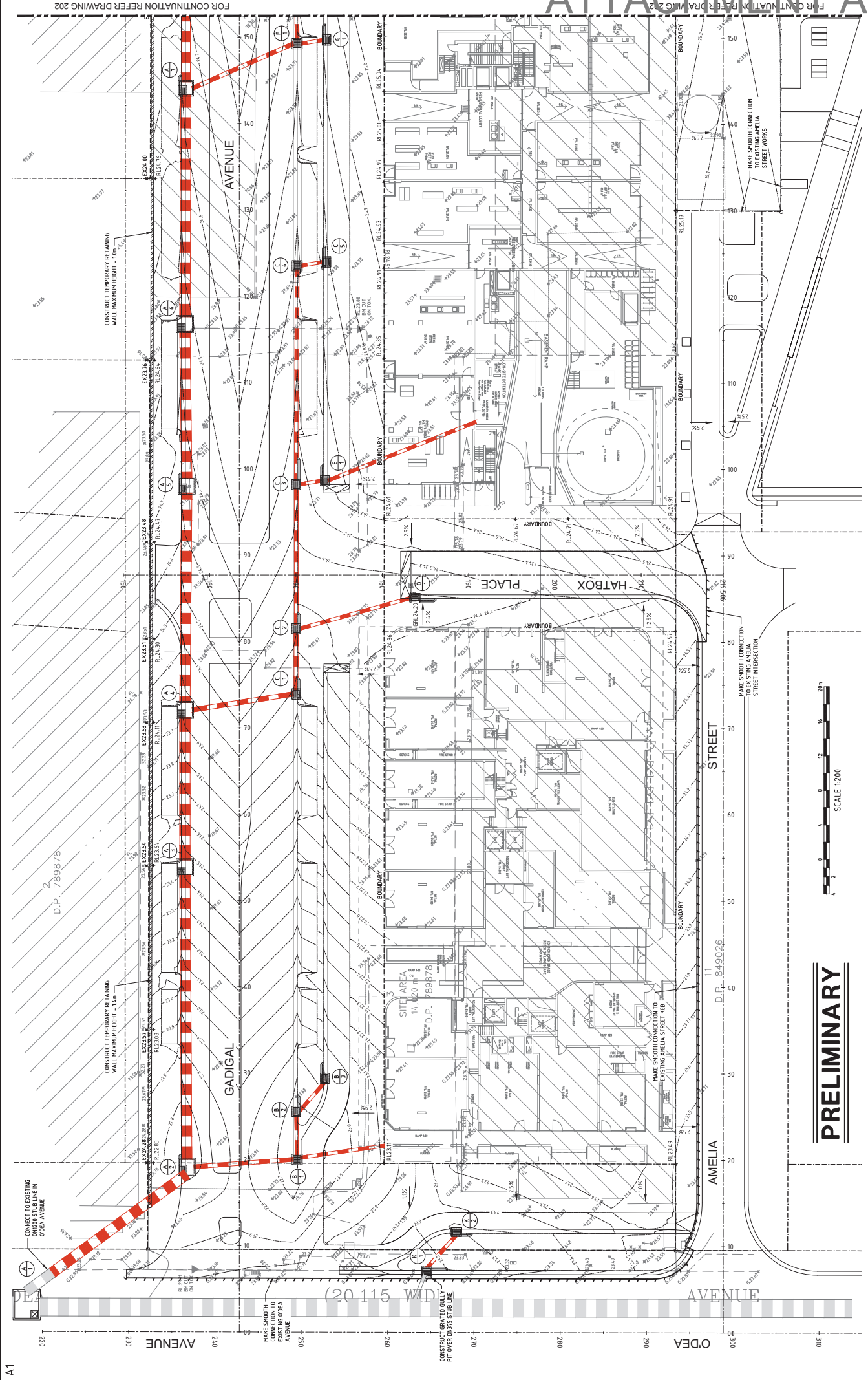


**ATTACHMENT**

**WORKS WITHIN PUBLIC DOMAIN  
D/2015/670**

**52 O'DEA AVENUE WATERLOO**



SCALE 1:200

**PRELIMINARY**

REV.	BS.	DATE	DESCRIPTION
P4	W.K.	23/11/15	A.H. 23/11/15 COUNCIL COMMENTS
P3	W.K.	27/07/15	A.H. 27/07/15 PRELIMINARY ISSUE
P2	W.K.	10/03/15	A.H. 10/03/15 PRELIMINARY ISSUE
P1	W.K.	04/02/15	A.H. 04/02/15 PRELIMINARY ISSUE

REQ'D BY	W.MARTIN	DATE	03/02/15
VERIFIED	A.MANCONE <td>DATE <td>03/02/15</td> </td>	DATE <td>03/02/15</td>	03/02/15
DRAWN	W.MARTIN <td>SCALE @ A1</td> <td>1:200</td>	SCALE @ A1	1:200

