25 Bunya Street
Eagle Farm Q
4009
Ph. (07) 3403 8888
Fx. (07) 3403 1898

15th August.2002

OPERATING MANUAL FOR:

ASHGROVE to THE CITY TRUNK MAIN

S2 TRUNK MAINS

CATHODIC PROTECTION SYSTEM

CLIENT:

BRISBANE WATER
WATER SYSTEM SERVICES

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.

An external source of direct current such as a transformer rectifier is used in conjunction with an anode consisting of material with a very slow corrosion rate.

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:	1370 mm Dia mild steel cement lined.
Coating:	Fibreglass Enamel Coated.
Length:	Appox 6.0 Km.
Location:	From Valve 664 corner Fletcher Pde and Beatrice St. Bardon to corner Ann and Albert St. City

Construction Drawings:

486/1/22-CC0024E	Cathodic Protection Standard Switchboard Cabinet
486/1/22-AA1T0001E	Cathodic Protection Test Points

(4.0) CATHODIC PROTECTION DETAILS

(4.1) Type of Cathodic Protection: Impressed Current.

(4.2) Rectifier: Standard 20 Volt, 20 amp direct current output enclosed in a stainless steel switchboard. This system has 1 rectifier installed. The rectifier is in McCaskie Park near the corner of Blamey and School Sts. Kelvin Grove and has a 240V supply from Energex Pole No.6939, located in Blamey St.

(4.3) Cathode: The cathode point is located on the 1370 mm dia mains near valve 104, opposite the rectifier at Blamey St. Kelvin Grove. The cathode point is where the cabling from the rectifier is attached to the structure under cathodic protection.

(4.4) Anodes: Four 1500 x 75mm silicone iron anodes were installed approximately 70 metres from the trunk mains, in a vertical bed 4 metres deep, at the rear corner of the park at Blamey St. The anodes are backfilled with cokebreeze thereby improving anode - ground resistance. The anodes are identified by a marker post and label. See layout drawing.

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

(4.6) Associated Drawings:

Cathodic Protection Test Point Details	- 486/1/22-AA1T0001E
Standard Rectifier Wiring Diagram	- 486/6/25-AA1C0021

(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) Testing of Insulated Flanges, Joints.

(3) Soil Resistance Testing.

(4) Current Drain Survey.

(5) Pipe Coating Anomaly Survey.

(6) Rectifier Loop Resistance.

(7) Foreign Structure Interference Survey and Mitigation.

(8) Final Potential Survey and Commissioning.

(6.0) CONCLUSION

Full Cathodic protection has been achieved on this section of trunk mains. The cathodic protection system is registered with the Electrical Safety Office, Department of Mines and Energy, and has approval to operate.

(7.0) MAINTENANCE

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

15th August, 2002.
Cathodic Protection Unit.

CPS Bimonthly Maintenance Details.

Required:

1/ Notify plant operator and/or sign entry logs where necessary.
2/ Have appropriate keying.

Labour:

One tradesperson, one vehicle. 20 minutes per site.

Procedure:

1/ Identify installation.
2/ Check system for operation.
3/ Record voltmeter.
4/ Record ammeter.
5/ Comments.
6/ Log entry.

15th August. 2002.
Cathodic Protection Unit

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.

15th August, 2002.
Cathodic Protection Unit

CPS 60 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.
9/ Rectifier load bank.
10/ PCS2000 Detection Equipment.

Labour:

One tradesperson electrical, one laborer, one vehicle.
Eight 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/ Load test rectifier for 10 minutes.
11/ Check all switchboard and testpoint terminals for tightness.
12/ Check all switchboard and testpoints are labelled and I.D. tags attached.
13/ Check plans are correctly drawn and modify if necessary.
14/ Remove and inspect anodes.
15/ Recheck all interference (CPS) bleeds.
16/ Pipecamp structure if applicable.
17/ Apply to reregister system if applicable

Brisbane Water

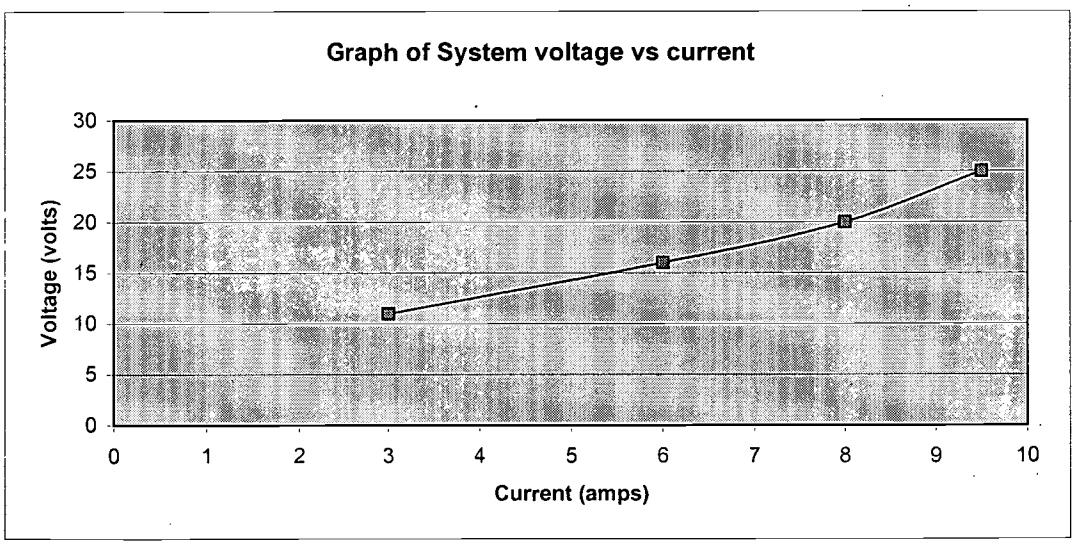
Network Services

Cathodic Protection System Loop Resistance Blamey St Rectifier. CPS181

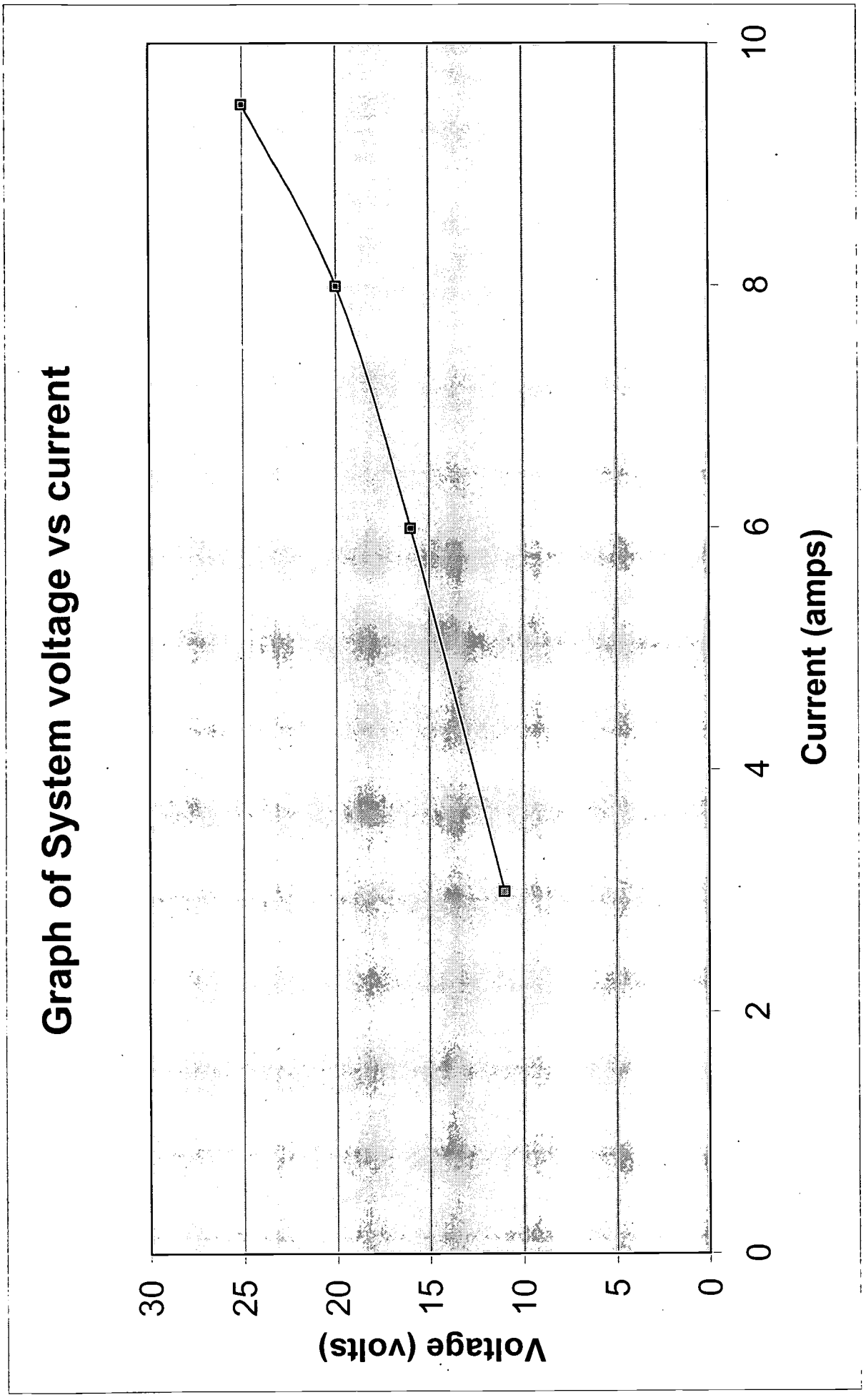
Date: 15th August 2002
Cathodic Protection System: Ashgrove to The City Trunk Main S2
System Operating Volts: 11 System Operating amps: 3.2

Test Voltage: (volts)		Test Current: (amps)	
11		3	
16		6	
20		8	
25		9.5	

Loop Resistance (ohms)
2.5



25/11/2002


Graph of System voltage vs current
Voltage (volts)
30
25
20
15
10
5
0
Current (amps)
0
2
4
6
8
10

Brisbane Water

CP Form No. 23

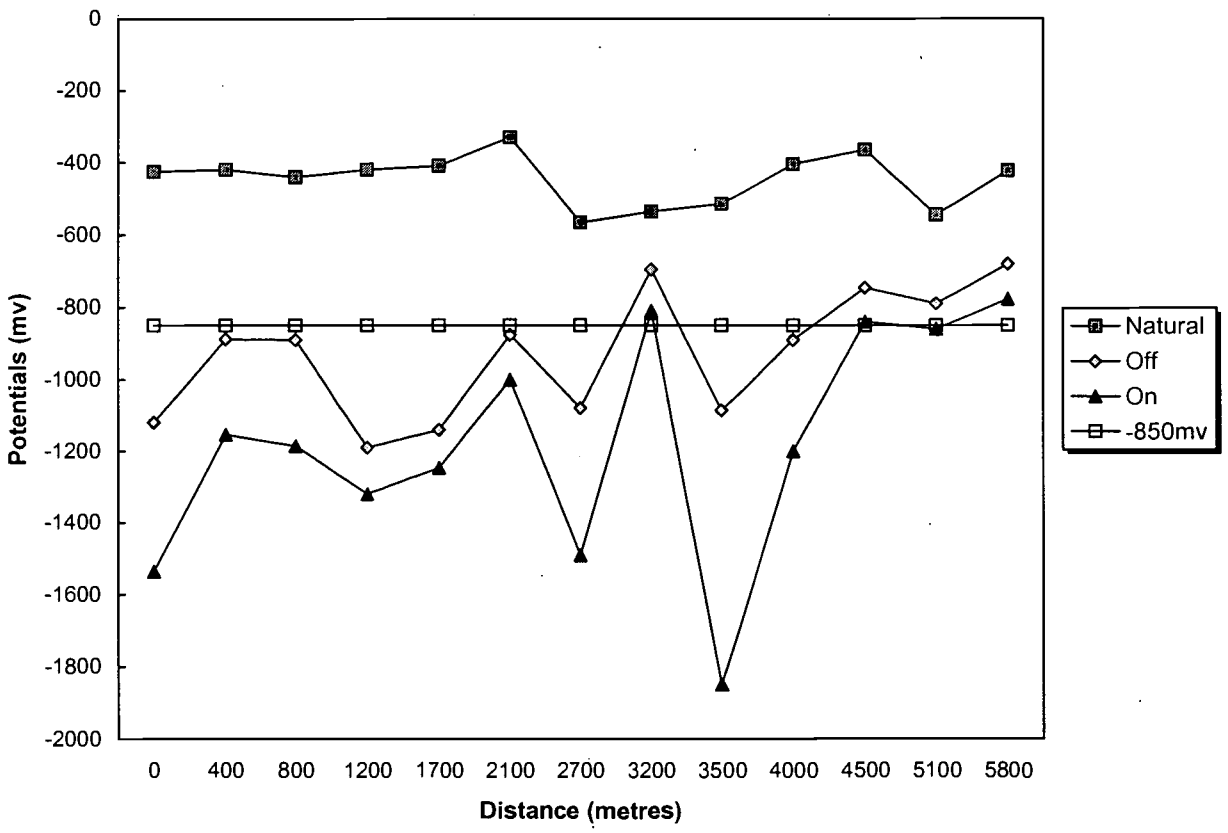
Network Services

Cathodic Protection System Potential Recording Form

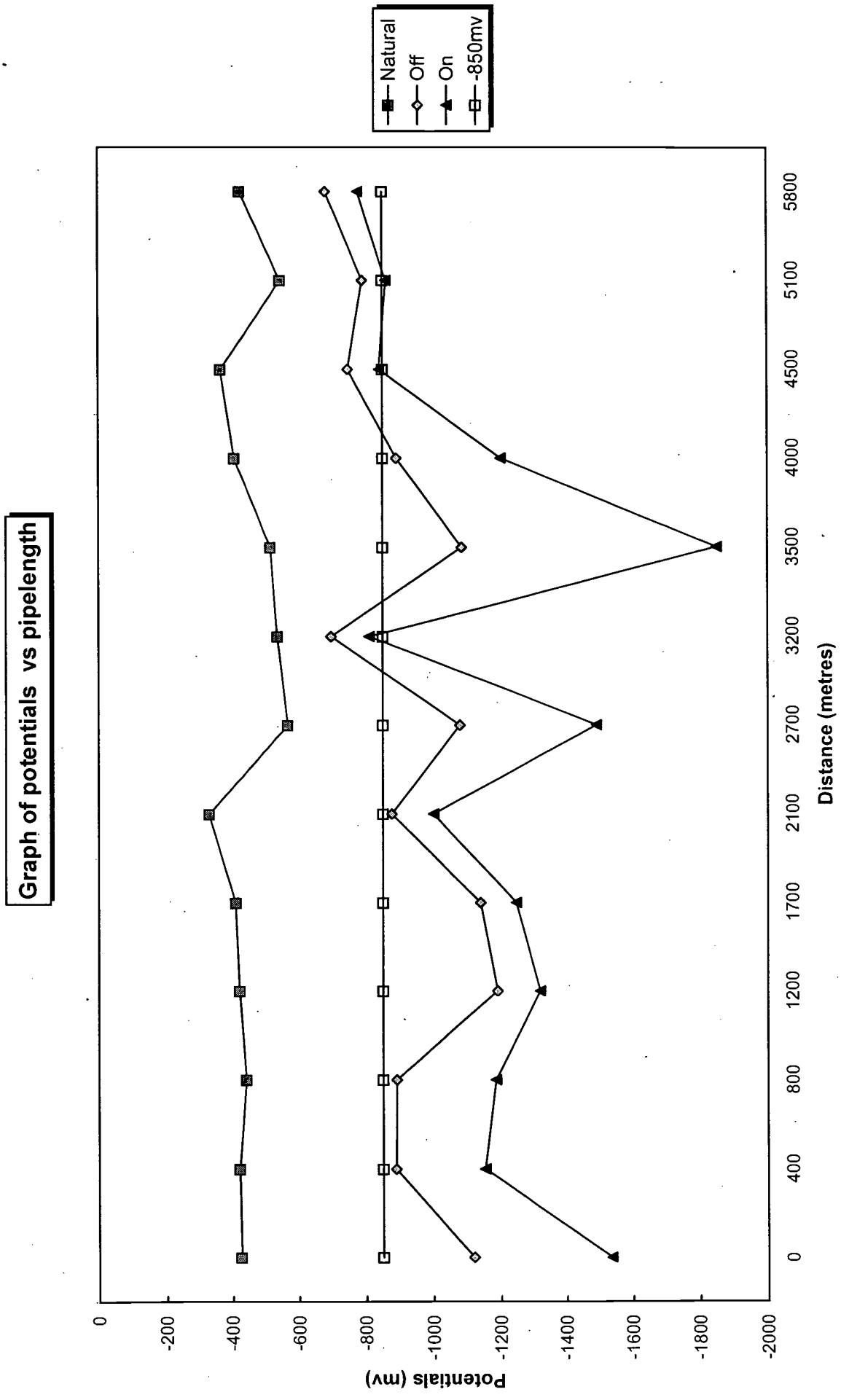
Project S2 Trunk Main.Ashgrove to the City **Date** 15th August 2002

Test Point number	Distances to T.P.	Potentials to CuSO4			
		Natural	Off	On	
	(metres)	(mV)	(mV)	(mV)	(mV)
1	0	-425	-1120	-1536	-850
2	400	-420	-888	-1153	-850
3	800	-440	-890	-1185	-850
4	1200	-420	-1190	-1320	-850
5	1700	-409	-1140	-1246	-850
6	2100	-330	-876	-1000	-850
7	2700	-566	-1080	-1490	-850
8	3200	-535	-695	-810	-850
9	3500	-514	-1086	-1850	-850
10	4000	-405	-890	-1200	-850
11	4500	-365	-746	-840	-850
12	5100	-544	-790	-860	-850
13	5800	-422	-680	-777	-850
14					

Graph of potentials vs pipelength



Revision 25/11/2002


Graph of potentials vs pipelength
Natural
Off
On
-850mv
Potentials (mv)
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
Distance (metres)
0
400
800
1200
1700
2100
2700
3200
3500
4000
4500
5100
5800

