

### IMPORTANT NOTICE:

This document must be disseminated to ALL contractors and personnel who are in any way involved in the proposed earthworks notified to the NetLink Management Pte Ltd (as Trustee of **NetLink Trust**). A copy of this document is also available on NetLink Trust's website at <https://nce.netlinknbn.com/>. ALL REQUIREMENTS IN THIS DOCUMENT MUST BE STRICTLY COMPLIED WITH. If a contractor encounters difficulty in complying with any requirement, it must consult **NetLink Trust** on the appropriate action to be taken.

## REQUIREMENTS TO BE COMPLIED WITH BY EARTHWORKS CONTRACTORS FOR THE PREVENTION OF DAMAGE TO TELECOMMUNICATION CABLES

### INTRODUCTION

1. Section 29(3)(a) of the Telecommunications Act (Cap. 323) ("Telecoms Act") requires contractors who carry out earthworks<sup>1</sup> ("Earthworks Contractors") to comply with all reasonable requirements of telecommunication system licensees for the prevention of damage to telecommunication cables..
2. This document sets out the requirements of NetLink Management Pte Ltd (as Trustee of **NetLink Trust**) (the "**Licensee**") that must be complied with by Earthworks Contractors for the purposes of Section 29(3)(a) of the Telecoms Act ("**Licensee's Earthworks Requirements**").
3. This document comprises three sections –
  - **Section A** sets out the step-by-step procedures that must be followed by Earthworks Contractors before they can commence earthworks.
  - **Section B** sets out the measures to be complied with by Earthworks Contractors where the Licensee's telecommunication cables need to be diverted.

<sup>1</sup> Under the Telecoms Act, "earthworks" is defined as including —

- (a) any act of excavating earth, rock or other material (by whatever means) in connection with—
  - (i) any works for or relating to the construction, reconstruction, extension, renovation, alteration, demolition or repair of any building, road, railway, bridge, viaduct, flyover, sewer or sewage works;
  - (ii) any works for or relating to the laying, inspecting, repairing or renewing of any mains, pipes, cables, fittings or other apparatuses;
  - (iii) any soil investigation works; or
  - (iv) such other works as are usually undertaken by a person carrying on business as a contractor in the construction industry or as a professional civil or structural engineer;
- (b) any act of boring, dredging, jacking, levelling, piling or tunnelling on or under any premises or street by any mechanical means; and
- (c) the driving or sinking of any earth rod, casing or tube into the ground.

- **Section C** sets out the “Do’s and Don’ts” to be complied with by Earthworks Contractors to prevent damage to the Licensee’s telecommunication cables.
4. **The Earthworks Contractor who performs the actual earthworks (e.g. a piling contractor) shall be directly responsible for complying with the Licensee’s Earthworks Requirements.** It shall not be an excuse for the Earthworks Contractor to claim that it had delegated such responsibility to another party or relied on another party to ensure that the requirements are complied with, whether pursuant to any contract, agreement, arrangement, understanding or otherwise that it has with such other party.
  5. **If there are more than one Earthworks Contractors who are carrying out earthworks at the work site, each party is required to comply with the Licensee’s Earthworks Requirements on their respective earthworks separately.** In addition, all parties who supervise or instruct Earthworks Contractors on any aspect of the earthworks (e.g. a developer or main contractor) should also ensure that the Earthworks Contractors comply with the Licensee’s Earthworks Requirements to prevent damage to telecommunication cables.
  6. Where the proposed earthworks involves Road Opening, as it would likely include traffic or road closures for the carrying out of earthworks, the Earthworks Contractors are advised to proceed with Step 3, i.e., submit the NCE application to the relevant Licensee (after completion of Steps 1 and 2) and concurrently, submit the road opening application via LTA.PROMPT timely.

## **SECTION A: STEP-BY-STEP PROCEDURES TO BE COMPLIED WITH BY EARTHWORKS CONTRACTORS BEFORE COMMENCING EARTHWORKS**

### **STEP 1: OBTAIN LICENSEE’S SERVICE LAYOUT PLAN**

- A.1 The Earthworks Contractor shall contact all telecommunication system licensees with underground plant<sup>2</sup> and obtain the relevant service layout plans from licensees who have telecommunication cables located within the vicinity of the proposed earthworks.
- A.2 **IMPORTANT: The Licensee’s service layout plan only indicates the *approximate* locations of the Licensee’s telecommunication cables and is not conclusive. The exact positions and depths of the Licensee’s telecommunication cables **MUST** be ascertained by the manual digging of trial holes (refer to A.24 for more details), by the Earthworks Contractor in accordance with Steps 6 and 7 below.**

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<sup>2</sup> Please refer to the list of telecommunication system licensees with underground plant at the Info-communications Media Development Authority’s website at <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-provision-of-service-of-detecting-underground-telecommunication-cable>

