



केंद्रीय भंडारण निगम

(भारत सरकार का एक उपक्रम)

CENTRAL WAREHOUSING CORPORATION

(A Govt. of India Undertaking)

Corporate Office

4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016,

Ph. No. & Fax No. (011) 49857894

Email Id: tendercell.co@cewacor.nic.in

E- Tender

Reference Number: E NIT_CWC/CO/Engg. /26-27/09

Name of the Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

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ई-निविदा सूचना

E-TENDER NOTICE

(E NIT_CWC/CO/Engg. /26-27/09)

सीडब्ल्यूसी निम्नलिखित कार्य के लिए ठेकेदारों से ऑनलाइन, खुली, ई-निविदा आमंत्रित करता है:

CWC invites on-line, open, E-tender from the contractors for the following work:

Name of Work	Estimated Cost (Rs.)	Earnest Money Deposit (Rs.)	Time of Completion	Last date of online bid submission
Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).	3980.75 Lakh	49.81 Lakh	14 months	10.06.2026 UP to 15:00 Hrs.

ई-निविदा आमंत्रण सूचना और अनुबंध की शर्तों सहित विस्तृत निविदा सूचना, सीडब्ल्यूसी की वेबसाइट www.cewacor.nic.in या ई-निविदा वेबसाइट www.cwceprocure.com या सीपीपी पोर्टल <http://eprocure.gov.in/e-publish/app> से देखी और डाउनलोड की जा सकती है।

इस निविदा में आगे कोई शुद्धिपत्र/परिशिष्ट, यदि कोई हो, केवल उपरोक्त वेबसाइटों पर प्रकाशित किया जाएगा और इसके लिए समाचार पत्रों में कोई प्रेस विज्ञापन जारी नहीं किया जाएगा।

Detailed Tender Notice along with Notice Inviting E-Tender and Conditions of Contract may be seen and downloaded from the CWC's website www.cewacor.nic.in or e-tender website www.cwceprocure.com or CPP Portal <http://eprocure.gov.in/e-publish/app>.

Further Corrigendum/Addendum to this Tender, if any, will be published on above websites only and any Press advertisement in Newspapers shall not be issued for the same.

Roopendra Kumar Sharma
Sr. General Manager
(Engineering)

Corporate Office, 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi;
Engineering Division:PH-011-49857894, E-mail; tendercell.co@cewacor.nic.in

निविदा आमंत्रण सूचना

NOTICE INVITING TENDER

(E-tendering Mode)

The Central Warehousing Corporation , the Procuring Entity, hereinafter also referred to as CWC or Corporation, through the **Sr. GM/Engineering** of the Central Warehousing Corporation, at Corporate Office, New Delhi hereinafter also referred to as 'Engineer In charge', invites online e- tenders hereinafter also referred as the 'bid(s)', for entering into a contract for **"Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.)."** hereinafter referred to as 'the Works'.

This Request for Proposal for procurement of works having reference number as mentioned in first Page (hereinafter referred to as 'the Tender Document'), gives further details.

The Tender Document

1.1. Bidders must read the complete 'Tender Document'.

This NIT is an integral part of the Tender Document and serves a limited purpose of invitation and does not purport to contain all relevant details for submission of bids.

'Tender Information Summary' (TIS) appended to this notice in APPENDIX-I gives a salient summary of the tender information. Any generic reference to NIT shall also imply a reference to TIS as well. However, Bidders must go through the complete Tender Document (covering all volumes and Its Annexures, Appendices as enclosed with) for details before submission of their Bids.

1.2. Availability of the Tender Document

The Tender Document shall be published on the the CWC's website www.cewacor.nic.in or e-tender website www.cwceprocure.com or CPP Portal <http://eprocure.gov.in/epublish/app>. It shall be available for download after the date and time of the start of availability till the deadline for availability as mentioned in TIS.

Unless otherwise stipulated in TIS, the Tender Document can be downloaded from CWC website www.cewacor.nic.in or from CPP portal free of cost. If the CORPORATION happens to be closed on the deadline for submitting the bids as specified above, this deadline shall *not* be extended.

Any query/ clarification regarding downloading Tender Documents and uploading Bids on the e-Procurement portal may be addressed to the Help Desk (contact details given in TIS).

1.3. Clarifications

A Bidder requiring any clarification regarding the Tender Document may ask questions in writing/ electronically from Office/ Contact Person as mentioned in TIS, provided the questions are raised before the clarification end date mentioned in TIS. This deadline shall not be extended in case of any intervening holidays.

2. ELIGIBILITY CRITERIA FOR PARTICIPATION IN THIS TENDER

Participation in this Tender Process is open to all bidders who fulfil the ‘Eligibility’ Criteria.

The bidder should meet the following eligibility criteria on the date of his bid submission and should continue to meet these till the end of the contract.

Bidder shall be required to declare fulfilment of Eligibility Criteria and submit these declarations in form of an Affidavit along with Bidder information Summary in Prequalifying Performa (PQ Performa) along with various EXHIBITS enclosed in the **APPENDIX III** of this NIT.

Eligibility Criteria:

Unless otherwise stipulated in Tender information Summary (TIS)/ Instructions to Bidder (ITB):

1) The Bidder:

- (a) must be a legal entity: natural person or private entity or public entity (State-owned enterprise or institution),
- (b) must not be (or proposes to be, a Joint Venture/ Consortium (an association of several persons, firms, or companies - hereinafter referred to as JV/C) when JV/C are not allowed to participate as mentioned in Appendix-I.
- (c) must be having valid registration regarding GSTIN, PAN and in case of JV, **the Lead member of JV must be in possession of GSTIN and PAN and shall submit the same.**
- (d) **itself or (lead member -in case of JV)** must be a contractor having technical experience and Financial Soundness, Working Capacity to the extent minimum required for eligibility (Pre-qualification criteria (PQC) for this tender) as mentioned in APPENDIX II of this NIT **OR Bidder as JV must satisfy relevant JV norms given vide this corrigendum.**

2) The Bidder:

- (e) must not be insolvent, in receivership, bankrupt or being wound up, not have its affairs administered by a court or a judicial officer, not have its business activities suspended and must not be the subject of legal proceedings for any aforesaid reasons.
- (f) (Including their affiliates or subsidiaries or Contractors/ subcontractors for any part of the contract):
 - i. Not stand declared ineligible/ blacklisted/ banned/ debarred by the CORPORATION and/or its Ministry/ Department from participation in its Tender Processes; and/ or
 - ii. Not be convicted (within three years preceding the last date of bid submission) or stand declared ineligible/ suspended/ blacklisted/ banned/ debarred by

appropriate agencies of Government of India from participation in Tender Processes of all of its entities, for:

- offences involving moral turpitude in business dealings under the Prevention of Corruption Act, 1988 or any other law; and/or
 - offences under the Indian Penal Code or any other law for causing any loss of life/ limbs/ property or endangering Public Health during the execution of a public procurement contract and/ or
 - suspected to be or of doubtful loyalty to the Country or a National Security risk as determined by appropriate agencies of the Government of India.
- iii. Not have changed its name or created a new “Allied Firm”, consequent to having declared ineligible/ suspended/ blacklisted/ banned/ debarred as above.
- iv. Not having an association (as a bidder/ partner/ director/ employee in any capacity) of: any retired Manager (of Gazette Rank) or any retired Officer of CWC or retired Gazette officer of the Central or State Government or officer of State/Central Public Sector Undertakings if such a retired person has not completed the cooling-off period of one year after his retirement. However, this shall not apply if such managers/ officers have obtained a waiver of the cooling-off period from their erstwhile organization.
- v. And of the near relations of executives of CORPORATION involved in this Tender Process including Head of Engineering / Finance/ Purchase/Business Section, Asst Managers/ Managers/DGM/GM etc. of Regional Office and Corporate Office.
- (g) Not having a conflict of interest, which substantially affects fair competition. The prices quoted should be competitive and without adopting any unfair/ unethical/ anti-competitive means. No attempt should be made to induce any other bidder to submit or not to submit an offer to restrict competition.
- 3) **must fulfil other additional eligibility conditions, viz Qualification norms, bid compliance, Bid security etc. as prescribed, in “APENDIX II of this NIT and Important Note -1.A given in Appendix-II.**
- 4) must provide such evidence of their continued eligibility to the CORPORATION if requested.
- 5) from specified countries having land borders with India (but not in development partnership with India) shall be eligible subject to certain conditions as detailed in the **ITB-clause 3.3 (APPENDIX IV) of this NIT.**

3. **PURCHASE PREFERENCE.**

No price preference or purchase preference shall be given to any bidder except valid L1 bidder quoting reasonable rates. Due to Nature of Scope, all works shall be awarded to valid L1 bidder (who has quoted reasonable rates) only without splitting it among others.

4. PRE-BID CONFERENCE:

If so, indicated in TIS, Bidders are requested to attend a Pre-bid conference for clarification on the Tenders' technical specifications and commercial conditions, on the time, date, and place mentioned therein. Participation in such a Pre-bid Conference is not mandatory.

If a bidder does not participate or submit any query, then no subsequent representations from them regarding the Technical/ commercial specifications/ conditions shall be entertained.

5. SUBMISSION OF BIDS:

- 1) **Bids must be uploaded only on CWC E procurement portal i.e. www.cwceprocure.com** till the deadline for submission mentioned in TIS. If the office happens to be closed on the deadline to submit the bids as specified above, this deadline shall not be extended.
- 2) No manual Bids shall be made available or accepted for submission. Bidder must comply with the conditions of the eProcurement portal, including registration, compatible Digital Signature Certificate (DSC) etc. In the case of downloaded documents, Bidder must not make any changes to the contents of the documents while uploading, except for filling in the required information.
- 3) **EMD** of amount as mentioned in TIS /ITB to be paid in favour of Central Warehousing Corporation, New Delhi only through e-payment gateway of e-procurement & receipt of same should be scanned and uploaded on the e-tendering website www.cwceprocure.com along with e-tender documents.
- 4) **Tender Document is free of cost unless specified in TIS. In such case, the Cost of tender** as mentioned in TIS /ITB to be paid only through e-payment gateway of e-procurement system. Proof should be submitted/uploaded with the tender.
- 5) **Tender processing fee** is NIL.
- 6) **Integrity Pact:** If so indicated, in the TIS/ ITB, all Bidders shall have to sign the Integrity Pact with the CORPORATION as per 'EXHIBIT-V: Integrity Pact' (Appendix-III of NIT). Bids without a signed Integrity Pact shall be rejected.

6. BID OPENING

Bids received shall be opened online at *the specified date and time given in TIS*. If the office is closed on the specified date of opening of the bids, the opening shall be done on the next working day at the same time.

7. TERMS AND CONDITIONS.

The works awarded after finalization of the L1 bidder shall be executed under various General, Special and Technical Conditions of works and shall be guided by technical specifications and Price schedules etc. enclosed under various Appendixes, volumes and Annexures of this NIT. The Bidder is required to review these carefully before quoting their prices.

8. DISCLAIMERS AND RIGHTS OF CORPORATION

The issue of the Tender Document does not imply that the CORPORATION is bound to select bid(s), and it reserves the right without assigning any reason to:

- a) reject any or all the Bids, or
- b) cancel the tender process; or
- c) abandon the procurement of the Services; or
- d) issue another tender for identical or similar Services.

Note: For further details, please refer to appended TIS, Qualification Criteria, ITB, PQ Forms & Exhibits and the complete Tender Document which consist of volume II, III and IV also.

Roopendra Kumar Sharma
Sr. General Manager/ Engineering
Corporate Office-New Delhi

Enclosers:

Appendix-I: Tender Information Summary (TIS).

Appendix-II: Qualification Norms.

Appendix-III: PQ Forms & Exhibits.

Appendix-IV: Instructions to Bidder (ITB)

Appendix-V : Special conditions of Contract (SCC)

Volume II: General Conditions of Contract and Its Annexures

Volume III: Technical Specifications of Works and Its Annexures

Volume IV: Price Bid

Volume V: Tender Drawings.

Appendix-I: Tender Information Summary (TIS)

1.0 Basic Details	
Name of Work	Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).
Estimated Cost	Rs. 3980.75 Lakh
Completion Period	14 Months.
Tender Type	Open Tender – Domestic
Tender Category	Works
Bidding System	Single Stage in Two Bid System
Form of Contract	Schedule wise Percentage rate
No. of Covers	Two Covers (1: Technical Bid); (2: Financial Bid)
e-Reverse Auction to be held after financial bid opening	No
Name of the Procuring Organization/Entity	Central Warehousing Corporation
Tender Accepting Authority	<i>Director (M&CP), CWC</i>
Tender Inviting Authority (TIA)	<i>Sr. General Manager /Engineering</i>
Address	<i>4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016, Ph. No. & Fax No. (011) 49857894</i>
Indicative HSN Code:	<u>998599</u>
Workplace /Site of construction is under administrative control of:	CWC Regional Office -Chennai
Address of Workplace/Site:	Plot No.15, 17, SIPCOT Multi Park, 1st Main Road, Upparpatty Village, Theni Dt.- 625 534
Nearest City/District:	Theni District

Nearest Major Railway Station for Site:	TENI Railway Station		
Nearest Airport for Site:	Madurai Airport		
2.0 Critical Dates			
NIT Publishing Date	13.05.2026 From (17:00) Hrs.	Bid Validity (Days from the date of Tender Opening)	90 days
Document Download Start Date & Time	13.05.2026 From (17:30) Hrs.	Document Download End Date & Time	9.06.2026 Up to (24:00) Hrs.
Clarification Start Date & Time	See pre bid meeting schedule	Clarification End Date & Time	See pre bid meeting schedule
EMD & Bid Submission Start Date & Time	14.05.2026 From (10:00) Hrs.	EMD & Bid Submission Closing Date & Time	10.06.2026 Up to (15:00) Hrs.
Tender Opening (Techno-commercial bid) Date & Time	11.06.2026 From (15:00) Hrs onwards.	Tender Opening (Financial bid) Date & Time	Shall be intimated later vide E-procurement portal only to Qualified Bidders.
3.0 Eligibility to Participate: (See NIT-clause 2; Qualification norms (APPENDIX-II) and ITB-clause 3.2 (APPENDIX-IV))			
Nature of Bidders eligible	[Individual / Firms / Company]		
Any kind of Joint venture/Consortium	ALLOWED		
Qualifying Financial capabilities and Turnover of Bidder	See APPENDIX-II(Document(s)-required in support of Qualifying Turnover is Mandatory Document)		
Qualifying Technical Experience of Bidder in Similar Nature of work completed within time or without (LD)	See APPENDIX-II (Completion certificate issued by Client in support of Technical Experience is a Mandatory Document)		
Other declaration of Eligibility and Power of attorney (as applicable)	Submit PQ Performa along with Affidavit as per EXHIBIT-I of APPENDIX-III which is a Mandatory Document); Submit Power of Attorney if required as per format in EXHIBIT-II of APPENDIX-III;		

Bidding capacity, Personnel & Equipment capabilities	See APENDIX-II for detailed provision on requirements of these criteria.
4.0 EMD (BID Security)	Applicable
EMD Amount	(Mandatory to be submitted by all bidders -total amount ₹49.81 Lakh.) <ul style="list-style-type: none">To be paid through NEFT/RTGS in the bank account of CWC, and EMD submission proof is to be submitted. The bank details for submitting the EMD are: - Name of Account Holder - CENTRAL WAREHOUSING CORPORATION, Bank Name - HDFC BANK LTD, Branch Name -A – 24, HAUZ KHAS, NEW DELHI -16, Account No. – 50100308128200, IFSC - HDFC0000467, MICR – 110240071No Exemption from EMD to bidders from MSME/ Start-ups etc.
5.0 Integrity Pact	Pre- Contract Integrity Pact to be Signed and Submitted along with bid.
Independent External Monitor, (IEM) Name and Contact Details	The CORPORATION has appointed following persons, an Independent External Monitor (IEM) hereinafter also referred to as Monitor for this Pact in consultation with the Central Vigilance Commission. Ms. Arundhati Ghosh, Email- arundhatyg@gmail.com Shri. P.V. Rao, Email- pasupuletirao@yahoo.co.in Shri Ashok Kumar Garg, Email- akgarg1654@gmail.com
6.0 Thresholds for Purchase Preference under Make in India Policy /MSME etc.	
Is the requirement divisible for purchase preference for Special status of Bidders (MSME /Make in India etc.)	[No]
Would the contract be split among more than one bidder	[No]
7.0 Obtaining the Tender Document and clarifications	
E Procurement Portal from where tender to be purchased, submitted and where tender shall be opened.	www.cwceprocure.com
Other web sites from where tender can be downloaded for references/ study etc.	www.cewacor.nic.in
Helpdesk for Document availability and submission	May also call at help-line nos.: 0120-4001 002 , 0120-4001 005, 0120- 4493395 and email at support- eproc(at)nic(dot)in
Cost of Tender Document (INR)	Free of Cost

Office/ Contact Person/ email for tender and work-related clarifications	<p>1. Sh. Piyush Saroj, Manager, Tender Cell, Mobile No. +91 98765 72931, Email: tendercell.co@cewacor.nic.in</p> <p>2. Sh. Abhi Kadian DGM, Engineering Mob No. – 8187000009</p>
8.0 Pre-bid Conference	
Place, time, and date of the Pre-bid Conference	<p>26.05.2026; 11:00 Hrs</p> <p>Through video conferencing through link- https://emulakaatcwc.webex.com/emulakaatcwc/globalcallin.php?MTID=m4631ce79af7de42f4cc675b1921c5d31</p> <p>Meeting number 2514 932 0580</p> <p>Meeting password 66VmsyrKJ2F</p> <p>Agenda: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).</p>
Helpdesk for Document availability and submission	<p>For any technical related queries please call at 24 x 7 Help Desk Number</p> <p>0120-4001 002</p> <p>0120-4001 005</p> <p>0120- 4493395</p> <p>e-Mail Support (for clarification in tender document): tendercell.co@cewacor.nic.in</p> <p>Technical - support-eproc@nic.in</p>
9.0 Preparation and Submission and Opening of Bids	
Bids to be Addressed to	<p>Sr. General Manager, Engineering</p> <p>Central Warehousing Corporation</p>
Tender Opening Place	Only On e-procurement portal(s) mentioned above
Alternate Bids allowed or not	Only one bid meeting the conflict-of-interest criteria (as mentioned in this document) shall be considered as valid from a bidder.

Physical submission of Bid/ documents required/ permitted	Not allowed and will not be entertained				
10.0 Other Important Details required under General Conditions of Contract					
Engineer In charge	Sr. General Manager /Engineering or Officers authorized by him.				
Agreement to be Signed by & Place of Signing	Engineer in Charge At CWC corporate office, New Delhi				
Corporation Engineers responsible for Physical Supervision of work	Manager/Sr. Manager/DGM (Second Level test check Authority) Asst. Manager/Dy. Manager/Manager/Sr. Manager (First Level test check Authority) (name of each as decided by EIC and communicated in LOA or amendment thereof)				
Schedule A: Price Schedule:	Schedule-I: Items of General Civil works Scheduled in Civil DSR 2023 and Items directly driven from DSR 2023 (NS) items.				
	Schedule-II: Items of General Civil works not scheduled in Civil DSR 2023 (Market Rate Items)				
	Schedule-III: - Items of General Electrical works Scheduled in E&M DSR 2022 and Items directly driven from DSR 2022 items.				
	Schedule-IV: - Items of General E&M works not scheduled in E&M works DSR 2022 (Market Rate Items)				
	Schedule-V: Schedule of Items to be operated on Design & build basis - Offices & Miscellaneous amenities Buildings works based on CPWD PAR 2023				
Schedule B: Schedule of Materials to be issued to the Contractor	SL	Description of Item	Quantity	Rates in Figures & Words at which the Material will be Charged to the Contractor	Place of Issue
	1	2	3	4	5
	NIL				
SCHEDULE ‘C’ Tools & Plants to be hired to the Contractor –	SL	Description	Hire Charges per day		Place of Issue
	1	2	3	4	
	NIL				

SCHEDULE 'D'	Extra Schedule for Specific Requirements / Document for the Work, if any: NIL*	
SCHEDULE 'E'	Performance Guarantee (PG) and Security Deposit (SD)	
Performance Guarantee Amount / Format / Timeline for Submission:	<ul style="list-style-type: none"> PG shall be 5% of Tendered Value as mentioned in LOA and to be deposited by the Contractor in form described in GCC clause 1, within timeline mentioned in LOA based on limits prescribed below Time limit for submission of Performance Guarantee from the date of Placement of LOA: up to 15 Days Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond above mentioned time limit: 15 days. <p>In case due dates as per above timeline falls to be a Bank holiday or National Public Holiday, the next working day shall be considered as due date.</p>	
Security Deposit (SD):	<ul style="list-style-type: none"> SD shall be 5% of Tendered Value as mentioned in LOA. Security Deposit (after adjustment from EMD) to be deposited by the Contractor: as prescribed in GCC clause 1 A 	
SCHEDULE 'F'	Linked with relevant clauses of General Conditions of Contract (GCC) as mentioned below	
i. Standard Schedule of Rates	<p>Latest Civil and E&M works -DSR at the time of preparing estimates.</p> <p>Civil DSR 2023</p> <p>E&M works-DSR 2022</p> <p>CPWD PAR 2023</p>	
ii. Percentage on cost of materials and labour to cover all overheads and profits of Contractor in Analysis of Market rates (non-Scheduled in DSR):	15%	
iii. Authority for fixing compensation under Clause 2 of GCC	Engineer in Charge	
iv. Number of days from the date of issue of Letter of Acceptance for reckoning date of start under Clause 5 of GCC	15 days	
v. Authority for Accepting the Hindrances, Deciding the Extension of Time, Rescheduling the Milestone, Shifting of Date of Start in case of delay in handing over of site under Clause 5 of GCC	Engineer in Charge	
vi. Authority for handing over of site and recording/certifying the Hindrances under Clause 5 of GCC	Corporation Engineers	

vii.		Authority for Certifying /accepting physical measurement of work and Certifying the Quality of works	Corporation Engineers authorized by EIC mentioned in LOA.	
viii.		Authority for miscellaneous communications with respect to works and issues related with Contract	Engineer in Charge (EIC) / Corporation Engineers/Other Officers authorized by EIC.	
ix. Schedule of Contract Milestone(s) / Stages of completion of Works* under Clause 5 of GCC				
SL	Mile-Stone Number	Brief Description	Time Allowed in Days from DOS	Remarks for actions upon failure in achieving Milestone
1.	MS1	Commencement of site clearance / Jungle clearance, Mobilization including establishment of site office, field laboratory, deployment of key technical staff, machinery and commencement of boundary wall work.	15 Days	Note as below *
2.	MS2	Completion of Land development works (cutting & filling), layout setting out and commencement of foundations for godown.	60 Days	Note as below *
3.	MS3	Completion of godowns up to plinth level including casting of veranda and earth filling in godown and veranda areas-100 % complete in at least 2 of 4 units.	100 Days	Note as below *
4.	MS4	Completion of RCC columns and brick masonry up to eave level including fixing of anchor bolts for steel trusses and commencement of steel truss erection. -100 % complete in at least 2 of 4 units.	180 Days	
5.	MS5	Completion of supply of roof Sheets and accessories. (100% of total quantity for 2 units)- and Completion of truss-purlins fabrication and supply complete -for 2 units out of total 4 units.	180 Days	LD shall be levied for delay in completion of this milestone. Note as below *
6.	MS6	Completion of erection of steel trusses, purlins and bracings – 100% in at least 2 of 4 units and completion of boundary wall, retaining wall up to full height as per drawings-100%. And	210 Days	

		Completion of Sub-base/Below plinth filling / WMM etc below godown flooring complete in all respect- in balance 2 units.		
7.	MS7	<p>Completion of roofing sheets, wall cladding, skylights, ventilators etc complete in Godowns - at least 2 of 4 units</p> <p>And</p> <p>Completion of RCC columns and brick masonry up to eave level including fixing of anchor bolts for steel trusses and commencement of steel truss erection. -100 % in balance 2 units.</p>	240 Days	
8.	MS8	<p>Completion of VDF flooring in all godowns and verandas including curing and finishing-100% in at least 2 of 4 units.</p> <p>And</p> <p>Completion of erection of steel trusses, purlins and bracings – 100% in balance 2 units.</p>	270 Days	
9.	MS9	<p>Completion of internal PQC M30 roads around 2 units and associated drains, including connectivity to gate and circulation areas and ancillary buildings (office block, labour shed, security cabin, utilities etc.)-all 100 % Complete along with Completion of all roofing works in balance 2 units.</p>	300 Days	
10.	MS10	<p>Handover of 2 units complete in all respects along with ancillary buildings, offices, power connections, 2 units circulation area and boundary walls -ready for occupy.</p> <p>And</p> <p>Completion of VDF flooring works in balance of 2 units.</p>	360 days	<p>LD shall be levied for delay in completion of this milestone.</p> <p>Note as below *</p>

11.	MS11	Completion of internal PQC M30 roads in complete campus and associated drains, (all 100 % Complete along with Completion of all works in all respect in balance units.	390 days	
12.	MS12	Completion of all remaining works including electrical installations, Final finishing, horticulture, site clearance, demobilization and handing over of complete sites complete in all respect.	425 Days	LD shall be levied for delay in completion of this milestone. Note as below *

Important Note: *

- 1st, 2nd, 3rd milestone are major milestones and if contractor fails to achieve any two milestones from the first three, then it shall be treated as failure on part of contractor in performance and default resulting in breach of contract and necessary action be taken as per the conditions of contract for such breach of contract.
- LD shall be levied as per GCC cl 2 for delay in completion of works from the stipulated date of completion of milestone (MS 5; MS10 & MS 12) where specified in table above.
- Incentive clauses as per GCC shall be applicable.

x. Schedule of Handing over of Site*

SN	Portion of Site	Description	Time Period for handing over reckoned from date of issue of LOA
(1)	Portion without any hindrance	Entire area for construction.	On Stipulated date of start.
(2)	Portions dependent on the work of other agencies.	Nil	-

xi. Schedule of Issue of Designs*

SN	Portion of design	Description	Time Period for Issue of Design reckoned from date of issue of LOA
(1)	Portion already included in NIT	Entire	Immediately upon start of work.
(2)	Portions of Architectural Drawings to be issued	--	-do-

(3)	Portions of Civil (Structural) Drawings to be issued	--	-do-
(4)	Portions of E&M Drawings to be issued	--	Within 60 days from the date of start of work.
xii. List of testing equipment* to be provided by the contractor at site lab under Clause 10A of GCC			
<ul style="list-style-type: none">• General & calibration: weighing balances (10 kg sensitivity 1 g; 50 kg sensitivity 10 g), hot-air ovens (up to 200 °C), desiccators, thermostatic water bath, sample splitters, sieve sets IS 4.75 mm to 75 µm with sieve shaker, pycnometers, density baskets, thermometers, stopwatches, cube moulds (150 mm) & CTM 2000 kN, curing tank, slump cone & compacting factor, rebound hammer, cover meter (if reinforcement cover checks are included).• Soil/GSB/WMM: Proctor (light/heavy) apparatus, sand-replacement & core-cutter kits, field density apparatus, hydrometer, speedy moisture meter, CBR moulds with loading frame, Atterberg limits kit• Aggregates: flakiness/elongation gauges, impact/abrasion (LA) machines, crushing value, water absorption, specific gravity.• Cement/fine aggregate: standard consistency/Vicat, initial-final setting time, soundness (Le-Chatelier), sieve analysis. <p>Note: Some of above specific equipment requiring precious procedures in testing -in the opinion of Engineer in charge may be exempted by him from maintaining the same at field laboratory by contractor provided Contractor carries the tests through NABL approved third party testing lab(s) -approved by Engineer in charge as and when demanded.</p>			
xiii. Technical Specifications to be followed for execution of work as mentioned in Clause 11 of GCC:		Relevant clauses of MoRTH and CPWD Specifications Vol - I & II 2019 for General Civil Works and CPWD General Specifications for Electrical Works Part-I (Internal) 2013 & Part-II (External) 1994 with up-to-date Correction Slips or Latest CPWD Specifications in vogue on the date of tender publication and where CPWD specifications are not available, industry best practices based on Indian/International standards to be followed.	
xiv. Type of Work as mentioned in Clause 12 of GCC:		-New works -Original -Project	
xv. List of mandatory machinery, T & P; to be deployed by contractor at site under Clause 18 of GCC			
1. Survey & layout (mandatory): 1 × Total Stations (1"-3"), 1 × Auto level with staff, 1 × Laser level, GNSS receiver (for road centreline/control when needed), prismatic compass, measuring wheels/tapes, range-poles, plumb lasers, setting-out software/laptop, and survey consumables.			
2. Earthwork & road sub-structure plant (mandatory for building platforms, pavement layers) 1 × Hydraulic excavator (0.9–1.2 m ³), 1 × Backhoe loader, 1-2 × 6-wheel tippers, 1 × Motor grader (150–170 HP) for WMM/GSB, 1 × Soil compactor (10–12 t vibratory),			

1 × Pneumatic tyred roller (PTP) or tandem roller (8–10 t) as per layer,
 1 × Water bowser with spray bar,
 1 × WMM plant (≥100 TPH) or arrangement at approved RMC/WMM source,
 3-4 x small plate compactors/rammers for trenches.

3. Concrete production, transport & placement (mandatory)

RMC tie-up or 1 on-site batching plant (30 m³/h) with weigh-batching or equivalent number(s) portable batching plant cum transit mixers.

2 × transit mixers (6 m³) or concrete dumpers,

2 × needle vibrators (Ø 40–60 mm) + 1 spare, 1 × screed/beam vibrator,

2x curing pumps/hoses/sprayers.

4. Roof Truss & roofing Works:

Hydraulic Mobile Crane (25T–100T) – for lifting columns, rafters, and heavy assemblies

Hydra Crane / Pick & Carry Crane – for shifting members within site

Boom Lift / Man Lift / Scissor Lift – working at height for bolt tightening and sheeting

Total Station / Auto Level / Theodolite

Calibrated Torque Wrench

xvi. Additional Staff Requirement* for the Works in addition of minimum specified in Clause 32 of GCC and Rate of Recovery

Sn	Category & Strength	Education Qualification	Post Qualification Experience (yrs.)	Rate of recovery for non-deployment
1	General staff for day-to-day assistance of CWC engineers (as per SCC)-1 Nos.	Graduate	5 to 10 yrs.	Rs. 50,000/-

xvii. Recovery rates for under consumption of Materials beyond permissible limits of Material Uses/Consumption in Works under Clause 38 of GCC

SL	Description of Item	Rates at which recovery shall be made from the Contractor
(1)	Cement	Rs. 8800 / tonnes
(2)	Steel reinforcement	Rs. 10200 / Quintal
(3)	Structural Steel Sections	Rs. 11000/ Quintal
(4)	Non-Metallic Hardener	Rs. 24 / kg
(5)	Paint & Enamel	Rs. 300 / Litre

11. Brief Description of Scope of Work

The major scope in the proposed work is as below:

- **Construction of four Godowns-Conventional buildings** (two units having span of 28.70 m and two units with 21.80 m span), providing a **total storage capacity of 1,95,000.00 sq. ft.**, including complete civil works and optimized electrical installations. -Engineering Design shall be in CWC scope and Architectural drawings /Structural drawings shall be provided by CWC,
- **Development of land** through cutting and filling, and **construction of PQC M30 roads** in the circulation area of the godown complex with Drains based on Site topography survey completed by Contractor and levels approved by Corporation Engineers.
- **Construction of boundary walls** all along the periphery
- **Construction of Office Block, Sentry Post, Labour Hut, Public Toilets & Drinking Water Facilities, and Electrical Room**, all on EPC Mode.
- **Development of allied amenities** within the campus including High Mast, Foundation for OGT, Rainwater Harvesting System, Septic Tank, Portable Firefighting System, Underground Tank, Ramps, Drain lines etc.
- After completion of the work assisting the Corporation in obtaining Occupation Certificate (OC) from local authorities and complete liaising with local bodies including preparation of plans, NOC etc shall be in the scope of contractor, however all statutory fees will be paid/ reimbursed by the CWC.
- **Any other works requested by Engineer in charge with written order pertaining to main construction.**

Note:

- **Anti-termite treatment** in the building area is exclusion from contractor scope as it will be undertaken by the **CWC in-house PCS team upon site readiness by Contractor.**

Contact details for submission of grievances regarding Bidding process:

Sh. Prakash Rai

General Manager/HR

Email-gmpers@cewacor.nic.in

For details refer Clause 15 of ITB (Appendix-IV)

**Sr. General Manager/Engineering
Corporate Office/New Delhi**

PRE – QUALIFICATION CRITERIA (PQC)

Name of work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

A. Pre-Qualification criteria;**TABLE 1**

S. No.	Criteria	Supporting documents to be submitted
1.	Earnest money Deposit EMD (Bid Security) & Tender Processing Fees.	Refer Clause B (I) below for detailed information.
2.	Pre-Qualifying Performa (Bidder Information Summary) along with Affidavit.	Refer Clause B (2) below for detailed information. Use EXHIBIT-I of Appendix-III with its Annexure (affidavit)
3.	<p>Bidder must be a.</p> <p>(a) Legal entity.</p> <p>Joint Ventures are allowed in this tender and in case of JV, the bidder shall submit all documents, credentials and as stipulated in JV evaluation Norms given in this document.</p>	<p>1) <u>For Registered Company/ PSU / statutory Body: -</u></p> <p>(i) Copy of Certificate of Incorporation (with CIN, if applicable)</p> <p>(ii) Current list of Directors</p> <p>2) <u>For Registered Partnership Firm</u></p> <p>(i) Copy of the partnership deed</p> <p>(ii) Current list of Partners</p> <p>3) <u>For Proprietorship</u></p> <p>Declaration of Proprietorship/ Sole Proprietorship in EXHIBIT -II of Appendix III.</p> <p>4) <u>For LLP</u></p> <p>(i) Copy of certificate of registration with LLPIN.</p> <p>(ii) Current list of Partners</p>

S. No.	Criteria	Supporting documents to be submitted
4.	<p>Authorized signatory:</p> <p>Note: -</p> <ol style="list-style-type: none"> 1. If the bidder is a firm in partnership/ LLP, the bid shall be signed by all the partners of the firm above their full type written names and current address, or, alternatively, by a partner holding power of attorney for the firm. In the later case, a certified copy of the power of attorney should accompany the bid. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the bid. 2. If the bidder is a limited company or a Corporation, the bid shall be signed by a duly authorized person who has been authorized through Board Resolution. In case, the person authorized through Board Resolution, is authorizing some other personnel, the same should be done through POA (Both POA and Board Resolution is to be submitted in this case. The Board Resolution should clearly stipulate that the person delegating the powers is authorized to do so). 3. If the bidder is a sole proprietorship/ proprietorship, the bid shall be signed by the proprietor himself. 	<p>Power of Attorney in favour of Authorized signatory (ies) duly attested by Notary as per format in EXHIBIT-III of Appendix-III</p> <p style="text-align: center;">OR/ AND</p> <p>True Certified Copy of Board Resolution in favour of Authorized Signatory/ Person delegating the POA.</p> <p>Note: -</p> <ol style="list-style-type: none"> 1. All the documents uploaded must be ink signed & stamped or digitally signed by the Authorized Signatory. 2. The digital signature of Authorized Signatory must be used to submit the tender.

