



# PEJUTA

PERSATUAN JURUUKUR TANAH BERTAULIAH MALAYSIA  
ASSOCIATION OF AUTHORISED LAND SURVEYORS MALAYSIA

## **SCHEDULE OF FEE FOR ENGINEERING SURVEY 2020**

**Adopted by The Council of Persatuan Juruukur Tanah  
Bertauliah Malaysia (PEJUTA) 2020**

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## CODE OF PROFESSIONAL CONDUCT

Every member shall observe and be guided by the following provisions of the Code of Professional Conduct.

- a) Every member shall order his conduct so as to uphold the dignity, standing and reputation of the profession.
- b) No member shall canvass or solicit professional employment nor offer to make by commission or otherwise payment for the introduction of such payment.
- c) Every member may exhibit plates and signs at his place or places of business exhibiting his name, title and professional qualifications and may advertise for a reasonable period of time. Such advertisement shall be appropriate and befits the dignity, prestige and standing of the profession.
- d) Every member shall be remunerated solely by the fees payable by the client under the rules of Lembaga Juruukur Tanah Semenanjung Malaysia (Land Surveyors Board, Peninsular Malaysia) of any fees as approved by the Association.
- e) Every member shall not, directly or indirectly, attempt to supplant another member nor shall he or she intervene or attempt to intervene in or in connection with the survey work of any kind which to his knowledge has already been entrusted to another member nor shall he review or take over the work or that other member acting for the same client, until he has either obtained the consent of that member or has been formally notified by the client that the engagement of that member has been properly terminated.
- f) No member shall assume or consciously accept a position in which his interest is in conflict with his professional duty.
- g) No member shall maliciously injure or attempt to injure, whether directly or indirectly, the professional reputation, prospects or business of another member.
- h) Any member may enter into professional partnership with any person permitted under the provisions of any other written law for the time being in force provided it does not contradict the provision of the Licensed Land Surveyors Act, 1958 (revised 1991) or its Regulations.
- i) No member shall:
  - i. Offer any financial inducement to secure instructions, appointment or employment, or

- ii. Undertake or offer work for charges which in the opinion of the Executive Council would be unfair to other members, or
- iii. With the objective of securing instructions, appointment, or employment attempt to compete with another member on the basis of fees.

## **WHEN A SURVEY JOB IS COMPLETED**

A land survey shall be deemed to have been completed: -

When the Surveyor has supplied his client or client's agent with such plans of the survey and/or other documents necessary for that particular survey work.

## **MODE OF PAYMENT**

All commission of survey works shall be paid according to the following schedule;

30% of total survey fees to be paid upon mobilization

40% of total survey fees to be paid upon completion of field survey

30% of total balance survey fees to be paid upon submission of final survey plans and calculations.



# JADUAL KADAR BAYARAN PERKHIDMATAN UKUR TANAH BAGI TUJUAN KEJURUTERAAN

Berikut ialah jadual kadar bayaran perkhidmatan yang di jalankan oleh jurukur Tanah Berlesen yang berdaftar di bawah Akta Jurukur Tanah Berlesen 1958 (Akta 458) (Pindaan 1991). Jadual bayaran ini berdasarkan kepada kos sehari bagi satu pasukan ukur seperti berikut :-

Semenanjung Malaysia : RM 1,750.00

Sabah, Sarawak dan Wilayah Persekutuan Labuan : RM 2,275.00

## PART I

### GENERAL ENGINEERING SURVEY

#### 1. GENERAL ITEMS

Para 1.1 to prescribe work items and work rates applicable in all types of survey. They are to be included as and when necessary as part and parcel of the relevant work items for any particular survey.

##### 1.1 Classification of Terrain and Ground Condition

The following classification of terrain and ground condition is to be adopted in determining the general ground condition of the project site.

<b>Classification of Terrain and Ground Condition</b>	<b>Description</b>
Flat and Undulating area	up to 10 degrees slope or differences in heights of not more than 20 metres
Hilly area	exceeding 10 degrees slope or differences in heights of more than 20 metres

Swampy Area	generally wetted at the time of survey whether temporary or permanent in nature
Built up area	area with manmade structure such as building, road, fence, drain, hedge, cutting, embankment and etc.

1.2 *Preparatory Work*

Work rate for preparatory work is 1 party-day.

1.3 *Mobilization and Demobilization*

Work rates for mobilization and demobilization per party are as follows:

<b>Distance between Worksite and Headquarters</b>	<b>Mobilization and Demobilization Cost</b>
50 kilometres or less	Nil
More than 50 kilometres but not exceeding 150 kilometres	1 party-days
More than 150 kilometres but not exceeding 300 kilometres	2 party-days
Exceeding 300 kilometres	3 party-days

1.3.1 Mobilization of the survey party by the following modes of transportation where necessary shall be reimbursable at cost.

1.3.1.1 Hire of helicopter or aircraft and crew

1.3.1.2 Hire of boat and crew

1.3.1.3 Hire of additional motor vehicles and drivers under exceptional circumstances.

1.3.1.4 Air fares

1.4 *Point Positioning by Satellite*

This item provides the fee for Point Positioning with the use of satellite.

The survey rates chargeable under this item for each job shall consist of the following charges: -



1.4.1 Charges for mobilization and demobilization of 1 Field party shall be as follows:

<b>Distance between Worksite and Headquarters</b>	<b>Charge for 1 Field Day (RM)</b>
More than 50 kilometres but not exceeding 150 kilometres	RM1,750.00
More than 150 kilometres but not exceeding 300 kilometres	RM3,500.00
Exceeding 300 kilometres	RM5,300.00

1.4.2 Basic Charge – RM 2,600.00

1.4.3 Charges for positioning of each point is RM3,500.00

1.4.4 Charges for construction of a monument similar to the type 'C' Marker of Department of Survey and Mapping Malaysia is RM800.00/mark

1.4.5 Charges for site clearance for observation shall be on reimbursable basis.

1.4.6 Charges for survey in Security Areas shall be as per item 1.8.

#### 1.5 *Planimetric Control and Connection*

The accuracy for planimetric control and connection shall not be less than 1 in 4000.

The planimetric control and connection includes:

- i) Connection to Department of Survey and Mapping Malaysia datum, and
- ii) Along the proposed or existing routes alignment

1.5.1 Rates for planimetric control and connection are as follows:

<b>Classification of terrain and Ground Condition</b>	<b>Peninsular</b>	<b>Sabah / Sarawak</b>
Flat and undulating area	RM4.50 / metre	RM5.85 / metre
Hilly area	RM4.50 / metre	RM7.30 / metre
Swampy area	RM4.50 / metre	RM7.30 / metre
Built up area	RM4.50 / metre	RM7.30 / metre

1.6 *Height Control and Connection*

The height control and connection include:

- i) Connection to Department of Survey and Mapping Malaysia Bench Marks/Datum, and
- ii) Along proposed or existing routes or alignments

1.6.1 Height control shall be established on the following conditions:

1.6.1.1 The datum for height control shall be established by at least two existing Bench Marks.

1.6.1.2 The surveyors shall take the shortest practical route.

1.6.2 Work rates are as follows:

<b>Class for heighting</b>	<b>Accuracy (in metres)</b>	<b>Flat and Undulating</b>	<b>Hilly &amp; Swampy &amp; Built up area</b>
a. Ordinary	$+ 0.02 \sqrt{k}$ km	1.6 km / party-day	1.0 km / party-day
b. Precise	$+ 0.003 \sqrt{k}$ km	0.5 km / party-day	0.3 km / party-day
	Where k is the distance in kilometer		

The surveyor may use any methods that he considers most suitable for the job to meet the accuracy required.

## 1.7 Monumenting

(Construction of intersection Points, Temporary Bench Marks and Reference Marks)

These rates are applicable if work item monumenting is done together with items 1.5 and 1.6

### 1.7.1 Monumenting

The work rates for monumenting are as follows: -

Monument Type	Marks Per Party-days	
	Accessible	Inaccessible
a. With concreting	4	2
b. Without concreting	5	3

### 1.7.2 Specification for Standard Monument

The temporary bench marks (TBM) standard monument shall be constructed out of a 1 metre length of 40 mm diameter galvanized iron pipe set in concrete of dimension 30cm x 30cm x 30cm. The TBM standard monument number and the value of the TBM must be written on the concrete.

### 1.7.3 Specification for standard Monument without Concreting

The temporary bench mark (TBM) standard monument shall be constructed out of a 1 metre length of 40 mm diameter galvanized iron pipe to be firmly embedded

### 1.7.4 Non-Standard Monument

In the event where the surveyor is required to construct monuments according to non-standard specifications the charge shall be at actual cost.

