

TECHNICAL PROPOSAL



PMU PMU KVRT 2L5

LAT/LONG: 4.620100° E 101.149900°



PPU GUNUNG RAPAT 1L5

LAT/LONG: N 4.576638° E 101.143327°

CIVIL INFRASTRUCTURE AND FIBRE OPTIC CABLING SYSTEM

PROJECT NAME : INSTALL NEW FIBRE FROM PMU KVRT 2L5 TO PPU GNRT 2P5
REGION : NORTHERN
SITE / LINK : PMU KVRT 2L5 TO PPU GUNUNG RAPAT 1L5

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**Section 1: SAMPLE BILL OF QUANTITY PMU KVRT 2L5
TO PPU GUNUNG RAPAT 1L5**

NO	PU ID NO	DESCRIPTION	UNIT OF MEASURE	WORK ODER REQUEST	NORMAL RATE (RM)	PRICE (RM)
1	F.2.48	Mobilisation Cost - Central	Each			
2	F.2.47	Site Survey	Per site			
4	C.1.1	Supply and install of 50mm GI Pipe Class C	Meter			
5	C.6.1	Processing Fee to authority/or building owner	Per site			
6	C.6.5	Utility Mapping	Meter			
7	C.6.7	Supply and install of Plastic Slab	Meter			
8	C.5.13	Mobilisation and Demobilisation of HDD Equipment	Each			
9	C.5.11	Horizontal Direct Drilling (HDD) 1 Way	Meter			
10	C.5.12	Horizontal Direct Drilling (HDD) 2 Wa	Meter			
11	C.5.1	Excavation and Backfill Work	Meter ³			
12	C.5.6	Cut and permanent reinstatement (Tarmac)	Meter ²			
13	C.2.1	Supply and install of JRC7 manhole c/w	Each			
14	F.2.10	Installation of cable in duct	Meter			
15	F.3.4	Supply and install of 40mm PVC sheathed flexible Corrugated and armoured conduit	Meter			
16	F.1.35	Supply of optical patch tray (48core)-LSH(E2000)/APC	Each			
17	F.1.40	Supply of 42U Optical Distribution Panel (Close Rack)	Each			
18	F.2.24	Optical Fibre Termination from 25 core up to 48 cores on Optical patch tray	Each			
19	F.2.28	Testing of optical fibre cable End to End for 25 to 48core	Each			
20	F.3.6	Supply and install of stainless steel fibre optic cable tagging	Each			
21	T.1	Transportation of Materials from regional of headquarter store to site using 1 Ton / 3 Ton lor	Each			
22	C.4.6	Hacking and resurfacing of wall	Each			
23	C.1.12	Supply and install minimum 40mm HDPE pipe	Meter			
24	F.1.9	Supply of joint closure (2way) with braket	Each			
25	F.2.19	Straight jointing and install of splice closure for underground install from 25 core up to 48	Each			
26	CP.1.1	EC Competent person e) 132kV	Per Day			
TOTAL						

Section 1: OSP Summary

Item	Description Activity	Qty	Unit
	Overall OSP Proposed Civil Infra. Design Distance		
1	Horizontal Directional Drilling 1 Way	7555	m
2	Horizontal Directional Drilling 2 Way		
3	Trenching in Carriageway		
4	Trenching in Grass Verge	113	m
5	Supply & Install GI 50mm	155	m
6	Supply & Install Manhole JRC7	38	Each
ISP Cable length from PMU KVRT 2L5 to PPU GUNUNG RAPAT 1L5		8000	m

3rd Parties Dependencies

Item	Parties Involve
Building Owners	PMU KVRT 2L5
Building Owners	PPU GUNUNG RAPAT 1L5

Other Highlights/Remarks

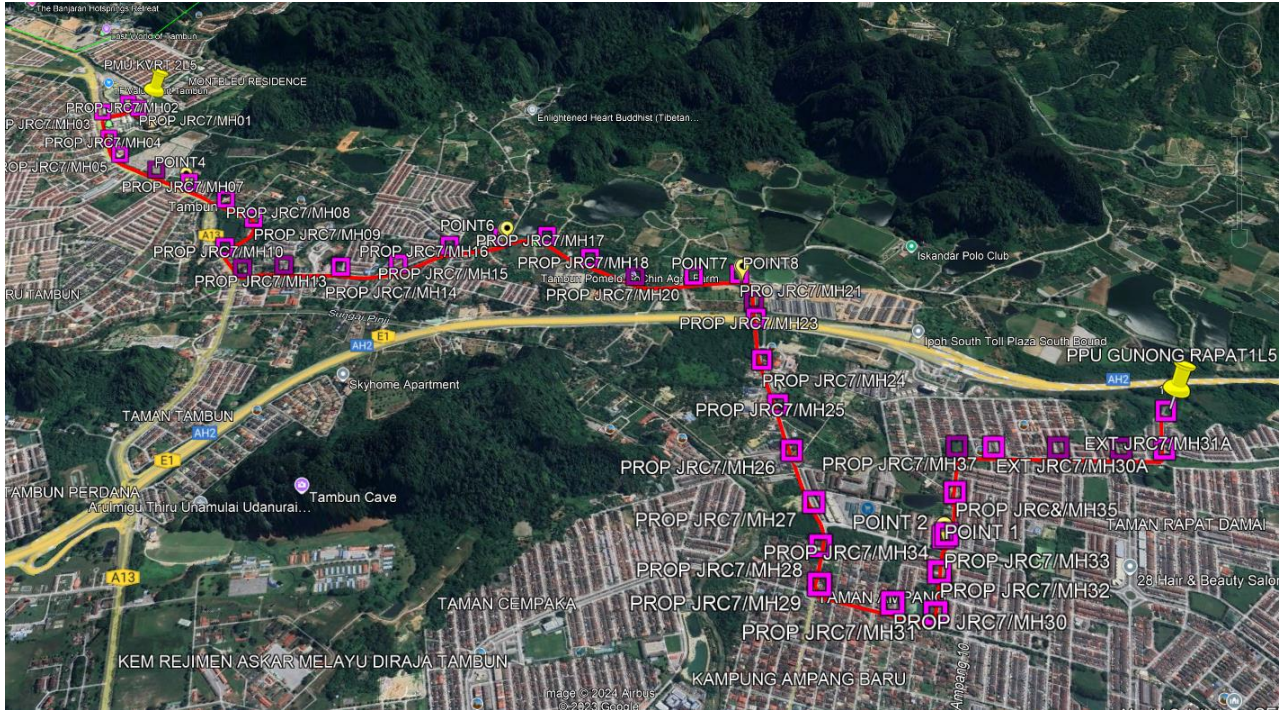
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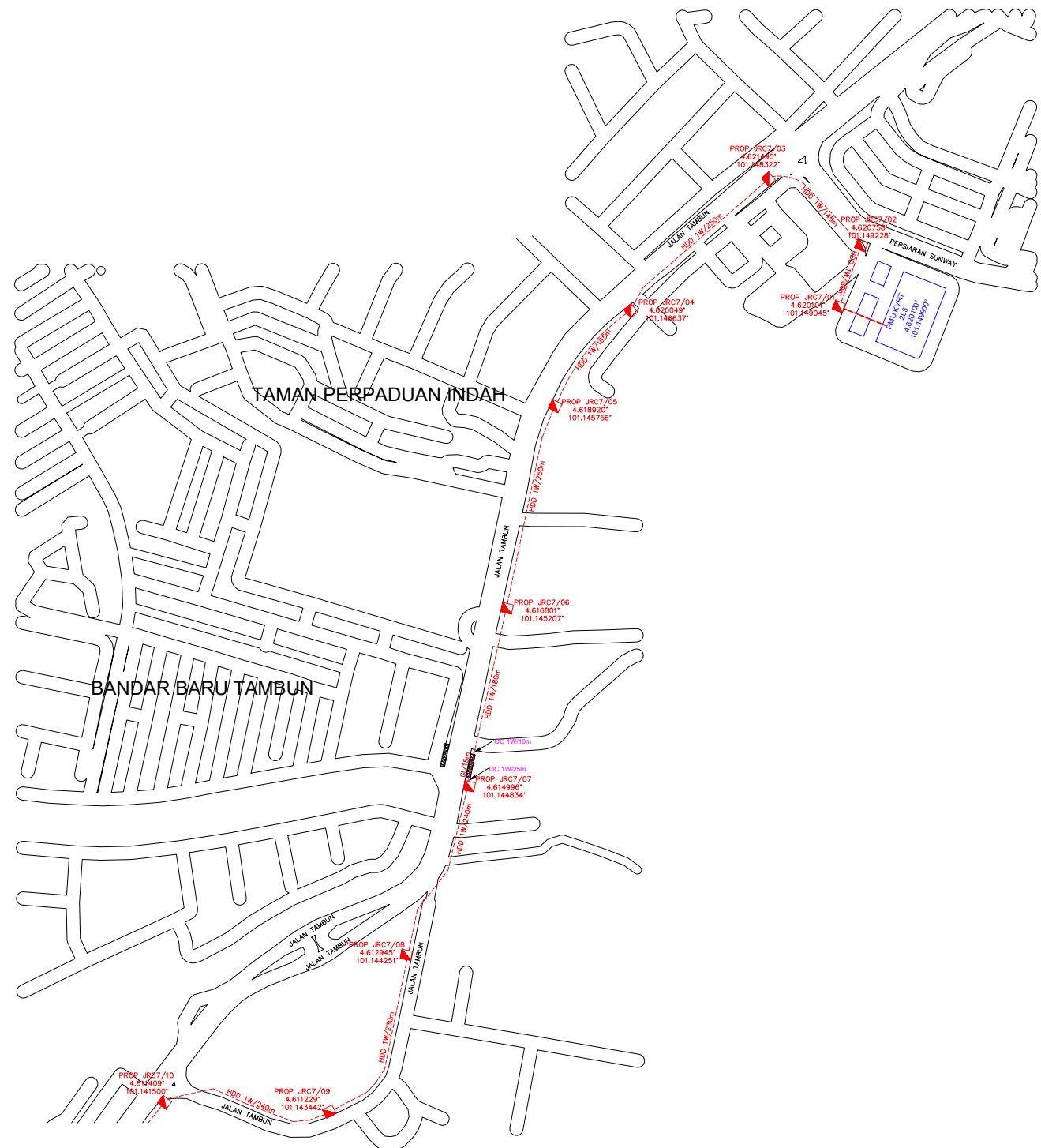
Section 2: Proposed Manhole Coordinates