S. No.	Criteria	Supporting documents to be submitted
5.	<p>Construction Experience: Similar Nature Work Bidder, during the last seven (07) years ending last day of month previous to the one in which NIT is invited i.e. 30 April 2026, must have successfully completed or substantially completed: -</p> <ul style="list-style-type: none"> ➤ at least ONE similar nature work of value not less than ₹ 3184.60 Lakh (80% of the Estimated cost put on Tender (ECPT).) <li style="text-align: center;">OR ➤ at least TWO similar nature works each of value not less than ₹ 1990.38 Lakh (50% of the Estimated cost put on Tender (ECPT).) <li style="text-align: center;">OR ➤ at least Three similar nature works each of value not less than ₹ 1592.30 Lakh (40% of the Estimated cost put on Tender (ECPT).) <p>Note: Similar nature work means: Construction of Warehouse / Godowns (Conventional or PEB) OR industrial sheds OR Building</p>	<p>Refer Clause B (3) below for detailed information on supporting documents to be submitted.</p> <p>Use EXHIBIT-V or VI or VII of Appendix-III as Applicable/Required.</p>
6.	<p>Financial capabilities: - Average Annual Financial Turnover Average Annual Financial Turnover of the bidders during the last three financial years ending 31st March of the previous financial year i.e. (FY 2025-26, FY 2024-25, FY 2023-24) should be at least ₹ 1194.23 Lakh -30% of Estimated cost (ECPT)</p>	<p>Refer B (4) below for detailed information on supporting documents to be submitted.</p>
7.	<p>General Construction Experience: Annual Turnover The bidder should have achieved minimum annual turnover -₹ 5971.13 Lakh from Construction works, in any of the last 05</p>	<p>Refer Clause B (5) below for detailed information on supporting documents to be submitted.</p> <p>Use EXHIBIT- VIII of Appendix-III</p>

S. No.	Criteria	Supporting documents to be submitted
	financial years ending 31st March of previous financial year i.e. (FY 2025-26 or FY 2024-25 or FY 2023-24 or FY 2022-23 or FY 2021-22).	
8.	<p>Financial capabilities: - Availability of Liquid Assets and Sources of Finance to meet the construction cash flow requirements.</p> <p><u>The bidder: -</u></p> <p>a) Should not have incurred any loss (profit after tax should be positive) in more than two years during the last five years ending 31st March of previous FY i.e (FY 2025-26, FY 2024-25, FY 2023-24, FY 2022-23, FY 2021-22).</p> <p>AND</p> <p>b) Should have Net worth of minimum ₹ 398.08 Lakh {10% amount of Estimated Cost (ECPT)} which should be certified from CA with UDIN.</p> <p>OR</p> <p>Should have a Banker's certificate of Solvency from a commercial bank for ₹ 1592.30 Lakh {40% of Estimated Cost (ECPT)}.</p>	<p>For criteria (a)*, Scanned copy of CA certificate where profit after tax during last 05 FYs ending 31st March of Previous FY i.e. 2025-26 is clearly mentioned.</p> <p>UDIN number of CA should be mentioned on certificate. (Use EXHIBIT- VIII of Appendix-III)</p> <p>And For criteria (b)*,</p> <p>Certificate from CA with UDIN certifying the net worth of the bidder in the FY ending 31st March of Previous FY i.e. 2025-26. (Use EXHIBIT- IX) of Appendix-III</p> <p>OR</p> <p>The Solvency certificate from Commercial bank for the said amount which should not be issued more than 6 months old from the due date of submission of bid (Use EXHIBIT- X of Appendix-III)</p> <p>* Also Refer Notes under cl B (5) below for information related with Latest P&L accounts, Balance sheet and alternate permissible options thereof.</p>
9.	Pre-contract-Integrity Pact	Signed copy of the integrity pact, as in EXHIBIT-XI of Appendix III to be uploaded by the bidder.

S. No.	Criteria	Supporting documents to be submitted
10.	Available Bid Capacity – In such cases, the bidder should possess the minimum bidding capacity equal to the Estimated cost (ECPT)- ₹ 3980.75 Lakh as calculated by the specified formula mentioned in subclause B (7) below.	Refer Clause B (7) below for detailed information on supporting documents to be submitted and formula to be used. Use EXHIBIT- XIII of Appendix-III

B. List of Supporting Documents required to be submitted: -

1. Earnest money Deposit EMD (Bid Security) & Tender Processing Fees.

- EMD (of Amount as mentioned in TIS in Appendix I to NIT) to be paid in favor of Central Warehousing Corporation, New Delhi only through e-payment gateway of e-procurement & receipt of same should be scanned and uploaded on the e-tendering website www.cwceprocure.com along with e-tender documents.
- In addition to the above EMD, non-refundable tender processing fee (as mentioned in TIS in Appendix I to NIT) would be paid mandatorily to M/s ITI Ltd. through e-payment on the portal www.cwceprocure.com.
- The bids not accompanied by EMD and/or Tender Processing Fees shall be summarily rejected.

2. Pre-Qualifying Performa (Bidder Information Summary) along with Affidavit:

To be filled up in excel sheet uploaded over tender portal along with NIT and signed Affidavit on stamp paper to be submitted along with Technical Bid as per Format enclosed at EXHIBIT-I of Appendix III.

3. Construction Experience: Similar Nature Work

- The copy of the credential certificate issued by client shall include completion certificate with clear mention of the name of work (Project), agreement/ Work Order no., stipulated date of start and completion, actual date of start & completion, Contract Value, gross amount of work done and status of time extension granted with or without LD. The Completion certificate should preferably be as per format given in **EXHIBIT -V** of Appendix -III of NIT, if it is issued by Govt Deptt./Public sector undertaking.

Note:

Experience certificate released by Private Ltd company / Public limited company (Non CPSE/ SPSE), autonomous institutes like IITs/NITs, Public Trust etc can be considered

subject to Verification of Credentials for Works Executed for Private Clients and Authenticity of CA Certificates:

- a) Where experience/ turnover/ credentials are claimed on the basis of works executed for private clients, the bidder shall submit supporting evidence such as:
 - relevant extracts of Income Tax Return (ITR) / audited financial statements, and/or
 - Form 26AS/16A (TDS certificates), to verify that the turnover/receipts claimed are consistent with statutory tax records.
- b) Wherever a Chartered Accountant (CA) certificate is submitted in support of eligibility/ credential/ turnover/ net worth, such CA certificate shall mandatorily bear a valid UDIN (Unique Document Identification Number). Certificates without UDIN may be treated as non-responsive.
- c) For works/assignments for private clients, the value of work/receipts considered for eligibility shall be restricted to the value that is supported by acceptable documentary evidence such as client-certified RA/final bill abstracts/payment certificates and corresponding banking/tax evidence.

The completion certificate issued by such a client should be in the format given in EXHIBIT -VI of Appendix III of NIT.

- a) (i) To clarify the amount of similar nature of work done among a large composite nature of project containing other works also, the bidder must submit the copy of the bill of quantities of agreement/ work order AND RA/ Final bill abstract duly certified by client reflecting the quantities and amount of the similar nature of work executed. OR

(ii) such information regarding the value of similar nature of work done should be available in any certificate issued by the client.

- b) The experience/ certificate of substantial completion shall be considered only if they meet the following criteria: -

- i. The contract value of the project, which substantial completion certificate is submitted by the bidder, should be of value at least 02 times of ECPT.
- ii. The contract period, including any time extension (granted without LD) should be live for execution of balance work on the date of release of such a certificate.
- iii. The certificate should not be issued by the client on a date prior to the date of publication of this Tender.
- iv. Substantial completion means at least 80 (eighty) per cent of contract value is completed under the contract. For this purpose, the bidder shall be required to submit a substantial completion certificate issued by client as per format in **EXHIBIT VII** of Appendix III.
- v. Such certificate should be supported by copy of work order OR Agreement executed with the client.

- vi. The certificate for substantial completion should be issued by an authority equivalent or higher than the authority issuing the work order or signing the agreement.
 - vii. Certificate for 'substantial completion' of project/work/asset should contain two parts. Part -I shall contain 'financial value of work done' and part-II shall contain 'certificate of functional completion of project/work/asset'.
 - viii. The information of Contract period and levy of compensation (LD) in case of time extension should be available in the certificate.
- c) The date of completion of work shall be used to ascertain the last 07 years.
- d) **For arriving at the cost of similar work**, the value of work executed shall be brought to current costing level by enhancing the actual value of work **at simple rate of seven percent per annum**, calculated from the date of completion to ending last day of month previous to the one in which NIT is invited.
- e) **Performance of Bidder in the work completed by them:** Experience of work not completed in Time and where LD is levied by Client organization shall not be accepted /considered for evaluation. The information on the levy of LD /time extension with or without LD should be available in the credential certificate issued by client. in other case where such information is not available therein, the bidder shall provide the same at appropriate place in PQ Performa which is liable to verify from the client as mentioned in Tender document.
- f) The value of executed works, for the purpose of this clause shall also include the value of any materials (such as cement, steel, etc.), services (scaffolding, batching-plant, other machinery, etc.), which have been supplied by client/employer free cost/ on discounted price to the contractor, and which have not been already included in the 'value of works executed' that is reflected/declared on the relevant 'experience certificate' or 'Letter of Award'. Such exclusion shall be specifically mentioned on the Letter of Award, "Experience Certificate" and the 'value of free supplies' shall be separately certified by the employer, or in cases where the employer is a private entity, by a practicing cost/chartered accountant with UDIN.

5. Financial capabilities: - Average Annual Financial Turnover

- a) Audited balance sheets and P&L accounts for each financial year **OR** certificate by CA with UDIN clearly certifying the average annual financial turnover for each year as mentioned in this tender enquiry.
- b) In case the Balance Sheet and Statement of Profit/Loss for the financial year **2025-26** have not been prepared / audited; the account for one more preceding financial year can be submitted.
- c) In case, Bidder does not submit Audited balance sheet and P&L accounts for a particular year or turnover of any FY is not certified by CA in its certificate, turn over for that particular year will be considered '0'(zero) for calculating average of previous three years.

6. General Construction Experience: Annual Turnover

- a) Certificate from CA with UDIN as per format attached at **EXHIBIT VII** of Appendix III. of NIT, clearly certifying the turnover from general construction works & turnover from specific work as mentioned in S/N (7) of Table under Clause (A) above.

The format is just indicative in nature, however, in case the certificate is issued in any other format, it should be ensured that the certificate must contain at least the required information.

- b) Note: - In case the Balance Sheet and Statement of Profit/Loss for the immediately preceding financial year have not been prepared / audited due to which CA is unable to certify the turnover for that FY, the turnover for immediately preceding financial year can be submitted subject to certificate from CA to this effect (i.e. on audit).

7. Key Production of Specialized work quantities:

- a) The copy of credential certificate issued by client includes completion certificate mentioning the produced/ executed quantities of specialized work as stipulated in this tender enquiry during a Financial Year. For this purpose, the bidder may submit credentials of multiple contracts in support of quantities executed there during that FY.
- b) Experience certificates released by private individuals, proprietors, partnership firms and private companies shall not be considered. However, experience certificate released by Public limited company (Non CPSE/ SPSE), autonomous institutes like IITs/NITs, Public Trust etc can be considered only if these are duly supported with *“Copy of work order or Contract agreement with Client organization and Form 16 A/ 26AS released by Client organization reflecting all the payments made and TDS deducted.”*

Certificate(s) issued by Client(s) for execution of minimum specified quantities of special works during a FY year along with summarized breakup of these works as per EXHIBIT-XII.

8. Available Bid Capacity:

The bidder should possess the bidding capacity on the ending last day of month previous to the one in which NIT is called, as calculated by the specified formula mentioned below.

Available bid capacity = $A \times 1.5 \times Y - B$, where

- **A** = Maximum value of construction turnover in lakhs in any one FY year during the last five FY updated at the current level by enhancing the actual value at simple rate of seven percent per annum up to the date of Bid opening.
- **Y** = Number of years prescribed for completion of the work in NIT i.e. **14/12=... '1.17' Years.**
- **B** = Value of the existing commitments of bidder with any PSU/Govt./Semi Govt. or any other public Ltd. clients, and ongoing works to be completed in the next **1.17** years on pro-rata basis as submitted by the bidder in the format attached at **EXHIBIT XI** of Appendix III.

C. Other Important Notes for Bidder Eligibility and Qualification:

1. Bidder(s) not fulfilling the above requirements or not submitting required documents mentioned above or not submitting the clarification with respect to any query on missing information/shortfall documents or others with respect to qualification norms mentioned above, shall be technically disqualified.
2. In case any clarification is required in the experience certificates submitted by the bidder, the same can be sought by the Corporation at its own discretion. However, clarification regarding the already submitted experience certificate shall only be sought. Experience of any other work (for which documents have not been submitted in the technical bid) shall not be considered during clarification.
3. ~~To enable a window for startups, Sub-contractors, New Contractors of entry **only EMD, PQ Performa, Financial capabilities (Average Annual Financial Turnover) & Affidavit shall be under the eligibility criteria.** These exemptions shall be extended for the tenders where ECPT is up to Rs. 30 lakhs. For qualification under this clause, the following conditions shall be applicable:—~~
 - ~~(i) If Tenderer is an enlisted contractor of CPWD / Railways / MES / State PWDs / Other Govt. Organizations / Public Sector Undertakings and their Subsidiaries and his enlistment is valid for at least one year from the date of tender opening. **OR**~~
 - ~~(ii) Tenderers have executed any construction or repair & maintenance work or doing construction or repair & maintenance with any Govt. Departments / Public sector undertaking and their Subsidiaries during the last four financial years (i.e., 2024-2025, 2023-2024, 2022-2023 and 2021-2022) or in current year (2025-2026) up to the date of tender submission. **OR**~~
 - ~~(iii) Tenderer himself OR one of his partner OR Director is a Graduate Engineer /Architect passed from Recognized university / Institute in India.
In such case, The Bidder will be considered qualified for Part2 (price bid opening) only if Bidder submit Copy of Proof of enlistment/working **or** Experience with any Govt. Departments / Public sector undertaking and their Subsidiaries **or** Copy of Degree awarded by Recognized university / Institute in India of the Graduate engineer/Architect Partner/Director or Bidder himself along with all needful documents required against S/N 1 & 2 of Table in Subclause (A) above. .~~
 - ~~(iv) However, in order to avoid overstretching their resources, no such contractor shall be allowed to hold more than 2 contracts under relaxed credentials at any given time.~~
- a. The credential documents viz Letter of award/ Work order/ Contract Agreement /Work completion certificate etc., should be in the name of Bidder and works should have been executed in the same name and style, the bidder is participating in the tender.
- b. The information about the actual completion date and stipulated completion date and LD levied by client (if any) on the delay in completion must be available in the client certificate. In case this information is silent on client certificate, Bidder shall submit factual position of Delay and LD levied in his eligibility declaration along with PQ form.

This information from the bidder shall be varied from client organization at any stage of evaluation/ execution of work.

- c. Foreign bidders are not allowed to participate in the tender enquiry.
- d. Joint ventures / Consortia of firms / companies are allowed to participate in the tenders only when these are specifically allowed and mentioned in NIT -Appendix-I.
- e. Experience gained by executing work on a back-to-back contract basis is acceptable. Back-to-back contract means work awarded by owner to first agency and then by the first agency to the second agency. The first agency shall not be eligible for work experience in such a case. Experience in respect of an associate contractor, subcontractor or those executing work on subletting may be allowed only if the conditions of sub-contract / sub-letting have been incorporated in the original agreement between the client/owner.

To get the weightage of such experiences, the following conditions must be fulfilled.

- a. Work should be carried out by the second agency with due concurrence of the owner as tri-partite agreement OR under a separate agreement with 1st agency but with the approval of the owner. The credential certificate in such case should be supported with a copy of agreement (Between owner & first agency AND first agency & second agency) and approval of the owner.
- b. Payments received by the second agency should be reflected in income tax statements.
- c. The owner of the project and first agency should jointly certify the experience certificate.
- d. The actual amount of payment received by the second agency shall be considered for experience.
- f. Experience of petty contractors, labour rate contractor work shall not be accepted.
- g. Experience of work on foreign soil shall not be accepted.
- h. Certificate in the name of other companies:**
 - a) Certificates of Subsidiary/ Parent/ Group Company/ Own works: Any company/firm while submitting tender can use the work experience of its subsidiary company to the extent of its ownership in the subsidiary company. On the other hand, the companies/firms which intend to get qualified on the basis of experience of the parental company/group company/ Own works, shall not be considered. Further, the financial parameters of the subsidiary or Parental Company cannot be used by the other one for qualifications.
 - b) Merger/ Acquisition of Companies: In case of a Company/firm, formed after merger and/ or acquisition of other companies/ firms, past work experience and financial parameters like turnover, profitability, net worth etc. of the merged/ acquired companies/ firms will be considered for qualification of such Company/ firm provided such Company/ firm continues to own the requisite assets and resources of the merged/ acquired companies/ firms. Valid documents like Copy of MOA/ROC etc should be submitted in support of this information.
 - c) The bidder, who has changed the name of Firm/merged/acquired/purchased any Firm whose credential papers are being used/submitted for qualification of tender,

should submit the following documents in this regard and in absence of the complete documentary evidence, such offer shall be summarily rejected.

- i. The copy of certificate of Incorporation of Firm or Registration Certificate of Firm.
 - ii. Copy of Memorandum and Articles of Association of Firm.
 - iii. Copy of Board Resolution regarding change of name of/take over/merger of Firm.
 - iv. Copy of sale deed/Memorandum of Understanding for Purchase/sale/merger of Firm along with assets and liabilities.
 - v. Copy of PF Registration and PAN Card.
 - vi. Affidavit regarding the change of name of Firm along with transfer of all assets and liabilities, if any.
 - vii. Affidavit regarding closure of business of Old Firm/Merged Firm.
 - viii. Copy of Certificate of CA/Company Secretary regarding Sale/Merger/Change of name of Firm.
- i. If a work is physically completed and a completion certificate to this extent is issued by the concerned Client organization but the final bill is pending, such work shall be considered for fulfilment of credentials.
 - j. The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work.
 - k. **Participation of Partnership Firms in works tenders:**
 - i. The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.
 - ii. The partnership firm should have been in existence or should have been formed prior to submission of tender. Partnership firm should have either been registered with the Registrar or the partnership deed should have been notarized prior to date of tender opening as per the Indian Partnership Act.
 - iii. Separate identity / name should be given to the partnership firm. The partnership firm should have PAN / TAN number in its own name and PAN / TAN number in the name of any of the constituent partners shall not be considered. The valid constituents of the firm shall be called partners.
 - iv. Once the tender has been submitted, the constitution of the firm shall not be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from CWC and in any case the minimum eligibility criteria should not get vitiated. The re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for a change of constitution of the firm, in any case, shall be at the sole discretion of the CWC and the Bidder shall have no claims what-so-ever. Any change in the constitution of the Partnership firm after opening of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid

and full EMD shall be forfeited. If any Partner/s withdraws from the firm after opening of the tender and before the award of the contract, the offer shall be rejected. If any new partner joins the firm after opening of tender but prior to award of contract, his / her credentials shall not qualify for consideration towards eligibility criteria either individually or in proportion to his share in the previous firm. In case the Bidder fails to inform CWC beforehand about any such changes / modification in the constitution which is inevitable due to succession laws etc. and the contract is awarded to such firm, then it will be considered a breach of the contract conditions liable for determination of the contract under Clause 3 of General Conditions of Contract.

- v. A partner of the firm shall not be permitted to participate either in his individual capacity or as a partner of any other firm in the same tender.
- vi. The tender form shall be submitted only in the name of partnership firm. The EMD shall be deposited by partnership firm through e-payment gateway as mentioned in the tender document. The EMD submitted in the name of any individual partner or in the name of authorized partner (s) shall not be considered.
- vii. One or more of the partners of the firm or any other person (s) shall be designated as the authorized person (s) on behalf of the firm, who will be authorized by all the partners to act on behalf of the firm through a "Power of Attorney", specially authorizing him / them to submit & sign the tender, sign the agreement, receive payment, witness measurements, sign measurement books, make correspondences, compromise / settle / relinquish any claim (s) preferred by the firm, sign "No Claim Certificate", refer all or any dispute to arbitration and to take similar such action in respect of the said tender / contract. Such "Power of Attorney" shall be notarized / registered and submitted along with the tender.
- viii. On issue of the Letter of Acceptance (LOA) to the partnership firm, all the guarantees like Performance Guarantee, Guarantee for various Advances to the Contractor shall be submitted only in the name of the partnership firm and no splitting of guarantees among the partners shall be acceptable.
- ix. On issue of the Letter of Acceptance (LOA), contract agreement with partnership firm shall be executed in the name of the firm only and not in the name of any individual partner.
- x. In case the Letter of Acceptance (LOA) is issued to a partnership firm, the following undertakings shall be furnished by all the partners through a notarized affidavit, before signing of contract agreement.

(a) Joint and several liabilities: The partners of the firm to which the Letter of Acceptance (LOA) is issued, shall be jointly and severally liable to the CWC for execution of the contract in accordance with General and Special Conditions of the Contract. The partners shall also be liable jointly and severally for the loss, damage caused to the CWC during the course of execution of the contract or due to non-execution of the contract or part thereof.

(b) Duration of the partnership deed and partnership firm agreement: The partnership deed/partnership firm agreement shall normally not be modified/altered/ terminated during the currency of contract and the maintenance

period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without the permission of CWC shall constitute a breach of the contract, liable for determination of the contract under Clause 3 of the General Conditions of Contract.

(c) Governing laws: The partnership firm agreement shall in all respect be governed by and interpreted in accordance with the Indian laws.

No partner of the firm has the right to assign or transfer the interest right or liability in the contract without the written consent of the other partner/s and that of the CWC.

- xi. The Bidder shall clearly specify that the tender is submitted on behalf of a partnership firm. The following documents shall be submitted by the partnership firm, with the tender:
 - a. A copy of partnership deed.
 - b. A copy of Power of Attorney (duly registered as per prevailing law) in favor of the individual to tender for the work, sign the agreement etc. and create liability against the firm.
 - c. An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by CWC/CPWD/Railways or any other Ministry / Department of the Govt. of India / any State Govt. or PSU from participation in tenders / contracts as on the date of opening of bids, either in their individual capacity or in any firm in which they were / are partners. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 3 of the General Conditions of Contract.
- xii. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of 0.3×0.2 * value of the work done in the previous entity. For this purpose, the Bidder shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.
- xiii. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the Bidder shall submit along with his bid all the relevant

- documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.
- xiv. In case of an existing partnership firm if any other partner(s) joins the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in sub-clause above. For this purpose, the Bidder shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.
 - xv. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A&B partners in any other partnership firm or propriety firm without leaving partnership firm of A&B partners.
 - xvi. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.
 - xvii. If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, if a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.
 - xviii. In case of a partnership firm 'AB' consisting of partners 'A' & 'B', if Partner 'A' also works as proprietor firm 'P' or partnership in other firm 'AX', the credentials of 'A' in proprietor firm 'P' or other partnership firm 'AX' earned after date of becoming a partner of the firm AB shall not be added in partnership firm AB.
 - xix. In case a Bidder is LLP, the credentials of Bidder shall be worked out on above lines similar to a partnership firm.

D. JV evaluation norms

Note: This Document shall be part of Appendix-II of NIT.

It applies to all open tenders for Works where JV participation is permitted in the NIT/ITB.

It supplements the Standard Bidding Document (consisting of NIT and its Appendixes) and shall be read accordingly.

1. Definitions

- **Joint Venture (JV):** A consortium/association of two or three legally distinct entities formed for the specific tender, **submitting a single** bid and assuming **joint and several liability** for contract performance.
- **Lead Partner:** The JV member nominated to represent the JV, authorized through Power of Attorney (PoA), and holding the minimum equity/participation stipulated in the NIT.
- **Similar Work:** As defined in the NIT/Appendix, by nature, complexity and executed value/time frame, including admissible works executed for Government/CPSE/State PSU/Autonomous Bodies/**Public and Private Limited** companies, subject to verification requirements in this document.

2. JV Composition Requirements:

ONLY THOSE JV SHALL BE CONSIDERED ELIGIBLE TO PARTICIPATE WHICH MEETS FOLLOWING COMPOSITION REQUIREMENTS:

- i. A JV may consist of minimum Two and maximum three members only.
- ii. One member shall be the **Lead Partner** with a minimum shareholding of **51%**.
- iii. In case of three member JV- the second member shall hold a minimum of **25%** share, and the third member shall hold a minimum of **10%** share.
- iv. In case of two member JV- the second member shall hold a minimum of **26%** share
- v. No member shall participate in the same tender individually or as part of another JV otherwise all bids submitted by such Member bidder or by JV(s) where such bidder is member shall be summarily rejected.
- vi. The JV shall submit, with the bid, an MoU/JV Agreement signed by all members, clearly stating: (i) participation interest/share of each member, (ii) division of responsibilities, (iii) financial commitments, and (iv) technical

obligations/other obligations.

- vii. After submission of the tender, the MoU shall not be altered during bid validity. The Lead Member shall remain unchanged/ constant, nor can any partner withdraw after the award of work. JV constitution, shareholding, or roles **shall not change** after bid submission, and also during the currency of the contract except statutory mergers/ amalgamations with prior written consent of CWC and proof that capacity shall be equal **or higher** in the successor entity.
- viii. All members of JV are **jointly and severally liable** to the Corporation (CWC) for the fulfillment of the terms of the contract and satisfactory completion of the work. In the event of default by any member, the remaining member(s) shall be responsible for the due performance of the contract.
- ix. Non-compliance from any of above, shall render the JV invalid and rejection of the JV (if work is not awarded) or In the event of such withdrawal or change post award of contract, the contract may be terminated, and all partners shall be liable for the resultant damages.)
- x. **Authorization by JV Members**
Where the individual legal identity of JV members is different, the bid shall be supported by proper authorization documents from each JV member, as applicable, permitting participation in the JV and authorizing the signatory/authorized representative(s) to act on behalf of the member and the JV, as under:
 - i. In case of a company (JV member): a Board Resolution (or equivalent authorization as per the company's constitutional documents) authorizing participation in the JV and nomination of authorized signatory(ies)/representative(s).
 - ii. In case of a partnership firm (JV member): written consent/resolution of all partners, duly signed, authorizing participation in the JV and nomination of authorized signatory(ies)/representative(s).
 - iii. In case of LLP: a resolution/authorization as per LLP Agreement, authorizing participation in the JV and nomination of authorized signatory(ies)/representative(s).
 - iv. In case of proprietorship: an authorization/undertaking by the proprietor authorizing participation in the JV and nomination of authorized signatory(ies)/representative(s).

Failure to submit the above authorizations for each JV member, along with the bid, may render the bid non-responsive.

3. Documents Required from JV

Following documents shall be submitted by JV in support of its valid constitution.

I. JV FORMATION DOCUMENTS

a) Notarized JV Agreement / MoU on adequate stamp paper containing

- Shareholding of each member and scope split,
- Roles and responsibilities of each member,
- Resource commitments,
- Management structure,
- Dispute resolution among members,
- Joint and several liability clauses
- Lead Partner authorization
- Confirmation that JV constitution will not change.
- Validity period of JV shall not expire prior to the end of DLP as mentioned in NIT.

b) Power of Attorney in favor of Lead Partner.

c) Declarations from each member: not debarred/blacklisted; not insolvent/under IBC; not a willful defaulter/NPA; no sanctions/ prohibitions by any authority affecting performance.

d) PAN and GST details of each member.

e) Legal constitution documents (Company/LLP/Partnership/Proprietorship) of each member.

f) The bid shall be submitted through the procurement portal by the **Lead Partner's DSC** on behalf of the JV.

g) All forms/affidavits shall be signed by the authorized signatory of the Lead Partner; member-wise undertakings/power of attorney

II. TECHNICAL & FINANCIAL DOCUMENTS SEPARATELY FROM EACH MEMBER OF JV:

a) Similar Work experience certificates (as per Eligibility /PQC -Criteria) gained by each member.

b) Copy of Work Orders / Completion Certificates.

c) Statutory payment proof (as described in Eligibility Criteria) where private sector experience is used by each member.

d) Turnover certificates (CA-certified) of each member.

e) Net worth certificate (if applicable) of each member.

f) List of ongoing commitments of each member.

4. Evaluation rules for Qualification as per Norms of Tender eligibility criteria:

Stage-I: Pre-checks. Corporation authorized tender committee shall:

- Confirm bid submission by the **Lead Partner's DSC**.
- Verify completeness of JV Agreement/PoA and statutory registrations.
- Record any deficiencies and may seek one-time clarifications per ITB timelines (no new documents that alter substance shall be asked for or considered for evaluation).

STAGE-II:

I. Technical Eligibility (Experience of Similar Nature Work)

(1) The JV shall meet the Similar Nature Work experience requirement exactly as specified in NIT Appendix-II, by satisfying any one of the following alternatives within the specified period:

- a) One similar work of value at least **80%** of ECPT; or
- b) Two similar works, each of value at least **50%** of ECPT; or
- c) Three similar works, each of value at least **40%** of ECPT.

For the avoidance of doubt, "adding up" values of multiple smaller works to reach 80%/50%/40% is not permitted; each work relied upon must independently meet the relevant threshold under (a)/(b)/(c).

(2) The Similar Nature Work requirement may be met either:

- a) by the Lead Member alone; or
- b) by the JV collectively, using eligible works of one or more JV members.

In either case, the requirement shall be satisfied strictly in the form stated (1×80% or 2×50% each or 3×40% each).

(3) Experience of a JV member in earlier JVs shall count **only to the extent of their actual executed share in earlier JV**.

II. Financial Eligibility (Turnover- average annual and Highest Turnover, Construction, E&M (as the case may be), Net worth, Banker's Solvency)

JV financial capacity is the **arithmetic sum** of individual financial capacities of members. The JV must collectively meet **100%** of Values of financial criteria required as per PQC mentioned in NIT- Appendix-II.

- The financial eligibility criteria stated in Appendix-II shall be assessed for a JV by (i) the Lead Member's financial capacity and (ii) the arithmetic sum of the financial capacities of all JV members.
- The JV shall be considered compliant if the sum of the Average Annual Financial Turnover of the JV members (as per Appendix-II definition) meets or exceeds the required value.
- The JV shall be considered compliant if the sum of the eligible Annual Turnover from Construction Works or specific works (mentioned in

Appendix-II) of the JV members meets or exceeds the required value (Appendix-II). The Annual turnover (for working out annual average) and minimum annual turnover from construction or specific works (when mentioned in Appendix-II) shall be assessed by summing the construction turnover of all JV members for the same financial year.

- The Lead Member shall individually meet at least 51% of the required value of Average Annual Financial Turnover and Annual Turnover from Construction Works/Specified E&M etc (as given in Appendix-II).
- JV turn over shall be combined turnover of all members and must be **≥100%** of required turnover as per NIT.
- Net Worth / Banker's Solvency requirement given in Appendix-II shall be met by JV by satisfying either:
 1. (a) Net worth route - sum of net worth of members \geq prescribed net worth and the net worth of all the partners individually as on the specified date (Appendix-II criteria), should be positive.

OR

- (b) Solvency route-sum of banker's solvency certificates of members \geq prescribed solvency amount.

