

STORMWATER STRUCTURE SETOUT TABLE

| PIT No. | EASTING   | NORTHING   | STRUCTURE TYPE                                   | TOP LEVEL |
|---------|-----------|------------|--|-----------|
| 0/50    | 6491.851* | 7655.772*  | Outlet Structure                                 | 5.261*    |
| 1/3A    | 6484.380* | 76484.280* | 5600x1800 stormwater manhole                     | 7.160*    |
| 1/DG1   | 6522.035* | 76475.428* | Grated Kerb Inlet (3600C) over 1200x1500 manhole | 6.163*    |
| 1/DG3   | 6523.678* | 76487.617* | Grated Kerb Inlet (3600C) over 1200x1200 manhole | 6.147*    |
| 1/DG4   | 6446.845* | 76482.589* | Grated Kerb Inlet (3600C) over 1200x1500 manhole | 6.199*    |
| 2/DG4   | 6425.350* | 76485.719* | Grated Kerb Inlet (3600R) over 900x900 manhole   | 6.370*    |
| 2a/DG4  | 6391.283* | 76488.246* | 900x900 Stormwater Manhole, Type 1               | 6.878*    |
| 3/DG4   | 6392.408* | 76500.371* | Grated Kerb Inlet (3600L) over 900x900 manhole   | 6.647*    |
| 1/DG5   | 6448.103* | 76494.932* | Grated Kerb Inlet (3600C) over 1200x1200 manhole | 6.199*    |
| 1/DG8   | 6445.488* | 76477.282* | Raised Grate Field Inlet Pit with 600x600 grate  | 6.228*    |

- All dimensions are to centre of chamber, U.N.O.
- Grated kerb inlets constructed over 900x900 Type 1 stormwater manhole to Local Authorities standard details U.N.O.
- Grated kerb inlets constructed over 1200x1200 Type 2 stormwater manhole to Local Authorities standard details U.N.O.
- Refer to drawing SUNG0002/17 for non standard chamber construction details to grated kerb inlets 1/DG1 & 1/DG4.
- Refer to SUNG0002/16 for headwall details.
- Refer to drawings SUNG0002/17 for manhole 1/3A details.
- Class 'B' covers to stormwater manholes.
- Setout to structures 1a/3A & 0/50 are to end of centre culvert.
- Raised grate field inlet manhole constructed in accordance with Local Authorities standard details U.N.O.
- 600x600 Class 'B' raised grates to all field inlet pits.

LAYOUT PLAN

LEGEND

- 2/1 (12.000\*) - Pit No. 2/Drainline No. 1
- 12.000\* - As constructed top of structure levels.
- As constructed pipe invert levels.
- RP boundary.
- Top of batter.
- Toe of batter.
- Stormwater drain line.
- Subsoil drainage.
- Water supply main.
- Irrigation conduit.
- Stormwater drain line.
- Sewer main.
- Sewer manhole.
- Acoustic barrier.

**ACCEPTED AS CONSTRUCTED**

NOTES:

- All Kerb Inlet Grates Class 'D' and 'Bicycle Safe' to AS 3996 U.N.O.
- All RCBC base slabs constructed in accordance with Department of Transport and Main Roads standards.
- All RCBC installed in accordance with Department of Transport and Main Roads standards.

AS CONSTRUCTED

Northern Consulting Engineers hereby certify that the works detailed on this drawing have been constructed to the dimensions and levels detailed.

*[Signature]* Date: 1-6-15  
Derek Robert Logley Saw

AS CONSTRUCTED

Rowlands Surveys Pty Ltd (ACN 010 025 260) hereby certify that the works detailed on this drawing, denoted \*, have been constructed to the dimensions and levels shown.

