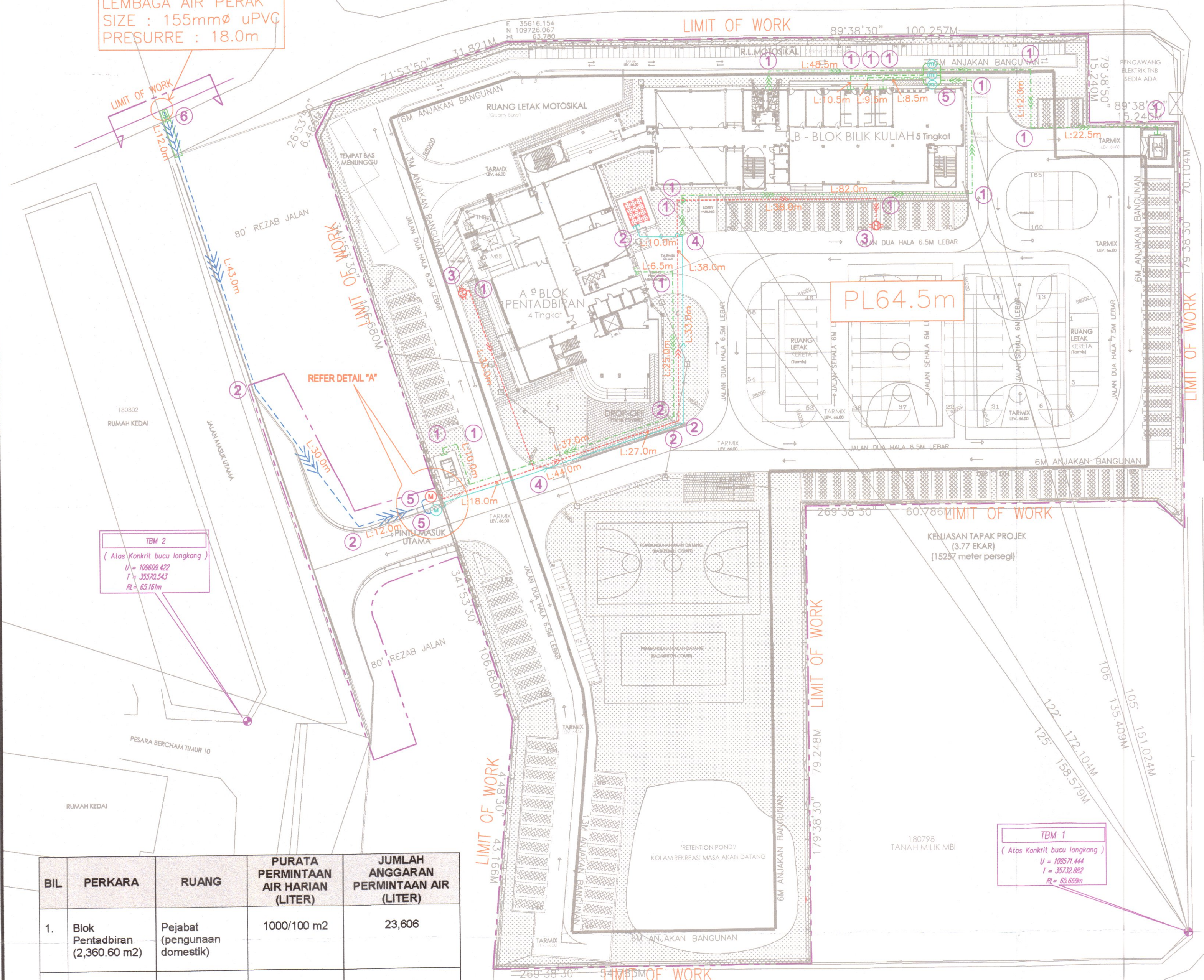


TAPPING FROM PIPE LEMBAGA AIR PERAK  
 SIZE : 155mmØ uPVC  
 PRESURRE : 18.0m

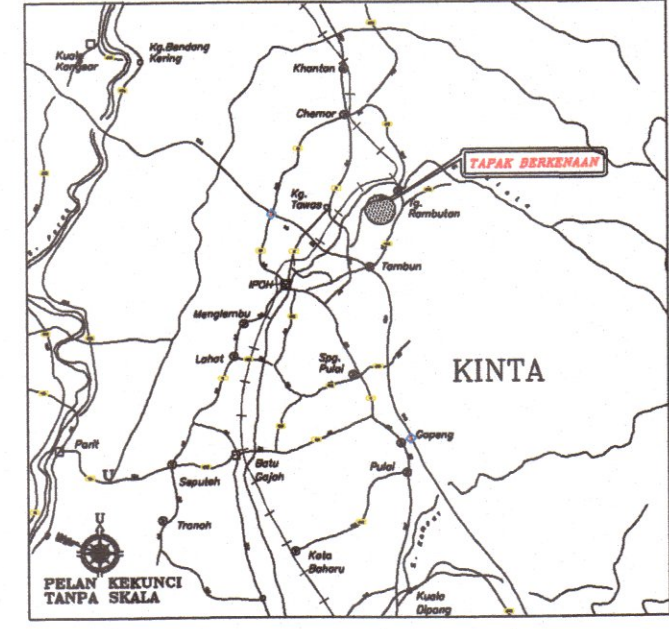
