

- LEGEND**
- GENERAL:-**
- Top of batter.
 - Toe of batter.
 - Invert of creek/drain.
 - Stormwater drain line.
 - Webforge safety barrier.
 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Poly water main.
 - Stormwater drain line.
 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Overhead power line.
 - Telstra conduit.

- SEWERAGE RETICULATION:-**
- 2 - Manhole Number
 - 1A - Sewer line description
 - MH - Manhole type: MH - Manhole, MS - Maintenance Shaft

- As constructed sewer invert levels at manhole.
- 1A - Sewer line description.
- 150Ø uPVC class SN8 - Diameter, type & class of pipe.
- 40.05m at 1 in 12.0 - Distance between manholes, (centre to centre) & grade.
- As constructed 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.
 - Allotment connection dimension 'X'.
 - Allotment connection dimension 'Y'.
 - Type of junction

APPROVED

- NOTES:**
- All sewer manholes are 1050Ø unless shown otherwise.
 - All sewer manhole covers are class 'B' unless shown otherwise.
 - All 150Ø sewer mains & fittings are uPVC class SN8.
 - All 100Ø sewer mains & fittings are uPVC class SN10.

SEWER MANHOLES

Manhole No.	Easting	Northing	Manhole Type
1/12A6a	5646.500*	76798.160*	Standard
2/12A6a	5627.890*	76746.020*	Standard
3/12A6a	5602.790*	76675.690*	Standard
1/12A6a1	5593.740*	76758.080*	Standard
2/12A6a1	5568.090*	76762.020*	Standard
3/12A6a1	5532.580*	76789.110*	Standard
1/12A6a2	5574.700*	76685.400*	Standard
2/12A6a2	5551.960*	76690.060*	Standard
3/12A6a2	5508.920*	76715.170*	Standard
4/12A6a2	5486.550*	76693.980*	Maintenance Shaft
5/12A6a2	5417.050*	76662.320*	Standard
1/12A6a2A	5540.480*	76660.960*	Standard

TOWNSVILLE CITY COUNCIL
REC'D - 3 MAR 2010
AMENDED PLANS

AS CONSTRUCTED


John James Rowlands 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: [Signature]
Date: 2/3/10
Director (Registered Surveyor)


REAL PROPERTY DESCRIPTION

Lot 501 & 502 on SP 16243
Parish of BOHLE
County of ELPHINSTONE
Bilbao Place - Bushland Beach

In Association with:-



ROWLANDS SURVEYS PTY LTD
22 GORDEN STREET
GARBUTT, 4814
Ph. (07)47755077



SUNLAND GROUP

LAYOUT PLAN


Scale: 0 5 10 20m

LEVEL DATUM A.H.D.
Horizontal Datum GDA '94 Zone 55
Refer P.M. 138403 RL. 8.545
Bolt & washer in manhole top.
LYNWOOD AVENUE

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 the former THURINGOWA CITY COUNCIL standard details.



NORTHERN CONSULTING
engineers

Civil & Structural Engineers
50 Punari Street, Currarejong 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	AS CONSTRUCTED AMENDED TO COUNCIL REQUIREMENTS.	03/03/2010
B	AMENDED TO AS CONSTRUCTED.	11/01/2010
A	ISSUED FOR CONSTRUCTION.	16/07/2008
P2	PRELIMINARY - NOT FOR CONSTRUCTION - AMENDED TO COUNCIL REQUIREMENTS.	13/12/2007
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL.	12/10/2007

Drawn CN	In Association with SUNLAND GROUP LIMITED	SEWERAGE RETICULATION PLAN
Date 12/10/2007	STAGE 84, 41 TRADITIONAL RESIDENTIAL LOT SUBDIVISION	Drawing Number SUN84/20
Checked [Signature]	BILBAO PLACE	Issue C
Approved [Signature]	BUSHLAND BEACH	
COPYRIGHT ©		

SEWER MANHOLES

Manhole No.	Easting	Northing	Manhole Type
5/12A6a2	5417.050*	76662.320*	Standard
6/12A6a2	5340.200*	76626.770*	Standard
7/12A6a2	5326.130*	76614.410*	Standard
8/12A6a2	5335.930*	76605.010*	Standard
1/12A6a2C	5280.190*	76574.360*	Standard

- All dimensions are to centre of chamber.