In either route, the Lead Member shall individually contribute at least 51%

- The "profit after tax / loss years", as mentioned in Appendix-II, shall be met at least by the Lead Member. Further, any JV member whose financial parameters are relied upon to meet financial capacity (Turnover) and technical capacity (Experience) shall also meet this requirement. A member not relied upon for meeting any financial criterion shall not be tested under this condition.

III. **BID CAPACITY OF THE JV: BID CAPACITY CALCULATION**

The Available Bid Capacity of a Joint Venture (JV) shall be assessed collectively using the same Bid Capacity formula and prescribed format as given in the NIT/Appendix-II.

- Determination of "A" (Maximum Annual Turnover from Construction Works) for JV:
 - a) For each of the last five financial years, total construction turnover of the JV shall be computed for that year by summing the "turnover from construction works" of all JV members for the same financial year only.
 - b) the highest (maximum) value shall be taken as "A" from these five year-wise JV totals.
 - c) Updating to current price level, if specified in the NIT, shall be applied to the year- wise JV totals before selecting the maximum.
- Determination of "B" (Existing Commitments / Ongoing Works) for JV:

- a) "B" shall be the sum of the balances of ongoing commitments of all JV members that are to be completed in the next 'Y' years, worked out strictly on prorata basis as per the NIT/ Appendix-II format.
- b) No double counting shall be permitted. Any single contract/commitment shall be counted only once in "B", including where more than one JV member has a shared interest in the same contract.
- The JV shall be considered qualified under Bid Capacity if the Available Bid Capacity computed using the above "A" and "B" is not less than the minimum required Bid Capacity specified in the NIT/Appendix-II.

IV. EQUIPMENT/KEY PERSONNEL (IF SPECIFIED IN NIT):

- JV shall meet the minimum prescribed numbers of Equipment / Key Personnel collectively.
- The Lead shall submit an undertaking listing **member-wise holdings** and the **resources dedicated** to the subject work along with details of the Equipment/Key Personnel held by each member including the name/numbers of those dedicated to the subject works in tender.

V. EXPERIENCE OF SPECIALIZED WORKS QUANTITIES: COMPONENT-WISE EVALUATION OF "SIMILAR WORK" FOR JV-

(a) Where Appendix-II specifies minimum execution/production quantities for any specialized component during a financial year (e.g., PEB, CC road quantity, paver blocks, rail track, specialized systems, etc.), the JV shall comply as follows:

- one JV member (the "Specialist Member") shall individually demonstrate **[100%]** of the specified specialized quantity requirement in any one eligible year/period as prescribed in Appendix-II. Splitting/aggregation of specialized quantities across different JV members shall not be permitted.

(b) For meeting Clause (a), the Specialist Member may submit credentials of one or more contracts executed by that Specialist Member during the same year, as permitted in Appendix-II, to establish the specialized quantities executed in that year.

(c) The Specialist Member shall have a minimum participation interest of not less than 25% in the JV (both for two-member and three-member JVs).

(d) The overall Similar Nature Work value requirement (1×80% OR 2×50% each OR 3×40% each of ECPT, as applicable in Appendix-II) shall be met by the JV collectively, as per the JV technical eligibility norms already stated.

(e) The JV MoU/Agreement shall clearly state that the Specialist Member shall be responsible for execution of the specialized component under the contract as per the scope allocation and shall deploy commensurate resources. Any subletting/back-to-back arrangement, if permitted under the tender conditions, shall be only in accordance with the tender provisions and Appendix-II conditions/documentation.

(f) Documentary evidence for specialized quantities shall be as per Appendix-II (client credential/completion certificate clearly mentioning quantities executed during the year mentioned in NIT and supporting documents as prescribed; for non-Govt/public clients, the additional supports prescribed in Appendix-II shall apply).

VI. **MINIMUM TECHNICAL & FINANCIAL CAPACITY OF NON-LEAD MEMBERS:**

Each non-lead JV member who does not individually satisfy technical experience or financial capacity requirement as described above, should preferably demonstrate minimum technical capacity by having successfully completed or substantially completed at least one similar work of value not less than **[10%]** of ECPT within the period specified in the NIT-Appendix II and similarly they should also meet minimum **[10%]** of turnover requirement individually;

However, for this tender, non-fulfilment of the above indicative preference shall not, by itself, be a ground for disqualification, provided the JV satisfies all other eligibility criteria and the MoU/JV Agreement submitted with the bid clearly allocates responsibilities and confirms technical and financial obligations/commitments of the members (including the Lead Member's responsibility for overall execution)

5. Financial Bid Opening

After JV qualifies PQC, the financial bid submitted by Lead Partner on behalf of JV is opened.

6. Post-Award Conditions

- i. Letter of Acceptance /PO shall be issued in name of JV's
- ii. Performance Bank Guarantee shall be furnished in **name of JV only**.
- iii. EMD. PBG etc. may be deposited by lead member of JV and Contract Agreement shall be signed by Lead Partner/member for JV.
- iv. JV shall maintain a **dedicated JV bank account** for receipt of payments from Corporation.
- v. All communications, Technical/commercial/administrative discussions and technical representation on works with Corporation representative shall be done by either Lead member or technical person authorized by JV during the contract.

- vi. Work experience certificate, upon completion of works shall be issued in name of JV only stipulating the share of individual member as submitted originally with technical bid.

6.1 SUSTENANCE OF JV/CONSORTIUM AND CONSEQUENCES OF FAILURE

- i. The JV/Consortium composition, the Lead Member, and the participation interests of members as submitted with the bid shall remain unchanged during the entire period of bid validity and, if awarded, throughout the contract period including defect liability/warranty period, except with prior written approval of the Corporation. wherever permissible under the tender/contract conditions and proof of equivalent or superior capacity of the successor.
- ii. All JV/Consortium members shall be jointly and severally liable for due performance of the contract and for all obligations, liabilities and claims arising out of the contract.
- iii. Any withdrawal of any JV/Consortium member, or failure to maintain the JV/Consortium arrangement as submitted, without prior written approval of the Corporation (wherever permissible), shall be treated as a material breach/non- performance.
- iv. In such event, the Corporation shall, without prejudice to any other rights and remedies available under the tender/contract, be entitled to take one or more of the following actions:
 - a) rejection of bid and forfeiture of EMD (if the event occurs before award); and/or
 - b) termination of the contract for default/breach (if the event occurs after award); and/or
 - c) encashment/forfeiture of Performance Bank Guarantee and/or other securities as applicable; and/or
 - d) recovery of risk-and-cost and other dues/damages as per the contract provisions; and/or
 - e) initiation of debarment/banning action against the JV/Consortium and/or the constituent members, as per the Corporation's extant debarment/ banning policy and applicable guidelines.

In case of debarring of Contractors, due to any reasons breaching the contract and in line of relevant clause of GCC, all JV members shall be debarred / blacklisted along with JV following the due process prescribed in GCC. Any misrepresentation by a member shall be attributable to the **JV and all members** for penal action.

Note:

Verification of Credentials for Works Executed for Private Clients and Authenticity of CA Certificates:

(a) Where experience/turnover/credentials are claimed on the basis of works executed for private clients, the Employer may, in addition to the documents prescribed in the NIT, seek supporting evidence such as:

(i) relevant extracts of Income Tax Return (ITR) / audited financial statements, and/or

(ii) Form 26AS/16A (TDS certificates), to verify that the turnover/receipts claimed are consistent with statutory tax records.

(b) Wherever a Chartered Accountant (CA) certificate is submitted in support of eligibility/credential/turnover/net worth, such CA certificate shall mandatorily bear a valid UDIN (Unique Document Identification Number). Certificates without UDIN may be treated as non- responsive.

(c) For works/assignments for private clients, the value of work/receipts considered for eligibility shall be restricted to the value that is supported by acceptable documentary evidence such as client- certified RA/final bill abstracts/payment certificates and corresponding banking/tax evidence.

(d) For consultancy/PMC/design/service assignments (where applicable), the value of experience shall be considered commensurate with the consultancy/service fee actually received/credited, supported by TDS certificates (Form 26AS/16A) and the agreed fee as per work order/contract.”

**Sr. General Manager
Engineering**

Appendix-III: Tender Forms & Exhibits:

EXHIBIT- I		
Pre-Qualifying (PQ) Proforma: Bidder Information Summary		
{To be Filled by Bidder in sheet uploaded over portal and then to be submitted along with technical bid}		
Name of Works: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).		
NIT Reference Number: E NIT_CWC/CO/Engg. /26-27/06		
SL	Description	Details (filled by Bidder)
General Details of Bidder		
See PQC S/n (1) to (4): Appendix-II of NIT		
1	Name of the Bidder	
1.1	Bidder Address, (registered)	
	City	
	State	
	PIN	
1.2	Bidder Organization ID /CIN in case of Company	
1.3	Bidder Telephone number	
1.4	Bidder E-mail address	
2	Type of Bidder constituent (Organization)	
	<i>(JV allowed for these works)</i>	
2.1	Attested copy of documents in support of Bidder Organization Type	
	(See ITB-Appendix IV clause number 3.2: 1 (b): Organization Details and Appendix-II of NIT: List of documents required in support of Bidder Legal Entity.	
2.2	Current List of Directors/Partners: as applicable	
3	Name of the person holding the power of attorney for this Bid	
3.1	Designation	
3.2	Contact details of person holding the power of attorney	
	Mobile Number	
	Email id.	
3.3	Attested Copy of Power of Attorney to sign & submit the Tender (as per format given in EXHIBIT-III of Appendix-II)	
4	Earnest Money Deposit (EMD) of Amount as mentioned in APPENDIX-1 (TIS) through e- payment Gateway	
5.1	PF Registration code number of Bidder	
5.2	COPY of PF Registration number of Bidder	
6.1	GST Registration code number of Bidder	

Appendix-III: Tender Forms & Exhibits:

6.2	COPY of GST Registration number of Bidder	
7.1	PAN of the Bidder	
7.2	COPY of PAN of Bidder	
8.1	Whether Enlisted /Empaneled with CPWD/ MES/ Railway/ PWD/ CWC/any other PSU etc. if any,	
8.2	Copy of Enlistment/Empanelment certificate Submitted or Not	
9	Whether Bidder is executing or completed any work awarded by CENTRAL WAREHOUSING CORPORATION in Past Three FY Year (FY 2023-24, FY 2024-25 & FY 2025-26) and Current FY 2026-27.	
10.1	Affidavit along with this PQ Performa (EXHIBIT-I) on NJS paper signed and submitted after filling necessary details.	
10.2	Declaration of near relatives (EXHIBIT-IV) submitted.	
	Technical Eligibility Criteria:	
	See PQC S/n (5) in Appendix-II of NIT for details & qualifying limits.	
11	Particular Technical Experience w.r.t. Similar Nature of Work:	
11.1	Brief of Similar Nature Work Experience-1	
I	Work order/ contract agreement ref number and date	
li	Name of client issued the work order and completion certificate	
iii	Completion certificate -ref number and date	
iv	Total value of work completed (Rs.)	
V	Stipulated date of completion	
vi	Actual date of completion	
vii	If LD is levied: Amount / period of delay for which Liquidity damage is levied by client (if any)	
viii	Copy of completion/experience certificate of work and Copy of Agreement/Workorder issued by Client is submitted as per format given in EXHIBIT-V or EXHIBIT-VI or EXHIBIT-VII as applicable	
11.2	Brief of Similar Nature Work Experience-2	
I	Work order/ contract agreement ref. number and date	
li	Name of client issued the work order and completion certificate	
iii	Completion certificate -ref number and date	
iv	Total value of work completed (Rs.)	
V	Stipulated date of completion	
vi	Actual date of completion	
vii	If LD is levied: Amount / period of delay for which Liquidity damage is levied by client (if any)	

Appendix-III: Tender Forms & Exhibits:

viii	Copy of completion/experience certificate of work and Copy of Agreement/Workorder issued by Client is submitted as per format given in EXHIBIT-V or EXHIBIT-VI or EXHIBIT-VII as applicable	
11.3	Brief of Similar Nature Work Experience-3	
I	Work order/ contract agreement ref number and date	
li	Name of client issued the work order and completion certificate	
iii	Completion certificate -ref number and date	
iv	Total value of work completed (Rs.)	
V	Stipulated date of completion	
vi	Actual date of completion	
vii	If LD is levied: Amount / period of delay for which Liquidity damage is levied by client (if any)	
viii	Copy of completion/experience certificate of work and Copy of Agreement/Workorder issued by Client is submitted as per format given in EXHIBIT-V or EXHIBIT-VI or EXHIBIT-VII as applicable	
	See PQC S/n (6) in Appendix-II of NIT for details & qualifying limits.	
	Information on Financial Capabilities & Turn over	
12.1	Annual Financial Turnover-Total Revenue (Income) (as per CA certificate and audited P&L Account)	
I	FY 2025-26	
ii	FY 2024-25	
lii	FY 2023- 24	
Iv	FY 2022 –23	
V	FY 2021 – 22	
Vi	FY 2020-21 (only when audited turnover for FY 2025-26 is not available)	
12.2	The average of financial turnover for the last three financial years i.e. FY 2024-25, FY 2023-24 and FY 2022-23 Or FY 2021-22 (FY 2021-22 to be referred only when Audited turnover of FY 2024-25 is not available)	
	See PQC S/n (7) in Appendix-II of NIT for details & qualifying limits.	
13	Annual Financial Turnover-Total Revenue (Income) from Construction Works (as per CA certificate and audited P&L Account)	
i	FY 2025-26	
ii	FY 2024-25	
iii	FY 2023- 24	
iv	FY 2022 –23	
v	FY 2021 – 22	
vi	FY 2020-21 (only when audited turnover for FY 2025-26 is not available)	

Appendix-III: Tender Forms & Exhibits:

14	Annual Financial Turnover-Total Revenue (Income) from Electrical Works (as per CA certificate and audited P&L Account)	
i	FY 2025-26	
ii	FY 2024-25	
iii	FY 2023- 24	
iv	FY 2022 –23	
v	FY 2021 – 22	
vi	FY 2020-21 (only when audited turnover for FY 2025-26 is not available)	
15	Annual Financial Turnover-Total Revenue (Income) from Mechanical Works (as per CA certificate and audited P&L Account)	
i	FY 2025-26	
ii	FY 2024-25	
iii	FY 2023- 24	
iv	FY 2022 –23	
v	FY 2021 – 22	
vi	FY 2020-21 (only when audited turnover for FY 2025-26 is not available)	
	See PQC S/n (8) of Appendix-II of NIT for details & qualifying limits.	
16	Bidder's Profit after Tax (PAT) (as per CA certificate and audited P&L Account)	
i	FY 2025-26	
ii	FY 2024-25	
iii	FY 2023- 24	
iv	FY 2022 –23	
v	FY 2021 – 22	
vi	FY 2020-21 (only when audited turnover for FY 2025-26 is not available)	
17	Bidder's Total Net worth (as per CA certificate and audited P&L Account)	
i	FY 2025-26	
ii	FY 2024- 25 (only when audited Balance Sheet for FY 2025-26 is not available)	
18	copy of Audited Balance Sheets and Profit & Loss Statements for Annual financial turnover/ revenue (income), PAT & NETWORTH of Bidder (in support of Information provided above) to be submitted with Bid	
i	FY 2025-26	
ii	FY 2024-25	
iii	FY 2023- 24	

Appendix-III: Tender Forms & Exhibits:

iv	FY 2022 –23	
v	FY 2021 – 22	
vi	FY 2020-21 (only when audited turnover for FY 2025-26 is not available)	
19	Copy of Chartered Accountant's Certificate as per format given in EXHIBIT VIII in support of information provided above on Annual financial turnover/ revenue (income), PAT of Bidder.	
20	Chartered Accountant's Certificate as per format given in EXHIBIT IX in support of information provided above on Net worth of Bidder.	
21.1	Total Solvency in Rs. As per Banker certificate issued for this purpose	
21.2	Banker's certificate in support of the above information as per EXHIBIT X submitted.	
	See PQC S/n (9) in Appendix-II of NIT for details & qualifying limits.	
22	Duly signed copy of Pre Contract Integrity Pact as per EXHIBIT-XI	
	See PQC S/n (10) in Appendix-II of NIT for details & qualifying limits.	
23	Certificate(s) issued by Client(s) for execution of minimum specified quantities of special works during a FY year along with summarized breakup of these works as per EXHIBIT-XII.	
	See PQC S/n (11) in Appendix-II of NIT for details & qualifying limits.	
24.1	Available Bid Capacity of Bidder in Figures in INR:	
24.2	Certificate as per EXHIBIT XIII duly filled with all details and capacity derived from specified formula -Submitted	
	See PQC S/n (12) of Appendix-II of NIT for details & qualifying limits.	
25	Details of Personnel & Equipment as asked in Appendix-II of NIT submitted with summarized breakup on letter-head of Bidder.	

Sign of Bidder.

(Digital Signature)

IMPORTANT NOTES:
<div>1. Tenderers have to fill complete details in Pre-Qualifying Performa (Bidder Information Summary) in sheet uploaded over tender portal.</div> <div>2. Documents pertaining to the above details should be scanned and uploaded on e-tendering website at the time of on-line tender submission.</div> <div>3. RTGS/NEFT E-payment Challans with UTR no. duly authenticated by Bank may also be scanned & uploaded along with tender submission.</div> <div>4. Bidder must refer Tender Information Summary (TIS) in APPENDIX-I, PRE QUALIFICATION CRITERIA (PQC) in (APPENDIX-II) and Tender eligibility criteria as per ITB clause 3 (APPENDIX-IV) appended with NIT before filling this PQ Performa and Affidavit.</div> <div>5. The PQ Performa EXHIBIT-I along with Its Annexure (Affidavit) enclosed with this Performa is mandatory and must be submitted by the Bidder.</div>

Annexure to EXHIBIT-I

AFFIDAVIT

{TO BE MANDATORILY SUBMITTED BY BIDDER ALONGWITH THE PQ FORMS}

(To be executed in presence of Public Notary on non-judicial stamp paper of the value ofRs. 100. The stamp paper has to be in the name of the Bidder.)

TENDER FOR THE WORK OF:

“(Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).”

Invited by Sr. General Manager Engineering vide NIT bearing reference number

.....
.....

I/We, [Insert Bidder Name], after carefully reviewing the tender documents, including the E-Tender Notice, Notice Inviting Tender (NIT), Tender Information Summary (TIS), Instructions to Bidders (ITB), Tender Eligibility Criteria, Pre-Qualification criteria (PQC), Tender Appendices, Schedules, Specifications, General , Special & Technical Conditions of Contract, and all other relevant documents, corrigendum, addendum to NIT etc. hereby submit my bid with following declarations:

1 ELIGIBILITY CONFIRMATION

I/We solemnly declare that I/we (including our affiliates or subsidiaries or constituents):

- i. hereby confirm that we comply with all the stipulations of NIT including eligibility conditions described in ITB-clause 3 and declare as under and I/We shall provide evidence of our continued eligibility to the CWC as may be requested:
- ii. are legal entity and are not insolvent, in receivership, bankrupt or being wound up, not have our affairs administered by a court or a judicial officer, not have our business activities suspended and are not the subject of legal proceedings for any of these reasons.
- iii. do not stand declared ineligible/ blacklisted/ banned/ debarred by the Central Warehousing Corporation or its Ministry/ Department, FCI, MES, CPWD, Railways, State PWDs, any State /Central Public Sector Undertaking, or other government authorities or Institutions from participation in its Tender Processes; and
 - a. Are not convicted (within three years preceding the last date of bid submission) or stand declared ineligible/ suspended/ blacklisted/ banned/ debarred by appropriate agencies of Government of India from participation in Tender Processes of all of its entities, for offences mentioned in Tender Document in this regard.
 - b. We have neither changed our name nor created a new “Allied Firm”, consequent to the above disqualifications.
- iv. do not have any association (as bidder/ partner/ Director/ employee in any capacity) with such retired public official or near relations of such officials of Central Warehousing Corporation, as counter-indicated, in the Tender Document.
- v. Details of my/our near relative(s) working for CWC/Ministry DFP&D are as given in EXHIBIT -IV.
- vi. We certify that we fulfil any other additional eligibility conditions and meet pre-qualification criteria as prescribed in Tender Document (APPENDIX-II) of NIT.
- vii. We have no conflict of interest, which substantially affects fair competition. The prices quoted are competitive and without adopting any unfair/ unethical/ anti-competitive means. No attempt has been made or shall be made by us to induce any other bidder to submit or not to submit an offer to restrict competition.
- viii. We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries, (under Rule 144 (xi) of the General Financial Rules 2017) and solemnly certify that we fulfil all requirements in this regard and are eligible to be considered. We certify that:
 - a. we are not from such a country or, if from such a country, we are registered with the Competent Authority (copy enclosed). And; **(strike which is not applicable)**
 - b. we shall not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

Appendix-III: Tender Forms & Exhibits:

ix. We also declare that.

- a. There is no country whose bidders have been notified as ineligible on a reciprocal basis under this order for the offered / tendered works/ Services, or
- b. We do not belong to any Country whose bidders are notified as ineligible on a reciprocal basis under this order for the offered / tendered works/ Services.

2 CONFIDENTIALITY OF TENDER DOCUMENTS

- I/We undertake to treat all tender documents, designs, and other records related to the work as confidential. We will not disclose or use them in any manner prejudicial to the interests of CWC.

3 BACK-TO-BACK CONTRACTING CLAUSE

- I/We confirm that the eligible similar work has not been executed through another contractor on a back-to-back basis.
- I/We undertake that violation of this clause will lead to debarment from future tenders and forfeiture of the EMD and Performance Guarantee.

4 COMPLIANCE WITH BID REQUIREMENTS

- I/We confirm that we have reviewed the entire tender document, including any addenda/corrigenda, and that our bid complies with all the requirements set out in the document.
- I/we have visited the site of work and are well acquainted with local site and workplace conditions and confirm my bid in accordance with site requirement.
- I/WE accept all the terms and conditions of Tender invited by CORPORATION and submit the bid without any deviations. Any explanation or submission by me/us in our bid with respect to tender clauses, terms and conditions if found in deviation from tender published clauses terms & conditions shall stand null and void.
- I/We agree that this declaration, when signed, will form part of the contract in the event that the contract is awarded to us.

5 VALIDITY OF TENDER

- I/We agree to keep this tender valid **for 90 days** from the date of opening of the Technical Bid under the two-bid system. We will not make any modifications to the tender's terms and conditions during this period.

6 EARNEST MONEY DEPOSIT (EMD)

- A sum of **Rs. Lakh (sum of Total EMD for bids submitted for (name of locations)** is submitted through the e-payment gateway as Earnest Money Deposit (EMD) /Bid Security.

7 PERFORMANCE GUARANTEE AND CONTRACTUAL OBLIGATIONS

- I/We understand that failing to submit the prescribed Performance Guarantee after the Letter of Acceptance (LOA) will result in the termination of the contract and forfeiture of EMD, with no further claims from our side.
- I/We confirm that we will complete the work within the specified timelines and adhere to all terms of the contract, including those related to LD for delays and Penalties for quality standards.

8 FORFEITURE OF EMD & PERFORMANCE GUARANTEE

- In the event that I/We fail to commence work within the specified time or fail to submit the required Performance Guarantee, I/We agree that CWC has the right to forfeit the EMD and the Performance Guarantee.
- In such cases, I/We will be debarred from participating in future tenders of CWC for the Period mentioned in Conditions of Contract.

9 PENALTIES FOR FALSE DECLARATIONS

- I/We understand that providing false, misleading declaration(s), or concealed information would violate the Code of Integrity and will attract penalties, including but not limited to forfeiture of the EMD, disqualification from this and future tenders for the Period mentioned in Conditions of Contract and other legal actions as per the applicable laws.
- I/We hereby confirm that the particulars given in PQ Performa including those as above are factually correct and nothing is concealed and undertake to advise any future changes to the above details.

10 VERIFICATION

I, [Authorized Signatory Name], in my capacity as [Designation] of [Bidder's Name], declare that the information provided in this document is accurate, True and complete to the best of my knowledge and belief.

Signature of Authorized Signatory

[Name & Designation]

[Company Seal]

[Date]

EXHIBIT- II
DECLARATION OF PROPRIETORSHIP

(For Sole Proprietary Firm)

(To be executed in presence of Public Notary on non-judicial stamp paper of appropriate value.
The stamp paper has to be in the name of the Bidder.)

I, _____ R/o _____
_____ do hereby solemnly
affirm and declare as under –

1. That I am Sole Proprietor of (Sole Proprietor Firm Name).
2. That the office of the firm is situated at..... (address).

Place:

Date:

FORMAT FOR POWER OF ATTORNEY TO AUTHORIZED SIGNATORY

POWER OF ATTORNEY

(To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant Stamp Act. The stamp paper to be in the name of the Firm / Company who is issuing the Power of Attorney)

We, M/s _____ (name of the Firm / Company with address of the registered office) hereby constitute, appoint and authorize Mr/Ms _____ (Name & residential address) who is presently with us and holding the position of _____ and whose signature is given below, as our Attorney to do in our name and our behalf all or any of the acts, deeds or things, necessary or incidental to our bid for the work _____ (name of work), including signing and submission of application / tender / proposal, participating in the meetings, responding to queries, submission of information / documents and generally, to represent us in all the dealings with CWC or any other Government Agency or any person, in connection with the works until culmination of the process of bidding, till the Contract Agreement is entered into with CWC and thereafter, till the expiry of the Contract Agreement.

We hereby agree to ratify all acts, deeds and things lawfully done by our said Attorney, pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid Attorney shall always be deemed to have been done by us.

Dated this the _____ day of _____, 20__

(Signature and Name of Authorized Signatory, being given Power of Attorney)

Signature and Name in block letters of Proprietor / All the Partners of the Firm / Authorized Signatory for the Company) (Strike out whichever is not applicable)

Seal of the Proprietorship Firm / Partnership Firm /

Company Witness 1: Witness 2:

Name:

Name:

Address:

Address:

Occupation:

Occupation:

Appendix-III: Tender Forms & Exhibits:

Notes:

- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
- Power of Attorney is to be attested by Notary.

DECLARATION OF NEAR RELATIVE

(On the letter head of Bidder firm)

I/we..... certify that my/our following near relative are working in the Central Warehousing Corporation or in the Ministry of Food, Consumer Affairs & Public Distribution, Govt. of India, New Delhi:

S/N	Department	Name of officer & Designation	Relation	Remarks
1	Central Warehousing Corporation			
2	Ministry of Food, Consumer Affairs & Public Distribution, Govt. of India, New Delhi:			
3	Department of Food and Public Distribution			

(Duly authorized signatory of the BIDDER)

EXHIBIT-V
(Indicative Format for Submitting Work Experience by Client -Govt Deptt/Public Sector Undertaking)
(To be issued On the Letter head)

TO WHOMSOEVER IT MAY CONCERN

REF:

Date:..

It is to inform that M/s. _____ having PAN No. _____ has satisfactorily and successfully completed the work for our organization (.....name of Organization) as per below details:

Sr. No	Particulars	Details
1.	Name of Work	
2.	Brief Description/Scope of Work	
3.	Date of Issue of Work Order/LOA	
4.	Date of Agreement and Agreement No. (if any)	
5.	Awarded Value of Work as per Work Order/Agreement (in Rupees)	
6.	Stipulated Date of Start of Work (As per work order)	
7.	Stipulated Date of Completion of Work (As per work order)	
8.	Actual Date of Completion of Work	
9.	Actual Value of Works Completed (in Rupees)	
10.	Amount paid till date of issuance of this letter ((in Rupees)	
11.	Details of Time extension granted, if any, and amount of Liquidated Damages (LD) or any other penalty levied due to delay in completion of work (in Rupees)	
12.	Penalty levied, if any, due to Sub-standard Quality of work, any other reason (in Rupees)	
13.	Remarks on Overall Performance of the Contractor	
14.	Major items in Scope & executed under the Contract	

Signature with Seal of Officer Authorized _____

Date: _____

Place: _____

Name & Designation of Officer _____

Phone No. & Email ID of Officer _____

Name and Registered Address of Organization
issuing the certificate _____

EXHIBIT-VI

**Format for Submitting Work Experience by Client- Public Limited Company
(To be issued On Letter head of Company)**

TO WHOMSOEVER IT MAY CONCERN

REF:

Date:....

It is to inform that M/s. _____ having PAN No. _____ has has satisfactorily and successfully completed the work for our organization (.....name of Organization) as per below details:

Sr. No	Particulars	Details
1.	Name of Work	
2.	Brief Description of Work	
3.	Date of Issue of Work Order/LOA	
4.	Work order Number/ Agreement No.	
5.	Awarded Value of Work as per Work Order/Agreement (in Rupees)	
6.	Stipulated Date of Start of Work (As per work order)	
7.	Stipulated Date of Completion of Work (As per work order)	
8.	Actual Date of Completion of Work	
9.	Actual Value of Works Completed (in Rupees)	
10.	Amount paid till date of issuance of this letter ((in Rupees)	
11.	Details of Time extension given, if any and amount of Liquidated Damages (LD) or any other penalty levied due to delay in completion of work (in Rupees)	
12.	Penalty levied, if any, due to Sub-standard Quality of work, any other reason (in Rupees)	
13.	Major items in Scope & executed under the Contract	
14.	Remarks on Overall Performance of the Contractor	

Signature of Officer Authorized

Date:

_____ Place:

Name & Designation of Officer

Employee ID

Phone No. & Email ID of Officer

Appendix-III: Tender Forms & Exhibits:

Website of Company

Name of Company

Registered Address

_____ **CIN**

EXHIBIT-VII
FORMAT OF CERTIFICATE FROM CLIENT FOR SUBSTANTIAL WORK COMPLETION

(On client's letter head)

Ref No.

Date:

PART-1

1	Name of Project / work	
2	Name of Contractor (Executing agency)	
3	PAN number of Contractor (Executing agency)	
4	Contract Agreement No.	
5	Work order /LOI/LOA no.	
6	Total contract value (INR)	
7	Revised contract value (INR) if any	
8	Actual value of work completed up to date (INR)	
9	% completion with respect to revised contract value	
10	Stipulated Date of completion of work	
11	Contract Period live up to Date	
12	Time extension granted or not required as on date	
13	Status of LD, in case time extension required/granted	
14	Major items in scope covered	
15	Name & Designation of Authority signing the Agreement or issuing the work order (as the case may be)	

PART - 2

THIS IS TO CERTIFY THAT : -

1. The above-mentioned work has been carried as per detail given above and I/we are satisfied with performance of Contractor for completing above work successfully in all respect.
2. The work has been functionally completed, and Project/work/assets are ready for use as on date of Issue of this certificate despite progress of balance works in contract scope.

(Name & Designation of the issuing authority)

EXHIBIT VIII

Format for submitting the turnover by CA of Bidder

For general construction works and specific works mentioned in S/n (9) of Table under Clause (A)

(On the letterhead of the Chartered Accountants firm)

REF:

Date: DD-MM-YYYY

To

Central Warehousing Corporation

<<Address of tender calling Office>>

Dear Sir,

This is to certify that Turnover of M/s _____, having office at _____, in each Financial Year are as given below:

Financial Year	Total Turnover (in INR) of the bidder	Total Turnover (in INR) from construction works	Total Profit after Tax (in INR)

[UDIN]

For (Name of CA Firm)

Partner, M.No

FRN No.

Date:

Appendix-III: Tender Forms & Exhibits:

Place:

EXHIBIT-IX
FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT

(On CA’s Letter Head)

It is to certify that Balance Sheet and Profit & Loss Account of M/sfor FY 2025-26 has been audited/has not been audited. (strike which not applicable)

As per the Latest audited Balance Sheet and Profit & Loss Account during the Financial Year...2025-26 / 2024-25 (if not audited for FY 2025-26) ..., the Net Worth of M/s (Name & Registered Address of Individual/ Firm/ Company), as on (the relevant date) is Rs..... after considering all liabilities.

Unique Document Identification Number (UDIN).....

(Signature of Chartered Accountant)

Name of Chartered Accountant

Membership No. of ICAI

Date and Seal

EXHIBIT X
BANKERS' CERTIFICATE FROM A COMMERCIAL BANK

Ref No.

Date:

To,
CENTRAL WAREHOUSING CORPORATION

This is to certify that to the best of our knowledge and information that M/s./ Sh.....
..... having marginally noted address,
.....as a customer of our bank are/is respectable and can be treated as
good for any engagement up to a limit of Rs.....
(Rupees.....)

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature) For the Bank

NOTE

1. Bankers Certificates should be on letter head of the Bank, addressed to tendering authority.
2. In case of Partnership firm, certificate should include names of all partners as recorded with the Bank.

PRE-CONTRACT INTEGRITY PACT

(Compulsory Ink signed on each page and to be submitted along with Technical Bid)

(The same shall be signed on non-judicial stamp paper of appropriate value during agreement signing)

Name of works: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

NIT bearing reference number

General This pre-bid / pre-contract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____ between on one hand, the Central Warehousing Corporation (A Govt. of India Undertaking), 4/1 Siri Institutional area, Hauz Khas, New Delhi, acting through....., Central Warehousing Corporation (hereinafter called the "CORPORATION" which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and

M/s _____ represented by Shri _____, (Name of the contractor) (hereinafter called BIDDER which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the CORPORATION proposes to appoint a contractor at _____ and the BIDDER is willing to execute the items of work / Section as per schedule of work, the work order issued General conditions of the contract of CWC.

