


Reference	MTS-Civils- 006			Demolishing Joint Boxes and Manholes	
Revision	4	Review Date	01.03.21		

1. Purpose

To detail the method of demolishing OPENREACH underground Manholes in a safe and proper manner without causing damage to other OPENREACH plant and in accordance with OPENREACH Specification LN 550.

2. Responsibilities

- 2.1 The **team leader** shall ensure staff demolishing underground manholes adhere to this method and are licensed under the OPENREACH scheme for the disciplines they are to conduct.
- 2.2 The **Site Supervisor** shall periodically monitor the compliance to this method statement.
- 2.3 The **Project Manager** will ensure that all the necessary safety precautions have been undertaken prior to the work starting and periodically monitor the job during its implementation.
- 2.4 If this method cannot be adhered to, contact your supervisor for advice before proceeding.

3. References & Definitions

3.1 References

- OPENREACH Specification LN 550- Underground Duct Laying and Associated Works
- Safety at Street Works and Road Works – A Code of Practice
- OPENREACH CN Drawings
- New Roads and Street Works Act 1991
- HAUC – Specification for the Reinstatement of Openings in Highways
- NJUG – Codes of Practice
- HS (G) 47 Avoiding Danger from underground services
- Reporting Positive Gas Test Results

3.2 Definitions

- **Chapter 8** - is the section of the New Roads and Street Works Act, which details the requirements of the road works guarding.
- **Manhole** – is an underground chamber with a roof.


4. Safety considerations

4.1 Hazards

Traffic	√	Fumes/Gas	√	Falls of material	√	Mobile Plant & Vehicles	√
Buried Services	√	Dust	√	Demolition	√	Noise & Vibration	√
Overhead Services		Deep Excavations	√	Collapse of Structure	√	Lifting Operations	√
Fire/Explosions	√	Confined Spaces	√	Soft Ground	√	Manual Handling	√
Flying Particles/Objects	√	Lighting Levels	√	Falls on Level		Working near Water	√
Heat		Falls from Height	√	Infected Materials		Adverse Weather	√

4.2 Precautions

ASSESS THE RISK - Ensure that prior to starting work a **SITE SPECIFIC RISK ASSESSMENT** is conducted and recorded on MTS-FM-S-013 Site Specific Risk Assessment to identify specific risks that may be present. If in doubt contact your site supervisor.

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- **ROAD WORKS GUARDING**

- To be in accordance with Chapter 8.
- Signs and barriers to be secured with sand bags if necessary.
- Maintain a safe route for pedestrians to by pass by the works.
- Guard pedestrians from vehicles when directed into carriageway.
- Where required lights to be attached to signing and guarding.

- **PLANT, VEHICLES & WORK TOOLS**

- To be kept inside the work area.
- To be in good working order and properly maintained.
- To have mufflers and silencers fitted where practicable.
- Vehicles to be fitted with, and use amber rotating beacon/s.
- Plant operators to be trained and competent in the use of the plant they are using.
- Switch plant off when not in use.
- Ensure that all guards are properly secured and unauthorised persons do not use the plant/vehicle.
- Rotate operators to reduce individual exposure.
- Keep plant & vehicles away from the edge of the excavation.
- Air hoses to be maintained in good order with joints correctly coupled.
- Hose check arrestors to be fitted and used on all compressed air lines.
- Dust suppression is to be used when saw cutting or using equipment that can cause airborne dust, i.e. water.
- Fuel oil to be stored and handled safely to prevent spillage or contact with skin or clothing.
- Ensure the correct PPE is used for the type of equipment.
- Ensure fumes do not enter confined space.

- **SAFE DIGGING**


- Utility safe dig prints to be available on site at all times.
- Visual & CAT/ Genny, where required surveys to take place.
- All identified services to be marked on the surface.
- Pilot Holes to be excavated by hand to confirm positions of services.
- Ensure where necessary that correct trench wall supports are available and are used.
- Excavated material shall be stored a safe distance away from the excavation to stop possible collapse into the excavation, but kept within the guarded area.
- Mechanical excavation equipment shall not be used in the vicinity of other utility services.
- Adequate access/ingress to be maintained at all times.

- **CONFINED SPACE WORKING**

- Ensure that continuous gas-testing equipment is available, and is used when entering joint boxes or manholes.
- A Permit to Work Is required before any one is allowed access into a manhole
- Where entry is required ensure that all involved are trained and competent in confined space working and the confined space is continually gas monitored.
- In confined spaces where there is no free flow of clean air, ensure there is adequate ventilation and where practicable used forced ventilation.

- **SAFE LIFTING TECHNIQUES**

- When lifting materials and tools from/to the excavation or onto/off the truck ensure that items are not too heavy. Either reduce them into lighter pieces or/and seek assistance to spread the load or use suitable lift equipment. If in doubt seek advice.

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- When lifting manhole or box covers ensure that the proper lifting keys are used and that safe lifting techniques are employed. For carriageway covers lifting aids shall be used for lifting the covers wherever practicable, i.e. a suitable manhole lifter.

4.3 Personal Protective Equipment

- Ensure the following is worn at all times during the works:
 - Hard Hats
 - Safety boots or wellingtons
 - High visibility jacket or jerkin
 - Coveralls
- Ensure the following is worn as required during the works:
 - Eye protection – grinding, sawing and cutting
 - Ear protection – grinding, sawing, cutting, using jackhammers.
 - Dust masks – grinding, sawing, cutting or conducting activities that involve airborne dust.
 - Gloves – when using power equipment or manual handling.
 - Waterproofs – in wet weather.


