□ Electrical □ Mechanical □ Water Meters
25 Bunya Street Eagle Farm Q 4009
Ph. (07) 3403 1849
Fx. (07) 3403 1898

14th December.1999

OPERATING MANUAL FOR:

QCL DEVELOPMENT 300 dia RETICULATION MAIN

CATHODIC PROTECTION SYSTEM

CLIENT:

CIVIL CONTRACTORS (AUST) PTY LTD.

MANUAL CONTENTS

DRAWINGS

(1.0) INTRODUCTION

Steel when immersed or covered in water has a tendency to corrode (or rust) as the oxidized form is more stable than the metal.

Because of this, precaution must be taken to stop or minimize the corrosion reaction to an acceptable level consistent with the design life of the structure. This is normally achieved by the use of protective coatings which control the corrosion reaction by isolating the steel from its surrounding environment.

However, it is not practical to achieve a perfect coating and coating damage will always occur with time. Because of this, corrosion may occur at imperfections in the paint coating, causing further deterioration in the coating as well as loss of metal.

As a result of this, the coating defects must be rectified by periodic maintenance or an additional method of protection used to prevent this deterioration and corrosion occurring. This additional protection is achieved by the cathodic protection system.

(2.0) CORROSION AND CATHODIC PROTECTION

Corrosion is an electrochemical process in that it is accompanied by a flow of electrical current.

Corrosion occurs on the surface of metals at active areas known as anodes, which are electrically continuous with less active or passive areas known as cathodes. The electric current flows from the anode through the electrolyte to the cathode, with the circuit being completed by the electrical continuity between the cathode and anode. In practice anodes and cathodes are generally part of the same metallic surface and individual anodic areas may be small.

In applying cathodic protection an external current is applied to the surface so that the entire surface to be protected acts as a cathode. This involves the use of an auxiliary anode and when the current flow from this anode is sufficient, no part of the structure acts as an anode.

While it is the flow of current which achieves the cathodic protection of the surface it is impractical to measure these currents over individual anodic areas to determine when cathodic protection has been achieved. However, with the flow of cathodic protection current, the structure becomes more negative with respect to the surrounding electrolyte. Because of this, it is possible to state values of metal/electrolyte potential at which corrosion does not occur. This metal/electrolyte potential is generally measured against a standard reference electrode which allows a reproducible potential at which corrosion does not occur to be quoted.

(3.0) MAINS DETAILS

Size:	300 mm Dia mild steel cement lined.
Coating:	Fusion bonded polyethelene.
Length:	Appox 150.00 metres.
Location:	From corner Warrender St. and Strathavon St. Darra, under railway lines, to easement off Cement Works Drive. Darra.

Construction Drawings:

486/1/22-AA1T0001E	Cathodic Protection Test Points
C100179-500-A132	Water Reticulation Title Page
C100179-500-A134	Water Reticulation Layout Plan.
C100179-500-A136	Water Main Details.

(4.0) CATHODIC PROTECTION DETAILS

(4.1) Type of Cathodic Protection: Sacrifical System.

(4.2) Cathode: The cathode point is located on the 300 mm dia main, adjacent to the valve at each end of the mild steel reticulation main. The cathode point is where the cabling from the test point is attached to the structure under cathodic protection.

(4.3) Anodes: Two ten kg zinc anodes were installed approximately 4 metres from the reticulation main, one in a bed 3 metres deep at test point No1 and the second 2 metres deep at test point No.2.The anodes are backfilled with gypsum thereby improving anode - ground resistance. The anodes are located under the test points. See layout drawing.

(4.4) Test Points: Test points are installed on cathodically protected structures to enable testing to ensure full protection of the mains. On this main two test points have been installed which can be identified from the layout drawing.

(4.5) Grading Ring Junction Box.This box is mounted on the side of the anchor where the main is exposed. Two 10 kg zinc earthing electrodes are installed 400mm deep and approx.1 metre from the main on the high side of the anchor block.Cables are connected to the main on the lower side of the anchor block and and all these wires are connected in this box.The grading ring is to mitigate earth potential risk.

(4.6) Associated Drawings:
Cathodic Protection Test Point Details - 486/1/22-AA1T0001E

(4.7) Associated Standards:
AS 3000 1991 Australia Wiring Rules
AS 2832.1 1991 Pipes, Cables, Ducts, Guide to Cathodic Protection, Part One.

(4.8) Government Regulations:
Queensland Electricity Acts and Regulations.

(5.0) PERFORMED TESTING

(1) Natural Potential Survey

(2) Soil Resistance Testing.

(3) Current Drain Survey

(4) Final Potential Survey and Commissioning.

(6.0) CONCLUSION

Full Cathodic protection has been achieved on this section of reticulation main.

(7.0) MAINTENANCE

The cathodic protection system is maintained on a six monthly basis after commissioning. These checks involve testing operation and recording of pipe to soil potentials.

14th December, 1999.
Electrical Engineering Unit.
Cathodic Protection

Commissioning Results.

CPS 122 QCL Development Darra 300 dia Reticulation MSCL Main.

Test Point No.1 Warrender Street

1	Natural Potential (CuSo4 Ref. Cell)	- 760 mv
2	Polorised Potential ON (CuSo4 Ref)	- 992 mv
3	Polorised Potential OFF (CuSo4 Ref)	- 948 mv
4	Polorised Potential ON (Zinc Ref)	+188 mv
5	Polorised Potential OFF (Zinc Ref)	+206 mv
6	Soil Resistivity at 3 metres	11.3 ohm metres
7	Anode Current	16.0 mA

Test Point No.2 Bikeway in QCL Estate.

1	Natural Potential (CuSo4 Ref. Cell)	- 746 mv
2	Polorised Potential ON (CuSo4 Ref)	- 961 mv
3	Polorised Potential OFF (CuSo4 Ref)	- 952 mv
4	Polorised Potential ON (Zinc Ref)	+182 mv
5	Polorised Potential OFF (Zinc Ref)	+193 mv
6	Soil Resistivity at 2 metres	8.700ohm metres
7	Anode Current	0.6 mA

14th December, 1999.
Electrical Engineering Unit.
Cathodic Protection

CPS 6 Monthly Maintenance Details.

Required:

1/ Notify plant operator and/or sign entry logs where necessary.
2/ Have appropriate keying.
3/ Set of tools. (Electricians)
4/ Multimeter.
5/ DC clampmeter.
6/ Copper sulphate reference cell and leads.
7/ Cleaning equipment.
8/ Gatic cover lifters.

