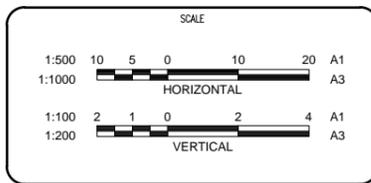


ROAD I LONGITUDINAL SECTION

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	21/01/13	VERTICAL ALIGNMENT AMENDED	MT	RH
C	16/11/12	GRADING AMENDED FROM CH200. CHANGE DEFLECTED T	MT	MT
B	02/12/11	ROAD F INTERSECTION REMOVED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

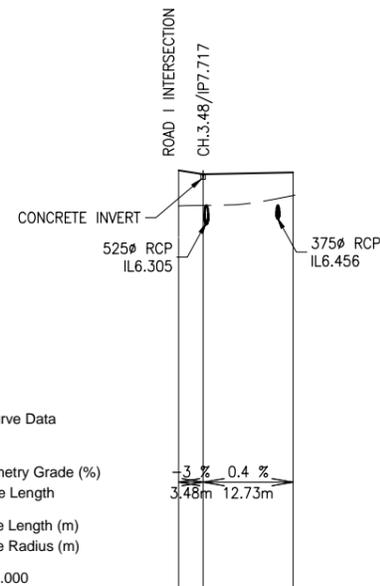
DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

ROAD I LONGITUDINAL SECTION PLAN

DRAWING NO. 136-002-C123

REVISION D



Horizontal Curve Data

Vertical Geometry Grade (%) -3 % 0.4 %
 Vertical Grade Length 3.48m 12.73m

Vertical Curve Length (m)
 Vertical Curve Radius (m)

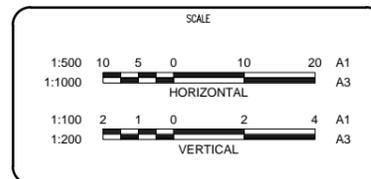
DATUM RL-4.000

RIGHT LIP LEVEL	FOR INTERSECTION DETAIL REFER DWG 136-006-C134		
LEFT LIP LEVEL			
CUT/FILL DEPTH	1.002	0.864	0.641
DESIGN SURFACE	7.822	7.717	7.762
NATURAL SURFACE	6.82	6.834	7.121
CHAINAGE	0	3.48	16.48

ROAD S LONGITUDINAL SECTION

AMENDMENT REQUIRED
 SUBJECT TO CONDITIONS
 REFER DECISION NOTICE
 Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	29/01/13	SERVICES CROSSINGS AMENDED	MT	MT
D	16/11/12	GRADING AMENDED TO JOIN NEW ROAD 1 GRADING	MT	MT
C	23/03/12	ROAD 1 AMENDED, ROAD S ADDED	MT	NH
B	02/12/11	PAVEMENT DETAIL MOVED TO TCS DRAWING	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH



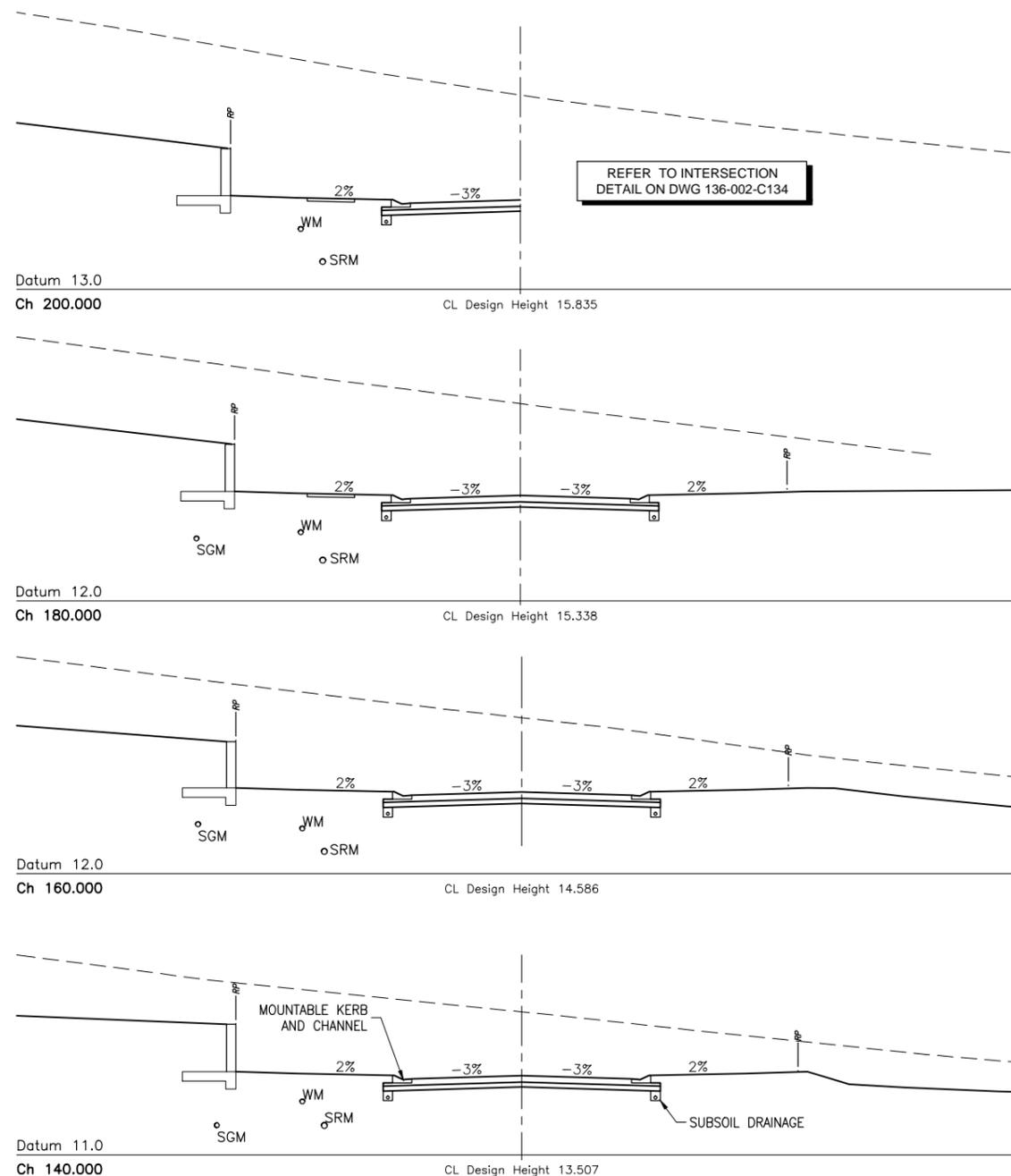
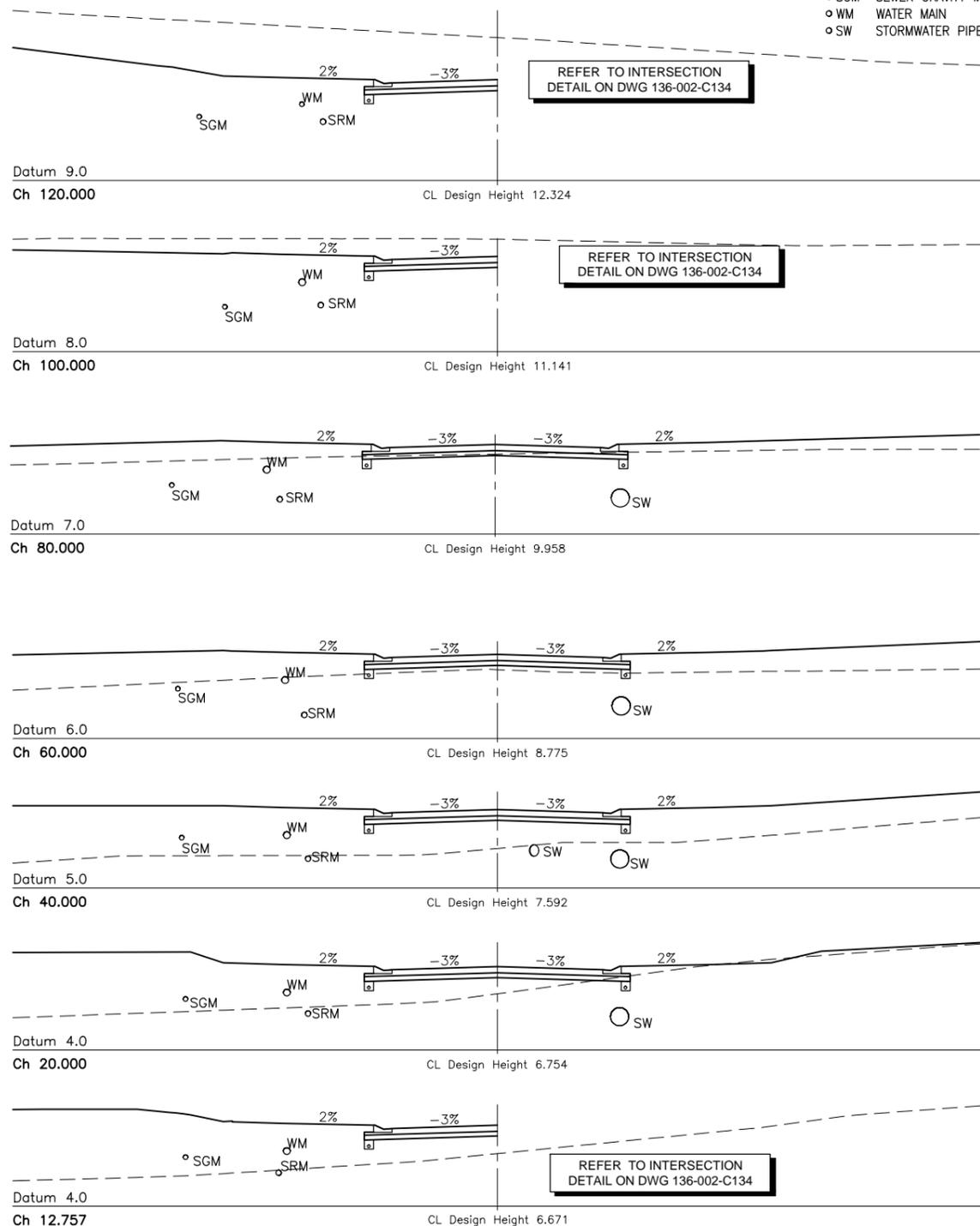
Projex North
 Level 2, 9 Capital Place
 Lake Kawana Business Village
 PO Box 1415 Buddina Qld 4575
 PH: (07) 5493 3649
 FAX: (07) 5493 3638
 ABN 47 129 314 478
 CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1	
ROAD S LONGITUDINAL SECTION PLAN	
DRAWING NO.	136-002-C124
REVISION	E

LEGEND

- SRM SEWER RISING MAIN
- SGM SEWER GRAVITY MAIN
- WM WATER MAIN
- SW STORMWATER PIPE



ROAD I CROSS SECTIONS

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay **OW-2011-107**

NOTE:
REFER DRG. 136-002-C110
FOR PAVEMENT DETAIL.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	VERTICAL ALIGNMENT AMENDED AND RETAINING WALL ON RHS	MT	RH
C	16/11/12	RETAINING WALL ADDED LHS FROM CH140	MT	MT
B	02/12/11	ROAD H INTERSECTION REMOVED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

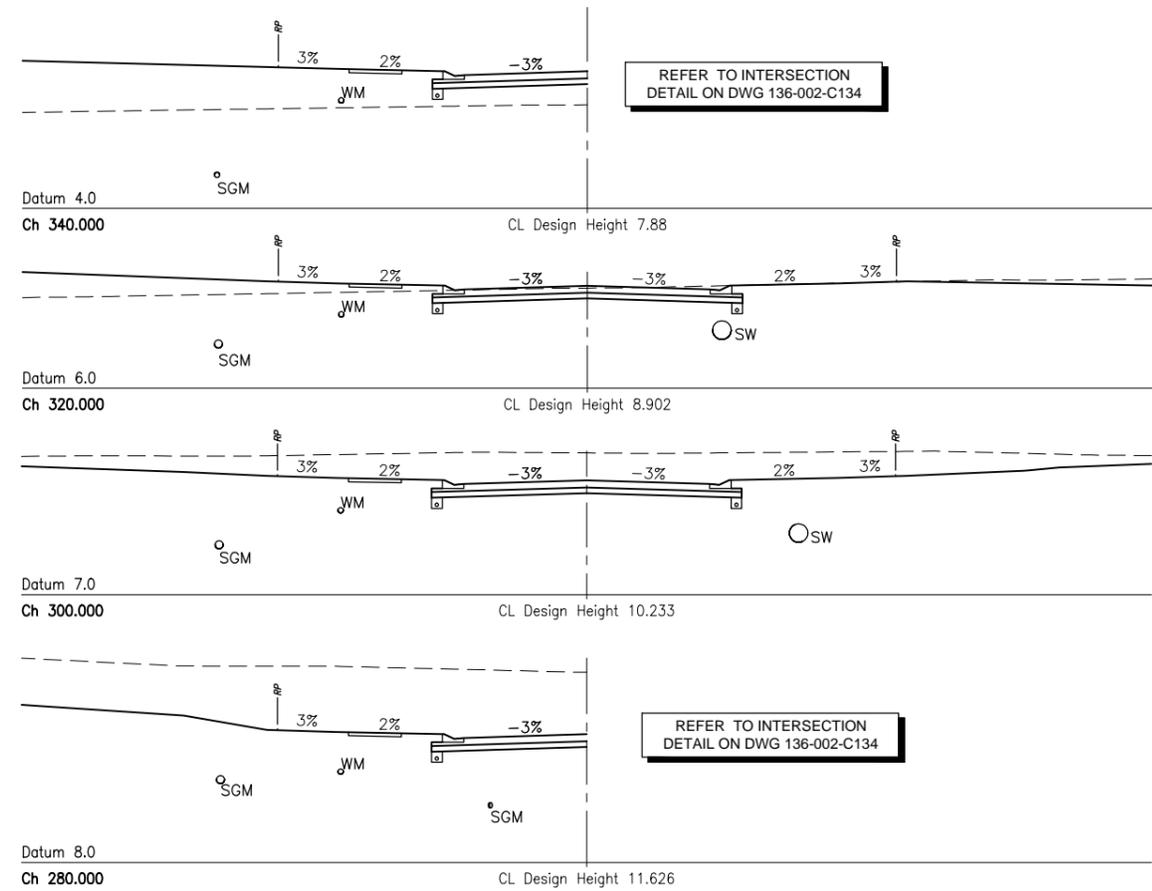
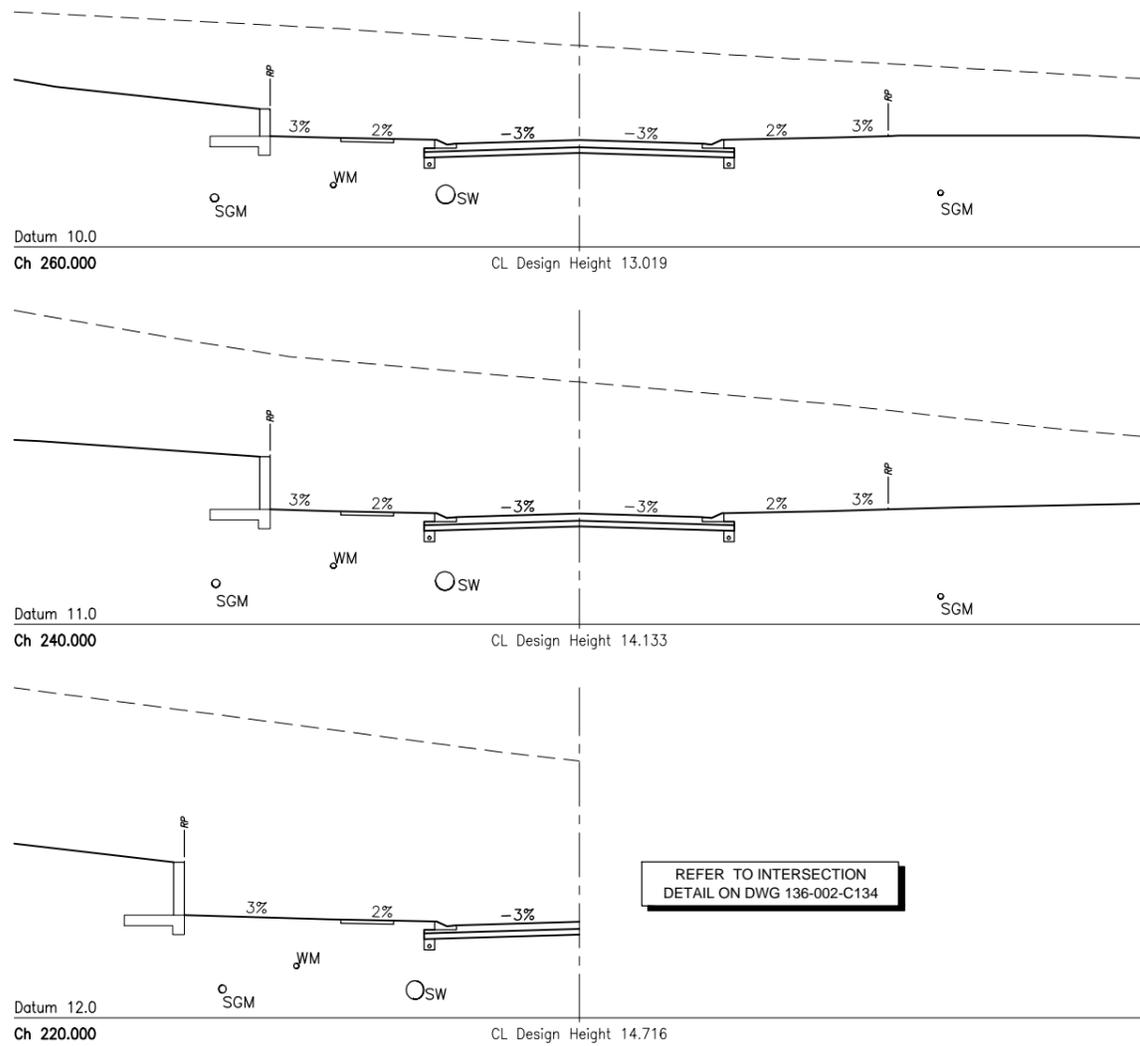
SCALE

1:100 1 0 1 2 3 4 5 A1
1:200

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1	
ROAD I CROSS SECTIONS PLAN (SHEET 1 OF 2)	
DRAWING NO.	136-002-C125
REVISION	D



ROAD I CROSS SECTIONS

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

LEGEND

- SRM SEWER RISING MAIN
- SGM SEWER GRAVITY MAIN
- WM WATER MAIN
- SW STORMWATER PIPE

NOTE:
REFER DRG. 136-002-C110
FOR PAVEMENT DETAIL.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	SERVICES AMENDED	MT	MT
C	16/11/12	RETAINING WALL ADDED LHS CH220-260, RE-GRADE OF ROAD I	MT	MT
B	06/03/12	SECTIONS AMENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

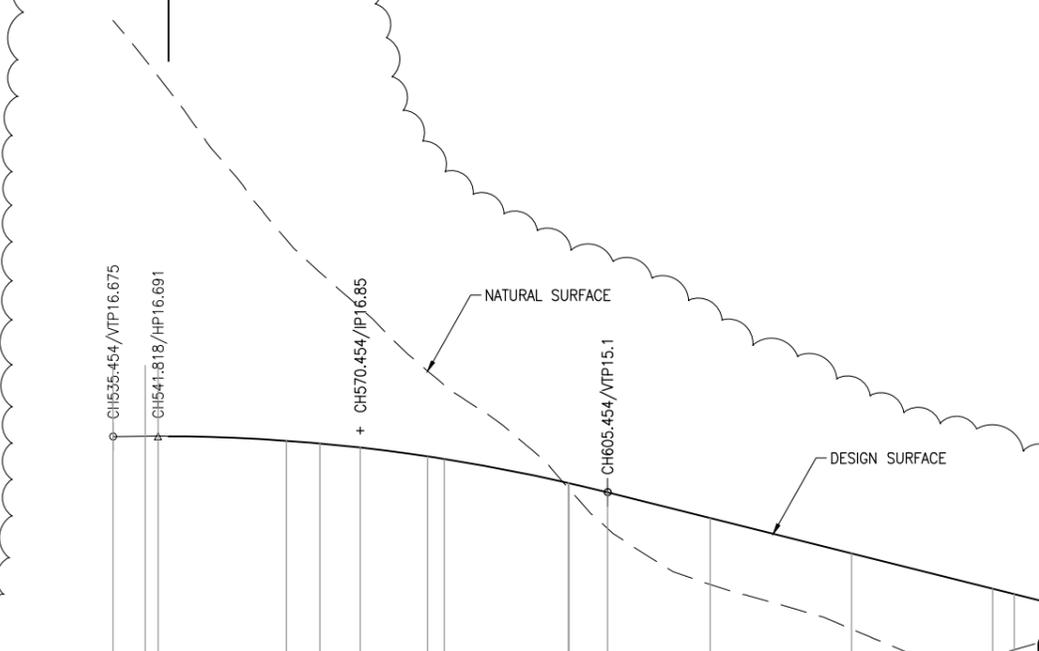
SCALE

1:100 1 0 1 2 3 4 5 A1
1:200

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1	
ROAD I CROSS SECTIONS PLAN (SHEET 2 OF 2)	
DRAWING NO.	136-002-C126
REVISION	D



Horizontal Curve Data
 Vertical Geometry Grade (%)
 Vertical Grade Length
 Vertical Curve Length (m)
 Vertical Curve Radius (m)
 DATUM RL4.000

CHAINAGE	NATURAL SURFACE	DESIGN SURFACE	CUT/FILL DEPTHS	LEFT LIP LEVEL	RIGHT LIP LEVEL
535.454	28.455	16.675	-11.781	16.593	16.593
540	27.337	16.889	-10.647	16.607	16.607
541.818	26.869	16.691	-10.178	16.609	16.609
543.302	26.487	16.689	-9.798	16.607	16.607
560	22.25	16.561	-5.69	16.479	16.479
564.752	21.327	16.484	-4.843	16.402	16.402
570.454	20.315	16.368	-3.946	16.286	16.286
580	18.531	16.118	-2.413	16.036	16.036
582.343	18.132	16.045	-2.087	15.961	15.961
599.934	15.215	15.364	0.149	15.282	15.282
600	15.2	15.361	0.161	15.279	15.279
605.454	14.081	15.1	1.019	15.018	15.018
620	12.494	14.372	1.879	14.291	14.291
640	11.233	13.372	2.139	13.291	13.291
660	10.488	12.372	1.884	12.291	12.291
663.061	10.645	12.219	1.574	12.138	12.138
675.962	11.456	11.574	0.119	11.492	11.492
680	11.725	11.372	-0.353	11.291	11.291
683.535	11.9	11.196	-0.704	11.114	11.114
688.864	12.091	10.986	-1.105	10.904	10.904
693.535	12.23	10.896	-1.334	10.831	10.831
696.035	12.322	10.883	-1.438	10.801	10.801
700	12.45	10.915	-1.536	10.833	10.833
703.535	12.537	10.996	-1.541	10.904	10.904
712.864	12.726	11.276	-1.451	11.276	11.276

ROAD K LONGITUDINAL SECTION

Horizontal Curve Data
 Vertical Geometry Grade (%)
 Vertical Grade Length
 Vertical Curve Length (m)
 Vertical Curve Radius (m)
 DATUM RL0.000

CHAINAGE	NATURAL SURFACE	DESIGN SURFACE	CUT/FILL DEPTHS	LEFT LIP LEVEL	RIGHT LIP LEVEL
0	13.307				
4.431	13.036	11.918	-1.118		
16.931	12.454	11.66	-0.793	11.582	11.582
20	12.372	11.633	-0.739	11.551	11.551
24.431	12.23	11.618	-0.612	11.536	11.536
29.431	11.98	11.637	-0.343	11.555	11.555
40	11.473	11.716	0.243	11.634	11.634
60	10.307	11.866	1.559	11.784	11.784
61.081	10.227	11.874	1.648	11.792	11.792
73.58	11.371	11.991	0.62	11.909	11.909
73.581	11.371	11.991	0.62	11.909	11.909
80	11.732	12.07	0.338	11.988	11.988
86.081	12.029	12.155	0.126	12.074	12.074
91.886	12.314	12.242	-0.072	12.161	12.161
100	12.717	12.364	-0.353	12.282	12.282
110.193	13.405	12.517	-0.888	12.435	12.435
120	14.243	12.664	-1.578	12.582	12.582
140	16.601	12.964	-3.636	12.882	12.882
160	18.5	13.264	-5.236	13.182	13.182

ROAD J LONGITUDINAL SECTION

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	01/02/13	ROAD K LONGITUDINAL SECTION AMENDED		
D	29/01/13	SERVICES CROSSINGS AMENDED	MT	MT
C	16/11/12	ROAD K ADDED PER MASTERPLAN, ROAD J AMENDED	MT	MT
B	02/12/11	ROAD J EXTENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

Projex North
 Level 2, 9 Capital Place
 Lake Kawana Business Village
 PO Box 1415 Buddina Qld 4575
 PH: (07) 5493 3649
 FAX: (07) 5493 3638
 ABN 47 129 314 478
 CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

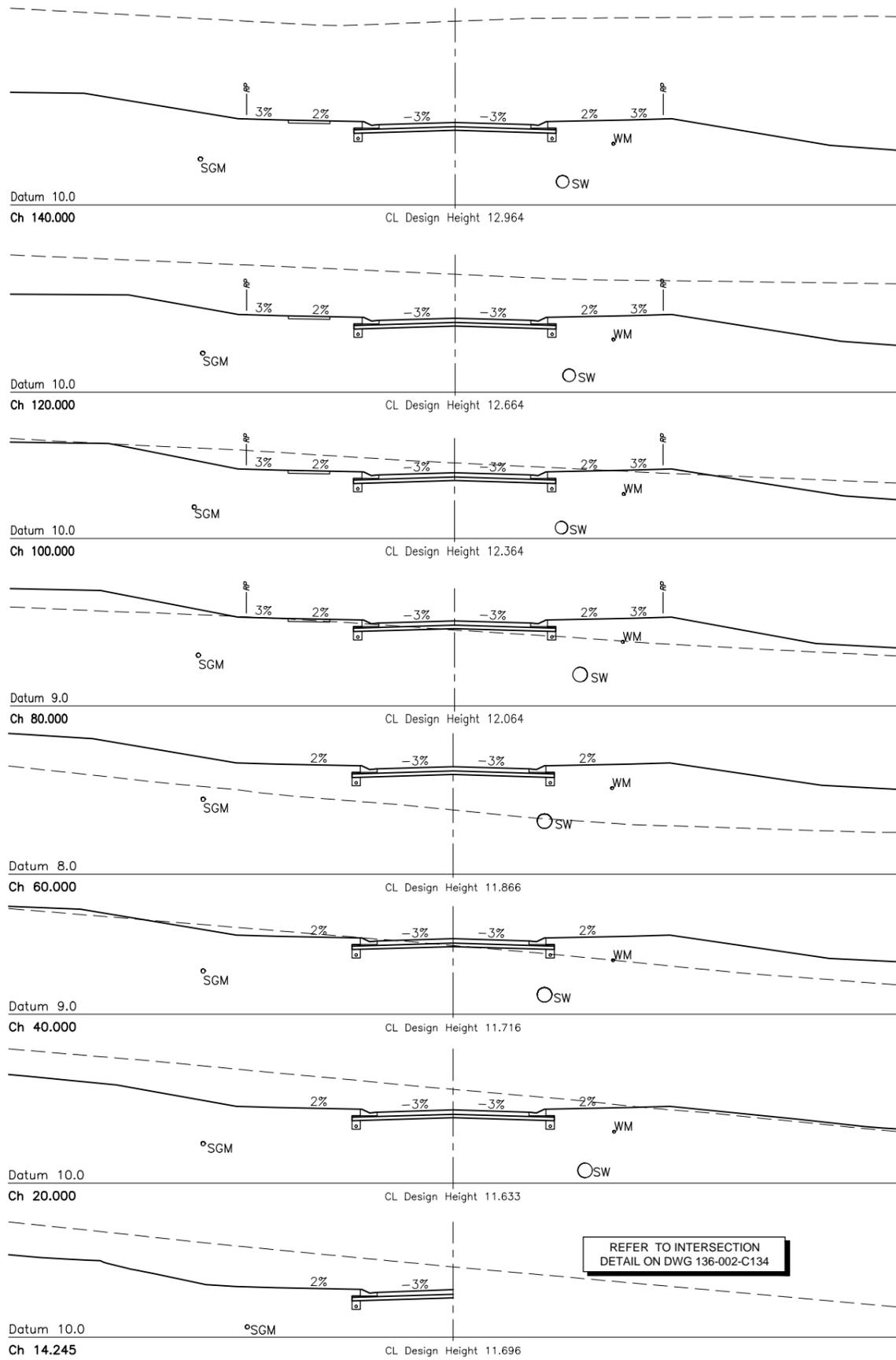
ROAD J & K LONGITUDINAL SECTION PLAN

DRAWING NO. 136-002-C127

REVISION E

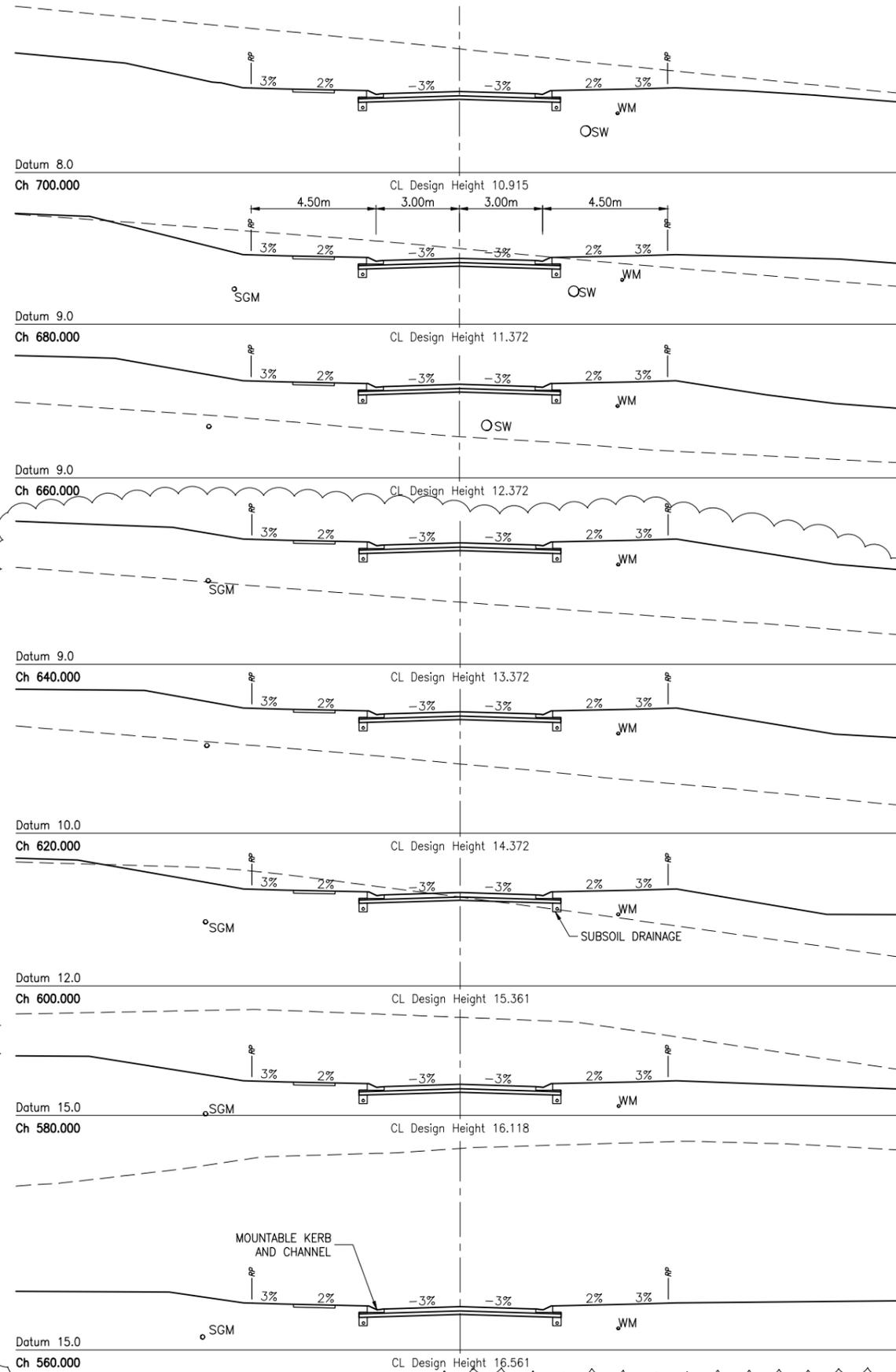
AMENDMENT REQUIRED
 SUBJECT TO CONDITIONS

