLE):
 20N2-200 INDICATES 20 GRADE 500N 20mm DIAMETER BARS AT 200mm SPACING FOR THE EXTENT INDICATED.
 10N24-200 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 DEVELOP 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 MOISTENED 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 AS 3679. GRADE 350 SHALL BE WELDED SECTIONS. AS 1513 GRADE 350 FOR CHS SECTIONS. ALL STEEL PLATE FOR LIQUID STORAGE TANKS SHALL BE TO AS 3478 GRADE 350 L15.
- SHOP DRAWINGS 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 8.8/8.2 PER CONNECTION (U.N.O.). ALL GUSSET PLATES TO BE 10mm THICK (U.N.O.) ON THE DRAWINGS.

- 4.6/75 REFERS TO COMMERCIAL BOLTS OF STRENGTH GRADE 4.6 TO AS 1111 TIGHTENED TO A SNUG TIGHT CONDITION.
- 8.8/5 REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1552 TIGHTENED TO A SNUG TIGHT CONDITION.
- 8.8/7B REFERS TO TIGHT STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1552 FULLY TENSIONED TO AS 1511 AS A BEARING JOINT.
- 8.8/7F REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1552 FULLY TENSIONED TO AS 1510 AS A FRICTION JOINT.
- HIGH STRENGTH BOLTED JOINTS SHALL BE IN ACCORDANCE WITH AS 4100. 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, TIMBER AND OTHER ELEMENTS TO STEEL WHETHER OR NOT DETAILED 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 ENCASEMENT AND WRAPPED WITH WIRE AT 50 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 COMPLETING BACKFILL ALL AREAS SHALL BE STRIPPED OF LOOSE AND UNSUITABLE TOPSOIL TO A MINIMUM DEPTH OF 50mm. THE EXCAVATED SURFACE 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 300 < 4.75mm CALIFORNIA BEARING RATIO OF GREATER THAN 30% AT 98% SPDD.
- 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, TIMBER, 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 SHOD 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/2m 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 OVERFELLING AND CUTTING BACK AFTER COMPACTING. OVERFELLING 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 AS 3798-1996.
- IN AREAS WITH ACCESS CONSTRAINTS SUCH AS CLOSE TO WALLS OR EXISTING SERVICES, COMPACTOR SHALL BE CARRIED OUT USING A HAND HELD VIBRATING PLATE COMPACTOR AS INSTRUCTED BY THE URS GEOTECHNICAL ENGINEER. THE MAXIMUM ROSE 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: *[Signature]*
 URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

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DESIGN FILE NO. A1
 FILE NUMBER 1 OF 1 SHEETS ORIGINAL
 DRAWING NO. 3512 SHEET NO. N1 ISSUE B
 WOLLONGONG City of Wollongong
 DESIGN DIVISION Ph. 02 42271111

WORK AS EXECUTED
CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
GENERAL NOTES

SCALES
AS SHOWN

APPROVED
 (FOR CONSULTING ENGINEER)
 DATE 19/09/03
 DATE 19/09/03
 DATE 19/09/03
 DATE 19/09/03
 DATE 19/09/03
 DATE 19/09/03

DRAWN J.McI. CHECKED RR
DESIGNED J.N.
CHECKED A.E.

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

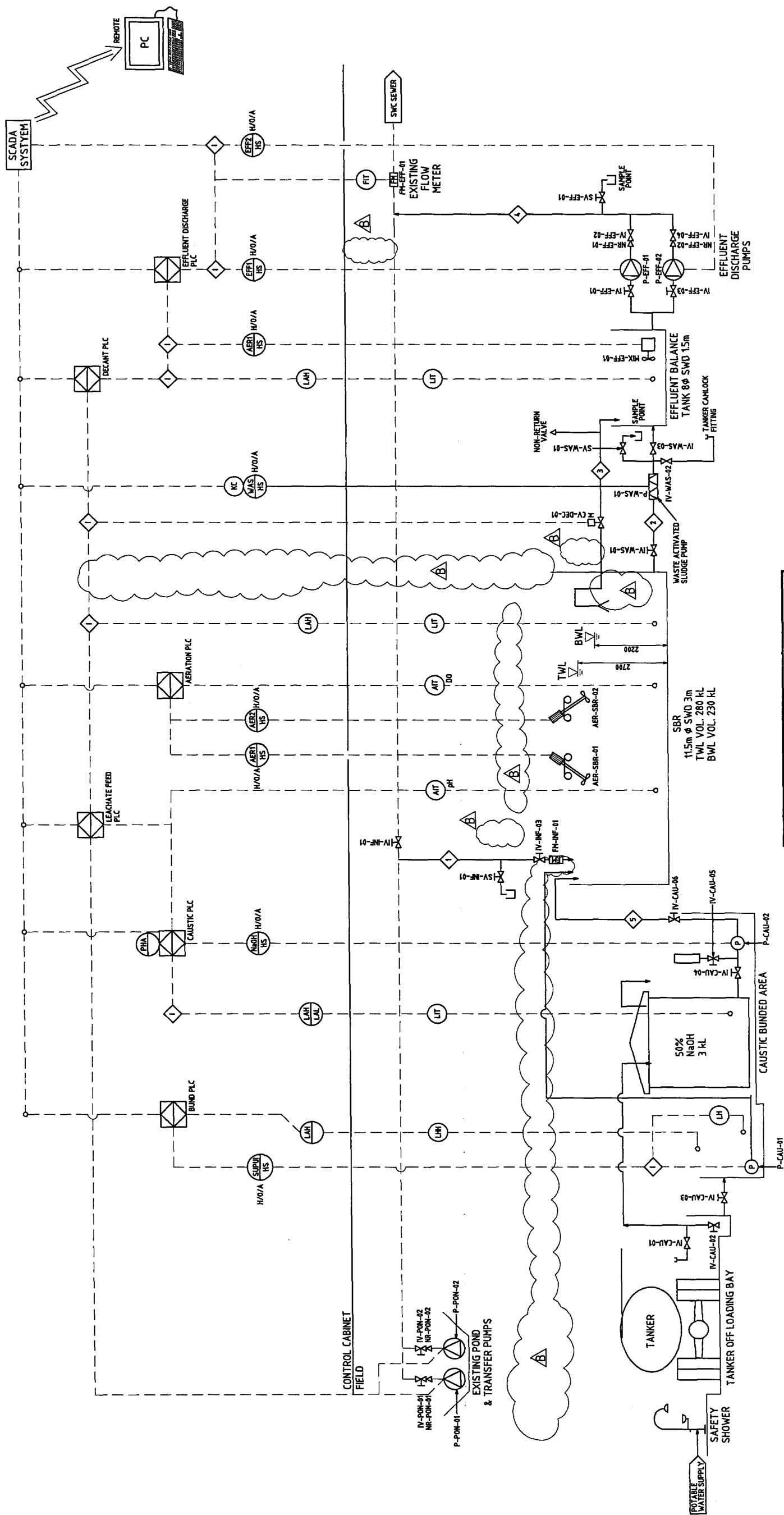
DATE 22/03/05
DATE 09/03/05
DATE 09/03/05
DATE 09/03/05

DESCRIPTION
 B WORK AS EXECUTED
 A FOR CONSTRUCTION
 ISSUE

TAG NUMBERING SYSTEM
EQUIPMENT - LOCATION - NUMBER

- LEGEND:**
- EQUIPMENT:**
 P - PUMP
 IV - ISOLATING VALVE
 SV - SAMPLING VALVE
 NR - NON-RETURN VALVE
 AER - AERATOR
 MIX - MIXER
 CV - CONTROL VALVE
- LOCATION:**
 CAU - CAUSTIC SODA BAY
 INF - INFLUENT
 EFF - EFFLUENT
 WAS - WASTE ACTIVATED SLUDGE
 SBR - SEQUENTIAL BATCH REACTOR
 PON - POND
 DEC - DECANT

LINE No.	1	2	3	4	5
FLUID	RAW LEACHATE	WASTE ACTIVATED SLUDGE	TREATED EFFLUENT	TREATED EFFLUENT	CAUSTIC SODA 50%
MAXIMUM FLOW	12.5 m ³ /h	3.6 m ³ /h	50 m ³ /h	10 m ³ /h	17 L/h
AVERAGE FLOW	7.5 m ³ /h	3.6 m ³ /h	30 m ³ /h	6 m ³ /h	7 L/h
CONDUIT	63 UPVC CLASS 16 T.B.C.	50 UPVC CLASS 16 T.B.C.	100 UPVC CLASS 16 T.B.C.	50 UPVC CLASS 16 T.B.C.	20 UPVC CLASS 16 T.B.C.



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.

WORK AS EXECUTED

CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT

PROCESS AND INSTRUMENT DIAGRAM

APPROVED (FOR CONSTRUCTION ONLY)

MANAGER DESIGN

SENSEOR DESIGN ENGINEER

DATE 19/09/03

DATE 19/09/03

DATE 19/09/03

DATE 19/09/03

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
DRAWN	CHECKED	DESIGNED	CHECKED	DATE	DATE	DATE	DATE	DATE	DATE
JMKL	BR	SP	JM						
SURVEYOR	FIELD BOOK	RELATED PLANS	APPROD						
JMKL	BR	SP	JM						
DATE	DATE	DATE	DATE						
19/09/03	19/09/03	19/09/03	19/09/03						

URS

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DESIGN P.C.S. No. 3512

FILE NUMBER 1 OF 1 SHEETS

DRAWING No. M1

SHEET No. 3512

DESIGN DIVISION Ph. 02 4277111

A1 ORIGINAL

B ISSUE

NOTES

- EQUIPMENT SIZES TO BE CONFIRMED.
- EXISTING SERVICES TO BE LOCATED ON SITE PRIOR TO COMMENCING CONSTRUCTION.
- WATER TANK LOCATION TO BE CONFIRMED ON SITE.

SETTING OUT POINTS OF TANKS

	EASTING	NORTHING
SOP 1	297815.319	6184205.471
SOP 2	297811.071	6184217.613
SOP 3	297797.355	6184190.704
SOP 4	297797.355	6184232.704

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.

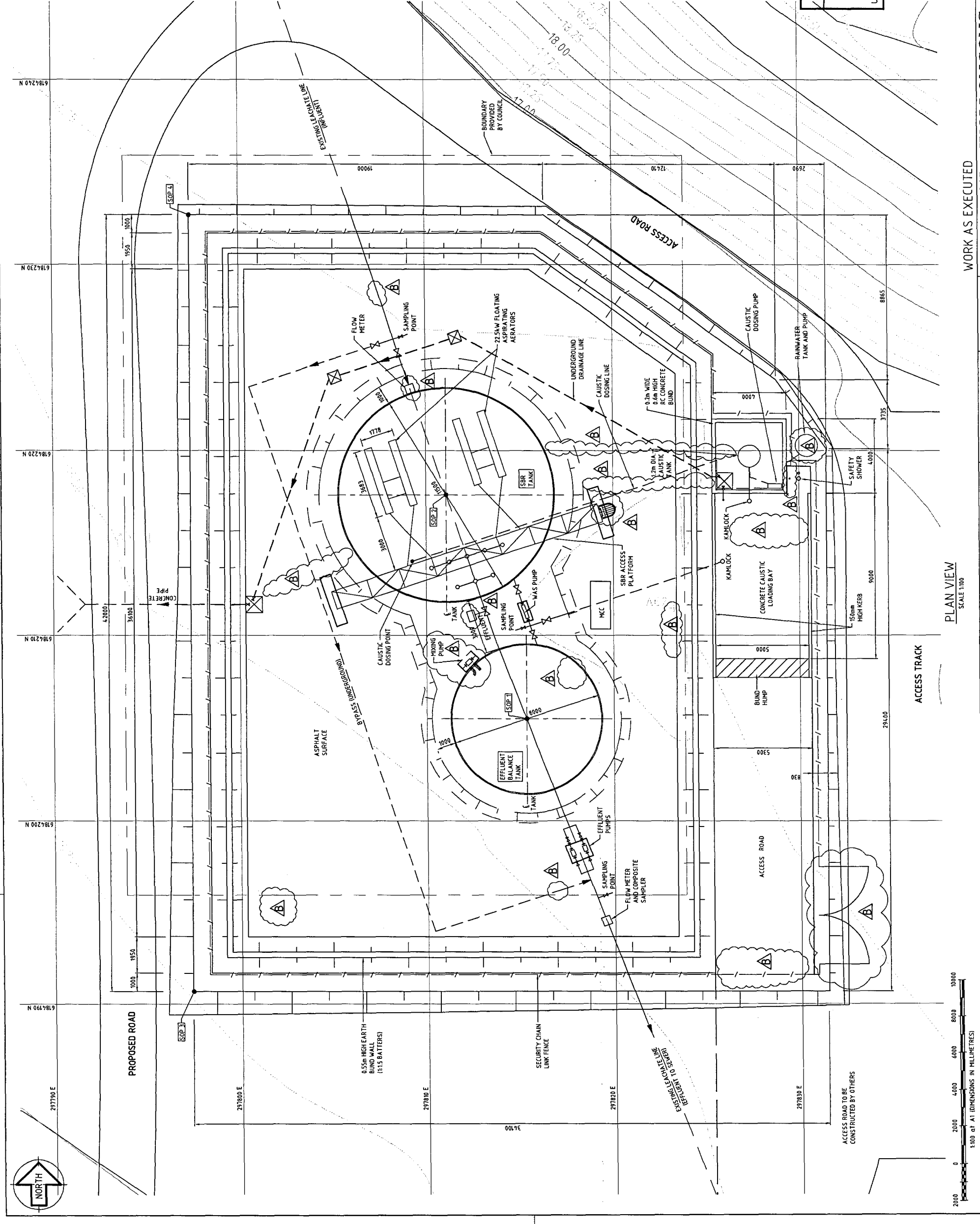
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DESIGN PCS No.	A1
FILE NUMBER	8
SHEET	1
OF SHEETS	8
DRAWING No.	3512
SHEET No.	C1
ISSUE	B
DESIGN DIVISION	Ph. 02 43277111



PLAN VIEW
SCALE 1:100

WORK AS EXECUTED

CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT

GENERAL ARRANGEMENT

AS SHOWN

APPROVED
(FOR COUNCIL USE ONLY)

MANAGER DESIGN

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

DRAWN	JMCL
CHECKED	RR
DESIGNED	JN
CHECKED	AE

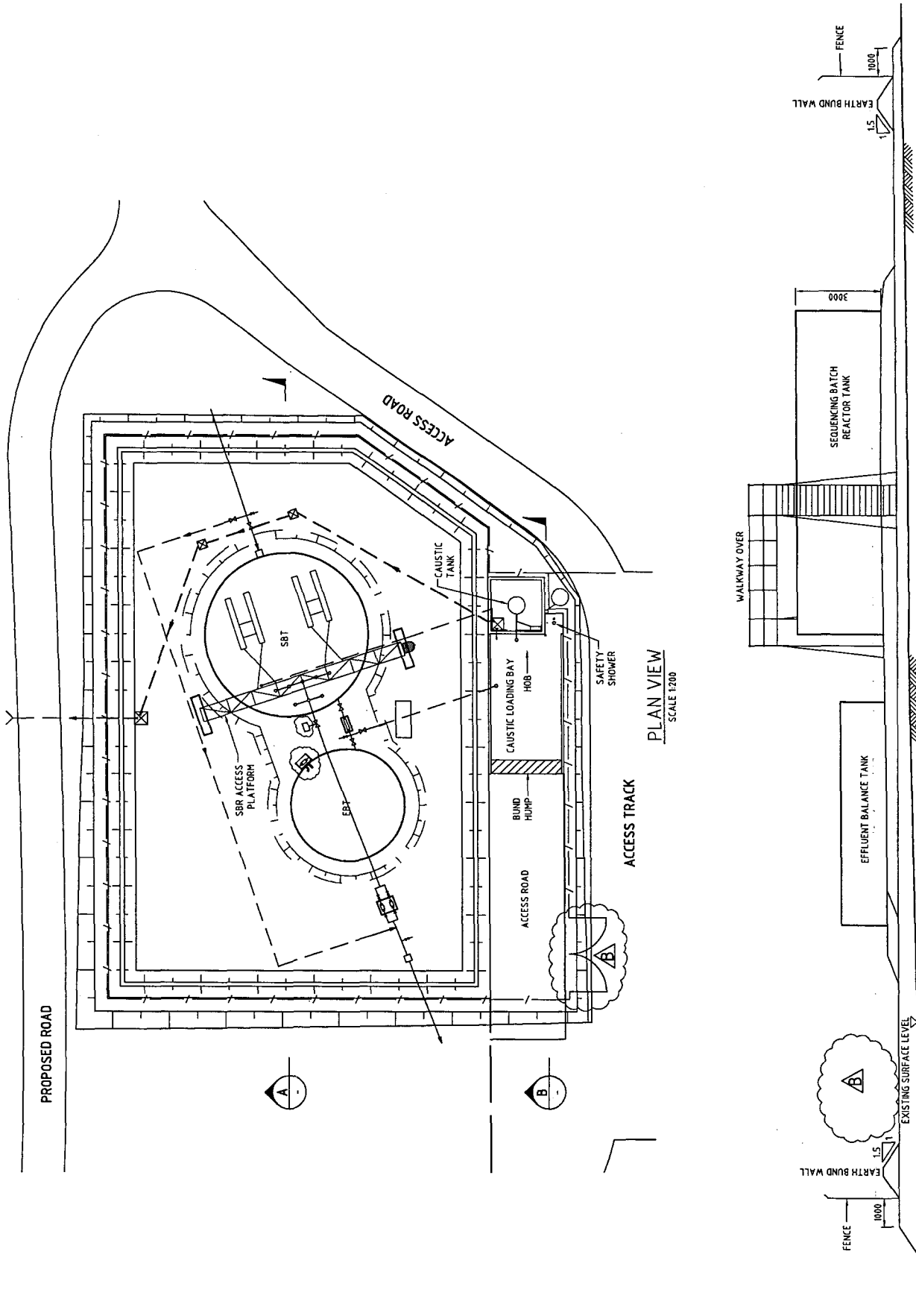
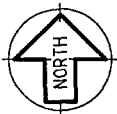
SURVEYOR	FIELD BOOK
RELATED PLANS	

DATUM AND AZIMUTH MGA	
TT	AE
AE	09/03
AE	19/09/03

DRAWN	APPRD	DATE
DESCRIPTION		

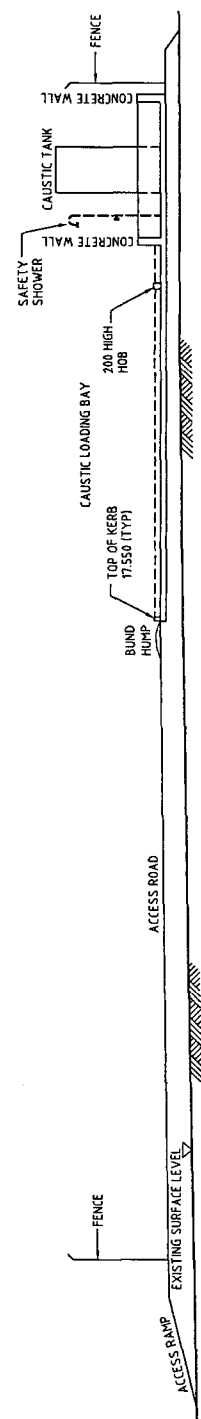
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1:100 at A1 (DIMENSIONS IN MILLIMETRES)					

