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Schedule 2
Agreed Services

Part 1 - Maintenance, Emergency Response and Reporting

The Contractor shall render the following services during the Term:

1. Routine Inspections and Maintenance
 - 1.1 The Contractor shall at all times during the Term keep the System in good working order and condition and shall undertake and perform routine inspections and maintenance on the System at the frequency based on the existing schedule (a sample is attached in **Error! Reference source not found.**).
 - 1.2 The Contractor and the Contractor's Personnel shall thoroughly examine the System during each inspection, and shall:
 - 1.2.1 promptly take such action as is necessary to repair, remedy and rectify any defect, deficiency, flaw and/or effect of wear and tear in the System, or if necessary replace any defective or faulty part of the System; and
 - 1.2.2 troubleshoot, correct and resolve expeditiously any error which may be discovered or revealed through the investigations and tests conducted by the Contractor's Personnel.
 - 1.3 The Contractor shall, from time to time at the request of the Company, provide the Company with general guidance, technical advice, assistance and support in relation to the use, operation, maintenance and repair of the System.
 - 1.4 In relation to the repair or replacement of any of the Parts with any Defect, the Contractor shall:
 - 1.4.1 commence any such repair or replacement only when so authorised by the Company's Supervisor; and
 - 1.4.2 replace that defective Part with a new and unused Part of the best possible quality in relation to condition, durability and performance, from authorised suppliers approved by the Company's Supervisor.

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2. Emergency Response

- 2.1 The Contractor's Personnel shall be on call on a 24-hour basis (including all Sundays and public holidays) to provide the services set out in paragraphs 2.2 to 2.7 below.
- 2.2 The Contractor's Personnel shall respond promptly to any telephone inquiry made by the Company in respect of any issue involving the System, and provide such technical support over the telephone as may be required to resolve the issue. However, if the Company is unable to resolve the issue to its satisfaction despite such telephone support, the Contractor's Personnel shall be required to attend at the Premises.
- 2.3 The Company may at its discretion require two (2) or more of the Contractor's Personnel to attend at the Premises to resolve the issue involving the System after office hours. They should be contactable by handphone at all times.
- 2.4 Where a Contractor's Personnel is required to attend at the Premises pursuant to any provision of this paragraph 2, the Contractor's Personnel shall personally enter the Premises to inspect the System within the relevant period under column (4) of the table set out in **Error! Reference source not found..** For the purpose of this paragraph 2.4, the Contractor's Personnel shall be deemed to arrive at the Premises at the time he reports to the Company's Supervisor at the Premises.
- 2.5 The Contractor's Personnel shall immediately investigate the cause of the issue(s), problem(s) or fault(s) encountered by the Company with the System and shall conduct such evaluations and tests as may be appropriate to verify and confirm that all of the parts, accessories and components comprising the System and their related software are:
- 2.5.1 free from any defect, fault, malfunction or failure, technically sound and operating in accordance with their respective functional design and specifications; and
 - 2.5.2 operating in proper combination with each other.
- 2.6 The Contractor's Personnel shall:
- 2.6.1 promptly take such action as is necessary to repair, remedy and rectify any defect, deficiency, flaw and/or effect of wear and tear in the System, or if necessary replace any defective or faulty part of the System; and

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- 2.6.2 troubleshoot, correct and resolve expeditiously any error which may be discovered or revealed through the investigations and tests conducted by the Contractor's Personnel.
- 2.7 In relation to the repair or replacement of defective Parts, the Contractor shall:
 - 2.7.1 commence any such repair or replacement only when so authorised by the Company's Supervisor; and
 - 2.7.2 replace the defective Parts with new and unused Parts of the best possible quality in relation to condition, durability and performance, from authorised suppliers approved by the Company's Supervisor.
- 3. Reporting
 - 3.1 For each time that the Contractor's Personnel is required to attend at the Premises to perform any of the Services (whether on account of performing routine inspections and maintenance, or responding to a notification by the Company of any issue with the System), the Contractor's Personnel shall, within the relevant period under column (4) of the table set out in **Error! Reference source not found.**, submit to the Company's Supervisor a report stating, *inter alia*, the following:
 - 3.1.1 a record of the defects, faults, errors and/or problems found in the System; and
 - 3.1.2 the work done by the Contractor in respect of the defects, faults, errors and/or problems referred to in paragraph 3.1.1, including any part, accessory and/or software repaired or replaced.
- 4. Preventive Maintenance ['PM']
 - 4.1 The PM shall be carried out once a cycle (6-7weeks) or as per the manufacturer's maintenance schedule for all equipment. The maintenance work covers checking, lubricating, minor adjustment, functional test of all safety devices and controls. (For details, please refer to Schedule 1). The Tenderer is expected to provide qualified and skilled technicians to perform this program. There should be sufficient manpower to complete the number of equipment scheduled for servicing every month. The equipment servicing cycle should not exceed 6 weeks unless special permission is given.
 - 4.2 All tools and consumable items are included in the tender price. eg