REFER DECISION NOTICE
 Mackay OW-2011-107



ROAD J CROSS SECTIONS

REFER TO INTERSECTION
DETAIL ON DWG 136-002-C134



ROAD K CROSS SECTIONS

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

- LEGEND**
- SRM SEWER RISING MAIN
 - SGM SEWER GRAVITY MAIN
 - WM WATER MAIN
 - SW STORMWATER PIPE

NOTE:
REFER DRG. 136-002-C110
FOR PAVEMENT DETAIL.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	01/02/13	ROAD K CROSS SECTIONS AMENDED		
D	29/01/13	SERVICES AMENDED	MT	MT
C	16/11/12	ROAD K ADDED, ROAD J AMENDED	MT	MT
B	02/12/11	ROAD J EXTENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

1:100 1 0 1 2 3 4 5 A1
1:200

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

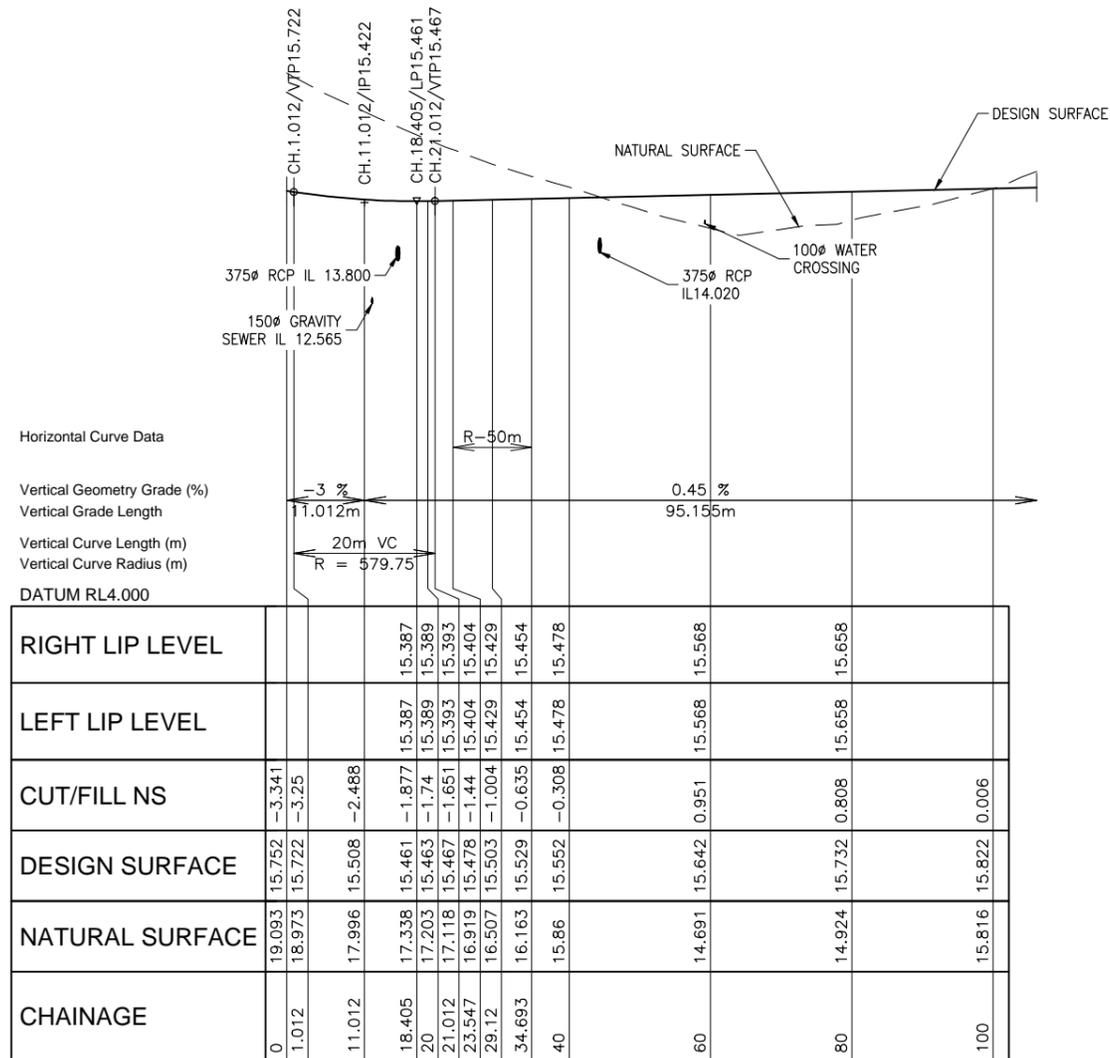
DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

ROAD J & K CROSS SECTIONS PLAN

DRAWING NO. 136-002-C128

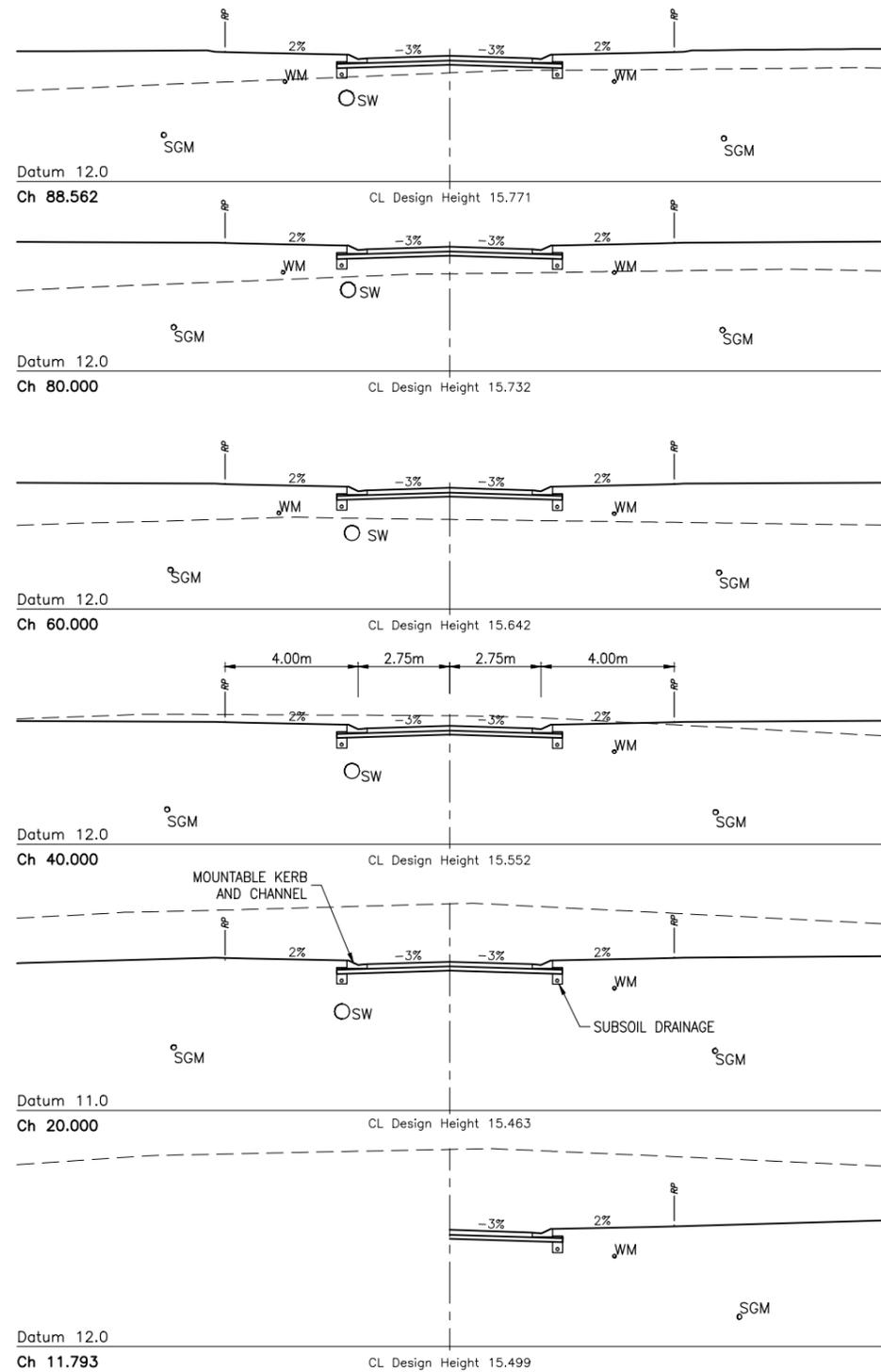
REVISION E



ROAD L LONGITUDINAL SECTION

LEGEND

- SRM SEWER RISING MAIN
- SGM SEWER GRAVITY MAIN
- WM WATER MAIN
- SW STORMWATER PIPE

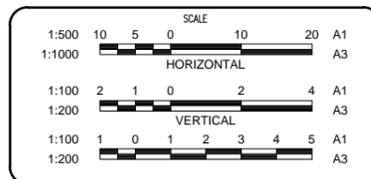


ROAD L CROSS SECTIONS

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NOTE:
REFER DRG. 136-002-C110
FOR PAVEMENT DETAIL.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	VERTICAL ALIGNMENT AMENDED	MT	MT
C	16/11/12	ROAD L AMENDED TO MEET NEW DEFLECTED T ON ROAD I	MT	MT
B	02/12/11	PAVEMENT DETAIL MOVED TO TCS DRAWING	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

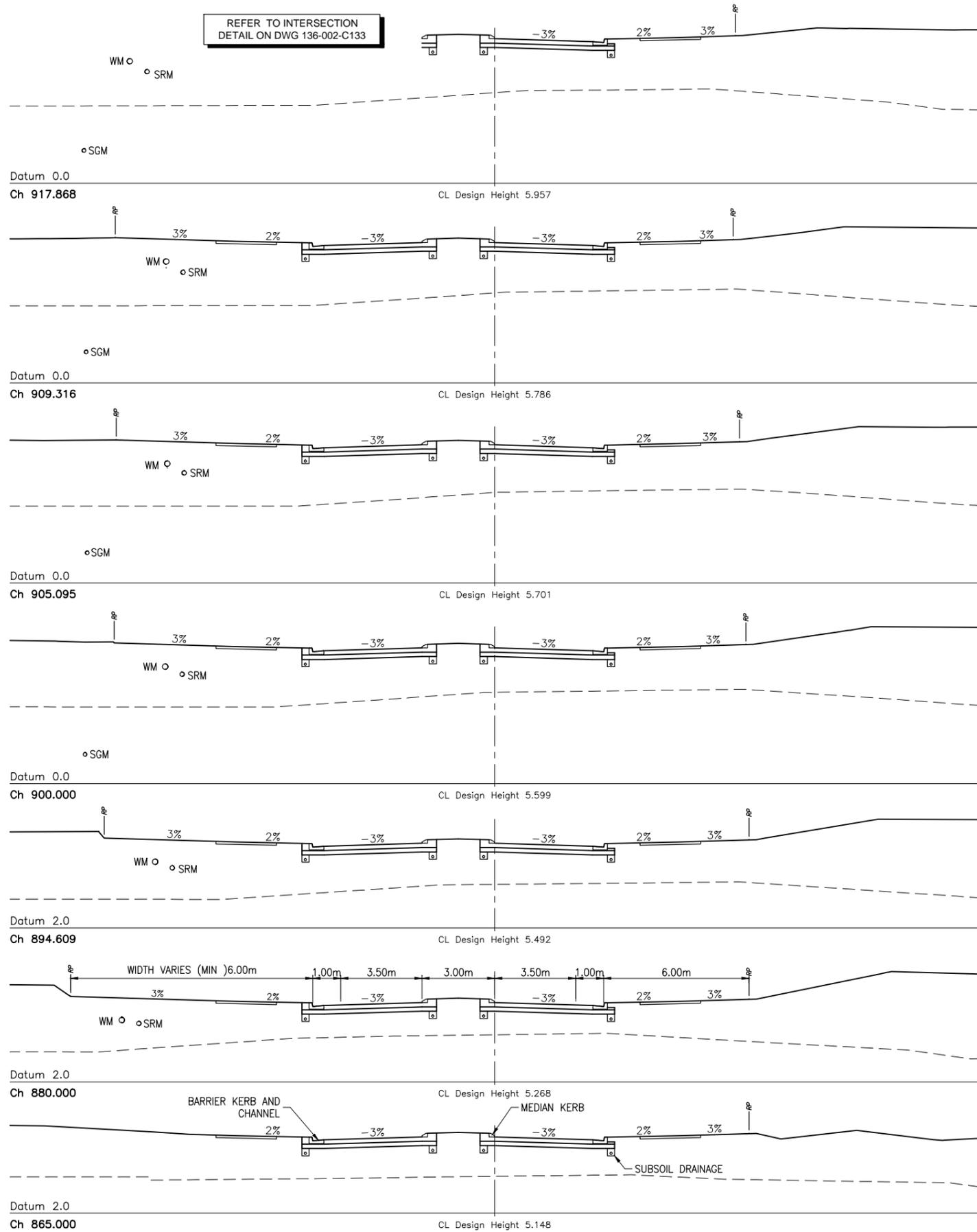
SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

ROAD L LONGITUDINAL & CROSS SECTIONS PLAN

DRAWING NO. 136-002-C129

REVISION D

REFER TO INTERSECTION
DETAIL ON DWG 136-002-C133

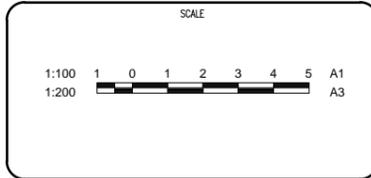


AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

- LEGEND**
- SRM SEWER RISING MAIN
 - SGM SEWER GRAVITY MAIN
 - WM WATER MAIN
 - SW STORMWATER PIPE

NOTE:
REFER DRG. 136-002-C110
FOR PAVEMENT DETAIL.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
C	29/01/13	HODGES ROAD CONTROL LINE LOCATION AMENDED	BE	BE
B	16/11/12	CROSS SECTIONS AMENDED DUE TO VERTICAL GEOMETRY CHANGE	MT	MT
A	14/09/11	FOR APPROVAL	MT	NH



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

HODGES ROAD CROSS SECTIONS PLAN

DRAWING NO. **136-002-C132** REVISION **C**

LEGEND

50mm ASPHALT TO INTERSECTIONS, ROUNDABOUTS, AND CULDESACS

NOTE:

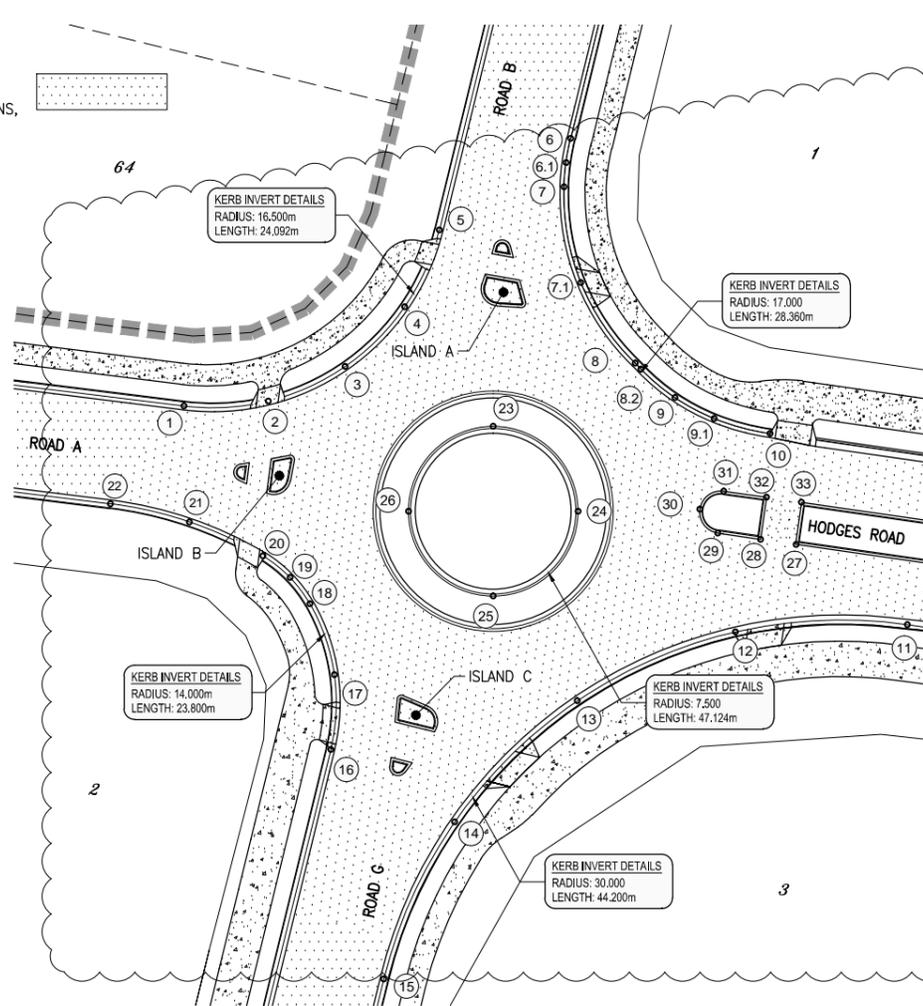
REFER DRG. 136-002-C110 FOR PAVEMENT DETAIL.

NOTE:

REFER DRG. 136-002-C135 FOR SPLITTER ISLAND DETAILS.

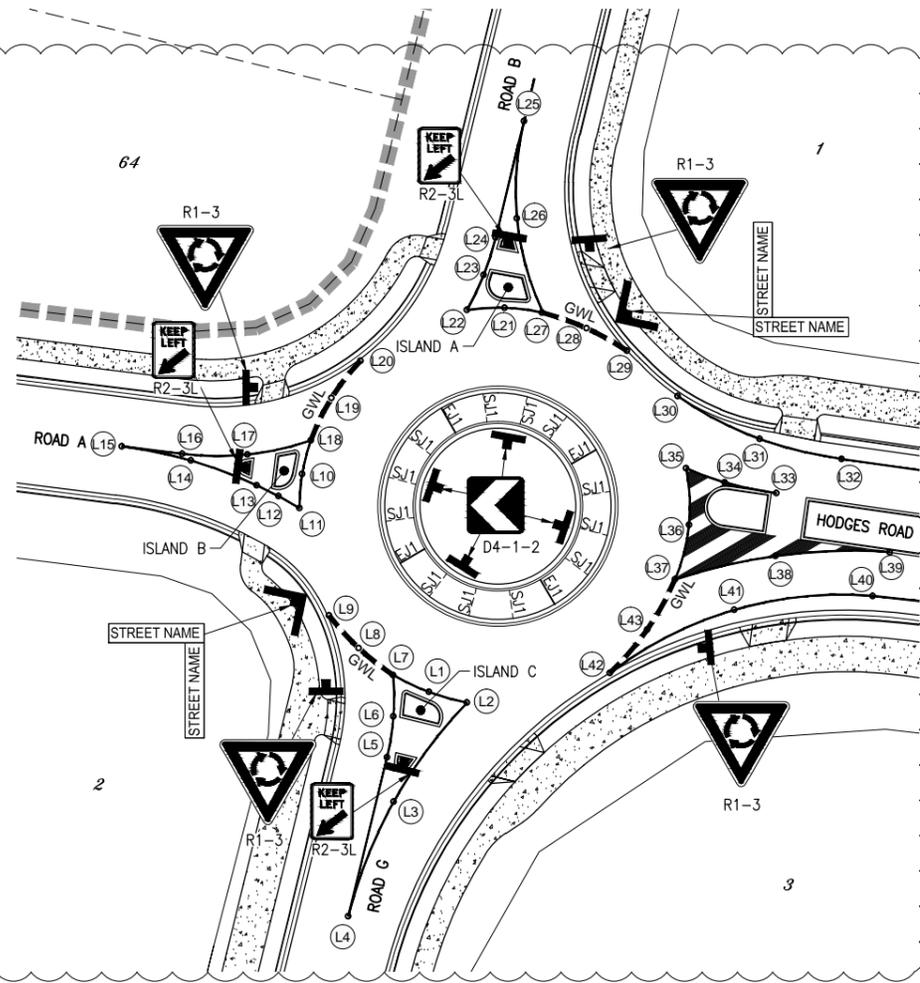
NOTE:

REFER DRG. 136-002-C135 FOR KERB SETOUT DATA.



HODGES ROAD/ ROAD A/ ROAD B AND ROAD G

SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135

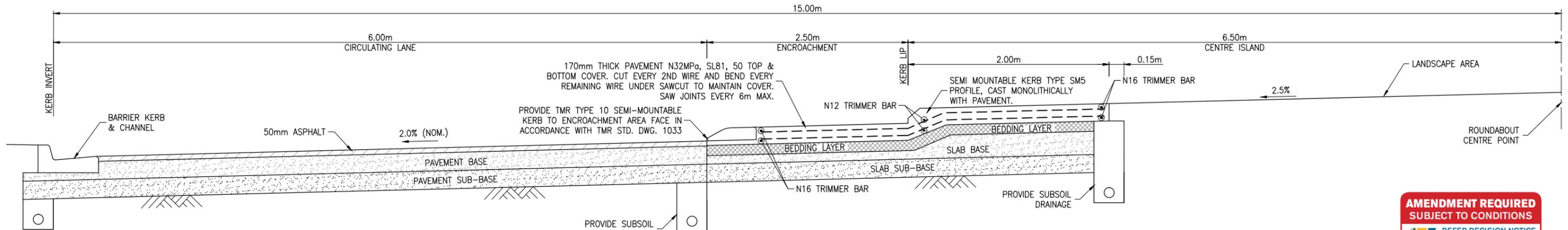


HODGES ROAD/ ROAD A/ ROAD B AND ROAD G SIGNAGE AND LINEMARKNG

SCALE 1:250 (A1) 1:500 (A3)

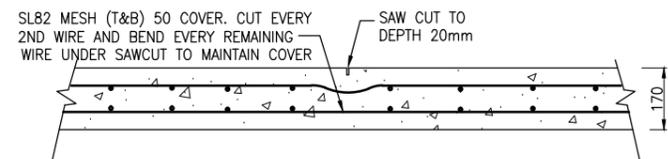
LINEMARKING SETOUT

POINT No.	EASTING	NORTHING
L1	722852.4213	7675998.3095
L2	722855.1148	7675997.5510
L3	722849.9293	7675990.5440
L4	722846.7114	7675982.4426
L5	722849.4554	7675993.6895
L6	722849.9121	7675996.5768
L7	722849.8887	7675999.4999
L8	722847.4452	7676001.4115
L9	722845.3546	7676003.7038
L10	722843.4500	7676013.7330
L11	722843.2596	7676011.3049
L12	722841.7690	7676012.1563
L13	722840.2347	7676012.9259
L14	722835.5710	7676014.6778
L15	722830.6908	7676015.6787
L16	722834.9683	7676015.1466
L17	722839.5648	7676015.1007
L18	722844.0534	7676016.0927
L19	722845.5160	7676019.0924
L20	722847.5645	7676021.7271
L21	722857.7836	7676025.4829
L22	722855.1193	7676025.3181
L23	722856.3045	7676027.8099
L24	722857.1399	7676030.4396
L25	722859.1505	7676038.6761
L26	722858.6508	7676031.8007
L27	722860.4311	7676025.1411
L28	722863.5779	7676024.0310
L29	722866.4387	7676022.4502
L30	722870.0285	7676019.2367
L31	722875.8244	7676016.2044
L32	722881.6291	7676014.7859
L33	722877.0157	7676012.3645
L34	722873.3524	7676013.1280
L35	722870.6228	7676014.1207
L36	722870.8270	7676010.1335
L37	722869.8381	7676006.2656
L38	722876.9403	7676007.9210
L39	722885.0455	7676008.1859
L40	722883.8315	7676005.0966
L41	722874.0229	7676004.1099
L42	722865.2285	7675999.6553
L43	722867.8766	7676002.7210



HALF-SECTION THROUGH ROUNDABOUT

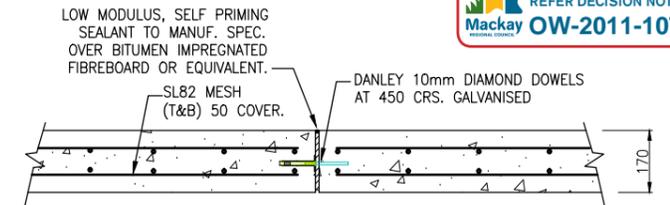
NTS



ROUNDABOUT ENCROACHMENT

SAWCUT JOINT - SJ1

NTS



ROUNDABOUT ENCROACHMENT

EXPANSION JOINT - EJ1

NTS

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay **OW-2011-107**

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	ROUNDABOUT SETOUT REVISED	JW	JW
C	16/11/12	CIRCULATING LANE GRADING ON ROUNDABOUT AMENDED	MT	MT
B	02/12/11	LINE MARKING ADDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

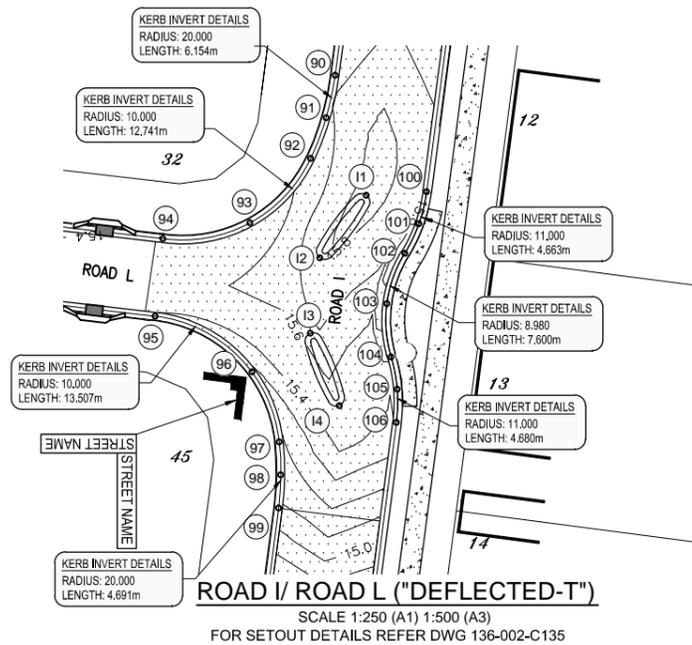
DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

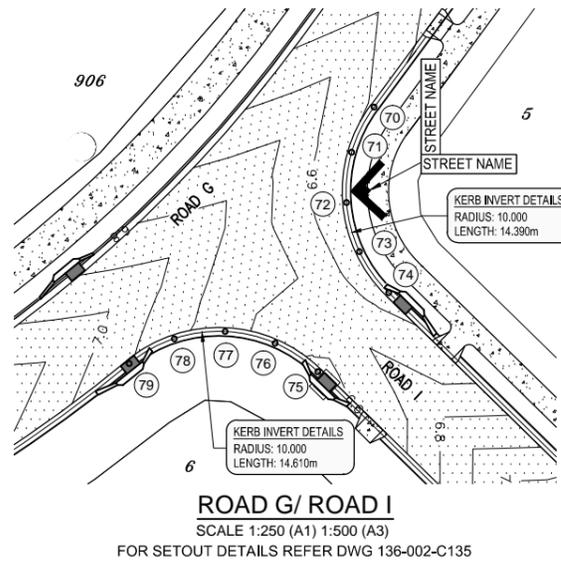
INTERSECTION SETOUT PLAN (SHEET 1 OF 2)