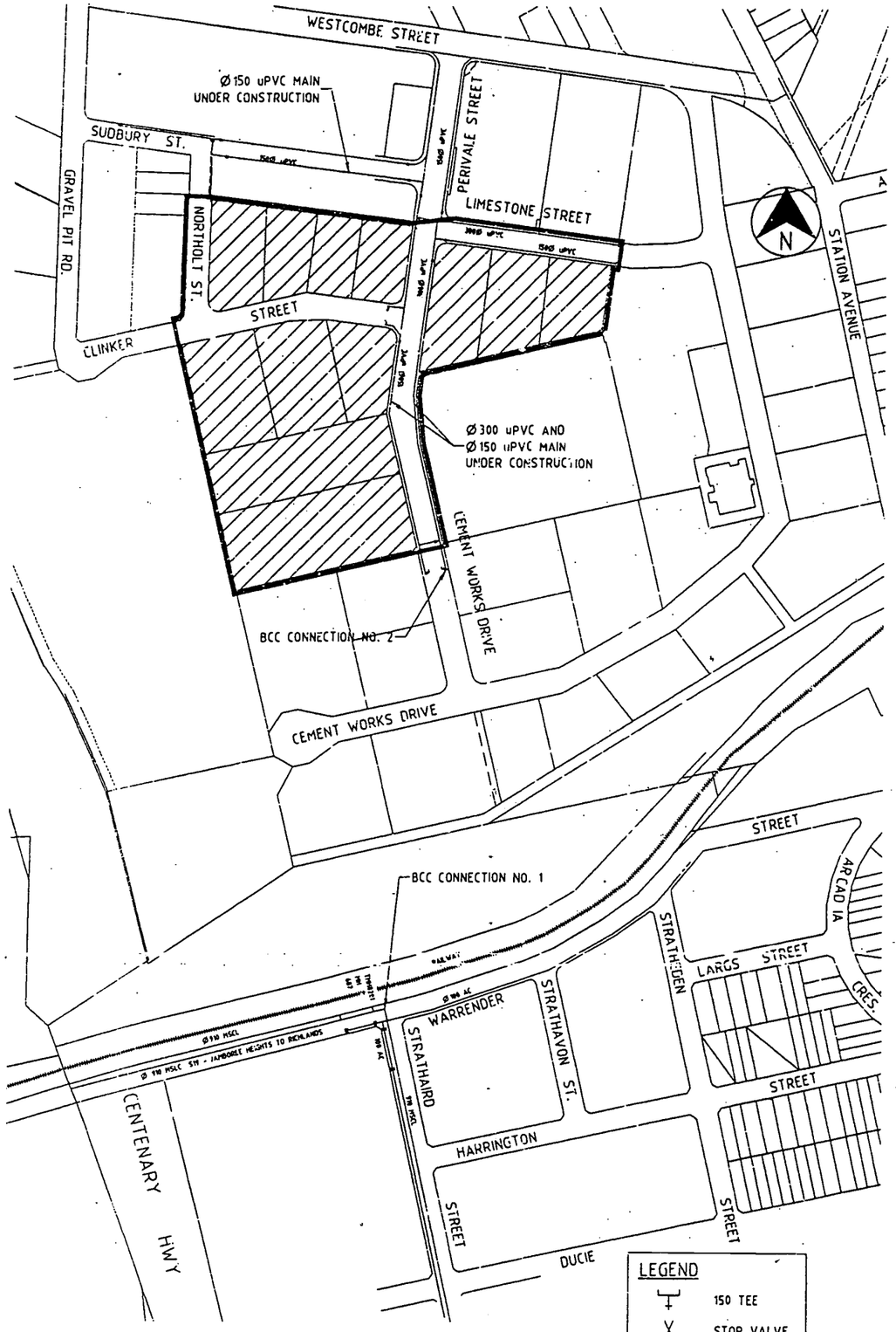
Labour:

One tradesperson electrical, one laborer, one vehicle.
Two hours per site.

Procedure:

1/ Identify system.
2/ Check system for operation.
3/ Record voltmeter.
4/ Record ammeter.
5/ Record "on" potentials for all test points.
6/ Record "instant off" potentials for all test points.
7/ Record "off" potentials for all test points.
8/ Perform loop resistance and record.
9/ Check and record anode string currents.
10/ Comments.
11/ Log entry.

DARRA DEPOT



LOCALITY PLAN
SCALE 1:2500
UBD MAP REF 197 Q12
4 CHAIN MAP NO. 174

ASSET REGISTER - WATER RETICULATION					
ESTATE/STAGE		QCL DEVELOPMENTS WORKS PRECINCT STG 1B			
SITE ADDRESS		PERIVALE ST. DARRA			
COUNCIL FILE		DRS/USE/H99-211869			
BCC DELEGATES APP. DATE		12/7/1999			
UBD REFERENCE		197 Q12			
AS CONSTRUCTED DATE		-			
MAINS	DIAMETER	MATERIAL DESIGN	MATERIAL CONST	LENGTH DESIGN	LENGTH CONST
	300mm	UPVC	385.43	-	-
	300mm	MSCL	144.68	-	-
	-	-	-	-	-
	-	-	-	-	-

DRAWING LIST - PACKAGE 2	
DWG No.	DESCRIPTION
C100179-500-A132	WATER RETICULATION TITLE PAGE AND NOTES
C100179-500-A133	WATER RETICULATION LAYOUT PLAN SHEET 1 OF 2
C100179-500-A134	WATER RETICULATION LAYOUT PLAN SHEET 2 OF 2
C100179-500-A135	WATER LONGITUDINAL SECTION SHEET 1 OF 1
C100179-500-A136	WATER MAIN DETAILS SHEET 1 OF 4
C100179-500-A137	WATER MAIN DETAILS SHEET 2 OF 4
C100179-500-A138	WATER MAIN DETAILS SHEET 3 OF 4
C100179-500-A139	WATER MAIN DETAILS SHEET 4 OF 4

B.C.C. CONNECTIONS	
STREET	WARRENDER STREET
FROM	CONNECTION NUMBER 1
TO	NEAR STRATHAIRD STREET
LENGTH	TYPE OF MAIN 300Ø uPVC
DATE COMMENCED	DATE COMPLETED
SIGNATURE	
STREET	PERIVALE STREET
FROM	CONNECTION NUMBER 2
TO	NEAR WESTCOMBE STREET
LENGTH 5.00	TYPE OF MAIN 300Ø UPVC
DATE COMMENCED	DATE COMPLETED
SIGNATURE	

MAIN DETAILS	
STREET	PERIVALE STREET
FROM	EXISTING END
TO	WARRENDER STREET
LENGTH 241.33m / 134.68m	TYPE OF MAIN 300 UPVC / 300 MSCL
DATE COMMENCED	DATE COMPLETED
SIGNATURE	

MAIN DETAILS	
STREET	WARRENDER STREET
FROM	STRATHAIRD STREET
TO	STRATHAIRD STREET
LENGTH 144.10m / 10.00m	TYPE OF MAIN 300 UPVC / 300 MSCL
DATE COMMENCED	DATE COMPLETED
SIGNATURE	