LEGEND

GENERAL:-

- Top of batter.
- Toe of batter.
- Invert of creek/drain.
- Stormwater drain line.
- Sewer main.
- Sewer manhole.
- Water main.
- Poly water main.
- Stormwater drain line.
- Sewer main.
- Sewer manhole.
- Water main.

SEWERAGE RETICULATION:-

- 2 - Manhole Number
- 1A - Sewer line description
- MH - Manhole type: MH - Manhole Shaft, MS - Maintenance Shaft
- As constructed sewer invert levels at manhole.
- 1A - Sewer line description.
- 150Ø uPVC class SN8 - Diameter, type & class of pipe.
- 40.05m at 1 in 12.0 - Distance between manholes, (centre to centre) & grade.
- TM 4.650 - As constructed top of manhole level.

SERVICES:-

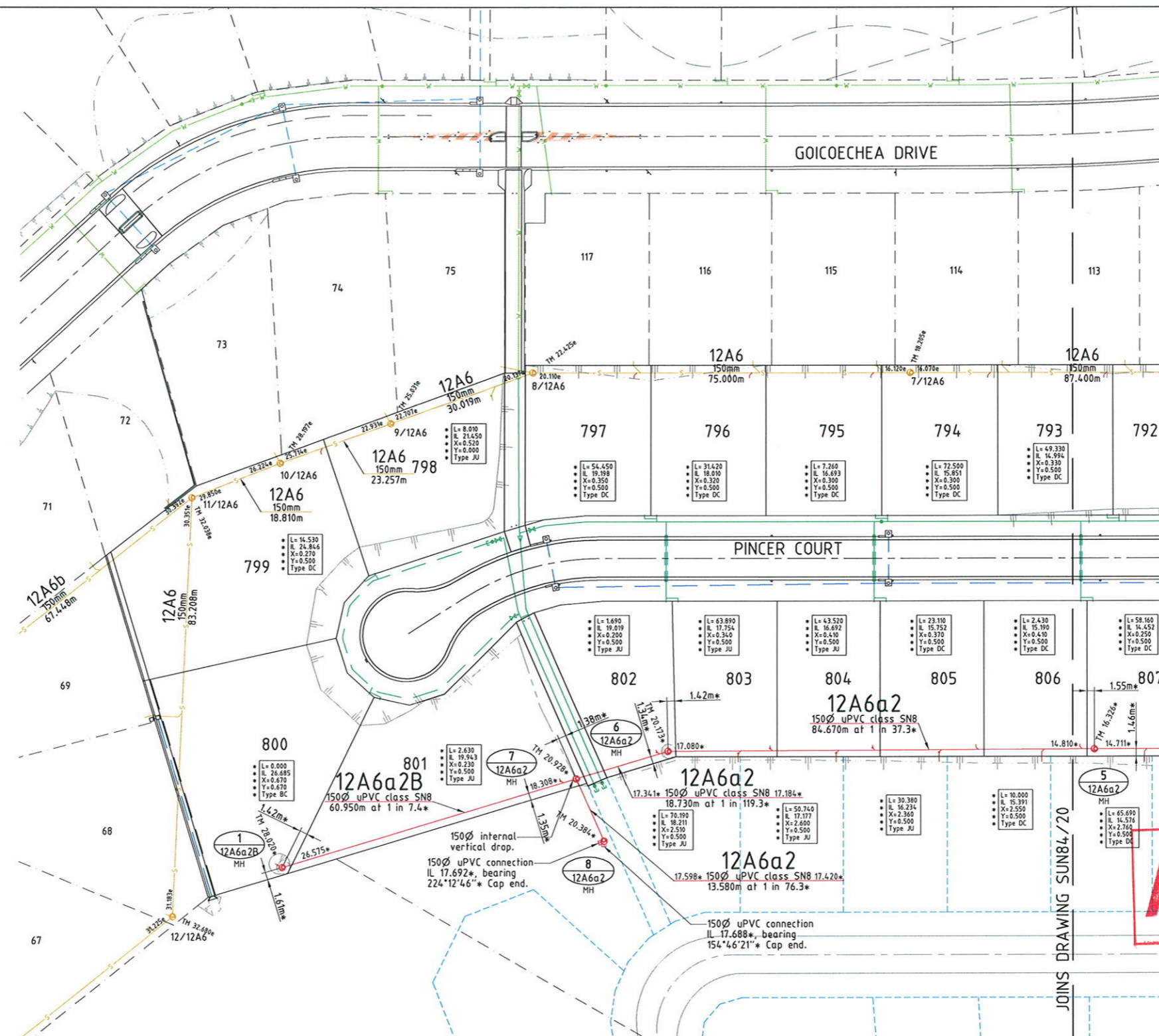
- Direct connection (DC)
- Jump up connection (JU)
- 100Ø manhole connection - Benching (BC) - Vertical Drop (VD)
- Distance from downstream manhole to Y-junction - dimension 'L'.
- Invert level at limit of house connection branch.
- Allotment connection dimension 'X'.
- Allotment connection dimension 'Y'.
- Type of junction

