



**UtilityINFO(1Call)Ltd.**

1Call Power Service (6888 6600)

*1Call Power, Your Road Digging Partner*

## **Cable Detection Report**

Cable Detection

At

Heung Yip Road, Wong Chuk Hang

(D0)

Y11-OC-S-011-105

Site No. CP367,369, 371, 375, 377, 380, 382

(Revision 00)

December 2011

As member of The UtilityINFO Group (TUG)



**The UtilityINFO Group**

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## FOREWORD

This report presents the underground cable detection works and results at Heung Yip Road.

UtilityINFO Limited is a company member of Hong Kong Institute of Utility Specialists (HKIUS) and works in Hong Kong for various types of utility specialist works since 2002.

UtilityINFO offers the services by qualified personnel (OMHKIUS) with relevant training and at least 3 years on site experiences. In addition, all the survey results are checked and approved by professional members of HKIUS (M/FHKIUS) to ensure all the data submitted are up to the required standard to complying with HKIUS' as well as the Electricity Supply Lines (Protection) Regulation, Cap406H requirements.

This record should be read together with full set of appendices and basic knowledge of Utility Survey. And the record is not a CP written report unless on site digging supervision and active detection are conducted by same CP.

**Client:** Leighton Contractors (Asia) Ltd.

Surveyed by:

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Mr. Kam Hung Wong  
Competent Person (CP01275)

Checked and approved by:

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Mr. Victor Chow  
Engineer

### CABLE DETECTION REPORT (Form A)

Project No.: Y11-OC-S-011-105 Client Name: Leighton Contractors (Asia) Ltd.  
 Survey Date: 22-31 Dec, 2011 Location: Heung Yip Road, Wong Chuk Hang(D0)  
 Survey Time: 09:00-17:00 Name of Assistant(s): Nil

**Survey Equipment:**

<input checked="" type="checkbox"/>	Set 1	Radiodetection	RD4000	Tx: 11/T10-A-9394US Rx: 11/4KRx-156716Q0	Calibrated on 01/02/2011
<input checked="" type="checkbox"/>	Set 2	3M Dynatel	2250E	0601005R	Calibrated on 02/01/2011
<input checked="" type="checkbox"/>	Set 3	3M Dynatel	2273M	Tx: 0715007A	Calibrated on 26/04/2011
			2250E	Rx: 0606000Y	Calibrated on 26/04/2011
<input checked="" type="checkbox"/>	Set 4	3M Dynatel	2250M	0616000V	Calibrated on 06/04/2011
<input checked="" type="checkbox"/>	Set 5	3M Dynatel	2210E	0517002P	Calibrated on 21/04/2011
<input checked="" type="checkbox"/>	Set 6	3M Dynatel	2273E	9906028F	Calibrated on 29/04/2011
<input checked="" type="checkbox"/>	Set 7	3M Dynatel	2273E	993300GX	Calibrated on 28/01/2011
<input checked="" type="checkbox"/>	Set 8	3M Dynatel	2210E	0140000A	Calibrated on 17/03/2011
<input checked="" type="checkbox"/>	Set 9	3M Dynatel	2250E	025200P9	Calibrated on 16/02/2011
<input checked="" type="checkbox"/>	Set 10	Radiodetection	RDM400	Tx: 10/Pm2774-240-55 Rx: 5687877	Calibrated on 01/02/2011
<input checked="" type="checkbox"/>	Set 11	3M Dynatel	2550	1114000D	Calibrated on 29/03/2011
<input checked="" type="checkbox"/>	Set 12	3M Dynatel	2250M	0715007D	Calibrated on 22/11/2010
<input checked="" type="checkbox"/>	Set 13	3M Dynatel	2250M	0715007G	Calibrated on 11/11/2010
<input checked="" type="checkbox"/>	Set 14	Radiodetection	RD8000	Tx: 64116 Rx: 10/8KPDL-13050	Calibrated on 17/03/2011