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- a. All types of bolts, nuts, washers, screws, springs, bushing and pins
 - b. All types of cleaning solvents, grease, lubricants, sprays, paint, hydraulic oil (for topping up only) and filters
 - c. Rags and brushes.
- 4.3** The Contractor shall submit a master maintenance schedule - both monthly and yearly (please refer to Schedule 1) during the tender submission for reference. This will serve as a guideline whereby future schedule will be based on.
- 4.4** The actual work on site will however need to be adjusted after consultation with SAS so that the timing of equipment shutdown can be properly coordinated.
- 4.5** The proposed maintenance contract sum shall include all arrangement and assistance for necessary testing, inspections and issuance of professional engineers certificates as required by the government authorities at any point of time but will exclude PE fees.
- 4.6** The Contractor shall follow closely to the manufacturer's recommended list of PM checklist. This is indicated in Schedule 1. Within 3 weeks upon the award of this contract, the Contractor is to submit to SAS a proposed list of checklists following closely to the manufacturer's recommendation for approval by SAS engineers. The Contractor is expected to improve the manufacturer recommendations and should include other details like spare part used, manhours taken, components to change during the next PM, etc.
- 4.7** Defects requiring repair discovered during regular PM must be rectified at no additional cost.
- 4.8** The Contractor shall carry out half-yearly load tests on all lifting equipment. The required load shall always be available in the terminal so that ad-hoc tests can be carried out.
- 4.9** The Contractor must ensure that function tests must be carried out on the sub-system (on which the PM has been done) before the system is released to SAS for use.
- 4.10** SAS reserves the right to amend the preventive schedules as and when required and to redeploy the men to carry out repairs. Such repair works shall not be chargeable if the existing preventive maintenance manpower is used.
- 4.11** A minimum of 16 men are required daily to perform the PM.

Part 2 – First Line Maintenance and Reporting

The Contractor shall render the following services during the Term:

5. First Line Maintenance

5.1 The Contractor shall at all times during the Term keep the System in good working order and condition and shall undertake and perform breakdown recovery and repairs on the System as and when directed or when equipment breaks down .

5.2 The Contractor and the Contractor's Personnel shall correctly recover the system from breakdown, and shall:

5.2.1 promptly take such action as is necessary to repair, remedy and rectify any defect, deficiency, flaw and/or effect of wear and tear in the System, or if necessary replace any defective or faulty part of the System; and

5.2.2 troubleshoot, correct and resolve expeditiously any error which may be discovered or revealed through the investigations and tests conducted by the Contractor's Personnel.

5.3 The Contractor shall, from time to time at the request of the Company, provide the Company with general guidance, technical advice, assistance and support in relation to the use, operation, maintenance and repair of the System.

5.4 In relation to the repair or replacement of any of the Parts with any Defect, the Contractor shall:

5.4.1 commence any such repair or replacement only when so authorised by the Company's Supervisor; and

5.4.2 replace that defective Part with a new and unused Part of the best possible quality in relation to condition, durability and performance, from authorised

5.4.3 free from any defect, fault, malfunction or failure, technically sound and operating in accordance with their respective functional design and specifications; and

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- 5.4.4 operating in proper combination with each other.
 - 5.4.5 there shall not be additional charges for such repairs during first line support (repairs requiring no more than 2 men and not more than 5 manhours)
6. Reporting
- 6.1 The Contractors' men are expected to report to the duty technical officer at the start and end of every shift. They are to fill in an attendance form provided by the contractor with details of time reporting and leaving the workplace. This form shall be kept in the control room.
 - 6.2 The men are expected to stay in the control room if there are no breakdowns The men would be given time off for lunch breaks. The lunch breaks will be staggered to ensure there are sufficient men to attend to breakdowns.

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Schedule 3
Schedule of Rates for Agreed Services

1. In consideration of the Contractor completing each of the Services specified in column (2) of the table below, the Company shall pay the Contractor the charges as described and specified against such Services in column (3) of the table below:

S/No. (1)	Type of Services (2)	Payment Charges/Milestones (3)
1.	Combined PM and First Line maintenance	Cost per annum: \$ Optional Extension years: \$
BREAKDOWN		
2.	PM Routine Inspections and Maintenance	For each routine inspection and maintenance completed by the Contractor (as certified in writing by the Contractor and which certification is accepted in writing by the Company) in each subsequent year in the Term: \$
3.	First Line Maintenance	For provision of first line maintenance completed by the Contractor (as certified in writing by the Contractor and which certification is accepted in writing by the Company) in each subsequent year in the Term: \$
4.	Emergency Response	For each issue resolved where the Contractor's Personnel is required to attend at the Premises, as certified in writing by the Contractor and which certification is accepted in writing by the Company: \$
5.	Replacement of Parts	Actual documented cost of any of the Parts used by the Contractor for replacing defective Parts, as evidenced by a copy of each relevant invoice issued by the supplier thereof and which invoice is accepted in writing by the Company, together with an additional fee equal to [15] % of such actual documented cost.
6.	Additional Servicings after office hrs	For each full day servicing carried out after office hrs, as certified in writing by the contractor and

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		accepted in writing by the Company
OPTIONS		
1.	Additional preventive maintenance per workstation, Hoists	
2	Additional men for First Line Maintenance of AFT 6	For each additional men provided per month
3	Additional men for First Line Maintenance of AFT 1-5	For each additional men provided per month
4	For additional man to work for one additional shift on ad hoc basis (as OT by existing man)	Office hrs After office hrs

2. The Contractor shall determine the amounts payable by the Company in accordance with this Schedule on the last day of each month that such amount becomes due and payable, and prepare and render an invoice for such amounts on the Company in the following month.
3. The contractor shall quote for the standard repairs below:

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Applicable item shall be applied to other relevant subsystem or equipment.