STATUS	PRELIMINARY	DRAWING NO.	01362_201	REVISION	P4
GENERAL ARRANGEMENT PLAN - SHEET 1					
52 O'DEA AVENUE, WATERLOO					

CIVIL AND HYDRAULIC ENGINEERING DESIGN AND CONSULTING ENGINEERS  
 SUITE 501 HANCOCK STREET  
 BALMAIN HILLS NSW 2153  
 PHONE: (02) 9480 3100  
 FAX: (02) 9480 3100  
 AFB 21 131 134 240

**CONSTRUCTORS**

A1

# ATTACHMENT A



## LEGEND

BOUNDARY	
CONTROL	ROAD CONTROL LINE
K&G	KERB & GUTTER (K&G)
K.O.	KERB ONLY (K.O.)
D.C.	DISHED CROSSING (D.C.)
M.K.	MOUNTABLE KERB (M.K.)
V.C.	VEHICULAR CROSSING (V.C.)
—	FINISHED SURFACE CONTOUR
—	STORMWATER DRAINAGE LINE
—	EXISTING STORMWATER DRAINAGE LINE
GP	STORMWATER DRAINAGE PITS
GP	STORMWATER DRAINAGE LINE LETTER
GP	STORMWATER STRUCTURE NUMBER

**PRELIMINARY**

TUNG HOP STREET

MURRAY STREET

STREET

AMELIA ST

AMELIA ST

AMELIA ST

AMELIA ST

AMELIA ST

AMELIA ST

ARCHIBALD AVENUE

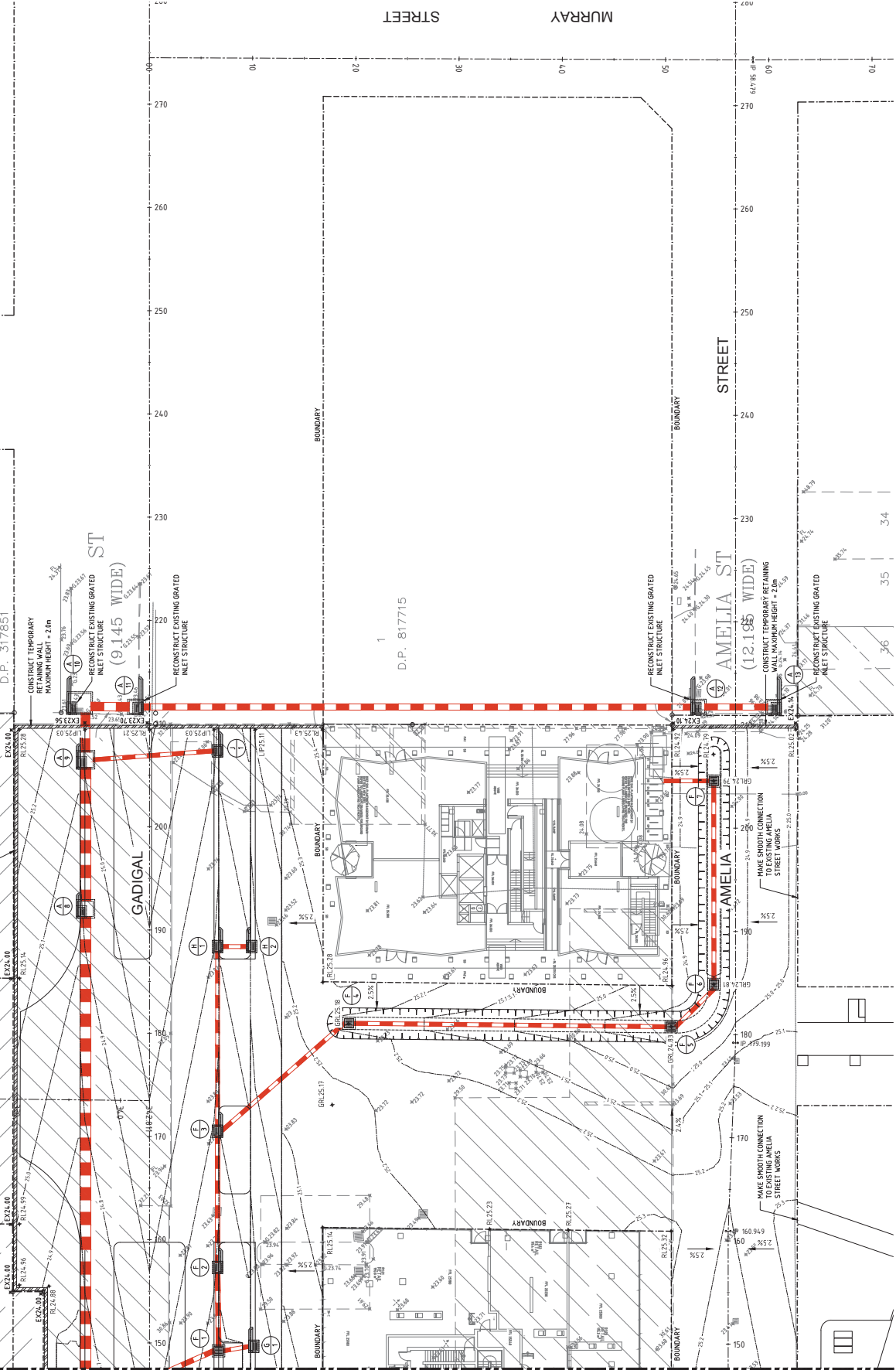
GADICAL ST

GADICAL ST

GADICAL ST

GADICAL ST

GADICAL ST



FOR CONTINUATION REFER DRAWING 201

FOR CONTINUATION REFER DRAWING 201

52 O'DEA AVENUE, WATERLOO

GENERAL ARRANGEMENT PLAN - SHEET 2

DATE: 03/02/15  
 DATE: 03/02/15  
 SCALE @ A1: 1:200

DESIGNED: W. MARTIN  
 VERIFIED: A. MANTONE  
 DRAWN: W. MARTIN

CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY MANAGEMENT  
 SUITE 511 HANBURY STREET  
 BALDWIN HILLS NSW 2153  
 PHONE: (02) 9480 3100  
 FAX: (02) 9480 3100  
 ABR 21 131 34 240



DATE: 03/02/15  
 DATE: 03/02/15  
 SCALE @ A1: 1:200

DESIGNED: W. MARTIN  
 VERIFIED: A. MANTONE  
 DRAWN: W. MARTIN

CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY MANAGEMENT  
 SUITE 511 HANBURY STREET  
 BALDWIN HILLS NSW 2153  
 PHONE: (02) 9480 3100  
 FAX: (02) 9480 3100  
 ABR 21 131 34 240



REV.	BS.	DATE	VER.	DATE	DESCRIPTION
