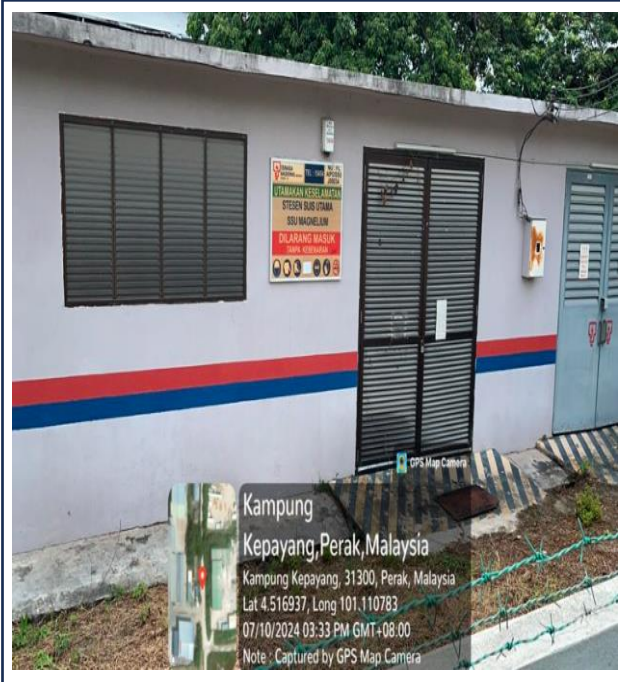
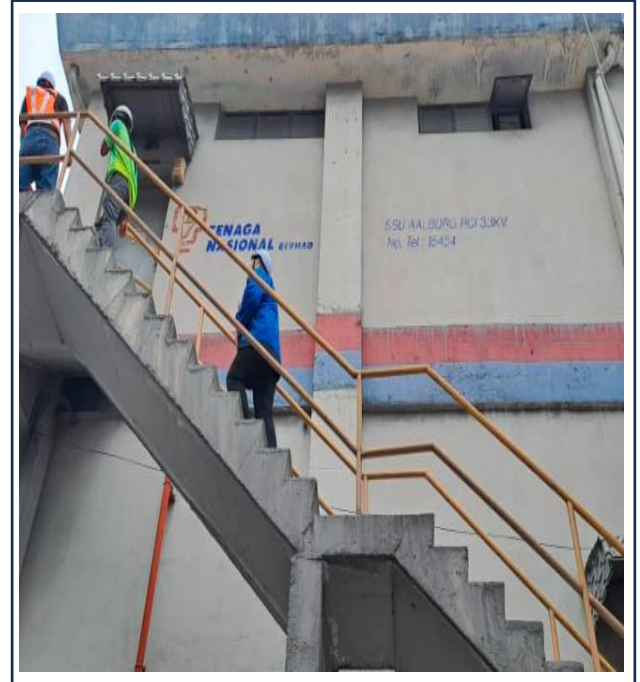


TECHNICAL PROPOSAL



SSU MAGNALIUM SIMPANG PULAI
LAT/LONG: N 4.516937° E 101.110783°



SSU ALLBORG PINJI ESTATE
LAT/LONG: N 4.524094° E 101.077383°

CIVIL INFRASTRUCTURE AND FIBRE OPTIC CABLING SYSTEM

PROJECT NAME : INSTALL NEW FIBRE FROM SSU MAGNALIUM TO SSU AALBORG
REGION : NORTHERN
SITE / LINK : SSU MAGNALIUM TO SSU ALLBORG

Table of Content

- Section 1 : Bill of Quantity and OSP Summary
- Section 2 : Proposed Manhole Coordinates
- Section 3 : OSP and ISP Routing Plan
- Section 4 : Straight Line Drawing
- Section 5 : OSP and ISP Snapshot/Photo
- Section 6 : Work Schedule

**Section 1: SAMPLE BILL OF QUANTITY SSU MAGNALIUM SIMPANG PULAI
TO SSU ALLBORG PINJI ESTATE**

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	Meter3			
12	C.5.6	Cut and permanent reinstatement (Tarmac)	Meter2			
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 staintess 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	5295	Meter
1	Horizontal Directional Drilling 1 Way	5195	Meter
2	Horizontal Directional Drilling 2 Way		
3	Trenching in Carriageway	15	Meter
4	Trenching in Grass Verge	35	Meter
5	Supply & Install GI 50mm	50	Meter
6	Supply & Install Manhole JRC7	25	Nos
ISP Cable length from SSU Magnalium Simpang Pulai to SSU Aalborg Pinji Estate			

3rd Parties Dependencies

Item	Parties Involve
Building Owners	SSU Magnalium Simpang Pulai
Building Owners	SSU Aalborg Pinji Estate

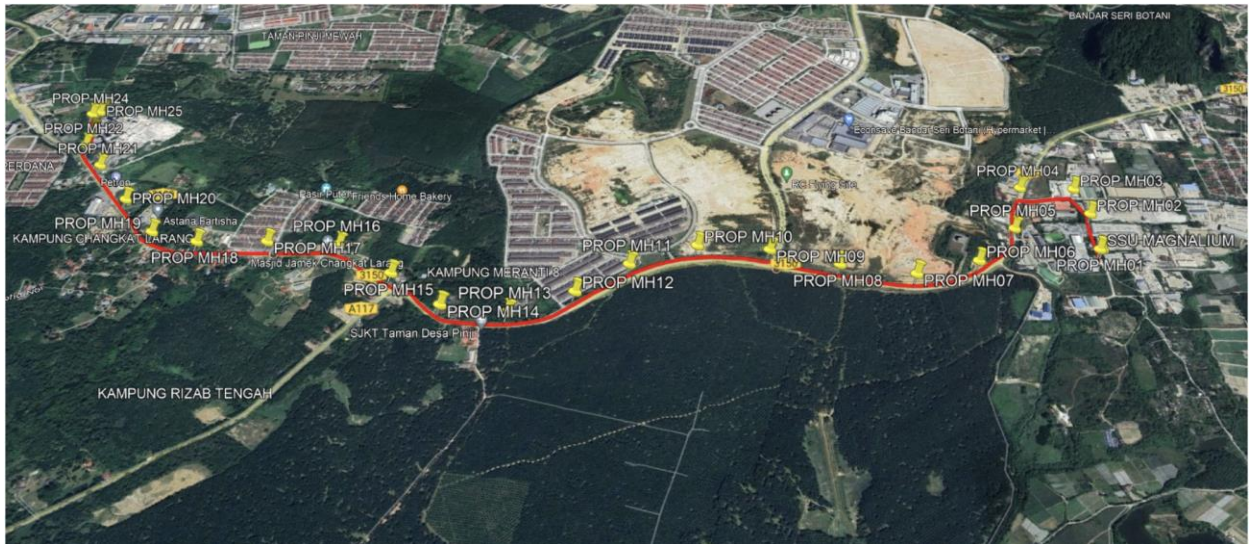
Other Highlights/Remarks

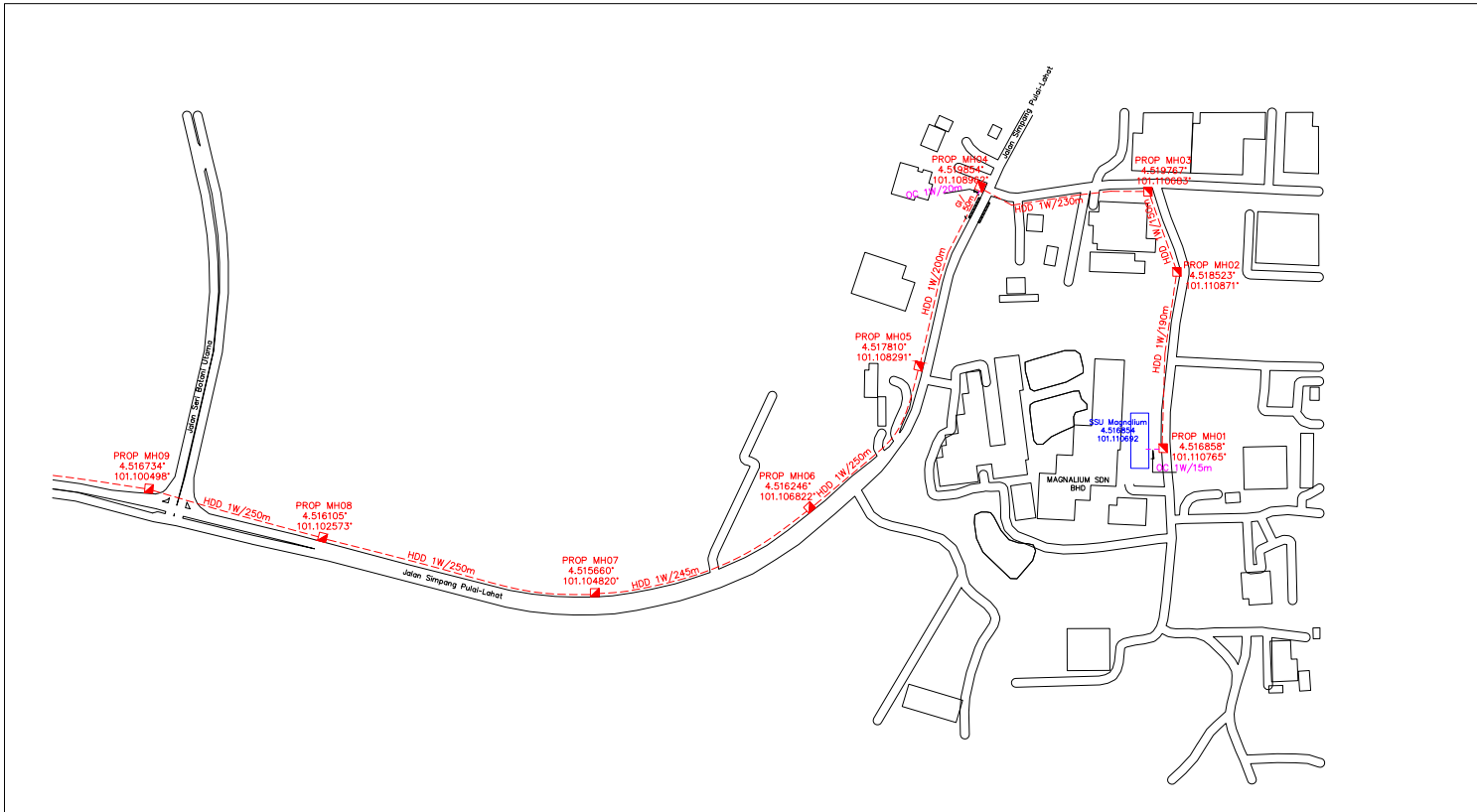
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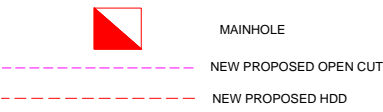
Section 2: Proposed Manhole Coordinates