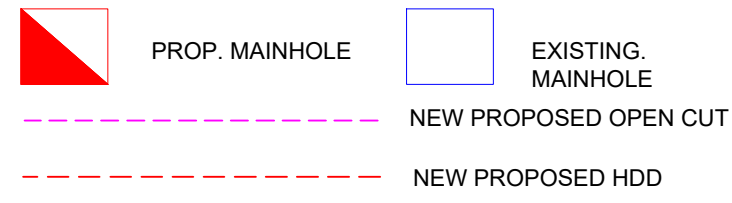
No	Manhole No.	Latitude	Longitude
1	PMU KVRT 2L5	4.620100°	101.149900°
2	PROP JRC7/01	4.620101°	101.149044°
3	PROP JRC7/02	4.620758°	101.149228°
4	PROP JRC7/03	4.621494°	101.148321°
5	PROP JRC7/04	4.620048°	101.146637°
6	PROP JRC7/05	4.618920°	101.145756°
7	PROP JRC7/06	4.616801°	101.145207°
8	PROP JRC7/07	4.614996°	101.144834°
9	PROP JRC7/08	4.612945°	101.144251°
10	PROP JRC7/09	4.611229°	101.143442°
11	PROP JRC7/10	4.611409°	101.141500°
12	PROP JRC7/11	4.610136°	101.140587°
13	PROP JRC7/12	4.608707°	101.141235°
14	PROP JRC7/13	4.606571°	101.141788°
15	PROP JRC7/14	4.604515°	101.142564°
16	PROP JRC7/15	4.603040°	101.144196°
17	PROP JRC7/16	4.601272°	101.145304°
18	PROP JRC7/17	4.599596°	101.145920°
19	PROP JRC7/18	4.597558°	101.145120°
20	PROP JRC7/19	4.595585°	101.144590°
21	PROP JRC7/20	4.593460°	101.145259°
22	PROP JRC7/21	4.591824°	101.145893°
23	PROP JRC7/22	4.590970°	101.144517°
24	PROP JRC7/23	4.590709°	101.143631°
25	PROP JRC7/24	4.590074°	101.141576°
26	PROP JRC7/25	4.589124°	101.139625°
27	PROP JRC7/26	4.588297°	101.137717°
28	PROP JRC7/27	4.587236°	101.135772°
29	PROP JRC7/28	4.586751°	101.134168°
30	PROP JRC7/29	4.586551°	101.132756°
31	PROP JRC7/30	4.584392°	101.132732°

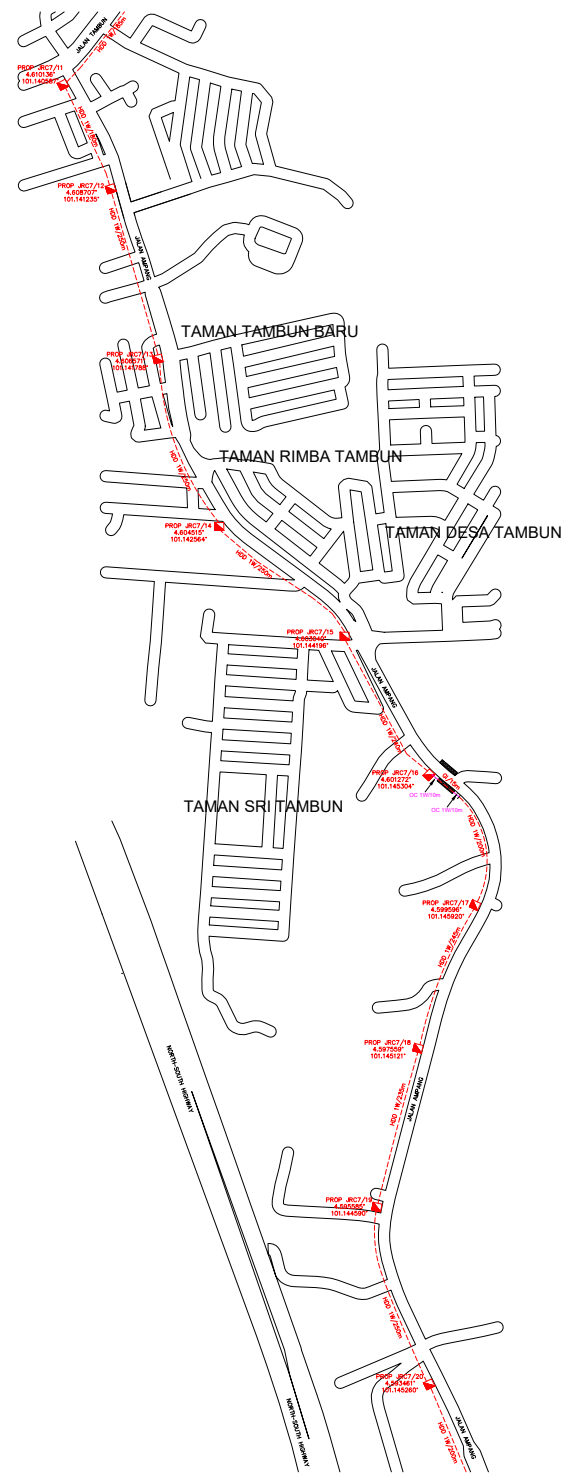
32	PROP JRC7/31	4.583162°	101.132741°
33	PROP JRC7/32	4.583198°	101.134232°
34	PROP JRC7/33	4.583204°	101.135546°
35	PROP JRC7/34	4.583121°	101.135680°
36	PROP JRC7/35	4.583022°	101.137441°
37	PROP JRC7/36	4.583131°	101.139424°
38	PROP JRC7/37	4.581974°	101.139740°
30	PROP JRC7/38	4.579950°	101.140313°
40	EXT MH29	4.577985°	101.140887°
41	EXT MH30	4.576623°	101.141281°
42	EXT MH31	4.576522°	101.143083°
43	PPU GUNUNG RAPAT 1L5	4.576451°	101.143352°






Section 3: OSP & ISP Routing Plan (Overall Routing)