WHEREAS the BIDDER is a private company / public company / Government undertaking / partnership firm constituted in accordance with the relevant law in the matter and the corporation is a PSU performing its functions on behalf of the Ministry of Consumer Affairs, Food and Public Distribution, New Delhi, Govt. of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence / prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:- Enabling the CORPORATION to obtain the desired said work at a competitive price in conformity with the defined specifications by avoiding the high cost and the

Appendix-III: Tender Forms & Exhibits:

distortionary impact of corruption on public procurement, and enabling BIDDER to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the CORPORATION will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this integrity Pact and agree as follows:

[1] Commitments of the Corporation

[1.1] The Corporation undertakes that no official of the CORPORATION, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

[1.2] The CORPORATION will, during the pre-contractor stage, treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

[1.3] All the officials of the CORPORATION will report to the appropriate authority any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

[2] In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the CORPORATION with full and verifiable facts and the same is prima facie found to be correct by the CORPORATION, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the CORPORATION and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the CORPORATION the proceedings under the contract would not be stalled.

[3] Commitments of BIDDERS

The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -

[3.1] The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CORPORATION, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

Appendix-III: Tender Forms & Exhibits:

[3.2] The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CORPORATION or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the CORPORATION for showing or forbearing to show favour or dis favour to any person in relation to the contract or any other contract with the CORPORATION.

[3.3] The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the CORPORATION or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

[3.4] The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

[3.5] The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

[3.6] The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the CORPORATION as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

[3.7] The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

[3.8] The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

[3.9] If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the CORPORATION, or alternatively, if any relative of an officer of the CORPORATION has financial interest / stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

[3.10] The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the CORPORATION

[4] Previous Transgression

Appendix-III: Tender Forms & Exhibits:

[4.1] The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

[4.2] The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

[5] Sanctions for Violations

Any breach of the aforesaid provision by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the CORPORATION to take all or any one of the following actions, wherever required: -

- i. To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
- ii. The Security Deposit / Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the CORPORATION and the CORPORATION shall not be required to assign any reason therefore.
- iii. To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- iv. To recover all sums already paid by the CORPORATION, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the CORPORATION in connection with any other contract for any other stores / work such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- v. To encase the advance bank guarantee and performance bond / warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the CORPORATION, along with interest.
- vi. To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the CORPORATION resulting from such cancellation / rescission and the CORPORATION shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
- vii. To debar the BIDDER from participating in future bidding processes of the CORPORATION for a minimum period of five years, which may be further extended at the discretion of the CORPORATION.
- viii. To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- ix. In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the CORPORATION with the BIDDER, the same shall not be opened.
- x. Forfeiture of Performance Bond in case of a decision by the CORPORATION to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

Appendix-III: Tender Forms & Exhibits:

[5.1] The CORPORATION will be entitled to take all or any of the actions mentioned at para 5.1(i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

[5.2] The decision of the CORPORATION to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the independent Monitor(s) appointed for the purposes of this Pact.

[6] Fall Clause

[6.1] The BIDDER undertakes that it has not supplied / is not supplying similar product / systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry / Department of the Government of India or PSU and if it is found at any stage that similar product / systems or sub systems was supplied by the BIDDER to any other Ministry / Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the CORPORATION, if the contract has already been concluded.

[7] Independent Monitor

[7.1] The CORPORATION has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission, New Delhi.

[7.2] The CORPORATION has appointed

Ms. Arundhaty Ghosh, Email- arundhatyg@gmail.com as an Independent Monitor (hereinafter referred to as Monitor) for this Pact in consultation with the Central Vigilance Commission.

[7.3] The task of the Monitor shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

[7.4] The Monitor shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

[7.5] Both the Parties accept that the monitors have the right to access all the documents relating to the project / procurement, including minutes of meetings.

[7.6] As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the CORPORATION.

[7.7] The BIDDER(s) accepts that the Monitor has the right to access without restriction all Project documentation of the CORPORATION including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The

Appendix-III: Tender Forms & Exhibits:

Monitor shall be under contractual obligation to treat the information and documents of the BIDDER / Subcontractor(s) with confidentiality.

[7.8] The CORPORATION will provide the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer the Monitor the option to participate in such meetings.

[7.9] The Monitor will submit a written report to the designated Authority of CORPORATION within 8 to 10 weeks from the date of reference or intimation to him by the CORPORATION / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

[8] Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the CORPORATION or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

[9] Law and Place of Jurisdiction

This Pact is subject to Indian Law. The Place of performance and jurisdiction is the seat of the CORPORATION.

[10] Dispute Mediation:

In the event of any dispute between the Central Warehousing Corporation and the contractor relating to those contracts where an Integrity Pact is applicable, in case both the parties are agreeable, they may try to settle the dispute through mediation before the panel of IEMs in a time-bound manner. However, no more than five meetings shall be held for particular dispute resolution. The fees/ expenses on dispute resolution shall be equally shared by both the parties. In case, the dispute remains unresolved even after mediation by the panel of IEMs, the Central Warehousing Corporation may take further action as per the terms & conditions of the contract.

[11] Other Legal Actions

The actions stipulated in this integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

[12] Validity

Appendix-III: Tender Forms & Exhibits:

[12.1] The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the CORPORATION and the BIDDER / Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this integrity Pact shall expire six months after the date of the signing of the contract.

[12.2] Should one or several provisions of this Pact out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

[13] The parties hereby sign this Integrity Pact at _____ on _____

Corporation	Bidder
Name of the Officer: -	Name of Authorized Signatory: -
Designation	Designation
Signature & Stamp: -	Signature & Stamp: -
Signature and Name of Witness 1	Signature and Name of Witness 1
Signature and Name of Witness 2	Signature and Name of Witness 2

EXHIBIT-XII

Details of Experience of Execution of Specialized work Quantities.

(On the letter head of Bidder firm)

Appendix-III: *Tender Forms & Exhibits:*

I certify that, I. (name of Bidder company)has executed following Quantities of specialized works specified in PQC S/n (10) of Appendix II of NIT for the clients tabulated below/

S/N	Name of Client	Name of Project	Name of Specialized work	Total Quantities executed	unit	FY

The Certificates duly issued by the above-mentioned client(s), where above information is clearly mentioned is enclosed with my technical bid in support of above.

(Duly authorized signatory of the BIDDER)

EXHIBIT-XIII

Details of existing commitments and ongoing works in Hand (For calculating Bid Capacity)

Sl. No.	Name of work/ project and location	Name of Client	Contract value in rupees	Date of commencement per contract	Stipulated date of completion	Upto date percentage progress of works	Remaining work in percentage (100- column 7)	Existing commitment Column 4 x Column 8 /100	Name and address / telephone number of officer to whom reference may be made	Remarks	
1	2	3	4	5	6	7	8	9	10	11	
Total											

Total (B) sum of existing Commitments (sum of value in column 8)	B=
Maximum turnover in last seven years	=
FY year (when maximum turnover achieved)	FY
Updated value of Turnover (A) as per norms prescribed in NIT	A=
No. of Years (N) for completion of work as per NIT	N=
Bidding Capacity = [AxNx1.5]-B}	=

Certificate:

I certify that all the awarded and ongoing works have been included in the above list. I am also aware of the fact that CWC may get the aforementioned details verified at point of the tendering process or post award of the contract. In case, my declarations are found wrong/ misleading/ forged etc., CWC may initiate necessary actions as per the Contract.

Signature of Bidder(s)

EXHIBIT-XIV

Details of Personnel & Equipment Capabilities

I certifies that I/We possess following personnel and equipment capabilities required as per the tender for the works and relevant credential documents in support of my possession/ownership are enclosed herewith.

If any of above /below information is found wrong, at any stage upon enquiry by central warehousing corporation, I understand and agree that my bid/contract shall be cancelled, and punitive actions shall be taken upon me by the corporation as per conditions mentioned in the tender documents.

Sl. No.	Description / Position	Minimum Requirement / Quantity	Qualification / Experience	Documentary Proof	Description of Equipment/Name of persons.
(A) Personnel Capabilities					
1					
2					
3					
4					
5					
(B) Equipment Capabilities					

(Name of Bidder)

EXHIBIT-XV
Format of Performance Bank Guarantee

Note:-

1. To be submitted on non-judicial stamp paper of appropriate value purchased in the name of the issuing Bank.
2. The expiry date of the BG shall be **60 days beyond the date of expiry of the contract.**
3. The date of expiry of **claim period shall be 06 months** beyond the date of expiry of the BG.
4. The Bank Guarantee issuing bank shall send cover for Bank Guarantee issued through SFMS platform to the CWC Banker i.e., ICICI Bank, 9 Phelps Building, Connaught Place, New Delhi, (IFSC Code: ICIC0000007) as per details given below:
 - i. MT760 COV for issuance of bank guarantee.
 - ii. MT767 COV for amendment of bank guarantee.
- iii. Issuing bank shall mention CWC beneficiary code i.e. CENTRALW27112020 in field 7037 of MT760 COV / MT767 COV.
- iv. Issuing bank shall mention “CENTRAL WAREHOUSING CORPORATION ” in field 7034 of MT760 COV / MT767
- v. The bidder shall submit the copy of SFMS message as sent by the issuing bank branch along with the original Bank Guarantee.
- vi. **Bank Guarantee submitted without these details shall not be accepted**

BANK GUARANTEE

(To be submitted on non-judicial stamp paper of appropriate value purchased in the name of the issuing Bank.)

This Deed of Guarantee made on _____ (Date of issuance of BG) between _____ (Name of Bank) having its registered office at _____ (Address of Registered Office/ Corporate Office) and one of its local offices at _____ (Address of the BG issuing office) (hereinafter referred to as the “**Surety**”), in favour of Central Warehousing CWC, a statutory CWC established under the Central Warehousing CWC Act, 1962, having its registered head office at 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110026 (herein after referred to as “**CWC**”).

WHEREAS M/s _____ (Name of successful bidder is to be inserted) (hereinafter referred to as “**Supplier**”) having its registered office at _____ (Address of the bidder is to be inserted) is bound to furnish Performance Guarantee in the form of Bank Guarantee with CWC in connection with the award of work for _____ (Name of work to be inserted) through LOA/ WO/PO dated: - _____ (Date of LOA/ WO/ PO, GeM contract order is to be inserted)

WHEREAS the Supplier as per conditions of the Contract has agreed to furnish a Bank Guarantee for Rs. _____.

NOW THIS WITNESSETH:

Appendix-III: Tender Forms & Exhibits:

1. That the Surety in consideration of the above Tender made by the Bidder to CWC hereby undertakes to pay on demand by CWC and without demur and without notice to the Supplier, the said amount of Rs. _____ (Rupees _____).
2. The Surety agrees that CWC, at its option, shall be entitled to enforce this bank guarantee against the Surety as a principal debtor, in the first instance, without proceeding against the Supplier and notwithstanding any security of other guarantee that CWC may have in relation to the Supplier's liabilities.
3. The Surety guarantee and undertake to pay to CWC within two (2) business days after receipt by CWC, of a demand complying with the requirements of this bank guarantee on first demand in writing any / all moneys to the extent of INR _____ (in words) without any demur, reservation, recourse, contest or protest and without any reference to the Supplier. Any such demand made by Company on the Bank by serving a written notice, shall be conclusive and binding, without any proof whatsoever, as regards to the amount due and payable, notwithstanding any dispute (s) pending before any court, tribunal, arbitrator or any other authority and / or any other matter or thing whatsoever, as Bank's liability under these presents being absolute and unequivocal.
4. For the purposes of Clause 3 above, "business day" means a day on which commercial banks are open for business in _____[mention city of the bank branch].
5. This bank guarantee shall not be determined, discharged or affected by the liquidation, winding up, dissolution or insolvency of the Supplier and shall remain valid, binding and operative against the Surety. The bank guarantee shall not be discharged by any change in Surety's constitution, constitution of CWC or that of the Supplier or change in appropriate laws.
6. The Surety agrees that CWC shall have the fullest liberty without the Surety's consent and without affecting in any manner, Surety's obligations hereunder to vary any of the terms and Conditions of Contract or to extend time for performance of the Contract by the said Supplier and to enforce, or to forbear to enforce any of the terms and conditions relating to the Contract and the Surety shall not be relieved from its liability by reason of any such variation, or extension being granted to the Supplier or any forbearance, act or omission on the part of CWC or any indulgence shown by CWC to the Supplier or any such matter or thing whatsoever which under the Applicable Laws may, but for this provision, have effect of relieving the Bank.
7. The Surety hereby agree and acknowledge that this guarantee is irrevocable and shall remain in full force till it is fully and finally discharged by CWC in writing or _____ [insert claim expiry date date] whichever is earlier, and all dues of CWC under or by virtue of the Contract have been fully paid and all its claims satisfied or discharged.
8. The Bank also agrees that this bank guarantee shall be governed and construed in accordance with Indian laws and subject to the exclusive jurisdiction of Courts at New Delhi.
9. All charges, fees, commission and other costs shall be to the account of the Supplier. Failure of the Supplier to make such payments shall not in any way affect the Surety's obligation under this bank guarantee and CWC shall be paid the money due to it under this bank guarantee without any deduction.
10. The Surety confirms that this bank guarantee has been issued with observance of appropriate laws of India.
- 11. Notwithstanding anything contained hereinabove:**
 - (i) Surety's liability under this bank guarantee is limited to INR _____ (in words) and Bank's guarantee shall remain in force until _____[insert BG expiry date].

Appendix-III: Tender Forms & Exhibits:

(ii) Any claim under this bank guarantee must be received by Surety on/ or before _____[insert claim expiry date]. If no such claim has been received by us by the said date, the right of CWC under this bank guarantee will cease.

(iii) Any letter from the CWC to the Manager _____(Insert Branch name) branch of the Surety, under the seal of CWC shall be deemed to be sufficient and valid demand for payment under this bank guarantee.

(iv) The Bank undertakes not to revoke this bank guarantee before the expiry of this bank guarantee including during extension period, if any.

Cover message for this Bank Guarantee has been sent to CWC bankers i. e. ICICI Bank, 9 Phelps Building, Connaught Place, New Delhi, (IFSC Code: ICIC0000007) through Structured Financial Messaging System (SFMS).

In witness whereof, the Surety through its authorized officer has set its hand and stamp on this [insert date] day of [insert month], [insert year] at [insert place of execution].

(Signature)

(Signature)

Full name and official address
with bank stamp

Full name and official address
with bank stamp

Attorney as per power of
Attorney No.....

Dated

WITNESS No. 1

WITNESS No. 2

APPENDIX-IV: Instructions to Bidders (ITB)

1. The Tender Document

1.1. Basic Tender Details

This Tender Document details the terms and conditions for entering into a contract for execution and completion of work as per Scope of Works etc briefly mentioned in NIT (TIS) and covered in detail by Schedule A (price schedule), along with General Conditions of contract (GCC), Special conditions of contract (SCC) and technical specifications of works. (TS).

Bidders must go through the Complete Tender Document for further details.

‘Tender Information Summary’ (TIS) is appended at APPENDIX -I of Notice Inviting Tender (NIT) for ready reference.

1.2. Interpretations, Definitions, Abbreviations and Document Conventions

Details Tenets of interpretation, Definitions, Document conventions and Abbreviations, mentioned in this section shall also apply to the rest of the Tender Document.

1.3. Overview of Contents

- 1) The Sections, Forms, Annexures, Appendix and Formats etc comprising this Tender Document are described in ITB-clauses 1.4.
The BOQ file (Price schedule) C Tender Drawings are separately available on the eProcurement Portal and is also part of this Tender Document.
Any generic reference to Tender Document shall also imply a reference to any/ all the sections, Forms, Formats and the BOQ file or other files that comprise this Tender Document.
- 2) Bidder must submit the bid in the Forms/ Formats mentioned in under ITB clause 1.4 below. The documents as mentioned in other sections under ITB-clause 1.4 below need not be signed or returned by the bidders; however, Bidder must declare in his affidavit as per format enclosed in EXHIBIT-I of APPENDIX III of NIT (PQ Performa), that he has read, understood, complied, and stands bound by all requirements of the tender document:

1.4. Sections of the Tender Document

1.4.1 Sections of the Tender Document

The Tender Document contains the following sections mentioned in four different volumes, which are described in subsequent sub-clauses:

Volume I:

- i. E -Tender Notice.
- ii. Notice Inviting Tender (NIT) and its Appendixes:
 - a) APPENDIX-I: Tender Information Summary (TIS)
 - b) APPENDIX-II: Qualification Norms
 - c) APPENDIX-III: Tender Forms C EXHIBITs to be filled C submitted by bidder in his Technical Bid.
 - d) APPENDIX-IV: Instructions to Bidders (ITB)

Volume II-

- iii. Section I: General Conditions of Contract (GCC)
- iv. Section II: Model rules for the protection of health and sanitary arrangements for workers
- v. Section III Contractor's Labour Regulations

Volume III-

- vi. Section I: Technical Specifications of Works
- vii. Section II: Work Registers and testing proformas
- viii. Section III: Field quality plan (list C proforma of mandatory tests)

Volume IV-

- ix. Price Schedules-Sub-Schedules

Volume V-

- x. Tender Drawings etc.

1.4.2 Notice Inviting Tender (NIT) and its Appendix-I: Tender Information Summary (TIS)

Notice Inviting Tender (NIT) and its Appendix I- Tender Information Summary (TIS) provides a synopsis of information relevant for a Bidder to decide on participating in the Tender.

Any generic reference to NIT shall also imply a reference to TIS as well.

1.4.3 Appendix-II, III s IV of NIT: Qualification norms for tender; Tender Forms and Exhibits etc. s Instructions to Bidders (ITB).

Appendix-II “Prequalification Criteria (PQC) for tender” and Appendix-IV “Instructions to Bidders” - ITB provide the relevant information as well as instructions to assist the prospective Bidders in preparation and submission of Bids. It also includes the mode and procedure adopted for receipt/ opening, scrutiny/ evaluation of Bids, and contract award and qualification norms of Tender.

Appendix-III: Tender forms C Exhibits are the important document of the technical bid which any Bidder is required to fill, sign and submit along with his Technical Bids. The information provided by bidders through these documents shall be used to evaluate the eligibility of Bidder for Qualification for Tender.

Any generic reference to ITB shall also imply a reference to NIT as well.

1.4.4 Appendix-V: Special Conditions of Contract (SCC),

Special Conditions of Contract (SCC) appended in Appendix-V of NIT describe the conditions that shall govern the resulting contract. These are the Project specific Conditions prevailing over those described in the GCC in case of any contradiction between two. Any generic reference to SCC shall also imply a reference to GCC as well.

1.4.5 Section I of Volume II: General Conditions of Contract (GCC) and Section I of Volume III: Technical Specifications of Work

Section I - (General Conditions of Contract (GCC)) in volume II describe the important standard conditions that shall govern the resulting contract. Any generic reference to GCC shall also imply a reference to SCC as well.

Section I - Technical Specifications of Work in volume III describe the technical procedures, specifications and measures to be followed for the works under the resulting Contract. These are the Technical Conditions of Contract as well and In case of a conflict, provisions of these conditions shall prevail over those in the SCC/GCC. Any generic reference to TCC shall also imply a reference to SCC/GCC as well.

1.4.6 Section II s Section III of Volume II and Volume III:

These sections under Volume II describe various Model rules, regulations towards health, safety, Labor laws, and provide formats of various Documents /Information Site Registers etc to be maintained at site related with General Conditions of Contract.

The Section II and III under Volume III describe the detailed Testing procedure, Field

quality plans and formats of technical documents and register etc which needs to be followed at Construction Site during the Contract period.

1.4.7 Volume IV: Price Schedule and sub schedules:

This section (in separate volume IV) describes the item of works to be executed for completing the work as per scope, its technical description, the tentative quantities and rates. Bidder is required to quote their rates in various sub schedules of Price schedule -A for all items of work contained therein.

1.4.8 Volume V: Tender drawings.

The tender drawings for relevant information towards work sites, Layout, construction, as available with procuring entity are uploaded in this section. Drawings good for construction shall be released separately at the time of execution of work if specifically mentioned in this section.

2. Procuring Entity - Rights and Disclaimers

2.1. The Procuring Entity

Central Warehousing Corporation, having its corporate office at New Delhi also called (CWC) is the Procuring Entity and Bids are to be addressed to the Central Warehousing Corporation through the officer designated as Tender Inviting Authority as mentioned in NIT (TIS). He shall be authorized to clarify this Tender Document if required by Bidder as per procedure described in ITB.

Sr. Manager/Deputy General Manager/General Manager/Sr. General Manager / Director/ Managing Director/Executive Committee/CWC Board shall be the Tender Accepting Authority based on financials ie Estimated cost of work as per Prevailing Delegation of Power (DOP) in the Corporation.

The Authority who has invited the tender shall place the letter of award after obtaining the approval of Tender Acceptance from Competent Authority as per DOP.

The Officer designated as Engineer in charge in NIT (TIS) shall discharge designated functions during the contract execution through his authorized representative and Team.

The Engineer in charge shall enter into a contract agreement with the successful bidder after following due procedures described in the ITB.

2.2. Right to Intellectual Property and confidentiality:

- 1) The Tender Document and associated correspondence are subject to copyright laws and shall always remain the property of the Procuring Entity and must not be shared with third parties or reproduced, whether in whole or part, without the Procuring Entity's prior written consent.
-

- 2) However, Bidders may share these to prepare and submit its bid with its employees, subcontractor(s), or holding Company. Bidders shall obtain from them an undertaking of confidentiality similar to that imposed on Bidder under this clause.
- 3) This condition shall also apply to bidders who do not submit a bid after downloading it or who are not awarded a contract in the process.
- 4) The obligation of the Bidders under sub-clauses above, however, shall not apply to information that:
 - a) now or hereafter is or enters the public domain through no fault of Bidder.
 - b) is legally possessed by Bidder at the relevant time and was not previously obtained, directly or indirectly, from the Procuring Entity; or
 - c) otherwise lawfully becomes available to Bidder from a third party that has no obligation of confidentiality.
- 5) The provisions of this clause shall survive completion or termination for whatever reason of the Tender Process or the contract.

2.3. Right to Reject any or all Bids

The Procuring Entity reserves its right to accept or reject any or all Bids, abandon/ cancel the Tender process, and issue another tender for the same or similar at any time before the award of the contract. It would have no liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for such action(s).

The Competent Authority, on behalf of The Procuring Entity, does not bind himself to accept the lowest or any other offer and reserves himself the authority to reject any or all the tenders received without assignment of any reason.

The Competent Authority on behalf of The Procuring Entity does not bind himself to accept the lowest tender and reserves to himself the right to accept the whole or any part of the tender and the Bidder shall be bound to perform the same at the rate quoted.

2.4. Disclaimers

2.4.1 Regarding Purpose of the Tender Document

The Tender Document is neither an agreement nor an offer to prospective Bidder(s) or any other party hereunder. The purpose of the Tender Document is to provide the Bidder(s) with information to assist them in participating in this Tender Process.

2.4.2 Regarding Documents/ guidelines

The Tender Document, ensuing communications, and Contracts shall determine the legal and commercial relationship between the bidders/ contractors and the Procuring Entity. No other Government or Procuring Entity's document/ guidelines/

Manuals including its Procurement Manual (for internal and official use of its officers), notwithstanding any mention thereof in the Tender Document, shall have any locus-standi in such a relationship. Therefore, such documents/ guidelines/ Manuals shall not be admissible in any legal or dispute resolution or grievance redressal proceedings.

2.4.3 Regarding Information Provided

The information contained in the Tender Document or subsequently provided to the Bidder(s) is on the terms and conditions set out in the Tender Document or subject to which that was provided. Similar terms apply to information provided verbally or in documentary or any other form, directly or indirectly, by the Procuring Entity or any of its employees or associated agencies.

2.4.4 Regarding Tender Document:

- 1) The Tender Document does not purport to contain all the information Bidder(s) may require. It may not address the needs of all Bidders. They should conduct due diligence, investigation, and analysis, check the information's accuracy, reliability, and completeness, and obtain independent advice from appropriate sources. Information provided in the Tender Document to the Bidder(s) is on a wide range of matters, some of which may depend upon interpreting the law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Procuring Entity, its employees and other associated agencies accept no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.
- 2) The Procuring Entity, its employees and other associated agencies make no representation or warranty for the accuracy, adequacy, correctness, completeness or reliability, assessment, assumption, statement, or information in the Tender Document. They have no legal liability, whether resulting from negligence or otherwise, for any loss, damages, cost, or expense that may arise from/ incurred/ suffered howsoever caused to any person, including any Bidder, on such account.

3. Bidders - Eligibility and Preferential Policies

3.1. Bidders

Subject to provisions in the following clauses in this section and provisions in Tender Document, this invitation for Bids is open to all bidders who fulfil the 'Eligibility Criteria' stipulated in the Tender Document.

3.1.1 Sub-Contractors

Subject to the restrictions outlined in this Tender Document, any Bidder may propose to sub-contract a part of the contract for specialized items of services, provided that the names and details of the sub-contracts are clearly stated in the bid submitted by Bidder and provided further that such sub-contractor should not circumvent the eligibility condition laid down below. Procurement of material, hire of equipment or engagement of labour shall not be considered as sub-contracting. Despite any approval granted by the Procuring Entity for such arrangements, the Bidder/ Contractor shall be solely and directly responsible for executing sub-contracted portions of the contract.

Sub-contracting by the contractor without the approval of the Procuring Entity shall be a breach of contract.

The Bidder, apart from being a contractor of an appropriate class, may associate himself with agencies of the other appropriate class which are eligible to tender for (i) Electrical, (ii) Sanitary and Water Supply Installation, (iii) Fire safety installation works, (iv) Horticulture and others specialized works, (v) PEB supply C erection or any other specialized works if any in the scope.

3.2. Eligibility Criteria for Participation in this Tender

Subject to provisions in this Tender Document, participation in this Tender Process is open to all bidders who fulfil the 'Eligibility' and 'Qualification criteria. The bidder should meet (as on the date of his bid submission and should continue to meet till the award of the contract) the 'Eligibility Criteria' detailed herein. Bidder shall submit a declaration about the 'Eligibility Criteria' compliance in Eligibility Declarations along with their PQ forms.

ELIGIBILITY CRITERIA: Contractor who fulfils the following requirements shall only be eligible to quote the rates.

- 1) Submit a responsive technical bid comprising Mandatory documents (towards proof of qualification as well) and other documents as prescribed herein.
 - a) Mandatory submission of Following mandatory documents.
For detailed provisions of these criteria including qualifying norms, Forms, documents and Exhibits to be submitted, the Bidder shall refer Appendix I (TIS) and Appendix-II and Appendix III of NIT.

Unless specifically mentioned in Appendix II of NIT, the following documents shall be mandatorily required.

- I. EMD, Cost of Tender C Tender Processing Fees as per TIS.
 - II. Prequalification Performa along with Affidavit for Compliance/declaration by Bidder (EXHIBIT-1)
 - III. Technical Experience as required in NIT Appendix II
-

Appendix-IV: Instructions to Bidders (ITB)

- IV. Financial Capabilities and Turnover as required in NIT Appendix II
- V. Available Bid Capacity as and when required in NIT Appendix II
- VI. Personnel & Equipment Capabilities as and when required in NIT Appendix II
- VII. Duly Signed Integrity Pact as and when required in NIT (TIS).

b) Submission of other Documents:

In addition to the above-mentioned documents, the bidder, unless specifically mentioned in NIT **Appendix II**, shall also submit the following other documents.

- 1) GST Registration: Contractor must have valid GST Registration Certificate from the concerned authority (as applicable) and copy to be enclosed with the tender.
- 2) PAN Card: Bidder must enclose a copy of PAN Card along with the tender.
- 3) PF Registration: Bidders must have a valid PF Registration Certificate from the concerned authority and copy to be enclosed with the tender.
- 4) Organization Details:
 - i. In case the Bidder is a Proprietorship Firm, they will submit an affidavit as per EXHIBIT-II of APPENDIX-III.
 - ii. In case the Bidder is a Partnership Firm, a certified copy of the partnership deed shall be submitted by the Bidder.
 - iii. In case the Bidder is a Company (whether Private or Public), a certified copy of the Certificate of Incorporation together with Memorandum and Article of Association /Certificate of Registration with Registrars of Company (ROC) as applicable shall be submitted by the Bidder.
- 5) The Bidder shall submit a Power of Attorney* in favor of signatory(ies) duly attested by the Notary as per ANNEXURE III. This format is for guidance only and deviation in the wording can be accepted.

***Power of Attorney:** Notwithstanding anything contained in the Clause above, the Bidder shall execute the Power of Attorney (POA) in prescribed format as mentioned in EXHIBIT-III of Appendix III and shall conform to the following -

- a) A company, while executing Power of Attorney must make conformity with the Board Resolution and the charter documents giving the power to issue the said Power of Attorney including further sub-delegation of the same by the said POA holder only.
 - b) Unless notified in writing to the Tendering Authority, the Authority shall recognize only that POA holder for the purposes of tender submission and matters related thereto whose notice and necessary POA
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Appendix-IV: Instructions to Bidders (ITB)

document was submitted to the Authority at the time of tender submission.

- c) While for a Partnership Firm, either all the partners of the partnership firm shall execute and confirm the Power of Attorney if executed or there shall exist a Power of Attorney in favour of the Partners executing the Power of Attorney for the delegation of power on behalf of the Bidder.
 - d) The Power of Attorney being executed by the Bidder herein shall be executed in favour of only its Partner or Director or Salaried employee. And in case the POA is being executed by the Bidder in favour of its salaried employee, the said employee should have worked for at least more than one year continuously with the Bidder and the Bidder upon enquiry by Corporation should furnish the following:
 - i. Name
 - ii. Designation
 - iii. Mobile / Contact no.
 - iv. Employment Letter / Agreement issued by the Firm
 - v. Identity Card with number, issued by the Firm
 - vi. Information about the wages paid, i.e. Salary Slips
 - vii. Form-16
 - viii. PAN Card
 - ix. PF Number
 - x. Power of Attorney as per EXHIBIT III of Appendix III
 - e) CWC will not be bound by the Power of Attorney furnished by the Bidder and acceptance of the same shall be at the sole discretion of the CWC.
 - f) There can validly exist only a single Power of Attorney at any given time. The Power of Attorney executed and accepted by CWC shall stand revoked on issuance of any new Power of Attorney issued within the rules herein, with regard to this particular Project.
 - g) During the subsistence of contract, if Power of Attorney holder is found to be creating mischief or involved in any illegal or unlawful activity, CWC will at its sole discretion reject the Power of Attorney of such person submitted by the Bidder and the Bidder would be required to issue a fresh Power of Attorney within the rules herein in favour of authorized person, stated above, within a period of 10 days of being so notified.
 - h) The CWC will not be bound by any power of attorney granted by the Bidder or by change in the composition of the Firm and subsequent to the execution of the contract. It may, however, recognize such Power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.
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- 2) The contractor shall not be permitted to tender for works in the Central Warehousing Corporation in which his near relative (defined as first blood relations, and their spouses, of the bidder or the bidder's spouse) is posted as Accounts Officer at any rank or as any Engineering officer in any capacity between the grade of Sr.General Manager (Engineering) and Assistant Manager (Engineering) (both inclusive) or any other officer involved in decision making of procurement of this tender.

He , in the EXHIBIT-IV of Appendix III , shall also intimate in his technical bid , the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any officer in the Central Warehousing Corporation or in the Ministry of Consumer Affairs, Food C Public Distribution, Govt. of India, New Delhi, FCI. The Corporation reserves the right to debar the Bidder from participating in future bidding processes of the Corporation for a minimum period of Two years, which may be further extended at the discretion of the Corporation for any breach of this condition.

- 3) No officer of the Corporation is allowed to work as a contractor and also an employee of contractor for a period of Two year after his retirement from Corporation service, without the previous permission of the Central Warehousing Corporation in writing.

The bidder must not have in his employment: Without Government permission, any person who retired as gazette officer within the last two years of the rank and from the administrative ministry or FCI or without CWC permission for employees retired from CWC.

This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who has not obtained the permission of the Central Warehousing Corporation as aforesaid before submission of the tender or engagement in the contractor's service.

- 4) A firm that has been engaged to provide consultancy services for the preparation or implementation of this project, and any of its affiliates (associates, subsidiary, JV partner), shall not be eligible for subsequently providing goods or works (other than a continuation of the firm's earlier consultancy services) for this project.

3.3. Eligibility of bidders from specified countries

Orders issued by the Government of India restricting procurement from bidders from certain countries that share a land border with India shall apply to this procurement.

- xi. Any bidder (as defined in GCC) from a country that shares a land border with India¹, excluding countries as listed on the website of the Ministry of External

¹<https://mea.gov.in/india-and-neighbours.htm>

Affairs², to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects - hereinafter called 'Restricted Countries') shall be eligible to bid in this tender only if Bidder is registered³ with the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). Bidders shall enclose the certificate in this regard.