## 1.8 Survey in Security Areas

### 1.8.1 Where security pass or permit has to be obtained from authority, an

additional charge of 25% of total fees is applicable: or

1.8.2 Where armed escort is required and working hours are dictated by relevant authority, and additional fee of 50% of the total fees is applicable; and

1.8.3 When there is a waiting time after mobilization and additional charge at RM900.00 per party-day shall be applicable. Where required, the provision of armed escort shall be at no cost to the Licensed Land Surveyors.

### 1.9 *Survey in Inaccessible Areas*

Where the survey worksite is away from Motorable road, the following charges are applicable;

<b>Distance to Worksite from Motorable Road</b>	<b>Additional Charges</b>
a. 0 kilometer to 2 kilometer	No additional charge
b. More than 2 kilometer	20% of the total fees

### 1.10 *Reimbursable*

1.10.1 Actual expenses incurred in purchase of relevant documents, plan, maps, record and etc.

1.10.2 Actual expenses incurred for telegrams, fax, telex, telephone calls and etc.

1.10.3 Hiring charge of special equipment and software packages as agreed with the client.

1.10.4 Expenses incurred in traveling, accommodation and subsistence allowance shall be as follows: -

i)	Travelling	
	Air Fare	Business Class
	Mileage	RM1.00 per km
ii)	Hotel	Actual
iii)	Subsistences Allowances	RM200.00 per day

1.10.5 Expenses incurred in the use of special transportation, boat etc. as agreed with the client.

1.10.6 Expenses incurred in obtaining the followings: -

- i) Application of Permit.
- ii) Bank guaranteed imposed by appropriate authorities.
- iii) Attendance of all safety courses.
- iv) Pilot trenching.

1.11 *Preparation of Land Acquisition Plans*

1.11.1 Preparatory work as per item 1.2

1.11.2 All certified plans and cadastral sheets purchased for the compilation / preparation of the land acquisition plans shall be charged as per item 1.10.3.1

1.11.3 The time involved for search at the Land Office and Other Government Department will be charged at RM24.00 per hour plus traveling expenses chargeable as per item 1.10.3.4

1.11.4 Charges for computation and plan drawing shall be subject to a minimum charge of RM3000.00 per job, any additional lot above 30 lots is charged RM100.00 per lot.

Conditions:

Land acquisition plans shall be compiled from the Survey Department cadastral sheet, and on the same scale. This drawing shall show:

- i) lot boundaries with bearings and distances within the survey corridor
- ii) lot numbers
- iii) lot areas
- iv) any other information normally shown on Survey Department cadastral survey sheets.

1.12 *Processing Conversion and Translation of Digital Data Together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, a charge of 20% of the total survey fees is applicable.

1.13 *Transformation of co-ordinates*

The charges shall be RM50.00 per point subject to a minimum charge of RM940.00 per job.

1.14 *Supply of plans and Documents*

1.14.1 Plans and documents to be supplied to the client without charge shall be as follows: -

1.14.1.1 One (1) set of plan on tracing paper of weight 105/110gms/sqm

1.14.1.2 Two (2) set of paper prints

1.14.1.3 Digital data in DWG format

1.14.1.4 All relevant data, field book, drawing, calculation sheet, etc prepared in the execution of the contract.

Conditions:

Except 1.14.1.1 all other documents shall bear the signature of the Licensed Land Surveyor.

1.14.2 The cost of replotting any drawing on a different scale on A1 size is RM660.00 per sheet.

1.14.3 Additional sets of transparencies or paper prints shall be supplied at the following cost:

<b>Type of Size of Plan</b>	<b>Charge per copy</b>
Film transparency of A1 size	RM120.00
Tracing paper transparency of A1 size	RM70.00
Tracing paper transparency of A2 size or smaller	RM60.00
Paper print of A1 size or smaller	RM25.00

## 2. *SITE SURVEY*

### 2.1 *Classification of Sites*

Survey sites may include: -

Building sites

Dam sites

Sites for traffic interchanges and road junction

Any sites for development and construction.

Fees for Site Survey are as follows: -

### 2.2 *Preparatory Work*

Work rate for preparatory work is 1 party-day.

### 2.3 *Mobilization and Demobilization*

Rates for mobilization and demobilization shall be as per item 1.3

### 2.4 *Demarcation of Boundaries, Planimetric Control and Connection*

Rates for demarcation of boundaries, planimetric control and connection shall be as per item 1.5

### 2.5 *Height Control and Connection*

Work rates for height control and connection shall be per item 1.6

### 2.6 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 2.2, 2.3, 2.4 and 2.5.

## 2.7 *Survey in Security Areas*

Work rates for survey in security areas shall be as per item 1.8.

## 2.8 *Survey in Inaccessible areas*

Work rates for survey inaccessible areas shall be as per item 1.9.

## 2.9 *Reimbursable*

The charges for reimbursable shall be as per item 1.10

## 2.10 *Topographical Survey*

These rates are applicable if work item topographical survey is done together with items 2.2, 2.3, 2.4, 2.5, and 2.6

### 2.10.1 Contour and Detail

Work rates per party-days in hectare are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Contour Intervals</b>		
	<b>1 metre</b>	<b>2 metres</b>	<b>3 metres</b>
Flat and Undulating area	1.25	1.50	1.75
Hilly area	-	0.75	1.00
Swampy area	1.00	1.25	1.50
Built up area	1.00	1.25	1.50



### 2.10.2 Grid Heighting

Work rates per kilometer in party –days are as follows: -

Classification of Terrain And Ground Condition	Grid intervals (with detail)		Grid Intervals (without detail)	
	10m	20m	10m	20m
Developed area	5.00	2.50	2.50	1.25
Built up area	6.00	3.00	3.00	1.50
Undeveloped area	4.00	2.00	2.00	1.00
Swampy area	5.50	2.75	2.75	1.40

### 2.11 Minimum Fee

The minimum fee shall be 2 party-days which is inclusive of 1 party-day for preparatory works.

### 2.12 Preparation of Land Acquisition plans

The charge for preparation of Land Acquisition plans shall be as per item 1.11.

### 2.13 Processing, Conversion and Translation of Digital Data together with Quality Assurance

Where the survey result is required to be submitted in a designated format the charge shall be as per item 1.12

### 2.14 Transformation of co-ordinates

The charge for conversion and transformation of co-ordinates shall be as per item 1.13

### 2.15 Supply of Plan and Document

The charge for supply of plan and documents shall be as per item 1.14

### 3. *CROSS-SECTIONING WITH SOUNDING FOR BRIDGE SITES*

Fees for cross-sectioning with sounding for bridge sites survey are as follows: -

#### 3.1 *Preparatory Work*

Work rate for preparatory work is 1 party –day

#### 3.2 *Mobilization and demobilization*

Work rate for mobilization and demobilization be as per item 1.3

#### 3.3 *Planimetric Control and Connection*

Rate for planimetric control and connection shall be as per item 1.5

#### 3.4 *Height Control and Connection*

Work rate for height control and connection shall be as per item 1.6

#### 3.5 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 3.1, 3.2, 3.3 and 3.4

#### 3.6 *Survey in Security Areas*

Work rates for survey in security areas shall be as per item 1.8

#### 3.7 *Security Inaccessible Area*

Work rates for survey inaccessible area shall be as per item 1.9

#### 3.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

### 3.9 *Survey of Bridge Sites*

The works rates for the survey of bridge site shall be 5.50 party-day/per hectare, excluding the generally wetted area. These rates are applicable if work item survey of bridge site is done together with items 3.1, 3.2, 3.3, 3.4 and 3.5.

### 3.10 *Cross-Sectioning with Sounding*

These rates are applicable if works item cross-sectioning with sounding is done together with items 3.1, 3.2, 3.3, 3.4 and 3.5.

#### 3.10.1 Depth of water less than 1 metre

Where the depth of water is less than 1 metre, the work rates shall be 8 party day per kilometer of cross-sectioning with spot level taken at 10 metres interval. If the interval is less than 10 metres the fees shall increase proportionately.