CLIENT	
JOB CLASSIFICATION	
ESTIMATED COST	
FUNDS SOURCE	
CONSTRUCTION AUTH.	
FOLIO No.	
EASEMENT	
JOB No.	099 - 671811

LEGEND
- 150 TEE
- STOP VALVE
- FIRE HYDRANT

ISSUED FOR CONSTRUCTION
DATE 29-9-99

LEVEL DATUM
AHD - PSM No.21248
RL 29.29

COUNCIL'S DELEGATE ____ DATE ____
APPROVAL VALID FOR 12 MONTHS ONLY FROM DATE SHOWN
BCC FILE REFERENCE DRS/USE/H99211869

CONSULTANT : SINCLAIR KNIGHT MERZ
CONTACT : MR.J.DEANS
TELEPHONE : 3244 7273

FILENAME: 1795A132.DWG
DATE: 25-10-99
LOCATION: A:\CISM\JOBS\URB\C100179\500\ACAD\
XREF: XWATER1B, XPROJ05, EXWATST1

NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT BRISBANE CITY COUNCIL SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ADOPT TOP OF KERB AS PERMANENT LEVEL.
4. COVER ON MAINS FROM PERMANENT LEVEL TO BE AS FOLLOWS: - 63, 100 & 150 DIAMETER PIPE - 600mm
   200, 250 & 300 DIAMETER PIPE - 1000mm
5. CONDUITS TO BE INSTALLED IN ACCORDANCE WITH COUNCIL SPECIFICATIONS.
6. UPVC PIPES SHALL BE CLASS 16 AND COMPLY WITH A.S. 1477. FITTINGS SHALL BE CEMENT LINED GREY IRON IN ACCORDANCE WITH A.S.2544: OR DUCTILE IRON CEMENT LINED (DICL) IN ACCORDANCE WITH A.S. 2280.

   DUCTILE IRON CEMENT LINED (DICL) PIPES AND FITTINGS SHALL BE CLASS K9 AND COMPLY WITH A.S. 2280. PIPES AND FITTINGS SHALL BE POLYETHYLENE SLEEVED.

   MILD STEEL (MSCL) PIPES SHALL COMPLY WITH A.S. 1579 AND BE CEMENT LINED IN ACCORDANCE WITH A.S. 1281. PIPE COATING SHALL COMPLY WITH A.S. 4321 (SINTAKOTE B)

   POLYETHYLENE PIPES OF 63 OD SHALL BE CLASS PN16 PE80B AND COMPLY WITH A.S. 4130. FITTINGS SHALL COMPLY WITH A.S. 1460.
8. ALL CONCRETE FOOTPATHS TO BE CLEAR OF WATER MAINS.
9. TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING No. 486/4/25-W5006
10. THE CONSTRUCTION OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO COUNCIL'S RETICULATION SYSTEM.
11. CONTRATOR TO VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION.
12. ALL IRRIGATION SERVICES ARE TO BE CONSTRUCTED TO AS 3500 PART 1, SECTION 4 AND NOTIFICATION OF SUCH SERVICES IS TO BE MADE TO THE PRINCIPAL OFFICER, PLUMBING SERVICES - PH. 3403 1301

ENVIRONMENTAL NOTES

VEGETAION PROTECTION

A. TREES LOCATED ALONG THE FOOTPATH SHOULD BE, WHERE POSSIBLE TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
B. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHOULD BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES MUST BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
C. WHERE POSSIBLE, TREE ROOTS SHOULD BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHOULD BE TREATED WITH A SUITABEL FUNGICIDE. CONTACT COUNCIL ARBORIST FOR FURTHER ADVICE. PH3403 2958.
D. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY COUNCIL'S METROPOLITAN TREE SERVICES. PH 3403 2995.

SOIL

A. TOPSOIL AND CUBSOIL SHOULD BE STOCKPILED SEPARATELY.
B. CARE CHOULD BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.

CREEK CROSSINGS

A. SILTATION CONTROL MEASURES SHOULD BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
B. APPROPRIATE SEDIMENT CONTROLS SHOULD BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
C. NO SOIL SHOULD BE STOCKPILED WIHTIN 5m OF THE CREEK.

REHABILITATION

A. PREDESTURBANCE SOIL PROFILES AND COMPACTION LEVELS ARE TO BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHOULD BE RESTORED.
FOR FURTHER INFORMATION CONTACT BILL MANNERS PH 3403 9585.

NOTE

ALL ENVIRONMENT PROTECTION MEASURES SHOULD BE IMPLEMENTED PRIOR TO ANY CONSTRUCIOTN WORK, INCLUDING CLEARING, COMMENCING.

WORKPLACE HEALTH AND SAFETY

1. ALL WATER AND SEWERAGE CONSTRUCTION WORK UNDERTAKEN BY THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 1995.
2. CONTACT YOUR NEAREST OFFICE OF THE DIVISION OF WORKPLACE HEALTH & SAFETY FOR INFORMATION. Ph. SOUTH (07) 3896 3368

SINCLAIR KNIGHT MERZ
Sinclair Knight Merz Pty Ltd
A.C.N. 001 024 095
360 Ann Street, Brisbane
Qld 4000 Australia
PO BOX 246 Spring Hill 4004
http://www.skm.com.au
E-Mail: information@skm.com.au
Telephone (07) 3244 7100
Facsimile (07) 3244 7300

KEY PLAN

KEILAR FOX & McCHIE

AMENDMENTS

No	DATE	APP'D	AMENDMENT
A	11-06-99		FOR APPROVAL/TENDER
B	20/7/99		FOR TENDER
C	30.07.99		ISSUED FOR APPROVAL
D	29-9-99		ISSUED FOR CONSTRUCTION
E	26.10.99		AMENDED TO BCC REQUIREMENTS