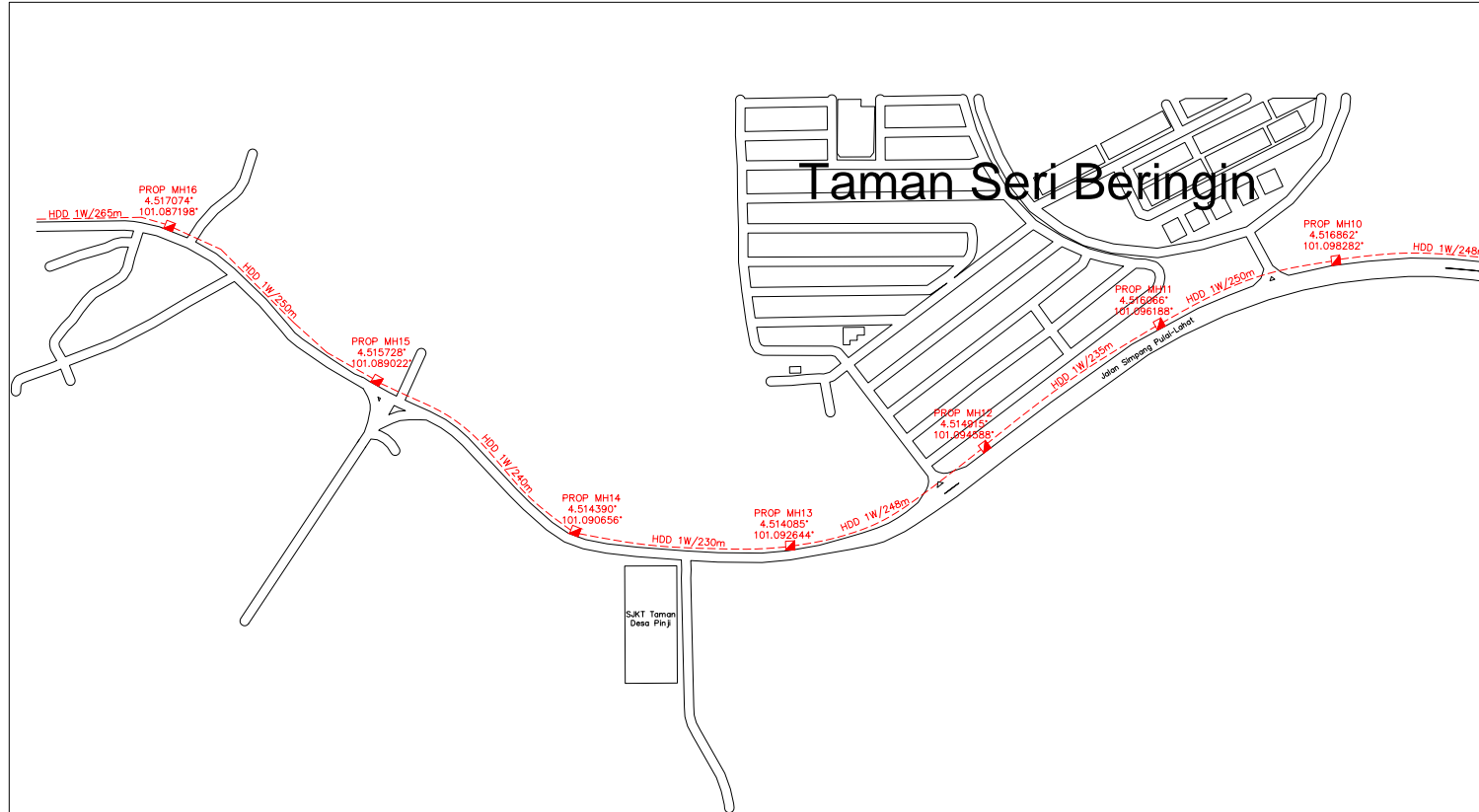
No	Manhole No.	Latitude	Longitude
1	SSU MAGNALIUM SIMPANG PULAI	4.516854°	101.110692°
2	MH01	4.516858°	101.110765°
3	MH02	4.518523°	101.110871°
4	MH03	4.519767°	101.110683°
5	MH04	4.519854°	101.108962°
6	MH05	4.517810°	101.108291°
7	MH06	4.516246°	101.106822°
8	MH07	4.515660°	101.104820°
9	MH08	4.516105°	101.102573°
10	MH09	4.516734°	101.100498°
11	MH10	4.516862°	101.098282°
12	MH11	4.516066°	101.096188°
13	MH12	4.514915°	101.094588°
14	MH13	4.514085°	101.092644°
15	MH14	4.514390°	101.090656°
16	MH15	4.515728°	101.089022°
17	MH16	4.517074°	101.087198°
18	MH17	4.517232°	101.084939°
19	MH18	4.517214°	101.082756°
20	MH19	4.517683°	101.081219°
21	MH20	4.519254°	101.079899°
22	MH21	4.521044°	101.078464°
23	MH22	4.522146	101.077609°
24	MH23	4.522949°	101.077611°
25	MH24	4.523876°	101.077257°
26	MH25	4.524020°	101.077478°
27	SSU ALLBORG PINJI ESTATE	4.524094°	101.077383°



Section 3: OSP & ISP Routing Plan (OVERALL ROUTING)