P4	W.K.	23/11/15	A.H.	23/11/15	COUNCIL COMMENTS
P3	W.K.	27/07/15	A.H.	27/07/15	PRELIMINARY ISSUE
P2	W.K.	10/03/15	A.H.	10/03/15	PRELIMINARY ISSUE
P1	W.K.	04/02/15	A.H.	04/02/15	PRELIMINARY ISSUE

STATUS: PRELIMINARY DRAWING NO: 01362\_202 REVISION: P.4

THIS DRAWING AND DESIGN ARE THE PROPERTY OF CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY MANAGEMENT. NO PART OF THIS DRAWING OR DESIGN SHALL BE REPRODUCED OR USED WITHOUT THE WRITTEN CONSENT FROM CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY MANAGEMENT PTY. LTD.

DATE: 03/02/15  
 DATE: 03/02/15  
 SCALE @ A1: 1:200

DESIGNED: W. MARTIN  
 VERIFIED: A. MANTONE  
 DRAWN: W. MARTIN



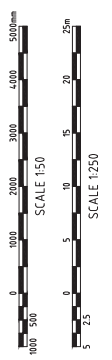
DATE: 03/02/15  
 DATE: 03/02/15  
 SCALE @ A1: 1:200

DESIGNED: W. MARTIN  
 VERIFIED: A. MANTONE  
 DRAWN: W. MARTIN

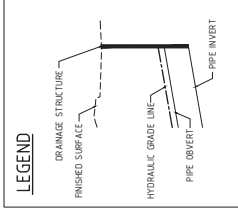
CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY MANAGEMENT  
 SUITE 511 HANBURY STREET  
 BALDWIN HILLS NSW 2153  
 PHONE: (02) 9480 3100  
 FAX: (02) 9480 3100  
 ABR 21 131 34 240



REV.	BS.	DATE	VER.	DATE	DESCRIPTION
P4	W.K.	23/11/15	A.H.	23/11/15	COUNCIL COMMENTS
P3	W.K.	27/07/15	A.H.	27/07/15	PRELIMINARY ISSUE
P2	W.K.	10/03/15	A.H.	10/03/15	PRELIMINARY ISSUE
P1	W.K.	04/02/15	A.H.	04/02/15	PRELIMINARY ISSUE



# PRELIMINARY



Station	Chainage	Flow (l/s)	Velocity (m/s)	Depth (m)	Invert Level	Surface Level	Grade (%)	Material
A/1	0.00	10.64	0.74	22.52	20.15	20.15	1.0%	18m LtrLri
A/2	23.49	8.97	0.67	22.52	20.15	20.15	1.3%	18m LtrLri
A/3	58.08	9.80	0.67	22.60	20.92	20.92	0.5%	Chambered
A/4	76.42	9.93	0.62	22.64	21.01	21.01	0.5%	Chambered
A/5	102.39	9.93	0.62	22.72	21.12	21.12	0.5%	18m LtrLri
A/6	121.11	9.93	0.62	22.74	21.34	21.34	0.5%	18m LtrLri
A/7	148.41	9.93	0.62	22.79	21.52	21.52	0.5%	18m LtrLri