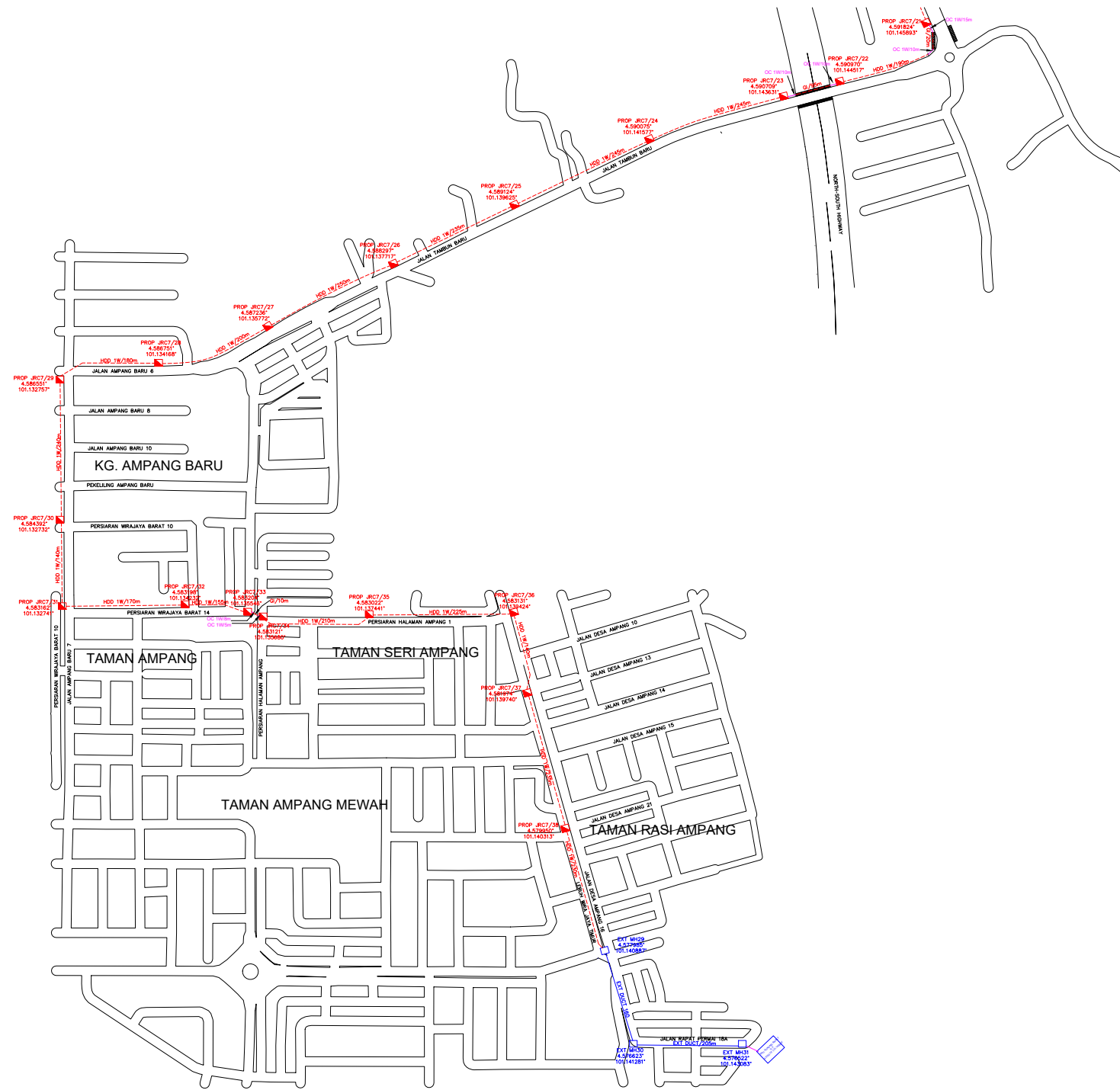



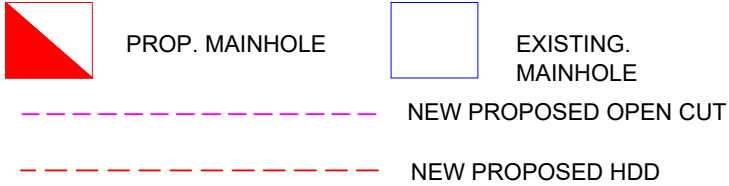


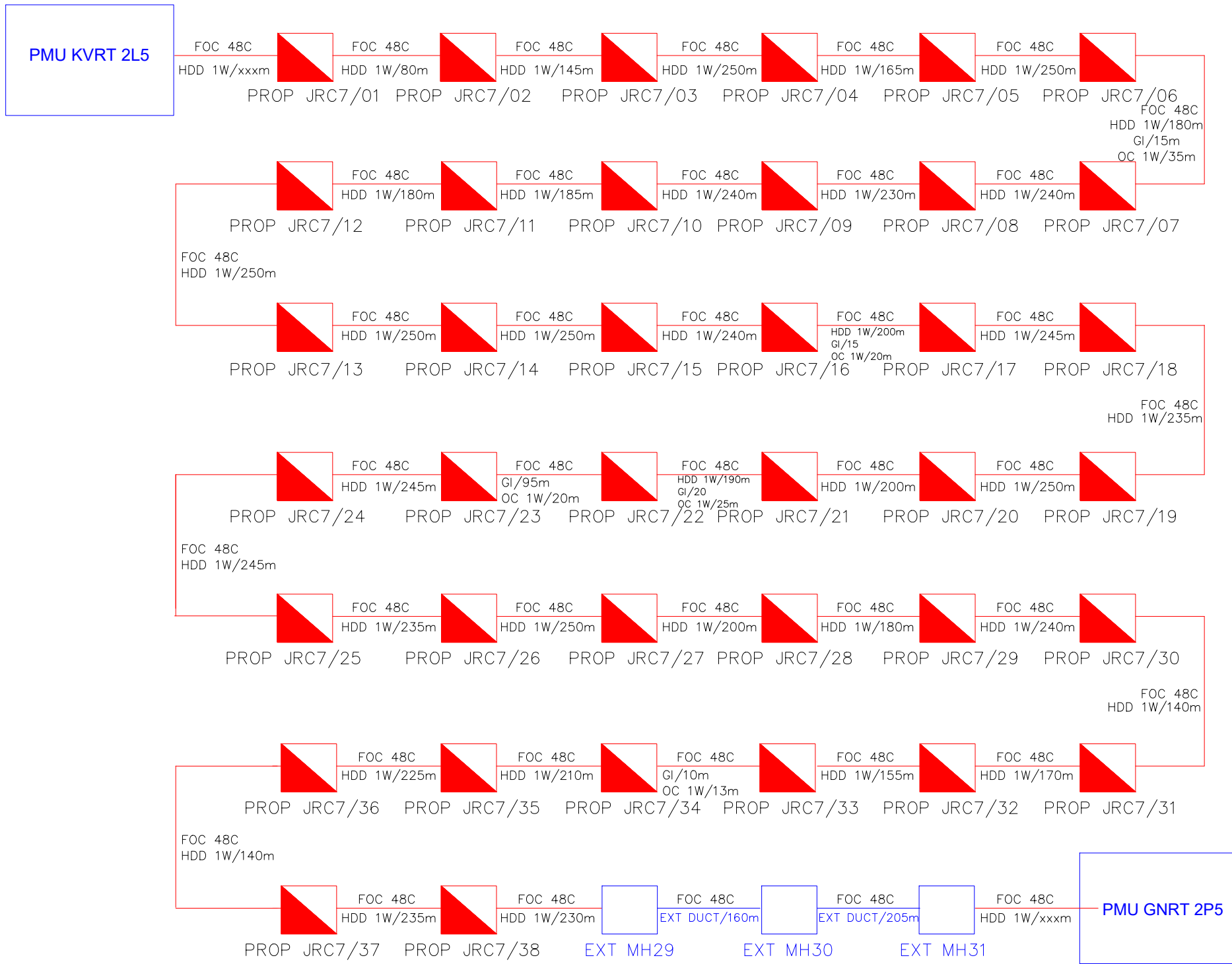
	Management Information		Project Owner : TNB-IT Sdn Bhd Level 27, Bangunan Dua Sentral No.8, Jalan Tun Sambanthan 50470, Kuala Lumpur		Prepared By (Contractor) :		Exchange Area: PMU KVRT 2L5 TO PMU GNRT 1L5		Northern NTS		
	Total Distance : 7823m		Revision No : Submission Date:		Checked By :		LOA Reference No./Contract No. :				
Total Length of Duct (KM) :		Total No. of Manhole : 38 units Total No. of Handhole :		Ammended By :		Approved By :		Drawing Title : FIBER OPTIC FROM PMU KVRT 2L5 TO PMU GNRT 1L5			
Total No. of Pole :		Management Information		Total No. of Street Cabinet (e.g. CCC, FEDB)		Drawing No :					
											


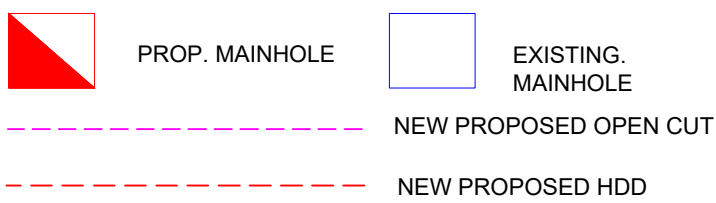


	Management Information		Project Owner : TNB-IT Sdn Bhd Level 27, Bangunan Dua Sentral No.8, Jalan Tun Sambanthan 50470, Kuala Lumpur	Prepared By (Contractor) :	Northern	Exchange Area:		NTS
	Total Distance	7823m				PMU KVRT 2L5 TO PMU GNRT 1L5		
Total Length of Duct (KM) :			Revision No : Submission Date:	Checked By :	LOA Reference No./Contract No. :			
Total Distance (GG) :		38 units			Drawing Title :			
Total No. of Manhole :			Ammended By :	Approved By :	FIBER OPTIC FROM PMU KVRT 2L5 TO PMU GNRT 1L5			
Total No. of Handhole :					Drawing No :			
Total No. of Pole :								
Management Information		Total No. of Street Cabinet (e.g. CCC, FEDB)						
 PROP. MAINHOLE	 EXISTING. MAINHOLE							
 NEW PROPOSED OPEN CUT								
 NEW PROPOSED HDD								



	Management Information		Project Owner : TNB-IT Sdn Bhd Level 27, Bangunan Dua Sentral No.8, Jalan Tun Sambanthan 50470, Kuala Lumpur	Prepared By (Contractor) :	Northern	Exchange Area: PMU KVRT 2L5 TO PMU GNRT 1L5	NTS
	Total Distance	7823m					
Total Length of Duct (KM) :		38 units	Revision No : Submission Date:	Checked By :	LOA Reference No./Contract No. :		
Total Distance (GG) : Total No. of Manhole : Total No. of Handhole :					Total No. of Pole :	Drawing Title :	
	Management Information		Ammended By :	Approved By :		FIBER OPTIC FROM PMU KVRT 2L5 TO PMU GNRT 1L5	
	Total No. of Street Cabinet (e.g. CCC, FEDB)				Drawing No :		

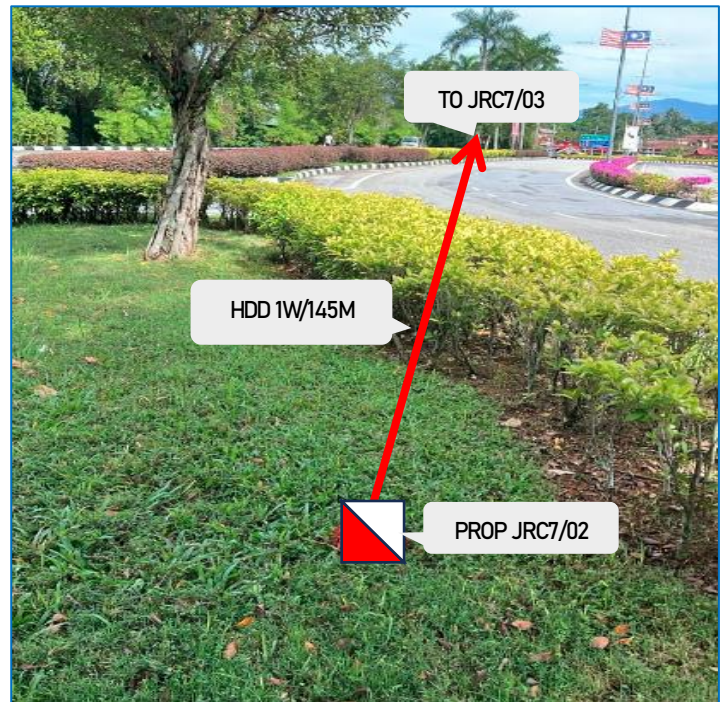


	Management Information		Project Owner : TNB-IT Sdn Bhd Level 27, Bangunan Dua Sentral No.8, Jalan Tun Sambanthan 50470, Kuala Lumpur		Prepared By (Contractor) :		Exchange Area: Northern PMU GPRD 8L5 TO PMU GNRT 2P5		NTS		
	Total Distance : 7823m		Total Length of Duct (KM) :		Revision No : Submission Date:		Checked By :		LOA Reference No./Contract No. :		
Total Distance (GG) : Total No. of Manhole : Total No. of Handhole :		38 units		Ammended By :		Approved By :		Drawing Title : FIBER OPTIC FROM PMU GPRD 8L5 TO GNRT 2P5		Drawing No :	
		Management Information		Total No. of Street Cabinet (e.g. CCC, FEDB)							