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
A. WORKSTATIONS, SCISSOR LIFT AND CONVEYOR DECKS				
1	To replace one unit roller deck motor or cross drive motor			
2	To replace one length of roller-deck roller			
3	To replace one no of bearing housing or sprocket for deck roller			
4	To replace one eccentric drive shaft			
5	To replace one set of bearing unit for eccentric drive shaft			
6	To replace one eccentric drive Cam motor			
7	To replace one eccentric drive's chain			
8	To replace or install one piece of M24 dia chemical bolt			
9	To replace one eccentric drive's sprocket			
10	To change one unit of hydraulic pump			
11	To change one unit of hydraulic pump motor			
12	To change one unit of hydraulic cylinder (main)			
13	To change one unit of hydraulic maintenance strut cylinder			
14	To change one length of hydraulic hose (per metre)			
15	To change one length of hydraulic piping			
16	To change one set of hydraulic joint fitting			
17	To service and replace oil seal for one unit of hydraulic cylinder (Main)			
18	To service and replace oil seal for one unit of hydraulic maintenance strut cylinder			
19	To change one length of hydraulic pipe (per metre)			
20	To change one no. of bearing or bush or pivot pin for scissor lift			
21	To replace one unit of hydraulic control valve/pressure setting and load testing			
22	To replace one length of cross drive shaft			
23	To replace one unit of sprocket gear for cross drive.			
24	To change one set of bushing for upper or lower guide for scissor lift.			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
A. WORKSTATIONS, SCISSOR LIFT AND CONVEYOR DECKS				
25	To replace one unit of clutch or coupling for motor.			
26	To replace one unit of gas spring for deck power stopper			
27	To replace one unit of magnetic solenoid for stopper.			
28	To check and replace one unit of ULD category contour check sensor (LMS-Laser measuring Scanner) at the introduction Point. Apply to others relevant subsystem or equipment.			
29	To check and replace one unit of LSI (Laser scanning instrument) Apply to others relevant subsystem or equipment.			
30	To change one unit of bearing housing or sprocket for roller			
31	To fabricate one length of maintenance struck for scissor lift			
32	To replace one length of maintenance strut			
33	To check and replace one unit of frequency converter for deck drive or cross drive motor			
34	To repair one set of safety panel (Cover beside scissor lift)			
35	To fabricate one set of safety cover			
36	To replace hydraulic cylinder for interlocking pin at tandem scissor lift			
37	To replace pump motor for interlocking pin at tandem scissor lift			
38	To replace interlocking pin			
39	To replace one length (Set) of safety trip bar			
40	To fabricate one set of safety trip bar			
WORKSHOP REPAIR				
41	<p>To service, repair and replace parts of following items and make all the spares in good condition.</p> <p>One unit of Hydraulic cylinder (main). (refer item 12, list A)</p> <p>One unit of Hydraulic maintenance strut cylinder. (refer item 13, list A)</p> <p>One unit of solenoid magnetic motor for stopper. (refer item 27, list A)</p>			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
A. WORKSTATIONS, SCISSOR LIFT AND CONVEYOR DECKS				
	One unit of LMI-Laser measuring instrument. (refer item 28, list A)			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
B. BRIDGE VEHICLES				
1	To change one unit of Drive Travel wheel			
2	To change one unit of Free Travel wheel			
3	To replace one set of wheel bearing for travel wheel			
4	To change one unit of Travel motor (Main or Backup motor)			
5	To change one length of friction drive gear motor			
6	To replace one unit of Roller deck gear motor			
7	To replace one unit of magnetic solenoid for stopper			
8	To replace one unit of gas spring for deck power stopper			
9	To replace one unit of motor clutch for Travel motor			
10	To replace one unit of stop retractor motor			
11	To change one length of power feed rail			
12	To change one set of current collector trolley			
13	To change one unit of friction drive roller			
14	To change one length of deck's roller			
15	To replace positioning encoder reader			
16	To replace one length of encoder rail and deck alignment check			
17	To check and replace one unit of frequency converter for deck motor.			
18	To replace one set of travel wheel guide roller.			
19	To replace of bearing for one unit of travel wheel guide roller.			
20	To check and replace one unit of frequency converter for travel motor			
21	To check and replace one unit of contour check sensor (LMS-Laser measuring scanner) Apply to others relevant subsystem or equipment.			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
B. BRIDGE VEHICLES				
22	To check and replace one unit of LSI (Laser scanning instrument) Apply to others relevant subsystem or equipment.			
23	To change one unit of bearing housing or sprocket for roller			
24	To replace one set of battery for rail brake			
25	To replace battery charger unit			
26	To replace one emergency Rail brake			
27	To service Air-con split unit			
28	Rectify the leak piping and re-charging of gas for the air con sprit unit.			
	WORKSHOP REPAIR			
29	<p>To service, repair and replace parts of following items and make all the spares in good condition.</p> <p>One unit of Drive Travel wheel. (refer item 1, list B)</p> <p>One unit of Free Travel wheel. (refer item 2, list B)</p> <p>One unit of Solenoid magnetic motor for stopper. (refer item 6, list B)</p> <p>One set of Wheel guide. (refer item 18, list B)</p>			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
C. BYPASS TRANSFER VEHICLE (TV1A, 3A 1D AND 3D)				
1	To change one unit of Drive Travel Wheel			
2	To repair one unit of Free Travel Wheel			
3	To change one unit of Travel Gear Motor (Main or Back up)			
4	To change one set of travel wheel guide roller			
5	To change one length of deck's roller			
6	To replace one unit of magnetic solenoid for stopper			
7	To replace one unit of gas spring for deck power stop			
8	To change one unit of bearing housing or sprocket for roller			
9	To change one unit of drive travel motor			
10	To replace one unit of frequency converter-for travel motor			
11	To change one unit of roller deck gear motor			
12	To replace one unit of motor clutch or coupling for Travel motor			
13	To check and replace one unit of contour check sensor (LMS-Laser measuring scanner)			
14	To check and replace one unit of obstacle aisle sensor (LMS-Laser measuring scanner)			
15	To check and replace one unit of LSI (Laser scanning instrument)			
16	To change one length of power feed rail			
17	To change one set of current collector trolley			
