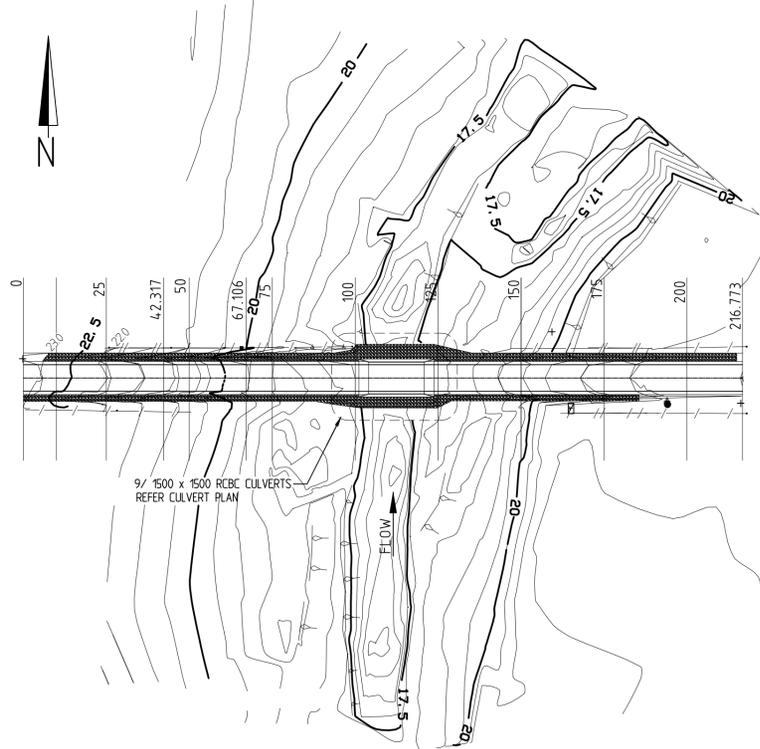


- LEGEND**
- FENCE POST
  - + TBM
  - EXISTING CONTOURS (@ 1m interval)
  - EXISTING INTERMEDIATE CONTOURS (@ 0.2m interval)
  - RIVER BANK



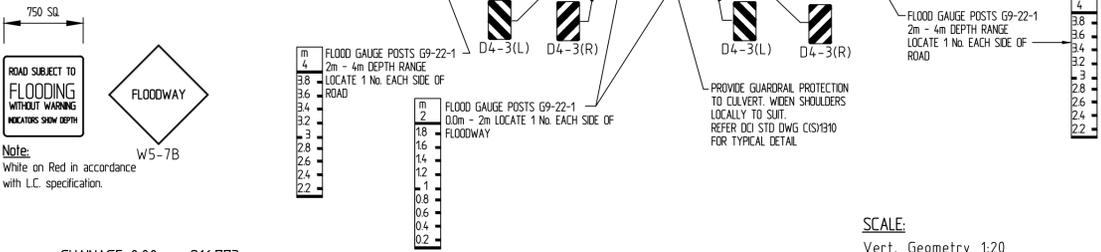
CHAINAGE 0.00m - 216.773m  
**LEONINO RD PLAN**

| Vertical Geometry Grade | Vertical Grade Length | Vertical Curve Length | Vertical Curve Radius | Datum 10m |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------|
| -5.24%                  | 84.017                | 33.823m VC            | R 100.1m              |           |
| 0.0%                    | 22.69m                | 36.38m VC             | R 673.01m             |           |
| 5.24%                   | 31.334m               | 28.01m VC             | R 764.09m             |           |
| 1.91%                   | 30.46m                |                       |                       |           |