A.3 The **Licensee's service layout plan shall only be valid for a period of six months.**  
In this regard –

- (a) If the Earthworks Contractor will only commence the proposed earthworks more than six months from the date that it obtained the Licensee's service layout plan, the Earthworks Contractor shall obtain a fresh set of the Licensee's service layout plan. This is important as updates and revisions may have been made to the Licensee's service layout plan since the time it was issued to the Earthworks Contractor.
- (b) The Earthworks Contractor shall ensure that its copy of the Licensee's service layout plan is obtained no more than six months prior to the date of commencement of the earthworks.
- (c) The Earthworks Contractor shall ensure that it refers to and uses the most updated version of the Licensee's service layout plan in its possession at all times.
- (d) The Licensee shall issue its service layout plan to the Earthworks Contractor in physical<sup>3</sup> or digital (PDF) format.

## **STEP 2: ENGAGE LICENSED TELECOMMUNICATION CABLE DETECTION WORKER TO CARRY OUT CABLE DETECTION WORK**

A.4 The Earthworks Contractor shall engage a licensed telecommunication cable detection worker ("**TCDW**") to –

- (a) carry out telecommunication cable detection work and prepare a cable detection report to indicate the locations and routes of all the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks;
- (b) physically mark out the locations and routes of all the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks in accordance with A.6 below; and
- (c) determine the positions and number of proposed trial holes that are to be manually dug by the Earthworks Contractor to ascertain the exact location of the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks in accordance with A.7 below.

A.5 **IMPORTANT: The TCDW's cable detection report only indicates the *approximate* detected locations of the Licensee's telecommunication cables and is not**

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<sup>3</sup> If the Earthwork Contractor is unable to view the service layout plan in digital format and produce hard copies of the same, the Licensee shall provide the service layout plan to the Earthwork Contractor in physical format.

**conclusive. The TCDW may also not be able to detect all telecommunication cables (e.g. optical fibre cables without copper elements or metallic tracer wire inserts). Therefore, the exact positions and depths of the Licensee's telecommunication cables MUST be ascertained by the manual digging of trial holes in accordance with Steps 6 and 7 below**

A.6 The Earthworks Contractor shall ensure that –

- (a) the TCDW physically marks out the locations and routes of all detected telecommunication cables throughout the entire vicinity of the proposed earthworks using suitable methods such as surface markers, pegs, barricades and signposts to alert all contractors and personnel at the work site to the presence of the cables;
- (b) the markings are durable, prominent and visible;
- (c) the markings are maintained and reapplied from time to time as necessary so that they remain prominent and visible at all times throughout the entire duration of the earthworks;
- (d) the markings are not covered over, obscured, disturbed, removed or tampered with at any time by any person, plant, equipment, material or object; and
- (e) all contractors and personnel at the work site are fully briefed on the markings so that they are clear about the locations and routes of the telecommunication cables.

A.7 The proposed trial holes –

- (a) shall be positioned on and along the routes of the telecommunication cables indicated in the TCDW's cable detection report in order to positively confirm that the cables are in fact running along the said routes;
- (b) shall, where the Licensee's service layout plan and the TCDW's cable detection report indicate the route of the cables to be running in a straight line, be spaced at intervals of no more than 30m apart for such segments of the cables;
- (c) shall, where the Licensee's service layout plan and the TCDW's cable detection report indicate the route of the cables to be running in a curved or meandering line, be spaced at intervals of no more than 10m apart for such segments of the cables; and
- (d) shall be spaced at appropriate intervals of no more than 30m apart (and where curved or meandering, no more than 10m apart) along the route of the telecommunication cables throughout the entire vicinity of the proposed earthworks.

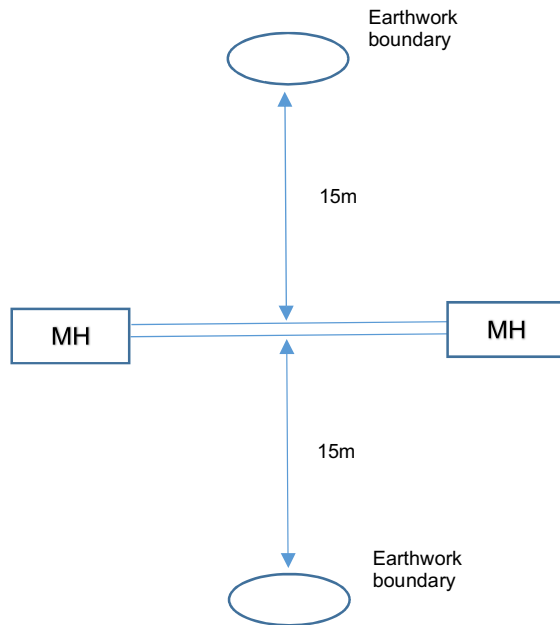
A.8 The exact positions and number of proposed trial holes shall be accurately recorded and marked up on the TCDW's cable detection report for the purposes of NCE Submission in accordance with A.10 below.