#### 3.10.2 Depth of water greater than 1 metre.

Where the depth of water is greater than 1 meter, the charges are as follows: -

3.10.2.1 Mobilization and Demobilization of boat is RM1400.00 per boat

3.10.2.2 Boat rental RM700.00 per boat per day.

3.10.2.3 Work rate for Cross-sectioning shall be as 8 party day per kilometer of cross-sectioning with spot level taken at 10 metres interval. If the interval is less than 10 metres the fees shall be increased proportionately

### 3.11 *Preparation of Land Acquisition Plans*

The charge of preparation of land acquisition plans shall be as per item 1.11. These rates are applicable of works item preparation of land acquisition plans is done together with item 3.1

3.12 *Processing, Conversation and Translation of Digital Data together with Quality Assurances*

Where the survey is required to be submitted in a designed format the charge shall be as per item 1.12

3.13 *Transformation of Co-ordinates*

The charge for conversion and transformation of coordinates shall be as per item 1.13.

3.14 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.

4. *ROAD AND RAILWAY SURVEY*

Fees for road and Railway Survey are as follows: -

4.1 *Preparatory Work*

Work rate for preparatory work is 1 party –day

4.2 *Mobilization and demobilization*

Work rate for mobilization and demobilization be as per item 1.3

4.3 *Planimetric Control and Connection*

Rates for planimetric control and connections shall be as per item 1.5

4.4 *Height Control and Connection*

Work rates for height control and connection shall be as per item 1.6

#### 4.5 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 4.1, 4.2, 4.3 and 4.4.

#### 4.6 *Survey in Security Areas*

Work rates for survey in security areas shall be as per item 1.8

#### 4.7 *Survey in Inaccessible Areas*

Work rates for survey inaccessible areas shall be as per item 1.9

#### 4.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

#### 4.9 *Survey of Strip with Spot Level and Detail*

These rates are applicable if work item survey of strip with spot level at 20 metres interval is done together with items 4.1, 4.2, 4.3, 4.4, 4.5 and 4.11. The work rates per party-day in hectares are as follows:

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Developed area / Flat & undulating area	2.0 ha / party-day
Built up area	1.5 ha / party-day
Undeveloped area / hilly area	1.5 ha / party-day
Swampy area	1.0 ha / party-day

#### Conditions:

- i) Item 4.9 shall be carried out with cross-sectioning.
- ii) Rate of cross sectioning as per items 4.13

#### 4.10 *Setting Out of Center Line of Road and Railway*

These rates are applicable if work item setting out of center line of road and railway station is done together with items 4.1, 4.2, 4.3.

##### 4.10.1 Setting out of center line of road and railway from IP to IP with chainage pegs at 20 metres intervals.

The work rates in party –days per kilometer are as follows:

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	2.75 party-days / km
Hilly area	4.25 party-days / km
Swampy area	4.25 party-days / km
Built up area	4.25 party-days / km

##### 4.10.2 Setting out of center line of road and railway from IP to IP with 20 meters intervals chainage pegs and curve setting.

<b>Work rates in party-days per kilometer are as follows: -Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	2.75 party-days / km
Hilly area	5.50 party-days / km
Swampy area	5.50 party-days / km
Built up area	5.50 party-days / km

#### Conditions:

Where the chainage interval is less than 20 metres then the fees shall be increased proportionately.

#### 4.11 *Connection to Reference Markers*

These rates are applicable if work item connection to reference markers is done together with items 4.1, 4.2, 4.3. and 4.4.

##### 4.11.1 Planimetric Connection

Rates for planimetric connection shall be as per item 1.5

#### 4.11.2 Height Connection

Work rates for height connection shall be as per item 1.6

#### 4.12 Longitudinal Profiling Along Established Chainage Pegs

Longitudinal Profiling is the determination of levels at the pegs established and is done together with item 4.10. The work rate in party-days per kilometer are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	1.75 party-days / km
Hilly area	3.00 party-days / km
Swampy area	3.00 party-days / km
Built up area	3.00 party-days / km

#### Conditions:

- i) Levels to be taken at every 20 metres interval and at any points to indicate significant change in slope.
- ii) Where the chainage interval is less than 20 meters then the fees shall be increased proportionately.

#### 4.13 Cross-Sectioning

Cross-sectioning shall be carried out at the chainage pegs established and is done together with items 4.10 and 4.12

The work rates in sections per party-days are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	7 sections / party-day
Hilly area	4 sections / party-day
Swampy area	4 sections / party-day
Built up area	4 sections / party-day

Condition:

- i) Where the total width is more than 70 meters then the fees shall be increased proportionately.

*4.14 Setting of Reserve Boundaries*

These rates are applicable if work item setting out of reserve boundaries is done together with items 4.10.

The work rates in sections party-days per kilometer are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	2.5 party-days / km
Hilly area	3.0 party-days / km
Swampy area	3.0 party-days / km
Built up area	3.0 party-days / km

Conditions:

- i) The above rates are only applicable when the setting out of the reserve boundary is carried out together with the setting out of the center line. Otherwise the normal rates for planimetric control and connection as per item 1.5 shall apply.
- ii) Hard wood pegs to be planted at turning points and jungle roller pegs at intermediate points on the reserve at about 100 metres 7 intervals.
- iii) For reserve width of 60 meters or less, fees shall be charged according to the distance measured along the center- line of the reserve.
- iv) For reserve width of more than 60 meters, or where the setting out has to be carried out along both sides of the reserve, fees shall be charged according to planimetric control and connection rates as per item 1.5 measured along both sides of the reserve.

*4.15 Preparation of Land Acquisition Plans*

The charges for preparation of Land Acquisition Plans shall be as per item 1.11. These rates are applicable if works item preparation of land acquisition plans is done together with item 4.1



4.16 *Processing, Conversation and Translation of Digital Data together with Quality Assurances*

Where the survey is required to be submitted in designated format, the charge shall be as per item 1.12

4.17 *Transformation of Co-ordinates*

The charge for conversion and transformation of coordinates shall be as per item 1.13.

4.18 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.

4.18.1 Types of Plans to be Supplied

The Types of plans to be supplied to the client's department are as follows: -

4.18.1.1 Location plan of the survey area at a suitable scale such that the area under study can be shown in a single standard size sheet. The chainages of the alignment shall be indicated for ease of cross referencing with the detail plans.

4.18.1.2 Longitudinal profile and plan shall show details of ground levels, chainages and all features as required, the survey stations along the center-line of the road, lps, locations of the cross-sections taken, reference points and bench marks. All items be clearly indicated and referenced. The longitudinal profile shall be at a scale of:

1 : 1000 (horizontal)

1 : 100 (vertical)

The drawing on plan view shall be to scale of 1 : 1000

4.18.1.3 Drawing of all the cross-sections taken along the center line of the proposed road, plotted in consecutive order, to a scale of 1: 100 both horizontal and vertical. The drawings shall show details of ground levels and distances from the center line of pavement, shoulders, etc.

4.18.1.4 All formats of plans submitted shall conform to accepted practice. All drawings shall be on A1 size unless otherwise agreed.

## 5. *PIPELINE SURVEY*

Fees for Pipeline Survey are as follows: -

### 5.1 *Preparatory Work*

Work rate for preparatory work is 1 party –day.

### 5.2 *Mobilization and demobilization*

Work rates for mobilization and demobilization be as per item 1.3

### 5.3 *Planimetric Control and Connection*

Rate for planimetric control and connection shall be as per item 1.5

### 5.4 *Height Control and Connection*

Work rates for height control and connection shall be as per item 1.6

### 5.5 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 5.1, 5.2, 5.3 and 5.4.

5.6 *Survey in Security Areas*

Work rates for survey in security areas shall be as per item 1.8

5.7 *Survey Inaccessible Area*

Work rates for survey inaccessible area shall be as per item 1.9

5.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

5.9 *Setting Out of Pipeline*

Setting out of pipeline from IP to IP with chainage pegs at 20 metres interval. These rates are applicable if work item setting out of pipeline is done together with items 5.1, 5.2, 5.3, 5.4 and 5.5.

The work rates in party – days per kilometer are as follows: <b>Classification of Terrain And Ground Condition</b>	<b>Along Existing Road</b>	<b>Other areas</b>
Flat & undulating area	3.00 party-days / km	3.75 party- days / km
Hilly area	3.75 party-days / km	5.00 party- days / km
Swampy area	3.75 party-days / km	5.00 party- days / km
Built up area	3.75 party-days / km	5.00 party- days / km

5.10 *Longitudinal Profiling*

Longitudinal Profiling is the determination of levels at the pegs established and is done together with item 5.9. The work rate in party-days per kilometer are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Along Existing Road</b>	<b>Other areas</b>
Flat & undulating area	1.25 party-days / km	1.5 party- days / km
Hilly area	2.00 party-days / km	2.5 party- days / km
Swampy area	2.00 party-days / km	2.5 party- days / km
Built up area	2.00 party-days / km	2.5 party- days / km

Conditions:

- i) Levels along center-line of the pipeline route to be taken at every 20 metres interval and at points necessary to show any significant changes in slope.
- ii) Longitudinal sections along the pipeline route shall be drawn to a scale of:
  - 1 : 1000 (horizontal)
  - 1 : 100 (vertical)
- iii) At all streams, bridge and culvert crossing the following information shall obtained:
  - (a) Section of streams along the pipeline center-line giving levels at intervals sufficiently close to show the bed levels.
  - (b) The soffit level of the longitudinal beam of the bridges, together with their spans and the locations of the columns.
  - (c) The invert levels and the crown levels of all culverts.

