General Bid Bulletin No. 27
14 September 2021

THE MALOLOS-CLARK RAILWAY PROJECT AND THE NORTH-SOUTH RAILWAY PROJECT SOUTH LINE COMMUTER PACKAGE CP NS-01: PROCUREMENT OF ELECTRICAL AND MECHANICAL SYSTEMS AND TRACK WORKS (IFB No: 21-040-3)

TO ALL PROSPECTIVE BIDDERS:

This General Bid Bulletin is issued to amend/clarify certain provisions in the Bidding Documents for the above-mentioned Project. Please refer to the attached Annexes of this General Bid Bulletin for details:

1. **Annex "A"** — Clarification to the Bidding Documents
2. **Annex "B"** — Addendum to the Bidding Documents with "**Attachment 1**"
3. **Annex "C"** — Not Applicable

All other portions of the Bidding Documents not affected by these revisions, amendments and/or clarifications shall remain unchanged.

Revisions/amendments/clarifications made herein shall be conserved as an integral part of the Bidding Documents of this Project.

For your guidance and information.

For the Bids and Awards Committee

SIGNATURE REDACTED

ENGR. JAIME M. NAVARRETE, JR
Chairperson

Annex A

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1	GBB No.22 DRG No. MCRP-DWG-PSS-1001 REV 07	This drawing shows electric utility company supplying for SS No21, SS No22 and Depot as follows. SS No21 > CEDC, SS No22 > CEDC, Depot > MERALCO In above case, if all substations (SS No21, SS No22, Depot and SP), feed power to OCS, the border of both electric companies' supply cannot be separated at section. Please clarify if it's acceptable.		The Depot substation is under the jurisdiction of CEDC as stated in Clause 4.1.1 ERT page 361. Please refer to revised drawing in Annex B.
2	Volume II. Part2 Employer's Requirements (ER) c) Technical Requirements (ERT) 4) Power Supply System, ERT-382, ERT-418, 4.4.5 BP(Battery Post), 4.1.3 System Overview (9) TSS equipment 5)Re-generating power absorbing equipment,	Please provide the starting voltage of Brake Blending (Re-generation Brake and Mechanical Brake) at rolling stock, to adopt the effective characteristics and setting voltage of regenerative power absorption device (Battery post, Braking resistor unit).		The starting voltage of brake blending would be greater than 900 Vdc.
3	GENERAL	We understand that the Replies to Queries, Addenda and General Bid Bulletins form part of		Where possible revisions to the contract documents will be made to reflect the responses to GBB's. Where the responses

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<tr><th>Item No.</th><th>Volume Section No.
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<tr><td></td><td></td><td>the Contract Document.
Kindly confirm.</td><td></td><td>to GBB's cannot be accurately reflected by changes to the contract documents a separate annex to the contract will be made to contain such GBB's</td></tr>
<tr><td>4</td><td>Part-1
Section - IV, BF-259, SCHEDULE 3: LIST OF JAPANESE ORIGIN, GOODS AND SERVICES [WITH PRICES]
<table><tr><th>Item</th><th>Description of Goods and/or Services to be procured from Eligible Sources</th><th>Manufacturers / Suppliers / Service Providers</th><th>Quantity</th><th>Amount in Japanese Yen</th></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="4">Total Amount excluding VAT (A)</td><td></td></tr></table></td><td>We understand that the bidder shall specify the details of Goods and Services which will be Procured from Japan in the Table provided in Schedule-3.
However, we understand that the bidder shall be allowed to enter the amount for these Good & Services in any of the currencies allowed in the bid, i.e, JPY, USD, EURO, PHP or any combination of the 4 currencies.
Kindly confirm.</td><td></td><td>Reference to the ITB 19.1:
"The currency(ies) of the Bid shall be as described below:
The unit rates and prices shall be quoted by the Bidder in the Price Schedule separately in the following currencies:
(i) for those inputs to the Works that the Bidder expects to supply from within the Employer's country, in Philippine Peso, the name of the currency of the Employer's country, and further referred to as "the local currency"; and
(ii) for those inputs to the Works that the Bidder expects to supply from outside the Employer's country (referred to as "the foreign currency requirements"), in Japanese Yen and/or United States Dollars and/or Euro.</td></tr>
<tr><td>5</td><td>Part-2
Section – VI, ERG - 183, MMSP</td><td>We understand that the scope of work of NS-01 Contractor in MMSP Depot Test Track is only to</td><td></td><td>Bidder's understanding is incorrect. CP 106 is E&M contractor for MMSP line as well as</td></tr>
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	INTERFACE, Signalling: …… NS-01 shall interface with CP106 for MMSP Depot test track for set up test facility for ETCS	provide interface support with CP106 contractor for set up test facility for ETCS. We also understand that the scope of works of CP NS-01 contractor does not include any other works like Track works, OCS, Power supply etc. in the MMSP Depot Test Track.		MMSP Depot. CP106 will provide infrastructure in the Depot like track, OCS, power supply , CBTC signaling on Test track,etc. NS01 shall provide ETCS test facility on the MMSP depot test track in coordination with MMSP contractors/s. Please also refer GBB 4 item 75 Annex A
6	Part-2 Section – VI, BF-21, Response for Appendix 7.3. 3.7 Approach for development of train operation plan: APPENDIX 7.3: PROPOSED METHOD OF IMPLEMENTATION OF THE WORKS 3. General Approach for System Integration and System Assurance 3.7 approach for development of train operation plan: 3.7.1 calculation of transport capacity of the Railway System corresponding to the demand forecast through the design life as defined in Section VI the Employer's Requirements;	GBB 12 S.N. 74 "An Integrated Train Operation Plan (ITOP) has been prepared which is based on various assumptions and unknowns such as PSD/ATO under ETCS level 2, etc. The Contractor shall provide simulations that will involve verification of all railway system parameters defined during the design stage, which will provide for accurate system parameters for train operation simulations. In addition, the contract shall provide a basis to re-check the ITOPs as applicable and necessary." Query: As per part of the Bid response for Appendix 3.7 in our Technical Bid 1. Are we expected to respond only with a methodology to verify/validate the ITOP		The contractor shall provide a methodology to verify and validate the ITOP and utilize such methodology to prepare a complete ITOP factoring all the Railway system parameters defined during the design."

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	3.7.2 calculation of trip time from Calamba Station to Clark International Airport Station and in the reverse direction without boarding and alighting time at stations; and 3.7.3 calculation or simulation to comply with the minimum headway at terminal stations and turn back stations.	prepared by Client which shall be shared only during the preliminary design stage Or 2. Are we expected to prepare a complete fresh ITOP factoring all the Railway system parameters?		
7	Part-2 Section – VI, ERT – 19, Depot Test Track	We understand that the scope of works of CP NS-01 contractor includes the Supply & Installation of Depot Test Track in the North Depot only. Kindly Confirm.		The Bidder's understanding is correct. The scope of work of NS-01 contractor includes the Design, Supply, and Installation of Depot Test Track in the North Depot.
8	Part-2 Section – VI, ERT – 19, Depot Test Track	We understand that the contractor shall install Ballasted Track in Depot Test Track with Rails and Fastening system similar to the Depot ballasted Track. Kindly confirm.		The Bidder's understanding is correct.
9	Part-2 Section – VI, ESMP – 41 & 22 of 321, Appendix- B: Generic Safety Requirements & MCRP-DWG-GEN-TK-0101, SR-100:	The referred clause states that in case of Derailment of the Rolling stock, the track structure shall be capable to contain the train from tilting, running into the structure gauge of the opposite track and from colliding with		This clause "SR-100" has been removed. Details on Guard Rails is stated in clause ERT 1.12.12.

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	Track structure shall be capable to contain the train path in the event of derailment (Containment from tilting, running into the structure gauge of the opposite track and from colliding with bridge/tunnel equipment). & TYPICAL CROSS SECTION FOR ELEVATED SECTION (TANGENT)	bridge/tunnel equipment. This requirement essentially means provision of a derailment guard or Guard rail. However, none of the Track cross section drawings show such arrangement of either a derailment Guard or guard rails. We also refer to similar track structures from similar projects like Jakarta MRT, Ho Chi Minh City Metro etc. where no such derailment guard or Gurad rails are used. Also in our experience, for a Ballasteless Track form using PSC sleepers, there is never a provison of derailment Guard or Guard rail. Therefore we are unable to understand the intent of refered Safety requirement “SR100”. So we request you to clary the requirement. Kindly specify if it is only applicable for areas with sharp curves. Kindly clarify.		
10	Part-2 Section – VI, ESMP – 41, Appendix- B: Generic Safety Requirements, SR-100: Track structure shall be capable to contain the train path in the event of	Further to our query above, It is understood that the derailment containment can only be provided away from the sleeper edges, thereby increasing the distance between the running rail face and the		This clause "SR-100" has been removed. Details on Guard Rails is stated in clause ERT 1.12.12.

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	derailment (Containment from tilting, running into the structure gauge of the opposite track and from colliding with bridge/tunnel equipment).	derailment containment edge. This implies that the minimum distance between the rail and derailment containment can be to the order of 500mm. In such a design, there is no way to contain the derailed train away from the civil equipment's and structure gauge of the adjacent track. This would mean that check rails or guard rails need to be provided on the sleepers which is a very expensive system. We request the employer to confirm on this requirement of derailment containment as to what provisions should be taken by the bidder in the design. We once again request you to clary the requiremen and specify if it is only applicable for areas with sharp curves. Kindly clarify.		
11	Part-2 Section – VI & GBB – 2, ERT-1 & 29/127, 1.1.1.(4), Sections of the Main Line tracks and junctions on	We understand from the response to queries provided in GBB No.2, that the employer has not identified any sections where differential settlement may occur. The requirement is specified only to cover for such unlikely scenarios during the execution stage.		There are no identified sections where differential settlement will occur. The interfaces between Civil contractors should be followed as stated in ERT 1.28.

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	supporting structures subject to possible settlement shall be constructed using FFU sleepers with double elastic indirect fastenings embedded within a ballast track base. & The are no identified sections where differential settlement will occur. The interfaces between Civil contractors should be followed as stated in ERT 1.28 of Section VI Part 2 Volume II.	Any such section requiring installation of special tracks with FFU sleepers on ballasted track base will have significant cost impact. You would appreciate that, it is impossible for a Bidder to assess the length of such sections at the current stage. Therefore, to bring all Bidders at par and avoid any speculation in this regard, we would request you to specify a length/ or number of such locations to be considered as part of Employers requirement. Kindly clarify.		
12	Part-2 Section – VI, ERT-1 & 97 of 321, 1.1.1.(4) & NSRP-DWG-GEN-TK-0501, Sections of the Main Line tracks and junctions on supporting structures subject to possible settlement shall be constructed using FFU sleepers with double elastic indirect fastenings	From the refereed clause and the Drawing, we understand that the ballast bed-based track shall be capable to accommodate the adjustment up to a tune of 1.25m due to settlement of the civil structure. It would mean that the ballast thickness may go up to a depth of more than 1.5m which is not acceptable by technical standards of railways due to various reasons. Kindly confirm if the increase in ballast		As part of the Design and Build contract, any settlement in Civil structure shall be coordinated and agreed by both Contractors. The Contractor shall propose to the Engineer and subject to approval, the solution and method of construction if any settlement in Civil structure are identified. Drawing referred by the bidder shows the Typical irregularity adjustable track at valley fault is for reference only.

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	embedded within a ballast track base.	thickness is expected to compensate the settlement in the civil structure.		
13	Part-2 Section – VI, ERT-1, 1.1.1.(4), Sections of the Main Line tracks and junctions on supporting structures subject to possible settlement shall be constructed using FFU sleepers with double elastic indirect fastenings embedded within a ballast track base.	From the referred clause, we understand that having double elastic fastening system on ballast bed track is non-proven and reduces the elasticity of the track to unacceptable levels. Kindly confirm if such a solution is mandatory or suggest any other alternate solution to accommodate such high level of settlement in the civil structure		The Contractor may propose to the Engineer and subject to approval, the proven solution and method of construction if any settlement in Civil structure are identified.
14	Part-2 Section – VI, MCRP-DWG-GEN-TK-0227, Typical Layout for #10 Crossover.	In the referred drawing, it is shown that the Epoxy grout has to be provided at the rail seat of the Outer rail only and the rest of the portion of the sleepers are without any support. We understand that the epoxy grout has to be provided throughout the length of the sleeper. Kindly confirm.		The Bidder's understanding is incorrect. Epoxy grout is needed in areas where rails, crossing, and fastening positions of the turnouts. Epoxy grout maybe needed in some areas of the turnouts depending on site condition.
15	Part-2 Section – VI, 58/321, HCRP-DWG-GEN-TK-0205, TYPICAL DETAILS FOR MONO-BLOCK PSC CONCRETE SLEEPER FOR BALLASTLESS TRACK	In the referred drawing, typical details of Mono-Block PSC sleepers for Ballastless Track are provided. We understand that the reinforcement details provided as ¢ 13 Prestressed Steel Rod is same as ¢ 13 Prestressed Steel strands. Kindly confirm.		The Bidder's understanding is incorrect. Prestressed Steel Rod is different from Prestressed Steel Strand

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	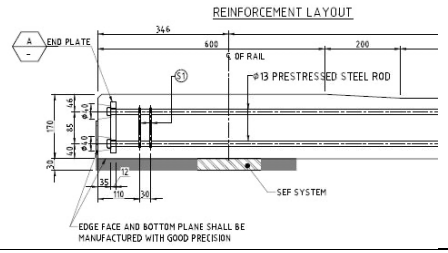			
16	Part-2 Section – VI, 58/321, HCRP-DWG-GEN-TK-0205, TYPICAL DETAILS FOR MONO-BLOCK PSC CONCRETE SLEEPER FOR BALLASTLESS TRACK	Kindly confirm whether the bidder has to follow the same drawing to supply PSC sleepers required for the main line or the bidder can propose different design of PSC sleepers complying to all the tender conditions related to the PSC sleepers.		The Bidder may propose a PSC sleeper design and subject to the Engineer's review and approval following the requirements stated in ERT 1.14 Prestressed Concrete Sleeper. The Contractor shall interface with other NSCR Trackwork contractor for the design of the sleeper for uniformity of the whole NSCR line.
17	7.2.1.2, ERT-619, Limited Express Ticketing System, There is mention of Ticket Validator	Developing software for Ticket Validator is in scope or not. Please confirm.		Please refer to GBB24 Item 7 response.
18	7.7.1.3, ERT-627, System Operation Requirement, Personalized Staff card issuance	Personalized staff SVC - What type of Stored value for staffs, Will they have to top up these cards as general passengers, and will AG deduct money from these cards as well, can they use this card in TVM, HT and POS ? Kindly confirm.		Please refer to GBB24 Item 9 response

