

LEGEND

- 2/1 (12.000)* - Pit No. 2/Drainline No. 1
- 12.000* - Top of structure levels.
- Pipe invert levels.
- Top of batter.
- Toe of batter.
- Stormwater drain line.
- Subsoil drainage.
- Sewer main.
- Sewer manhole.
- Water main.
- Stormwater drain line.
- Subsoil drainage.
- Sewer main.
- Sewer manhole.
- Water main.

AS CONSTRUCTED

I Laurence John Nolan of ROWLANDS SURVEYS Pty. Ltd. hereby certify that this drawing accurately describes and records the nature and the location of the works depicted hereon as they have been constructed for the purposes of the development.

Laurence John Nolan
Director/Registered Surveyor

**APPROVED
AS CONSTRUCTED**

STORMWATER STRUCTURE SETOUT TABLE

PIT No.	EASTING	NORTHING	STRUCTURE TYPE	TOP LEVEL
3/6	6236.800*	76511.370*	4000x1500 Stormwater Manhole	6.028*
4/6	6233.310*	76485.780*	Grated Kerb Inlet - 4.64m lintel (on grade)	6.489k*
5/6	6221.060*	76473.310*	1800x1800 Stormwater Manhole	6.584*
6/6	6192.420*	76460.090*	1800x1800 Stormwater Manhole	6.910*
1/25	6186.610*	76438.530*	Grated Kerb Inlet - 2.46m lintel (sag)	6.564k*
1/26	6193.990*	76437.850*	Grated Kerb Inlet - 2.46m lintel (sag)	6.573k*
1/50	6239.800*	76513.090*	Grated Kerb Inlet - 4.64m lintel (on grade)	6.120k*
1/51	6192.300*	76463.760*	Grated Kerb Inlet - 4.64m lintel (on grade)	6.924k*

- All dimensions are to centre of chamber.
- Pits 4/6 & 1/25 are non standard chambers, refer to table below.

NON STANDARD CHAMBER TABLE

PIT No.	Y distance (mm)	Z distance (mm)
4/6	3000	900
1/25	2500	900

REAL PROPERTY DESCRIPTION

Lot 902 on SP 218628, Lot 901 on SP 226447 & Lot 4 on RP 743005
Parish of BOHLE
County of ELPINSTONE
Glendower Street - Bushland Beach



In Association with:-
ROWLANDS SURVEYS PTY LTD
22 GORDEN STREET
CARBUTT. 4814
Ph. (07)47755077



LEVEL DATUM A.H.D.
Horizontal Datum GDA' 94 Zone 55
Refer P.M. 174438 RL. 4.820
Bolt & washer in kerb.
Cnr HILLOCK CR. & GLENDOWER ST.



THE ORIGINAL OF THIS DOCUMENT IS COMPLETED TO THE SCALE NOTED. AS REPRODUCTION CAN DISTORT SIZE & SHAPE USE ONLY THE DIMENSIONS PROVIDED ON ARCHITECTURAL &/OR ENGINEERING DRAWINGS. VERIFY DIMENSIONS ON SITE BEFORE CONSTRUCTION.

* - Indicates as constructed information.

All work is carried out in accordance with LOCAL AUTHORITY standard details.

NORTHERN CONSULTING
engineers

Civil & Structural Engineers
50 Punari Street, Currajong 4812
Phone: 07 4725 5550 Fax: 07 4725 5850
Email: mail@nceng.com.au
Milton Messer & Associates Pty. Ltd.
ACN 100 817 355