NOTES:

1. All sewer manholes are 1050Ø unless shown otherwise.
2. All sewer manhole covers are class 'B' unless shown otherwise.
3. All 150Ø sewer mains & fittings are uPVC class SN8.
4. All 100Ø sewer mains & fittings are uPVC class SN10.

APPROVED

TOWNSVILLE CITY COUNCIL
REC'D - 3 FEB 2010
TOWN PLANNING



LAYOUT PLAN

AS CONSTRUCTED

I John James Rowlands 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.

John James Rowlands Date: 12.01.10
John James Rowlands
Director/Registered Surveyor

REAL PROPERTY DESCRIPTION

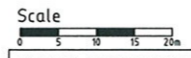
Lot 501 & 502 on SP 162413
Parish of BOHLE
County of ELPINSTONE
Bilbao Place - Bushland Beach

In Association with:-

ROWLANDS SURVEYS PTY LTD
22 GORDEN STREET
GARbutt. 4814
Ph. (07)47755077

SUNLAND GROUP

LEVEL DATUM A.H.D.
Horizontal Datum GDA' 94 Zone 55
Refer P.M. 138403 RL. 8.545
Bolt & washer in manhole top.
LYNWOOD AVENUE



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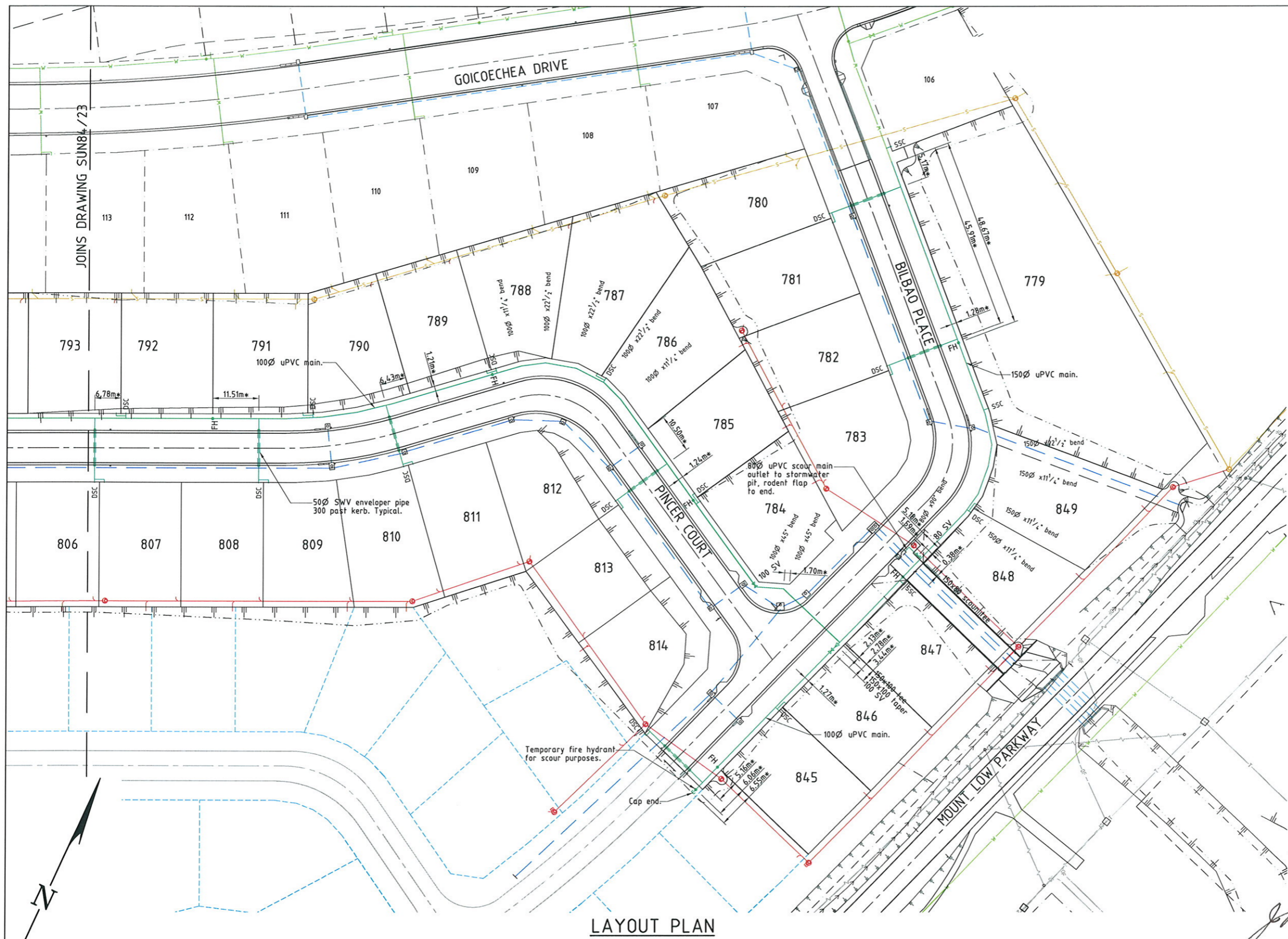
* - Indicates As Constructed information.
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NORTHERN CONSULTING
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50 Punari Street, Currajong 4812
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Milton Messer & Associates Pty. Ltd.
ACN 100 817 356

Issue	Description	Date
B	AMENDED TO AS CONSTRUCTED.	11/01/2010
A	ISSUED FOR CONSTRUCTION.	16/07/2008