### LINE A

Station	Chainage	Flow (l/s)	Velocity (m/s)	Depth (m)	Invert Level	Surface Level	Grade (%)	Material
A/7	0.00	8.98	0.58	22.93	20.38	20.38	0.5%	18m LtrLri
A/8	196.40	8.52	0.57	23.02	20.87	20.87	0.5%	18m LtrLri
A/9	200.84	8.50	0.57	23.14	20.92	20.92	0.5%	18m LtrLri
A/10	216.01	8.50	0.57	23.27	21.01	21.01	0.5%	3.6m LtrLri
A/11	220.85	8.50	0.57	23.34	21.01	21.01	0.5%	3.6m LtrLri

### LINE B

Station	Chainage	Flow (l/s)	Velocity (m/s)	Depth (m)	Invert Level	Surface Level	Grade (%)	Material
A/2	0.00	22.68	1.29	22.58	21.37	21.37	1.0%	18m LtrLri
A/12	275.40	23.95	1.15	23.71	23.71	23.71	1.0%	3.0m LtrLri
A/13	292.69	24.12	1.07	24.11	24.11	24.11	1.0%	3.0m LtrLri
B/1	13.89	22.60	1.11	22.60	22.60	22.60	1.0%	900GSP
B/2	18.39	22.65	1.02	22.61	22.61	22.61	1.0%	18m LtrLri
B/3	23.45	22.79	1.06	22.63	22.63	22.63	1.0%	18m LtrLri

### LINE B

1:250(HI & 150VI)

52 O'DEA AVENUE, WATERLOO

STORMWATER PIPE PROFILES  
FOR 20YR ARI - SHEET 1

STATUS: PRELIMINARY DRAWING NO: 01362\_621 REVISION: P3

REV	DATE	DESCRIPTION
P3	23/11/15	A.H. 23/11/15 COUNCIL COMMENTS
P2	10/08/15	A.H. 10/08/15 "20YR ARI" ADDED TO TITLES
P1	27/07/15	A.H. 27/07/15 PRELIMINARY ISSUE

**CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY CONSULTANTS**  
11 - 13 BROOKHOLLOW AVE  
BALLSHAM HILLS NSW 2153  
PHONE: (02) 9480 3100  
FAX: (02) 9480 3100  
WWW.CANDH.COM.AU

REVISION	DATE	BY	APP'D
DESIGNED	27/07/15	W.MARTIN	
VERIFIED	27/07/15	A.MANCONE	
DRAWN		W.MARTIN	

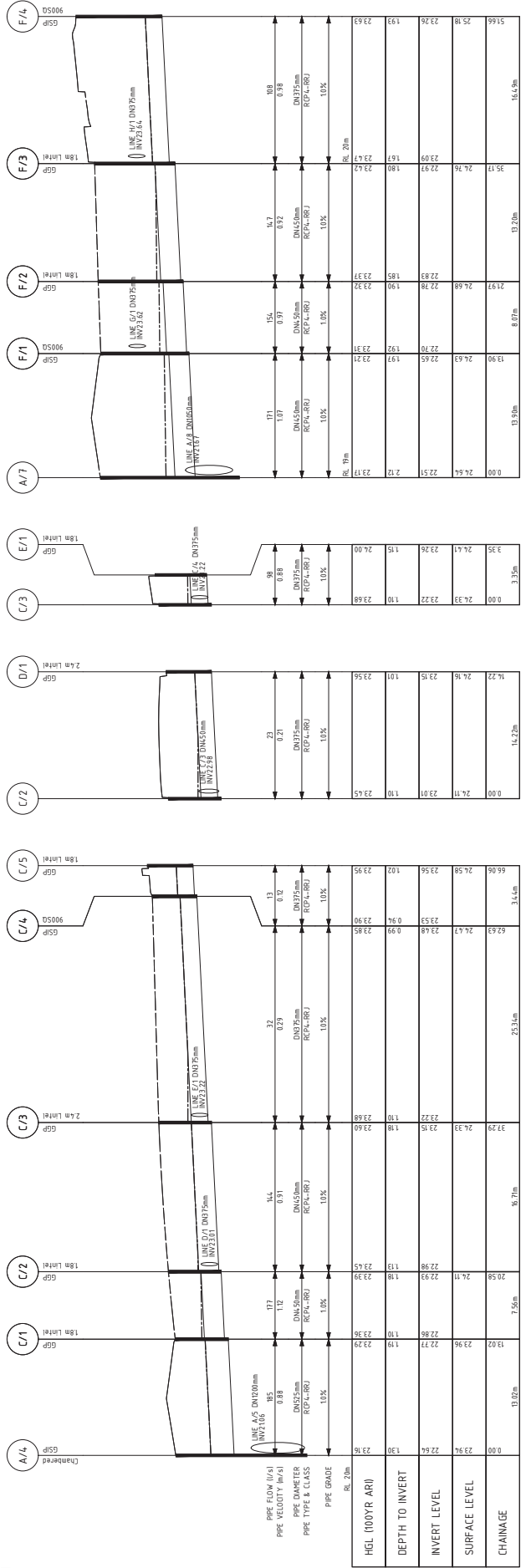
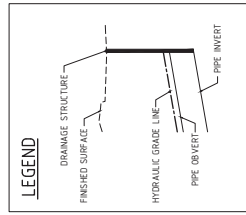
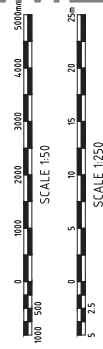
REVISION	DATE	DESCRIPTION
AS NOTED		

