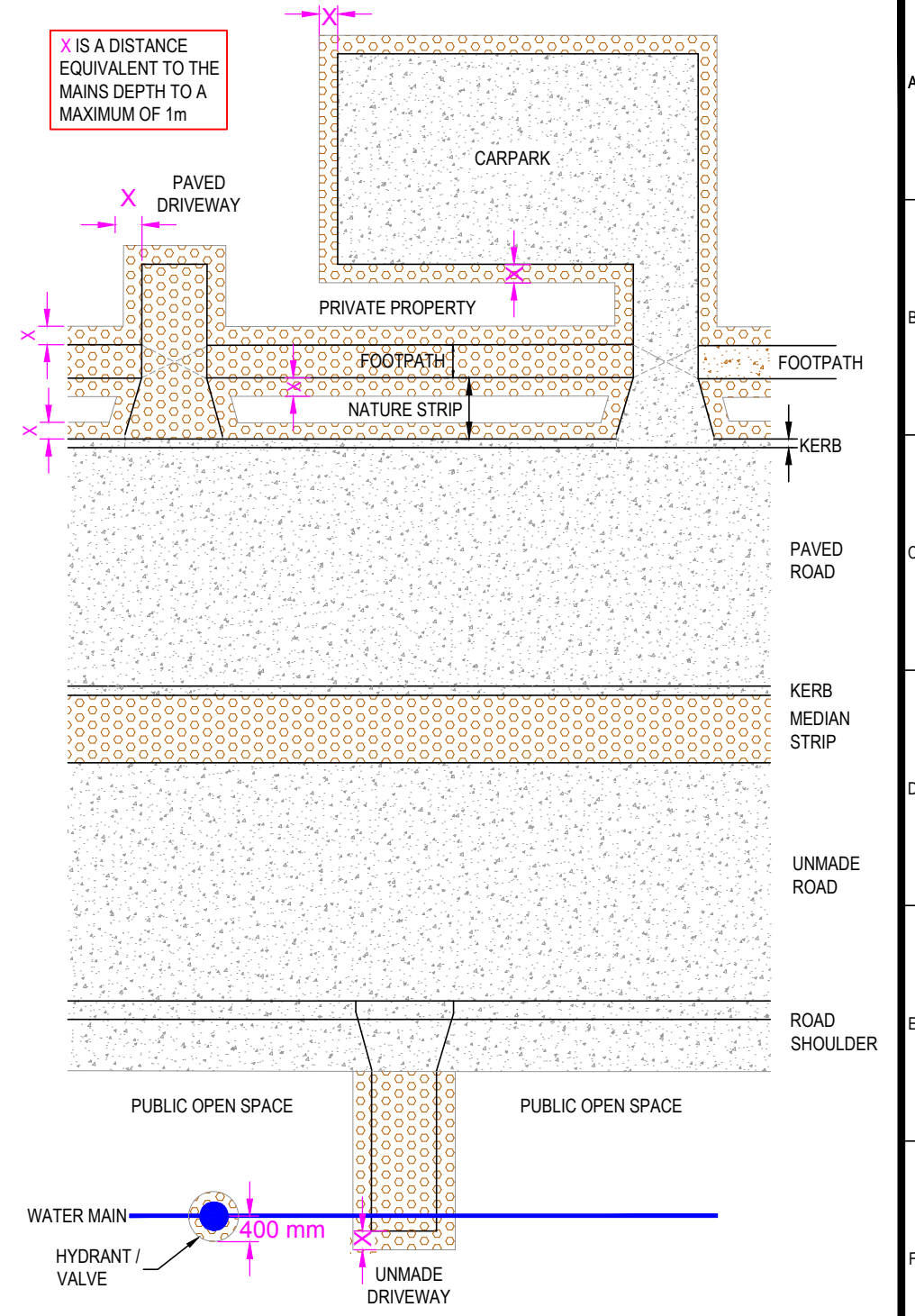
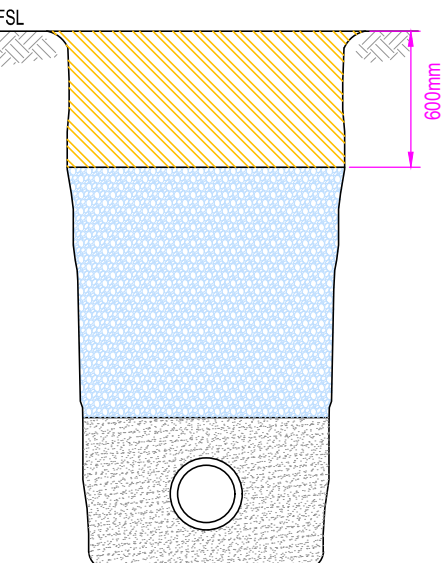
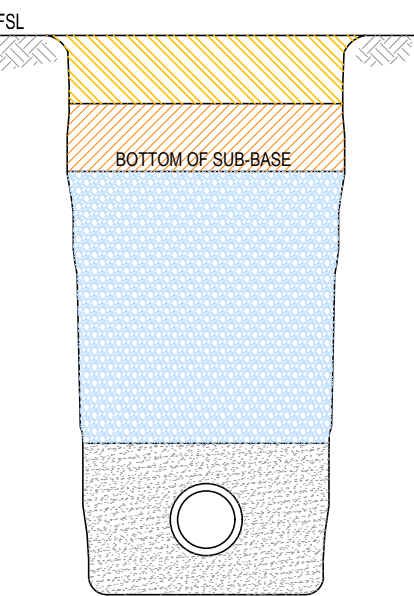