DRAFTER: OKC	DESIGNED: PJN
DRAFTING CHECK: KAC	DESIGN REVIEW: JD

ORIGINAL SIGNED J DEANS 2/8/99
REVIEWED DISCIPLINE MANAGER DATE

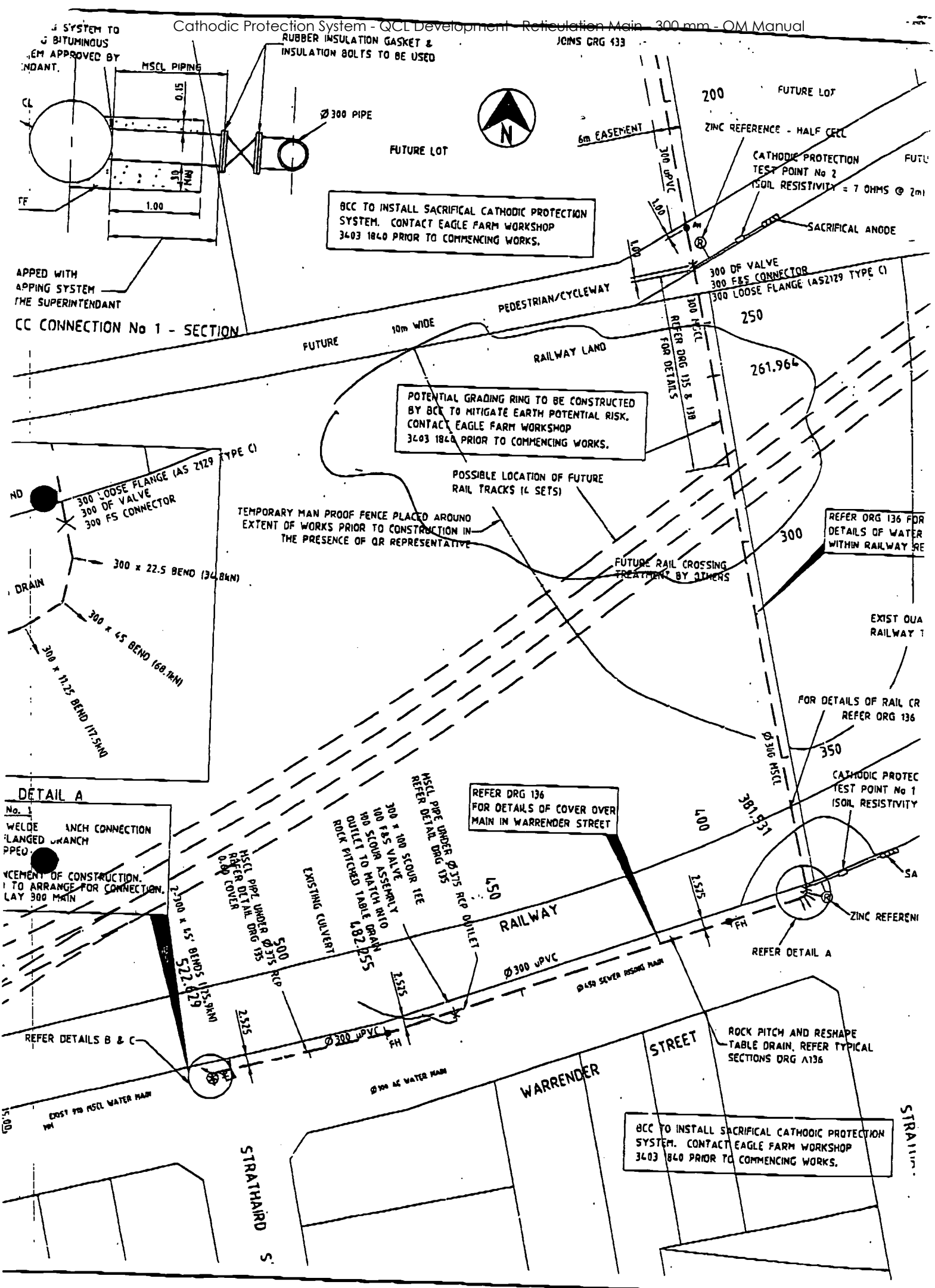
APPROVED PROJECT DIRECTOR DATE 26/10/99

CLIENT
QCL Group of Companies and Wingate Properties Pty Ltd

PROJECT
QCL REDEVELOPMENT
WORKS PRECINCT STAGE 1b

TITLE
WATER RETICULATION
TITLE PAGE & NOTES

SCALE	SIZE	DRAWING NUMBER	AMDT	SHEET No.
AS SHOWN	A1	C100179-500-A132	E	1 33



LEGEND

- Existing main to be abandoned
- Existing main
- Proposed Main
- Proposed road crossing
- B.C.C. Connection
- Stormwater (SWD)
- Sewerage (S)
- U/G Electricity (E)
- Gas (G)
- Telstra (T)
- Water Conduits (100Ø UPVC Class 12 with applicable size Cu service shown). (25ØCu)
- Telecom conduits
- Isolation Valve to Remain Closed Pending Clearance of New Main
- Temporary Manproof Fence

SYMBOLS

- SLUICE VALVE
- SCOUR BRANCH
- DEAD END
- FIRE HYDRANT
- TEST/CHLORINATION POINT
- REDUCER

B.C.C. CONNECTIONS TABLE

REFER TO DWG No. C100179-500-A132

WATER RETICULATION NOTES

REFER TO DWG No. C100179-500-A132

WORKPLACE HEALTH & SAFETY NOTES

REFER TO DWG No. C100179-500-A132

WORK WITHIN QUEENSLAND RAIL LAND

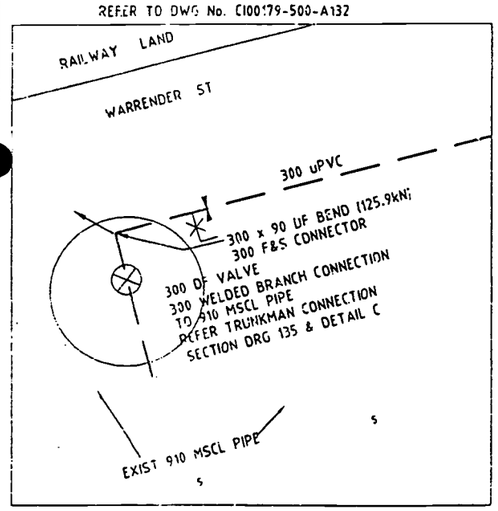
REFER TO DWG No. C100179-500-A136

LOCALITY PLAN

REFER TO DWG No. C100179-500-A132

ENVIRONMENTAL NOTES

REFER TO DWG No. C100179-500-A132



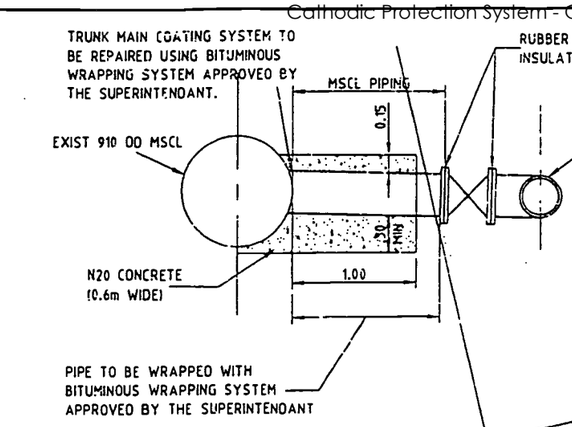
DETAIL B BCC CONNECTION No 1 - PLAN

ISSUED FOR CONSTRUCTION
DATE 29-9-99

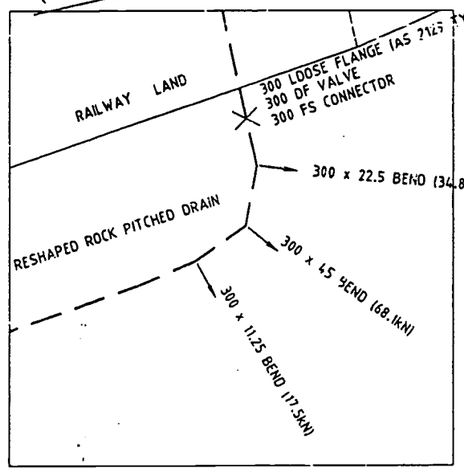
COUNCIL'S DELEGATE DATE
APPROVAL VALID FOR 6 MONTHS ONLY FROM DATE SHOWN
B.C.C FILE No. ORS/USE/1199-211869

1:500 0 10 20 30 40 50 m
10 8 6 4 2

FILENAME: 1795A134.DWG
DATE: 27-10-99
LOCATION: X:\CISN\JOBS\URB\C100179\500\ACAD\
XREF: XPRKERB, XPRBDYS, SURVEY, XRAIL, XWATERMB, EXWATST1, QCL-STM



