

Method Statement - General Network Construction



This method statement covers the general construction activities required to build the F4RN broadband network. These include:

- Installing ducting - hand digging / mole ploughing / mini-digger
- Installing chambers - large / small
- Installing telecoms cabinets (including construction of the concrete plinth)

It should be read in conjunction with the F4RN Risk Assessment for General Network Construction

- A Point of Work Risk Assessment must be carried out prior to any work by F4RN volunteers on the construction of the F4RN network. In addition, members of the working party should be made aware of the scope / limits of the work involved and the hazards involved.
- Members of the working party must wear appropriate PPE; individuals should come equipped with stout footwear. Additional PPE such as gloves, eye protection and high vis will be provided by F4RN.

Preparation

1. Prior to starting work the location of the work and scope of activities must be confirmed with the F4RN project manager
2. Confirm with landowner / property owner the scope of the planned work
3. Identify location of buried services
 - a. Refer to the Western Power Distribution guide “Avoidance of Danger from Electricity Overhead Lines and Underground Cables”¹
 - b. Consult Western Power Distribution (WPD) for location of electric cables (Note that the WPD plans may not show the exact location of buried cables)
 - c. Consult with landowner
 - d. Carry out a visual survey - look for marker post, manhole covers, BT chambers, valve covers etc.
 - e. Use a Cable Avoidance Tool (CAT scanner) to locate all cables shown on the WPD plans
 - f. Mark the locations of cables on the ground surface with waterproof road paint or other permanent marker.
4. Where work is in a field containing livestock, arrange with the landowner for the livestock to be moved to another field for the duration of the work, or for the erection of a temporary electric fence to keep the animals well clear of the working area
5. Where work area is accessible to members of the public (ie adjacent to public footpath or highway) erect warning signs. Consider use of barriers / cones / tape to show the boundary of the working area. Advise all members of the working party to look out for members of the public.
6. Carry out Point of Work Risk Assessment and brief working party on scope of work / specific tasks and risks involved.

Laying Ducting in Trenches

7. Confirm the route of the fibre and location of any telecoms chamber against the F4RN network plans. If in doubt consult with the F4RN project manager.
8. Where landowner requires turf to be reinstated (eg across gardens)
 - a. Lay sheets of builders’ plastic adjacent to route of fibre
 - b. Carefully cut turfs (use half-moon cutter or sharp spade) and place turfs on plastic sheet
9. Excavate to required depth placing soil on plastic sheet (if used). Trenches should be dug to spade depth across gardens or where ground is unlikely to be disturbed. 50-60cm (or as agreed with landowner) across fields where ploughing is expected. **Note that excavations must be less than one meter - should a deeper excavation be needed then this should be authorized**

¹ Available on the F4RN website

beforehand by one of the F4RN Directors, having first compiled a task specific risk assessment and method statement, and confirming the insurance requirements are adequate for the intended excavation.

10. Remove any large stones and ensure that the bottom of the trench is smooth and free of sharp objects
11. Lay the duct in the bottom of the trench ensuring that the duct lies flat and bends are kept to a minimum. When handling ducting avoid twisting / kinking the duct and ensure that you observe the minimum bend radius for the specific duct being laid. Larger drums of ducting should be mounted on an appropriate frame / spool to ensure that the duct can be run out without using excessive force or exceeding the maximum allowable tensile stress.
12. When installing ducting:
 - a. Only use approved tools for cutting the duct; ensure that ends are square and clean and burrs are removed
 - b. When making joints, ensure that the duct is pushed fully home and that the joint is correctly installed (refer to data sheet). 14mm direct burial joints are locked by twisting the ring on each side; 7mm joints require a cover
 - c. All open ends must be protected with an end cap to prevent dirt or moisture ingress.
13. Using hand tools, cover the ducting with a layer soil which is free of large or sharp stones, before infilling the remaining soil, distributing the soil evenly along the length of the trench.
14. Where turfs were cut, carefully replace these ensuring that the grass surface is even. In dry conditions, water generously and advise the property owner to keep the area well-watered until the turf has re-established the root system.

Mole Ploughing

15. Mole ploughing will only be carried out by experienced tractor drivers, however assistance will be required to lay out the ducting and feed it into the mole plough. Members of the working party should wear high-vis and one person should be appointed as the look-out/banksman.
16. Prior to mole ploughing, a pit should be dug at each end of the route to be ploughed. Do not leave the pit unattended or without barriers.
17. Lay out the length of duct to be installed. Ensure that there is sufficient ducting to cover the intended route. Intermediate pits for jointing will be required if more than one length of ducting is required.
18. Following the instructions of the mole plough operator at all times;

<u>Conventional mole plough</u> <i>Mole plough/sub-soiler drops duct into ground as the plough moves forwards</i>	<u>Drawn ducting</u> <i>Plough creates a "tube" through the soil and the duct is then drawn into the "tube" as the plough moves forwards</i>
<ol style="list-style-type: none"> a. Insert the mole plough into the start pit. b. Feed the ducting into the plough - feed sufficient ducting through to ensure that the end can be held securely as the plough starts to move forward (check that there is also enough duct to feed into chamber / joint pit as required) c. Slowly start to move mole plough forwards feeding ducting into the plough to ensure that it feeds smoothly behind the tractor. d. At the end of the run, drive the tractor forwards so that the plough is positioned in the end pit. e. Remove the ducting from the mole plough f. Move the tractor away from the working area - if it is necessary to reverse the tractor over the ducting, dig a small trench so that the ducting can be buried 	<ol style="list-style-type: none"> a. Attach the ducting securely to the ploughing tool b. Insert the mole plough into the start pit c. Slowly start to move the mole plough forwards feeding the ducting in behind the ploughing tool. Ensure that the duct feed smoothly. d. When the plough reaches the exit pit, raise the ploughing tool carefully to avoid damaging the ducting. Move the tractor forwards slowly to draw sufficient ducting for jointing / feeding into chamber e. Disconnect the duct from the mole plough

temporarily to protect the duct as the tractor drives over it.	
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Installing Telecoms Chambers

19. Specific guidance on installing telecoms chambers is covered by the CUBIS STAKKAbOX Installation Guide.²
20. When installing the concrete chamber covers, use the correct tools for lifting / moving the cover paying particular care to correct manual handling techniques and potential for trapped fingers / toes.

Installing Telecoms Cabinets

21. Telecoms cabinets are mounted on a concrete plinth. Refer to the plinth / cabinet drawings for dimensions.
22. Prepare location - excavate below the chamber location to install J-tubes ensuring the correct bend radius and location.
23. Lay hard-core if required.
24. Place shuttering to required plinth dimensions.
25. Following instructions provided with cement power, prepare cement as required and fill shuttering to required depth. Ensure surface is finished smoothly.
26. Place barriers / signs around plinth while it is drying and to prevent trip hazard.
27. Once cement has cured, install telecoms cabinet in required location. Ensure that lifting operations are assessed for manual handling risk and use mechanical aids if necessary.
28. Secure cabinet to plinth. Seal base of unit as per manufacturer's instructions.
29. Ensure cabinet is locked and keys are passed on to the F4RN project manager.

Work Completion

30. Ensure all equipment, machinery etc. is removed and work area is left clear.
31. Remove any debris and dispose of responsibly
32. Remove barriers, signs etc.
33. Complete Point of Work Risk Assessment and return to F4RN safety manager
34. Advise land owner / property owner that work is complete and confirm that they are happy with the way the work area is left.

² Available on the F4RN website
Videos guidance also available at <http://www.cubis-systems.com/uk/products/stakkabox/ultima/>