**5.11 Survey of Site with 0.5-metre Contour and Detail**

These rates are applicable if work item survey of site with spot level at 20m interval and detail is done together with items 5.1, 5.2, 5.3, 5.4 and 5.5.

5.11.1 0.5 metre contour and detail survey 0.75 ha/ party-days

5.11.2 The charge for minimum fees shall be as per item 2.11.

5.12 *Cross-Sectioning*

The charges for cross-sectioning shall be as per item 4.13

5.13 *Survey of Strip with Spot Level and Detail*

The charges for survey of strip with 2 metre contour interval and detail shall be as per item 4.9.

5.14 *Setting Out of Reserve Boundaries*

The fees for setting out of reserve boundaries shall be as per item 4.14

5.15 *Preparation of Land Acquisition Plans*

The charges for preparation of Land Acquisition Plans shall be as per item 1.11. These rates are applicable if works item preparation of land acquisition plans is done together with item 5.1

5.16 *Processing, Conversation and Translation of Digital Data together with Quality Assurances*

Where the survey is required to be submitted in designated format, the charge shall be as per item 1.12

5.17 *Transformation of Co-ordinates*

The charge for conversion and transformation of coordinates shall be as per item 1.13.

5.18 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.

## PART II

### ENGINEERING SURVEY FOR DRAINAGE AND IRRIGATION

#### 6. CLASSIFICATION OF TERRAIN AND GROUND CONDITION

The following classification of terrain shall be applied:

- 6.1 *Developed area refers to an area currently planted with padi or cultivated*
- 6.2 *Built-up area refers to an area with man –made structures such as building, road, fence, drain, hedge, cutting, embankment etc.*
- 6.3 *Undeveloped area refers to any area other than that referred to in 6.1 and 6.2 above.*
- 6.4 *Swampy area refers to generally wetted area at the time of survey whether temporary or permanent in nature.*
- 6.5 *Tidal area refers to an area subjected to inundation by tides.*

## 7. *SITE SURVEY*

Fees for Site Survey are as follows: -

### 7.1 *Preparatory Work*

Work rate for preparatory work is 1 party –day.

### 7.2 *Mobilization and demobilization*

Work rates for mobilization and demobilization be as per item 1.3

### 7.3 *Planimetric Control and Connection*

Rate for planimetric control and connection shall be as per item 1.5

### 7.4 *Height Control and Connection*

Work rates for height control and connection shall be as per item 1.6

### 7.5 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 7.1, 7.2, 7.3 and 7.4.

### 7.6 *Survey in Security Areas*

Work rates for survey in Security areas shall be as per item 1.8

### 7.7 *Survey in Inaccessible Area*

Work rates for survey inaccessible area shall be as per item 1.9

7.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

7.9 *Topographical Survey*

These rates are applicable if work item topographical survey is done together with items 7.2, 7.3, 7.4, 7.5 and 7.6

7.9.1 Contour and Detail

Work rates per party-days in hectares are as follows: -

Classification of Terrain And Ground Condition	Contour Intervals		
	1 metre	2 metres	3 metres
Flat and Undulating area / develop	1.25	1.50	1.75
Hilly area / undeveloped	-	0.75	1.00
Swampy area	1.00	1.25	1.50
Built up area	1.00	1.25	1.50

7.9.2 Grid Survey

Cost in party –days per kilometer

Classification of Terrain And Ground Condition	Base Line and Height Control	Grid Line with Spot Levels at intervals of		
		25 metre	50 metres	100 metres and above
Develop area	2.50	2.00	1.75	1.50
Built up area	3.00	3.00	2.75 2.25	2.50
Undeveloped area	3.25	2.50	2.25	2.00
Swampy area	4.00	3.50	3.25	3.00
Tidal area	4.50	4.00	3.75	3.50



7.10 *Minimum Fee*

The minimum fees shall be 2 party-days which is inclusive of 1 party-day for preparatory works.

The method of survey shall be left to the professional discretion of the Licensed Land Surveyor.

7.11 *Preparation of Land Acquisition plans*

The charge for preparation of Land Acquisition plans shall be as per item 1.11.

7.12 *Processing, Conversion and Translation of Digital Data together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, the charge shall be as per item 1.12

7.13 *Transformation of co-ordinates*

The charge for conversion and transformation of co-ordinates shall be as per item 1.13

7.14 *Supply of Plan and Document*

The charge for supply of plan and documents shall be as per item 1.14

8. *WATERWAYS SURVEY*

Fees for Survey Waterways (inclusive of Lakes, Ponds and Reservoir) are as follows: -

8.1 *Preparatory Work*

Work rate for preparatory work is 1 party –day.

8.2 *Mobilization and demobilization*

Work rates for mobilization and demobilization be as per item 1.3

8.3 *Planimetric Control and Connection*

Rate for planimetric control and connection shall be as per item 1.5

8.4 *Height Control and Connection*

Work rates for height control and connection shall be as per item 1.6

8.5 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 8.1, 8.2, 8.3 and 8.4.

8.6 *Survey in Security Areas*

Work rates for survey in Security areas shall be as per item 1.8

8.7 *Survey in Inaccessible Area*

Work rates for survey inaccessible area shall be as per item 1.9

8.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

8.9 *Survey of Strip with Detail*

These rates are applicable if work item survey of strip with detail is done together with items 8.1, 8.2, 8.3, 8.4, and 8.5. Work rates per party-day in hectares are as follows:

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Developed area / Flat & undulating area	2.00 ha / party-days
Built up area	1.50 ha / party-days
Undeveloped area / hilly area	1.50 ha / party-days
Swampy area	1.00 ha / party-days
Tidal area	0.75 ha / party-days

### 8.10 *Setting Out of Center Line of Proposed route, Waterways, Canals and Drains*

These rates are applicable if work item setting out of center line, longitudinal sectioning and cross-sectioning for the proposed route, waterways, canals and is done together with items 8.1, 8.2, 8.3, 8.4, 8.5 and 8.9.

Cost in party –days per kilometer

Classification of Terrain and Ground Condition	Setting Out	Longitudinal Section with Spot level at intervals of		Cross section at 50m Intervals for Surveyed width of		
		50 m	100 m	50 m	75 m	100 m
Developed area	2.75	1.25	1.00	1.00	1.75	2.25
Undeveloped area	4.25	1.75	1.00	1.00	2.00	3.00
Built up	4.25	2.00	1.75	1.75	2.00	3.00
Swampy area	4.25	2.25	2.00	2.00	2.75	3.75
Tidal area	4.75	2.50	2.50	2.25	3.00	4.00

### 8.11 *Survey of Existing Route, Waterways, Canals and Drains*

These rates are applicable if work item setting out of center line, longitudinal sectioning and cross-sectioning of the existing route, waterways, canals and is done together with items 8.1, 8.2, 8.3, 8.4, 8.5 and 8.9.

Classification of Terrain and Ground Condition	Alignment Survey	Longitudinal Section with Spot level at intervals of		Cross section at 50m Intervals for Surveyed width of		
		50 m	100 m	50 m	75 m	100 m
Developed area	3.00	1.75	1.50	2.25	2.50	2.75
Undeveloped area	3.50	2.25	2.00	2.50	3.00 3.00	3.50
Built up	3.50	2.50	2.25	2.50	3.00	3.50
Swampy area	3.50	2.75	2.50	3.25	3.75	4.25
Tidal area	4.25	3.00	2.75	3.50	4.00	4.50

Specifications:

- i) Setting out of center line from IP to IP of proposed or existing where applicable of route, waterways, canals and drains shall be carried out at 50 metres interval.
- ii) Where the intervals of setting out is less or more than 50 meters then fees shall be increased or decreased proportionately.
- iii) Only x and y coordinates of the setting our markers are to be supplied.
- iv) Longitudinal section survey of existing route, waterways, canals, and drain include taking of levels of the right and left banks.
- v) Levels shall be taken along alignment at every 50 meters interval and points necessary to show significant change in slope.
- vi) Cross section survey shall be carried out at intervals of 50 meters and across corridor width of 50 meter.
- vii) Where the width of corridor and intervals is more or less than 50 meters then fees shall be increased or decreased proportionately.
- viii) If the depth of the route, waterways, drains, and canals at the time of survey is more than 1 meter the charge shall be as per item 3.10.2 of part 1.