DRAWING NO. 136-002-C133

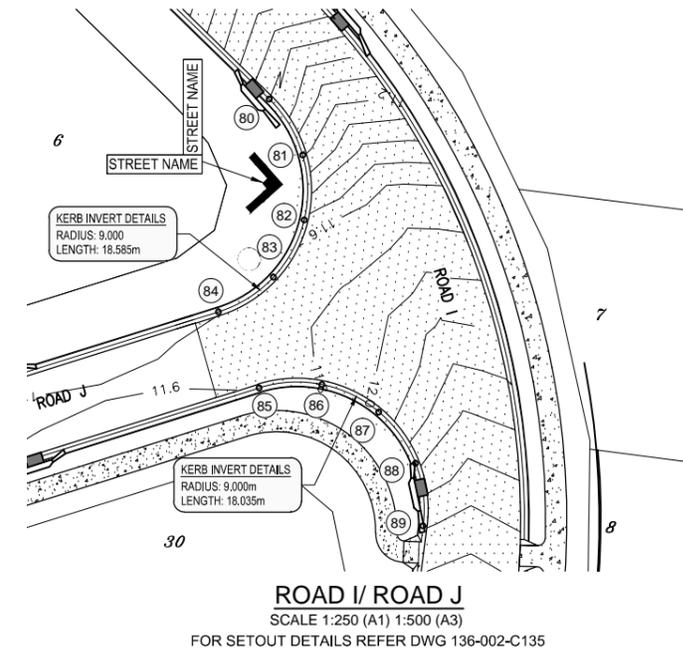
REVISION **D**



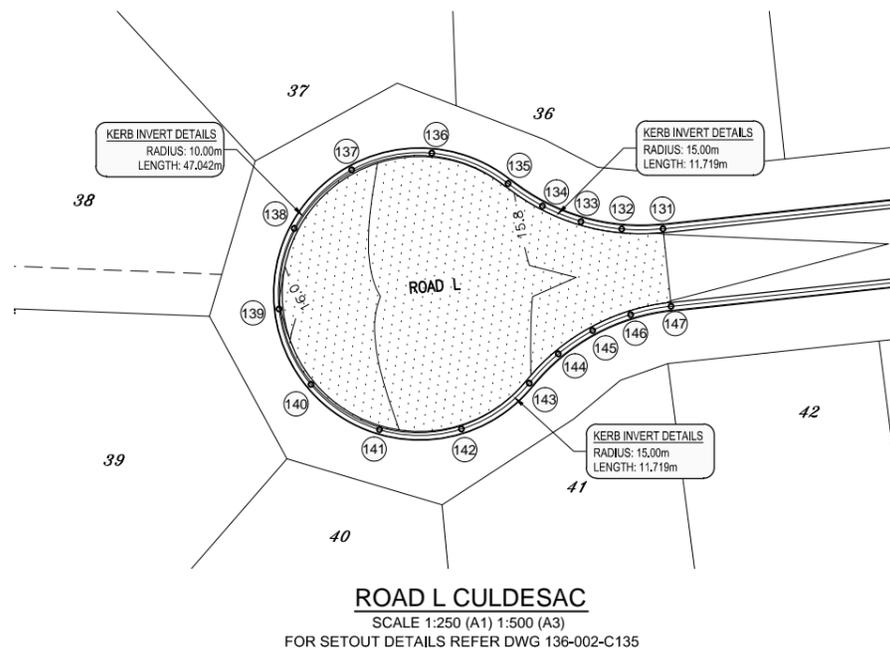
ROAD I / ROAD L ("DEFLECTED-T")
SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135



ROAD G / ROAD I
SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135



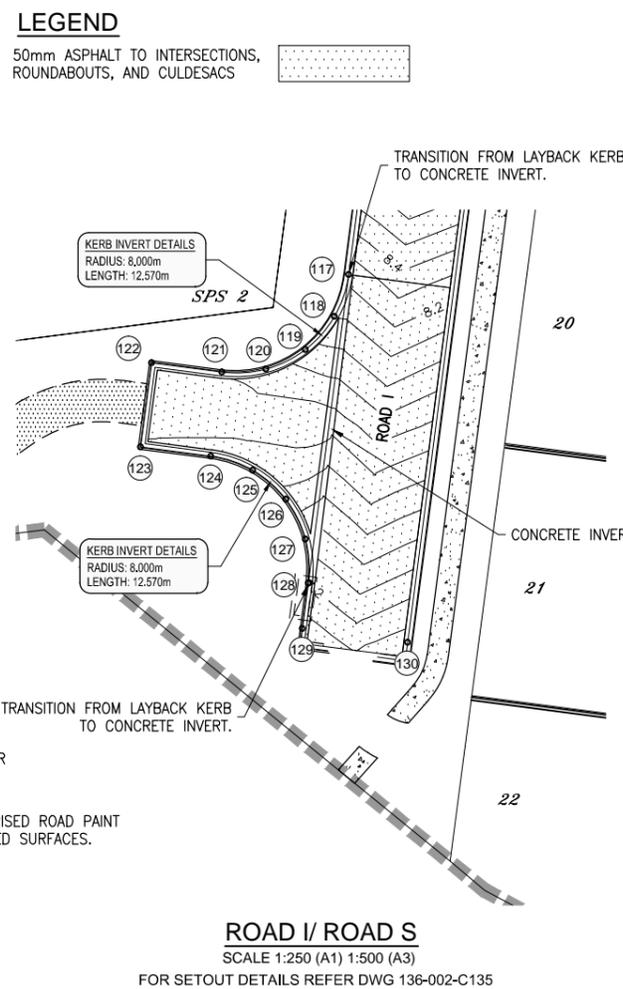
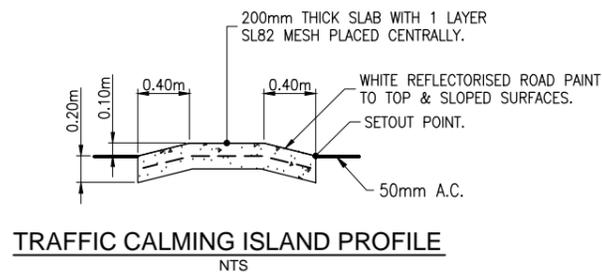
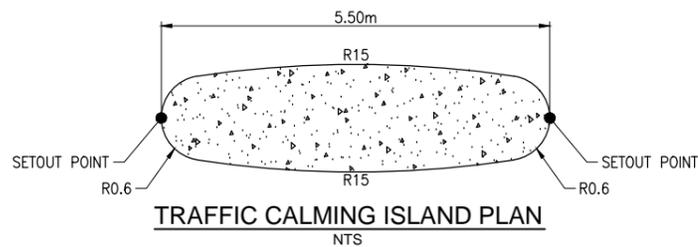
ROAD I / ROAD J
SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135



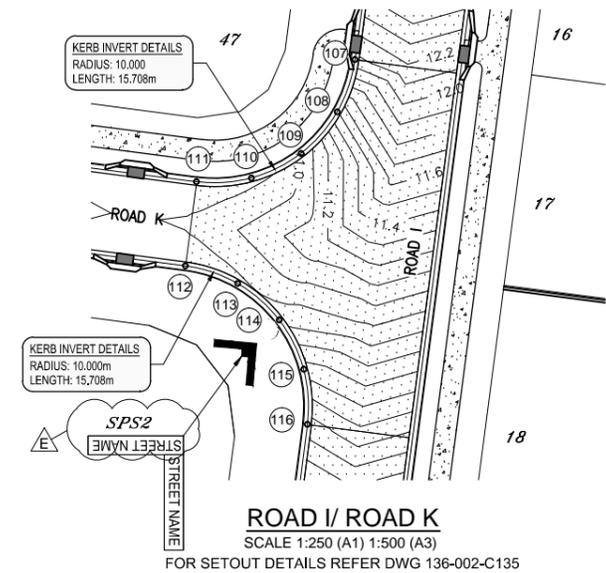
ROAD L CULDESAC
SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135

"DEFLECTED T" ISLAND SETOUT

POINT NO	EASTING	NORTHING	LEVEL
I1	722839.647	7675638.450	14.804
I2	722837.016	7675635.353	14.763
I3	722835.949	7675629.065	14.727
I4	722838.011	7675625.563	14.726

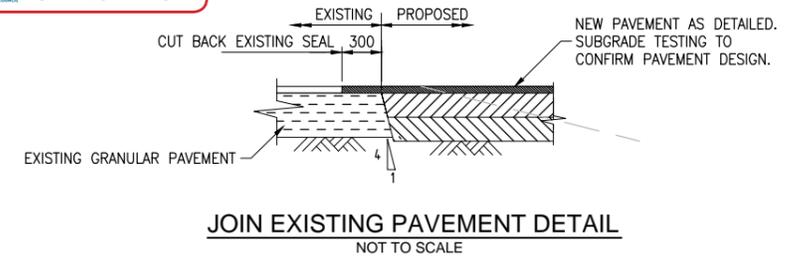


ROAD I / ROAD S
SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135



ROAD I / ROAD K
SCALE 1:250 (A1) 1:500 (A3)
FOR SETOUT DETAILS REFER DWG 136-002-C135

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107



NO.	DATE	DESCRIPTION	DESIGN	DRAWN
F	29/01/13	INTERSECTION I/L AND I/J REVISED.	MT	RS
E	21/12/12	SEWER PUMP STATION SHOWN. LOT NUMBER CHANGED TO SPS2.	MT	MT
D	16/11/12	ROAD I/L DEFLECTED T ADDED WITH DETAILS	MT	MT
C	23/03/12	ROAD L AMENDED, ROAD G REMOVED, ROAD S ADDED	MT	NH
B	02/12/11	ROAD HATCH AMENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

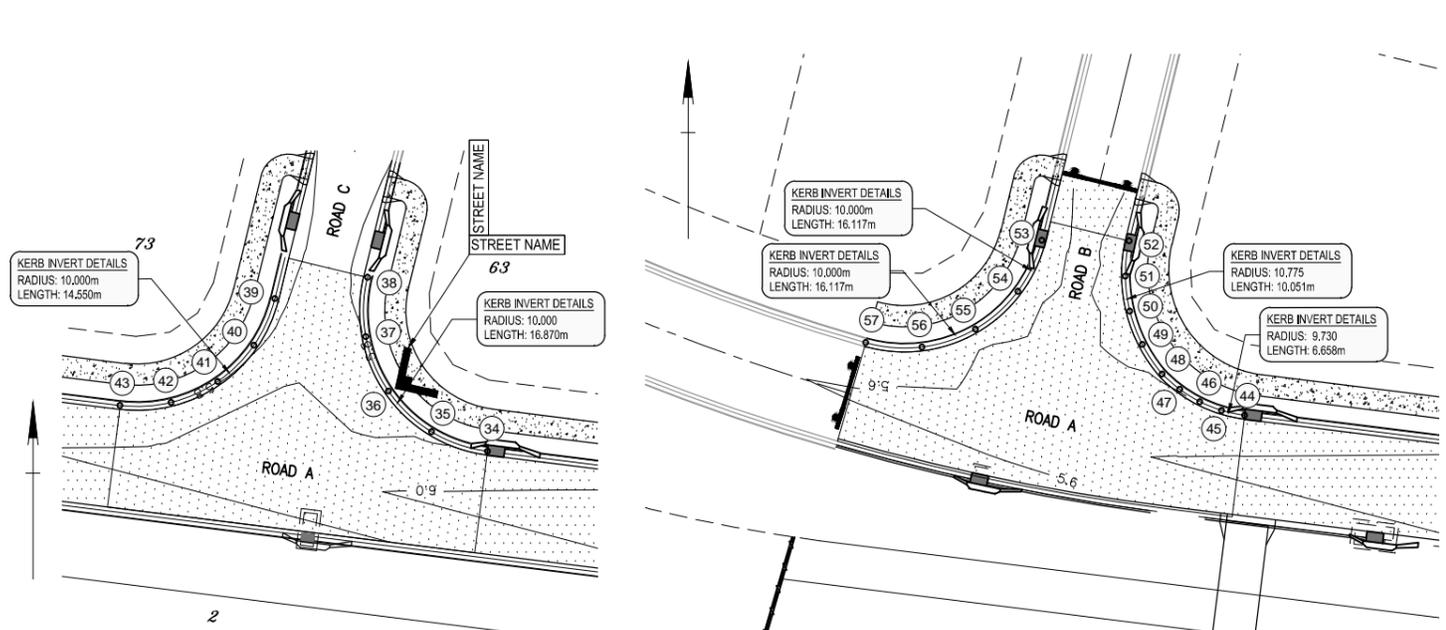
DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

INTERSECTION SETOUT PLAN (SHEET 2 OF 2)

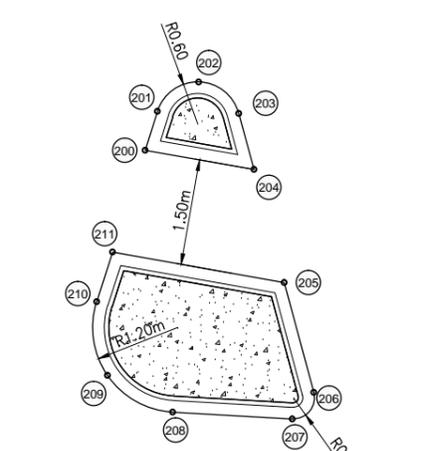
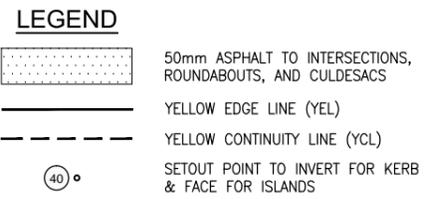
DRAWING NO. 136-002-C134

REVISION F

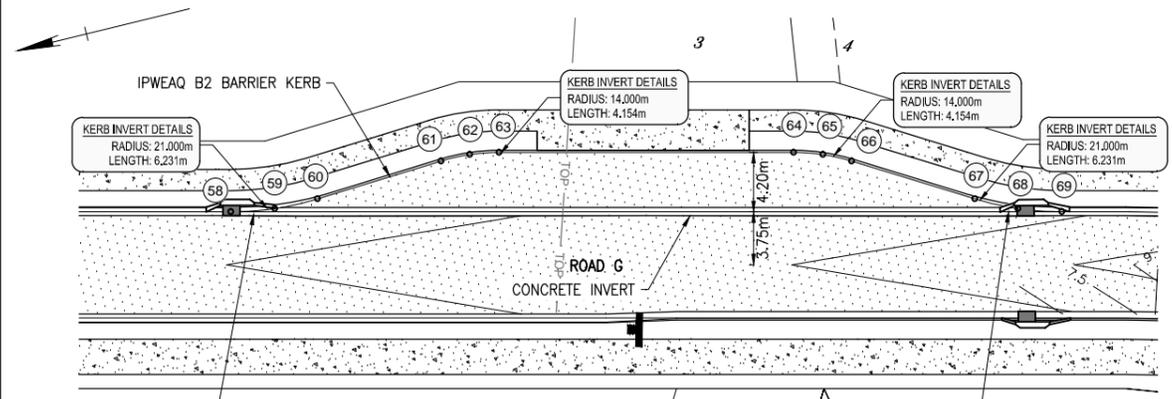


ROAD A/ ROAD C
SCALE 1:250 (A1) 1:500 (A3)

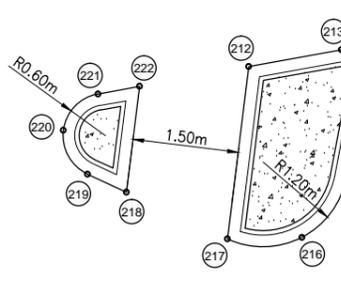
ROAD A/ ROAD B
SCALE 1:250 (A1) 1:500 (A3)



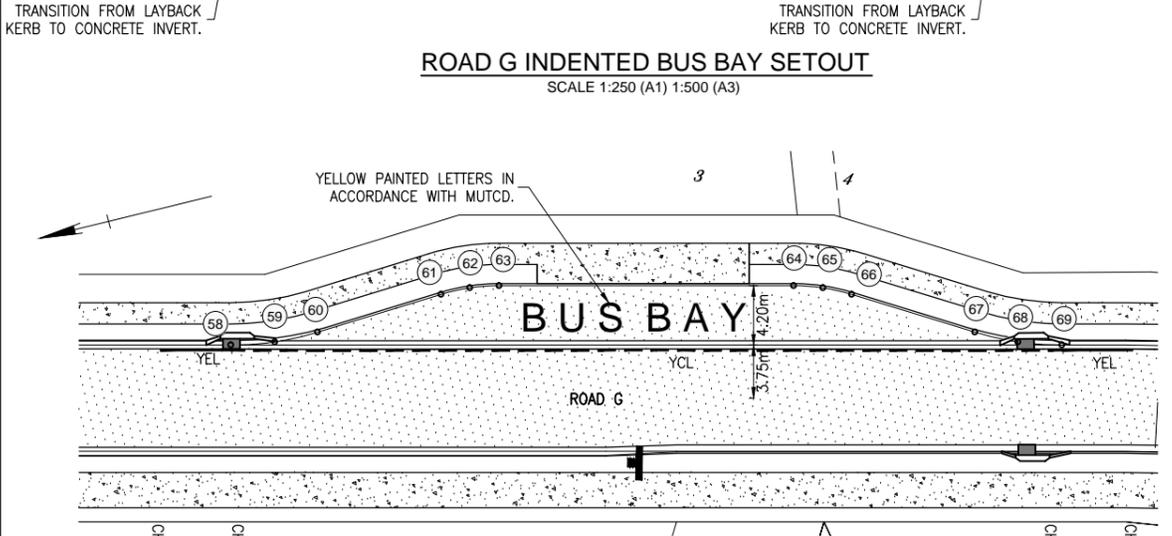
ISLAND 'A'
SCALE 1:50 (A1) 1:100 (A3)



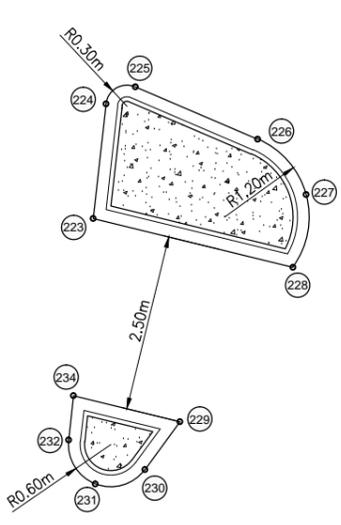
ROAD G INDENTED BUS BAY SETOUT
SCALE 1:250 (A1) 1:500 (A3)



ISLAND 'B'
SCALE 1:50 (A1) 1:100 (A3)



ROAD G INDENTED BUS BAY LINEMARKING
SCALE 1:250 (A1) 1:500 (A3)



ISLAND 'C'
SCALE 1:50 (A1) 1:100 (A3)

INTERSECTION SETOUT DETAILS

POINT	EASTING	NORTHING	LEVEL
1	722835.431	7676018.868	6.075
2	722841.390	7676019.215	6.133
3	722846.836	7676021.659	6.186
4	722851.056	7676025.882	6.134
5	722853.497	7676031.329	6.045
6	722862.794	7676037.787	5.909
7	722862.576	7676030.752	5.988
8	722865.227	7676024.231	6.066
9	722870.292	7676019.344	6.011
10	722876.903	7676016.926	5.762
11	722883.708	7676004.104	5.606
12	722872.692	7676003.374	5.897
13	722862.617	7675998.989	6.064
14	722854.796	7675991.270	5.911
15	722850.280	7675981.253	5.889
16	722845.812	7675994.577	5.879
17	722846.072	7675999.869	6.013
18	722844.346	7676004.878	3.119
19	722842.942	7676006.744	6.147
20	722842.942	7676008.274	6.162
20A	722835.814	7676010.671	6.174
20B	722830.228	7676011.957	6.187
21	722857.316	7676017.934	6.358
22	722863.816	7676011.434	6.284
23	722857.316	7676004.934	6.303
24	722850.816	7676011.434	6.455
25	722873.232	7676010.044	5.998
26	722872.101	7676011.552	6.036
27	722873.610	7676012.683	5.988
28	722762.392	7675799.498	6.722
29	722765.571	7675801.254	6.698
30	722769.167	7675801.759	6.674
31	722772.706	7675800.946	6.651
32	722775.722	7675798.923	6.626
33	722780.744	7675804.502	6.627
34	722778.673	7675807.418	6.729
35	722777.760	7675810.877	6.829
36	722778.124	7675814.436	6.931
37	722779.716	7675817.639	7.031
38	722835.266	7675740.560	10.777
39	722837.471	7675736.180	11.161
40	722837.329	7675731.278	11.515
41	722834.873	7675727.033	11.531
42	722830.694	7675724.466	11.450
43	722833.575	7675719.081	11.480
44	722838.451	7675719.356	11.711
45	722842.609	7675717.500	11.984
46	722845.587	7675713.839	12.476
47	722846.558	7675709.335	12.980
48	722689.687	7676038.794	5.563
49	722693.676	7676038.480	5.583
50	722697.470	7676039.754	5.573
51	722700.459	7676042.414	5.553
52	722702.167	7676046.033	5.532
53	722708.335	7676045.999	5.534
54	722708.072	7676043.506	5.556
55	722708.390	7676041.019	5.590
56	722709.271	7676038.673	5.603
57	722710.671	7676036.592	5.634
58	722711.918	7676035.492	5.648
59	722713.334	7676034.622	5.660
60	722714.877	7676034.005	5.671
61	722716.503	7676033.659	5.682
63	722749.360	7675631.931	14.794
64	722746.435	7675631.906	14.809
65	722743.561	7675632.450	14.824
66	722740.847	7675633.540	14.821
67	722738.396	7675635.137	14.806
68	722733.016	7675637.293	14.777
69	722727.343	7675636.102	14.753
70	722723.285	7675631.965	14.723

ISLAND SETOUT

POINT No.	EASTING	NORTHING
200	722857.3758	7676030.1952
201	722857.9612	7676030.6126
202	722858.2676	7676030.1687
203	722858.7401	7676029.3756
204	722859.1705	7676027.7763
205	722859.5887	7676026.2219
206	722859.2816	7676025.8445
207	722857.5907	7676025.9426
208	722856.6711	7676026.4612
209	722856.5171	7676027.5056
210	722856.7406	7676028.2058
211	722843.2410	7676015.0400
212	722842.9828	7676015.3912
213	722842.9643	7676013.5827
214	722842.3341	7676012.7394
215	722841.2816	7676012.7175
216	722839.8522	7676013.3787
217	722839.3045	7676013.6320
218	722838.9613	7676014.2526
219	722839.4494	7676014.7670
220	722840.0382	7676014.8737
221	722850.3456	7675996.5272
222	722850.5256	7675998.1471
223	722850.9418	7675998.3898
224	722852.6732	7675997.6490
225	722853.3585	7675996.8632
226	722853.1700	7675995.8377
227	722851.5740	7675993.6539
228	722851.0782	7675992.9756
229	722850.3763	7675992.7705
230	722849.9975	7675993.3959
231	722850.0670	7675994.0217

71	722722.202	7675626.271	14.696
72	722724.460	7675620.933	14.724
73	722729.300	7675617.744	14.751
74	722735.096	7675617.776	14.781
75	722739.901	7675621.017	14.810
76	722741.960	7675623.095	14.825
77	722744.383	7675624.733	14.824
78	722747.079	7675625.870	14.809
79	722749.943	7675626.462	14.794
80	722818.685	7675494.030	7.174
81	722818.478	7675497.145	7.364
82	722817.095	7675499.943	7.540
83	722814.746	7675501.999	7.627
84	722811.790	7675503.000	7.644
85	722812.568	7675508.949	7.774
86	722815.682	7675509.156	7.818
87	722818.481	7675510.539	7.935
88	722820.537	7675512.888	8.075
89	722821.537	7675515.844	8.216
90	722825.691	7675547.612	10.237
91	722825.433	7675551.505	10.540
92	722823.704	7675555.003	10.815
93	722820.768	7675557.573	10.862
94	722817.073	7675558.824	10.814
95	722817.850	7675564.774	10.814
96	722821.744	7675565.032	10.859
97	722825.242	7675566.761	10.996
98	722827.812	7675569.697	11.489
99	722829.063	7675573.393	12.056
100	722825.748	7676027.535	5.885
101	722769.360	7676027.745	5.905
102	722772.660	7676029.226	5.894
103	722775.218	7676031.785	5.876
104	722776.697	7676035.087	5.857
105	722783.243	7676036.599	5.854
106	722783.123	7676032.416	5.889
107	722784.726	7676028.550	5.925
108	722787.770	7676025.678	5.960
109	722791.723	7676024.304	5.994
110	722834.954	7675618.443	14.450
111	722834.659	7675622.762	14.471
112	722832.722	7675626.633	14.492
113	722829.440	7675629.457	14.477
114	722825.324	7675630.795	14.447
115	722826.354	7675636.215	14.452
116	722830.578	7675636.547	14.494
117	722834.376	7675638.465	14.536
118	722837.162	7675641.681	14.577
119	722838.520	7675645.714	14.619
120	722807.610	7675509.598	7.799
121	722806.832	7675503.648	7.709
122	722818.263	7675490.808	7.023
123	722825.700	7675489.835	7.036
124	722831.593	7675904.703	7.374
125	722832.553	7675907.664	7.329
126	722833.941	7675910.450	7.298
127	722838.607	7675918.303	7.200
128	722839.531	7675920.160	7.216
129	722840.172	7675922.134	7.155
130	722845.119	7675942.401	6.760
131	722845.460	7675944.447	6.744
132	722845.495	7675946.522	6.652
133	722844.972	7675955.642	6.417
134	722845.025	7675958.754	6.331
135	722845.537	7675961.824	6.257
136	722845.873	7675964.177	14.624
137	722844.740	7675639.943	14.673
138	722842.548	7675636.148	14.676
139	722840.711	7675631.713	14.670
140	722841.344	7675626.956	14.601
141	722842.486	7675622.724	14.545
142	722842.490	7675618.340	14.470

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	29/01/13	SPLITTER ISLAND DETAILS SHOWN. SETOUT TABLES REVISED.	JW	JW
D	16/11/12	BUS BAY DETAILS ROTATED, SETOUT AND LEVELS REGENERATED	MT	NH
C	23/03/12	KERB SETOUT AMENDED, BUS STOP ADDED	MT	NH
B	02/12/11	KERB SETOUT AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT
PG THE PICKERING GROUP

SCALE
1:25 0 0.25 0.5 0.75 1.0 1.25 A1
1:50 0 0.5 1 1.5 2 A3
1:100 0 1 2 3 4 A3
1:250 0 5 10 15 A1
1:500 0 5 10 15 A3

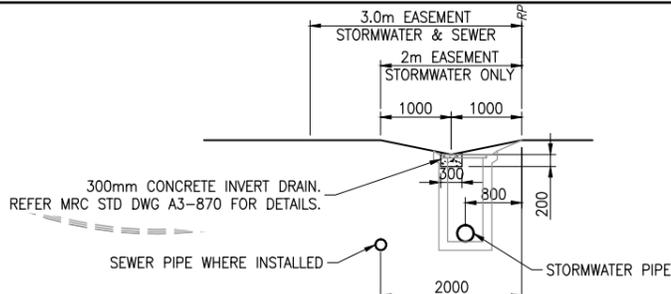
Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478

DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11	RPEQ: 5085	

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1
INTERSECTION SETOUT AND MISCELLANEOUS DETAILS PLAN
DRAWING NO. 136-002-C135
REVISION E

ROOFWATER DRAINAGE NOTES

1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH MACKAY CITY COUNCIL STANDARD METHODS, SPECIFICATIONS AND DRAWINGS.
2. ALL ROOFWATER DRAINAGE PIPES SHALL BE AS NOTED ON DETAIL PLAN AND LONGITUDINAL SECTIONS.
3. ALL ROOFWATER DRAINAGE LINES SHALL BE CONSTRUCTED ON A 0.80m ALIGNMENT FROM THE BOUNDARY U.N.O.
4. PROPERTY PITS SHALL BE AS DETAILED ON DRAWING NO. A3-870.
5. ROOFWATER DRAINAGE STRUCTURES ARE TO BE LOCATED SO AS TO AVOID CONFLICT WITH SEWER MANHOLES.
6. PROVIDE EASEMENTS OVER ALL REAR ALLOTMENT DRAINAGE. THE MINIMUM WIDTH OF EASEMENTS:
FOR 225mm DIA. PIPE = 2m
FOR 300mm DIA. PIPE OR LARGER = MIN 2m PLUS THE EXTERNAL PIPE DIAMETER
7. ALL STORMWATER HEADWALLS TO BE AS PER MRC.-DEVELOPMENT MANUAL (PT. 2.5.4)
8. FOR LOTS WHICH DRAIN TO THE STREET PROVIDE TWO KERB ADAPTORS AND EXTEND THE PIPEWORK TO THE PROPERTY BOUNDARY.
9. STORMWATER MANHOLES LOCATED IN COMBINED DRIVEWAYS AND ROADS TO HAVE HEAVY DUTY COVERS.



INTER ALLOTMENT DRAINAGE DETAIL

SCALE 1:50 @ A1
SCALE 1:100 @ A3

LEGEND

- STORMWATER PIT LABEL
- PROPOSED STORMWATER PIPE
- SUB-SOIL DRAINAGE & FLUSH POINT. REFER STD DWG A3-867 FOR DETAILS.
- SUB-SOIL FLUSHING POINT IN PIT
- SUB-SOIL FLUSHING POINT IN LINE
- SUB-SOIL FLUSHING POINT IN HEAD
- BATTER INTERFACE
- STORMWATER STRUCTURES
- STORMWATER HEADWALL

NOTE:
STRUCTURES 3/1C AND 4/1C ARE TO HAVE CHAMBERS CONSTRUCTED AND A CONCRETE COVER PLACED ON TOP. SAG INLET PITS TO BE CONSTRUCTED IN FUTURE.

CAP STORMWATER PIPE
E: 722788.5376
N: 7675479.6637
IL: 5.201

BIO RETENTION BASIN C
REFER DWG 136-002-C144
FOR DETAILS.

