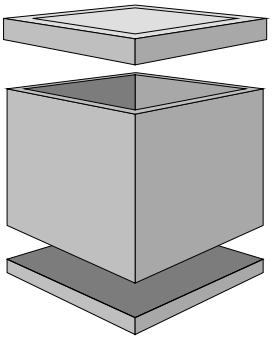
VANSTONE PRECAST (PTY) LTD

PRECAST CONCRETE PANEL MANHOLE / DRAW BOX FOR TELECOMS INSTALLATIONS
780 x 780 x 815 mm

SPECIFICATION
Update 1: September 2008 (alternative concrete lid)



Introduction
The Panel Manhole is a 780 x 780 x 815mm high (externally) reinforced precast concrete manhole or draw box suitable for underground telecoms services.

It comes equipped with any number of knock out holes of size and arrangement to suit the customer.

There are two lid options, a standard medium duty 600 x 600 cast iron lid and frame, and also a concrete lid and frame, which is not subject to theft, more difficult to tamper with and more economical.

The Panel Manhole has four loose panel walls that can be 'flat packed' for efficient transport and are assembled on site.

Design
The Panel Manhole has been designed in accordance with SABS 0100-1 2000 "The structural use of concrete" to safely withstand an occasional vehicle wheel loads of 50 kN (5 tonnes) evenly distributed over an area of 200 x 150 mm. This does not apply to cast iron lids.

The following design criteria were used:

Limit state of design:	Ultimate
Imposed load:	50 kN static wheel load acting vertically on lid over 200 x 150 mm area.
Load factor:	1.6
Material safety factors:	Steel 1.15; Concrete 1.5
Analysis:	Static, simply supported
Concrete strength	30 Mpa
Reinforcing:	High tensile main reinforcing to SABS 920 in lid

Dimensions

External:	Height	765 mm	Internal:	Depth	700 mm
	Length	780 mm		Length	650 mm
	Width	780 mm		Width	650 mm

Wall thickness	65 mm minimum
Lid thickness	100 mm

Components list

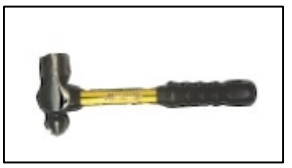
Floor:	800 x 800 x 85 mm
Walls:	4 off 780 x 780 x 65mm
Lid:	Concrete or cast iron in 820 x 820 x 100mm concrete surround
Knock-outs:	As required
Lifting boxes in lid:	2 x with slots for special key, also acting as ventilation openings for chamber.
Other:	Any other equipment to customers' requirements like unistruts, security bolts etc. may be supplied as optional extras.

Installation

Excavate for the handhole to a depth of at least 800 mm deep below the final level. Over excavate sufficiently to allow working space for assembly and compaction of backfill.

In the bottom of the excavation, prepare a true and level bed of 30mm thick riversand, crusher sand, fine clean gravel (particle size < 6 mm) or cement stabilized topping material. Place the floor carefully on the bed ensuring proper and even seating before proceeding. Place the walls on the floor and the frame on the walls. Use a layer of ordinary cement mortar between floor and walls and walls and frame to ensure snug seating. Clean excess mortar off directly after placing of components.
Knock out the required service holes by using no more than a 4 pound hammer. After installation of services it may be plugged with a semi-dry 1:3 cement/riversand mixture of poly-urethane foam. Full water tightness is not achievable.

Knocking out of holes:



Use a light ball head or ball-pein hammer of no more than 1½ lbs. Identify the hole to be knocked out by looking on the inside. Put one hand over the hole. Now locate the hole's corresponding outside position by placing the other hand on the outside of the wall directly over it. Mark if necessary.
Start tapping from the outside with the ball of the hammer as close as possible to the centre of the hole. The taps should be light and repeatedly on the same spot until penetration occurs. Carefully enlarge the hole from the centre out until it is complete. DO NOT use force, a heavy hammer or knock the hole out from the inside.

Attachments

- Drawing showing panel type manhole and an arrangement of knock-outs. Any arrangement is possible.

Credits Information

The following organizations either initiated the product or contributed to its improvement and extending it for wider application.

- Vodacom: Initial requirement and development for base stations.

