

| Metro Manila Subway Project Phase 1 Package CP106: E&M Systems and Track Works | | | | | | | | |
|---|---|--|------|-------------|--------------|-----|------------|------------|
| ITEM NO. | REFERENCE CLAUSE/SECTION | ADDENDUM No. 20 | | | | | | |
| <i>Volume I, Part 1 – Bidding Procedures</i> | | | | | | | | |
| 1. | SECTION V, COST CENTRE E, SCHEDULE E4 – PROVISIONAL SUMS FOR DISPUTE BOARD’S COSTS, PUBLIC RELATIONS RELATED EVENTS AT SITE, PROVISION OF ASSISTANCE FOR RIGHT OF WAY ACCESS AND MONTHLY TRAINING OF EMPLOYER’S PERSONNEL | <p>Revise this schedule with the following:</p> <p>(f) <u>Project Management Information System (PMIS)/Common Data Environment.</u> <u>This Provisional Sum is to include associated licenses cost which is part of the Digital Engineering.</u></p> <p>(g) <u>BIM Requirement.</u> <u>This Provisional Sum is to include pre-BIM works such as mobilization, setting-up, procurement of BIM system and associated works.</u></p> <p>(h) <u>Integrated Control & Safety System (ICSS) /F-SCADA.</u> <u>This Provisional Sum is to include design, delivery, installation, testing & commissioning.</u></p> <p>(i) <u>Depot Yard and Depot Street Lighting.</u> <u>This Provisional Sum is to include design, delivery, installation, testing & commissioning.</u></p> <p>(j) <u>Linear Heat Detection System (LHDS).</u> <u>This Provisional Sum is to include design, delivery, installation, testing & commissioning of LHDS in the tunnel.</u></p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">Item</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Amount (PHP)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">(a)</td> <td>DB’s Costs</td> <td style="text-align: right;">42,000,000</td> </tr> </tbody> </table> | Item | Description | Amount (PHP) | (a) | DB’s Costs | 42,000,000 |
| Item | Description | Amount (PHP) | | | | | | |
| (a) | DB’s Costs | 42,000,000 | | | | | | |

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| | | (b) | PR related Events at Site | 15,000,000 |
| | | (c) | Monthly Training | 10,000,000 |
| | | (d) | Temporary Power | |
| | | - | For PRI (Genset Rental) | 5,000,000 |
| | | - | For Station & Depot (Meralco's temporary supply) | 60,000,000 |
| | | (e) | Works related to FTI and Bicutan Stations | 5,811,000,000 |
| | | (f) | <u>Project Management Information System (PMIS) /Common Data Environment</u> | <u>21,000,000</u> |
| | | (g) | <u>BIM Requirement – Pre-BIM Works (Mobilization, Setting-up, Procurement of BIM system and associated works)</u> | <u>755,000,000</u> |
| | | (h) | <u>Integrated Control & Safety System (ICSS) /F-SCADA – Design, Delivery, Installation, Testing & Commissioning.</u> | <u>1,009,230,000</u> |
| | | (i) | <u>Depot Yard and Depot Street Lighting – Design, Delivery, Installation, Testing & Commissioning.</u> | <u>175,417,000</u> |
| | | (j) | <u>Linear Heat Detection – Design, Delivery, Installation, Testing & Commissioning.</u> | <u>388,000,000</u> |
| | | Total of Schedule E4 to be carried forward to Summary of Cost Centre E: | | 5,943,000,000 <u>8,291,647,000</u> |

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| <i>Volume II, Part 2 – Employer’s Requirements (ER)</i> <i>b) General Requirements (ERG)</i> | | |
| 2. | 17.4 SIGNAL PART MODEL FOR EDUCATION | Revise the title of this section with the following: “17.4 SIGNAL PART MODEL FOR EDUCATION” |
| 3. | 17.4 SIGNAL PART MODEL FOR EDUCATION, 17.4.1 General | Revise this section with the following: 17.4.1 General Signal p Part models shall be provided in order to establish a high quality approach for understanding maintenance of railway. There are two training organizations in MMSP depot. One is the Training Center (TC) of this project as a department of this subway operator, the other one is the Philippine Railway Institute (PRI) as the governmental training school to get railway staff license. All employees in railway operators shall get license first in PRI, then they will learn in training center of each railway operators. In PRI, the students have to know “What is train” to get license, then they have to be familiar with the technologies and structures of the train parts using parts models in TC before starting their maintenance work. |
| 4. | 17.4.2 Required General Functions and Performance | Revise items (1) of this section with the following: (1) General Self-standing part models shall be installed in PRI and TC. |