Brisbane Water CP Form No. 23

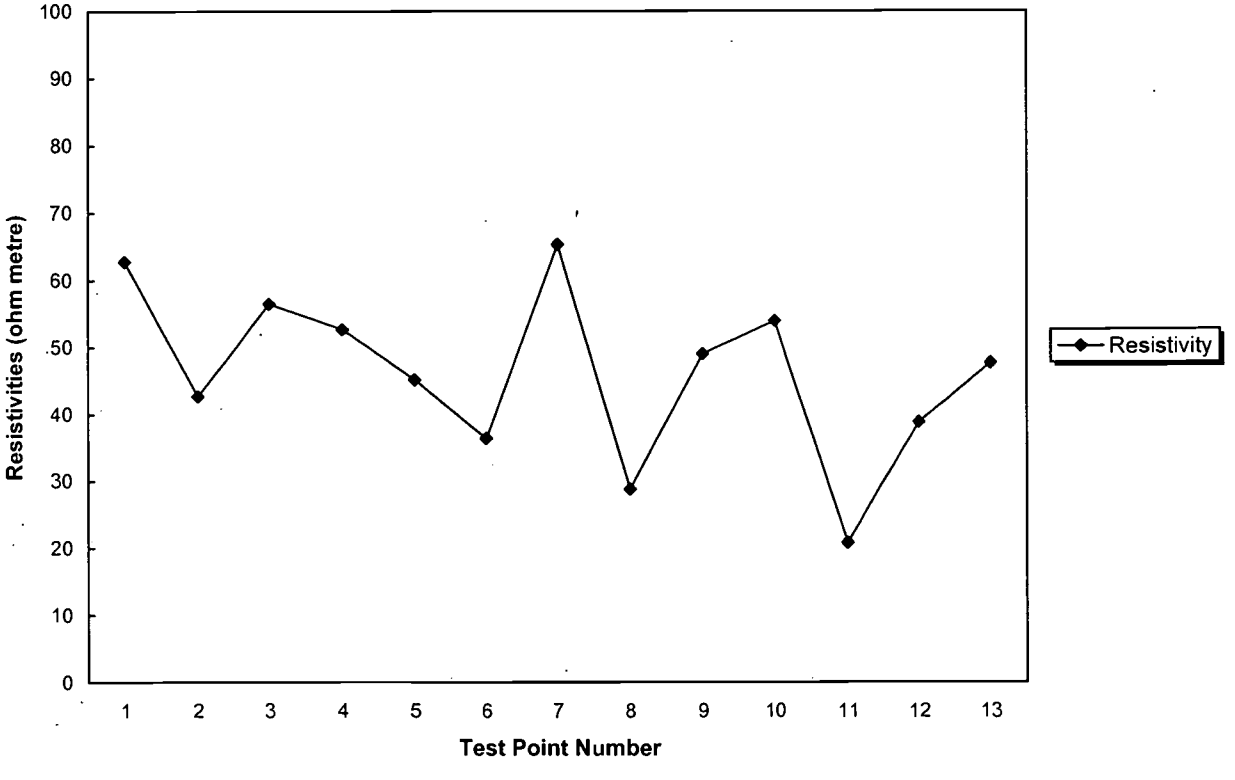
Network Services

Cathodic Protection System Resistivities Recording Form

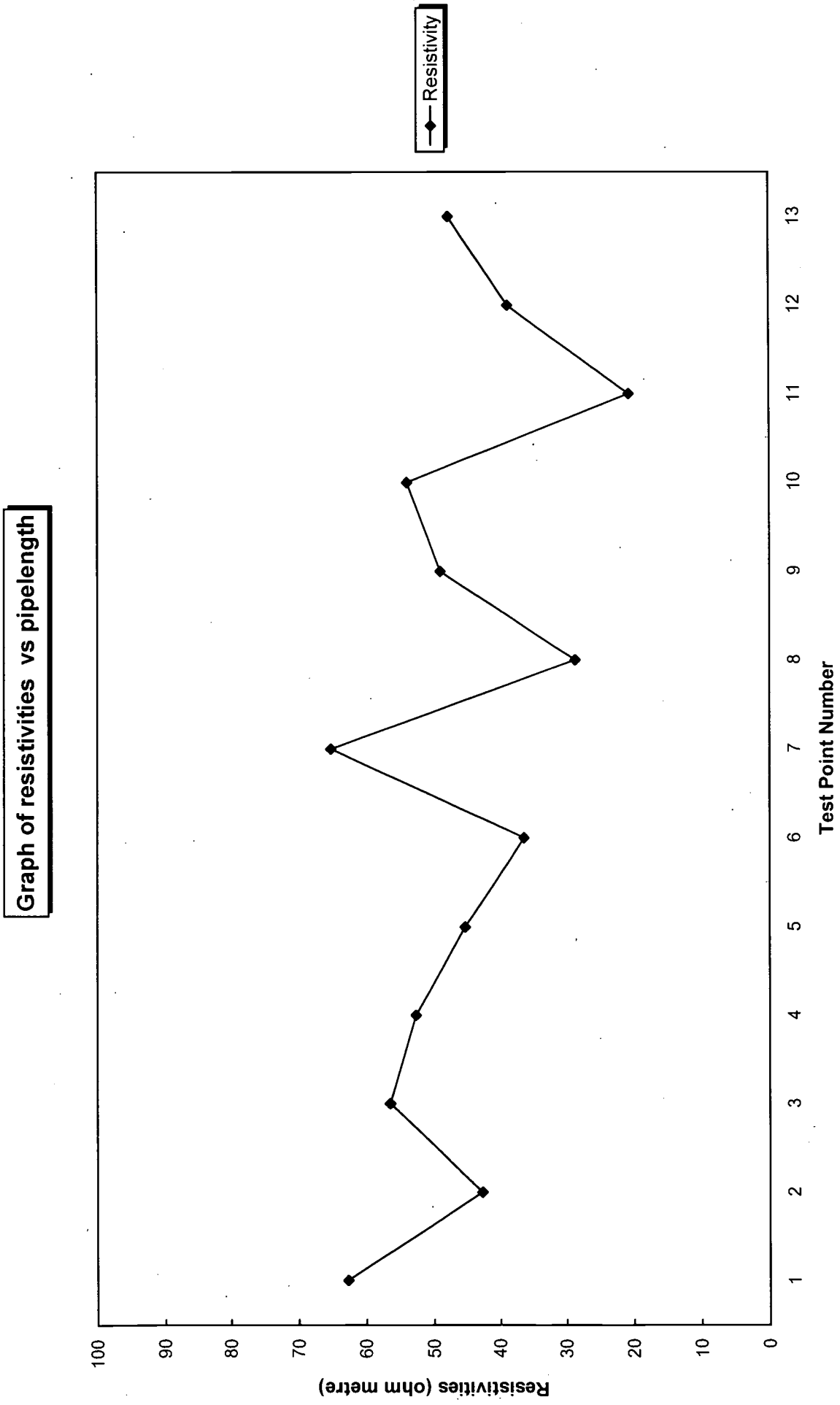
Project S2 Trunk Main.Ashgrove to the City **Date** 15th August 2002

Test Point number	Distances to T.P. (metres)	Resistivities at 2 metres ohm metres
1	0	62.8
2	400	42.7
3	800	56.5
4	1200	52.7
5	1700	45.2
6	2100	36.4
7	2700	65.3
8	3200	28.8
9	3500	49
10	4000	54
11	4500	20.8
12	5100	38.9
13	5800	47.7
14		

Graph of resistivities vs pipelength



Revision 25/11/2002


Graph of resistivities vs pipelength
Resistivity
Resistivities (ohm metre)
Test Point Number
0
10
20
30
40
50
60
70
80
90
100
1
2
3
4
5
6
7
8
9
10
11
12
13

Please note:
This application must be accompanied by a fee of $200.00

Office use only.
Fees paid:

Receipt no:

Queensland Government
Department of **Industrial Relations**

ABN – 52 293 849 579

Electricity Act 1994 (Queensland) (160 and 265)
Electricity Regulation 1994 (186 to 210)

APPLICATION TO REGISTER A REGISTRABLE CATHODIC PROTECTION SYSTEM

I/We, as system owner/s, hereby make application to register the registrable Cathodic Protection System described below:

Name and postal address of system owner:	Brisbane City Council / Brisbane Water GPO. Box 1434 Brisbane 4001
Contact Name:	Telephone no:
Name and postal address of authorised agent of system owner:	Brisbane Water Network Services 268 Cullen Ave Eagle Farm 4009
Contact Name: Jeff Say	Telephone no: 34078365
Type of application: (Tick as appropriate)	☑ New system (Note 2) Permit No; ☐ Alteration to an existing system, Registration No: (Note 3) ☐ Renewal of system, Registration No:
Location of system: (Note 4)	Blamey Street Kelvin Grove 4059 From cnr. Fletcher Pde. and Beatrice St Jubilee to Corner Ann and Albert Sts. Brisbane . Post Code 4059
Structure to be protected:	1370mm dia Mild Steel Trunk Main
Maximum operating current: 4.00A Amperes DC	Maximum operating voltage (Note 5): Volts

I/We, being the owner/s of the Cathodic Protection System described above, make application for the registration of this system and certify with respect to the system that:

(i) I/We have complied with the requirements of Part 4 of Chapter 3 of Electricity Regulation 1994;

(ii) the tests pursuant to section 190 of Electricity Regulation 1994 were based on the maximum operating current stated in this Application;

(iii) the maximum operating voltage stated in this Application (in the case of the system operating with an anode/s immersed in water or a marine environment corresponds to the maximum operating current mentioned in paragraph (ii); and

(iv) any necessary interference mitigation measures for foreign structures (in the case where the system is currently registered) have been tested and are operating satisfactorily.

Signature of System owner: Date: / /

Application should be forwarded with registration fee of $200.00 to: Electrical Safety Office, Department of Industrial Relations, PO Box 995, SPRING HILL Q 4004. **Please note: This is a GST free supply. No tax invoice will be issued.**

Refer notes overleaflet →

NOTES:

1. (a) A Registrable Cathodic Protection System is an impressed current system the converter of which is capable of delivering a current greater than 0.25A.

   (b) A separate application is required for each Registrable Cathodic Protection System.

2. The application for a new system is to be accompanied by a plan indicating full particulars about the system including the names of the owners and location of underground and immersed foreign structures.

3. Application submitted pursuant to section 209 of Electricity Regulation 1994.

4. Sufficient details are required to correctly identify the geographical location of the system. Post Code must be included.

5. The maximum operating voltage is only required for a system operating with an anode (or anodes) immersed in water or a marine environment.

   For such systems:

   - Refer section 197 of Electricity Regulation 1994.
   - The application is to be accompanied by the "Technical Schedule Relating to a Registrable Cathodic Protection installation in Water or a Marine Environment".

Note: There are no bleeds on the Ashgrove to City System

Brisbane Water Engineering Services CP Form No. 27

Electrical Engineering Unit

Cathodic Protection Interference Survey Results Form

Project ASHGROVE — City Unit Reading IIV 3.2a Date 31-7-02

	Reading	Test Point I.D.	Location	Swing
On	-40		ARTHER ST	
Off	-40	Men	Pole no 32976	0
On	-480			
Off	-472	Men	Pole no 30 60	-8
On	-260			
Off	-262	men	Poleno 26713	+2
On	-420			
Off	-420	men	Poleno 45125	0
On	-380			
Off	-380	men	Poleno A 3457	0
On	-312			
Off	-312	men	Poleno 3126	0
On	-260			
Off	-262	men	Poleno . 3156	+2
On	-257			
Off	-255	men	Poleno 3183	-2
On	-315		JAY ST	
Off	-315	men	Pole no 23740	0
On	-368			
Off	-368	men	Pole no 17193	0
On	-160		Victoria	
Off	-160	Men	Poleno 24824	0
On	-145			
Off	-144	men	Poleno 26406	-1
On	-190			
Off	-190	men	Poleno 26401	0
On	-447			
Off	-4490	men	Poleno 40142	-7
On	-455			
Off	-463	men	Poleno 26398	+8

TESTED BY P. Smyth

Revision 09/28/95

Brisbane Water Engineering Services CP Form No. 27

Electrical Engineering Unit

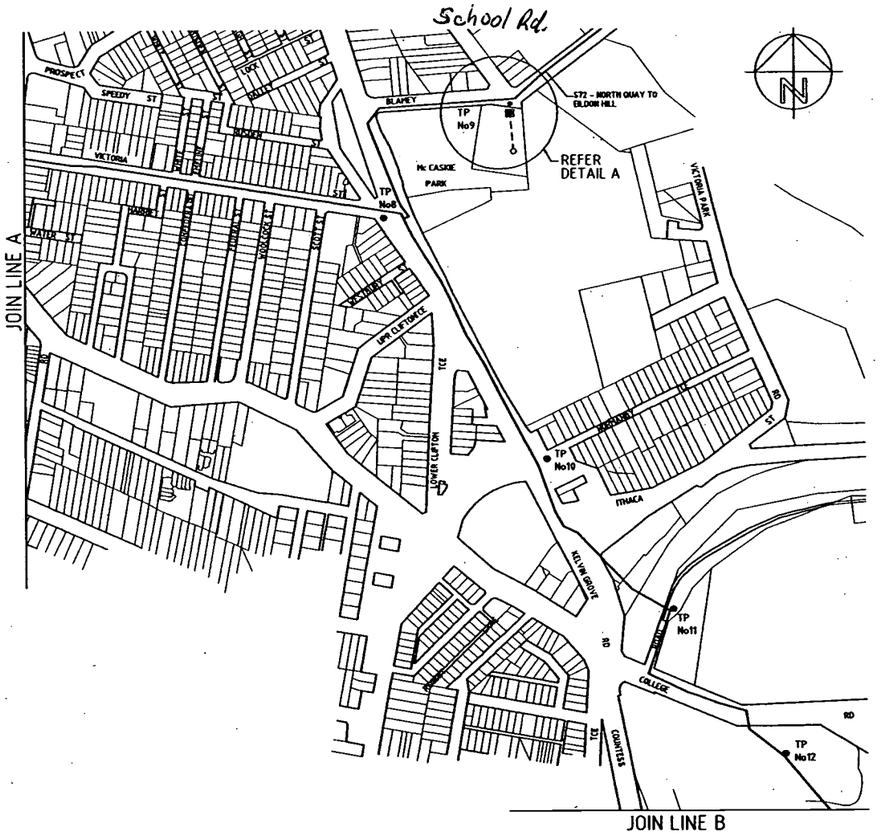
Cathodic Protection Interference Survey Results Form

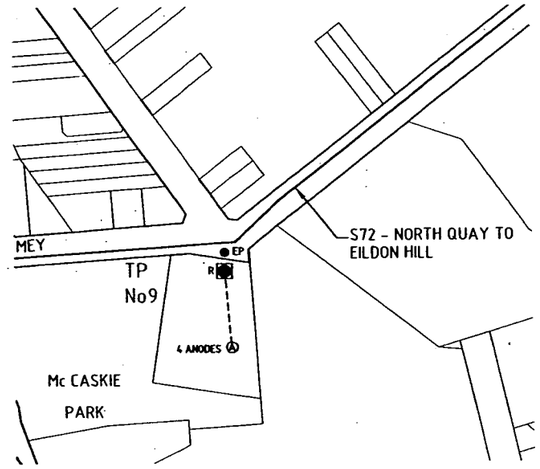
Project ASHGROVE – City Unit Reading 11V 3.2A Date 31-7-02

	Reading	Test Point I. D.	Location	Swing
On	-940		Blamey...	
Off	-617	man	Pole no 6939	-323
On	-742			
Off	-642	man	Pole no – 3394	-100
On	-566		Rowen St Park	
Off	-566	Light	Pole	0
On	-557			
Off	-557	Light	Pole	0
On	-568			
Off	-568	Light	Pole	0
On	-4100			
Off	-4100	Light	Pole	0
On	-420			
Off	-420	Light	Pole.	0
On	-395			
Off	-395	Light	Pole	0
On				
Off				
On				
Off				
On				
Off				
On				
Off				
On				
Off				
On				
Off				
On				
Off				

TESTED BY P. SMYTH

Revision 09/28/95





DETAIL A
SCALE: 1:2000 A1

ASSET REGISTER			
TICK APPROPRIATE BOX			
BCC FUNDED	✓	DEVELOPER FUNDED	
STATE GOVT. FUNDED		FED. GOVT. FUNDED	

AS CONSTRUCTED

PLOTTED N. KROMAN DATE 30/02

CHECKED DATE

0 50 100 150 200

SCALE OF METRES
1 : 4000 approx. FULL SIZE A1 SHEET

NO.	DATE	AMENDMENT	INITIAL

DIRECTOR OF PD & PS			DATE
ENGINEER IN CHARGE			DATE
SUPERVISING ENGINEER	RPEQ No		DATE

SUPERVISING ENGINEER		R.P.E.Q. NO.		DATE
CADD FILE	2380201			
JOB FILE		SURVEY NO.	NIL	
SURVEYED	NIL	FIELD BOOK	NIL	

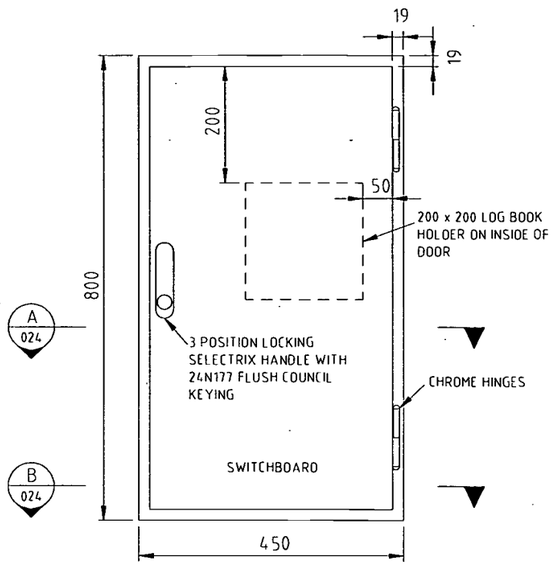
DESIGN		
DESIGN CHECK		
DRAWN	N.K.	OCT 02
DRAFTING CHECK	H.W.	NOV 02

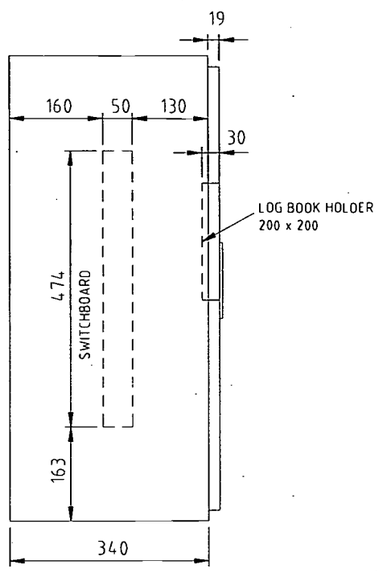
Brisbane Water

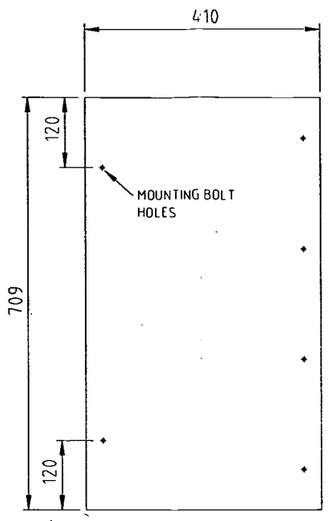
PROJECT
ASHGROVE TO CITY
S2 TRUNK WATER MAIN

TITLE
CATHODIC PROTECTION
TEST POINT & ANODE
BED LOCATIONS

SCALE	A.H. DATUM
AS SHOWN	N° 1 OF 1 SHEETS
DRAWING N° 2/38.02-01	AMEND. 0







FRONT INSULATED PANEL
(6mm THICK SUPPLIED)

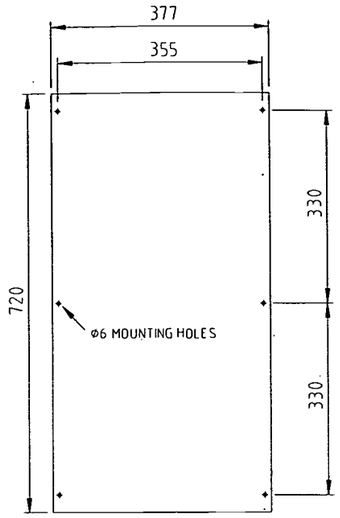


FIG.1
EQUIPMENT PANEL DETAILS

1. CABINET TO BE MANUFACTURED FROM 1.6mm 2B STAINLESS STEEL.

2. UNLESS SPECIFIED, SUPPLY CABINET WITH PLINTH. (MOUNT PLINTH TO SWITCHBOARD CABINET USING STAINLESS STEEL SCREWS).

3. REAR EQUIPMENT PANEL TO BE ZINC PLATED STEEL. POWDER COATED 'ORANGE'. (FULL LENGTH, FULL WIDTH & REMOVABLE). SEE FIG.1.

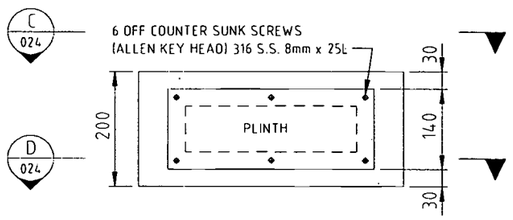
4. DOUBLE HINGED PANEL SUPPLIED BY B.C.C.

5. PROVIDE 1/4" WW STAINLESS STEEL STUDS TO DOOR & SWITCHBOARD CABINET.

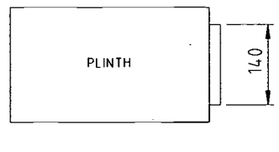
6. DEGREE OF WEATHER PROTECTION IP55.

7. SELECTRIX TYPE HANDLE TO BE SUPPLIED & FITTED BY SWITCHBOARD MANUFACTURER. HANDLE TO BE 1107 SS CU1. KEY TO BE 24N177.

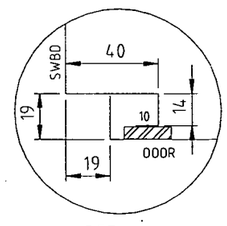
8. DOUBLE HINGED PANEL MOUNT TO BE SUPPLIED WITH MOUNTING BOLTS & NUTSERTS TOP & BOTTOM. SEE DETAIL A.