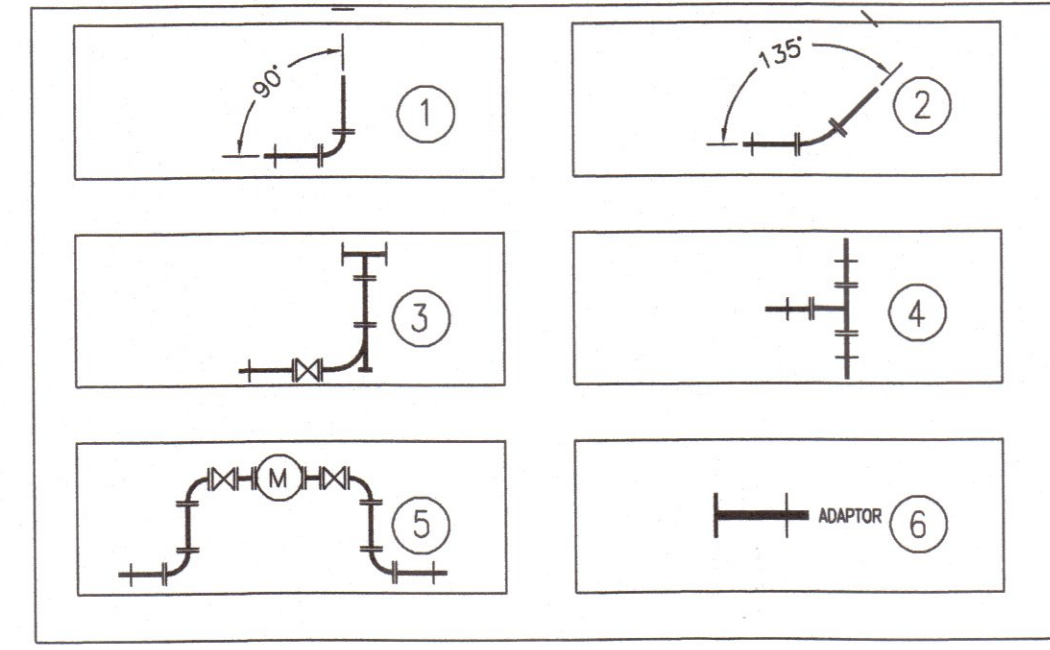


TBM 2  
 ( Atas Konkrit bucu langkang )  
 U = 10909.427  
 T = 3572.643  
 RL = 63.165m