- xii. In Bids for Turnkey contracts, including Works contracts, the successful bidder shall not be allowed to sub-contract works to any contractor from such Restricted Countries unless such contractor is similarly registered. In such cases, the bidders shall enclose the certificate in this regard.
- xiii. If Bidder has proposed to sub-contract Services or incidental Goods directly/ indirectly from the vendors from such countries, such vendor shall be required to be registered with the Competent Authority. However, if Bidder procures raw material, components, and sub-assemblies from such countries' vendors, such vendors shall not require registration.
- xiv. "Bidder from such Restricted Countries" means: -
 - a) An entity incorporated, established, or registered in such a country; or
 - b) A subsidiary of an entity incorporated, established, or registered in such a country; or
 - c) An entity substantially controlled through entities incorporated, established, or registered in such a country; or
 - d) An entity whose beneficial owner is situated in such a country; or
 - e) An Indian (or other) agent of such an entity; or
 - f) A natural person who is a citizen of such a country; or
 - g) A consortium/ joint venture where any member falls under any of the above
- xv. The beneficial owner shall mean:
 - a) In a company or Limited Liability Partnership, the beneficial owner is the natural person(s). Whether acting alone or together or through one or more juridical persons, controlling ownership interest or exercises control through other means.

Explanation-

- i) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of the company's shares or capital or profits.
- ii) "Control" shall include the right to appoint a majority of the directors or to control the management or policy decisions including by virtue of their

²<http://meadashboard.gov.in/indicators/92>

³<https://dipp.gov.in/sites/default/files/Revised-Application-Format-for-Registration-of-Bidders-15Oct2020.pdf>

shareholding or management rights or shareholder agreements or voting agreements.

- b) In the case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together or through one or more juridical persons, has ownership of entitlement to more than fifteen percent of capital or profits.
- c) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals.
- d) Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official.
- e) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

3.4. Conflict of Interest

Any bidder having a conflict of interest, which substantially affects fair competition, shall not be eligible to bid in this tender. Bids found to have a conflict of interest shall be rejected as non-responsive. Bidder shall be required to declare the absence of such conflict of interest towards Eligibility Declarations along with PQ forms. A bidder in this Tender Process shall be considered to have a conflict of interest if the bidder:

- 1) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
- 2) receives or have received any direct or indirect subsidy/ financial stake from another bidder; or
- 3) has the same legal representative/ agent as another bidder for purposes of this bid. A Principal can authorise only one agent, and an agent also should not represent or quote on behalf of more than one Principals. However, this shall not debar more than one Authorised distributor from quoting equipment manufactured by an Original Equipment Manufacturer (OEM), in procurements under Proprietary Article Certificate; or
- 4) has a relationship with another bidder, directly or through common third parties, that puts it in a position to have access to information about or influence the bid of another Bidder or influence the decisions of the Procuring Entity regarding this Tender process; or

- 5) participates in more than one bid in this tender process. Participation in any capacity by a Bidder (including the participation of a Bidder as sub-contractor in another bid or vice-versa) in more than one bid shall result in the disqualification of all bids in which he is a party. However, this does not limit the participation of a non-bidder firm as a sub-contractor in more than one bid; or
- 6) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services that it provided (or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm), for the procurement planning (inter-alia preparation of feasibility/ cost estimates/ Detailed Project Report (DPR), design/ technical specifications, terms of reference (ToR)/ Activity Schedule/ schedule of requirements or the Tender Document etc) of this Tender process; or
- 7) has a close business or family relationship with a staff of the CORPORATION who:
(i) are directly or indirectly involved in the preparation of the Tender document or specifications of the Tender Process, and/or the evaluation of bids; or (ii) would be involved in the implementation or supervision of resulting Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Corporation throughout the Tender process and execution of the Contract.

4. The Schedule of Requirements and Form of Contract

4.1. Eligible Supply of Goods and Services -Origin and Minimum Local Content

Unless otherwise stipulated in the Tender Document, all Works, 'Services' and incidental 'Goods and Works' to be delivered under the contract must conform to

- i) Restrictions on certain countries with land-borders with India.
- ii) Minimum local content (Make in India Policy).

4.2. Quotation for All Schedules and all Services

Unless otherwise stipulated in the Tender Document, Bidder must quote for all the sub schedules (and all the Services and item of works in a Sub Schedule) in the Price Schedule- that is Schedule A of Tender document; otherwise, his bid would be rejected as nonresponsive.

4.3. Facilities to be Provided by the CORPORATION (Procuring Entity)

- i. Unless otherwise stipulated in the various clauses of General/Special/Technical Conditions of Contract, no Facilities (including Reference Documents, Medical facilities, Rooms, Furniture, Transport, Access to IT Services etc.) shall be provided by the Procuring Entity to Contractor at Site.
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- ii. Unless otherwise stipulated in the Contract conditions, The Procuring Entity may supply without any obligation to do so, to the contractor part or whole of the quantity of the water and electricity required for the delivery of Services/ completion of work from the Procuring Entity's existing water/ electricity supply system at or near the site on chargeable basis Services as per specified terms and conditions in GCC/SCC, provided that the contractor shall arrange, at his own expense, to effect the connections and lay additional pipe/ power lines and accessories on the site. Nevertheless, it shall be the responsibility of the contractor to install adequate alternative arrangements to tide over outages in utilities or failure in supply by the Procuring Entity, and that the contractor shall not be entitled to any compensation- nor shall this be a reason for the delay in delivery of Services.
- iii. Unless exclusively stipulated in the NIT (TIS) 'Schedule B' / 'Schedule C' or 'Schedule' D', The Procuring Entity will not provide any TCP, Construction material, Consumable, Labour either free of cost or chargeable basis for completion of work under this contract.
- iv. Good for construction drawings and technical specifications / documents pertaining to the works will be provided by the procuring entity. The tender drawings and specifications if not enclosed with tender are open for inspection by the Bidders in the office of the Sr. General Manager/Sr, Manager (CWC) from where the Tender is invited.

4.4. Completion Time and Contract Period

Time is the essence of the contract.

The work shall be required to be completed within stipulated time period and up to the date mentioned in letter of Acceptance (LOA): The stipulated period of completion shall be that as mentioned in TIS (appendix to NIT) and shall be in 'N' months to be reckoned from the N'th day from date of issue of Letter of Acceptance as mentioned in NIT (TIS).

5. Bid Prices, Taxes and Duties

5.1. Prices

5.1.1 Competitive and Independent Prices

- a) The prices should be arrived at independently, without restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to:
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- i) those prices; or
 - ii) the intention to submit an offer; or
 - iii) the methods or factors used to calculate the prices offered.
- b) The prices should neither be nor shall be knowingly disclosed by the Bidder, directly or indirectly, to any other bidder or competitor before bid opening or contract award unless otherwise required by law.

5.1.2 Undue profiteering

- 1) **Controlled Price, if any:** The price quoted by Bidder shall not be higher than the controlled price fixed by law for any of the Services covered under contract, if any, or where there is no controlled price, it shall not exceed the prices or contravene the norms for fixation of prices if any, laid down by Government or where the Government has fixed no such prices or norms, it shall not exceed the price appearing in any agreement, if any, relating to price regulation by any industry.
- 2) **Undue profiteering:** If the price quoted is higher than the controlled price in the sub-clause above, Bidder shall specifically mention this fact in his bid giving reasons for quoting a higher price(s). If he fails to do so or makes any misstatement, it shall be lawful for the Procuring Entity either to revise the price at any stage to bring it in conformity with the sub-clause (1) above or to terminate the contract for default as per the contract and avail all the remedies available therein in addition to other punitive actions for violation of Code of Integrity.

5.1.3 Price Components

- 1) The prices quoted by Bidder shall include all cost towards satisfactorily completion of works as per technical specification, including cost of material, labor, Tools and Plants, Consumables, Sundries, site establishment, overhead, Contractor Profit, Water, Electricity charges, cost of incidental goods & services, cost towards testing and measurement and Taxes as applicable and covering complete scope as detailed in General /Special/technical Conditions of Contract.
 - 2) The Prices quoted by the bidders shall be inclusive of GST and all applicable taxes, Building and Other Construction Workers Welfare Cess (As applicable), Levies, Duties on materials or services and on complete works in respect of this contract.
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- 3) The quoted price shall be considered to include all relevant financial implications, including inter-alia the scope of the Services to be delivered and the incidental goods/ works to be supplied, location of the bidder, site(s) of the delivery of Services, terms of delivery, extant rules and regulations relating to taxes, duties, customs, transportation, environment, labour, cost of watch and ward of bidder's material through private security, Mining C Forest etc in India as applicable and covering complete scope as detailed in General /Special/Technical Conditions of Contract.

Central Warehousing Corporation will not entertain any claim whatsoever in this respect.

5.1.4 Price Schedule

- i. Bidders are to upload only the BOQ downloaded from CWC tender portal and Price sub schedules (in excel format) after entering the relevant fields without any alteration/ deletion/ modification of other portions of the excel sheet. All the columns shown in the price schedules should be filled up as required. If any column does not apply to a Bidder, he should clarify the same.
- ii. Bidders shall fill in their rates other than zero value in the specified cells without keeping it blank.
- iii. The Bidder shall quote the rate on-line in prescribed proforma, available with the tender in Excel format only and sign the same digitally.

5.1.5 Provisions of BOCW CESS, EPF, Income Tax, GST etc.

- 1) Contractor is required to get himself registered as per Building C Other Construction Workers Cess Act 1996, PF Registration, GST etc. as per Govt. of India law.
 - 2) The Bidder shall be required to pay CESS @ 1% of cost of construction work, or at the rate as mentioned in latest act/rules or guidelines of Government, in accordance with each bill payable on account of such construction to the concerned State Govt. (Labour Deptt.).
The cost of material shall be outside the purview of CESS, when supplied under a separate schedule item. CWC shall not entertain any claim whatsoever in this respect.
 - 3) Under Income Tax Act, 1961; a deduction for income tax along with surcharge, as applicable, will be made from sums paid on account and final payments for carrying out the work under this contract.
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5.1.6 Currencies of Bid and Payment

Unless otherwise stipulated in the Tender Document, the currency of bid and payment shall be quoted by Bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees only.

5.1.7 Non-compliance

Tenders, where prices are quoted in any other way, shall be rejected as non-responsive.

5.2. Price Variation

Unless specifically mentioned in Various clauses of General/Special conditions of Contract, The Price quoted by the bidder and accepted by CWC, shall remain firm during the currency of contract including the extended period, if any extended due to any reason attributable to either CWC or Contractor or Force majeure.

No claim whatsoever shall lie against the Corporation on account of any variation, escalation etc. in the rates in the market during contract. However, the rates for payment upon variation due to deviation (increase) in quantity and/or due to execution of extra item/ altered items shall be governed as per relevant General C Special conditions of contract.

5.3. Goods and Services Tax (GST)

5.3.1 GST Registration Status:

- 1) All the Bidders should ensure that they are GST compliant and their quoted tax structure/ rates as per GST Act/ Rules. Bidder should be registered under GST and furnish GSTIN number and GST Registration Certificate in their offer unless they are specifically exempted from registration under specific notification/ circular/ section/ rule issued by statutory authorities.
- 2) **GST Registration Number (15-digit GSTIN).** If the bidder has multiple business verticals in a state and has separate registration for each vertical, the GSTIN of each vertical is concerned with the delivery of Services involved, as per the Schedule of Requirements and Price Schedule's scope be quoted. If the services provided are from multiple states, the bidder should mention GST registration numbers for each state separately.
- 3) **Composition scheme:** If the Bidder has opted for a composition levy under Section 10 of CGST, he should declare the fact while bidding along with GSTIN and GST registration certificate.
- 4) **Exemption from Registration:** If a bidder is not liable to take GST registration, i.e., having turnover below threshold, he shall submit undertaking/ indemnification against tax liability. Bidder claiming exemption in this respect shall submit a valid

certificate from practising Chartered Accountant (CA)/ Cost Accountant with Unique Document Identification Number (UDIN) to the effect that Bidder fulfils all conditions prescribed in notification exempting him from registration. Such bidder/ dealer shall not charge any GST and/ or GST Cess in the bill/ invoice. In such case, applicable GST shall be deposited under Reverse Charge Mechanism (RCM) or otherwise as per GST Act by the Procuring Entity directly to concerned authorities. Bidder should note that his offer would be loaded with the payable GST under the RCM. Further, Bidder should notify and submit to the Procuring Entity within 15 days from the date of becoming liable to registration under GST.

- 5) The Procuring Entity's state-wise GSTINs is indicated in TIS

5.3.2 HSN Code and GST Rate:

- 1) It shall be the responsibility of Bidder to ensure that they quote for the exact HSN Code and including corresponding correct GST rate for each activity of the Services / works being offered by them.
- 2) **Applicability to Imported Goods/ Services:** Following the implementation of GST, the import of commodities shall not be subject to such erstwhile applicable duties likes safeguard duty, education cess, basic customs duty, anti-dumping duty, etc. All these supplementary custom duties are subsumed under GST. The supply of commodities or services or both, if imported into India, shall be considered as supply under inter-state commerce/ trade and shall attract integrated tax (IGST). The IGST rate and GST cess shall be applicable on the 'Custom Assessable Value' plus the 'Basic Customs duty applicable thereon'.

5.4. Payments

5.4.1 General

Periodic "On Account" payments and final Payment shall be made as per the procedure laid down in GCC/SCC only upon raise of valid invoice through BTS portal "Bill tracking system portal "of CWC after submission of complete E -MB (computerized Measurement Book) by Contractor and Acceptance of E MB by CWC on "ERP based CMS" of CWC.

- a) Central Warehousing Corporation (CWC) in its endeavor to achieve Zero Paper Usage (ZPU) and to ensure timely payment to the Contractors/vendors/ suppliers, has mandated the usage of BTS to submit the digitally signed invoices/ bills and supporting documents, if any, against the supply of goods/ services/ works etc. The ink signed invoices or physical copy of the invoices/ supporting documents shall not be accepted for processing the due payments.
 - b) The Contractors/ vendors/ suppliers shall be required to get themselves registered on the BTS as "vendors" (<https://cwceportal.com/bts/>) upon entering into the
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contract with CWC.

- c) Similarly, for increasing the transparency, expediting the process and achieving the contract management benefits through digital system, CWC has commenced “Contract Management system Portal (CMS)”. All contractors are required to submit their agreements, EMBS and Quality test reports etc. through CMS.
- d) CWC may improve from time to time or incorporate any other improved version or alternate system /Online /digital tool/ERP based system for preparation, submission of MB, Various Documents etc. and Bills/Invoices etc. for improved transparency, easy and efficient in working at any stage of contract and it shall be mandatorily binding and acceptable to Contractor for implementing the same. However, the corporation will arrange to provide needful training to utilize these tools to contractors and their authorized representative upon demand.

5.4.2 No Advance Payments

Unless otherwise stipulated in various General/Special conditions of Contract, no advance payment like Mobilization advance shall be made by the Procuring Entity. The other advances viz secured advances can be made If so, provided for such advances as per conditions stipulated therefore in GCC/SCC.

6. Quantity Variations:

At the time of contract execution, the Procuring Entity reserves the right to increase or decrease the quantity without any change in other terms and conditions of the bid and the Tender Document. The quantum of various works/ services to be performed/ delivered under this contract is liable to variation to any extent and in such cases, the variation in quantity of an individual item is considered unavoidable, then same shall be executed C paid as per detailed provisions contained in relevant Special/General Conditions of Contract.

7. Technical Specifications of Works:

- 1) Unless specifically mentioned in NIT C technical Conditions /Specifications of Contract, the Works in scope will be carried out according to the technical specifications of works mentioned in Schedule ‘A’ (price schedule) and its sub schedules, Technical Conditions of Contract, CPWD Specifications with up-to-date correction slips along with Special C General Conditions of Contract, Technical Specifications and approved Drawings of CWC, issued with this tender document and /OR Good for construction drawings issued at the time of work execution.
- 2) For roads and pavements, MORTH Specifications shall follow when not detailed or available in CPWD specifications.
- 3) MORTH Standard Specification (latest revised edition) for Road and bridge work; along with up-to-date correction slips for roads “C pavements can be obtained from Secretary, Indian Road Congress, Jam Nagar House, New Delhi’s book shop. CPWD’s Specifications C DSR with up-to-date correction slips can be obtained from CPWD office, Nirman Bhawan, New Delhi.

- 4) When particular specifications of a work is not detailed or available in the above-mentioned documents, the work shall be carried out in accordance to relevant BIS (IS) Codes and Code of Practices /Manufacturer Specifications and as per Industry best practices.

8. Downloading the Tender Document; Corrigenda and Clarifications

8.1. Downloading the Tender Document

The Tender Document shall be published and available for download as mentioned in TIS. Bidders can obtain the Tender Document after the date and time of the start of availability till the deadline for availability. If the office happens to be closed on the deadline for the availability of the Tender Document, the deadline shall not be extended. Tender documents should be purchased (at the price mentioned in TIS) by the Bidder who is participating in the tender, i.e., Tender forms should be in the name of bidder, otherwise tender will be summarily rejected.

8.2. Corrigenda/ Addenda to Tender Document

Before the deadline for submitting bids, the Procuring Entity may update, amend, modify, or supplement the information, assessment or assumptions contained in the Tender Document by issuing corrigenda and addenda. The corrigenda and addenda shall be published in the same manner as the original Tender Document. Newspaper press advertisement shall not be issued for the same. Without any liability or obligation, the Portal may send intimation of such corrigenda/ addenda to bidders who have downloaded the document under their login. However, the bidders' responsibility is to check the website(s) for any corrigenda/ addenda. Any corrigendum or addendum thus issued shall be considered a part of the Tender Document. To give reasonable time to the prospective bidders to take such corrigendum/ addendum into account in preparing their bids, the Procuring Entity may also suitably extend the deadline for the bid submission, as necessary. After the procuring entity makes such modifications, any Bidder who has submitted his bid in response to the original invitation shall have the opportunity to either withdraw his bid or re-submit his bid superseding the original bid within the extended time of submission.

8.3. Clarification on the Tender Document or discrepancies in the Document

- 1) A Bidder may seek clarification of the Tender Document from Office/ Contact Person/ e-procurement Help Desk as mentioned in TIS, provided the clarifications are raised before the clarification end date mentioned in TIS. The Procuring Entity shall respond within 7 working days of receipt of such a request for clarification. The query and clarification shall be shared on the portal with all the prospective bidders. Any modification of the Tender Document that may become necessary due to the clarification shall be made by the Procuring Entity through an Addendum/ Corrigendum issue under the sub-clause above.
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- 2) It should be understood that every endeavor has been made to avoid any error which can materially affect the basis of the tender, and the successful Bidder shall take upon himself and provide for the risk of any error which may subsequently be discovered. C shall make no subsequent claim on account thereof.

Should a Bidder find discrepancies or omissions in the drawings or any of the Tender forms or should he be in doubt as to their meaning, he should at once notify, within end date of clarifications as mentioned in NIT (TIS) and should send the same to email id mentioned in NIT (TIS) with copy of to the authority inviting tenders flagging such discrepancy.

G. Pre-bid Conference

- 1) If a Pre-bid conference is stipulated in the TIS, prospective bidders interested in participating in this tender may attend a Pre-bid conference to clarify the techno-commercial conditions of the Tenders at the venue, date and time specified therein. Participation in the Pre-bid conference is restricted to prospective bidders who have downloaded the Tender Document.
- 2) Participation is not mandatory. However, if a bidder chooses not to (or fails to) participate in the Pre-bid conference or does not submit a written query, it shall be assumed that they have no issues regarding the techno-commercial conditions.
- 3) The date and time by which the written queries for the Pre-bid must reach the authority and the last date for registration for participation in the Pre-bid conference are also mentioned in the TIS.
- 4) The pre-bid conference may also be held online at the discretion of the Procuring Entity.
- 5) After the Pre-bid conference, Minutes of the Pre-bid conference shall be published on the Procuring Entity's portal within seven working days from the Pre-bid conference. If required, a clarification letter and corrigendum to Tender Document shall be issued, containing amendments of various provisions of the Tender Document, which shall form part of the Tender Document. The Procuring Entity may suitably extend, as necessary, the deadline for the bid submission to give reasonable time to the prospective bidders to take such clarifications into account in preparing their bids.

10. Preparation of Bids

10.1. The bid

10.1.1 Language of the bid

Unless otherwise stipulated in the ITB, the bid submitted by Bidder and all subsequent correspondence and documents relating to the bid exchanged between Bidder and the Procuring Entity shall be written in English or the Official Language (Hindi). However, the language of any printed literature furnished by Bidder in connection with its bid may be written in any other language provided a

translation accompanies the same in the bid language. For purposes of interpretation of the bid, translation in the language of the bid shall prevail.

10.1.2 Acquaintance with Local Site Conditions and Factors

The Bidder, at his own cost, responsibility, and risk, is encouraged and advised to visit, examine, and familiarize himself with all the site/ local conditions and factors like the nature of ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, availability of Water, electricity, material, TCP , Laboure etc in local , accommodation they may require and in general, themselves to obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. The address of the site (workplace) is mentioned in TIS. The Bidder shall be deemed to have full knowledge of the construction site, Central warehousing complex and working culture, rules etc. prevailing in central warehousing complex, Operation hours, working days etc. and whether he/they inspect it or not and no extra charges consequent to any misunderstanding or otherwise shall be allowed. The Bidder shall be responsible for arranging and maintaining at his own cost all materials, tools and plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for, in the contract documents. The Bidder acknowledges that before the submission of the bid, he has, after a complete and careful examination, made an independent evaluation of the Site/ local conditions, infrastructure, logistics, communications, the legal, environmental, and any other conditions or factors, which would have any effect on the performance of the contract. Bidders shall themselves be responsible for compliance with Rules, Regulations, Laws and Acts in force from time to time at relevant places. On such matters, the Procuring Entity shall have no responsibility and shall not entertain any request from the bidders in these regards. Submission of tender by a Bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plants etc. will be issued (if any) to him by the Corporation and local site conditions and other factors having a bearing on the execution of the work.

10.1.3 Cost of Bidding

The Bidder(s) shall bear all direct or consequential costs, losses and expenditure associated with or relating to the preparation, submission, and subsequent processing of their Bids, including but not limited to preparation, copying, postage, delivery fees, expenses associated with any submission of samples, demonstrations, or presentations which the Procuring Entity may require, or any other costs incurred in connection with or relating to their Bids. All such costs, losses and expenses shall remain with the Bidder(s), and the Procuring Entity shall not be liable in any manner whatsoever for the same or any other costs, losses and expenses incurred by a Bidder(s) for participation in the Tender Process, regardless of the conduct or outcome of the Tender process.

10.1.4 Interpretation of Provisions of the Tender Document

The provisions in the Tender Document must be interpreted in the context in which these appear. Any interpretation of these provisions far removed from such context or other contrived or between-the-lines interpretation is unacceptable.

10.1.5 Quote Quantities/ Prices in both Numerals and Words

Although the software on the Portal may convert quantities/ rates/ amounts in numerical digits in Bids to words, the bidders are advised to ensure that there is no ambiguity in this regard.

10.1.6 Alternate Bids are not Allowed.

Any conditional offers, alternative offers, multiple bids by a bidder shall not be considered. The Portal shall permit only one bid to be uploaded.

10.2. Documents comprising the bid:

10.2.1 Techno-commercial bid/ Cover

"Technical Bid" shall include inter-alia the original or scanned copies of duly signed or digitally signed copies of the following documents in pdf format. Pdf documents should not be protected by passwords. If so, stipulated in TIS/ ITB, specified originals or self-certified copies of originals shall also be required to be physically submitted as per instruction contained therein. No price details should be given or hinted at in the technical bid:

The Bidder shall scan and upload:

- 1) Tender (bid) Form (to serve as covering letter and declarations applicable for both the technical bid and financial bid).

This form shall consist of the:

- a) PQ form.
- b) Affidavit on Eligibility and various Declarations as per format prescribed in NIT.
- c) Deviation Statement from Terms and Conditions of Tender - Any deviations should be listed in a chart form without ambiguity or conditionality, along with justification and supporting documents. All such Statements and Documents shall be uploaded as Form 5. In case of no deviation, it is not necessary to submit Form -5.

If deviations are mentioned elsewhere in the bid (other than designated Form 5), such deviations shall not be recognized and shall be null and void. If Form 5 is not enclosed along with Affidavit, it shall be considered that the bidder does not have any deviation.

- 2) Proof of submission of EMD,
 - 3) Cost of tender documents (if provided in TIS),
 - 4) Power of Attorney, (if required)
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- 5) Proof of the Constituent of Bidders organization: Affidavit of Proprietorship / Memorandum C Article of Association/ Partnership Deed as the case may be,
- 6) Pan Card,
- 7) Goods and Service Tax Registration Certificate,
- 8) PF Registration Certificate,
- 9) Bank certificate to prove the financial capabilities as asked in the NIT.
- 10) Similar Nature Works Completion Certificates along with copy of work order/agreement /bills abstract client certificate in support of specific information asked in Eligibility criteria of NIT,
- 11) CA Certificate C Balance Sheets with Profit C Loss Account, Trading account of specified for the preceding financial years in respect of financial turnover, financial capabilities to prove the qualification as per criteria described in NIT.
- 12) Certificates in support of personnel and equipment Capabilities as asked for in NIT.
- 13) Integrity Pact, (if required C mentioned in TIS) as per EXHIBIT -V)
- 14) Declaration of works in Hand -In progress by Bidder in support of Bidders available capacity as asked in the NIT.
- 15) Duly signed Checklist: Bidder must see and sign the check list given in the Tender Document to confirm that he has complied with all the instructions in the Tender Document, and nothing is inadvertently left out. This checklist is only for general guidance and is not comprehensive and does not absolve Bidder from complying with all the requirements stipulated elsewhere in the Tender Document. The Bidder may also upload the signed Checklist with their bid.
- 16) Any other document asked for submission in support of Bidders eligibility / qualification as stipulated in NIT/ APPENDIX I, II, III etc.

10.2.2 Financial bid/ Cover

"Financial bid" shall comprise the Price Schedules (To be submitted separately as an excel sheet) considering all financially relevant details, including Taxes and Duties. No additional technical details, which have not been brought out in the technical bid, shall be brought out in the financial bid and if so, shall not be entertained.

10.3. Bid Validity

- 1) Unless specified to the contrary in the TIS/ ITB, Bids shall remain valid for a period not less than 90 days from the deadline for the bid submission stipulated in TIS. A bid valid for a shorter period shall be rejected as nonresponsive.
 - 2) In case the day up to which the bids are to remain valid falls on/ subsequently declared a holiday or closed day for the Procuring Entity, the bid validity shall automatically be deemed to be extended up to the next working day.
 - 3) In exceptional circumstances, before the expiry of the original time limit, the Procuring Entity may request the bidders to extend the validity period for a specified
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additional period. The request and the bidders' responses shall be made in writing electronically. A bidder may agree to or reject the request.

- 4) The bidder(s) who has/have agreed to the Procuring Entity's request for extension of bid validity, in no case, shall be permitted to modify his/their bid.

10.4. Bid Security / Earnest Money Deposit (EMD)

- 1) All Bidders shall submit appropriate Bid Security/ EMD amount as mentioned in TIS/ITB, along with its technical bid. The EMD is required to protect the Procuring Entity against the risk of the Bidder's unwarranted conduct as amplified under the sub-clause below.
 - 2) Any request for recovery from outstanding bills for Earnest Money against present tender will not, under any circumstance, be entertained. Tenders submitted with earnest money in the forms other than specified in TIS/ITB, shall not be considered.
 - 3) The EMD shall be forfeited if Bidder breaches the following obligation(s) under the tender conditions:
 - (a) withdraws or amends his bid or impairs or derogates from the bid in any respect within the period of validity of its bid; or
 - (b) after having been notified within the period of bid validity of the acceptance of his bid by the Procuring Entity:
 - i) refuses to or fails to submit the original documents for scrutiny or the required Performance Security (PG) within the stipulated time as per the conditions of the Tender Document.
 - ii) Fails or refuses to sign the contract in prescribed Proforma at Annexure-VII within period prescribed in ITB.
 - 4) Unsuccessful Bidders' EMD shall be returned (only through digital mode), if the contract is not awarded to them, upon:
 - (a) receipt by Bidder of the Procuring Entity's notification
 - i) of cancellation of the entire tender process or rejection of all bids or
 - ii) of the name of the successful bidder or
 - (b) thirty days after the expiration of the bid validity or any extension thereof
 - 5) The Bidder shall provide name of bank, account no., branch code and RTGS code for account maintained by them/him for financial transaction.
 - 6) For the successful Bidder, Earnest Money will be retained as part of the Security Deposit (SD) in terms of Clauses of Contract.
 - 7) The procuring entity shall not be responsible for any depreciation that may happen thereto EMD due to price inflation etc while in its possession, nor shall be liable to pay any interest thereon.
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10.5. Non-compliance with these provisions

Bids are liable to be rejected as nonresponsive if a Bidder:

- 1) fails to provide and/ or comply with the required information, instructions etc., incorporated in the Tender Document or gives evasive information/ reply against any such stipulations.
- 2) furnishes wrong and/ or misleading data, statement(s) etc. In such a situation, besides rejection of the bid as nonresponsive, it is liable to attract other punitive actions under relevant provisions of the Tender Document for violation of the Code of Integrity.

11. Signing and Uploading of Bids

11.1. Relationship between Bidder and eProcurement Portal

The Procuring Entity is neither a party nor a principal in the relationship between Bidder and the organization hosting the e-procurement portal (hereinafter called the Portal). Bidders must acquaint and train themselves with the rules, regulations, procedures, and implied conditions/ agreements of the Portal.

Bidders intending to participate in the bid shall be required to register in the Portal. Bidders shall settle clarifications and disputes, if any, regarding the Portal directly with them.

In case of conflict between provisions of the Portal with the Tender Document (regarding bid signing, uploading, submission), provisions of the Portal shall prevail. Bidders may study the resources provided by the Portal for Bidders.

11.2. Submission/ uploading of Bids.

11.2.1 Submission/ Uploading to the Portal

- 1) No manual Bids shall be made available or accepted for submission. In the case of downloaded documents, Bidder must not make any changes to the contents of the documents while uploading, except for filling the required information- otherwise, the bid shall be rejected as nonresponsive.
 - 2) Bids shall be received only *Online* on or before the deadline for the bid submission as notified in TIS.
 - 3) Only one copy of the bid can be uploaded, and Bidder shall digitally sign all statements, documents, certificates uploaded by him, owning sole and complete responsibility for their correctness/ authenticity as per the provisions of the IT Act 2000 as amended from time to time.
 - 4) Bidder need not sign or up-load the entire tender document, and its sections as mentioned in ITB-clause 1.4 above while uploading his bid. It is assumed that Bidder commits itself to comply with all the Sections and documents uploaded by the Tender Inviting Officer.
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Appendix-IV: Instructions to Bidders (ITB)

- 5) Bidder must upload scanned copies of originals - (as specified). Uploaded Pdf documents should not be password protected. Bidder should ensure the clarity/ legibility of the scanned documents uploaded by him.
 - 6) The Procuring Entity reserves its right to call for verification originals of all such self-certified documents from the Bidders at any stage of evaluation, especially from the successful Bidder(s) even after the issue of Letter of Award (LoA).
 - 7) Regarding the protected Price Schedule (excel format, Cover-2), Bidder shall write his name in the space provided in the specified location only. Bidder shall type percentage rates in the figure only in the bidder's rate column of each of sub schedule without leaving any blank cell or Zero values in the rate column, without any alteration/ deletion/ modification of other portions of the excel sheet.
 - 8) The date and time of the deadline for the bid submission shall remain unaltered even if the specified date is declared a holiday for the Tender Inviting Officer.
 - 9) The date and time of the e-Procurement server clock, which is also displayed on the dashboard of the bidders, shall be taken as the reference time for deciding the closing time of bid submission. Bidders are advised to ensure they submit their bid within the deadline and time of bid submission, taking the server clock as a reference, failing which the portal shall not accept the Bids. No request on the account that the server clock was not showing the correct time and that a particular bidder could not submit their bid because of this shall be entertained. Failure or defects on the internet or heavy traffic at the server shall not be accepted as a reason for a complaint. The Procuring Entity shall not be responsible for any failure, malfunction or breakdown of the electronic system used during the e-Tender Process.
 - 10) Submission of tender and credential documents through E-Tender website www.cwceprocure.com shall be sole risk C responsibility of the Bidder. Any claim on this account will not be entertained. Hence, Bidder should ensure that tender along with all requisite credential papers are submitted / uploaded on e-tender website in correct way and at correct place on or before tender submission date C time.
 - 11) Bidder should upload all the required documents with the tender under valid digital signature. Uploading of tender with digital signature shall imply that all tender terms C conditions have been accepted by the bidder unless the bidder has specifically declared for non-acceptance / deviation in his technical bid. It shall also mean that documents uploaded by bidders are attested by himself and he takes full responsibility of authenticity of same.
 - 12) All Bids uploaded by Bidder to the portal shall get automatically encrypted. The encrypted bid can only be decrypted/ opened by the authorised persons on or after the due date and time. The bidder should ensure the correctness of the bid before uploading and take a printout of the system generated submission summary to confirm successful bid upload.
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- 13) The Procuring Entity may extend the deadline for the bid submission by issuing an amendment, in which case all rights and obligations of the Procuring Entity and the bidders previously subject to the original deadline shall then be subject to the new deadline for the bid submission.
- 14) Bid submitted through modalities other than those stipulated in TIS shall be liable to be rejected as nonresponsive.
- 15) For whatsoever reasons, if any part of tender document is not uploaded/submitted by the bidder, other than financial C technical offers and requisite pre-Qualifying credentials; in that case, the missing part of the tender document shall be treated as read and accepted by bidder. Missing part of tender document shall not be called for re-submission; however, the same shall form part of contract agreement and shall be binding on bidder.