**TABLE 201-A: TRAFFICABLE AREAS (TYPE R or F BACKFILL)**

TRENCH ZONE	PREFERRED MATERIALS	PRODUCT SPEC. No.	METHOD OF PLACEMENT	MINIMUM COMPACTION
PAVEMENT ZONE	REFER TO ROAD OWNERS SPECIFICATION			98% R <sub>D</sub> TOP 100mm
SUB-BASE ZONE	REFER TO ROAD OWNERS SPECIFICATION			
BACKFILL ZONE	Refer to road owners specification, if not available: comply with MRWA backfill spec - MRWA spec 04.03, summarised as follows: A. For trenches <1.5 m deep in Type R situation: the backfill shall be 20mm Class 3 plant wet mixed crushed rock, for the full depth. B. For trenches > 1.5 m in Type R situation: • 20mm class 3 plant wet mixed crushed rock above the bottom of the sub-base level. • 20mm class 4 (or better) crushed rock for the remainder. C. In Type F situations: • the backfill shall be 20mm Class 4 (or better) crushed rock.	VIC ROADS SPECS 812 FOR CLASS 3 & 4 FCR.  818 FOR CLASS 4 CRUSHED SCORIA (not CWW)  820 FOR CLASS 4 CRUSHED CONCRETE.	Backfill material shall be placed and compacted in layers and moisture conditioned as required to achieve the required density. Where hand held or walk behind compaction equipment is used on the backfill zone, avoid compaction within 300mm of top of pipe. Where heavier compaction is used in the backfill zone, avoid compaction within 800mm of top of pipe.	95% R <sub>D</sub>
EMBED-MENT ZONE	<ul style="list-style-type: none"> <li>Refer to MRWA-W-203.</li> <li>All nominated embedment is satisfactory in Type R situations, however, it is critical that embedment has the correct moisture content and be properly placed to achieve adequate compaction.</li> <li>Selected materials shall be worked around the pipe to ensure all voids at haunches are filled and the pipe is provided with good support along its entire length.</li> </ul>	<ul style="list-style-type: none"> <li>Embedment to be placed under the haunches by shovel and compacted using hand tampers or vibrating probes or plates.</li> <li>Risk of pipeline deflection may be further reduced by:                             <ul style="list-style-type: none"> <li>increasing the depth of the overlay (to up to 1m), or</li> <li>cement stabilising the top surface of the embedment (hand distributed cement at 2 kg per square metre, worked into the top surface by shovel).</li> </ul> </li> </ul>		70% i <sub>D</sub>

