

UTLC Paper No. 1/2012
Strengthening Measures in Audit Inspection to Control
Non-compliance (NC) with Minimum Depth Requirements
and Requirements of Photographs
to be Submitted for Processing Completion Notice (CN)

Purpose

The purpose of this paper is to seek endorsement from members on the proposed strengthening measures for control of shallow depth services under public roads and the requirements of photographs to be submitted for processing CN. UTLC paper no. 2/2005 is hereby superseded.

Background

2. The basic reasons to establish the minimum depth requirements of utility services are stated in HyD TC 3/90 and reproduced as follows:

- (a) *to avoid any adverse effects on the structural integrity of the road pavement;*
- (b) *to afford protection to the buried services from damage due to traffic loadings;*
- (c) *to afford protection to the buried services from damage due to subsequent road opening works;*
- (d) *to afford protection to personnel carrying out road opening works from cutting into energized services located at an unexpected shallow depth; and*
- (e) *to maximize the use of underground space for the accommodation of services while ensuring that sufficient space is reserved for the installation of surface drainage system which is essential for the proper operation of a highway.*

3. Based on the above principles, the part of HyD TC 3/90 stipulating the minimum depth requirements was extracted and laid down in prevailing XP conditions for various utility services under different road types. UUs have the supervisory obligation to monitor and control their contractors to comply with the requirements. As an add-on control measure, HyD's Audit Inspection Team (AIT) conducted random inspections on UUs' excavation sites to record non-compliances (NCs) with the minimum depth requirements.

4. Difficulties on complying with the minimum depth requirements stemmed from historical reasons were discussed in 2005. With due respect to factors beyond UUs' control, a pragmatic approach for handling shallow depth services identified during audit inspections is specified in UTLC Paper No. 2/2005. In brief, a notification letter will be issued to the responsible Permittee whenever shallow depth services are observed. An advisory letter will be issued if the remedial proposal is not received by HyD within 3 working days from the date of the NC notification. The notifications and advisory letters are to alert UUs to rectify the NC and to tighten supervision on their road opening works in respect of minimum depth requirements.

The above approach relies greatly on the spontaneity of individual UUs in supervising their contractors. It works on the prerequisite that every UU would endeavour to exercise its own supervision.

5. However, numerous complaints and media enquiries on shallow depth utilities were received by HyD in the past several months. Unlike complaints lodged by the general public that focus on incidental defects, these complaints covered defective locations widely spreading in the territory, and were lodged by practitioners of the industry. As revealed in HyD's investigations, some of the UUs did not appear to have exercised adequate supervision on their contractors to ensure compliance with the requirements. Individual permittees might have taken advantage of HyD's current practice in such a manner that they only required their contractors to rectify the NC when AIT's notification or advisory letter was received. Since AIT's inspections could only cover a small portion of UUs' road works, certain installations contravening the minimum depth requirements might stay persistently.

Consultation with JUPG

6. In view of the above, the need on reviewing existing measures adopted in handling shallow depth services is imminent. HyD considers that the current approach should be superseded by strengthening measures to address the problem. Strengthening measures may take place at both the Completion Notice (CN) processing stage and the Audit Inspection stage.

7. The principle of the proposal on strengthening control on the minimum depth requirements was deliberated in the JUPG meeting on 24 February 2012, and was generally well received by members. While members understood that technical details would be further established in the UTLC, a sub-group under JUPG was decided to be formed to render support on the issue.

8. Strengthening measures in line with the principle agreed in the JUPG are elaborated in the following paragraph.

Strengthening Measures

9. To deter the mal-practice of NC with minimum depth requirements, the following strengthening measures are proposed to be implemented.

Cessation on Notifying UUs of NC identified during Audit Inspections

a. The current practice of notifying and subsequent issuing advisory letter to permittees on NC with minimum depth requirements observed in audit inspections should cease. As a result, the audit observation in this regard will not be shown in the inspection report of AIMS. Notwithstanding, AIT will keep record of suspected shallow depth services whenever observed on site. The observation results will be referred to Enforcement Team (ET) and

Excavation Permit Processing Team (XPPT) for reference. Upon receipt of CN submission, ET in collaboration with XPPT may consider verifying the depth of services in question through opening of manhole cover and/or excavating trial pit. Prosecution will be instituted where appropriate. The responsible permittee will be required to rectify revealed NC with minimum depth requirements no matter prosecution is instituted or not.