11.2.2 Implied acceptance of procedures by Bidders

Submission of bid in response to the E -Tender is deemed to be acceptance of the e-Procurement and tender procedures and conditions of the Tender Document.

11.2.3 Late Bids

The bidder shall not be able to submit his bid after the expiry of the deadline for the bid submission (as per server time). Therefore, in eProcurement, a situation of Late Tender does not arise.

11.3. Signing of bid

- 1) The individual digitally signing the bid or any other connected documents should submit an authenticated copy of the document(s), which authorizes the signatory to commit and submit bids on behalf of the bidder in PQ form (Bidder Information).
 - 2) If the tender is made by a Proprietary firm, it shall be signed by the Proprietor with his full name and the full name of his firm with its current address.
 - 3) If the Bid is submitted by a Firm in Partnership, it shall be signed by all partners of the Firm with their full names and current addresses or if it is submitted by a partner holding the power of attorney for the Firm for signing the Bid then a certified copy of the power of attorney shall be submitted with the Bid. A certified copy of the Partnership Deed, current address of the Firm and the full names and current addresses of all the Partners of the Firm shall also accompany the Bid.
 - 4) If the Bid is submitted by a limited company or a limited corporation, it shall be signed by a duly authorized person, holding the power of attorney for signing the application in which case a certified copy of the Power of Attorney shall accompany the application. Such a Limited Company or Corporation will be required to provide satisfactory evidence of its existence before the contract is awarded.
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11.4. Modification, Resubmission and Withdrawal of Bids

11.4.1 Modification s Resubmission

Once submitted in e-Procurement, Bidder cannot view or modify his bid since it is locked by encryption. However, resubmission of the bid by the bidders for any number of times superseding earlier bid(s) before the date and time of submission is allowed. Resubmission of a bid shall require uploading of all documents, including financial bid afresh. The system shall consider only the last bid submitted.

11.4.2 Withdrawal

- 1) The bidder may withdraw his bid before the bid submission deadline, and it shall be marked as withdrawn.
- 2) No bid should be withdrawn after the deadline for the bid submission and before the expiry of the bid validity period. If a Bidder withdraws the bid during this period, the Procuring Entity shall be within its right to enforce Bid Security (EMD), in addition to other punitive actions provided in the Tender Document for such misdemeanour.

12. Bid Opening

The date C time of the opening bid is as stipulated in TIS. Bids cannot be opened before the specified date C time, even by the Tender Inviting Officer, the Procurement Officer, or the Publisher. If the specified date of tender opening falls on a subsequently declared holiday or closed day for the Procuring Entity, the Bids shall be opened at the appointed time on the next working day.

13. Evaluation of Bids and Award of Contract

13.1. General norms

13.1.1 Evaluation based only on declared criteria.

The evaluation shall be based upon scrutiny and examination of all relevant data and details submitted by Bidder in its/ his bid and other allied information deemed appropriate by Procuring Entity. Evaluation of bids shall be based only on the criteria/ conditions included in the Tender Document.

13.1.2 Infirmary/ Irregularity/ Non-Conformity/ Deviations - Substantive or Minor

- i. An infirmity/ irregularity or non-conformity/ exception/ deviation/ reservation/ omission from the requirements of the Tender Document shall be considered as a substantive deviation as per the following norm, and the rest shall be considered as Minor deviation:
 - a) which affects in any substantive way the scope, quality, or performance standards of the Works/ Services.
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- b) which limits in any substantive way, inconsistent with the Tender Document, the Procuring Entity's rights or the Bidder's obligations under the contract; or
 - c) Whose rectification would unfairly affect the competitive position of other Bidders presenting substantively responsive Bids.
- ii. The decision of the Procuring Entity shall be final in this regard. Bids with substantive deviations shall be rejected as nonresponsive.
 - iii. Variations and deviations and other offered benefits (Techno-commercial or Financial) above the scope/ quantum of Works/ Services stipulated in the Tender Document shall not influence evaluation Bids. If the bid is otherwise successful, such benefits shall be availed by the Procuring Entity, and these would become part of the contract.
 - iv. The Procuring Entity reserves the right to accept or reject bids with any minor deviations. Wherever necessary; the Procuring Entity shall convey its observation as per sub-clause below, on such 'minor' issues to Bidder electronically etc. asking Bidder to respond by a specified date. If Bidder does not reply by the specified date or gives an evasive reply without clarifying the point at issue in clear terms, that bid shall be liable to be rejected as nonresponsive.

13.1.3 Clarification of Bids and shortfall documents

The Procuring Entity reserves its right to, but without any obligation to do so, to seek any shortfall information/ documents only in case of historical documents which pre-existed at the time of the tender opening, and which have not undergone change since then and does not grant any undue advantage to any bidder. There is a provision on the portal for requesting Short-fall documents from the bidders.

- 1) During the evaluation of Techno commercial or Financial Bids, the Procuring Entity may, at its discretion, but without any obligation to do so, ask Bidder to clarify its bid by a **specified date** otherwise within **time of 03 to 07 days** as specified by Corporation based on the nature of clarifications.
 - 2) Equal time shall be given to all bidders from whom the clarifications or missing documents are asked by corporation.
 - 3) Bidder should answer the clarification within those specified date/days.
 - 4) The request for clarification shall be submitted in writing electronically and no change in prices or substance of the bid shall be sought, offered, or permitted that may grant any undue advantage to such bidder.
 - 5) for this purpose, the procedure stated below is to be followed and the specific clarification is required to be uploaded on the same portal as per the procedure prescribed therein.
 - 6) The Bidder has the option to respond or not to respond to these queries.
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Appendix-IV: Instructions to Bidders (ITB)

- 7) If the Bidder fails to respond, within the stipulated time period or fails to respond/submit the clarification(s)/ shortfall document(s) with respect to mandatory documents submitted or it is non-conforming to requirement of tender conditions; no further time will be given for submitting the same and the tender is liable for rejection. Depending on the outcome, such tenders are to be ignored or considered further. Clarifications can be sought multiple times till the Corporation is satisfied to finalize qualification/ dis-qualification of the bidders.
- 8) For obtaining clarification, following procedure is to be followed:
- i. An icon for clarification shall appear on “Bid Details” page (in front of each of the Bidder’s name) at Corporation’s end after opening of Technical / Financial Bid.
 - ii. Corporation shall click on clarification icon for the desired Bidder and enter the details of clarifications sought within the prescribed time.
 - iii. After entering the details of clarification sought by the Corporation, same icon shall appear at Bidder’s end for replying to the particular clarification sought by the Corporation. The system will also send the alert to the Bidder at his registered e-mail address about the clarification sought by the Corporation.
 - iv. Bidder will click on clarification icon and will reply to the same and upload the required clarification/documents in support of clarification sought, if any, within the prescribed time. Bidder cannot ask for any clarification from the corporation.
 - v. Once the prescribed time expires, clarification icon from Bidder site shall also disappear automatically.
 - vi. After expiry of prescribed time, Corporation shall download the clarification/ documents in support of clarification submitted by the Bidder.
 - vii. In case of poor readability of scanned copies of client issued credential certificates due to compression of documents on portal or any other technical reasons, the bidder may submit the good quality readable documents to the Corporation vide an online link addressing to the tender cell vide email id mentioned in NIT (TIS) within stipulated time frame. In such case, bidder shall upload the information of submission of such documents vide link/email on portal against response of clarification.
- 9) If discrepancies exist between the uploaded scanned copies and the Originals submitted by the bidder, the original copy’s text, etc., shall prevail. Any substantive discrepancy shall be construed as a violation of the Code of Integrity, and the bid shall be liable to be rejected as non-responsive in addition to other punitive actions under the Tender Document for violation of the Code of Conduct.
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13.1.4 IMPORTANT NOTES ON CLARIFICATIONS:

- i. For deciding eligibility/Qualification of Bidder, it is mandatory for Bidder to submit EMD, failing which the tender shall be summarily rejected, and no clarifications shall be taken from bidder.
- ii. The Documents described as mandatory in ITB cl 3.2 shall be required to be submitted mandatorily by bidder to determine their eligibility /Qualification. No additional mandatory documents will be entertained after tender opening, except clarification documents required, if any regarding already submitted documents with tender. Any documents submitted Suo-moto by the Bidder through e-mail/post/hand delivery etc. shall neither be entertained nor considered for evaluation. However, if Corporation specifically ask to submit the response on vide email due to any technical reason, the documents submitted on designated email with prescribed time limit shall only be considered and submission at any other place /time shall be summarily rejected.
- iii. The documents viz PQ Performa, Affidavit (Exhibit-I), Pre contract-Integrity Pact, CA certificates in support of Financial Capabilities/Turnover when Balance sheet /PCL account etc are already submitted or vice versa, Bankers certificate in support of financial capabilities, Certificates regarding Personnel C Equipment capabilities, Organization Details, etc., are also required to be submitted along with tender.
However, if the Bidder has not uploaded any of the above documents, the Corporation may ask for the submission of such missing document by giving a onetime opportunity as per procedure described above if required to finalize the Bidders' qualification as per NIT Qualification norms.
- iv. So far as the submission of documents is concerned with regard to qualification criteria, after submission of the tender, only related shortfall documents shall be asked for and considered. For example, if the bidder has submitted a contract without its completion/ performance certificate, the certificate can be asked for and considered. However, no new contract shall be asked for so as to qualify the bidder or permitted.
- v. Other documents like Goods and Services Tax Registration Certificate, PAN Card, PF Registration, Bank details or any other document which is in addition of mandatory document described in ITM cl 3.2, if left out from submission by Bidder due to any reason, the Corporation will require their submission mandatorily from only lowest Bidder.
The Lowest Bidder in such case shall submit the same with submission of Performance Guarantee, If the lowest Bidder fails to do so, then no Agreement between CWC and contractor will be executed, and it will lead to rejection of bid and forfeiture of EMD C Performance Guarantee whatsoever available with Corporation and punitive action towards breach of contract.

13.1.5 Contacting Procuring Entity during the evaluation

Canvassing whether directly or indirectly in connection with tenders is strictly prohibited and the tenders submitted by the Bidders who resort to canvassing will be liable to rejection. From the time of the bid submission to awarding the contract, no Bidder shall contact the Procuring Entity on any matter relating to the submitted bid. If a Bidder needs to contact the Procuring Entity for any reason relating to this tender and/or its bid, it should do so only in writing electronically. Any effort by a Bidder to influence the Procuring Entity during the processing of bids, evaluation, bid comparison or award decisions shall be construed as a violation of the Code of Integrity, and bid shall be liable to be rejected as non-responsive in addition to other punitive actions for violation of Code of Integrity as per the Tender Document.

13.2. Evaluation of Bids

13.2.1 Preliminary Examination of Bids - Determining Responsiveness

A substantively responsive bid is complete and conforms to the Tender Document's essential terms, conditions, and requirements, without substantive deviation, reservation, or infirmity. Only substantively responsive bids shall be considered for further evaluation. Unless otherwise stipulated in the ITB, the following are some of the crucial aspects for which a bid shall be rejected as nonresponsive:

- 1) The bid is not in the prescribed format or is not submitted as per the stipulations in the Tender Document.
- 2) Required Bid Security (EMD) has not been provided.
- 3) Tender Document Cost, if specifically mentioned in TIS/ITB, has not been paid.
- 4) Bidder is not eligible to participate in the bid as per laid down eligibility criteria.
- 5) The Services offered are not eligible as per the provision of this tender.
- 6) Bidder has quoted conditional bids or more than one bid or alternative bids unless permitted explicitly in the TIS/ ITB.
- 7) The bid validity is shorter than the required period.
- 8) The bid departs from the essential requirements stipulated in the bidding document.
- 9) Bidder has not quoted in all sub-Schedules or against any sub schedule of Price Schedule -A. or has not quoted for all item of works as per scope as stipulated in any sub schedule of Price Schedule.
- 10) Non-submission of **all stipulated Mandatory documents/ declarations.**
- 11) Tenders containing any condition leading to unknown/indefinite liabilities.

13.2.2 The evaluation process:

- 1) This Tender Process is for Single Stage bids in Two bid System (Technical and Financial) as stipulated in TIS/ITB.
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- 2) Initially, only the techno-commercial bids that is also referred /called as technical bid shall be opened on the stipulated date of opening of bids. After that, the techno-commercial evaluation shall be done to find whether these bids meet the eligibility C qualification criteria and techno-commercial aspects. Subsequent opening of financial bids and financial evaluation shall be done only of bids declared successful in techno-commercial evaluation.

13.3. Techno-commercial Evaluation

Only substantively responsive bids shall be evaluated for techno-commercial evaluation. In evaluating the techno-commercial bid, conformity to the eligibility/ qualification criteria, technical specifications, and Quality Assurance; and commercial conditions of the offered Services to those in the Tender Document is ascertained. Additional factors incorporated in the Tender Document shall also be considered in the manner indicated therein. Bids with substantive techno-commercial deviations shall be rejected as non-responsive. The procuring entity reserves its right to consider and allow minor deviations in technical and Commercial Conditions.

13.3.1 Evaluation of eligibility

The Tender evaluation Committee of the CORPORATION shall determine, to its satisfaction, whether the Bidders are eligible as per criteria/norms prescribed in various clauses of NIT to participate in the Tender Process.

The Bidders that do not meet the required and prescribed eligibility criteria shall be rejected as nonresponsive/disqualified.

13.3.2 Evaluation of Qualification Criteria

The Tender evaluation Committee constituted by the Procuring Entity shall determine, to its satisfaction, whether the Bidders are qualified and capable in all respects to perform the contract satisfactorily. This determination shall, inter-alia, consider the Bidder's Experience/ Past Performance and Financial Capabilities etc; for satisfying all requirements incorporated in the Tender Document. The determination shall not consider the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors, or any other firm(s) different from the Bidder.

13.3.3 Evaluation of Conformity to Commercial and Other Clauses

Bidder must comply with all the Commercial and other clauses of the Tender Document. The Procuring Entity shall also evaluate the commercial conditions quoted by Bidder to confirm that all terms and conditions stipulated in the Tender Document have been accepted without substantive omissions/ reservations/ exception/ deviation by the Bidder. Deviations from or objections or reservations to critical provisions such as those concerning Governing laws and Jurisdiction, Contractor's Obligations and Restrictions of its Rights, Performance Bond/ Security, Force Majeure, Taxes C Duties, Defects Liability Period, Completion Time, LD clauses, Indemnities related clauses, Technical Specifications, and Code of Integrity will be deemed to be a material deviation.

13.3.4 Declaration of Techno-commercially Suitable Bidders and Opening of Financial Bids

Bids that succeed in the above techno-commercial evaluation shall be considered techno-commercially suitable, and financial evaluation shall be done only of such Bids. The list of such techno-commercially suitable bidders and a date/time and venue for the opening of their financial bids shall be declared on the e procurement Portal only.

13.4. Evaluation of Financial Bids and Ranking of Bids

13.4.1 Ranking of Financial Bids

- 1) Evaluation of the financial bids shall be on the price criteria only. Financial Bids of all Techno-commercially suitable bids shall be evaluated and ranked to determine the lowest priced bidder.
 - 2) The comparison of the responsive Bids shall be on total outgo from the Procuring Entity's pocket, to be paid to the contractor including all elements of costs as per the terms of the proposed contract, duly delivered, commissioned, etc. as the case may be, including any taxes, duties, levies etc.
 - 3) If Price Schedule may contain more than one sub schedule, the financial ranking of bids shall be done based on total amount in all such sub schedules put together. The Bidders should quote their percentage rate separately for each Sub Schedule in Financial bid i.e separate for DSR CIVIL, DSR ECM, Market rates (Civil)/ Market Rate (ECM) etc. The bid for a schedule shall not be considered if all item of works prescribed in that schedule are not quoted or included in the bid.
Any mention of prices elsewhere other than at appropriate place in financial bid XLS sheet, will be summarily rejected and will not be entertained.
 - 4) Any tender in which any of the prescribed condition is not fulfilled and any condition including that of conditional rebate is put forth by the Bidder, shall be summarily rejected.
 - 5) If any bidder offers discounts/ rebates in his bid or suo-motu discounts and rebates after the tender opening (techno-commercial or financial), such rebates/ discounts shall not be considered for ranking the offer. But if such a bidder does become L-1 without such discounts/ rebates, such discounts/ rebates shall be availed and incorporated in the contracts.
 - 6) Unless announced beforehand, the quoted price shall not be loaded based on deviations in the commercial conditions. If it is so declared, such loading of a financial bid shall be done as per the relevant provisions.
 - 7) Bidders quoted rates shall be inclusive of GST, ESI, EPF, Building C Construction Workers Cess and any other taxes, levies, duties, as applicable on complete work. Evaluation of Bids shall include and consider these component over and above basic rates of material C services. The Procuring Entity shall not be responsible for any misclassification of HSN Number or incorrect GST rate if quoted by the bidder.
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Any increase in GST rate due to misclassification of HSN number shall have to be absorbed by the supplier

- 8) Valid L1 shall be decided based on over all lowest quote calculated by arithmetic sum of amount quoted in all sub schedules of Price schedule A.
- 9) **Ambiguous or Incomplete Financial bid:** If the financial bid is ambiguous or Incomplete (when the Bidder does not quote for all sub-schedules or items in Price bid), it shall be rejected as nonresponsive and shall not be considered for Bidder rank evaluation.

13.4.2 Cartel Formation/ Pool Rates

- i. If Procuring Entity decides this to be a case of Cartel/ Pool Rates, leading to “Appreciable Adverse Effect on Competition” (AAEC) as identified in Competition Act, 2002, as amended from time to time, It reserves its rights to:
 - a) consider it as a violation of the Code of Integrity and reject the bid(s) as non-responsive in addition to other punitive actions provided in this regard in the Tender Document. In addition to such remedies, the Procuring Entity also reserves the right to refer the matter to the Competition Commission of India (CCI) for obtaining necessary relief. In addition, the attention of the bidders is drawn to Chapter VI of the “The Competition Act 2002”, which deals with Penalties. Such actions shall be in addition to other rights and remedies available to the Procuring Entity under the contract and Law.

13.4.3 Reasonableness of Rates Received

The procuring Entity shall evaluate whether the rates received in the Bids in the zone of consideration are reasonable. If the rates received are considered abnormally low or unreasonably high, it reserves its right to take action as per the following sub-clauses, or as per ITB-clause 2.3, reject any or all Bids; abandon/ cancel the Tender process and issue another tender for identical or similar Services.

13.4.4 Consideration of Abnormally Low Bids

An Abnormally Low bid is one in which the bid price, in combination with other elements of the bid, appears so low that it raises substantive concerns as to the Bidder's capability to perform the contract at the offered price. Procuring Entity shall in such cases seek written clarifications from the Bidder, including detailed price analyses of its bid price concerning scope, schedule, allocation of risks and responsibilities, rates of material, manpower, TCP, machines etc required to be provided to complete the work or to deliver the services and any other requirements of the Tender Document. The Bidder/s shall submit an analysis of rates, if called upon to do so. A format for prices of material & labor shall be provided by the Corporation which needs to be filled in by the contractor in support of rate analysis which may be used to assess the reasonability of rates quoted by the bidder.

If, after evaluating the price analyses, the procuring entity determines that Bidder has substantively failed to demonstrate its capability to deliver the contract at the offered price, the Procuring Entity shall reject the bid/ proposal.

13.4.5 Price Negotiation

Usually, there shall be no price negotiations. However, the Procuring Entity reserves its right to negotiate with the lowest acceptable bidder (L-1). The Bidder shall not increase his rate in case the Procuring Entity negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of original offer and rates originally quoted will also be binding on the Bidder.

14. Award of Contract

Unless otherwise specified in NIT (TIS), There shall be no parallel orders or splitting quantities among more than one Bidders.

14.1. Letter of Award (Acceptance - LoA) and Signing of Contract

14.1.1 Selection of Successful Bidder(s)

The Procuring Entity shall award the contract to the Bidder whose bid is Techno-commercially suitable and the bid price is the lowest and reasonable, as per evaluation criteria detailed in the Tender Document.

14.1.2 Letter of Award (LoA)

- 1) The Bidder, whose bid has been accepted, shall be notified of the award by the Procuring Entity before the expiration of the bid validity period in written by digital means only through Corporation's Contract Management System (ERP/CMS) or Email. This notification (hereinafter and in the Conditions of Contract called the "Letter of Award - LoA") shall state the sum (hereinafter and in the contract called the "Contract Price") that the Procuring Entity shall pay the contractor in consideration of completion of work. The Letter of Award (LoA) shall constitute the legal formation of the contract, subject only to the furnishing of performance security as per the provisions of the sub-clause below.
 - 2) The bidder shall return duly acceptance copy of LOA in written by digital means only through CMS or Email.
Failure in acceptance of LOA or non-acting for further deposition of PG will lead to termination and forfeiture of EMD and other punitive actions as mentioned in Tender Clauses herein.
 - 3) On acceptance of the tender, the name of the accredited representative(s) of the contractor, who would be responsible for taking instructions from the
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Engineer-in-charge / Engineer shall be communicated to the Engineer-in-Charge.

- 4) If a Bidder expires after the submission of his tender or after the acceptance of his tender, the CWC shall deem such tender as cancelled. If a partner of a Firm expires after the submission of their tender or after the acceptance of their tender, the CWC shall deem such tender as cancelled, unless the Firm retains its character. However, in such cases, the amount of Earnest Money will be refunded to the legal heir on production of successor certificate.

14.1.3 Performance Security / Performance Guarantee (PG)

- 1) The Bidder, whose tender is accepted, and LOA has been placed, will be required to furnish to the Procuring Entity, a Performance Guarantee (PG) Within 15 days of receipt of the Letter of Award (LoA) or period specified in NIT (TIS) whichever is earlier.
- 2) In case of non-submission of Performance Security / Performance Guarantee (PG) by contractor by due date as above, Procuring Entity, upon written request of Contractor, may extend the due date of submission of PG which in no case shall be 30 days of receipt of the Letter of Award (LOA). Such (maximum) allowable extension shall be with late fee @ 0.1% per day of Performance Guarantee amount beyond the initial period of 15 days.
- 3) In case of non-receipt of written request of Contractor for extension of initial due date of submission of PG or non-submission of PG even by 15th day of receipt of LOA, no extension of such due date shall be su moto granted by Procuring Entity. The action on contract shall be decided by Procuring Entity as per provisions made herein at subclauses or elsewhere in Tender Document.
- 4) In case the PG/SD is to be submitted through BG then, The Bank Guarantee issuing bank shall send cover for Bank Guarantee issued through SFMS platform to the CWC Banker i.e. **ICICI Bank, G Phelps Building, Connaught Place, New Delhi, (IFSC Code: ICIC0000007)** as per details given below:
 - MT760 COV for issuance of bank guarantee.
 - MT767 COV for amendment of bank guarantee.
 - Issuing bank shall mention CWC beneficiary code i.e. CENTRALW27112020 in field 7037 of MT 760 COV / MT767 COV.
 - The bidder shall submit the copy of SFMS message as sent by the issuing
 - bank branch along with the original Bank Guarantee.
 - Bank Guarantee submitted without these details shall not be accepted.
- 5) If the contractor, having been called upon by the Procuring Entity to furnish PG, fails to do so within the period as specified above in subclause (1) (in case of non-extension) and even up to last date of extended period, if extended as specified in subclause (2) above, the contract shall be terminated without any notice to

Contractor, duly forfeiting EMD and other dues, if any payable against the contract. The failed contractor shall be debarred from participating in future tender of the Corporation for next two years from the date of debarring.

- 6) In the case, when bidder, whose bid has been found to be the lowest evaluated bid withdraws or whose bid has been accepted, fails to sign the contract as may be required, or fails to provide the security (PG) as may be required for the performance of the contract or otherwise withdraws from the procurement process, the Procuring Entity shall cancel the procurement process.

14.1.4 The Contract and Signing of Contract

- 1) Post receipt and acceptance/verification of PG by CWC, the contract can be signed physically across the table at office Place of the Corporation as mentioned in NIT (TIS) within 15 days of the acceptance of performance security. The contractor may point out to the Procuring Entity, in writing/ electronically, any anomalies noticed in the Contract/LOA within seven days of its receipt vide email or otherwise.
- 2) Failure to do so ie signing the contract by successful bidder (contractor) shall constitute a breach, in which case, the Procuring Entity would be at liberty to not only terminate the contract but also forfeit EMD and Performance Guarantee. Cost of stamp paper for the agreement will be borne by contractor. The due dates of work completion shall be valid as mentioned in LOA/ Tender document.
- 3) The contract agreement shall consist of:
The Press Notification (if any), E-Tender Notice, Notice Inviting Tender (NIT), Tender information summary (TIS), Instructions to Bidders (ITB), all the Documents (volumes, appendixes, sections, annexures etc) of Tender C Contract for works including Special Conditions of Contract, Technical Specifications and Drawings, if any, forming the part of tender documents, as issued/downloaded by the Bidder from the websites at the time of invitation of tender, corrigendum, addendum etc published against the tender including all Correspondence related with verification of credentials, LOA placed to the Contractor and acceptance thereof together with any correspondence with them leading thereto.

14.1.5 Publication of Tender Result

The name and address of the successful Bidder(s) receiving the contract(s) shall be published only on the e procurement Portal ie on www.cwceprocure.com C cPPP.

In cases, where Corporation compete with private firms in public tenders, publication of details of contracts awarded by Corporation concerned to various sub-vendors, suppliers, technology providers and other associates before firming up their offer, may hurt the interest of Corporation as the competitors may get to know the details of sub-venders, suppliers, technology providers and other associates as well as the price at which the contracts are placed. Therefore, in such

cases, details of contracts awarded will not be published.

14.1.6 Verification of Original Documents

The Procuring Entity, at its discretion, may ask Bidder to submit for verification the originals of all such documents whose scanned copies were submitted online along with the technical bid. The credential documents of financial and experience criteria shall also be verified from the authority/ office who has issued such documents. If so decided, the photocopies of such self-certified documents and the credential documents verified from the issuing office/ authority shall be kept in the records as part of the contract agreement. If the Bidder fails to provide such originals or in case of substantive discrepancies in such documents or it is found at any stage of the tendering process that documents submitted in bid is/are fabricated/ tempered/ forged/ altered/ manipulated/ false, then it shall be construed as a violation of the Code of Integrity. Such bid shall be liable to be rejected as non-responsive, bidder shall be disqualified, and the evaluation of Bids shall proceed with the subsequent ranked offers. If the Bidder fails to provide such originals or in case of substantive discrepancies in such documents or documents submitted in bid is/are fabricated/ tempered/ forged/ altered/ manipulated/ false if found even after placement of LOA or signing the contract or then Procuring Entity reserves the right to terminate the contract, forfeit of EMD and Performance Security / Security Deposit whichever is available at the time of termination. In addition to the above (disqualification of bidder or termination of contract as the case may be), other punitive actions shall also be taken to blacklist/debar the bidder from future participation in tenders of the Procurement Entity for the next Two years.

15. Grievance Redressal/ Complaint Procedure

- 1) Bidder has the right to submit a complaint or seek de-briefing regarding the rejection of his bid, in writing or electronically, within 10 days of declaration of techno-commercial or financial evaluation results.
The complaint shall be addressed to the Officers at their email mentioned in NIT (TIS) designated for grievance addressal by Competent authority.
- 2) The CORPORATION shall acknowledge the receipt in writing to the complainant indicating that it has been received, and the response shall be sent in due course after a detailed examination.
- 3) The CORPORATION shall convey the final decision to the complainant within 15 days of receiving the complaint/representation.
- 4) No response shall be given regarding the confidential process of evaluating bids and awarding the contract before the award is notified, although the complaint shall be kept in view during such a process. However, no response shall be given regarding the following topics explicitly excluded from such complaint process:
 - a) Only a bidder who has participated in the concerned Tender Process, i.e., bidding, can make such representation.
 - b) Only a directly affected bidder can represent in this regard.

Appendix-IV: Instructions to Bidders (ITB)

- i) In case a technical bid has been evaluated before the opening of the financial bid, an application for review concerning the financial bid may be filed only by a bidder whose technical bid is found to be acceptable.
- c) Following decisions of the Procuring Entity shall not be subject to review:
 - i) Determination of the need for procurement.
 - ii) Complaints against performance standards (specifications) except under the premise that they are either vague or too specific to limit competition
 - iii) Selection of the mode of procurement or bidding system.
 - iv) Choice of the selection procedure.
 - v) Provisions limiting the participation of bidders in the Procurement Process.
 - vi) Provisions regarding purchase preferences to specific categories of bidders.
 - vii) The decision to enter into negotiations with the L-1 bidder; and
 - viii) Issues related to ambiguity in contract terms may not be taken up after a contract has been signed, all such issues should be highlighted before consummation of the contract by the vendor/contractor; and
 - ix) Cancellation of the Procurement Process except where it is intended to subsequently re-tender the same requirements/services.

Note:

During the execution of the contract, the contractor/service provider /supplier can also raise a grievance to HoD (Personnel) at contact details described in NIT.

16. The contract operations and proceeding in connection with the works at all times be conducted during the continuance of contract in accordance with the laws, ordinances, rules and regulations for the time being in force and the contractors shall further observe and comply with the by-laws C regulations of the Govt. of India, State Govts., local Municipalities and other authorities, having jurisdiction over area involved in connection with the works of site C over operations, such as those as carried out by the contractor/s and shall give all notices required by such by-laws C regulations. The hospital and medical regulations in force for the time being shall also be complied with by the contractor/contractors and their workmen.
 17. The contractor shall be responsible for observance of the rules and regulations under Mines Act, Mineral Rules and Indian Metallurgical rules C regulations of State Govt. concerned, as amended from time to time.
 18. The contractor shall, at all times, keep CWC indemnified against all penalties that may be imposed by the Govt. of India or State Govt. for infringement of any other clauses of the mines act and rules made thereunder in respect of the quarries from which the quarry material for these works is procured.
 - 1G. Engineer in charge shall monitor the contract progress and shall ensure the day-to-day supervision of execution, quality etc through a team of his representative at site who may also be a PMC/Corporations' Engineers and will be field representative of him as mentioned in LOA. The contractor shall own the responsibility under the contract and shall report regularly to such representatives and keeping Engineer in charge informed also.
- 20. Code of Integrity in Public Procurement, Misdemeanors and Penalties:**

Procuring authorities, bidders including their suppliers, contractors, and consultants shall observe the highest standard of integrity and not indulge in prohibited practices or other misdemeanors, either directly or indirectly, at any stage during the Tender Process or during the execution of resultant contracts. Integrity Pact (including the penalties prescribed therein) shall be considered to be part of this clause of ITB (even though it is not being reproduced here for the sake of brevity) and shall apply mutadis mutandis during the pre-award tender process.

1. General Tenets of Interpretation:

Unless where the context requires otherwise, throughout the contract:

- i. The heading of these conditions shall not affect the interpretation or construction thereof.
- ii. Writing or written includes matter either whole or in part, in digital communications, manuscript, typewritten, lithographed, cyclostyled, photographed, or printed under or over signature or seal or digitally acceptable authentication, as the case may be.
- iii. Words in the singular include the plural and vice-versa.
- iv. Words importing the masculine gender shall be taken to include other genders, and words importing persons shall include any company or association or body of individuals, whether incorporated or not.
- v. Terms and expression not herein defined shall have the meanings assigned to them in the contract Act, 1872 (as amended) or the Sale of Goods Act, 1930 (as amended) or the General Clauses Act, 1897 (as amended) or of INCOTERMS, (current edition published by the International Chamber of Commerce, Paris) as the case may be.
- vi. Any reference to 'Works' shall be deemed to include the incidental Services/ Goods also.
- vii. Any generic reference to GCC shall also imply a reference to SCC as well.
- viii. Any reference to 'Contract' shall be deemed to include all other documents (inter-alia GCC, SCC, TCC, ITB, NIT and its all appendices, annexures, volumes etc)
- ix. Any reference to any legal Act, Government Policies or orders shall be deemed to include all amendments to such instruments, from time to time, till date.