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19	7.7.2.2, ERT-628, Card Issuance and Card Status, b, ii - First Issuer will encode the format of the card	Please elaborate who will be owning the card structure of contactless cards and what is the process if card structure has to change to accommodate new fare policy etc., can happen either during development of software or even during live operation		Please refer to GBB24 Item 10 response
20	7.7.3.1, ERT-630, Single Journey Ticket, System should issue tickets for other railways and accept tickets from other railways	Is same card and card structure will be used for other railways also. Please confirm		Please refer to GBB24 Item 11 response
21	7.7.3.3, ERT-630, Single Journey Ticket, SJT as payment mode	SJT can be also used for payment of limited express ticket, please elaborate.		Please refer to GBB24 Item 12 response
22	7.7.4.4, ERT-631, Stored Value card, SVC as payment mode	SVC can be also used for payment of limited express ticket, please elaborate.		Please refer to GBB24 Item 13 response
23	7.7.7.1, ERT-635, Card Handling, f. TVM and POS should be designed such that no of card should be counted inside the machine	Please let us know if software has to handle this and in POS card does not go inside the machine, therefore it will be with operator, please confirm		Please refer to GBB24 Item 14 response
24	7.9.1.7, ERT-650, System Requirement, f. AG shall be able to accept payment method of EMV complaint cards with contactless interface	Please clarify if this EMV card as fare media is in current scope or it is future scope. Please confirm.		Please refer to GBB24 Item 15 response

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25	7.9.3.3, ERT-655, System Requirement, i. POS should be able to top-up SVC with EMV based card	The assumption is the external credit/debit card payment device with payment application will be provided by customer. Please confirm		Please refer to GBB24 Item 16 response
26	7.9.3.3, ERT-656, System Requirement, l. It should be possible to configure machine (POS) by parameter as EFO or a POS	What are the requirements and functionalities of EFO? Please confirm.		Please refer to GBB24 Item 17 response
27	7.7.9.3, ERT-637, QR Code Payment, The mobile application shall be integrated with mobile wallet linked to the pre-paid account	Is it bank scope to provide the API for integration with wallet? Please confirm.		Please refer to GBB24 Item 18 response
28	7.7.12.3, ERT-639, Revenue Data, For any interchange paid-to-paid links, the revenue data shall be considered to show the amount of the other railway separately	We are assuming interchange information will be provided to us and revenue data bifurcation will be reflected on report only. Please confirm the understanding.		Please refer to GBB24 Item 19 response
29	7.7.3.1 (a) Fare Structure, ERT-630, Fare Structure, a) The system shall support graduated fare structure. It shall be flexible enough to support zone (or partly zoned) fare structure.	What is exactly meant here by "partly zoned"? Please kindly elaborate.		Please refer to GBB24 Item 20 response
30	7.7.3.1 (d) Fare Structure, ERT-630, Fare	For each type of Fare Media there will be separate Fare Structure? Example there will be		Please refer to GBB24 Item 21 response

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	Structure, d) The system shall be able to support at least 16 types of fare within one version for SJT, which is for future discount. Each type of fare shall be able to support 256 fare stages, which is for future increase of lines or stations including operated by another business operator.	different Fare Table for SJT and SVC? Kindly confirm.		
31	7.7.9.1, ERT-637, QR Code Payment, The AFC system shall include a QR code payment system. The QR code system provisions shall include, but shall not be limited to, the following facilities:	There will a customer Mobile application to generate this QR Codes. Now QR code will be generated for SVC or there should be provision to link SVC and generate QR Code and Use that QR code as Fare media for travel. Please confirm.		Please refer to GBB24 Item 22 response
32	7.7.10.3, ERT-638, Card Stock Management, Theoretical amount of valid card shall be calculated in the central clearing house system.	It is understood that AFC-CC will not do Stock Take of Cards. It will only exchange card counts with CCHS. Kindly confirm this understanding.		Please refer to GBB24 Item 23 response
33	Ch.3 Telecommunication.pdf, , Clause No. 3.11.2.2 Table No. 3.11.2.2 ERT-246, Interface with Architecture	Request to mark the location of Telecom Equipment Room in each station building layouts & Substation layouts of complete Package.		This is a Civil/Architecture interface. The IFC drawings of the Stations and Depot Buildings/ Layout can be found on DOTr's Website, within each corresponding Civil Packages. The Telecom Equipment room

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		Also, we request to share the first floor Layout of OCC building.		and Telecom UPS room are labelled in the drawings. https://dotr.gov.ph/2014-09-02-05-02-02/2014-09-02-05-02-13.html#2019
34	Ch.12 Integrated Operational Control Center.pdf, P.6, 12.7, Each Depot (Mabalacat, Malanday, and Banlic) (Malanday Depot and DCC provided by others) shall have its own Depot Control Center (DCC) where the train movements in each Depot shall be controlled.	Does each OCC located at Mabalacat and Banlic include functions of DCC as well?		The DCC of Banlic depot will be situated in Banlic OCC. After migration of Banlic OCC to IOCC, the DCC will continue to remain in Banlic OCC theatre. The DCC of Mabalacat shall be in a separate room other than OCC/IOCC theatre within the same building.
35	Drawing No. MCRP-DWG-VIA00-ST-0020 Key Plan	Request to Confirm our understanding that there is no Telecom scope b/w CIA & NCC Station/NCC alignment.		The Bidder's understanding is correct.
36	Part-2 Section VI, ERT-255, Refer Part 2; Section VI; Appendix-1; Clause 4.4; Optical Fibre Cable(OFC) infrastructure shall be formed by two single-mode optical fibre cables, laid along two physically distinct routes.	Request to confirm the OFC Cores will required to be laid in Solis to Calamba & Malolos to CIA Station.		The Bidder's understanding is correct.

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37	Part-2 Section VI, ERT-314, Refer Part 2; Section VI; Appendix-3; Figure 2.2; , Example of Voice System Configuration	Request to confirm our understanding that Intra building Analog phones can be extended over PIJF Cables /2 Core Cables from nearest satellite PBX.		The Bidders understanding is incorrect. The intra-building analog phone is extended using UTP Cat5E to the PABX.
38	Part-2 Section VI, ERT-250, Refer Part 2; Section VI; Chapter-3; Table-3.11.4; NS-01 & MMSP Telecommunication Interface(GSM-R Infrastructure at MMSP Track)	Request to share the existing GSM-R RF Coverage Plot for Valenzuela Depot & Layout of Valenzuela Depot along with Test track Map Route.		There is no existing GSMR coverage plot for Valenzuela Depot. The Contractor shall design and propose the GSMR infrastructure and coverage in MMSP's Valenzuela Depot. This is an interface with MMSP's CP106 and their Civil.
39	Part-2 Section VI, ERT-270, Refer Part 2; Section VI; Appendix-2; Clause 3.2; , Radio System Coverage Sufficient overlap for radio coverage shall be provided at the boundaries of NSCR. The Contractor shall interface with the NSCR-N1 Contractor for detailed radio coverage plan	Request to clarify the demarcation of GSM-R RF Coverage plot of BTS at Solis Station & Malolos Station.		This is part of the interface with N1's CP04 Contractor. NS-01 Contractor shall coordinate with CP04's contractor to design and build one seamless GSM-R Coverage and system for the whole NSCR Line.
40	Part-2 Section VI, ERT-270, Refer Part 2; Section VI; Appendix-2;Clause 3.2; , The GSMR Radio shall cover, but not limited to : The full	1. Request to share the existing GSM-R RF Coverage Plot of CP-04 Package & NSCR Package.		This is part of the interface with N1's Contractor. NS-01 Contractor shall coordinate with CP04's contractor to design and build one seamless GSM-R Coverage and system for the whole NSCR Line.

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	alignment of the viaduct & any other area within CP-04 trackwork.	2. Request to share the existing GSM-R OEM make & model of CP-04 & NSCR Package.		
41	Part-2 Section VI, ERT-266, Refer Part 2; Section VI; Appendix-2; Clause 2.3; The Contractor shall liaise with all concerned authorities such as NTC for obtaining license.	Request to confirm our understanding that only liaising with authorities from GSM-R scope is in contractor's scope. Necessary fees/payments will be done by DOTR/Employer.		Liaising and payment is under the Contractor's scope. All related permit and licenses fees will be reimbursed.
42	Part-2 Section VI, ERT-271, Refer Part 2; Section VI; Appendix-2; Clause 3.4; Access Unit/MMI	Request to confirm our understanding that Radio Control workstation (RCW) will be provisioned in OCC CER only.		The Bidders understanding is incorrect. The RCW will be provisioned in the OCC Theater.
43	Part-2 Section VI, ERT-314, Refer Part 2; Section VI; Appendix-3; Clause 2.2(A)(1); Voice System: Direct Line Telephones	Request to confirm our understanding that DLT Phones & other Office phones/IP phones will be extended through same IP-PBX. There will be no require		The bidders understanding is correct. A MDF for Cross-Connection and Data Patch Panel is required before the PABX.
44	Part-2 Section VI, ERT-344 & 345, Refer Part 2; Section VI; Appendix-7; Clause 2.2(a) & Figure2.2; , Time server & Master Clock is composed of a Master Clock unit, Sub-Master Clock, Clock Controller, Slave clock	1. Request to confirm our understanding that Master Clock, Submaster Clock, Clock Controller will not be required in redundant manner. 2. Request to confirm our understanding that Submaster Clock at Station will suffice the requirement of Sub Station slave Clocks & Interface. 3. Request to Clarify the term'' Clock Controller".		1.) The Bidder's understanding is incorrect. A redundant Master Clock and GPS will be required for the IOCC for redundancy. Please refer to Annex B. 2) The Bidder's understanding is incorrect. There should be a Sub-master clock and a Clock Controller in each Sub-Station. 3) The description of the Clock Controller is defined in the Bid Documents under the Systems Functions. The Clock controller will

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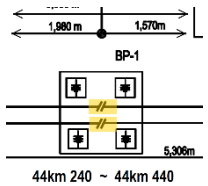
				drive the connection from Sub-Master Clock to each Slave Clock if Master Clock fails to work.
45	Power Supply, Package CP NS-01: E&M Systems and track works, General Bid bulletin No. 15 Annex-B attachment-1, Traction Power feeding system (MCRP-DWG-PSS-1001)  	At the air section in front of line side battery post, Bidder understands that rolling stock shall cross these air gaps by lowering pantographs or by switching OFF the CB in rolling stock inorder to avoid arcing during bridging of air section by pantograph due to presence of different voltages on either sections. Please confirm bidder's understanding.		Bidder understanding is incorrect. The hazard associated to the Rolling Stock and the catenary air gaps shall be addressed through the interface process during project implementation.
46	Power Supply, Package CP NS-01: E&M Systems and track works, General Bid bulletin No. 15 Annex-A, Item No. 20	The Response to GBB 15 Annex-A Item 20 states that the Substation Battery Post and the Wayside or Trackside Battery Post serves a common purpose. It is clarified that the Battery Post installation is required in anticipation of the reported frequent power outage for the north section. Battery posts are located in substations and along trackside (at boundaries of different		Previous response remains pending submission of the battery post traction power simulation studies. Control strategy (only voltage regulation & regeneration) of the TSS battery post and BP at wayside (emergency operation) is yet to determine and validated by the contractor based on their study. N2 scenario should also be considered by the contractor. Please refer

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		distribution utilities). You may appreciate that the Bidder needs to assess the Size of these Battery posts. Therefore, it is important for us to understand which Battery posts are meant to serve the purposed on only voltage regulation & regeneration and which Battery posts are meant for emergency rescue operation. In order to arrive at the sizing of the Battery posts, we need to understand the emergency rescue operation in case of the power outages/adjacent TSS failure scenario. We would like to explain this understanding taking an example case of failure of SS No.11 (at 42km370) When SS No11 fails, the section between SS10 & SS11 is fed by SS10. But due to the distance, SS10 cannot feed power upto BP1 air section. Therefore the trains affected between SS No11(42km 370) and BP1 (44km 350) needs rescue operation. We understand that in such scenario the train in between SS11 and BP1 shall be moved to Calumpit and Apalit stations using the battery		to Clause 4.1.3 1) i, ii, iii of ERT 364 and clause 4.1.3 7) of ERT 367.

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		posts placed in BP1. In any such case, as all the TSS are sized for the N-1 scenario (i.e. failure of next adjacent TSS), the Battery Posts located in the TSS are never utilized for the rescue operation. With the above, we understand that the purpose of these BPs are as below BPs at TSS – only voltage regulation & regeneration BPs at Lineside – emergency operation, voltage regulation & regeneration. Therefore, we request you to reconsider your response in GBB 15 Annex-A Item 20 and clarify the understanding as above.		
47	Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements, ESMP-36, Power SCADA (Safety Functions): SIL 2	Once hazard and risk assessment are determined on overall projects level, Project safety functions and their appropriate allocation to different subsystems including Power supply and within its POWER SCADA will be determined. Based on that effective SIL will be derived for each function RAMS deliverables will cover reliability, availability and. maintainability as per project requirements. Similarly, safety function which		The SIL 2 allocation to Power SCADA safety functions shall be considered as Employer's Requirement which shall be assessed during design stage and demonstrated during Testing & Commissioning stage by the Contractor in accordance to applicable standards like IEC 61508, EN 50128, EN 50129. The Contractor shall include the methodology of SIL Determination and/or SIL Assessment in their Safety Assurance

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		based on project safety function is to be allocated to Power SCADA and consequently SIL requirement will be derived, if any. We believe that safety functions allocations and SIL derived shall be done once project started and System Management Assurance Plan is made. Kindly confirm.		Plan for the Engineer and Employer acceptance. Refer **ERG- 21.2.5**. *"Electrical/electronic/programmable electrical safety-critical equipment shall be assigned a Safety Integrity Level (SIL), depending on the contribution of this equipment to safety risks also as specified in Employer's Requirements – Technical Requirements (ERT).* *For example, a Computer-based Interlocking (CBI) System shall be at SIL 4 level.* *Where not specified, the Contractor shall determine SIL requirements for electrical/electronic/programmable electronic safety-critical items in accordance with EN 50126, EN 50129, or IEC 61508 standards."*
48	Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements, (ERT-376)	Please confirm that the 69kV or 115kV Switchgear's Protection relays and measuring facilities can be proposed as a part of Switchgear LCC panel as standalone Protection		The Bidder's understanding is correct.