**TABLE 201-B: NON TRAFFICABLE AREAS**

TRENCH ZONE	PREFERRED MATERIALS	METHOD OF PLACEMENT	COMPACTION REQUIRED
BACKFILL ZONE	Refer to Backfill Specification - MRWA specification 04.03. <ul style="list-style-type: none"> <li>For backfill &lt; 1.5m deep, selected or ordinary fill.                             <ul style="list-style-type: none"> <li>Selected Fill. Material that is free from organic or other deleterious material, obtained from excavation or imported, with a particle size of rock not greater than 20mm, or for other than rock not greater than 75mm (refer AS2566.2-2002).</li> <li>Ordinary Fill. Material obtained from excavation or imported that contains not more than 20% by mass of rock fragments with size between 75mm and 150mm, with no rock or clay fragments greater than 150mm (refer AS2566.2-2002).</li> </ul> </li> <li>For backfill &gt; 1.5m deep, as per project backfill specification.</li> </ul>	Refer to Backfill Specification - MRWA specification 04.03. <ul style="list-style-type: none"> <li>For backfill &lt; 1.5m deep, selected or ordinary fill placed as required to meet the nominated compaction density.</li> <li>For backfill &gt; 1.5m deep, place as specified in the project backfill specification.</li> </ul>	95% R <sub>D</sub> TOP 600mm  90% R <sub>D</sub>
EMBED-MENT ZONE	<ul style="list-style-type: none"> <li>Refer to MRWA-W-203.</li> <li>The embedment proposed is satisfactory in non trafficable situations, however, it is critical the embedment has the correct moisture content and be properly placed to achieve maximum compaction.</li> <li>Selected materials shall be worked around the pipe to ensure all voids at haunches are filled and the pipe is provided with good support along its entire length.</li> </ul>	Embedment to be placed under the haunches by shovel or fork and compacted to the required density.	60% i <sub>D</sub>



**FIGURE 201-A - PLAN VIEW. TRAFFICABLE & NON TRAFFICABLE AREAS**

X IS A DISTANCE EQUIVALENT TO THE MAINS DEPTH TO A MAXIMUM OF 1m

TYPE R TRAFFICABLE AREA      TYPE F TRAFFICABLE AREA      UNCOLOURED AREAS ARE NON TRAFFICABLE

**NOTES:**

- The crushed rock classes specified in this standard shall take precedence over those specified in the MRWA Backfill Specification 04.03. In all other respects, the MRWA Backfill Specification shall take precedence.
- For the purposes of backfill, trafficable areas are defined as:
  - The full width of any existing or proposed road carriageway plus shoulders and kerb.
  - The part of the nature strip next to the back of kerb equal in width to water main cover, to a maximum of 1m.
  - The full width of any property access driveway or parking area and extending one metre either side.
  - The full length of any constructed footpath (including, but not limited to concrete, asphalt, crushed rock footpaths)
  - The full width of any median strip
  - Any other areas that are used as traffic areas (eg. Carparks, access tracks)
  - Any other areas where controlled compaction is required to minimise potential subsidence (eg: within 400mm of surface fittings).
- Specific bedding & backfill requirements different to that described here must be specified in the design. special bedding shall be specified to suit the conditions of the trench floor where there is:
  - Irregular outcrops of rock.
  - AHBP of < 50 kPa (refer MRWA-W-200), or
  - Uncontrolled ground water.
- Refer to water agency products catalogue for acceptable embedment and backfill materials and conditions of use.
- Sides of excavation to be kept vertical to at least 150 above the pipe.
- All rock intrusions out of trench wall must be removed prior to any pipe laying operations and conform to spring line trench clearance table.

DESIGNED:	K. DAWSON	DATE:	11/03/2011
DRAWN:	D. TOLENTINO	DATE:	11/03/2011
CHECKED:	NAME	DATE	APPROVED: NAME
	☑ CWW R.JAGGER	23/03/12	☑ CWW R.CARRUTHERS
	☑ SEWL C.PAXMAN	23/03/12	☑ SEWL G.REYNOLDS
	☑ YVW S. TAN	23/03/12	☑ YVW A.COSHAM

MELBOURNE RETAIL WATER AGENCIES

MRWA WATER SUPPLY STANDARDS

TRENCHFILL

NOT TO SCALE

MRWA-W-201

ISSUED 2012      REVISION NO. 3