2. Definitions

In the contract, unless the context otherwise requires:

- i. **"Agent"** is a person employed to do any act for another or represent another in dealings with a third person. In the context of public procurement, an Agent is a representative participating in the Tender Processor Execution of a Contract for and on behalf of its principals.
 - ii. **"Beneficiary"** (of Services/ Works) means the person for whom the Services/ Works are to be delivered as stipulated in the contract.
 - iii. **"bid"** (including the term 'tender', 'offer', 'quotation' or 'proposal' in specific contexts) means an offer to supply goods, services or execution of works made as per the terms and conditions set out in a document inviting such offers.
 - iv. **"Bidder"** (including the term 'Bidder', 'consultant' or 'service provider' in specific contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a Tender Process.
 - v. **"Bill of Quantities"** (including the term Price Schedule or BOQ) means the priced and completed Bill of Quantities forming part of the bid.
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Appendix-IV: Instructions to Bidders (ITB)

- vi. **"Commercial Bank"** means a bank, defined as a scheduled bank under section 2(e) of the Reserve Bank of India Act, 1934.
 - vii. **"Contract"** (including the terms 'Purchase Order' or 'Supply Order' or 'Withdrawal Order' or 'Work Order' or 'Consultancy Contract' or 'Contract for Services', 'rate contract' or 'framework contract' or 'Letter of Award - LoA' (letter or memorandum communicating to the contractor the acceptance of his bid) or 'Agreement' or a 'repeat order' accepted/ acted upon by the contractor in specific contexts), means a formal legal agreement in writing relating to the subject matter of procurement, entered into between the Procuring Entity and the contractor on mutually acceptable terms and conditions and which are in compliance with all the relevant provisions of the laws of the country;
 - viii. **"Contractor"** (including the terms 'Supplier' or 'Service Provider' or 'Consultant' or 'Firm' or 'Vendor' or 'Manufacturer' or 'Successful Bidder' in specific contexts) means the person, firm, company, or a Joint Venture with whom the contract is entered into and shall be deemed to include the contractor's successors (approved by the Procuring Entity), agents, subcontractor, representatives, heirs, executors, and administrators as the case may be unless excluded by the terms of the contract;
 - ix. **"PMC"** means the Project Management Consultant or any other officer or a third-party agency who has been assigned the authority to take day to day actions on behalf of the Engineer in charge / Procuring Entity during the execution of the contract by the contractor;
 - x. **"Day"**, **"Month"**, **"Year"** shall mean calendar day/ month or year (unless reference to financial year is clear from the context).
 - xi. **"Drawing"** means the drawing or drawings stipulated in or annexed to the Specifications or the Tender Document/ Contract;
 - xii. **"Equipment"** means the contractor's machinery and vehicles brought temporarily to the Site for the performance of Service.
 - xiii. **"General Conditions"** means the General Conditions of Contract, also referred to as GCC.
 - xiv. **"Goods"** (including the terms 'Stores', 'Material(s)' in specific contexts) includes all articles, material, commodity, livestock, medicines, furniture, fixtures, raw material, consumables, spare parts, instruments, machinery, equipment, industrial plant, vehicles, aircrafts, ships, railway rolling stock assemblies, sub-assemblies, accessories, a group of machines comprising an integrated production process or such other categories of goods or intangible, products like technology transfer, licenses, patents or other intellectual properties (but excludes books, publications, periodicals, etc., for a library), in specific contexts), procured or otherwise acquired by a Procuring Entity. Any reference to Goods shall be deemed to include specific small work or some services that are incidental or consequential to the supply of such goods;
 - xv. **"Government"** means the Central Government or a State Government as the case may be and includes agencies and Public Sector Enterprises under it, in specific contexts.
 - xvi. **"Inspection"** means activities such as measuring, examining, testing, analysing, gauging one or more characteristics of the goods or services or works, and comparing the same with the specified requirement to determine conformity.
 - xvii. **"Intellectual Property Rights"** (IPR) means the rights of the intellectual property owner concerning a tangible or intangible possession/ exploitation of such property by others. It
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Appendix-IV: Instructions to Bidders (ITB)

includes rights to Patents, Copyrights, Trademarks, Industrial Designs, Geographical indications (GI).

- xviii. **“Joint Venture”** means a Joint Venture or a Consortium (that is an association of several persons, or firms or companies - also referred to as JV/C)
- xix. **“Materials”** means all supplies, including consumables, used by the contractor for service performance or use by his staff.
- xx. **“Parties”**: The parties to the contract are the “Contractor” and the “Procuring Entity”, as defined in this clause;
- xxi. **“Performance Security”** (includes the terms ‘Performance Bond’ or ‘Performance Bank Guarantee’ or other specified financial instruments in specific contexts) means a monetary guarantee to be furnished by the successful Bidder or Contractor in the form prescribed for the due performance of the contract;
- xxii. **“Procurement”** or “public procurement” (or ‘Purchase’, or ‘Government Procurement/ Purchase’ including an award of Public-Private Partnership projects, in specific contexts) means the acquisition of Goods/ Services/ works by way of purchase, lease, license or otherwise, either using public funds or any other source of funds (e.g. grant, loans, gifts, private investment etc.) of goods, works or services or any combination thereof, by a Procuring Entity, whether directly or through an agency with which a contract for procurement services is entered into, but does not include any acquisition without consideration. The term “procure”/ “procured” or “purchase”/ “purchased” shall be construed accordingly.
- xxiii. **“Procuring Entity”** means the entity procuring Goods, Works, or Services that is **Central**
- xxiv. **warehousing Corporation** in context of this contract.
- xxv. **“Engineer in charge”** means the officer signing the Contract Agreement in capacity of Sr. GM/GM/Sr. Manager/Manager on behalf of the Procuring Entity.
- xxvi. **“Service(s)”** (including the term ‘non-consultancy services’ or ‘Outsourcing of Services’ in specific contexts) are defined by exclusion as services that cannot be classified as Consultancy Services. Services (non-Consultancy) involve routine, repetitive physical, procedural, and non-intellectual outcomes for which quantum and performance standards can be tangibly identified and consistently applied and are bid and contracted on such basis but does not include the appointment of an individual made under any law, rules, regulations, or order issued in this behalf. Any reference to Services shall be deemed to include the supply of goods or performance of consultancy service or small works, which are incidental or consequential to such services;
- xxvii. **“Works”** refer to any activity involving construction, fabrication, repair, overhaul, renovation, decoration, installation, erection, excavation, dredging, and so on, which make use of a combination of one or more of engineering design, architectural design, material and technology, labour, machinery, and equipment.
- xxviii. **“Special Conditions”** means Special Conditions of Contract, applicable specifically to the project and which override the General Conditions, also referred to as SCC.
- xxix. **“Specification”** or “Technical Specification” means the drawing/ document/ standard or any other details governing the construction, manufacture or supply of goods or performance of services or completion of work that prescribes the requirement to which goods or services or works have to conform as per the contract.

- xxx. **“Signed”** means ink signed or digitally signed with a valid Digital Signature as per IT Act 2000 (as amended from time to time). It also includes stamped, except in the case of Letter of Award or amendment thereof.;
- xxxi. **“Sub-Contractor”** means a person or corporate body with an agreement with the contractor to carry out a specific part of the contract that may or may not include working on the Site.
- xxxii. **“Temporary Works”** means works designed, constructed, installed, and removed by the contractor needed during the Services' performance.
- xxxiii. **“Variation”** means an instruction given by the Contract Manager, which varies the scope, quantum or performance standards of the Service performed.
- xxxiv. **“Tender”**; “Tender Document”; “Tender Enquiry” or “Tender Process”: ‘Tender Process’ is the whole process from the publishing of the Tender Document till the resultant award of the contract. ‘Tender Document’ means the document (including all its sections, appendices, forms, formats, etc.) published by the Procuring Entity to invite bids in a Tender Process. The Tender Document and Tender Process may be generically referred to as “Tender’ or ‘Tender Enquiry’, which would be clear from context without ambiguity.

3. The Contract

3.1 Language of Contract

Unless otherwise stipulated in the SCC and NIT, the contract shall be written in the Official Language or English. All correspondence and other contract documents, which the parties exchange, shall also be written/ translated accordingly in that language. For purposes of interpretation of the contract, the English documents/ translation shall prevail.

3.2 The Entire Agreement

The Contract and its documents constitutes the entire agreement between the Procuring Entity and the contractor and supersedes all other communications, negotiations, and agreements (whether written or oral) of the Parties made before the date of this Contract. No agent or representative of either Party has the authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not outlined in this Contract.

3.3 Severability

If any provision or condition of this Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of this Contract.

3.4 Parties

The parties to the contract are the contractor and the Procuring Entity, as defined above and as nominated in the contract.

3.5 Contract Documents and their Precedence

Appendix-IV: Instructions to Bidders (ITB)

The following conditions and documents in indicated order of precedence (higher to lower) shall be considered an integral part of the contract, irrespective of whether these are not appended/ referred to in it. Any generic reference to 'Contract' shall imply reference to all these documents as well:

- a) Valid and authorized Amendments issued to the contract.
- b) the Agreement consisting of the initial paragraphs, recitals and other clauses set forth immediately before the GCC and including the formats annexed to it and signatures of Procuring Entity;
- c) Price Schedule, Bill of Quantities;
- d) Technical drawings and specifications of works.
- e) the Letter of Award (LoA)
- f) Final written submissions made by the contractor during negotiations, if any;
- g) The TCC
- h) the SCC any other document listed in the SCC as forming part of this Contract.
- i) the GCC
- j) the NIT and ITB
- k) the contractor's bid;
- l) Integrity Pact, if any

4. Modifications/ Amendments, Waivers and Forbearances

4.1 Modifications/ Amendments of Contract

If any of the contract provisions must be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the Procuring Entity, and no modified provisions shall be applicable unless such modifications have been done. No variation in or modification of the contract terms shall be made except by a written amendment signed by the Procuring Entity. Requests for changes and modifications may be submitted in writing by the contractor to the Procuring Entity. At any time during the currency of the contract, the Procuring Entity may suo-moto or, on request from the contractor, by written order, amend the contract by making alterations and modifications within the general scope of the Contract.

If the contractor does not agree to the suo-moto modifications/amendments made by the Procuring Entity, he shall convey his views within 14 days from the date of amendment/ modification. Otherwise, it shall be assumed that the contractor has consented to the amendment.

Any verbal or written arrangement abandoning, modifying, extending, reducing, or supplementing the contract or any of the terms thereof shall be deemed conditional and shall not be binding on the Procuring Entity unless and until the same is incorporated in a formal instrument and signed by the Procuring Entity, and till then the Procuring Entity shall have the right to repudiate such arrangements.

4.2 Waivers and Forbearance

The following shall apply concerning any waivers, forbearance, or similar action taken under this Contract:

Any waiver of a Procuring Entity's rights, powers, or remedies under this Contract must be in writing, dated, and signed by an authorized representative of the Procuring Entity granting such waiver and must specify the terms under which the waiver is being granted.

No relaxation, forbearance, delay, or indulgence by Procuring Entity in enforcing any of the terms and conditions of this Contract or granting of an extension of time by Procuring Entity to the contractor shall, in any way whatsoever, prejudice, affect, or restrict the rights of Procuring Entity under this Contract, neither shall any waiver by Procuring Entity of any breach of Contract operate as a waiver of any subsequent or continuing breach of Contract.

5. Separate Contracts in Connection with Services

The Procuring Entity shall have the right to let other contracts related to or linked with the Services/works/goods. The contractor shall afford other contractors' reasonable opportunity to store their materials, execute their services/ works, and properly connect and coordinate their services. The contractor shall inspect services/ works of other contractors(s) and promptly report to the Engineer in charge or his representative at site any defects that may hinder proper execution of his Services to proper performance standards. The contractor's failure to inspect and report such defects shall constitute an acceptance of the other contractor's work as fit and proper for the performance of Contractor's services, except as to defects that may develop in the other contractor's work after such a provision Services.

6. Governing Laws and Jurisdiction

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Laws of India for the time being in force.

Irrespective of the place of delivery, or the place of performance or the place of payments under the contract, or place of the Letter of Award (LoA, or the contract Agreement, in the absence of LoA) has been issued. The courts at New Delhi, where corporate office of central warehousing corporation is located shall alone have jurisdiction to decide any dispute arising out or in respect of the contract.

7. Communications

- i. All communications under the contract shall be served by the parties on each other in writing, in the contract's language, and served in a manner customary and acceptable in business and commercial transactions.
 - ii. The effective date of such communications shall be either the date when delivered to the recipient or the effective date mentioned explicitly in the communication, whichever is later.
 - iii. No communication shall amount to an amendment of the terms and conditions of the contract, except a formal letter of amendment of Contract, so designated.
 - iv. Such communications would be an instruction or a notification or an acceptance or a certificate from the Procuring Entity, or it would be a submission or a notification from the contractor. A notification or certificate which the contract requires must be communicated separately from other communications.
-

- v. The Contract Manager/ PMC or Representative of the Engineer in charge or Engineer in charge shall direct the order in which the several components of the Services / works shall be provided, and the contractor shall execute without delay all such orders given time to time. Still, the contractor shall not be relieved thereby from responsibility for the due performance of the Services in all respects.

8. Persons signing the Communications

For all purposes of the contract, including arbitration, thereunder all communications to the other party shall be signed by:

The person who has signed the contract on behalf of the contractor shall sign all correspondences. A person signing communication in respect of the contract or purported to be on behalf of the contractor, without disclosing his authority to do so, shall be deemed to warrant that he has authority to bind the contractor. If it is discovered at any time that the person, so signing has no authority to do so, the Procuring Entity reserves its right, without prejudice to any other right or remedy, to terminate the contract for default in terms of the contract and avail any or all the remedies thereunder and hold such person personally and/ or the contractor liable to the Procuring Entity for all costs and damages arising from such remedies.

Unless otherwise stipulated in the contract, the Engineer in charge signing the contract shall administer the contract and sign communications on behalf of the Procuring Entity. PMC / field representative of Engineer in charge mentioned in the contract / letter of award (LOA) shall also administer respective functions during Contract Execution.

G. Address of the parties for sending communications by the other party.

For all purposes of the contract, including arbitration, thereunder the address of parties to which the other party shall address all communications and notices shall be:

The address of the contractor as mentioned in the contract, unless the contractor has notified change by a separate communication containing no other topic to the Procuring Entity. The contractor shall be solely responsible for the consequence of an omission to notify a change of address in the manner aforesaid, and

The address of the Procuring Entity shall be the address mentioned in the contract. The contractor shall also send additional copies to officers of the Procuring Entity presently dealing with the contract.

In case of the communications from the contractor, copies of communications shall be marked to the PMC and field representative of Engineer in charge (as mentioned in LOA) and the Procuring Entity's officer signing the contract.

Unless already specified before the contract's start, the Procuring Entity and the contractor shall notify each other if additional copies of communications are to be addressed to additional addresses.

10. Abbreviation of the words used in Tender document

Abbreviation	Definition
BG	Bank Guarantee
BIS	Bureau of Indian Standard
BOQ	Bill of Quantities
BSD	Bid Securing Declaration
CAR Policy	Contractor's all Risk Policy
CGST	Central Goods and Services tax
CPP	Central Procurement Portal
CPWD	Central Public Works Department
CTE	Chief Technical Examiner
CWC	Central Warehousing Corporation
DPIIT	Department for Promotion of Industry and Internal Trade
DSR	Delhi Schedule of Rates
EFT	Electronic Funds Transfer
EMD	Earnest Money Deposit
EOT	Extension of Time
EPFO	Employees Provident Fund Organization
ESI	Employees State Insurance
FD/FDR	Fixed Deposit Receipt
GCC	General Conditions of Contract
GST	Goods and Services Tax
GSTIN	GST Identification Number
HSN	Harmonized System of Nomenclature
IEM	Independent External Monitor
IGST	Integrated Goods and Services tax
IIT	Indian Institute of Technology
INR	Indian Rupee
IPC	Indian Penal Code
IPR	Intellectual Property Rights
IRC	Indian Roads Congress
ITB	Instructions To Bidders
JV	Joint Venture
JV/C	Joint Venture/ Consortium
LAR	Last Approved Rates
LD	Liquidated damage
LoA	Letter of Award (Acceptance)
MD	Managing Director
MES	Military Engineering Services
MII	Make in India
MORTH	Ministry of Road Transport & Highway
MSE	Micro and Small Enterprises
MSME	Micro Small and Medium Enterprises

Appendix-IV: Instructions to Bidders (ITB)

MSMED	MSME Development (Act)
MT	Metric Tonne
NEFT	National Electronic Funds Transfer
NIT	Notice Inviting Tender
PAN	Permanent Account Number
PC	(Indian) Penal Code
PC	Prevention of Corruption
PERT	Programme Evaluation Review Technique.
PF	Provident Fund
PQ	Pre-Qualifying
PSU	Public Sector Undertaking
PVC	Price Variation Clause
RCM	Reverse Charge Mechanism
SCC	Special Conditions of Contract
SD	Security Deposit
SGST	State Goods and Services tax/
SOR	Schedules of Rates
TCP	Tools C Plants
TCS	Tax Collected at Source
TDS	Tax Deducted at Source
TIA	Tender Inviting Authority
TIS	Tender Information Summary
UGST	Union Territory Goods and Services tax
WC Policy	Workmen Compensation Policy

Special Terms & Conditions of Contract.**1. Deployment of Supporting Technical Staff and Office Facilities**

The Contractor, in addition of minimum technical staff as required in GCC CL 32, shall also deploy One (01) additional supporting personnel for day to day assisting the CWC Engineers/Officials in miscellaneous office or site related works of corporation as assigned by CWC Engineer.

The Qualification and experience profile, duration of deployment etc. of such personnel shall be as below. These personnel shall be employee of the Contractor working on His pay role and there will be no employee-employer relationship with CWC. Contractor shall do all payment to such personnel on monthly remuneration basis towards their services.

- i. **Qualification & Experience:** The supporting personnel shall possess minimum qualification as below:

- Any Graduate or
- Diploma in Engineering

from a recognized University/Institute and shall have expertise of fluent working in computer applications including MS Word, MS Excel.

He/she shall be having post qualification experience 5 to 10 yrs in handling such works.

ii. **Duties and Responsibilities**

The deployed personnel shall work under the overall supervision and direction of the CWC Site engineers and shall assist in miscellaneous day to works related with project monitoring including but not limited to:

- Preparation of project progress reports, drafting notes, letters, PPT presentations etc.
- Data compilation, documentation, and record maintenance.
- Arithmetic vetting of calculations etc.
- Any other office or documentation work as directed by the Engineer-in-Charge.

iii. **Office & IT Infrastructure**

The Personnel shall be provided sitting space in CWC Regional office at Chennai by Corporation along with required IT infrastructure including computer/laptop with MS Office, printer with scanning facility, internet connectivity, office furniture, and necessary stationery for works.

iv. **Submission of Credentials**

The Contractor shall submit the qualification certificates and details of the proposed personnel to the Engineer-in-Charge for approval prior to deployment.

v. **Replacement of Personnel**

In case the services of any deployed personnel are found unsatisfactory, the Contractor shall replace such personnel promptly upon instructions from the Engineer-in-Charge.

vi. **Costing**

No separate payment shall be done to contractor for deployment of the above personnel and provision of office infrastructure during the contract period including extended period, if extended due to any reason, and the cost thereof shall be deemed to be included in the quoted rates of the Contractor.

vii. **Duration of Deployment**

The above personnel shall be deployed throughout the execution period of the contract since requirement raised by engineer in charge post commencement of work and up to actual completion of work or as directed by the Engineer-in-Charge.

For non-deployment, a recovery of Rs. 50000/- per person per month as mentioned in schedule F, shall be done from RA / Final bill of Contractor. An absence of more than 7 working days without suitable replacement shall also be considered non deployment and Proportionate recovery shall be done in such cases.



केंद्रीय भंडारण निगम

(भारत सरकार का एक उपक्रम)

CENTRAL WAREHOUSING CORPORATION

(A Govt. of India Undertaking)

Corporate Office

4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016,

Ph. No. s Fax No. (011) 49857894

Email Id: tendercell.co@cewacor.nic.in

E- Tender VOLUME-II

Reference Number: **E NIT_CWC/CO/Engg. /26-27/06**

Procurement of Works FOR

"Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units alongwith internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.)."

FORM OF CONTRACT (FOC)

(FILL APPROPRIATE DATA IN YELLOW CELLS ONLY; REST NOT TO BE EDITED)

CENTRAL WAREHOUSING CORPORATION

and

...[NAME OF Contractor] ...

Contract Number

"Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units alongwith internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.)."

[SGM/GM/ DGM/
Sr. Mgr/Mgr] Engineering,
[Insert Name];
(Signature of the Engineer in charge)

(Authorized Signatory)

(On a Non-Judicial Stamp Paper of INR 100/-)

**THIS AGREEMENT is entered into and made effective on this [date] day of [month], [year]
("Effective Date") at [Place], India**

BY AND BETWEEN

- (1) **Central Warehousing Corporation**, a Navaratna CPSE, established under the Warehousing Corporation Act, 1962, having its Corporate Office at at 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi- 110016 and having its Regional Office at;
...hereinafter referred to as the "Corporation",
(which expression shall unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors, Affiliates, subsidiaries, executors, administrators and permitted assignees);
- and**
- (2) **[name of the Contractor]**, having its place of business/registered office at **[INSERT address]** and represented by its Authorized Signatory [Insert Name of Authorized Signatory] (Aadhar Card No. _____)
...hereinafter referred to as the "Contractor"
(which expression shall unless it be repugnant to the context or meaning thereof, be deemed to mean

and include its successors, Affiliate(s), subsidiaries, executors, administrators, legal heirs and permitted assignees).

Whereas:

- A The Corporation is engaged in providing services in the field of warehousing, logistics and related activities to various depositors, including those from the Government and private sectors, in furtherance of its objective to develop and maintain efficient warehousing infrastructure and promote the scientific storage, handling and movement of goods.
- B For the purposes mentioned under Recital A above, the Corporation requires the Contractor to provide certain construction works together with related supplies and services for [name of work] and other associated requirements. The Contractor being engaged in the business of providing such construction works and allied services, has agreed to perform such works and allied services for the Corporation on the terms and conditions set out in this Contract. Contractor
- C. The Corporation attaches paramount importance to the orderly, coordinated and efficient execution of the works under this Contract, so that its warehousing and logistics operations are not disrupted or delayed. The Contractor accordingly undertakes to perform and complete the works and related services with due diligence, planning and in adherence to the work schedules so as to maintain the continuity of performance consistent with the overall program of the Corporation.

NOW THEREFORE IT IS HEREBY AGREED as follows:

- 1. The Contractor agrees to execute the said construction works, together with all related and incidental supplies and services, in accordance with the terms and conditions of this Contract, the Letter of Award (LOA) and/or Purchase Order (PO), and such directions as may be issued from time to time by the Corporation, provided that such directions are not inconsistent with this Contract. In consideration of the due and faithful performance of the Works and Services, the Corporation shall make payment to the Contractor in accordance with the rates, terms, and conditions herein contained.
- 2. The Contract shall comprise the following documents, which shall be read and construed together as forming an integral part of this Agreement:
 - This Agreement.
 - The General Conditions of Contract and the Special Conditions of Contract together with their Appendices.
 - The Technical Specifications, Technical Conditions of Contract and associated Appendices.
 - The Price/ Compensation Schedule; and
 - The Tender Document including the E-Tender Notice, Notice Inviting Tender (NIT) and its Appendices and Volumes, together with all Addenda, Corrigendum, the Letter of Acceptance, the Letter of Award, Purchase Order and any amendments or modifications issued thereto.
- 3. The Works shall be completed within the stipulated time schedule, to be reckoned from the Commencement Date as specified in this Contract or as may be notified by the Corporation. The Contractor shall plan and perform the Works in accordance with the approved program to ensure completion within the said time frame, subject to extensions, if any, granted under the provisions of this Contract.
- 4. The Contractor has furnished to the Corporation an irrevocable and unconditional Performance Guarantee ("Performance Guarantee") in the sum of INR _____ (Indian Rupees _____ only) in the form of a [Bank Guarantee / Surety Bond / Demand Draft / Pay Order / RTGS] issued by [insert name of bank, financial institution, or insurance agency] and acceptable to the Corporation. The Performance Guarantee shall remain valid and enforceable for the period and upon the terms stipulated in this Contract.

5. For the purposes of Notices under various provisions of this Contract, the addresses for communication shall be:

<u>If to the Corporation/ Engineer in charge:</u>	<u>If to the Contractor:</u>
[Insert Address]	[Insert Address]
E-mail: [] Attention: []	E-mail: [] Attention: []

Any notice, instruction, or communication shall be deemed duly given if delivered by hand, sent by registered post, speed post, courier, or transmitted by e-mail to the above addresses, or to such other address as may be subsequently notified by either Party in writing.

6. For the purposes of this Contract,

(i) the Corporation's Representative for contractual matters shall be [name/designation] who shall **also act as the Engineer-in-Charge for this contract**; and

(ii) the Engineer responsible for physical supervision, test checks, measurements and all such actions authorized by the Engineer-in-Charge on his behalf shall be [name/designation].

For the purposes of this Contract, the Contractor's Representative

- (i) for contractual and correspondence matters shall be **[name/designation]** and
(ii) for operational and technical matter shall be **[name/designation]**.

7. The following additional terms and conditions shall apply to this Contract:

[Insert here any additional contract-specific terms and conditions, if any]

IN WITNESS WHEREOF the Parties hereto have executed this Agreement on the day, month and year herein above written:

Signed by..... [Print Name & Designation] for and on behalf of CWC	Signed by..... [Print Name & Designation] for and on behalf of Contractor
Witness..... [Witness Name & Address]	Witness..... [Witness Name & Address]

(Section-I)

- A) **DEFINITIONS:** In the Conditions of Contract, which include the Special Conditions and these General Conditions, the following words and expressions shall have the meanings stated. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.
1. **"Affiliate":** shall mean any subsidiary or holding company of anybody corporate or any other subsidiary of such holding company. For the purpose of this definition: "subsidiary" shall mean a subsidiary within the meaning of the Companies Act, 2013 but in addition as if that section provided that its members are deemed to include any other body corporate whose rights in relation to it are held on behalf of that other body corporate or by way of security by another person but are treated for the purposes of that section as held by that other body corporate; and "holding company" shall mean a holding company within the meaning of the Companies Act, 2013 but in addition as if that section provided that a body corporate is deemed to be a member of another body corporate where its rights in relation to that body corporate are held on its behalf or by way of security by another person but treated for the purposes of that section as held by it;
 2. **"Agreement":** shall mean the Agreement between the Corporation and the Contractor to which this these conditions are attached.
 3. **"Claim":** shall mean means any and all claims, demands, liens, judgments, awards, remedies, debts, liabilities, damages, injuries, costs, losses, legal and other expenses, or causes of action of whatsoever nature, including, without limitation, those claims made or enjoyed by dependents, heirs, claimants, executors, administrators, successors or assigns, in whatever jurisdiction the foregoing may arise;
 4. **"Corporation Group":** shall mean the Corporation, its Affiliate, successors and permitted assignees, and its and their respective directors, officers and employees (including agency personnel).
 5. **"Corporation Information":** shall mean all data, documents, materials and information supplied by the Corporation to the Contractor for the purposes of this Contract, including, without limitation, any updated or re-issued information.
 6. **"Corporation's Representative":** shall mean the person(s) identified as such in the Agreement.
 7. **"Contractor Group":** shall mean the Contractor, its subcontractors of any tier, its and their respective Affiliate(s), successors and permitted assignees, and its and their respective directors, officers, employees (including agency personnel).
 8. **"Contractor's Personnel":** shall mean all personnel provided or used by the Contractor Group for the purpose of carrying out the Work, including, without limitation, those referred to in the Scope of Work.
 - G. **"Contractor's Representative":** shall mean the person(s) identified as such in the Agreement.
 10. **"Contract"** means the documents forming part of the Tender and its acceptance thereof as well as the Contract Agreement executed between the Central Warehousing Corporation and the Contractor along with the documents referred to therein including but not limited to the Letter of Acceptance, the Letter of Tender, these Conditions, the Schedules, the Contractors Proposal, the Employers

Requirements as well as the Specifications, Designs, Drawings and Instructions issued by the Engineer-in-Charge from time to time and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance. That all these documents taken together, shall be deemed to form an integral part of the Contract and shall be read and construed together. In the event of any inconsistency, the documents shall take precedence in the order listed in the Contract Agreement.

11. **"Work(s)"** means the whole of the works, whether permanent or temporary, to be executed, constructed, supplied, installed, completed and maintained by the Contractor under the Contract, and includes all materials, equipment, labor, and services to be provided by the Contractor, as well as any alteration, modification, substitution, or additional work required for the proper completion of the Contract.
12. **"Site"** means the land, building plot, path, street or other areas/places made available by the Corporation for the execution of the Works, including any approach roads, storage spaces, or working areas withing or adjoining the said land as may be approved by the Engineer-in-Charge for the purposes of the Contract.
13. **"Contractor"** shall mean the person, individual, firm, company, or joint venture, whether incorporated or not, named as such in the Contract Agreement, who has undertaken the Works. The term shall include the legal successors and permitted assignees and representatives of such person, individual, firm, company or joint venture. In the case of a joint venture or consortium, each member thereof shall be jointly and severally liable to the Corporation for the performance of all obligations under the Contract.
14. **"Corporation" or "Corpn." or "Department" or "CWC"** means the Central Warehousing Corporation.
15. **"Engineer-in-Charge"** means the officer designated by the Corporation (Sr. GM/GM/DGM/Sr. Mgr/Mgr from the Engineering Division of the Corporation) authorized to sign the Contract on behalf of the Corporation, administer and supervise the Works, issue instructions, and exercise the powers delegated under the Contract on behalf of the Corporation.
16. **"Accepting Authority"** shall mean the competent authority (DGM / GM/Sr. GM/GGM/Director/ Managing Director) authorized to accept the tender in accordance with the value thresholds, the Tendered Value of work and delegation of powers prevailing in the Corporation.
17. **"Excepted Risk"** means risks due to riots (other than those on account of the Contractor or it's employees), war (whether declared or not), invasion, acts of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Govt., damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods and other causes over which the Contractor has no control and which are accepted as such by the Accepting Authority or causes solely due to the Corporations use or occupation of the completed parts of the Works in respect of which a Certificate of Completion has been issued or a cause solely due to faulty/defective design of works.
18. **"Market Rate"** shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour at the Site where the Work is to be executed plus the percentage mentioned in General Conditions of Contract to cover, all overheads and profits provided that no extra overheads and profits shall be payable on the part(s) of Work assigned to other agency(ies) by the Contractor as per terms of Contract.

- 1G. "Schedule(s)"** referred to in these conditions shall mean the relevant Schedule(s) annexed to the tender document or the Standard Schedule of Rates as applicable and mentioned in General Conditions of Contract hereunder, along with the amendments thereto issued up to latest due date of the receipt of tender.
- 20. "District Specifications"** means the Specifications issued, notified or followed by the State Government at the Site where the Work is to be executed.
- 21. "Tendered Value"** means the total monetary value quoted by the Contractor in its Financial Bid submitted in response to the Invitation to Tender, inclusive of all items of work, duties, Taxes and levies, unless otherwise expressly stated.
- 22. "Accepted Tendered Value"** means the Tendered Value as accepted by the Corporation, based on the rates approved and reflected in the Letter of Acceptance or Work Order. The Accepted Tendered Value shall form the basis for comparative evaluation of bids, determination of the Contract Price, and award of the Contract. The Tendered Value /Accepted Tendered Value shall be treated as fixed, and no adjustment shall be made thereto on account of variations, deviations, or additional works executed after award except as otherwise provided under this Contract or specifically authorized in writing by the Corporation.
- 23. "Contract Value"** means the total financial value of the Contract as stated in the **Letter of Award, Letter of Acceptance, or Agreement**, and shall include the **Accepted Tendered Value** plus or minus any duly approved variations, price adjustments, or additional items executed during the course of the Contract in accordance with its terms and conditions. The Contract Value shall be dynamic and subject to revision from time to time based on sanctioned change orders, approved variation statements, price escalation or de-escalation, and other adjustments permitted under the provisions of this Contract. It shall serve as the reference value for determining performance security, liquidated damages, and all other financial computations under the Contract, unless otherwise expressly provided.
- 24. "Date of Commencement of Work"** shall mean the date of start of Work as specified in the General Conditions of Contract hereunder or the date mentioned in LOA or the first date of handing over of the Site, whichever is later, in accordance with the phasing, if any, as indicated in the tender document.
- 25. "Tax" or "Taxes"** means all present and future Taxes, duties, cesses, levies, surcharges, fees and charges (including any interest, penalty or addition thereto) imposed by any Government Authority, including without limitation GST (CGST/SGST/UTGST/IGST and Compensation Cess), customs duty, excise duty (to the extent applicable), VAT/sales Tax for legacy periods, entry Tax/octroi, professional Tax, labour welfare cess, and any similar imposts under applicable law.
- 26. "Government Authority(ies)"** means any central, state or union territory government, department, ministry, local authority, municipality, panchayat, statutory or Tax authority (including GST authorities), tribunal, court or other governmental, regulatory or quasi-judicial body having jurisdiction over the Parties or the Works.
- 27. GST** shall mean Goods and Service Tax comprising of CGST, SGCT/UTGST/IGST and any applicable cess as amended from time to time.

B) Interpretation: In the Contract, except where the context requires otherwise:

1. Words indicating the singular also indicate the plural and vice versa.
2. Words indicating one gender includes all genders.
3. provisions including the word "agree", "agreed" or "Agreement" require the Agreement to be recorded in writing, and
4. "written" or "in writing" means the hand-written, type-written, printed or electronically made, and resulting in a permanent record.
5. Headings and Marginal Notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.
6. The Contractor when demanding to Corporation shall be furnished, free of cost one certified copy of the Contract documents except Standard Specifications, Schedule of Rates and such other printed and documents already published by the Corporation, together with all drawings, as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this Contract.