CAP STORMWATER PIPE
E: 722692.2104
N: 7675707.2599
IL: 10.817

INSTALL 600Ø RCP & END CAP
E 722765.1410
N 7675790.8959
US IL: 5.234
DS IL: 5.195

INSTALL 375Ø RCP & END CAP
E 722785.8669
N 7675807.8854
US IL: 5.152
DS IL: 5.126

WETLAND B REFER DWG
136-002-C143 FOR
DETAILS.

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NOTE:
REFER DRG. 136-002-C137
FOR WORKS NOTES & SETOUT.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
F	01/02/13	REAR OF LOT DRAINAGE ON LINE 1C REMOVED		
E	29/01/13	PUMP STATION & LOT CONNECTIONS ADDED, ALIGNMENT AMENDED	MT	MT
D	16/11/12	LINE 8B & 1D ADDED, LINE 7B & BASIN PIPES AMENDED	BE	BE
C	23/03/12	LOT LAYOUT AMENDED	MT	NH
B	02/12/11	LOT AND STORMWATER LAYOUT AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

STORMWATER DRAINAGE LAYOUT PLAN (SHEET 1 OF 2)

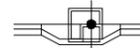
DRAWING NO. 136-002-C136

REVISION F

STORMWATER NOTES

- LOCATION AND ALIGNMENT OF ALL STORMWATER DRAINLINES IS TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT PRIOR TO EXCAVATION. THE DESIGN SURFACE LEVELS OF MANHOLES AND OTHER STRUCTURES ARE TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT.
- CONSTRUCTION TO BE IN ACCORDANCE WITH COUNCIL'S DEVELOPMENT MANUAL, PLANNING SCHEME POLICY 15.05, OTHER SPECIFICATIONS AND STANDARD DRAWINGS
 - A3-845 - EXCAVATION, BEDDING AND BACKFILLING OF PIPES.
 - A3-3882 - FIELD INLET PITS.
 - A3-3885 & A3-3896 - GULLY PITS AND GRATES
 - A3-3874 - STORMWATER ACCESS CHAMBERS
- ALL REINFORCED CONCRETE PIPES (RCP) TO BE RUBBER-RING JOINTED.

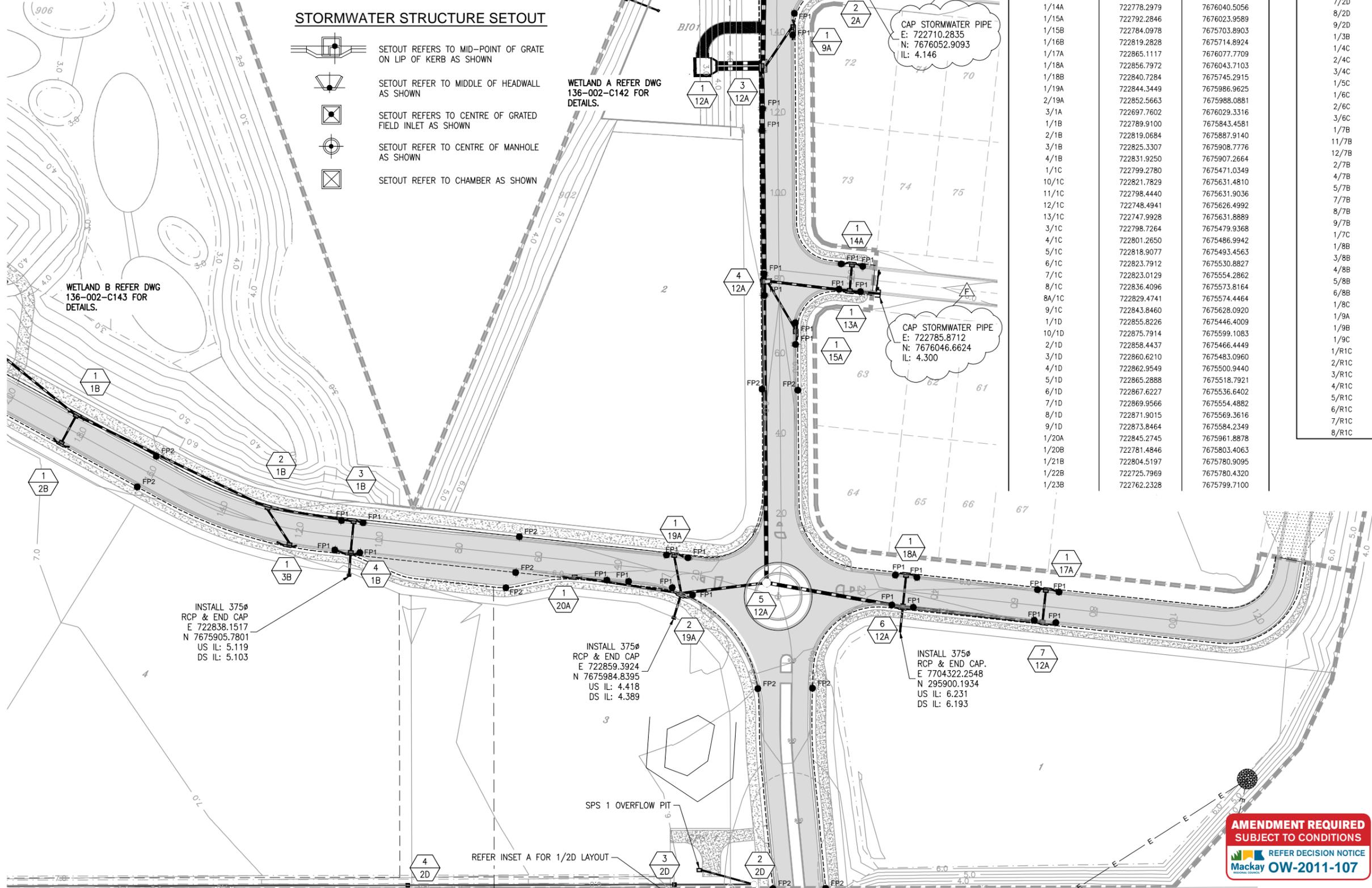
STORMWATER STRUCTURE SETOUT

-  SETOUT REFERS TO MID-POINT OF GRATE ON LIP OF KERB AS SHOWN
-  SETOUT REFER TO MIDDLE OF HEADWALL AS SHOWN
-  SETOUT REFERS TO CENTRE OF GRATED FIELD INLET AS SHOWN
-  SETOUT REFER TO CENTRE OF MANHOLE AS SHOWN
-  SETOUT REFER TO CHAMBER AS SHOWN

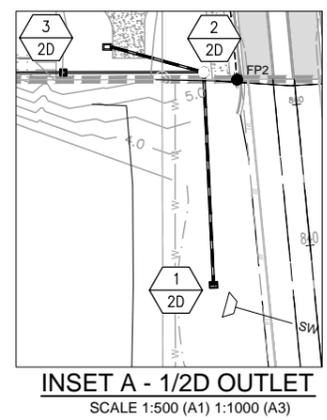
STORMWATER STRUCTURE SETOUT

STRUCTURE NUMBER	EASTING	NORTHING
1/12A	722724.2100	7676013.4790
3/12A	722725.7624	7676025.4033
4/12A	722779.0666	7676018.5924
5/12A	722853.5330	7676009.0344
6/12A	722863.5600	7676042.0650
7/12A	722871.8746	7676076.1258
1/13A	722783.6260	7676039.3084
1/14A	722778.2979	7676040.5056
1/15A	722792.2846	7676023.9589
1/15B	722784.0978	7675703.8903
1/16B	722819.2828	7675714.8924
1/17A	722865.1117	7676077.7709
1/18A	722856.7972	7676043.7103
1/18B	722840.7284	7675745.2915
1/19A	722844.3449	7675986.9625
2/19A	722852.5663	7675988.0881
3/1A	722697.7602	7676029.3316
1/1B	722789.9100	7675843.4581
2/1B	722819.0684	7675887.9140
3/1B	722825.3307	7675908.7776
4/1B	722831.9250	7675907.2664
1/1C	722799.2780	7675471.0349
10/1C	722821.7829	7675631.4810
11/1C	722798.4440	7675631.9036
12/1C	722748.4941	7675626.4992
13/1C	722747.9928	7675631.8889
3/1C	722798.7264	7675479.9368
4/1C	722801.2650	7675486.9942
5/1C	722818.9077	7675493.4563
6/1C	722823.7912	7675530.8827
7/1C	722823.0129	7675554.2862
8/1C	722836.4096	7675573.8164
8A/1C	722829.4741	7675574.4464
9/1C	722843.8460	7675628.0920
1/1D	722855.8226	7675446.4009
10/1D	722875.7914	7675599.1083
2/1D	722858.4437	7675466.4449
3/1D	722860.6210	7675483.0960
4/1D	722862.9549	7675500.9440
5/1D	722865.2888	7675518.7921
6/1D	722867.6227	7675536.6402
7/1D	722869.9566	7675554.4882
8/1D	722871.9015	7675569.3616
9/1D	722873.8464	7675584.2349
1/20A	722845.2745	7675961.8878
1/20B	722781.4846	7675803.4063
1/21B	722804.5197	7675780.9095
1/22B	722725.7969	7675780.4320
1/23B	722762.2328	7675799.7100

1/2A	722702.4579	7676046.0860
2/2A	722708.0631	7676045.9508
1/2B	722795.3777	7675839.4491
1/2D	722957.6239	7675993.4458
10/2D	722884.4783	7675665.5432
2/2D	722927.6921	7675996.0123
3/2D	722925.1174	7675976.3209
4/2D	722916.4902	7675910.3435
5/2D	722903.1642	7675808.4356
6/2D	722892.6223	7675727.8234
7/2D	722890.3130	7675710.1634
8/2D	722888.3681	7675695.2900
9/2D	722886.4232	7675680.4166
1/3B	722827.9576	7675892.3661
1/4C	722816.0325	7675499.1274
2/4C	722809.5524	7675503.5647
3/4C	722810.2457	7675508.9805
1/5C	722825.7841	7675492.5602
1/6C	722812.8198	7675559.6528
2/6C	722785.4767	7675561.1057
3/6C	722782.6736	7675566.3081
1/7B	722749.1980	7675824.4260
11/7B	722785.4200	7675710.0246
12/7B	722754.0675	7675703.0339
2/7B	722759.0417	7675814.8048
4/7B	722776.6075	7675798.4357
5/7B	722792.7447	7675782.6791
7/7B	722835.2199	7675741.0196
8/7B	722834.6019	7675728.7148
9/7B	722817.5451	7675720.0713
1/7C	722813.5202	7675565.0677
1/8B	722747.9950	7675823.2730
3/8B	722758.6928	7675805.8243
4/8B	722726.5961	7675787.9661
5/8B	722685.1717	7675783.7057
6/8B	722684.7572	7675776.7580
1/8C	722822.4279	7675636.4058
1/9A	722717.0654	7676033.3171
1/9B	722846.3661	7675712.5272
1/9C	722792.4614	7675636.2552
1/10C	722817.4803	7675531.0956
2/10C	722797.7614	7675528.5577
3/10C	722777.4294	7675525.9409
4/10C	722756.0507	7675523.1893
5/10C	722735.2225	7675520.5086
6/10C	722712.9141	7675517.6372
7/10C	722691.7190	7675518.6489
8/10C	722679.3195	7675523.8996



NOTE:
REFER DRG. 136-002-C136 FOR LEGEND.



AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
F	01/02/13	STORMWATER SETOUT TABLE AMENDED		
E	29/01/13	REMOVAL OF GPTs, LOT CONNECTIONS ADDED, ALIGNMENT AMENDED	BE	BE
D	16/11/12	PIT AND PIPE LOCATIONS AMENDED AS CLOUDED	BE	BE
C	23/03/12	LOT LAYOUT AMENDED, BUS STOP ADDED	MT	NH
B	02/12/11	LOT AND STORMWATER LAYOUT AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

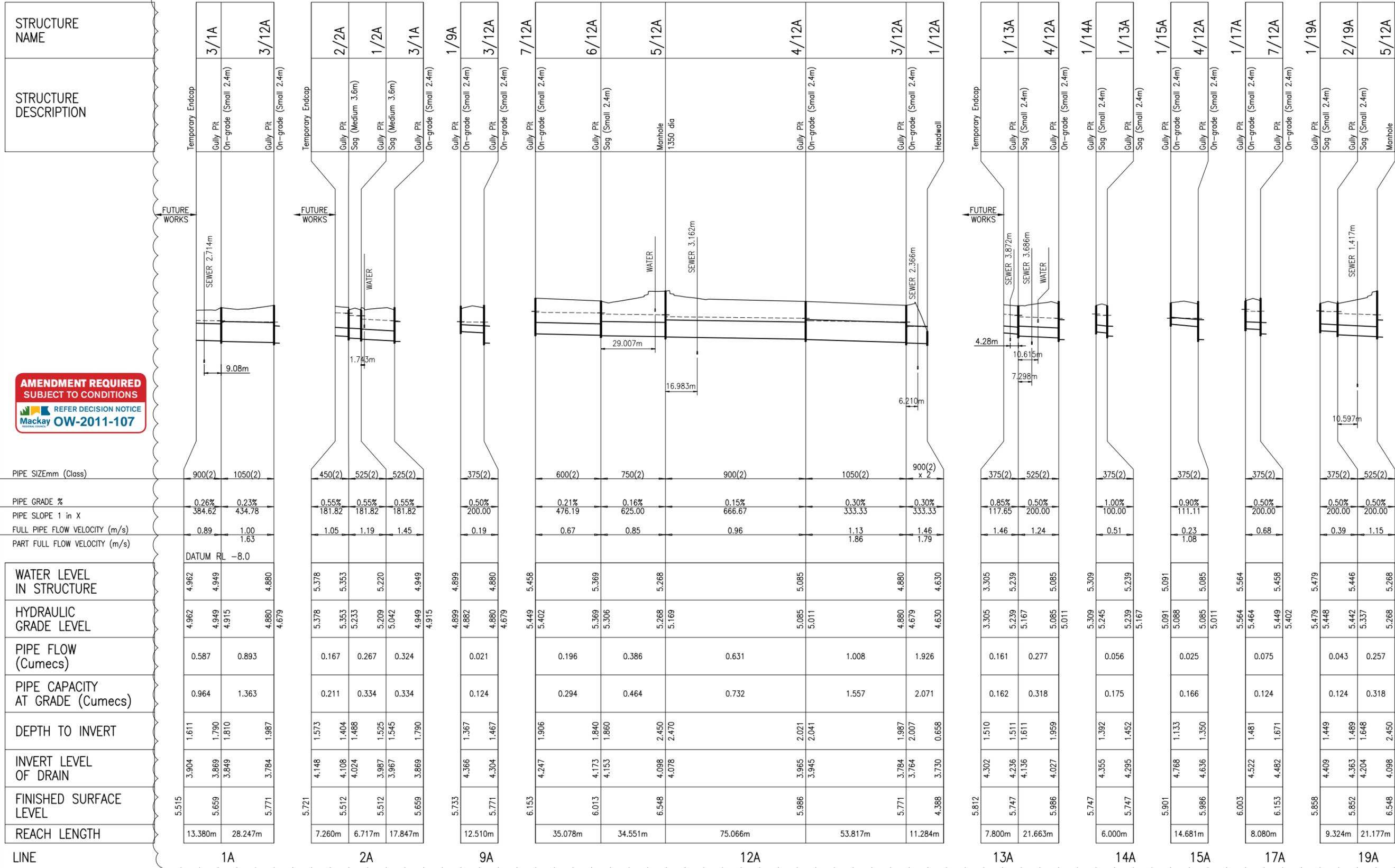
DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

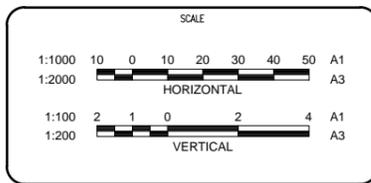
STORMWATER DRAINAGE LAYOUT PLAN (SHEET 2 OF 2)

DRAWING NO. 136-002-C137

REVISION F



NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	STORMWATER NETWORK AMENDED	BE	BE
C	16/11/12	LONGITUDINAL SECTIONS AMENDED	MT	MT
B	02/12/11	LONGITUDINAL SECTIONS AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	JL



Projex North
 Level 2, 9 Capital Place
 Lake Kawana Business Village
 PO Box 1415 Buddina Qld 4575
 PH: (07) 5493 3649
 FAX: (07) 5493 3638
 ABN 47 129 314 478
 CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1
Q5 STORMWATER LONGITUDINAL SECTIONS
SHEET 1 OF 5
 DRAWING NO. 136-002-C138
 REVISION D

STRUCTURE NAME
STRUCTURE DESCRIPTION

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS

REFER DECISION NOTICE
Mackay OW-2011-107

PIPE SIZE (mm Class)	450(2)	450(2)	525(2)	525(2)
PIPE GRADE %	1.25%	1.10%	1.80%	7.20%
PIPE SLOPE 1 in X	80.00	90.91	55.56	13.89
FULL PIPE FLOW VELOCITY (m/s)	1.21	1.84	2.14	2.85
PART FULL FLOW VELOCITY (m/s)				5.47
DATUM RL	-8.0			
WATER LEVEL IN STRUCTURE	7.915	7.915		
HYDRAULIC GRADE LEVEL	7.693	7.656	6.958	6.263
PIPE FLOW (Cumecs)	0.192	0.293	0.479	0.639
PIPE CAPACITY AT GRADE (Cumecs)	0.319	0.299	0.603	1.207
DEPTH TO INVERT	2.011	2.120	1.988	2.055
INVERT LEVEL OF DRAIN	6.272	6.171	5.611	4.954
FINISHED SURFACE LEVEL	8.291	6.151	7.683	4.934
REACH LENGTH	8.080m	41.438m	36.518m	19.912m

LINE 8B

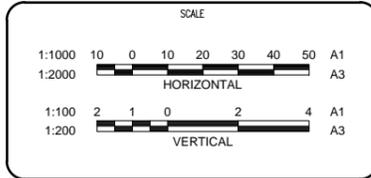
STRUCTURE NAME	1/15B	1/16B	1/18B	1/21B	1/20B	1/22B	1/23B
STRUCTURE DESCRIPTION	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)
PIPE SIZE (mm Class)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)
PIPE GRADE %	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
PIPE SLOPE 1 in X	100.00	100.00	100.00	100.00	100.00	100.00	100.00
FULL PIPE FLOW VELOCITY (m/s)	0.88	0.80	1.35	1.14	1.26	1.04	1.47
PART FULL FLOW VELOCITY (m/s)							
DATUM RL	-5.0				-8.0		
WATER LEVEL IN STRUCTURE	11.246	11.246	10.345	7.038	6.335	7.186	6.638
HYDRAULIC GRADE LEVEL	11.077	10.694	9.893	6.658	6.064	6.987	6.333
PIPE FLOW (Cumecs)	0.097	0.088	0.149	0.126	0.139	0.166	0.162
PIPE CAPACITY AT GRADE (Cumecs)	0.175	0.175	0.175	0.175	0.175	0.285	0.175
DEPTH TO INVERT	1.603	1.432	1.385	1.645	1.433	1.797	1.702
INVERT LEVEL OF DRAIN	10.206	10.091	9.419	6.175	5.106	5.781	5.175
FINISHED SURFACE LEVEL	11.931	11.673	10.917	7.404	6.689	7.683	7.009
REACH LENGTH	7.312m	6.630m	8.090m	12.624m	8.080m	8.617m	8.219m

LINE 15B 16B 18B 21B 20B 22B 23B

STRUCTURE NAME	4/2C	3/2C	2/2C	1/2C	3/1C	1/3C	1/2C	2/4C	1/4C	5/1C	
STRUCTURE DESCRIPTION	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	MANHOLE 1050 dia	Gully Pit On-grade (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit Sag (Small 2.4m)	MANHOLE 1050 dia	Gully Pit Sag (Small 2.4m)	
PIPE SIZE (mm Class)	375(2)	375(2)	375(2)	450(2)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)	
PIPE GRADE %	0.50%	0.50%	0.50%	1.30%	1.00%	2.00%	2.00%	2.00%	5.00%		
PIPE SLOPE 1 in X	200.00	200.00	200.00	76.92	100.00	50.00	50.00	50.00	20.00		
FULL PIPE FLOW VELOCITY (m/s)	0.53	0.66	0.66	1.24	0.92	0.23	0.32	0.32			
PART FULL FLOW VELOCITY (m/s)	1.10	1.17	1.17	2.14		1.44					
DATUM RL	-8.0										
WATER LEVEL IN STRUCTURE	6.600	6.561	6.548	6.432	6.310	6.636	6.310	6.846	6.829	6.821	
HYDRAULIC GRADE LEVEL	6.600	6.561	6.492	6.406	6.176	6.335	6.310	6.843	6.824	6.821	
PIPE FLOW (Cumecs)	0.058	0.073	0.073	0.197	0.102	0.025	0.036	0.025	0.036		
PIPE CAPACITY AT GRADE (Cumecs)	0.124	0.124	0.124	0.325	0.175	0.248	0.248	0.248	0.392		
DEPTH TO INVERT	1.233	1.248	1.268	1.384	1.581	1.100	1.171	1.281	1.504	1.349	
INVERT LEVEL OF DRAIN	6.344	6.285	6.265	6.075	5.072	6.518	6.395	6.518	6.201	5.895	
FINISHED SURFACE LEVEL	7.577	7.533	7.459	6.972	6.653	7.688	6.972	7.799	7.705	7.244	
REACH LENGTH	11.741m	33.951m	54.913m	50.262m	7.514m	6.148m	7.705m	6.104m			

LINE 2C 3C 4C

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
F	01/02/13	STORMWATER 'C' NETWORK AMENDED	BE	BE
E	29/01/13	STORMWATER NETWORK AMENDED	BE	BE
D	16/11/12	LONGITUDINAL SECTIONS AMENDED	MT	MT
C	23/03/12	LONGITUDINAL SECTIONS AMENDED	MT	NH
B	02/12/11	LONGITUDINAL SECTIONS AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	JL



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

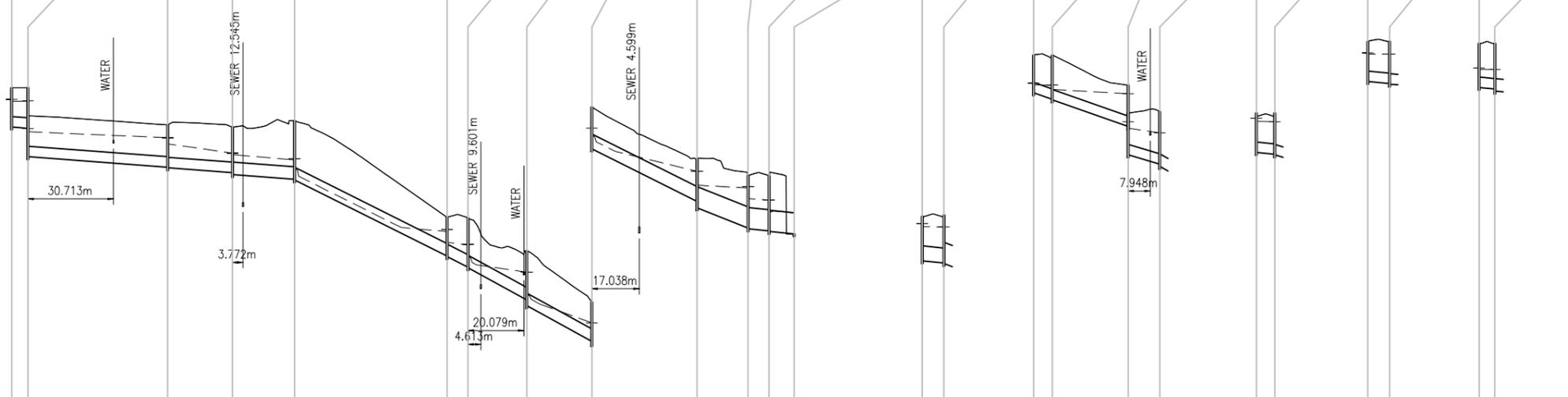
SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

Q5 STORMWATER LONGITUDINAL SECTIONS
SHEET 3 OF 5

DRAWING NO. 136-002-C140

REVISION F

STRUCTURE NAME	13/1C	12/1C	11/1C	10/1C	9/1C	8A/1C	8/1C	7/1C	6/1C	5/1C	4/1C	3/1C	1/1C	1/5C	5/1C	2/6C	1/6C	7/1C	1/7C	1/6C	1/9C	11/1C	1/8C	10/1C	
STRUCTURE DESCRIPTION	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit Sag (Small 2.4m)	MANHOLE 1050 dia	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	MANHOLE 1050 dia	Gully Pit On-grade (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit Sag (Medium 3.6m)	Gully Pit Sag (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit Sag (Small 2.4m)	MANHOLE 1050 dia	Gully Pit Sag (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit On-grade (Small 2.4m)	Gully Pit Sag (Small 2.4m)	Gully Pit Sag (Small 2.4m)
PIPE SIZEmm (Class)	375(2)	375(2)	375(2)	450(2)	450(2)	450(2)	450(2)	450(2)	450(2)	525(2)	750(2)	750(2)	750(2)	525(2)	525(2)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)	375(2)	
PIPE GRADE %	0.75%	0.75%	0.75%	0.75%	5.00%	5.00%	5.50%	5.50%	5.00%	4.00%	1.00%	1.00%	1.00%	1.00%	1.00%	3.50%	3.50%	3.00%	1.00%	1.00%	1.00%	1.00%	1.00%		
PIPE SLOPE 1 in X	133.33	133.33	133.33	133.33	20.00	20.00	18.18	18.18	20.00	25.00	100.00	100.00	100.00	100.00	100.00	28.57	28.57	33.33	100.00	100.00	100.00	100.00	100.00		
FULL PIPE FLOW VELOCITY (m/s)	0.53	1.04	1.88	1.69	1.69	1.99	2.16	3.40	3.12	1.87	2.04	2.45	0.67	0.67	0.67	0.91	1.21	1.99	0.80	0.80	0.42	0.42	0.37		
PART FULL FLOW VELOCITY (m/s)					3.83	4.23	4.68	4.68	4.85	4.85	2.04	2.90	2.90	0.67	0.67	2.61	2.61	2.61	0.80	0.80	0.42	0.42	0.37		
WATER LEVEL IN STRUCTURE	15.402	15.351	15.023	14.475	14.265	11.727	11.193	10.197	8.372	6.821	6.265	5.786	5.320	6.943	6.821	10.987	10.922	10.601	10.197	10.728	10.601	15.068	15.023	14.530	
HYDRAULIC GRADE LEVEL	15.402	15.337	15.023	14.420	14.222	11.654	11.174	10.195	8.372	6.821	6.220	5.786	5.320	6.943	6.821	10.926	10.760	10.373	10.195	10.728	10.618	15.068	15.023	14.530	
PIPE FLOW (Cumecs)	0.059	0.115	0.207	0.268	0.268	0.316	0.344	0.541	0.699	0.852	0.932	1.119	0.150	0.150	0.150	0.100	0.134	0.219	0.088	0.088	0.046	0.046	0.041		
PIPE CAPACITY AT GRADE (Cumecs)	0.152	0.152	0.152	0.247	0.637	0.637	0.668	0.668	1.006	2.322	1.161	1.161	0.450	0.450	0.450	0.328	0.328	0.303	0.175	0.175	0.175	0.175	0.175		
DEPTH TO INVERT	1.412	1.456	1.518	1.538	2.102	1.393	1.413	1.759	1.779	1.896	1.916	2.122	1.412	1.599	1.716	1.348	1.563	1.603	1.889	1.416	1.462	1.432	1.518	1.580	
INVERT LEVEL OF DRAIN	14.407	14.363	13.967	13.947	13.510	10.771	10.751	10.376	9.194	8.994	8.994	8.994	7.709	5.606	5.528	10.637	10.403	10.383	9.429	9.409	9.429	14.045	13.967	13.828	
FINISHED SURFACE LEVEL	15.819	15.819	15.485	15.404	15.632	12.164	12.135	10.958	9.122	7.244	6.671	6.653	4.570	7.205	7.244	11.985	11.986	10.911	10.958	10.911	15.477	15.485	15.408	15.404	
REACH LENGTH	5.860m	50.169m	23.268m	22.312m	54.776m	7.505m	21.123m	23.362m	37.770m	18.327m	7.500m	9.039m		7.783m	7.783m	6.680m	27.263m	11.342m	6.581m	6.581m	7.820m	7.820m	5.632m		



AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay **OW-2011-107**

NOTE: LINE D LONGITUDINAL SECTIONS (SHEET 5 OF 5) ARE SHOWN ON 136-002-C153

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
F	01/02/13	NETWORK "C" AMENDED	BE	BE
E	29/01/13	STORMWATER NETWORK AMENDED	BE	BE
D	16/11/12	LONGITUDINAL SECTIONS AMENDED	MT	MT
C	23/03/12	LINE 8C AND 9C AMENDED	MT	NH
B	02/12/11	LINE 1C AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	JL

CLIENT

SCALE

1:1000 10 0 10 20 30 40 50 A1
1:2000 HORIZONTAL A3

1:100 2 1 0 2 4 A1
1:200 VERTICAL A3

Projex North

Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT <td>CHECKED</td> <td>DJW</td>	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