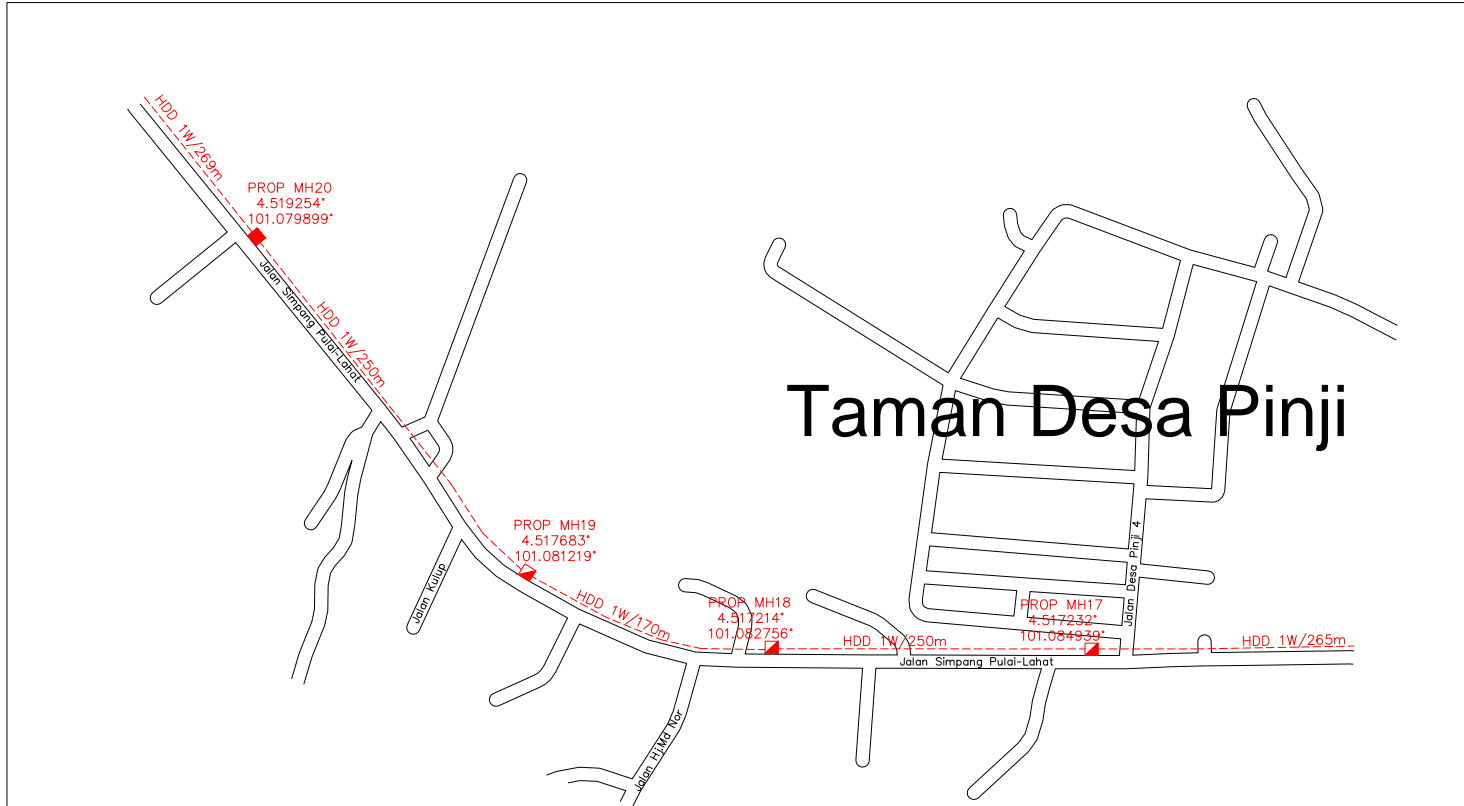






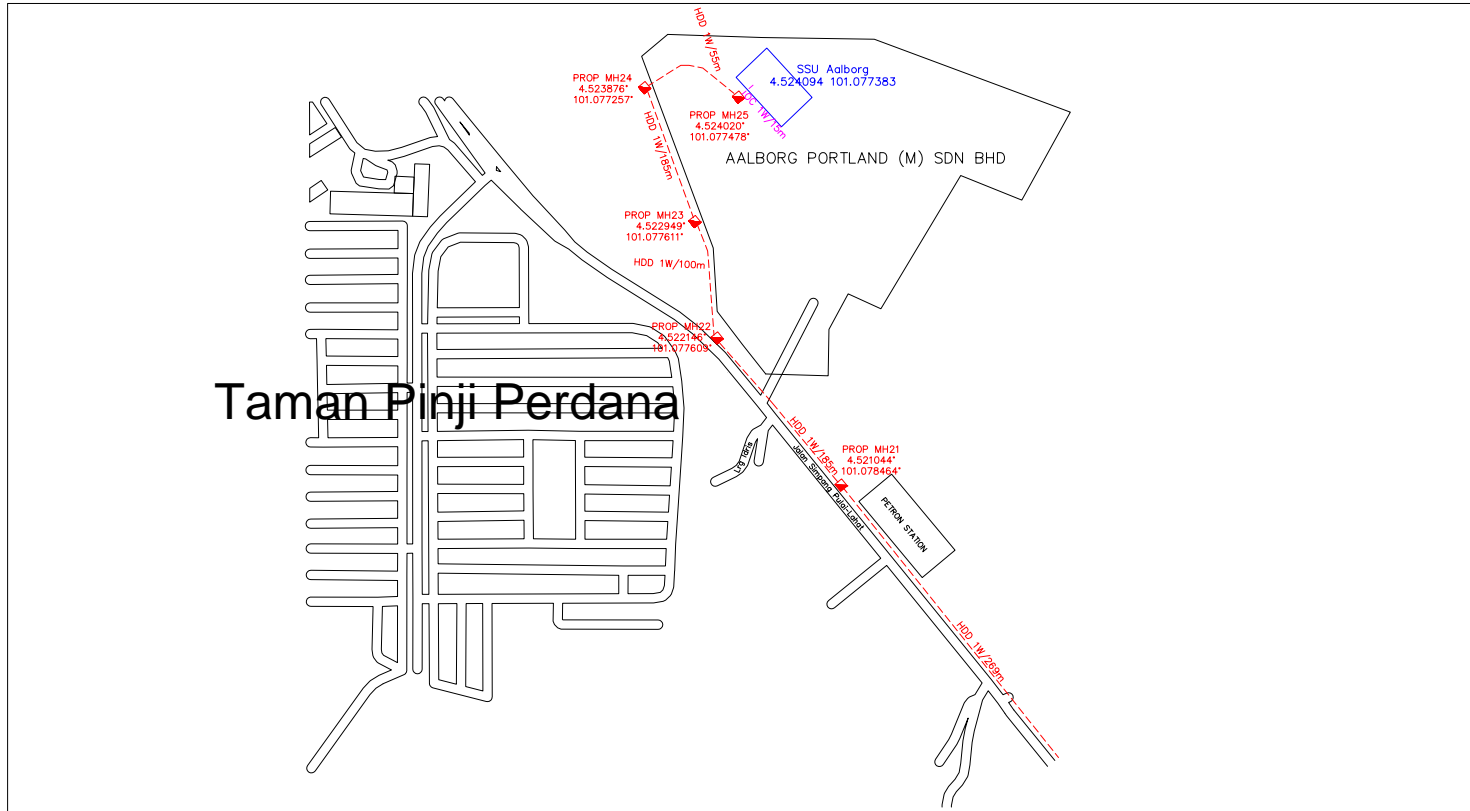
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	Total Distance	5295m	Total Length of Duct (KM) :		Revision No : Submission Date:		Checked By :	
	Total Distance (GG) :	25 units	Total No. of Manhole :		LOA Reference No./Contract No. :			
	Total No. of Handhole :		Total No. of Pole :		Drawing Title :			
	Management Information		Amended By :		Approved By :		FIBER OPTIC FROM SSU MAGNALIUM TO SSU ALLBORG	
	Total No. of Street Cabinet (e.g. CCC, FEDB) :						Drawing No :	


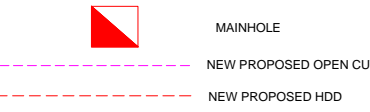


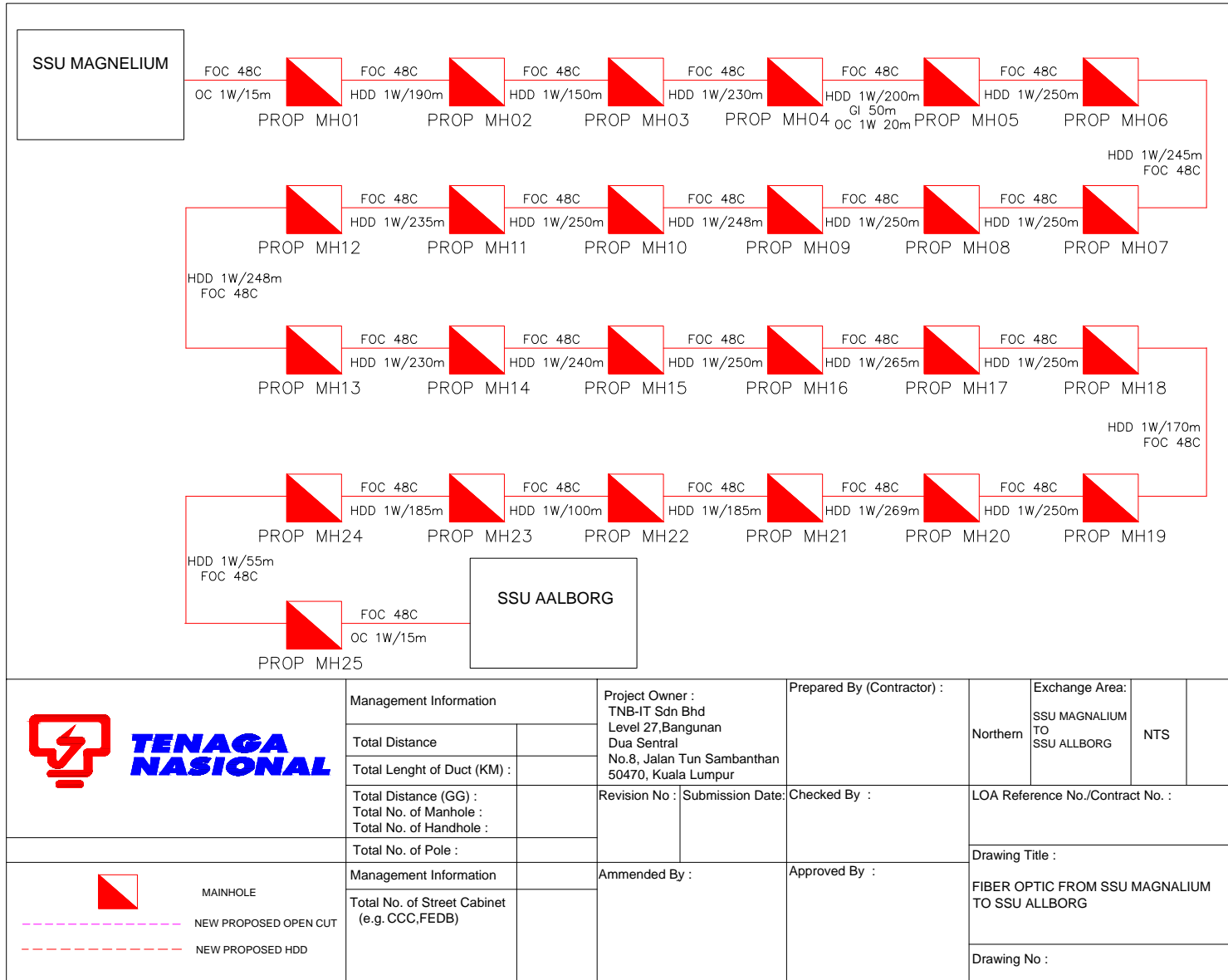
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	Total Distance	5295m			
Total Length of Duct (KM) :			Revision No : Submission Date:	Checked By :	LOA Reference No./Contract No. :
Total Distance (GG) :		25 units			
Total No. of Manhole :			Drawing Title :		
Total No. of Handhole :					
Total No. of Pole :			Approved By :		
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) :	Exchange Area: SSU MAGNALIUM TO SSU ALLBORG	Northern NTS	
	Total Distance	5265m					
	Total Length of Duct (KM) :		Revision No : Submission Date:	Checked By :	LOA Reference No./Contract No. :		
	Total Distance (GG) :	25 units			Drawing Title :		
	Total No. of Manhole :		Ammended By :	Approved By :	FIBER OPTIC FROM SSU MAGNALIUM TO SSU ALLBORG		
	Total No. of Handhole :				Drawing No :		
	Total No. of Pole :						
	Management Information						
	Total No. of Street Cabinet (e.g. CCC, FEDB)						