**Survey Method of Electric Cables:**

<input checked="" type="checkbox"/> 50Hz Passive Detection	<input checked="" type="checkbox"/> Radio Frequency Passive Detection	<input checked="" type="checkbox"/> Inductive Detection	<input checked="" type="checkbox"/> Toroidal Active Detection
<input checked="" type="checkbox"/> P- Power Cable	Voltage: 275kV, 11kV	Number: 275kV L/R Handside, 11kV *1	
<input checked="" type="checkbox"/> 已提供電纜圖則 [HEC Ref. No.: <u>009581-05</u> Printed Date: <u>16 August 2011</u> ]			
此為 *無效的電纜圖則 *供電商所提供的電纜的圖則有限期為三個月，圖則須清楚顯示電纜資料			

**Highlights of Findings:**

<input checked="" type="checkbox"/>	所有電纜只用無源探測，準線及深度僅供參考(除非特定指明)，需以有源探測，確定準線和深度。
<input checked="" type="checkbox"/>	如未有挖掘試孔或進行有源探測，此書面記錄謹能定為“電纜準線記錄”。
<input checked="" type="checkbox"/>	試孔必須盡量以手動工具作橫向挖掘，並由合資格人士監督，及重複使用電纜探測器，不時把電纜的最準確位置告知工地人員，直至目標電纜外露為止，核對電纜數目及確定電壓高低。
<input checked="" type="checkbox"/>	試孔已把電纜外露，並針對每條電纜作有源探測，找出準確的準線和深度。
<input checked="" type="checkbox"/>	準線以 A、B 距離紀錄位置。
<input checked="" type="checkbox"/>	準線以 X、Y 距離紀錄位置。
<input checked="" type="checkbox"/>	有關探測結果及詳情，請參閱其他附頁。

Utility Mapping Form B	2 Page(s)
Site Sketch Form C	2 Page(s)
Drawing	3 Page(s)
Photographs	3 Page(s)
GPR Survey Form	0 Page(s)
Topographic Survey Form	0 Page(s)
Underground Cable Record Plan	5 Page(s)

I have explained the details of this report to  
 (Name) Thomson Leung (Post) Engineer  
 (Date & Time) 31 Dec, 2011

Name of CP: Wong Kam Hung

Approval No.: CP01275

Signature: \_\_\_\_\_

Date: 31 Dec, 2011

**CABLE DETECTION REPORT (Form B)**

Point ref.	Width (mm) (if known)	Estimated Depth (m)	Reference Point(P.L. NO: 47555)		Remarks			
			From X (m)	From Y (m) (Offset from edge)				
P50	-	0.70	-160.50	2.57	1. It's 11kV electric cable. 2. Updated HEC record (valid from date printed out) is needed for electrical supply lines' protection in accordance with Regulation Cap 406H.	4		
P51	-	0.85	-157.35	2.03		4		
P52	-	0.80	-153.50	1.54		4		
P53	-	0.71	-149.30	-0.20		4		
P54	-	0.71	-148.25	-0.85		4		
P55	-	0.65	-147.33	-0.90		4		
P56	-	0.70	-143.70	-0.86		4		
P57	-	0.70	-133.50	-1.57		4		
P58	-	0.85	-125.00	-1.70		4		
P59	-	0.70	-116.00	-1.64		4		
P60	-	0.65	-108.00	-2.00		4		
P61	-	0.70	-100.00	-2.41		4		
P62	-	0.70	90.00	-2.61		4		
P63	-	0.70	-85.50	-2.38		4		
P64	-	0.70	-79.40	-2.40		4		
P65	-	0.70	-73.00	-2.44		4		
P66	-	0.70	-66.50	-2.19		4		
P67	-	0.70	-57.90	-1.80		4		
P68	-	0.70	-55.80	0.13		4		
P69	-	0.90	-55.50	3.76		4		
P70	-	1.10	-55.08	10.17	4			
-	-	-	-	-	-	-		
P68	-	0.70	-55.08	0.13	1. It's 11kV electric cable.	4		
P68A	-	0.65	-54.00	-2.10	2. Updated HEC record (valid from date printed out) is needed for electrical supply lines' protection in accordance with Regulation Cap 406H.	4		
P68B	-	Visible	-52.60	-2.11		4		
-	-	-	-	-	-	-		
<b>Legend</b>	A - Fresh Water Mains		B - Salt Water Mains		G - Gas Mains		P - Power Cable	
	T - Telecom Cable		C - CATV Cable		L - Public Lighting		M - Area Traffic Control	
	S - Storm		F - Foul		Y - Gully		U - Unknown	