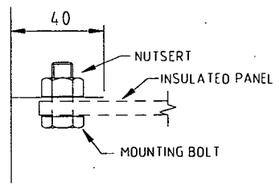
FRONT ELEVATION
SWITCHBOARD & PLINTH



SIDE ELEVATION
SWITCHBOARD & PLINTH

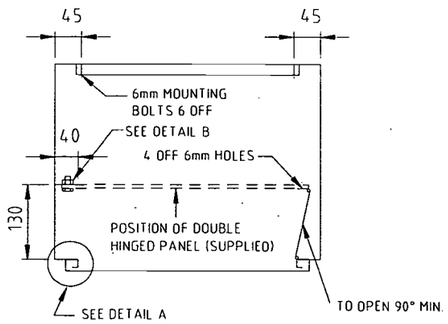


DETAIL A
DOOR/CORNER DETAIL

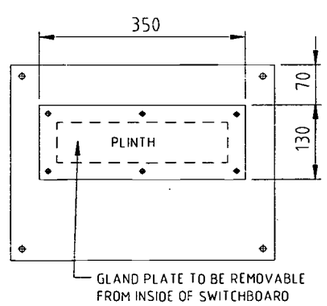


DETAIL B

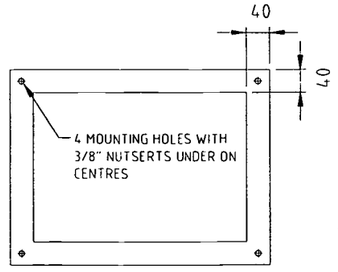
NUMBER OF SWITCHBOARDS REQUIRED	
NUMBER OF PLINTHS REQUIRED	



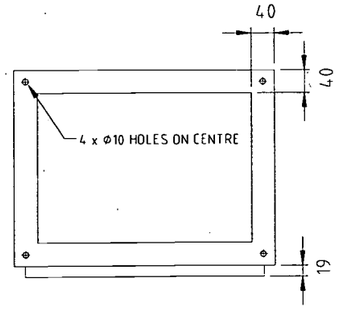
SECTION A-A
(SHOWING HINGED PANEL)



SECTION B-B
(SHOWING GLAND PLATE)



SECTION C-C
PLINTH MOUNTING DETAILS



SECTION D-D
PLINTH MOUNTING DETAILS

C	9-97	NOTE 7 REVISED	HI
B	11-95	MODIFIED	OLP
A	5-92	ISSUED FOR APPROVAL	OLP
NO.	DATE	AMENDMENT	INITIALS

DIRECTOR OF P.D. & P.S. — DATE
ENGINEER IN CHARGE — DATE
SUPERVISING ENGINEER — R.P.E.Q. NO. — DATE

	NAME	DATE
DESIGN	K.M.G	5-5-92
DRAWN	G.L.P	7-5-92
CHECKED		

Brisbane City

JOB FILE
ACAD FILE 22C0024-Rev-C — SHEET SIZE A1
SURVEY No. — FIELD BOOK
SURVEYED — A.H. DATUM

Brisbane Water — Professional Services — Engineering

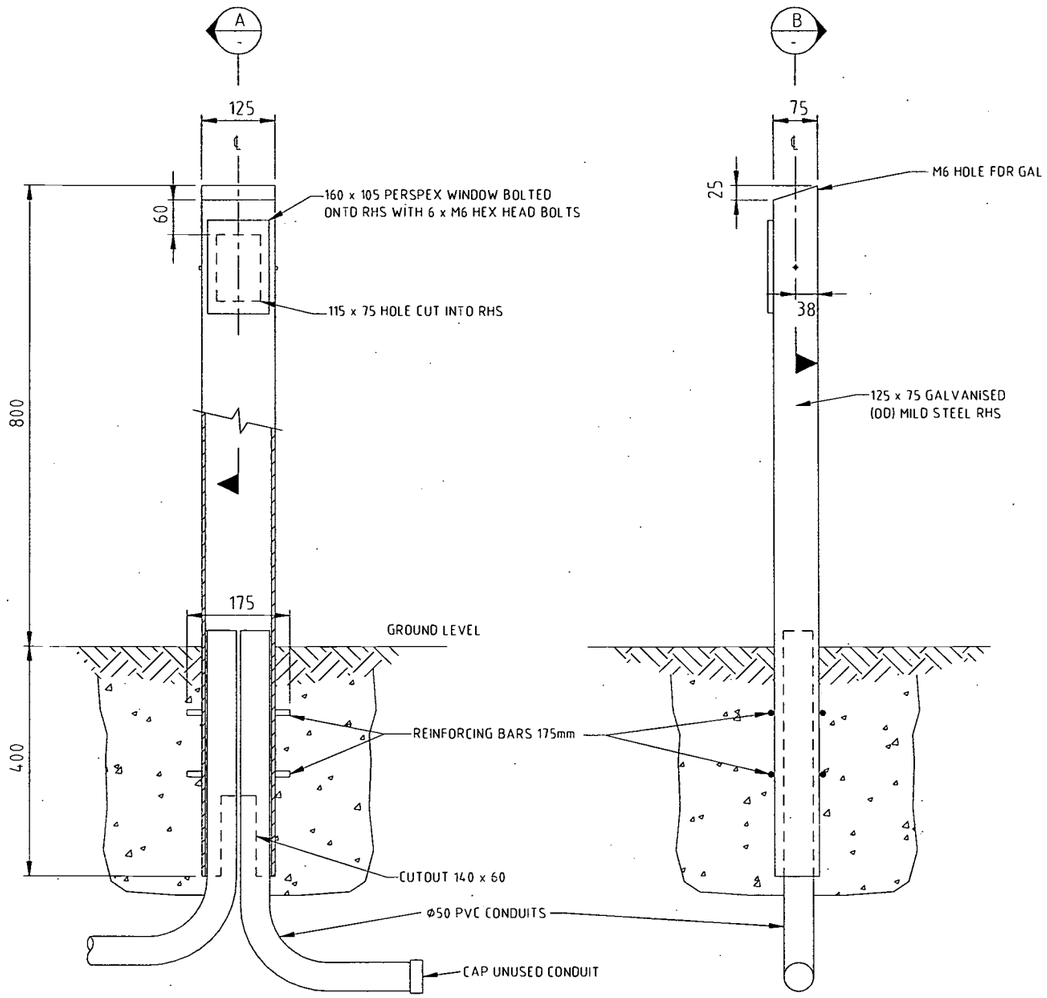
PROJECT: CATHODIC PROTECTON

TITLE: STANDARD SWITCHBOARD CABINET

SCALE NTS — N° 1 OF 1 SHEETS
DRAWING N° 486/1/22-C0024E — AMEND C

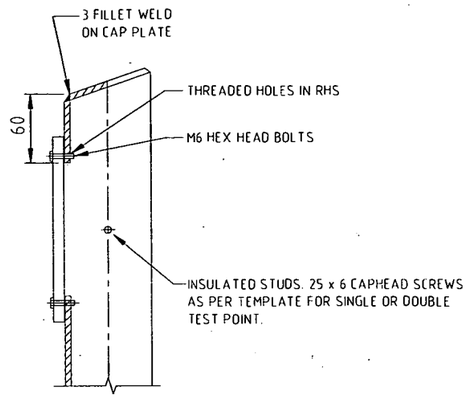
NOTES

1. HOT DIP GALVANISE AFTER FABRICATION.

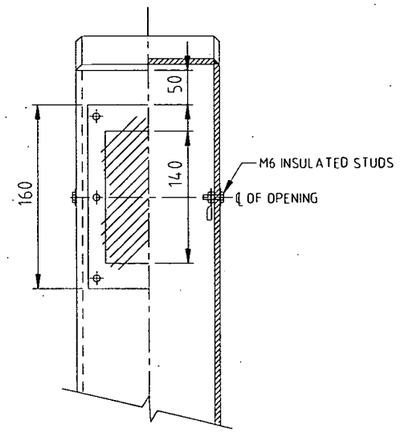


FRONT ELEVATION SECTIONED

SIDE ELEVATION



SECTION A-A



SECTION B-B

NO.	DATE	AMENDMENT	INITIALS
C	9-97	NOTE 3 REVISED	HT
B	11-95	MODIFIED	OLP
A	5-92	ISSUED FOR APPROVAL	OLP

DIRECTOR OF P.D. & P.S. — DATE
ENGINEER IN CHARGE — DATE
SUPERVISING ENGINEER — R.P.E.Q. NO. — DATE

	NAME	DATE
DESIGN	K.McG.	5-5-92
DRAWN	O.L.P.	7-5-92
CHECKED		

Brisbane City

JOB FILE
ACAD FILE 2210001-RevA — SHEET SIZE A1
SURVEY No. — FIELD BOOK
SURVEYED — A.H. DATUM

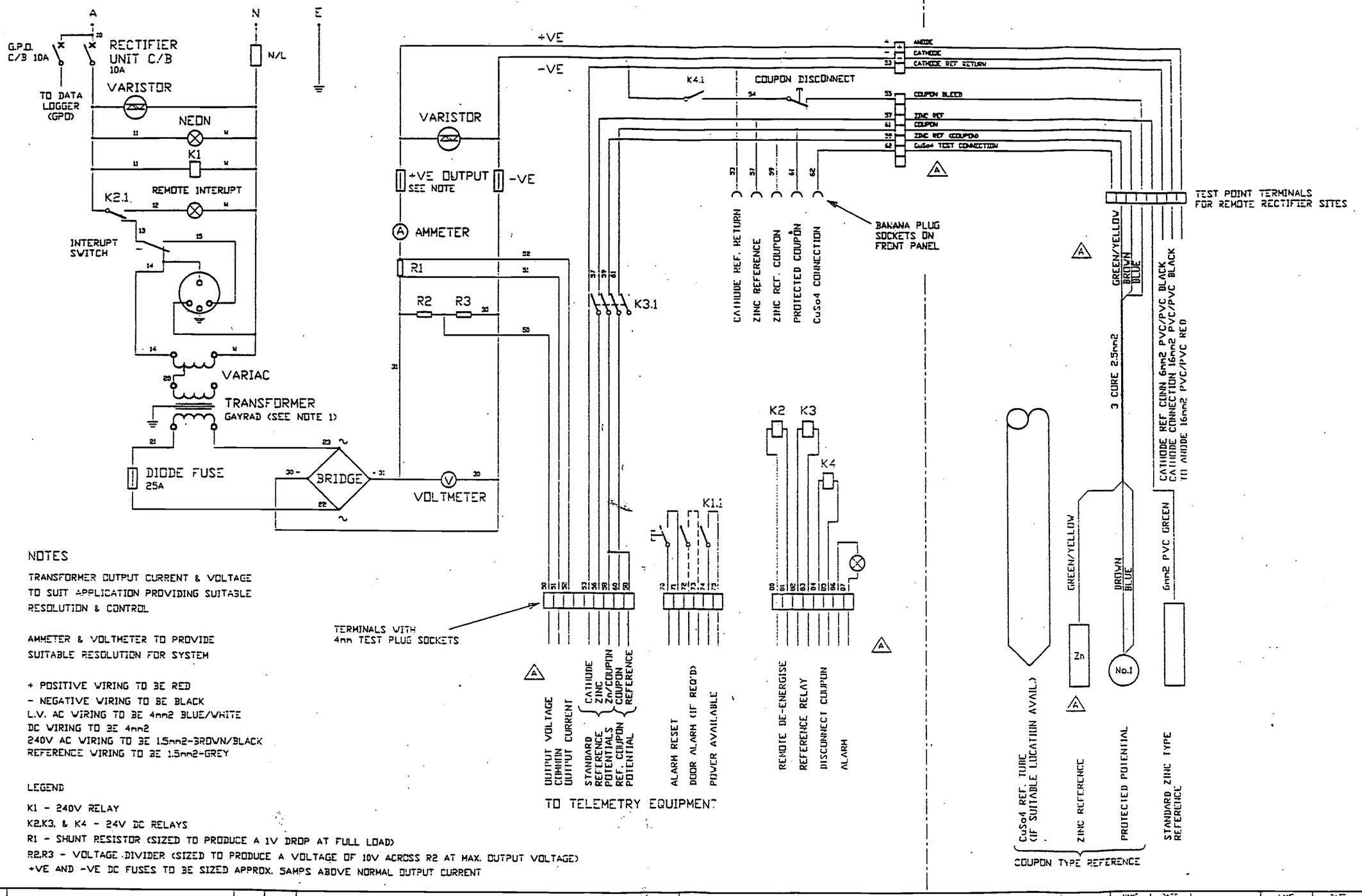
Brisbane Water — Professional Services — Engineering

PROJECT: CATHODIC PROTECTON

TITLE: STANDARD TEST POINT CONSTRUCTION DETAILS

SCALE NTS — N° 1 OF 1 SHEETS

DRAWING N° 486/1/22-AAT0001E — AMEND. C



NOTES

TRANSFORMER OUTPUT CURRENT & VOLTAGE TO SUIT APPLICATION PROVIDING SUITABLE RESOLUTION & CONTROL

AMMETER & VOLTMETER TO PROVIDE SUITABLE RESOLUTION FOR SYSTEM

\+ POSITIVE WIRING TO BE RED
\- NEGATIVE WIRING TO BE BLACK
L.V. AC WIRING TO BE 4mm2 BLUE/WHITE
DC WIRING TO BE 4mm2
240V AC WIRING TO BE 1.5mm2-BROWN/BLACK
REFERENCE WIRING TO BE 1.5mm2-GREY

LEGEND

K1 - 240V RELAY
K2,K3, & K4 - 24V DC RELAYS
R1 - SHUNT RESISTOR (SIZED TO PRODUCE A 1V DROP AT FULL LOAD)
R2,R3 - VOLTAGE DIVIDER (SIZED TO PRODUCE A VOLTAGE OF 10V ACROSS R2 AT MAX. OUTPUT VOLTAGE)
+VE AND -VE DC FUSES TO BE SIZED APPROX. 5AMPS ABOVE NORMAL OUTPUT CURRENT

BY	DATE	REVISION	CHECK	APPR
R.L.	18.10.93	CHANGES AS SHOWN		
R.L.	25.8.93	ISSUED FOR CONSTRUCTION		

BRISBANE CITY COUNCIL
DEPARTMENT OF WATER SUPPLY & SEWERAGE
MECHANICAL & ELECTRICAL SERVICES

PROJECT: STANDARD CATHODIC PROTECTION

TITLE: RECTIFIER UNIT WITH DATA LOGGING FACILITIES WIRING DIAGRAM

	NAME	DATE		NAME	DATE
DRAWN	R.L.	3.8.93	SUPER. ENG.	M.J.	25.8.93
DESIGN	J.S.	3.8.93	SENIOR ENG.		
CHECKED	J.S.	25.8.93	ELECT. ENG.		

SCALE | SIZE: A3 | AMEND: A

DRAWING No. 486/6/25-AA1C0021E

ACADR12 FILE No. A625C21

Brisbane Water Engineering Services

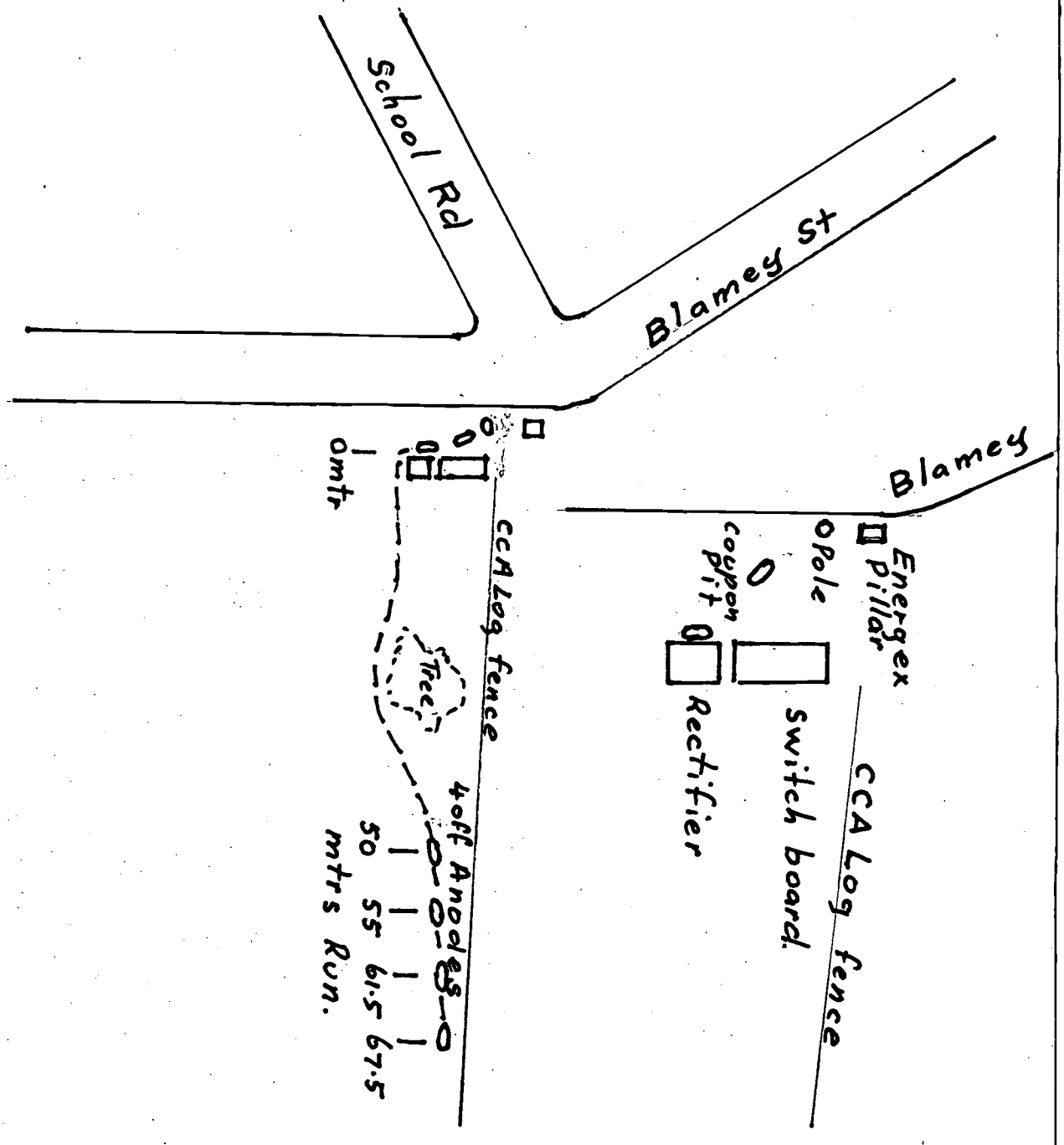
CP Form No. 16

Electrical Engineering Unit

Site Plan Drawing Sheet

Project Ashgrove - City S2 CPS 181

Date Anode site 26/11/03



COMPILED BY J. Taylor

Revision 09/28/95

MEMORANDUM

BRISBANE CITY

Brisbane City Council

TO

DATE 9-12-07

FROM

PHONE

SUBJECT Blamey St. 20 V 4a CPS 181

TP 9 Rest on off

Cusone - Pipe -1630 -1190

Cusone - ZN -1021

Cusone - ZN Coupon -1036

Cusone - P. Coupon -1644. -1180

ZN - Pipe -600 +390

ZN - Coupon -669 +400

ZN - P. Coupon -1247

TP. 1 on off

Cusone - Pipe -980 -511

Cusone - ZN -993

ZN - Pipe +9C +420

TP 2

Cusone - Pipe -763 -520

Cusone - ZN. -933

ZN - Pipe +133 +440

TP 3

Cusone - Pipe -758 -560

Cusone - ZN. -840

ZN - Pipe +80 +360

MEMORANDUM

BRISBANE CITY

Brisbane City Council

TO

DATE 9-12-07

FROM

PHONE

SUBJECT Blamey St. 20V 4A

TP 4

CuSO4 - PIPE	-905	-600
CuSO4 - ZN	-1147	
ZN - PIPE	+240	+575

TP 5

CuSO4 - PIPE	-800	-512
CuSO4 - ZN	-825	
ZN PIPE	+20	+290

TP 6

CuSO4 - PIPE	-796	-490
CuSO4 - ZN	-1064	
ZN - PIPE	+275	+540

TP 7

CuSO4 - PIPE	-1060	-900
CuSO4 - ZN	-516	
ZN - PIPE	-520	-160

TP 8

CuSO4 - PIPE	-565	-403
CuSO4 - ZN	-1207	
ZN - PIPE	+643	+714

Our Business – A Better Brisbane

MEMORANDUM

Brisbane City Council

TO

DATE 9-12-07

FROM

PHONE

SUBJECT Blamey St 20V 4A.

