Precinct Plan
Indicative Potable Water Layout

REV AMENDMENT APPROVED DATE
Update legend and extent of WP3 works S.N. 16-09-2013

Drawing No. CAD Ref.
Checked By Drawn By
Date Sheet of Version
ES 2 30/4/2013 139029P00 WATER

Legend
- Precinct boundary
- Proposed Trunk Water (WP3 2013-2017)
- Proposed Trunk Water (WP5 2023-2027 or beyond)

Co-ordinate Datum Scale
MGA55 15000

1: Lengths are in metres

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Legend
- Precinct boundary
- Proposed Trunk Water (WP3 2013-2017)
- Proposed Trunk Water (WP5 2023-2027 or beyond)
TABLE 1: COVER REQUIREMENTS

<table>
<thead>
<tr>
<th>CROSSING</th>
<th>COVER / CLEARANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAILWAY LINES</td>
<td>&gt; 1800 below rail level, &gt; 600 below formation level, (ground level in welded joint ballast), &gt; 2000 between rail levels and top of tunnels</td>
</tr>
<tr>
<td>WATERWAYS</td>
<td>900</td>
</tr>
<tr>
<td>TRAMWAYS</td>
<td>1200 [TOP OF RAIL TO TOP OF PIPE]</td>
</tr>
<tr>
<td>MAJOR ROADS</td>
<td>1200</td>
</tr>
</tbody>
</table>

TABLE 2: OTHER CROSSING REQUIREMENTS

<table>
<thead>
<tr>
<th>CROSSING</th>
<th>REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGIONAL DRAINS</td>
<td>AS PER DETAIL A, EXCEPT VALVES AT SIZES OF CROSSING &amp; HYDRANT / SCOUR ARE NOT REQUIRED, ANY APPROVED HYDRAULIC SYSTEM WHICH SATISFIES STRUCTURAL, CLEARANCE, COVER AND MRWA-W-212 REQUIREMENTS. JOINTS UNDER CROSSING TO BE MINIMIZED, TYPICALLY ONLY 2 ALLOWED. COLOR JOINTS MUST BE HORIZONTALLY OFFSET FROM ANY PIPE OR SERVICE BEING CROSSED.</td>
</tr>
<tr>
<td>LOCAL DRAINS: COUNCIL</td>
<td></td>
</tr>
<tr>
<td>OTHER SERVICES,</td>
<td></td>
</tr>
<tr>
<td>LOCAL SERVICES,</td>
<td></td>
</tr>
</tbody>
</table>

MAJOR CROSSING NOTES:
1. ALL joint MAJOR CROSSINGS TO BE CONSTRUCTED FROM FULLY WELDED MILD OR BUTT WELDED PE, ON APPROVAL OF THE WA, ZONED RAIL OR FLANGED MAWS MAY BE PERMITTED, PROVIDED THERE IS A MAXIMUM OF ONE SUCH JOINT UNDER THE STRUCTURE BEING CROSSED.
2. LANDOWNER REQUIREMENTS (E.G. VICTRA) MAY PRECEDE OVER THESE REQUIREMENTS.
3. CONCRETE ENCASING MATERIAL IS NOT PERMITTED.
4. STEEL PIPE JOINTS TO BE EITHER PLAIN ENDS WITH WELDED COLLAR, BALL AND SOCKET OR SLIP IN WELDED JOINT (BOLTED JUNCTURES).
5. ALL STEEL PIPEWORK IS TO BE FABRICATED AND PROTECTED AS PER MRWA-W-405 SERIES DRAWINGS, THE WATER AGENCY SPECIFICATION AND AS2802 (CASTIRON PROTECTION).
6. ALL BEND LENGTHS AND ANGLES TO BE SPECIFIED IN THE DESIGN DRAWING.
7. LOCATE A HYDRANT OR SCOUR (DEPENDENT ON TOPOGRAPHY AND SIZE OF MAW) ON THE LOW SIDES OF THE CROSSING BETWEEN THE LOW DIGITAL VALUES) TO FACILITATE DRAINAGE OF THE WATER MAINS. HYDRANTS (MILLER) TO BE LOCATED ON THE LOW SIDE OF THE CROSSING TO ELIMINATE STACKING OF THE WATER MAIN.
8. FOR SCOUR DESIGN REFER TO DRAWING MRWA-W-320.
9. MINIMUM COVER TO BE SPECIFIED WITHIN THE DESIGN DRAWING.
10. WATER MAINS MAY CROSS WATERWAYS ABOVE CULVERTS, PROVIDED THAT MINIMUM COVER AND ENCAPSULATION REQUIREMENTS ARE MET.

SLEEVING NOTES:
A. SLEEVES AND END SEALS SHALL BE SPECIFICALLY DESIGNED BY A SENIOR CORROSION CONSULTANT AND DESIGNED FOR A SERVICE LIFE OF 100 YEARS.
B. PIPES ONLY TO BE SLEEVED ON THE LOW SIDE OF THE CROSSING BETWEEN THE LOW DIGITAL VALUES) TO FACILITATE DRAINAGE OF THE WATERS MAIN, HYDRANTS (MILLER) TO BE LOCATED ON THE LOW SIDE OF THE CROSSING TO ELIMINATE STACKING OF THE WATER MAIN.
C. CULVERTS FOR CATHODICALLY PROTECTED MILD OR CONCRETE ARE TO BE CONNECTED TO THE PVC MAINS (2000MM) AND TO THE TANKAGE (1000MM) AND TO THE TANKAGE (1000MM).
D. SLEEVING FOR OTHER MAINS TO BE GRIT BUTT WELDED PE OR CATHODICALLY PROTECTED WELDED STEEL, OF A SIZING APPROPRIATE TO THE GROUND CONDITIONS.
E. WATER MAIN SUPPORTS (AS SHOWN IN DETAIL F) MUST BE FIRMLY fastened and not mobile or loose. The water main once attached.
F. ONCE A PVC WATER MAIN IS INSERTED INTO THE SLEEVE, A COATING INSPECTION CHECK OF THE WATER MAIN MUST BE PERFORMED ON VARIOUS INSPECTION, FEEDBACK MUST BE PROVIDED TO THE WATER AGENCY AND ANY DAMAGE REPORTED.
G. WHEN BORE HOLE ANNULAR IS >50, CIRCULAR BASE PLATE OR PLATE.-SLEEVE TO BE CIRCULATED IN PLATE WITH A BORE HOLE ANNULAR ≤150 (150MM) OR BENTONITE.
H. INSURE CIRCULATION PRESSURES DO NOT EXCEED THE BUCKLING CAPABILITY OF THE PIPE WHEN EMPTY.
I. WATER MAINS TO BE SUPPORTED USING SLIPPER SUPPORTS ANY CAPTURED IN THE CASE OF WELDED MAINS WITH APPROVAL OF THE WA.

MRWA WATER SUPPLY STANDARD DRAWINGS

UNDERGROUND CROSSINGS

MRWA-W-210

ISSUED 2012 VERSION 2