DETAIL C BCC CONNECTION No 1 - SECTION



DETAIL A

SINCLAIR KNIGHT MERZ
Sinclair Knight Merz Pty Ltd
A.C.N. 001 024 095
369 Ann Street, Brisbane
Qld 4000 Australia
PO BOX 246 Spring Hill 4004
http://www.skm.com.au
E-Mail: information@skm.com.au
Telephone (07) 3244 7100
Facsimile (07) 3244 7300

KEY PLAN

KEILAR FOX & McGHIE

AMENDMENTS

No	DATE	APP'D	AMENDMENT
A	11-06-99		FOR APPROVAL/TENDER
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D	29-9-99		ISSUED FOR CONSTRUCTION
1	26-10-99		AMENDED TO BCC REQUIREMENTS

DRAFTER: JTM	DESIGNED: JTM
DRAFTING CHECK: KAC	DESIGN REVIEW: JG
REVIEWED DISCIPLINE MANAGER: ORIGINAL SIGNED J DEANS	DATE: 2-8-99
APPROVED PROJECT DIRECTOR	DATE: 27.10.99

CLIENT

QCL
Group of Companies
and
Wingate Properties Pty Ltd

PROJECT

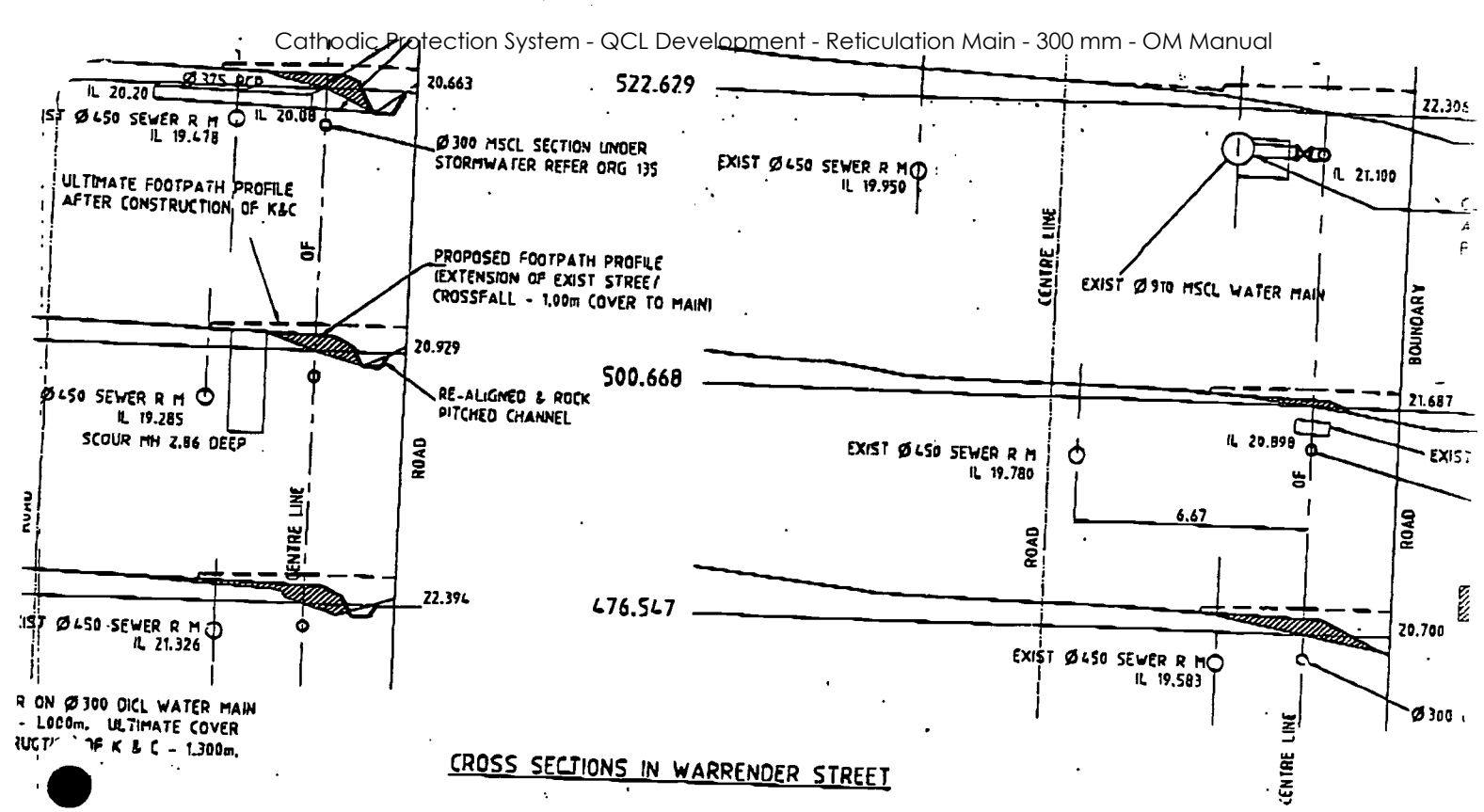
QCL Land at Darra

QCL DEVELOPMENT
WORKS PRECINCT STAGE 1b

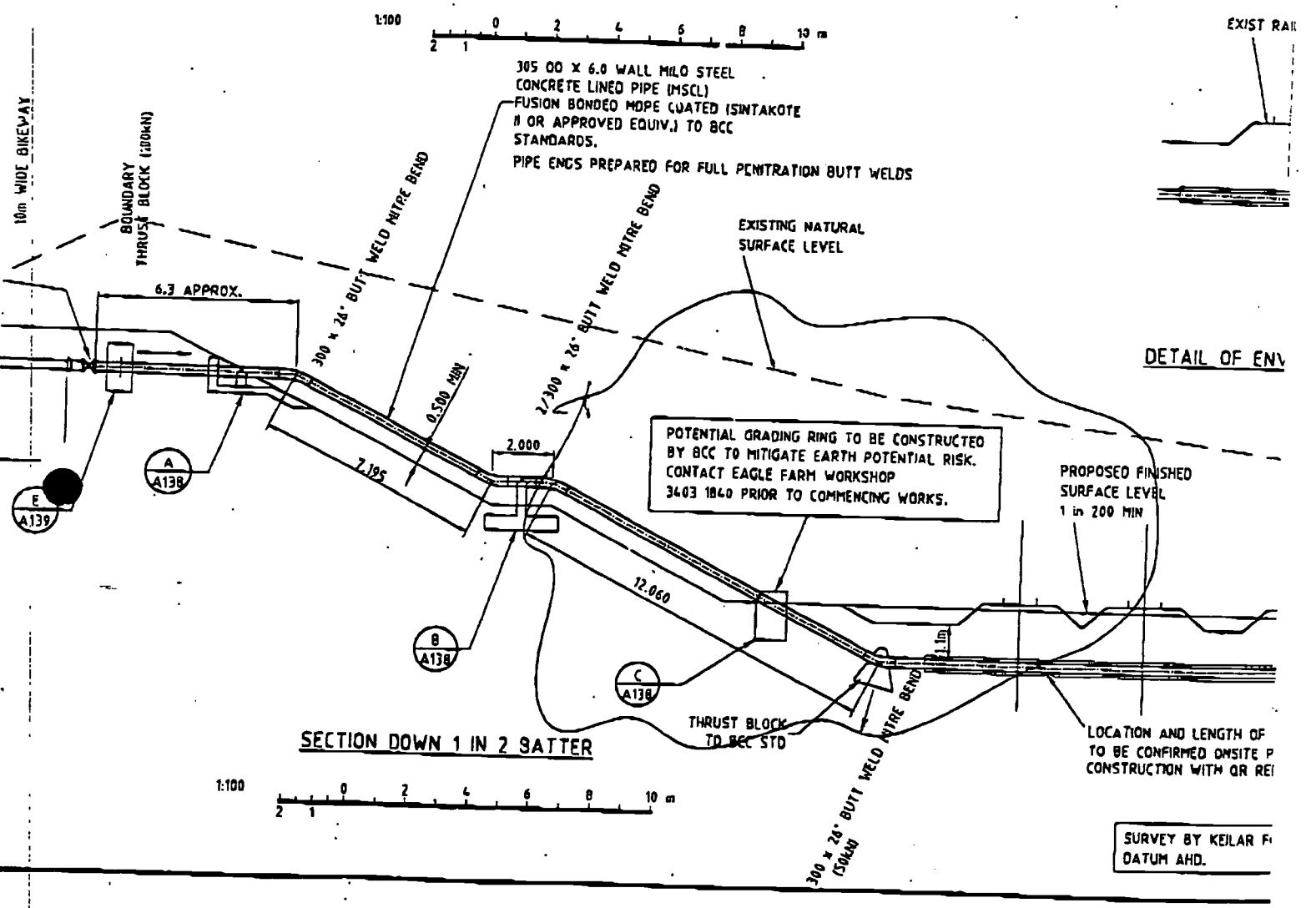
TITLE

WATER RETICULATION
LAYOUT PLAN
SHEET 2 OF 2

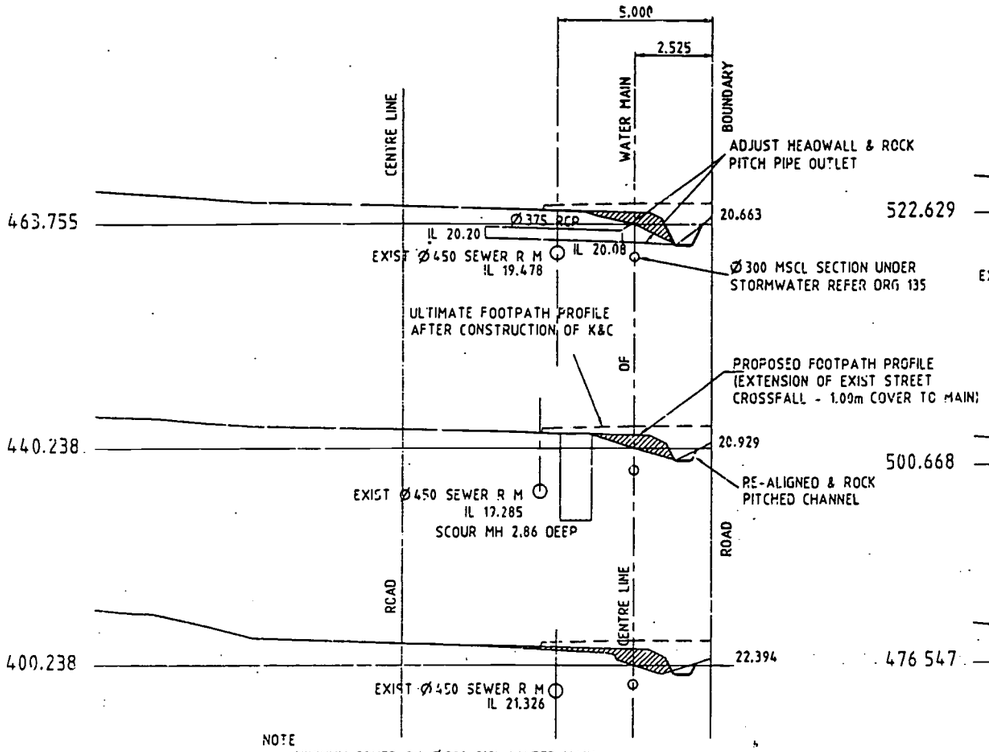
SCALE	AT	DRAWING NUMBER	AMDT	SHEET NO
AS SHOWN	A1 SIZE	C100179-500-A134	1	35