*[Signature]* Date: 1/6/15  
Laurence John Nolan  
Director/Registered Surveyor

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



Civil & Structural Engineers  
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Email: mail@nceng.com.au  
Milton Messer & Associates Pty. Ltd.  
ACN 100 817 356

| B                       | AMENDED TO AS CONSTRUCTED.   | 29/05/2015        |
|-------------------------|--|-------------------|
| A                       | ISSUED FOR CONSTRUCTION - RESPONSE TO COUNCIL INFORMATION REQUEST.               | 02/12/2014        |
| P1                      | PRELIMINARY - NOT FOR CONSTRUCTION - ISSUED FOR OPERATIONAL WORKS APPROVAL ONLY. | 05/09/2014        |
| Issue                   | Description  | Date              |
| Drawn<br>HAB            | In Association With<br><b>SUNLAND GROUP LIMITED</b>                              |                   |
| Date<br>05/09/2014      | <b>STORMWATER DRAIN LINE PLAN</b>  |                   |
| Checked<br>HAB          | <b>ROAD EXTENSION<br/>LIONELL TURNER DRIVE<br/>BUSHLAND BEACH</b>                |                   |
| Approved<br>[Signature] | Drawing Number<br><b>SUNG0002/14</b>   | Issue<br><b>B</b> |
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REAL PROPERTY DESCRIPTION

Lot 902 on SP256043  
Parish of BOHLE  
County of ELPHINSTONE  
Lionell Turner Drive - Bushland Beach