5. Method

5.1 Prior to commencing work

- 5 Establish the type of chamber/manhole to be demolished (if the type of manhole is not available/known then the internal dimensions shall be measured and an index point marked on the surface) and the type of chamber to be rebuilt. This can be taken from the job pack.
- 6 Gas test each chamber directly prior to entering (for manholes also monitor continuously during the works). If gases are found within the structure, no work must take place and your Supervisor informed.
- 7 Survey the works to be done taking noting the size of the chamber to be demolished, the vicinity of previous excavations and other utility services. If there are discrepancies contact your Supervisor.
- 8 Erect road works guarding and signs in accordance with Chapter 8. There may be traffic management provided by others on roadworks scheme and traffic sensitive areas, if this is the case you still have a responsibility to ensure that the guarding is kept safe.
- 9 The surface to be excavated shall be marked out using a template suitable for the chamber to be built. The site supervisor or Project Manager may need to check this prior to proceeding with the new excavation.
- 10 Read service prints and conduct survey with CAT and where practicable mark all services in the vicinity of the excavation.
- 11 Conduct trial holes to locate existing services and to see what effect they might have on the works.
- 12 If the structure is a manhole deck out the inside of the chamber and ensure the existing cables are suitably protected from damage during the demolition.
- 13 Ensure that any necessary shoring equipment is available on site prior to excavating. Where there is traffic passing alongside the excavation or there is a possibility of the trench wall collapsing then sheet piles and struts shall be used.
- 14 Where an external supplier is used they shall supply calculations for the ground support and drawings indicating the position of Wallings

5.2 De-Watering

- 15 If de-watering is required during any stage of the work, then samples of water should be taken prior to de-watering equipment.
- 16 If the water shows any sign of contamination then the water should not be discharged and the site supervisor/Project Manager contacted. There is a OPENREACH term contractor available that the planner can use to extract and dispose of contaminated water/substances and they

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should be used wherever possible.


- 17 Before de-watering ensure that your site supervisor has agreed all discharge points then pumps and hoses should be positioned as to avoid any inconvenience to pedestrians, road traffic or other 3rd parties.
- 18 Ensure silt is not drawn from the excavation. Use a settlement tank where necessary.

5.3 Breaking the Surface

- 19 Mark the area to be excavated.
- 20 Where practicable, for large excavations in blacktop the surface shall be cut with a suitable road saw, however for small excavations a Sthil saw can be used.
- 21 All excavation equipment used should be suitable for the work undertaken. Mechanical excavators should not be used near other services.
- 22 If concrete is found and it is suspected to surround/encase any services the team should stop work and inform their supervisor.
- 23 Service damage caused by you or a previous contractor should be reported to your site supervisor.
- 24 Services found which are not on your service prints should be reported to your site supervisor.
- 25 In the case of manholes, break out the surface over the manhole ensuring that plant and equipment you are using is positioned outside the marked excavation area and that all safety precautions are taken to ensure the personal safety of everyone involved.

5.4 In the case of Demolishing a Manhole

- 26 Remove the Frame and Cover and demolish the shaft
- 27 Fully expose the roof of the manhole.
- 28 Break out the manhole roof ensuring that the debris does not damage the OPENREACH apparatus and that personnel are not in danger of falling through the roof.
- 29 Excavated materials must be strictly controlled during all stages of the works, ensuring that it is stored at a practical and safe distance from the excavation, within the road works guarding.
- 30 Grab wagon should be positioned in such a way to ensure that minimum disruption is caused to pedestrians, road traffic or any other 3rd parties. Stop/Go boards may be needed to control traffic flow whilst the grab wagon is on site.
- 31 Materials for re-use e.g. topsoil and granular materials, etc. should be kept free from contamination and where necessary protected from weather conditions.
- 32 The excavation shall have framed supports at suitable levels to prevent undercutting and or the collapse of the excavation. Shoring shall commence immediately if unsafe conditions exist, or at a maximum depth of 1.2m.
- 33 Ensure that all OPENREACH apparatus is protected from damage prior to and during the works.
- 34 All excavated services shall be adequately supported and protected to prevent them being damaged.
- 35 Break out the walls and shore as necessary, ensuring that existing cables and ducts are properly supported and protected from damage.
- 36 Clear the debris out of the manhole on an ongoing basis to reduce the risk of damage to the OPENREACH apparatus and personal injury. If manual handling is used then ensure the items being lifted are neither too heavy nor awkward to lift without causing injury to the person lifting them.
- 37 Where required break out the floor. Then prepare a base for the excavation by placing a 100mm thick concrete blinding on the ground of the excavation to support the base of the trench sheets.
- 38 Trench Sheets should be toed in to a minimum of 150mm or as dictated by the ground support calculations.

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5.5 Housekeeping

- 39 The roadwork's guarding and signs should be regularly checked to ensure they always meet the requirements of Chapter 8.
- 40 All spoil, materials, vehicles and plant should be properly guarded in accordance with Chapter 8.
- 41 The site should be kept as clean and tidy practicable during the works.
- 42 Always be polite to the general public within the vicinity of the works and where necessary liaise with the local residents and other contractors present.
- 43 Consideration should be given to houses, hotels, public houses, hospitals, nursing homes, etc in the vicinity of the works and the working hours using jack hammers, or peckers, etc should be limited to reasonable hours wherever possible.