18	To replace positioning encoder reader			
19	To replace one length of encoder rail and deck alignment check			
20	To replace one set of travel wheel guide roller.			
21	To replace of bearing for one unit of travel wheel guide roller.			
	WORKSHOP REPAIR			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
C. BYPASS TRANSFER VEHICLE (TV1A, 3A 1D AND 3D)				
22	To service, repair and replace parts of following items and make all the spares in good condition. One unit of Drive Travel Wheel. (refer item 1, list C) One unit of Free Travel Wheel. (refer item 2, list C) One set of travel wheel guide roller. (refer item 3, list C)			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
D. DIRECT DELIVERY TRANSFER VEHICLE (TV 2A AND TV2D)				
1	To change one unit of Drive Travel Wheel			
2	To repair one unit of Free Travel Wheel			
3	To change one unit of Travel Gear Motor (Main or Back up)			
4	To change one set of travel wheel guide roller			
5	To change one length of deck's roller			
6	To replace one unit of magnetic solenoid for stopper			
7	To replace one unit of gas spring for deck power stop			
8	To change one unit of bearing housing or sprocket for roller			
9	To change one unit of drive travel motor			
10	To replace one unit of frequency converter-for travel motor			
11	To change one unit of roller deck gear motor			
12	To replace one unit of motor clutch or coupling for Travel motor			
13	To check and replace one unit of contour check sensor (LMS-Laser measuring scanner)			
14	To check and replace one unit of obstacle aisle sensor (LMS-Laser measuring scanner)			
15	To check and replace one unit of LSI (Laser scanning instrument)			
16	To change one length of power feed rail			
17	To change one set of current collector trolley			
18	To replace positioning encoder reader			
19	To replace one length of encoder rail and			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
D. DIRECT DELIVERY TRANSFER VEHICLE (TV 2A AND TV2D)				
	deck alignment check			
20	To replace one set of travel wheel guide roller.			
21	To replace of bearing for one unit of travel wheel guide roller.			
WORKSHOP REPAIR				
22	To service, repair and replace parts of following items and make all the spares in good condition. One unit of Drive Travel Wheel. (refer item 1, list D) One unit of Free Travel Wheel. (refer item 2, list D) One set of travel wheel guide roller. (refer item 3, list D)			
ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
E. WORKSTATION TRANSFER VEHICLE (WV1D, WV2D AND WV3D)				
1	To change one unit of Drive Travel Wheel			
2	To repair one unit of Free Travel Wheel			
3	To change one unit of Travel Gear Motor (Main or Back up)			
4	To change one set of travel wheel guide roller			
5	To change one length of deck's roller			
6	To replace one unit of solenoid magnetic solenoid for stopper			
7	To replace one unit of gas spring for deck power stop			
8	To change one unit of bearing housing or sprocket for roller			
9	To change one unit of drive travel motor			
10	To replace one unit of frequency converter-for travel motor			
11	To change one unit of roller deck gear motor			
12	To replace one unit of motor clutch or coupling for Travel motor			
13	To check and replace one unit of contour check sensor (LMS-Laser measuring scanner)			
14	To check and replace one unit of obstacle aisle sensor (LMS-Laser measuring scanner)			
15	To check and replace one unit of LSI (Laser scanning instrument)			
16	To change one length of power feed rail			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
D. DIRECT DELIVERY TRANSFER VEHICLE (TV 2A AND TV2D)				
17	To change one set of current collector trolley			
18	To replace positioning encoder reader			
19	To replace one length of encoder rail and deck alignment check			
20	To replace one set of travel wheel guide roller.			
21	To replace of bearing for one unit of travel wheel guide roller.			
	WORKSHOP REPAIR			
22	To service, repair and replace parts of following items and make all the spares in good condition. One unit of Drive Travel Wheel. (refer item 1, list E) One unit of Free Travel Wheel. (refer item 2, list E) One set of travel wheel guide roller. (refer item 20, list E)			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
F. STACKERS				
1	To change one unit of Drive Travel's Wheel			
2	To change one unit of Free Travel's Wheel			
3	To change one unit of Travel's motor			
4	To change one unit of hoist's motor			
5	To change one length of power-feed-rail			
6	To change one set of current collector trolley			
7	To change one no. of wire rope sheave			
8	To change one length of electrical flexible cable			
9	To replace one set of rail guide roller			
10	To replace one set of top guiding roller			
11	To change one unit of Hoist's motor-brake			
12	To replace pump and motor for the lifting deck at the I/O station			
13	To replace one unit of hydraulic cylinder for the lifting deck at the I/O station			
14	To change I/P or O/P station roller deck's gear motor			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
F. STACKERS				
15	To change I/P or O/P station roller-deck's shaft			
16	To change I/P or O/P station roller-deck's shaft			
17	To change a set of Telescopic fork table and assembly			
18	To change one unit of Telescopic fork's gear motor			
19	To change one piece of Telescopic fork's chain			
20	To replace one set of safety catch device and repair the damaged part of the safety catch railing			
21	To change Hoisting steel rope			
22	To replace one unit of frequency converter for hoist motor			
23	To replace one unit of frequency converter for telescopic fork motor			
24	To replace one unit of electronic power converter for travel motor			
25	To change one unit of travel gear motor			
26	To change one unit of hoist gear motor			
27	To change hoisting motor gearbox seal (drum side)			
28	To replace one unit of magnetic solenoid for stopper			
29	To replace one unit of gas spring for deck power stopper			
30	To replace one unit of load cell			
31	To replace one unit of bar code reader			
	WORKSHOP REPAIR			
32	<p>To service, repair and replace parts of following items and make all the spares in good condition.</p> <p>One unit of Drive Travel's Wheel. (refer item 1, list F)</p> <p>One unit of Free Travel's Wheel. (refer item 2, list F)</p> <p>One unit of Hydraulic cylinder. (refer item 13, list F)</p> <p>One set of Telescopic fork table. (refer item 17, list F)</p>			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
G. AIR SIDE DELIVERY TURN TABLE TRANSFER VEHICLE				
1	To change one unit of Drive Travel's Wheel			
2	To change one unit of Free Travel's Wheel			
3	To change one unit of Travel's gear motor			