100mm ON ORIGINAL PLAN

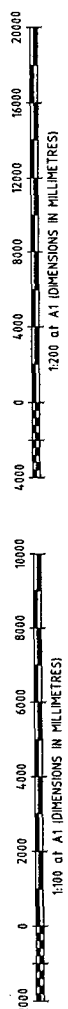


PLAN VIEW
SCALE 1:200

SECTION A-A
SCALE 1:100



SECTION B-B
SCALE 1:100



WORK AS EXECUTED
 These drawings are an accurate representation as at 22/03/05 of the Work Executed.
 Signed: *[Signature]*
 URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

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 ORIGINALLY OF AUSTRALIA INC
 ORIGINALLY OF AUSTRALIA INC
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DESIGN PCS No.		FILE NUMBER	SHEET	OF	SHEETS	ORIGINAL
3512		2	8			A1
WOLLONGONG City of Wollongong		DRAWING No.		SHEET No.		ISSUE
DESIGN DIVISION		3512		C2		B
Ph. 02 42277111						

APPROVED		FOR COUNCIL USE ONLY		MANAGER DESIGN	
DATE	19/09/03	DATE	19/09/03	DATE	19/09/03
SENIOR DESIGN ENGINEER		SENIOR DESIGN ENGINEER		SENIOR DESIGN ENGINEER	
DATE	19/09/03	DATE	19/09/03	DATE	19/09/03
DESIGNED	JM	CHECKED	AE	DESIGNED	JM
RELATED PLANS		RELATED PLANS		RELATED PLANS	
DATE	09/03	DATE	09/03	DATE	09/03
APPROD		APPROD		APPROD	
DRAWN	JM	DRAWN	JM	DRAWN	JM
DESCRIPTION		DESCRIPTION		DESCRIPTION	
WORK AS EXECUTED		WORK AS EXECUTED		WORK AS EXECUTED	
FOR CONSTRUCTION		FOR CONSTRUCTION		FOR CONSTRUCTION	

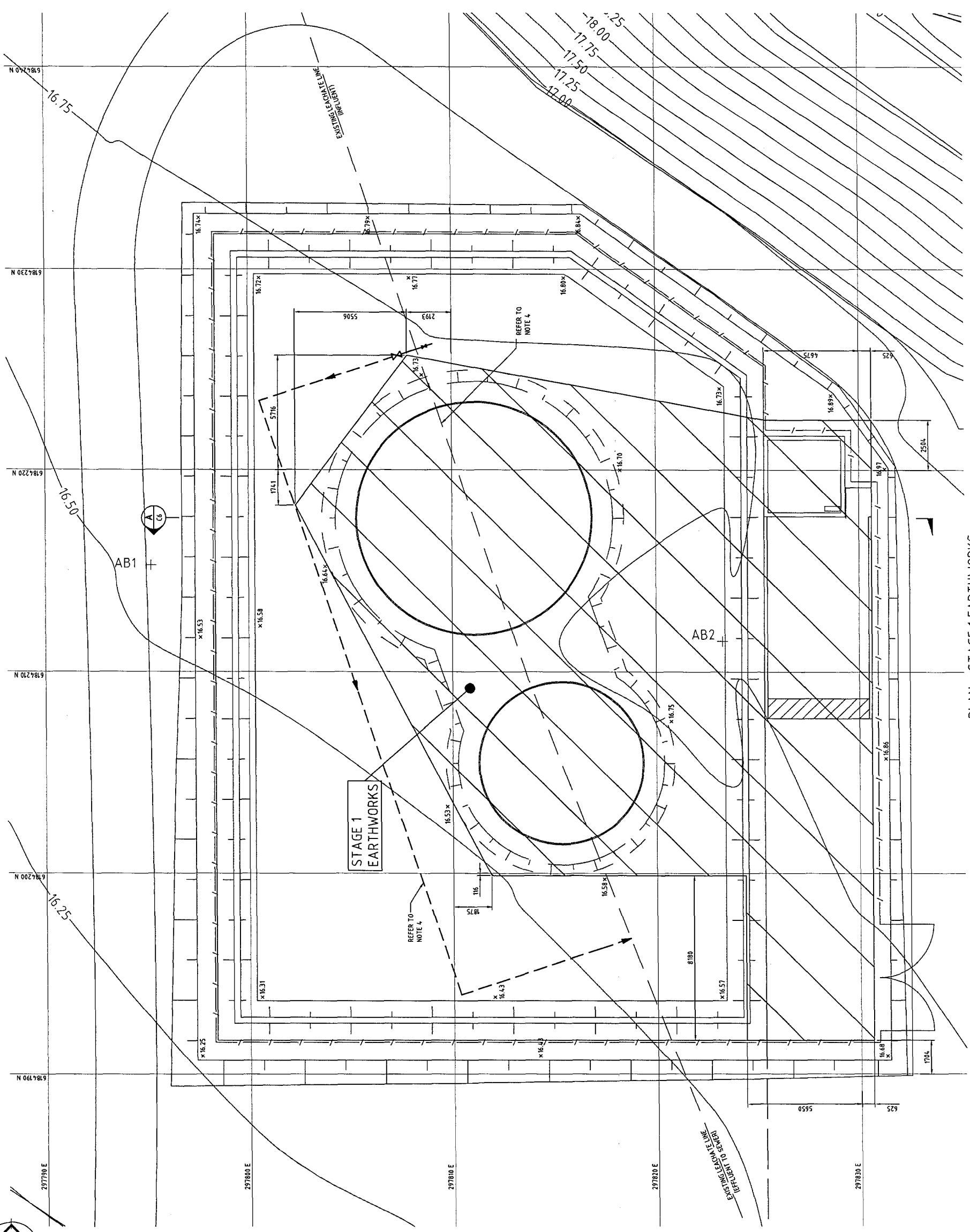
SCALES	NORTH POINT	CITY OF WOLLONGONG	WHYTES GULLY LEACHATE TREATMENT PLANT	GENERAL PLANT ELEVATIONS
AS SHOWN				

NOTES

- SUBGRADE PREPARATION STAGE 1 EARTHWORKS**
- 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.
 - PLACE SELECTED CLASS A MATERIAL (REFER GENERAL NOTES) IN MAXIMUM 200mm LOOSE LAYERS AND COMPACT TO 98% STANDARD DENSITY. BRING COMPACTED FILL UP TO MATCH EXISTING SURFACE LEVEL UND.
 - EXISTING LEACHATE LINE TO BE REMOVED AND REDIRECTED PRIOR TO BULK EARTHWORK EXCAVATION.

LEGEND:

- x 16.64 EXISTING SURFACE LEVEL
- + 17.90 PROPOSED FINISHED SURFACE LEVEL FOR BULK EARTHWORKS
- ▨ PLACEMENT OF COMPACTED FILL



PLAN - STAGE 1 EARTHWORKS
SCALE 1:100

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.

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PEI
PROFESSIONAL ENGINEERING INSTITUTION OF AUSTRALIA
MEMBER

WOLLONGONG City of Wollongong DESIGN DIVISION Ph. 02 42271111	DESIGN PCS No. FILE NUMBER SHEET 3 OF 8 SHEETS DRAWING No. 3512	A1 ORIGINAL ISSUE B C3 ISSUE B
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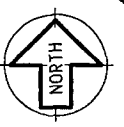
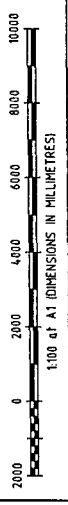
WORK AS EXECUTED
CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
STAGE 1 BULK EARTHWORKS

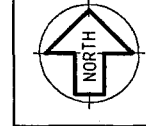
DATE	APPROVED FOR COUNCIL USE ONLY	SCALE	NORTH POINT
19/09/03	MANAGER DESIGN	AS SHOWN	
19/09/03	SENIOR DESIGN ENGINEER		
19/09/03	ENGINEER		
19/09/03	DATE		
19/09/03	DATE		

DRAWN	SURVEYOR	DATUM	DATE
JML	JML	AD	19/09/03
RR	RR	AD	19/09/03
JN	JN	AD	19/09/03
AE	AE	AD	19/09/03

DATE	DESCRIPTION
22/03/05	IT DW
09/03	JML AE
	DRAWN APPROD DATE

ISSUE	DESCRIPTION
B	WORK AS EXECUTED
A	FOR CONSTRUCTION



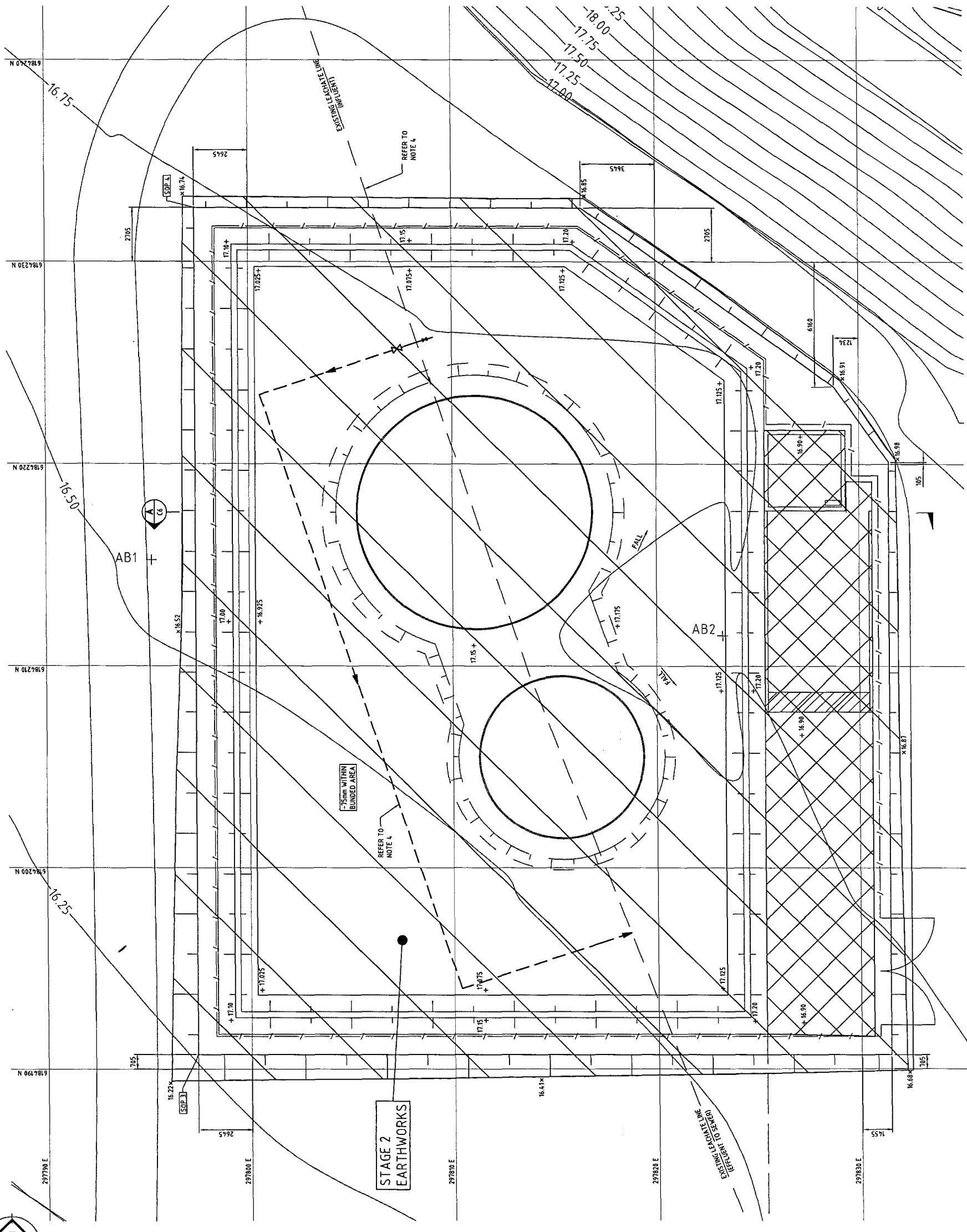


NOTES
 SUBGRADE PREPARATION
STAGE 2 EARTHWORKS

- CLEAR AREA (EXCEPT STAGE 1 AREA) OF ALL OBSTRUCTIONS, VEGETATION, DEBRIS, SOFT OR OTHERWISE UNSUITABLE MATERIAL TO A DEPTH OF AT LEAST 300mm OR AS DIRECTED BY THE ENGINEER.
- 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.
- IN AREA DESIGNATED BY FINISHED SURFACE LEVEL (STAGE 2 EARTHWORKS) TO BE 300mm BELOW FINAL SURFACE LEVEL.
- EXISTING LEACHATE LINE TO BE REMOVED AND REDIRECTED PRIOR TO BULK EARTHWORK EXCAVATION.
- FOR SET OUT POINTS (SOP3 & SOP4) REFER DRG. No. 3512-C1.

LEGEND:

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



PLAN - STAGE 2 EARTHWORKS
 SCALE 1:100

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
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DESIGN PCS No.	FILE NUMBER	OF	SHEETS	ORIGINAL
	3512		4	B
DRAWING No.				ISSUE
				C4
WOLLONGONG City of Wollongong				DESIGN DIVISION
				PH. 02 42277111

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

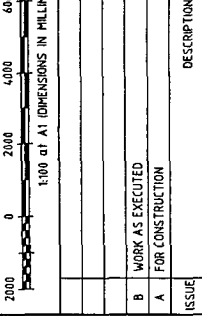
NORTH POINT	AS SHOWN
SCALES	AS SHOWN

APPROVED FOR COUNCIL USE ONLY	MANAGER DESIGN
DATE 19/09/03	DATE 19/09/03
SENIOR DESIGN ENGINEER	DATE 19/09/03
DATE 19/09/03	DATE 19/09/03

DRAWN J.M.L.	CHECKED R.R.	DESIGNED J.M.	CHECKED A.E.
DATE 19/09/03	DATE 19/09/03	DATE 19/09/03	DATE 19/09/03

DATUM AHD	SURVEYOR FIELD BOOK	RELATED PLANS	DRAWN J.M.L.	APPROD A.E.	DATE
AS 1984					

DESCRIPTION	DATE
B WORK AS EXECUTED	19/09/03
A FOR CONSTRUCTION	19/09/03



NOTES

- 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 60mm IN THE TOTAL CIRCUMFERENCE MEASURED FROM THE AVERAGE ELEVATION.
- PROTECTION OF TANK PAD SHOULDER
PROTECT SHOULDERS WITH SAND/BITUMEN/CEMENT MIX (IE. WET SAND) OR CHEMIST MODIFIED SAND AFTER CONSTRUCTION OF PAD FOUNDATION AND EXCESS FILL MATERIAL HAS BEEN CUT BACK.
- 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 MIXING SAND AND BITUMEN AS DESCRIBED IN THE GENERAL NOTES ON DRG NO. 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.
- TANK PAD SET OUT
FOR SET OUT POINTS OF TANKS (SOP1 & SOP2) AND REFER DRG. No. 3512-C1
- ASPHALT SURFACE TO BE BITUMEN SPAY OVER 75mm COMPACTED DGB 20 (CLASS B MATERIAL) COVER SURFACE WITH STONE DUST.

LEGEND

- X 16.64 EXISTING SURFACE LEVEL
- ⊙ 17.30 PROPOSED FINISHED SURFACE LEVEL

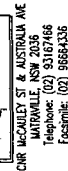
SETTING OUT POINTS OF TANK PAD SURFACE

SOP	EASTING	NORTHING
SOP 1	1237809.115	6184211.092
SOP 2	1237810.521	6184203.072
SOP 3	1237816.668	6184213.734
SOP 4	1237818.072	6184209.714

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 AUSTRALIA PTY LTD
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DESIGN PCS No.	A1
FILE NUMBER	OF SHEETS
SHEET No.	3512
DRAWING No.	C5
SHEET No.	ISSUE
DESIGN DIVISION	B
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

SCALES

NORTH POINT

APPROVED
FOR CONSTRUCTION

DATE 19/09/03
MANAGER DESIGN

DATE 19/09/03
SENIOR DESIGN ENGINEER

DATE 19/09/03
DESIGNED

DATE 19/09/03
CHECKED

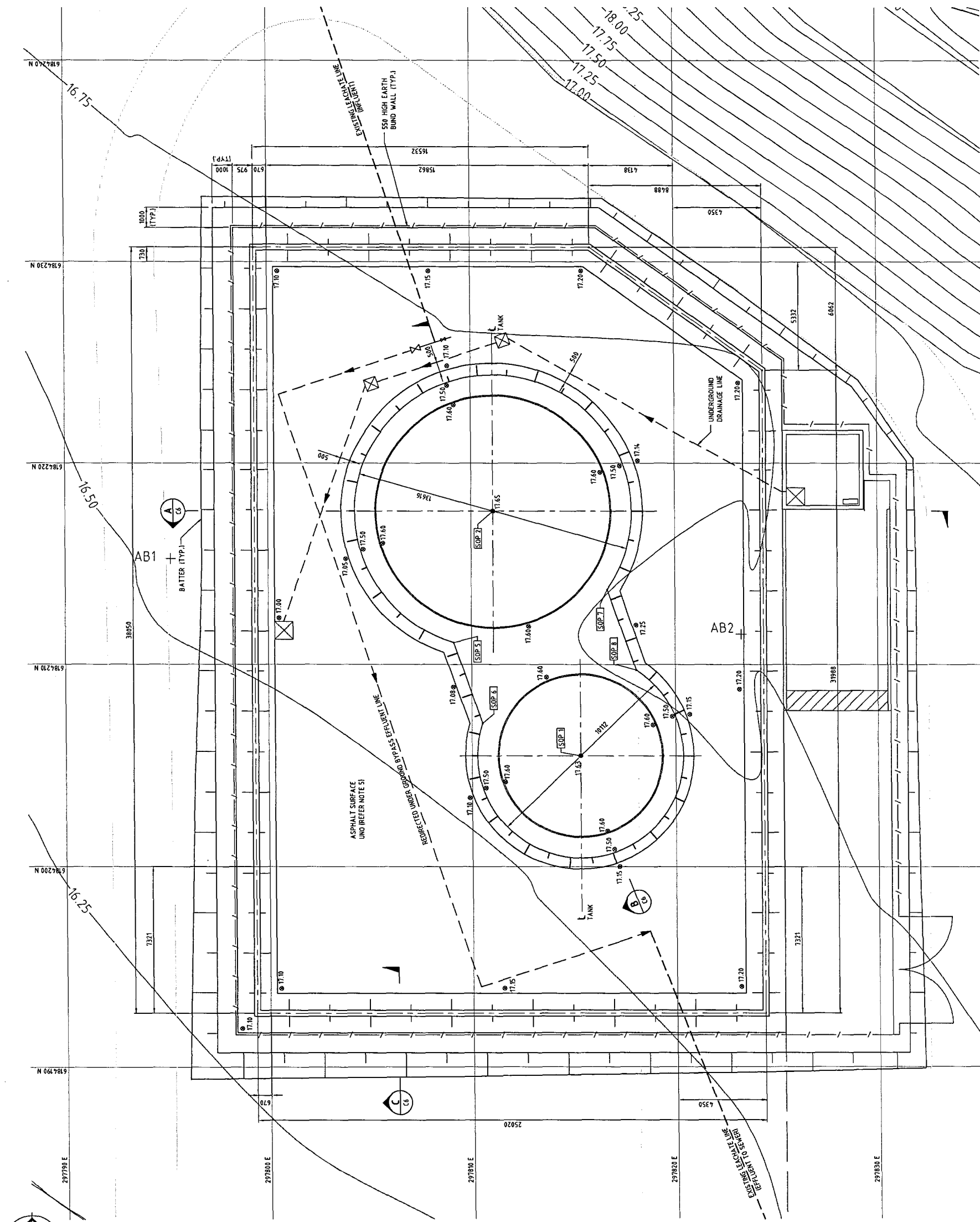
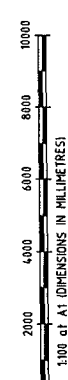
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DATE