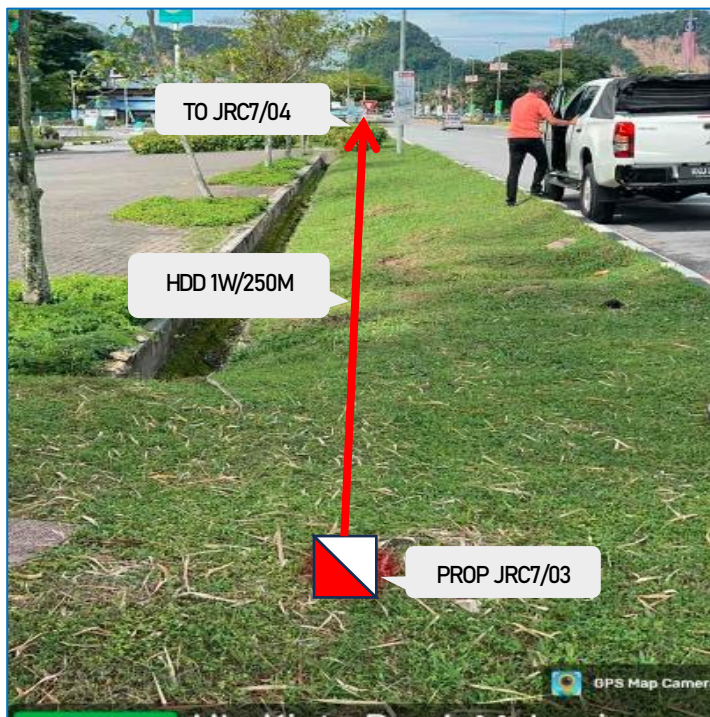
Section 5: OSP Snapshot/Photo



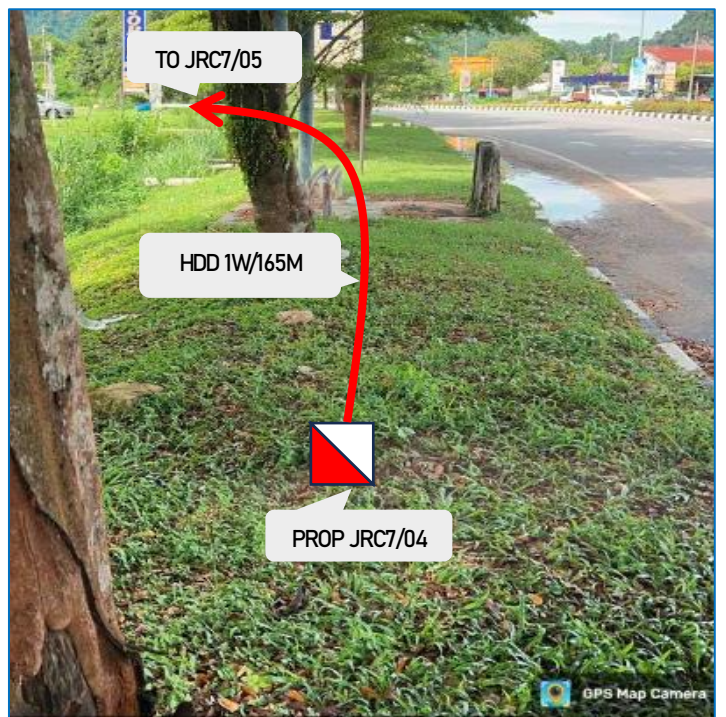
PROP JRC7/01 LOC AT UNNAMED ROAD BESIDE PMU



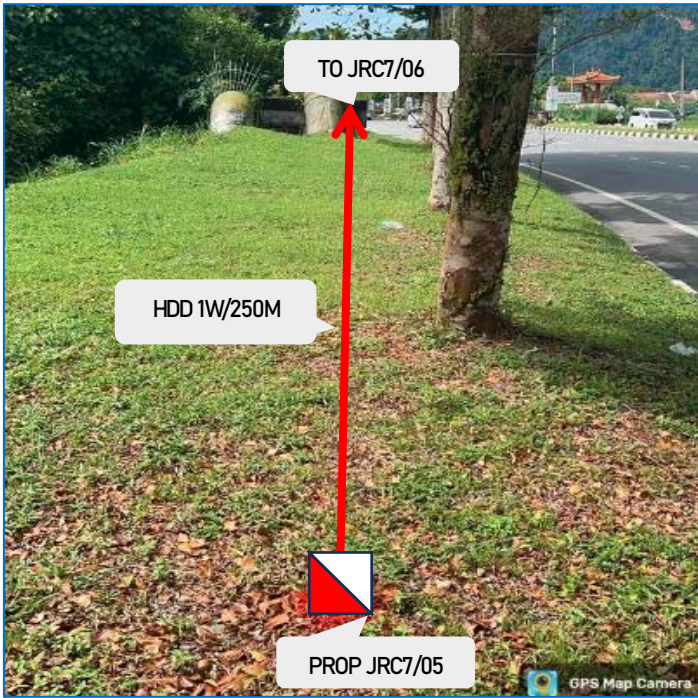
PROP JRC7/02 LOC AT PESIARAN SUNWAY (ROADSIDE)



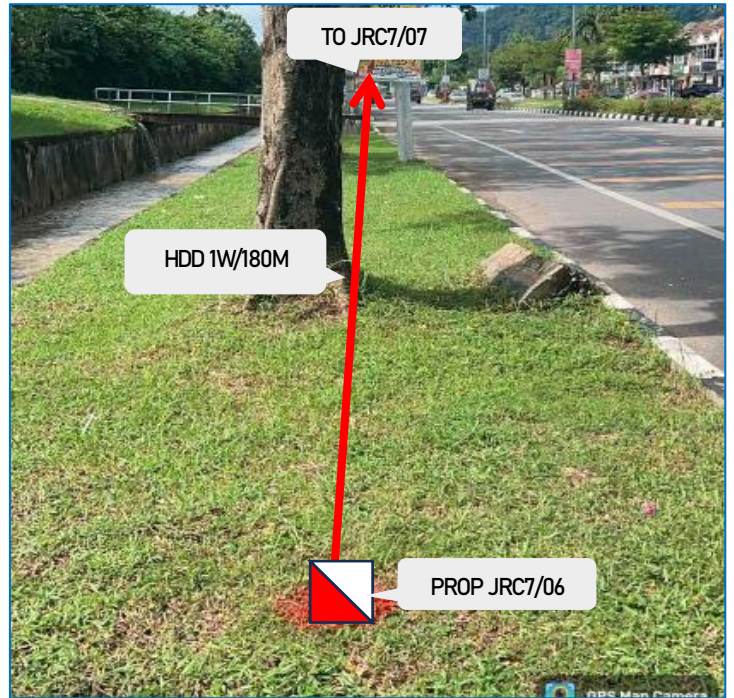
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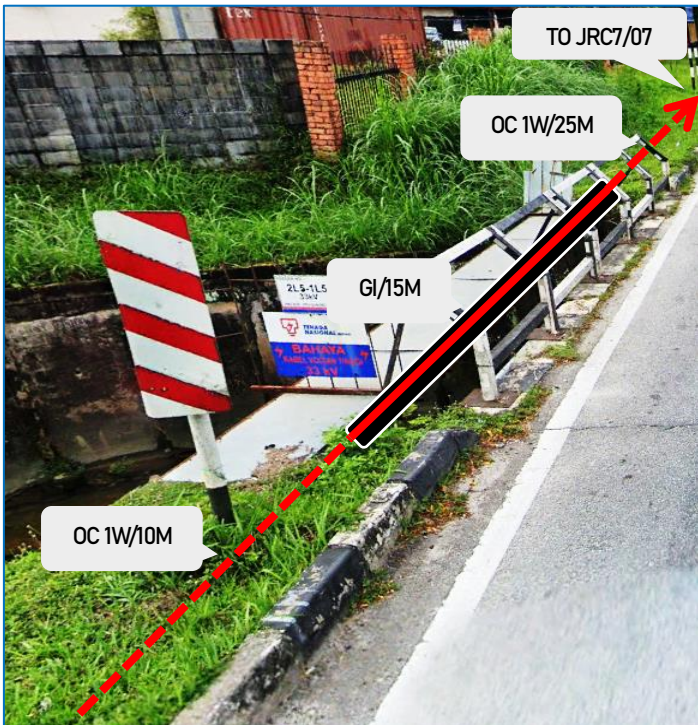
PROP JRC7/04 LOC AT JALAN TAMBUN (ROADSIDE)



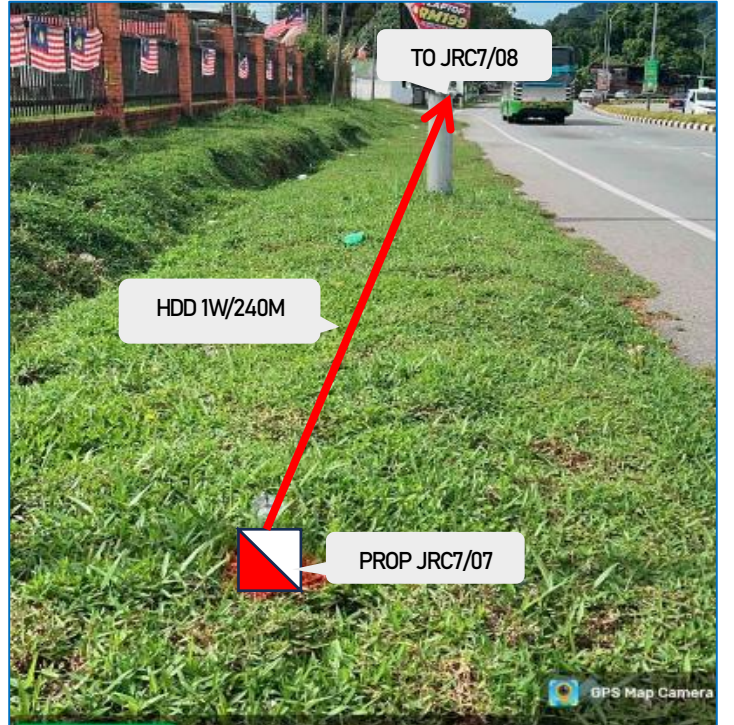
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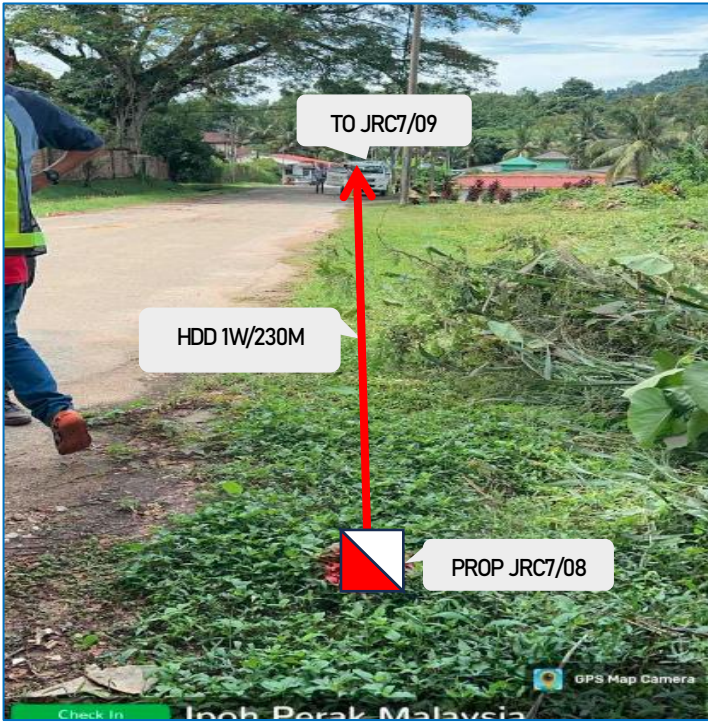
PROP JRC7/06 LOC AT JALAN TAMBUN (ROADSIDE)