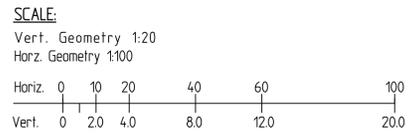
  

| CHAINAGE                     | 0      | 10     | 20     | 30     | 40     | 50     | 60     | 67.106 | 70     | 80     | 84.017 | 90     | 100    | 100.929 | 110    | 120    | 123.633 | 130    | 140    | 150    | 158.295 | 160    | 170    | 180    | 186.312 | 190    | 200    | 210    | 216.773 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|---------|--------|--------|--------|---------|--------|--------|--------|---------|--------|--------|--------|---------|
| CENTRELINE FINISHED LEVEL    | 23.285 | 22.798 | 22.311 | 21.825 | 21.338 | 20.852 | 20.366 | 20.020 | 19.891 | 19.610 | 19.478 | 19.140 | 18.963 | 18.947  | 18.947 | 18.947 | 18.947  | 18.947 | 19.448 | 19.748 | 20.000  | 20.066 | 20.462 | 20.853 | 21.051  | 21.107 | 21.285 | 21.420 | 21.512  |
| EXISTING NATURAL SURFACE     | 23.285 | 22.641 | 22.197 | 21.793 | 21.309 | 20.721 | 20.059 | 19.567 | 19.375 | 18.744 | 18.512 | 18.169 | 17.579 | 16.822  | 16.822 | 16.822 | 16.822  | 16.822 | 18.790 | 19.453 | 20.016  | 20.101 | 20.569 | 20.903 | 21.051  | 21.107 | 21.257 | 21.407 | 21.512  |
| CUT / FILL DEPTH TO EXISTING | 0.00   | 0.157  | 0.114  | 0.032  | 0.029  | 0.125  | 0.307  | 0.453  | 0.516  | 0.866  | 0.966  | 1.125  | 1.384  | 1.424   | 1.903  | 1.47   | 1.368   | 1.015  | 0.458  | 0.295  | -0.016  | -0.035 | -0.107 | -0.05  | 0.051   | 0.044  | 0.028  | 0.013  | 0.00    |

IP CH. 84.017 RL. 18.974  
 9/ 1500 x 1500 RCBC CULVERTS REFER CULVERT ELEVATION  
 IP CH. 140.964 RL. 18.947  
 IP CH. 172.298 RL. 20.841



CHAINAGE 0.00m - 216.773m  
**LEONINO RD LONGITUDINAL SECTION**



| PROJECT DRAWINGS |  |
|------------------|--|
| DRAWING No.      | DESCRIPTION  |
| LC001 - C1       | PLAN & LONGITUDINAL SECTIONS - LEONINO ROAD CH.0.0 TO 216.773, LOCALITY PLAN, SCHEDULE OF DWGS |
| LC001 - C2       | CULVERT PLAN & ELEVATION, DETAILS AND TYPICAL SECTIONS   |

| STANDARD DRAWINGS |   |
|-------------------|---|
| DRAWING No.       | DESCRIPTION   |
| CIS1104/3         | STANDARD DRAWING - ENDWALLS TO PRECAST BOX CULVERTS                       |
| CIS1119/-         | STANDARD DRAWING - RCBC CONCRETE & REINFORCEMENT DETAILS SHEET 1          |
| CIS1120/-         | STANDARD DRAWING - RCBC CONCRETE & REINFORCEMENT DETAILS SHEET 2          |
| CIS1206/6         | STANDARD DRAWING - RURAL RESIDENTIAL PROPERTY ACCESS WITH CONCRETE INVERT |
| CIS1300/1         | STANDARD DRAWING - FLEXIBLE GUIDE POSTS                                   |
| CIS1520/2         | STANDARD DRAWING - LINE MARKING   |

**NOTE:**  
 SETOUT DIMENSIONS ARE BASED ON A 150mm THK CULVERT LEG & 180mm THK CROWN W/ 50mm TAPED GAPS BETWEEN CULVERTS. CULVERT LENGTH = 2446mm

**BASIS FOR DESIGN**

**GEOMETRY**  
 DESIGN SPEED: 80km/h  
 AUSTRORADS RURAL ROAD DESIGN  
 LITCHFIELD SHIRE COUNCIL RURAL SUBDIVISION ROADS & DRAINAGE WORKS GUIDELINES B1