8.12 *Site Survey*

Cost in party-day per site

<b>Classification of Terrain and Ground Condition</b>	<b>Rate for Site of 150m x 150m</b>
Developed area	2.5 party-day / site
Undeveloped area	3.5 party-day / site
Built up	3.5 party-day / site
Swampy area	3.5 party-day / site
Tidal area	3.5 party-day / site

Conditions:

- i) Cross-section survey shall be carried out at intervals of 50 meter and across corridor width of 50 meter.
- ii) Where the width of corridor and intervals is more than 50 meters then the fees shall be increased proportionately.
- iii) If the depth of the waterways at the time of survey is more than 1 meter the charge shall be as per item 3.10.2

**8.13 Setting Out of Waterways Reserve**

These rates are applicable if work item setting out of waterways reserve is done together with items 8.1, 8.2, 8.3, and 8.10.

Work rates in party-days per kilometer are as follows:

<b>Classification of Terrain and Ground Condition</b>	<b>Rate</b>
Developed area	2.5 party-day / site
Built up	3.0 party-day / site
Undeveloped area	3.0 party-day / site
Swampy area	3.0 party-day / site
Tidal area	3.5 party-day / site

Conditions:

- i) The above rates are only applicable when the setting out of the reserve boundary is carried out together with the setting out of the center line. Otherwise the normal rates for planimetric control and connection as per item 1.5 shall apply.
- ii) Hard wood pegs to be planted at turning points and jungle roller pegs at intermediate points on the reserve at about 100 meters 7 intervals and where the intervals are less than 100 metres the fees shall be increased proportionately.

- iii) For reserve width of 60 meters or less, fees shall be charged according to the distance measured along the center- line of the reserve.
- iv) For reserve width of more than 60 meters, or where the setting out has to be carried out along both sides of the reserve, fees shall be charged according to planimetric control and connection rates as per item 1.5 measured along both sides of the reserve.

8.14 *Preparation of Land Acquisition plans*

The charge for preparation of Land Acquisition plans shall be as per item 1.11.

8.15 *Processing, Conversion and Translation of Digital Data together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, the charge shall be as per item 1.12

8.16 *Transformation of co-ordinates*

The charges for conversion and transformation of co-ordinates shall be as per item 1.13

8.17 *Supply of Plans and Document*

The charge for supply of plan and documents shall be as per item 1.14

### **PART III**

#### **ENGINEERING SURVEY FOR TRANSMISSION LINE**

##### **9. CLASSIFICATION OF TERRAIN AND GROUND CONDITION**

The following classification of terrain shall be applied:

9.1 *Flat and undulating area refers to an area with terrain of up to 10-degree slope.*

9.2 *Hilly area refers to an area with terrain exceeding 10-degree slope.*

9.3 *Swampy area refers to generally wetted area at the time of survey whether temporary or permanent in nature.*

9.4 *Built-up area refers to an area with manmade structures such as buildings, road, fence, drain, hedge, cutting, embankment etc.*

##### **10. TRANSMISSION LINE SURVEY**

Fees for Transmission Line Survey are as follows: -

###### **10.1 Preparatory Work**

Work rate for preparatory work is 1 party –day per job.

###### **10.2 Mobilization and demobilization**

Work rates for mobilization and demobilization shall be as per item 1.5

###### **10.3 Planimetric Control and Connection**

Rates for planimetric control and connection shall be as per item 1.5

10.4 *Height Control and Connection*

Work rates and condition for height control and connection shall be as per item 1.6

10.5 *Monumenting*

Work rates for monumenting shall be as per item 1.7. These rates are applicable if work item monumenting is done together with item 10.1, 10.2, 10.3 and 10.4.

10.6 *Survey in Security Areas*

Work rates for survey in Security areas shall be as per item 1.8

10.7 *Survey in Inaccessible Area*

Work rates for survey inaccessible area shall be as per item 1.9

10.8 *Survey of Strip with Spot Level and Detail*

These rates are applicable if work item survey of strip with spot level at 20m interval is done together with items 10.1, 10.2, 10.3, 10.4 and 10.5.

The work rates per party-days in hectare are as follows:

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	2.0 ha / party-day
Hilly area	1.5 ha / party-day
Swampy area	1.0 ha / party-day
Built up area	1.5 ha / party-day

10.9 *Setting Out of Center Line of transmission Line*

These rates are applicable if work item setting-out of center line of transmission line is done together with items 10.8.

Work rates in party-days per kilometer are as follows:



<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	2.75 party-days / km
Hilly area	4.25 party-days / km
Swampy area	4.25 party-days / km
Built up area	4.25 party-days / km

Conditions:

- i) The setting-out of centre line of transmission line shall be carried out at 200 metres intervals.
- ii) Angle positions shall be indicated by emplacement of galvanized iron pipes 1 metre in length and 40mm in diameter. The pipe shall be buried in the ground to a depth of 0.75 metre and the remaining exposed portion to be painted red.
- iii) Where the intervals is less than 200 metres then fees shall be increased proportionately.

#### 10.10 Longitudinal Profiling

These rates are applicable if work item longitudinal profiling is done together with item 10.9

Work rates in party-day per kilometer are as follow: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	1.50 party-days / km
Hilly area	2.75 party-days / km
Swampy area	2.75 party-days / km
Built up area	2.75 party-days / km

Conditions:

- i) Levels shall be taken at every 50 metres interval and at points necessary to indicate significant changes in slope.
- ii) Where the width is more than 10 metres then the fees shall be increased proportionately.

### 10.11 Cross-Sectioning with Sounding

These rates are applicable if works item cross sectioning is done together with items 10.8 and 10.10.

Work rates in party-day per section are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	14 sections / party-day
Hilly area	10 sections / party-day
Swampy area	10 sections / party-day
Built up area	10 sections / party-day

#### Conditions:

- i) The total width of each section shall be 10 metres.
- ii) Where the width is more than 10 metres then fees shall be increased proportionately.

### 10.12 Setting out of Tower / Pylon Positions

These rates are applicable if works item setting out of tower/pylon positions is done together with items 10.1, 10.2 and 10.3

The work rates in tower/pylon per party-day are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	3 towers / pylon per party-day
Hilly area	2 towers / pylon per party-day
Swampy area	2 towers / pylon per party-day

### 10.13 Site Survey of Tower / Pylon Positions

These rates are applicable if works item site survey for tower/pylon positions is done together with items 10.1, 10.2 and 10.3, 10.4 and 10.5.

Work rates in sites per party-day are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Rate</b>
Flat & undulating area	3 sites / per party-day
Hilly area	2 sites / per party-day
Swampy area	2 sites / per party-day

Conditions:

- i) The maximum area per sites shall be 100 square metres.
- ii) Spot levels shall be taken at 2 metres intervals.
- iii) Where the interval is less than 2 metres then the fees shall be increased proportionately.
- iv) Where the area is more than 100 square metres the fees shall be increased proportionately.

*10.14 Setting Out of Boundaries*

These rates are applicable if works item setting out reserve is done together with items 10.9.

Work rates in party-day per kilometer are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Contour Intervals</b>		
	60m	40m	20m
Flat & undulating area	2.5 party-day	2.25	2.0
Hilly area	3.0 party-day	2.75	2.5
Swampy area	3.0 party-day	2.75	2.5
Built up area	3.0 party-day	2.75	2.5

Condition:

- i) Setting out shall be carried out by off-setting from the center line 200 metres marker

#### 10.15 *Marking of Tress within the Reserve Boundaries*

These rates are applicable if works item marking of tress within the reserve boundaries is done together with items 10.14.

Work rates in party-day per kilometer are as follows: -

<b>Classification of Terrain And Ground Condition</b>	<b>Reserve Width</b>		
	20 metres	40 metres	60 metres
Flat & undulating area	0.50 party-day	0.75 party-day	1.00 party-day
Hilly area	0.75 party-day	1.00 party-day	1.25 party-day
Swampy area	0.75 party-day	1.00 party-day	1.25 party-day
Built up area	0.75 party-day	0.75 party-day	1.00 party-day

#### Condition:

The tress to be marked shall be 30 centimetres or more in diameter measured at approximately 1 metre above ground level.