REVISION	DATE	DESCRIPTION
AS NOTED		

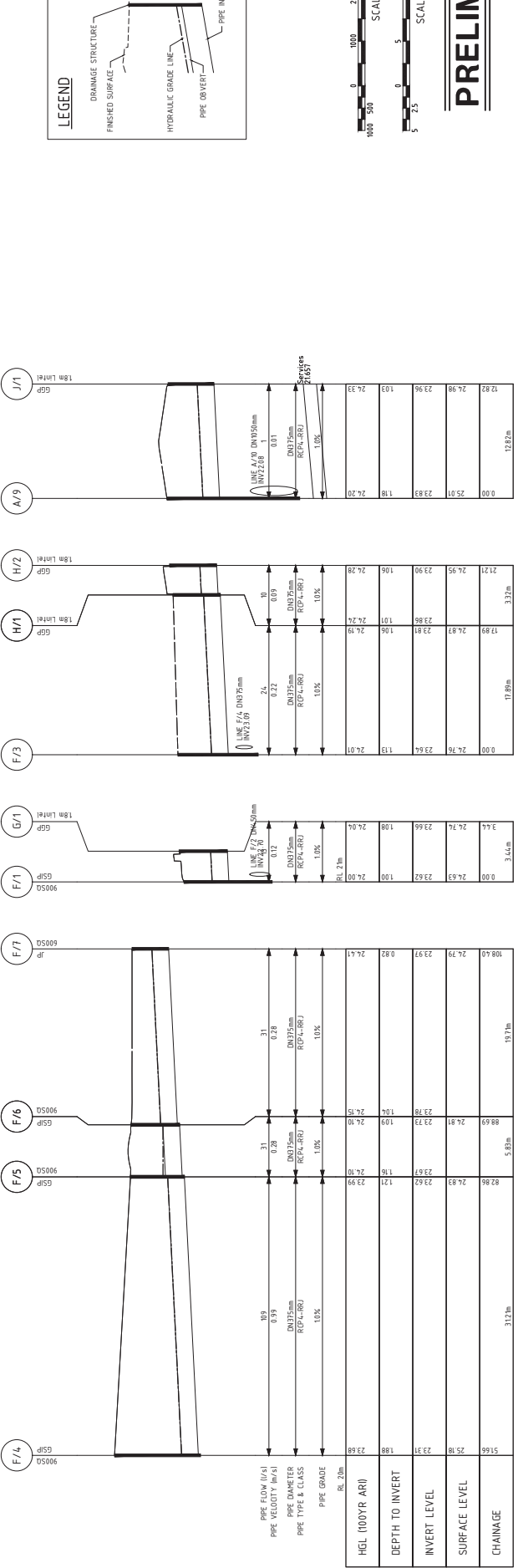
REVISION	DATE	DESCRIPTION
AS NOTED		

# ATTACHMENT A

## PRELIMINARY



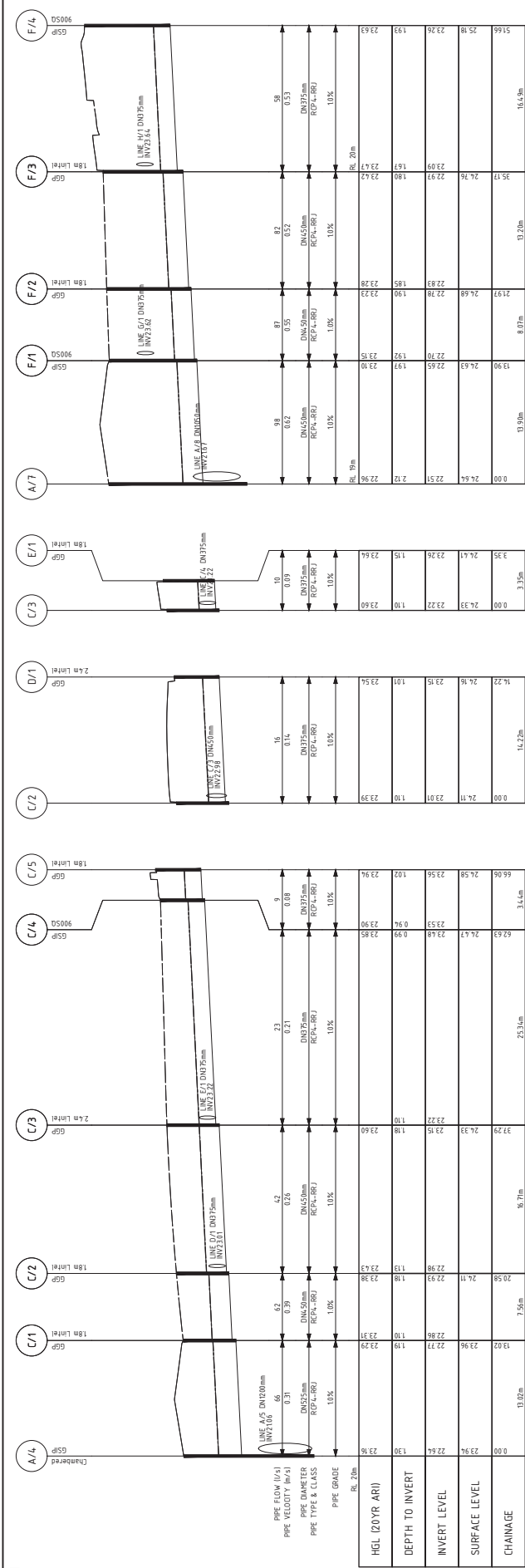
LINE	Station	HGL (100YR ARI)	DEPTH TO INVERT	INVERT LEVEL	SURFACE LEVEL	CHAINAGE
A	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
B	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
C	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
D	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
E	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
F	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
G	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
H	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
I	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
J	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m