Q5 STORMWATER LONGITUDINAL SECTIONS

SHEET 4 OF 5

DRAWING NO. 136-002-C141

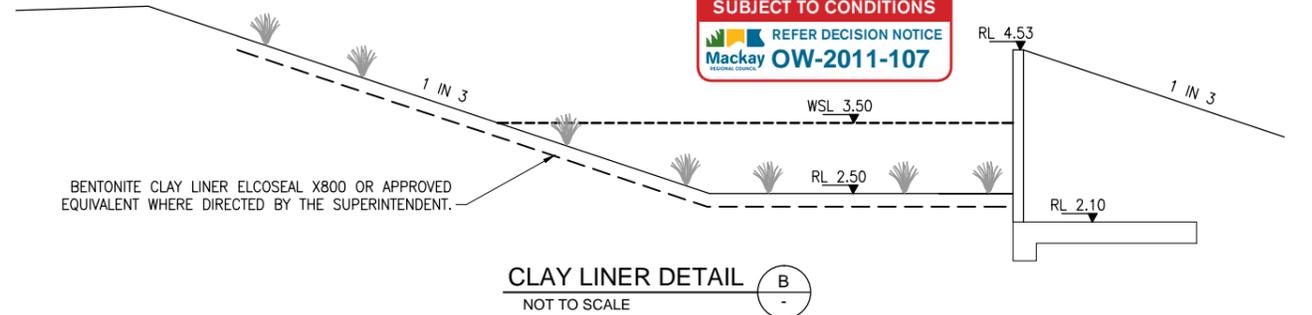
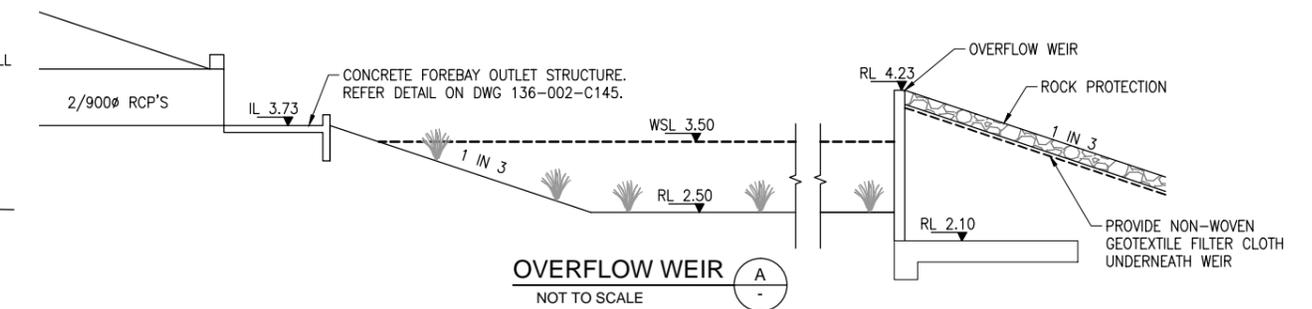
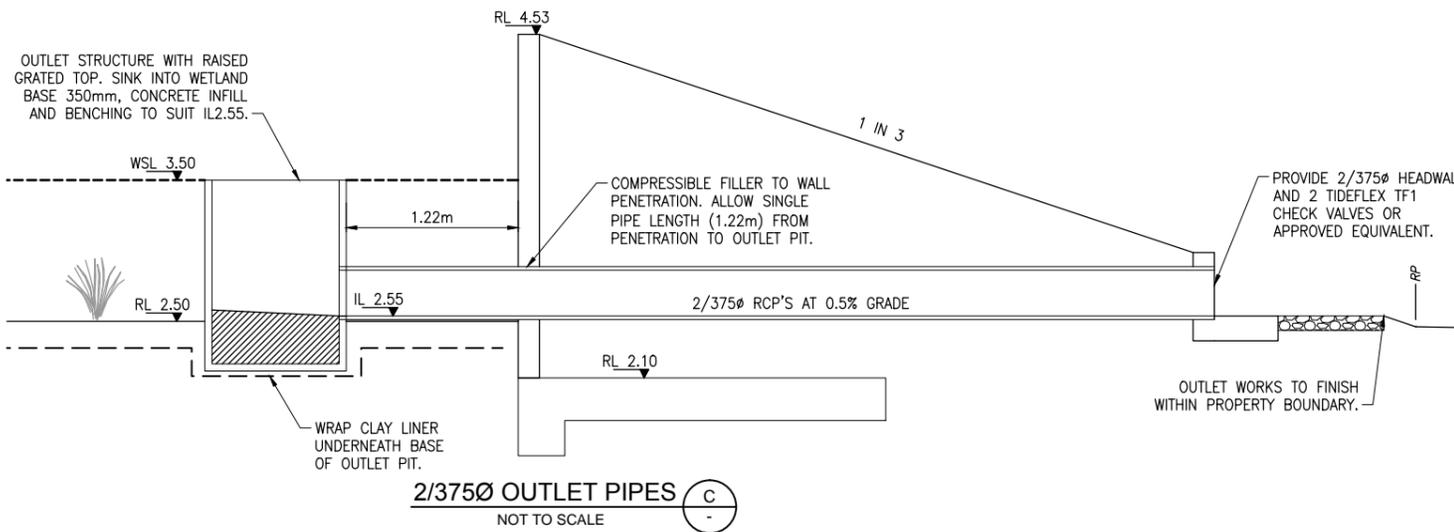
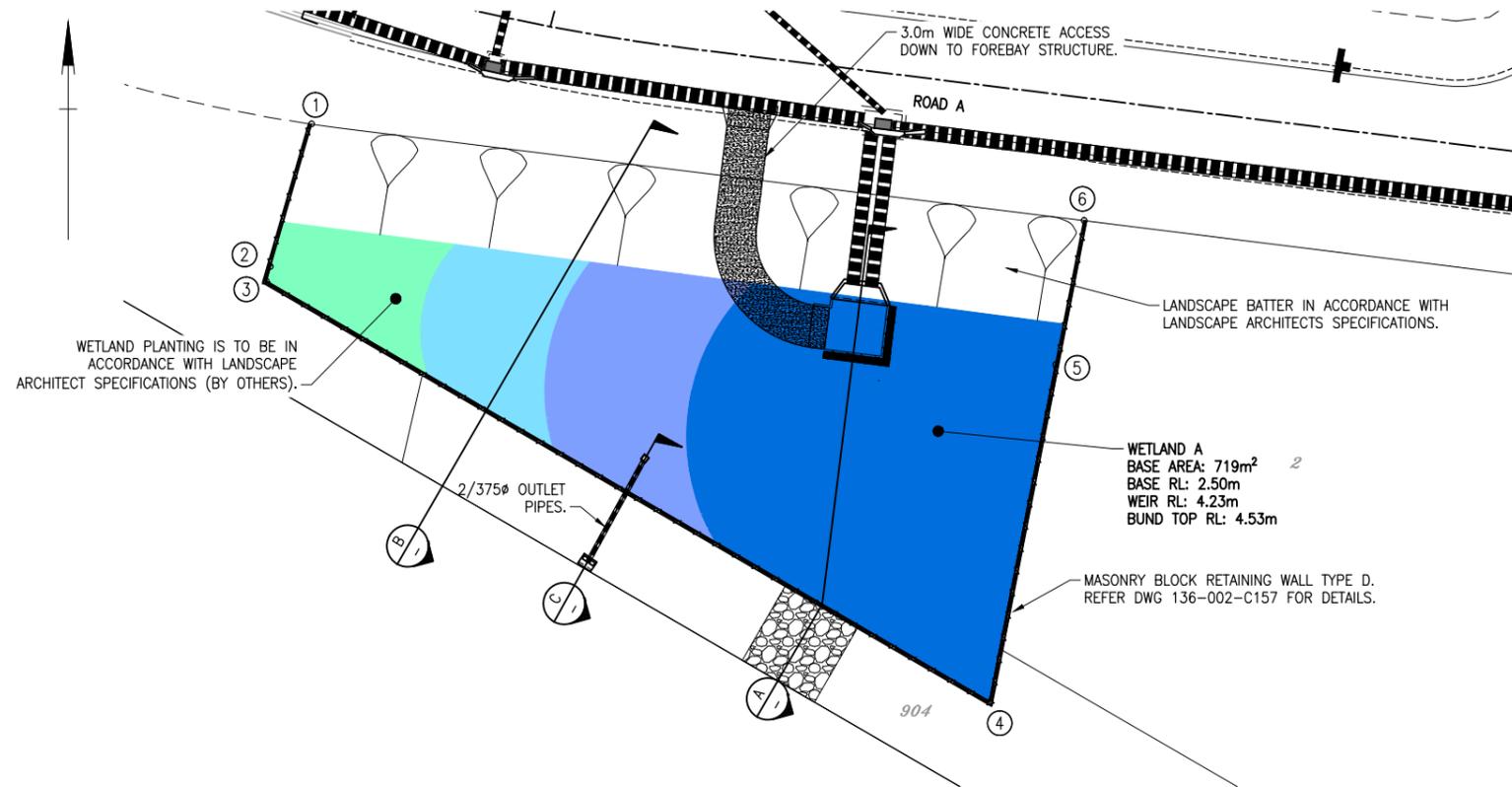
REVISION F

WETLAND ZONING LEGEND

- SHALLOW MARSH - DEPTH 0.0m - 0.25m
- MARSH - DEPTH 0.25m - 0.50m
- DEEP MARSH - DEPTH 0.50m - 0.75m
- POOL - DEPTH 0.75m - 1.5m
- BATTERS

WETLAND A SETOUT

SETOUT POINT	EASTING	NORTHING
1	722684.666	7676025.050
2	722681.705	7676014.838
3	722681.401	7676013.789
4	722733.364	7675983.640
5	722738.105	7676007.796
6	722740.132	7676018.124



AMENDMENT REQUIRED
 SUBJECT TO CONDITIONS
 REFER DECISION NOTICE
 Mackay OW-2011-107

NOTES

- WETLANDS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH LOCAL GOVERNMENT STANDARDS AND "HEALTHY WATERWAYS WSUD TECHNICAL DESIGN GUIDELINES - CHAPTER 6 (CONSTRUCTED STORMWATER WETLANDS)."
- REFER IPWEA QLD STD. DWG. WSUD-009 FOR OUTLET RISER PIT STANDARD DETAILS.
- REFER IPWEA QLD STD. DWG. WSUD-012 FOR WEIR STANDARD DETAILS.
- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH LANDSCAPING PLANS.

PLANT ESTABLISHMENT IN WETLAND

- BATTER & WETLAND PLANTING TO BE COMPLETED BY OTHERS IN ACCORDANCE WITH LANDSCAPE ARCHITECTS SPECIFICATIONS.

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	01/02/13	BIO BASIN CHANGED TO WETLAND	MT	NH
D	16/11/12	BASIN OUTLET AMENDED	MT	NH
C	23/03/12	LOT LAYOUT AMENDED	MT	NH
B	02/12/11	BASIN A LAYOUT AND LEVELS AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

1:250 5 0 5 10 A1

1:500 5 0 5 10 A3

1:50 1 0.5 0 1 2 A1

1:100 1 0.5 0 1 2 A3

Projex North

Level 2, 9 Capital Place
 Lake Kawana Business Village
 PO Box 1415 Buddina Qld 4575
 PH: (07) 5493 3649
 FAX: (07) 5493 3638
 ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	-
APPROVED			

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

WETLAND A SETOUT PLAN

DRAWING NO. 136-002-C142

REVISION E

NOTES

1. WETLANDS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH LOCAL GOVERNMENT STANDARDS AND "HEALTHY WATERWAYS WSUD TECHNICAL DESIGN GUIDELINES - CHAPTER 6 (CONSTRUCTED STORMWATER WETLANDS)."
2. REFER IPWEA QLD STD. DWG. WSUD-009 FOR OUTLET RISER PIT STANDARD DETAILS.
3. REFER IPWEA QLD STD. DWG. WSUD-012 FOR WEIR STANDARD DETAILS.
4. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH LANDSCAPING PLANS.

PLANT ESTABLISHMENT IN WETLAND

1. BATTER & WETLAND PLANTING TO BE COMPLETED BY OTHERS IN ACCORDANCE WITH LANDSCAPE ARCHITECTS SPECIFICATIONS.

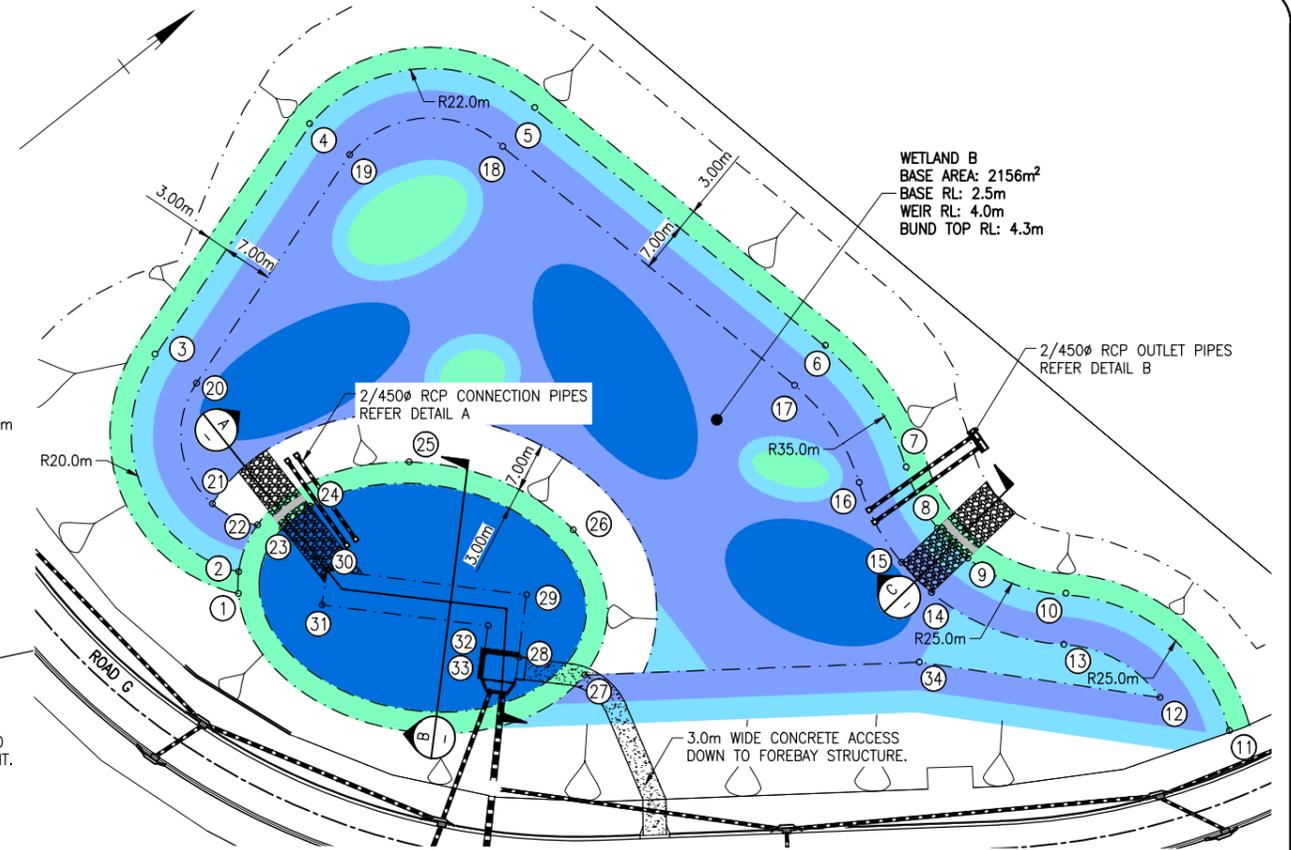
WETLAND 2 SETOUT

SETOUT POINT	EASTING	NORTHING
1	722715.083	7675803.716
2	722712.720	7675805.669
3	722681.223	7675815.508
4	722669.311	7675852.913
5	722687.340	7675879.283
6	722739.277	7675890.612
7	722759.846	7675888.868
8	722769.411	7675886.965
9	722775.371	7675887.683
10	722787.914	7675895.458
11	722817.519	7675901.513
12	722807.714	7675896.765
13	722793.361	7675890.731
14	722776.003	7675880.649
15	722770.040	7675879.971
16	722757.435	7675882.295

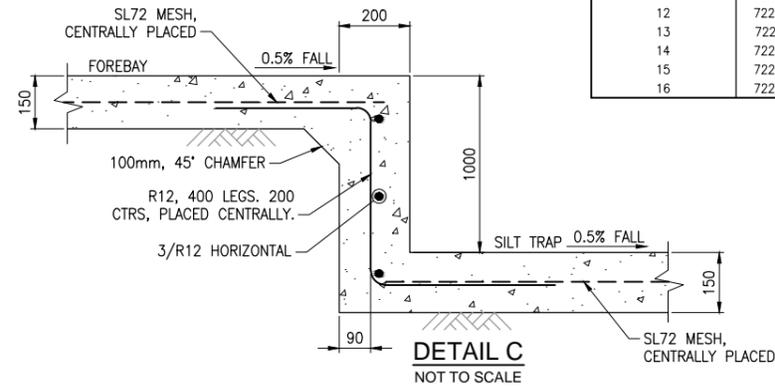
17	722740.979	7675883.690
18	722688.832	7675872.316
19	722676.302	7675854.605
20	722688.103	7675817.549
21	722702.844	7675808.709
22	722709.193	7675811.837
23	722711.708	7675814.347
24	722711.728	7675819.347
25	722715.550	7675834.199
26	722737.506	7675846.442
27	722754.578	7675834.928
28	722746.825	7675829.186
29	722740.597	7675835.543
30	722720.280	7675815.639
31	722723.716	7675812.006
32	722740.635	7675828.582
33	722743.260	7675825.903
34	722782.609	7675873.159

WETLAND ZONING LEGEND

- SHALLOW MARSH - DEPTH 0.0m - 0.25m
- MARSH - DEPTH 0.25m - 0.50m
- DEEP MARSH - DEPTH 0.50m - 0.75m
- POOL - DEPTH 0.75m - 1.5m
- BATTERS



WETLAND B
 BASE AREA: 2156m²
 BASE RL: 2.5m
 WEIR RL: 4.0m
 BUND TOP RL: 4.3m



DETAIL C
NOT TO SCALE

CLAY LINER DETAIL

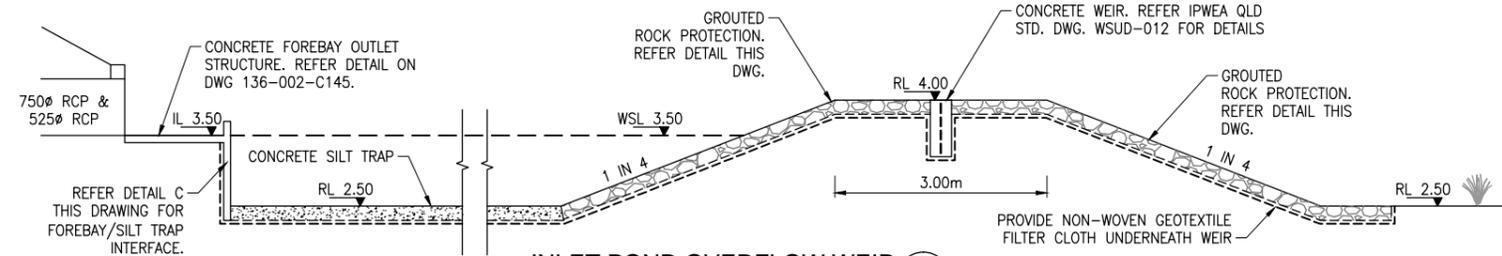
NOT TO SCALE



INLET POND OVERFLOW WEIR

NOT TO SCALE

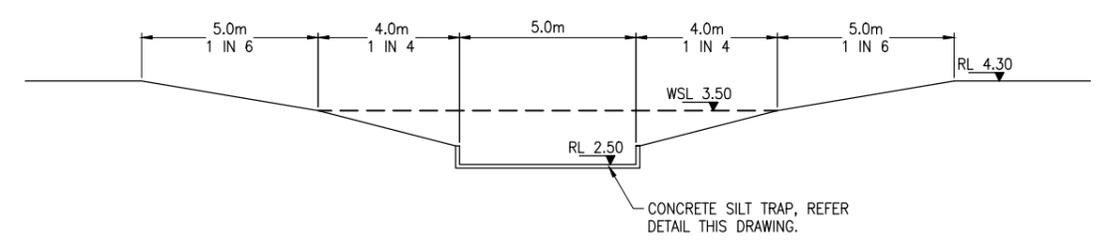
A



INLET POND TYPICAL CROSS SECTION

NOT TO SCALE

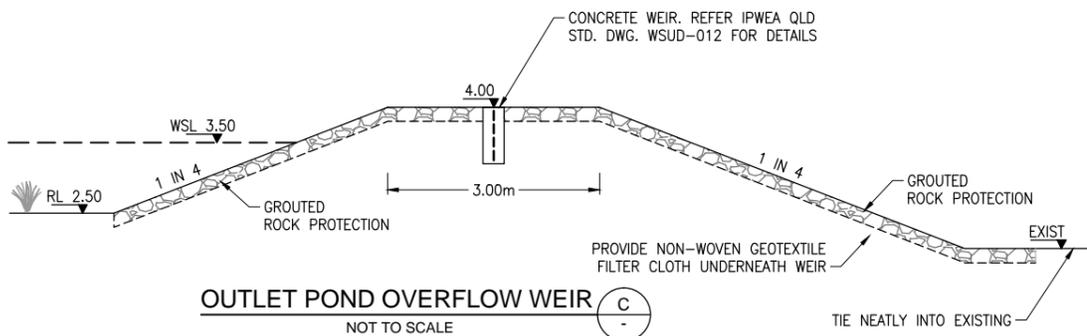
B



OUTLET POND OVERFLOW WEIR

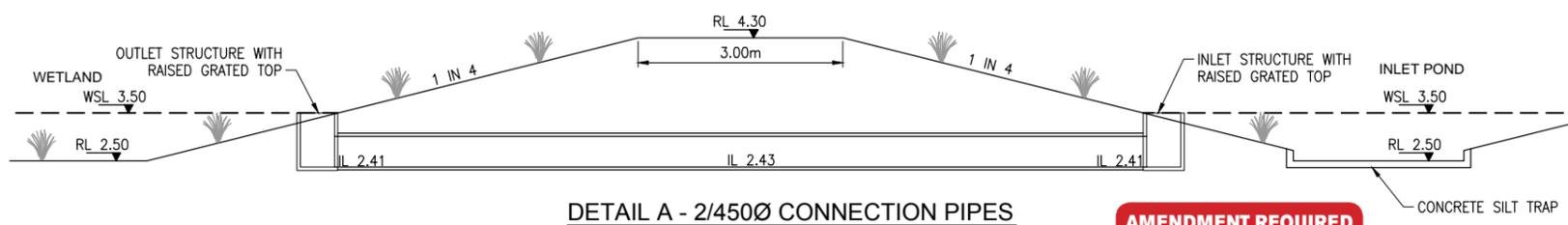
NOT TO SCALE

C



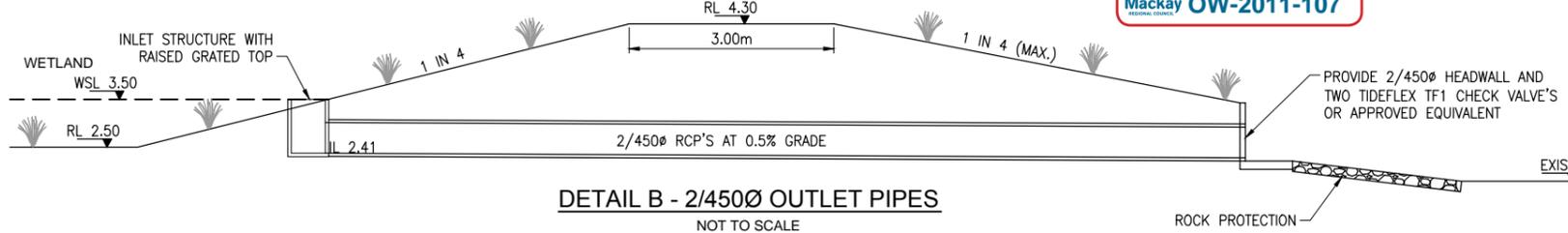
DETAIL A - 2/450Ø CONNECTION PIPES

NOT TO SCALE

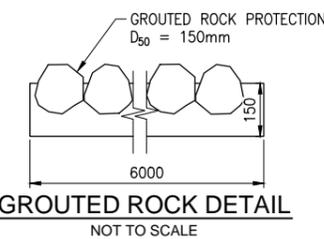


DETAIL B - 2/450Ø OUTLET PIPES

NOT TO SCALE



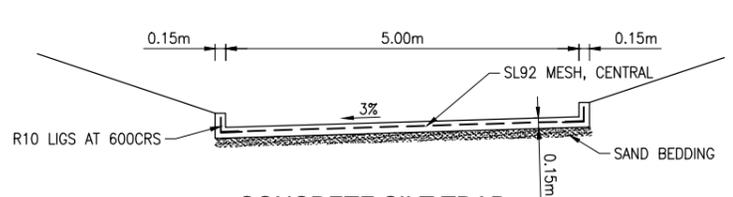
AMENDMENT REQUIRED
 SUBJECT TO CONDITIONS
 REFER DECISION NOTICE
 Mackay OW-2011-107



GROUTED ROCK DETAIL
NOT TO SCALE

CONCRETE SILT TRAP

NOT TO SCALE



NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	01/02/13	BIO BASIN CHANGED TO WETLAND	MT	NH
D	16/11/12	OUTLET PIPE AMENDED	MT	NH
C	23/03/12	LOT LAYOUT AMENDED	MT	NH
B	02/12/11	BASIN B LAYOUT AND LEVELS AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

1:250 5 0 5 10 A1
 1:500 A3

1:50 1 0.5 0 1 2 A1
 1:100 A3

Projex North

Level 2, 9 Capital Place
 Lake Kawana Business Village
 PO Box 1415 Buddina Qld 4575
 PH: (07) 5493 3649
 FAX: (07) 5493 3638
 ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED			

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

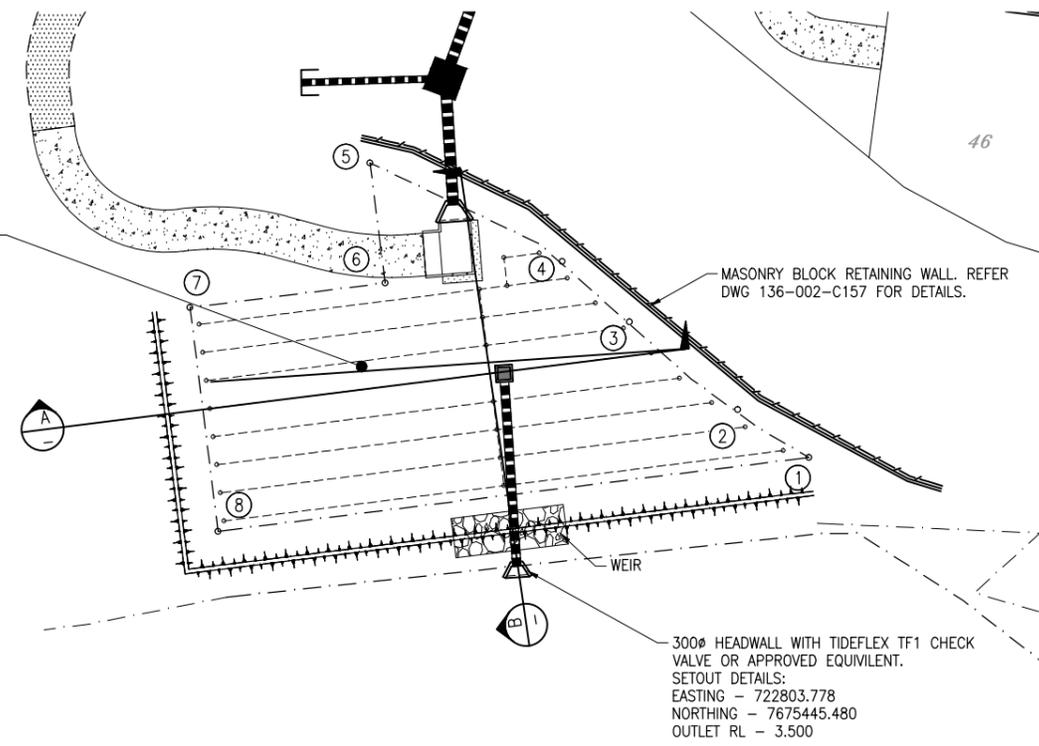
WETLAND B SETOUT PLAN

DRAWING NO. 136-002-C143

REVISION E



BIO BASIN C
 AREA: 745m²
 FSL: 4.570m
 WEIR RL: 5.020m
 BUND TOP RL: 5.170m

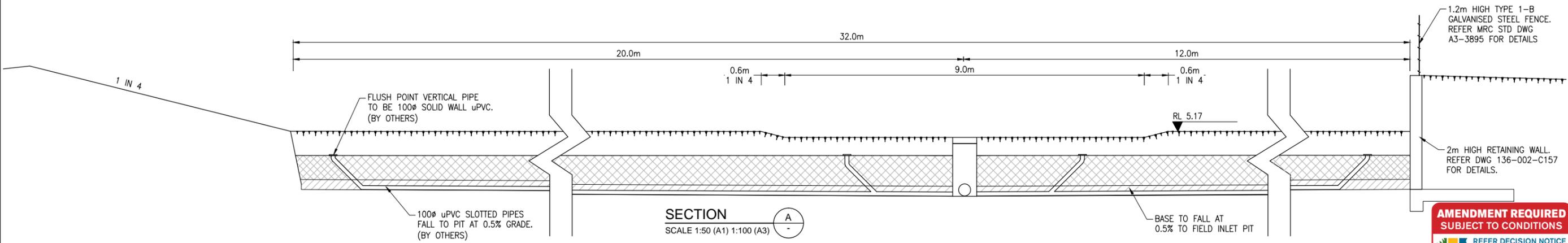
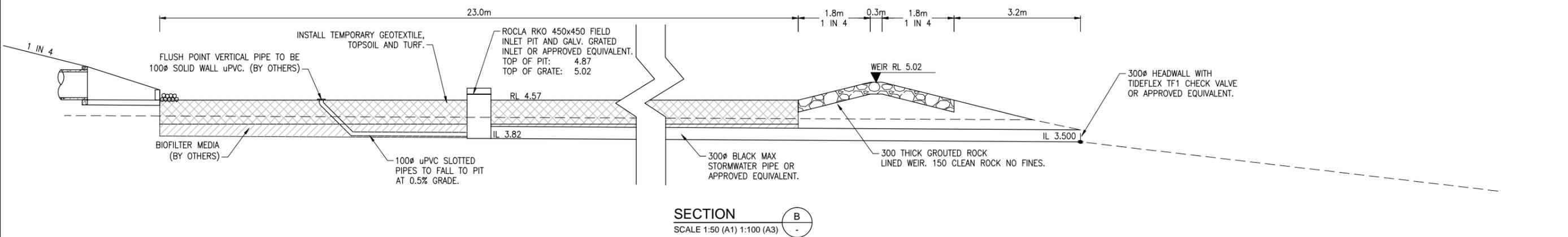


BIO BASIN C SETOUT

SETOUT POINT	EASTING	NORTHING
1	722824.461	7675453.153
2	722819.4109	7675456.5460
3	722811.7635	7675462.7328
4	722806.9937	7675467.0179
5	722793.3967	7675473.9821
6	722794.4637	7675465.4853
7	722780.6579	7675463.7516
8	722782.644	7675447.936

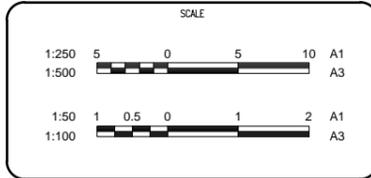
MASONRY BLOCK RETAINING WALL. REFER DWG 136-002-C157 FOR DETAILS.