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	(ERT-427), 4.4.1 Switchgear, 6) Protection and measuring facilities	panel are not indicated in the TSS Substation layout drawings.		
49	Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements, (ERT-368), 10) TSS equipment, 69kV outdoor type, metal enclosed gas insulated or air insulated switchgear (eco-friendly type)	We presume that the requirement of 'eco-friendly type' that is mentioned is applicable only for air insulated switchgear type and not for the gas insulated type of the 69kV or 115kV Outdoor Switchgear and there is no specific requirement on the type of Gas used for insulation. Kindly confirm our understanding.		The Bidder's understanding is incorrect. Eco-friendly or eco-efficient type applies both for gas insulated or air insulated switchgear as an added benefit of reduced environmental impact.
50	Volume III Part 2 – Employer's Requirements Section VI. Employer's Requirements (ER) d) Employer's Drawings (ERD), Sh, 3 of 40 Sh, 3 of 45, Traction power feeding system, Number of outgoing feeders in 69kV Switchgear & 115kV Switchgear	Kindly confirm that there is no specific spare feeder requirement in the 69kV or 115kV Switchgear and the number of bays shall be considered as per the actual requirement.		This is a conceptual design. The number of bays/feeders of the high voltage switchgear shall be determined by the contractor during the detailed design stage.
51	Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical	Kindly confirm that the 110V battery that is to be supplied for Station HRR, RER is only for the Electrical equipment (i.e SCADA RTU, 6.6kV		This is a design and build contract. Equipment to be supplied of 110V DC for TSS, SP, SER, RER/REH and HRR/HER should

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	Requirements, ERT-476, 5.6.4 DC Battery and Charger, Battery Units (NiCad: Nickel-Cadmium rechargeable battery） 1) For the HRR, RER in stations	Switchgear, distribution transformer & 400-230V switchgear) that is located inside the HRR/ RER and there is no specific requirement to consider any other loads.		be determined by the system contractor with the interface parties during the detailed design stage .
52	Volume III Part 2 – Employer's Requirements Section VI. Employer's Requirements (ER) d) Employer's Drawings (ERD), MCRP-DWG-C/C-PSS-2101 to 2112 Sh. 19 of 40 to sh. 29 of 40 & Sh. 30 of 40, Substation Layout, 110V Battery & Charger	We observe that the Battery dimension that is indicated in the Substation layout drawing will not be adequate for the rating of the Battery that will be required for the Substation. Kindly clarify if it is possible to change the Substation control building dimension to accommodate the actual dimension of the Battery racks.		The substation equipment shall fit within the buildings and space provided. Should any amended to the building design be necessary and costs associated with the change shall be paid by the NS-01 contractor.
53	Volume III Part 2 – Employer's Requirements Section VI. Employer's Requirements (ER) d) Employer's Drawings (ERD), MCRP-DWG-C/C-PSS-2101 to 2112 Sh. 19 of 40 to sh. 29 of 40 & Sh. 30 of 40, Substation Layout,	Kindly clarify the requirement for Control & Protection panels of 69kV Switchgear, we observe that the Control & Protection panel is not indicated in the Substation layout drawing for Substations SS No. S10 to S21, whereas it is indicated for S22. If it is to be located inside the building the space will not be adequate for the same in SS No. S10 to S21 Substations.		This is a design and build project. The contractor should determine the suitable control and protection panel of the 69kV Switchgear during the detailed design stage. The contractor should proposed a suitable size of panel that would fit in the building space provided. Otherwise costs associated with the change shall be paid by the NS-01 contractor.

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	Control & Protection Panel for 69kV Switchgear			
54	Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirement, ERT-389, 4.4.7 Photo Voltaic Power Generation Systems, General: Solar roof top	Bidder presume that water outlet with required pressure for cleaning the modules shall be made available near to the module installation on the roof by the station building contractors. Kindly confirm.		This provision of water will be designed and constructed by other contractors. The contractor needs to coordinate with them regarding positioning of outlets etc.
55	General	We understand that cable trays for power supply system to feed OCS on the viaduct and cable trays in the substation on the viaduct for the cables from Rectifier to the switchgears is in the civil scope. Kindly confirm.		The Bidder's understanding is incorrect. This work is in the scope of NS-01.
56	Package NS-01: Bidding documents DRG No. MCRP-DWG-PSS-1001 Sheet No. 3 of 40 : Traction power feeding system,	At SP (83km 436), feeders connecting to track require Infeed isolators. Please confirm bidder's understanding.		The Bidder's understanding is correct. All feeders require infeed isolators. (Please refer to GBB 2 Annex A Item 102 response).
57	Package NS-01: Bidding documents Single Line diagrams,	1.18/0.4kV,230V 50kVA operation transformer shown in every SLD. But details for the same are not shown in either technical write up or SS layout drawings. Please clarify.		Please refer to GBB 9 Annex A Item 62 response.

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58	Package NS-01: Bidding documents DRG No. NSRP-DWG-B/C-0017 Sheet No. 17 of 18 : Substation connection (SS No.17),	Number of outgoing feeders shown in Substation connection (SS No.17) drawing are not matching with traction power feeding system drawing (NSRP-DWG-PSS-0000). Please clarify.		Please refer to GBB 9 Annex A Item 63 response.
59	Package NS-01: Bidding documents DRG No. MCRP-A/C-PSS-2003 Sheet No. 6 of 40 : Substation connection (SS No.12),	SS No.12 ratings are not matching between Substation connection drawing (MCRP-A/C-PSS-2003) and feeding system drawing (MCRP-DWG-PSS-1001). Please clarify.		Please refer to GBB 2 Annex A Item 103 response.
60	Part-2 Section VI, Page no. ERT 368, Package NS-01: Part 2 — Employer's Requirements, Chapter 4, Power Supply system, , Clause No. 10, TSS equipment, ii) Rectifier equipment, AC Bus duct between Rectifier Transformer and Rectifier DC 1500V outdoor type metal enclosed air insulated switchgear with high-speed circuit breaker and disconnecting switches.	AC Bus Duct is normally not available for the 1500V DC system. Request to allow for the cables between Rectifier Transformer and Rectifier. Also, we assume that HSCB and Disconnecting switches will come after the Rectifier and not between Rectifier transformer and rectifier. Please confirm.		Please refer to GBB 2 Annex A Item 104 response.
61	ERT 537, Clause No. 6.1.2, Package CP NS-01: E&M Systems and track works, General Bid bulletin No. 12 Annex-B, Attachmen-1,	Normal operations for wind speeds upto 47.3 m/s (i.e., 170kmph), which is equivalent to a category 2 Hurricane, is very high and will lead to a highly over specified and uneconomic		The Bid condition shall prevail. The decision on whether to run a service will be made by the operator etc, however the OCS shall be

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	Operation regulations for wind speed: a) Normal train speed for wind speed of less or equal to 47.3 m/s b) Train operation stopped for wind speed of more than 47.3 m/s	system design. In similar projects like Dhaka metro (Bangladesh) and Ho chi Minh metro (Vietnam), this train operations are regulated/stopped after wind speed of 30m/s. In Delhi Metro, (DMRC), the train operation are regulated /stopped at wind speed of 25 m/s. Request you to reconsider the specified requirement.		designed to support operation at the stated operational wind speed.
62	ERT 564, 1.Package NS-01: Part 2 — Employer's Requirements, Chapter 6, table 6.2.2, item 1.5,ERT 563 2.Package NS-01: Part 2 — Employer's Requirements, Chapter 6, table 6.2.3,ERT 564 3.Package CP NS-01: E&M Systems and track works, General Bid bulletin No. 12 Query No. 51, 1. Design ambient pressure - 1013hPa 2. Example of Wind loads at the wind speed of 54m/s against structures, etc: Lines: Two feeders bundled - 2200N/m2 and Others - 1800N/m2	We understand that design wind pressure for OCS supports, conductor, insulators shall be as per table 6.2.3 and all remaining environmental conditions are as per table 6.2.2. Please confirm Bidder understanding.		The Bidder's understanding is correct.

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	3. The OCS shall be designed in accordance with Table 6.2.2 Ambient Conditions and Usage Environments. However, the OCS shall remain operational up to the wind speeds stated in Clause 6.1.2.			
63	Part-2 Section VI, Page nos. ERT 545 and 584, Package NS-01: Part 2 — Employer's Requirements, Chapter 6, OCS, , Contract clauses: i) 6.1.4.1 (6) TR- OCS Page No. 545 "Cantilever: It is an insulated swiveling type structure member, comprising of assorted sizes of metal tubes (lightweight and non-corrosive), to support and to keep the OCS in position to facilitate current collection by pantograph at all speed without doing the structural member damage. ii) 6.4.13 TR- OCS Page No. 584 " b) Material Grade: STK 490, SS400, CAC 702 (pull-off arm & ear), SS400	Please confirm whether aluminium light weight tubes can be proposed.		Please refer to GBB no. 2 Item 137.

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	(drop bracket), SUS304 (fitting); c) Pole surface: Hot dip galvanized;"			
64	Part-2 Section VI, ERT-246, Refer Table 3.11.2.2,	Request you to kindly elaborate the Interface protocol along with interface locations for synchronisation of PSD System with Clock system through Master/Sub Master Clock (if required) Interface protocol along with interface locations required for PSD System. Bandwidth requirement if Ethernet ports are required along with detailed port calculation Sub System wise.		The Clock is provided by NS01 under Telecommunication system. The contractor shall interface within NS01 systems to decide protocol and location of clock interface as required.
65	General, Prototype Test	What is the specific scope of the prototype components? Do we need to consider the prototype test for FH, HH-1.5 m and HH – 1.2/1.3 m. Please confirm.		The Bidder's understanding is correct.
66	Part-2 Section VI, General	Please share the missing FTI station drawing.		FTI station is being designed. The contractor shall interface and obtain drawings from Civil contractor.
67	General, SR-58 The entire construction and glazing of the PSD System shall withstand the pressure from	For the purpose of structural dimensioning, please share the wind pressure for the storm to be considered.		The contractor shall propose the wind pressure for the storm to be considered based on the local historical data and Philippines National Guidelines and Codes,

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	non-stop train and the wind pressure from tropical storm.			at the design stage, for the approval of the Engineer.
68	Part-2 Section VI	Request you to share the information for NSCR MMS system for the Interface a. What is the Application software used as NSCR MMS system b. What is the database and version used by the software c. How many interface touch points are required to be considered d. How many Inbound and Outbound touch points e. What are the supported interface communication protocols by the NSCR MMS system f. Vendor of NSCR MMS System to be available during interface discussion and development		It's under Contractor responsibility to propose the suitable application software. For requirement details, please refer to Section 11: Computerized Maintenance Management System. All the touch points detail can be proposed by Contractor and subject to the Engineer's approval in design development phase.
69	Part-2 Section VI	Please elaborate, while Balnic depot OCC Migration a. When IOCC is constructed and ready for operations, Whether the Maximo software data from the depot instance to be migrated to IOCC. b. Development and Test environments will be		It's under Contractor responsibility to propose the suitable application software. Both application and data server for CMMS provided in the Mabalacat Depot and Banlic Depot shall be in dual redundant configuration. However, the equipment at Banlic Depot will be decommissioned and

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		provided at IOCC c. DR environment is required to be setup d. Depot instances will be decommissioned after the migration is completed to IOCC		migrated to Mabalacat Depot once it's operational. Details may refer to Clause 12.1.1 and IOCC is only responsible for Train Operation Activities. Development and test environment will be under part of Depot Facilities.
70	Part 2 – Employer's Requirements Section V1., ERT-940, Employer's Requirements Technical Requirements -Depot Facilities N41.01 Shunting Locomotive (Both Rail and Road Drive Type), Clause 2.1. The shunting locomotive (both rail and road drive type) shall be provided for the shunting of the car body in the Depot and Workshop.	What is the design minimum turning radius in depot? What is the maximum gradient in depot?		Please refer to Volume III Part 2-Employers Requirements Drawing (b) pages 143-156 and pages 306-315 for the details of radius in the North Depot and South Depot. Minimum horizontal radius for Depot: 100m or more as stated in Trackwork ERT 1.6. There are no gradient in both depots.
71	Part 2 – Employer's Requirements Section V1., ERT-941, Employer's Requirements Technical Requirements -Depot Facilities	The weight of an empty commuter train and limited express train based on 8 cars trainset is 270 tons and 315 tons respectively. Please confirm on the requirement for clause 2.2 and 2.9 vi for the weight of failed train, 270		Please refer to Annex B.

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	N41.02 Shunting Locomotive (Engine Type), Clause 2.2. Contractor shall supply diesel locomotive (1 units) along with one flat car suitable for mainline operations having maximum 2.95m wide, to recover failed train, 270t, on 3.5% downgrade. Clause 2.9. Major performance of the shunting locomotive shall be as follows; the Contractor shall confirm the type of coupler to the Rolling Stock Contractor: i. Type: diesel locomotive, ii. Track gauge: 1,435 mm, iii. Coupler: the couplers of rolling stock at both ends, (to be supplied by Rolling stock contractor CP NS-02) iv. The locomotive envelope to follow rolling stock and structure gauge drawing MCRPDWG-GEN-TK-0020 Rev 6 or latest.	tons, 315 tons, 338 tons or 394 tons to recover on 3.5% downgrade.		

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	v. Driver cab: air conditioned, with assistant driver's seat, vi. Traction force: max. for rolling stock with Ten (10)-car set, vii. Maximum speed: 80km/h viii. Onboard signaling and telecom equipment			
72	Part 2 – Employer's Requirements Section V1., ERG-57, Employer's Requirements General Requirements -Depot Facilities 11.1.3, During the Defect Notification Period, if any defect, imperfection, or other faults will require any design modification to a component of equipment, the Defect Notification Period of that part shall re-start from the date when such modification of the or component of equipment is completed to the satisfaction to the Engineer and commissioned into service.	We request the employer to elaborate the meaning "Other Faults" We understand that any fault which is not attributable to Contractor shall not effect a restart of DNP. Kindly confirm.		"Other Faults" means any other fault or defect of the system leading to malfunctioning which might impact the operation of the system. The Bidder's understanding is correct. The re-start of DNP due to "Other Faults" pertains to any relevant fault of the system attributable to the Contractor.

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73	Volume IV Section VIII, PC-4, PC Sub-clause 4.2, The Performance Security will be in the form of one “demand guarantee” for the percent (10%) of the Accepted Contract Amount and for the same currencies and proportion as the Accepted Contract Amount	We would like to humbly request Employer to accept to reduce amount of Performance Security to 5% of Accepted Contract Amount. We would also like to request Employer to accept the Contractor submitting Performance Security through multiple banks and use JPY as a currency. Other currency amount shall be calculated in JPY by exchange rate which would be applicable at this Contract.		The Bidder's request is rejected. The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the Contract Data and denominated in the currency(ies) of the Contract or in a freely convertible currency acceptable to the Employer. Reference to the Section VIII Particular Conditions Contract Data 4.2, the Performance Security will be in the form of one "demand guarantee" for ten percent (10 %) of the Accepted Contract Amount and for the same currencies and proportion as the Accepted Contract Amount.
74	Volume IV Section VIII, PC-34, PC Sub-clause 4.2, The contractor may obtain such Performance Security from foreign bank, subject to the Performance Security being “confirmed” by a reputable bank or financial institution consented to by the Employer, located and authorized to	What is the meaning of “confirmed” by a reputable bank or financial institution under PC Sub-clause 4.2 ? May we construe that Performance Security from foreign bank located outside of the Republic of Philippines may be issued through reputable bank or financial institution in the Republic of the Philippines as an advising bank? We would like to ask the Employer to accept		Confirming bank is a bank that, at the request of the issuing bank, agrees to perform the principal duties of the issuing bank. The Bidder's interpretation is incorrect. The Bidder's request on the amendment is rejected.

