

- LEGEND**
GENERAL:-
- RP boundary.
 - Top of batter.
 - Toe of batter.
 - Stormwater drain line.
 - Subsoil drainage.
 - Sewer main.
 - Sewer manhole.
 - uPVC water main.
 - Poly water main.
 - Stormwater drain line.
 - Subsoil drainage.
 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Underground electrical supply.
 - National Broadband Network.

- SEWERAGE RETICULATION:-**
- Manhole Number
 - Sewer line description
 - Sewer invert levels of manhole.
 - Sewer line description.
 - Diameter of pipe, type & class.
 - Distance between manholes, centreline to centreline and grade.
 - Top of manhole level.

- SERVICES:-**
- Direct connection (DC)
 - Jump up connection (JU)
 - 100Ø manhole connection - Benching (BC) - Vertical Drop (VD)
 - Distance from downstream manhole to 'Y' junction - dimension 'L'.
 - Invert level at limit of house connection branch.
 - Attainment connection dimension 'X'.
 - Attainment connection dimension 'Y'.
 - Type of junction (EX - Existing).
 - Level at top of riser cap.

SEWER MANHOLES

Manhole No.	Easting	Northing
3/B7b3A	6238.050*	76412.780*
4/B7b3A	6231.760*	76361.340*
5/B7b3A	6230.390*	76333.570*
6/B7b3A	6222.490*	76332.760*
7/B7b3A	6231.720*	76300.490*
8/B7b3A	6240.600*	76285.380*
9/B7b3A	6265.400*	76260.900*
3/B7b4B	614.590*	76373.790*
4/B7b4B	6137.880*	76336.350*
5/B7b4B	6147.950*	76280.640*
6/B7b4B	6157.970*	76246.080*
7/B7b4B	6199.680*	76189.560*
1/B7b4B1	6169.400*	76333.350*
2/B7b4B1	6176.180*	76296.450*
3/B7b4B1	6193.820*	76260.100*
4/B7b4B1	6221.800*	76231.320*

- All dimensions are to centre of chamber.

- NOTES:**
- All sewer manholes are 1050Ø type C2 U.N.O.
 - All sewer manhole tops are type 2 U.N.O.
 - All sewer manhole covers are class 'B' U.N.O.
 - All 150Ø sewer mains & fittings are uPVC class SN8.
 - All 100Ø sewer mains & fittings are uPVC class SN10.
 - Trench stops to be 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 to be such 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.

LAYOUT PLAN

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
Date: 11/12/12

SUNLAND GROUP
REAL PROPERTY DESCRIPTION
Lot 901 on SP 226447,
Lot 902 on SP 218628,
Lot 4 & 5 on RP 743005
Parish of BOHLE
County of ELPHINSTONE
Holbourne Street - Bushland Beach

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

BASE SURVEY
Rowlands Surveys (42821/03)
TRUNCATED COORDINATES
E 6300, N 0300
EQUIVALENT TO
E 460000, N 7800000

LEVEL DATUM A.H.D.
Horizontal Datum GDA '94 Zone 55
Refer P.M. 17438 RL. 4.820
Bolt & washer in kerb.
Cnr HILLOCK CR. & GLENDOWER ST.

Scale
0 5 10 15 20m

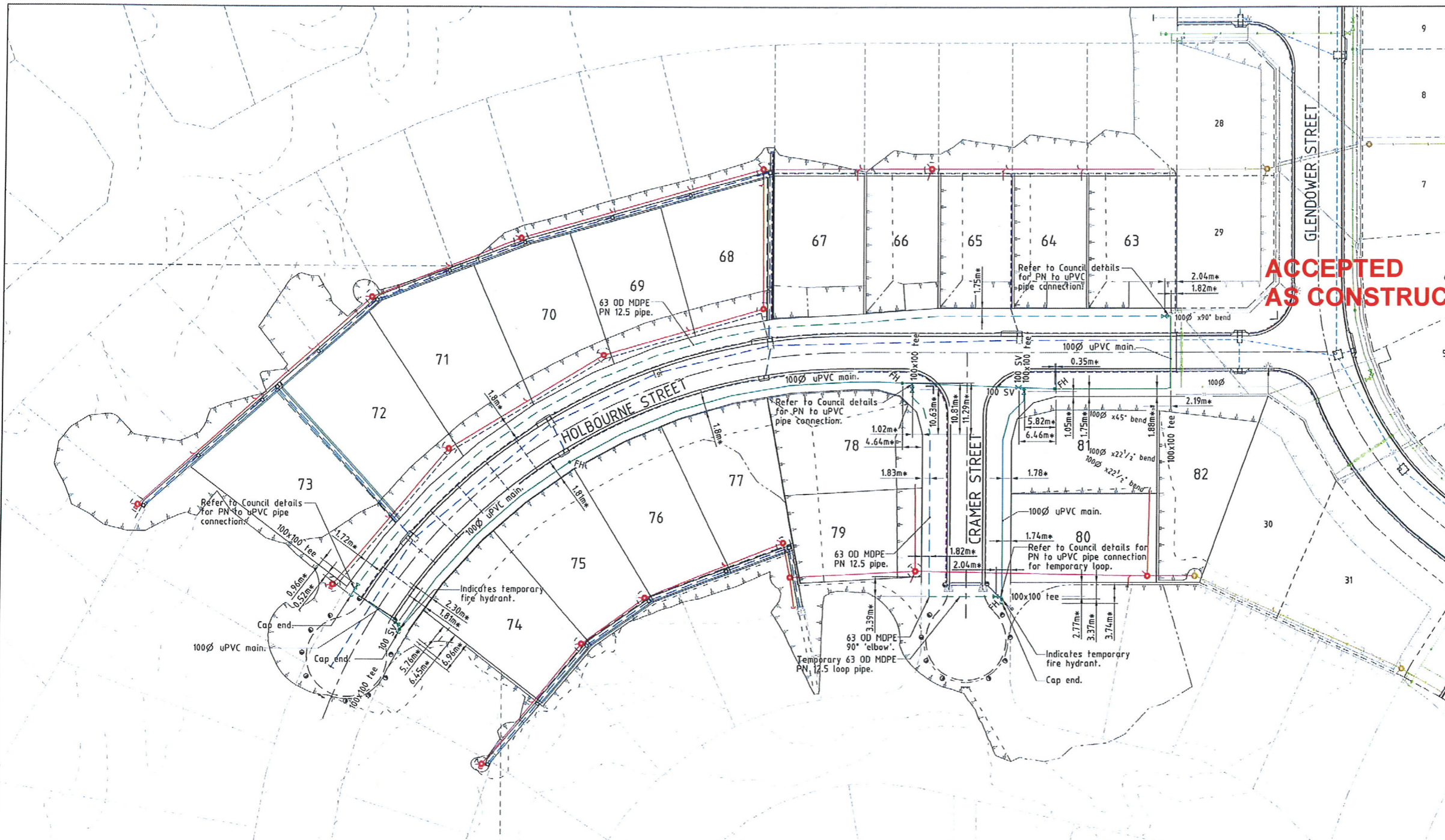
THE ORIGINAL OF THIS DOCUMENT IS COMPLETED TO THE SCALE NOTED. AS REPRODUCTION CAN DISTORT SIZE & SHAPE USE ONLY THE DIMENSIONS PROVIDED ON ARCHITECTURAL &/OR ENGINEERING DRAWINGS. VERIFY DIMENSIONS ON SITE BEFORE CONSTRUCTION.