**STEP 3: SUBMIT NOTICE FOR COMMENCEMENT OF EARTHWORKS**

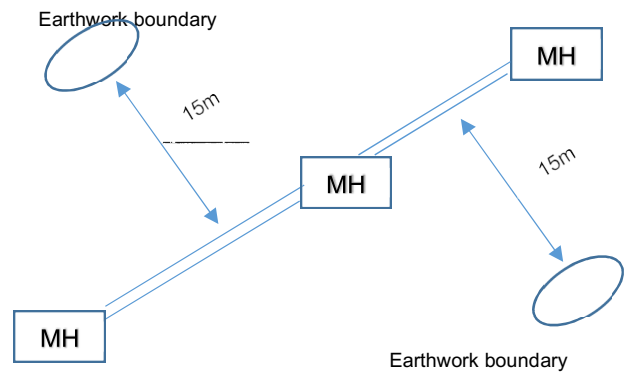
A.9 If the proposed earthworks are to be carried out within **a distance of 15m** of any of the Licensee's telecommunication cables (which refers to the perpendicular distance between the linear line of sight of manholes as shown in the examples below), the Earthworks Contractor shall submit the "Notice for Commencement of Earthworks" ("NCE") to the Licensee in the form set out at **Appendix A-1** to the Licensee **not less than seven days** prior to the commencement of the proposed earthworks. In particular, the Earthworks Contractor shall state within the NCE whether the proposed earthworks involve Road Opening or not.

The Earthworks Contractor shall complete all the required steps under Section A and obtain the "Final Approval For Commencement of Earthworks" in the form set out at Appendix D-1 from the Licensee before proceeding with the proposed earthworks.

E.g. Between two manholes



E.g. Between a few manholes



A.10 The Earthworks Contractor shall submit the NCE **together** with the following information –

- (a) the TCDW's cable detection report and the Licensee's service layout plan;

- (b) the exact positions and number of proposed trial holes that will be manually dug by the Earthworks Contractor, which shall be clearly indicated and marked up on the TCDW's cable detection report; and
- (c) the works schedule for the proposed earthworks.

(collectively, the “**NCE Submission**”)

A.11 The NCE Submission shall be made to the Licensee –

- (a) electronically: by uploading it onto the Licensee's website or submitting it through the Licensee's designated online platform.

The Earthworks Contractor shall consult the Licensee on the mode of submission to be used for NCE Submission and for the submission of all other documents referred to in the steps below<sup>4</sup>.

A.12 **Each NCE Submission shall only be valid for a period of 12 months.** Where the earthworks are to be carried out and completed more than 12 months after the date of the NCE Submission, the Earthworks Contractor shall comply with the following procedure –

- (a) The Earthworks Contractor shall obtain a fresh set of the Licensee's service layout plan from the Licensee to confirm whether there have been any revisions or updates to the plan since the previous set obtained by the Earthworks Contractor (which shall be within the validity period specified in A.3 above).
- (b) If there have been changes such as updates or revisions to the Licensee's service layout plan, the Earthworks Contractor shall be required to repeat Steps 2 and 3 and make a fresh NCE Submission to the Licensee.
- (c) If there have been no changes to the Licensee's service layout plan, the Earthworks Contractor may apply to the Licensee to extend the NCE Submission for a further period of 12 months, which shall be accompanied by the updated works schedule for the proposed earthworks. Where the request for extension is

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<sup>4</sup> This includes the submission of the following documents/forms by the Earthworks Contractor –

- submission of request to extend validity period of NCE Submission in accordance with A.12;
- submission of amended documents for NCE Submission in accordance with A.18;
- submission of application for fresh “Conditional Approval for Digging of Trial Holes” in accordance with A.22;
- submission of photographic records of trial holes in accordance with A.27;
- submission of “Application for Final Approval for Commencement of Earthworks” in accordance with A.35.

approved, the Earthworks Contractor shall carry out and complete the earthworks within the extended 12 months' validity period. In the event that the Earthworks Contractor does not do so, the Earthworks Contractor shall be required to repeat Steps 2 and 3 and make a fresh NCE Submission to the Licensee to carry out the earthworks.

