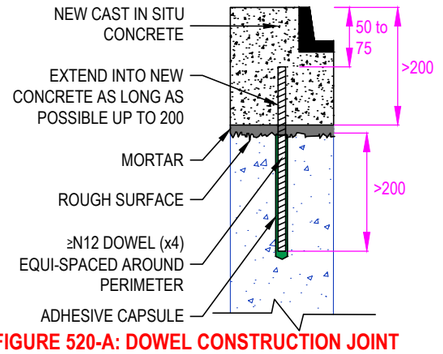

FIGURE 520-A: DOWEL CONSTRUCTION JOINT

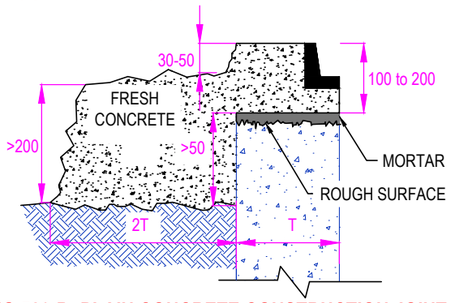

FIG 520-B: PLAIN CONCRETE CONSTRUCTION JOINT

CAST IN SITU PROCEDURE:

1. Cut neck / cone / shaft (refer cut instructions).
2. Scabble / roughen cut surface, exposing aggregate.
3. Place internal (& external if preferred) formwork.
4. Place mortar over cut surface.
5. Pour new concrete to F.S.L
6. Place new frame within wet concrete & finish surface.
7. Steel plate over work area if in trafficable area.
8. Wait until 60% cure strength (ie: 24 hrs normally).
9. Strip formwork, Compo form support holes, place new cover & return to service.

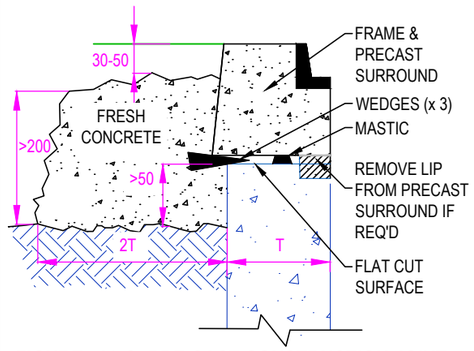

FIGURE 520-C: PRE-CAST CONSTRUCTION JOINT

Pre-cast construction joints not permitted for MH's < 12 months old.

MASTIC + PRECAST COMPONENT PROCEDURE:

1. Cut neck / cone / shaft (refer cut instructions).
2. Place mastic primer on both surfaces.
2. Place 25 wide triangular bromo butyl mastic around top surface.
3. Locate precast item (frame, flat top, ring segment) with wedges.
4. Place precast item centrally.
5. Place new rapid set concrete around joint perimeter, > 2T wide and > 200 deep (flat top on vertical shaft does not require this).
6. Place new cover & return to normal service.

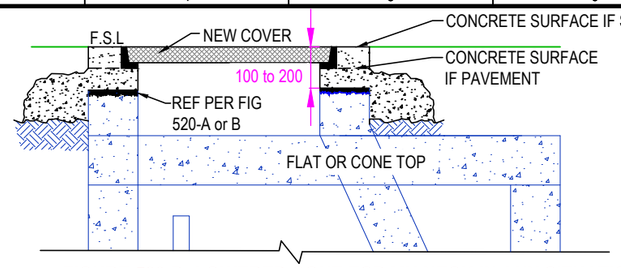

FIGURE 520-D: LOWERED CONE TOP MH NECK IN ANY SITUATION

SHALLOW PLAIN CONCRETE CONSTRUCTION JOINT SHOWN
FOR FLAT TOPS, WHERE NECK CUT TO < 100 HIGH, REMOVE ALL OF EXISTING NECK

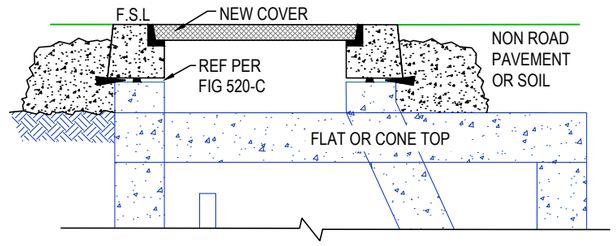

FIGURE 520-E: LOWERED MH NECK OUT OF ROAD PAVEMENT

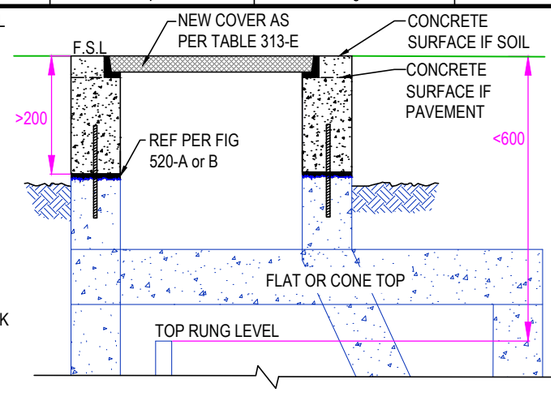

FIGURE 520-F: RAISED MH NECK IN ANY SITUATION

TALLER DOWEL CONSTRUCTION JOINT SHOWN

LEGEND:

- New Assert (black)
- Existing asset (blue)

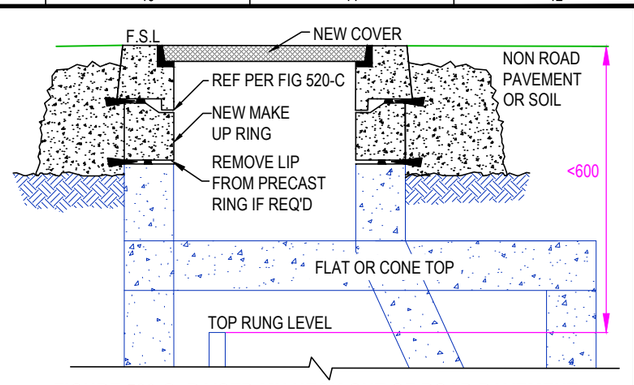

FIGURE 520-G: RAISED MH NECK OUT OF ROAD PAVEMENT

- Lip of precast concrete frame surround may need to be trimmed to fit within the recess of the make up ring.
- Proprietary MH adjustment rings systems approved by the Water Agency (eg: Cretex) may be used in lieu of the above. Install as per manufacturer's installation instructions.

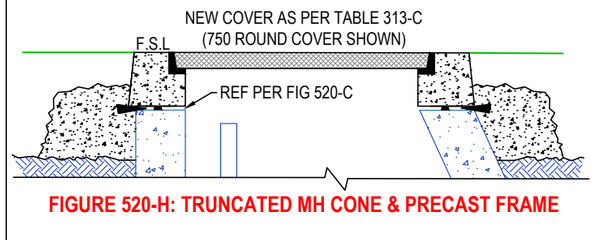

FIGURE 520-H: TRUNCATED MH CONE & PRECAST FRAME

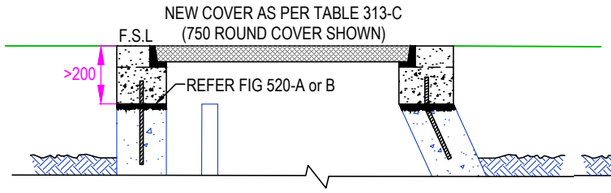

FIGURE 520-I: TRUNCATED MH CONE & CAST IN SITU FRAME

MHs IN TRAFFICABLE AREAS MAY NOT BE TRUNCATED

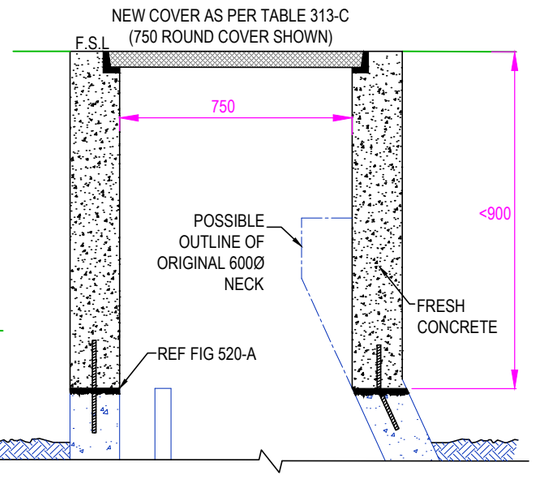

FIGURE 520-J: TRUNCATED MH CONE WITH RAISED 750Ø NECK TO SURFACE

THIS OPTION REQUIRES WATER AGENCY APPROVAL.

LADDER / STEP IRON ALTERATION PROCEDURE:

Ladder and step irons shall be installed / modified in accordance with MRWA-S-314.

1. Cut down ladder or remove step irons as required (to <600 from new FSL).
2. If Figure 520-J being constructed: (i) if ladder / step irons in poor condition, remove all (structure becomes non-entry), or (ii) if ladder / step irons in good condition, apply note 1.
3. Install new ladder support brackets as required as per Figure 314-D.
4. Extend ladder from existing ladder using brackets as per Figure 314-B.
5. Add new step irons as per Figure 314-E when raising MHs.
6. If a landing is present, it shall be left in place unless impractical to do so. New landings need not be added.