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	do business in the Republic of the Philippines	replacement of words from “confirmed” to “advised”		
75	Volume IV Section VIII, PC-34, GC Sub-clause 4.2, The Contractor shall deliver the Performance Security to the Employer within 28 days after receiving the Letter of Acceptance, …..	Can a Contractor issue Performance Security on a prorate basis? We would like to ask the Employer if a Contractor can submit Performance Security amounted 10% against interim payment amount in every month up to 10% amount against total contact amount?		The Bidder's request is rejected. Reference to the Section VII General Conditions, The Contractor shall deliver the Performance Security to the Employer within 28 days after receiving the Letter of Acceptance, and shall send a copy to the Engineer.
76	Volume IV Section VIII, PC-34, GC Sub-clause 4.2, The Contractor shall deliver the Performance Security to the Employer within 28 days after receiving the Letter of Acceptance, …..	Can Contractor issue multiple Performance Securities by reputed bank or financial institution accepted by Employer?		The Bidder's request is rejected. Reference to the Section VIII Particular Conditions Contract Data 4.2, the Performance Security will be in the form of one "demand guarantee" for ten percent (10 %) of the Accepted Contract Amount and for the same currencies and proportion as the Accepted Contract Amount.
77	Volume IV Section VIII, PC-38, GC Sub-clause 14.2, (ii) a guarantee in amounts and currencies equal to the advance payment. The guarantee shall be issued by an entity and from within a	Please advise whether Japan is categorized as “within a country (or other jurisdiction) approved by the Employer or not.		Yes, however, the guarantee shall be subject to being “confirmed” by a reputable bank or financial institution consented to by the Employer, located and authorized to do business in the Republic of the Philippines.

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	country (or other jurisdiction) approved by the Employer			
78	Volume IV Section VIII, PC-38, GC Sub-clause 14.2, ii) a guarantee in amounts and currencies equal to the advance payment. The guarantee shall be issued by an entity and from within a country (or other jurisdiction) approved by the Employer	Can a Contractor divide guarantee into multiple guarantees issued by approved bank?		The Bidder's request is rejected. Reference to the Section VII General Conditions article 14.2, it shall be a guarantee in amounts and currencies equal to the advance payment.
79	Volume IV Section VIII, , GC Sub-clause 17.6, The total liability of the Contractor to the Employer, under or in connection with the Contract other than……, shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount,……..	Could you specify “Accepted Contract Amount” to “Accepted Contract Amount at each Section which is defined in sub-clause 1.1.5.6. in PC” ?		The Bidder's request for the amendment to the General Conditions is rejected.
80	Volume IV Section VIII, PC-5, GC sub-clause 8.7, Thee maximum amount for cumulative delay damages for the	Could you change “final Contract Price” to “final Contract Price at each Section which is defined in sub-clause 1.1.5.6. in PC” ?		The Bidder's request is rejected. The Contract Price is defined in the Part 3 Section VII General Conditions (GC) article 14.1.

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	Contract shall not exceed ten percent (10%) of the final Contract Price			
81	Volume IV Section VIII, PC-4, GC sub-clause 3.1 (B) (ii), Variations resulting in an increase of the Accepted Contract Amount in excess of one percent (1%) shall require approval of the Employer.	Please explain what is “Accepted Contract Amount”.		Please refer to the Part 3 Section VII General Conditions (GC) article 1.1.4.1 for the definition of Accepted Contract Amount.
82	Volume II Section V1, SOW-4, , The AFC system performance shall conform to the AFC National Standard and the Business Rules.	In General Bid Bulletin NO. 13 dated July 7, 2021, bidder was informed that “A copy of the AFC National Standard (Confidential Information) may be obtained by Prospective Bidders upon formal written application, accompanied by a photocopy of two (2) validation government issued IDs, attached with Notarized Non-Disclosed and Confidentiality Agreement (NDA) …. How can bidder finalize Confidentiality Agreement? Can bidder use own standard NDA? Please kindly accept to share document for AFC		The Bid Conditions shall prevail. The NDA template has been provided under Section II Bid Data Sheet New Attachment-4 Page BDS 18 to BDS 29.

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		National Standard without any restriction to bidder.		
83	Volume II Section V1, ERT-1007, Clause No.9.2.1, The Contractor shall provide two (2) Train Operation Simulators at the Training Centre in Mabalacat Dept.	Is it required 2 sets of simulator which are independent and stand-alone simulator?		The Bidder's understanding is correct. One (1) Train simulator shall be designed for the Commuter Train (CP NS-02) and one (1) for Limited Express Train (CP NS-03). Please refer ERT clause 9.2 .1, 9.2.1.3 and Table 9.1 for details.
84	Volume II Section V1, ERT-1009, Clause No. 9.2.1.3, The related parts and equipment shall be identical to that in the actual train cabs. The detailed equipment required shall include but not be limited to that shown in Table 9.1 below.	Will configuration of simulator be 1 set on teacher's desk, and 2 sets of driver's sheet simulator?		The Bidder's understanding is incorrect. Please refer ERT clause 9.2.1.3. The detailed equipment required for one (1) Train Operation Simulator shall include but not be limited to the equipment shown in Table 9.1. In the table 9.1, minimum requirement of one (1) set of instructor console is clearly stated.
85	Volume II Section V1, ERT-1007, Clause No.9.2.1, The simulator shall project the actual driver's view of the complete alignment covering MCRP, NSCR and NSRP-South under multiple mode of operations including train recovery scenarios.	Are type of rolling stocks the same?		Refer to GBB No. 4, Annex A- Item 85 and GBB No. 22, Annex B, Item 26.

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Annex A

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
86	Volume II Section V1, ERT-1007, Clause No.9.2.1, The simulator shall project the actual driver's view of the complete alignment covering MCRP, NSCR and NSRP-South under multiple mode of operations including train recovery scenarios.	Is the signaling system the same in all sections?		The Bidder's understanding is correct. The Signaling System in MCRP, NSCR and NSRP-South section is same.
87	Volume II Section V1, ERT-1007, Clause No.9.2.1, The simulator shall project the actual driver's view of the complete alignment covering MCRP, NSCR and NSRP-South under multiple mode of operations including train recovery scenarios.	Is it necessary for Contractor to provide new data base for displayed video?		The Bid conditions shall prevail.
88	Volume II Section V1, ERT-1007, Clause No.9.2.1, The simulator shall project the actual driver's view of the complete alignment covering MCRP, NSCR and NSRP-South under multiple mode of operations including train recovery scenarios.	Can Contractor provide training video for each section separately and will not provide training video in whole sections?		This is a design and build contract. Contractor can propose the training video details at design finalization stage for Engineer's approval.

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Annex A

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
89	Volume II Section V1, ERT-1007, Clause No.9.2.1, The simulator shall project the actual driver's view of the complete alignment covering MCRP, NSCR and NSRP-South under multiple mode of operations including train recovery scenarios.	In case that simulator shall be designed based on existing data, can DOTr procure existing data including copyright of the data?		The Bid conditions shall prevail. The whole MCRP, NSCR and NSRP-South driver`s view shall be prepared by the Contactor and shared with the NSCR contractor to harmonize the views in the various simulators. Necessary interface with CP-04 contractor shall be done at appropriate stage of the project for existing data base of NSCR section.

Annex B

PACKAGE CP NS-01: E&M SYSTEMS AND TRACK WORKS General Bid Bulletin No. 27 Annex B

ITEM NO.	REFERENCE/CLAUSE/ SECTION	REVISIONS / AMENDMENTS
Volume II Part 2 – Employer's Requirements		
1	Part 2 Section VI General Requirements ERG22	Revised Section (2) Safety for Third Parties.
2	ERT-347:3) Master Clock Unit	Added Statement: "The Master Clock and GPS shall be redundant when the IOCC becomes functional."
3	ERG-188- MMSP Interface.	Added Statement -CP106 Column: "MMSP's Master clock system to be installed at FTI & Bicutan stations for respective MMSP Rail Systems utilization."
4	ERG 5 Clause 2.2	Staff Experience requirements added.
5	ERG 12 . Clause 4.1.5. Added	Clause added regarding contractors plans :" 4.1.4.4.1.5. All plans shall follow the processes stated in, and be coordinate with, the Engineers Procedures."
6	ERG 19 Clause 4.5.11	Approval requirements expanded for "Subcontractors".
7	ERG 77. Clause 16.6	New clause added regarding need for communications equipment
8	ERT 1080 Clause 12.2.1, and 12.2.1 11) and 12.2.3.	Clauses amended to specifically state an integrated system and all equipment are to be supplied under contract NS-01. SBT changed to Solis-Blumentritt-Tutuban. Three phases changed to multiple phases.
9	APPENDIX 6 - ENGINEERING SAFETY MANAGEMENT PLAN, ERG, Part-2 Section – VI	The clause "SR-100" has been removed from Appendix B Generic Safety Requirements.
10	Chapter 8, Clause 8.9.3.3 Page ERT-709	Revised Clause 8.9.3.3. to read as:

		8.9.3.3. Contractor shall supply diesel locomotives (2 units) along with one flat car suitable for mainline operations having maximum 2.95m wide, to recover failed train, 315t, on 3.5% gradient.
11	Chapter 8, Part A of Appendix 8.1, N15.01 Work Lift Platform, Page ERT-790	Added description on clause 2.3 and 4(iv) as below: 2.3. Two lifting platforms shall be installed on the floor along the sides of the car body in each booth. Traveling rails shall be provided in the floor to maintain a constant clearance between the platform and the train. 4(iv). Embedment of traveling rails for work lift platform, floor loading (t/m2) and floor flatness.
12	Chapter 8, Part A of Appendix 8.1, N15.02 Car Body Washing Booth, Page ERT-791	Revised/added description clause 2.5 and 4(vi) as below: 2.5. Floor embedded rail for car body moving will be provided through the booth by the Contractor. 4(vi). Embedment of traveling rails for work lift platforms and track rails for car body moving, floor loading (t/m2) and floor flatness.
13	Chapter 8, Part A of Appendix 8.1, N15.03 Car Body Painting Booth, Page ERT-792	Revised/added description clause 2.5 and 4(vi) as below: 2.5. Floor embedded rail for car body moving will be provided through the booth by the Contractor. 4(vi). Embedment of traveling rails for work lift platforms and track rails for car body moving, floor loading (t/m2) and floor flatness.
14	Chapter 8, Part A of Appendix 8.1, N15.04 Car Body Drying Booth (Include Fuel Tank),	Revised/added description on clause 2.5 and 4(iv) as below: 2.5. Floor embedded rail for car body moving will be provided through the booth by the Contractor.

	Page ERT-793	4(iv). Embedment of track rails for car body moving, floor loading (t/m2) and floor flatness.
15	Chapter 8, Part A of Appendix 8.1, N41.02 Shunting Locomotive (Engine Type), Page ERT-941	Revised Clause 2.2 to read as: 2.2 Contractor shall supply diesel locomotives (2 units) along with one flat car suitable for mainline operations having maximum 2.95m wide, to recover failed train, 315t, on 3.5% gradient. Locomotives should be able to work in both single and in multiple mode as a consist of two locomotives as per the operational requirement.
Volume III Part 2 – Employer's Requirements d) Employer's Drawings		
16	GBB 22 Annex B, Item no. 41	Revised drawing: DWG No. MCRP-DWG-PSS-1001 Rev.08 Traction Power Feeding System
17	Volume III Part 2- Employers Requirement Drawings (a) page 40	Revised drawing MCRP-DWG-GEN-TK-0122 Rev. 04 Typical Cross Section For Elevated Section (Station)

Annex B – Attachment 1

proper retaining wall prevents the collapse of an excavated ditch/pit that may damage an adjacent rail roadbed structure.

Where temporary storages of the construction material and equipment are adjacently located along the railway track, proper clearance between the storages and track shall be kept. This clearance means allocating the storage out of the area of a roadbed level in principle. If the storage will inevitably overlap the roadbed level, the storage shall also be considered that stored goods will not interfere with the train operation in case of a load collapse and scatter.

(2) Safety for Third Parties

It is essential that the hoarding will isolate the construction works from any third party interfacing. The hoarding will consist of existing PNR's fencing and supported by temporary barriers such as crowd control and traffic barrier. These temporary barriers would be arranged at locations that the third-party individuals could easily enter the works site. Such entry points should be equipped with noticeable information boards and picket guards to ensure that individuals entering the site are well informed.

The traffic diversion for the loading and unloading of materials/equipment into site premises shall be managed in safe manner. The traffic diversion shall consist of traffic barriers, markings, signs, and impact attenuators as necessary. In addition, the traffic personnel shall guide construction working vehicles and direct traffic flow on the road. The management plan of this traffic diversion shall also include obtaining consent from the relevant authorities to mitigate the traffic jam due to the relevant works.

Any utilities that will be affected by the construction works shall be protected. This protection shall comply with the regulations of the relevant authorities such as electricity, telecommunication, water supply, sewerage, gas, and the lands owned by PNR itself. Before executing the protection works, each alignment condition shall carefully be identified with visual inspections and official registers. Especially, underground lines shall ensure the identification accompanied by the trial trench if that alignment condition would be controversial between the record and on-site conditions. This trial trench should also observe to detect abandoned lines with surveillance of the relevant authorities.

(3) Safety organization for prevention of railway accidents

The security organization for the works in the railway roadbed level shall be established in accordance with PNR's safety regulation. This organization provisionally assigns the following responsible personnel:

1) A Superintendent who is responsible for this organization for the prevention of accidents. He is obligated to arrange preventive measures and communicates with the relevant department such as stations, operation controls, and maintenance in case of emergency.
2) A Foreman who is responsible for the safety instruction and working procedures of their laborer,
3) A Railway Watchman who is responsible of the approaching/passing train to motion the personnel for confirming their perception and evacuation, and
4) A Laborer who is instructed to execute the works by the superintendent/foreman considering the safety precautions such as the railway track entry, site ambulation, track crossing, prohibition of solo works, and evacuation from the approaching/passing train.

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4) A Laborer who is instructed to execute the works by the superintendent/foreman considering the safety precautions such as the railway track entry, site ambulation, track crossing, prohibition of solo works, and evacuation from the

The antenna shall be waterproof and weather-resistant against direct sunlight, wind, rain, etc.

The antenna shall be installed in an appropriate position that can be confirmed with the eyes. Also, the support of the antenna has a strong structure and the safety rate of wind pressure load is double.

3) Master clock unit

The Master clock unit shall have a GPS receiver function, to acquire accurate time from the GPS.

The Master clock unit converts the signal received from the GPS into SNTP. The Master clock unit distributes time to the systems and the Slave clock of OCC. The Master Clock and GPS shall be redundant when the IOCC becomes functional.

The Master clock unit has crystal (quartz) inside and can hold the exact time by itself.

The Master clock unit distributes time to all sub- Master clock units via the Backbone system.

Network time synchronization over the data network shall be using SNTP, with an accuracy of ± 0.1 s/day to the reference.

4) Sub-Master clock unit

The sub-master clock unit synchronizes with the Master clock unit and distributes the time to the Slave clock.

The sub-Master clock unit has crystal (quartz) inside, and it is possible to hold accurate time by itself.

Network time synchronization over the data network shall be using SNTP, with an accuracy of ± 0.1 s/day to the reference.