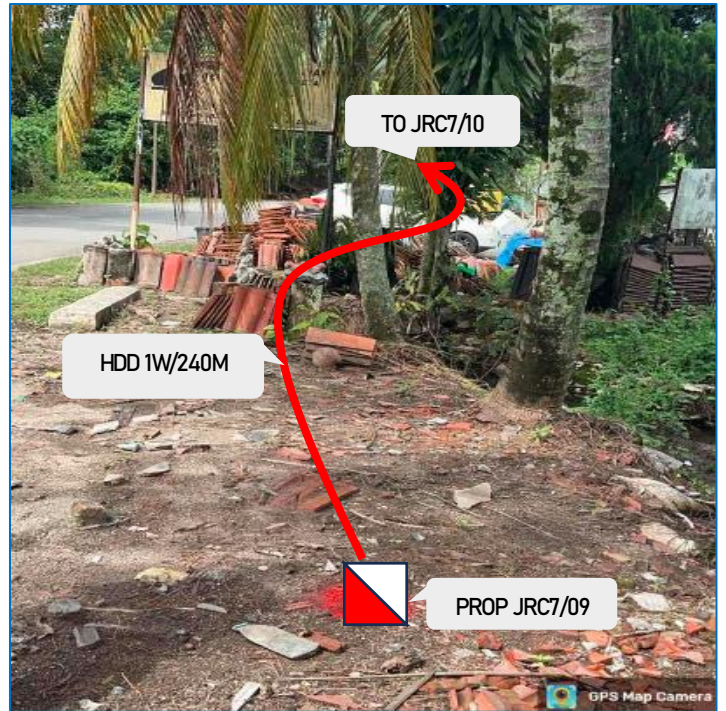
PROP CABLE ROUTING VIA OC /GI FOR RIVER CROSSING



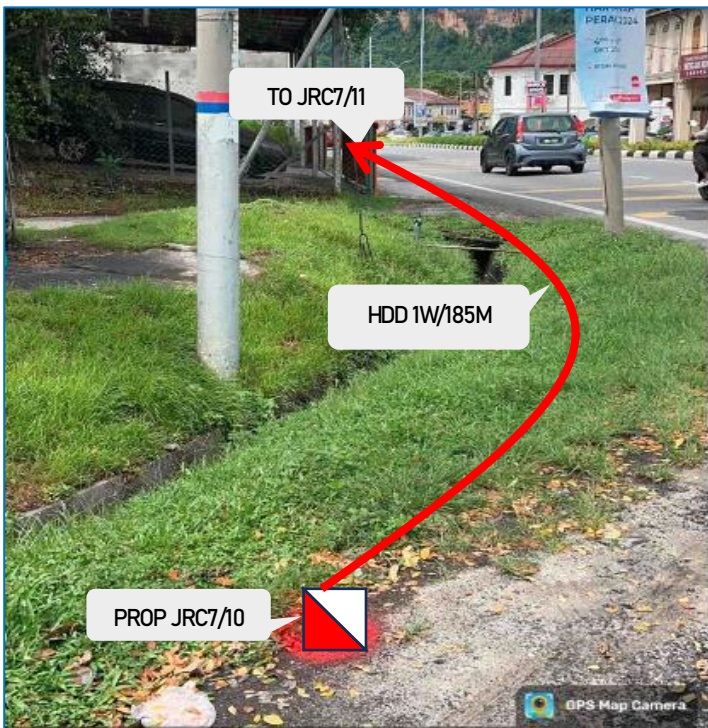
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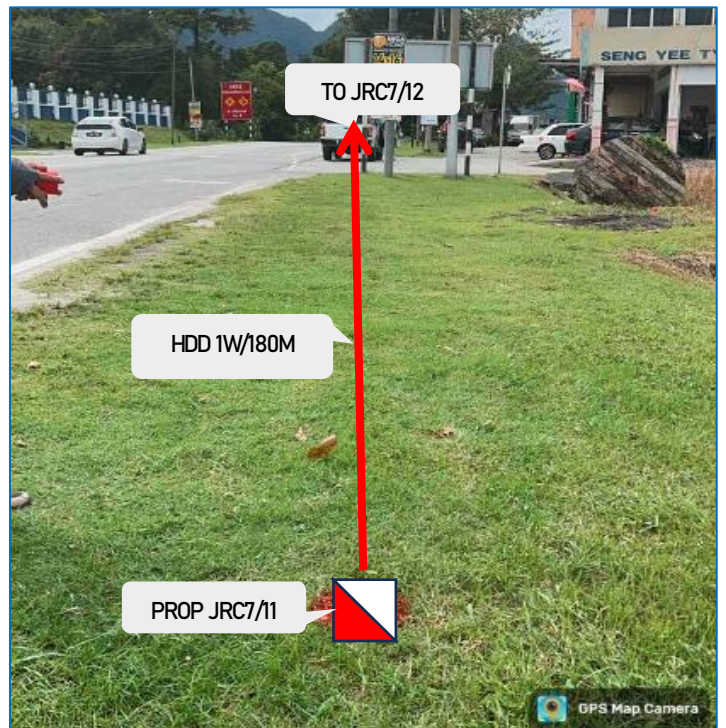
PROP JRC7/08 LOC AT JALAN TAMBUN (ROADSIDE)



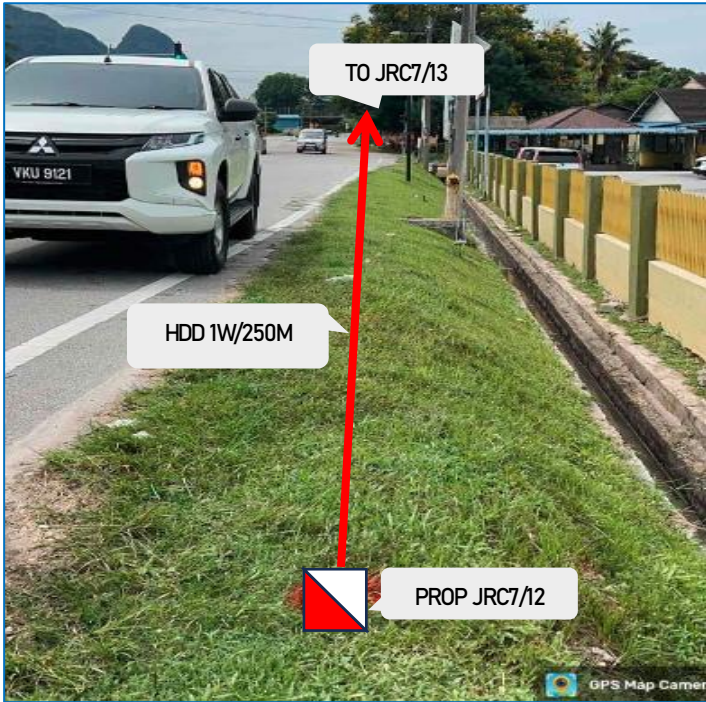
PROP JRC7/09 LOC AT JALAN TAMBUN (ROADSIDE)



PROP JRC7/10 LOC AT JALAN TAMBUN (ROADSIDE)



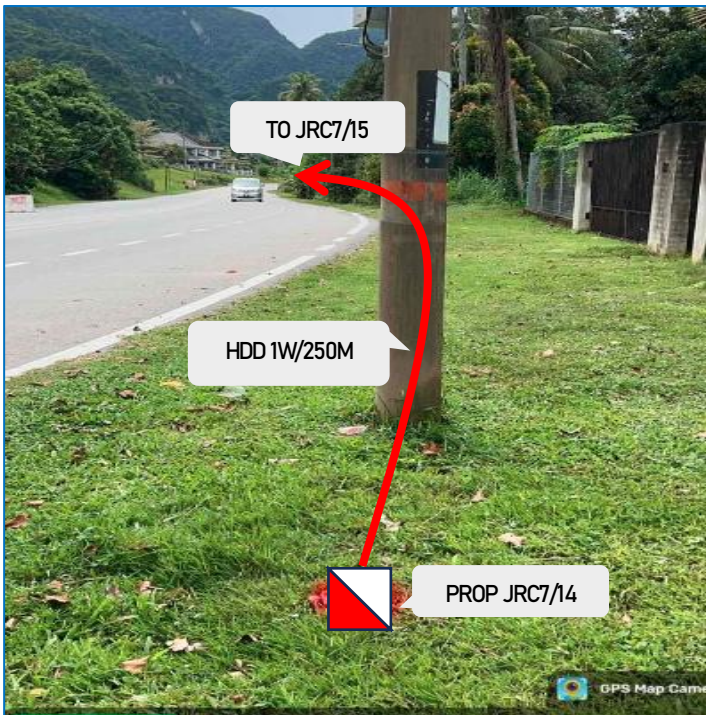
PROP JRC7/11 LOC AT JALAN TAMBUN (ROADSIDE)



PROP JRC7/12 LOC AT JALAN AMPANG (ROADSIDE)



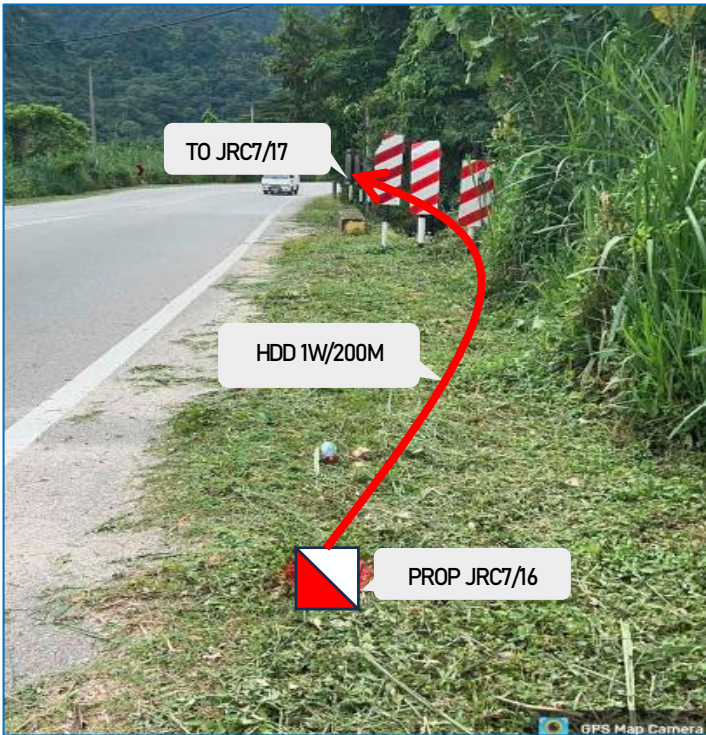
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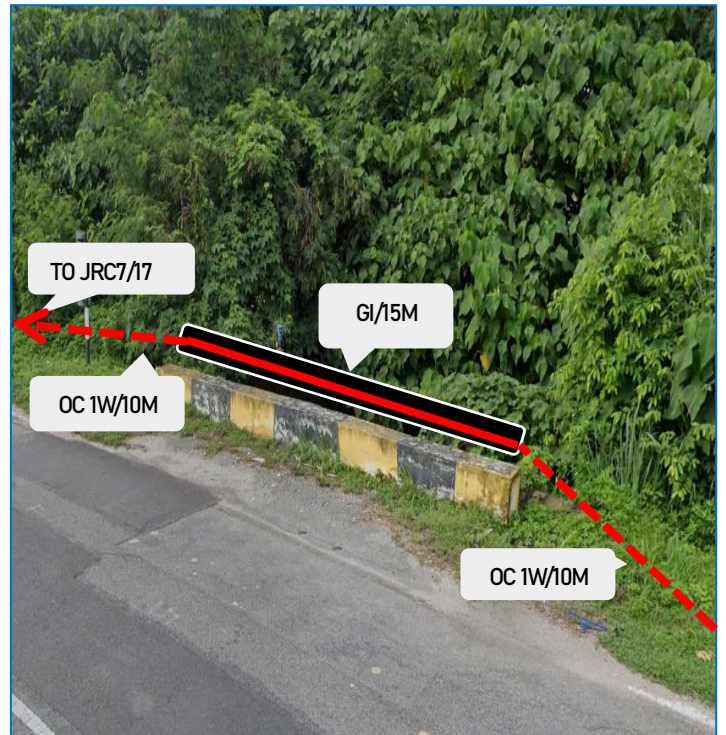
PROP JRC7/14 LOC AT JALAN AMPANG (ROADSIDE)