TP 10

Cusono - Pipe	-1179	-920

TP 11

Cusono - Pipe	-655	-470
Cusono - ZN	-1112	
ZN - Pipe	+460	+615

TP 12

Cusono - Pipe	-622	-530
Cusono - ZN	-1096	
ZN - Pipe	+475	+566

TP 13

Cusono - Pipe	-477	-395
Cusono - ZN	984	
ZN - Pipe	+505	+585

BRISBANE CITY COUNCIL - CITY FLEET

Temporary Fleet Requisition

ABN 72 002 765 795

FAX COMPLETED FORM TO:

Fleet Hire	3407 0446
Light Plant Store - Acacia Ridge	3407 0451
Light Plant Store - Virginia	3403 1056

Quality Endorsed Company ISO 9001 Lic. 4464 Standards Australia

Requirements

Equipment Required

BOB CAT WITH 4" OR 6" TRENCHER ATTACHMENT

Delivery Required Yes ☑ No ☐ Pick Up Required ☐

Address for Delivery/Pick Up

McCASKIE PARK BLAMEY ST KELVIN GROVE

UBD 159 J4

Reporting to *Officer's name*	Site Contact Phone no.	Time	Date
PHIL SMYTH	0414 375 964	7-30 a.m.	24-10-03

Advise availabilty to *Officer's name*	Phone no.	Fax no.
LES GREAVES	34031840	

Terminate Hire at p.m. on	Date	Extend Hire to p.m. on	Date	On current Requisition no.
	24-10-03			

Customer Details

Division/Unit	Branch/Section	Work Unit	Customer no.
BRISBANE WATER	NETWORK SERVICES	MYE	

Account/Billing Details

If your requirements are being provided from City Fleet's Pool, please provide the relevant MIMS Purchase Order Number

If City Fleet is sourcing a Council Owner/Driver to meet your requirements, please provide the relevant MIMS Purchase Order Numbers as shown

Labour Charge *As recorded by Owner/Driver on charge docket*

Only fill in one Work Order/ Oracle PA (Project) *OR* General Ledger (GL)

Tick Type Work Order ☐ Project ☑

	E	TU	RC	ACT	A1	A2	NA	SA	TS
GL									
	SLN1	1002					675	0000	0

Section Head/Manager's Authorisation *Division is responsible for correct authorisation of this requisition.*

Authorised by *Print name*	Officer Code	Employee no.	Phone no.	Signature and date
L. GREAVES	EEIESBW	32316	34031840	L Greaves 22-10-03.

CC6006w (1/2002) © iDivision eForms

Fax 70446
Ph 70416

SLN 11 002

BELLS' BOBCAT

BOBCAT, BACKHOE, CHAIN TRENCHING, FLOAT, MINI EXCAVATOR, ROLLER, AUGER

N 53 812 544 138
39 Forbes Court, Morayfield 4506
bile: 0418 712 918
: (07) 5497 9427
: A/Hrs. (07) 5497 9120

Tax Invoice No. № 09302

Date: 27-10-03

tomer: City concile Job Address:
lress: Blame St Kelvingrove
Machine:

ours:	$	6
ip Fees:	$	
Material:	$	
Transport:	$	
Total:	$	

Start: 730
Lunch:
Finish: 1245

Completed to my satisfaction: [signature]

EARTHING SERVICES PTY LTD

155 Williamson Rd
MORAYFIELD Q 4506

Phone 07 54287701
Fax 07 54287701
Email

A.B.N. 63 081 987 519

TAX INVOICE

Invoice No: 00000248

Date: 07/11/03

Invoice To:

Brisbane Water
25 Bunya Street
EAGLE FARM QLD 4009

Attention: Les Greaves

DATE Services Provided	DESCRIPTION	AMOUNT Excluding GST	TAX CODE
	ORDER NUMBER: H40672EF BLAMEY STREET, KELVIN GROVE		
29/10/03	Five (5) hours drilling at $80 per hour	$400.00	GST
	Travle one (1) hour at $80 per hour	$80.00	GST

CODE	SALE AMOUNT	RATE	TAX
GST	$480.00	10%	$48.00

SUBTOTAL	$480.00
TAX	$48.00
TOTAL	**$528.00**

Payment Details

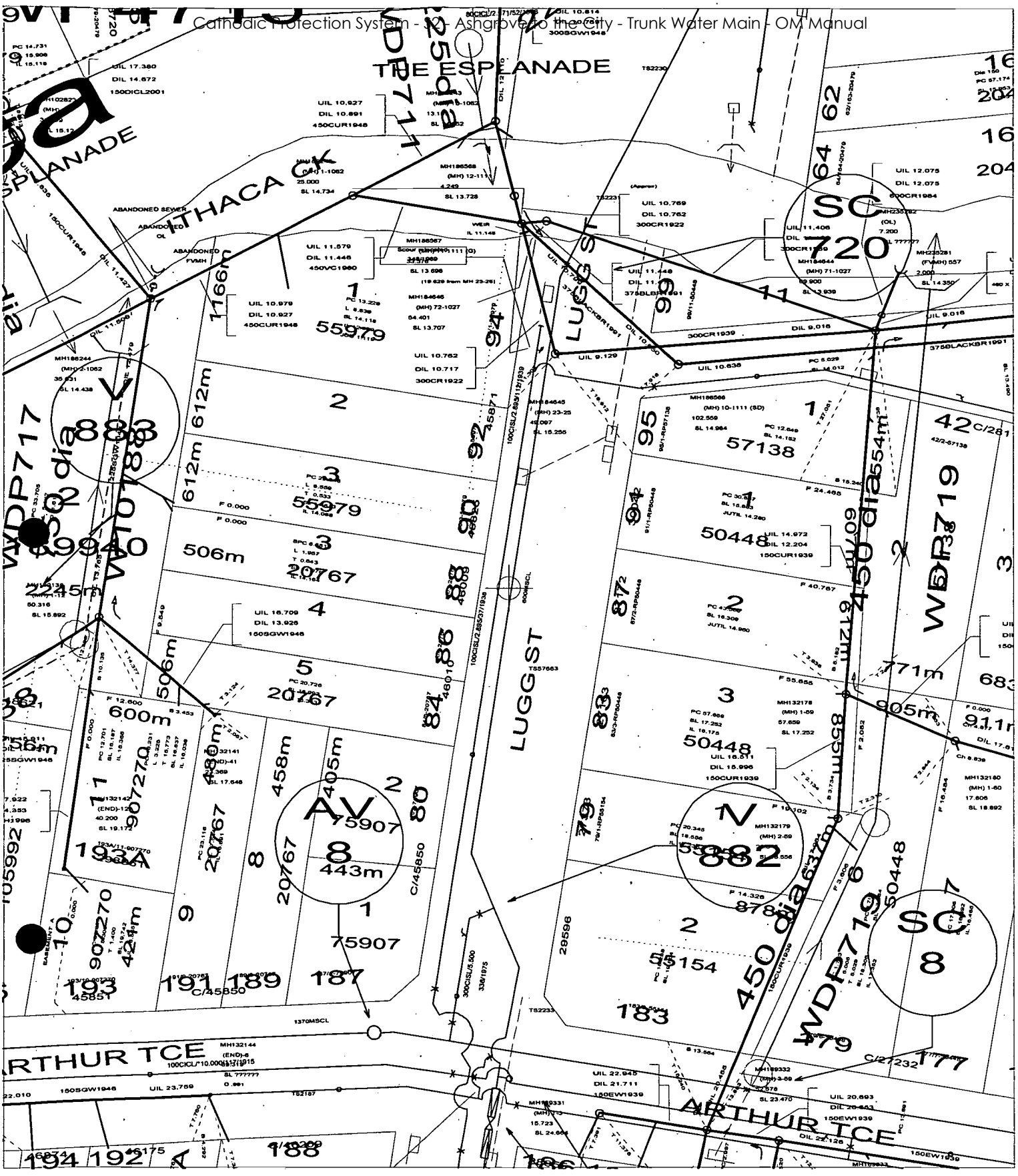
TERMS: Net 30 Days

Cheques to above address
E.F.T. to BSB 06 4155 Account 10062054

Enquiries: 5428 7702

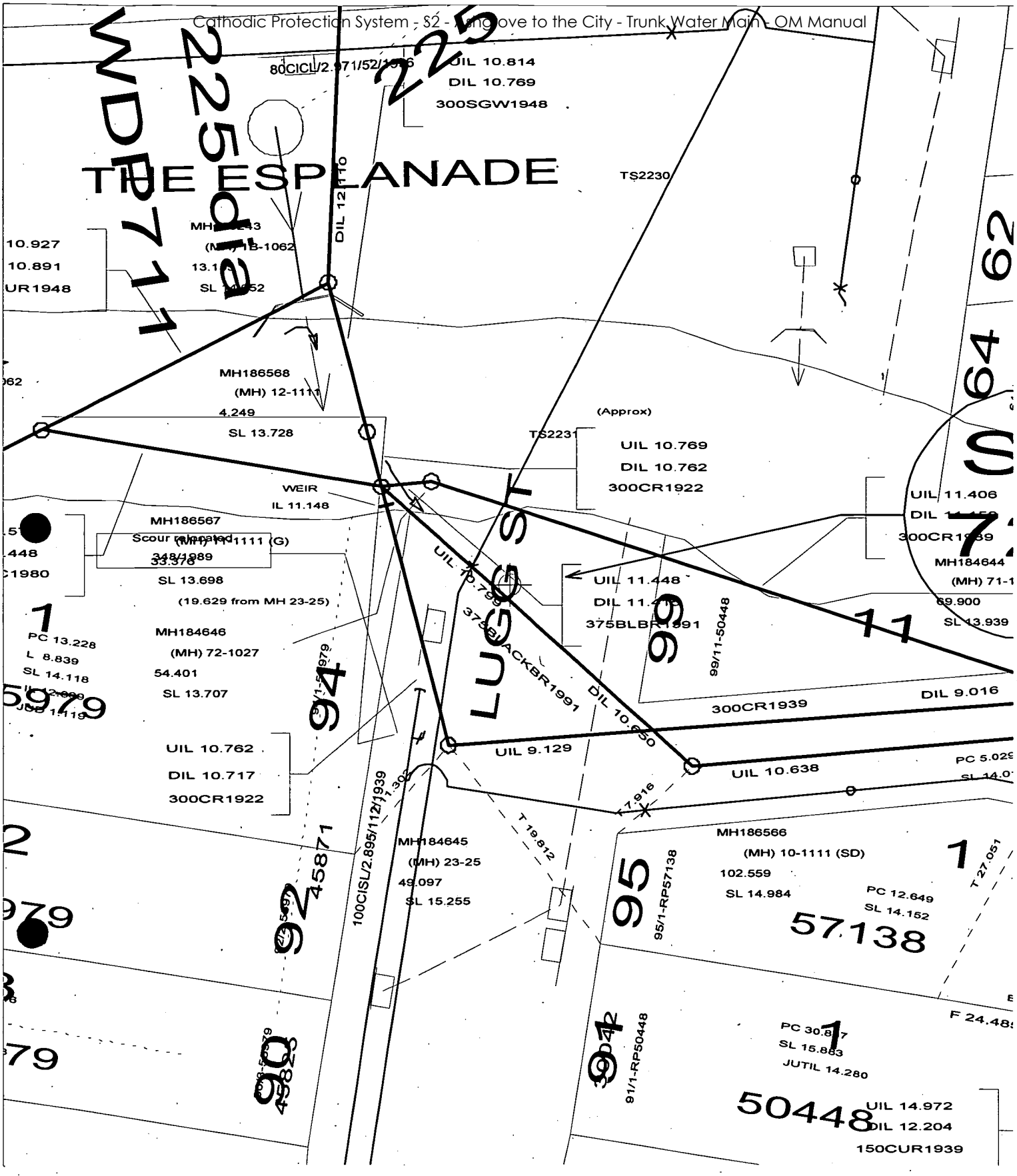
SLNI 1002.
L.J. Greaves
32316
12/11/03

Thank you. We appreciate your business.



Location:
499160 6963780

GDA N



Date: 08/10/2003
Time: 11:06:13
Userid: ee1esbw
Scale: 1:400

Location:
499172 6963830

Themes:
Cadastre
Water Supply BCC
Storm Water
Sewerage BCC

Disclaimer:
"While every care is taken by Brisbane City Council (BCC) and Dept. of Natural Resources & Mines (NRM) to ensure the accuracy of this data, BCC and NRM jointly and severally make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of data being inaccurate in any way and for any reason."
Based on Data provided with the permission of NRM: Cadastral Data (July 2003)

Quality System
Quality Endorsed Company

GDA N

Brisbane Water

Engineering Services
268 Cullen Avenue
Eagle Farm Qld 4009
Ph: 07 36324664
Fax: 07 36324771

Brisbane City

28 September 2002

To: Ian McKinlay

From: Kerry McGovern

Re: Relocation of Corrosion Prevention Equipment in E. E. McCaskie Oval

Ian,

Brisbane Water has installed a corrosion prevention system on a steel water trunk mains in Kelvin Grove Rd. The installation consists of cables and conduits installed underground from Energex pole #6939 in Blamey Street near School Street, running approximately 90metres into the Park, parallel to Kelvin Grove Rd. An electrical cabinet is located near the Energex pole. Brisbane Water applied to install this equipment 14 May 2002 and received approval on 15 May 2002 from your Karen Nuss.

Recently we were advised that the section of E. E. McCaskie Oval that has our corrosion prevention equipment installed was going to be part of a development. We met a representative from Connell Wagner 26 August 2002 on site to discuss the extent of the resumption on the park area and the affect on our equipment. Conversation and plans from Connell Wagner point toward a relocation of our equipment.

Subject to definition of the new park boundary, we are proposing to relocate our corrosion prevention equipment to a new location in the Park as shown in attached sketch 1. It is anticipated works will commence in approximately October, subject to any conditions you may require and be completed within one month. We will monitor the site after for any ground subsidence and re-top trenches as required. As part of the project we will forward you a copy of as constructed drawings for your information and records.

Could you contact me regarding the above proposals and advise if you have services plans for the proposed sites.

Regards,
Kerry McGovern
Technical Support Officer
Ph. 36324664
Fx. 36324771
Mob. 0419733978

From: Kerry McGovern
To: Les Greaves
Date: 10/13/03 12:37pm
Subject: Fwd: FW: Information: Electrical workplace hazards

Les,
Connell Wagner meeting on site at Blamey Street is 11.30am-1.00pm tomorrow Tuesday 14th. Job number (already on Maximo) is SLN11002.
Regards,
Kerry

From: Kerry McGovern
To: Les Greaves
Date: 10/14/03 1:16pm
Subject: Blamey Street CP system

Les,
Phoned Ian from parks and reminded him of the attached letter where we asked to relocate CP equipment in EE McCaskie Park. He has no objections providing we follow the usual protocols i.e forward plans on completion, tidy up park, etc.
Copy of letter for your information.
Regards,
Kerry

BRISBANE WATER - ENGINEERING SERVICES

ENQUIRY FORM / WORK ORDER FORM(Cross out whichever is not applicable)

Brisbane City

Business / Co Name	EXT	**Date**	**Phone No**	**Fax No**
Contact Name	AO1ESBW	10-OCT-03	3362 8700	
Quote Required?	YES/NO (cross out whichever is not applicable)		Quote No	
Work Required Description (Note or attach further information as required, e.g. Quality plan, reference for drawings etc or any special details.)	CONNELL WAGNER PTY LTD RELOCATION OF CATHODIC PROTECTION EQUIPMENT AT THE KELVIN GROVE URBAN VILLAGE PROJECT			
Can we satisfy requirements?	YES/NO (cross out whichever is not applicable)			
Job Details Taken By		**Date Required**	27-MAY-03	
BWES Work Order No	SLN11002	**Date Commenced**		
Master Work Order No		**Identifier / Pimms No**		
Customer/IOB Number	065430CC/3/BW	**Job Assigned To**	32316	
Amendment Details				
BW Rep	**Customer**	**Date**		
Work Completed Details (To be completed by assigned person)				
Checked and/or Tested OK	YES/NO	As per work instruction No ..... (if applicable)		
Signature	Date	(Return to Coordinator upon completion)		

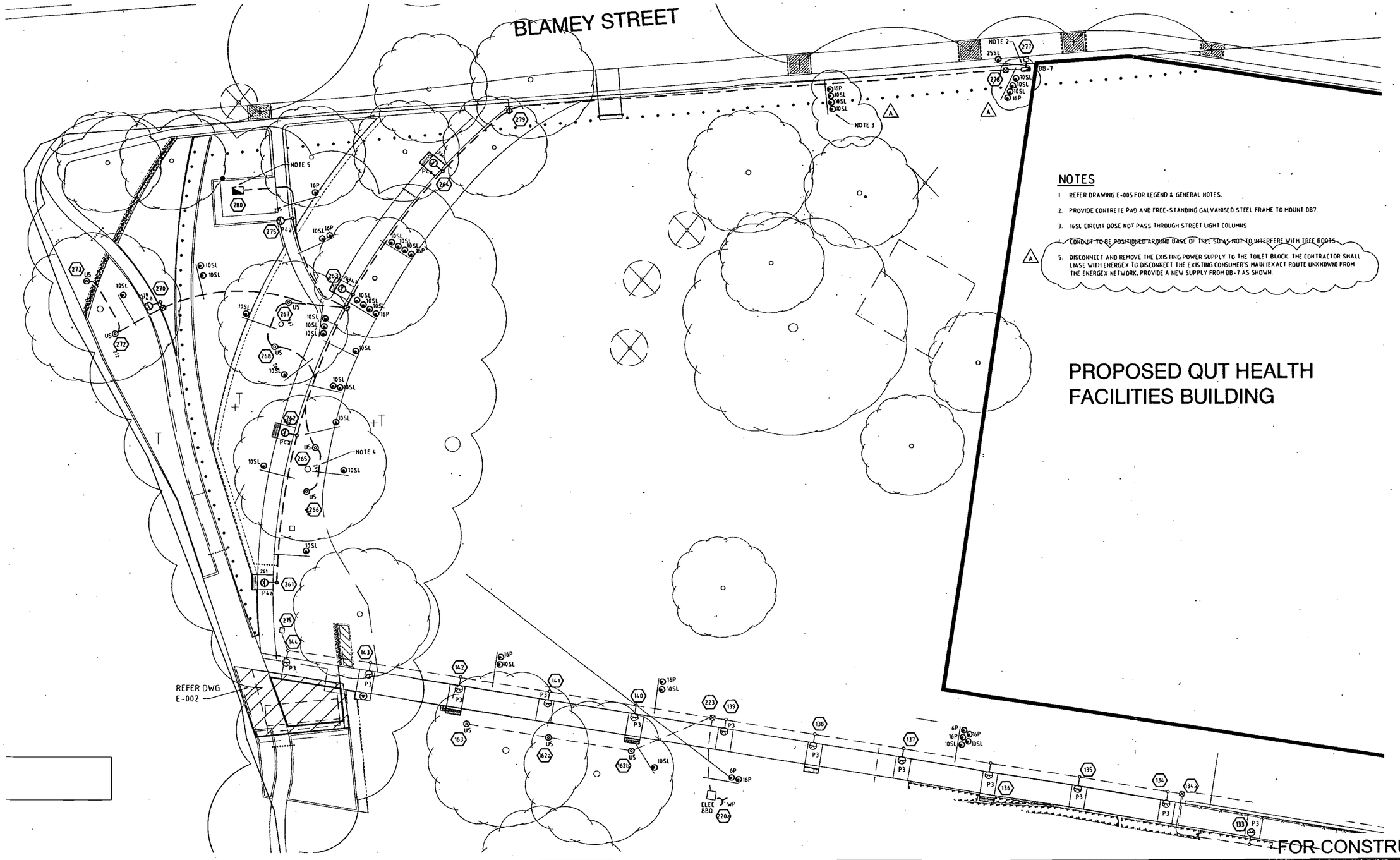
Bill For This Amount	Labour	Materials	Total	Coordinators Signature
	.....	.....	.....	.....

(Coordinator - check details and pricing, print completed copy sign off and pass onto administration for invoicing)

(Retain the original of this document in the quality records file) Form F 3-1E/Revision 1 / 10th November 1997

U:\SQR3\BW0052.SQT 10/Oct/2003

A1



Rev.	Date	Revision Details	By	Ver.	App.
A	27.05.03	ISSUED FOR CONSTRUCTION	JAR		
01	24.01.03	TENDER ISSUE	JSB		

Client: Queensland Government Department of Housing / QUT

A person using Connell Wagner drawings and other data accepts the risk of
1. using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions,
2. using the drawings or other data for any purpose not agreed to in writing by Connell Wagner

Project Manager: Project Services, Queensland Government Department of Public Works

Principal Consultant: Connell Wagner
Connell Wagner Pty Ltd ABN 54 005 139 873 Telephone: +61 7 3246 1000
433 Boundary St. (Locked Bag 1800) Spring Hill Facsimile: +61 7 3246 1001
Queensland 4004 Australia Email: cwbne@conwag.com

Sub-Consultants: URS, Robin Russell, Humphreys Reynolds Perkins, Hassell

kelvin grove urban village.