#### 10.16 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

#### 10.17 *Preparation of Land Acquisition Plans*

Rates and condition for preparations of Land Acquisition Plans shall be as per item 1.11of part. These rates are applicable if works item preparation of land acquisition plans is done together with item 10.1.

#### 10.18 *Processing, Conversation and Translation of Digital Data together with Quality Assurances*

Where the survey results is required to be submitted in designated format, the charge shall be as per item 1.12

10.19 *Transformation of Co-ordinates*

The charges for conversion and transformation of coordinates shall be as per item 1.13.

10.20 *Supply of Plans and Documents*

Cost of plans and documents to be supplied shall be as per item 1.14.

**PART IV**  
**ENGINEERING SURVEY FOR AERIAL MAPPING**

11. *AERIAL MAPPING*

11.1 *Aerial Mapping Rate*

<b>Compilation Scale</b>	<b>Ground Control Fee</b>	<b>Compilation Fee</b>
Smaller than or equal to 1 :10000	RM0.5[Cx(D+H)]	RM(24.00xA)x0.5
Larger than 1:10000 but smaller than or equal to 1:4000	RM[Cx(D+H)]	RM(24.00xA)
Larger than 1:4000 but smaller than or equal to 1:1000	RM1.5[Cx(D+H)]	RM(24.00xA)x1.5
Larger than 1:1000	RM2.0[Cx(D+H)]	RM(24.00xA)x2.0

Where A is the area in hectare

C is the distance in metre = 5Ax 10,000

D is the rate for traversing as provided in terms 1.5 of Part I

H is the rate for heighting as provided in para 1.6 of Part I

11.2 *Deliverables*

- i) The compiled hard copy plans.
- ii) Digital data in DWG format.

Where the survey result to be submitted in a designated format an additional charge of 20 % of the total survey fees is applicable.

11.3 *Reimbursable*

The charge for reimbursable shall be as per item 1.10.

12. **AERIAL PHOTOGRAPHY**

Aerial photography will be charged on actual cost plus 25% management fee. Reimbursable items are:

12.1 *Cost of chartering of aircraft.*

12.2 *Cost of rental of equipment such as camera and navigation equipment*

12.3 *Cost of photographic material such as aerial film, paper, diapositive, chemical and processing.*

12.4 *Cost of security supervision.*

12.5 *Reimbursable*

The charge for reimbursable shall be as per item 1.10.

13. **AERIAL SURVEY WITH UNMANNED AIRCRAFT SYSTEM (UAS)**

13.1 Preparatory works RM 5,800.00 per job

13.2 Work rates per party-days in hectare are as follows: -

<b>Classification of Area Condition</b>	<b>Hectare per party-day</b>
Low Density Area	14.00
Medium Density Area	13.00
High Density Area	12.00

Specification:

- i) Low Density – Non-Built up area
- ii) Medium Density – Less Built up area
- iii) High Density Area – High Built up area

Conditions:

- i) Planimetric control and connection for ground control must be carried out together with item 13.1.2 and subject to charges as per item 1.5 and 1.6.
- ii) Above rate only applies to map scale of 1 : 1000 (fees to be proportionately according to map scale).
- iii) Application for Permit shall not be applicable for Low Density Area.

13.3 *Mosaic (Orthophoto) And Digital terrain model*

- 13.3.1 The works rates for the mosaic image compilation shall be 0.05 party-day/ hectare subject to minimum charges RM4,500.00
- 13.3.2 The works rates for Digital Terrain Model (DTM) by shall be 0.05 party-day/hectare subject to minimum charges RM4,500.00



## PART V

### HYDROGRAPHIC SURVEY FOR TERRITORIAL WATERS

#### 14. GENERAL

The schedule of rates for Coastal Hydrographic Survey in support of: -

- The management of coastal zones
- The hydrographic survey of deltaic regions and river mouths up to two kilometers upstream of the river mouth
- The development of coastal engineering, property, infrastructure projects and activities
- The management and development of jetties, ports, harbours and associated maritime facilities
- The management and development along inland waterways and inland water body

The General Items in Part I shall be applicable here. Fees for Coastal Hydrographic Survey are as follow: -

##### 14.1 *Mobilization and Demobilization*

Work rates for mobilization and demobilization shall be as per item 1.3 of Part I

##### 14.2 *Planimetric Control and Connection*

Work rates for planimetric control and connection of the site shall be as per item 1.6 of Part I

##### 14.3 *Height Control and connection*

Work rates for monumenting shall be as per item 1.6 of Part I.

##### 14.4 *Monumenting*

Work rate for monumenting shall be as per item 1.7 of Part I. These rates are applicable if work item monumenting is done together with items 14.1, 14.2, and 14.3

14.5 *Survey in Security Areas*

Work rates for survey in security areas shall be as per item 1.8 of Part I.

14.6 *Survey in Inaccessible Areas*

Work rates for survey in inaccessible areas shall be as per item 1.9 of Part I

14.7 *Reimbursable*

The charge for reimbursable shall be as per item 1.10.

14.8 *Survey of Strip With Detail*

These rates are applicable if work item survey of strip with detail is done together with items 14.1, 14.2, 14.3 and 14.4.

Work rates per party day in hectare are as follows:

14.8.1. Developed area / flat and undulating	2.0 ha / party days
14.8.2. Built up area	1.5 ha / party days
14.8.3. Undeveloped area / hilly area	1.5 ha / party days
14.8.4. Swampy area	1.0 ha / party days
14.8.5. Tidal area	0.75 ha / party days

## 14.9 Shoreline Profiling

### 14.9.1 Topographical (Onshore) Profiling

These rates are applicable if work item of topographical (Onshore) profiling is done together with items 14.1, 14.2, 14.3, 14.4 and 14.8.

Cost in party day per km

<b>Specification</b>	<b>Base Line and Height Control</b>	<b>Profiles at interval of</b>		
		25m	50m	100m and above
Developed area	2.50	2.00	1.75	1.50
Undeveloped area	3.00	2.50	2.25	2.00
Built up area	3.25	3.00	2.75	2.50
Swampy area	4.00	3.50	3.25	3.00
Tidal area	4.50	4.00	3.75	3.50

Specifications:

Spot levels shall not be more than 10 metres apart along the profiling line and shall extend as far into the sea as in possible.

14.9.2 Bathymetric (Offshore) Profiling

These rates are applicable if work item of bathymetric profiling is done together with items 14.1, 14.2, 14.3, 14.4, 14.8 and 14.9.1

Cost in km per Party Day

<b>Profiles at interval of (m)</b>	<b>Km/Party Day</b>
25	0.3
50	0.4
75	0.4
100 or more	0.5

Subject to a minimum of RM7,000.00 per job

Specifications:

- i) The echo sounder shall be calibrated at the start and at the end of each day's sounding using the bar check method.
- ii) Continuous echo sounding shall be carried out with the sounding recorded at not more than 10 metres interval along the profiling line.
- iii) Sounding is to be extended as close as possible to the shoreline.
- iv) Sounding must be reduced to the adopted height datum from observed tides.
- v) Usage of dual frequency echo sounder, multibeam, side scan sonar, sub bottom profiler and software packages shall be as per item 1.10

14.10 *Tidal Observation*

These rates are applicable if work item of tidal observation is done together with items 14.1, 14.2, 14.3, and 14.4.

#### 14.10.1 Automatic Water Level Recording

The lump sum cost per location per instrument.

<b>Period</b>	<b>Installation</b>	<b>Measurement and Data Processing</b>
14 days or less	RM 8,500	RM 11,800
30 days	RM 8,500	RM 28,800

Where the duration is less than 30 days but more than 14 days, the fees shall be computed proportionately. Where the duration is more than 30 days, then the fees shall be increased proportionately

#### Specifications:

- i) Water level measurement with self-recording (automatic) water level recorder with the measurement recorded at not more than 15 minutes interval continuously for measurement period.
- ii) The recorded data shall be downloaded at the measurement period and processed to produce tabulation of recorded water level in ASCII or MS EXCEL format.
- iii) For the purpose of harmonic analysis of tidal data, a minimum of 30 days recorded data is recommended.

#### 14.10.2 Direct Reading

The cost in party day and lump sum.