4	To change one unit of vertical drive gear motor for deck carriage			
5	To change one set of Friction drive wheel			
6	To replace one length of roller-deck roller			
7	To replace one no of bearing housing or sprocket for deck roller			
8	To replace one unit of DC magnetic solenoid for deck stopper			
9	To change one length 4 metre power feed-rail			
10	To replace one length of signal communication rail			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
G. AIR SIDE DELIVERY TURN TABLE TRANSFER VEHICLE				
11	To replace positioning encoder reader			
12	To replace one length of encoder rail and deck alignment check			
13	To change one set of current collector trolley			
14	To change one unit of Friction drive roller			
16	To change one length of deck's chain			
17	To replace one unit of frequency converter for travel motor			
18	To change one unit of vertical driven gear box			
19	To change one unit of bearing housing or sprocket for roller			
20	To change one length of vertical drive chain			
21	To change one length of vertical drive shaft/sprocket			
22	To replace one unit of LMS horizontal obstacle sensor			
23	To replace one unit of protrusion check sensor			
24	To check and replace aligned deck stop sensor			
25	To replace one set of battery for rail brake			
26	To replace battery charger unit			
27	To replace one emergency Rail brake			
	WORKSHOP REPAIR			
25	<p>To service, repair and replace parts of following items and make all the spares in good condition.</p> <p>One unit of Drive Travel's Wheel. (refer item 1, list G)</p> <p>One unit of Free Travel's Wheel. (refer item 2, list G)</p> <p>One unit of vertical driven gear box. (refer item 18, list G)</p>			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
H. ELEVATING TRANSFER VEHICLES - EVA				
1	To repair one unit of Drive Travel's Wheel			
2	To repair one unit of Free Travel Wheel			
3	To change one unit of Travel's motor			
4	To change one unit of Hoist's motor			
5	To change one unit of Friction drive motor			
6	To change one length of 4 metre power feed-rail			
7	To replace one length of signal rail			
8	To replace one length of Horizontal encoder rail and deck alignment check			
9	To replace one length of Vertical position encoder rail and deck alignment check			
10	To replace positioning encoder reader			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
H. ELEVATING TRANSFER VEHICLES - EVA				
	for vertical or horizontal			
11	To change one set of current collector trolley for power line			
12	To change one unit of Friction drive roller			
13	To change one length of wire rope			
14	To change one wire rope sheave			
15	To change one length of electrical flexible cable			
16	To change one length of deck's roller			
17	To replace brake resistance bank unit for main hoisting motor or backup motor			
18	To change one unit of Hoist's gear motor			
19	To change one unit of traveling motor			
20	To change one unit of Hoisting motor brake			
21	To change one unit of Traveling motor brake			
22	To change one unit of DC magnetic solenoid for stopper			
23	To replace stop retractor gear motor			
24	To change one unit of bearing housing or sprocket for roller			
25	To replace one unit of frequency converter for travel motor			
26	To replace one unit of frequency converter for Hoist motor			
27	To replace PLS Horizontal obstacle sensor			
28	To check and replace aligned deck stop sensor			
29	To replace width check sensor			
30	To replace one set of battery for rail brake			
31	To replace battery charger unit			
32	To replace one emergency Rail brake			
33	To replace one unit of deck motor			
34	To replace one set of wheel guide roller			
WORKSHOP REPAIR				
35	<p>To service, repair and replace parts of following items and make all the spares in good condition.</p> <p>To repair one unit of Drive Travel's Wheel. (refer item 1, list H)</p> <p>To repair one unit of Free Travel Wheel. (refer item 2, list H)</p>			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
H. ELEVATING TRANSFER VEHICLES - EVA				
	To repair one unit of wheel guide roller. (refer item 34, list H)			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
I. ELEVATING TRANSFER VEHICLES - EVX				
1	To repair one unit of Drive Travel's Wheel			
2	To repair one unit of Free Travel Wheel			
3	To change one unit of Travel's motor			
4	To change one unit of Hoist's motor			
5	To change one unit of Friction drive motor			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
I. ELEVATING TRANSFER VEHICLES - EVX				
6	To change one length of 4 metre power feed-rail			
7	To replace one length of signal rail			
8	To replace one length of Horizontal encoder rail and deck alignment check			
9	To replace one length of Vertical position encoder rail and deck alignment check			
10	To replace positioning encoder reader for vertical or horizontal			
11	To change one set of current collector trolley for power line			
12	To change one unit of Friction drive roller			
13	To change one length of wire rope			
14	To change one wire rope sheave			
15	To change one length of electrical flexible cable			
16	To change one length of deck's roller			
17	To replace brake resistance bank unit for main hoisting motor or backup motor			
18	To change one unit of Hoist's gear motor			
19	To change one unit of traveling motor			
20	To change one unit of Hoisting motor brake			
21	To change one unit of Traveling motor brake			
22	To change one unit of DC magnetic solenoid for stopper			
23	To replace stop retractor gear motor			
24	To change one unit of bearing housing or sprocket for roller			
25	To replace one unit of frequency converter for travel motor			
26	To replace one unit of frequency converter for Hoist motor			
27	To replace PLS Horizontal obstacle sensor			
28	To check and replace aligned deck stop sensor			
29	To replace width check sensor			
30	To replace one set of battery for rail brake			
31	To replace battery charger unit			
32	To replace one emergency Rail brake			
33	To replace one unit of deck motor			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
I. ELEVATING TRANSFER VEHICLES - EVX				
34	To replace one set of wheel guide roller			
35	To replace one set of Top horizontal guide roller			
WORKSHOP REPAIR				
36	<p>To service, repair and replace parts of following items and make all the spares in good condition.</p> <p>To repair one unit of Drive Travel's Wheel. (refer item 1, list I)</p> <p>To repair one unit of free Travel's Wheel. (refer item 2, list I)</p> <p>To repair one set of wheel guide roller. (refer item 34, list I)</p> <p>To repair one set of Top horizontal guide roller. (refer item 35, list I)</p>			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
J. Two position ULD Hoist				