5) Clock controller

The Clock controller is necessary when the Slave clock does not have the function of receiving the time directly from the network.

The Clock controller is installed at the OCC and at the stations to make it easy to add and replace the Slave clock.

The Clock controller receives the time from the sub-Master clock unit and multicasts the time to the Slave clock.

Since the clock controller controls the Slave clock, it is not necessary to allocate IP addresses to individual Slave clock at the time of addition or replacement of the Slave clock.

The power of the clock controller shall be powered by PoE conforming to IEEE802.3af.

6) Slave clock

The Slave clock receives the time transmitted from the Master clock unit or the sub- Master clock unit and displays the time in analog or digital form.

The Slave clock is connected to the Master clock unit or the sub- Master clock unit via LAN.

The Slave clock shall have an automatic adjustment function. When the signal is restored after the signal has been interrupted due to a failure of the Master clock unit or the sub Master clock unit or disconnection of the cable, the accurate time must be displayed automatically and immediately.

The Slave clock has a crystal (quartz) inside and the time should be held independently by itself, even if the signal from the Master clock unit or sub- Master clock unit is lost.

The Time server and Master clock system detects the absence or abnormality of GPS time information and outputs an alarm.

2) GPS antenna

The GPS antenna receives the reference time from the GPS satellite and conveys the information to the Master clock unit.

When a surge voltage such as lightning is applied, the surge protector protects the Time server and Master clock system by flowing the surge current from the antenna to the ground.

The antenna shall be waterproof and weather-resistant against direct sunlight, wind, rain, etc.

The antenna shall be installed in an appropriate position that can be confirmed with the eyes. Also, the support of the antenna has a strong structure and the safety rate of wind pressure load is double.

3) Master clock unit

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Discipline	MMSP INTERFACE			
	NS-01	**CP106**	**NS-01**	**CP107**
	with CP106 for all Telecom Systems works. NS-01 will facilitate and provide all Telecom Systems work terminations for CP106 either or both at FTI and Bicutan Stations. NS-01 will provide connectivity for the Backbone, Radio Systems (GSM-R), PABX, PA System. NS-01 will supply, install, test, and commission the clocks for FTI and Bicutan stations. Excluding the clocks on FTI's MMSP Platform. NS-01 shall interface with CP106 for their Banlic Depot TETRA infrastructure requirements. NS-01 shall provide Backbone Facilities for the TETRA Radio Infrastructure to be connected from Banlic Depot to the Backbone Switch at Bicutan.	with NS-01 for all Telecom Systems works. CP106 will terminate all Telecom Systems work termination to NS-01 either or both at FTI and Bicutan Stations. CP106 will supply all equipment to connect to the NSCR backbone system. CP106 will supply, install, test, and commission the equipment for Millimeter-wave, Backbone Radio System (CBTC), PABX, PIDS. MMSP's Master clock system to be installed at FTI & Bicutan stations for respective MMSP Rail Systems utilization. CP106 shall interface with NS-01 for their Valenzuela Depot Test and Transfer Track for GSMR infrastructure requirements. CP106 shall provide Backbone	commission GSM-R radio on CP107 Rolling stock. For this purpose, NS-01 shall develop an interface matrix for all related aspects with CP107 matrix and interface at all stages of the project with NS-01 NS01 shall supply on board Telecom equipment for Driving Operation Simulator and interface with CP107 as stipulated in the Signaling clause (below). (Please refer to Clause 2.26.10.2.4 in the Signalling Bidding Documents.)	matrix and interface at all stages of the project with NS-01. CP107 will install the GSM-R onboard equipment succeeding trains following the installation on the initial rolling stock. CP107 and NS01 shall coordinate on the on board Telecom equipment for the Driving Operation Simulator. (Please refer to Clause 2.26.10.2.4 in the Signalling Bidding Documents.)

Discipline	MMSP INTERFACE			
	NS-01	CP106	NS-01	CP107
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Contractor identifies as being at risk, and any action required to be undertaken by the Engineer shall support the Mobilization Program.

2.2. Mobilization Requirements

Mobilization shall consist of preparatory and execution works and operations, including but not necessarily limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the work site; for the establishment of offices, buildings, and other facilities necessary to commence work on the Project; and for other work and operations which must be performed, or costs incurred prior to beginning work on the various contract items on the project site.

Mobilization shall include providing submittals as detailed in Appendix 4 and elsewhere in this document. This will include the proposed Organization Chart and Curriculum Vitae's of all key staff that shall be submitted for approval by the Engineer. Staff shall possess the minimum experience requirements as stated below:

Position	Total Work Experience	Experience in Railway Project
1. Project Manager (PM) 1-PM for all sections	20 years	10 years for E&M systems works and 2 projects as PM or Deputy Project Manager (DPM) or similar position
2. Section Manager Minimum 2 Managers: 1 for Section 1 and 2 1 for Section 3 and 4	20 years	10 years as E&M systems engineer and 2 projects as Deputy Project Manager (DPM) or similar position.
3. Manager for System Integration Minimum 1 Manager	20 years	10 years as E&M systems engineer and 2 projects as integrator
4. Technical Director (Railway System) Minimum 1 Manager	15 years	10 years as E&M systems engineer and 2 projects as manager
5. Track Works Engineer Minimum 1 Manager	15 years	10 years as Track Works engineer in Railway Project
6. Signaling Engineer Minimum 2 Engineers: 1 for Section 1 and 2 1 for Section 3 and 4	15 years	10 years as Signaling engineer

Contractor identifies as being at risk, and any action required to be undertaken by the Engineer shall support the Mobilization Program.

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Mobilization shall consist of preparatory and execution works and operations, including but not necessarily limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the work site; for the establishment of offices, buildings, and other facilities necessary to commence work on the Project; and for other work and operations which must be performed, or costs incurred prior to beginning work on the various contract items on the project site.

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2. Section Manager Minimum 2 Managers: 1 for Section 1 and 2 1 for Section 3 and 4	20 years	10 years as E&M systems engineer and 2 projects as Deputy Project Manager (DPM) or similar position.
3. Manager for System Integration Minimum 1 Manager	20 years	10 years as E&M systems engineer and 2 projects as integrator
4. Technical Director (Railway System) Minimum 1 Manager	15 years	10 years as E&M systems engineer and 2 projects as manager
5. Track Works Engineer Minimum 1 Manager	15 years	10 years as Track Works engineer in Railway Project

Position	Total Work Experience	Experience in Railway Project
7. Telecommunications/SCADA Engineer Minimum 2 Engineers: 1 for Section 1 and 2 1 for Section 3 and 4	15 years	10 years as Telecommunication engineer
8. Electrical Power/Overhead Contact System Engineer	15 years	10 years as Electrical engineer
9. Civil Engineering Interface/ Coordination Manager Minimum 2 Managers: 1 for Section 1 and 2 1 for Section 3 and 4	10 years	5 years and 1 project as manager
10. Quality Assurance Manager Minimum 2 Managers: 1 for Section 1 and 2 1 for section 3 and 4	10 years	5 years and 1 project as manager
11. Health & Safety (Accident Prevention) Officer Minimum 2 Managers: 1 for Section 1 and 2 1 for Section 3 and 4	10 years	5 years and 1 project as manager
12. System Assurance Manager Minimum 1 Manager	15 years	10 years in System Assurance and 1 project as manager

The Contractor shall complete construction of all Temporary Facilities for the Contractor and mobilization of all Key Personnel, equipment, and plant in such a time frame that the start and progress of works is not delayed due to late mobilization.

3. TEMPORARY FACILITIES FOR THE CONTRACTOR

3.1. General

3.1.1. This section describes the minimum Temporary Facilities with required infrastructure that will need to be provided by the Contractor for the Works. These include, but are not necessarily limited to the provision and maintenance (including all reasonable operating costs) of:

(1) Site offices, huts, workshops, warehouses, and stores;

Position	Total Work Experience	Experience in Railway Project
6. Signaling Engineer Minimum 2 Engineers: 1 for Section 1 and 2 1 for Section 3 and 4	15 years	10 years as Signaling engineer
7. Telecommunications/SCADA Engineer Minimum 2 Engineers: 1 for Section 1 and 2 1 for Section 3 and 4	15 years	10 years as Telecommunication engineer
8. ~~8.~~ Electrical Power/Overhead Contact System Engineer	15 years	10 years as Electrical engineer
9. Civil Engineering Interface/ Coordination Manager Minimum 2 Managers: 1 for Section 1 and 2 1 for Section 3 and 4	10 years	5 years and 1 project as manager
10. Quality Assurance Manager Minimum 2 Managers: 1 for Section 1 and 2 1 for section 3 and 4	10 years	5 years and 1 project as manager
11. Health & Safety (Accident Prevention) Officer Minimum 2 Managers: 1 for Section 1 and 2 1 for Section 3 and 4	10 years	5 years and 1 project as manager
12. System Assurance Manager Minimum 1 Manager	15 years	10 years in System Assurance and 1 project as manager

The Contractor shall complete construction of all Temporary Facilities for the Contractor and mobilization of all Key Personnel, equipment, and plant in such a time frame that the start and progress of works is not delayed due to late mobilization.

4.1.2. The plans and documents shall be coordinated with each other and shall collectively define, describe and encompass the Contractor's proposed methods, procedures, processes, organization, and sequencing of activities to meet the requirements of the Employer's Requirement - Technical Requirements (ERT) in respect of the subjects listed.

4.1.3. The respective Plans shall be submitted for the Engineer's Approval as per the submission schedule furnished in Table 4-1 of Appendix 4 attached hereto.

4.1.4. All Plans shall be updated and resubmitted at an interval of between 6 to 12 months as approved by the Engineer.

4.1.5. All plans shall follow the processes stated in, and be coordinate with, the Engineers Procedures.

4.2. Project Management Plan

4.2.1. The Contractor shall submit a Project Management Plan, which shall provide a clear overview of the Contractor's organization, the management system, and methods to be used for completion of the Works. The organization resources for the design, procurement, manufacture, installation, testing and commissioning, and setting to work, shall be clearly defined.

4.2.2. The Contractor shall submit the Project Management Plan for the Engineer's Approval as per schedule of Table 4-1 of Appendix 4 attached to hereto. The Engineer will review the Contractor's Project Management Plan and will have the right to require the Contractor to make amendments as deemed necessary. The Contractor shall submit a detailed revised plan within 15 days of the review of the Engineer. The Project Management Plan shall include;

(1) A diagram showing the organizational structure for the management of the Contract, with locations, names, and position titles of Key Personnel and their line and staff relationship. The diagram shall include associate organizations and subcontractors and show clearly the individuals and lines of responsibility linking the various groups. It shall also identify the persons designated as contacts with the Engineer. All Key Personnel and those holding senior positions, as designated by the Engineer, shall be given a Notice of No Objection prior to their engagement and mobilization. Approval may be withdrawn at any time in the event of incompetence, non-performance, or misconduct. Any person so removed shall be replaced without delay by a substitute given a Notice of No Objection by the Engineer. The Contractor shall not be entitled to any claim for any expenses whatsoever incurred by him in respect of any direction given by the Engineer under this Clause nor any claim for extension of time arising from this Clause. All Key Personnel shall be employed on a full-time basis until the issuance of the final Taking Over Certificate or such other time as the Engineer may instruct.

(2) The names, qualifications, positions, and current resumes of key executive, supervisory, and engineering staff to be employed full-time for the works, separately for principals and subcontractors.

(3) A narrative describing the sequence, nature, and inter-relationship of the main Contract activities including timing for exchange of information.

(4) The Deputy Project Manager shall coordinate activities of the design offices and manufacturing works. The Deputy Project Manager shall be responsible to the Project Manager for all works executed outside the Republic of the Philippines and

series of Contractor's Management Plans shall be developed.

4.1.2. The plans and documents shall be coordinated with each other and shall collectively define, describe and encompass the Contractor's proposed methods, procedures, processes, organization, and sequencing of activities to meet the requirements of the Employer's Requirement - Technical Requirements (ERT) in respect of the subjects listed.

4.1.3. The respective Plans shall be submitted for the Engineer's Approval as per the submission schedule furnished in Table 4-1 of Appendix 4 attached hereto.

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~~4.1.4.~~4.1.5. All plans shall follow the processes stated in, and be coordinate with, the Engineers Procedures.

4.2. Project Management Plan

4.2.1. The Contractor shall submit a Project Management Plan, which shall provide a clear overview of the Contractor's organization, the management system, and methods to be used for completion of the Works. The organization resources for the design, procurement, manufacture, installation, testing and commissioning, and setting to work, shall be clearly defined.

4.2.2. The Contractor shall submit the Project Management Plan for the Engineer's Approval as per schedule of Table 4-1 of Appendix 4 attached to hereto. The Engineer will review the Contractor's Project Management Plan and will have the right to require the Contractor to make amendments as deemed necessary. The Contractor shall submit a detailed revised plan within 15 days of the review of the Engineer. The Project Management Plan shall include;

(1) A diagram showing the organizational structure for the management of the Contract, with locations, names, and position titles of Key Personnel and their line and staff relationship. The diagram shall include associate organizations and subcontractors and show clearly the individuals and lines of responsibility linking the various groups. It shall also identify the persons designated as contacts with the Engineer. All Key Personnel and those holding senior positions, as designated by the Engineer, shall be given a Notice of No Objection prior to their engagement and mobilization. Approval may be withdrawn at any time in the event of incompetence, non-performance, or misconduct. Any person so removed shall be replaced without delay by a substitute given a Notice of No Objection by the Engineer. The Contractor shall not be entitled to any claim for any expenses whatsoever incurred by him in respect of any direction given by the Engineer under this Clause nor any claim for extension of time arising from this Clause. All Key Personnel shall be employed on a full-time basis until the issuance of the final Taking Over Certificate or such other time as the Engineer may instruct.

(2) The names, qualifications, positions, and current resumes of key executive, supervisory, and engineering staff to be employed full-time for the works, separately for principals and subcontractors.

(3) A narrative describing the sequence, nature, and inter-relationship of the main Contract activities including timing for exchange of information.

(4) The Deputy Project Manager shall coordinate activities of the design offices and

during which they will be prepared and the subsequent period and manner in which they will be stored;

(6) Quality Control Points and Quality Hold Points during verification, surveillance, tests, trial, and commissioning activities;

(7) Procedure for maintenance of records of inspection/tests.

4.5.6. The Quality Assurance System shall be applied without prejudice to, or without in any way limiting, any Quality Assurance System that the Contractor already maintains.

4.5.7. The Contractor shall maintain the Quality Assurance Management Plan updated during the course of the execution of the Contract. All amendments to the original and approved Quality Assurance Management Plan shall be notified to the Engineer. The quality plan shall comprise:

(1) A Management Quality Plan for control of management related activities;

(2) A Design Quality Plan for control of design-related activities;

(3) A Manufacturing (including Inspection and Testing) Quality Plan for the control of related activities;

(4) Testing and Commissioning (including Integrated Testing and Commissioning) Quality Plan.