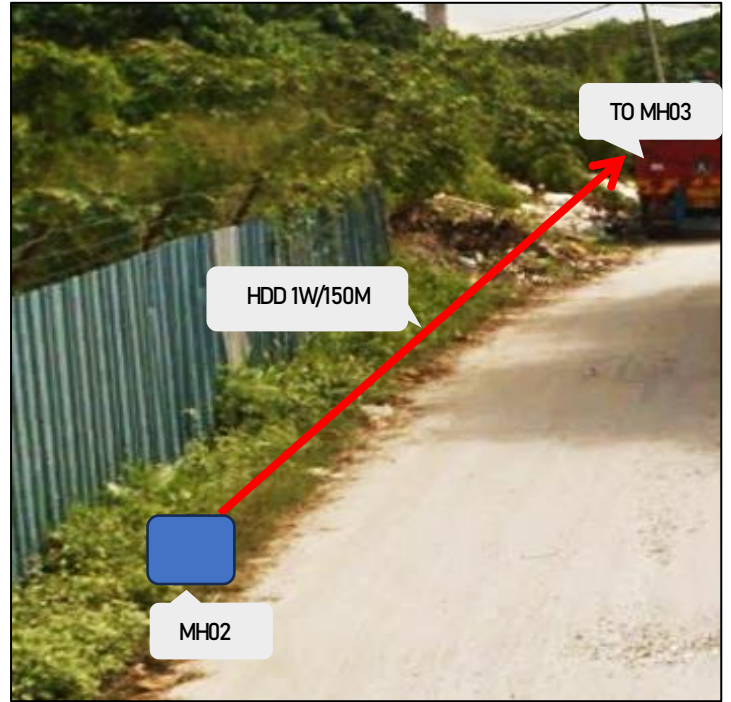
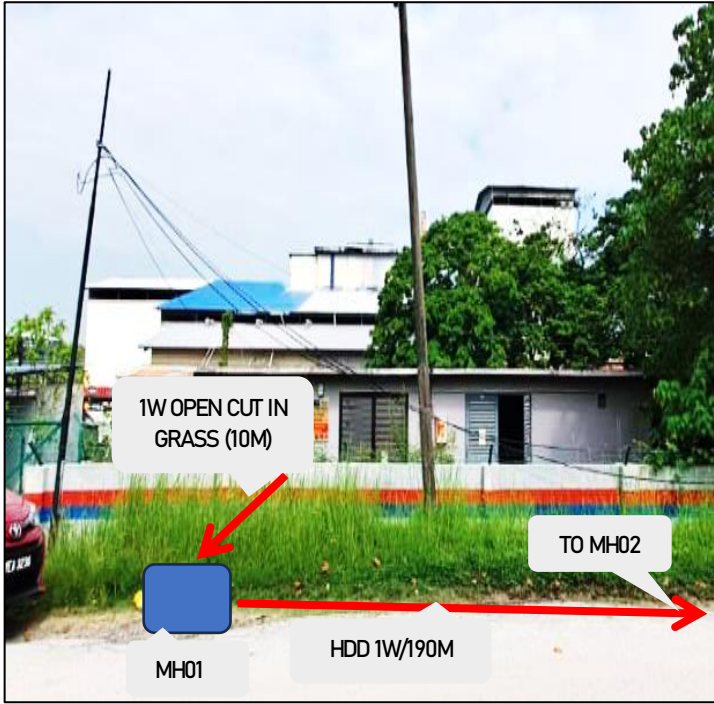


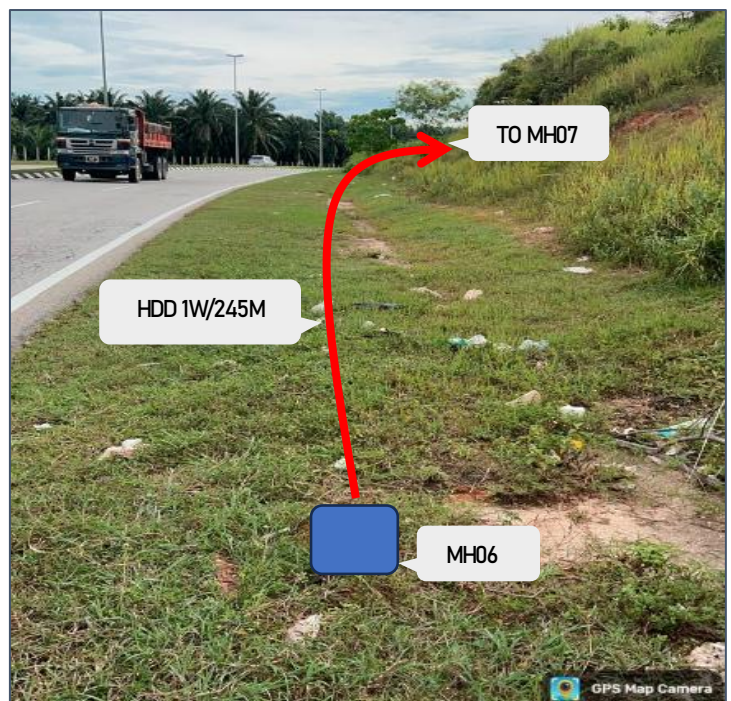
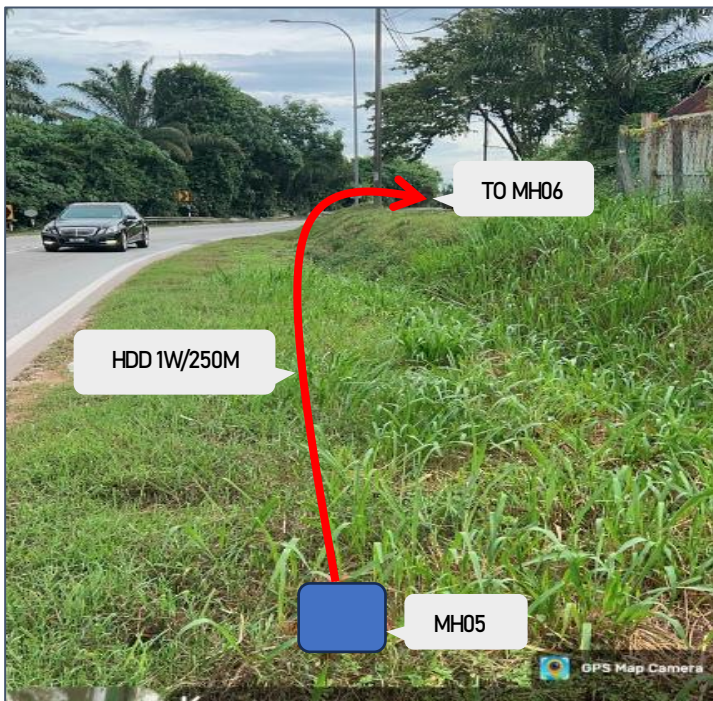
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	Total Distance	5265m				
	Total Length of Duct (KM) :		Revision No : Submission Date:	Checked By :	LOA Reference No./Contract No. :	
	Total Distance (GG) : Total No. of Manhole : Total No. of Handhole :	25 units				
	Total No. of Pole :		Amended By :	Approved By :	Drawing Title :	
	Management Information				FIBER OPTIC FROM SSU MAGNALIUM TO SSU ALLBORG	
	Total No. of Street Cabinet (e.g. CCC, FEDB)		Drawing No :			