CONCRETE SPECIFICATION:

a. Concrete quantities > 0.5m^3 shall be approved fresh plant mixed 32 MPa concrete trucked to site.

b. Concrete quantities < 0.5m^3 may be mixed on site using 50 MPa structural concrete (ie: not "builders" concrete).

NOTES Regarding All Height Alterations:

- Arrangements shown are suitable for both conical and flat top MHs unless otherwise indicated.
- All figures are shown in the finished altered state.
- Re-grease all frames prior to replacement of covers.
- All frames and covers shall be new and as per Table 313-E.
- New cover shall be the same size as that removed unless otherwise stated.
- Place covers over live channels to collect debris and ensure that no content enters the sewer.

CUTTING EXISTING CONCRETE:

A. Ensure only MHs in sound condition are cut.
B. Jack hammer demolition not allowed.
C. Ring or demolition saw cut, or
D. Plug and feather cut.
E. Where mastic joint to be used, cut surface must be flat with surface irregularities < 5mm depth.

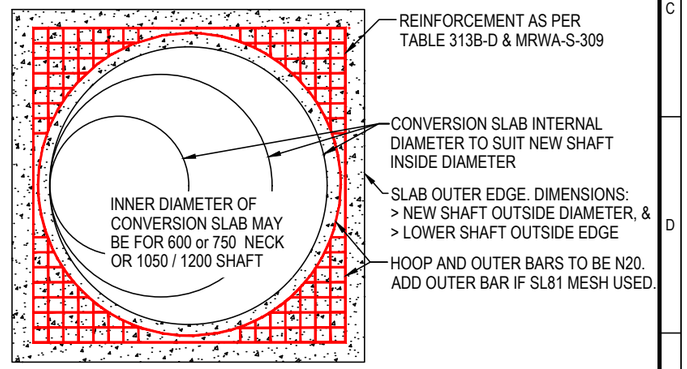

FIGURE 520-K: SECTION A: CONVERSION SLAB

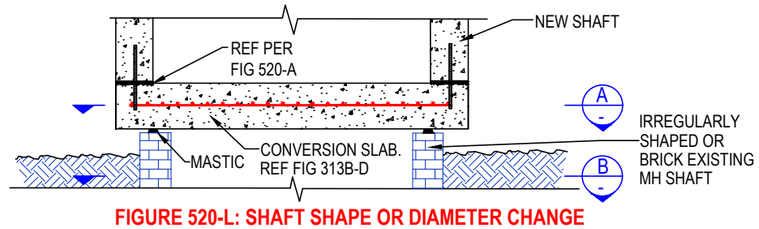

FIGURE 520-L: SHAFT SHAPE OR DIAMETER CHANGE

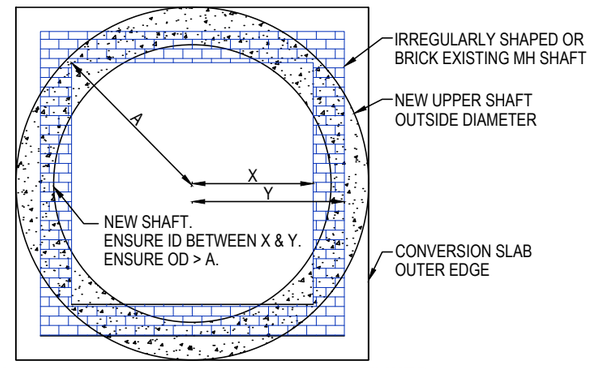

FIGURE 520-M: SECTION B: COMPONENT OUTLINES

ALL DIMENSIONS IN mm UNLESS STATED OTHERWISE

REV	DESCRIPTION	DATE	APPROVED
2	PUBLISHED FIRST ISSUE	SEP 20	CP / GA / RL
1	PRE-PUBLISHED DRAFT	JUN 20	CP / GA / NG

			DATE:
DESIGNED:	R. JAGGER		JAN 2020
DRAWN:	R. JAGGER		JAN 2020

CHECKED:	NAME	DATE	APPROVED:	NAME	DATE
☒ CWW	G. ANTHONSEN	SEP 20	☒ CWW	S. TRIKHA	SEP 20
☒ SEW	C. PAXMAN	SEP 20	☒ SEW	D. STEWART	SEP 20
☒ YVW	N. GERHARD	SEP 20	☒ YVW	R. LEON	SEP 20

ISSUED 2020 VERSION 1

MELBOURNE RETAIL WATER AGENCIES

City West Water · South East Water · Yarra Valley Water

MRWA SEWERAGE STANDARDS

EXISTING CONCRETE MH HEIGHT ADJUSTMENT, CONSTRUCTION DETAILS

NOT TO SCALE

MRWA-S-520

Planning	Design	Construction
		✓ ✓ ✓ ✓