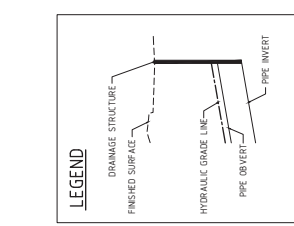
LINE	Station	HGL (100YR ARI)	DEPTH TO INVERT	INVERT LEVEL	SURFACE LEVEL	CHAINAGE
A	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
B	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
C	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
D	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
E	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
F	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
G	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
H	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
I	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m
J	0+00	24.64	1.30	23.34	24.64	0.00
	8+19m	23.17	1.00	22.17	23.17	8.19m

52 O'DEA AVENUE, WATERLOO		DATE	10/08/15
STORMWATER PIPE PROFILES FOR 100YR ARI - SHEET 2		DATE	10/08/15
STATUS	PRELIMINARY	SCALE @ A1	AS NOTED
DRAWING NO.	01362_626	DESIGNED BY	W.MARTIN
REVISION	P2	CHECKED BY	A.MANCONE
CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY CONSULTANTS		DRAWN BY	W.MARTIN
11-13 BROADHOLLOW AVE. BALDWIN HILLS NSW 2153		THIS DRAWING AND DESIGN IS THE PROPERTY OF CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY CONSULTANTS. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. NO PART OF THIS DRAWING OR DESIGN SHALL BE REPRODUCED OR USED WITHOUT THE WRITTEN CONSENT FROM CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY CONSULTANTS PTY. LTD.	
REV.	DATE	DESCRIPTION	
P2	10/08/15	A.M.	23/11/15 COUNCIL COMMENTS
P1	10/08/15	A.M.	10/08/15 PRELIMINARY ISSUE