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| | | <p>These model shall be the same hardware as the actual ones, as much as possible.</p> <p>The part models shown below shall be installed in PRI by the Contractor,</p> <p>P1) Railway side indicators;</p> <p>P2) Level crossing;</p> <p>P3) Emergency train stop warning system; and</p> <p>P4) Auto fare collection system.</p> <p><u>P5) Rail and track bed.</u></p> | | | | | | | | | | | | | | | | | | | | |
| 5. | 17.4.2 Required General Functions and Performance | <p>Revise this section by add new item (10) with the following:</p> <p><u>(10) 4m Rail and track bed mock-up</u></p> <p><u>For the students support to understand the track structure, two (2) mock-ups with the same structure as the main line structure shall be prepared. Rails shall be 4m long, and sleepers and track bed shall be 1-2m longer than rails. One (1) will be exhibited with the bogie mock-up of the train.</u></p> | | | | | | | | | | | | | | | | | | | | |
| 6. | 17.4.2 Required General Functions and Performance, Table 17.7 | <p>Revise Table 17.7 with the following:</p> <p style="text-align: center;">Table 17.7: Major <u>Training</u> Equipment of the Signal Part Model</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">System</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Qty. for PRI</th> <th style="text-align: center;">Qty. for TC</th> <th style="text-align: center;">Remarks</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center;">Railway indicator*</td> <td style="text-align: center;">PNR indicator</td> <td style="text-align: center;">1 set</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">LRT1 indicator</td> <td style="text-align: center;">1 set</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">LRT2 indicator</td> <td style="text-align: center;">1 set</td> <td></td> <td></td> </tr> </tbody> </table> | | | System | Description | Qty. for PRI | Qty. for TC | Remarks | Railway indicator* | PNR indicator | 1 set | | | LRT1 indicator | 1 set | | | LRT2 indicator | 1 set | | |
| System | Description | Qty. for PRI | Qty. for TC | Remarks | | | | | | | | | | | | | | | | | | |
| Railway indicator* | PNR indicator | 1 set | | | | | | | | | | | | | | | | | | | | |
| | LRT1 indicator | 1 set | | | | | | | | | | | | | | | | | | | | |
| | LRT2 indicator | 1 set | | | | | | | | | | | | | | | | | | | | |

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| | | | MRT3 indicator | 1 set | | |
| | | | LRT7 indicator | 1 set | | |
| | | | NSCR indicator | 1 set | | |
| | | | MMSP indicator | | | |
| | | Level crossing | Controller | 1 set | | |
| | | | Road warning device | 2 sets | | |
| | | | Crossing gate | 2 sets | | |
| | | | Train detector. | 2 sets | | Single track, 2 directions |
| | | Emergency train stop warning system* | Signal | 1 set | 1 set | |
| | | | Switch and sound device | 1 set | 1 set | |
| | | 3rd rail model | 20m 3rd rail model | 1 set | | Non electrified model Install at end of non electrified track. |
| | | CBTC equipment* | Radio | | 1 set | |
| | | | Root indicator | | 1 set | Or point direction indicator |
| | | | controller | | 1 set | |
| | | PSD equipment* | Doors | | 1 set | |
| | | | Door local switch | | 1 set | |
| | | | Door sensors | | 1 set | |
| | | | Door controller | | 1 set | |
| | | | Station office control board | | 1 set | |
| | | Automatic £ Fare | Automatic gate | 1 pair | 3 sets | AFC in PRI shall set as different |

