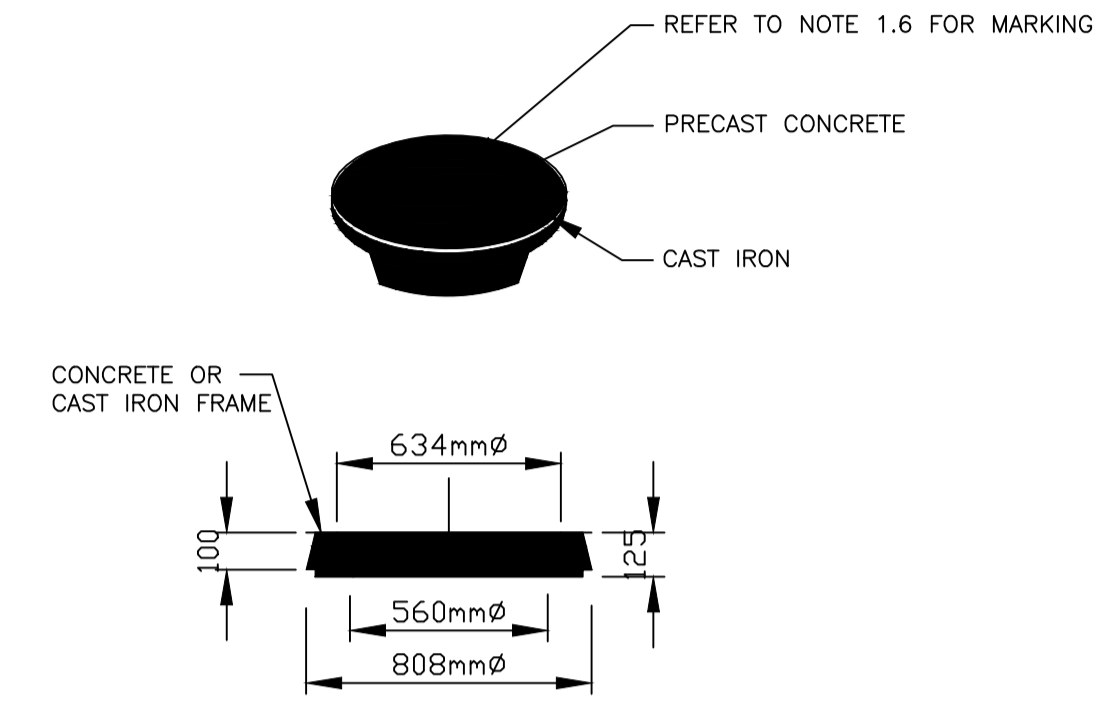
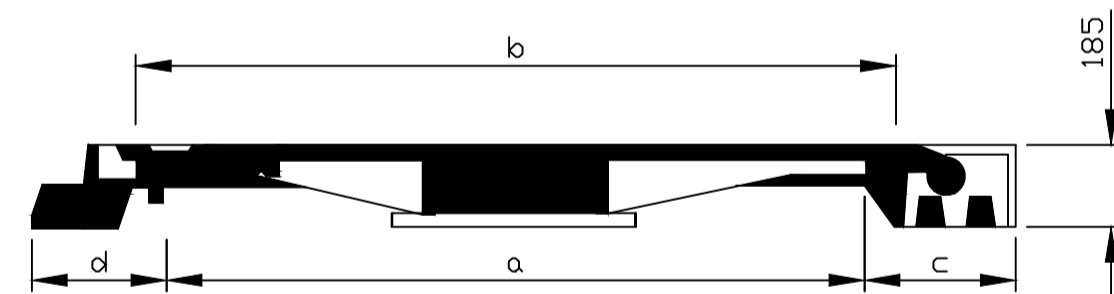
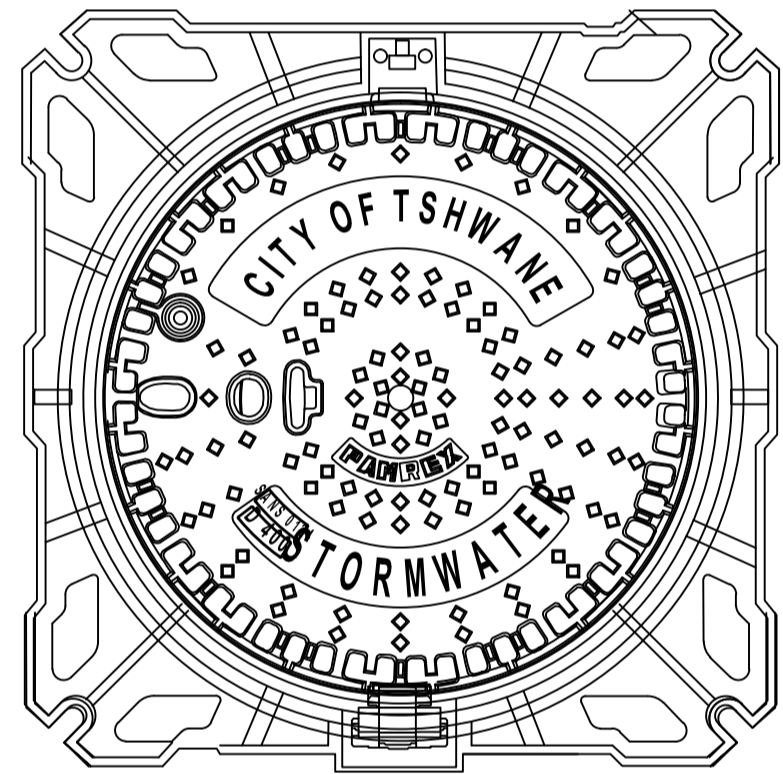