TOWNSVILLE CITY COUNCIL
REC'D - 8 SEP 2011
TOWN PLANNING

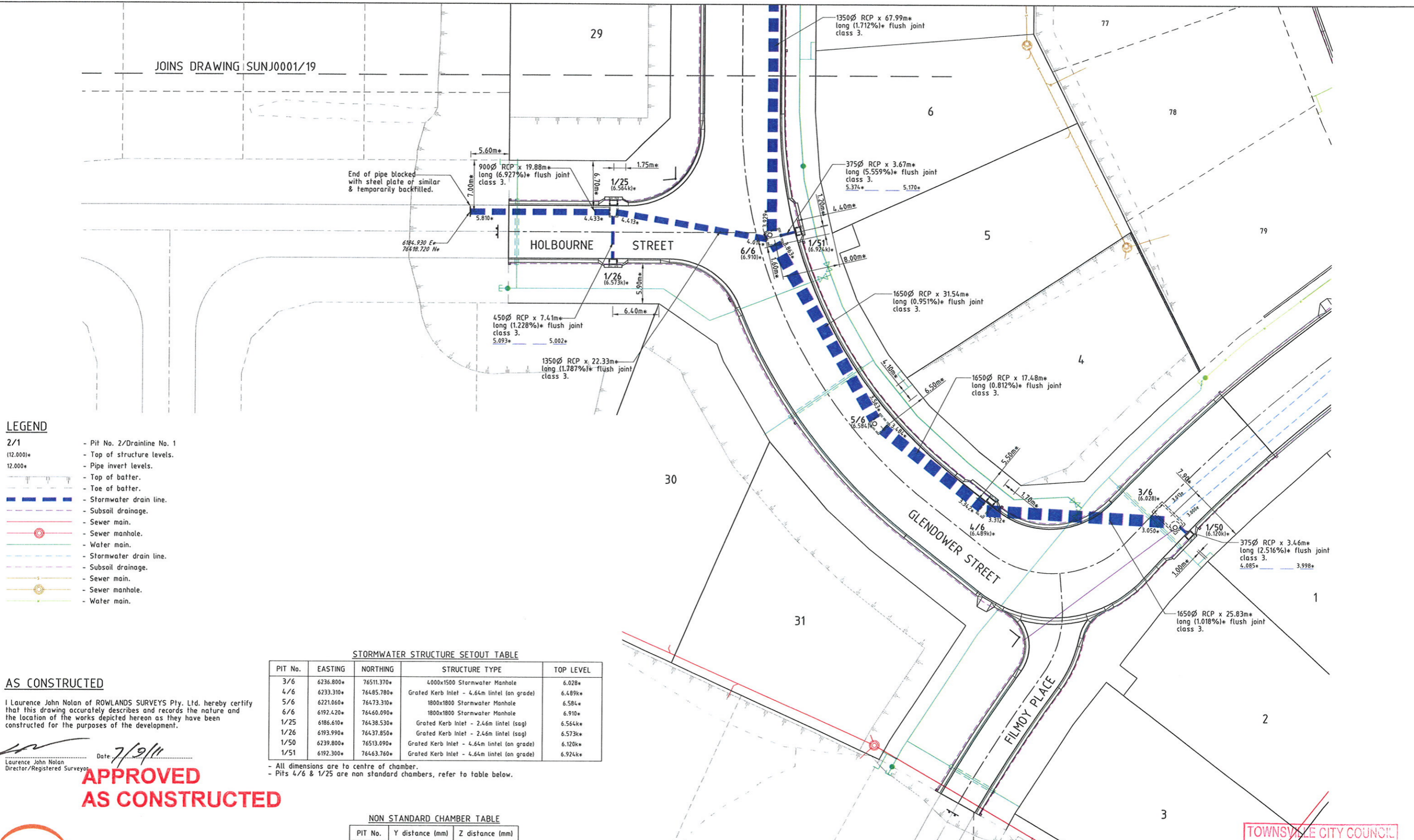
Issue	Description	Date
E	AMENDED TO AS CONSTRUCTED.	07/09/2011
D	MODIFICATION TO RETAINING WALLS AND SERVICES.	23/06/2011
C	SERVICES & LOT LAYOUT DESIGN AMENDED - ISSUED FOR APPROVAL.	24/03/2011
B	PIPE INVERT LEVELS AMENDED.	01/12/2010
A	ISSUED FOR CONSTRUCTION	27/18/2010
P2	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATION WORKS APPROVAL.	17/08/2010
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR CLIENT APPROVAL.	06/08/2010

In Association With
SUNLAND GROUP LIMITED
STAGE 1, 31 TRADITIONAL
RESIDENTIAL LOT SUBDIVISION
GLENDOWER STREET
BUSHLAND BEACH