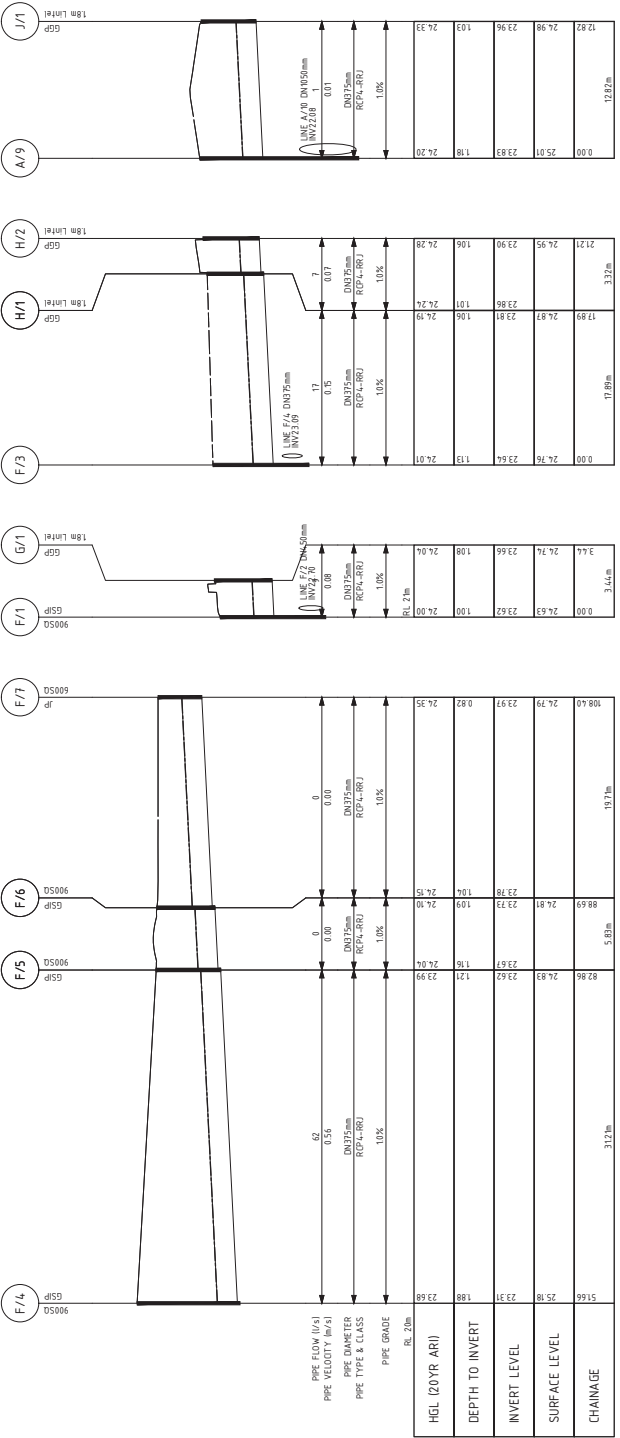
# ATTACHMENT A



LINE A	LINE B	LINE C	LINE D	LINE E	LINE F
13.98	21.97	23.26	23.54	23.54	23.26
24.53	24.66	24.41	24.16	24.16	24.76
22.51	22.78	23.01	23.01	23.22	22.97
22.96	23.23	23.39	23.39	23.60	23.42
22.96	23.23	23.39	23.39	23.60	23.42
22.51	22.78	23.01	23.01	23.22	22.97
22.96	23.23	23.39	23.39	23.60	23.42
22.96	23.23	23.39	23.39	23.60	23.42
22.51	22.78	23.01	23.01	23.22	22.97
22.96	23.23	23.39	23.39	23.60	23.42



**PRELIMINARY**



LINE G	LINE H	LINE I	LINE J
13.98	21.97	23.26	23.26
24.53	24.66	24.41	24.41
22.51	22.78	23.01	23.01
22.96	23.23	23.39	23.39
22.96	23.23	23.39	23.39
22.51	22.78	23.01	23.01
22.96	23.23	23.39	23.39
22.96	23.23	23.39	23.39
22.51	22.78	23.01	23.01
22.96	23.23	23.39	23.39

**PRELIMINARY**

REV	BY	DATE	DESCRIPTION
P1	W.K.	27/07/15	PRELIMINARY ISSUE
P2	W.K.	10/08/15	"20YR ARI" ADDED TO TITLES
P3	W.K.	23/11/15	COUNCIL COMMENTS

REVISED	DATE	BY	SCALE
AS NOTED	27/07/15	W.MARTIN	A1
W.MARTIN	27/07/15	A.MANCONE	
W.MARTIN	27/07/15	W.MARTIN	

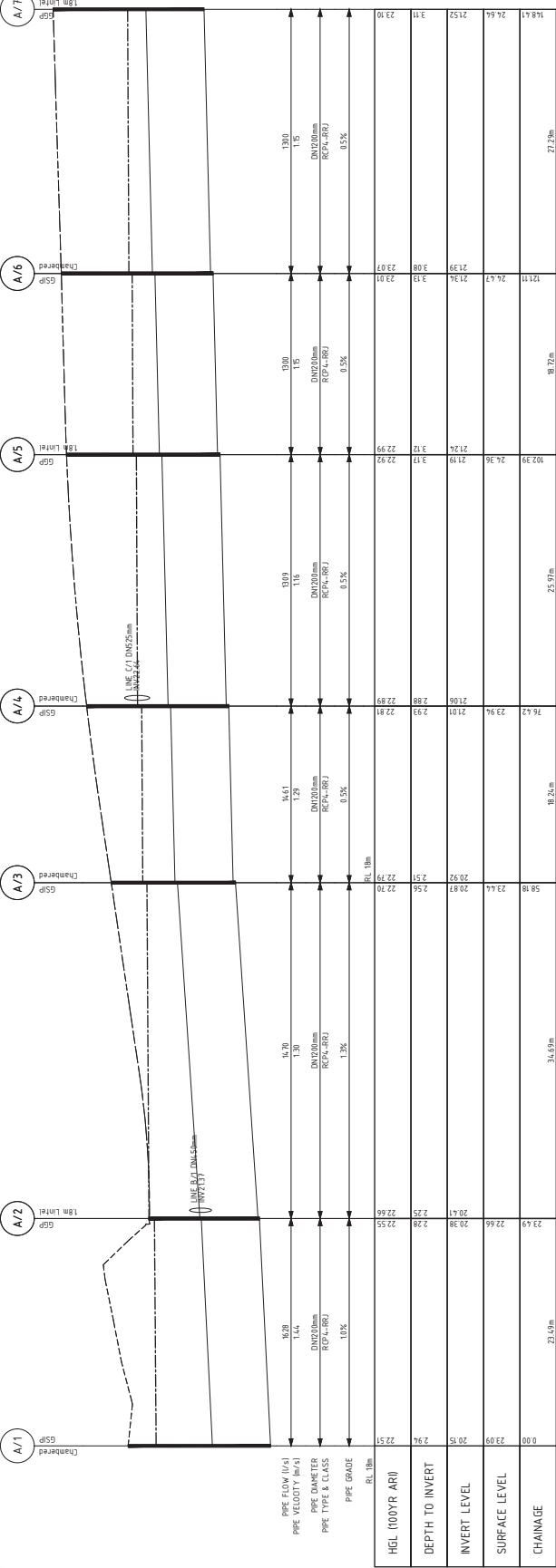
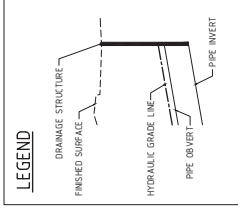
CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY CONSULTANTS  
 17-19 BROOKHOLLOW AVE  
 BALLSHAM HILLS NSW 2153  
 PHONE: (02) 9480 3100  
 FAX: (02) 9480 3109  
 ABR 21 131 34 240