Submission of Record Photographs in association with CN

- b. As substantiation on compliance with the minimum depth requirements, record photographs showing the services installed at sufficient depth should be submitted in association with CN submission. Tentative proposal on the format of submission and details to be included in the photographs are specified in **Appendix A**. An imitative submission is provided in **Appendix B**. The proposal will be further deliberated in the JUPG sub-group, with a view to arriving at a refined proposal for submission to the UTLC for endorsement.

Site Constraints Encountered During Excavation

10. As a matter of fact, the underground space of many roads in Hong Kong are congested with utilities or embedded with various kinds of obstructions. It is not uncommon that unanticipated constraints be encountered after opening up of the road pavement and top soil. Whilst UUs are obliged to take necessary measures against malpractices, there are circumstances that pragmatic measures have to be considered to cope with existing situations. Two situations warranting the consideration of special measures are depicted in paragraphs 11 and 12 below.

11. Due to historical reason, utility services installed before promulgation of HyD TC 3/90 may be at a depth shallower than the current requirements. For the connection between an existing shallow depth service and a new service, a transition length deviated from the current minimum depth requirements is inevitable. When such a transition length does not exceed 4m measured on plan, it should be allowed provided adequate protection to the service within the transition zone is installed.

12. Shallow depth services may be exposed during an emergency repairs. To avoid prolonged interruption of the services to the public, the permittee of the EXP should be allowed to carry out the emergency repairs for the existing shallow depth services provided that adequate protection to the shallow depth services should be installed. The permittee shall rectify the shallow depth services subsequently as appropriate.

13. It is noticed that some existing spare ducts are not complying with the minimum depth requirements. New service should not be allowed to be laid inside these spare ducts. As a good practice, the UUs concerned should cut/remove/grout their exposed spare ducts not complying with the minimum depth requirements.

Way Forward

14. Subsequent to members' endorsement on this Paper, cessation on notifying UUs of suspected depth NC observed during Audit Inspections will be effected on 1 July 2012. The requirements for photograph submission will be further deliberated in the JUPG Subgroup and the aligned proposal will be submitted to the next UTLC meeting.

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Research and Development Division, Highways Department

Qualifying notes to para. 9b, 11, 12 and 14:

1. After deliberating the requirements for photo submission in UTLC and JUPG meetings in August 2012, the proposal on the format of submission and details to be included in the photos to show the services installed at sufficient depth are finalized as specified in **Appendix A1**. It is agreed that the requirement of photo submission for processing CN will be subject to a trial to commence on 22 October 2012 for a period of 6 months and follow by a review. (Para. 9b and 14 refer.)
2. For the connection of a new service to an existing service appears at shallow depth, it is understood that a transition length deviated from the current minimum depth requirements is inevitable. Construction of such a transition section is thus allowed and will not be considered as a non-compliance if the length of the transition is less than 4m measured on plan, provided adequate protection is installed for the service within the transition zone. The same principle also applies to emergency repairs. Permission for laying such transition sections shall not prejudice the obligation and/or authority of any parties on rectifying the non-compliance on minimum depth requirements of any existing utilities. (Para. 11 and 12 refer.)

Strengthening Measure to Control Non-compliance (NC) with Minimum Depth Requirements - Requirements of Photograph Submission for Processing Completion Notice (CN)

The criteria of photo submission in association with processing CN were deliberated with UUs in the latest JUPG meeting held on 24 August 2012. Subsequently, the revised photo submission criteria and measurement arrangement were finalized as detailed below:

1. Site photos for laid pipes / ducts / utilities

a. Principle and suggested numbers of site photos to be taken under each CN submission:

- (i) A wide view photo to show the active work sites under the XP with nearby street furniture so that the location can be identifiable. Additional wide view photos may be needed if one cannot cover the whole site area, e.g. with a number of sites situated at different streets / round the road corner under the same XP;
- (ii) Close-up photos clearly indicating the depth to the top of services placed or top of services at drawpits / manholes / connection points.
- (iii) Underground services newly laid/repaired/renewed under the XP shall be explicitly indicated on the photos.
- (iv) Requirements of photos taken for features / locations of the services are listed in para. (b) below.
- (v) For easy reference, photos are expected to be named in separate numbers for different locations, while photos taken at the same location should add a suffix to distinguish, e.g. photos 1, 2A, 2B, 3A, 3B, 3C, ...
- (vi) To cater for easy handling and follow up by both the UUs and the Authority, a template in WORD format will be provided for pasting the photos required for CN submission. The completed file shall then be converted into PDF format and uploaded to XPMS in one electronic file with each A4 page containing 2 photos. Each photo should be presented with a photo number and the measurement reading if applicable. Total number of photos submitted should not exceed 20 and the file size should not exceed 10M.