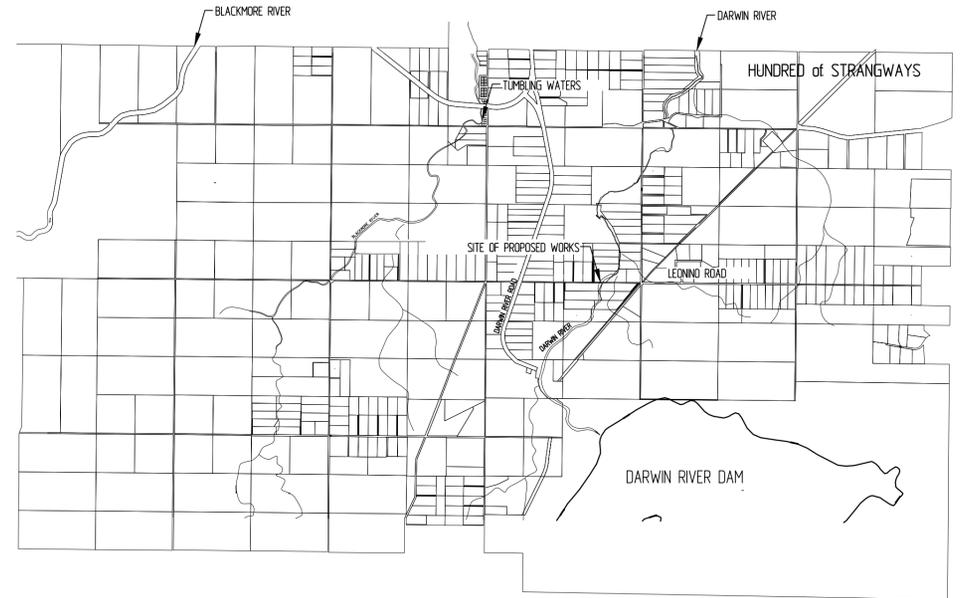
**EXPOSURE CLASSIFICATION**  
 B1

**DRAINAGE**  
 PRIMARY SYSTEM ARI: NOT CONSIDERED (OWN RVR DAM)  
 SECONDARY SYSTEM ARI: 20 YEARS

ARI FLOW (m/s) DEPTH (m) VEL (m/s) Cy  
 20 61 15 3 0.16

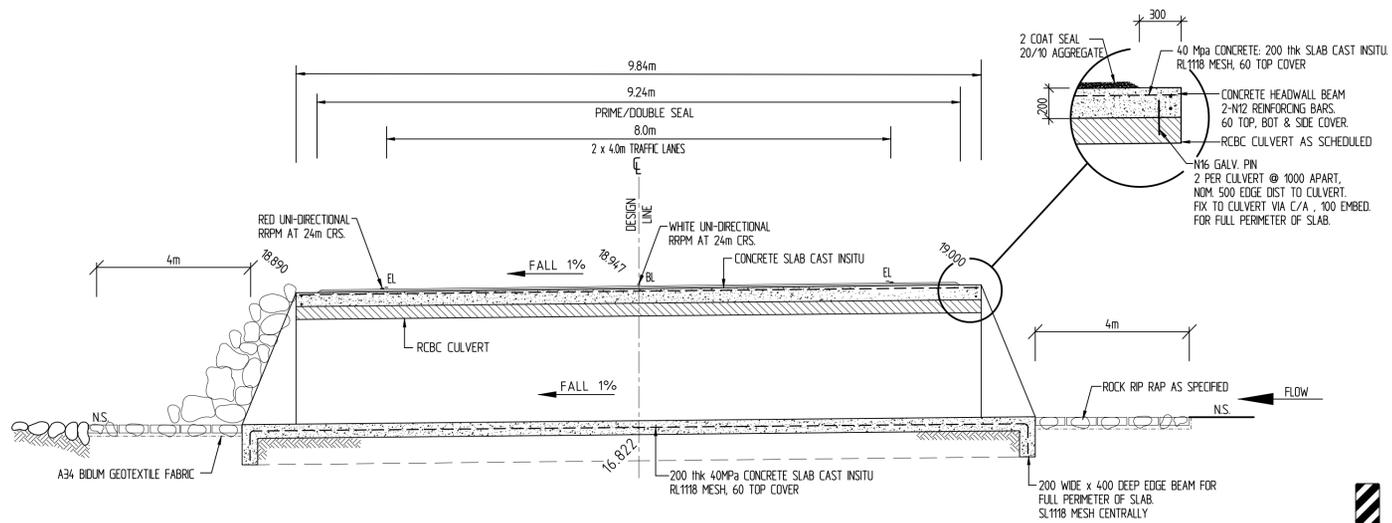
DISCHARGE MEASURED AT LEONINO RD INVERT

- NOTES**
- DETAILS SHOWN ARE TYPICAL ONLY.
  - ACTUAL DIMENSIONS AND LEVELS ARE GIVEN ON DETAIL DRAWINGS.
  - VOLUME OF FILL GIVEN FOR EARTHWORKS INCLUDES SUB BASE TOPUP AND SHOULDER BATTERS.

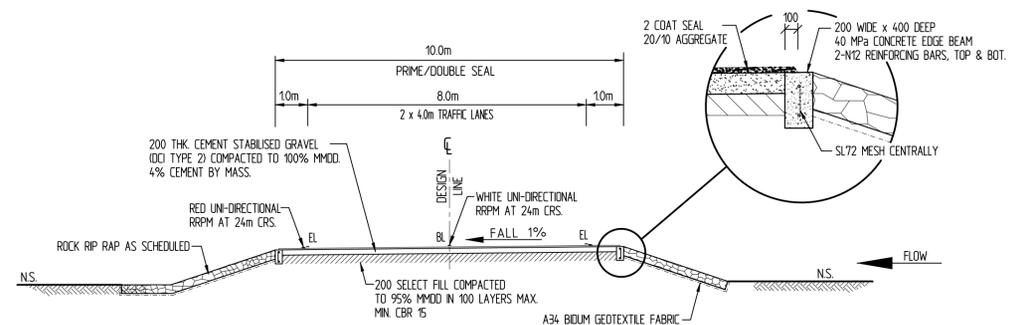


**LOCATION PLAN**  
 NOT TO SCALE

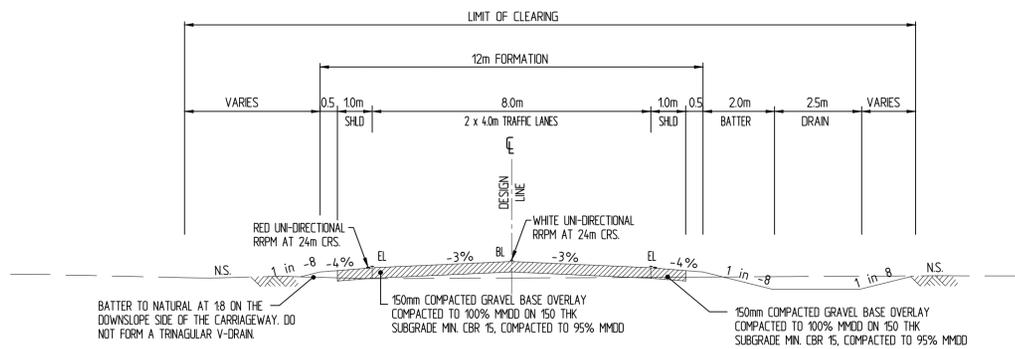
|   |  |   |  |  |
|---|--|---|--|--|
| <br>N.T. Consulting Engineers<br>ABN 73 102 631 186<br>P.O. Box 2028<br>HUMPTY DOO 0836<br>Northern Territory, Australia<br>Email: ntee@westnet.com.au<br>Telephone: (08) 89 832 292 Mobile: 0427 411 633 | Project<br><b>Proposed Culvert Bridge</b><br><b>Leonino Road, Darwin River</b><br><b>Hundred of Strangways</b> | Designed by <b>MC</b><br>Drawn by <b>MW</b><br>Concurred<br>Date <b>Aug. 2013</b> | Title<br><b>PLAN &amp; LONGITUDINAL SECTION</b><br><b>Leonino Road Ch.0.0 to Ch.216.0</b><br><b>SCHEDULE of Dwgs., LOCALITY PLAN</b> | Scale <b>AS SHOWN</b><br>Job No. <b>LC001</b><br>Drawing No. <b>LC001-C1</b> Rev. <b>—</b> |
|   | For<br><b>Litchfield Council</b>   |   |  |  |
|   |  |   |  |  |
|   |  |   |  |  |