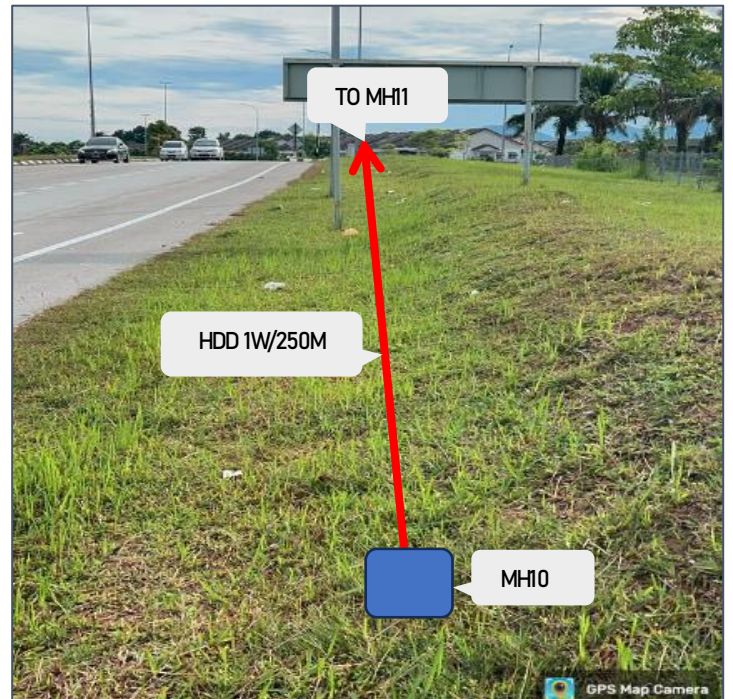
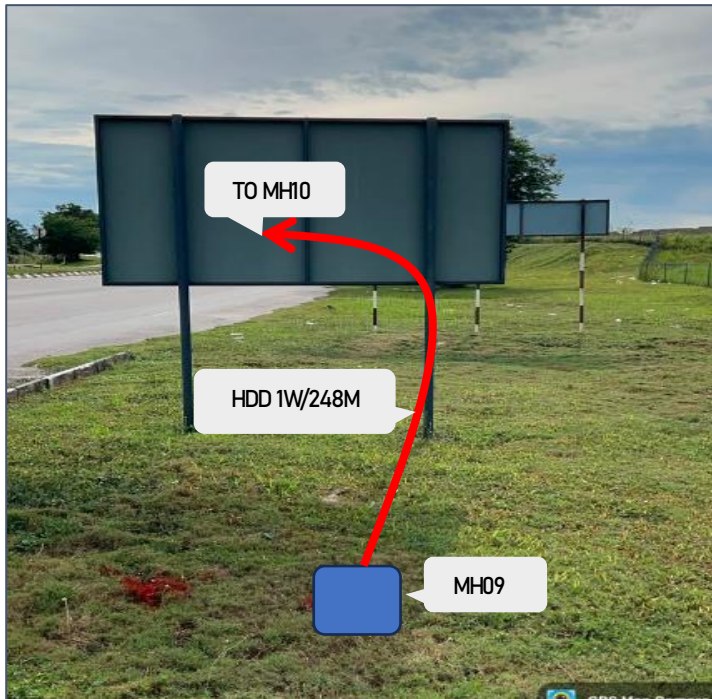
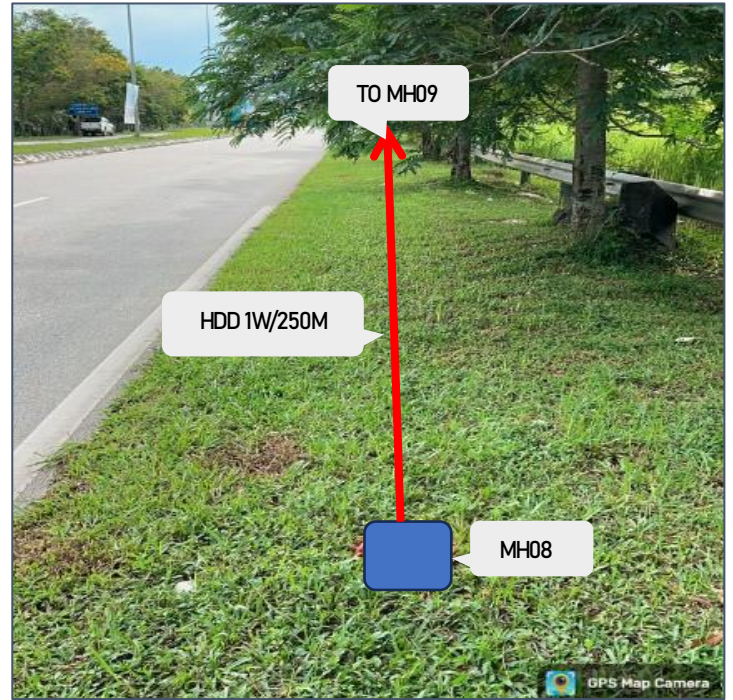
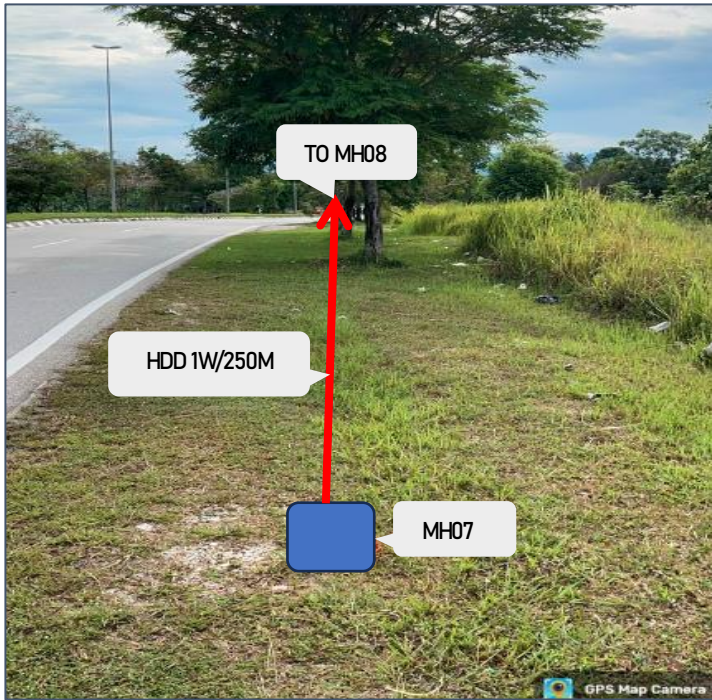