STORMWATER DRAIN LINE PLAN

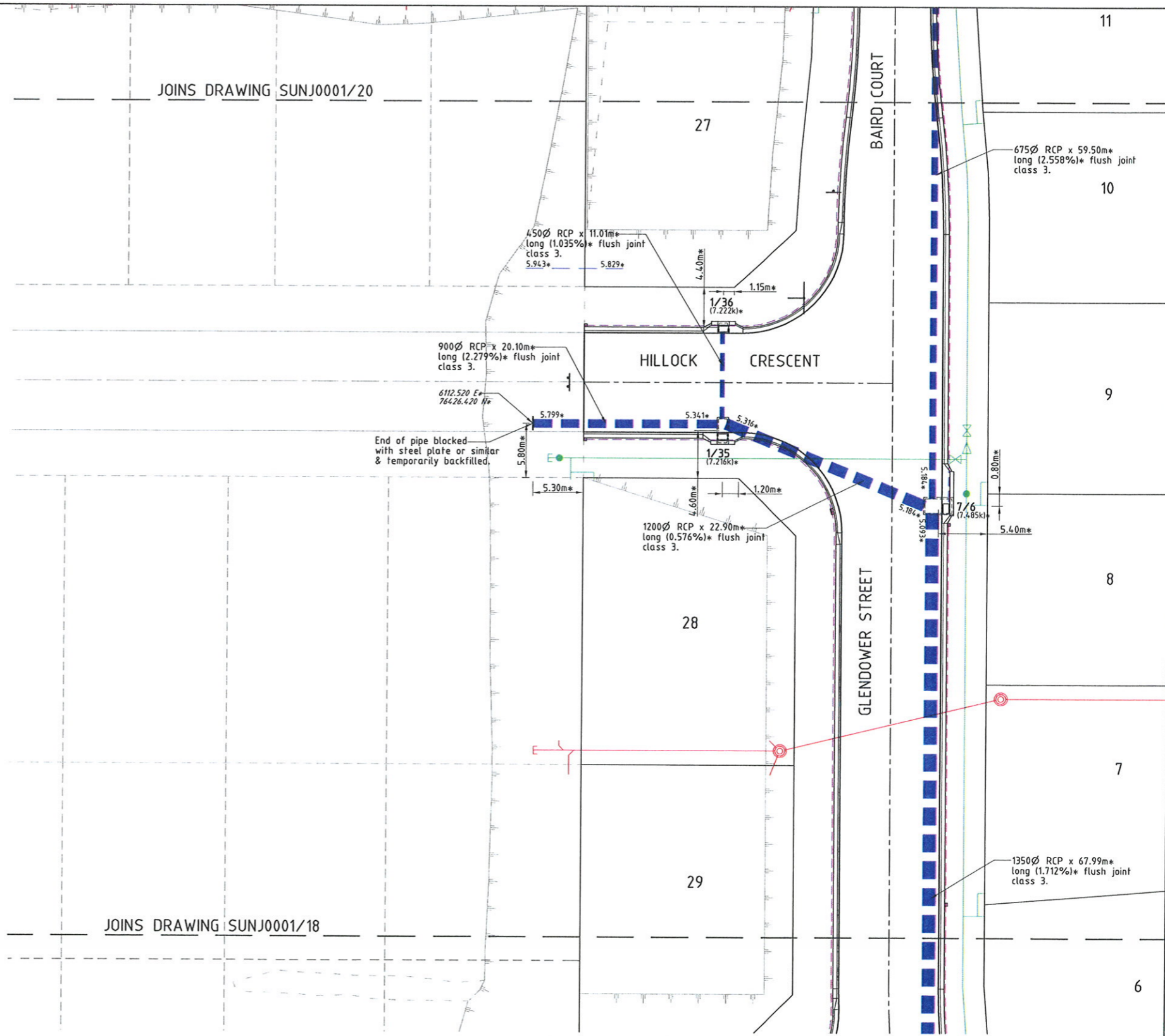
Drawing Number
SUNJ0001/18

Issue
E



LEGEND

- 2/1 - Pit No. 2/Drainline No. 1
- (12.000)* - Top of structure levels.
- 12.000* - Pipe invert levels.
- Top of batter.
- Toe of batter.
- Stormwater drain line.
- Subsoil drainage.
- Sewer main.
- Sewer manhole.
- Water main.