**Remarks:**

Under no circumstances should this report be regarded as a formal “**Competent Person Written Report**” unless **Active Cable Detection** was carried out. All the alignment records presented in this report are based on the result of **Passive Cable Detection** only. (Please refer Code of Practice on Working near Electricity Supply Lines)

Note	Remarks
i. 50Hz Frequency adopted for Live Cable and depth located by utilizing Receiver.	1 - No record plan provided
ii. Limit of detection is 3 meters in depth.	2 - On site, not in record plan
iii. All information provided is to the best recordable by the competent person.	3 - In record plan, not on site
iv. Accuracy need to be re-verified during excavation.	4 - Both on site & in Record Plan
v. Care must be taken while excavating.	*- The “Estimated Depth” is for reference only unless is detected by active detection mode.
vi. Use hand tools at all times for trial pits.	
vii. Unknown voltage cable shall be treated as high voltage cable and extra care must be taken.	
viii. For enquiry or further work, please call 1Call Power Service (6888 6600).	

**CABLE DETECTION REPORT (Form B)**

Point ref.	Width (mm) (if known)	Estimated Depth (m)	Reference Point(P.L. NO: 47555)		Remarks		
			From X (m)	From Y (m) (Offset from edge)			
P34, P34A	1910	1.30 1.30	-83.00 -83.00	1.02 -0.89	1. It's 275kV bundle of cables and the outermost two cables( L/R) were detected.  2. Points P34 & P34A connect to Points P18 & 18A of the 275 kV bundle of cables detected on 12~15 Dec. 2011. ( Refer to Cable Alignment Record of Site No. 347,349,351&353)  3. Points P45, P45A, P46, P46A are visible in Trial Pit T/P A.  4. Updated HEC record (valid from date printed out) is needed for electrical supply lines' protection in accordance with Regulation Cap 406H.	4	
P35, P35A	2100	1.30 1.30	-90.00 -90.00	1.30 -0.80		4	
P36,P36A	2170	1.30 1.30	-95.00 -95.00	1.41 -0.76		4	
P37, P37A	2120	1.30 1.30	-100.00 -100.00	1.38 -0.74		4	
P38, P38A	2010	1.30 1.30	-105.00 -105.00	1.48 -0.53		4	
P39, P39A	2070	1.30 1.30	-110.00 -110.00	1.53 -0.54		4	
P40, P40A	1950	1.25 1.30	-115.00 -115.00	1.50 -0.45		4	
P41, P41A	1980	1.30 1.30	-120.00 -120.00	1.70 -0.28		4	
P42, P42A	2360	1.30 1.30	-124.00 -124.00	2.10 -0.26		4	
P43, P43A	2720	1.30 1.20	-132.00 -132.00	2.58 -0.14		4	
P44, P44A	2270	1.40 1.30	-140.00 -140.00	2.90 0.63		4	
P45, P45A	2210	1.50 1.40	-147.30 -147.30	1.10 3.31		4	
P46, P46A	2130	1.40 1.40	-149.00 -149.00	3.33 1.20		4	
P47, P47A	2460	1.20 1.20	-153.00 -153.00	3.37 0.91		4	
P48, P48A	2550	0.85 0.85	-154.50 -155.70	4.00 1.45		4	
P49, P49A	1540	0.80 0.80	-159.70 -159.70	4.34 2.80		4	
<b>Legend</b>	A - Fresh Water Mains    B - Salt Water Mains    G - Gas Mains    P - Power Cable T - Telecom Cable        C - CATV Cable        L - Public Lighting    M - Area Traffic Control S - Storm                    F - Foul                Y - Gully                U - Unknown						