52 O'DEA AVENUE, WATERLOO	27/07/15
STORMWATER PIPE PROFILES FOR 20YR ARI - SHEET 2	

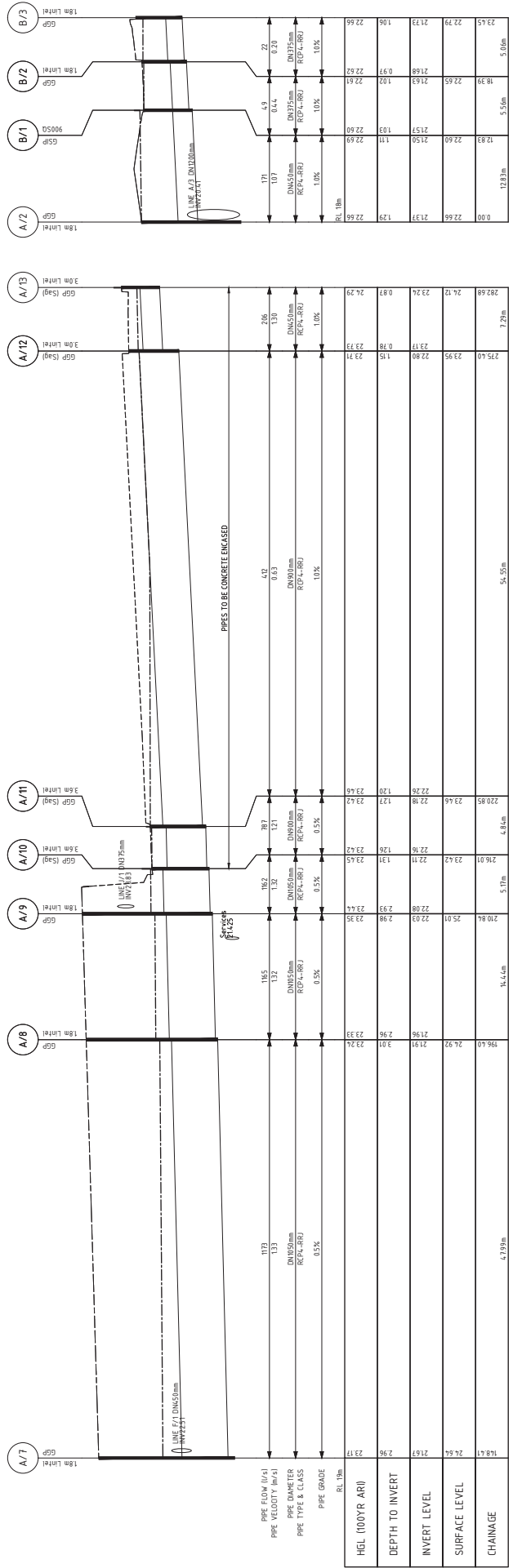
# ATTACHMENT A



**PRELIMINARY**



**LINE A**  
1250(H) & 150(V)



**LINE B**  
1250(H) & 150(V)

REV.	BS.	DATE	DESCRIPTION		
P2	W.K.	23/11/15	A.M.	23/11/15	COUNCIL COMMENTS
P1	W.K.	10/08/15	A.M.	10/08/15	PRELIMINARY ISSUE

REVISION	DATE	BY	DESCRIPTION
10/08/15	W.MARTIN	DATE	10/08/15
10/08/15	A.MANCONE	DATE	10/08/15
AS NOTED	W.MARTIN	SCALE @ A1	AS NOTED

52 O'DEA AVENUE, WATERLOO	10/08/15	W.MARTIN	DATE
STORMWATER PIPE PROFILES FOR 100YR ARI - SHEET 1	10/08/15	A.MANCONE	DATE
PRELIMINARY	10/08/15	W.MARTIN	DATE
DRAWING NO. 01362_625	10/08/15	A.MANCONE	DATE
REVISION P2	10/08/15	W.MARTIN	DATE

CIVIL AND HYDRAULIC ENGINEERING DESIGN AND SURVEY CONSULTANTS  
 11 - 13 BROOKHOLLOW AVE  
 BALSASHAM HILLS NSW 2115  
 PHONE: (02) 9480 3100  
 FAX: (02) 9480 3100  
 ABR 21 131 34 240