STORMWATER STRUCTURE SETOUT TABLE

PIT No.	EASTING	NORTHING	STRUCTURE TYPE	TOP LEVEL
7/6	6124.810*	76467.280*	Grated Kerb Inlet - 4.64m lintel (on grade)	7.485k*
1/35	6115.140*	76446.260*	Grated Kerb Inlet - 2.46m lintel (sag)	7.216k*
1/36	6104.750*	76446.880*	Grated Kerb Inlet - 2.46m lintel (sag)	7.222k*

- All dimensions are to centre of chamber.
 - Pits 7/6 & 1/35 are non standard chambers, refer to table below.

NON STANDARD CHAMBER TABLE

PIT No.	Y distance (mm)	Z distance (mm)
7/6	2800	1500
1/35	2500	900

AS CONSTRUCTED

I Laurence John Nolan of ROWLANDS SURVEYS Pty. Ltd. hereby certify that this drawing accurately describes and records the nature and the location of the works depicted hereon as they have been constructed for the purposes of the development.

[Signature] Date 7/9/11
 Laurence John Nolan
 Director/Registered Surveyor

APPROVED
AS CONSTRUCTED

SUNLAND GROUP
 REAL PROPERTY DESCRIPTION
 Lot 902 on SP 218628, Lot 901 on SP 226447 & Lot 4 on RP 743005
 Parish of BOHLE
 County of ELPHINSTONE
 Glendower Street - Bushland Beach

In Association with:-
ROWLANDS SURVEYS PTY LTD
 22 GORDEN STREET
 GARBUTT. 4814
 Ph. (07)47755077



LEVEL DATUM A.H.D.
 Horizontal Datum GDA' 94 Zone 55
 Refer P.M. 174438 RL. 4.820
 Bolt & washer in kerb.
 Cnr HILLOCK CR. & GLENDOWER ST.

Scale
 0 2.5 5 7.5 10m
 THE ORIGINAL OF THIS DOCUMENT IS COMPLETED TO THE SCALE NOTED. AS REPRODUCTION CAN DISTORT SIZE & SHAPE USE ONLY THE DIMENSIONS PROVIDED ON ARCHITECTURAL &/OR ENGINEERING DRAWINGS. VERIFY DIMENSIONS ON SITE BEFORE CONSTRUCTION.

* - Indicates as constructed information.
 All work is carried out in accordance with LOCAL AUTHORITY standard details.

NORTHERN CONSULTING
 engineers
 Civil & Structural Engineers
 50 Punari Street, Currajong 4812
 Phone: 07 4725 5550 Fax: 07 4725 5850
 Email: mail@nceng.com.au
 Milton Messer & Associates Pty. Ltd.
 ACN 100 817 358

Issue	Description	Date
E	AMENDED TO AS CONSTRUCTED.	07/09/2011
D	MODIFICATION TO RETAINING WALLS AND SERVICES.	23/06/2011
C	SERVICES & LOT LAYOUT DESIGN AMENDED - ISSUED FOR APPROVAL.	24/03/2011
B	PIPE INVERT LEVELS AMENDED.	04/03/2011
A	ISSUED FOR CONSTRUCTION	27/06/2010
P2	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATION WORKS APPROVAL.	17/08/2010
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR CLIENT APPROVAL.	06/08/2010

Drawn JHS	In Association With SUNLAND GROUP LIMITED	STORMWATER DRAIN LINE PLAN
Date 06/08/2010	STAGE 1, 31 TRADITIONAL RESIDENTIAL LOT SUBDIVISION GLENDOWER STREET BUSHLAND BEACH	
Checked [Signature]		Drawing Number SUNJ0001/19
Approved [Signature]		Issue E

TOWNSVILLE CITY COUNCIL
 REC'D - 8 SEP 2011
 TOWN PLANNING

LEGEND

- 2/1 (12.000)* - Pit No. 2/Drainline No. 1
- (12.000)* - Top of structure levels.
- 12.000* - Pipe invert levels.
- Top of batter.
- Toe of batter.
- Stormwater drain line.
- Subsoil drainage.
- Sewer main.
- Sewer manhole.
- Water main.
- Poly water main.
- Stormwater drain line.
- Sewer main.