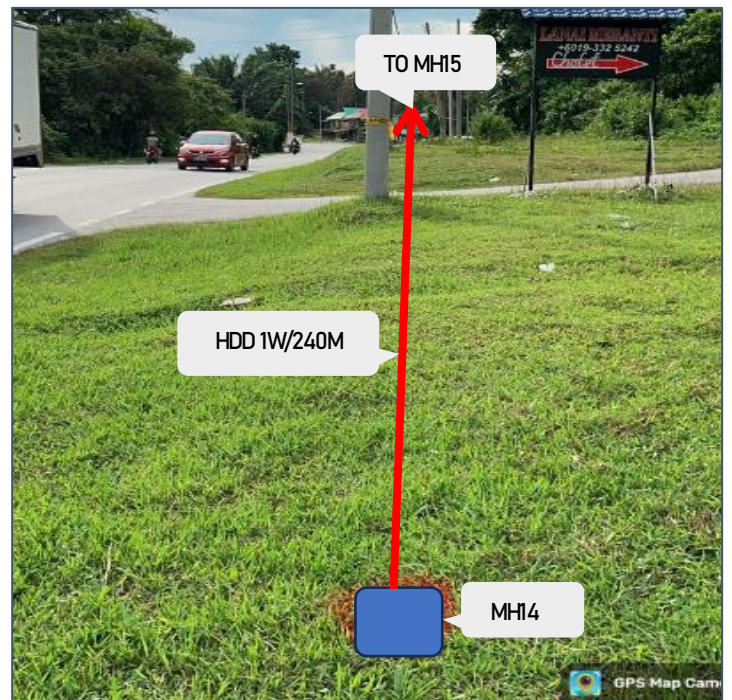
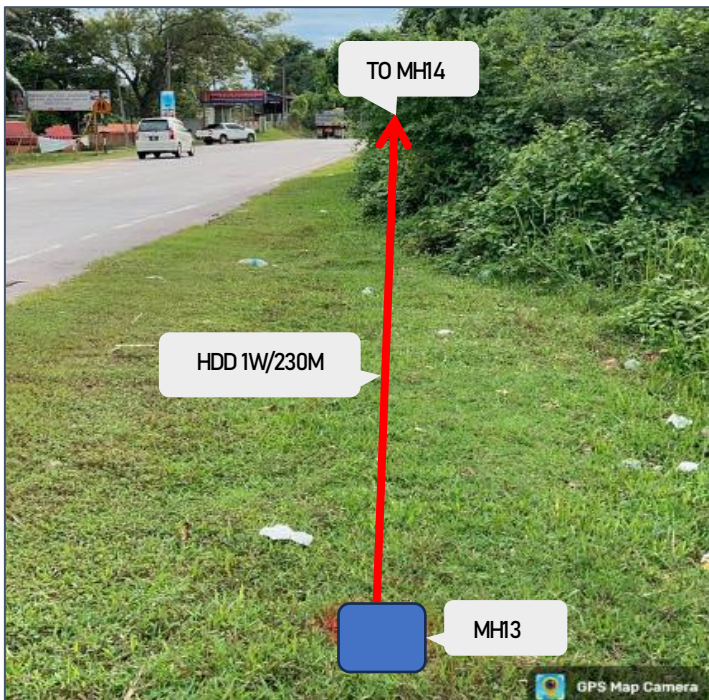
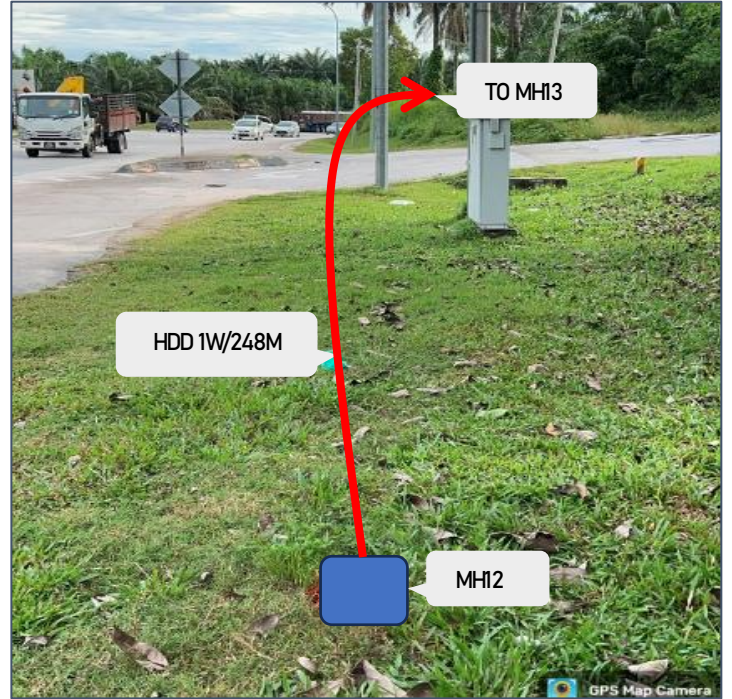
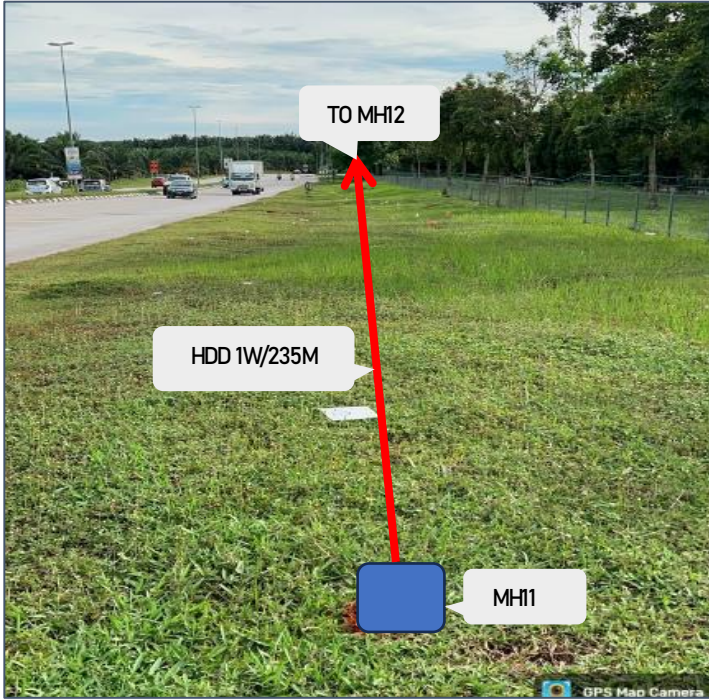
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	Total Distance							
	Total Length of Duct (KM) :		Revision No. : Submission Date:	Checked By :	LOA Reference No./Contract No. :			
	Total Distance (GG) :				Drawing Title :			
	Total No. of Manhole :		Amended By :	Approved By :	FIBER OPTIC FROM SSU MAGNALIUM TO SSU ALLBORG			
	Total No. of Handhole :				Drawing No. :			
 MAINHOLE  NEW PROPOSED OPEN CUT  NEW PROPOSED HDD	Management Information							
	Total No. of Pole :							
	Total No. of Street Cabinet (e.g. CCC, FEDB)							

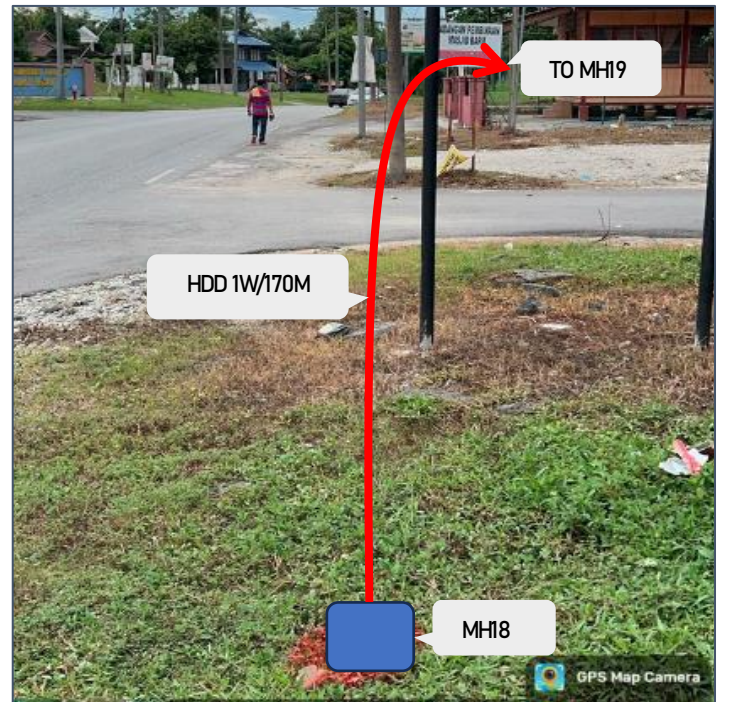
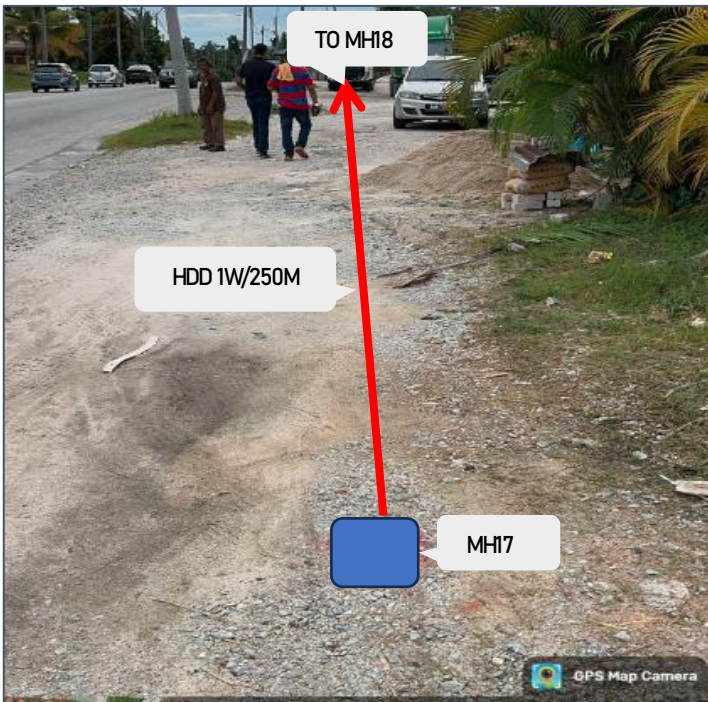
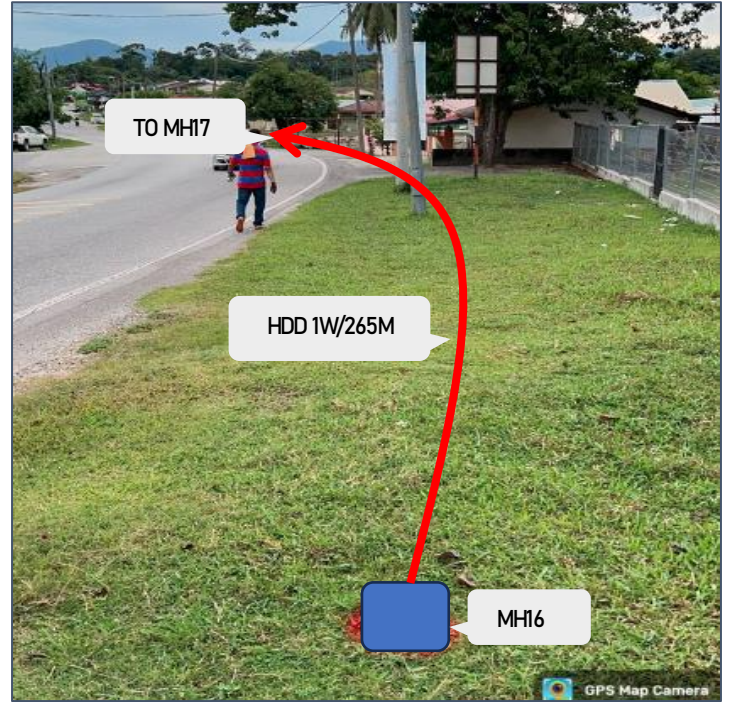
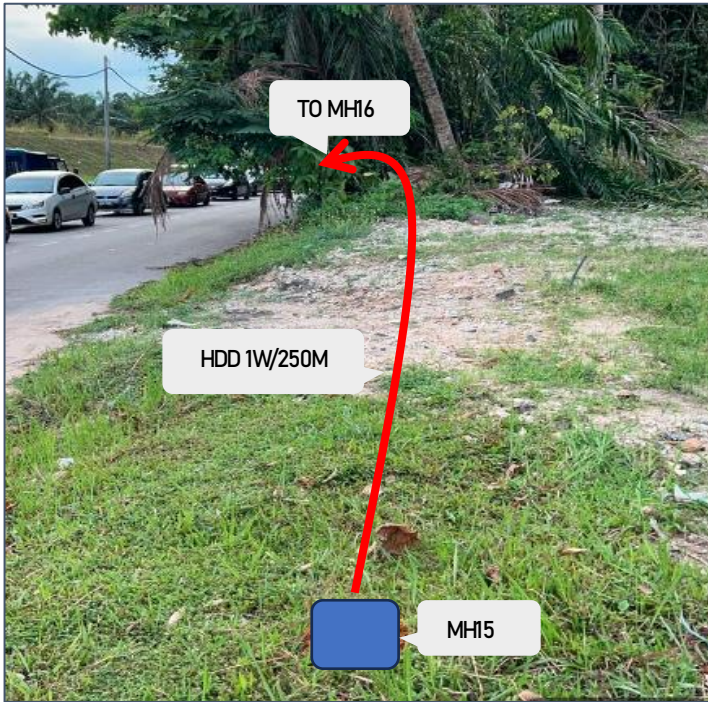
Section 5: OSP Snapshot/Photo