4.5.8. The Contractor shall submit a detailed organization chart identifying the responsibilities, authority, and interrelation of all personnel who manage, perform, and verify work involving quality in respect of all the Quality Plans. The organization chart shall be specific to this Contract. The chart shall identify the Quality Management Representative who shall act as the Quality Coordinator for the Contractor in all dealings with the Engineer.

4.5.9. The Contractor shall audit all the activities in each Quality Plan at quarterly intervals or other such intervals as the Engineer may require ensuring the continuing suitability and effectiveness of the quality management system. The Contractor shall make available upon request any document, which relates to his recent internal audits.

4.5.10. The Engineer will require compliance audits of the Contractor's and suppliers' quality system to be conducted. Not less than two (2) weeks a notice will be given by the Engineer. During audits, the Contractor shall provide suitably qualified staff to accompany the auditors.

4.5.11. All suppliers and subcontractors used by the contractor shall be given a Notice of No Objection prior to the commencement of the manufacture and commencement of their works. A detailed submission for each supplier and subcontractor shall be made which shall include as a minimum, scope of works, company organization, experience in supplying product or service, and quality management systems. Supplier familiarization visits, Quality Inspections at the manufacturer's facilities, First Article inspections, Type Tests, Routines Tests, and Factory Acceptance Tests shall be undertaken for all material and equipment to be supplied for this contract. For all these inspections and tests a maximum of four people will attend from the Employer and Engineer. All costs associated with these inspections either offshore or onshore including transportation, accommodation, insurances, expense, etc. for the Employers and Engineers staff shall be borne by the Contractor.

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housekeeping of the area, plant, and possessions allocated to him. The Contractor shall provide and maintain all facilities required by him in the area allocated for his use and all other work required to allow the Contractor to fulfill his obligations under the Contract.

16.4.4. The Firefighting and First-Aid equipment shall be provided in accordance with the recommendations of the Employer and Engineer. (Examples: Fire-Extinguishers, Fire-Blanket, First-Aid kits, etc.)

16.5. Accommodation

The Contractor shall provide suitable living accommodation for eight (8) staff from the Employer and eight (8) staff from the Engineer in the vicinity of the working location. The location of the accommodation shall move progressively based on the working location. The accommodation shall be provided from six (6) months prior to first site access to issuance of the final Taking Over Certificate.

16.6. Communications

During the testing and commissioning phases the contractor shall provide portable radios to their own staff and also the Engineers and Employers staff who are involved with the testing. The range of such radios shall be dependent on the tests being conducted.

17. ROAD TRAFFIC AND TRANSPORTATION

17.1. General

17.1.1. The Contractor shall conform to the applicable requirements under the law, act, regulations, and decision issued by the Government of the Republic of the Philippines and/or the Governmental authorities and imposed in the Republic of the Philippines. The Contractor shall ensure compliance with the requirements regarding the registration of vehicles. Vehicle size and load limitations shall be in accordance with all statutory requirements.

17.2. Transportation to Site

17.2.1. The Contractor shall make all arrangements and assume full responsibility for transportation to the Site of all plant, equipment, materials, and supplies needed for the proper execution of the Works. Procedures for the access to and from the Site shall be coordinated with the relevant authorities if required.

17.2.2. The Employer will obtain any required permits or licenses from relevant authorities for the import of the Goods intending to form or forming part of the Permanent Works or required for the sole purpose of carrying out the Works. Furthermore, the Employer shall assist the Contractor in procuring any necessary Government consent and in obtaining clearance through Customs of the Goods imported for the Works. The cost of any permits shall be borne by the Contractor.

17.2.3. If requested by the Contractor, the Employer shall facilitate the transport of the imported items for Railway System works, via railway from Manila Port or an available nearest port to the Site, which, however, will not relieve the Contractor of any of his obligation under the Contract. The Contractor shall inspect the condition of Railway System equipment at Manila Port or an available nearest after customs clearance and also at the Site when arrived at the Site.

~~17.4.3.~~16.4.3. If lighting is not provided in the specific areas allocated to the Contractor, he should make his own arrangements. The Contractor shall be solely responsible for the security and housekeeping of the area, plant, and possessions allocated to him. The Contractor shall provide and maintain all facilities required by him in the area allocated for his use and all other work required to allow the Contractor to fulfill his obligations under the Contract.

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12 \INTEGRATED OPERATIONAL CONTROL CENTER AND DEPOT CONTROL CENTER

12.1 Introduction

12.1.1 The complete E & M systems for the Clark International Airport to Calamba line will ultimately be controlled from an Integrated Operations Control Center (IOCC) located at Mabalacat Depot provided by the Contractor. The contractor shall take the lead in the interface of the IOCC. The existing OCC theatre at Mabalacat will be designed and upgraded to IOCC. Therefore, the Mabalacat OCC shall be designed keeping in view the future requirement of IOCC and adequate provision for all facilities will be provided from the beginning for use of the Mabalacat theatre as IOCC at later stage.

As the railway is progressively commissioned, the various control and monitoring functions will be implemented from individual OCC's and then ultimately migrated to the IOCC as follows:

i) NSCR will initially be controlled from an OCC at Malanday Depot in Valenzuela,

ii) MCRP will initially be controlled from the OCC at Mabalacat Depot.

iii) NSRP – South will initially be controlled from an OCC at Banlic.

The control of system from Malolos to Solis which is controlled from the OCC within Malanday Depot will eventually be transferred to the Integrated Control Center (IOCC) located in Mabalacat Depot, The Contractor shall allow provision for the seamless switchover of control from the OCC in Malanday to the Integrated Operation Control Center. The Contractor shall submit in their design how this will be achieved in coordination with the NSCR E&M System Contractor.

12.1.2 Each Depot (Mabalacat and Banlic) shall have its own Depot Control Center (DCC). The Contractor shall provide E&M facilities in the Depot for efficient operations and management.

12.2 Scope of Works

12.2.1 The Contractor shall supply all workstations and systems to combine and consolidate all E&M railway control systems along the route between CIA and Calamba to allow central integrated control of all sections of the line from Calamba to CIA from the IOCC at Mabalacat. which includes:

1. An Integrated ATS and OCC to unify the operational control and monitoring of the three lines N1, N2 and SC
2. Power Supply monitoring and control
3. Passenger Information Displays and PA system
4. Centralized Radio Management and dispatcher for complete line
5. Centralized alarms for disaster management
6. Common video wall to cover display of track layout with train status, Power SCADA and CCTV
7. Centralized trackside alarms management
8. NMS for all subsystems
9. Suitable positions and seating arrangement for all IOCC functions
10. Centralized CMMS
11. Also included to be integrated are systems outside of the E&M systems like BMS which uses the Backbone Transmission Network. The Contractor shall integrate the Central BMS

which is provided by other contractors that resides in each OCC for N1, N2, and SC shall be combined and consolidate to the IOCC. The Contractor shall supply all necessary equipment to fully integrate and consolidate all of the Control and Monitoring Systems that can be combined such as the P-SCADA and BMS which shall all be integrated at the IOCC.

12. PABX and Landline telephones for communication with all stations, Depots and adjacent railway/MRTS lines

13. Backbone requirements for all operational systems for N1, N2 and SC to be connected to IOCC.

12.2.2 The contractor shall comply with the requirements covered in other chapters of ERT.

12.2.3 The Contractor shall prepare and implement the requirements of a detailed Migration Plan covering strategy, timeline, testing, and decommissioning during the transfer of the OCC functions to the IOCC. The IOCC shall be commissioned progressively as the sections are connected so as to form contiguous line from CIA station/Mabalacat Depot towards South. The IOCC shall connect to N1 section and then SC section (which has multiple phases: For example: Calamba-Alabang, Solis-Blumentritt-Tutuban and Blumentritt to FTI etc). IOCC work shall be completed with the completion of last phase of the line.

12.2.4 All migration works shall be coordinated and agreed with the O&M Concessionaire. Redundant equipment from the decommissioned OCC's shall be returned to the Employer. The migration plan shall be submitted to the Engineer for approval.

12.2.5 Following the migration, the integrated combined consoles and displays shall cover the complete railways from CIA to Calamba.

12.2.6 Effective inter-disciplinary checks will be required to ensure the objectives for integration are realized.

12.2.7 Provisions of the space and associated works should be planned, to accommodate various equipment in the IOCC. Ergonomic studies will be required as part of the design of the IOCC which shall cover the likes of desk layout, lighting levels, and environment designs. These studies and all designs shall be submitted to the Engineer for approval.

12.2.8 Provisions shall be made in the IOCC to accommodate the future requirements for the extension to New Clark City.

12.2.9 The System equipment, rooms and E&M facilities design and installation shall also be in line and compliant with the RAMS Project requirements as defined in the ERG.

12.2.10 The functionality of the operating systems shall be driven by operational requirements. This Technical Specifications for IOCC systems equipment have been developed to international norms and standards. Other Equivalent standards shall also be allowed subject to review by the Engineer.

The Contractor shall propose all designs and functionality required to effectively operate the line. The Contractor shall submit suitable designs and plans for undertaking this work, at detail design stage, for the review of the Engineer.

The contractor shall design and supply all furniture, accessories, finishes as detailed in the document.

12.2.11 The contractor shall comply to requirements of DCC for managing operations within the Depot for all Depot operations.

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Serial No.	Safety Requirement Description	Subsystem
SR-95	The system shall include signage throughout the network to provide assistance, direction and warning to passengers and operations personnel to support normal, degraded and emergency operations. Signage shall include the following types: · Way finding signage: · System identification signs · Station name signs · Directional signs · Travel information displays · Metro network map · Local area map · Descriptive signs · Emergency exit signs · Trackside and tunnel signage · Other facility way finding signage · Warning, mandatory and prohibition signs Signage may also be complimented by the use of the passenger information and public address systems.	SYS, CIV
SR-96	The fire detection and alarm system Manual call points for outdoor mounting shall have IP-65 enclosure protection and in explosion hazardous areas shall have explosion proof protection.	MEP, TEL
SR-97	Automatic fire detection shall be provided along the tunnel trainway and inside technical rooms located within tunnel sections.	MEP, TEL
SR-98	"Cant" and "gradient Cant" will be applied to curve and transition curve.	TRK
SR-99	Gauges and Clearances shall be in alignment with RS cross-section and kinematic envelope.	TRK
SR-100	-	-
SR-101	Buffer stops shall be capable for the rolling stock weight to stop without major damage.	TRK
SR-102	The desirable minimum main TD 'track distance' (*distance between two track distance center lines*) shall be 4.00 m for higher operational speeds >100 km/h.	TRK, CIV
SR-103	To provide control and monitoring of Tunnel Ventilation system (TVS) during fire situation to ensure tenable environment conditions can be maintained.	MEP
SR-104	Provide necessary smoke control to achieve tenable conditions for passenger evacuation during emergency (fire) conditions in the tunnels, trackways and stations as per NFPA 130 specification or an equivalent international standard requirement. Cross-passageways shall also remain free of smoke during a tunnel fire incident.	MEP, CIV, SYS
SR-105	The Power SCADA (Safety Functions) shall be SIL 2	Power

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~~SR-100~~	~~Track structure shall be capable to contain the train path in the event of derailment (*Containment from tilting, running into the structure gauge of the opposite track and from colliding with bridge/tunnel equipment*).~~	~~TRK~~
SR-101	Buffer stops shall be capable for the rolling stock weight to stop without major damage.	TRK
SR-102	The desirable minimum main TD 'track distance' (*distance between two track distance center lines*) shall be 4.00 m for higher operational speeds >100 km/h.	TRK, CIV
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8.9.3.3. Contractor shall supply diesel locomotives (2 units) along with one flat car suitable for mainline operations having maximum 2.95m wide, to recover failed train, 315~~270~~t, on 3.5% gradient~~downgrade~~.

8.9.3.4. Locomotives shall be fully equipped for emergency responses.

8.9.3.5. Contractor shall supply adaptors for tight lock couplers to couple to work trains.

8.9.3.6. Flat car: Contractor shall supply flat car with side boards to carry tools, re-railing equipment and emergency response equipment, 15m length, 2.95m wide, with platform 1.10m above T.O.R.

8.9.3.7. Contractor shall supply and install tight lock couplers on both ends flat car (free issue).

8.9.3.8. It is assumed that the fuel supply equipment (N41-03) is used for the shunting Diesel locomotive (N41-02).

8.9.3.9. Common use (N61 and S61):

These facilities are used commonly in/outside of the depot/workshop area for the works concerned with rolling stock maintenance and accidents.

8.9.3.10. Tools:

a. These equipment/facilities are used commonly for the works concerned with rolling stock maintenance and accidents.

b. These tools can be provided by general commercial tool suppliers.

c. The contractor shall confirm to the interface contractor to resolve the interface problems as specified in Technical Requirement and Section 19 of ERG.

8.9.3.11. Other tools/equipment/facilities for rolling stock maintenance that is assumed not to procure at general commercial markets are treated as special tools and test equipment of the railway system and rolling stock.

8.9.3.12. These Special tools and test equipment are to be planned and supplied in close consultation and interfacing with Rolling Stock supplier at appropriate time with approval of Engineer. Special tools and test equipment of the rolling stock shown in Table 8.13 are indicative only. Actual requirement and specifications shall be reviewed and finalized as per the maintenance requirement of the Rolling stock supplier.

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N15 PAINT SHOP

N15.01 Work Lift Platform

1. Quantity: Eight (8) sets

2. Functional Requirements

2.1. One set is composed of two lifting platforms.

2.2. The work lift platform of scissor type shall be provided for painting work deck in the painting booth and on the Pit of the N15 Paint Shop.

2.3. Two lifting platforms shall be installed on the floor along the sides of the car body in each booth. Traveling rails shall be provided in the floor to maintain a constant clearance between the platform and the train.

2.4. Major performance shall be as follows:
i. Loading capacity: 200 kg (min. 2 persons with hand tools),
ii. Top height: approx. 4,200 mm above the floor,
iii. Platform size: approx. L 21,000 x W 900 mm,
iv. Power: AC 400V, 3 phase,
v. Lifting mechanism: scissors lifting device with hydraulic cylinder,
vi. Accessories: foot plates for car end painting work.

3. Design

3.1. The lowest height of the table shall be minimized as much as possible.

3.2. Lifting operation shall be performed on the platform. Operating switch shall be of explosion-proof type.

3.3. In order to keep safety for lifting platform, lifting platform shall have 900 mm height handrail at 3 sides except the car body side. The door on the platform shall be provided at both ends.

3.4. The floor of the platform shall be of non-slip type such as checkered steel plate or grating.

3.5. The floor of the platform shall be equipped with utility connections such as water supply and compressed air with quick couplers.

3.6. Arrangement of the lift platform shall be referred to the drawing Workshop Layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Lifting platform size, installation, anchor bolts, etc.,
ii. Electric power source, distribution box, cabling, etc.,
iii. Water and air piping, route, etc.
iv. Embedment of traveling rails for work lift platform, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N15 PAINT SHOP

N15.01 Work Lift Platform

1. Quantity: Eight (8) sets

2. Functional Requirements

2.1. One set is composed of two lifting platforms.

2.2. The work lift platform of scissor type shall be provided for painting work deck in the painting booth and on the Pit of the N15 Paint Shop.