**PRECAST CONCRETE
FRAME AND COVER
(ONLY ON SIDEWALKS)**



**COMBINATION PRECAST
CONCRETE / CAST IRON
FRAME AND COVER
(SEE NOTE 1.5)**



**MANHOLE FRAME AND COVER
PRECAST CONCRETE**

NOTES AND SPECIFICATIONS

1. MANHOLE
 - 1.1 All precast manhole sections shall comply with the relevant requirements of SANS 1294.
 - 1.2 No step irons shall be required unless otherwise indicated on the drawings.
 - 1.3 Dimensions of precast manhole sections are approximate and may vary slightly according to different manufacturer's specifications.
 - 1.4 Position of manholes shall be directly above the PI of adjoining stormwater pipes.
 - 1.5 The function of the combination precast concrete/cast iron manhole cover is to replace lost cast iron covers, unless otherwise specified.
 - 1.6 All concrete manhole covers shall have the letters "SW" formed or engraved on top. Each letter shall be 50mm wide, 75mm high and 5mm thick.
 - 1.7 All ductile iron manhole sections shall comply with the relevant requirements of SANS 50124.
 - 1.8 Dimensions of ductile iron manhole sections are approximate and may vary slightly according to different manufacturer's specifications.
 - 1.9 All ductile iron manhole covers shall have the wording: "CITY OF TSHWANE" as well as "STORMWATER" cast into the cover. Each letter shall be 75mm wide and 75mm high and 7mm thick.
 - 1.10 All ductile iron manhole covers to be supplied with a square frame. Installations with a round frame only to be used with a circular precast shaft or if approved by the Engineer in writing.
 - 1.11 All ductile iron manhole covers shall be hinged and incorporate a 90 degree blocking system to prevent accidental closure.
 - 1.12 All ductile iron manhole covers shall be fitted with an anti-theft device to prevent the cover from being completely removed from the frame.
 - 1.13 All ductile iron manhole covers in the roadway shall be installed with the hinge in the direction of the oncoming traffic (See Fig ??)
2. CAST IN-SITU COVER SLABS
 - 2.1 Measurement B is always smaller than L.
 - 2.2 Concrete to be class 25/19.
 - 2.3 Concrete to be cured for a minimum period of 7 days.
 - 2.4 Minimum cover to reinforcement is 20mm.
 - 2.5 Type, bar and spacing of reinforcement as specified in Table D.
 - 2.6 Main reinforcement to be shape code 38, with hook length (A- dimension) not less than t minus 60, except for slabs with a span not exceeding 1000, where no hooks are required and shape code 20 is used.

TABLE C: USE OF MANHOLES AT JUNCTION BOXES

APPLICATION	TYPE OF COVER AND FRAME
At junction boxes falling underneath the carriageways of roads (including pedestrian streets, hard shoulders and parking areas).	SANS class D 400 Ductile Iron
At least every 100m on long inaccessible stormwater lines.	SANS Type 4 Precast Concrete Medium duty or SANS class C 250 Ductile Iron
At junction boxes falling underneath block or concrete paving on the sidewalk.	SANS Type 4 Precast Concrete Medium duty or SANS class C 250 Ductile Iron
At junction boxes where the stormwater line changes course	SANS Type 4 Precast Concrete Medium duty or SANS class C 250 Ductile Iron
At junction boxes indicated otherwise on the drawings or specified by the Engineer.	SANS Type 4 Precast Concrete as specified or SANS 50124 Ductile Iron as specified

AMENDMENTS				
NR.	DATE	APPROVED	DESCRIPTION	PAR.

DESIGNED J. CRONJE	DRAWN S. AUDIE
DESIGN CHECKED BY S. NAIDOO	INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT D.J. CHALMERS

**CITY OF TSHWANE
ROADS AND TRANSPORT DEPARTMENT**

GROUP HEAD Mr Lesitlone P. (Phelo) P.O. BOX 1409 PRETORIA 0001		DIVISIONAL HEAD Mr Marven K. Thagale P.O. BOX 1409 PRETORIA 0001
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TRANSPORT INFRASTRUCTURE DESIGN AND CONSTRUCTION DIVISIONAL HEAD Mr K. Thagale (Marven)	DRAWING RECOMMENDED BY DIVISIONAL HEADS	TRANSPORTATION PLANNING DIVISIONAL HEAD Mr L. Swaneepoel (Lourens)
SIGNATURE:.....		SIGNATURE:.....
DATE:.....		DATE:.....

DRAWING APPROVED BY GROUP HEAD
Mr Lesitlone P. (Phelo)

SIGNATURE:..... DATE:.....

LOCATION OF PROJECT:

**TYPICAL STANDARD
DETAILS**

DESCRIPTION OF PROJECT

**JUNCTION BOX AND
MANHOLE DETAILS**

MANHOLE

CONTRACT No.: PROJECT No.:

DATE: FEBRUARY 2017 SCALE: AS SHOWN ORIGINAL PAPER SIZE: A1