300Ø HEADWALL WITH TIDEFLEX TF1 CHECK VALVE OR APPROVED EQUIVALENT.
 SETOUT DETAILS:
 EASTING - 722803.778
 NORTHING - 7675445.480
 OUTLET RL - 3.500



AMENDMENT REQUIRED
 SUBJECT TO CONDITIONS
 REFER DECISION NOTICE
 Mackay OW-2011-107

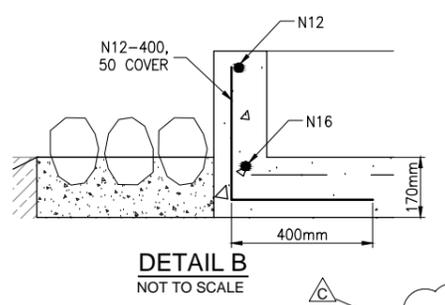
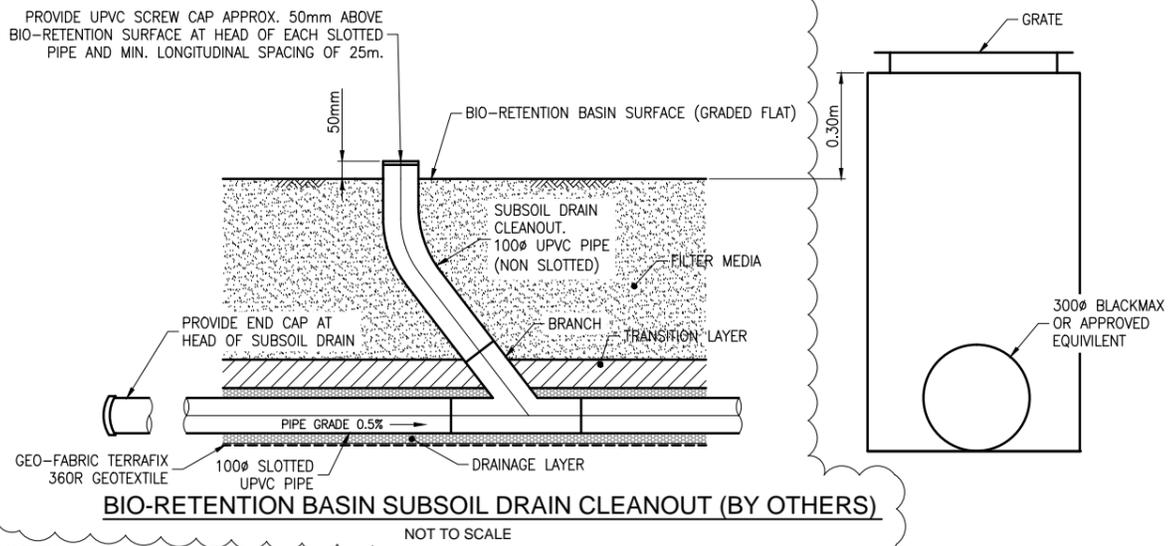
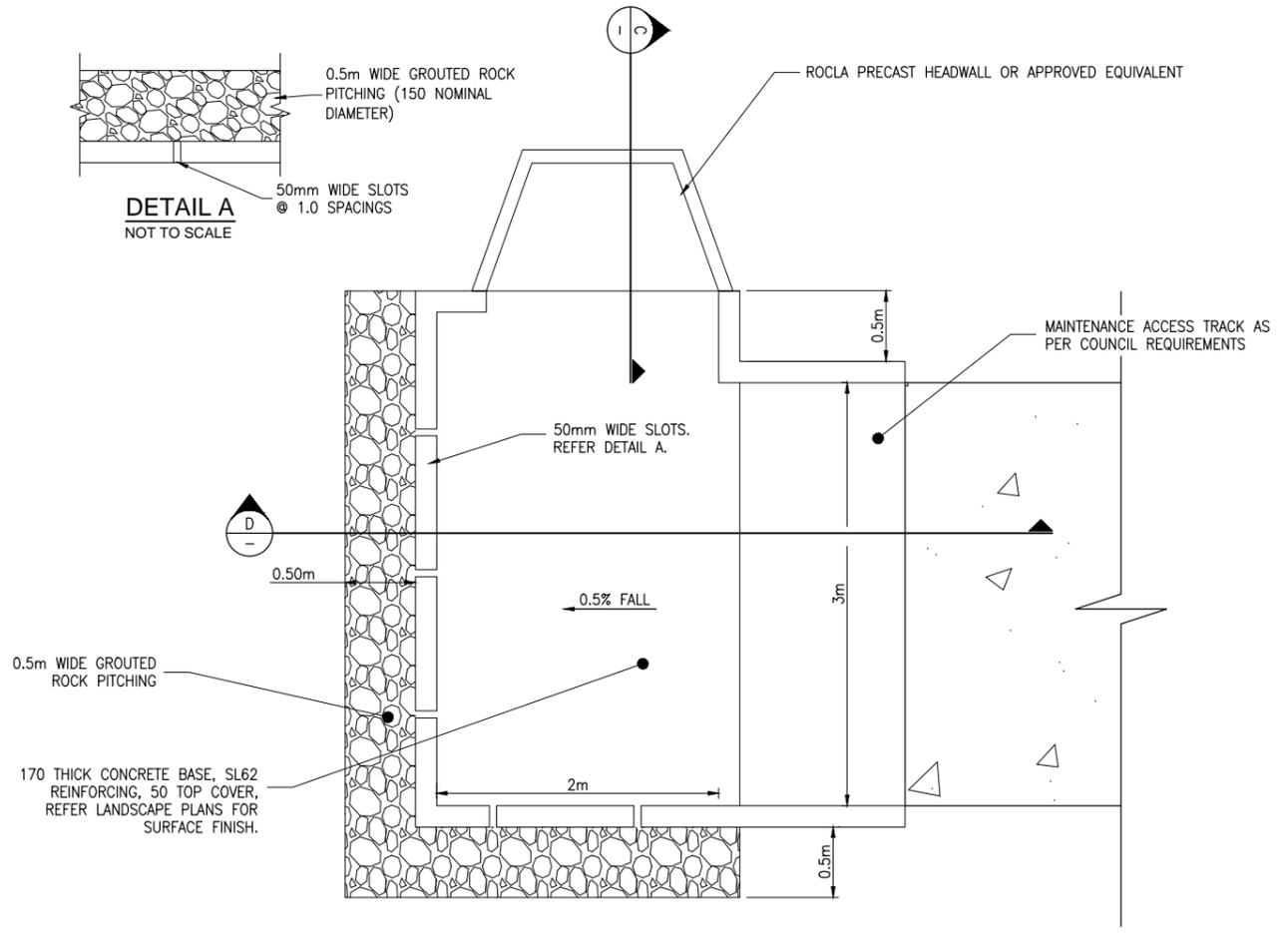
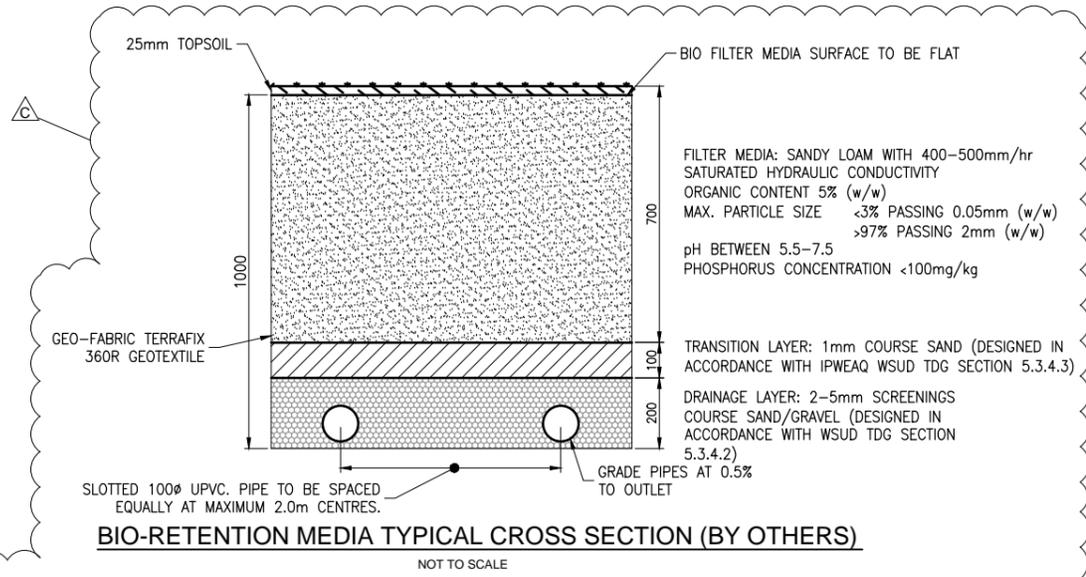
NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	16/11/12	OUTLET PIPE AMENDED, BASE RAISED, LEVELS AMENDED	MT	NH
C	23/03/12	BIO BASIN LAYOUT AMENDED	MT	NH
B	02/12/11	BASIN C LAYOUT AND LEVELS AMENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	NH



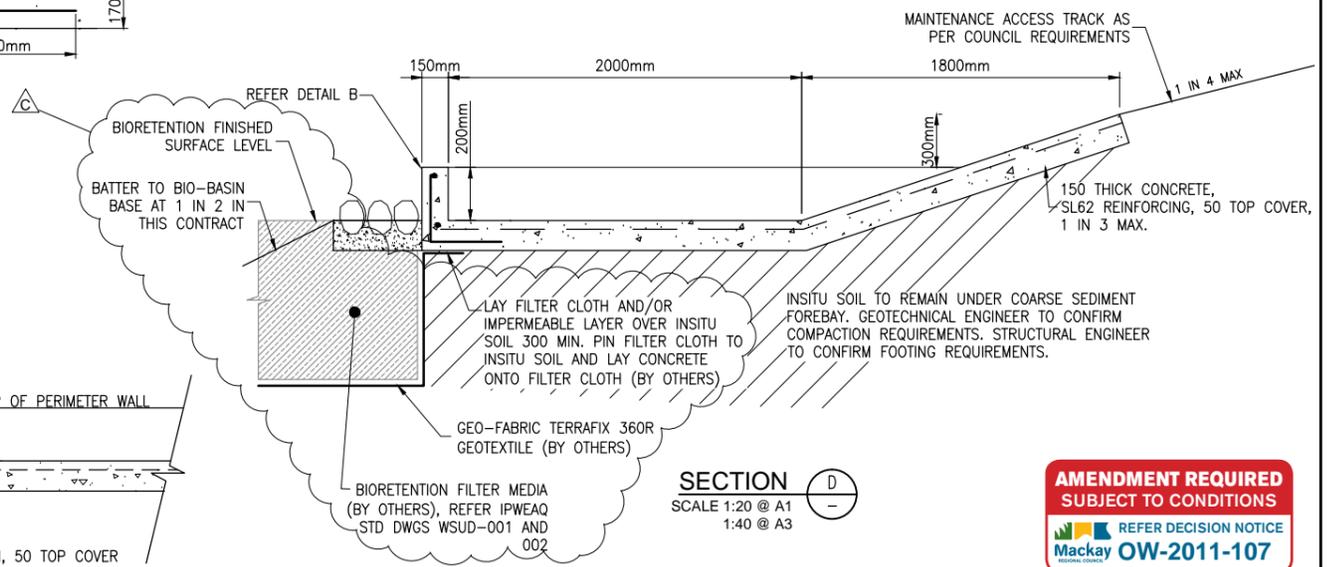
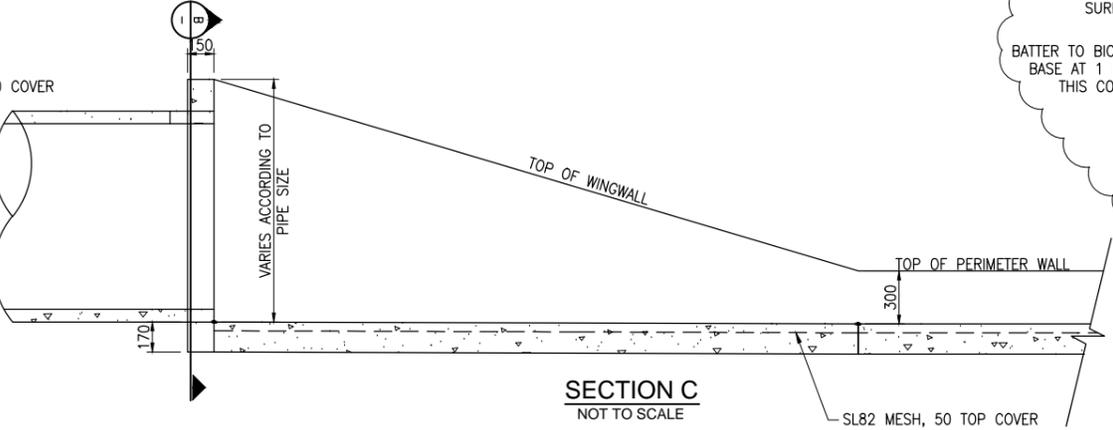
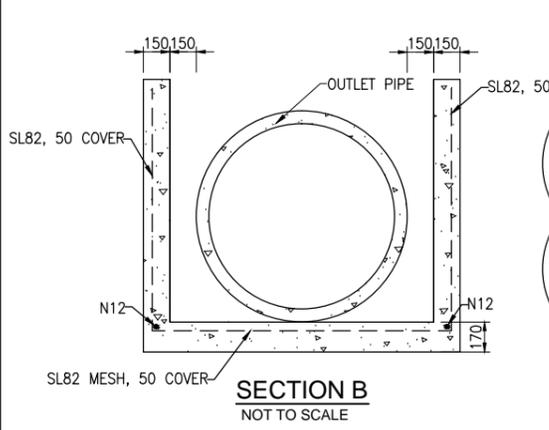
Projex North
 Level 2, 9 Capital Place
 Lake Kawana Business Village
 PO Box 1415 Buddina Qld 4575
 PH: (07) 5493 3649
 FAX: (07) 5493 3638
 ABN 47 129 314 478
 CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1	
BIO RETENTION BASIN C SETOUT PLAN	
DRAWING NO.	136-002-C144
REVISION	D



- NOTES:**
1. BIORETENTION MEDIA MATERIAL TO BE IN ACCORDANCE WITH FAWB BIORETENTION FILTER MEDIA GUIDELINES DATED MARCH 2008.
 2. SUBSOIL DRAINAGE IS VINIDEX SCU SLOTTED WALL (EXTRA-HEAVY) OR APPROVED EQUIVALENT.
 3. ALL BATTER TO BIO-FILTERS TO BE LANDSCAPED AS PER LANDSCAPERS DRAWINGS AND SPECIFICATIONS.
 4. PROVIDE SURFACE PROTECTION IN ACCORDANCE WITH BUILDING PHASE; INCLUDING
 - 4.1. SEDIMENT FENCES TO BE INSTALLED AROUND PERIMETER OF FILTER MEDIA AND TOP OF BATTERS
 - 4.2. BATTERS ARE TO BE COVERED WITH FILTER CLOTH WHERE LANDSCAPE WORKS ARE NOT TO COMMENCE IMMEDIATELY
 - 4.3. PROTECTIVE COVERING (FILTER CLOTH + 25mm TOPSOIL + TURF) INSTALLED ACROSS ENTIRE FILTER MEDIA AREA OF SYSTEM.



AMENDMENT REQUIRED
SUBJECT TO CONDITIONS

REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
C	16/11/12	BIO RETENTION BASIN DETAILS AMENDED	MT	NH
B	02/12/11	BIO RETENTION BASIN DETAILS AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

PG THE PICKERING GROUP

SCALE

1:25 0.25 0 0.25 0.5 0.75 1.0 1.25 A1

1:50 A3

1:20 0.2 0 0.2 0.4 0.6 0.8 1 A1

1:40 A3

Projex North

Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

BIO RETENTION BASIN DETAILS AND NOTES PLAN

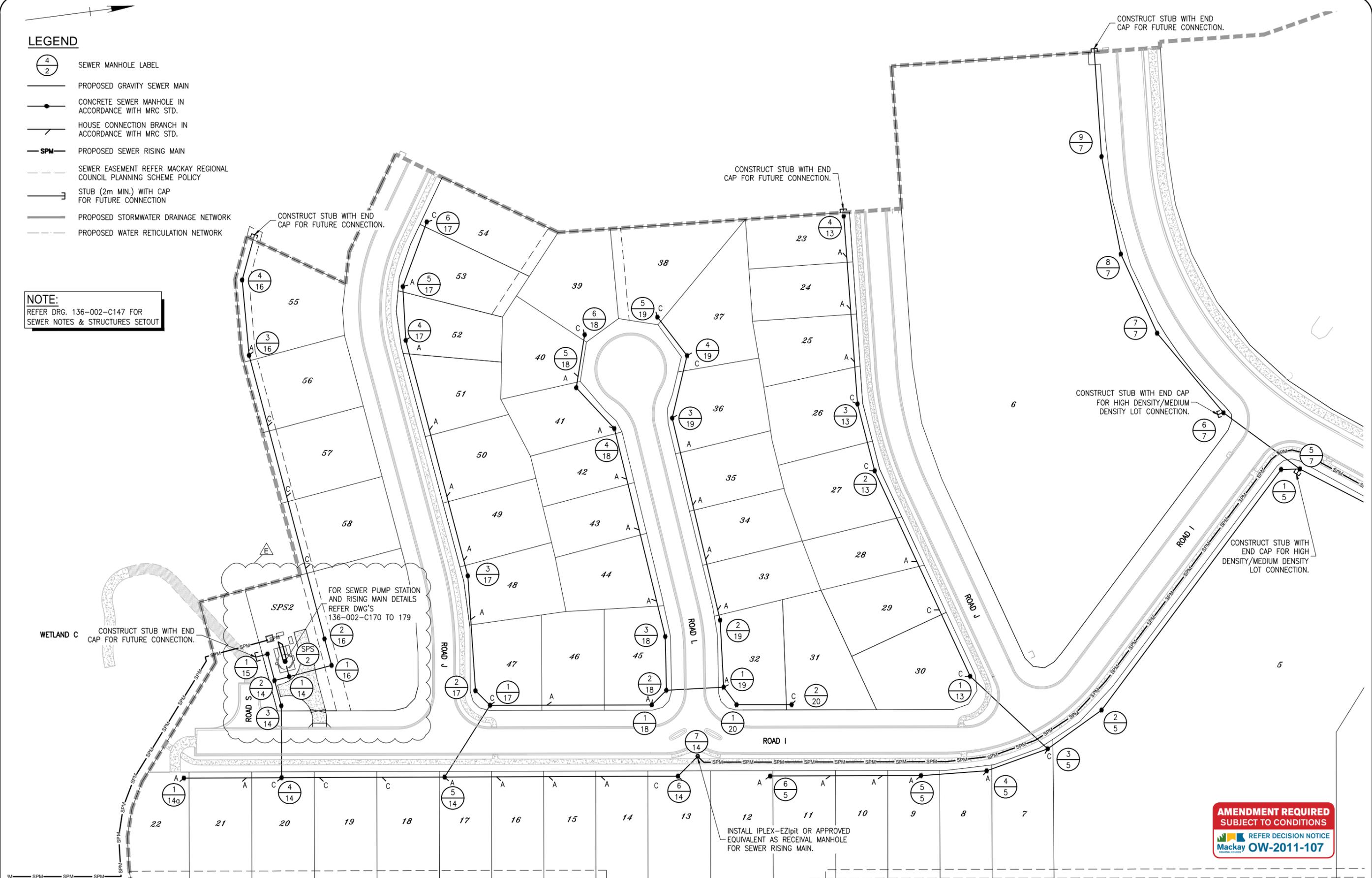
DRAWING NO. 136-002-C-145

REVISION C

LEGEND

-  SEWER MANHOLE LABEL
-  PROPOSED GRAVITY SEWER MAIN
-  CONCRETE SEWER MANHOLE IN ACCORDANCE WITH MRC STD.
-  HOUSE CONNECTION BRANCH IN ACCORDANCE WITH MRC STD.
-  PROPOSED SEWER RISING MAIN
-  SEWER EASEMENT REFER MACKAY REGIONAL COUNCIL PLANNING SCHEME POLICY
-  STUB (2m MIN.) WITH CAP FOR FUTURE CONNECTION
-  PROPOSED STORMWATER DRAINAGE NETWORK
-  PROPOSED WATER RETICULATION NETWORK

NOTE:
REFER DRG. 136-002-C147 FOR SEWER NOTES & STRUCTURES SETOUT



AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	21/12/12	SEWERAGE TREATMENT PLANT REMOVED, SEWER PUMP STATION ADDED.		
D	16/11/12	LINE 7, 13, 16, 17, 18, 19, 20 AMENDED MASTERPLAN LAYOUT	MT	MT
C	23/03/12	LOT LAYOUT AMENDED	MT	NH
B	02/12/11	LOT LAYOUT AMENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	JL

CLIENT



SCALE

1:500 10 5 0 10 20 A1
1:1000




Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

SEWER RETICULATION PLAN (SHEET 1 OF 2)

DRAWING NO. 136-002-C146

REVISION E

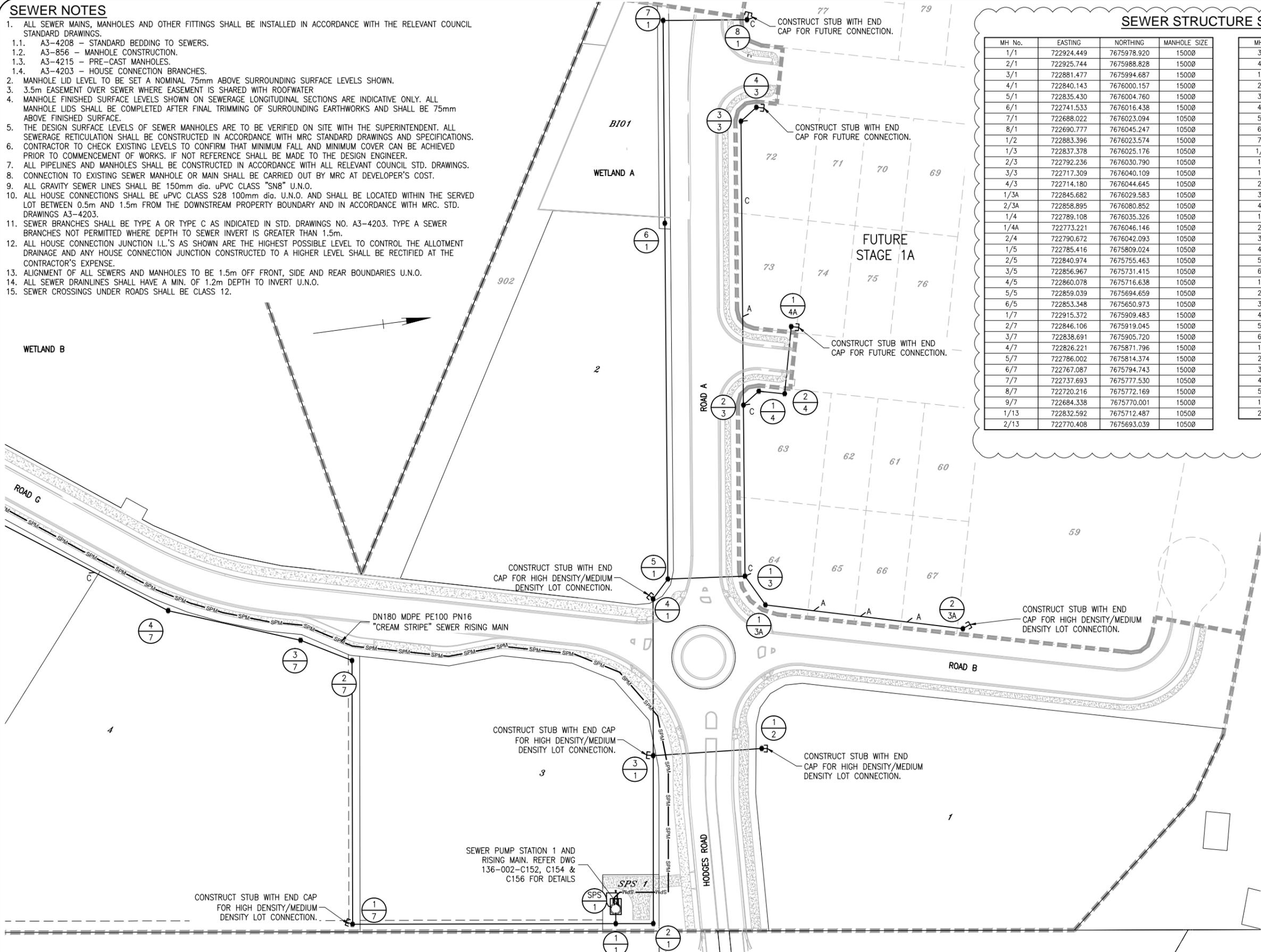
SEWER NOTES

1. ALL SEWER MAINS, MANHOLES AND OTHER FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE RELEVANT COUNCIL STANDARD DRAWINGS.
 - 1.1. A3-4208 - STANDARD BEDDING TO SEWERS.
 - 1.2. A3-856 - MANHOLE CONSTRUCTION.
 - 1.3. A3-4215 - PRE-CAST MANHOLES.
 - 1.4. A3-4203 - HOUSE CONNECTION BRANCHES.
2. MANHOLE LID LEVEL TO BE SET A NOMINAL 75mm ABOVE SURROUNDING SURFACE LEVELS SHOWN.
3. 3.5m EASEMENT OVER SEWER WHERE EASEMENT IS SHARED WITH ROOFWATER
4. MANHOLE FINISHED SURFACE LEVELS SHOWN ON SEWERAGE LONGITUDINAL SECTIONS ARE INDICATIVE ONLY. ALL MANHOLE LIDS SHALL BE COMPLETED AFTER FINAL TRIMMING OF SURROUNDING EARTHWORKS AND SHALL BE 75mm ABOVE FINISHED SURFACE.
5. THE DESIGN SURFACE LEVELS OF SEWER MANHOLES ARE TO BE VERIFIED ON SITE WITH THE SUPERINTENDENT. ALL SEWERAGE RETICULATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH MRC STANDARD DRAWINGS AND SPECIFICATIONS.
6. CONTRACTOR TO CHECK EXISTING LEVELS TO CONFIRM THAT MINIMUM FALL AND MINIMUM COVER CAN BE ACHIEVED PRIOR TO COMMENCEMENT OF WORKS. IF NOT REFERENCE SHALL BE MADE TO THE DESIGN ENGINEER.
7. ALL PIPELINES AND MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL RELEVANT COUNCIL STD. DRAWINGS.
8. CONNECTION TO EXISTING SEWER MANHOLE OR MAIN SHALL BE CARRIED OUT BY MRC AT DEVELOPER'S COST.
9. ALL GRAVITY SEWER LINES SHALL BE 150mm dia. uPVC CLASS "SN8" U.N.O.
10. ALL HOUSE CONNECTIONS SHALL BE uPVC CLASS S28 100mm dia. U.N.O. AND SHALL BE LOCATED WITHIN THE SERVED LOT BETWEEN 0.5m AND 1.5m FROM THE DOWNSTREAM PROPERTY BOUNDARY AND IN ACCORDANCE WITH MRC. STD. DRAWINGS A3-4203.
11. SEWER BRANCHES SHALL BE TYPE A OR TYPE C AS INDICATED IN STD. DRAWINGS NO. A3-4203. TYPE A SEWER BRANCHES NOT PERMITTED WHERE DEPTH TO SEWER INVERT IS GREATER THAN 1.5m.
12. ALL HOUSE CONNECTION JUNCTION I.L.'S AS SHOWN ARE THE HIGHEST POSSIBLE LEVEL TO CONTROL THE ALLOTMENT DRAINAGE AND ANY HOUSE CONNECTION JUNCTION CONSTRUCTED TO A HIGHER LEVEL SHALL BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.
13. ALIGNMENT OF ALL SEWERS AND MANHOLES TO BE 1.5m OFF FRONT, SIDE AND REAR BOUNDARIES U.N.O.
14. ALL SEWER DRAINLINES SHALL HAVE A MIN. OF 1.2m DEPTH TO INVERT U.N.O.
15. SEWER CROSSINGS UNDER ROADS SHALL BE CLASS 12.