**Remarks:**

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Note	Remarks
i. 50Hz Frequency adopted for Live Cable and depth located by utilizing Receiver. ii. Limit of detection is 3 meters in depth. iii. All information provided is to the best recordable by the competent person. iv. Accuracy need to be re-verified during excavation. v. Care must be taken while excavating. vi. Use hand tools at all times for trial pits. vii. Unknown voltage cable shall be treated as high voltage cable and extra care must be taken. viii. For enquiry or further work, please call 1Call Power Service (6888 6600).	1 - No record plan provided 2 - On site, not in record plan 3 - In record plan, not on site 4 - Both on site & in Record Plan *- The “Estimated Depth” is for reference only unless is detected by active detection mode.

## REFERENCES

1. HKIUS, Particular Specification for Utility Mapping By Non-Destructive Methods, HKIUS-UT PS, June 2011
2. Code of Practice on Working near Electricity Supply Lines (Year 2005 edition)
3. Code of Practice on Avoiding danger from gas pipes (Year 1997 edition)
4. Cable / Pipe Locator operator manual.
5. UTI Training Manual on Advanced Utility Surveys.

## **Appendix A. Cable Alignment Record Drawing**



### Appendix B. Site Photographs

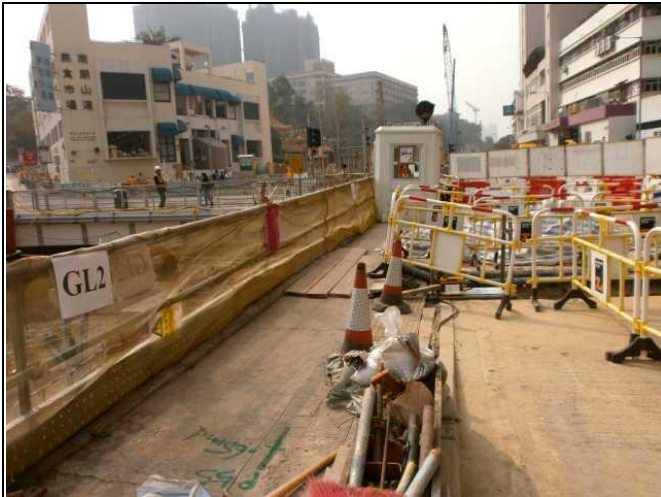