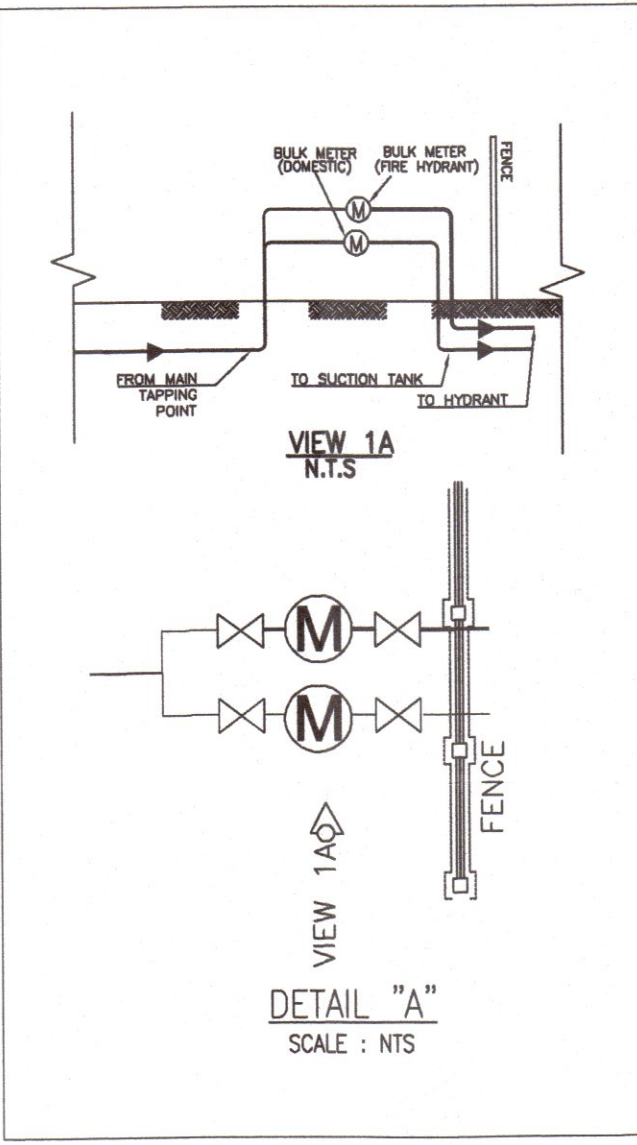
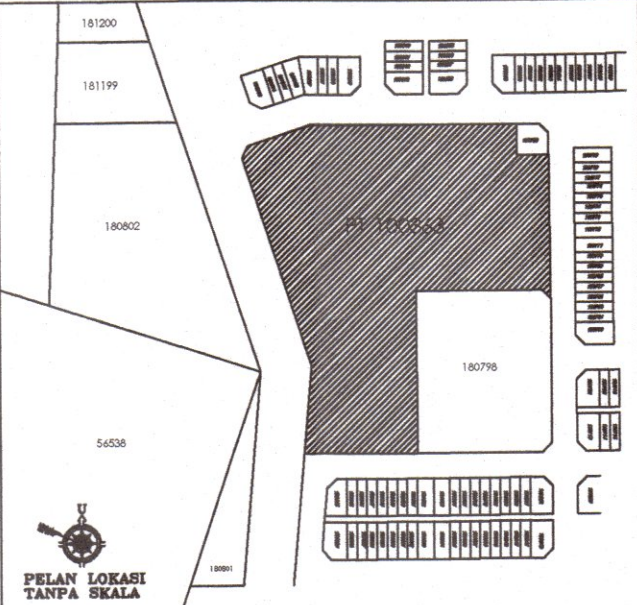
TBM 1  
 ( Atas Konkrit bucu langkang )  
 U = 10957.444  
 T = 3572.892  
 RL = 63.669m

**LEGEND**

- 150mm Ø HDPE PIPE (DOMESTIC)
- 150mm Ø HDPE PIPE (HYDRANT)
- 75mm Ø HDPE PIPE (DOMESTIC)
- 200mm Ø MSCL PIPE (PIPE JACKING)
- 200mm Ø MSCL PIPE
- METER
- SUB-METER
- HYDRANT PILLAR
- END CAP
- REDUCER
- SLUICE VALVE



- NOTES :**
- All dimensions are in millimetres unless otherwise shown on the drawings.
  - These drawings shall be read in conjunction with the relevant mechanical drawings in addition to architectural and survey drawings.
  - Actual tapping point and bulk meter locations shall be as approved by the water authority.
  - Pipelines shall be laid within road reserve unless otherwise instructed by the S.O.
  - The minimum cover for main pipelines shall be 1000 mm. Under roads and hardstanding the cover shall be 1200 mm. Otherwise the pipes shall be encased with concrete grade 20P with minimum thickness of 150mm or as approved by the S.O.
  - The section of pipe line that runs across roads and culverts shall be made from ductile iron pipe (D.I) or mild steel pipe as approved by the local Water Authority. The materials and construction of this section of pipeline shall conform to the relevant specifications.
  - Underground air, sluice and scour valves shall be housed in precast concrete chamber.
  - Actual location of water pipe, air valve, sluice valve, scour valve and 'S' bend shown on the drawings shall be confirmed on site and approved by the S.O. Requirement for additional valves shall be determined on site as directed by the S.O.
  - The valve chambers shall conform to current standard imposed by Water Authority. All valve chambers and other works before the bulk meter shall be approved by the Water Authority.
  - Concrete thrust block shall be provided to anchor water pipe at every junctions and bends.
  - Where pipe jacking works are required, the contractor shall map all services within the particular area and propose actual level and position of the work. No work shall commence before the prior approval of the relevant Authorities and the S.O.
  - All water pipes shall not be laid below sewer pipes. If the vertical clearance provided between the crown of a sewer pipe and the bottom of a water pipe is less than 1 metre, the sewer pipe shall be encased with concrete grade 20P with a minimum thickness of 250 mm.
  - All material for pipes, fittings as well as method of construction shall conform to the requirement of the relevant Water Authority.