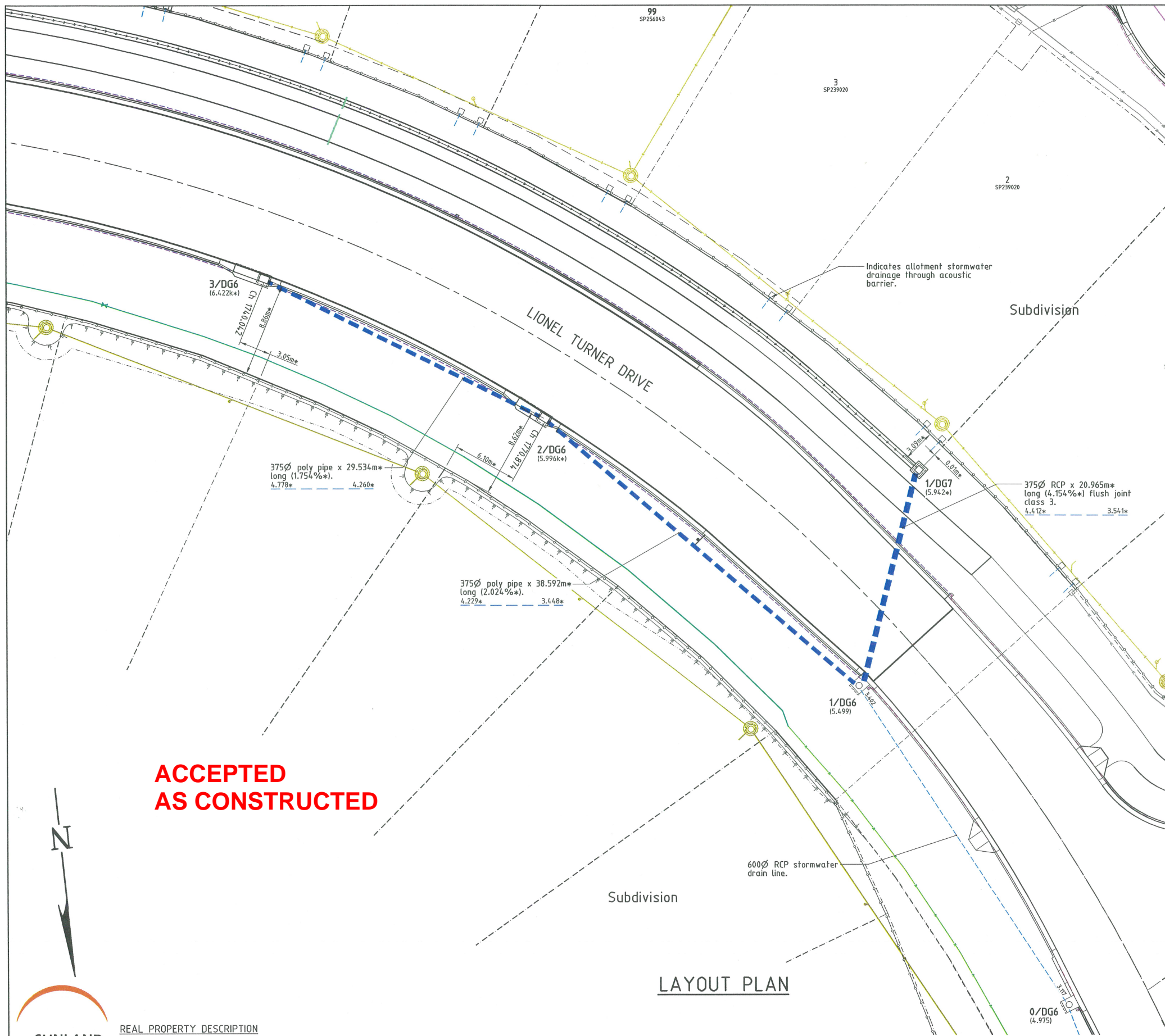


**ROWLANDS SURVEYS PTY LTD**  
22 GORDEN STREET  
GARBUITT. 4814  
Ph. (07)47755077

LEVEL DATUM A.H.D.  
Horizontal Datum GDA' 94 Zone 55  
Refer P.M. 174439 RL. 4.820  
Bolt & washer in kerb.  
Cnr HILLOCK CR. & GLENDOWER ST.

BASE SURVEY  
Rowlands Surveys (43074/02)  
TRUNCATED COORDINATES  
E. 0.000, N. 0.000  
EQUIVALENT TO  
E. 460000, N. 7900000

Scale 0 2 4 6 8 10  
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.



**LEGEND**

|                             |   |
|-----------------------------|---|
| 2/1<br>(12.000*)<br>12.000* | - Pit No. 2/Drainline No. 1               |
| - - - - -                   | - As constructed top of structure levels. |
| - - - - -                   | - As constructed pipe invert levels.      |
| - - - - -                   | - RP boundary.                            |
| - - - - -                   | - Top of batter.                          |
| - - - - -                   | - Toe of batter.                          |
| — — — — —                   | - Stormwater drain line.                  |
| — — — — —                   | - Subsoil drainage.                       |
| — — — — —                   | - Water supply main.                      |
| — — — — —                   | - Irrigation conduit.                     |
| — — — — —                   | - Stormwater drain line.                  |
| — — — — —                   | - Subsoil drainage.                       |
| — — — — —                   | - Sewer main.                             |
| — — — — —                   | - Sewer manhole.                          |
| — — — — —                   | - Acoustic barrier.                       |

**NOTES:**

- All Kerb Inlet Grates Class 'D' and 'Bicycle Safe' to AS 3996 U.N.O.

**STORMWATER STRUCTURE SETOUT TABLE**

| PIT No. | EASTING   | NORTHING   | STRUCTURE TYPE                                  | TOP LEVEL |
|---------|-----------|------------|---|-----------|
| 1/DG6   |           |            | Existing Kerb Inlet                             | 5.499     |
| 2/DG6   | 6306.773* | 76532.280* | Grated Kerb Inlet (3600R) over 900x900 manhole  | 5.996k*   |
| 3/DG6   | 6331.713* | 76516.461* | Grated Kerb Inlet (3600R) over 900x900 manhole  | 6.422k*   |
| 1/DG7   | 6272.365* | 76540.569* | Raised Grate Field Inlet Pit with 600x600 grate | 5.942*    |

- All dimensions are to centre of chamber. U.N.O.  
 - All grated kerb inlets constructed over 900x900 Type 1 stormwater manhole to Local Authorities standard details U.N.O.  
 - Raised grate field inlet manhole constructed in accordance with Local Authorities standard details U.N.O.  
 - 600x600 Class 'B' raised grates to all field inlet pits.

**AS CONSTRUCTED**  
 Rowlands Surveys Pty Ltd (ACN 010 025 260) hereby certify that the works detailed on this drawing, denoted \*, have been constructed to the dimensions and levels shown.

Date: 15/6/15  
 Laurence John Nolan  
 Director/Registered Surveyor

**SUNLAND GROUP**

**REAL PROPERTY DESCRIPTION**  
 Lot 902 on SP256043  
 Parish of BOHLE  
 County of ELPHINSTONE  
 Lionel Turner Drive - 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.