DATE 19/09/03
DATE

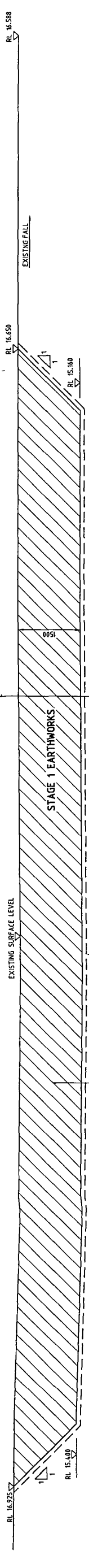
DATE 19/09/03
DATE

DATE 19/09/03
DATE

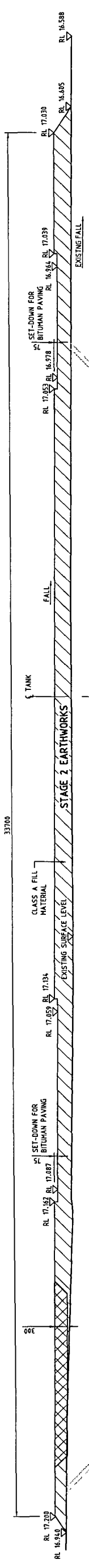
PLAN - TANK FOUNDATION PAD AND BUND WALL
SCALE 1:100



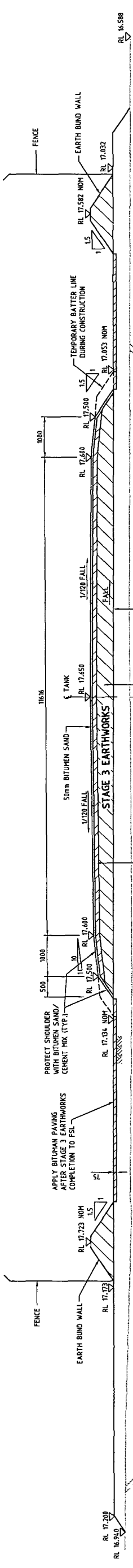
0 10 20 30 40 50 60 70 80 90 100mm ON ORIGINAL PLAN



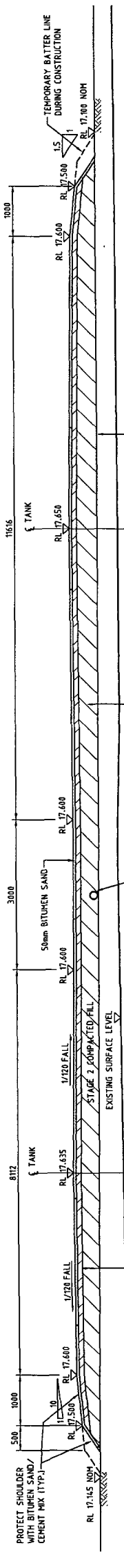
SECTION A-C3
SCALE: 1:50
STAGE 1 EARTHWORKS



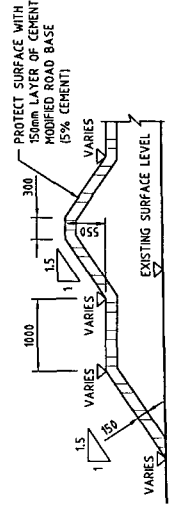
SECTION A-C3
SCALE: 1:50
STAGE 2 EARTHWORKS



SECTION A-C3
SCALE: 1:50
STAGE 3 EARTHWORKS



SECTION B-C5
SCALE: 1:50
STAGE 3 EARTHWORKS



SECTION C-C5
SCALE: 1:50
TYPICAL SECTION THROUGH EARTH BUND WALL

NOTES
1. CLASS A AND B MATERIAL IS DEFINED IN THE GENERAL NOTES ON DRG NO. 3512-N1
2. BITUMEN SAND MIX IS DEFINED IN GENERAL NOTES ON DRG NO. 3512-N1

LEGEND:
CLASS A MATERIAL
CLASS B MATERIAL

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.

1:50 AT ALL DIMENSIONS IN MILLIMETRES

URS
Level 3, 116 Miller Street,
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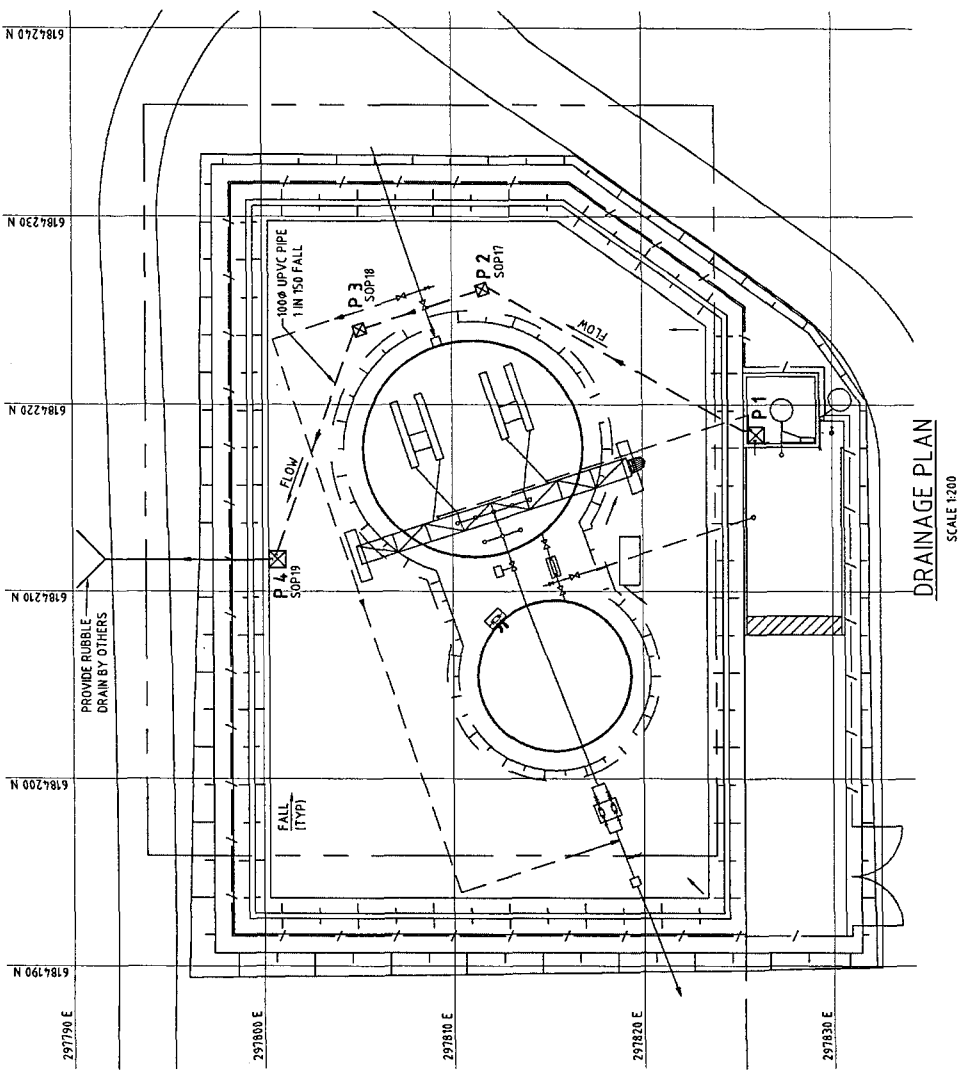
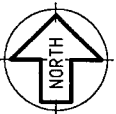
PET
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DESIGN PCS No.	FILE NUMBER	SHEET	OF	SHEETS	ORIGINAL
		6		6	
DRAWING No.					ISSUE
					B
					C6
					3512
					WOLLONGONG
					CITY OF WOLLONGONG
					DESIGN DIVISION
					PH. 02 42277111

WORK AS EXECUTED
CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
BULK EARTHWORKS SECTIONS

ISSUE	DESCRIPTION	DATE	APPROVED	SCALE	NORTH POINT
B	WORK AS EXECUTED	19/09/03	MANAGER DESIGN	AS SHOWN	
A	FOR CONSTRUCTION	19/09/03	SENIOR DESIGN ENGINEER		

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

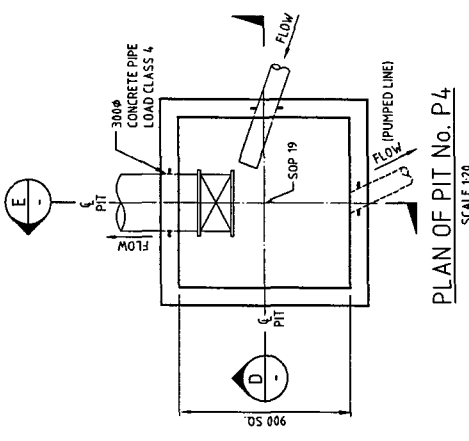


PIT COVER	
PIT No.	DESCRIPTION
P1	SUPPLY GALVANISED GRATING
P2	60mm NOM THICK CONCRETE
P3	60mm NOM THICK CONCRETE
P4	SUPPLY GALVANISED GRATING

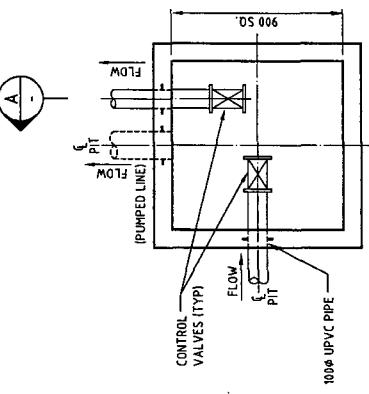
PIT SCHEDULE					
PIT No.	SIZE	INLET	OUTLET	IL	F.S.L.
P1	900x900x750 DEEP	N/A	16.705	16.385	17.300
P2	600x600x600 DEEP	16.600	16.575	16.351	17.316
P3	600x600x600 DEEP	16.533	16.508	16.317	17.282
P4	900x900x750 DEEP	16.525	16.400	16.085	17.000

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	6184211.704

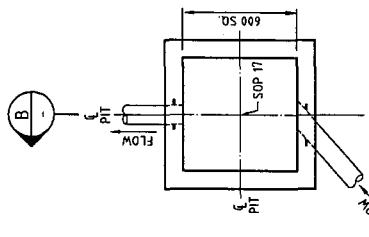
NOTE: ALL PIPES ARE 1500 UPVC U.N.D.



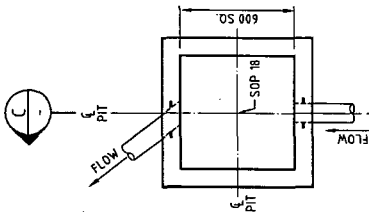
PLAN OF PIT No. P4
SCALE 1:20



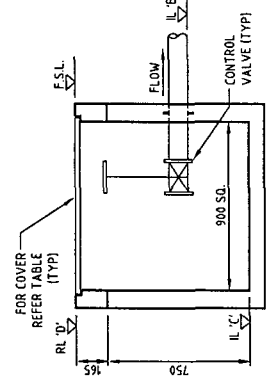
PLAN OF PIT No. P1
SCALE 1:20



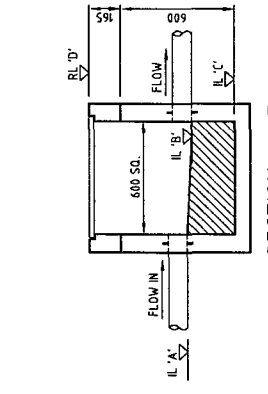
PLAN OF PIT No. P2
SCALE 1:20



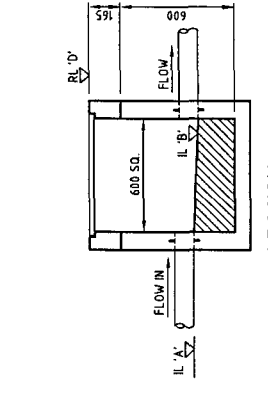
PLAN OF PIT No. P3
SCALE 1:20



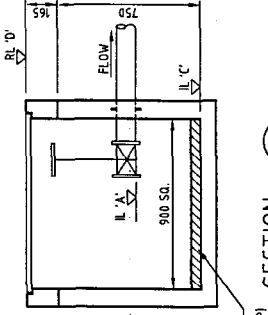
SECTION A-A
SCALE 1:20



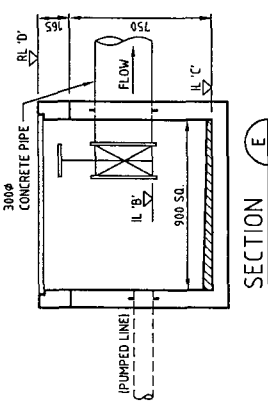
SECTION B-B
SCALE 1:20



SECTION C-C
SCALE 1:20



SECTION D-D
SCALE 1:20



SECTION E-E
SCALE 1:20

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.

NOTES

- ALL PITS PRECAST TO DIMENSIONS SHOWN.
- ALL PIT COVERS SUPPLIED AS PRE-CAST UNITS OR GRATING AS SPECIFIED BY PIT SUPPLIER.
- KNOCK OUT PANELS IN PIT WALLS TO BE 375x375 MAX TO TAKE 1500 PIPE.

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DESIGN P.E. No.	FILE NUMBER	SHEETS	OF	SHEETS	ORIGINAL
		8		8	
		DRAWING No.		SHEET No.	ISSUE
		3512		C8	B

WOLLONGONG
City of Innovation
DESIGN DIVISION
Ph. 02 82271111

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

APPROVED	FOR CONSTRUCTION	DATE	DATE	DATE	DATE	DATE	DATE
MANAGER DESIGN	SENIOR DESIGN ENGINEER	19/09/03	19/09/03	19/09/03	19/09/03	19/09/03	19/09/03

APPROVED	FOR CONSTRUCTION	DATE	DATE	DATE	DATE	DATE	DATE
MANAGER DESIGN	SENIOR DESIGN ENGINEER	19/09/03	19/09/03	19/09/03	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
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DATE	DESIGNED	CHECKED	DATE	DATE	DATE
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19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DESIGNED	CHECKED	DATE	DATE	DATE
19/09/03	JN	JN	19/09/03	19/09/03	19/09/03

DATE	DES
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NOTES

- FOR GENERAL NOTES REFER TO DRG. No. 3512-N1.
- PLATES SHALL BE GRADE 350 L¹S IN ACCORDANCE WITH AS 3678.
- ALL STEEL SHOULD BE GRADE 300 FOR ROLLED SECTIONS. FLAT AND ROUND BAR, IN ACCORDANCE WITH AS 3678 & AS 3679 (UNL01).
- SITE WELDING SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF AS 1554, WELD CATEGORY SP. ALL VERTICAL SHELL PLATE WELDS SHALL BE FULL PENETRATION BUTT WELDS AND THE BASE WELD BOTTOM PLATE SHALL BE A SQUARE BUTT WELD... FABRICATION, ERECTION, INSPECTION AND TESTING TO BE IN ACCORDANCE WITH API STANDARD 650.
- PROTECTIVE COATINGS**
 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.
SHOP COATINGS
 UNDERSIDE OF BOTTOM PLATES—
 COATING SYSTEM - FIRST COAT DEVTAR SA - 150um DFT
 SECOND COAT DEVTAR SA - 150um DFT
 PREFER WELD MARGIN AT JOINT SPLICE DETAIL)
 ON-SITE COATINGS
 AFTER TANK ERECTION)
 INSIDE STEEL TANK SURFACES
 COATING SYSTEM - FIRST COAT DEVCHEM 253 - 150um DFT
 SECOND COAT DEVCHEM 253 - 150um DFT
 EXTERNAL STEEL TANK SURFACES
 COATING SYSTEM-
 FIRST COAT BAR-RUST 236 - 150um DFT
 SECOND COAT DEVTHANE 359HS - 125um DFT
 ALL PREPARATION AND COATING APPLICATION WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ALTEX COATINGS LIMITED PRINTED INSTRUCTIONS.
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.

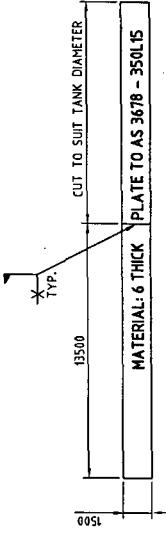
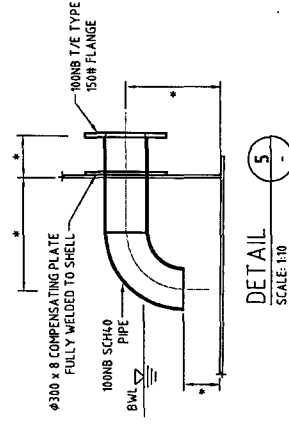
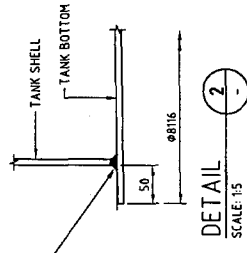
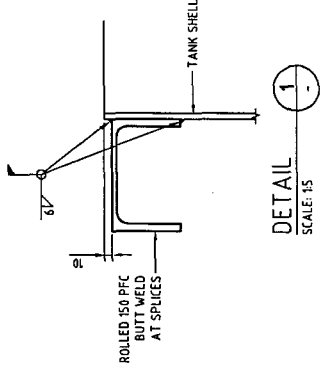
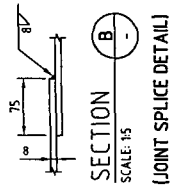


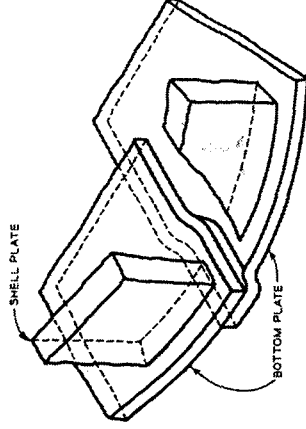
PLATE CUTTING DETAIL FOR BALANCE TANK

(PLATE WIDTHS AS PER MILL SUPPLY WITH TRIMMED AND PREPARED EDGES)

SCALE 1:200

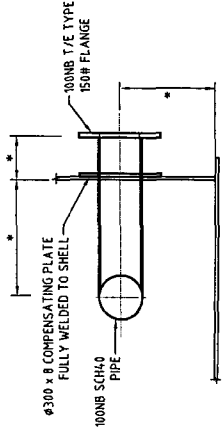


* EFFLUENT DISCHARGE PUMP CONNECTION FLANGE FINAL POSITION AND DIAMETER TO BE CONFIRMED BEFORE FABRICATION

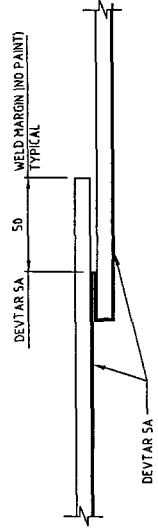


Method for Preparing Lap-Welded Bottom Plates Under Tank Shell.