Installation of Tide Pole	RM 2,100.00
Tidal Observation of 1 party day per job	RM 50.00/ hour subject to a minimum

#### Specifications:

- i) Water level measurement by method of direct observation of a tide pole established in the vicinity of the survey area with the tidal observation carried out at no more than 15 minutes interval.
- ii) The observed data should be processed to produce tabulation of observed tidal levels in ASCII or MS EXCEL format

#### 14.11 *Current Measurement*

These rates are applicable if work item current measurement is done together with items 14.1, 14.2, 14.3 and 14.4

##### 14.11.1 Self Recording Current Measurement

The cost in Lump Sump per location per instrument.

<b>Period</b>	<b>Installation</b>	<b>Measurement and Data Processing</b>
14 days or less	RM 16,500	RM 46,250
30 days	RM16,500	RM 93,200

Where the duration is less than 30 days but more than 14 days, the fees shall be computed proportionately. Where the duration is more than 30 days, then the fees shall be increased proportionately.

##### Specifications:

- i) A self-recording current meter shall be deployed at a designated location with a suitable mooring and recovery system (e.g. U-shape mooring).
- ii) Measurement of current speed and direction using the self-recording current meter deployed at designated depth within the water column at the designated location, with the measurement of current speed and direction at not more than 30 minutes interval continuously for the measurement period.
- iii) The self-recording current meter must not be subject to befouling, during the measurement period.
- iv) The recorded data shall be down loaded at the end of the measurement period and process to produce tabulation of recorded current speed and direction in ASCII or MS EXCEL format.

### 14.11.2 Direct Reading

The cost per location

Preparation and set up RM 4,250

Direct observation of RM 700 / hour

Current Speed and Direction subject to a minimum of RM 9,200 per job.

#### Specifications:

- i) In-situ observation of the current speed and direction using a direct reading current meter at three depths within the water column (one meter below surface, mid depth, and one meter above the seabed) at one designated location. The current speed and direction will be observed at more than 30 minutes interval.
- ii) The measurement is normally carried out during spring and neap tidal condition and the measurement period shall not be less than 13 hours to sufficiently cover the basic tidal cycle.
- iii) The observed data should be processed to produce tabulation of observed current speed and direction in ASCII or MSEXCEL format.

### 14.12 *Seawater Temperature and Salinity Measurement*

These rates are applicable if work item Seawater Temperature and Salinity Measurement is done together with items 14.1, 14.2, 14.3, and 14.4

The cost per location.

Installation RM 4,250

In-situ (direct) observation of Seawater Temperature and salinity RM 700 / hour subject to a minimum of RM 9,200 per job.

Specifications:

- i) In-situ observation of sea water temperature and salinity using direct reading temperature and salinity bridge at three depths within the water column (one metre below surface, mid depth, and one metre above the seabed.) at one designated location. The temperature and salinity will be observed at no more than 30 minutes interval.
- ii) The measurement is normally carried out during spring and neap tidal condition and the measurement period shall not be less than 13 hours to sufficiently cover the basic tidal cycle.
- iii) The observed data shall be processed to produce tabulation in ASCII or MS EXCEL format.

*14.13 Seabed (Grab) Soil Sampling*

These rates are applicable if work item grab sampling is done together with item 14.1, 14.2, 14.3, and 14.4

Cost in lump sum per sample RM 600 per sample subject to a minimum charge of RM 2,950

Specifications:

- i) Seabed (Grab) soil sampling shall be carried out at designated location and using appropriate grab sampler e.g. Van Der Veen type
- ii) The seabed soil samples shall be sent to approved laboratory for particle size distribution (sieve analysis)

*14.14 Seawater Sampling*

These rates are applicable if work item seawater sampling is done together with item 14.1, 14.2, 14.3 and 14.4

Cost in lump sum per Sample RM 600 per sample subject to a minimum charge of RM 2,950



Specifications:

- i) Seawater sample shall be collected using an appropriate water sampler at different depths within the water location at each designated location.
- ii) Water sample shall be sent to an approval laboratory for total suspended solids analysis.

14.15 *Processing, Conversation and Translation of Digital Data together with Quality Assurances*

As per item 1.12 part 1.

14.16 *Preparation of Report and Submission*

Cost in Percentage of Total Survey Fees chargeable.

5% of the total Survey Fees chargeable

A minimum fee is RM 5,900 per job.

14.16.1 Survey Report should include, as minimum, the following

- i) Scope of Work
- ii) Personal and Equipment
- iii) Methodology
- iv) Significant Events
- v) Data Collected
- vi) Results of Laboratory analysis (if applicable)

14.16.2 Supply of Plans and Documents *as per items 1.14 of part 1*

**PART VI**  
**UNDERGROUND UTILITY DETECTION SURVEY**

15. *GENERAL*

The schedule of rate for Underground Utility Surveys are as follows:

15.1 *Preparatory Work*

Work rate for preparatory work is minimum fee of 3 party-days per job.

Specifications:

- i) Gathering of existing information from utility provider
- ii) Preliminary discussion with utility provider for permission and access.
- iii) Gathering of information on Soil and geological information
- iv) Gathering latest available information utility from 'Pangkalan Data Ukur Utiliti' (PADU)

15.2 *Mobilization and Demobilization*

Rates for mobilization and demobilization shall be as per item 1.3 but subject to minimum charge 1 party-days per job.

15.3 *Underground Utility Detection*

Work rates per party-days in meter square are as follow:

<b>Site Classification</b>	<b>&lt;3m depth</b>	<b>&gt; 3m depth</b>
High Density Fully built-up area	125 meter sq	As per Specification below
Medium Density Built-up area	200 meter sq	As per Specification below
Low Density	500 meter sq	As per Specification below

Specifications:

- i) Detail survey of underground utility survey area to be charge as per item 2.4, 2.5 and 2.10
- ii) Work rate for as-built survey of exposed utility that requires 24 hours standby the rate shall be RM2,500.00/day or part thereof.
- iii) Preparation of survey report and plans is compulsory and content as per 15.7.
- iv) More than 3 meter depth subject to special equipment used with actual cost

Classifications:

- i) High Density: - refers to any area within city/town and urban area with heavy traffic and high density of buildings and with congested volume of utilities.
- ii) Medium Density: - refers to area with moderate traffics and buildings and less densified utilities.
- iii) Low Density: - refers to other areas than above.

15.3.1 Cross sectioning for Utility Detection

The work rates in sections per party-days are as follows: -

Density	Rate		
	< 20m width	20 – 40m width	40 – 60m width
Low Density	6 sections / party-day	5 sections / party-day	4 sections / party-day
Medium Density	4 sections / party-day	3 sections / party-day	2 sections / party-day
High Density	2 sections / party-day	1.5 sections / party-day	1 sections / party-day

Conditions:

- i) Where the total width is more than 60 meters then the fees shall be increased proportionately.
- ii) Includes setting out of gridlines or chainage for Cross Sectioning.

15.4 *Survey in Security Areas*

Work rates for survey in security area shall be as per item 1.8.

15.5 *Survey in Inaccessible Areas*

Work rates for survey in inaccessible areas shall be as per item 1.9

15.6 *Processing, Conversion and Translation of Digital Data in compliance with Quality Assurance*

Where the survey result is required to be submitted in a designated format, the charge shall be as per item 1.12.

*15.7 Preparation of Survey Report and Plans*

- The charge of preparation of survey report and plans subject to 5% of the total survey fees chargeable, subject to a minimum fee of RM 2,500 per job/site.

15.7.1 *Contents of Survey Report*

The Survey Report shall encompass, as a minimum, the following:

- i) Scope of work
- ii) Personnel and equipment
- iii) Methodology
- iv) Significant events
- v) Data collection
- vi) Result of survey
- vii) Recommendation and conclusion

15.7.2 Supply of Plans and Documents

The charge for supply of plans and documents shall be as per item 1.14.

15.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10

**PART VII**  
**MISCELLANEOUS SURVEY**

16. *EARTHWORK SURVEYS*

The schedule of rate for Earthwork Surveys are as follows:

16.1 *Preparatory Works*

Rates for preparatory work is 1 party-day.

Specifications:

- Gathering of existing information
- Preliminary discuson

16.2 *Mobilization and Demobilization*

Rates for mobilization and demobilization shall be as per item 1.3 and subject to minimum charge 1 party-days per job.

16.3 *Site Survey*

Rates as per item 2

16.4 *Survey in Security Areas*

Rates for survey in security area shall be as per item 1.8.

16.5 *Survey in Inaccessible Areas*

Rates for survey in inaccessible areas shall be as per item 1.9.

16.6 *Processing, Conversion and Translation of Digital Data together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, the charge shall be as per item 1.12.