NOTES:

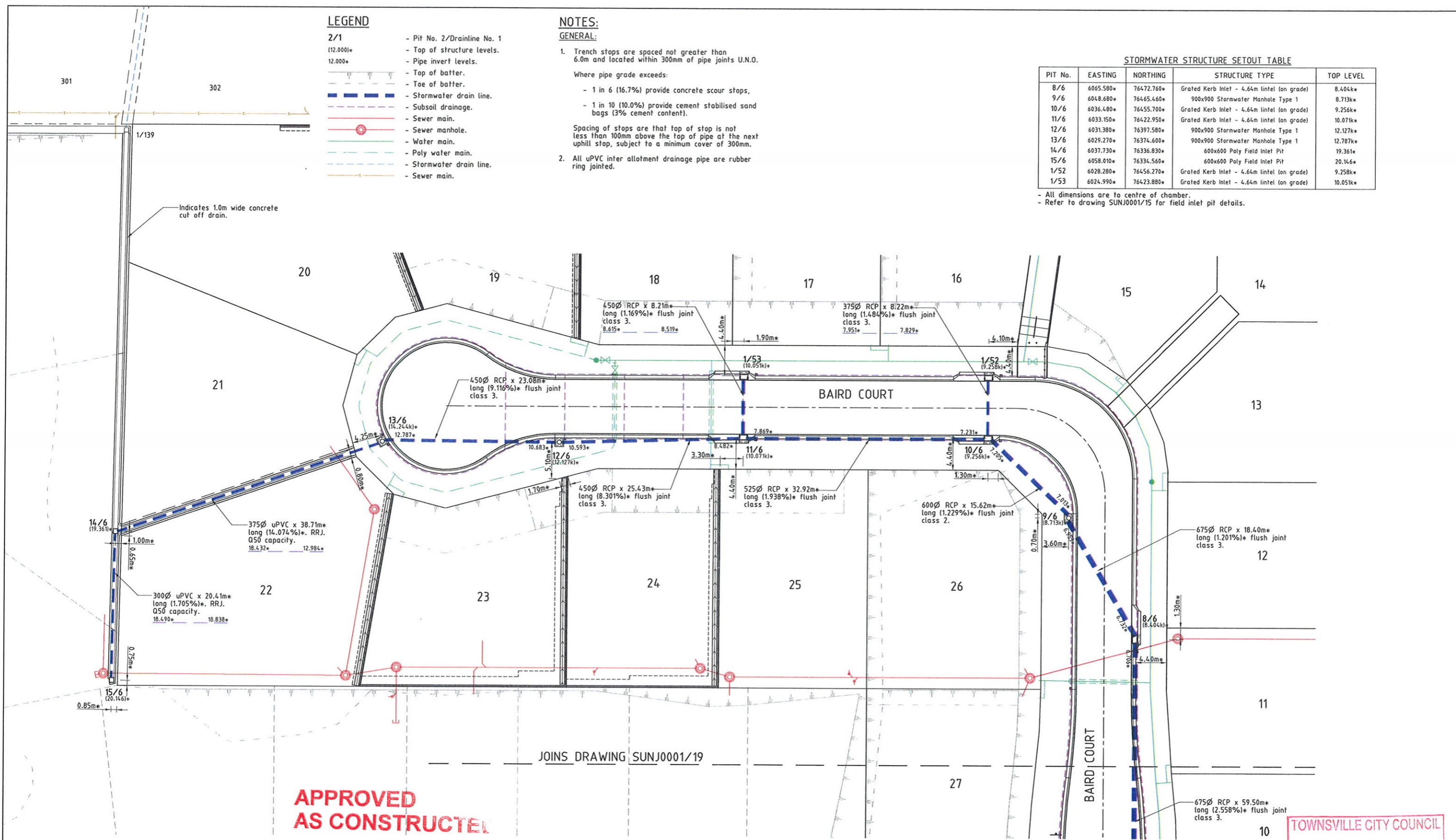
GENERAL:

1. Trench stops are spaced not greater than 6.0m and located within 300mm of pipe joints U.N.O.
Where pipe grade exceeds:
 - 1 in 6 (16.7%) provide concrete scour stops,
 - 1 in 10 (10.0%) provide cement stabilised sand bags (3% cement content).
 Spacing of stops are that top of stop is not less than 100mm above the top of pipe at the next uphill stop, subject to a minimum cover of 300mm.
2. All uPVC inter allotment drainage pipe are rubber ring jointed.