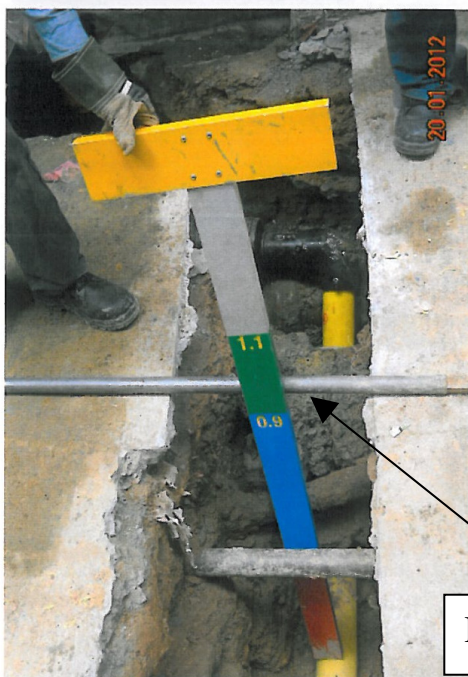
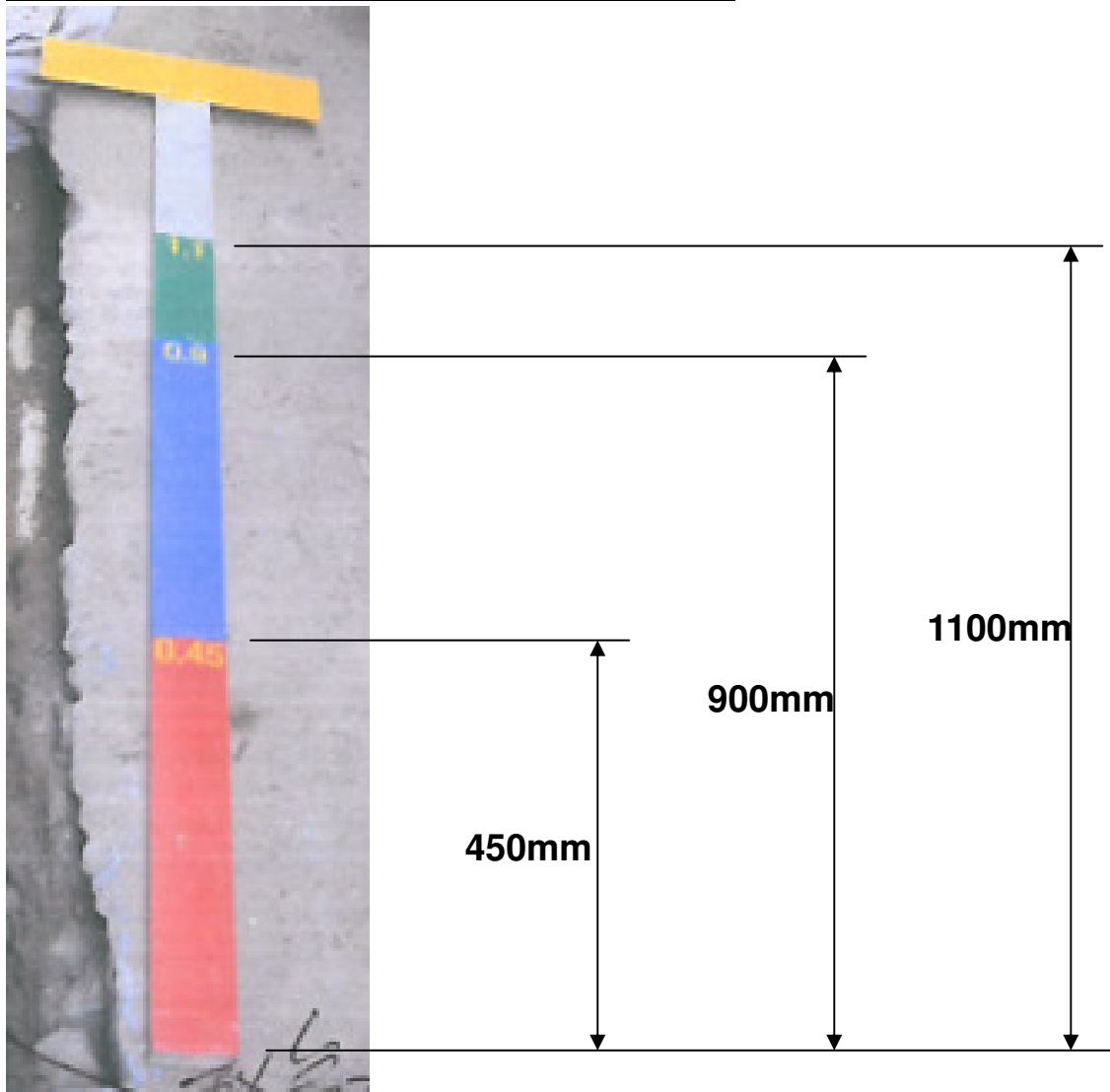
b. Locations / features of photos for depth measurements to be taken:

- (i) the laid pipe / duct / utility itself between manholes / drawpits / connection points in the following recommended interval –
 - (1) one in every 50m long alignment for non-energized services laid at non-carriageway but excluding kerb zone with minimum depth of 300mm;
 - (2) one in every 70m long alignment for services laid at non-carriageway but excluding kerb zone with minimum depth equal to or more than 450mm;
 - (3) one in every 100m long alignment for services laid at carriageway and/or kerb zone with minimum depth equal to or more than 900mm;
- (ii) at the midway of cross-road pipe / duct / utility between the manholes / drawpits /

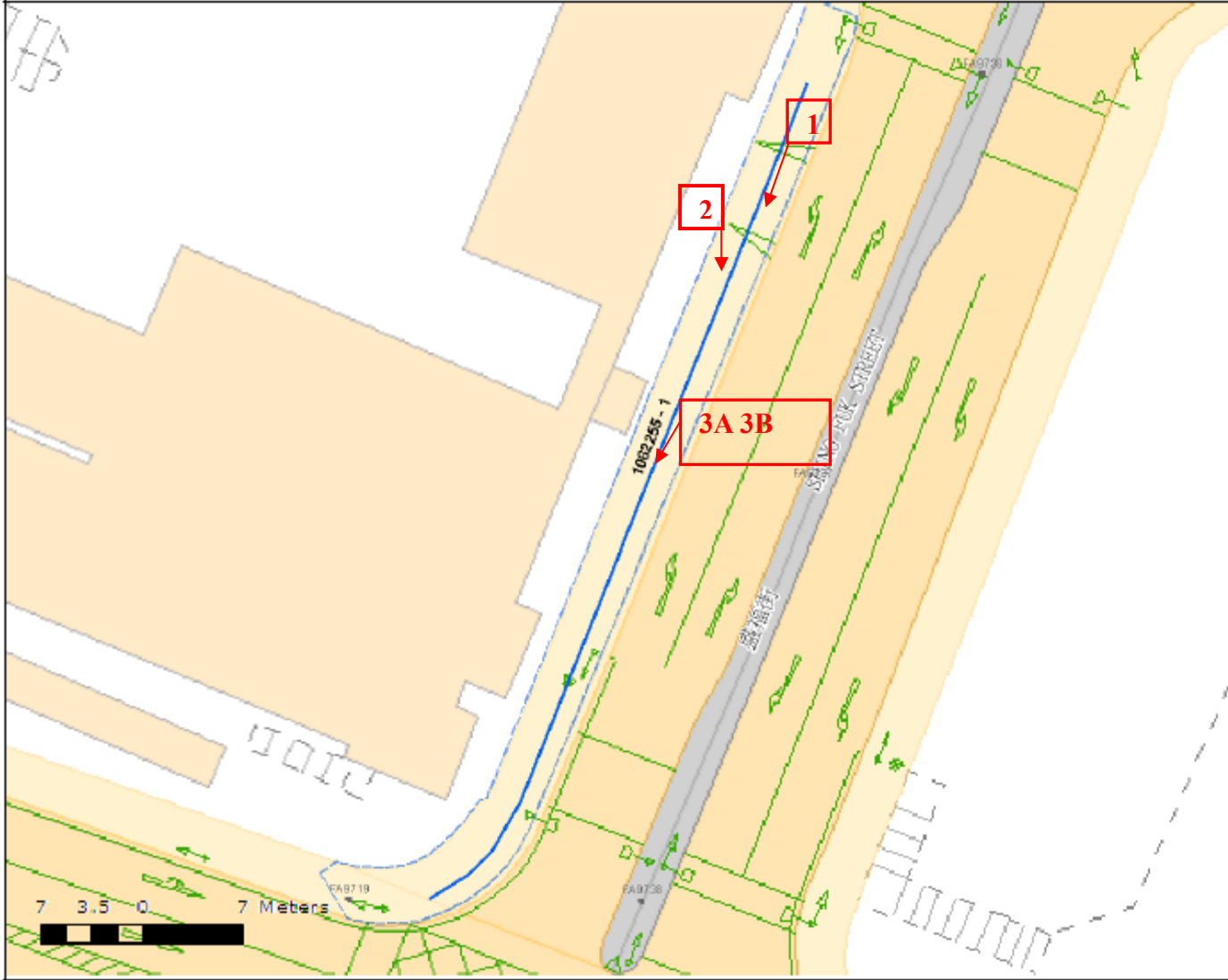
connection points at footpath.