BASE SURVEY  
 Rowlands Surveys (43074/02)  
 TRUNCATED COORDINATES  
 E 0.000, N 0.000  
 EQUIVALENT TO  
 E 460000, N 7800000

Scale  
 0 2 4 6 8m

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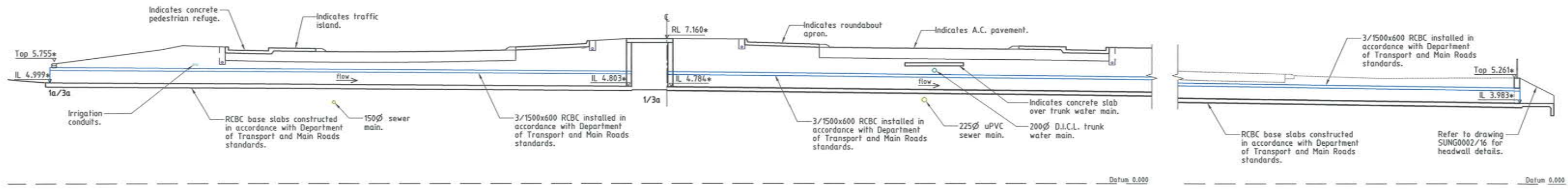
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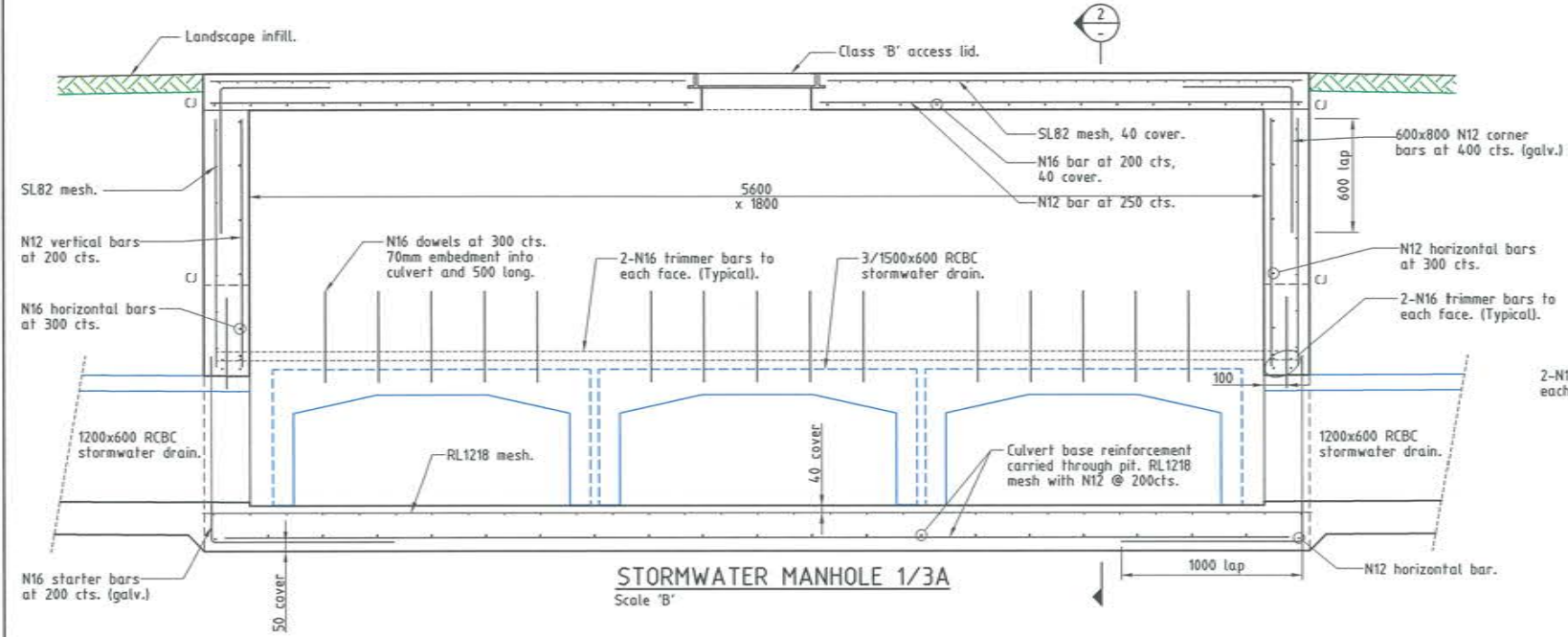
**NORTHERN CONSULTING engineers**  
 Civil & Structural Engineers  
 50 Punari Street, Currajong 4812  
 Phone: [07] 4725 5550 Fax: [07] 4725 5850  
 Email: mail@nceng.com.au  
 Milton Messer & Associates Pty. Ltd.  
 ACN 100 817 356