P2	PRELIMINARY - NOT FOR CONSTRUCTION - AMENDED TO COUNCIL REQUIREMENTS.	13/12/2007
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL.	12/10/2007

Drawn	In Association with	SEWERAGE RETICULATION PLAN
CN	SUNLAND GROUP LIMITED	Drawing Number
Date	12/10/2007	Issue
Checked	STAGE 84, 41 TRADITIONAL RESIDENTIAL LOT SUBDIVISION	SUN84/21
Approved	BILBAO PLACE	B
COPYRIGHT ©	BUSHLAND BEACH	



- LEGEND**
- GENERAL:-**
- Top of batter.
 - Toe of batter.
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 - Stormwater drain line.
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 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Poly water main.
 - Stormwater drain line.
 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Overhead power line.
 - Telstra conduit.

- WATER RETICULATION:-**
- FH Fire Hydrant.
 - SV Stop Valve.
 - DSC Double Service Connection.
 - SSC Single Service Connection.

- NOTES:**
1. All water service connections have been installed in accordance with the former Thuringowa City Council standards. ie. 1.2m 100mm offset from property boundary. U.N.O.
 2. All water supply fixtures (FH, SV etc.) have been installed in accordance with the former Thuringowa City Council standards. ie. adjacent to property boundary intersection. U.N.O.
 3. All uPVC water mains are Class 16 cast iron outside diameter compatible. Unless noted otherwise.