BIL	PERKARA	RUANG	PURATA PERMINTAAN AIR HARIAN (LITER)	JUMLAH ANGGARAN PERMINTAAN AIR (LITER)
1.	Blok Pentadbiran (2,360.60 m2)	Pejabat (penggunaan domestik)	1000/100 m2	23,606
2.	Blok Kuliah (1,360 pelajar + 300 pensyarah & pekerja / kakitangan)	Institut Pendidikan (selain sekolah dan tadika)	100/pelajar	166,000
			<b>Jumlah (liter)</b>	<b>189,606</b>

TANDATANGAN DAN COP KELULUSAN PIHAK LEMBAGA AIR PERAK :

Kelulusan diberi tertakluk kepada syarat-syarat seperti dalam Bil. ( 1 ) dan Bil. ( 2 ) bertarikh 28/8/24.

**PENCIPTA WILAYAH LAMP. WILAYAH BANGSAH 1**

Kelulusan ini adalah sah selama dua (2) tahun sahaja bermula dari 28/8/24. Kegagalan untuk mematuhi syarat-syarat dalam tempoh yang ditetapkan bermakna LEMBAGA AIR PERAK berhak membatalkan dan mengubah syarat-syarat kelulusan.

b.p. Suruhanjaya Perkhidmatan Air Negeri (SPAN)

PEMILIK :

**KEMENTERIAN PENGAJIAN TINGGI**  
 BAGIAN PENGALIHAN KEMENTERIAN PENGAJIAN TINGGI

**NORFAIRIS BT JARUDIN**  
 Ketua Pengarah Perusahaan  
 Bahagian Pembangunan  
 Kementerian Pendidikan Tinggi

TANDATANGAN & COP  
 KELULUSAN PELANGGAN

**TANDATANGAN JURUTERA PROFESIONAL :**

"I hereby certify that these works have been designed by me in accordance with sound engineering practice and that I take full responsibility for the design and property performance of the same"

**ROSA BINTI ZAINI BAKAL**  
 Pejabat Jurutera Awam  
 Jurutera Awam Persekitaran Alam  
 Bahagian Kejuruteraan Awam  
 (KESELAMATAN DAN PENYEDIAAN AIR)  
 CAWANGAN KEJURUTERAAN AWAM BUKIT SERI ALAM  
 IBU PEJABAT PERAK, MALAYSIA

NOTA :

**BAGIAN KEJURUTERAAN AWAM (PENDIDIKAN)**  
 CAWANGAN KEJURUTERAAN AWAM DAN STRUKTUR  
 JABATAN KERJA RAYA MALAYSIA  
 TINGKAT 4 - 10, MENARA KERJA RAYA (BLOK G)  
 IBU PEJABAT JKR MALAYSIA  
 JALAN SULTAN SALAHUDDIN  
 50480 KUALA LUMPUR.

(NO. TEL: 03-26189171 & NO. FAX: 03-26189155)

**JABATAN KERJA RAYA MALAYSIA**

<b>DISEDIAKAN :</b> MOHAMED FIRDAUS BIN OTHMAN / Ir. HARLIZA HANIS BT ABDUL RAZAK / NOR SYAZWINA BT LOKMAN	<b>PENGARAH KANAN :</b> Ir. NOREHA BINTI NORDIN	<b>HURUF PETUNJUK</b>	<b>PINDAAN</b>	<b>TARIKH</b>	<b>TANDA TANGAN</b>
<b>DISEMAK :</b> AIEDAH @ NORAIDAH BT MOHD NADZRI / HAFIZA ASMA BT ADI	<b>PENGARAH KHIDMAT REKABENTUK :</b> Ir. ROSNITA BINTI ABDUL RANI				
<b>DILUKIS :</b> ANIS MASHITAH BT REDZUAN / RASHIDAH BT ABDOL HAMED	<b>JURUTERA AWAM PENGUSAHA KANAN :</b> Ir. Dr. ZURAIHA BT ZAINI RIJAL				
<b>NO. FAIL PROJEK :</b> JKR/CKASJ/09.500/020/MOHE/A10	<b>JURUTERA AWAM KANAN :</b> Ir. NURFITRI BT SENIN / A/NUN BASIRAH BT HAMID				
<b>SKALA :</b> 1:500	<b>TARIKH :</b> JUN 2022				

<b>NAMA PROJEK :</b> MENYIAPKAN BAKI KERJA BAGI PROJEK UBAHSUAI DAN MENYIAPKAN KAMPUS CAWANGAN POLITEKNIK UNGKU OMAR, DI BERCHAM, IPOH PERAK
<b>TAJUK LUKISAN :</b> PELAN SUSUNATUR SISTEM RETIKULASI AIR
<b>NO. LUKISAN :</b> JKR/CKAS/BKA/14/A10/RA/01(01)