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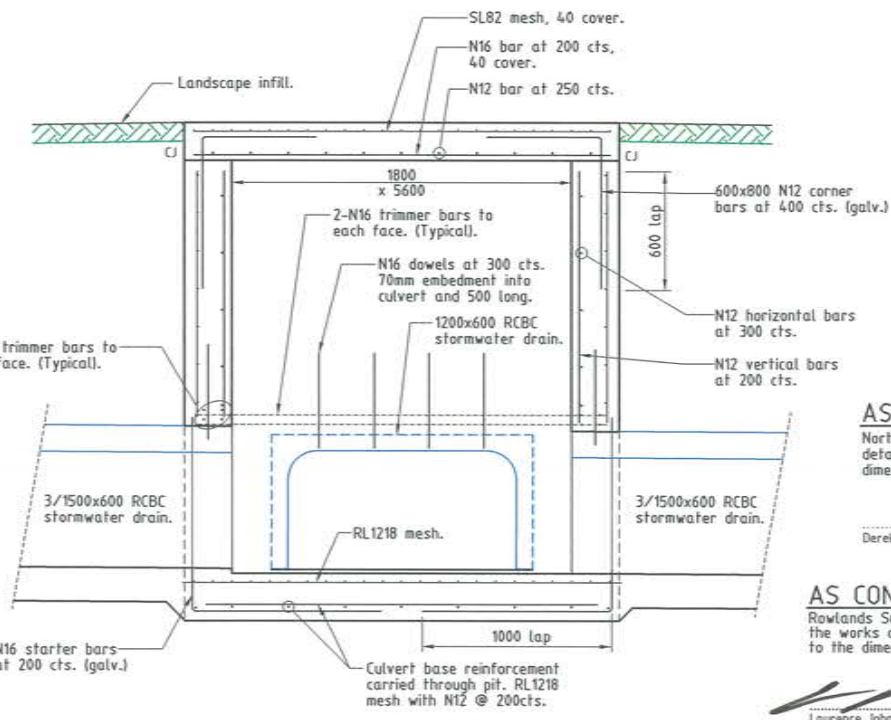
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|-------------------------|---|-------------------|
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| Date<br>05/09/2014      | <b>STORMWATER DRAIN LINE PLAN</b>                       |                   |
| Checked<br>HAB          | ROAD EXTENSION<br>LIONEL TURNER DRIVE<br>BUSHLAND BEACH |                   |
| Approved<br>[Signature] | Drawing Number<br><b>SUNG0002/15</b>                    | Issue<br><b>C</b> |