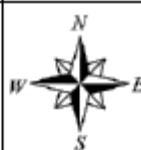

- c. Supplementary details for attention during photo taking:
- (i) All measurements of depth should be taken by reference to an indicator placed horizontally on ground surface. The scale reading showing the measured depth of the service shall be clear and legible. (Remarks: For the concern on the clearness of the depth measurement indication, HKCG's current as-built records using a simple T-square rule with colour zoning/magnified markings of different depth ranges were used as example for discussion in the JUPG sub-group meeting, and were recognized by all members as handy and easy to use. Sample photos were attached for reference.)
 - (ii) The photo records provided should have the date displayed on them.
 - (iii) In view of the limit of photos recommended in (a)(vi), i.e. less than 20 numbers, the interval of alignment for photo taking as suggested in (b)(i) could be adjusted subject to the prior agreement of HyD.
 - (iv) Upon request by HyD, UU may be required to submit additional photos by means of hard copies or CD-Roms, etc.
2. A layout plan showing the alignment of the services to be laid, the locations, directions and number of the photos taken is required and to be submitted in the same template of PDF file for CN submission. The layout plan should be extracted from an electronic maps or street maps of HK.
3. A new check box would be developed for the Permittee to declare the validity and genuine nature of the documents/information uploaded for CN submission. The Permittee must thoroughly review and click this box before CN submission can be completed.
4. Auto CN submission through XPMS would not be rejected due to the missing or non-conformance of photo submission. If the Permittee fails to provide photo submission to the satisfaction of HyD, however, the Permittee will be required to provide certified as-built records with depth of services laid clearly presented as supplement. NC on XP Condition 17 would be issued if the as-built record is not submitted to the satisfaction of HyD. The services laid under the corresponding XP will then be included in sampling for subsequent inspection by HyD.
5. For those XP works without involving laying, repair or renewal of underground services, e.g. road resurfacing works and trial pit construction, etc., submission of photographs for processing CN is not required. A check box will also be provided for the Permittee to declare that their works covered by the XP do not involve underground service works requiring submission of photograph as set out under this criterion.

Sample of Measurement Rule as presented by HKCG:



Depth > 900mm



Scale: 1:500

Plan ID / Plan Ref.:

IOW:
 NT South West

Permit Start **Permit End Date:**

Permit No.:

Sketch No.:

Utility Name/ Contact/ Tel.:

Road Name & House No.:
 SHING FUK STREET

Office:
 Highways/NT Region



Layout Plan

Permit No.: 106xxxx



Photo 1 (Wide View)



Photo 2 (Depth of Services/Installation = 540mm)



Red & Yellow Cables shown on this photo are laid under the subject XP



Existing Services of Other UUs

These red and yellow cables are laid under the subject XP

Photo 3A (Depth of Services/Installation = 640mm)



Photo 3B (Depth of Services/Installation = 640mm)