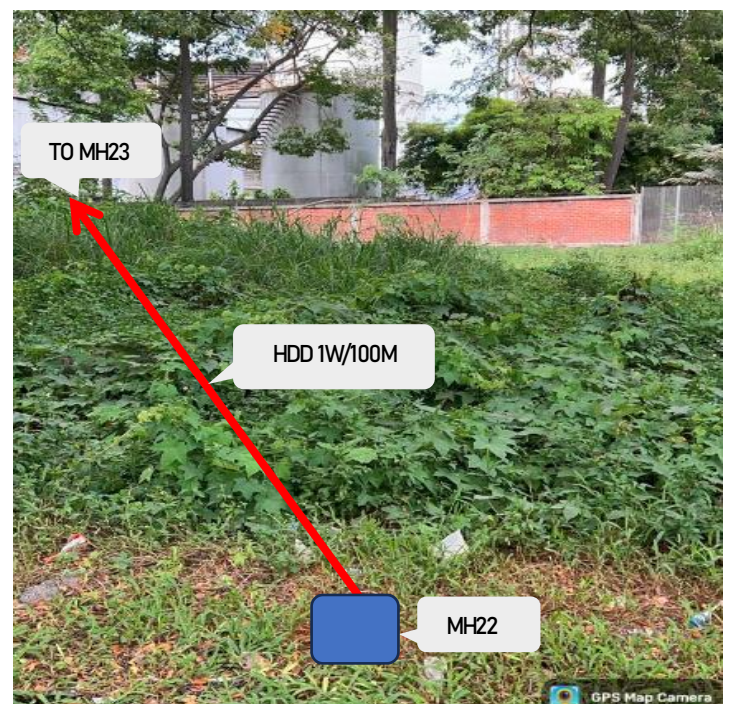
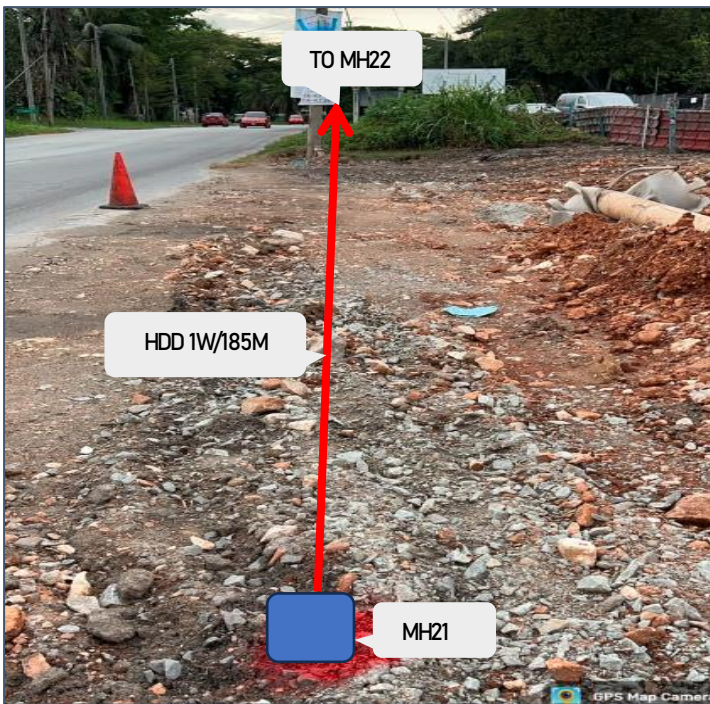
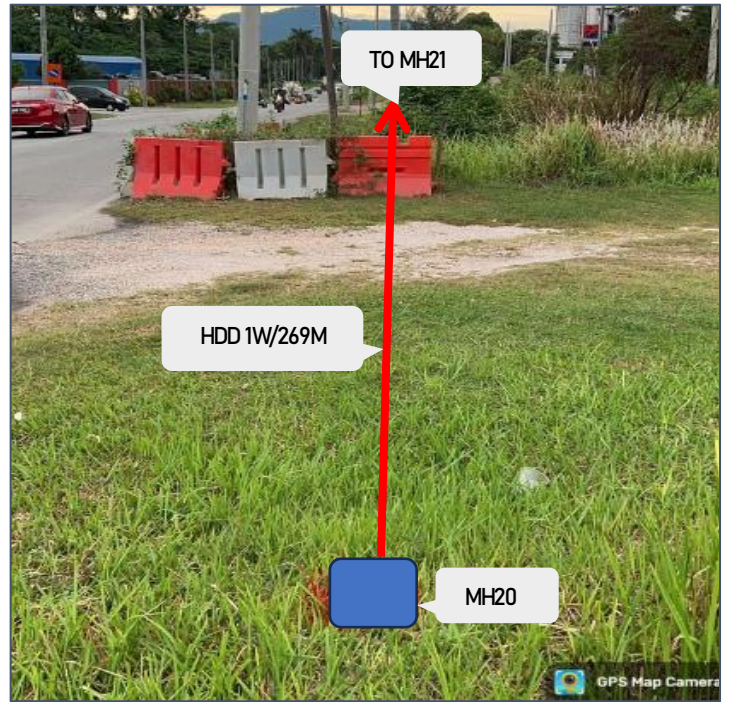
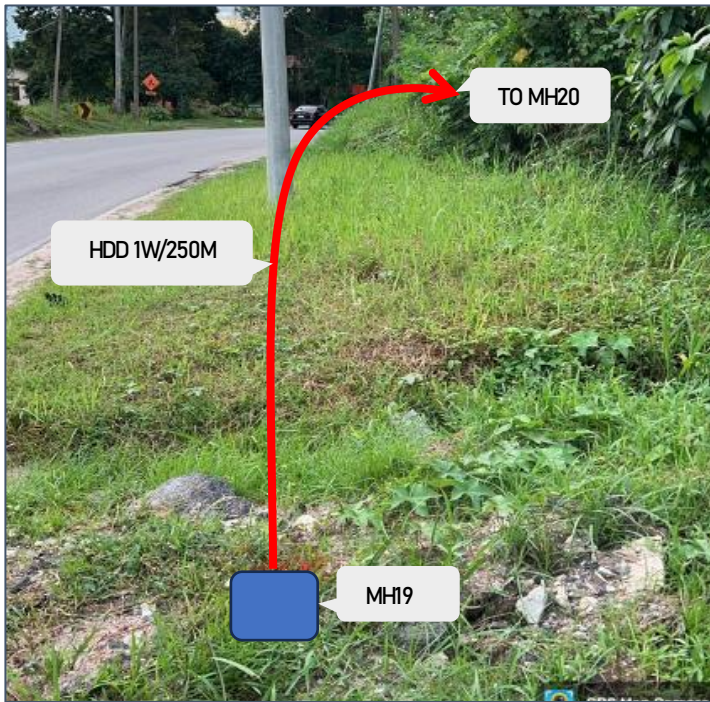






