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**Department** MEP

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Rev 01

# MANHOLE CONSTRUCTION AND INSTALLATION FOR THE INSTALLATION OF HV&LV CABLES

REVISION HISTORY	ISSUE DATE	DESCRIPTION	REVIEW / STATUS

PREPARED BY:	REVIEWED & APPROVED BY:
QHSE ENGINEER	SR. PROJECTS ENGINEER



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## 1. INTRODUCTION

This document is written to make sure that the Manhole construction and installation works are done executed and to ensure that the work shall be conducted in a well-controlled and systematic way and conform to the specified requirements.

### 2. SCOPE OF WORKS

The work applies to the Manhole construction and installation for the installation of HV (High Voltage) and LV (Low Voltage) cables.

## 3. METHOD STATEMENT

- 1. The pit is excavated to its required depth to receive the concrete base for the construction of the manhole. The base shall be adequate in size to receive the external concrete surrounding the manhole. The position of the manhole shall be checked to avoid misalignment of pipes down and upstream of the manhole.
- 2. Shoring to the pit shall be provided if the pit measured from the top edge is more than 1.5m.
- 3. Excavate further to the desired level manually to achieve the required level.
- 4. Excavate a sump pit at the bottom of the pit for de-watering.
- 5. Prepare formwork to receive base for the positioning of the manhole and eventual concrete to the external of the manhole.
- 6. Cast the base and allow the concrete to set for the next day to position the pre-cast concrete reinforced chamber rings.
- 7. Break or puncture a hole through the chamber ring for the inlets and prepare the box-outs at the hacked openings before the 150mm concrete surround to the external of the manhole.
- 8. Remove the formwork to the concrete surround the next day and lay the main drain lines to the openings of the manhole.
- 9. Install and prepare to cast the main drain at the end of the day.
- 10. Remove all formwork in the trench and at the pit of the manhole.
- 11. Backfill once the pit and trench are cleared of debris.
- 12. Apply sulfate-resistant cement to the internal of the manhole.
- 13. Render smooth gaps between chamber rings.
- 14. Proceed to render the benching with cement mortar and construct the channels with glazed vitrified half channels according to the numbers of main or branch drain lines.
- 15. Form up the opening to the manhole with timber and wait for the commencements of the external finishes work by the builder before installing the approved type of frame and covers
- 16. Call for Inspection.



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## 4. MATERIAL

- Timber for formwork
- Glazed vitrified clay half channels of various sizes.
- Portland cement and plastering sand
- Manhole frame and cover.
- BRC or rebar
- Grade 20 concrete.

#### 5. MACHINERY

- Man-operated excavator
- Hand-held cutter
- Rammer
- Leveling equipment

#### 6. MANPOWER

- Resident Engineer
- Supervisor
- QC Inspector
- Excavator operator
- General workers

## 7. SAFETY & ENVIRONMENT

#### 7.1. Safety

The following item is deemed the safe working practice and should be observed by all workers as well as subcontractor workmen who are engaged to carry them out within the company's or its client's premises.

- 1. Wear Plain, tough, close-fitting clothing and keep them buttoned up.
- 2. Wear Safety shoes or boots and keep them in good repair.
- 3. Wear Hand gloves when holding objects which are hot, sharp-edged, and covered with chemical or oily surfaces.
- 4. Wearing a safety helmet at the construction site.
- 5. Use ear protection devices and masks where necessary.
- 6. In addition, the personnel protection equipment shall be
- 7. practiced all the time such as wearing Safety Helmet, Safety
- 8. Shoes, Eye Goggles, Safety belt, welding Mask, etc.

#### 7.2. Environment

All workers shall be responsible and ensure that the site works carried out shall conform to the Employer's Environment Policy and comply with the [Name of Country or State where the business



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physically exists]/Environment Act 1974 and any other Federal and State Government act. Hence all workers shall always ensure that all the site workers shall.

- 1. Any waste and unwanted installation materials arising from the works are not harmful and do not cause deposits and contamination in drains and sewers.
- 2. Keep roads and footpaths clear of mud, unwanted installation debris, boxes, and the like. Cooperates with Main Contractor and the employer in this respect.
- 3. Ensure that existing services are not damaged and are maintained in good order.
- 4. Take effective action to protect occupies of adjacent buildings or land, and the public from any danger, discomfort, disturbances, trespass, or nuisance.
- 5. Take effective measures to reduce the nuisance from dust during the site installation works.
- 6. Take effective measures to minimize the noise from the installation works.