2.3. Two lifting platforms shall be installed on the floor along the sides of the car body in each booth. Traveling rails shall be provided in the floor to maintain a constant clearance between the platform and the train.

2.4. Major performance shall be as follows:
i. Loading capacity: 200 kg (min. 2 persons with hand tools),
ii. Top height: approx. 4,200 mm above the floor,
iii. Platform size: approx. L 21,000 x W 900 mm,
iv. Power: AC 400V, 3 phase,
v. Lifting mechanism: scissors lifting device with hydraulic cylinder,
vi. Accessories: foot plates for car end painting work.

3. Design

3.1. The lowest height of the table shall be minimized as much as possible.

3.2. Lifting operation shall be performed on the platform. Operating switch shall be of explosion-proof type.

3.3. In order to keep safety for lifting platform, lifting platform shall have 900 mm height handrail at 3 sides except the car body side. The door on the platform shall be provided at both ends.

3.4. The floor of the platform shall be of non-slip type such as checkered steel plate or grating.

3.5. The floor of the platform shall be equipped with utility connections such as water supply and compressed air with quick couplers.

3.6. Arrangement of the lift platform shall be referred to the drawing Workshop Layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Lifting platform size, installation, anchor bolts, etc.,
ii. Electric power source, distribution box, cabling, etc.,
iii. Water and air piping, route, etc.
iv. Embedment of traveling rails for work lift platform, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N15.02 Car Body Washing Booth

1. Quantity: One (1) set

2. Functional Requirements

2.1. The car body washing booth shall be provided for the prevention of spray scattering by car body washing in the N15 Paint Shop.

2.2. The car body washing booth shall be composed of, but not limited to:

i. Booth,
ii. Ventilation device of push-pull in the booth,
iii. Air washing and dust collecting device.

2.3. The booth shall be equipped with the following facilities at minimum:

i. Fresh air discharge outlet in the ceiling,
ii. Air outlet at the floor,
iii. Underfloor water pool,
iv. Air duct with exhaust fan,
v. Traveling rails for the work lift platforms,
vi. Car body transfer device.

2.4. Air mean velocity shall be about 0.2 m/sec. at 1.5 m above the floor.

2.5. Floor embedded rail for car body moving will be provided through the booth by the ~~Building~~ Contractor.

2.6. Car body data of EMU is described below; the Contractor shall confirm to the Rolling Stock Contractor:

i. Track gauge: 1,435 mm,
ii. Size: L 19,500 mm x W 2,950 mm x H 3,800 mm,
iii. Net weight: max. 40 ton.

3. Design

3.1. The booth size shall be within approx. L 30,000 x W 6,000 x H 7,000 mm.

3.2. Working lift platforms (N15.01) for painting work shall be integrated in the booth.

3.3. The pit cover (floor grating) shall be provided and installed.

3.4. Arrangement of the Car body washing booth shall be referred to the Workshop Layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Floor pit structure and size,
ii. Booth size, installation, anchor bolts, floor finishing work,
iii. Electric power source, distribution box, cabling, etc.
iv. Water piping, route, supply piping, drainage, etc.
v. Duct, size, support, route, wall penetration, opening finishing, etc.
vi. Embedment of traveling rails for work lift platforms and track rails for car body moving, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N15.02 Car Body Washing Booth

1. Quantity: One (1) set

2. Functional Requirements

2.1. The car body washing booth shall be provided for the prevention of spray scattering by car body washing in the N15 Paint Shop.

2.2. The car body washing booth shall be composed of, but not limited to:

i. Booth,
ii. Ventilation device of push-pull in the booth,
iii. Air washing and dust collecting device.

2.3. The booth shall be equipped with the following facilities at minimum:

i. Fresh air discharge outlet in the ceiling,
ii. Air outlet at the floor,
iii. Underfloor water pool,
iv. Air duct with exhaust fan,
v. Traveling rails for the work lift platforms,
vi. Car body transfer device.

2.4. Air mean velocity shall be about 0.2 m/sec. at 1.5 m above the floor.

2.5. Floor embedded rail for car body moving will be provided through the booth by the Contractor.

2.6. Car body data of EMU is described below; the Contractor shall confirm to the Rolling Stock Contractor:

i. Track gauge: 1,435 mm,
ii. Size: L 19,500 mm x W 2,950 mm x H 3,800 mm,
iii. Net weight: max. 40 ton.

3. Design

3.1. The booth size shall be within approx. L 30,000 x W 6,000 x H 7,000 mm.

3.2. Working lift platforms (N15.01) for painting work shall be integrated in the booth.

3.3. The pit cover (floor grating) shall be provided and installed.

3.4. Arrangement of the Car body washing booth shall be referred to the Workshop Layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Floor pit structure and size,
ii. Booth size, installation, anchor bolts, floor finishing work,
iii. Electric power source, distribution box, cabling, etc.
iv. Water piping, route, supply piping, drainage, etc.
v. Duct, size, support, route, wall penetration, opening finishing, etc.
vi. Embedment of traveling rails for work lift platforms and track rails for car body moving, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N15.03 Car Body Painting Booth

1. Quantity: One (1) set

2. Functional Requirements

2.1. The car body painting booth shall be provided for painting of the car body in the N15 Paint Shop.

2.2. The car body painting booth shall be composed of, but not limited to:

i. Booth,
ii. Ventilation device of push-pull in the booth,
iii. Air washing and dust collecting device.

2.3. The booth shall be equipped with the following facilities at minimum:

i. Fresh air discharge outlet in the ceiling,
ii. Air outlet at the floor,
iii. Underfloor water pool,
iv. Air duct with exhaust fan collecting paint mist by water,
v. Traveling rails for the work lift platforms,
vi. Car body transfer device.

2.4. Air mean velocity shall be about 0.2 m/sec. at 1.5 m above the floor.

2.5. Floor embedded rail for car body moving will be provided through the booth by the ~~Building~~ Contractor.

2.6. Car body data of EMU are described below; the Contractor shall confirm to the Rolling Stock Contractor:

i. Track gauge: 1,435 mm,
ii. Size: L 19,500 mm x W 2,950 mm x H 3,800 mm,
iii. Net weight: max. 50 ton.

3. Design

3.1. The booth size shall be within L 30,000 x W 6,000 x H 7,000 mm.

3.2. Working lift platforms (N15.01) for painting work and painting machine (N15.05) shall be integrated in the booth.

3.3. The pit cover (floor grating) shall be provided and installed.

3.4. Arrangement of the car body painting booth shall be referred to Workshop Layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Floor pit structure and size,
ii. Booth size, installation, anchor bolts, floor finishing work,
iii. Electric power source, distribution box, cabling, etc.,
iv. Water piping, route, supply piping, drainage, etc.,
v. Duct, size, support, route, wall penetration, opening finishing, etc.
vi. Embedment of traveling rails for work lift platforms and track rails for car body moving, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N15.03 Car Body Painting Booth

1. Quantity: One (1) set

2. Functional Requirements

2.1. The car body painting booth shall be provided for painting of the car body in the N15 Paint Shop.

2.2. The car body painting booth shall be composed of, but not limited to:

i. Booth,
ii. Ventilation device of push-pull in the booth,
iii. Air washing and dust collecting device.

2.3. The booth shall be equipped with the following facilities at minimum:

i. Fresh air discharge outlet in the ceiling,
ii. Air outlet at the floor,
iii. Underfloor water pool,
iv. Air duct with exhaust fan collecting paint mist by water,
v. Traveling rails for the work lift platforms,
vi. Car body transfer device.

2.4. Air mean velocity shall be about 0.2 m/sec. at 1.5 m above the floor.

2.5. Floor embedded rail for car body moving will be provided through the booth by the Contractor.

2.6. Car body data of EMU are described below; the Contractor shall confirm to the Rolling Stock Contractor:

i. Track gauge: 1,435 mm,
ii. Size: L 19,500 mm x W 2,950 mm x H 3,800 mm,
iii. Net weight: max. 50 ton.

3. Design

3.1. The booth size shall be within L 30,000 x W 6,000 x H 7,000 mm.

3.2. Working lift platforms (N15.01) for painting work and painting machine (N15.05) shall be integrated in the booth.

3.3. The pit cover (floor grating) shall be provided and installed.

3.4. Arrangement of the car body painting booth shall be referred to Workshop Layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Floor pit structure and size,
ii. Booth size, installation, anchor bolts, floor finishing work,
iii. Electric power source, distribution box, cabling, etc.,
iv. Water piping, route, supply piping, drainage, etc.,
v. Duct, size, support, route, wall penetration, opening finishing, etc.
vi. Embedment of traveling rails for work lift platforms and track rails for car body moving, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N15.04 Car Body Drying Booth (Include Fuel Tank)

1. Quantity: Two (2) sets

2. Functional Requirements

2.1. The car body drying booth including its fuel tank shall be provided for drying paint and ventilation of harmful gas in the N15 Paint Shop.

2.2. The car body drying booth shall have the function to hold the inside of the booth up to 80 deg. (usually 60 deg.).

2.3. The car body drying booth shall be composed of, but not limited to:

i. Booth built with thermal insulation wall,

ii. Circulation fan of heated air,

iii. Light oil burner or gas burner,

iv. Temperature control device,

v. Booth lighting and emergency lighting,

vi. Regular and emergency door (with interlock),

vii. Shutter (for entrance and exit),

viii. Car body transfer device,

ix. Fuel Pump (Light oil burner),

x. Fuel tank: Underground type (Light oil burner) 3m3.

2.4. The civil works for fuel tank's foundation and pit shall be included to the Contractor's scope of works as specified in section 8.1 of this ERT. The Contractor shall take the interface with the Building Contractor.

2.5. Floor embedded rail for car body moving will be provided through the booth by the ~~Building~~ Contractor.

2.6. Car body data of EMU are described below; the Contractor shall confirm to the Rolling Stock Contractor:

i. Track gauge: 1,435 mm,

ii. Size: L 19,500 mm x W 2,950 mm x H 3,800 mm,

iii. Net weight: max. 50 ton.

3. Design

3.1. The booth size shall be within approx. L 30,000 x W 6,000 x H 7,000 mm.

3.2. The design of Car Body Drying Booth shall include of underground fuel tank and the civil works for its foundation and pit.

3.3. Fuel receiving pipe with delivery hose screw connection at ground level. The delivery hose connection shall be protected within a connection box set into the ground and having lockable cover plate,

3.4. Arrangement of the car body drying booth shall be referred to the workshop layout drawings.

N15.04 Car Body Drying Booth (Include Fuel Tank)

1. Quantity: Two (2) sets

2. Functional Requirements

2.1. The car body drying booth including its fuel tank shall be provided for drying paint and ventilation of harmful gas in the N15 Paint Shop.

2.2. The car body drying booth shall have the function to hold the inside of the booth up to 80 deg. (usually 60 deg.).

2.3. The car body drying booth shall be composed of, but not limited to:

i. Booth built with thermal insulation wall,

ii. Circulation fan of heated air,

iii. Light oil burner or gas burner,

iv. Temperature control device,

v. Booth lighting and emergency lighting,

vi. Regular and emergency door (with interlock),

vii. Shutter (for entrance and exit),

viii. Car body transfer device,

ix. Fuel Pump (Light oil burner),

x. Fuel tank: Underground type (Light oil burner) 3m3.

2.4. The civil works for fuel tank's foundation and pit shall be included to the Contractor's scope of works as specified in section 8.1 of this ERT. The Contractor shall take the interface with the Building Contractor.

2.5. Floor embedded rail for car body moving will be provided through the booth by the Contractor.

2.6. Car body data of EMU are described below; the Contractor shall confirm to the Rolling Stock Contractor:

i. Track gauge: 1,435 mm,

ii. Size: L 19,500 mm x W 2,950 mm x H 3,800 mm,

iii. Net weight: max. 50 ton.

3. Design

3.1. The booth size shall be within approx. L 30,000 x W 6,000 x H 7,000 mm.

3.2. The design of Car Body Drying Booth shall include of underground fuel tank and the civil works for its foundation and pit.

3.3. Fuel receiving pipe with delivery hose screw connection at ground level. The delivery hose connection shall be protected within a connection box set into the ground and having lockable cover plate,

3.4. Arrangement of the car body drying booth shall be referred to the workshop layout drawings.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Booth size, installation, anchor bolts, floor finishing work,

ii. Electric power source, distribution box, cabling, etc.,

iii. Duct, size, support, route, wall penetration, opening finishing, etc.

iv. Embedment of track rails for car body moving, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

4. Interface Requirement

Interface shall be taken at the appropriate timing with the Building Contractor regarding, but not limited to:

i. Booth size, installation, anchor bolts, floor finishing work,

ii. Electric power source, distribution box, cabling, etc.,

iii. Duct, size, support, route, wall penetration, opening finishing, etc.

iv. Embedment of track rails for car body moving, floor loading (t/m2) and floor flatness.

5. Eligible Supplier

There is no preference.

N41.02 Shunting Locomotive (Engine Type)

1. Quantity: One (1) set

2. Functional Requirements

2.1. The shunting locomotive (engine type) shall be provided for the shunting of the rolling stock in the Depot/Workshop and during rescue operation of a failed Trainset on mainline.

2.2. Contractor shall supply diesel locomotives (2 units) along with one flat car suitable for mainline operations having maximum 2.95m wide, to recover failed train, 315~~270~~t, on 3.5% gradient~~downgrade~~. Locomotives should be able to work in both single and in multiple mode as a consist of two locomotives as per the operational requirement.

2.3. Locomotives shall be fully equipped for emergency responses.

2.4. Contractor shall supply adaptors for tight lock couplers to couple to work trains.

2.5. Space for Onboard Signaling and Telecom equipment shall be provided by doing proper interfacing with Signaling and Telecom contractor for equipment installation details.

2.6. All onboard Signaling and Telecom Equipment along with cables and wire harness will be provided by Signaling and Telecom sub-contractors.

2.7. Installation will be done by Locomotive manufacture by doing necessary interface. Commissioning will be done jointly with Signaling and Telecom contractors.

2.8. The shunting locomotive shall be stored in the shunting locomotive shed supplied by the Building Contractor.

2.9. Major performance of the shunting locomotive shall be as follows; the Contractor shall confirm the type of coupler to the Rolling Stock Contractor:

i. Type: diesel locomotive,
ii. Track gauge: 1,435 mm,
iii. Coupler: the couplers of rolling stock at both ends,(to be supplied by Rolling stock contractor CP NS-02)
iv. The locomotive envelope to follow rolling stock and structure gauge drawing MCRP-DWG-GEN-TK- 0020 Rev 6 or latest.
v. Driver cab: air conditioned, with assistant driver's seat,
vi. Traction force: max. for rolling stock with Ten (10)-car set,
vii. Maximum speed without load: 80km/h
viii. Onboard signaling and telecom equipment

3. Design

3.1. The shunting locomotive can be operated by single driver. The shunting locomotive shall be equipped with the following features, but not limited to:

i. Wide windows for wide and clear view from the cab for safe operation,
ii. Bi-directional operation
iii. Visually checking of the coupling status in the cab,
iv. Decks and handrails at both end for marshalling staff,
v. Remote releasing of coupling.