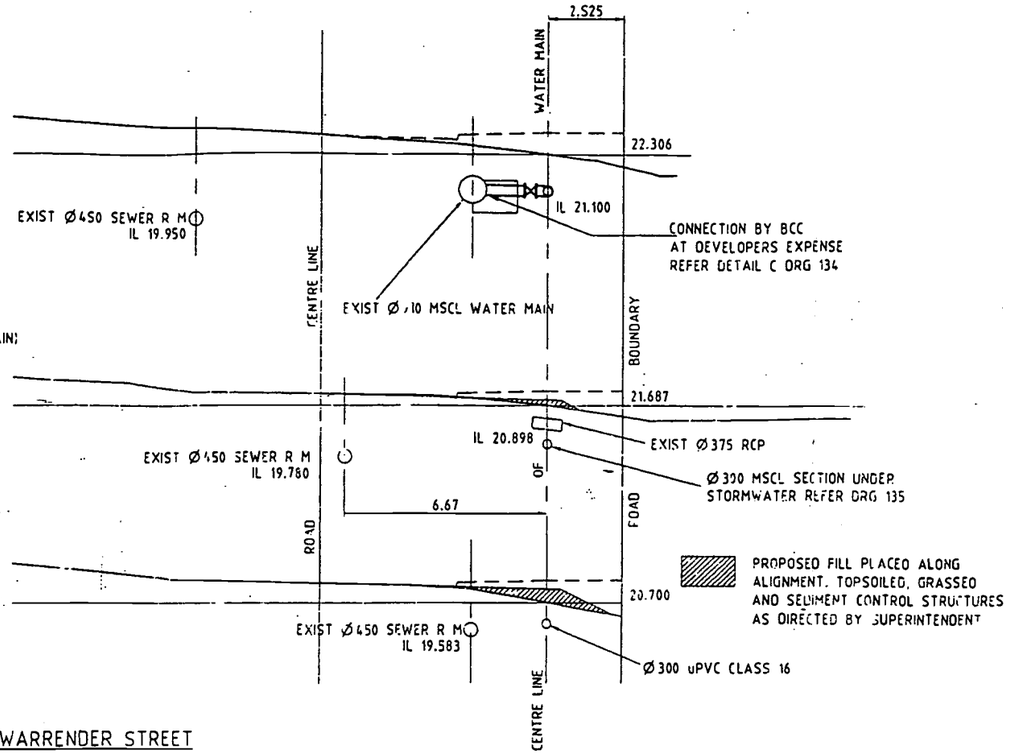
CROSS SECTIONS IN WARRENDER STREET



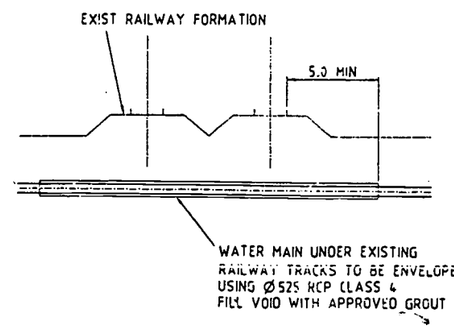
DARRA DEPOT



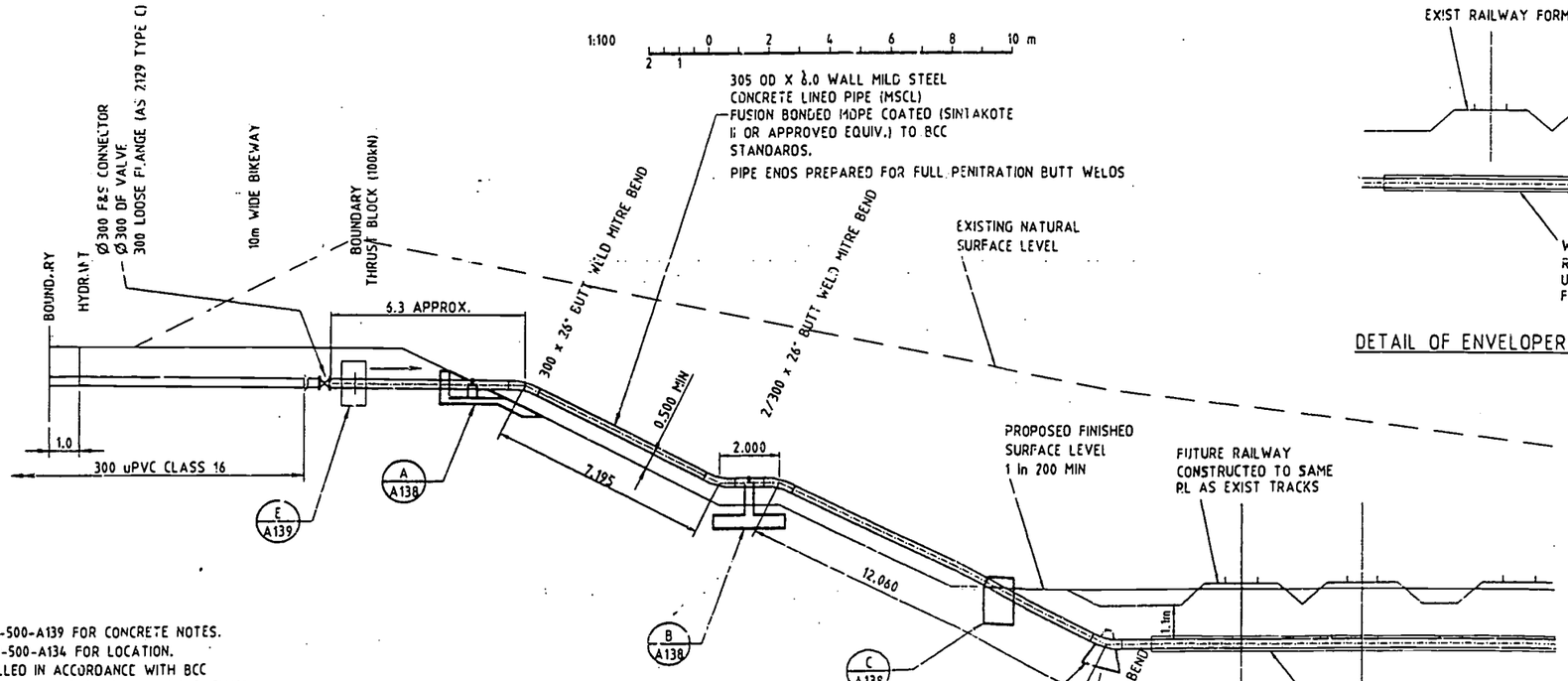
NOTE
MINIMUM COVER ON Ø300 DICL WATER MAIN IN FOOTPATH - 1.900m. ULTIMATE COVER AFTER CONSTRUCTION OF K & C - 1.300m.



CROSS SECTIONS IN WARRENDER STREET



DETAIL OF ENVELOPER UNDER EXIST RAILWAY



SECTION DOWN 1 IN 2 BATTER

NOTES:
1 REFER ORG C100179-500-A139 FOR CONCRETE NOTES.
2 REFER ORG C100179-500-A134 FOR LOCATION.
3 PIPE TO BE INSTALLED IN ACCORDANCE WITH BCC SPECIFICATION AND MANUFACTURERS RECOMMENDATIONS.

ISSUED FOR CONSTRUCTION
DATE 29-9-99

SURVEY BY KEILAR FOX & McGHIE
DATUM AHD.

COUNCIL'S DELEGATE DATE
APPROVAL VALID FOR 12 MONTHS ONLY FROM DATE SHOWN
B.C.C. FILE No. DRS/USE/H99-211869

FILENAME: 1795A136.DWG
LOCATION: J:\CISM\JOBS\QRB\C100179\500\ACAD\
XREF: -

SINCLAIR KNIGHT MERZ

Sinclair Knight Merz Pty Ltd
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369 Ann Street, Brisbane
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Telephone (07) 3244 7100
Facsimile (07) 3244 7200

KEY PLAN

KEILAR FOX & McGHIE

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JTM DRAFTER	JTM DESIGNED
KAC DRAFTING CHECK	JD DESIGN REVIEW
ORIGINAL SIGNED J DEANS 2/9/99 REVIEWED DISCIPLINE MANAGER DATE	
APPROVED PROJECT DIRECTOR DATE 26-10-99	