SEWER STRUCTURE SETOUT TABLE

MH No.	EASTING	NORTHING	MANHOLE SIZE
1/1	722924.449	7675978.920	15000
2/1	722925.744	7675988.828	15000
3/1	722881.477	7675994.687	15000
4/1	722840.143	7676000.157	15000
5/1	722835.430	7676004.760	15000
6/1	722741.533	7676016.438	15000
7/1	722688.022	7676023.094	10500
8/1	722690.777	7676045.247	10500
1/2	722883.396	7676023.574	15000
1/3	722837.378	7676025.176	10500
2/3	722792.236	7676030.790	10500
3/3	722717.309	7676040.109	10500
4/3	722714.180	7676044.645	10500
1/3A	722845.682	7676029.583	10500
2/3A	722858.895	7676080.852	10500
1/4	722789.108	7676035.326	10500
1/4A	722773.221	7676046.146	10500
2/4	722790.672	7676042.093	10500
1/5	722785.416	7675809.024	10500
2/5	722840.974	7675755.463	10500
3/5	722856.967	7675731.415	10500
4/5	722860.078	7675716.638	10500
5/5	722859.039	7675694.659	10500
6/5	722853.348	7675650.973	10500
1/7	722915.372	7675909.483	15000
2/7	722846.106	7675919.045	15000
3/7	722838.691	7675905.720	15000
4/7	722826.221	7675871.796	15000
5/7	722786.002	7675814.374	15000
6/7	722767.087	7675794.743	15000
7/7	722737.693	7675777.530	10500
8/7	722720.216	7675772.169	15000
9/7	722684.338	7675770.001	15000
1/13	722832.592	7675712.487	10500
2/13	722770.408	7675693.039	10500

MH No.	EASTING	NORTHING	MANHOLE SIZE
3/13	722750.705	7675690.663	10500
4/13	722696.591	7675693.858	10500
1/14	722806.847	7675518.214	15000
2/14	722807.403	7675513.899	15000
3/14	722814.853	7675514.858	15000
4/14	722835.374	7675512.213	15000
5/14	722841.370	7675558.731	10500
6/14	722849.9718	7675625.342	10500
7/14	722845.0599	7675631.731	10500
1/14A	722831.782	7675484.346	10500
1/15	722799.576	7675512.892	15000
1/16	722805.236	7675530.730	10500
2/16	722797.410	7675529.722	10500
3/16	722713.745	7675518.954	10500
4/16	722691.984	7675519.842	10500
1/17	722822.645	7675574.442	10500
2/17	722817.926	7675570.815	10500
3/17	722784.896	7675572.982	10500
4/17	722715.442	7675564.214	10500
5/17	722699.968	7675565.441	10500
6/17	722682.440	7675574.723	10500
1/18	722828.677	7675620.576	10500
2/18	722825.063	7675625.289	10500
3/18	722809.694	7675627.007	10500
4/18	722751.396	7675621.085	10500
5/18	722732.334	7675611.267	10500
6/18	722720.788	7675615.708	10500
1/19	722826.349	7675641.750	10500
2/19	722807.080	7675643.304	10500
3/19	722747.691	7675637.285	10500
4/19	722730.445	7675643.896	10500
5/19	722718.323	7675636.893	10500
1/20	722831.842	7675644.781	10500
2/20	722833.894	7675660.468	10500



NOTE:
REFER DWG. 136-002-C146 FOR
LEGEND AND GENERAL WORKS NOTES.

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	16/11/12	MANHOLE SIZES ADDED TO TABLE	MT	MT
C	23/03/12	LOT LAYOUT AMENDED, BUS STOP ADDED	MT	NH
B	02/12/11	LOT LAYOUT AMENDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	JL

CLIENT

SCALE

1:500 10 5 0 10 20 A1
1:1000

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

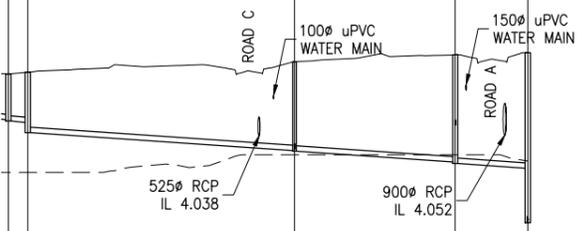
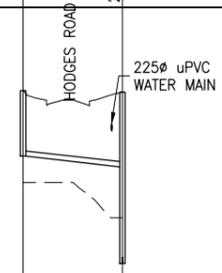
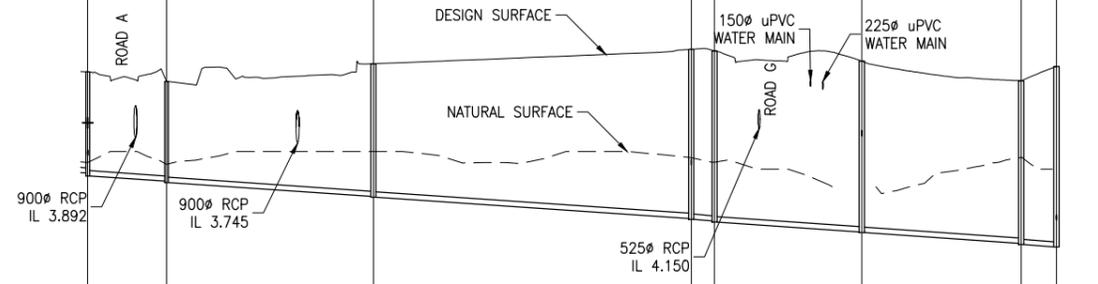
SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

SEWER RETICULATION PLAN (SHEET 2 OF 2)

DRAWING NO. 136-002-C147

REVISION D

	8/1	7/1	6/1	5/1	4/1	3/1	2/1	1/1	1/2	3/1	4/3	3/3	2/3	1/3	5/1	2/3A	1/3A	1/3	2/4	1/4	2/3	
	JUNC.			JUNC.		JUNC.				JUNC.			JUNC.		JUNC.		JUNC.		JUNC.		JUNC.	
MH TYPE	P1	P1	P3	P3	P3	P3	P3	P1	P3	P3	P1	P1	P1	P1	P3	P1	P1	P1	P1	P1	P1	
LOT. NO	77										72		63	64			64			63		
HCB TYPE	C										C		C	C			C			C		
HCB IL	4.307										4.542		4.716	4.877			4.877		4.716			
JUNCTION LEVEL	2.885			3.120		3.940				3.940			3.661	4.716	3.120		4.877		4.716			
MH DROP (mm)	80	40	20	30	30	20	40	30		2743	40	290	20	40	30		40		1077	705	40	60.4



Pipe Diameter (mm)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Pipe Class	SN8	CLASS 12 RRJ	CLASS 12 RRJ	CLASS 12 RRJ	CLASS 12 RRJ	CLASS 12 RRJ	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8	SN8
Pipe Grade (1 in ...)	150	150	150	150	150	150	150	149	93.7	149	150	150	150	150	150	150	150	150	150	150	150
DATUM RL	-11.000								-11.000												

DEPTH TO INVERT	2.865	2.945	2.824	2.864		3.752	3.772	4.78	4.81	4.81	4.84		4.827	4.847		4.598	4.638	5.108	5.108		
INVERT LEVEL	2.885	2.805	2.656	2.616		2.225	2.205	1.605	1.575	1.531	1.501		1.223	1.203		0.901	0.861	0.794	0.794		
DESIGN SURFACE	5.75		5.48			5.977		6.385		6.341			6.05			5.499		5.902			
NATURAL SURFACE	3.185		3.134			3.5		3.318		3.189			2.5			3.343		5.902			
CHAINAGE	217.084	239.408			297.951			387.951	394.54			436.234			481.387	491.378					

DEPTH TO INVERT	1.86	2.11	4.847
INVERT LEVEL	4.24	3.94	1.203
DESIGN SURFACE	6.1	6.05	
NATURAL SURFACE	3.5	2.5	
CHAINAGE	28.106	28.106	28.106

DEPTH TO INVERT	1.295	1.335	1.424	1.714	2.51	2.53	3.029	3.069	3.265	4.81
INVERT LEVEL	4.492	4.452	4.415	4.125	3.621	3.601	3.297	3.257	3.12	1.575
DESIGN SURFACE	5.787	5.659	5.639	5.425	6.131	6.013	6.326	6.257	6.385	
NATURAL SURFACE	3	3	3	3	3.5	3.5	3.5	3.5	3.318	
CHAINAGE	43.46	48.97			124.475		169.964	190.472		

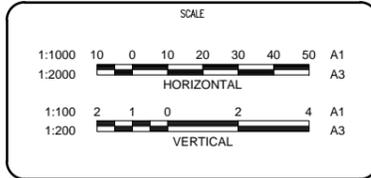
DEPTH TO INVERT	1.318	1.876	1.916	1.992	3.069
INVERT LEVEL	4.967	4.437	4.397	4.334	3.257
DESIGN SURFACE	6.285	6.313	6.326	6.326	
NATURAL SURFACE	3	3.418	3.5	3.5	
CHAINAGE	52.944	52.944	62.345		

DEPTH TO INVERT	1.533	2.238	2.281	2.321	2.47	2.53
INVERT LEVEL	4.488	3.783	3.738	3.698	3.661	3.601
DESIGN SURFACE	6.021	6.019	6.019	6.131	6.131	
NATURAL SURFACE	3.5	3.5	3.5	3.5	3.5	
CHAINAGE	39.033	45.777				51.287

NOTE:
P1 = 1050Ø MANHOLE
P2 = 1200Ø MANHOLE
P3 = 1500Ø MANHOLE

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

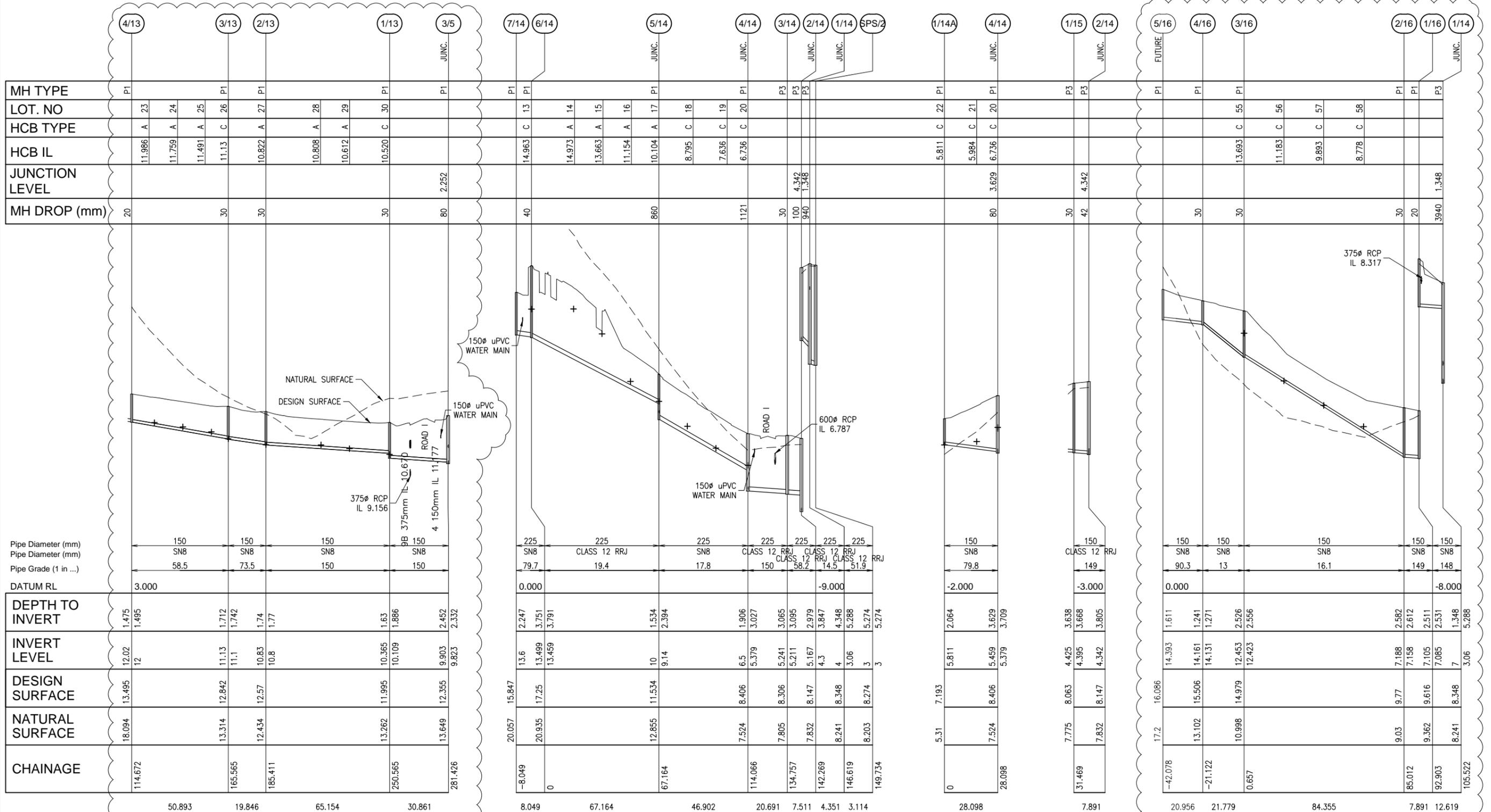
NO.	DATE	DESCRIPTION	DESIGN	DRAWN
E	29/01/13	SEWER NETWORK REGRADED, HCB'S AMENDED	JL	JL
D	16/11/12	HCB LEVELS AMENDED	MT	JL
C	24/10/12	LOT NUMBERS AMENDED, MANHOLE NOTE ADDED	MT	MT
B	02/12/11	SERVICES ADDED	MT	NH
A	14/09/11	FOR APPROVAL	MT	JL



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

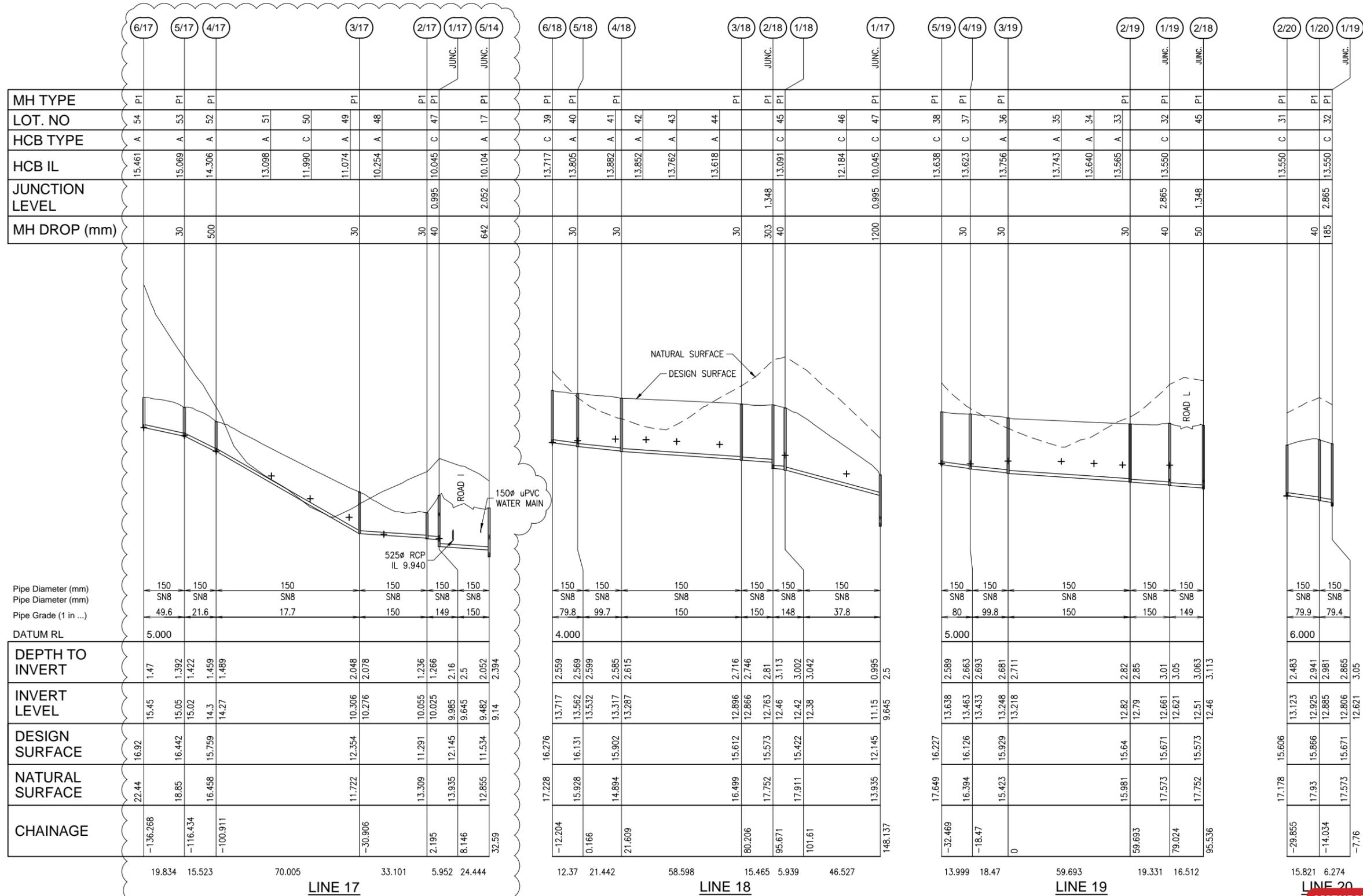
DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1
SEWER LONGITUDINAL SECTIONS (SHEET 1 OF 4)
DRAWING NO. 136-002-C148
REVISION E



MH TYPE	LOT. NO	HCB TYPE	HCB IL	JUNCTION LEVEL	MH DROP (mm)
P1	23	A	11.986		20
P1	24	A	11.759		
P1	25	A	11.491		
P1	26	C	11.13		30
P1	27	A	10.822		30
P1	28	A	10.808		
P1	29	A	10.612		
P1	30	C	10.520		30
P1	JUNC.			2.252	80
P1	13	C	14.963		40
P1	14	A	14.973		
P1	15	A	13.663		
P1	16	A	11.154		
P1	17	A	10.104		860
P1	18	C	8.795		
P1	19	C	7.636		1121
P1	20	C	6.736		
P3				4.342	30
P3				1.348	100
P3					940
P1	22	C	5.811		
P1	21	C	5.984		
P1	20	C	6.736		80
P3				4.342	30
P3					42
P1	55	C	13.693		30
P1	56	C	11.183		
P1	57	C	9.883		
P1	58	C	8.778		
P3				1.348	3940

Pipe Diameter (mm)	Pipe Diameter (mm)	Pipe Grade (1 in ...)	DATUM RL	DEPTH TO INVERT	INVERT LEVEL	DESIGN SURFACE	NATURAL SURFACE	CHAINAGE
150 SN8	150 SN8	58.5	3.000	1.475	12.02	13.495	18.094	114.672
150 SN8	150 SN8	73.5		1.742	11.13	12.842	13.314	165.565
150 SN8	150 SN8	150		1.74	10.83	12.57	12.434	185.411
150 SN8	150 SN8	150		1.886	10.109	11.995	13.262	250.565
150 SN8	150 SN8	150		2.452	9.903	12.355	13.649	281.426
225 SN8	225 SN8	79.7	0.000	2.247	13.6	17.25	20.057	-8.049
225 SN8	225 SN8	19.4		3.751	13.499	17.25	20.835	0
225 SN8	225 SN8	17.8		3.791	13.459	17.25	20.835	0
225 SN8	225 SN8	150		1.534	10	11.534	12.855	67.164
225 SN8	225 SN8	150		2.394	9.14	11.534	12.855	67.164
225 SN8	225 SN8	150		1.906	6.5	8.406	7.524	114.066
225 SN8	225 SN8	150		3.027	5.379	8.406	7.524	114.066
225 SN8	225 SN8	150		3.065	5.241	8.306	7.805	134.757
225 SN8	225 SN8	150		3.095	5.211	8.147	7.832	142.269
225 SN8	225 SN8	150		2.979	5.167	8.147	7.832	142.269
225 SN8	225 SN8	150		3.847	4.3	8.348	8.241	146.619
225 SN8	225 SN8	150		4.348	3.06	8.348	8.203	149.734
225 SN8	225 SN8	150		5.288	3	8.274	8.203	149.734
225 SN8	225 SN8	150		5.274	3	8.274	8.203	149.734
150 SN8	150 SN8	79.8	-2.000	2.064	5.811	7.193	5.31	0
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	28.098
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	28.098
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	31.469
150 SN8	150 SN8	149		3.668	4.395	8.063	7.775	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.805	4.342	8.147	7.832	31.469
150 SN8	150 SN8	149		3.638	4.425	8.063	7.775	3



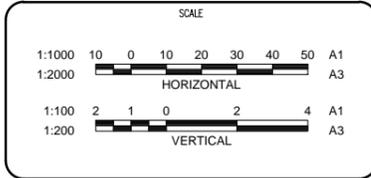
MH TYPE	LOT. NO	HCB TYPE	HCB IL	JUNCTION LEVEL	MH DROP (mm)
P1	54	A	15.461		
P1	53	A	15.069		30
P1	52	A	14.306		500
P1	51	A	13.098		
P1	50	C	11.990		
P1	49	A	11.074		30
P1	48	A	10.254		
P1	47	C	10.045	0.995	30
P1	47	A	10.045	0.995	40
P1	17	A	10.104	2.052	642
P1	39	C	13.717		30
P1	40	A	13.805		30
P1	41	A	13.882		30
P1	42	A	13.852		30
P1	43	A	13.762		30
P1	44	A	13.618		30
P1	45	C	13.091	1.348	303
P1	45	A	13.091	1.348	40
P1	46	C	12.184		1200
P1	47	C	10.045	0.995	1200
P1	38	C	13.638		30
P1	37	C	13.623		30
P1	36	A	13.756		30
P1	35	A	13.743		30
P1	34	A	13.640		30
P1	33	A	13.565		30
P1	32	C	13.550	2.865	40
P1	45	A		1.348	50
P1	31	C	13.550		185
P1	32	C	13.550	2.865	40

Pipe Diameter (mm)	Pipe Diameter (mm)	Pipe Grade (1 in ...)	DATUM RL	DEPTH TO INVERT	INVERT LEVEL	DESIGN SURFACE	NATURAL SURFACE	CHAINAGE
150 SN8	150 SN8	49.6	5.000	1.47	15.45	16.92	22.44	-136.268
150 SN8	150 SN8	21.6	5.000	1.392	15.05	16.442	18.85	-116.434
150 SN8	150 SN8	17.7	5.000	1.422	15.02	15.759	16.458	-100.911
150 SN8	150 SN8	150	5.000	1.459	14.3	15.759	16.458	-100.911
150 SN8	150 SN8	150	5.000	1.489	14.27	15.759	16.458	-100.911
150 SN8	150 SN8	150	5.000	2.048	10.306	12.354	11.722	-30.906
150 SN8	150 SN8	150	5.000	2.078	10.276	12.354	11.722	-30.906
150 SN8	150 SN8	150	5.000	1.236	10.055	11.291	13.309	2.195
150 SN8	150 SN8	150	5.000	1.266	10.025	12.145	13.935	8.146
150 SN8	150 SN8	150	5.000	2.16	9.985	12.145	13.935	8.146
150 SN8	150 SN8	150	5.000	2.5	9.645	11.534	12.855	32.59
150 SN8	150 SN8	150	5.000	2.052	9.482	11.534	12.855	32.59
150 SN8	150 SN8	150	5.000	2.394	9.14	11.534	12.855	32.59
150 SN8	150 SN8	150	4.000	2.559	13.717	16.276	17.228	-12.204
150 SN8	150 SN8	150	4.000	2.569	13.562	16.131	15.928	0.166
150 SN8	150 SN8	150	4.000	2.599	13.532	15.902	14.894	21.609
150 SN8	150 SN8	150	4.000	2.585	13.317	15.902	14.894	21.609
150 SN8	150 SN8	150	4.000	2.615	13.287	15.902	14.894	21.609
150 SN8	150 SN8	150	4.000	2.716	12.896	15.612	16.499	80.206
150 SN8	150 SN8	150	4.000	2.746	12.866	15.573	17.752	95.671
150 SN8	150 SN8	150	4.000	2.81	12.763	15.422	17.911	101.61
150 SN8	150 SN8	150	4.000	3.113	12.46	15.422	17.911	101.61
150 SN8	150 SN8	150	4.000	3.002	12.42	15.422	17.911	101.61
150 SN8	150 SN8	150	4.000	3.042	12.38	15.422	17.911	101.61
150 SN8	150 SN8	150	4.000	0.995	11.15	12.145	13.935	148.137
150 SN8	150 SN8	150	4.000	2.5	9.645	12.145	13.935	148.137
150 SN8	150 SN8	150	5.000	2.589	13.638	16.227	17.649	-32.469
150 SN8	150 SN8	150	5.000	2.663	13.463	16.126	16.394	-18.47
150 SN8	150 SN8	150	5.000	2.693	13.433	15.929	15.423	0
150 SN8	150 SN8	150	5.000	2.681	13.248	15.929	15.423	0
150 SN8	150 SN8	150	5.000	2.711	13.218	15.929	15.423	0
150 SN8	150 SN8	150	5.000	2.82	12.82	15.64	15.981	59.693
150 SN8	150 SN8	150	5.000	2.85	12.79	15.64	15.981	59.693
150 SN8	150 SN8	150	5.000	3.01	12.661	15.671	17.573	79.024
150 SN8	150 SN8	150	5.000	3.05	12.621	15.671	17.573	79.024
150 SN8	150 SN8	150	5.000	3.063	12.51	15.573	17.752	95.536
150 SN8	150 SN8	150	5.000	3.113	12.46	15.573	17.752	95.536
150 SN8	150 SN8	150	6.000	2.483	13.123	15.606	17.178	-29.855
150 SN8	150 SN8	150	6.000	2.941	12.925	15.866	17.93	-14.034
150 SN8	150 SN8	150	6.000	2.981	12.885	15.671	17.573	-7.76
150 SN8	150 SN8	150	6.000	2.865	12.806	15.671	17.573	-7.76
150 SN8	150 SN8	150	6.000	3.05	12.621	15.671	17.573	-7.76

NOTE:
P1 = 1050Ø MANHOLE
P2 = 1200Ø MANHOLE
P3 = 1500Ø MANHOLE

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

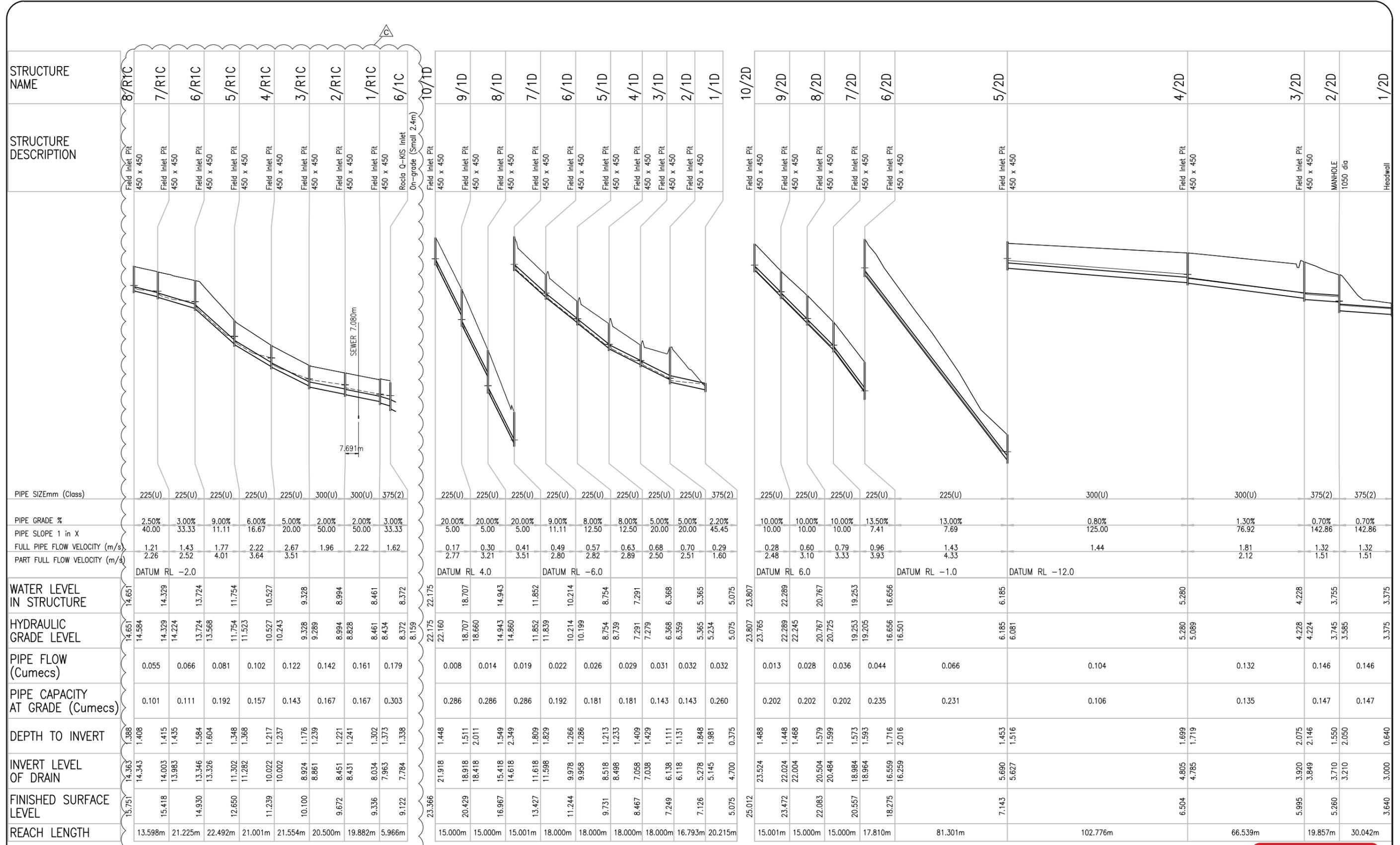
NO.	DATE	DESCRIPTION	DESIGN	DRAWN
F	01/02/13	LINE 17 AMENDED	JL	JL
E	29/01/13	SEWER NETWORK REGRADED, HCB's AMENDED	JL	JL
D	16/11/12	LINE 17, 18, 19 & 20 AMENDED, MANHOLE NOTE ADDED	MT	MT
C	23/03/12	LINE 16 UPDATED	MT	JL
B	02/12/11	SERVICES ADDED	MT	NH
A	16/11/12	FOR APPROVAL	MT	JL



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

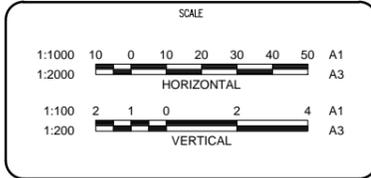
SHOAL POINT SUBDIVISIONAL WORKS STAGE 1
SEWER LONGITUDINAL SECTIONS (SHEET 4 OF 4)
DRAWING NO. 136-002-C151
REVISION F



LINE R1C 1D 2D

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
C	01/02/13	LINE R1C AMENDED	BE	JL
B	29/01/13	STORMWATER NETWORK AMENDED	BE	BE
A	16/11/12	ORIGINAL ISSUE	MT	JL



Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	
APPROVED			

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1
Q5 STORMWATER LONGITUDINAL SECTIONS
SHEET 5 OF 5

DRAWING NO. 136-002-C153 REVISION B

CONSTRUCTION NOTES

MATERIALS

ALL NUTS & BOLTS TO BE STAINLESS STEEL GRADE 316 IN ACCORDANCE WITH AS 2837. ALL ALUMINIUM TO BE COATED WITH APPROVED BITUMINOUS SEAL WHERE SET INTO OR CONTACTING CONCRETE. MILD STEEL HANDGRIPS TO BE HOT DIP GALVANISED. ALL CHAINS ARE TO BE GRADE 316 STAINLESS STEEL.