DETAIL 4
 SCALE: 1:10

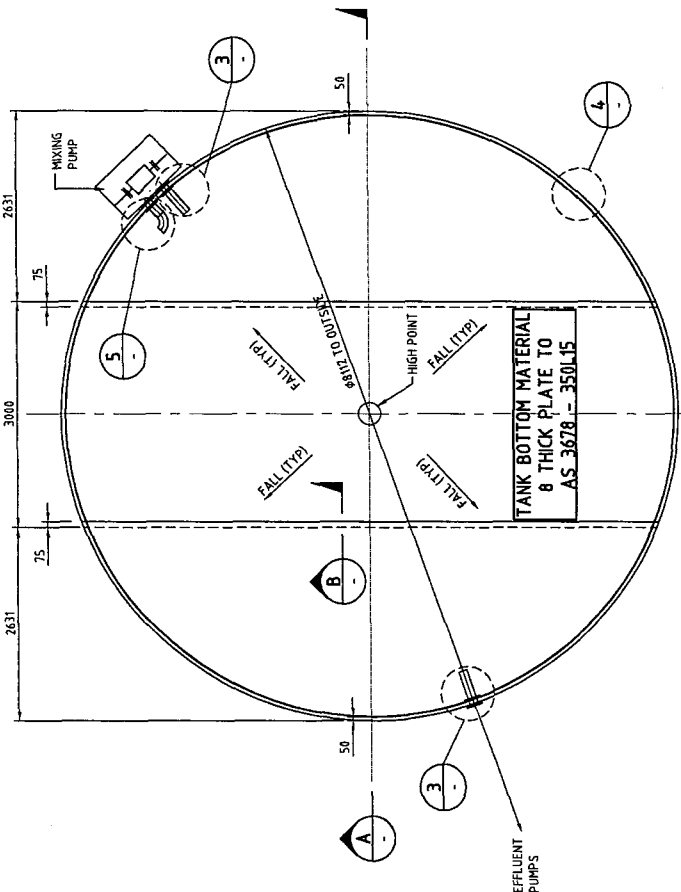


DETAIL 5
 SCALE: 1:10
 (HORIZONTAL BEND)



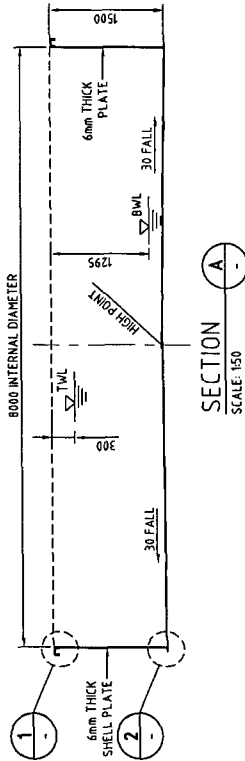
SHOP PAINTING DETAIL AT BOTTOM PLATE JOINT SPLICE

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



BALANCE TANK BOTTOM PLAN VIEW

SCALE 1:50



SECTION A
 SCALE: 1:50



APPROVED FOR CONSTRUCTION		APPROVED FOR GENERAL USE ONLY		MANAGER DESIGN		NORTH POINT		SCALES		WORK AS EXECUTED	
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
JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL
AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE
TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT
JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL	JMKL
AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE
AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE

DESIGNATION	DESCRIPTION	DATE	DATE	DATE
B	WORK AS EXECUTED	TT	A.E.	22/03/05
A	FOR CONSTRUCTION	JMKL	A.E.	09/03
		AE	CHECKED	
		AE	CHECKED	

DESIGNATION	DESCRIPTION	DATE	DATE	DATE
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		AE	CHECKED	

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		AE	CHECKED	

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		AE	CHECKED	

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		AE	CHECKED	
		AE	CHECKED	

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		AE	CHECKED	

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		AE	CHECKED	

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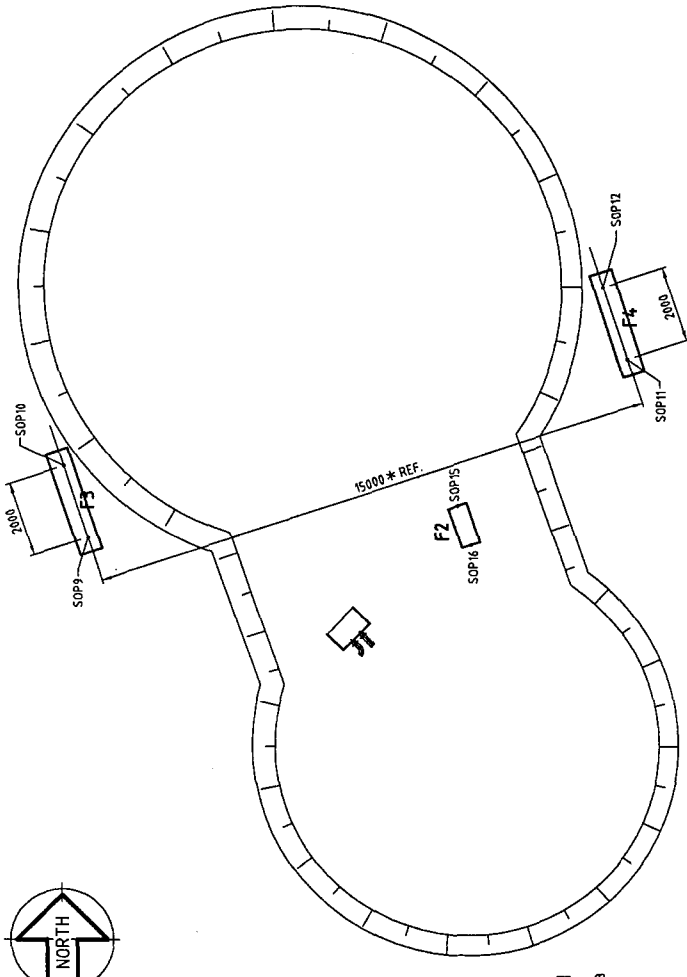
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DESIGNATION	DESCRIPTION	DATE	DATE	DATE
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DESIGNATION	DESCRIPTION	DATE	DATE	DATE
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DESIGNATION	DESCRIPTION	DATE	DATE	DATE
B	WORK AS			

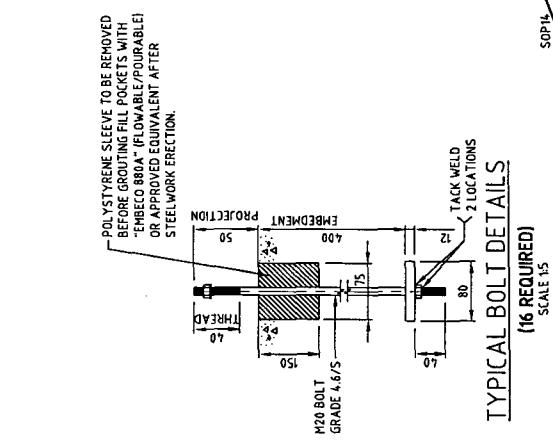


LOCATION PLAN
SCALE 1:100

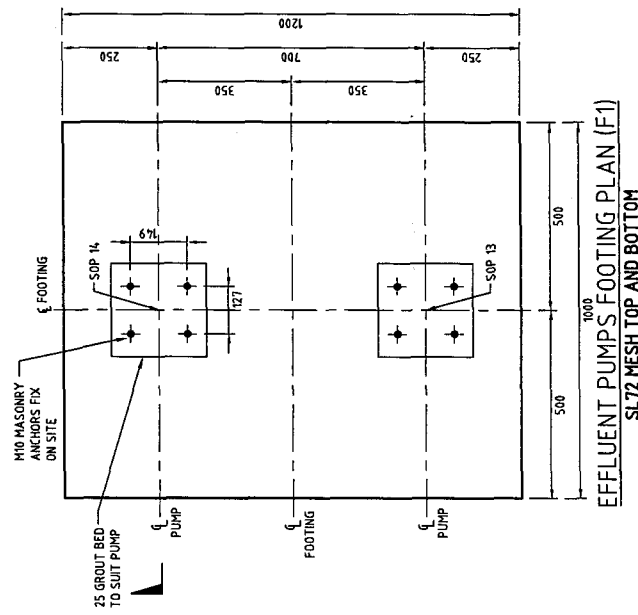
SETTING OUT POINTS OF ACCESS PLATFORM AND PUMP FOOTINGS

SOP	EASTING	NORTHING
SOP 9	297805.370	6184210.980
SOP 10	297805.740	6184212.870
SOP 11	297819.606	6184215.703
SOP 12	297818.977	6184217.602
SOP 13	297818.394	6184198.456
SOP 14	297817.741	6184198.205
SOP 15	297815.106	6184211.829
SOP 16	297815.452	6184210.785

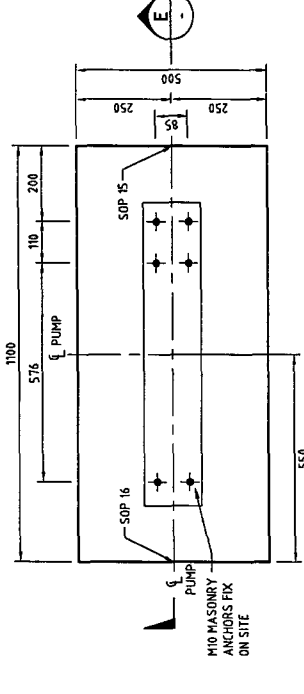
* REFER TO NOTE 4



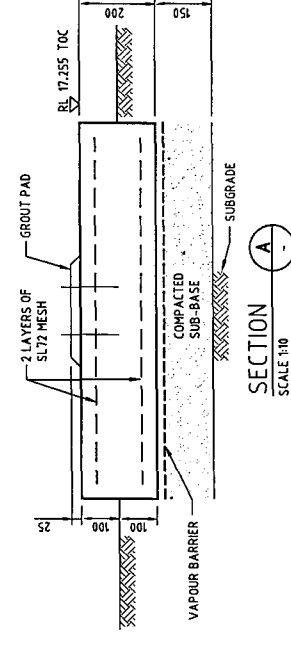
TYPICAL BOLT DETAILS
(16 REQUIRED)
SCALE 1:5



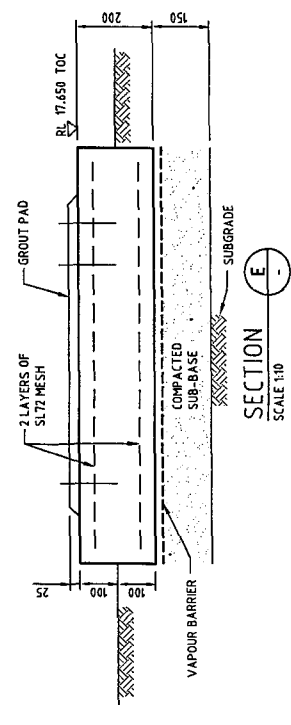
EFFLUENT PUMPS FOOTING PLAN (F1)
SCALE 1:10



WAS PUMPS FOOTING PLAN (F2)
SCALE 1:10



SECTION A-A
SCALE 1:10



SECTION E-E
SCALE 1:10

- NOTES**
- REFER TO DRG. No. 3512-NI FOR GENERAL NOTES.
 - SOP DENOTES SETTING OUT POINTS FOR FOOTING AS NOTED AS PER LOCATION PLAN.
 - F1-F4 DENOTES FOOTING NUMBER.
 - CENTRELINE OF 2 BOLT GROUPS TO BE 2000mm APART AND 15000mm APART AS PER LOCATION PLAN.

WORK AS EXECUTED

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
FOOTING DETAILS

SCALES
AS SHOWN

NORTH POINT

APPROVED
FOR CONSTRUCTION
DATE 19/09/03
MANAGER DESIGN

DESIGNED
DATE 19/09/03
CHECKED
DATE 19/09/03

DRAWN
DATE 19/09/03
DATE

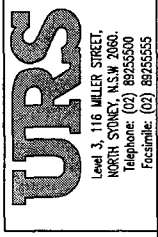
DESCRIPTION
DATE

ISSUE

3512

S3

C

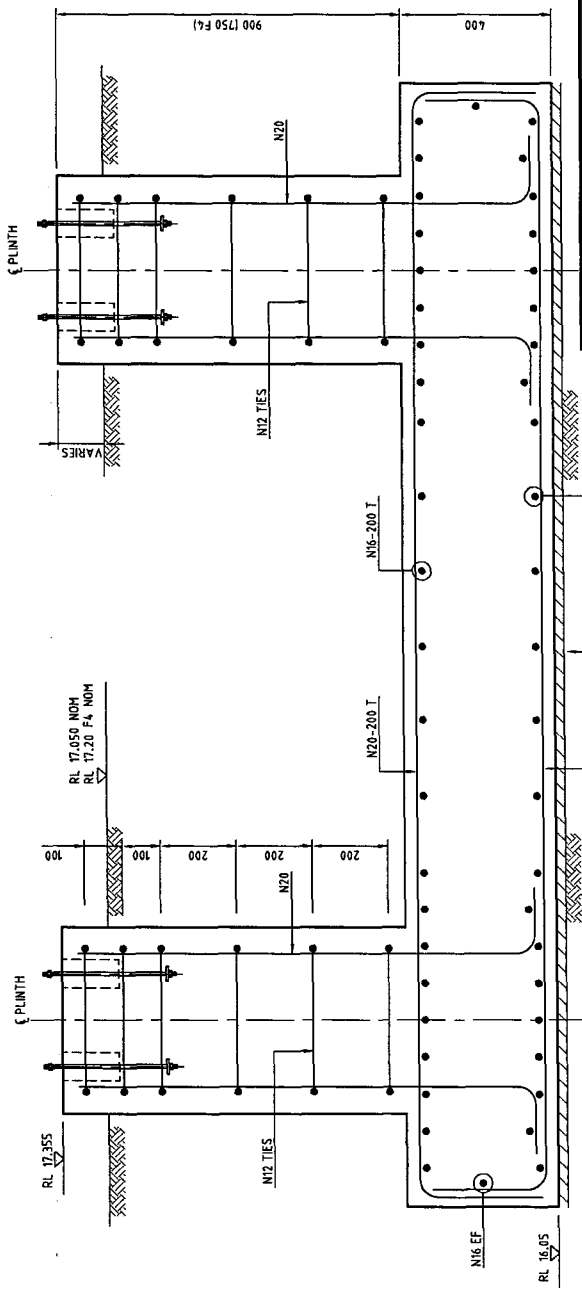


URS
Level 3, 116 MILLER STREET
WORTH STONEY NSW 2060
Telephone: (02) 89255000
Facsimile: (02) 89255555

RET
OUR MASONRY & CONCRETE
116 MILLER STREET
WORTH STONEY NSW 2060
Telephone: (02) 83167466
Facsimile: (02) 86684336

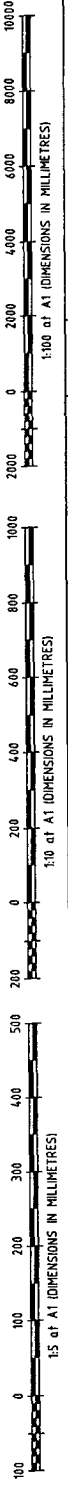
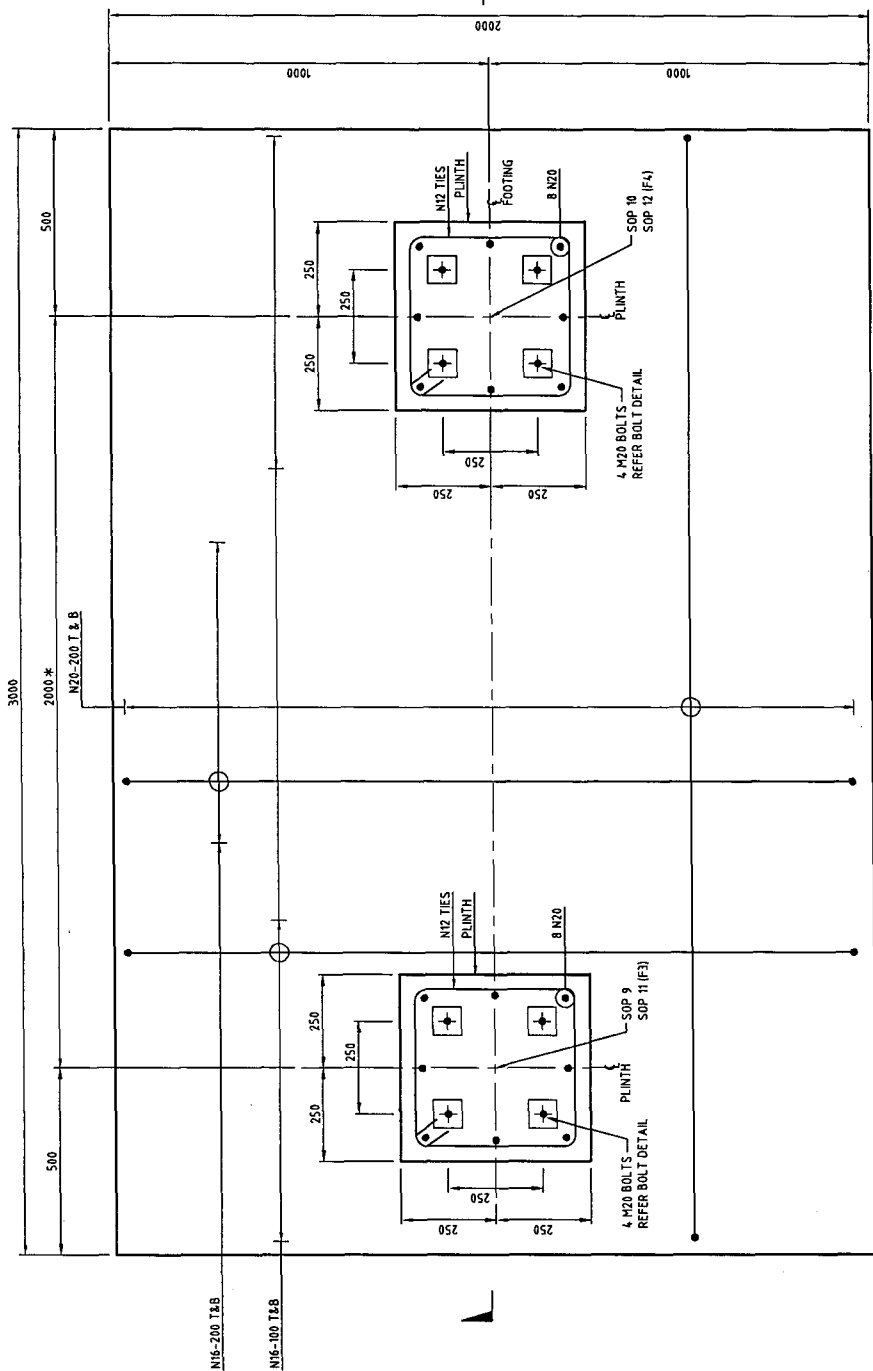
WORK AS EXECUTED
These drawings are an accurate representation as at 22/03/05 of the Work as Executed.
Signed: [Signature]
URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

SECTION B-B
SCALE 1:10



ACCESS PLATFORM FOOTING PLAN
SCALE 1:10

(2 FOOTINGS REQUIRED)
(F3 AS DRAWN F4 SIMILAR AS NOTED)