**STORMWATER CULVERT - Ch 1581.542**  
Scale 'A'



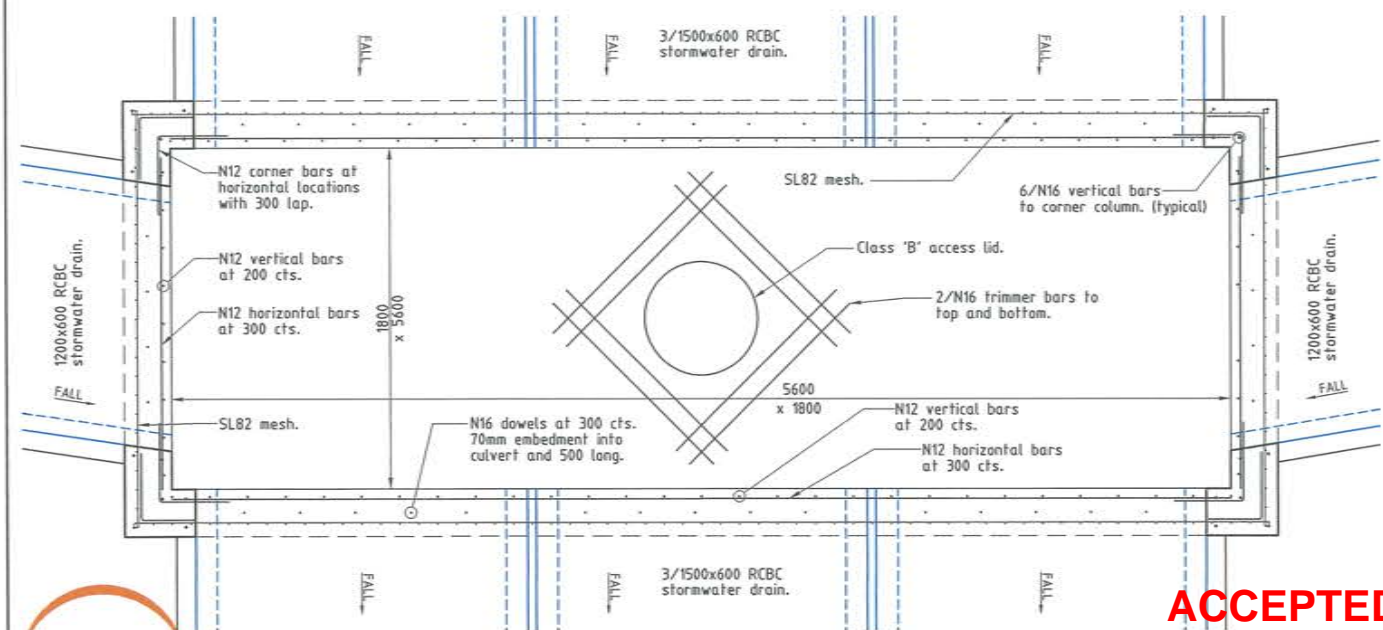
**STORMWATER MANHOLE 1/3A**  
Scale 'B'



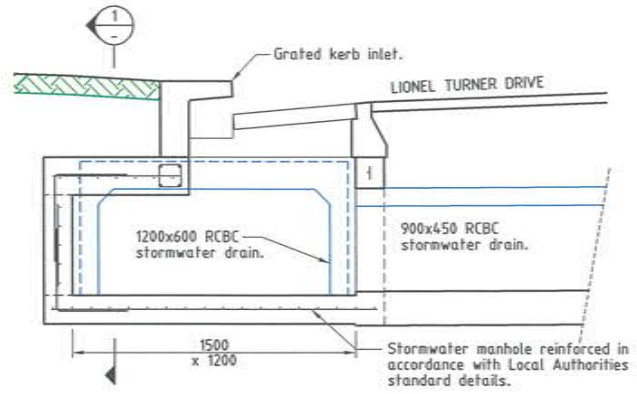
**SECTION 2**  
Scale 'B'

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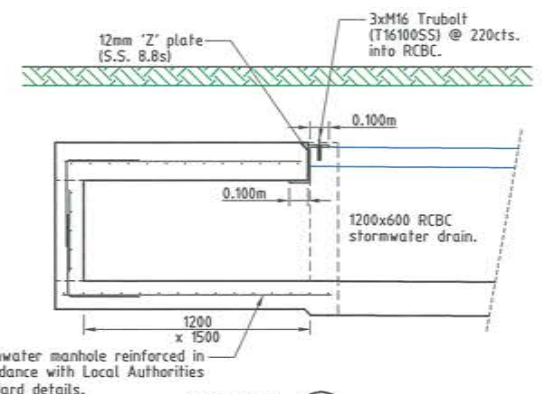
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Date: 4/6/15  
Laurence John Nolan  
Director/Registered Surveyor



**STORMWATER MANHOLE 1/3A PLAN**  
Scale 'B'



**GRATED KERB INLET 1/DG1**  
Scale 'B'  
GRATED KERB INLET 1/DG4 SIMILAR



**SECTION 1**  
Scale 'B'

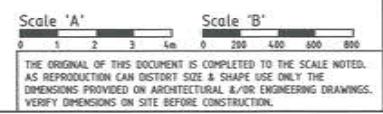
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engineers

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