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
J. Two position ULD Hoist				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length of wire rope			
3	To change one wire rope sheave			
4	To change one length of electrical flexible cable			
5	To change one length of deck's roller			
6	To replace brake resistance bank unit for main hoisting motor or backup motor			
7	To change one unit of Hoist's main gear motor			
8	To change one unit of Hoist's backup gear motor			
9	To replace one set safety gate			
10	To replace one set of chains for safety gate			
11	To replace sliding guide for safety gate			
12	To replace one set of Vertical guide roller for carriage			
13	To replace one set of counter weight guide roller			
14	To change one unit of gate motor			
15	To change one unit of Hoisting motor break			
16	To change one unit of roller deck gear motor			
17	To change one unit of DC magnetic solenoid for stopper			
18	To change one unit of bearing housing or sprocket for roller			
19	To replace one unit of frequency converter for Hoist motor			
20	To replace mechanical safety catch			
21	To replace interlocking steel cable for mechanical safety catch device			
22	To fabricate one set of safety gate			
23	To repair one unit of safety gate			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
K. One position ULD Hoist				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length of wire rope for LH1			
3	To change one length of wire rope for LH2			
4	To change one wire rope sheave			
5	To change one length of electrical flexible cable			
6	To change one length of deck's roller			
7	To replace brake resistance bank unit for main hoisting motor or backup motor			
8	To change one unit of Hoist's main gear motor			
9	To change one unit of Hoist's backup gear motor			
10	To replace one set safety gate			
11	To replace one set of chains for safety gate			
12	To replace sliding guide for safety gate			
13	To replace one set of Vertical guide roller for carriage			
14	To replace one set of counter weight guide roller			
15	To change one unit of gate motor			
16	To change one unit of Hoisting motor break			
17	To change one unit of roller deck gear motor			
18	To change one unit of DC magnetic solenoid for stopper			
19	To change one unit of bearing housing or sprocket for roller			
20	To replace one unit of frequency converter for Hoist motor			
21	To replace mechanical safety catch			
22	To replace interlocking steel cable for mechanical safety catch			
23	To fabricate one set of safety gate			
24	To repair one unit of safety gate			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
L. Stacker Bin Hoist				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length of wire rope			
3	To change one wire rope sheave			
4	To change one length of electrical flexible cable			
5	To change one length of deck's roller			
6	To replace brake resistance bank unit for main hoisting motor			
7	To change one unit of Hoisting main gear motor			
9	To replace one set safety gate			
10	To replace one set of chains for safety gate			
11	To replace sliding guide for safety gate			
12	To replace one set of Vertical guide roller for carriage			
14	To change one unit of gate motor			
15	To change one unit of Hoisting motor brake			
16	To change one unit of roller deck gear motor			
17	To change one unit of DC magnetic solenoid for stopper			
18	To change one unit of bearing housing or sprocket for roller			
19	To replace one unit of frequency converter for Hoist motor			
20	To replace mechanical safety catch			
21	To fabricate one set of safety gate			
22	To repair one unit of safety gate			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
M. T5 Bin Hoist				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length of wire rope			
3	To change one wire rope sheave			
4	To change one length of electrical flexible cable			
5	To change one length of deck's roller			
6	To replace brake resistance bank unit for main hoisting motor			
7	To change one unit of Hoisting main gear motor			
9	To replace one set safety gate			
10	To replace one set of chains for safety gate			
11	To replace sliding guide for safety gate			
12	To replace one set of Vertical guide roller for carriage			
13	To replace one set of counter weight guide roller			
14	To change one unit of gate motor			
15	To change one unit of Hoisting motor brake			
16	To change one unit of roller deck gear motor			
17	To change one unit of DC magnetic solenoid for stopper			
18	To change one unit of bearing housing or sprocket for roller			
19	To replace one unit of frequency converter for Hoist motor			
20	To replace mechanical safety catch			
21	To replace interlocking steel cable for mechanical safety catch			
22	To fabricate one set of safety gate			
23	To repair one unit of safety gate			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
N. T6 Bin Hoist				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length of wire rope			
3	To change one wire rope sheave			
4	To change one length of electrical flexible cable			
5	To change one length of deck's roller			
6	To replace brake resistance bank unit for main hoisting motor			
7	To change one unit of Hoisting main gear motor			
9	To replace one set safety gate			
10	To replace one set of chains for safety gate			
11	To replace sliding guide for safety gate			
12	To replace one set of Vertical guide roller for carriage			
13	To replace one set of counter weight guide roller			
14	To change one unit of gate motor			
15	To change one unit of Hoisting motor brake			
16	To change one unit of roller deck gear motor			
17	To change one unit of DC magnetic motor for stopper			
18	To change one unit of bearing housing or sprocket for roller			
19	To replace one unit of frequency converter for Hoist motor			
20	To replace mechanical safety catch			
21	To replace interlocking steel cable for mechanical safety catch			
22	To replace counter weight safety clamber			
23	To replace counter weight safety clamber oil pump			
24	To repair one unit of safety gate			
25	To fabricate one set of safety gate			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
O. Floored Good lift				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length of wire rope			
3	To change one wire rope sheave			
4	To change one length of electrical flexible cable			
5	To replace one unit of load cell			
6	To replace brake resistance bank unit for main hoisting motor			
7	To change one unit of Hoist's main gear motor			
9	To replace one set safety gate			
10	To replace one set of chains for safety gate			
11	To replace sliding guide for safety gate			
12	To replace one set of Vertical guide roller for carriage			
13	To replace one set of counter weight guide roller			
14	To change one unit of gate motor			
15	To change one unit of Hoisting motor brake			
16	To change one unit of sliding platform gear motor			
17	To replace one unit of frequency converter for Hoist motor			
18	To replace mechanical safety catch			
19	To replace interlocking steel cable for mechanical safety catch			
20	To fabricate one set of safety gate			
21	To repair one unit of safety gate			
P. Mini-Shipment Vertical Carousel				
1	To replace one length of Vertical position encoder rail and deck alignment check			
2	To change one length rotation drive chain			
3	To change one set of main sprocket gear for rotation shaft			
4	To change one length of electrical			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
O. Floored Good lift				
	flexible cable			
5	To change one unit of Vertical rotation gear motor			
6	To replace one set safety door			
7	To replace one set of chains for safety door			
8	To change one unit of door motor			
9	To change one unit of rotation motor brake			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
Q. Turntable with Right Angle deck				
1	To replace one unit of rotation wheel for turn table			
2	To replace one unit of rotation motor for turn table			
3	To change one length of deck's roller			
4	To replace one set of side rotation guide roller			
5	To replace one set of bottom rotation guide roller			
6	To replace one unit of power supply rotation slip ring unit			
7	To change one unit bearing housing or sprocket for roller			
8	To check and replace one unit of frequency converter for rotation motor			
9	To replace one unit of deck motor for turn table main deck			
10	To replace one unit of deck motor (Main Deck)			
11	To replace one unit of deck motor (Sub deck)			
12	To replace one unit of cross drive motor			
13	To replace one unit of solenoid magnetic solenoid for stopper			
14	To replace one no of bearing housing or sprocket for deck roller			
15	To replace one eccentric drive shaft			
16	To replace one set of bearing unit for eccentric drive shaft			
17	To replace one eccentric drive Cam motor			
18	To replace one eccentric drive's chain			
19	To replace one eccentric drive's sprocket			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
R. Queue Lane sub system				
1	To replace one unit roller deck motor or cross drive motor (RA deck Interface to hoist)			
2	To replace one length of roller-deck roller			
3	To replace one no of bearing housing or sprocket for deck roller			
4	To replace one eccentric drive shaft			
5	To replace one set of bearing unit for eccentric drive shaft			
6	To replace one eccentric drive Cam motor			
7	To replace one eccentric drive's chain			
8	To replace one eccentric drive's sprocket			
9	To replace one length of cross drive shaft			
10	To replace one unit of sprocket gear for cross drive.			
11	To replace one unit of clutch or coupling for motor.			
12	To replace one unit of gas spring for deck power stopper			
13	To replace one unit of magnetic solenoid for stopper.			
14	To check and replace one unit of ULD category contour check sensor (LMS-Laser measuring Scanner) at the introduction Point. Apply to others relevant subsystem or equipment.			
S. Bin Distribution Sub system				
1	To replace one unit roller deck motor or cross drive motor			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
R. Queue Lane sub system				
2	To replace one length of roller-deck roller			
3	To replace one no of bearing housing or sprocket for deck roller			
4	To replace one eccentric drive shaft			
5	To replace one set of bearing unit for eccentric drive shaft			
6	To replace one eccentric drive Cam motor			
7	To replace one eccentric drive's chain			
8	To replace one eccentric drive's sprocket			
9	To service and replace oil seal for one unit of hydraulic cylinder (Main)			
10	To replace one length of cross drive shaft			
11	To replace one unit of sprocket gear for cross drive.			
12	To replace one unit of clutch or coupling for motor.			
13	To replace one unit of gas spring for deck power stopper			
T. Dock Leveller				
1	To replace or install one piece of M24 dia chemical bolt			
2	To change on unit of hydraulic pump			
3	To change one unit of hydraulic pump motor			
4	To change one unit of hydraulic cylinder			
5	To change one length of hydraulic hose (per metre)			
6	To change one length of hydraulic piping			
7	To change one set of hydraulic joint fitting			
8	To service and replace oil seal for one unit of hydraulic cylinder (Main)			
9	To change one length of hydraulic pipe (per metre)			
U. Storage Lane and stopper				
1	To fabricate, supply and install one new unit of stopper			
2	To repair one unit of stopper			
3	To change one length of deck's roller			
4	To change one unit bearing housing or sprocket for roller			
5	To replace one set of mechanical interlocking rod for stopper and testing with interface equipments			