Drawn	Original signed by JSB	Date
Designed	Original signed by JKL	Date
Verified	Original signed by AWJ	Date
Approved	KJG	Date
Recommended	Dept of Public Works	Date

Drawing Title: ELECTRICAL SERVICES McCASKIE PARK LIGHTING SHEET 2 OF 3

CW Project No: 065450BX
Scale: 1:250 AT A1
Drawing No: E-006 Rev: A

A1

URD CONDUIT SCHEDULE - ROADWAYS BY CIVIL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m) 40mm HD	80mm Class 6	100mm Class 6	125mm Class 6	BENDS (<°/No.) 40mm HD <°	No.	RAD.	80mm Class 6 <°	No.	RAD.	100mm Class <°	No.	RAD.	X-SECTION (m) EXCAV TAPE	TRENCH DETAIL	PLUGS	DRAW WIRE (m)	KERB MARK (E)	REMARKS	TRENCH DEPTH (m) 850	900	1050	1150
MAIDSTONE STREET	2-3		15												15	0	2x80	16	2	X-ROAD		15		
	3-3L	12													12	0	2X40	13	2	X-ROAD		12		
ROAD 3	5-6	24		4x24											24	A2	2x40 8x100	125	2	X-ROAD				24
	5-9	26		4x26											26	A2	2x40 6x100	135	2	X-ROAD				26
ROAD 5	11-12	25		4x25											25	A2	2x40 8x100	104	2	X-ROAD				25
BLAMEY STREET	17-18	22			8x22										22	B	2x40 12x125	161	2	X-ROAD				22
	15-18	38		2x38											38	A	2x40 4x100	117	2	X-ROAD				38
	15-20	32			8x32										32	B2	2x40 16x125	297	2	X-ROAD				32
	21-22	25		4x25											25	A2	2x40 8x100	130	2	X-ROAD				25
ROAD 1	39-40	20			8x20										20	B	2x40 12x125	147	2	X-ROAD				20
	43-44	24			8x24										24	B	2x40 12x125	175	2	X-ROAD				24
PROTECTIVE COVER STRIPS																				140m				
TOTAL		248	15	476	652										263		20x40	1420	22			27		238
																	2x80							
																	36x100							
																	52x125							

NOTE: 1 REFER SPECIFICATION URD DWG.4925-A4 SHEETS 36 & 37 FOR DETAILS OF CONDUIT CROSS-SECTIONS.

2 PLEASE NOTE: PROTECTIVE PVC COVER STRIPS TO BE INSTALLED ABOVE ALL CONDUITS WHERE THEY CROSS FOOTPATHS.

3 CIVIL CONTRACTOR SHALL ENSURE THAT ELECTRICITY AND TELSTRA CONDUITS HAVE BEEN INSTALLED BEFORE CONSTRUCTING ANY PATHS OR DRIVEWAYS ACROSS THE VERGE.

4 CIVIL CONTRACTOR - CONDUIT ENDS SHOULD BE PLUGGED WITH A SUITABLE MATERIAL TO PREVENT THE ENTRY OF DIRT OR OTHER FOREIGN MATTER.

URD CONDUIT SCHEDULE - FOOTPATH BY ELECTRICAL CONTRACTOR

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m) 40mm HD	80mm Class 6	100mm Class 6	125mm Class 6	BENDS (<°/No.) 40mm HD <°	No.	RAD.	80mm Class 6 <°	No.	RAD.	100mm Class 6 <°	No.	RAD.	125mm Class 6 <°	No.	RAD.	X-SECTION (m) EXCAV TAPE	TRENCH DETAIL	REMARKS	TRENCH DEPTH (m) 850	900	1050	1150
MAIDSTONE ST	1-2		16						45	4	1830							16	0	ALONG FOOTPATH	16			
ROAD 3	4-6	84		4x84								15 30	12 12	1830				84	A2	ALONG FOOTPATH			84	
ROAD 2	6-16	92		4x92														92	A2	ALONG FOOTPATH			92	
ROAD 3	8-7	78		4x78								15	4	1830				78	A2	ALONG FOOTPATH			78	
ROAD 5	9-13	102		4x102								45	4	1830				102	A2	ALONG FOOTPATH			102	
BLAMEY STREET	19-17	22			6x22										15 30	12 12	1830	22	B	ALONG FOOTPATH			22	
	17-16	77			8x77										15	8	1830	77	B2	ALONG FOOTPATH			77	
	20-23	70			8x70										45	8	1830	70	B2	ALONG FOOTPATH			70	
	25-26	65		4x65								30	4	1830				65	A2	ALONG FOOTPATH			65	
	27-20	72		4x72								15 30 45	8 8 4	1830				72	A2	ALONG FOOTPATH			72	
ROAD 1	37-43	100			6x100													160	B	ALONG FOOTPATH			160	
VICTORIA PARK RD	44-46	6			6x6										15	6	1830	6	B	ALONG FOOTPATH			6	
KELVIN GROVE RD	47-48	98			6x98													98	B	ALONG FOOTPATH			98	
ALL S/LIGHTS		6				90	6	300										0	0	X-FOOTPATH	6			
BENDS AT SERVICE X-INGS									90	2	450													
BENDS AT LINING SERVICE PILLARS									45	10	1200													
PROTECTIVE COVER STRIPS																				18m				
TOTAL		630	16	1864	2892	90	6	300	90	2	460							645			21		624	
									45	10	1200													
									15		1830	15	24	1830	15	26	1830							
									30		1830	30	24	1830	30	12	1830							
									45	4	1830	45	8	1830	45	8	1830							

NOTE :- 1 ELECT. CONTRACTOR - CONDUIT ENDS SHOULD BE PLUGGED AROUND THE CABLE WITH A SUITABLE MATERIAL TO PREVENT THE ENTRY OF DIRT OR OTHER FOREIGN MATTER.

2 ALL MATERIAL ON CONDUIT SCHEDULE TO BE SUPPLIED BY CONTRACTOR.

3 REFER SPECIFICATION URD DWG.4925-A4 SHEETS 36 & 37 FOR DETAILS OF CONDUIT CROSS-SECTIONS.

4 PLEASE NOTE: PROTECTIVE PVC COVER STRIPS TO BE INSTALLED ABOVE ALL CONDUITS WHERE THEY CROSS FOOTPATHS.

5 ALL FOOTPATH CONDUITS SHALL BE INSTALLED WITH MINIMUM COVER OF 700mm.

6 FOOTPATH CONDUITS SHALL NOT BE INSTALLED UNTIL AFTER KERB HAS BEEN CONSTRUCTED AND FOOTPATHS HAVE BEEN GRADED TO FINAL LEVELS LESS TOPSOIL.

7 CABLES SHALL BE INSTALLED WITHIN A CORRIDOR 450-500mm FROM PROPERTY ALIGNMENT. IN ACCORDANCE WITH ENERGEX DRAWINGS No. 4925-A4 SHEETS 20-30

EQUIPMENT SCHEDULE - SERVICE PILLARS

LOCATION	STN No.	SITE I.D.	EX	REC	IN	SIZE & DESCRIPTION	IIN	COMP I.D.	PLANT No.	MODEL I.D.	QTY.	REMARKS
MAIDSTONE STREET	3	U663158			•	CROSS ROAD				LVSP4C30	1	
ROAD 6	10	U663159			•	2 WAY				LVSPBS125	2	
					•	LIEN				LV4CHEB	1	
					•					SD6256	6	
					•					SD6253	2	
					•	SP BASE & COVER				LVSPJ	1	
					•	FUSE PANEL & LUGS				LVSPFC3A	1	
					•	BOLTS SET				LVSPB4C	1	
					•					LVSPTAPESET	1	
					•	LV SHROUD & TIE SET				LVSPS2	1	
BLAMEY STREET	22	U663160			•	1 WAY				LVSPBS185	1	
					•	LIEN				LV4CHEB	1	
					•					SD6256	6	
					•					SD6253	2	
					•	SP BASE & COVER				LVSPJ	1	
					•	FUSE PANEL & LUGS				LVSPFC3A	1	
					•	BOLTS SET				LVSPB4C	1	
					•					LVSPTAPESET	1	
					•	LV SHROUD & TIE SET				LVSPS2	1	
BLAMEY STREET	26	U663161			•	1 WAY				LVSPBS125	1	
					•	LIEN				LV4CHEB	1	
					•					SD6256	6	
					•					SD6253	2	
					•	SP BASE & COVER				LVSPJ	1	
					•	FUSE PANEL & LUGS				LVSPFC3A	1	
					•	BOLTS SET				LVSPB4C	1	
					•					LVSPTAPESET	1	
					•	LV SHROUD & TIE SET				LVSPS2	1	
SCHOOL STREET	28	U663162			•	LINK PILLAR - 2 WAY TYPE				LVSP4C35		
										LVSPBS185	2	
					•	LIEN				LV4CHEB	1	
					•					SD6256	6	
					•					SD6253	2	
					•	BOLTS SET				LVSPB4C	1	
					•					LVSPTAPESET	1	
					•	LV SHROUD & TIE SET				LVSPS2	1	
SCHOOL STREET	29	U663163			•	2 WAY				LVSPBS185	2	
					•					SD6256	6	
					•					SD6253	2	
					•	SP BASE & COVER				LVSPJ	1	
					•	FUSE PANEL & LUGS				LVSPFC3A	1	
					•	BOLTS SET				LVSPB4C	1	
					•					LVSPTAPESET	1	
					•	LV SHROUD & TIE SET				LVSPS2	1	

UNDERGROUND CABLE SCHEDULE

LOCATION	STATIONS FROM-TO	VOLTS	EX	REC	IN	CABLE SIZE/TYPE 11FDR (m) 240C/XL	185C/HD	LVFDR (m) 185C	4C120A	4C16	2C16	2C4	REMARKS
ROAD 1	8-14	11KV			•		172						
ROAD 2	14-11	LV			•			132					
	5-4	LV			•			104					
	14-19	LV			•			162					
BLAMEY STREET	15-24	LV			•			130					
	21-22	LV			•			32					
	25-26	LV			•			78					
	25-29A	LV			•			114					
SCHOOL STREET	29A-28	LV			•			36					
ROAD 1	36-45	11KV			•		230						
	36-45	LV			•			228					
MAIDSTONE STREET	1-3	LV			•					50			
PILLARS		LV			•					8			(1.5m PER LOOP PILLAR)
ALL S/LIGHTS	SP-S/L	SLM			•							38	SEE S/L SCHEDULE
TOTALS							402	1016		58		38	

THE CONTRACTOR SHALL MEASURE ACTUAL CABLE LENGTHS REQUIRED ON SITE, AFTER INSTALLATION OF CONDUITS, THEN NOTIFY ENERGEX/SUPPLIER WHEN CONFIRMING CABLE ORDER.

EQUIPMENT SCHEDULE - 11KV & TRANSFORMER

LOCATION	STN No.	SITE I.D.	EX	REC	IN	SIZE & DESCRIPTION	IIN	COMP I.D.	PLANT No.	MODEL I.D.	QTY.	REMARKS
ROAD 2	14	SC663154			•	UNICULVERT FOUNDATION					1	
					•	500KVA PMT TRANSFORMER & RMU	S18699	TR1			1	
					•	HV FUSES				S18713	3	
					•	LV FUSES				DSLVF31	2	
					•	EARTHING				DSSOPMEG	1	
					•	ADDITIONAL EARTHING				DSPMTEGA	1	
					•	SIGNS				DSRMSIGN	1	
BLAMEY 15	33	SC2020		•		300KVA PMT & RMU		TR1	-		1	RECOVER PMT AND
												TRANSPORT TO
												BANYO DEPOT.

PRELIMINARY

Rev.	Date	Revision Details	By	Ver.	App.
04	27.03.02	ISSUED FOR B.C.C. APPROVAL			
03	21.03.02	TENDER ADDENDUM NO.2	GVF		
02	11.03.02	PRELIMINARY WORKS PLAN	EW		
01	25.02.02	PRELIMINARY CONDUIT PLAN	EW		

Client: Queensland Government Department of Housing · QUT

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Project Manager: Project Services Queensland Government Department of Public Works

Principal Consultant: Connell Wagner
Connell Wagner Pty Ltd ABN 54 005 139 873 Telephone: +61 7 3246 1000
433 Boundary St. (Locked Bag 1800) Spring Hill Facsimile: +61 7 3246 1001
Queensland 4004 Australia Email: cwbne@conwag.com

Sub-Consultants: URS · Robin Russell · HUMPHREYS REYNOLDS PERKINS · HASSELL

kelvin grove urban village.

Drawn EW	Original signed by	Date 25.2.02
Designed BW	Original signed by	Date 25.2.02
Verified	Original signed by	Date
Approved		Date
Recommended	Dept of Public Works	Date

Drawing Title: ELECTRICAL RETICULATION SHEET 4 OF 5

ENERGEX PROJECT No. ~~D1800513~~

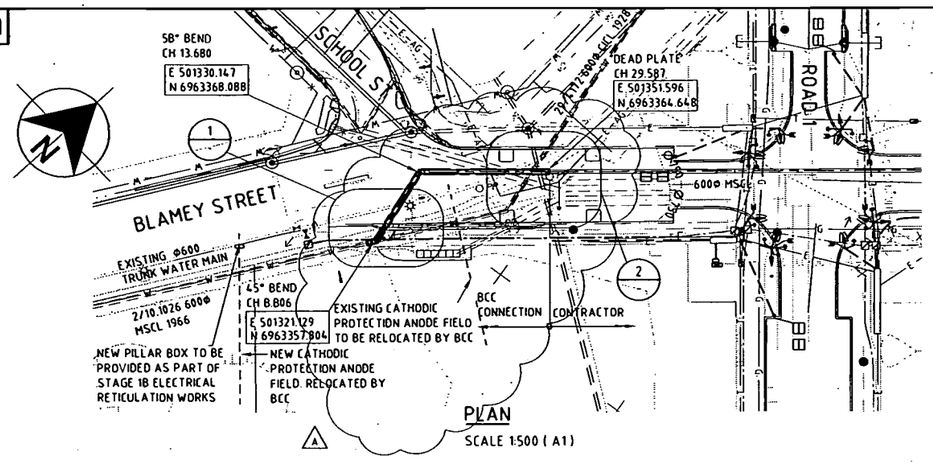
CW Project No 0654

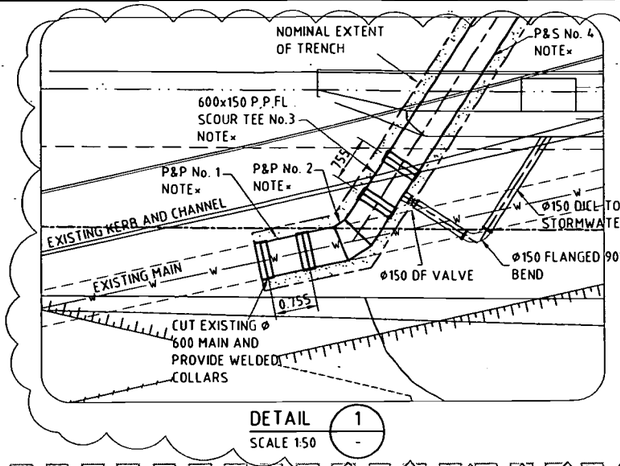
Scale -

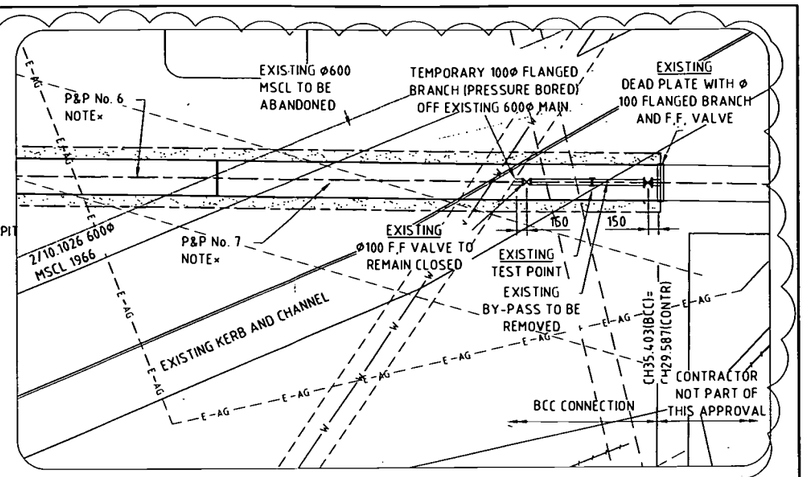
Drawing No S1B-EL-043 Rev. 04

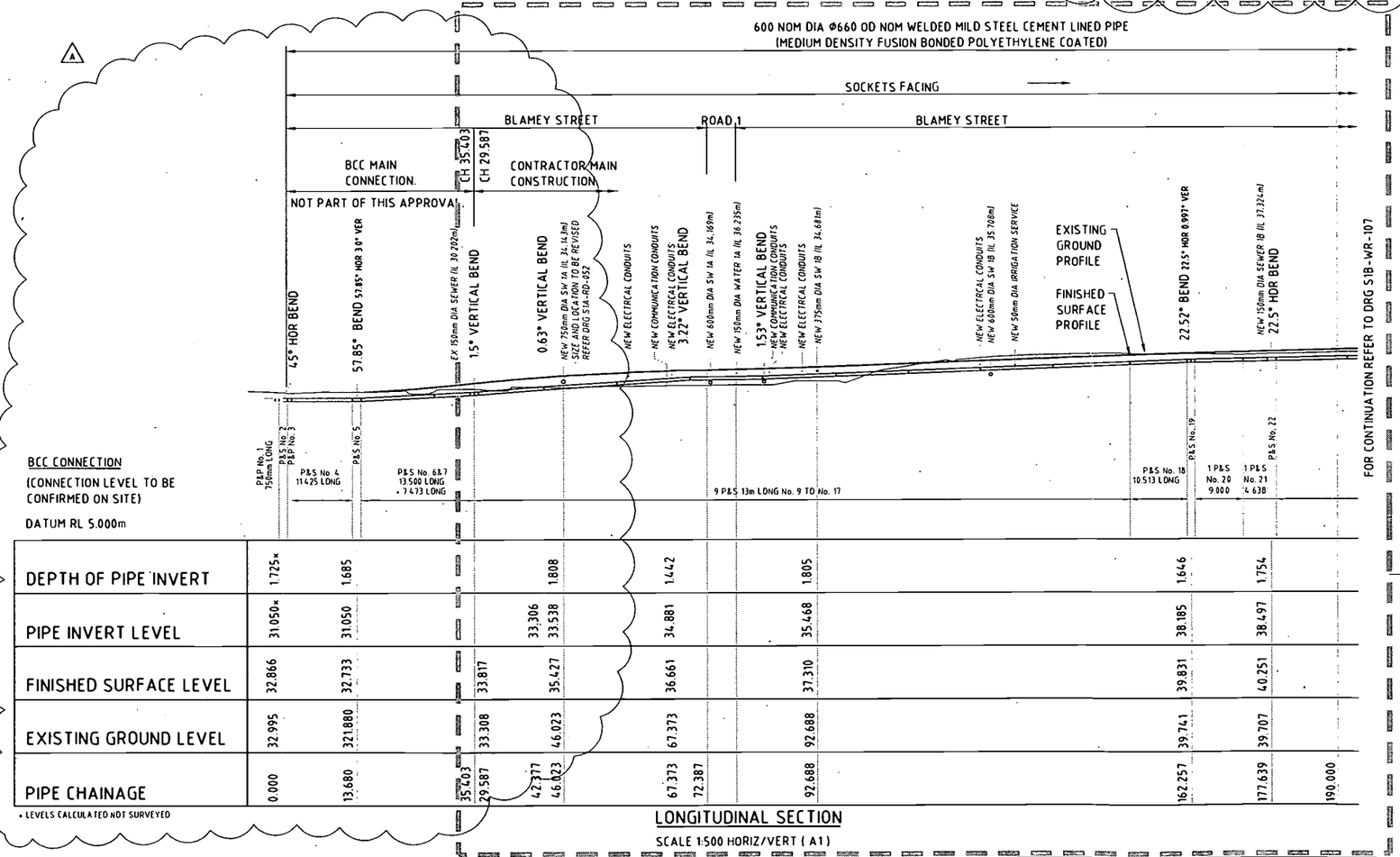
I:\0654\cad\drg\S1B\S1B-EL-043.dwg xrefs CW-A1HS 28.03.2002@13:47

A1









FOR CONTINUATION REFER TO DRG S1B-WR-107

BCC CONNECTION
EXISTING VALVE TO BE BACKFILLED WITH CEMENT (3 %) STABILISED SAND. PIPEWORK TO BE REMOVED. REMOVE EXISITING DEAD PLATE INCLUDING TEMPORARY CONTRACTOR CONNECTION AND CONNECT TO NEW 600Ø MAIN.

NOTE ×
PIPE PARTS 1 & 63 ARE P & P TO BE MADE TO SUIT EXISTING AND NEW PIPES. THE ACTUAL LENGTH AND DIAMETERS ARE TO BE CONFIRMED PRIOR TO FABRICATION. PIPE PART P & S No. 3 CUT LENGTH TO SUIT

EXISTING WORKS

1000 0 1000 2000 3000 4000 5000mm
SCALE 1:50

10 0 10 20 30 40 50m
SCALE 1:500

COUNCIL'S DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

NOTE:
TELECOMMUNICATIONS AND ELECTRICITY SERVICES ADDED.