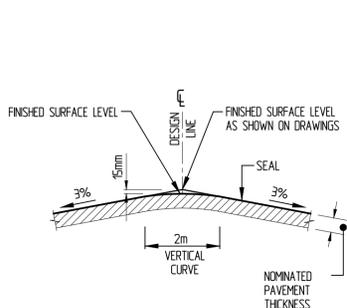
**CULVERT TYPICAL SECTION**  
NOT TO SCALE



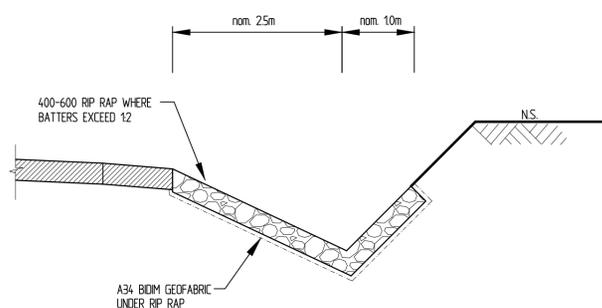
**FLOODWAY TYPICAL SECTION**  
NOT TO SCALE



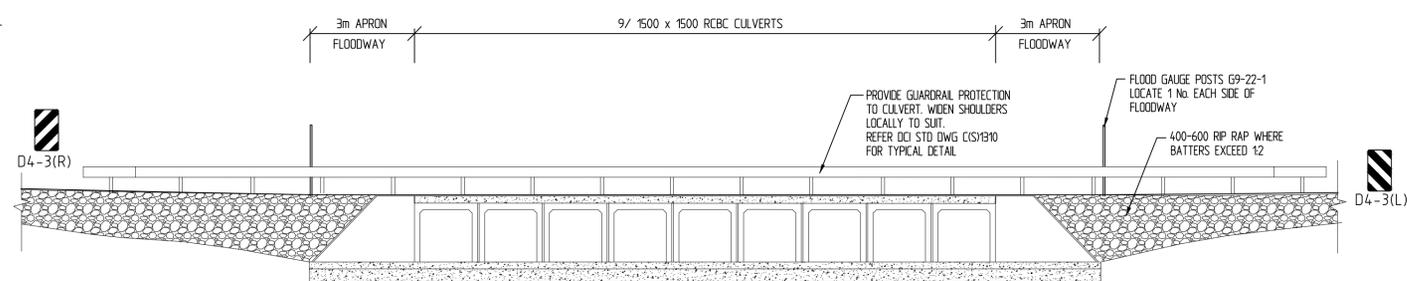
**TYPICAL CROSS SECTION**  
NOT TO SCALE