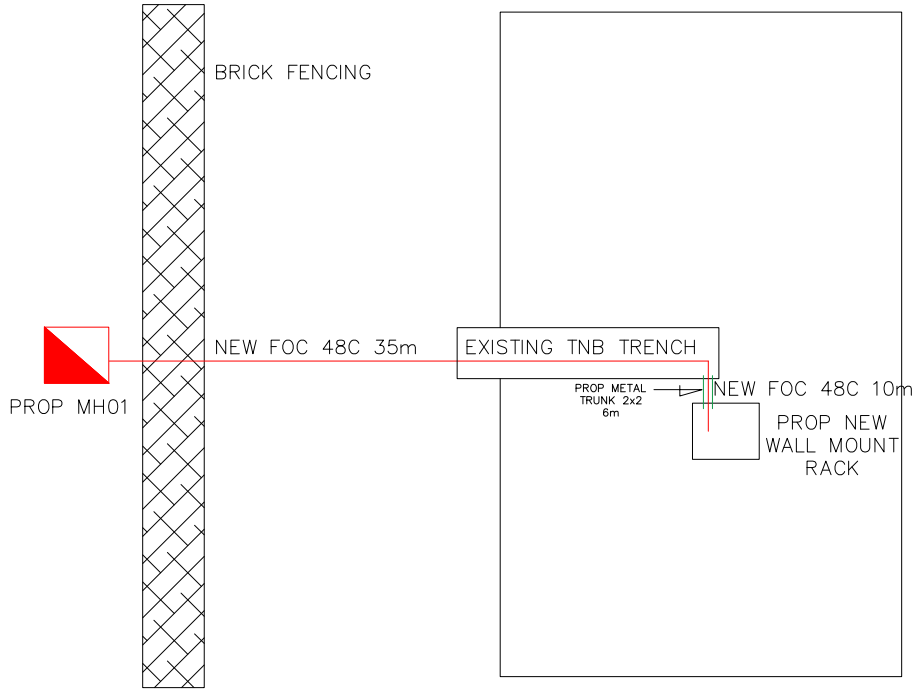












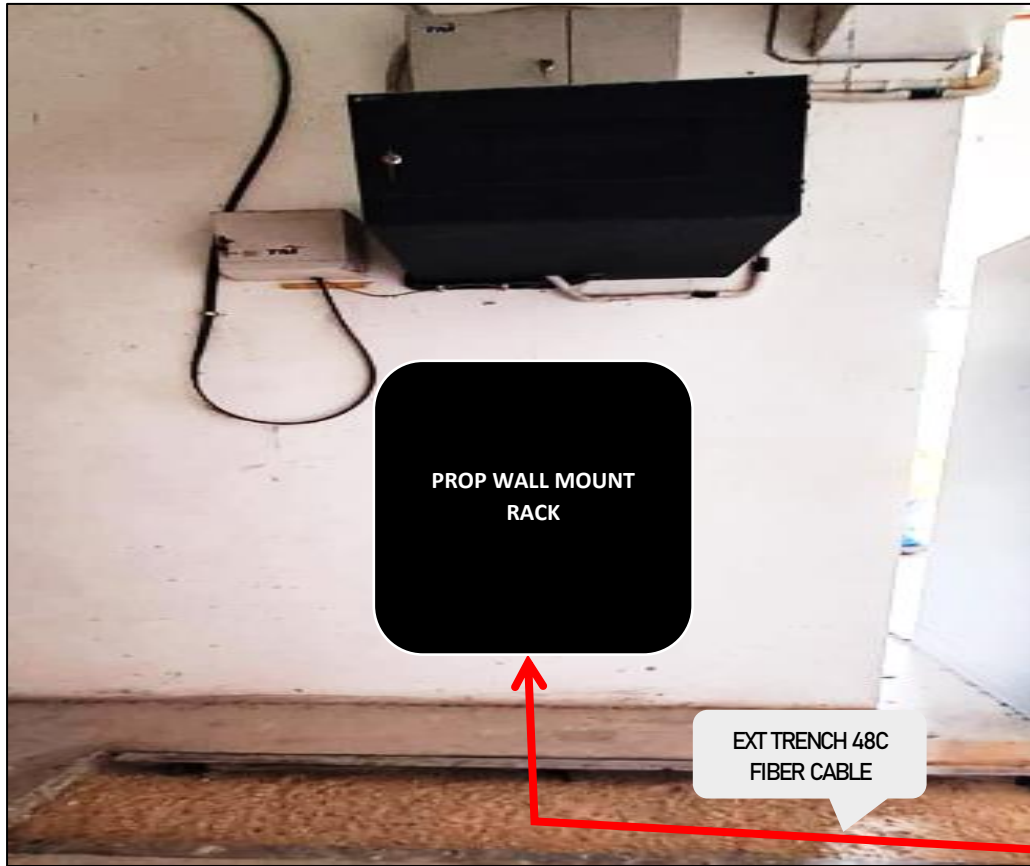
LAYOUT PLAN OF SSU MAGNELIUM



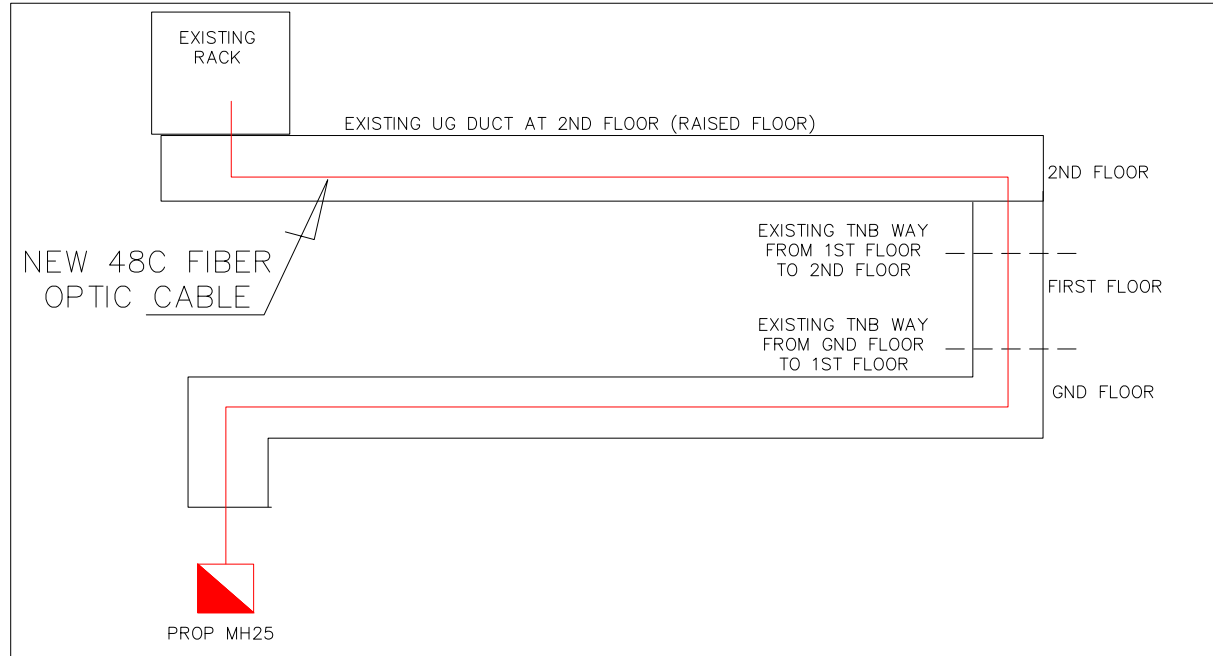
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	Total Distance		Revision No :	Submission Date:				
	Total Length of Duct (KM) :							
	Total Distance (GG) :							
	Total No. of Manhole :							
	Total No. of Handhole :							
	Total No. of Pole :							
 MAINHOLE  NEW PROPOSED OPEN CUT  NEW PROPOSED HDD	Management Information		Amended By :		Approved By :		Drawing Title :	
	Total No. of Street Cabinet (e.g. CCC, FEDB)						FIBER OPTIC FROM SSU MAGNALIUM TO SSU ALLBORG	
							Drawing No :	





ISP ROUTE IN SSU MAGNALIUM SIMPANG PULAI





LAYOUT PLAN OF SSU AALBORG



	Management Information		Project Owner :		Northern	SSU MAGNALIUM TO SSU ALLBORG	NTS
	Total Distance		TNB-IT Sdn Bhd Level 27, Bangunan Dua Sentral No.8, Jalan Tun Sambanthan 50470, Kuala Lumpur				
	Total Length of Duct (KM) :		Revision No :	Submission Date:			
	Total Distance (GG) :						
	Total No. of Manhole :						
	Total No. of Handhole :						
	Total No. of Pole :						Drawing Title :
 MAINHOLE  NEW PROPOSED OPEN CUT  NEW PROPOSED HDD	Management Information		Amended By :		Approved By :		FIBER OPTIC FROM SSU MAGNALIUM TO SSU ALLBORG
	Total No. of Street Cabinet (e.g. CCC, FEDB)						Drawing No :

ISP ROUTE IN SSU ALLBORG PINJI ESTATE