- A.13 **IMPORTANT: The “Notice for Commencement of Earthworks” MUST be signed and submitted by the Earthworks Contractor who will be carrying out the actual earthworks. Earthworks Contractors who are carrying out separate earthworks at the work site are required to submit individual NCEs on their respective earthworks. This is to ensure that the *actual party* carrying out the earthworks is fully aware of the Licensee’s Earthworks Requirements and is directly responsible for providing the declarations, confirmations and information required in the NCE Submission.**

**STEP 4: CONDUCT JOINT SITE MEETING (TO BE ATTENDED BY EARTHWORKS CONTRACTOR, TCDW AND LICENSEE)**

- A.14 Following the NCE Submission, the Earthworks Contractor shall arrange for the conduct of a joint site meeting at the work site together with the Licensee and the TCDW (“**Joint Site Meeting**”) to –
- (a) verify the accuracy and consistency between the Licensee’s service layout plan, the TCDW’s cable detection report, the locations and routes of the Licensee’s telecommunication cables as physically marked out by the TCDW, and the actual site conditions;
  - (b) confirm that the locations and routes of the Licensee’s telecommunication cables throughout the entire vicinity of the proposed earthworks have been accurately and properly marked out by the TCDW; and
  - (c) confirm the exact positions and number of trial holes that are to be manually dug by the Earthworks Contractor to ascertain the exact location of the Licensee’s telecommunication cables.
- A.15 At the Joint Site Meeting, the Earthworks Contractor shall, with the assistance of the TCDW and Licensee, verify that there are no inaccuracies or discrepancies between –
- (a) the Licensee’s service layout plan;
  - (b) the TCDW’s cable detection report;
  - (c) the physical markings applied by the TCDW to indicate the locations and routes of the Licensee’s telecommunication cables; and
  - (d) the actual conditions at the work site.

A.16 If there are any such inaccuracies or discrepancies, the following actions shall be taken by the relevant party –

- (a) Where there are any inaccuracies in the Licensee's service layout plan, the Licensee shall physically mark up the service layout plan on the spot to indicate the corrected locations and routes of the Licensee's telecommunication cables, and provide the marked-up plan to the Earthworks Contractor. The Licensee shall follow up by issuing an updated service layout plan to the Earthworks Contractor.
- (b) Where there are any inaccuracies in the TCDW's cable detection report, the Earthworks Contractor shall ensure that the TCDW physically marks up the TCDW's cable detection report on the spot to indicate the corrected locations and routes of the Licensee's telecommunication cables, and provide the marked-up report to the Earthworks Contractor. The Earthworks Contractor shall follow up by obtaining an updated cable detection report from the TCDW.
- (c) Where there are any inaccuracies in the physical markings applied by the TCDW to indicate the locations and routes of the Licensee's telecommunication cables, the Earthworks Contractor shall ensure that the TCDW makes the necessary corrections to the markings on the spot (which shall comply with the requirements stated in A.6 above). The Earthworks Contractor shall also ensure that any inaccurate markings are entirely removed and that all contractors and personnel at the work site are fully briefed on the revised markings.

A.17 At the Joint Site Meeting, the Earthworks Contractor shall obtain the Licensee's confirmation on the exact positions and number of trial holes that are to be manually dug by the Earthworks Contractor to ascertain the exact location of the Licensee's telecommunication cables. Where any corrections are made in accordance with A.16 above, the Earthworks Contractor shall consult the TCDW and the Licensee to ensure that appropriate adjustments are made to the positions and number of proposed trial holes taking into account such corrections, and that the Licensee's confirmation is obtained on the said adjustments. The Licensee may require additional trial holes to be dug by the Earthworks Contractor beyond those proposed by the Earthworks Contractor in its NCE Submission.

A.18 Where pursuant to the Joint Site Meeting –

- (a) there are any corrections made to the version of the Licensee's service layout plan that was submitted by the Earthworks Contractor in its NCE Submission;
  - (b) there are any corrections made to the version of the TCDW's cable detection report that was submitted by the Earthworks Contractor in its NCE Submission;
- or



- (c) there are any changes made to the positions and number of trial holes as indicated on the TCDW's cable detection report that was submitted by the Earthworks Contractor in its NCE Submission,

the Earthworks Contractor shall resubmit the relevant amended document to the Licensee to replace the version previously submitted in its NCE Submission. The Earthworks Contractor shall ensure that it refers to and uses the amended document in place of the earlier version when carrying out the steps below.

A.19 After the Joint Site Meeting, the Earthworks Contractor shall in a timely manner –

- (a) ensure that all relevant drawings and plans utilised by contractors and personnel at the work site are updated to accurately reflect the locations and routes of all the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks, and
- (b) provide a copy of the updated service layout plan and cable detection report to all contractors and personnel (e.g. earthworks supervisor, earthworks machine operator, etc.) that are in any way involved in the proposed earthworks.

#### **STEP 5: OBTAIN CONDITIONAL APPROVAL FOR DIGGING OF TRIAL HOLES**

A.20 After the Joint Site Meeting and the Earthwork Contractor's submission of the amended documents (if any) in accordance with A.18 above, if there are no further clarifications required by the Licensee, the Licensee shall issue the "**Conditional Approval for Digging of Trial Holes**" in the form set out at **Appendix B-1** to the Earthworks Contractor. The Licensee shall attach the finalised version of the TCDW's cable detection report indicating the confirmed positions and numbers of trial holes that are to be dug by the Earthworks Contractor.