NOTE:
1. LOCATION AND LEVEL OF EXISTING SERVICES IS TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
2. CUT LENGTHS AND ARE A GUIDE ONLY. TO BE CONFIRMED BY CONTRACTOR ON SITE PRIOR TO CONSTRUCTION.
3. FOR PROJECT NOTES REFER TO DRG S1B-WR-105
4. CLEAR COVER TO COMMUNICATONS CONDUITS IS 450mm NOMINAL
5. CLEAR COVER TO ELECTRICAL CONDUITS IS 1960mm NOMINAL

LEGEND

- STORMWATER
- WATER EXISTING
- WATER PROPOSED
- GAS
- TELSTRA
- SEWER
- COMMUNICATIONS
- ELECTRICTY
- 660 OD MAIN - BY BCC
- 660 OD MAIN - BY CONTRACTOR

BCC DRG No. 2/10.1026-03

FOR CONSTRUCTION

Rev.	Date	Revision Details	By	Ver.	App.
A	3.12.02	ISSUED FOR CONSTRUCTION & BCC APPROVAL	BAL		
02	3.12.02	REALIGNMENT OF CONNECTION POINTS	BAL		
01	19/11/02	BCC APPROVAL	NMB		

Client: Queensland Government Department of Housing; QUT

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Queensland 4004 Australia Email: cwbne@conwag.com

Sub-Consultants: URS; Robin Russell; Humphreys Reynolds Perkins; Hassell

kelvin grove urban village.

Drawn Original signed by M. BEALE	Date 22.11.02	
Designed Original signed by M.REARDON	Date 22.11.02	
Verified Original signed by M.REARDON	Date 22.11.02	
Approved	Date	
Recommended Dept. of Public Works	Date	

Drawing Title: STAGE 1B -COUNCIL CONNECTION BLAMEY STREET TO VICTORIA PARK ROAD (KELVIN GROVE) Ø600 MSCL TRUNK WATER MAIN PLAN AND LONG SECTION SHEET 1 OF 3

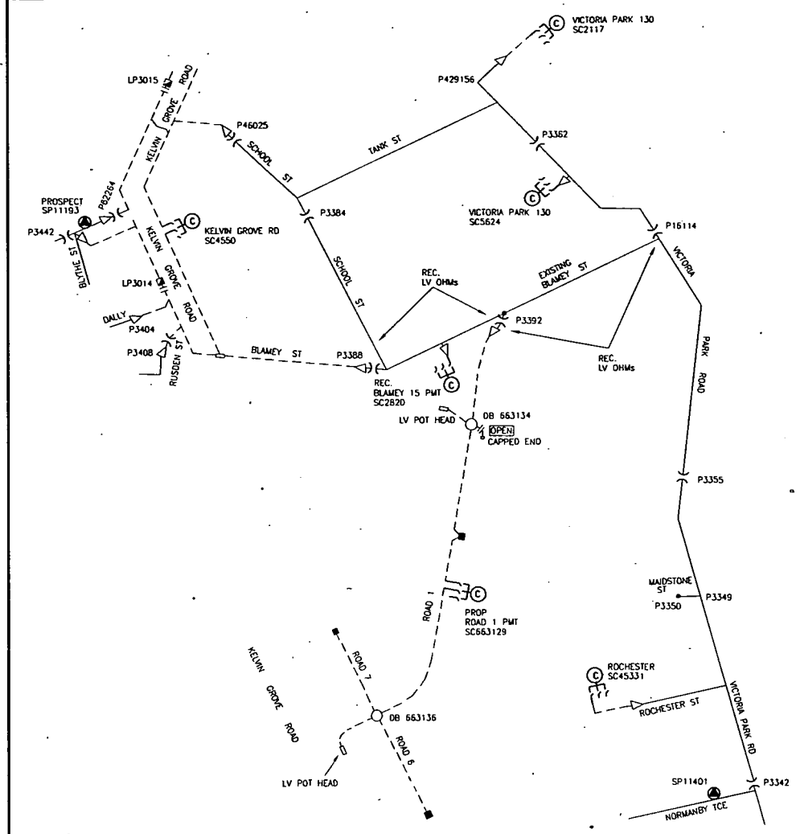
CW Project No: 0654

Scale: AS NOTED

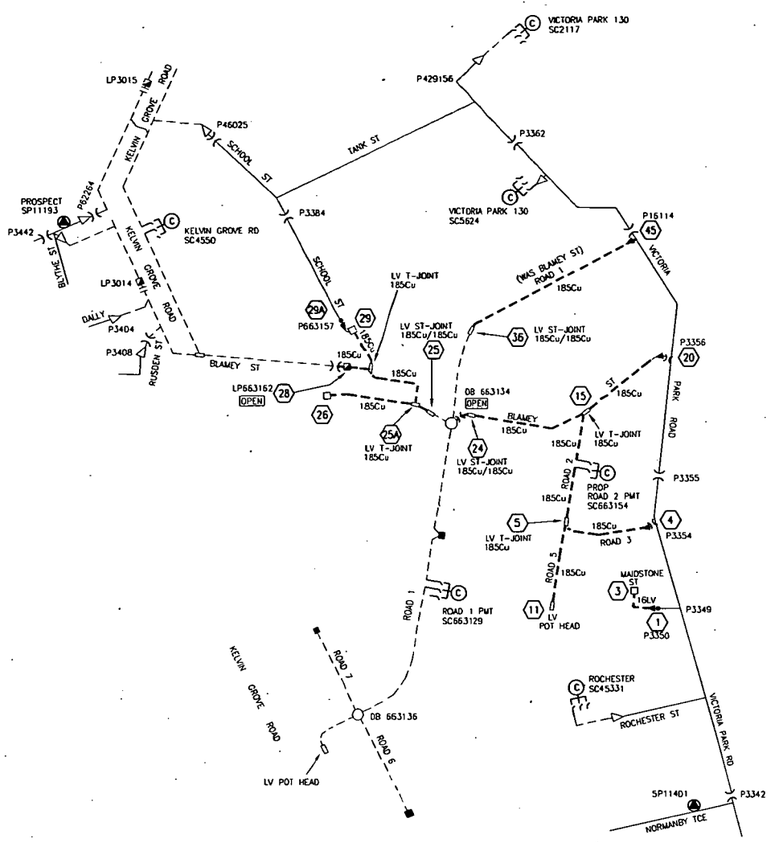
Drawing No: S1B-WR-114 Rev: A

20 10 6 10 20 30 40 50 100mm

A1



EXISTING LV SCHEMATIC
SCALE 1:2500



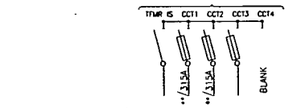
PROP LV SCHEMATIC
SCALE 1:2500

PMT: ABB LV SWITCHBOARD LABEL
STATION No: SC663154 ROAD 2, KELVIN GROVE

CIRCUIT No	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
TFMR ISOLATOR	80x80	WB	6	TRANSFORMER ISOLATOR
1	80x35	WB	5	TO ROAD 1 DB663134/ VICTORIA PARK RD P3356 AND SERVICES
2	80x35	WB	5	TO VICTORIA PARK RD P3354 AND SERVICES
3	80x35	WB	5	
4	80x35	WB	5	

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6455-A4

FOR LABEL DETAILS SEE ABOVE

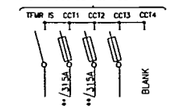


PMT: ABB LV SWITCHBOARD LABEL
STATION No: SC4550 KELVIN GROVE 171

CIRCUIT No	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
TFMR ISOLATOR	80x80	WB	6	TRANSFORMER ISOLATOR
1	80x35	WB	5	TO BLAMEY ST LP663162/ RUSDEN ST P3408/ DALLY ST P3404/ KELVIN GROVE RD LP3014 AND SERVICES
2	80x35	WB	5	
3	80x35	WB	5	
4	80x35	WB	5	

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6455-A4

FOR LABEL DETAILS SEE ABOVE



LV LABEL ORDERING SHEET:
DISCONNECT BOX
STATION No: DB 663134
LOCATION: ROAD 1 KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION	
160x40	WB	5	TO VICTORIA PARK RD P16114 AND SERVICES	CHANGE LABEL
160x40	WB	5	TO ROAD 2 SC663154/ VICTORIA PARK RD P3356 AND SERVICES	CHANGE LABEL
160x40	WB	5		
160x40	WB	5	TO BLAMEY ST LP663162/ SCHOOL RD P663157 AND SERVICES	

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6454-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3354 LOC. VICTORIA PK RD	TO ROAD 2 SC663154 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3356 LOC. VICTORIA PK RD	TO ROAD2 SC663154/ ROAD 1 DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 663157 LOC. SCHOOL ST	TO BLAMEY ST P663162/ ROAD 1 DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3356 LOC. VICTORIA PK RD	TO ROAD 2 SC663154/ ROAD 1 DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3404 LOC. DALLEY ST	TO KELVIN GROVE 171 SC4550/ RUSDEN ST P3408/ KELVIN GROVE LP3014/ BLAMEY ST LP663162 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3408 LOC. RUSDEN ST	TO KELVIN GROVE 171 SC4550/ DALLEY ST P3404/ KELVIN GROVE LP3014/ BLAMEY ST LP663162 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV LABEL ORDERING SHEET:
LINK PILLAR (NEW TYPE)
STATION No: LP663162
LOCATION: BLAMEY ST KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
80x35	WB	5	TO KELVIN GROVE 171 SC4550/ DALLEY ST P3404/ RUSDEN ST P3408/ KELVIN GROVE RD LP663162 AND SERVICES
80x35	WB	5	TO SCHOOL RD P663157/ ROAD 1 DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6453-A4

LV LABEL ORDERING SHEET:
LINK PILLAR (NEW TYPE)
STATION No: LP3014
LOCATION: KELVIN GROVE RD KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
80x35	WB	5	TO KELVIN GROVE 171 SC4550/ DALLEY ST P3404/ RUSDEN ST P3408/ BLAMEY ST LP663162 AND SERVICES
80x35	WB	5	

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6453-A4

PRELIMINARY

Rev.	Date	Revision Details	By	Ver.	App.
04	27.03.02	ISSUED FOR B.C.C. APPROVAL			
03	21.03.02	TENDER ADDENDUM NO.2	GVF		
02	25.02.02	PRELIMINARY WORKS PLAN	EW		
01	14.02.02	PRELIMINARY CONDUIT PLAN	EW		

Client: Queensland Government Department of Housing; QUT

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Queensland 4004 Australia Email: cwbne@conwog.com

Sub-Consultants: URS; Robin Powell; Humphreys Reynolds Perkins; Hassell

kelvin grove urban village.

Drawn E.W.	Original signed by	Date
Designed B.W.	Original signed by	Date
Verified	Original signed by	Date
Approved		Date
Recommended		Date

Dept of Public Works

Drawing Title: ELECTRICAL RETICULATION SHEET 3 OF 5

ENERGEX PROJECT No. D1800513

CW Project No 0654

Scale

Drawing No S1B-EL-042 Rev 04

A1

NOTE:- ROAD LIGHTING CERTIFIED TO COMPLY WITH THE NOMINATED CATEGORIES OF AS/NZS 1158.1.1: (AND/OR AS/NZS 1158.3.1 AND/OR AS1158.1.1986). FOR LUMINAIRES AND LAMPS SUPPLIED UNDER ENERGEX CONTRACT QESI 31/98:

- INTERSECTION OF VICTORIA PARK RD & ROAD 1 : BCC STANDARD AS PER MIKE AGER FAX
- INTERSECTION OF VICTORIA PARK RD & BLAMEY ST : BCC STANDARD AS PER MIKE AGER FAX
- INTERSECTION OF VICTORIA PARK RD & ROAD 3 : BCC STANDARD AS PER MIKE AGER FAX
- MAIDSTONE ST : B2
- INTERSECTION OF BLAMEY ST & SCHOOL ST : BCC STANDARD AS PER MIKE AGER FAX

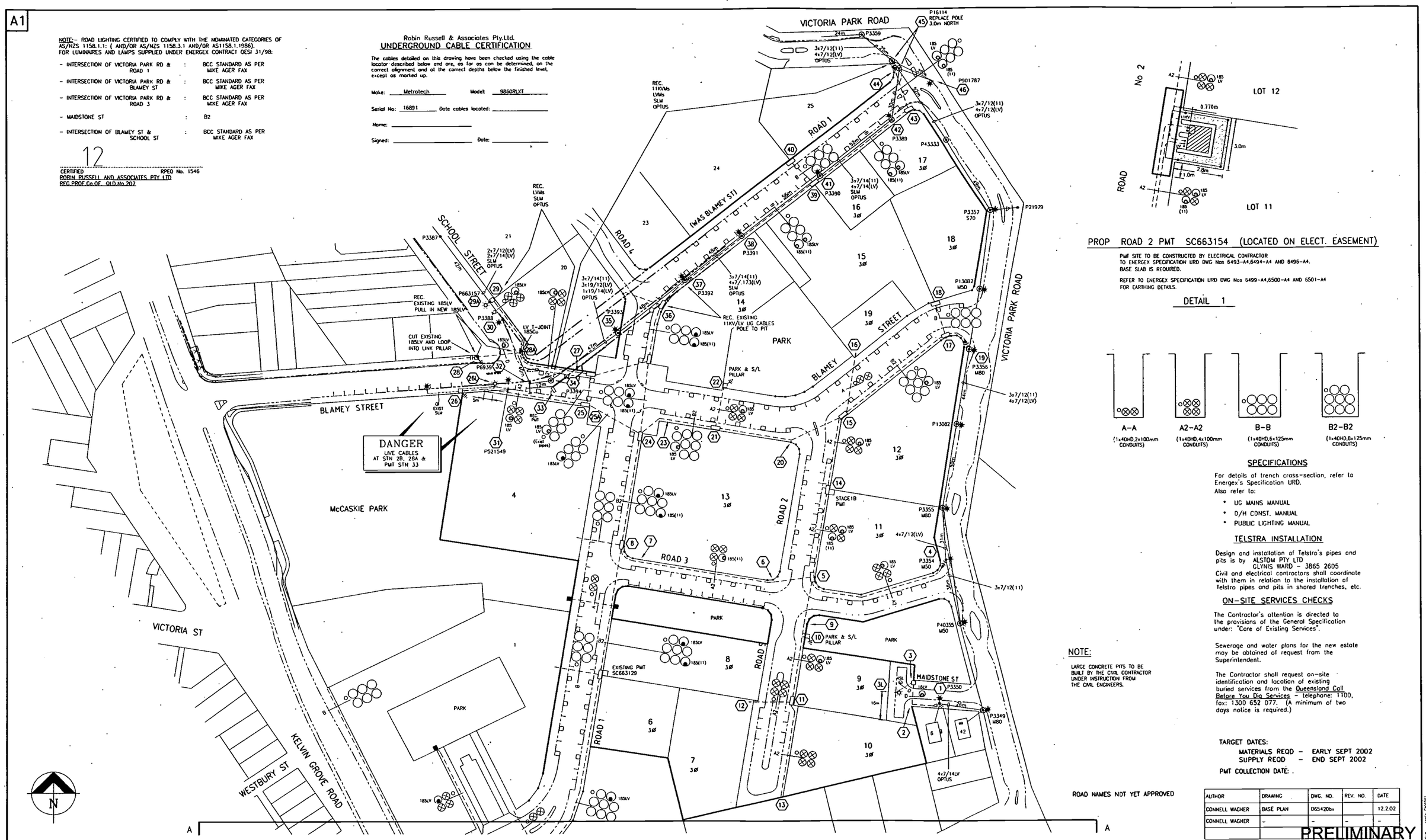
12

CERTIFIED RPEQ No. 1546
ROBIN RUSSELL AND ASSOCIATES PTY LTD
REG.PROF.Co.OF. QLD.No.207

Robin Russell & Associates Pty.Ltd.
UNDERGROUND CABLE CERTIFICATION

The cables detailed on this drawing have been checked using the cable locator described below and are, as far as can be determined, on the correct alignment and at the correct depths below the finished level, except as marked up.

Make: Metrotech Model: 9860RLXT
Serial No: 16891 Date cables located:
Name:
Signed: Date:



NOTE:

LARGE CONCRETE PITS TO BE BUILT BY THE CIVIL CONTRACTOR UNDER INSTRUCTION FROM THE CIVIL ENGINEERS.

ROAD NAMES NOT YET APPROVED

PROP ROAD 2 PMT SC663154 (LOCATED ON ELECT. EASEMENT)

PMT SITE TO BE CONSTRUCTED BY ELECTRICAL CONTRACTOR TO ENERGEX SPECIFICATION URD DWG Nos 6493-A4,6494-A4 AND 6496-A4. BASE SLAB IS REQUIRED.

REFER TO ENERGEX SPECIFICATION URD DWG Nos 6499-A4,6500-A4 AND 6501-A4 FOR EARTHING DETAILS.

DETAIL 1

SPECIFICATIONS

For details of trench cross-section, refer to Energex's Specification URD.
Also refer to:

- UG MAINS MANUAL
- O/H CONST. MANUAL
- PUBLIC LIGHTING MANUAL

TELSTRA INSTALLATION

Design and installation of Telstra's pipes and pits is by ALSTOM PTY LTD
GLYNIS WARD - 3865 2605
Civil and electrical contractors shall coordinate with them in relation to the installation of Telstra pipes and pits in shared trenches, etc.

ON-SITE SERVICES CHECKS

The Contractor's attention is directed to the provisions of the General Specification under: "Care of Existing Services".

Sewerage and water plans for the new estate may be obtained of request from the Superintendent.

The Contractor shall request on-site identification and location of existing buried services from the Queensland Call Before You Dig Services - telephone: 1100, fax: 1300 652 077. (A minimum of two days notice is required.)

TARGET DATES:
MATERIALS REQD - EARLY SEPT 2002
SUPPLY REQD - END SEPT 2002
PMT COLLECTION DATE:

AUTHOR	DRAWING	DWG. NO.	REV. NO.	DATE
CONNELL WAGNER	BASE PLAN	D65420bx		12.2.02
CONNELL WAGNER	-	-	-	-

PRELIMINARY

Rev.	Date	Revision Details	By	Ver.	App.
04	27.03.02	ISSUED FOR B.C.C. APPROVAL			
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02	11.03.02	PRELIMINARY WORKS PLAN	EW		
01	25.02.02	PRELIMINARY CONDUITS PLAN	EW		

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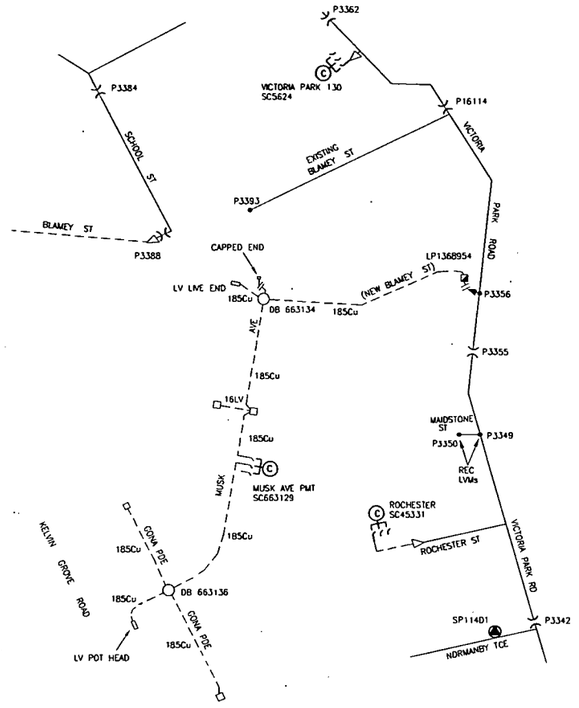
kelvin grove urban village.