APPROVED

TOWNSVILLE CITY COUNCIL
REC'D - 3 FEB 2010
TOWN PLANNING

AS CONSTRUCTED

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John James Rowlands 12.01.10
John James Rowlands
Director/Registered Surveyor

REAL PROPERTY DESCRIPTION

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Parish of BOHLE
County of ELPHINSTONE
Bilbao Place - Bushland Beach

In Association with:-

ROWLANDS SURVEYS PTY LTD
22 GORDEN STREET
GARBUTT. 4814
Ph. (07)47755077

SUNLAND GROUP

LEVEL DATUM A.H.D.
Horizontal Datum GDA' 94 Zone 55
Refer P.M. 138403 RL. 8.545
Bolt & washer in manhole top.
LYNWOOD AVENUE

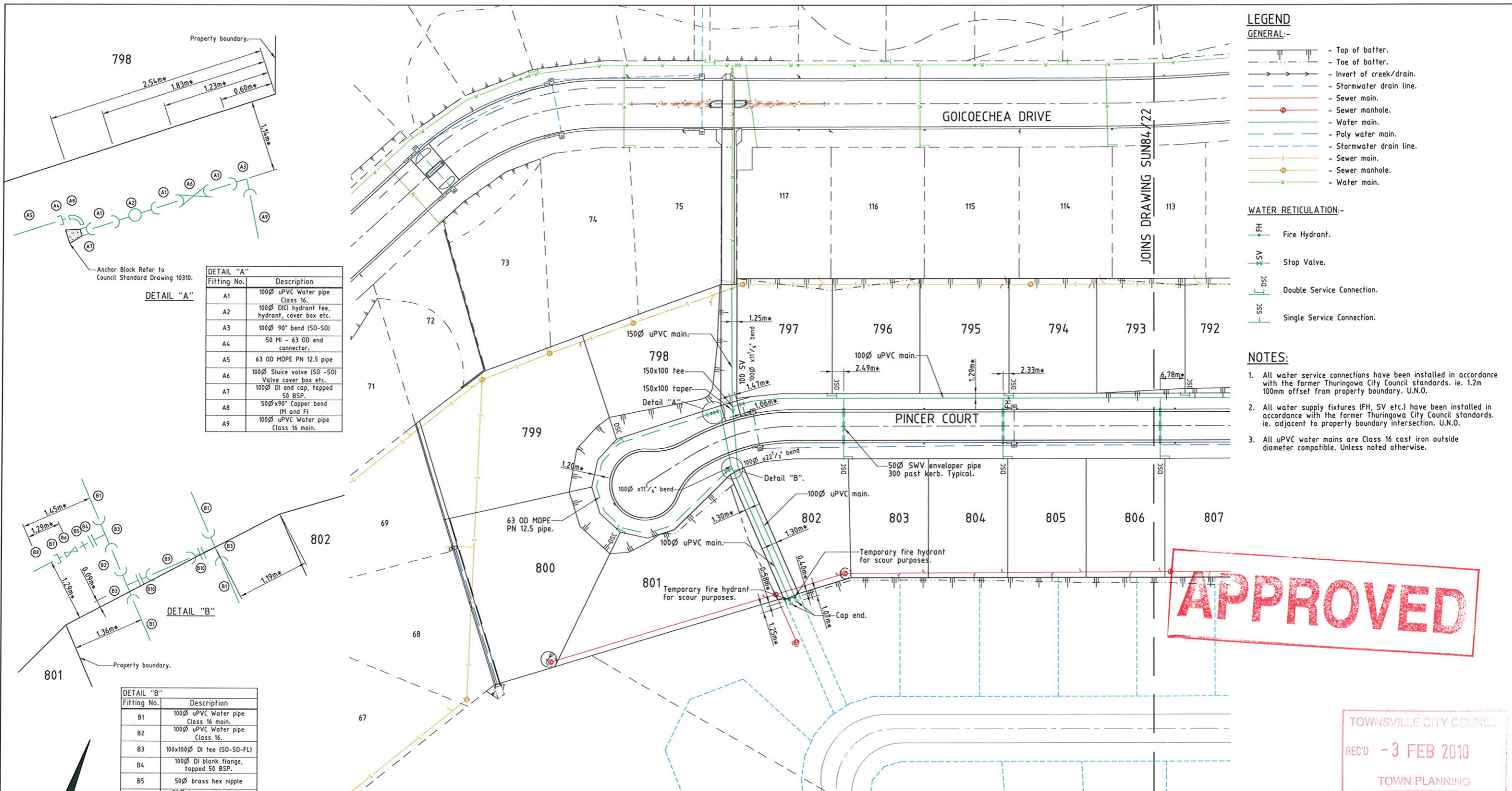
Scale
0 5 10 15 20m
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Milton Messer & Associates Pty. Ltd.
ACN 100 817 356