Contact

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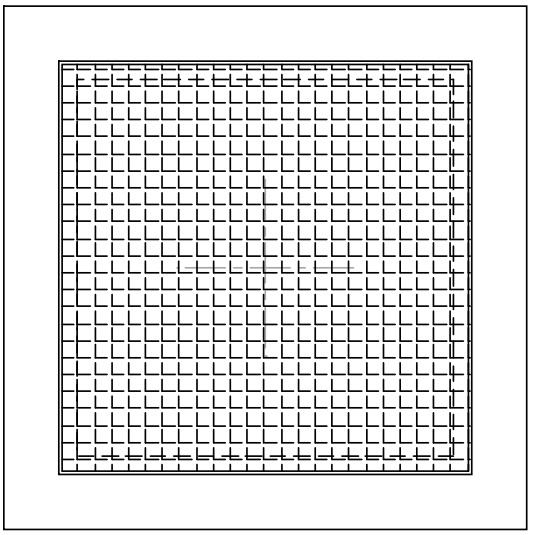
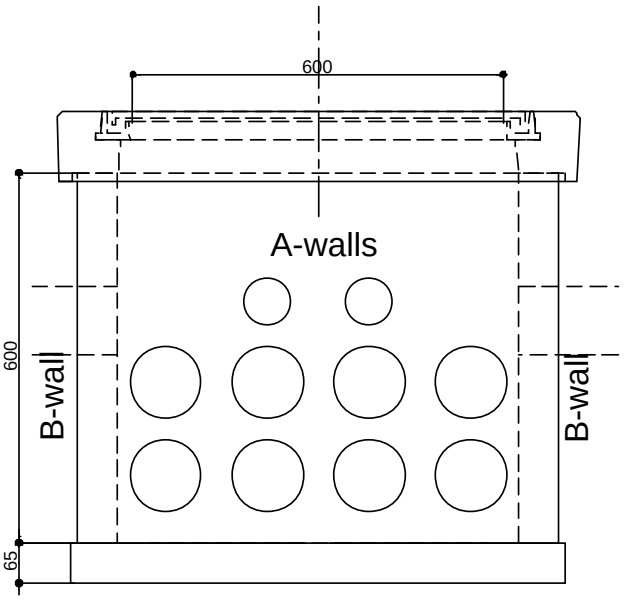
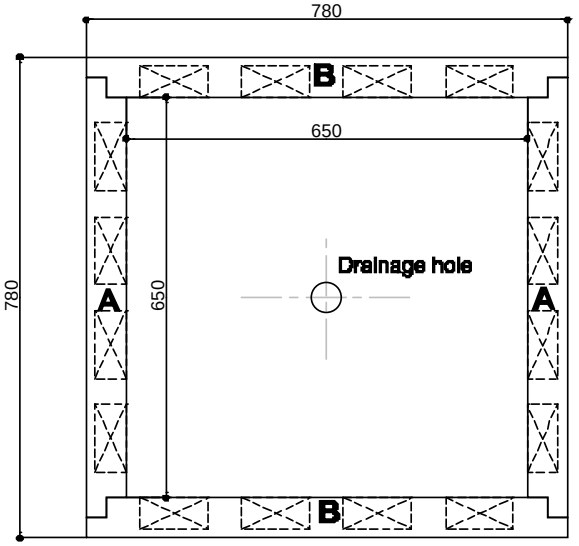
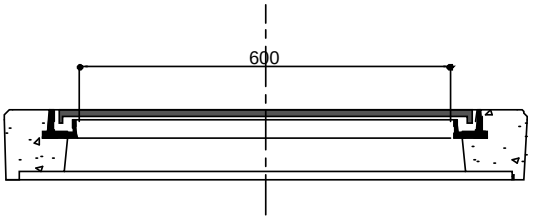