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V. STACKER BIN				
1	To paint one unit of 4'X8' stacker bin			
2	To replace all the wire netting for one unit of 4'X8' stacker bin plus painting			
3	To repair one unit of 4' x 8' stacker bin (25% damaged)			
4	To repair one unit of 4' x 8' stacker bin (50% damaged)			
5	To replace a base plate for 4' x 8' stacker bin			
6	To fabricate and supply one unit of 4' x 8' stacker bin			

ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
W. AV or EV crossing Gate				
1	To replace one length of drop arm (Upper section)			
2	To replace one length of drop arm (Bottom section)			
3	To replace one warning sign for crossing gate			
4	To replace one unit of motor for crossing gate			
5	To replace gear and shaft for crossing gate			
6	To replace one support bar for the drop arm.			
X. VUN- Vulnerable Security Door				
1	To Replace one length drive chain for VUN sliding door			
2	To Replace one unit of motor			
3	To repair one set of VUN sliding door			
4	To replace chain sprocket			
Y. RAD –D/E Lifting Table at Direct Delivery Workstation –A North				
1	To Replace one unit of ball screw jack for lifting table			
2	To Replace one unit of motor for lifting table			
3	To replace one unit of vertical drive gear coupling unit			
4	To repair one unit of vertical drive gear coupling unit (Workshop repair)			
5	To replace one unit of FMC HELI Roll			