PROP JRC7/15 LOC AT JALAN AMPANG (ROADSIDE)



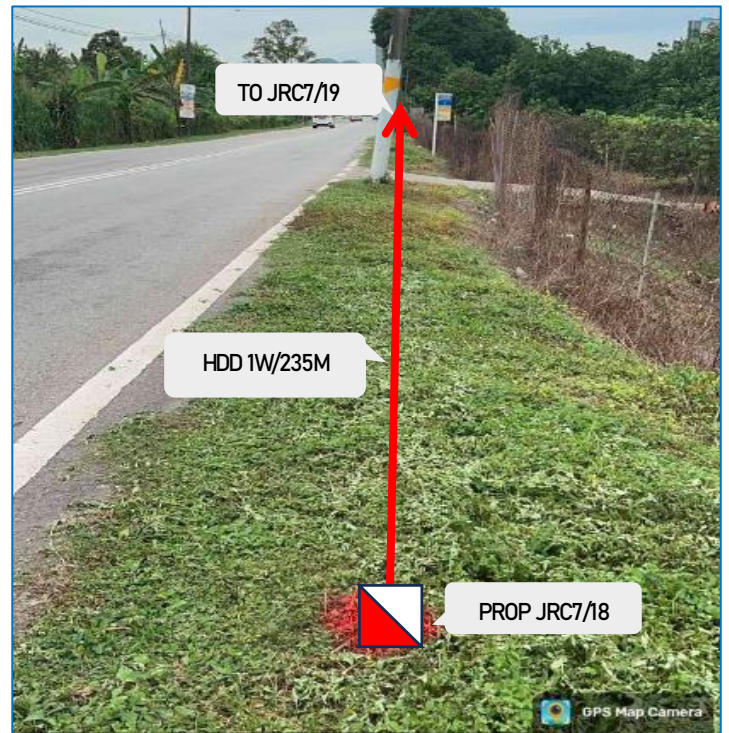
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PROP CABLE ROUTING VIA OC/GI FOR RIVER CROSSING



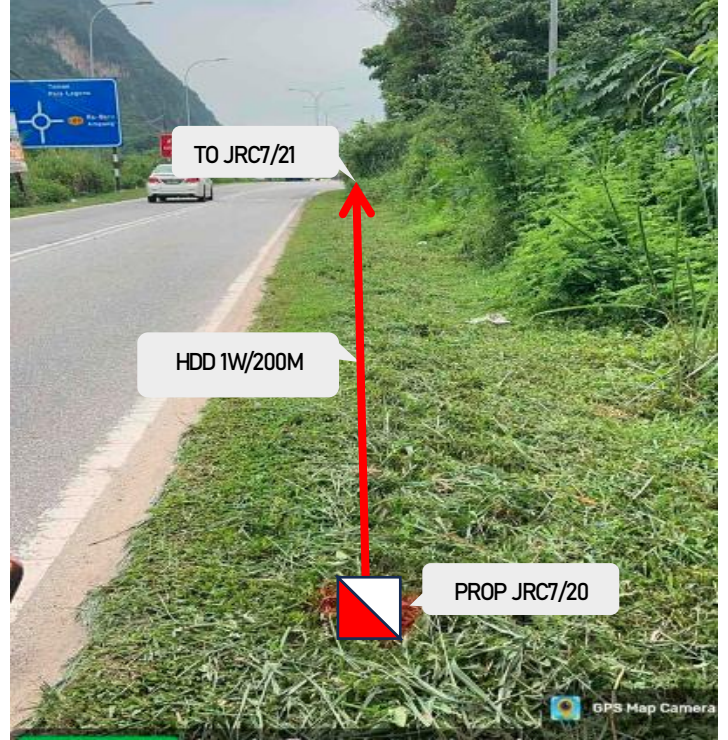
PROP JRC7/17 LOC AT JALAN AMPANG (ROADSIDE)



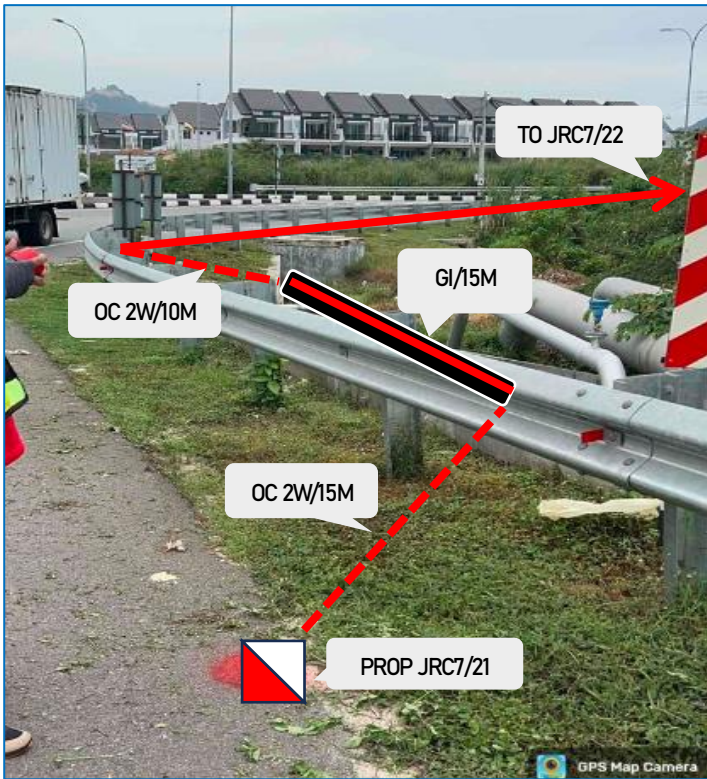
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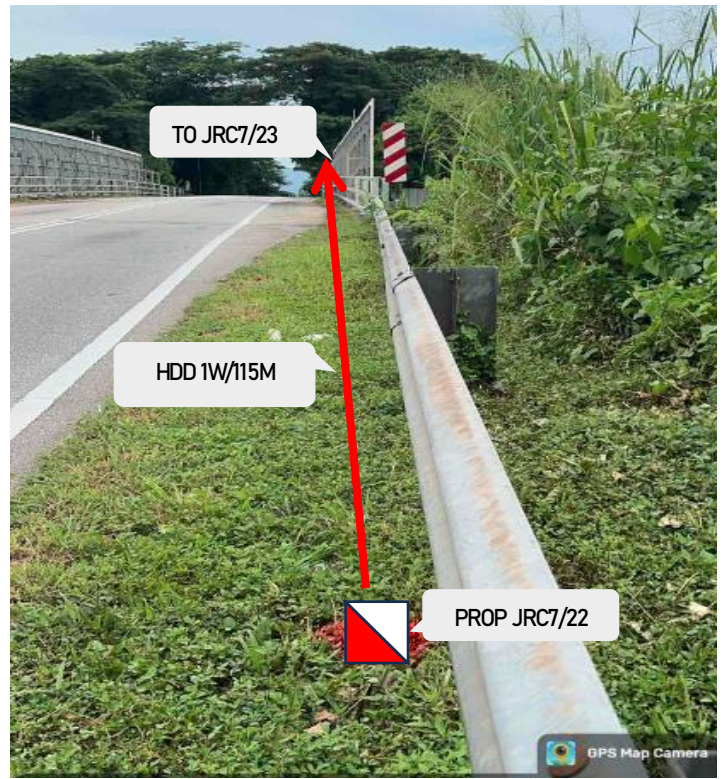
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PROP JRC7/20 LOC AT JALAN AMPANG (ROADSIDE)



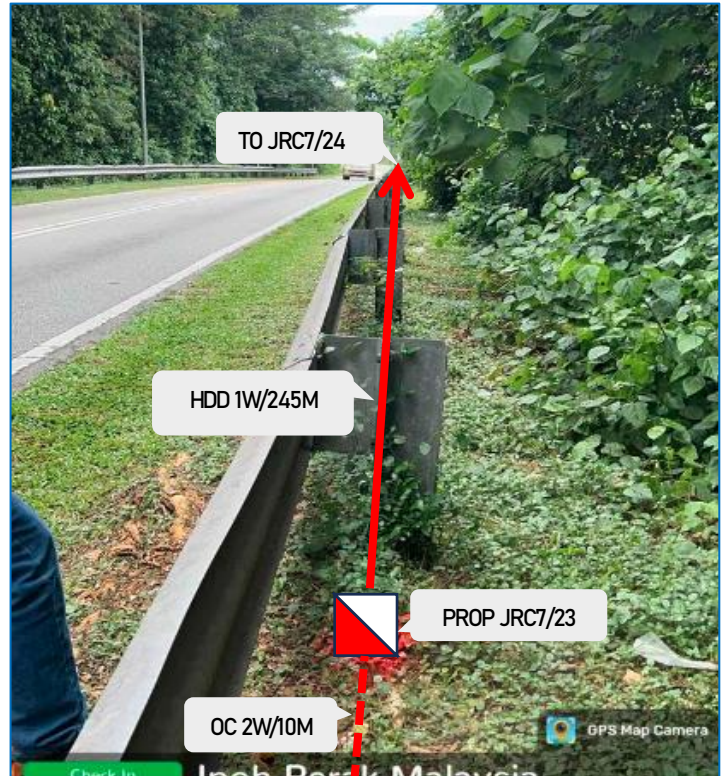
PROP JRC7/21 LOC AT JALAN AMPANG (ROADSIDE)