3.2. The following accessories shall be included, but not limited to:

i. Standard accessories,
ii. Maintenance tool kit.

4. Interface Requirement

N41.02 Shunting Locomotive (Engine Type)

1. Quantity: One (1) set

2. Functional Requirements

2.1. The shunting locomotive (engine type) shall be provided for the shunting of the rolling stock in the Depot/Workshop and during rescue operation of a failed Trainset on mainline.

2.2. Contractor shall supply diesel locomotives (2 units) along with one flat car suitable for mainline operations having maximum 2.95m wide, to recover failed train, 315t, on 3.5% gradient. Locomotives should be able to work in both single and in multiple mode as a consist of two locomotives as per the operational requirement.

2.3. Locomotives shall be fully equipped for emergency responses.

2.4. Contractor shall supply adaptors for tight lock couplers to couple to work trains.

2.5. Space for Onboard Signaling and Telecom equipment shall be provided by doing proper interfacing with Signaling and Telecom contractor for equipment installation details.

2.6. All onboard Signaling and Telecom Equipment along with cables and wire harness will be provided by Signaling and Telecom sub-contractors.

2.7. Installation will be done by Locomotive manufacture by doing necessary interface. Commissioning will be done jointly with Signaling and Telecom contractors.

2.8. The shunting locomotive shall be stored in the shunting locomotive shed supplied by the Building Contractor.

2.9. Major performance of the shunting locomotive shall be as follows; the Contractor shall confirm the type of coupler to the Rolling Stock Contractor:

i. Type: diesel locomotive,
ii. Track gauge: 1,435 mm,
iii. Coupler: the couplers of rolling stock at both ends,(to be supplied by Rolling stock contractor CP NS-02)
iv. The locomotive envelope to follow rolling stock and structure gauge drawing MCRP-DWG-GEN-TK- 0020 Rev 6 or latest.
v. Driver cab: air conditioned, with assistant driver's seat,
vi. Traction force: max. for rolling stock with Ten (10)-car set,
vii. Maximum speed without load: 80km/h
viii. Onboard signaling and telecom equipment

3. Design

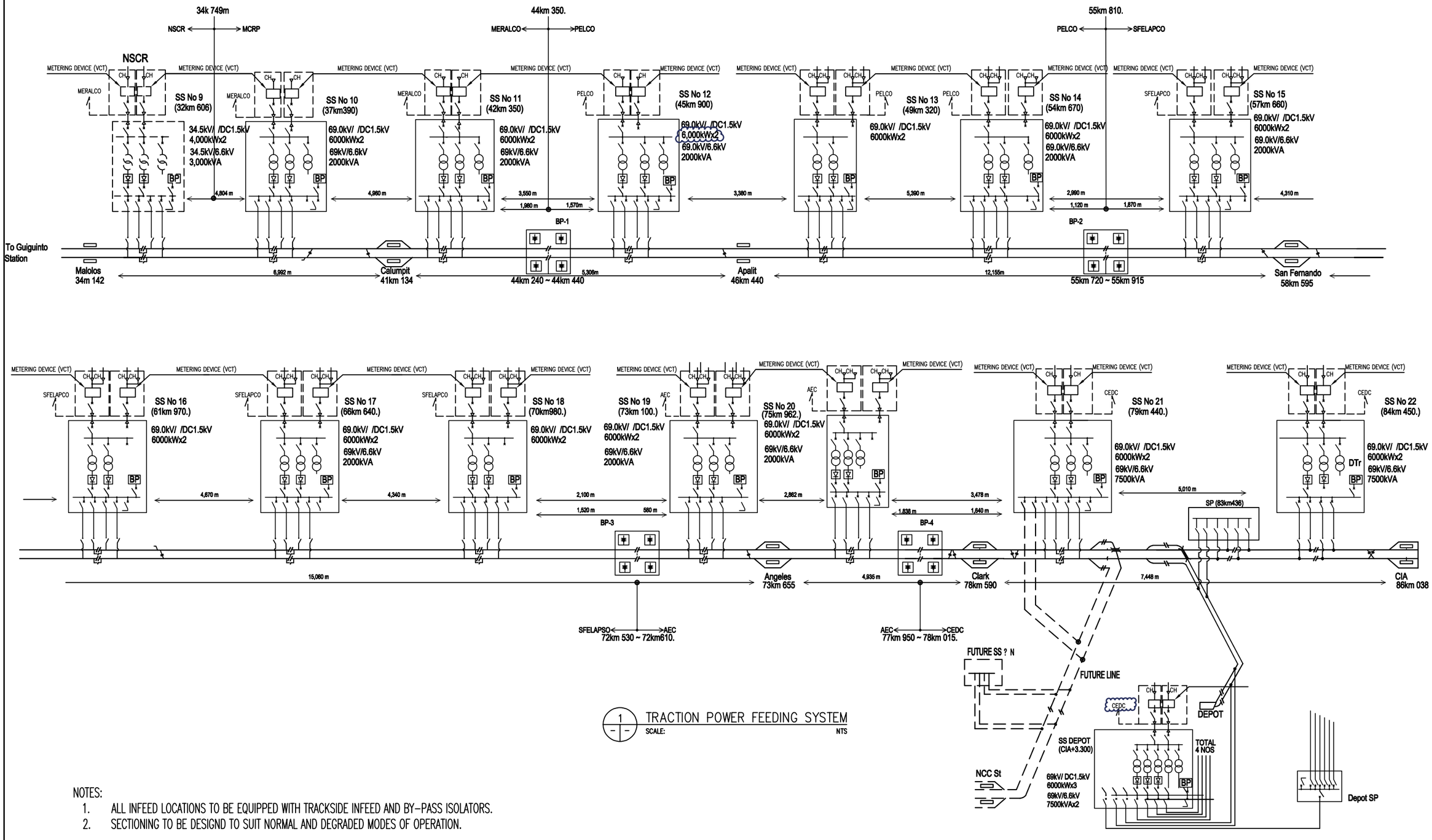
3.1. The shunting locomotive can be operated by single driver. The shunting locomotive shall be equipped with the following features, but not limited to:

i. Wide windows for wide and clear view from the cab for safe operation,
ii. Bi-directional operation
iii. Visually checking of the coupling status in the cab,
iv. Decks and handrails at both end for marshalling staff,
v. Remote releasing of coupling.

3.2. The following accessories shall be included, but not limited to:

i. Standard accessories,
ii. Maintenance tool kit.

4. Interface Requirement



1 — TRACTION POWER FEEDING SYSTEM
SCALE: NTS

NOTES:
1. ALL INFEED LOCATIONS TO BE EQUIPPED WITH TRACKSIDE INFEED AND BY-PASS ISOLATORS.
2. SECTIONING TO BE DESIGND TO SUIT NORMAL AND DEGRADED MODES OF OPERATION.

FOR REFERENCE

VERSIONS	DATE	DESCRIPTION
04	26/02/2021	ADDITIONAL TURNOUTS BASED ON TRACKS TRACKS SCHEMATIC DRAWINGS
05	02/03/2021	ISSUED FOR REFERENCE
06	25/05/2021	LINES AT BP REMOVED & SS NO.10 TO SS NO.22 CHAINAGE REVISED
07	06/08/2021	SP CONNECTION REVISED
08	02/09/2021	ELECTRICAL COMPANY AT DEPOT CHANGED

DEPARTMENT OF TRANSPORTATION (DOTr)
PHILIPPINE NATIONAL RAILWAYS

CONSULTANT

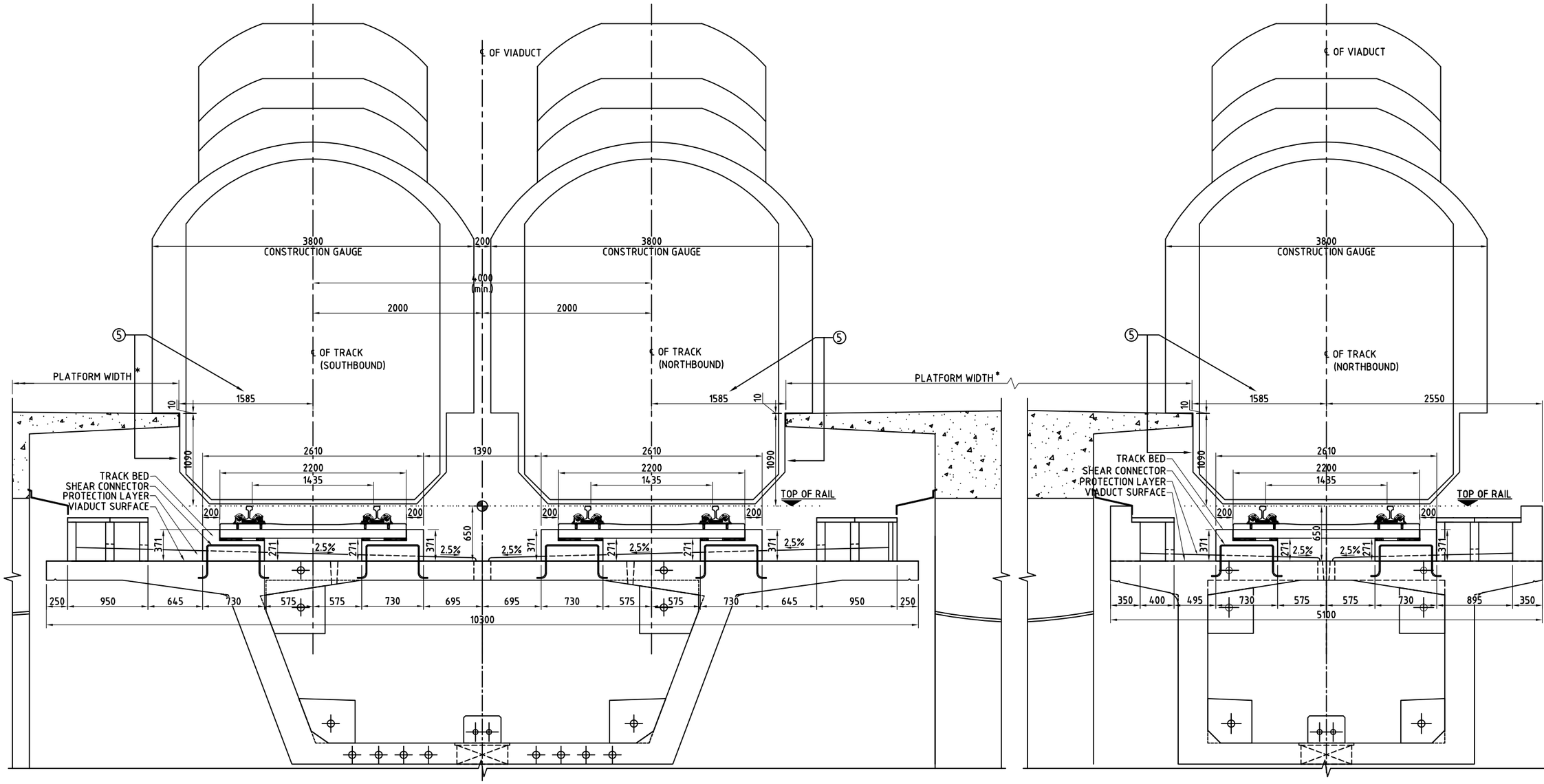
JICA DESIGN TEAM (JDT)
ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
KATAHIRA & ENGINEER INTERNATIONAL
TONICHI ENGINEERING CONSULTANTS, INC.
PACIFIC CONSULTANTS CO.,LTD.
Tokyo Metro Co.,Ltd.

TITLE	JDT	SMEC
DESIGNER	M.OGIKUBO	–
CHECK	T.MATSUMOTO	–
TEAM LEADER	T.ISHIZUKA	–
P. MANAGER	N.KAWAI	–

MALOLOS – CLARK RAILWAY PROJECT (MCRP)
NORTH SOUTH RAILWAY PROJECT–SOUTH (NSRP–SOUTH)
Package CP NS–01 : Bidding Documents
TRACTION POWER FEEDING SYSTEM

DATE: 24 MARCH 2020
SCALE: NONE
SHEET No.: 3 OF 40
DRG No.: MCRP–DWG–PSS–1001
DRG S.: –
REV: 08

GBB No. 27



SECTION 01
SCALE 1:25

TYPICAL CROSS SECTION FOR TRACK BED ON VIADUCT (STATION LOCATION)

THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORK CONTRACTOR TO PROVIDE DETAILS AND SPACING OF SHEAR CONNECTORS AND LAYOUT OF TRACK BED CONCRETE .

* REFER STATION DRAWINGS FOR DIMENSIONS.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF SLEEPER REFER TO DRAWING NO. MCRP-DWG-GEN-TK-0205
3. FOR DETAILS OF SEF SYSTEM REFER TO DRAWING NO. MCRP-DWG-GEN-TK-0200
4. FOR DETAILS OF SHEAR CONNECTOR REFER TO DRAWING NO. MCRP-DWG-GEN-TK-0142
5. 10MM TOLERANCE WERE ADDED TO THE CIVIL PLATFORM POSITION FROM THE REQUIRED CONSTRUCTION GAUGE. REFER TO DRAWING MCRP-DWG-GEN-TK-0020 REV. 06 FOR THE CONSTRUCTION GAUGE REQUIREMENTS.

SCALE 1:25 0.25 0 0.50 1.00

VERSIONS	DATE	DESCRIPTION
03	15 MAY 2019	ISSUED FOR REFERENCE
04	31 AUG 2021	ISSUED FOR REFERENCE

DEPARTMENT OF TRANSPORTATION (DOTr)

PHILIPPINE NATIONAL RAILWAYS

CONSULTANT

JICA DESIGN TEAM (JDT)

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD.
KATAHIRA & ENGINEERS INTERNATIONAL
TONICHI ENGINEERING CONSULTANTS INC.
PACIFIC CONSULTANTS CO., LTD.
TOKYO METRO CO., LTD

TITLE	JDT	SMEC
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CHECK	S. YOSHIMOTO	V. BALAKRISHNAN
TEAM LEADER	K. KUSANAGI	W. FRENCKEN
P. MANAGER	Y. MAEDA	R. YUZON JR.

E & M SYSTEMS AND TRACK WORKS
PACKAGE CP NS-01 : BIDDING DOCUMENTS

FOR REFERENCE

TYPICAL CROSS SECTION FOR ELEVATED SECTION (STATION)

DATE: MAY 2019
SCALE: AS SHOWN IN A1
SHEET No.:
DRG No.: MCRP-DWG-GEN-TK-0122
DRG S.:
REV: 04

WVR-410

Last modified by GCR - LAP49 / 31 Aug 2021
Filename: C:\Users\User\Desktop\MY FILES\ORGANIZE CAD FILES\MCRP\TRACKWORKS\MCRP-DWG-GEN-TK-0122 REV.04