B	AMENDED TO AS CONSTRUCTED.	11/01/2010
A	ISSUED FOR CONSTRUCTION.	16/07/2008
P2	PRELIMINARY - NOT FOR CONSTRUCTION - AMENDED TO COUNCIL REQUIREMENTS.	13/12/2007
P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL.	12/10/2007

Issue	Description	Date
Drawn CN	In Association with	
Date 12/10/2007	SUNLAND GROUP LIMITED	
Checked <i>[Signature]</i>	STAGE 84, 41 TRADITIONAL RESIDENTIAL LOT SUBDIVISION	
Approved <i>[Signature]</i>	BILBAO PLACE BUSHLAND BEACH	
COPYRIGHT ©	WATER RETICULATION PLAN	
	Drawing Number	Issue
	SUN84/22	B



- LEGEND**
GENERAL:-
- Top of batter.
 - Toe of batter.
 - Invert of creek/drain.
 - Stormwater drain line.
 - Sewer main.
 - Sewer manhole.
 - Water main.
 - Poly water main.
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- WATER RETICULATION:-**
- FH Fire Hydrant.
 - SV Stop Valve.
 - DSC Double Service Connection.
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- NOTES:**
- All water service connections have been installed in accordance with the former Thuringowa City Council standards. ie. 1.2m 100mm offset from property boundary. U.N.O.
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 - All uPVC water mains are Class 16 cast iron outside diameter compatible. Unless noted otherwise.

DETAIL "A"

Fitting No.	Description
A1	100Ø uPVC Water pipe Class 16.
A2	100Ø DI hydrant tee, hydrant, cover box etc.
A3	100Ø 90° bend (S0-S0).
A4	50 MI - 63 OD end connector.
A5	63 OD MDPE PN 12.5 pipe
A6	100Ø Sluice valve (S0-S0) Valve cover box etc.
A7	100Ø DI end cap, tapped 50 BSP.
A8	50Ø x 90° Copper bend (H and F)
A9	100Ø uPVC Water pipe Class 16 main.

DETAIL "B"

Fitting No.	Description
B1	100Ø uPVC Water pipe Class 16 main.
B2	100Ø uPVC Water pipe Class 16.
B3	100x100Ø DI Tee (S0-S0-FL)
B4	100Ø DI blank flange, tapped 50 BSP.
B5	50Ø brass hex nipple
B6	50Ø bronze gate valve (F and F)
B7	50 MI - 63 OD end connector.
B8	63 OD MDPE PN 12.5 pipe
B9	100Ø uPVC Water pipe Class 16.
B10	100Ø DI connector (FL-S0)

LAYOUT PLAN

APPROVED

TOWNSVILLE CITY COUNCIL
REC'D - 3 FEB 2010
TOWN PLANNING

AS CONSTRUCTED

I John James Rowlands 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.

John James Rowlands
John James Rowlands
Director/Registered Surveyor
Date: 12.01.10

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LEVEL DATUM A.H.D.
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Refer P.M. 138403 RL. 8.545
Bolt & washer in manhole top.
LYNWOOD AVENUE

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P1	PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL.	12/10/2007

Drawn CN	In Association with SUNLAND GROUP LIMITED	WATER RETICULATION PLAN
Date 12/10/2007	STAGE 84, 41 TRADITIONAL RESIDENTIAL LOT SUBDIVISION	
Checked <i>[Signature]</i>	BILBAO PLACE	Drawing Number SUN84/23
Approved <i>[Signature]</i>	BUSHLAND BEACH	Issue B
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