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

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

Issue	Description	Date
C	AMENDED TO AS CONSTRUCTED.	11/12/2012
B	LINE 5/B7b3A TO 4/B7b3A AMENDED & LINE B7b3A1 ADDED.	30/07/2012
A	ISSUED FOR CONSTRUCTION.	28/05/2012
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL.	03/11/2011

Drawn	In Association With	Drawing Number	Issue
DC	SUNLAND GROUP LIMITED	SUNJ0003/18	C
Date	STAGE 3, 20 TRADITIONAL RESIDENTIAL LOT SUBDIVISION		
03/11/2011	HOLBOURNE STREET BUSHLAND BEACH		
Checked			
Approved			



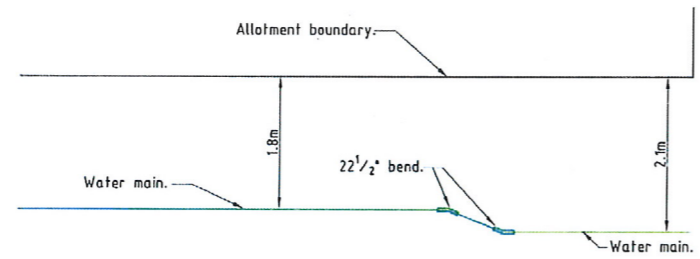
- LEGEND**
GENERAL:-
- RP boundary.
 - Top of batter.
 - Toe of batter.
 - Stormwater drain line.
 - Subsoil drainage.
 - Sewer main.
 - Sewer manhole.
 - uPVC water main.
 - Poly water main.
 - Stormwater drain line.
 - Subsoil drainage.
 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Underground electrical supply.
 - National Broadband Network.

- WATER RETICULATION:-**
- FH Fire Hydrant.
 - SV Stop Valve.

- NOTES:**
AS CONSTRUCTED WATER RETICULATION:
- All water supply fixtures (FH, SV etc.) have been installed in accordance with Townsville City Council standards, ie. adjacent to boundary intersection, U.N.O.
 - All uPVC water mains & fittings are to be Class 16 cast iron outside diameter compatible unless shown otherwise.

ACCEPTED AS CONSTRUCTED

LAYOUT PLAN



WATER ALIGNMENT TRANSITION DETAIL
Scale 'B'

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: 11/12/12
Laurence John Nolan
Director/Registered Surveyor



REAL PROPERTY DESCRIPTION
Lot 901 on SP 226447,
Lot 902 on SP 218628,
Lot 4 & 5 on RP 743005
Parish of BOHLE
County of ELPHINSTONE
Holbourne Street - Bushland Beach

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



BASE SURVEY
Rowlands Surveys (4/28/1/03)
TRUNCATED COORDINATES
E 0.000, N 0.000
EQUIVALENT TO
E 460000, N 7800000

LEVEL DATUM A.H.D.
Horizontal Datum GDA' 94 Zone 55
Refer P.M. 174.438 RL. 4.820
Bolt & washer in kerb.
Cnr HILLOCK CR. & GLENDOWER ST.

Scale 'A' 0 5 10 15 20m
Scale 'B' 0 0.5 1 1.5 2m

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.

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

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 100 817 350

B A P1	AMENDED TO AS CONSTRUCTED ISSUED FOR CONSTRUCTION. PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL.	11/12/2012 26/05/2012 03/11/2011
Issue	Description	Date
Drawn DC	In Association With SUNLAND GROUP LIMITED	WATER RETICULATION PLAN
Date 03/11/2011	STAGE 3, 20 TRADITIONAL RESIDENTIAL LOT SUBDIVISION HOLBOURNE STREET BUSHLAND BEACH	
Checked 12 Approved 11		
COPYRIGHT ©		Drawing Number SUNJ0003/19
		Issue B