A.21 The "Conditional Approval for Digging of Trial Holes" is solely for the purposes of permitting the Earthworks Contractor to proceed with the manual digging of trial holes to ascertain the exact location of the Licensee's telecommunication cables, which shall be based on the positions and number of proposed trial holes as confirmed at the Joint Site Meeting.

A.22 **The "Conditional Approval for Digging of Trial Holes" shall only be valid for a period of one month** from the date of its issuance by the Licensee. The Earthworks Contractor is required to carry out and complete the digging of trial holes within the one month validity period. If the Earthworks Contractor does not do so, it shall be required to apply to the Licensee for a fresh "Conditional Approval for Digging of Trial Holes" subject to such application being made within the validity period of its NCE Submission as stated in A.12 above. At all times, the Earthworks Contractor must ensure that it carries out and completes the digging of trial holes within both the validity period of the "Conditional Approval for Digging of Trial Holes" and the validity period of its NCE Submission.

**STEP 6: DIG TRIAL HOLES TO ASCERTAIN EXACT LOCATION OF TELECOMMUNICATION CABLES**

A.23 **The Earthworks Contractor shall dig the trial holes manually until it positively locates (i.e. visually confirms) and physically exposes all of the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks.**

A.24 **IMPORTANT: The Earthworks Contractor shall only use manual digging and exercise due care when digging the trial holes to avoid damaging the telecommunication cables. The Earthworks Contractor **MUST NOT** –**

- (a) use any mechanical equipment (e.g. excavator); or
- (b) use any manual equipment that has sharp pointed edges (e.g. hand auger) which may damage the telecommunication cables.

**If, in the course of digging any trial holes, the Earthworks Contractor damages or has reason to suspect that it has damaged –**

- (a) the Licensee's telecommunication cables; and/or
- (b) the ducts, pipes or other infrastructure housing or encasing the Licensee's telecommunication cables,

**the Earthworks Contractor **MUST** inform the Licensee immediately.**

A.25 **The Earthworks Contractor must not assume that the Licensee's telecommunication cables are not present if the cables are not found or encountered when the trial holes are dug.** There may be various reasons for this (e.g. the telecommunication cables are located deeper than the level to which the trial holes are dug, the telecommunication cables may not be travelling in a straight-line path, etc.). Accordingly, the Earthworks Contractor must continue to dig additional and/or deeper trial holes manually without the use of machinery or manual equipment with sharp pointed edges, to positively locate and physically expose the telecommunication cables.

A.26 **IMPORTANT: In the event that the Earthworks Contractor is unable to positively locate and physically expose all of the Licensee's telecommunication cables after digging the trial holes, the Earthworks Contractor **MUST** obtain the Licensee's assistance to ascertain the exact location of the telecommunication cables throughout the entire vicinity of the proposed earthworks. **UNDER NO CIRCUMSTANCE** should the Earthworks Contractor proceed with the proposed earthworks without consulting the Licensee.**

A.27 The Earthworks Contractor shall maintain photographic records of all the trial holes that it has dug and the exposed telecommunication cables within the trial holes. The photographic records shall also be submitted to the Licensee for reference.

**STEP 7: CONDUCT JOINT TRIAL HOLES INSPECTION (TO BE ATTENDED BY EARTHWORKS CONTRACTOR, TCDW, PARTY WHO IS SUPERVISING OR INSTRUCTING THE EARTHWORKS CONTRACTOR AND LICENSEE)**

A.28 After the Earthworks Contractor has positively located and physically exposed the Licensee's telecommunication cables via the digging of trial holes, the Earthworks Contractor shall arrange for the conduct of a joint trial holes inspection at the work site together with the Licensee, the party who is supervising or instructing the Earthworks Contractor and the TCDW ("**Joint Trial Holes Inspection**").

A.29 The purpose of the Joint Trial Holes Inspection is for all parties to –

- (a) jointly verify that the exact location of **all** the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks have been positively ascertained by the Earthworks Contractor; and
- (b) determine if there is any need for diversion works by the Licensee in relation to part of or all of the Licensee's telecommunication cables.

A.30 The Licensee may require additional trial holes to be dug by the Earthworks Contractor if there is a need to further confirm the exact locations and/or routes of the Licensee's telecommunication cables.

A.31 After the location of all the Licensee's telecommunication cables throughout the entire vicinity of the proposed earthworks have been ascertained pursuant to the Joint Trial Holes Inspection, the Earthworks Contractor shall re-verify that there are no inaccuracies or discrepancies between –

- (a) the Licensee's service layout plan;
- (b) the TCDW's cable detection report; and
- (c) the physical markings previously applied by the TCDW to indicate the locations and routes of the Licensee's telecommunication cables.