DATE	DESCRIPTION	DATE	DESCRIPTION
19/09/03	MANAGER DESIGN	19/09/03	MANAGER DESIGN
19/09/03	ENGINEER	19/09/03	ENGINEER
19/09/03	DESIGNED	19/09/03	DESIGNED
19/09/03	CHECKED	19/09/03	CHECKED
19/09/03	DATE	19/09/03	DATE

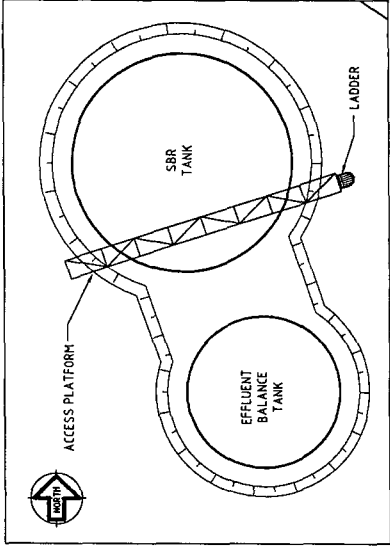
NOTES

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

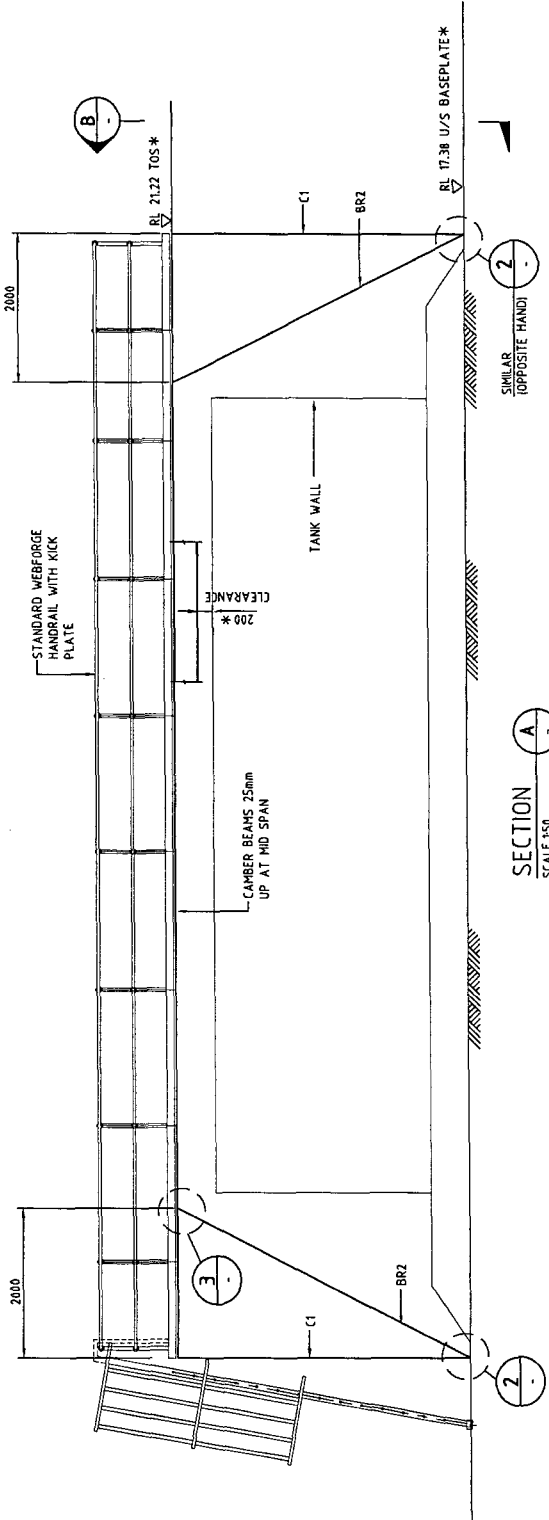
MEMBER	SCHEDULE	WELD
B1	310 UB 40	FULLY WELDED
B2	150 PFC	FULLY WELDED
BR1	75 x 75 EA 6	REFER DETAIL 2 & 4
C1	150 UC 30	REFER DETAIL 2 & 4
BR2	100 x 100 x 6 SHS	REFER DETAIL 2 & 3

NOTE

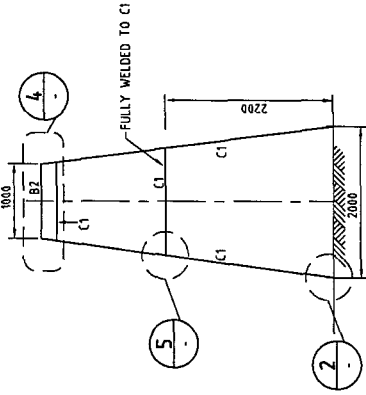
- ALL DIMENSIONS AND LEVELS SHOWN THUS TO BE VERIFIED ON SITE PRIOR TO FABRICATION.
- ALL STEELWORK TO BE HOT DIPPED GALVANISED AS 1857.
- PLATFORM, STAIRS AND LADDER TO CONFORM TO AS 1857.



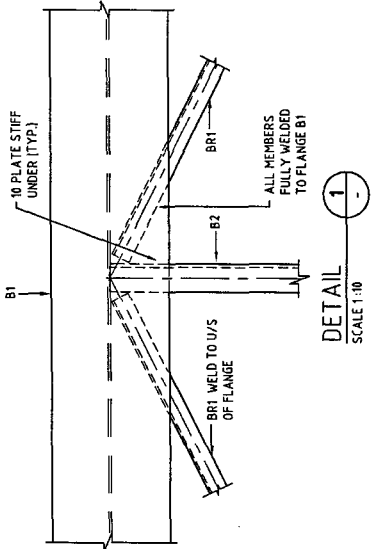
LOCATION PLAN
SCALE 1:200



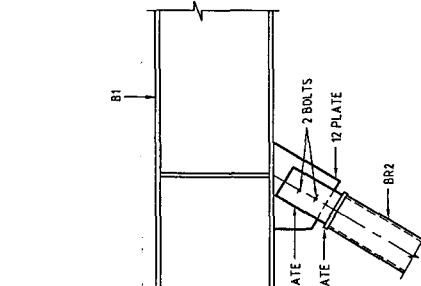
SECTION A
SCALE 1:50



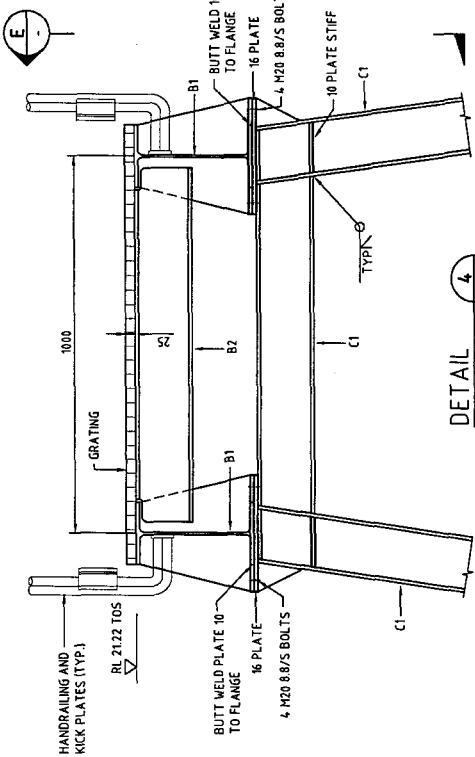
VIEW B
SCALE 1:50
FRAME DETAILS AT SUPPORT



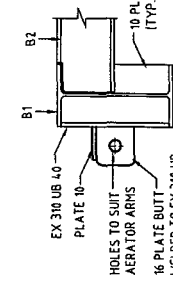
DETAIL 1
SCALE 1:10
TYPICAL TRUSS CONNECTION DETAIL



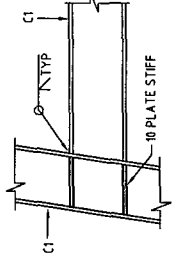
DETAIL 3
SCALE 1:10
TYPICAL TRUSS CONNECTION DETAIL



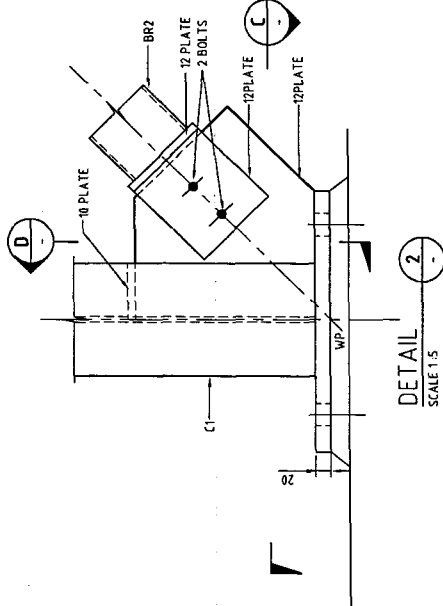
DETAIL 4
SCALE 1:10
TYPICAL SUPPORT



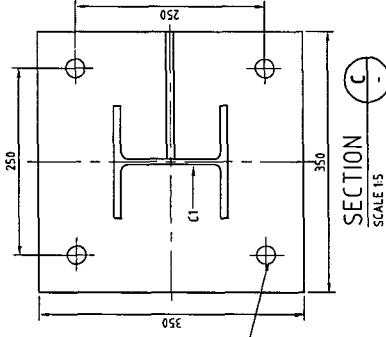
SECTION F
SCALE 1:10
TYPICAL AERATOR BRACKETS



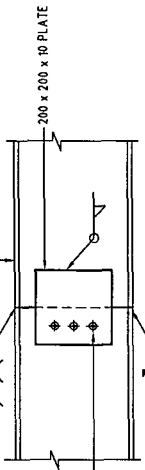
SECTION 5
SCALE 1:10
TYPICAL SPLICE CONNECTION



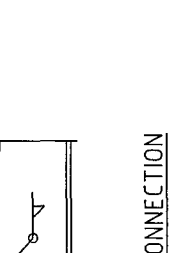
DETAIL 2
SCALE 1:5



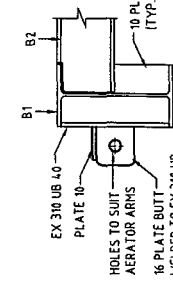
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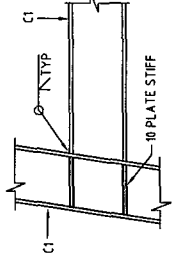
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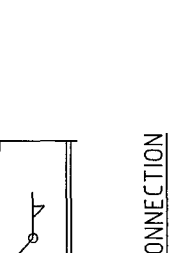
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SCALE 1:10
TYPICAL AERATOR BRACKETS



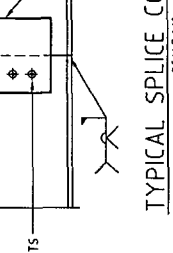
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SCALE 1:10
TYPICAL AERATOR BRACKETS



SECTION 15
SCALE 1:10
TYPICAL AERATOR BRACKETS



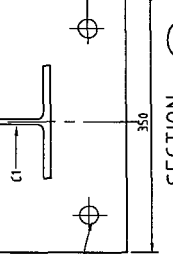
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TYPICAL AERATOR BRACKETS



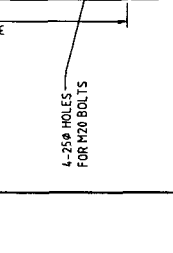
SECTION 15
SCALE 1:10
TYPICAL AERATOR BRACKETS



SECTION 15
SCALE 1:10
TYPICAL AERATOR BRACKETS



SECTION 15
SCALE 1:10
TYPICAL AERATOR BRACKETS



SECTION 15
SCALE 1:10
TYPICAL AERATOR BRACKETS



SECTION 15
SCALE 1:10
TYPICAL AERATOR BRACKETS

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.

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WOLLONGONG
City of Wollongong
DESIGN DIVISION
Ph. 02 42277111

DESIGN PCS No. _____
FILE NUMBER _____
DRAWING No. _____
SHEET No. _____
S4
3512
ISSUE B

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

WORK AS EXECUTED

AS SHOWN

SCALES

NORTH POINT

APPROVED
(FOR COUNCIL USE ONLY)
MANAGER DESIGN

SENIOR DESIGN ENGINEER

DATE 19/09/03

DATE 19/09/03

DATE 19/09/03

DATE 19/09/03

DATE 19/09/03

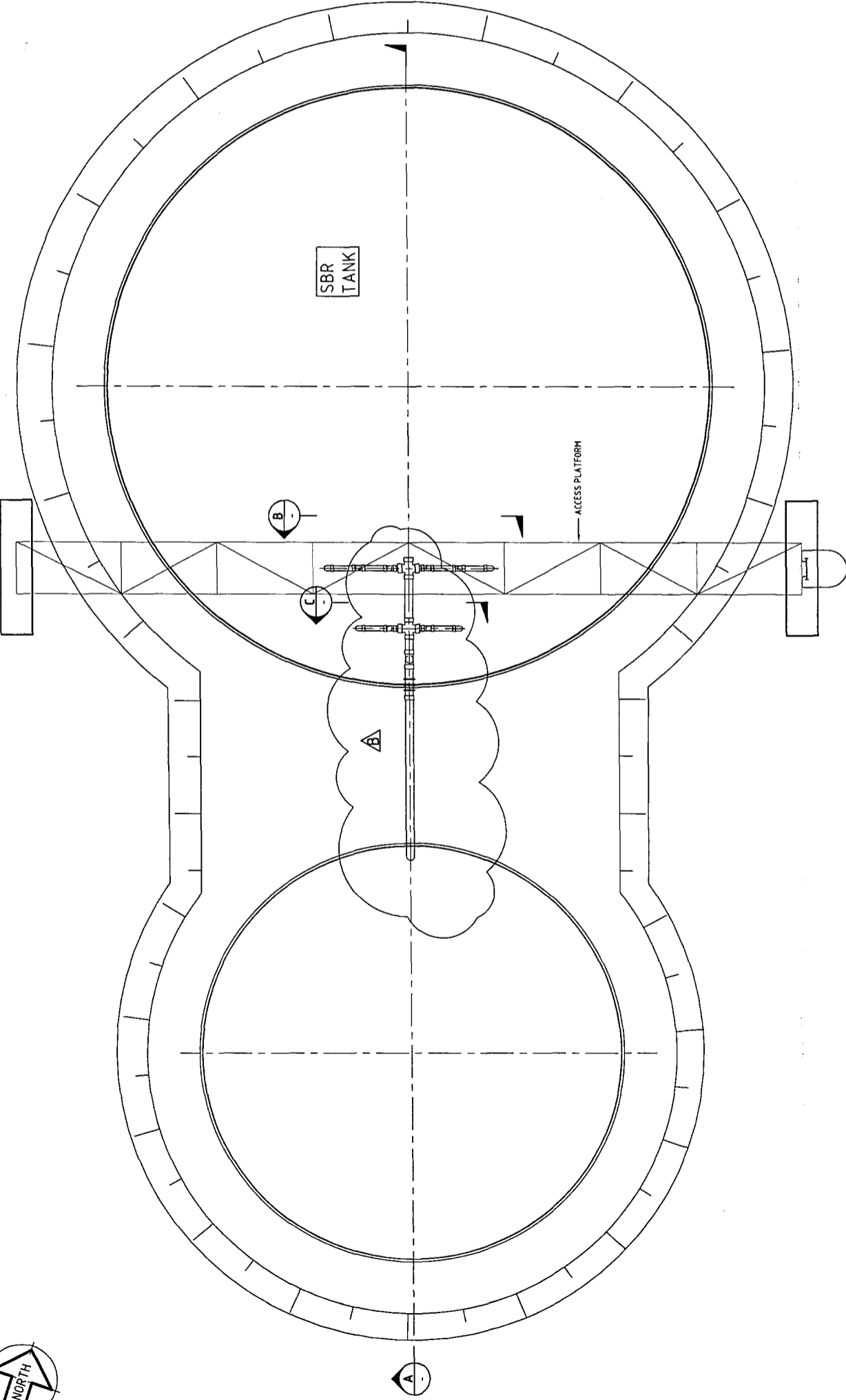
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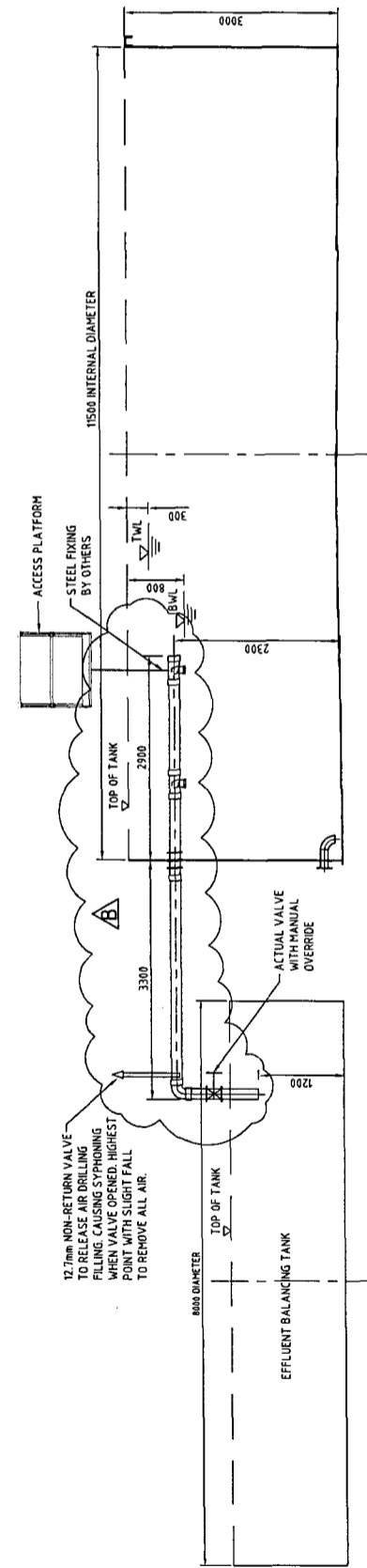
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TT	AE	22/03/05	22/03/05	22/03/05	22/03/05	22/03/05	22/03/05	22/03/05

DATE	DESCRIPTION
19/09/03	WORK AS EXECUTED
22/03/05	FOR CONSTRUCTION

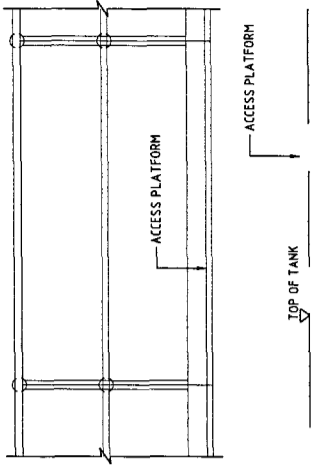
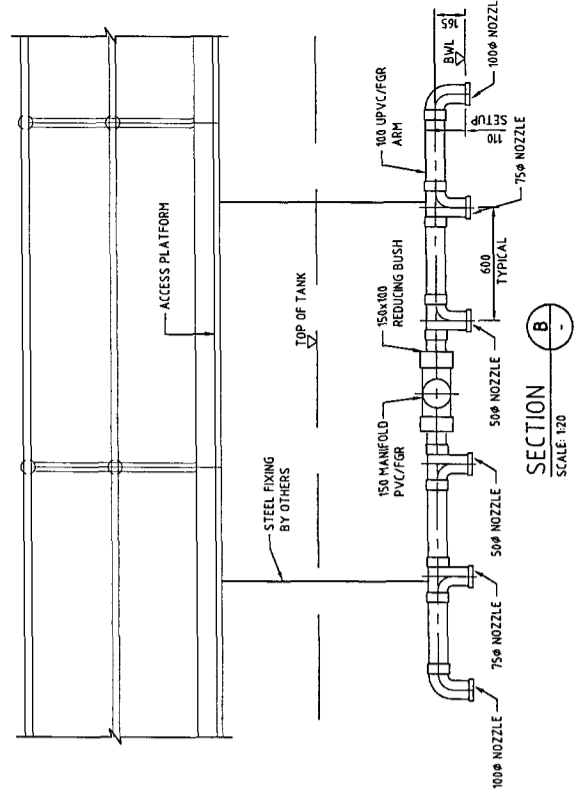
DATE	DESCRIPTION
19/09/03	WORK AS EXECUTED
22/03/05	FOR CONSTRUCTION