SWITCHGEAR AND CONTROL GEAR ASSEMBLY (SCA)

THE SCA SHALL BE ASSEMBLED BY A MANUFACTURER APPROVED BY SUPERINTENDENT. THE SCA SHALL BE OF OUTDOOR, STATIONARY, FREE STANDING, METAL ENCLOSED, CUBICLE TYPE SERIES WITH A MINIMUM DEGREE OF PROTECTION OF IP56D AS SPECIFIED IN AS 1939. ALL EQUIPMENT TO BE POSITIONED SECURELY ON SUITABLE MOUNTING PANELS AND COMPRISE INDIVIDUAL COMPARTMENTS. A STEEL GALVANISED CHANNEL VASE SHALL BE PROVIDED ALONG WITH AN EFFECTIVE BARRIER TO PREVENT GASSES FROM WET WELL ENTERING SCA. CONTROL CABINET AND ITS HINGES TO BE LOCATED TO ENSURE TECHNICIANS HAVE A CLEAR VIEW OF WET WELL OPENING WITH CABINET DOOR OPEN/LATCHED, WHILE STANDING IN FRONT OF INSTRUMENT PANEL.

PIPEWORK

ALL PIPEWORK AND UNPROTECTED FITTINGS IN THE PUMPWELL SHALL BE GIVEN THREE (3) EXTERNAL COATS OF AN APPROVED EPOXY PAINT. TWO COATS BEFORE FITTING AND THE THIRD COAT AFTER INSTALLATION. DROP PIPE FROM INLET PIPE TO BE CONSTRUCTED FROM HIGH DENSITY POLYETHYLENE VALVES AND FITTINGS PRESSURE TAPPING AND GAUGES MUST BE APPROVED FOR ALL VALVES INCLUDING ISOLATION AND NON-RETURN VALVES AND AS DETAILED IN MRC ENGINEERING GUIDELINES C402.

LADDERS

LADDERS ARE NOT PERMITTED.

WATER SUPPLY

ADEQUATE WATER SUPPLY (63Ø OD) SHALL BE PROVIDED FOR CLEANING PURPOSES AND PROTECTED FROM CONTAMINATION BY INSTALLATION OF A REDUCED PRESSURE ZONE DEVICE IN ACCORDANCE WITH AS 3500.

VENTING

VENTING TO BE PROVIDED FOR PUMP STATIONS IN BUILT UP AREAS. PENDING CONSULTATION WITH MRC.

COLLECTOR MAINTENANCE HOLES

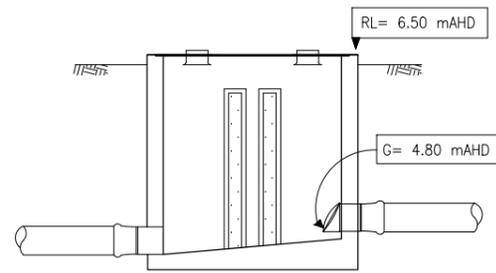
COLLECTOR MAINTENANCE HOLES MUST BE PROVIDED DOWNSTREAM OF ALL CONNECTIONS TO THE GRAVITY SEWER SO THAT THERE IS A SINGLE LINE ENTRY TO THE PUMP STATION.

INTERNAL COATING

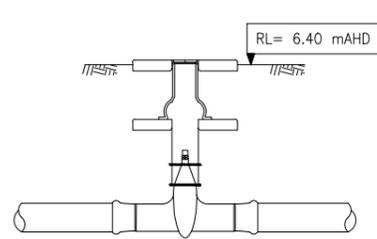
INTERNAL COATING OF WET WELLS ARE TO BE PREPARED AND COATED IN EPOXY PAINT SYSTEM APPROVED BY THE SUPERINTENDENT.

NOTES

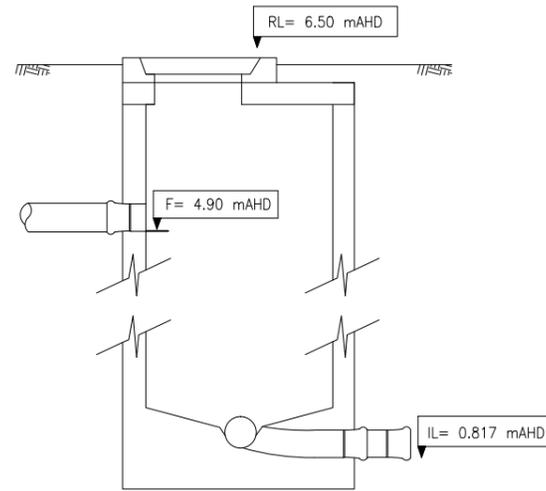
- THIS DRAWING IS TO BE READ IN CONJUNCTION AND COMPLY WITH THE CURRENT MRC STD DWG's A3-0853, A3-00857, A3-04162, A3-04163, A3-04164, A3-04165, A3-04166, A3-00832, A3-00852.
- ANTI FLOTATION PLUG TO BE 3.5m DIAMETER AND 0.6m DEEP. REINFORCING SHALL BE SL81 MESH TOP AND BOTTOM WITH 100mm COVER. REINFORCING FROM WET WELL WALL TO EXTEND INTO ANTI FLOTATION PLUG AND OVERLAP 600mm.
- ALL MATERIALS CONSTRUCTION AND COMMISSIONING TO BE IN ACCORDANCE WITH THE MRC DEVELOPMENT MANUAL AND AUSTRALIAN STANDARDS
- DIAMETER OF OVERFLOW MAIN TO MATCH PUMPSTATION INLET SEWER.
- EXACT OUTLET LOCATION AND LEVEL TO BE DETERMINED ON SITE BY SUPERINTENDENT.
- THE CONTRACTOR IS TO DESIGN AND CONSTRUCT AN AUTOMATIC DIESEL GENERATOR BACK UP TO COUNCILS REQUIREMENTS.
- THE PUMPSTATION SWITCH BOARD AND TELEMETRY SHALL BE DESIGNED AND CONSTRUCTED TO COUNCILS REQUIREMENTS.



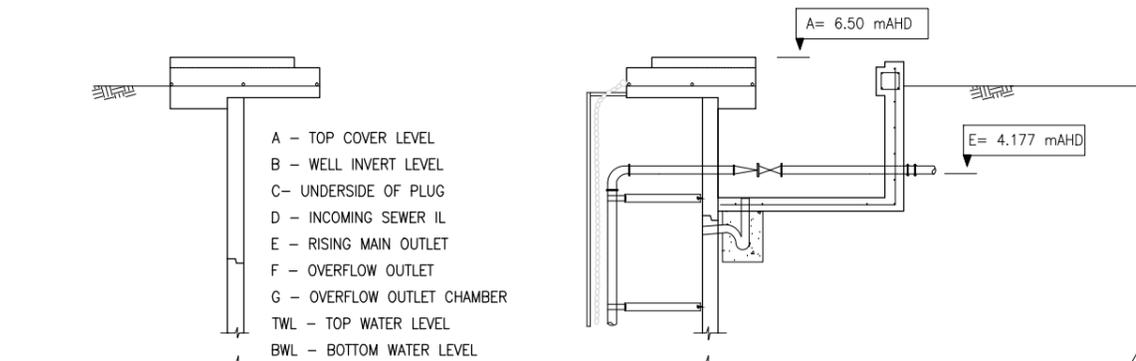
OVERFLOW CHAMBER



OVERFLOW VALVE



SEWER MANHOLE



- A - TOP COVER LEVEL
- B - WELL INVERT LEVEL
- C - UNDERSIDE OF PLUG
- D - INCOMING SEWER IL
- E - RISING MAIN OUTLET
- F - OVERFLOW OUTLET
- G - OVERFLOW OUTLET CHAMBER
- TWL - TOP WATER LEVEL
- BWL - BOTTOM WATER LEVEL

INLET SEWER

BACKFILL WITH CONCRETE TO INCREASE MASS AND COUNTER BOUANCY

PUMP STATION

ANTI FLOTATION PLUG TO BE 3.5m DIAMETER AND 0.6m DEEP. REINFORCING SHALL BE SL81 MESH TOP AND BOTTOM WITH 100mm COVER. REINFORCING FROM WET WELL WALL TO EXTEND INTO ANTI FLOTATION PLUG AND OVERLAP 600mm.

WET WELL DETAILS

DIAMETER - 2.4m

RISING MAIN - DN225 MDPE PE100
PN 16, WITH CREAM STRIP

OVERFLOW - 300Ø PVC

STORAGE REQUIRED - 29.01m³

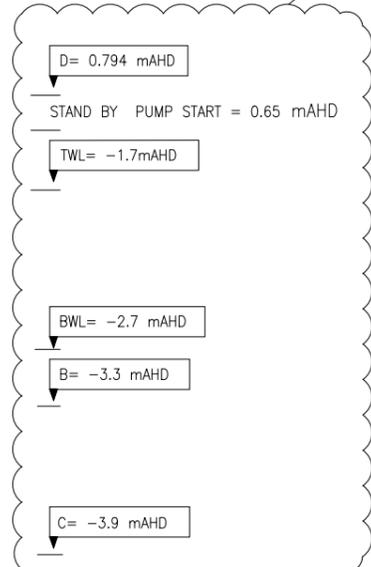
TOTAL STORAGE - 29.40m³

PUMP DETAILS

NUMBER - 2

FLYGT - NP3153 HT 3- 453 (imp 261mm)

DUTY POINT - 31.5L/s Vs 20.0m HEAD.



NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	RISING MAIN, PUMP DETAILS & LEVELS AMENED	BE	BE
C	16/11/12	INCOMING IL AND RISING MAIN IL AMENDED	MT	MT
B	02/12/11	LEVELS AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	BE	JL

CLIENT

SCALE

NOT TO SCALE

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	JL	CHECKED	DJW
DESIGNED	BE	CHECKED	DJW
DATE CREATED	JULY 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

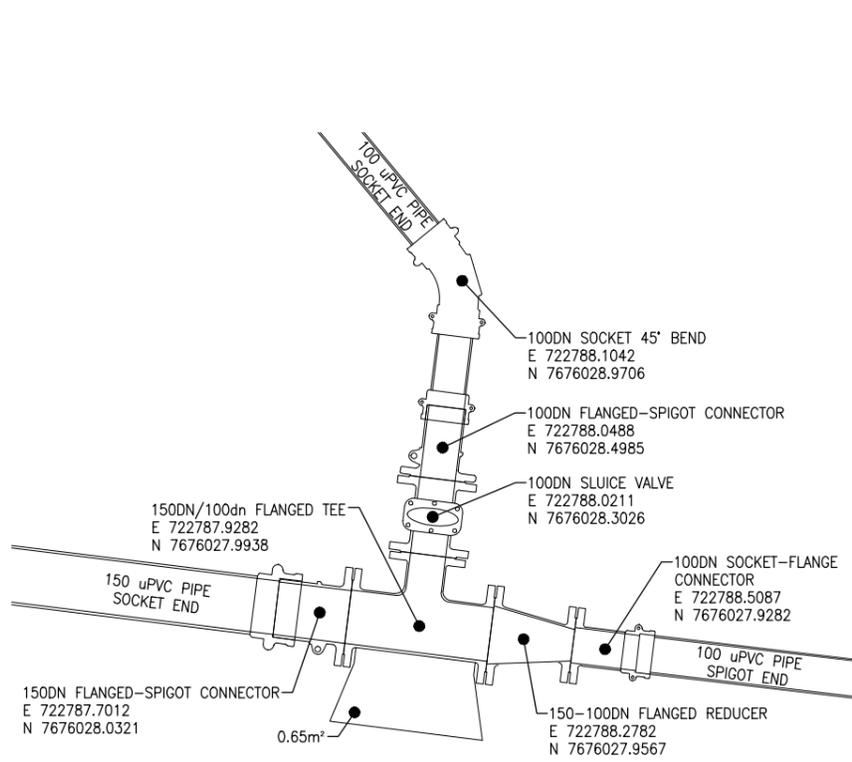
SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

SEWER PUMP STATION 1 DETAILS

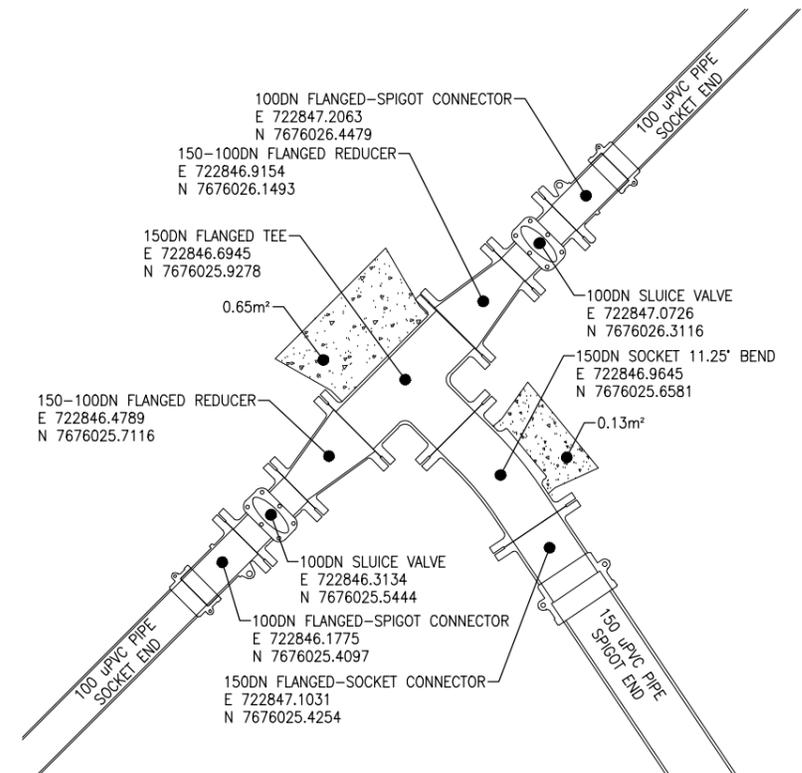
DRAWING NO. 136-002-C154

REVISION D

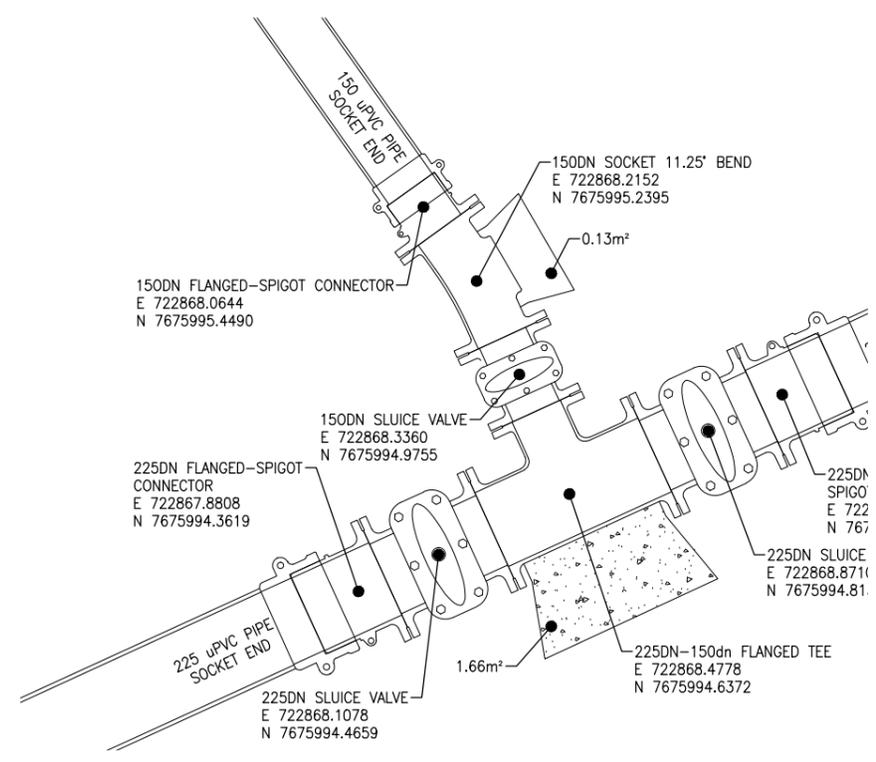
AMENDMENT REQUIRED
SUBJECT TO CONDITIONS



ROAD A - ROAD C INTERSECTION

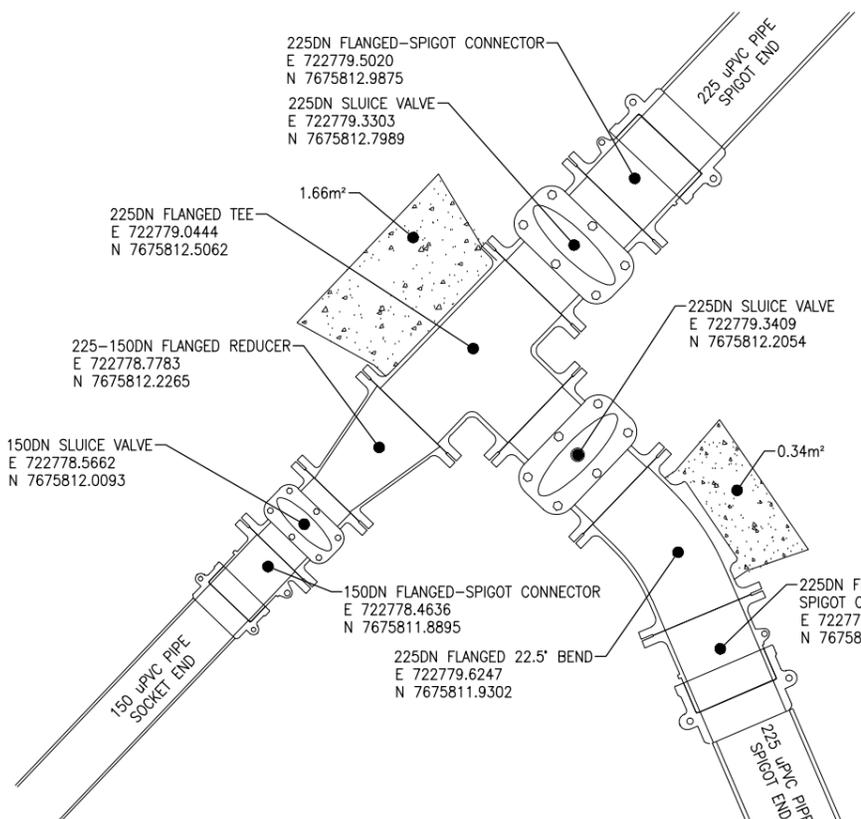


ROAD A - ROAD B ROUNDABOUT

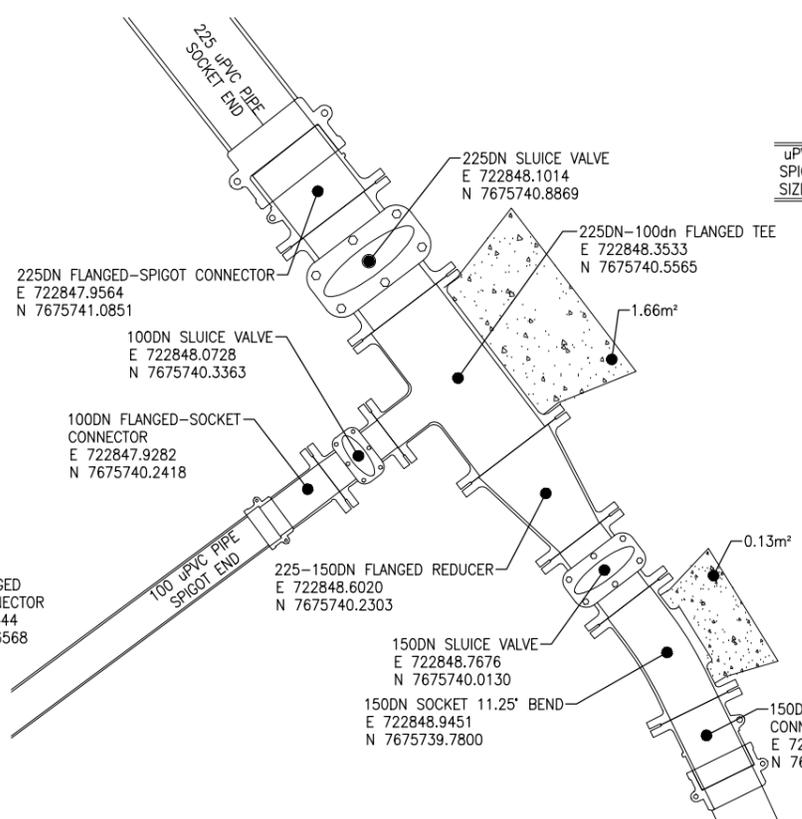


ROAD G - HODGES ROAD ROUNDABOUT

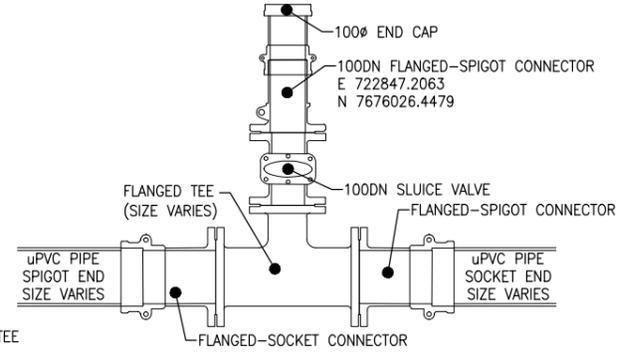
NOTE: REFER MRC STD. DRG. THRUST BLOCKS, GATE VALVE, HORIZONTAL & VERTICAL BENDS FOR DETAILS ON CONNECTIONS AND FITTINGS.



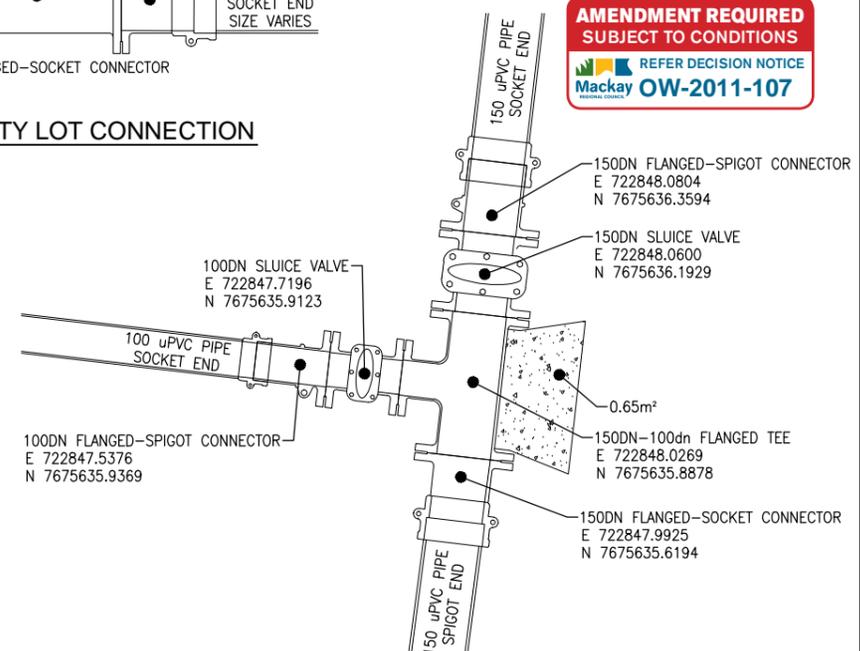
ROAD G - ROAD I INTERSECTION



ROAD I - ROAD J INTERSECTION



HIGH DENSITY LOT CONNECTION



ROAD I - ROAD L & ROAD I - ROAD K INTERSECTION

AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
B	29/01/13	DETAILS AMENDED	MT	NH
A	16/11/12	ORIGINAL ISSUE	MT	RH

CLIENT

SCALE

NTS

Projex North
Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478
CONSULTING ENGINEERS - PROJECT MANAGERS

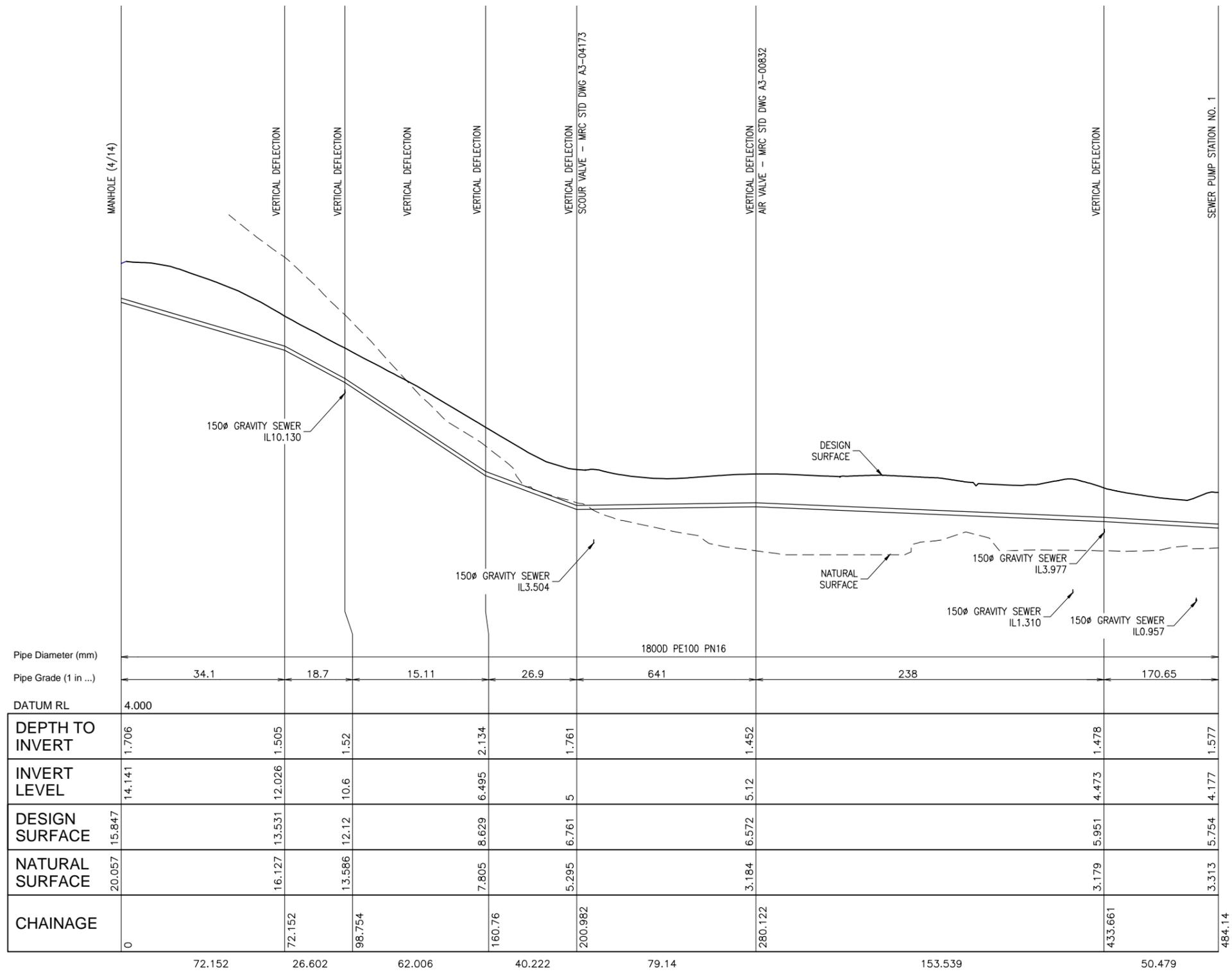
DRAWN	DESIGNED	DATE CREATED	APPROVED
RH	MT	OCTOBER 2012	
CHECKED	CHECKED	DATE SIGNED	
DJW	DJW	16/11/12	

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

WATER MAIN CONNECTION DETAILS

DRAWING NO. 136-002-C155

REVISION B



AMENDMENT REQUIRED
SUBJECT TO CONDITIONS
REFER DECISION NOTICE
Mackay OW-2011-107

NO.	DATE	DESCRIPTION	DESIGN	DRAWN
D	29/01/13	DEPTH TO INVERT LEVELS AMENDED	MT	NH
C	23/03/12	RIISING MAIN AMENDED FOR BUS STOP	MT	JL
B	02/12/11	DESIGN SURFACE AMENDED	MT	JL
A	14/09/11	FOR APPROVAL	MT	NH

CLIENT

SCALE

1:1000 10 0 10 20 30 40 50 A1
1:2000 HORIZONTAL A3

1:100 2 1 0 2 4 A1
1:200 VERTICAL A3

Projex North

Level 2, 9 Capital Place
Lake Kawana Business Village
PO Box 1415 Buddina Qld 4575
PH: (07) 5493 3649
FAX: (07) 5493 3638
ABN 47 129 314 478

CONSULTING ENGINEERS - PROJECT MANAGERS

DRAWN	NH	CHECKED	DJW
DESIGNED	MT	CHECKED	DJW
DATE CREATED	JUNE 2011	DATE SIGNED	14 SEPT. 2011
APPROVED	ORIGINALLY SIGNED JOHN MARTIN DATE: 14/09/11 RPEQ: 5085		

SHOAL POINT SUBDIVISIONAL WORKS STAGE 1

SEWER PUMP STATION 1
RISING MAIN LONGITUDINAL SECTION

DRAWING NO. 136-002-C-156

REVISION D