If there are any such inaccuracies or discrepancies, the actions stated in A.16 above shall be carried out. In particular, where there are any inaccuracies in the physical markings previously applied by the TCDW, the Earthworks Contractor shall ensure that the TCDW makes the necessary corrections to the markings on the spot (which shall comply with the requirements stated in A.6 above). The Earthworks Contractor shall also ensure that any inaccurate markings are entirely removed and that all contractors and personnel at the work site are fully briefed on the revised markings.

- A.32 At the Joint Trial Holes Inspection, the Earthworks Contractor shall also brief the Licensee on the protection measures and methods of support that it will implement to prevent damage to the Licensee’s telecommunication cables. The Earthworks Contractor shall implement such other measures that the Licensee may require the Earthworks Contractor to undertake to protect the telecommunication cables.
- A.33 The protection measures and methods of support to be implemented by the Earthworks Contractor shall be accurately detailed by the Earthworks Contractor in its “Application for Final Approval for Commencement of Earthworks” in accordance with Step 8 below.
- A.34 In the event that the Licensee determines that diversion works are necessary in relation to part of or all of the Licensee’s telecommunication cables, the Earthworks Contractor shall co-ordinate and co-operate with the Licensee to facilitate the necessary diversion works and comply with the requirements specified in Section B. The Earthworks Contractor shall factor in the planning time required by the Licensee to carry out the necessary diversion works, which may generally range from 6 to 18 months depending on the site conditions.

#### **STEP 8: SUBMIT APPLICATION FOR FINAL APPROVAL FOR COMMENCEMENT OF EARTHWORKS**

- A.35 After completion of the Joint Trial Holes Inspection, the Earthworks Contractor shall submit the “**Application for Final Approval for Commencement of Earthworks**” to the Licensee in the form set out at **Appendix C-1**.
- A.36 The purpose of the “Application for Final Approval for Commencement of Earthworks” is for the Earthworks Contractor to –
- (a) declare and confirm that the Earthworks Contractor has read, understood and will comply with the Licensee’s Earthworks Requirements;
  - (b) declare and confirm that the Earthworks Contractor has duly completed Steps 1 to 7 above; and
  - (c) provide full details of the protection measures and methods of support that the Earthworks Contractor will implement to prevent damage to Licensee’s telecommunication cables throughout the entire course of the proposed earthworks.
- A.37 **IMPORTANT: The “Application for Final Approval for Commencement of Earthworks” MUST be signed and submitted by the Earthworks Contractor who will be carrying out the actual earthworks. This is to ensure that the *actual party* carrying out the earthworks is fully aware of the Licensee’s Earthworks Requirements and is directly responsible for providing the declarations, confirmations and information required in the “Application for Final Approval for**

**Commencement of Earthworks". The Earthworks Contractor shall also provide a copy of this document to any party that is instructing or supervising the Earthworks Contractor in the performance of the actual earthworks.**

#### **STEP 9: OBTAIN FINAL APPROVAL FOR COMMENCEMENT OF EARTHWORKS**

- A.38 After receipt of the duly completed Application for "Final Approval for Commencement of Earthworks" from the Earthworks Contractor and if the Licensee is satisfied as to the adequacy of the protection measures and methods of support detailed by the Earthworks Contractor therein, the Licensee shall issue the **"Final Approval for Commencement of Earthworks"** in the form set out at **Appendix D-1** to the Earthworks Contractor.
- A.39 In carrying out the earthworks, the Earthworks Contractor shall–
- (a) fully implement the protection measures and methods of support which it has undertaken to implement, as detailed in its "Application for Final Approval for Commencement of Earthworks"; and
  - (b) fully comply with the "Do's and Don'ts" specified in Section C below to ensure that the Licensee's telecommunication cables are protected from damage throughout the entire course of the earthworks.
- A.40 **IMPORTANT: The Earthworks Contractor MUST NOT proceed with the proposed earthworks until it receives the "Final Approval for Commencement of Earthworks" from the Licensee. Upon its receipt, the Earthworks Contractor shall also provide a copy of this document to any party that is instructing or supervising the Earthworks Contractor in the performance of the actual earthworks.**

#### **SECTION B: MEASURES TO BE COMPLIED WITH BY EARTHWORKS CONTRACTORS IN THE EVENT OF CABLE DIVERSION**

- B.1 In the event that the Licensee determines at the Joint Trial Holes Inspection (refer A.34 above) that it is necessary to divert any of the Licensee's telecommunication cables which may be affected by the proposed earthworks ("**Affected Cables**"), the following procedures and requirements shall apply –
- (a) The Earthworks Contractor shall ensure that the Affected Cables are adequately protected and supported and obtain the Licensee's written approval to the protection measures and methods of support before the diversion works are carried out.