Drawn E.W.	Original signed by	Date
Designed B.W.	Original signed by	Date
Verified	Original signed by	Date
Approved		Date
Recommended		Date

Dept of Public Works

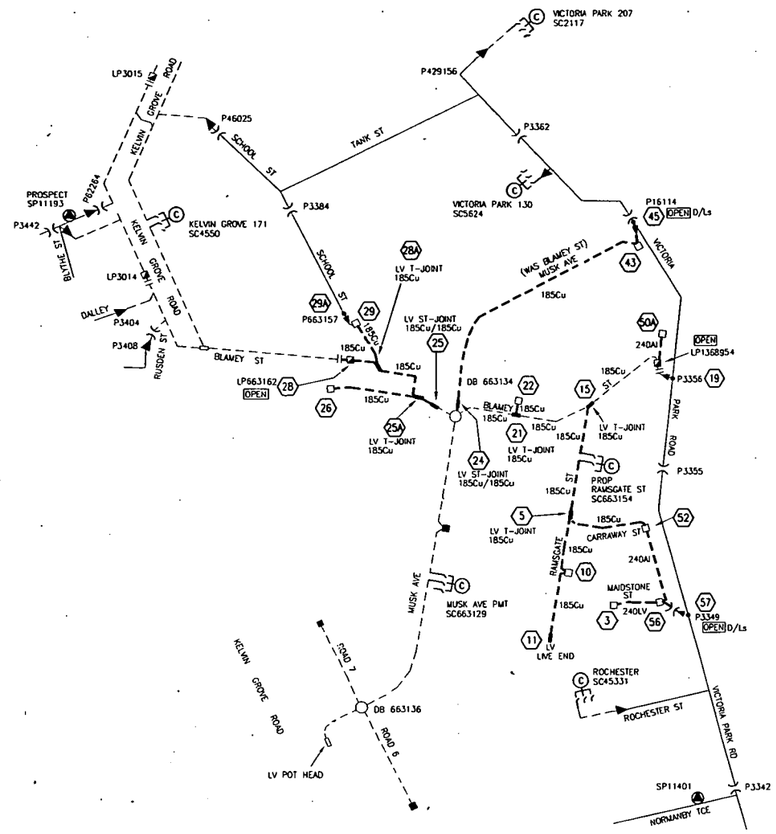
Drawing Title: ELECTRICAL RETICULATION SHEET 1 OF 5
ENERGEX PROJECT No. ~~D1800513~~
CW Project No: 0654
Scale:
Drawing No: S1B-EL-040 Rev: 04

A1



EXISTING LV SCHEMATIC
SCALE 1:2500

THIS LV SCHEMATIC ASSUMES THAT STAGE 1B EARLY WORKS (RECOVERY OF BLAMEY ST PMT) HAS BEEN COMPLETED.



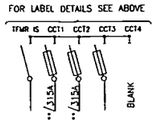
PROP LV SCHEMATIC
SCALE 1:2500

PMT: ABB LV SWITCHBOARD LABEL
STATION No: SC663154 RAMSGATE ST, KELVIN GROVE

CIRCUIT No	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
ITMR ISOLATOR	80x80	WB	6	TRANSFORMER ISOLATOR
1	80x35	WB	5	TEE VICTORIA PARK RD LP1368954/ MUSK ST DB663134 AND SERVICES
2	80x35	WB	5	TO VICTORIA PARK RD P3349 AND SERVICES
3	80x35	WB	5	
4	80x35	WB	5	

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6455-A4

FOR LABEL DETAILS SEE ABOVE

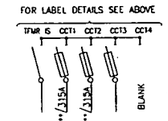


PMT: ABB LV SWITCHBOARD LABEL
STATION No: SC4550 KELVIN GROVE 171

CIRCUIT No	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION	
TFMR ISOLATOR	80x80	WB	6	TRANSFORMER ISOLATOR	
1	80x35	WB	5	TO BLAMEY ST LP663162/ RUSDEN ST P3408/ DALLY ST P3404/ KELVIN GROVE RD LP3014 AND SERVICES	CHANGE LABEL
2	80x35	WB	5		
3	80x35	WB	5		
4	80x35	WB	5		

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6455-A4

FOR LABEL DETAILS SEE ABOVE



LV LABEL ORDERING SHEET:
DISCONNECT BOX
STATION No: DB 663134 LOCATION: MUSK ST KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION	
150x40	WB	5	TO VICTORIA PARK RD P16114 AND SERVICES	CHANGE LABEL
150x40	WB	5	TEE RAMSGATE ST SC663154/ BLAMEY ST LP1368954 AND SERVICES	CHANGE LABEL
150x40	WB	5		
150x40	WB	5	TEE BLAMEY ST LP663162/ SCHOOL RD P663157 AND SERVICES	CHANGE LABEL

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6454-A4

LEGEND

- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- EXISTING SERVICE PILLAR
- PROPOSED SERVICE PILLAR
- LINK PILLAR
- DISCONNECT BOX
- CONC. PIT
- EXISTING UG CABLE
- PROPOSED UG CABLE
- PROPOSED O/H MAINS
- MEN
- LV POLE
- LV/11KV POLE
- 40mm CONDUIT
- 125mm CONDUIT

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 663157 LOC. SCHOOL ST	LV CABLE TEE BLAMEY ST LP663162/ MUSK AVE DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3404 LOC. DALLEY ST	LV CABLE TEE KELVIN GROVE 171 SC4550/ RUSDEN ST P3408/ KELVIN GROVE LP3014/ BLAMEY ST LP663162 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3408 LOC. RUSDEN ST	LV CABLE TEE KELVIN GROVE 171 SC4550/ DALLEY ST P3404/ KELVIN GROVE LP3014/ BLAMEY ST LP663162 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 16114 LOC. VICTORIA PARK RD	LV CABLE TO MUSK AVE DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV POLE LABEL

LABEL SIZE	SITE LOCATION FOR ATTACHING OF LABEL	LABEL INFORMATION
300x100	POLE No. 3349 LOC. VICTORIA PARK RD	LV CABLE TO RAMSGATE ST SC663154 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.4 DWG.6448-A4

LV LABEL ORDERING SHEET:
LINK PILLAR (NEW TYPE)
STATION No: LP663162 LOCATION: BLAMEY ST KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
80x35	WB	5	TO KELVIN GROVE 171 SC4550/ DALLEY ST P3404/ RUSDEN ST P3408/ KELVIN GROVE RD LP3014 AND SERVICES
80x35	WB	5	TO SCHOOL RD P663157/ MUSK ST DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6453-A4

LV LABEL ORDERING SHEET:
LINK PILLAR (NEW TYPE)
STATION No: LP3014 LOCATION: KELVIN GROVE RD KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION	
80x35	WB	5	TO KELVIN GROVE 171 SC4550/ DALLEY ST P3404/ RUSDEN ST P3408/ BLAMEY ST LP663162 AND SERVICES	CHANGE LABEL
80x35	WB	5		

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6453-A4

LV LABEL ORDERING SHEET:
LINK PILLAR (NEW TYPE)
STATION No: LP1368954 LOCATION: VICTORIA PK RD KELVIN GROVE

LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
80x35	WB	5	TO VICTORIA PARK RD P3356 DIRECT
80x35	WB	5	TEE RAMSGATE SC663154/ MUSK ST DB663134 AND SERVICES

REFER: NETWORK LABELLING & SIGNAGE-SECT.3.5 DWG.6453-A4

Rev.	Date	Revision Details	By	Ver.	App.
G	9.12.02	11KV CABLE ROUTE CHANGED - SOME CONCRETE PIT CHANGES - UNDERGROUNDING HOUSE No6 MAIDSTONE ST		R. R.	
F	14.11.02	EARLY WORKS - RECOVERY OF BLAMEY STREET PMT		R. R.	
E	18.10.02	ADDITIONAL ROAD X-ING & PIT BETWEEN STN 38A & 38B 40mmHD S/L CONDUIT DELETED IN AREAS WHERE RATE 3 S/Ls ARE PROPOSED.		R. R.	
D	14.10.02	FINAL WP - ALLOTMENT BDY. CHANGERS		R. R.	
C	25.3.02	WP SUBMITTED TO ENERGEX		R. R.	
B	11.3.02	PRELIMINARY WORKS PLAN			
A	25.2.02	PRELIMINARY CONDUIT PLAN			

Client:
Queensland Government
Department of Housing
QUT

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1 using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions.
2 using the drawings or other data for any purpose not agreed to in writing by Connell Wagner.

Project Manager:
Project Services
Queensland Government
Department of Public Works

Principal Consultant
Connell Wagner

Connell Wagner Pty Ltd ABN 54 005 139 873 Telephone: +61 7 3246 1000
433 Boundary St. (Locked Bag 1800), Spring Hill Facsimile: +61 7 3246 1001
Queensland 4004 Australia Email: cwbne@conwag.com

KELVIN GROVE URBAN VILLAGE STAGE 1B - KELVIN GROVE

Drawn: ELAINE WILLIAMSON	Date: 25.2.02	Drawing Title: ELECTRICAL RETICULATION	CW Project No:
Designed: BILL WILLIAMSON	Date: 25.2.02		Scale: 1:1000
Checked	Date: 12.3.02	ENERGEX PROJECT No: D1800531	Drawing No: 2353-03G Rev
Approved RPEQ 2833	Date		SHEET 3 OF 7
Recommended Dept of Public Works	Date		

2b 1b 0 1b 2b 3b 4b 5b 10bms

A1

LIGHTING SCHEDULE METERED

LOCATION	STN No	SITE ID POLE No	POLE COMPONENTS: COMP I.D.	EXIST (m)	REC (m)	ERECT (m)	SLM OR IDN	DIST. FROM KERB OR PATH (m)	LUMINAIRE: COMP I.D.	EXIST (m)	RECOVER LUMINAIRE PATH (m)	RECOVER CUST	ERECT LUMINAIRE PATH (m)	ERECT CUST	OUTREACH BRACKET: SLM OR IDN	EXIST (m)	REC (m)	ERECT (m)	SLM OR IDN	MOUNT HT (m)	COORD E (m)	N (m)	REMARKS
McCASKIE PK	261					3.6 BPM		0.3					H70L3					-		3.6			
	262					3.6 BPM		0.3					H70L3					-		3.6			
	263					3.6 BPM		0.3					H70L3					-		3.6			
	264					3.6 BPM		0.3					H70L3					-		3.6			
	265					-		-					H250					-		0.0			UPLIGHTER
	266					-		-					H250					-		0.0			UPLIGHTER
	267					-		-					H250					-		0.0			UPLIGHTER
	268					-		-					H250					-		0.0			UPLIGHTER
	269																						NOT USED
	270					3.6 BPM		0.3					H70L3					-		3.6			
	271																						NOT USED
	272					-		-					H250					-		0.0			UPLIGHTER
	273					-		-					H250					-		0.0			UPLIGHTER
	274																						NOT USED
	275					3.6 BPM		0.3					H70L3					-		3.6			

A

UNDERGROUND CONDUIT SCHEDULE

LOCATION	STNs FROM - TO	CONDUIT LENGTH (m): 50mm HD	100mm HD	125mm HD	BENDS: 50mm HD <	50mm HD HD	50mm HD RAD	100mm HD <	100mm HD HD	100mm HD RAD	125mm HD <	125mm HD HD	125mm HD RAD	TRENCH & BACKFILL: LENGTH (m)	WIDTH (m)	DEPTH (m)	MODEL I.D.	MARKER TAPE	PLUGS	DRAW WIRE	KERB MARKERS	REMARKS
McCASKIE PK	277 - 278	5												5	0.3	0.7		5		7		
	278 - 261	150												150	0.3	0.7		150		152		
	263 - 275	15												15	0.3	0.7		15		17		USE COMMON TRENCH WHERE POSSIBLE
	278 - 273	150												150	0.3	0.7		150		152		USE COMMON TRENCH WHERE POSSIBLE
	278 - 280	135												135	0.3	0.7		135		137		USE COMMON TRENCH WHERE POSSIBLE
	278 - 266	160												160	0.3	0.7		160		162		USE COMMON TRENCH WHERE POSSIBLE

A

UNDERGROUND CABLE SCHEDULE

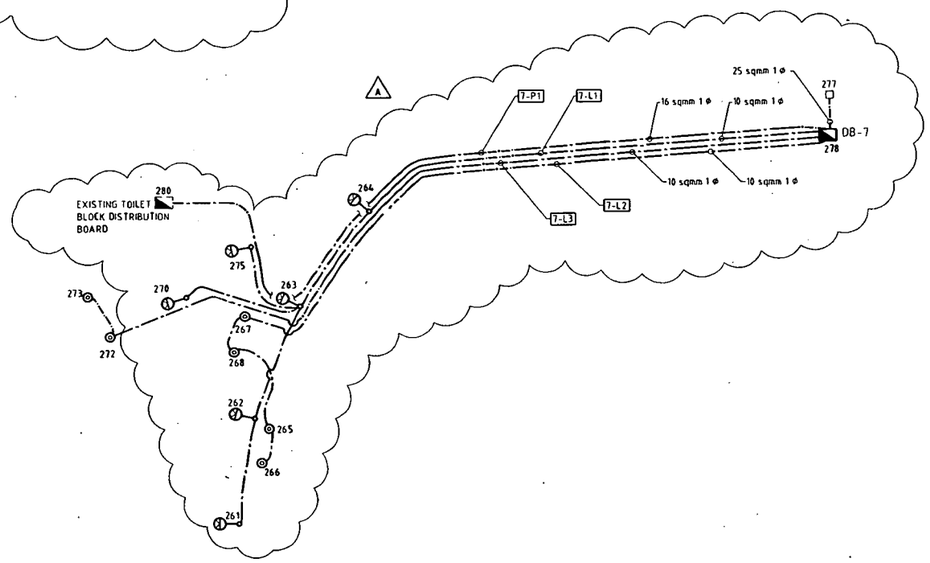
LOCATION	STNs FROM TO	VOLTS	EXIST	REC	INSTALL	SIZE & DESCRIPTION: 2C06	2C10	2C16	2C25	REMARKS
McCASKIE PK	277 - 278	240			X				5	
	278 - 261	240			X		150			
	263 - 275	240			X		15			
	278 - 273	240			X		150			
	278 - 280	240			X			135		
	278 - 266	240			X		160			

A

EQUIPMENT SCHEDULE

LOCATION	STN No./s	SITE I.D.	EXIST	REC	INSTALL	SIZE & DESCRIPTION	SLM or IDN	PLANT No	MODEL I.D.	QTY	REMARKS
McCASKIE PK	263				x	No 4 PIT				1	
	270				x	No 4 PIT				1	
	278				x	No 4 PIT				1	
	279				x	No 4 PIT				1	

A



S.L.D. -7
N.T.S

NOTES

1 REFER DRAWING E-005 FOR LEGEND & GENERAL NOTES.

FOR CONSTRUCTION

Rev.	Date	Revision Details	By	Ver.	App.
A	27.05.03	ISSUED FOR CONSTRUCTION	JAR		
01	24.01.03	TENDER ISSUE	JSB		

Client: Queensland Government, Department of Housing; QUT

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Project Manager: Project Services, Queensland Government, Department of Public Works

Principal Consultant: Connell Wagner
Connell Wagner Pty Ltd ABN 54 005 139 873 Telephone: +61 7 3246 1000
433 Boundary St. (Locked Bag 1800) Spring Hill Facsimile: +61 7 3246 1001
Queensland 4004 Australia Email: cwbne@conwag.com

Sub-Consultants: URS; Robby Russell; HUMPHREYS REYNOLDS PERKINS; HASSELL

kelvin grove urban village.

Drawn	Original signed by JSB	Date
Designed	Original signed by JKL	Date
Verified	Original signed by AWJ	Date
Approved	KJG	Date
Recommended	Dept. of Public Works	Date

Drawing Title: ELECTRICAL SERVICES McCASKIE PARK LIGHTING SHEET 3 OF 3

CW Project No: 065450BX
Scale: N.T.S A1
Drawing No: E-007 Rev: A

A1

NOTE:- ROAD LIGHTING CERTIFIED TO COMPLY WITH THE NOMINATED CATEGORIES OF AS/NZS 1158.1.1: (AND/OR AS/NZS 1158.3.1 AND/OR AS1158.1.1986), FOR LUMINAIRES AND LAMPS SUPPLIED UNDER ENERGEX CONTRACT DESI 31/98:

- INTERSECTION OF VICTORIA PARK RD & MUSK AVE	:	BCC STANDARD AS PER MIKE AGER FAX
- INTERSECTION OF VICTORIA PARK RD & BLAMEY ST	:	BCC STANDARD AS PER MIKE AGER FAX
- INTERSECTION OF VICTORIA PARK RD & CARRAWAY ST	:	BCC STANDARD AS PER MIKE AGER FAX
- MAIDSTONE ST	:	B2
- INTERSECTION OF BLAMEY ST & SCHOOL ST	:	BCC STANDARD AS PER MIKE AGER FAX

12

CERTIFIED RPEQ No. 1545
ROBIN RUSSELL AND ASSOCIATES PTY LTD
REG.PROF.Co.OF. QLD.No.207

Robin Russell & Associates Pty.Ltd.
UNDERGROUND CABLE CERTIFICATION

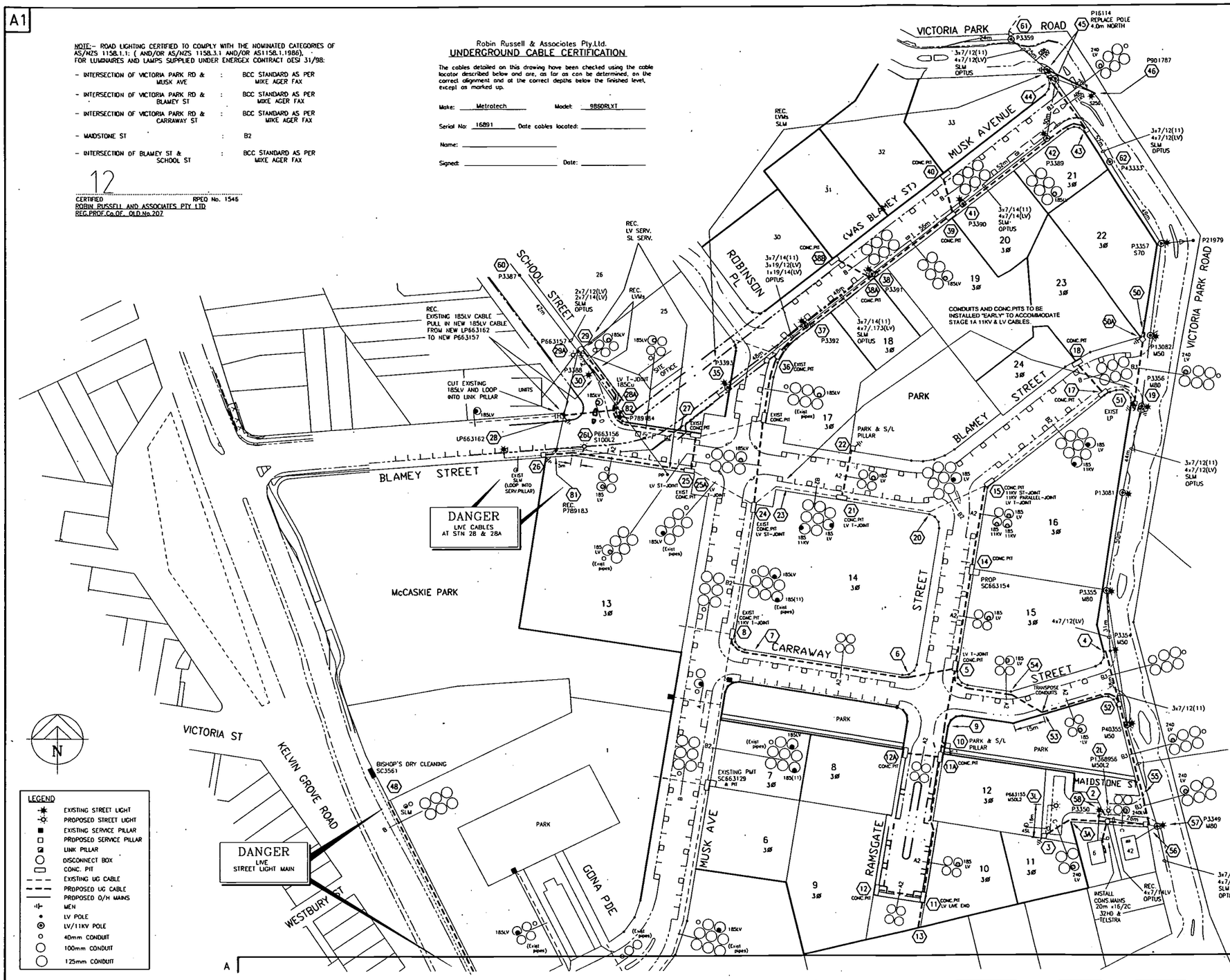
The cables detailed on this drawing have been checked using the cable locator described below and are, as far as can be determined, on the correct alignment and at the correct depths below the finished level, except as marked up.