PLAN - TOP FRAME

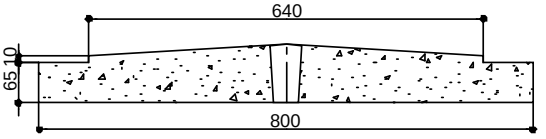




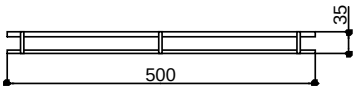
PLAN - WALLS



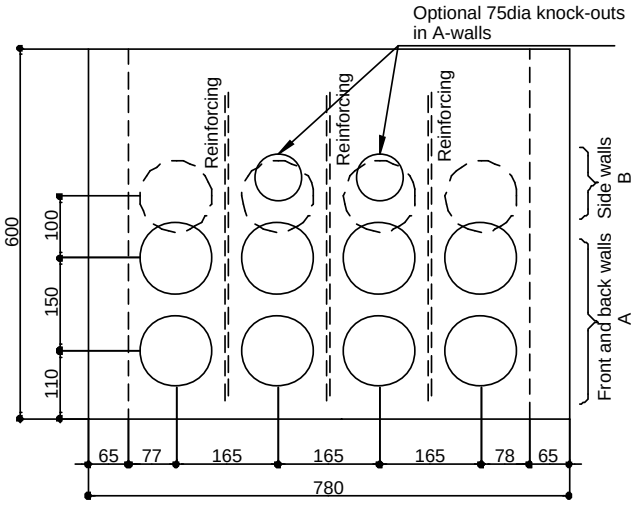
SECTION - TOP FRAME



SECTION - BASE
With drainage hole



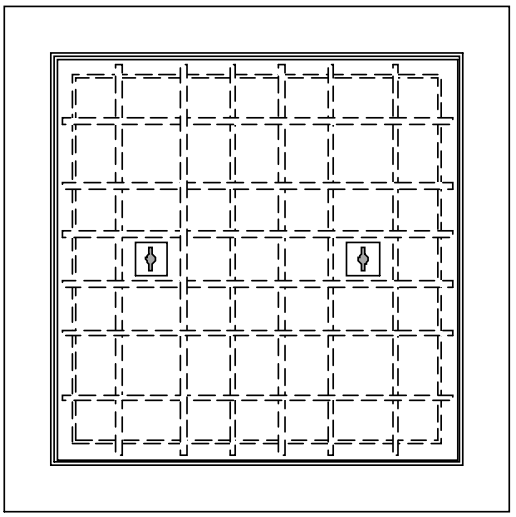
R6 Reinforcing



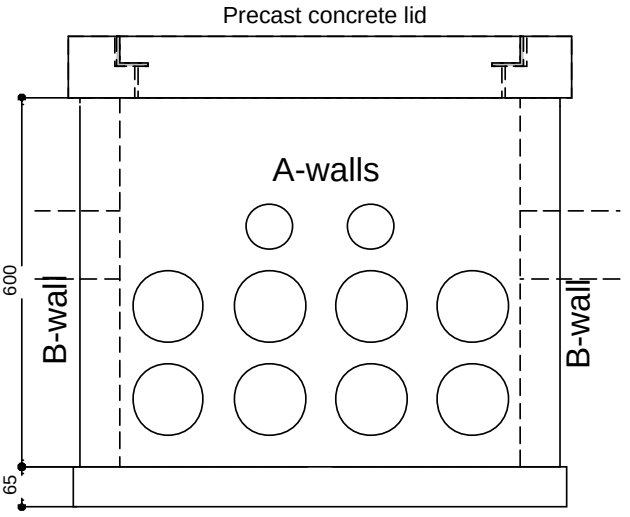
ELEVATION OF WALLS

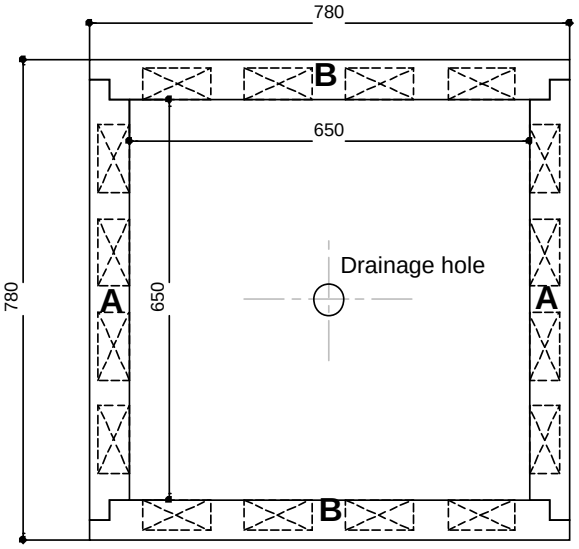
600 x 600
PANEL MANHOLE
CAST IRON LID

Vanstone



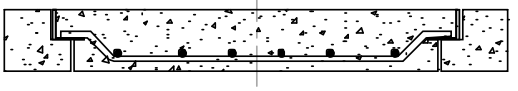
PLAN - TOP FRAME



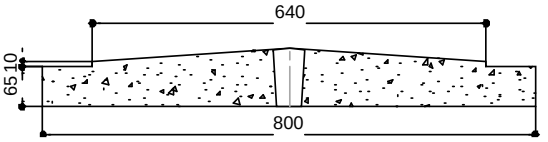


PLAN - WALLS

Reinforced precast concrete lid and frame.
Galvanized angle subframe, lifting slots.

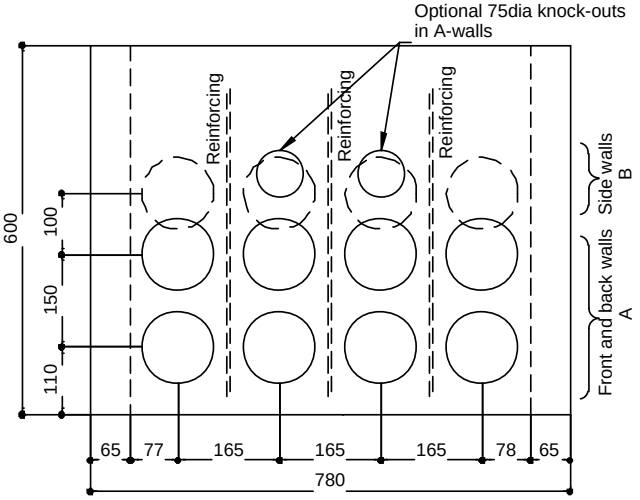


SECTION - TOP FRAME

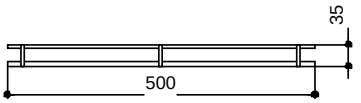


SECTION - BASE

With drainage hole



ELEVATION OF WALLS



R6 Reinforcing

600 x 600 PANEL MANHOLE CONCRETE LID

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