16.7 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.

16.8 *Reimbursable*

The charge for reimbursable shall be as per item 1.10.

16.9 Volume Calculation

The work rates in party day per day are as follows: -

Area (Ha)	Rate (Party Day)
Less than 10	3
10-50	4
Above 50	Proportionately as above

Subject to minimum charge 2 party-days per job.

17. *VERTICALITY SURVEYS*

Specification:

Connection to control points shall be carried out for every 5th floor or less

The schedule of rate for Verticality Surveys are as follows:

### 17.1 *Preparatory Works*

Rates for preparatory work is minimum fee of 1 party-days.

#### Specifications:

- Gathering of existing information
- Preliminary discussion

### 17.2 *Mobilization and Demobilization*

Rates for mobilization and demobilization shall be as per item 1.3 and subject to minimum charge 1 party-days per job.

### 17.3 *Control traverse and Height Connection*

Rates as per item 1.5.1 and 1.6

### 17.4 *Monumenting of Control/Reference Marks*

Rates for survey shall be as per item 1.7.1.

### 17.5 *Verticality survey points*

Rates for survey shall be RM130.00 per point subject to a minimum charge of 1 party-day.

### 17.6 *Survey Report*

Where the survey result is required to be submitted in a designated format, the charge shall be RM4,500.00/report and the report shall be submitted for every maximum of five (5) floor or less.

### 17.7 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.



18. *PILING POINT SURVEY*

18.1 *Preparatory Work*

Rates for preparatory work is 1 party-day.

18.2 *Mobilization and Demobilization*

Rates shall be as per item 1.3

18.3 *Control traverse and Height Connection*

Rates as per item 1.5.1 and 1.6

18.4 *Monumenting of Control Reference Marks*

Rates for survey shall be as per item 1.7.1.

18.5 *Setting out and As-built Piling Points*

Rates for survey shall be as follows:

Per point basis:

18.5.1 Setting out rates shall be RM50.00 per points

18.5.2 As-built rates shall be RM30.00 per points

Block pegging for piling:

18.5.3 Setting-out rate shall be 1 party day per block

18.5.4 Setting-out of grid line shall be charges as per item 1.5.1.

Condition:

Subject to a minimum charge of 1.5 party-day/job.

## 19. MONITORING SURVEYS

Classification of Monitoring Survey shall include all related surveying activities but not limited to:

- i) Settlement Survey
- ii) Deformation Survey
- iii) Dilapidation Survey
- iv) Structural Monitoring Survey
- v) Forensic Survey

### 19.1 General

The scope covered for survey in support of monitoring for, but not limited to;

- i) Dam, roads, tunnels, bridges and viaducts
- ii) High rise and historical buildings
- iii) Foundations, construction sites
- iv) Mining, landslide areas, settlement areas, earthquake

The schedule of rate for Monitoring Surveys are as follows:

### 19.2 Preparatory Work

Rates for preparatory work is minimum fee of 1 party-days.

#### Specifications:

- Gathering of existing information from provider
- Preliminary discussion with provider

### 19.3 Mobilization and Demobilization

Rates for mobilization and demobilization shall be as per item 1.3 subject to A minimum charge 1 party-days per job.

### 19.4 Site Survey

Work rates as per item 2

19.5 *Survey in Security Areas*

Work rates for survey in security area shall be as per item 1.8.

19.6 *Survey in Inaccessible Areas*

Work rates for survey in inaccessible areas shall be as per item 1.9.

19.7 *Processing, Conversion and Translation of Digital Data together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, the charge shall be as per item 1.12.

19.8 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.

19.9 *Reimbursable*

The charge for reimbursable shall be as per item 1.10.

19.10 *Monitoring Survey*

19.10.1 Establishment of monitoring point

Work rates for survey shall be RM100 per point, subject to a minimum charge of 1.5 party-day/point per day

19.10.2 Work rates for survey in shall be RM100 per point, subject to a minimum charge of 1.5 party-day/point per day.

19.11 *Settlement Survey*

19.11.1 The schedule of rates as per item 19.1

19.11.2 The work rates shall cover the scope of services rendered using various approach adopted either geodetic or photogrammetric method

19.11.3 The work rates for survey shall be in accordance with the table appropriate with method adopted

19.11.4 Minimum fee

The minimum fee shall be 3 party days which inclusive of 1 party day for preparatory works

### 19.12 *Deformation Survey*

19.12.1 The scope covered as per item 19.1

19.12.2 The rates shall cover the scope of services rendered using various approach adopted either geodetic or photogrammetric method

19.12.3 The work rates for the survey shall be in accordance with the table appropriate with method adopted

19.12.4 Minimum fee

The minimum fee shall be 3 party days which is inclusive of 1 party day for preparatory works and 1 party day for report.

### 19.13 *Dilapidation Survey*

19.13.1 The schedule of rates as per item 19.1

19.13.2 The work rates shall cover the scope of services rendered using various approach adopted either geodetic or photogrammetric method

19.13.3 The work rates for survey shall be in accordance with the table appropriate with method adopted

19.13.4 Minimum fee

The minimum fee shall be 3 party days which inclusive of 1 party day for preparatory works

19.13.5 Survey Report

Where the survey result is required to be submitted in a designated format, the charge shall be RM4,500.00 per report

## 19.14 *Structural Monitoring Survey*

19.14.1 The schedule of rates as per item 19.1

19.14.2 The rates shall cover the scope of services rendered using various approach adopted either geodetic or photogrammetric method

19.14.3 The work rates for the survey shall be in accordance with the table appropriate with method adopted

19.14.4 Minimum fee

The minimum fee shall be 3 party days which is inclusive of 1 party day for preparatory works

19.14.5 Survey Report

Where the survey result is required to be submitted in a designated format, the charge shall be RM4,500.00 per report

## 19.15 *Forensic Survey*

19.15.1 General

The survey may include spatial investigation for accurate assessment of position for, but not limited to:

- i) Crime scene
- ii) Traffic accidents
- iii) Storm damage
- iv) Environmental threats

19.15.2 The work rates shall be in accordance with the table appropriate with the method adopted.

19.15.3 Minimum fee

The minimum fee shall be 3 party days inclusive of preparatory works and report

#### 19.15.4 Survey Report

Where the survey result is required to be submitted in a designated format, the charge shall be RM 4,500.00 per report.

##### Specification:

- Periodic/non periodic report with tabulated deviation data for period comparison

#### 20. *JOINT VERIFICATION SURVEYS*

20.1 *Mobilization and Demobilization shall be as per item 1.3*

20.2 *Joint Verification survey shall be charges at rate of 1.5 party-day per day*

20.3 *Where the survey result is required to be submitted in a designated format, the charge shall be RM 4,500/report.*

20.4 *Reimbursable shall be charge as per item 1.10*

#### 21. *SURVEY FOR BUILDING INFORMATION MODELLING (BIM)*

The schedule of rate for Building Information Modelling Survey are as follows:

21.1 *Preparatory Work*

Rates for preparatory work is minimum fee of 1 party-days.

##### Specifications:

- Gathering of existing information from provider
- Preliminary discussion with provider

21.2 *Mobilization and Demobilization*

Rates for mobilization and demobilization shall be as per item 1.3 subject to A minimum charge 1 party-days per job.

21.3 *Site Survey*

Work rates as per item 2

21.4 *Survey in Security Areas*

Work rates for survey in security area shall be as per item 1.8.

21.5 *Survey in Inaccessible Areas*

Work rates for survey in inaccessible areas shall be as per item 1.9.

21.6 *Building Information Modelling Survey rate shall be as follows:*

RM 6.50/meter<sup>3</sup> (cubic metre) in building and subject to a minimum charge of RM15,000.00/job.

Condition:

Volume quantity shall be measured and calculated from three-dimensional space enclosed by a closed surface.

21.7 *Processing, Conversion and Translation of Digital Data together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, the charge shall be as per item 1.12.

21.8 *Supply of Plans and Documents*

The charge for supply of plans and documents shall be as per item 1.14.

The work rates shall be charge RM6.50 per cubic metre subject to minimum charge of RM15,000.00 per job.

21.9. *Reimbursable*

The charge for reimbursable shall be as per item 1.10.

21.10 *Survey Report*

Where the survey result is required to be submitted in a designated format, the charge shall be RM 4,500.00 per report.

21.11 *Processing Conversion and Translation of Digital Data Together with Quality Assurance*

Where the survey result is required to be submitted in a designated format, a charge of 20% of the total survey fees is applicable.