Make: Metrotech Model: 9880RLXT

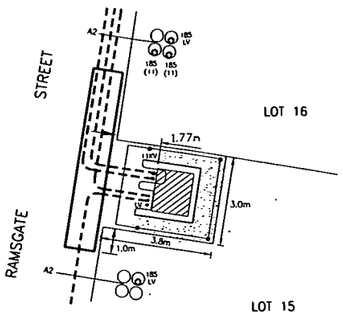
Serial No: 16891 Date cables located:

Name:

Signed: Date:



LEGEND
- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- EXISTING SERVICE PILLAR
- PROPOSED SERVICE PILLAR
- LINK PILLAR
- DISCONNECT BOX
- CONC. PIT
- EXISTING UG CABLE
- PROPOSED UG CABLE
- PROPOSED O/H MAINS
- MEN
- LV POLE
- LV/11KV POLE
- 40mm CONDUIT
- 100mm CONDUIT
- 125mm CONDUIT

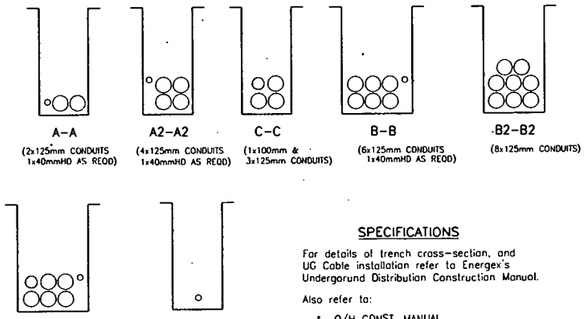


PROP RAMSGATE ST PMT SC663154
(LOCATED ON ELECT. EASEMENT 3.0m WIDE x 3.8m DEEP)

PMT SITE TO BE CONSTRUCTED BY ELECTRICAL CONTRACTOR TO ENERGEX UNDERGROUND DISTRIBUTION CONSTRUCTION MANUAL DWG Nos 7468-A4 AND 7771-A4.
BASE SLAB IS REQUIRED.

REFER TO DWG Nos 7478-A4 AND 7480-A4 FOR EARTHING DETAILS.

DETAIL 1



SPECIFICATIONS

For details of trench cross-section, and UG Cable installation refer to Energex's Underground Distribution Construction Manual.

Also refer to:
- O/H CONST. MANUAL
- PUBLIC LIGHTING MANUAL

TELSTRA INSTALLATION

Design and installation of Telstra's pipes and pits is by ALSTOM PTY LTD GLYNIS WARD - 3865 2605
Civil and electrical contractors shall coordinate with them in relation to the installation of Telstra pipes and pits in shored trenches, etc.

ON-SITE SERVICES CHECKS

The Contractor's attention is directed to the provisions of the General Specification under: "Care of Existing Services".

Sewerage and water plans for the new estate may be obtained of request from the Superintendent.

The Contractor shall request on-site identification and location of existing buried services from the Queensland Dial Before You Dig Services - telephone: 1100, fax: 1300 652 077. (A minimum of two days notice is required.)

NOTE:

11.0m LONG CONCRETE PITS TO BE BUILT BY THE CIVIL CONTRACTOR UNDER INSTRUCTION FROM THE CIVIL ENGINEERS AT STN Nos. 5,11,11A,12A,12,14,15,17,18,21,38A,38B, 39,40.

TARGET DATES:
MATERIALS REQD - EARLY MAR 2003
SUPPLY REQD - END APL 2003

PMT COLLECTION DATE:

AUTHOR	DRAWING	DWG. NO.	REV. NO.	DATE
CONNELL WAGNER	BASE PLAN	06542Dbx		22.8.02

Rev.	Date	Revision Details	By	Ver.	App.
G	9.12.02	11KV CABLE ROUTE CHANGED - SOME CONCRETE PIT CHANGES - UNDERGROUNDING HOUSE No6 MAIDSTONE ST		R.R.	
F	14.11.02	EARLY WORKS - RECOVERY OF BLAMEY STREET PMT		R.R.	
E	18.10.02	ADDITIONAL ROAD X-ING & PIT BETWEEN STN 38A & 38B 40mmHD S/L CONDUIT DELETED IN AREAS WHERE RATE 3 S/Ls ARE PROPOSED.		R.R.	
D	14.10.02	FINAL WP - ALLOTMENT BDY. CHANGERS		R.R.	
C	25.3.02	WP SUBMITTED TO ENERGEX		R.R.	
B	11.3.02	PRELIMINARY WORKS PLAN			
A	25.2.02	PRELIMINARY CONDUIT PLAN			

Client: Queensland Government Department of Housing / QUT

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Project Manager: Project Services, Queensland Government, Department of Public Works

Principal Consultant: Connell Wagner

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Queensland 4004 Australia Email: cwbne@conwag.com

Sub-Consultants :

KELVIN GROVE URBAN VILLAGE STAGE 1B - KELVIN GROVE

Drawn ELAINE WILLIAMSON	Date 25.2.02	Drawing Title: ELECTRICAL RETICULATION	CW Project No
Designed BILL WILLIAMSON	Date 25.2.02		
Certified	Date 12.3.02	ENERGEX PROJECT No. D1800531	Scale 1:1000
Approved RPEQ0 2833	Date		Drawing No. 2353-01G Rev. SHEET 1 OF 7
Recommended Dept. of Public Works	Date		

Connell Wagner Pty Ltd
ABN 54 005 139 873
433 Boundary Street
(Locked Bag 1800)
Spring Hill
Queensland 4004 Australia

Telephone: +61 7 3246 1000
Facsimile: +61 7 3246 1001
Email: cwbne@conwag.com
www.conwag.com

Connell Wagner

Project: Kelvin Grove Urban Village					Reference: 065430CC
To:	Copy:	Circulate	Name:	Organisation:	Location/Facsimile:
✓			Kerry Peters	BCC - Trunk Mains Group	3407 8471
	✓		Kok Yeo	BCC Compliance North	3407 0750
		✓	MDR/JFN	Connell Wagner	Brisbane
	✓		David Makinson	Civdec Constructions	3832 4325
From: Tanya Sideris				Date: 24 September 2002	Total Pages: 2

Subject: Cathodic Protection in Blarney Street

Kerry

Further to our discussions regarding the relocation of the existing cathodic protection system in Blarney Street, attached is a plan that indicates the existing McCaskie Park boundary and the new boundary for a new lot excised from McCaskie Park (relative to Blarney Street). The new lot boundary has moved (east) approximately 65-70m from the old boundary. As part of the works, we will provide a surveyed stake to locate the boundary on site.

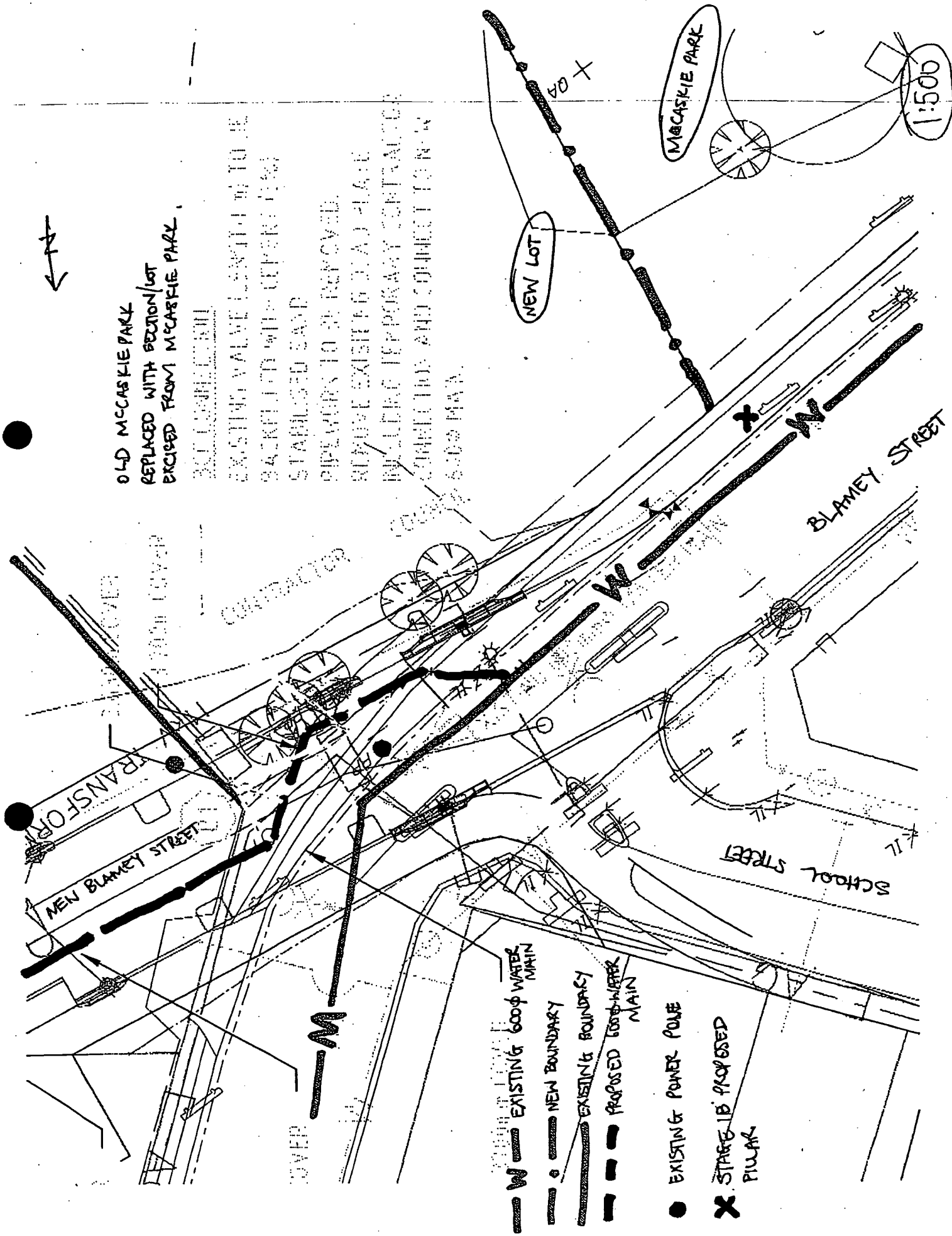
As you are aware, the existing Energex power pole is to be eliminated in favour of proposed underground electricity. Hence, an alternative power supply is required for your system. We have indicated on the attached plan that a new pillar will be located adjacent the new lot boundary. The pillar will be built in Stage 1B. Therefore, there will be a time period between removal of pole and installation of pillar, which suggests that the cathodic protection system will be temporarily disconnected until installation of the new source and relocation of the cathodic protection system.

We will advise the time at which the power pole is due to be removed, installation of the new water main and installation of the new pillar. In the meantime, we advise organising the necessary BCC requirements to ensure a smooth transition of installation for the new protection system. Should you have any queries, please do not hesitate to contact myself (3246 1050) or Mark Reardon (3246 4341).

Regards

Tanya Sideris
Engineer

LES,
CAN YOU DO SOME APPROXIMATE $ TO DO THE ABOVE SO WE CAN ASK FOR AN ORDER FROM TANYA
TA
KERRY


OLD MCCASKIE PARK
REPLACED WITH SECTION/LOT
EXCISED FROM MCCASKIE PARK.
NEW LOT
MACASKIE PARK
1:500
BLAMEY STREET
SCHOOL STREET
TRANSFORM
NEW BLAMEY STREET
EXISTING 600ϕ WATER MAIN
NEW BOUNDARY
EXISTING BOUNDARY
PROPOSED 600ϕ WATER MAIN
EXISTING POWER POLE
STAGE 1B PROPOSED PILLAR

From: Kerry McGovern
To: John Whitbourne
Date: 10/9/03 11:07am
Subject: Kelvin Grove Urban Village Cathodic Protection to BCC Water Main

John,
Greg Ogilvie recently did some work in regards to the above site on BCC watermains. As part of that project, some of the associated cathodic protection had to be relocated as it was located in parts of the redevelopment.
I have been in contact with Connell Wagner who are heading the development regarding a quote I gave them some time ago to reinstall the cathodic protection. This was approx $11k. Connell Wagners reply was to do the work under the work order for Greg Ogilvies work.
Can you advise if we (M&E) can book to this work order and if so what is the number?
Thanks,
Kerry McGovern

CC: Les Greaves; Phil Carkeet

Connell Wagner Pty Ltd
ABN 54 005 139 873
433 Boundary Street
(Locked Bag 1800)
Spring Hill
QLD 4004 Australia

Telephone: +61 7 3246 1000
Facsimile: +61 7 3246 1001
Email: cwbne@conwag.com
www.conwag.com

2 October 2003

The General Manager
Brisbane City Council
GPO Box 1434
BRISBANE QLD 4001

Attention: Mr Kerry McGovern
Brisbane Water

Dear Sir

Kelvin Grove Urban Village
Cathodic Protection to BCC Watermain

Project Services has approved the proposal outlined in your facsimile of 21 August 2002. (Refer copy of approval attached) We propose to do this work under the Work Order for the 600 dia watermain (please refer to Mr Greg Ogilvie of Brisbane Water).

As indicated in our correspondence of August 2002, for construction to proceed you require one (1) weeks notice. It should be realized that the civil contractor, Civdec Construction Pty Ltd, has programmed to complete earthworks in this area. Property pegs have been placed Wednesday 30 September 2003. Could you please advise when you can be on site to undertake these works.

Should you have any questions, please contact me.

Yours faithfully

Mark Reardon
Associate

cc: Paul Krautz, Project Services
Michael Gilligan, Rider Hunt

BRISBANE WATER - ENGINEERING SERVICES
QUOTATION FORM

Company / Client Name	CONNELL WAGNER	Date	18-10-02	Quote No.	
		Phone		Prepared by	L. GREAVES
Contact Name	TANYA SIDERIS	No of Pages		Sent by fax / phone / other	
Job Description	REPOSITION BLAMEY ST RECTIFIER & ANODE BED.			Accepted	YES / NO

Item No	MATERIALS OR LABOUR REQUIRED	QUANTITY (No or Hrs)	SUPPLIER	UNIT COSTING	TOTAL COST + O/H%
1	1500 x 75 SILICON IRON ANODES	4	CORR. SPECIALISTS	$315.00	$1260.00
2	TELSTRA PITS & LIDS	5	BWES	$50.00	$250.00
3	16mm SDI CABLE BLACK	200M.	OLEX	$100.00	$200.00
4	TRENCHER 8hrs + 1hr travel	9	CITY FLEET	$70.00	$630.00
5	BORER FOR ANODES "	9	J.M°CALLUM	$70.00	$630.00
6	REMOVE SYSTEM. 8½ hrs / 1 PERSON	8½	BWES	$50.00	$450.00
7	REINSTALL SYSTEM 1 WK. / 2 PERSON		BWES	$1000 PER DAY	$5000.00
8	ENERGEX SUPPLY	1	ENERGEX	$229.00	$229.00
9.	MATERIAL (CONDUIT, CEMENT, ETC	Misc	BWES	$550.00	$550.00

Form F 3-2E / Revision 0 / 25th August 1997

$9199.00

+ 10% OH = $10,000.00

Brisbane Water Engineering Services

CP Form No. 16

Electrical Engineering Unit

Site Plan Drawing Sheet

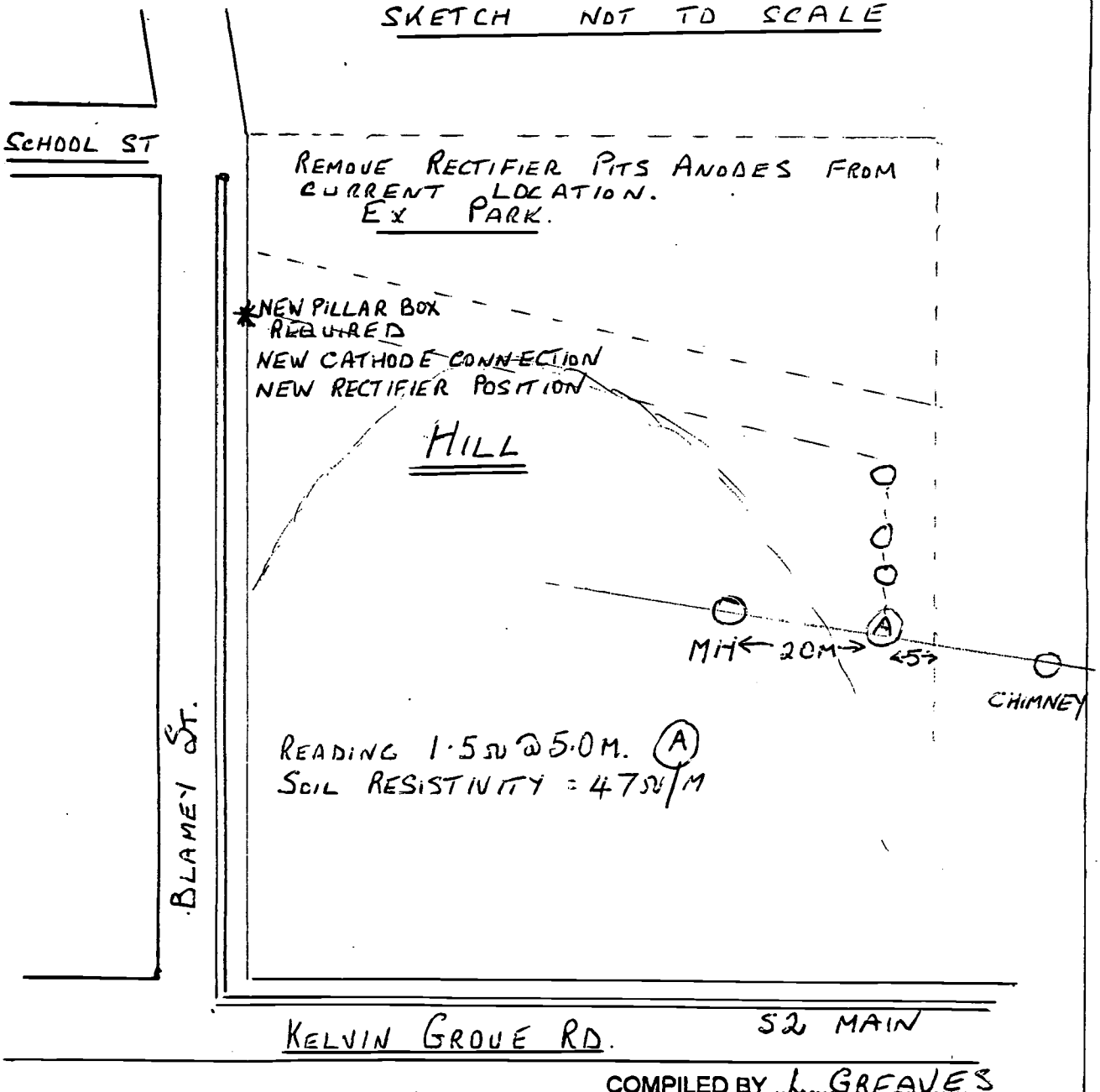
Project S2 ASHGROVE TO CITY

Date 26-8-2002

UBD MAP 159 J4 OR MAP 18 B7

PROPOSED RELOCATION OF ANODE BED M°CASKIE PARK.

SKETCH NOT TO SCALE



COMPILED BY L. GREAVES

Revision 09/28/95

Les Greaves - Blamey Street Kelvin Grove CP system.

From: Kerry McGovern
To: Jeff Say; Les Greaves
Date: 17/03/2003 11:38 AM
Subject: Blamey Street Kelvin Grove CP system.

Rang Tanya from O'Connel Wagner today regarding above. She will follow up and get back to me about where the CP rectifier is and when the further works will take place. Will update you ASAP.
Kerry

Les Greaves - Kelvin Grove Urban Village - reconnection of cathodic protectionsystem Blamey Street

From: <siderist@conwag.com>
To: <ceesbw@brisbane.qld.gov.au>
Date: 17/03/2003 12:57 PM
Subject: Kelvin Grove Urban Village - reconnection of cathodic protectionsystem Blamey Street
CC: <reardonm@conwag.com>

Project Code : 065430cc

Attention - Kerry McGovern

Kerry

Confirming our conversation earlier today -

Reconnection of 600 water main in Blamey Street by Brisbane Water approximately 1st week April at earliest.

Installation of pillar in Blamey Street approximately June 2003

The switchboard is currently held on site by Civdec (main Contractor). You can contact Kerry Johns (project supervisor) on 0418 886 879 to arrange to pick it up.

Please call Civdec (Kevin Bell 3832 2728 Site Engineer or David Makinson 3832 2728 Project Manager) to monitor their progress and coordinate site works.

Regarding quotation, could you please send through another copy of your quotation and I will follow up our end regarding payment.

I will be on leave for 12 months from 31 March, so if you have any queries, please call Mark Reardon (3246 4341).

Regards

Tanya Sideris
ph + 61 07 3246 1050
fax + 61 07 3246 1002
siderist@conwag.com

Blamey St.

Dec 02

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Mar. 03

O. O. S.

Brisbane Water

BRISBANE WATER - ENGINEERING SERVICES

BACKLOG REPORT FOR EEU FOR PERIOD 01-Jul-2002 to 07-Oct-2003

Brisbane City

08-Oct-2003 13:26

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For Team: EEU BWES - Elect Engineering Unit

Worder	Description	Status	Work	Problem	EstLabHrs	ActLabHrs	Reported	TgtStart	ActStart	TgtComp	Freq
GRAND TOTAL - BACKLOG WORK ORDERS =		**290**		**Total Hours:**	**1023.90**	**917.75**					