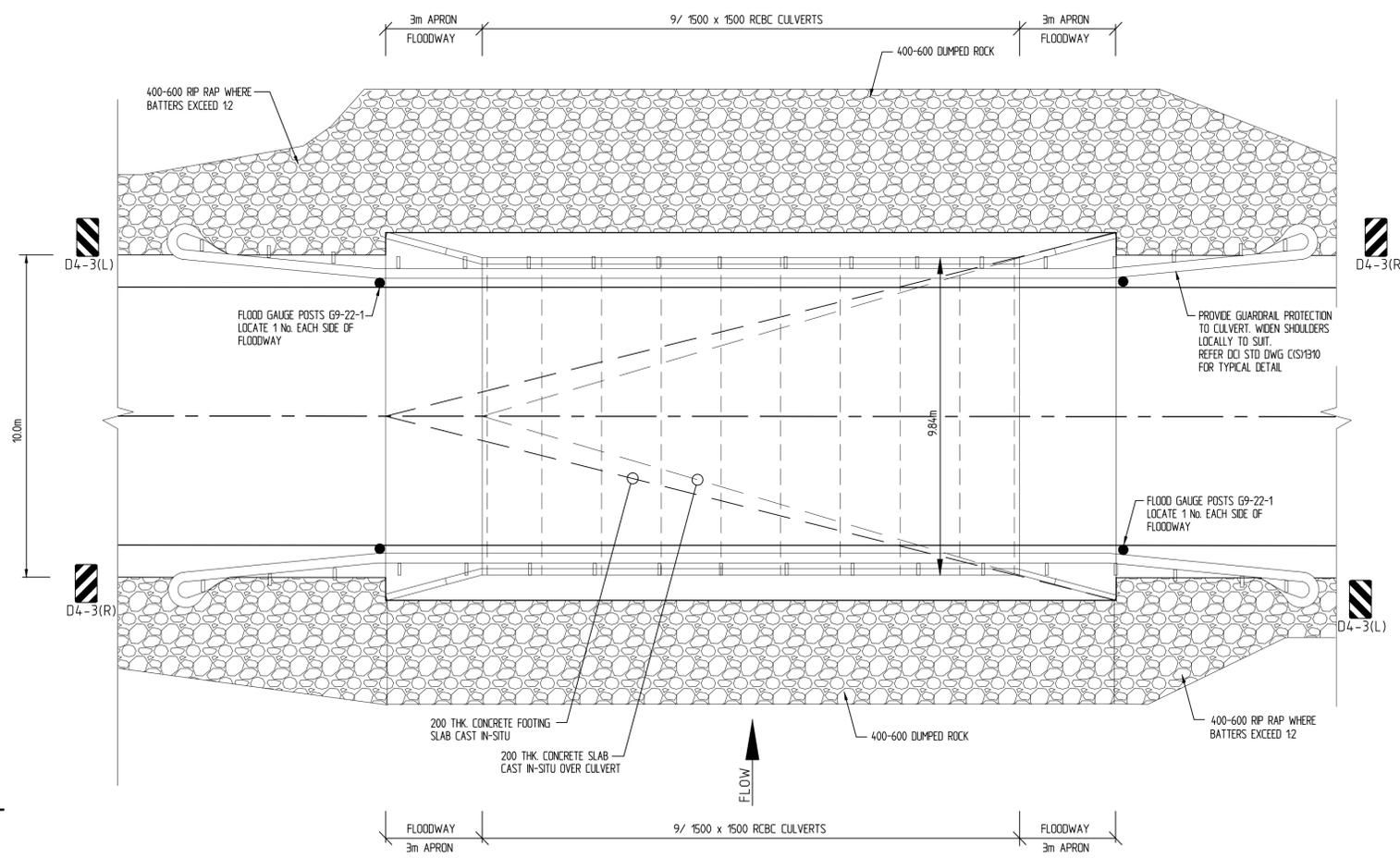
**TYPICAL CROWN DETAIL**  
NOT TO SCALE



**TYPICAL TABLE DRAIN PROTECTION DETAIL**  
NOT TO SCALE



**CULVERT ELEVATION**  
1:10



**CULVERT PLAN**  
1:10

|   |   |  |   |  |  |  |
|---|---|--|---|--|--|--|
| <p><b>NT Consulting Engineers</b><br/>Telephone: (08) 89 832 292 Mobile: 0427 411 633</p> | <p>N.T. Consulting Engineers<br/>ABN 73 102 631 186<br/>P.O. Box 2028<br/>SUMMITTOWN QLD 0836<br/>Northern Territory, Australia<br/>Email: ntece@westnet.com.au</p> | <p>Project<br/><b>Proposed Culvert Bridge</b><br/>Leonino Road, Darwin River<br/>Hundred of Strangways</p> | <p>Designed by <u>MC</u><br/>Drawn by <u>MW</u><br/>Concurred<br/>Date <u>Aug. 2013</u></p> | <p>Title<br/><b>CULVERT PLAN &amp; ELEVATION</b><br/>TYPICAL CROSS SECTIONS, DETAILS</p> | <p>Scale<br/><b>AS SHOWN</b></p>       |  |
|   |   |  |   | <p>Job No.<br/><b>LC001</b></p>  |  |  |
|   |   |  |   |  | <p>Drawing No.<br/><b>LC001-C2</b></p> |  |
|   |   |  |   |  | <p>Rev.<br/><b>—</b></p>               |  |