STORMWATER STRUCTURE SETOUT TABLE

PIT No.	EASTING	NORTHING	STRUCTURE TYPE	TOP LEVEL
8/6	6065.580*	76472.760*	Grated Kerb Inlet - 4.64m lintel (on grade)	8.404*
9/6	6048.680*	76465.460*	900x900 Stormwater Manhole Type 1	8.713*
10/6	6036.480*	76455.700*	Grated Kerb Inlet - 4.64m lintel (on grade)	9.256*
11/6	6033.150*	76422.950*	Grated Kerb Inlet - 4.64m lintel (on grade)	10.071*
12/6	6031.380*	76397.580*	900x900 Stormwater Manhole Type 1	12.127*
13/6	6029.270*	76374.600*	900x900 Stormwater Manhole Type 1	12.787*
14/6	6037.730*	76336.830*	600x600 Poly Field Inlet Pit	19.361*
15/6	6058.010*	76334.560*	600x600 Poly Field Inlet Pit	20.146*
1/52	6028.280*	76456.270*	Grated Kerb Inlet - 4.64m lintel (on grade)	9.258*
1/53	6024.990*	76423.880*	Grated Kerb Inlet - 4.64m lintel (on grade)	10.051*

- All dimensions are to centre of chamber.
- Refer to drawing SUNJ0001/15 for field inlet pit details.



APPROVED AS CONSTRUCTED

AS CONSTRUCTED

LAYOUT PLAN

JOINS DRAWING SUNJ0001/19

I Laurence John Nolan of ROWLANDS SURVEYS Pty. Ltd. hereby certify that this drawing accurately describes and records the nature and the location of the works depicted hereon as they have been constructed for the purposes of the development.

Laurence John Nolan
Director/Registered Surveyor
Date: 7/9/11



LEVEL DATUM A.H.D.
Horizontal Datum GDA '94 Zone 55
Refer P.M. 174438 RL. 4.820
Bolt & washer in kerb.
Cnr HILLOCK CR. & GLENDOWER ST.



THE ORIGINAL OF THIS DOCUMENT IS COMPLETED TO THE SCALE NOTED. AS REPRODUCTION CAN DISTORT SIZE & SHAPE USE ONLY THE DIMENSIONS PROVIDED ON ARCHITECTURAL &/OR ENGINEERING DRAWINGS. VERIFY DIMENSIONS ON SITE BEFORE CONSTRUCTION.

* - Indicates as constructed information.

All work is carried out in accordance with LOCAL AUTHORITY standard details.

TOWNSVILLE CITY COUNCIL
REC'D - 8 SEP 2011
TOWN PLANNING

Issue	Description	Date
G	AMENDED TO AS CONSTRUCTED.	07/09/2011
F	MODIFICATION TO RETAINING WALLS AND SERVICES.	23/06/2011
E	SERVICES & LOT LAYOUT DESIGN AMENDED - ISSUED FOR CONSTRUCTION.	30/03/2011
D	SERVICES & LOT LAYOUT DESIGN AMENDED - ISSUED FOR APPROVAL.	24/03/2011
C	PIPE INVERT LEVELS AMENDED.	04/03/2011
B	PIPE INVERT LEVELS AMENDED.	04/03/2011
A	ISSUED FOR CONSTRUCTION	27/10/2010
P2	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATION WORKS APPROVAL.	17/08/2010
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR CLIENT APPROVAL.	06/08/2010

SUNLAND GROUP

REAL PROPERTY DESCRIPTION
Lot 902 on SP 218628, Lot 901 on SP 226447 & Lot 4 on RP 743005
Parish of BOHLE
County of ELPHINSTONE
Glendower Street - Bushland Beach

In Association with:
ROWLANDS SURVEYS PTY LTD
22 GORDEN STREET
GARBUTT. 4814
Ph. (07)47755077

NORTHERN CONSULTING
engineers

Civil & Structural Engineers
50 Punari Street, Currejong 4812
Phone: 07 4725 5550 Fax: 07 4725 5850
Email: mail@nceng.com.au
Milton Messer & Associates Pty. Ltd.
ACN 100 817 356

Drawn: JHS
Date: 06/08/2010
Checked: [Signature]
Approved: [Signature]

In Association With:
SUNLAND GROUP LIMITED

STAGE 1, 31 TRADITIONAL RESIDENTIAL LOT SUBDIVISION
GLENDOWER STREET
BUSHLAND BEACH

STORMWATER DRAIN LINE PLAN
Drawing Number: SUNJ0001/20
Issue: G