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|---------------------------|--|--|---------------------------|--|--|--|--|------|--|-----------------|--------------------|--------|--|--|--|-------------------|--------------------|--------|--|--|--|----------------|---------------------|-------|--|--|--|-------------------|---------------------------|---------------------------|--|--|--|-----------------------------------|--------------------------------------|---------------|--|--|--|--|--|--|
| | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">eCollection system</td> <td style="width: 20%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;">Sta.</td> </tr> <tr> <td></td> <td>Ticket machine,</td> <td>1 sets</td> <td>3 sets</td> <td></td> <td></td> </tr> <tr> <td></td> <td>counter computer,</td> <td>1 sets</td> <td>3 sets</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Station server</td> <td>2 setss</td> <td>1 set</td> <td></td> <td>1 servers in PRI shall set as different Station.</td> </tr> <tr> <td></td> <td>Training tickets.</td> <td>500 tickets</td> <td>300 tickets</td> <td></td> <td></td> </tr> <tr> <td></td> <td><u>Rail and track bed mock-up</u></td> <td><u>4m rail and track bed mock-up</u></td> <td><u>2 sets</u></td> <td></td> <td></td> </tr> </table> <p style="color: red; font-size: small;"><i>*Note: Quantities of equipment for test / training tracks at PRI, workshop and MMSP Training Center are not included in this table. Requirements and quantities shall refer to the Section 17.9 & 17.10.</i></p> | eCollection system | | | | | Sta. | | Ticket machine, | 1 set s | 3 sets | | | | counter computer, | 1 set s | 3 sets | | | | Station server | 2 sets s | 1 set | | 1 server s in PRI shall set as different Station. | | Training tickets. | 500 tickets | 300 tickets | | | | <u>Rail and track bed mock-up</u> | <u>4m rail and track bed mock-up</u> | <u>2 sets</u> | | | | | | |
| eCollection system | | | | | Sta. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ticket machine, | 1 set s | 3 sets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | counter computer, | 1 set s | 3 sets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Station server | 2 sets s | 1 set | | 1 server s in PRI shall set as different Station. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Training tickets. | 500 tickets | 300 tickets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>Rail and track bed mock-up</u> | <u>4m rail and track bed mock-up</u> | <u>2 sets</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | <p>17.7 TRAINING EQUIPMENT FOR POWER SUPPLY SYSTEM,</p> <p>17.7.2 Major Equipment and Required Functions for PRI</p> | <p>Revise list of equipment and last paragraph on item 1 with the following:</p> <p>17.7.2 Major Equipment and Required Functions for PRI</p> <p>(1) Training equipment for Power supply system equipment and others</p> <p>The following equipment shall be installed in PRI:</p> <p style="margin-left: 40px;">1- 34.5 kV Switchgear for Reception;</p> <p style="margin-left: 40px;">1- 34.5kV Switchgear for Rectifier;</p> <p style="margin-left: 40px;">1- Rectifier transformer 1200kVA;</p> <p style="margin-left: 40px;">1- Rectifier 1000kW;</p> <p style="margin-left: 40px;">1- DC switchgear for Rectifier secondary;</p> <p style="color: red; font-size: small; margin-left: 40px;">1- <u>Non energized mock-up of DC switchgear for Rectifier secondary for student lounge;</u></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | <p>1- DC switchgear for Feeder;</p> <p>1- DC switchgear for Negative disconnect switch;</p> <p>.....</p> <p>The specifications conform to the indoor specifications of each device installed to the substation and SCADA.</p> <p>A single-line diagram of this test facility is attached.</p> <p><u>The "Non energized mock-up of DC switchgear for rectifier secondary" is a non-energized standalone mock-up.</u></p> <p><u>It will be displayed in the class room for electric engineers at PRI building. Some of its lids and covers shall be removed so that students can understand the basic structure and role of the switchgear. Lightings to illuminate the inside shall be provided if necessary.</u></p> |
| 8. | <p>17.10 MMSP TEST TRACK FOR PRI,</p> <p>17.10.1 General,</p> <p>&</p> <p>GBB 17, item 16 of Annex B</p> | <p>Revise last paragaraph with the following:</p> <p>17.10.1 General</p> <p>A Training track, mock-up bridge.....</p> <p>The major equipment prepared by the CP106 contractor for the training center is as shown in the table below. For details of each equipment, check each chapter of this technical specification. These devices shall be prepared by The Contractor without items which other contractor is assigned. In this chapter, we will focus on the training track in particular.</p> <p>The Contractor shall supply, deliver and install <u>two (2) sets of</u> four (4) meter rail tracks including sleepers, rail bed</p> |

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| | | etc. inside the PRI building. <u>One (1) set is use</u> for the Train Part Model that to be provided by CP107. The Contractor shall coordinate with CP107 and other relevant parties for this interface works. | | | | | | | | | | |
| 9. | APPENDIX 6 PROVISIONS FOR INTERFACE CONTRACTORS | Revise item 10 of Section 5 with the following: 5 ROLLING STOCK <table border="1" data-bbox="734 576 1982 932"> <tr> <td>10</td> <td><u>Changeover</u> Switch <u>for</u> <u>CBTC & ETCS signaling</u> <u>systems operation and button</u> <u>for Signaling system</u></td> <td>CP106 (CBTC) and CP NS-01 (ETCS)</td> <td>CP106 (CBTC) and CP NS-01 (ETCS)</td> <td>CP107</td> <td>Type of switch, layout arrangement and data exchange interface shall be coordinated. <u>Supply of equipment shall be further discussed between both Contractors.</u></td> </tr> </table> | | | | | 10 | <u>Changeover</u> Switch <u>for</u> <u>CBTC & ETCS signaling</u> <u>systems operation and button</u> <u>for Signaling system</u> | CP106 (CBTC) and CP NS-01 (ETCS) | CP106 (CBTC) and CP NS-01 (ETCS) | CP107 | Type of switch, layout arrangement and data exchange interface shall be coordinated. <u>Supply of equipment shall be further discussed between both Contractors.</u> |
| 10 | <u>Changeover</u> Switch <u>for</u> <u>CBTC & ETCS signaling</u> <u>systems operation and button</u> <u>for Signaling system</u> | CP106 (CBTC) and CP NS-01 (ETCS) | CP106 (CBTC) and CP NS-01 (ETCS) | CP107 | Type of switch, layout arrangement and data exchange interface shall be coordinated. <u>Supply of equipment shall be further discussed between both Contractors.</u> | | | | | | | |
| 10. | APPENDIX 16 SIGNALLING SYSTEM DETAILED DESIGN CONSULTANT & CONTRACTOR RELIABILITY, AVAILABILITY, MAINTAINABILITY & SAFETY ASSURANCE | Revise item h) in Section 2 & 6 with the following: 2. General RAM Requirements h) The Contractor shall have previous demonstrable pedigree for delivering GOA3 UTO Driverless <u>GOA2 STO Semi-automatic</u> CBTC systems 6. Technical Safety Requirements h) The Contractor shall provide a GOA3 UTO Driverless <u>GOA2 STO Semi-automatic</u> system to MMSP | | | | | | | | | | |