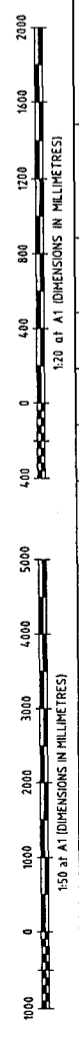
PLAN
SCALE: 1:50



SECTION A-A
SCALE: 1:50



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



ISSUE	DESCRIPTION	DATE	APPROVED	DATE	APPROVED	DATE	SCALE	NORTH POINT	WORK AS EXECUTED
B	WORK AS EXECUTED	19/09/03	MANAGER DESIGN	19/09/03	MANAGER DESIGN	19/09/03	AS SHOWN		
A	FOR CONSTRUCTION	19/08/03	SENIOR DESIGN ENGINEER	19/08/03	SENIOR DESIGN ENGINEER	19/08/03			

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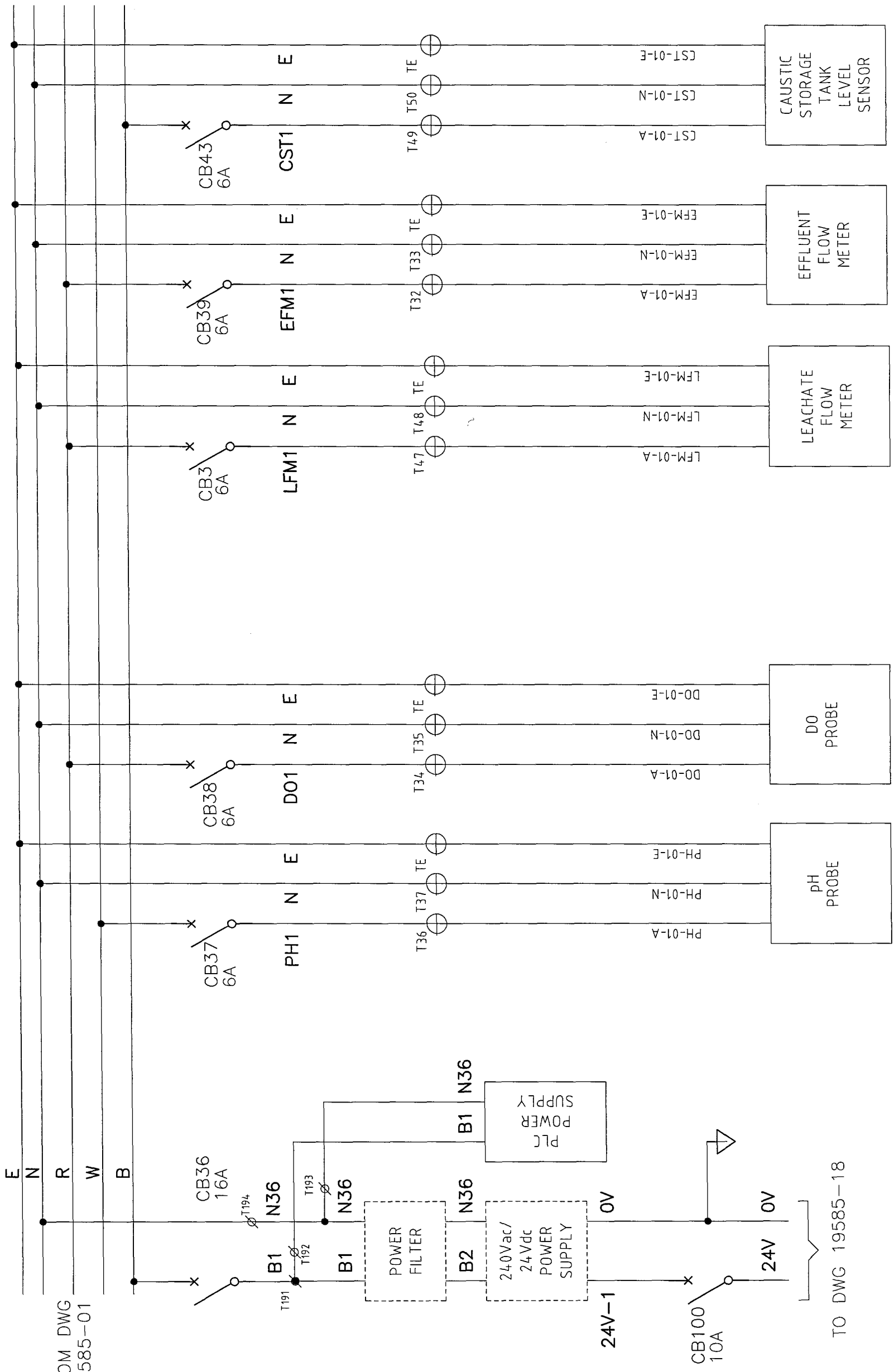
DESIGN PLS No. 3512
FILE NUMBER 6
SHEET 6 OF 6 SHEETS
DRAWING No. S6
ORIGINAL ISSUE B

WORK AS EXECUTED

CITY OF WOLLONGONG
WHYTES GULLY LEACHATE TREATMENT PLANT
DECANT PIPEWORK DETAILS

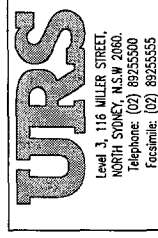
FROM DWG
19585-01

TO DWG
19585-03



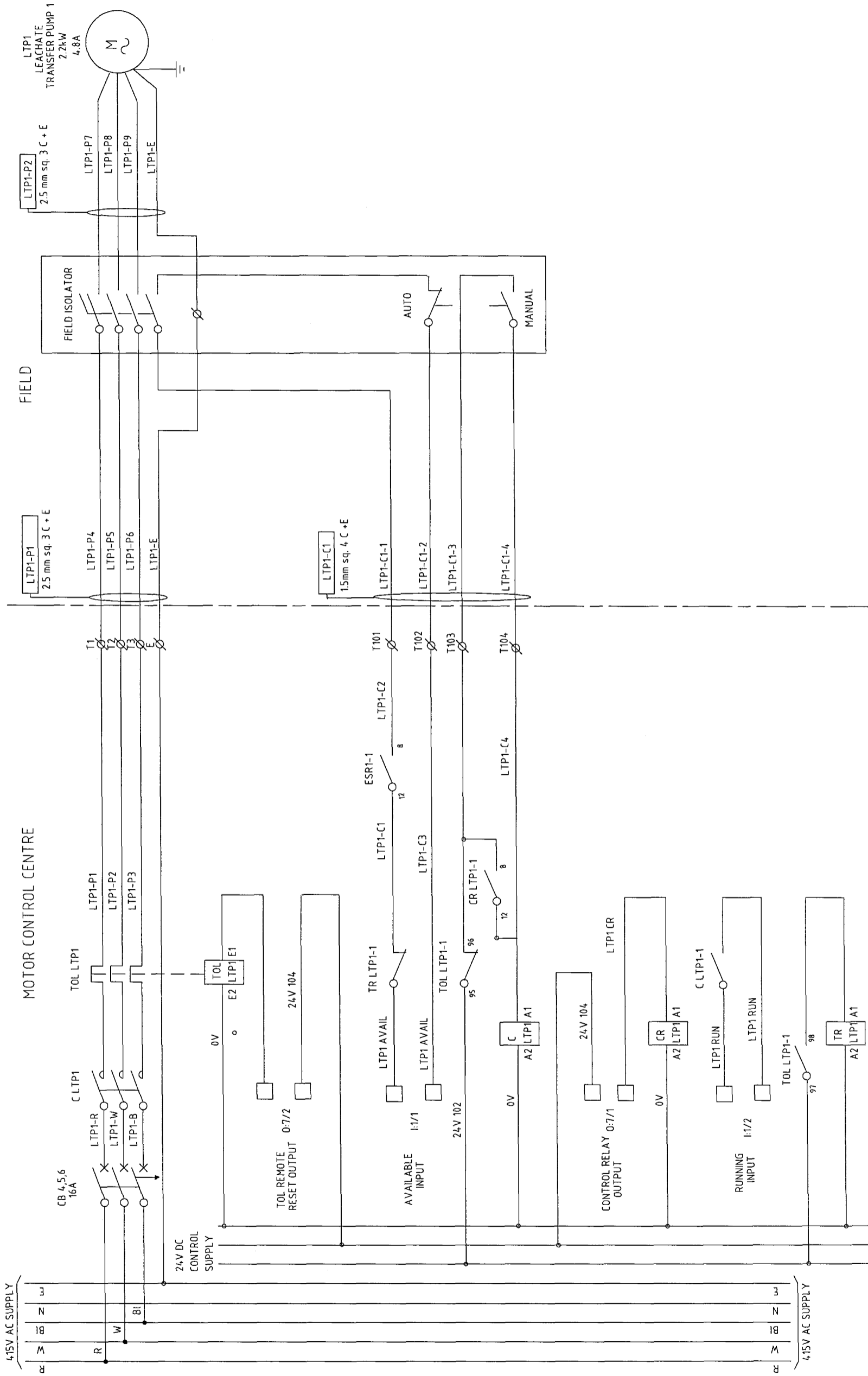
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DESIGN PCS No.	A1	ORIGINAL
FILE NUMBER	OF	SHEETS
DRAWING No.	3512	E2
SHEET No.		B
ISSUE		

CITY OF WOLLONGONG		WHYTES GULLY LEACHATE TREATMENT PLANT		WASTE TREATMENT SYSTEM		POWER & DISTRIBUTION (1 OF 2)	
APPROVED	MANAGER DESIGN	DATE	DATE	DATE	DATE	DATE	DATE
SENIOR DESIGN ENGINEER							
DRAWN	CHECKED	DESIGNED	CHECKED	DRAWN	APPROD	DATE	DATE
DATUM	SURVEYOR	FIELD BOOK	RELATED PLANS	TT	AE	AE	AE
SCALE	NORTH POINT	CITY OF WOLLONGONG					
		WHYTES GULLY LEACHATE TREATMENT PLANT					
		WASTE TREATMENT SYSTEM					
		POWER & DISTRIBUTION (1 OF 2)					
DESCRIPTION							
ISSUE							



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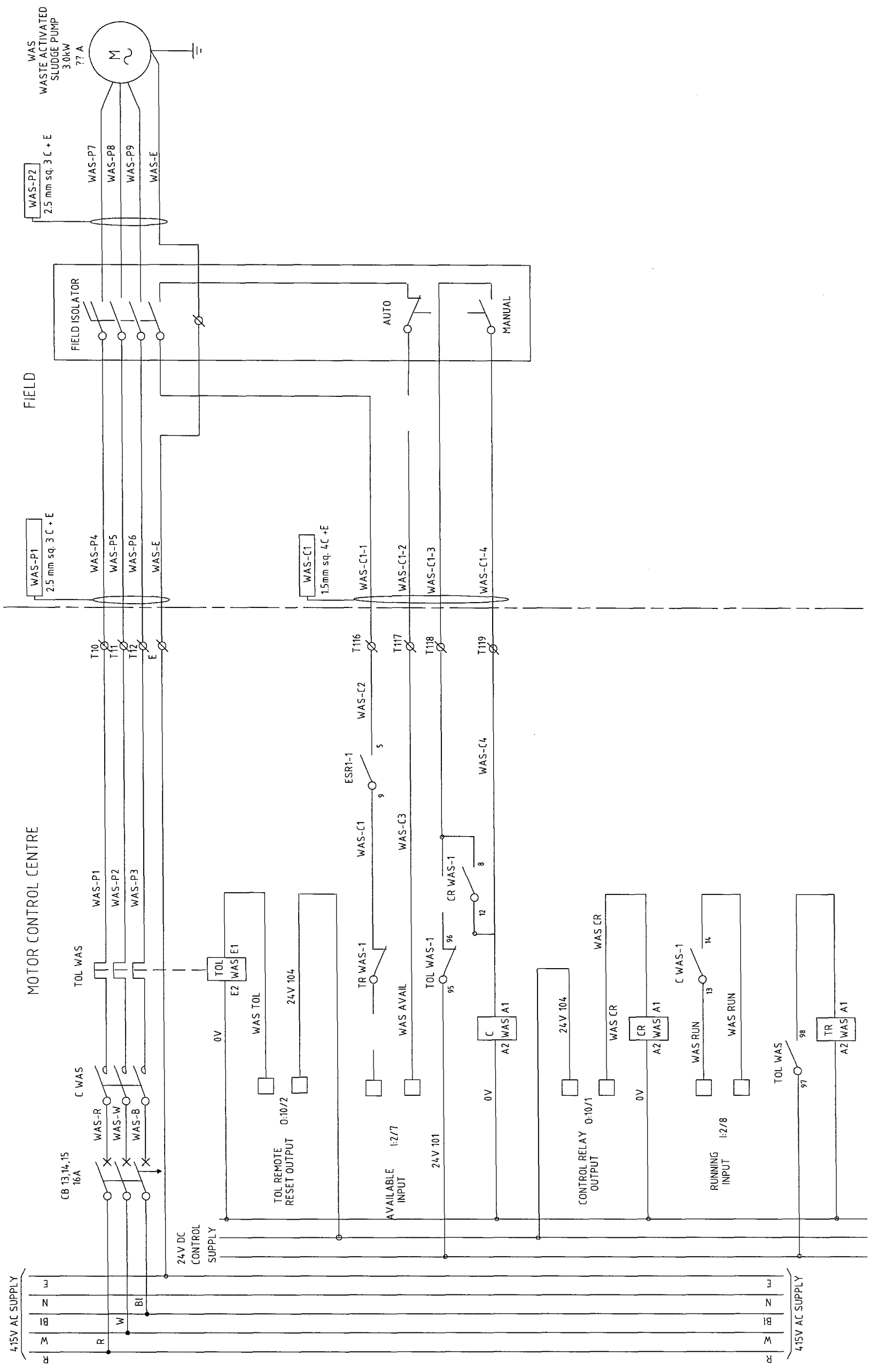
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3512	E4	E4		B	

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WORK AS EXECUTED

CITY OF WOLLONGONG
 WHYTE'S GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 STARTER CIRCUIT DIAGRAM

APPROVED		SCALES		NORTH POINT		DATE		DATE		DATE		DATE	
FOR CONSTRUCTION						MANAGER DESIGN		SENIOR DESIGN ENGINEER		MANAGER DESIGN		DATE	
DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE



WORK AS EXECUTED
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DESIGN PCS No. A1
 FILE NUMBER SHEET 4 OF 6 SHEETS ORIGINAL
 DRAWING No. 3512 SHEET No. E5 ISSUE B

WORK AS EXECUTED
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 STARTER CIRCUIT DIAGRAM

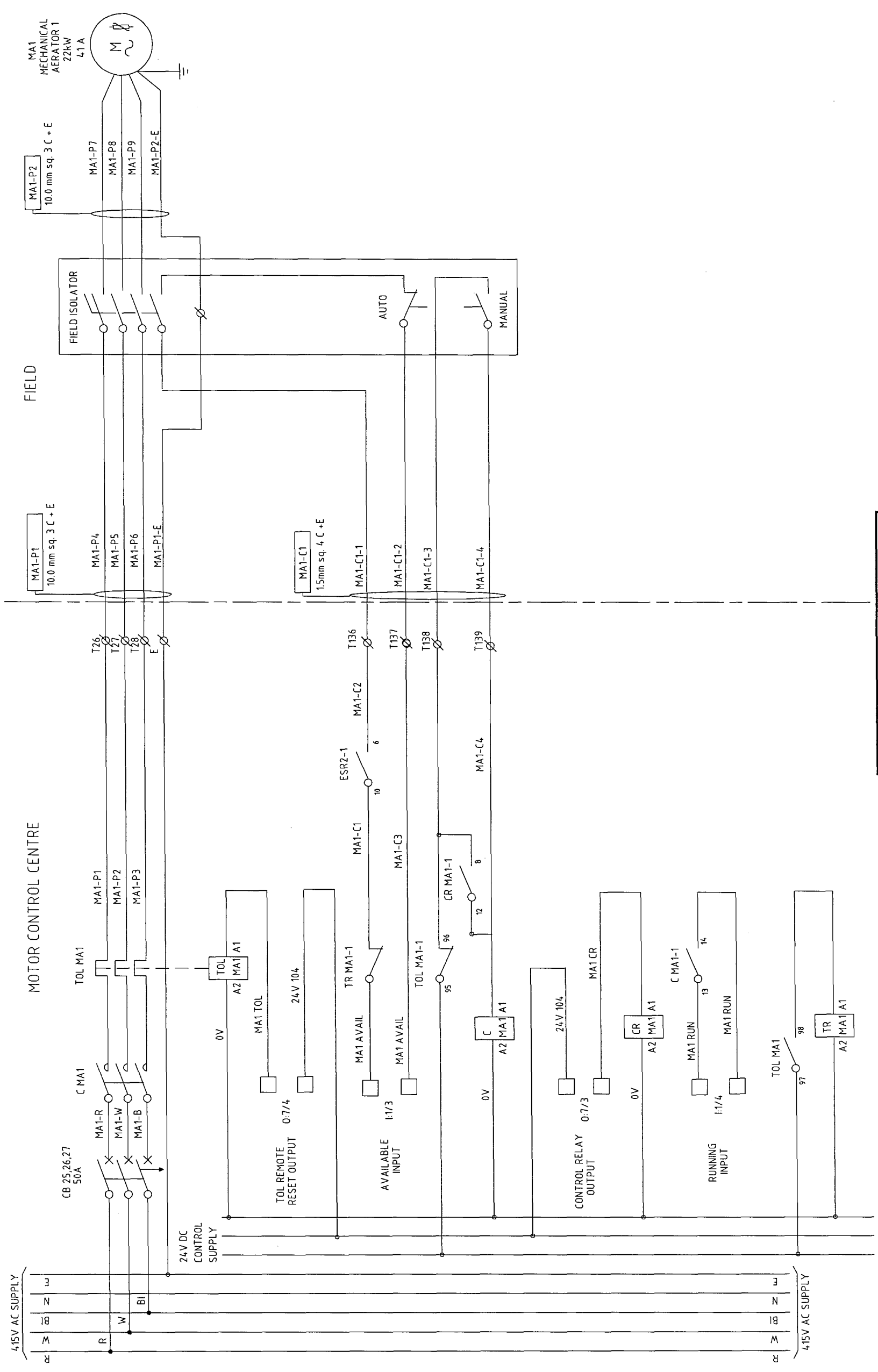
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DATE		DATE		DATE		DATE	
DATE		DATE		DATE		DATE	