- (b) After completion of the relevant diversion works, the Licensee shall issue a written notice to the Earthworks Contractor to confirm that the Licensee's Affected Cables have been fully diverted.
- (c) Upon receipt of such written notice, the Earthworks Contractor shall arrange for a joint site inspection with the Licensee.
- (d) The purpose of the joint site inspection is for the Earthworks Contractor and Licensee to carry out the following –
  - (i) to confirm that all of the Licensee's Affected Cables have been diverted;
  - (ii) to confirm the exact locations and routes of the newly diverted telecommunication cables;
  - (iii) where the Licensee has abandoned any telecommunication cables, ducts, pipes or other related infrastructure within the vicinity of the proposed earthworks arising from the diversion works, to confirm their exact locations and the actions to be taken by the Earthworks Contractor in relation to such abandoned plant; and
  - (iv) to ensure that the Licensee's service layout plan is updated to accurately reflect the diversion of the Licensee's Affected Cables.

B.2 The Licensee shall provide the Earthworks Contractor with the updated service layout plan reflecting the diverted telecommunication cables. The Licensee shall ensure that the updated service layout plans are accurately geo-tagged to include GPS Coordinates and/or 3D Coordinates (where applicable). Where the diverted telecommunication cables are relocated to any other area within the vicinity of the Earthworks Contractor's proposed earthworks, the Earthworks Contractor shall ensure that the TCDW physically marks out the locations and routes of the diverted telecommunication cables (which shall comply with the requirements stated in A.6 above).

B.3 Where the diverted telecommunication cables are relocated to any other areas where earthworks are to be carried out by other Earthworks Contractors (e.g. where the Licensee diverts its telecommunication cables into an adjacent land at which another contractor is to perform earthworks), the Licensee shall inform such other Earthworks Contractors of the locations and routes of the diverted telecommunication cables in the vicinity of their earthworks and provide them with the updated service layout plan.

## **SECTION C: DO'S AND DON'TS TO BE COMPLIED WITH BY EARTHWORKS CONTRACTORS TO PREVENT DAMAGE TO TELECOMMUNICATION CABLES**

### **DO'S**

- C.1 **DO** display the following in a prominent place at the work site for all contractors and personnel at the work site to refer to–
- Section A & B for employees performing supervisory functions and above
  - Section C for all employees involved in carrying out the earthworks
  - the latest version of the Licensee's service layout plan issued to the Earthworks Contractor;
  - the latest version of the TCDW's cable detection report showing the locations and routes of the Licensee's telecommunication cables; and
  - the "Notice for Commencement of Earthworks" submitted by the Earthworks Contractor to the Licensee.
- C.2 **DO** provide a competent full-time site supervisor to closely supervise the performance of the earthworks **throughout** the entire duration of the earthworks and ensure that the site supervisor is fully familiar with all the requirements stated in this document. Do keep the Licensee informed of any changes in key personnel such as the site supervisor, TCDW, etc.
- C.3 **DO** ensure that appropriate and adequate protection measures and methods of support are implemented to prevent damage to the Licensee's telecommunication cables (including but not limited to such measures and methods as may be required by the Licensee) and conduct regular inspections and maintenance to ensure that the measures and methods that are implemented remain sound and effective throughout the duration of the earthworks.
- C.4 **DO** create a cable corridor using barricades and signposts where appropriate, and ensure that works and personnel movement inside the barricaded cable corridor are strictly controlled by the sitesupervisor.
- C.5 **DO** provide protective plates over trenches in which the Licensee's telecommunication cables are located so as to prevent pressure being exerted on the cables by heavy vehicles or machinery traversing over them.
- C.6 **DO** use earth mats instead of earth rods as far as possible. If earth rods have to be used, do ensure that they are driven into the ground away from the Licensee's telecommunication cables.
- C.7 **DO** ensure that all contractors and personnel at the work site are fully briefed on the locations and routes of the Licensee's telecommunication cables,

including locations and routes of any diverted cables, throughout the entire vicinity of the proposed earthworks so that they are aware of the same. Do maintain records of all such briefings (including the date and time, venue, person conducting the briefing, contents of the briefing, and the names of the personnel who attended the briefing) and make them available to the Licensee upon request.

C.8 **DO** grant the Licensee access to the work site to enable the Licensee to inspect the adequacy of the protection measures and methods of support implemented by the Earthworks Contractor, and to take any measures necessary to protect the Licensee's telecommunication cables from damage.

C.9 **DO** notify and obtain the Licensee's prior written approval before any removing or dismantling any protection measures and methods of support for the Licensee's telecommunication cables and/or before backfilling the Licensee's telecommunication cables after the completion of the earthworks. It is recommended that Earthworks Contractors maintain photographic records of the entire dismantling and backfilling process.