PROP JRC7/22 LOC AT JALAN TAMBUN BARU (ROADSIDE)



PROP CABLE ROUTING VIA OC/GI FOR BRIGDE CROSSING



PROP JRC7/23 LOC AT JALAN TAMBUN BARU (ROADSIDE)



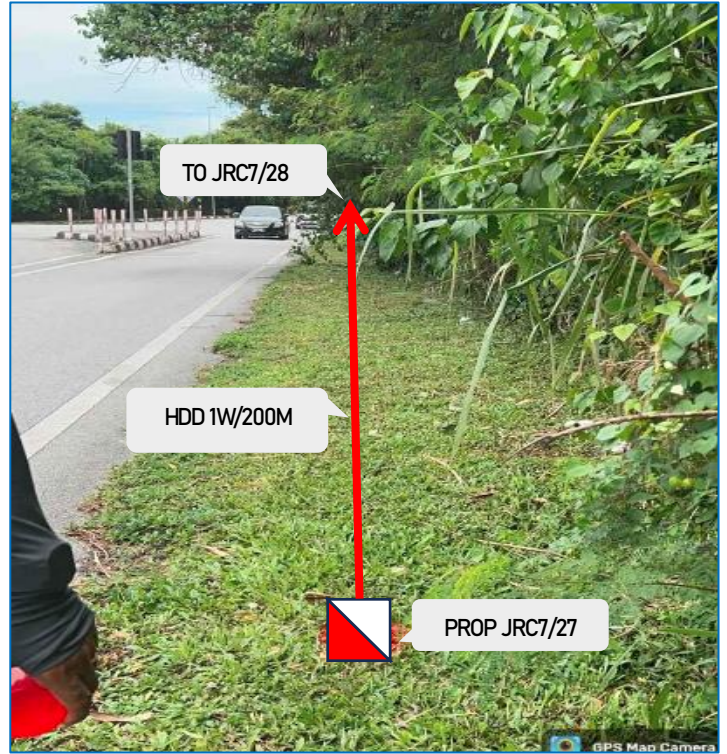
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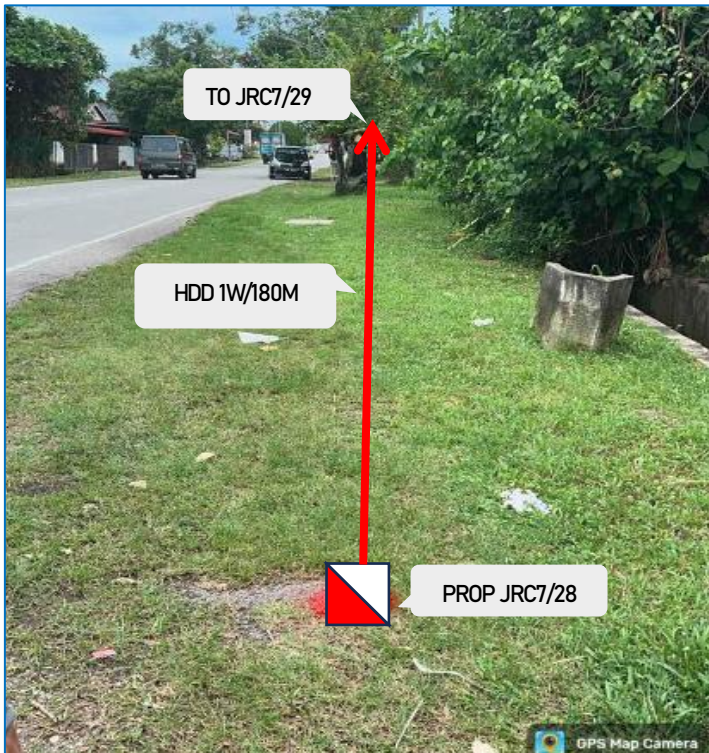
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PROP JRC7/26 LOC AT JALAN TAMBUN BARU (ROADSIDE)



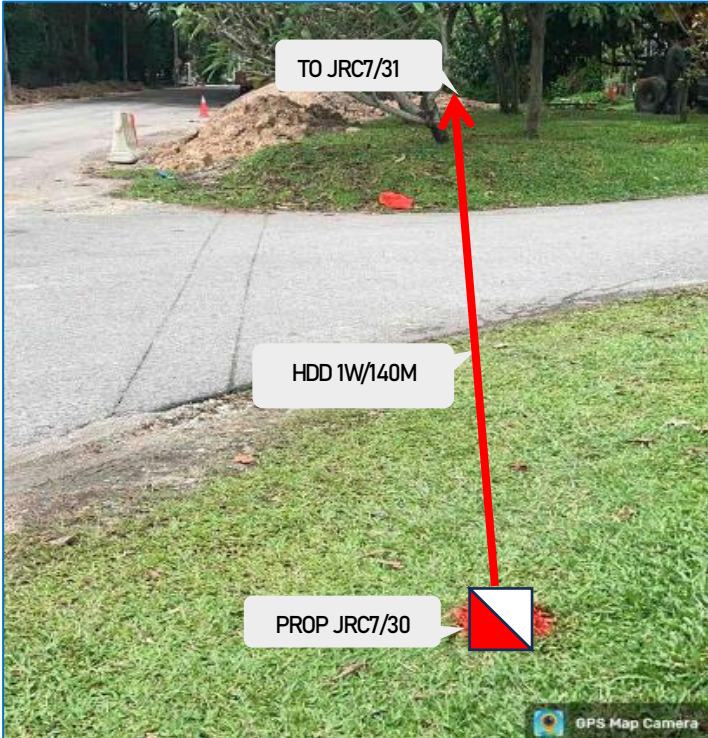
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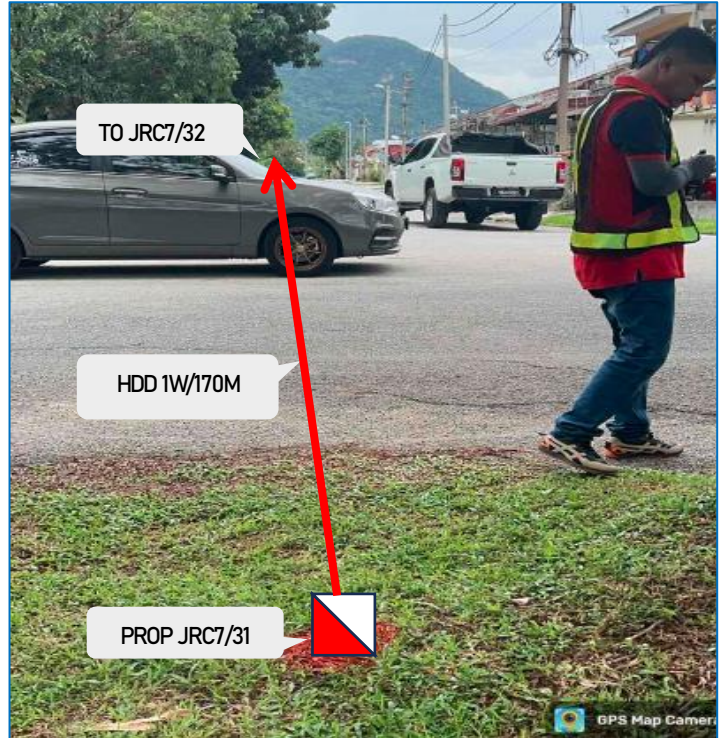
PROP JRC7/28 AT JALAN AMPANG BARU 6 (ROADSIDE)



PROP JRC7/29 AT JALAN AMPANG BARU 7 (ROADSIDE)



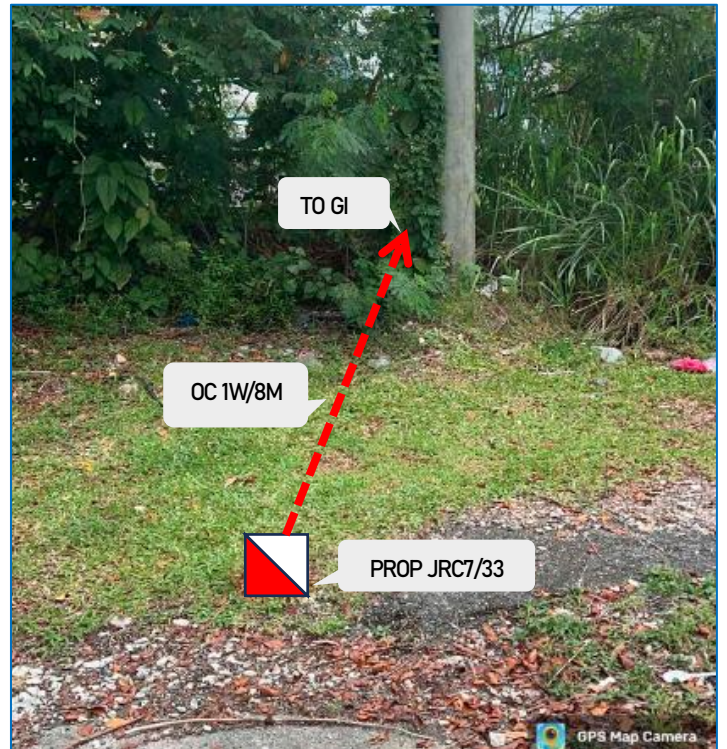
PROP JRC7/30 AT JALAN AMPANG BARU 7 (ROADSIDE)



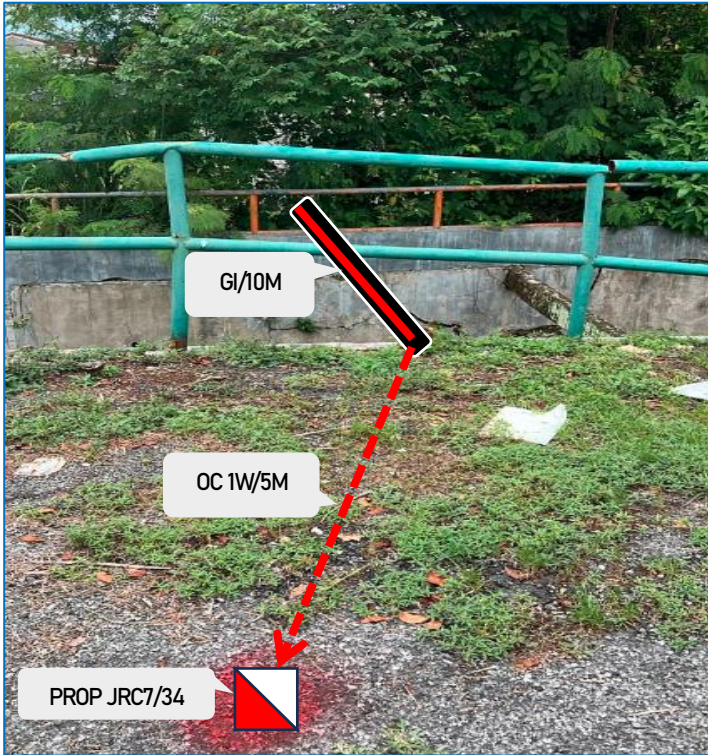
PROP JRC7/31 AT JALAN AMPANG BARU 7 (ROADSIDE)