DATUM	SURVEYOR	RELATED PLANS	DATE

DESCRIPTION	DATE
B WORK AS EXECUTED	22/03/05
A FOR CONSTRUCTION	09/03

ISSUE	DESCRIPTION	DATE

100mm ON ORIGINAL PLAN



WORK AS EXECUTED
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 of the Work as Executed.
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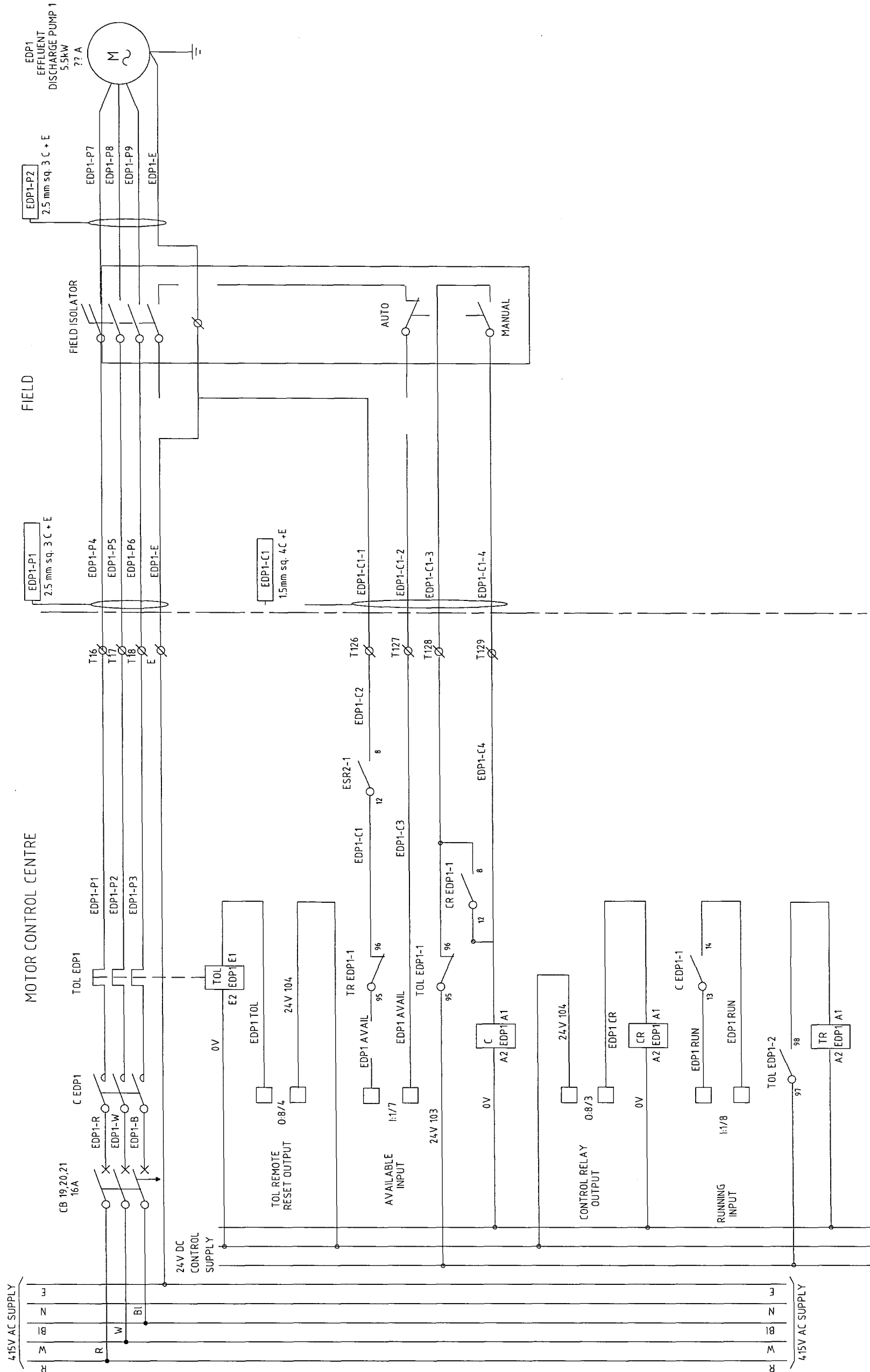
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 NORTH SYDNEY, N.S.W. 2060.
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WORK AS EXECUTED
 CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 STARTER CIRCUIT DIAGRAM

ISSUE	DESCRIPTION	DATE	APPROVED	DATE	SCALE	NORTH POINT	WORK AS EXECUTED
B	WORK AS EXECUTED	22/03/05	MANAGER DESIGN				
A	FOR CONSTRUCTION	09/03	ENGINEER				



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DESIGN PCS No.	FILE NUMBER	SHEET	OF	SHEETS	ORIGINAL
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WOLLONGONG City of Wollongong	DRAWING No.	3512		SHEET No.	ISSUE
DESIGN DIVISION	3512		E9		B
Ph. 02 42277111					

WORK AS EXECUTED
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 STARTER CIRCUIT DIAGRAM

APPROVED		NORTH POINT		SCALES	
FOR CONSULT USE ONLY	MANAGER DESIGN	DATE	DATE	DATE	DATE
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DATE	DATE	DATE	DATE	DATE	DATE

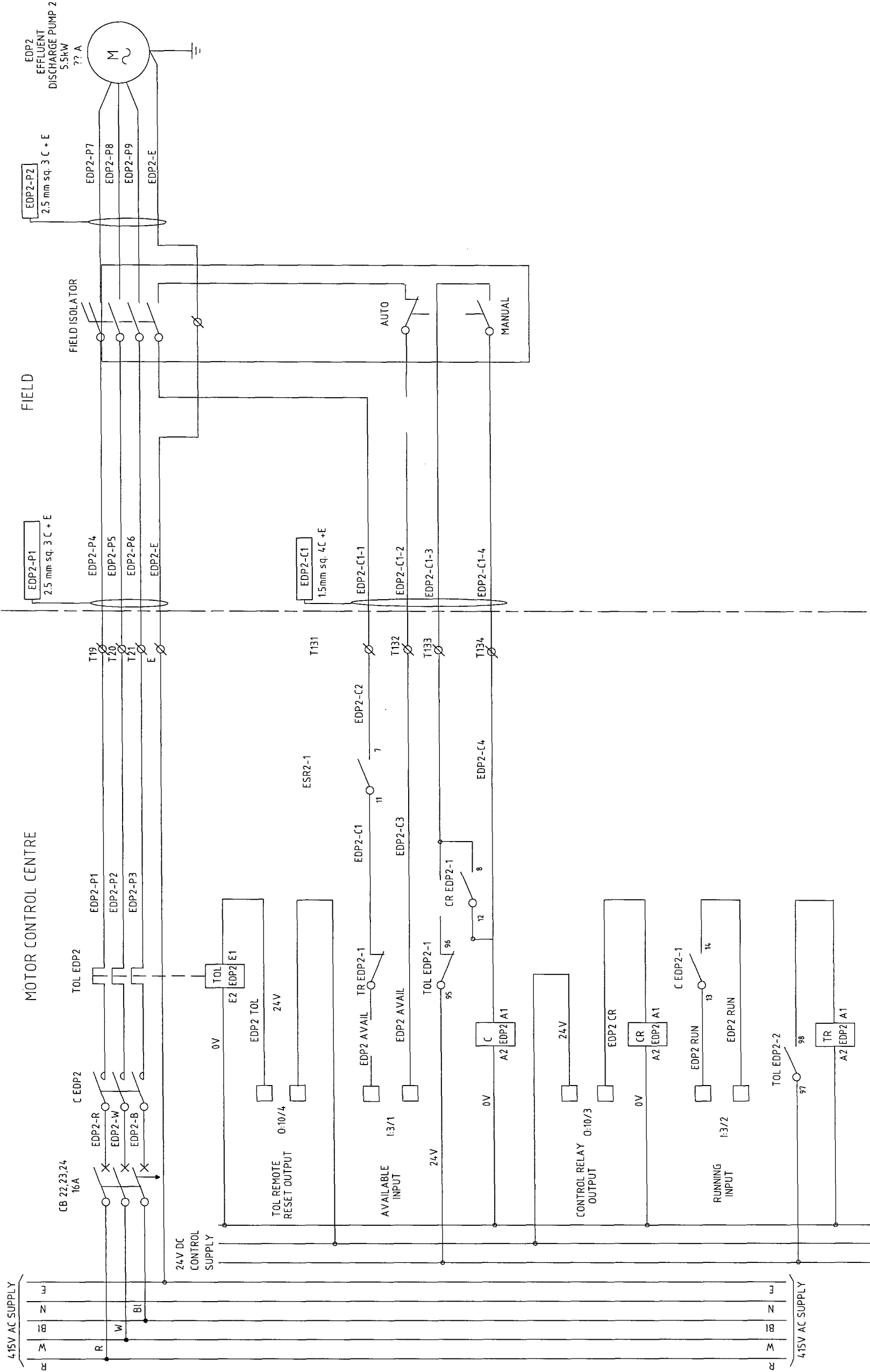
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PHCP	PHCP		

DATUM	SURVEYOR	RELATED PLANS	DATE
AZRUH	FIELD BOOK		

TT	MR	AE	DATE	DATE
JMEL	AE	AE	09/03	

DRAWN	APPROD	DATE	DESCRIPTION

100mm ON ORIGINAL D1.A1



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 DESIGN DIVISION
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WORK AS EXECUTED
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 STARTER CIRCUIT DIAGRAM

ISSUE	DESCRIPTION	DATE	APPROVED	DATE	SCALE	NORTH POINT	DESIGN NO.	DATE
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A	FOR CONSTRUCTION	09/03	ENGINEER					

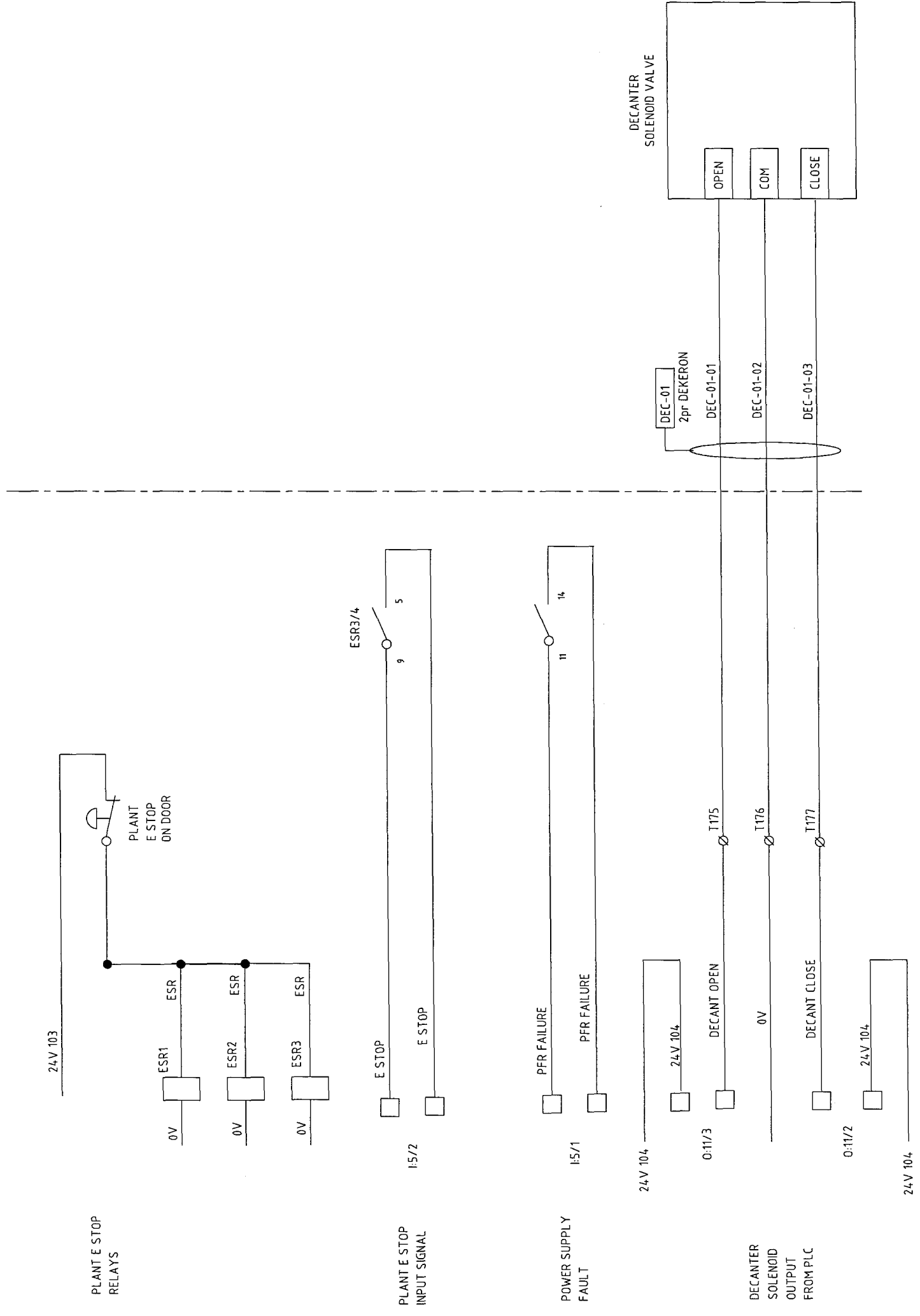
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DESIGN P.C.S. No.	FILE NUMBER	OF	SHEETS	ORIGINAL
	3512	4	6	1

ISSUE	DESCRIPTION	DATE
B	ISSUE	
E10	ISSUE	

FIELD HAZARDOUS AREA

CONTROL PANEL SAFE AREA



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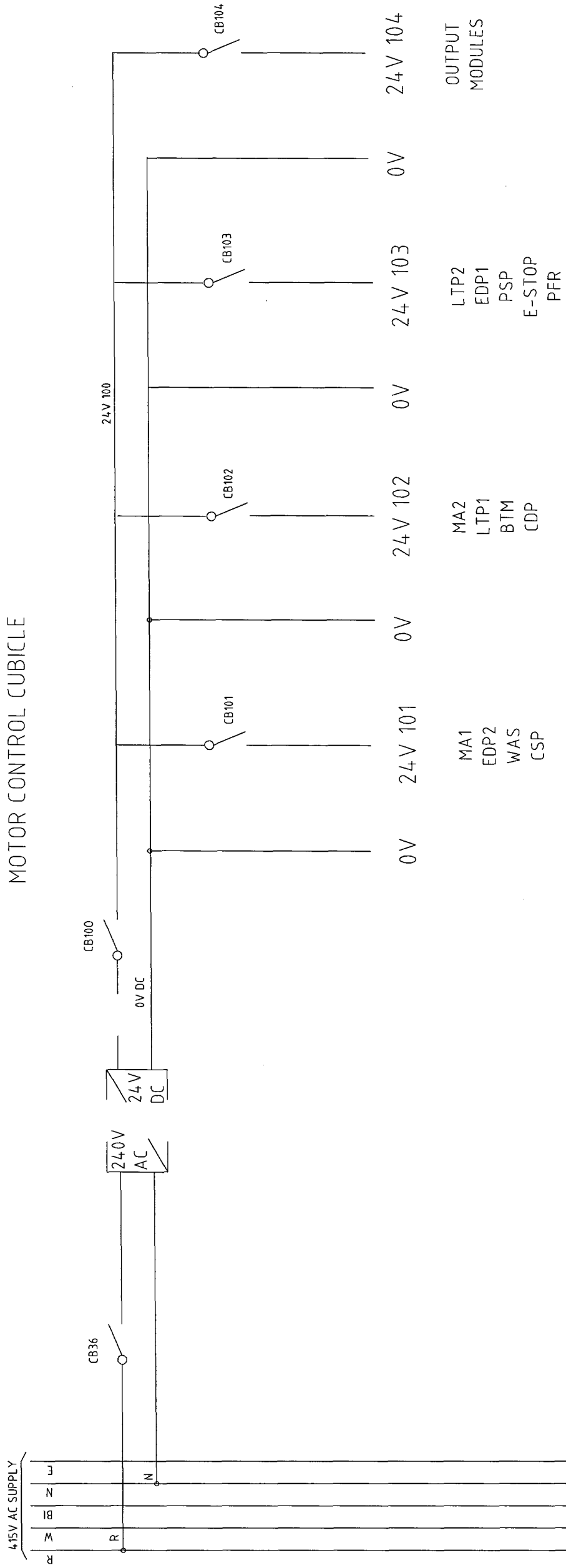
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B	WORK AS EXECUTED		MANAGER DESIGN				
A	FOR CONSTRUCTION	22/03/05	ENGINEER				
		09/03					

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DESIGN PCS No.	FILE NUMBER	SHEET	OF	SHEETS	ORIGINAL
		3512	6	E13	B
DRAWING No.		ISSUE			
DESIGN DIVISION		Ph. 02 42727111			

MOTOR CONTROL CUBICLE



WORK AS EXECUTED

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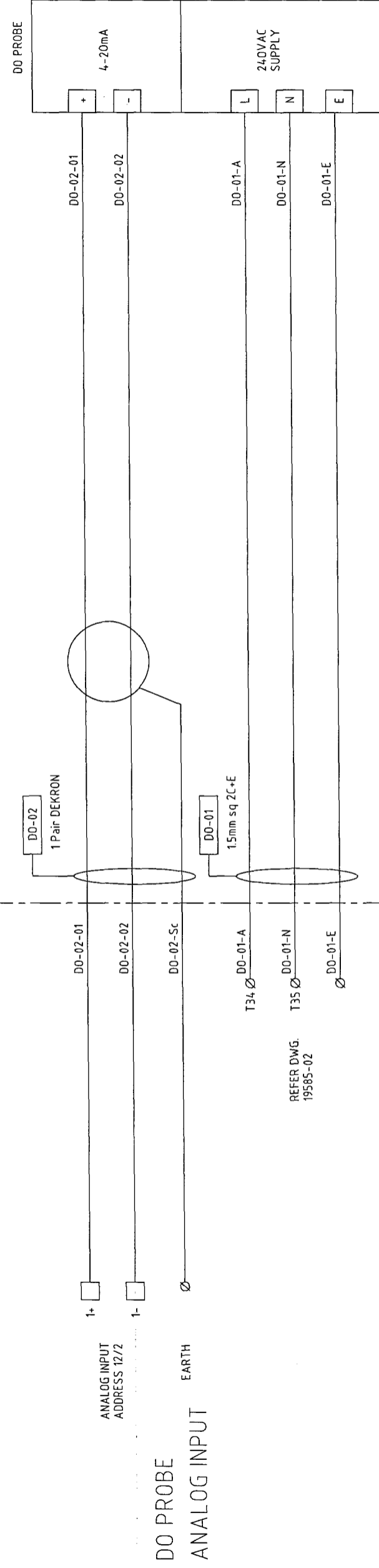
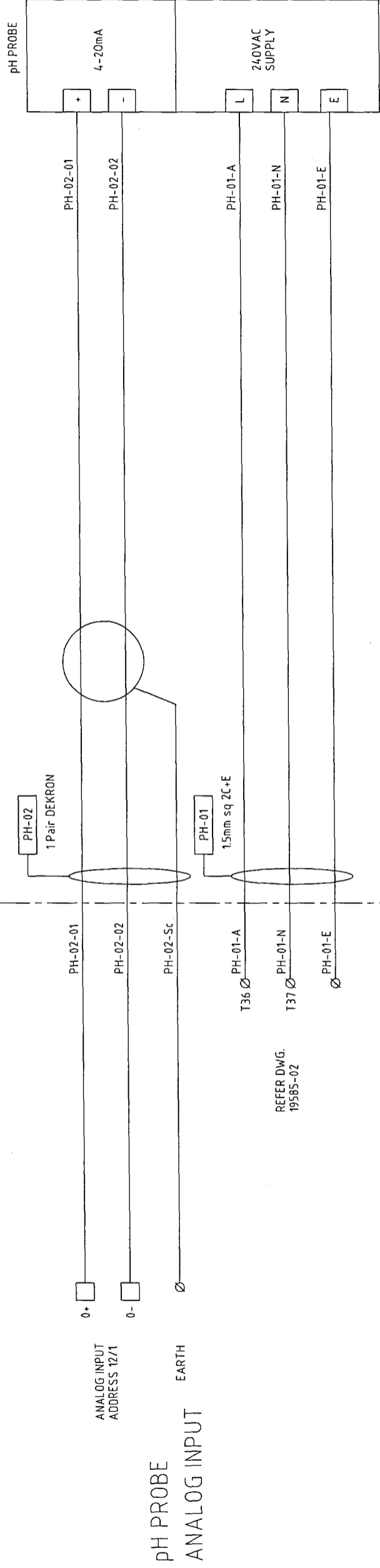
WORK AS EXECUTED

CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 STARTER CIRCUIT DIAGRAM
 SHEET 3

<p>URS Level 3, 116 MILLER STREET, NORTH SYDNEY, N.S.W. 2060, Telephone: (02) 89255500 Facsimile: (02) 89255535</p>	<p>PET CONSULTING ENGINEERS 10/115 WILSON STREET, SYDNEY, N.S.W. 2000, Telephone: (02) 93167466 Facsimile: (02) 96664336</p>	DESIGN PCS No.	A1
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DRAWING No.	3512	SHEETS	E18
SHEET	4	OF	6
ISSUE		B	

ISSUE	DESCRIPTION	DRAWN	APP'D	DATE	CHECKED	P/M/C	DATE	APPROVED <small>(FOR COUNCIL USE ONLY)</small>	SCALES	NORTH POINT	CITY OF WOLLONGONG	WORK AS EXECUTED	
												DATE	DATE
B	WORK AS EXECUTED	TT	MR	22/03/05	DESIGNED	MR	DATE	MANAGER DESIGN					
A	FOR CONSTRUCTION	JMI	AE	09/03	CHECKED	MR	DATE	ENGINEER					

MOTOR CONTROL CENTRE FIELD



WORK AS EXECUTED
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WORK AS EXECUTED

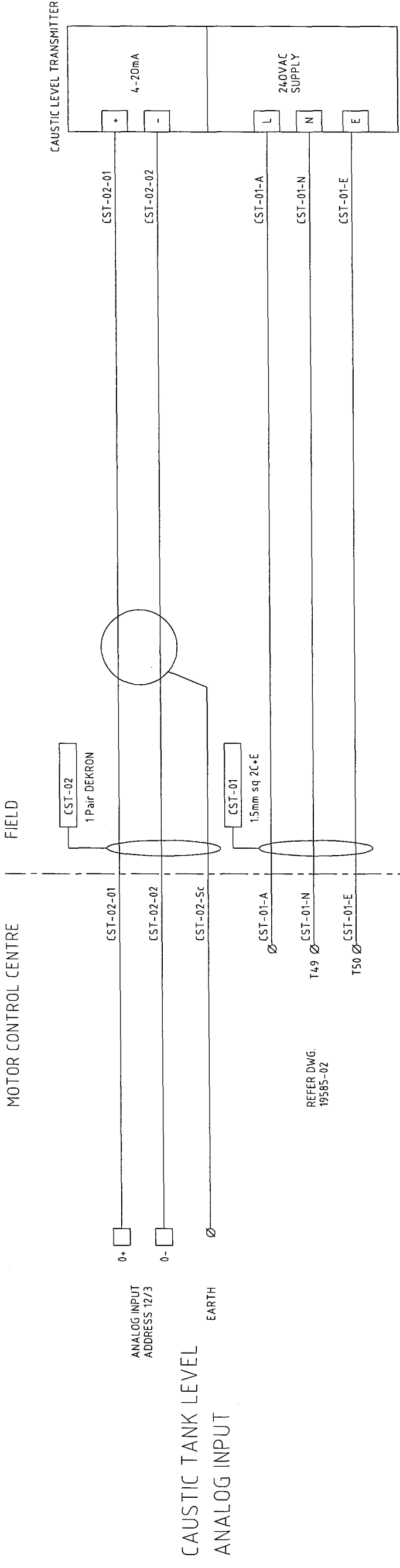
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 INSTRUMENTATION SHEET 1

ISSUE	DESCRIPTION	DATE	APPROVED	DATE	SCALE	NORTH POINT
B	WORK AS EXECUTED	22/03/05	MANAGER DESIGN			
A	FOR CONSTRUCTION	09/03	SENIOR DESIGN ENGINEER			

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DESIGN PCS No.	A1
FILE NUMBER	ORIGINAL
SHEET 4 OF 6	SHEETS
DRAWING No.	3512
SHEET No.	E21
ISSUE	B



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DESIGN PCS No.	FILE NUMBER	SHEET	OF	SHEETS
3512	4	6	6	6
DRAWING No.	DRAWING No.	DRAWING No.	DRAWING No.	DRAWING No.
3512	3512	3512	3512	3512
DESIGN DIVISION	DESIGN DIVISION	DESIGN DIVISION	DESIGN DIVISION	DESIGN DIVISION
Ph. 02 42277111	Ph. 02 42277111	Ph. 02 42277111	Ph. 02 42277111	Ph. 02 42277111

WORK AS EXECUTED

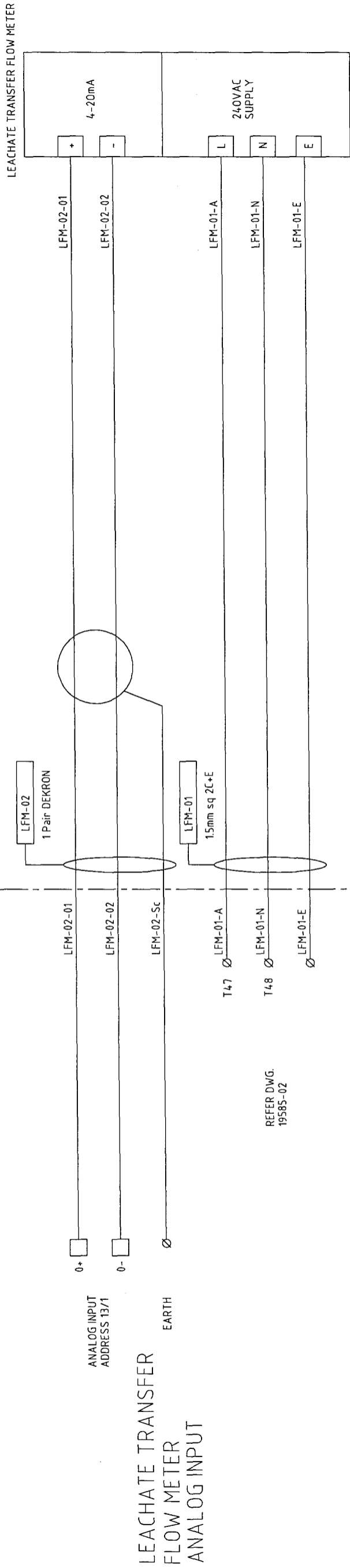
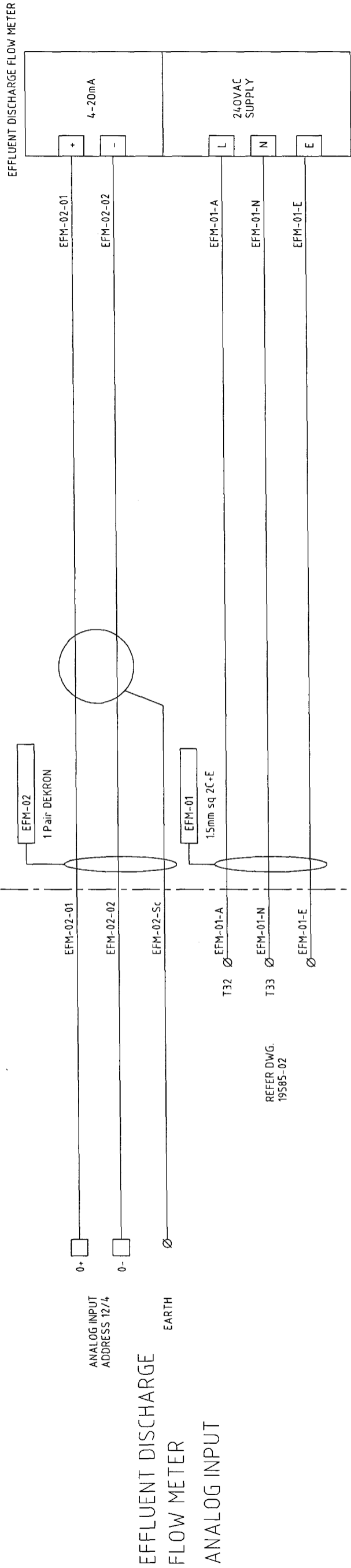
CITY OF WOLLONGONG

WHYTES GULLY LEACHATE TREATMENT PLANT
WASTE TREATMENT SYSTEM
INSTRUMENTATION SHEET 2

DATE	APPROVED	SCALES	NORTH POINT	DATE	DRAWN	SURVEYOR	DATUM	RELATED PLANS		DATE
								DATE	DATE	
	MANAGER DESIGN									
	SENIOR DESIGN ENGINEER									

MOTOR CONTROL CENTRE

FIELD



ANALOG INPUT ADDRESS 12/4

EFFLUENT DISCHARGE FLOW METER ANALOG INPUT


ANALOG INPUT ADDRESS 13/1

LEACHATE TRANSFER FLOW METER ANALOG INPUT


REFER DWG. 19585-02

REFER DWG. 19585-02

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DESIGN PCS No.	FILE NUMBER	SHEETS	OF	SHEET No.	DRAWING No.	3512	E23	A1 ORIGINAL
		4	6					ISSUE
								B

WORK AS EXECUTED
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 INSTRUMENTATION SHEET 3

NO	DESCRIPTION	DATE	APPROVED	SCALE	NORTH POINT	DATE		DATE	
						DATE	DATE	DATE	DATE
TT	WORK AS EXECUTED	27/03/05	MR						
JPHL	FOR CONSTRUCTION	09/03	AE						
DRAWN			APPRO						

MOTOR CONTROL AND MONITORING

LEACHATE FEED PUMPS		MECHANICAL AERATORS		EFFLUENT TRANSFER	
PUMP 1	PUMP 2	AERATOR 1	AERATOR 2	PUMP 1	PUMP 2
DUTY	STANDBY	DUTY	STANDBY	DUTY	STANDBY
AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
1873 Hrs	1721 Hrs	1873 Hrs	1721 Hrs	1873 Hrs	1721 Hrs
DUTY SELECTOR		DUTY SELECTOR		DUTY SELECTOR	
PUMP 1	PUMP 2	AERATOR 1	AERATOR 2	PUMP 1	PUMP 2

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



PROCESS INSTRUMENTATION

PH LEVEL	1.145 mgO/l	CAUSTIC STORAGE LEVEL	2 500 Litres	CAUSTIC CONSUMED	4 500 Litres
DO LEVEL	7.01	EFFLUENT DISCHARGE FLOW RATE	234 Litres/sec	EFFLUENT DISCHARGED	10 000 Litres

WEEKLY TOTALS

WHYTES GULLY TREATMENT PLANT EQUIPMENT MONITORING

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.

 URS Level 3, 116 MILLER STREET, NORTH SYDNEY, N.S.W. 2060. Telephone: (02) 89255500 Facsimile: (02) 89255555	 PET CHR. MACAULEY ST & AUSTRALIA AVE MURRAYVILLE, NSW 2038 Telephone: (02) 83167466 Facsimile: (02) 86641336	DESIGN PCS No.	A1	ORIGINAL
		FILE NUMBER	6	SHEETS
DRAWING No.	3512	SHEET No.	E33	ISSUE
DESIGN DIVISION				B

WORK AS EXECUTED
CITY OF WOLLONGONG
 WHYTES GULLY LEACHATE TREATMENT PLANT
 WASTE TREATMENT SYSTEM
 SCADA EQUIPMENT MONITORING PAGE

DATE	TIME	DESCRIPTION	ISSUE
22/03/05	11:45	PHCP	B
09/03	09:03	AE	A

DATE	TIME	DESCRIPTION	ISSUE
22/03/05	11:45	PHCP	B
09/03	09:03	AE	A

DATE	TIME	DESCRIPTION	ISSUE
22/03/05	11:45	PHCP	B
09/03	09:03	AE	A

DATE	TIME	DESCRIPTION	ISSUE
22/03/05	11:45	PHCP	B
09/03	09:03	AE	A


DATE	TIME	DESCRIPTION	ISSUE
22/03/05	11:45	PHCP	B
09/03	09:03	AE	A

DATE	TIME	DESCRIPTION	ISSUE
22/03/05	11:45	PHCP	B
09/03	09:03	AE	A


	CYCLE 1	CYCLE 2	CYCLE 3
START TIME	8:00	16:00	24:00
LEACHATE FEED STAGE	50 000 Litres	50 000 Litres	30 000 Litres
AERATION STAGE	5.00 Hours	5.00 Hours	5.00 Hours
SETTLING STAGE	2.00 Hours	2.00 Hours	2.00 Hours
WAS PUMP RUN TIME	1.00 minutes	1.00 minutes	1.00 minutes
DO SETPOINT	1.50	1.50	1.50
pH SETPOINT	7.10	7.10	7.10
cycle time	6.30	6.30	6.30

WHYTES GULLY WASTE TREATMENT PLANT PROCESS SETPOINTS


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



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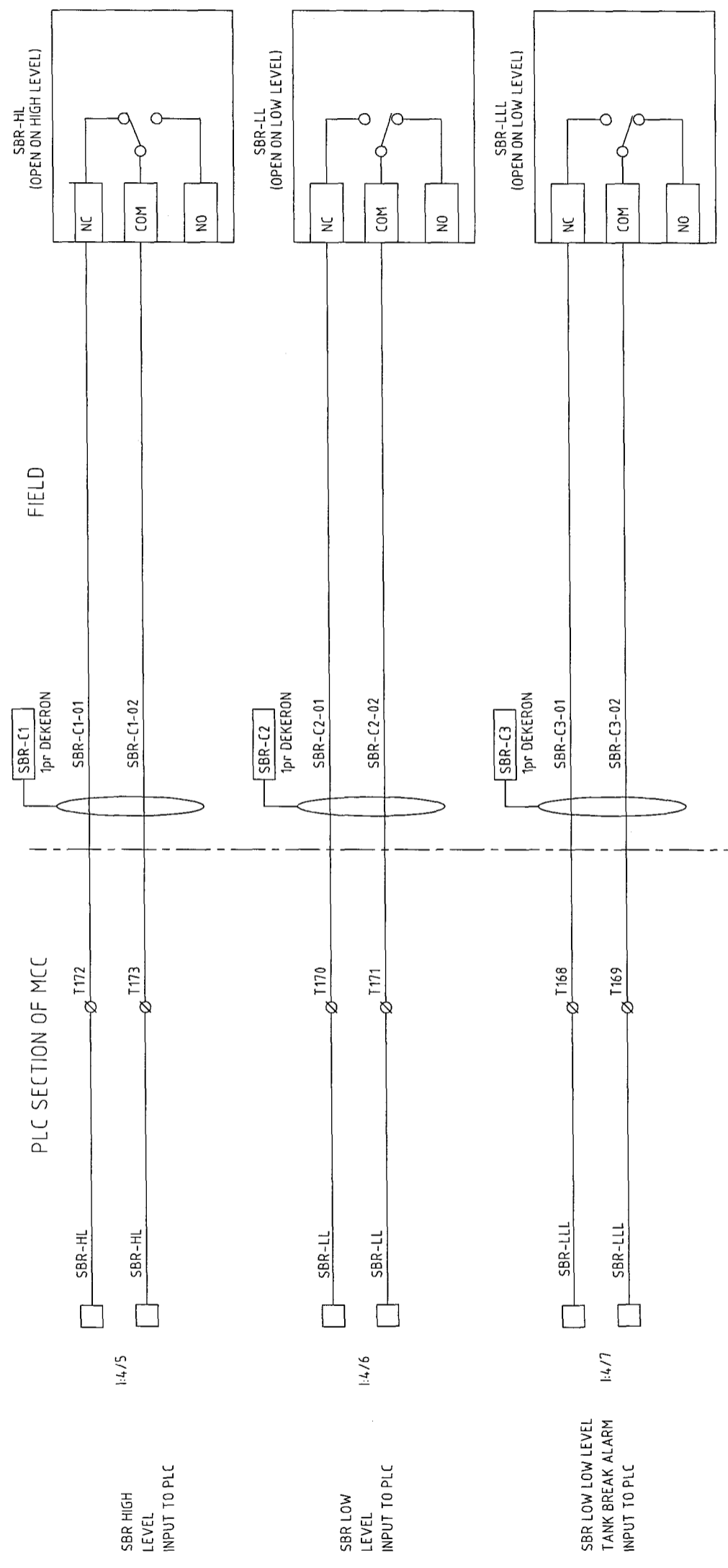
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WOLLONGONG
City of Innovation
DESIGN DIVISION
Ph. 02 42277111

DESIGN P.C.S. No.	FILE NUMBER	SHEET	OF	SHEETS	A1 ORIGINAL
		4	6		
		DRAWING No.		SHEET No.	ISSUE
		3512		E34	B

WORK AS EXECUTED												
CITY OF WOLLONGONG												
WHYTES GULLY LEACHATE TREATMENT PLANT												
WASTE TREATMENT SYSTEM												
SCADA PROCESS SETPOINT PAGE												
DESCRIPTION	DRAWN	APPD	DATE	RELATED PLANS	SURVEYOR	DRAWN	CHECKED	DATE	APPROVED		SCALES	NORTH POINT
									FOR CONSTRUCTION	FOR EXECUTION		
									SENIOR DESIGN ENGINEER	MANAGER DESIGN		
8 WORK AS EXECUTED	JVL	AE	09/03									
A FOR CONSTRUCTION												



WORK AS EXECUTED

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

Signed: *[Signature]*

URS Australia Pty Ltd / Process Engineering Technologies Pty Ltd.

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DESIGN PCS No. _____
FILE NUMBER 4 OF 6 SHEETS ORIGINAL
SHEET 4 OF 6 SHEETS ISSUE
DRAWING No. 3512 SHEET No. E38
DESIGN DIVISION 3512 E38 B

WORK AS EXECUTED		CITY OF WOLLONGONG		WHYTES GULLY LEACHATE TREATMENT PLANT		WASTE TREATMENT SYSTEM		DIGITAL 170 SHEET1	
APPROVED FOR CONSTRUCTION	MANAGER DESIGN	SCALES	AS SHOWN	NORTH POINT		DATE		DATE	
SENOR DESIGN ENGINEER						DATE		DATE	
DRAWN	CHECKED	DESIGNED	CHECKED	DRAWN	CHECKED	DESIGNED	CHECKED	DRAWN	CHECKED
TT	JHCL	AE	AE	MR	MR	MR	MR	MR	MR
DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
22/03/05	09/03								
DESCRIPTION									
B WORK AS EXECUTED									
A FOR CONSTRUCTION									
ISSUE									