C.10 **DO** when demolishing, altering, shifting, severing or removing any tree, root, vegetation, rock, boulder, object, obstacle or other material (including man-made structures) which are within the vicinity of the Licensee's telecommunication cables, take all necessary precautions and exercise all due diligence to protect the Licensee's telecommunication cables from damage when carrying out such works;

C.11 **DO** immediately halt all works and report to the Licensee any damage or suspected damage caused at any point in time to—

(a) the Licensee's telecommunication cables; and/or

(b) the ducts, pipes or other infrastructure housing or encasing the Licensee's telecommunication cables,

so as to enable the Licensee to take early action to address any possible disruption in telecommunication services resulting from such damage. The report shall be lodged with the Licensee by calling +65-6692-6830 during office hours and +65-9753-7533 after office hours.

C.12 **DO** monitor the soil conditions at the work site and check once every six weeks for soil movement that may damage the Licensee's telecommunication cables or cause the locations or routes of the Licensee's telecommunication cables to be shifted or altered. Do provide appropriate and adequate soil control measures such as shoring and shuttering to



prevent soil movement which may cause damage to the Licensee's telecommunication cables.

- C.13 **DO** where requested to do so by the Licensee or any relevant authority (including the Info-communications Media Development Authority), furnish all documents and information required to be prepared, submitted or maintained by the Earthworks Contractor as referred to in this document.
- C.14 **DO** consult the Licensee and seek the Licensee's assistance in the event that the Earthworks Contractor encounters any difficulty in complying with any of the requirements stated in this document, whether due to site conditions or otherwise. Under no circumstance should the Earthworks Contractor ignore or circumvent any of the requirements and/or take matters into its own hands.

### **DON'TS**

- C.15 **DON'T** take any short cuts or omit any of the steps and actions required to be taken in Section A before commencing with the earthworks. In the event of cable diversion, don't take any action that may damage the Affected Cables unless and until **all** the steps and actions required to be taken in Section B have been carried out and express confirmation has been given by the Licensee that the Affected Cables have been diverted.
- C.16 **DON'T** assume that the Licensee's telecommunication cables are only located at any particular maximum depth (e.g. 1.5m) as the telecommunication cables may be located much deeper.
- C.17 **DON'T** assume that the Licensee's telecommunication cables run at a consistent depth throughout the entire vicinity of the earthworks as the depth of the telecommunication cables may vary (e.g. the telecommunication cables may be located very deep at the point where they under-cross a drain or canal, while being shallower elsewhere).
- C.18 **DON'T** assume that the Licensee's telecommunication cables run in a straight line path from manhole to manhole as the route of the telecommunication cables may detour or deviate (e.g. the telecommunication cables may be contoured around an existing underground feature).
- C.19 **DON'T** assume that all of the Licensee's telecommunication cables are housed within a single pipe/duct as the telecommunication cables may be deployed in different sets of pipes/ducts within the same area. Accordingly, all telecommunication cables within the vicinity of the earthworks must be accounted for and verified.

- C.20 **DON'T** park or place heavy vehicles, equipment or machinery across, over or along the location and routes of the telecommunication cables.
- C.21 **DON'T** dig trial holes using machinery or manual equipment with sharp pointed edges.
- C.22 **DON'T** open, remove or cover up any of the Licensee's manholes, equipment boxes or pedestal boxes with earth or any construction/building materials, equipment or machinery without obtaining the Licensee's prior written approval.
- C.23 **DON'T** fence up or in any way prevent access to the Licensee's manholes, equipment boxes or pedestal boxes without obtaining the Licensee's prior written approval.
- C.24 **DON'T** ignore any damage, cover up any damage, or attempt to repair any damage or suspected damage caused at any point in time to –
- (a) the Licensee's telecommunication cables; and/or
  - (b) the ducts, pipes or other infrastructure housing or encasing the Licensee's telecommunication cables.

The Earthworks Contractor must immediately report any such damage or suspected damage to the Licensee by calling +65-6692-6830 during office hours and +65-9753-7533 after office hours.

C.25 **DON'T** tamper with, remove, modify, dismantle or in any way interfere with the Licensee's installation and plant, including –

- (a) the Licensee's telecommunication cables;
- (b) the ducts/pipes housing the Licensee's telecommunication cables;
- (c) any concrete encasing the Licensee's telecommunication cables or the ducts/pipes housing the telecommunication cables; and
- (d) any warning slab installed at the Licensee's telecommunication cables or the ducts/pipes housing the telecommunication cables.

without obtaining the Licensee's prior written approval.

**Note: The requirements stated in this document are not exhaustive. Additional requirements may be issued from time to time by the Licensee. These additional requirements, together with the requirements in this document, shall constitute the full set of requirements that must be complied with by the Earthworks Contractor at all times to prevent damage to telecommunication cables. Should you require any further clarification, please contact the Licensee at –**

**NetLink Management Pte Ltd  
(as Trustee of NetLink Trust)  
750E Chai Chee Road, #07-03  
Singapore 469005  
Telephone: +65 6692 6830  
Email: [servicedesk@nlt.earthworks.sg](mailto:servicedesk@nlt.earthworks.sg)**