CLIENT
QCL
Group of Companies
and
Wingate Properties Pty Ltd

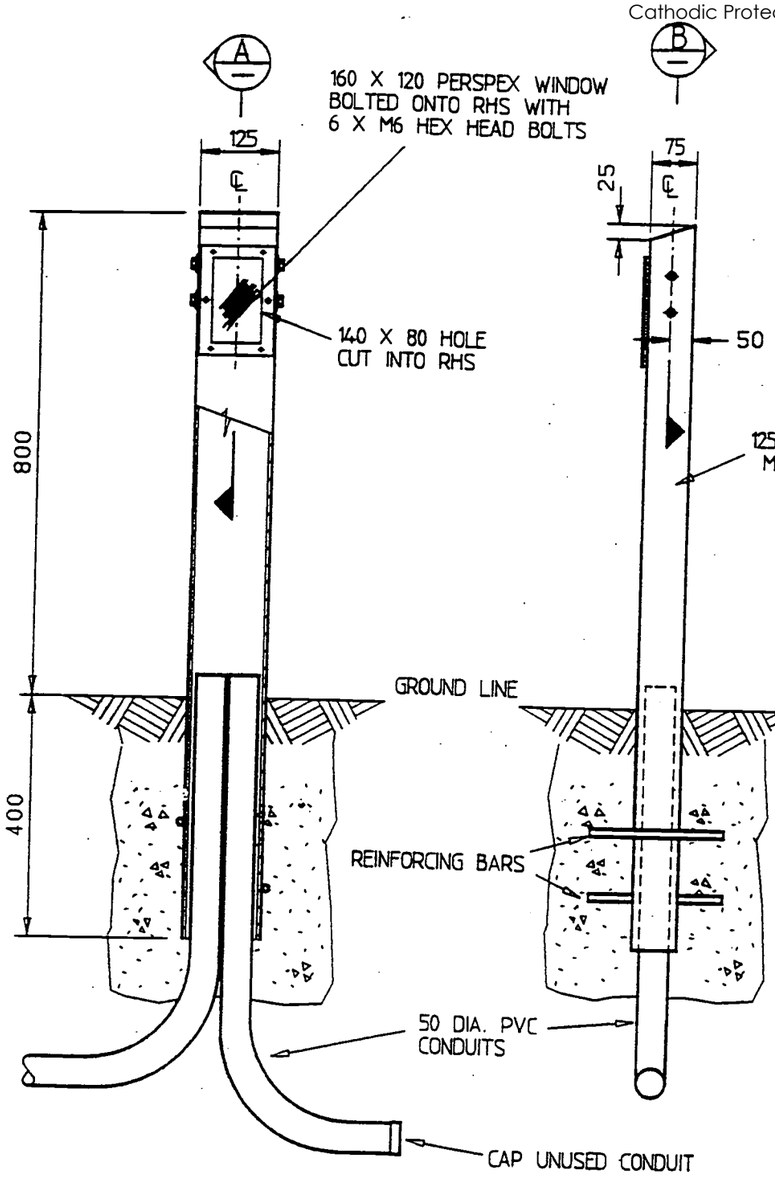
QCL Land at Darra

PROJECT
QCL DEVELOPMENT
WORKS PRECINCT STAGE 1b

TITLE
WATER MAIN DETAILS
SHEET 1 OF 3

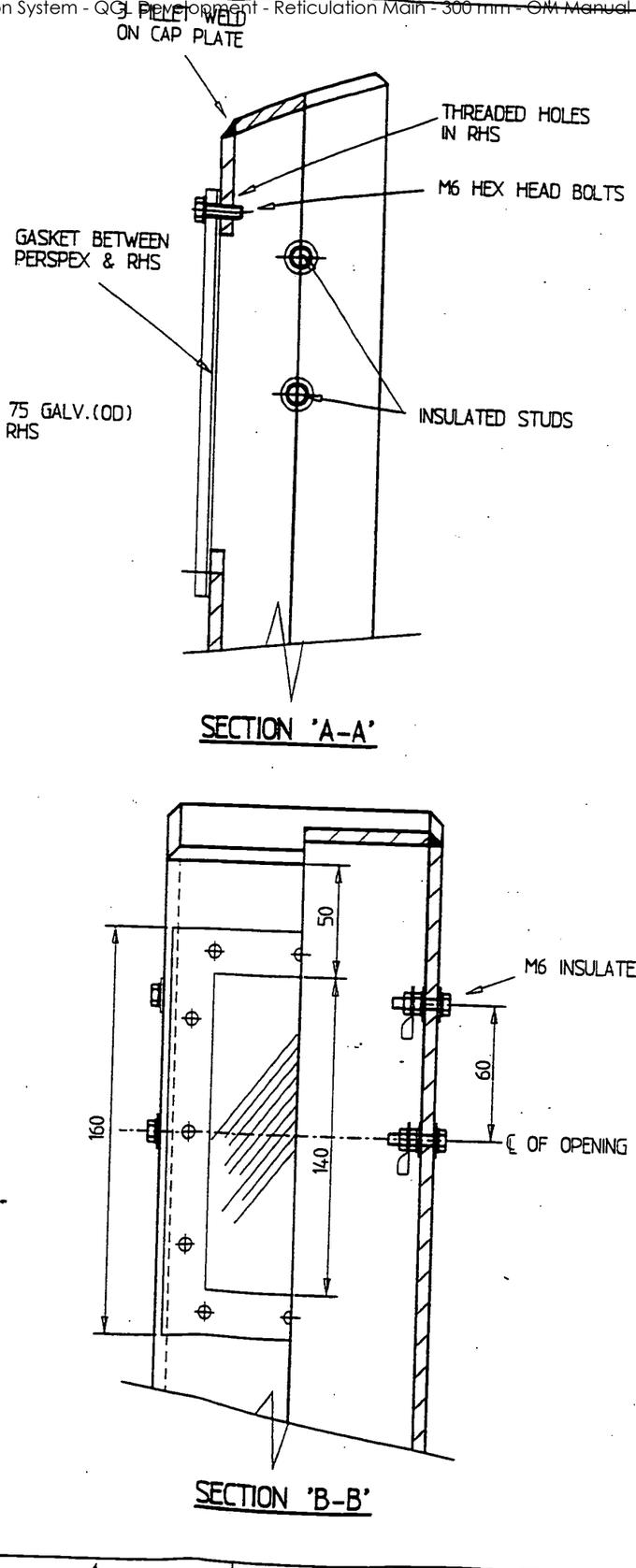
SCALE AS SHOWN AT A1 SIZE

DRAWING NUMBER C100179-500-A136 SHT 1 SHEET NO 37



FRONT ELEVATION SECTIONED

SIDE ELEVATION



SECTION 'A-A'

SECTION 'B-B'

NOTES

1. HOT DIP GALVANISE AFTER FABRICATION.

No	DATE	AMENDMENT	INITIALS
0	4.96	ISSUED FOR APPROVAL	O.L.P.

AMENDENT & ISSUE REGISTER

MANAGER	DIRECTOR OF TECHNOLOGY SERVICES
DATE:	DATE:

DIRECTOR OF PLANNING & DESIGN	DIRECTOR OF WATER SUPPLY	DIRECTOR OF CONSTRUCTION
DATE:	DATE:	DATE:

DESIGN	J.S.	19.4.96	ENGINEER IN CHARGE
DRAWN	O.L.P.	22.4.96	SUPERVISING ENGINEER
TRACED			
CHECKED			A2 REDUCED

REFERENCES

CADD FILE No. 122T00010

THIS DRAWING WAS PRODUCED USING QIKDRAW

BRISBANE CITY COUNCIL
BRISBANE WATER
TECHNOLOGY SERVICES BRANCH
INFORMATION TECHNOLOGY

PROJECT:
CATHODIC PROTECTION

TITLE:
STANDARD TEST POINT CONSTRUCTION DETAILS

SCALE: N.T.S. | No. 1 OF 1 SHEETS

DRAWING No. 486/1/22-AA1T0001E | AMEND. 0