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ITEM	DESCRIPTION	MANHOUR	MATERIAL	UNIT PRICE S\$
W. AV or EV crossing Gate				
	deck roller			
6	To replace one length of shaft for gear coupling			
7	To replace one unit of Helical gear motor			
8	To replace one unit of clutch unit for lifting motor.			
9	To replace one unit of solenoid magnetic motor for stopper			
10	To replace one length of front roller			
11	To replace one set of bearing housing			
12	To replace one length of front protection bumper			
13	To repair front protection panel			

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Schedule 4
Insurances

1. The Contractor shall effect and maintain at its sole cost, at all times during the Term, the following insurances:
 - 1.1 public liability policy against any risks arising out of fire, theft, occurrences on the Premises and such other risks as are customarily insured in a public liability policy, with the following limits of indemnity:
 - 1.1.1 for any one accident, not less than **\$1,500,000** per claim; and
 - 1.1.2 for any one period of indemnity, unlimited;
 - 1.2 Workmen's Compensation Insurance against liability arising under the Workmen's Compensation Act (Chapter. 354) and at common law arising out of the master-servant relationship, which shall contain the following endorsements:
 - 1.2.1 **Endorsement A** – If any workmen employed by the insured or by the insured's contractors as referred to in Endorsement B herein or any dependant of such workman, brings or makes a claim under any Workmen's Compensation legislation in force in Singapore against the Company and its related corporations and associated corporations for personal injury or disease sustained whilst at work on any contract covered by the terms and conditions of the within policy which the Contractor may be carrying out for the Company, the insurance company will indemnify the Company and its related corporations and associated corporations against such claim, that the insurance company may have the sole conduct and control of all proceedings connected with claims covered by this endorsement. Nothing in the endorsement will be construed as affecting the insured's right to recover damages in any other way under the said legislation;
 - 1.2.2 **Endorsement B** – It is hereby understood and agreed that the indemnity herein granted is intended to cover the legal liability of the insured to workmen in the employment of contractors performing work for the insured while engaged in the business and occupation in respect of which the within policy is granted but only so far as regards claims under any Workmen's Compensation legislation or common law in force in Singapore;
 - 1.3 any other insurances required under law or customarily effected by persons which provide services similar to or analogous with the Services.

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Schedule 5
Services Obligations

1. Removal of Properties

- a. The Contractor shall not, and shall ensure that the Contractor's Personnel shall not, remove any property, including discarded and unused items, from the Premises without written authorisation from the Company.
- b. The Contractor will be liable for the cost of any property so removed (regardless of how such property may have come into its possession) and will indemnify the Company in full under Clause **Error! Reference source not found.** against all liability resulting from such removal.

2. Uniforms for Contractor's Personnel

- 2.1** The Contractor shall provide the Contractor's Personnel with uniforms (including shirts, trousers and footwear) acceptable to the Company. All uniforms must bear the Contractor's name and logo.
- 2.2** All Contractor's Personnel must be properly attired in such uniforms while on the Premises.

3. Safety

- 3.1** All safety regulations of SATS, Changi Airport Authority and Singapore Factorey Act or other regulations are to be complied with.
- 3.2** Without prejudice to any other terms of the contract, the Contractor shall pay the following amounts to SAS:

1st time offence \$100

2nd time offence – Contract sum above \$3,000,000 penalty if up to 0.05% of the contract sum up to maximum of \$2000.

3rd time offence – the contractor shall be barred from future tender

- 3.3** The contractor shall promptly pay all sums due hereunder upon SAS request. Without prejudice to any other right of action or remedy of SAS against the Contractor does not promptly pay any such amounts to SAS, SAS may set off and deduct such sum against any payment(s) due to the Contractor, or set off the same against the security deposit furnished bythe Contractor, as SAS may elect in its sole discretion.

3.4 Safety requirements

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- 13.1 The followings are the safety measures that the Contractor shall provide in the course of the Works. It shall be the responsibility and duty of the Contractor to ensure that all safety measures deemed by SAS to be necessary for the proper execution and completion of the Works are complied with.

a) Safety Helmet

The Contractor shall provide safety helmets to all workmen who are required to work or pass through places that are normally exposed to falling materials or objects. The safety helmet shall be of the type approved by the Standard, Productivity and Innovation for Growth ("Spring").

b) Safety Belts

The Contractor shall provide safety belts, life lines and all devices for the attachment of lines to all workmen who are required to work at height in respect of whom the attachment of life lines shall be of adequate strength and of a type approved by Spring.

c) Overhead Shelters

The Contractor shall provide as and when directed by the SO suitable overhead shelters at places where workmen are required to work or pass which are potentially exposed to falling materials or objects.

d) Warning Signs

The Contractor shall erect and maintain proper warning signboards and barriers during the progress of Works which may endanger the safety of the staff working there or others. The warning signboards and barriers shall be sufficiently large to attract attention and shall include words such as "Danger", "Keep Out", etc as appropriate.

e) Scaffolding

The Contractor shall provide and maintain all scaffolding required for the Works. Scaffolding shall be erected in compliance with the relevant laws, regulations, by-laws and codes of practice and to the satisfaction of the relevant authority(ies) and shall be removed when directed by SAS.

f) Erection/Dismantling of Scaffolding

- i) Sufficient numbers of workmen must be deployed at the Site in order to ensure that the operation of erecting and dismantling scaffolding is expeditious and smooth.
- ii) Unwanted poles must not be stacked up along the common corridors but must be removed immediately from the Site.
- iii) No poles shall be thrown down from the upper floors.
- iv) The Contractor and his/her scaffolding sub-contractor shall be present to control the workmen during the erection and dismantling operation.

g) Safety Vests/Boots

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- i) The Contractor shall provide safety vests and boots to all workmen who are required to work or pass through premises or places, (including without limitation warehouses) that are normally exposed to safety hazards. The safety vests shall be of the type approved by Spring.