Figure 1 Location Photo



Figure 2 Location Photo



Figure 3 Location Photo



Figure 4 Location Photo



Figure 5 Reference Point

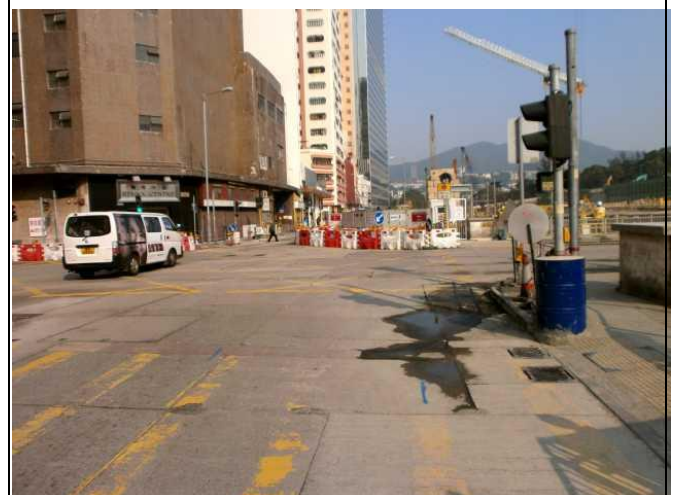


Figure 6 Location Photo





Figure 7 Trial pit T/P A

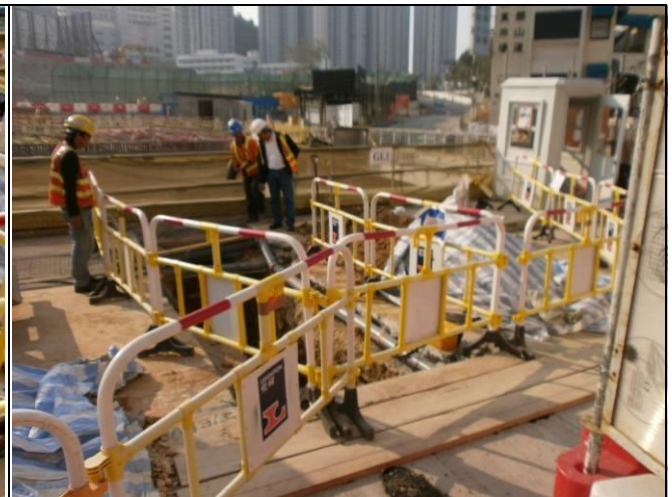


Figure 8 Trial pit T/P A



Figure 9 Trial pit T/P 36



Figure 10 Trial pit T/P 36



Figure 11 Locator setup at 275kv electric cable



Figure 12 Locator setup at 11kv electric cable





Figure 13 Site Markings

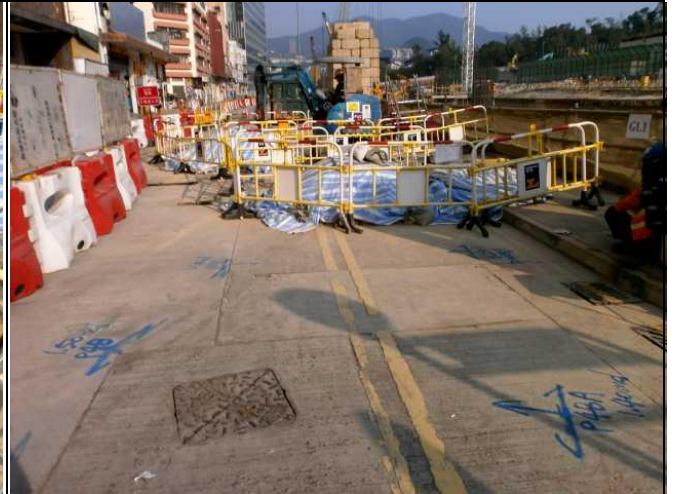


Figure 14 Site Markings



Figure 15 Locating in progress

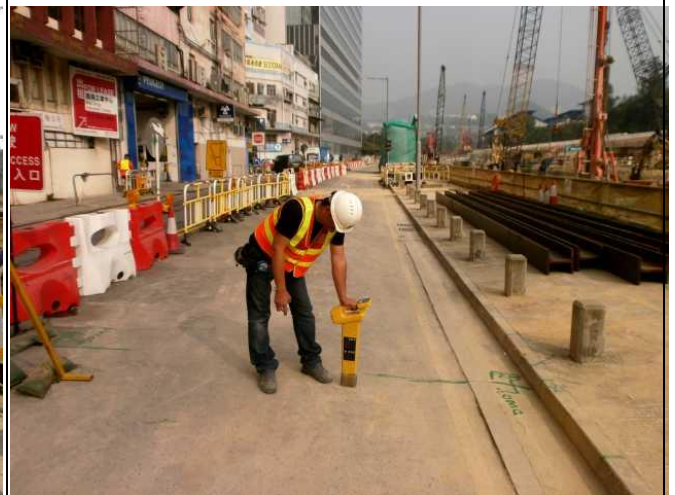


Figure 16 Locating in progress

## **Appendix C. Equipment Used**

### **C.1 CABLE / PIPE LOCATOR (3M 2250)**

An electromagnetic Cable / Pipe Locator was used to identify the pipe alignment. The equipment contains two parts – a transmitter and a receiver. The transmitter generates a low-frequency signal to the targeted object. The receiver can detect the same frequency signal with an aerial antenna. The pipe alignment and depth can be marked on site immediately for record. Calibration and maintenance check would be performed every year.

## **Appendix D. Electricity Supply Line Record Plan**

## Appendix E. Raw Data