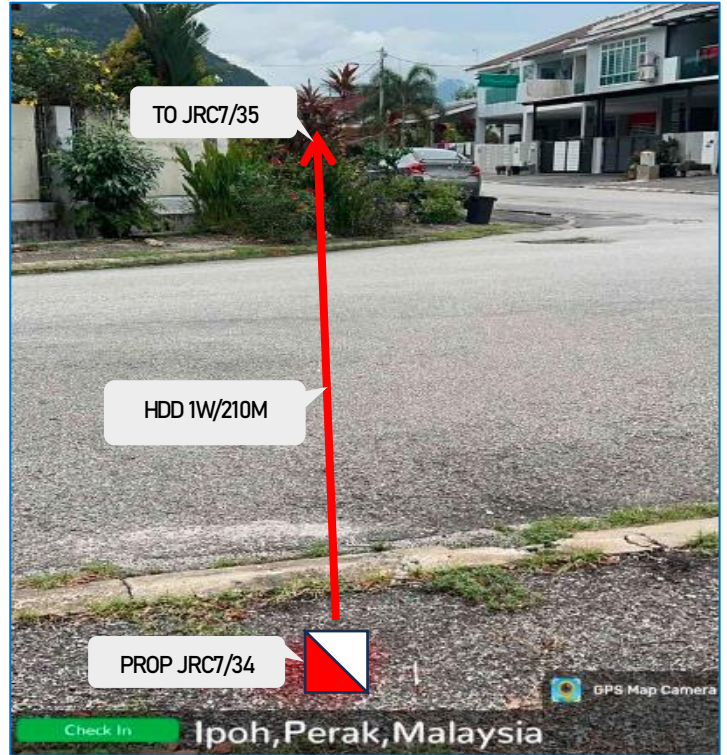
PROP JRC7/32 LOC AT PESIARAN WIRAJAYA BARAT 14(ROADSIDE)



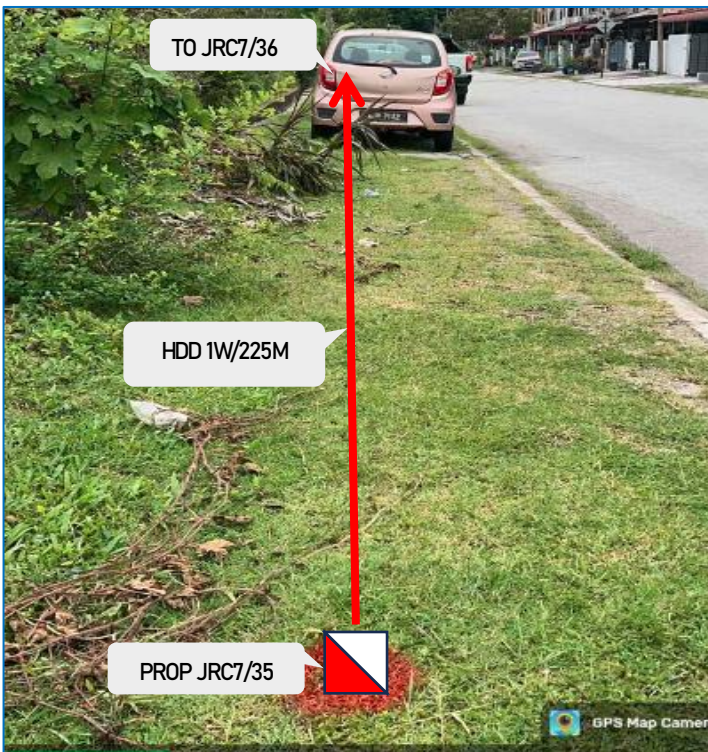
PROP JRC7/33 LOC AT PESIARAN WIRAJAYA BARAT 14(ROADSIDE)



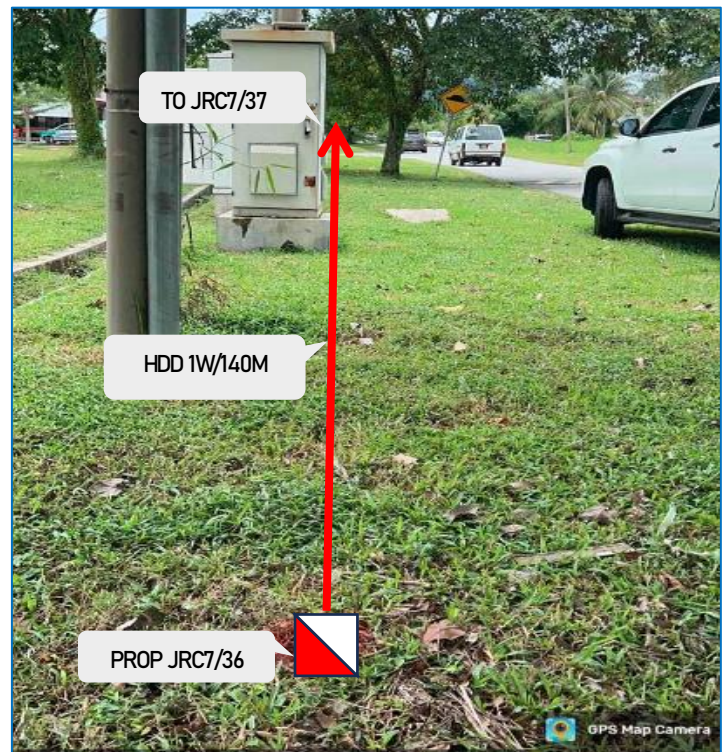
PROP JRC7/34 LOC AT PESIARAN HALAMAN AMPANG (ROADSIDE)



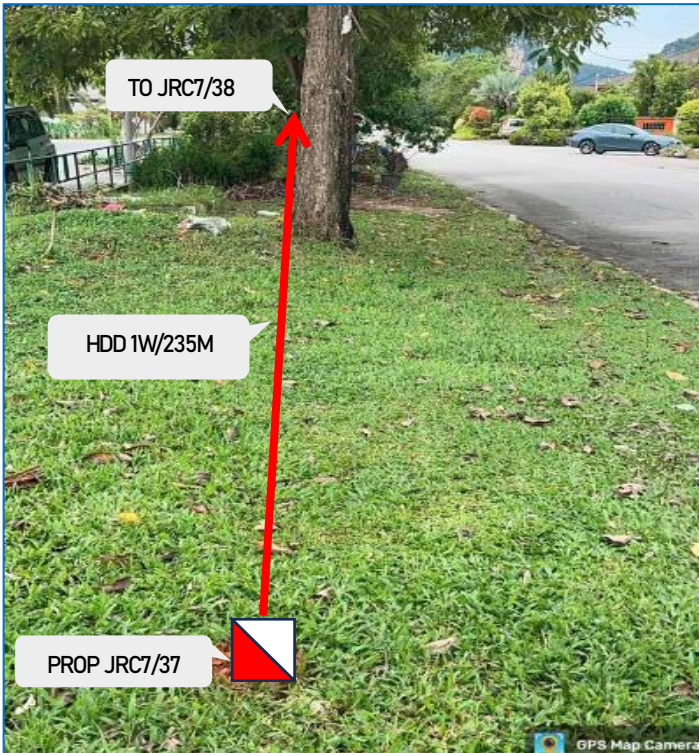
PROP JRC7/34 LOC AT PESIARAN HALAMAN AMPANG (ROADSIDE)



PROP JRC7/35 LOC AT PESIARAN HALAMAN AMPANG 1 (ROADSIDE)



PROP JRC7/36 LOC AT JALAN DESA AMPANG 16 (ROADSIDE)



PROP JRC7/37 LOC AT JALAN DESA AMPANG 16 (ROADSIDE)



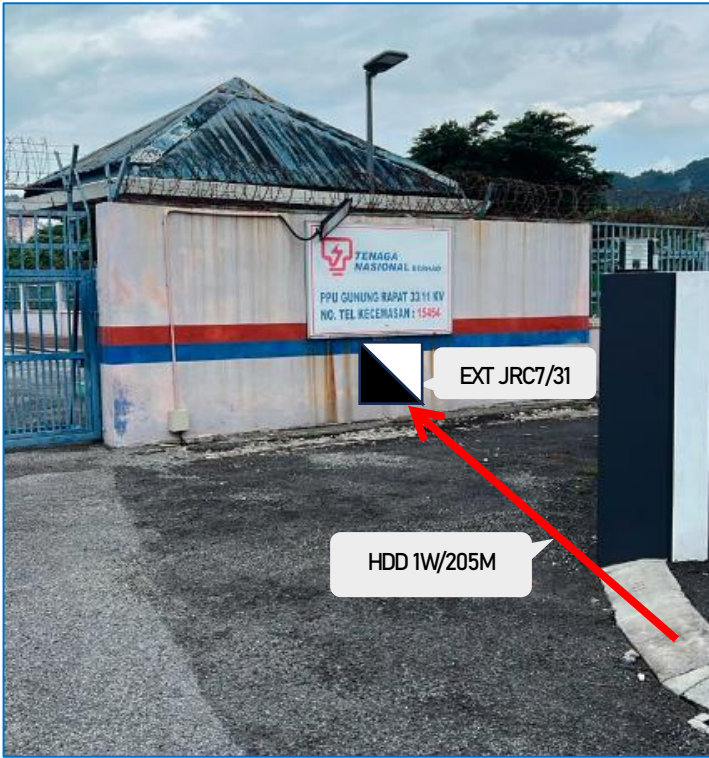
PROP JRC7/38 LOC AT JALAN DESA AMPANG 16 (ROADSIDE)



PROP CABLE ROUTING VIA EXT JRC7/29 (PMU GPRD-PPU GNRT)



PROP CABLE ROUTING VIA EXT JRC7/30 (PMU GPRD-PPU GNRT)



PROP CABLE ROUTING VIA EXT JRC7/31 (PMU GPRD-PPU GNRT)



Layout for PMU KVRT 2L5

ISP ROUTE IN PMU KVRT 2L5



Layout for PPU GUNUNG RAPAT 1L5

ISP ROUTE IN GUNUNG RAPAT 1L5