C) Works to be Carried Out:

The Work to be carried out under the Contract shall, except as otherwise provided in these Conditions, include all labor, materials, tools, plants, equipment and transport required for the preparation, execution and full completion of the Works. The descriptions given in the Schedule of Quantities (Schedule-A) shall, unless otherwise stated, be deemed to include wastage of materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting C fixing in position and all other labor necessary for the proper and complete execution C completion of the Works in accordance with good practice and recognized industry standards.

D) Sufficiency of Tender and Deemed Satisfaction:

1. The Contractor shall be deemed to have satisfied itself before submitting the tender, as to the correctness and sufficiency of the rates and prices quoted in the Schedule of Quantities. Such rates and prices shall, except as otherwise provided in the Contract, cover all the Contractor's obligations and all matters and things necessary for the proper execution, completion and maintenance of the Works.
2. Notwithstanding any information made available by the Corporation, the Contractor shall be deemed to have satisfied itself in respect of all relevant matters pertaining to and relevant to the Work, including but not limited to the Scope of Work, the nature of the Work, Site conditions, access to the Site, local facilities, climatic, sea, other water and weather conditions, working hygiene and working environment conditions and all other matters which may affect the performance of the Works. Any failure by the Contractor to consider or verify such matters shall not relieve or excuse the Contractor from any responsibility, liability or obligation under the Contract nor entitle the Contractor to any extra payment or extension of time.

E) Priority of Documents

1. The several documents forming the Contract shall be taken as mutually explanatory of one another, such that the detailed drawings being followed in preference to small, scaled drawings and figured

dimensions being followed in preference to scale dimensions and the Special Conditions in preference to the General Conditions.

2. In the case of discrepancy between the Schedule of Quantities, the Specifications and/or the Drawings, the following order of preference shall apply:
 - i. Bill of Quantities (BOQ)
 - ii. Technical Specifications mentioned in the tender document/ technical conditions of Contract.
 - iii. Drawings
 - iv. CWC specifications of work
 - v. Indian standard specifications of BIS
 - vi. International standards C Industries best practice (for technical matters only).
 - vii. Special Conditions of Contract
 - viii. General Conditions of Contract
 - ix. Instructions to Tenderers/ RFP
3. Where varying or conflicting provisions occur within any single document forming part of the Contract, the Accepting Authority shall determine the intention of the document, and such decision shall be final and binding on the Contractor.
4. Any error in description, quantity or rate in Schedule of Quantities or any omission therefrom shall not vitiate the Contract or release the Contractor from executing the whole or any part of the Works in accordance with the drawings, specifications, and terms of the Contract or from any of its obligations under thereunder.

F) CORPORATION SUPPLIED RESOURCES

1. Issued Materials, Tools, Plants and Equipment

- i. The Corporation shall deliver to the Contractor such materials, tools, plants and equipment as specified in Schedules B and C. The Contractor shall inspect all such resources upon delivery and shall, within forty-eight (48) hours, notify the Corporation in writing of any defect, deficiency or shortage. Failure to so notify within the said period shall be deemed acceptance by the Contractor that the resources have been received in full, complete and undamaged condition.
- ii. Title to all Corporation-issued materials, tools, plants and equipment shall at all times remain vested in the Corporation. However, risk, custody and responsibility for their damage, loss, care or maintenance shall pass to the Contractor upon delivery and remain with the Contractor until the issuance of the Completion Certificate in respect of the whole of Works. Upon completion of the Works or expiry/ termination of the Contract, the Contractor shall return to the Corporation all unconsumed or balance materials, tools, plants, and equipment, duly reconciled against the permissible technical consumption as defined in these Conditions. The Contractor shall be liable to pay to the Corporation the cost of any issued resources not duly accounted for.

2. Corporation Information

- i. The Corporation shall, upon the Contractors written request, provide such information in its possession ("Corporation Information") as is relevant to the Scope of Work. The Corporation does not warrant the accuracy, completeness or sufficiency of such information.
- ii. The Contractor shall review the Corporation Information and promptly notify the Corporation, in writing, of any inaccuracies, errors, omissions, inconsistencies, contradictions or ambiguities it may identify.
- iii. All Corporation Information, including any copies, extracts or data derived there from, shall remain the exclusive property of the Corporation and such information (including electronic records) shall be returned to the Corporation or permanently deleted upon completion of the Works or earlier

termination of the Contract, whichever is the earlier. The Contractor shall certify in writing that no part of such information has been retained, except to the extent required by law or for record-keeping under the Contract.

- iv. The Corporation may, from time to time, issue revisions or updates to the Corporation Information. The Contractor shall promptly incorporate such updates in the execution of the Works.
- v. The Contractor shall not alter, disregard or deviate from the requirements or parameters set out in the Corporation Information or the Scope of Work without the Corporation's prior written approval.

G) Signing of Contract:

The successful tenderer /Contractor, upon acceptance of its tender by the Accepting Authority, shall execute the Contract Agreement within the period and in the manner specified in the Tender Documents (Volume 1). No payment shall be released for any Work executed until the Contract Agreement has been duly signed and executed by the Contractor.

H) GENERAL LEGAL PROVISIONS

- 1. Amendment:** - This Contract may be amended or varied only by a written instrument expressly stated to be an amendment to this Contract and executed by duly authorized representatives of both Parties.
- 2. Waiver:** - No delay, forbearance or failure by either Party to exercise any right, power, or remedy under this Contract shall operate as a waiver of that or any other right, power, or remedy, nor shall any single or partial exercise preclude any further exercise thereof.
- 3. Retention of Rights:** - Except as otherwise expressly provided in this Contract, including the indemnities granted under the Clause titled Indemnities, each Party retains all rights and remedies available to it under this Contract and at law.
- 4. No Relief by Approval:** - The Contractor shall not be relieved of any responsibility, liability or obligation under the Contract by reason of any review, approval, authorization, acknowledgement, issuance of completion certificate or a similar act by the Corporation.
- 5. Language:** - The language of the Contract shall be English and all correspondence, documents, records and communications between the Parties shall be in English.
- 6. Notices:** -
 - i. All notices or other communications under this Contract shall be in writing and shall be delivered by hand, by registered mail, or by electronic means (email or facsimile) to the addresses specified in the Contract Agreement. Either Party may from change its address or communication details by giving written notice to the other Party.
 - ii. Notices delivered by hand shall be deemed received upon delivery.
 - iii. Notice sent by electronic means shall be deemed received when transmission is confirmed by the sender's system, provided that if such confirmation occurs outside normal business hours of the recipient, the notice shall be deemed received at 10:00 hours (recipient's local time) on the next business day.
 - iv. Notices sent by registered mail shall be deemed received on the date shown as delivered in the postal or courier records.

7. Invalidity: -

If any provision of this Contract is held invalid, illegal or unenforceable by a judgement or decision of any Court of competent jurisdiction or any authority, such provision shall be deemed severed and the remainder shall remain valid and enforceable. The Parties shall, in good faith, agree to replace any invalid or unenforceable provision with one that most closely reflects the original intent.

8. Entire Agreement: - This Contract constitutes the entire agreement between the Parties and supersedes all prior negotiations, understandings, commitments, agreements and representations whether oral or written, pertaining to its subject matter. Nothing in this Clause shall exclude or limit liability for fraud or fraudulent misrepresentation.**G. Status of Corporation: -**

- i. The Corporation enters into this Contract on its own behalf and where applicable, as agent for and on behalf of its co-venturers or Affiliates. The Contractor shall look solely to the Corporation for the performance of the Corporations obligations under this Contract and nothing contained herein shall impose any liability upon, or entitle the Contractor to commence any proceedings against any co-venturer or Affiliate of the Corporation; and
- ii. the Corporation may enforce this Contract both for itself and on behalf of its co-venturers or Affiliate(s) and may commence proceedings in its own name to enforce any obligation or liability of the Contractor.; and
- iii. Any reference to losses, damages, costs (including legal costs) or expenses recoverable by the Corporation shall include those incurred by the Corporation's co-venturers and their respective Affiliates, subject to the same limitations or exclusions of liability applicable to the Corporation or the Contractor under this Contract.

I) CONFIDENTIALITY AND PUBLICITY

1. **Confidentiality: -** All information, documents, data, drawings, or records concerning the Corporation, its operations, or its business obtained by the Contractor in the course of performing the Works or otherwise furnished by the Corporation shall be treated as confidential. The Contractor shall not disclose such information to any third party or use it for any purpose other than the proper performance of the Contract, except with the prior written consent of the Corporation.
2. **Publicity and Publications: -** The Contractor shall not, without the prior written consent of the Corporation, make or permit any public announcement, press release, publication, presentation, or other disclosure (whether pictorial, written, oral or digital) concerning the Contract, the Works, or the Corporation's activities. Such consent, if granted, shall apply only to the specific instance for which it is issued. The Contractor shall be solely responsible for the accuracy of any information released by it and not supplied or approved in writing by the Corporation.
3. **Contractor's Proprietary Information: -** The Corporation shall keep confidential all techniques, know-how, methods and processes that are proprietary to the Contractor, as well as any other information expressly marked as confidential by the Contractor. Such information shall not be disclosed to any third party without the Contractors prior written consent.
4. **Exclusions: -** The obligations of Confidentiality and Contractor's Proprietary Information in this Clause shall not apply to any information that:

- a) Is or becomes part of the public domain other than through breach of this Contract; or
- b) was in the lawful possession of the receiving Party prior to disclosure, without obligation of confidentiality; or
- c) is lawfully obtained from a third party who is not under any duty of confidentiality with respect to such information; or
- d) is required to be disclosed by law, rules or regulation, or order of any governmental, judicial, or regulatory authority having jurisdiction, or by any stock exchange rules applicable to the relevant Party, provided that the disclosing Party shall, where practicable, give prior notice to the other Party of such requirement.

J) REPRESENTATIVES

1. Corporation's Representative

- The Engineer-in-Charge, designated as the Corporation's Representative, shall be in overall charge of the Works and shall have full authority to liaise with the Contractor's Representative to resolve all contractual, administrative, and day-to-day matters arising between the Corporation and the Contractor, and to take all actions and decisions under the provisions of this Contract.
- The Corporation's Representative shall monitor and supervise the performance of the Works and shall have all authority necessary to enforce the terms and conditions of this Contract.
- The Corporation's Representative shall be entitled to inspect the Works, materials, plant, and all related documentation at any time and to issue directions as may be necessary for the proper execution of the Contract.
- The Contractor shall address and refer all matters, correspondence, and communications relating to the Contract exclusively to the Corporation's Representative and shall act in accordance with the instructions and directions issued by such Representative.

2. Contractor's Representative

- The Contractor's Representative shall be in full charge of the Works on behalf of the Contractor and shall have complete authority to liaise with the Corporation's Representative for resolution of contractual and operational matters, including all day-to-day issues arising during execution.
- The Contractor's Representative shall ensure that all directions and instructions issued by the Corporation's Representative are promptly implemented at Site and that the Works are executed in conformity with the provisions of this Contract.

3. Change of Representatives: Either Party may:

- a) revoke the appointment of any person appointed as its' Representative and appoint another person in his or her place; or
- b) appoint an additional Representative for any stated purpose. No such revocation or appointment shall be effective until written notice thereof is given to the other Party.

(Section-II)

CWC's GENERAL CONDITIONS OF CONTRACT

1. Performance Guarantee

- I. **Furnishing of Performance Guarantee:** The Contractor shall submit an irrevocable Performance Guarantee for an amount equal to five percent (5%) of the Contract Value, in addition to other deposits required elsewhere in the Contract, as security for the proper performance of the Contract Agreement (notwithstanding and without prejudice to any other provisions contained in the Contract). The Performance Guarantee shall be furnished within the period specified in the Tender (NIT Appendix-I) from the date of issue of the Letter of Acceptance (LOA).

This period may be extended by the Engineer-in-Charge, up to the maximum period stated in the Tender (NIT Appendix-I), upon a written request from the Contractor explaining the reasons for delay to the satisfaction of the Engineer-in-Charge.

- II. **Form of Guarantee:** This Guarantee cannot be in the form of cash, but may be deposited through any one of the following instruments:
- a) Demand Draft of any Scheduled Bank.
 - b) Pay Order of any Scheduled Bank (where the guaranteed amount is less than ₹1,00,000).
 - c) Government Securities.
 - d) Guarantee Bonds of any Scheduled Bank or of the State Bank of India; or
 - e) Surety Bonds issued by insurance companies approved by IRDAI, strictly in the format appended with this document (Appendix-G (XVI)).

All forms of Performance Guarantee shall be subject to verification and acceptance by the Corporation before commencement of work.

Validity and Extension: The Performance Guarantee shall initially remain valid up to the **stipulated date of completion plus sixty (60) days** thereafter. In the event that the completion period of the work is extended, the Contractor shall extend the validity of the Performance Guarantee correspondingly so as to cover the extended period in full.

- III. **Invocation:** The Engineer-in-Charge shall be entitled to invoke and realize the Performance Guarantee, without prejudice to any other rights of the Corporation, in the following circumstances:
- a) failure of the Contractor to extend the validity of the Performance Guarantee as required herein.
 - b) failure of the Contractor to pay any amount due to the Corporation—whether mutually agreed or determined under any provision of the Contract—within thirty (30) days of notice in writing; or
 - c) default or non-performance of any substantial obligation by the Contractor under the Contract.

The Corporation's decision as to the recoverable amount shall be final and binding.

- IV. In the event of the Contract being terminated, determined or rescinded under any of the provision of the Contract, the Performance Guarantee shall stand forfeited in full and be absolutely at the disposal of the Corporation.
- V. Where required or otherwise specified in the Contract, a Part Completion Certificate may be issued for any building(s)/ facility, or portion of the infrastructure that has been completed in all respects and is ready for use. All statutory approvals and completion drawings of the relevant services, wherever applicable, shall be obtained before such part is handed over. The scope and

boundaries of the completed portion shall be clearly identified in the Part Completion Certificate.

- VI. Each Part Completion Certificate shall also record the outstanding balance works, if any, to be completed in accordance with the provisions of the Contract. Such certificate shall be prepared by the Corporation Engineer authorized by the Engineer-in-Charge and issued by competent authority. Upon issuance of the Part Completion Certificate, up to eighty percent (80 %) of the Performance Guarantee amount, proportionate to the value of the completed part, shall be released to the Contractor without interest, subject to fulfilment of all statutory and contractual requirements.
- VII. Adjustment on Variation of Contract Value: In the event that the cumulative deviations or variations in the work exceed fifteen percent (15%) of the Contract/LOA value, the Corporation shall have the right to require the Contractor to furnish additional Performance Guarantee so that the total Performance Guarantee remains equal to five percent (5%) of the revised Contract Value. Such additional Performance Guarantee shall be furnished by the Contractor within the time specified by the Engineer-in-Charge, under the same terms and conditions as the original Guarantee. It may be furnished in any one of the following manners:
 - a) by furnishing a fresh revised Performance Guarantee for 5% of the revised Contract Value; or
 - b) by furnishing an additional Performance Guarantee for the incremental amount so that the total PG equals 5% of the revised Contract Value; or
 - c) by recovery of the equivalent incremental amount from sums due to the Contractor under any Running Account bills or any other Contract, which shall be retained and treated as Performance Security subject to the same conditions as the original Guarantee.
- VIII. Forfeiture: In the event of the Contract being determined or rescinded under any provision of this Agreement, the Performance Guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Corporation.

1A Security Deposit (SD)

1A.1 Recovery of SD:

- I. Total Security Deposit under this Contract, including any maintenance or defect-liability obligations, shall be five percent (5 %) of the Contract Value.
- II. The Contractor shall permit the Corporation, at the time of making any payment for work done under this Contract, to deduct five percent (5 %) of the gross amount of each running and final bill until the total deduction equals the required Security Deposit of five percent (5 %) of the Contract Value.
- III. Such deductions shall be held by the Corporation as Security Deposit unless the Contractor has already deposited the equivalent amount through any permitted mode of security.
- IV. All compensations or other sums of money payable by the Contractor under this Contract may be deducted from, or realised by sale of, a sufficient part of the Security Deposit, or from any sums due or becoming due to the Contractor under any account whatsoever.
- V. If the Security Deposit is reduced by such deductions or sales, the Contractor shall, within ten (10) days, make good the deficiency in the form of Bank Guarantee or Demand Draft endorsed in favor of the Central Warehousing Corporation.
- VI. The Security Deposit so deducted may, at the Contractor's request, be released against a Bank Guarantee issued by a Scheduled Bank in the format prescribed in the Tender Document or as otherwise approved by the Engineer-in-Charge, provided that each such guarantee (except the last one) shall not be for less than ₹ 5 lakh and the total accumulation against which such conversion is sought shall not be less than ₹ 5 lakh.

- VII. In cases involving maintenance or defect-liability obligations, the Performance Guarantee may be retained as Security Deposit, ensuring that the total Security Deposit of five percent (5 %) remains available to the Corporation throughout the maintenance or defect-liability period.

1A.2 Release of Security Deposit

- I. The Security Deposit of the Contractor shall not be refunded before the expiry of the stipulated maintenance / Defect Liability Period (DLP) as per the Contract, and in any case not before the issue of the Final Completion Certificate or the preparation and passing of the Final Bill, whichever is later.
- II. In the case of Maintenance and Operation contracts of Electrical C Mechanical (E C M) services, the Security Deposit deducted from the Contractor shall be refunded within one month from the date of final payment or within one month from the date of completion of the maintenance Contract, whichever occurs earlier.
- III. The Security Deposit for the work shall be refunded only after successful completion of the Defect Liability Period, provided that
- a) all defects, deficiencies, or damages arising during the DLP have been duly rectified, repaired, or replaced by the Contractor to the satisfaction of the Corporation's Engineer-in-Charge; and
 - b) no defects or deficiencies remain pending on the date of expiry of the DLP.
- IV. The Security Deposit for the work shall be refunded **only after** successful completion of the **Defect Liability Period**, provided that:
- a) all defects, deficiencies, or damages arising during the DLP have been duly rectified, repaired, or replaced by the Contractor to the satisfaction of the Corporation's Engineer-in-Charge; and
 - b) no defects or deficiencies remain pending on the date of expiry of the DLP.
- V. For composite construction projects, including warehouse buildings, roads, metal roofing, and / or CC flooring of godowns i.e. where the maintenance / Defect Liability Period is three (3) years, the Security Deposit shall be released proportionately as follows:
- a) 33 percent (33 %) of the total Security Deposit after completion of the first year of the DLP; and
 - b) the balance 67 percent (67 %) after completion of the entire DLP, subject in each case to compliance with sub-clauses (i) to (iv) above.
 - c)
- VI. In the case of projects primarily comprising roads, metal roofs, or CC-flooring works where the DLP is three (3) years, the entire Security Deposit shall be refunded only upon completion of the full DLP of three years, subject to the same conditions specified in sub-clauses (i) to (iv).
- VII. For special items of work having a DLP exceeding three (3) years, as expressly specified in the Special Conditions, Technical Conditions, or Bill of Quantities (BOQ), the Contractor shall, prior to release of the Security Deposit, submit an Indemnity Bond and Warranty Certificate in the prescribed format (Appendix-G XVII) to indemnify the Corporation against any defect or deficiency arising during such extended warranty period.

2. Compensation for Delay

- 2.1 If the Contractor fails to maintain the required progress in terms of Clause 5 or to complete the work and clear the Site on or before the Contract completion date or the justified extended date of completion as per Clause 5 (excluding any extension granted under Clauses 12 or 15), the Contractor shall, without prejudice to any other right or remedy available to the Corporation

under law or this Contract, pay as compensation an amount calculated at the rates stipulated below, as may be determined by the Engineer-in-Charge, on the Accepted Tendered Value of the work, for every completed day or month (as applicable) that the progress remains below that specified in Clause 5 or the work remains incomplete.

- 2.2 Compensation for delays in work In case of delay in completion of the Contract, damages shall be levied at the following rates based on the quantum of delay attributable to the Contractor:
- For repair and maintenance works where the Tendered Value (original cost) is up to ₹10 lakh – 1% of the Contract Value per week or part thereof of delay.
 - For contracts involving new construction works of godowns, container yards, terminals, or rail track laying - 0.5% of the Contract Value per week or part thereof of delay.
 - For contracts covering upgradation, replacement, relaying, or similar works of roof, floor, or road etc., and other works without any new-construction component as in (b) above, a maximum rate of 1% of the Contract Value per month of delay, computed on a per-day basis and uniformly applicable unless the Tender-Accepting Authority records written reasons for applying a lower rate.
- 2.3 Provided always that the total amount of compensation for delay payable under this clause shall not exceed 10% of the Accepted Tendered Value of the work or of the Accepted Tendered Value of any sectional part of work specified in Schedule-F (Appendix-I of the Tender) for which a separate period of completion has been stipulated. GST, as applicable, shall be payable by the Contractor in addition to the compensation levied.
- 2.4 If no compensation has been decided by the Engineer-in-Charge during the progress of work, it shall not constitute waiver of the Corporation's right to levy compensation if the work remains incomplete on the final justified extended date of completion. If the Engineer-in-Charge grants a further extension of time beyond the justified extended date, the Contractor shall remain liable to pay compensation for such extended period.
- 2.5 If any variation in the Contract amount occurs during such extended period and the Contractor becomes entitled to additional time under Clause 12, the net period for such variation shall be accounted for while determining the delay. However, during such further extended period beyond the justified extended period, if any delay occurs due to events under Sub-Clause 5.2 attributable to the Contractor, the Contractor shall be liable to pay compensation for such delay.
- 2.6 Provided further that compensation during the progress of work before the justified extended date of completion shall apply for non-achievement of sectional completion or part-handing over of the work on the stipulated/justified extended date for such part, or where such delay affects other works or services. This is without prejudice to the right of action by the Engineer-in-Charge under Clause 3 for delay in performance or to Claim compensation under that Clause.
- 2.7 If action under this Clause has not been finalized and the work has been determined under Clause 3, the right of action under this Clause shall survive such determination. In such case, compensation shall be limited to the number of days the progress was behind schedule on the date of determination, as assessed by the Engineer-in-Charge after due consideration of justified extensions.
- 2.8 For any cost overrun beyond the approved estimated cost, where prior written approval of the Engineer-in-Charge has not been obtained, such expenditure shall not be admitted unless specifically condoned by the Corporation. In such cases, the Contractor shall remain liable for all consequences, including imposition of liquidated damages and/or recovery of any excess payment made.
- 2.9 The parties agree that the amounts specified herein are a genuine pre-estimate of the loss or damage that the Corporation is likely to suffer and are not in the nature of a penalty. This is

without prejudice to the Corporation's right to recover any additional direct or indirect losses not covered by this estimate.

- 2.10 For avoidance of doubt, in contracts covering the scope specified in Sub-Clause 2.2(c) above, the maximum rate of 1% per month shall apply uniformly unless the Competent Authority records reasons for applying a lower rate, in which case such lower rate shall also be treated as an agreed pre-estimate of loss.
- 2.11 The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other Contract with the Corporation. If the Contractor fails to achieve a particular milestone mentioned in Schedule-F (Appendix-I of the Tender) or its rescheduled version under Clause 5.4, the amount shown against that milestone shall be withheld and adjusted against the compensation levied.
- 2.12 Withholding of such milestone amount on failure to achieve progress shall be automatic and shall not require any separate notice to the Contractor. However, if the Contractor subsequently catches up with the approved progress schedule, the withheld amount may be released if the Engineer-in-Charge is satisfied with the progress. If the Contractor again fails to make up for the delay in subsequent milestones, the amounts against each subsequent missed milestone shall also be withheld automatically. No interest shall be payable on such withheld amounts.
- 2.13 Notwithstanding anything to the contrary contained in this Contract, the Contractor shall not be liable for compensation or damages for delay in completion of the works to the extent that such delay is attributable to any act, omission, default, or breach by the Corporation or arises from circumstances where delay is concurrent and not solely or exclusively due to the fault or default of the Contractor.
- 2.14 The imposition or recovery of compensation under this Clause shall not relieve either party of its obligations, liabilities, or responsibilities under this Contract or under applicable law..

2A. Incentive for Early completion

- 2A.1 In case the Contractor completes the work ahead of the stipulated date of completion, a bonus at the rate of 1 percent of the Contract Value per month, computed on a per-day basis, shall be payable to the Contractor, subject to a maximum limit of 5 percent of the Contract Value.
- 2A.2 For the purpose of this clause, the justified time for extra work (including escalated quantities, if any) shall be calculated on a pro-rata basis, as follows:
$$\text{Value of extra work} \times (\text{Stipulated completion period} \div \text{Accepted Tendered Value of work}).$$
- 2A.3 The bonus, if payable, shall be released along with the final bill after completion of the entire work.
- 2A.4 The bonus under this clause shall be applicable only when all of the following conditions are fulfilled:
- (a) The scope of work includes the construction of a godown or rail-linked yard, or when specifically stipulated in Appendix-V (Special Conditions of Contract) of the NIT.
 - (b) All works covered under the Contract, including extra works, are completed in all respects, without any pending minor defects, punch points, or incomplete items.
 - (c) The Completion Report has been submitted by the Contractor to the Engineer-in-Charge and the Head of Engineering Division at the Corporate Office (in case the work is awarded by the CWC Regional Office), and also to the concerned Warehouse Manager and Regional Manager, digitally within two (2) days of completion of the work, or upon commissioning and handing over of the completed works for commencement of operations, as applicable.

- 2A.5 The bonus under this clause shall not be applicable if any extension of the Contract period occurs for any reason attributable to the Corporation, the Contractor, any third party, or due to Force Majeure (other than justified extra work as provided above). In all such cases, no incentive shall be payable.

3. When Contract can be Determined.

3.1 Subject to other provisions of this Clause, the Engineer-in-Charge may, without prejudice to any other rights or remedies available to the Corporation in respect of any delay, non-compliance with safety norms, inferior workmanship, damages, or other defaults under this Contract, and whether or not the stipulated date of completion has elapsed, determine the Contract absolutely by giving notice in writing in any of the following cases:

- (a) If the Contractor, having been given by the Engineer-in-Charge a written notice to rectify, reconstruct, or replace any defective work, or where the work is being performed in an inefficient, improper, or unworkmanlike manner, fails to comply with such notice within seven (7) days thereafter.
- (b) If the Contractor, without reasonable cause, suspends the progress of the work or fails to proceed with due diligence, and continues to do so for seven (7) days after a written notice from the Engineer-in-Charge.
- (c) If the Contractor fails to complete the work or any section thereof within the stipulated or justified extended date of completion, and having been given further reasonable time by the Engineer-in-Charge (as mutually agreed or determined by the Engineer-in-Charge), still fails to complete the work within such period, whereupon such time shall be deemed the essence of the Contract.
- (d) If the Contractor persistently neglects to carry out obligations under the Contract or commits default in complying with any of its terms or conditions and fails to remedy the same within seven (7) days after a written notice from the Engineer-in-Charge.
- (e) If the Contractor offers, gives, or agrees to give to any person in the Corporation's service, or to any other person on his behalf, any gift or consideration of any kind as an inducement or reward for doing or forbearing to do any act in relation to the obtaining or execution of this or any other Contract with the Corporation.
- (f) If the Contractor has entered into this Contract in connection with which any commission has been paid or agreed to be paid by him, or to his knowledge, unless the particulars of such commission and its terms have been disclosed in writing to the Engineer-in-Charge before execution.
- (g) If the Contractor has secured this Contract through misrepresentation, falsification, or other non-bona fide means, or commits breach of the Integrity Agreement.
- (h) If the Contractor, being an individual or a partner in a firm, is adjudged insolvent, or if a receiving order or order for administration of his estate is made against him or takes proceedings for liquidation or composition under any Insolvency Act, or makes an assignment for the benefit of creditors.

- (i) If the Contractor, being a company, passes a resolution for voluntary winding up (other than for amalgamation or reconstruction), or if an order of winding up is made by the court, or if a receiver or manager is appointed on behalf of a creditor, or if circumstances arise entitling the court or creditors to make such appointment or order.
- (j) If the Contractor allows an execution to be levied on his goods and such execution is not set aside within twenty-one (21) days.
- (k) If the Contractor assigns, transfers, sublets, or otherwise parts with the whole or any portion of the works (other than part(s) permitted under the Contract) without the prior written approval of the Engineer-in-Charge. Upon the occurrence of any of the above events, the Engineer-in-Charge, on behalf of the Corporation, shall have the powers:
 - (i) To determine the Contract so far as it relates to the performance of the work by the Contractor, by written notice to that effect. Upon such determination, the Earnest Money Deposit, Security Deposit already recovered or payable, and the Performance Guarantee shall stand forfeited and be absolutely at the disposal of the Corporation.
 - (ii) After giving notice, to measure up the work executed by the Contractor and to take possession of the unexecuted balance work, either wholly or in part, and to have such balance executed by another agency. The Contractor whose Contract is determined as above shall not be eligible to participate in the tendering process for such balance or related work.

In the event of the above actions being taken, the Contractor shall have no Claim for damages, loss of profit, or compensation for any loss sustained due to purchase of materials, execution of subcontracts, or other commitments made for the performance of the work.

In all such cases, the Contractor shall not be entitled to payment for any work actually executed under the Contract unless and until the Engineer-in-Charge certifies in writing the extent and value of such work, and the Contractor shall be entitled only to such certified amount.

In the event of any breach or default as outlined above, the Engineer-in-Charge shall issue a Notice of Default or Show-Cause Notice, delineating the breaches and granting the Contractor a period of two (2) weeks to respond and take corrective action. During this period, all payments due to the Contractor may be withheld without prejudice to the Corporation's right to recover dues.

3.2 Determination by Contractor:

3.2.1 The Contractor shall, in the event of the Corporation's failure to perform its obligations under this Contract, be entitled to determine the Contract by giving seven (7) days' written notice to the Engineer-in-Charge, only in any of the following circumstances:

- (a) If the Engineer-in-Charge, without reasonable cause, suspends the progress of the work for a period exceeding three (3) months, or fails to make payment of any certified amount due to the Contractor within three (3) months from the date of submission of such bill.

- (b) If the Corporation persistently neglects or fails to provide access to the site, drawings, or materials which it is required to supply under the Contract or otherwise commits default in carrying out any of its obligations, thereby causing prolonged delay in execution of the work.
- (c) If the Corporation fails to pay the Contractor the amount due under the Contract within a period of three (3) months from the date of certification by the Engineer-in-Charge, and such failure is not due to any reason attributable to the Contractor.

3.2.2 Upon receipt of such notice, if the Corporation does not take remedial measures within the notice period or fails to respond satisfactorily, the Contractor shall be entitled to treat the Contract as determined and shall be paid for:

- (i) All work executed and measured up to the date of determination in accordance with the provisions of the Contract.
- (ii) The value of approved materials and plant reasonably brought to Site for execution of the remaining work, provided such materials and plant are handed over to the Corporation; and
- (iii) Any other dues admissible under the Contract, subject to certification by the Engineer-in-Charge and approval of the Competent Authority.

3.2.3 In such an event, the Contractor shall not be entitled to Claim compensation for any loss of profit, overheads, or consequential damages arising out of such determination, and the decision of the Corporation as to the quantum of payment under this clause shall be final and binding.

3.2.4 Nothing in this clause shall prejudice the rights of the Corporation to recover or adjust any sums due from the Contractor under this or any other Contract.

3.3 In the event of above courses of actions being adopted by the Engineer-in-Charge, the Contractor shall have no Claim for damages or loss of profits compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the Contract etc.

3.4 And in case, action is taken under any of the aforesaid provision (s), the Contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this Contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value, so certified.

3.5 In the event of any breach or default of the Contract, as outlined under Clause 3.1, or any other act or omission that materially affects the Corporation's rights under this Contract, the Engineer-in-Charge shall issue a **written Notice of Default** or **Show-Cause Notice** delineating the breaches, providing the Contractor a period of **two weeks** to respond and take corrective action. Upon issue of such notice, **all payments due to the Contractor may be temporarily withheld**, without prejudice to the Corporation's right to recover amounts due under the Contract.

3.6 Additional Contractual Remedies in Case of Breach or Termination Without prejudice to other provisions of this Contract, and in addition to actions under Clause 3.2, the Corporation shall have the right to take one or more of the following contractual remedies in case of breach/default or upon termination under Clause 3:

- a) **Withhold payments** due to the Contractor until recoveries on account of contractual violations are made.

- b) **Call back any advance payments** made to the Contractor, along with applicable interest at the prevailing **MIBID (Mumbai Interbank Bid Rate)**;
- c) **Recover Liquidated Damages (LD)** as applicable under the Contract.
- d) **Encash and/or forfeit Performance Guarantee, Security Deposit, or other contractual securities** in part or full;
- e) **Debar or blacklist the Contractor** from participation in future tenders of the Corporation for a period of **up to two years**, depending on the severity and impact of the default.
- f) **Initiate legal proceedings** for breach of contractual or statutory obligations, including for loss or damages, not otherwise compensated through the above remedies.

3.7 Risk and Cost Procurement

In addition to termination for default under Clause 3.2, the Corporation shall be entitled to carry out or procure the balance or similar work at the **Risk and Cost** of the defaulting Contractor in line of relevant conditions of Contract.

In such cases, The Corporation shall not be required to notify the Contractor regarding the method or manner of such procurement. The Contractor shall be liable for any additional cost incurred by the Corporation on this account. No Claim for gain or profit, if any, shall be admissible to the Contractor.

3.8 Limitation of Liability

Except in cases of criminal negligence or wilful misconduct, the aggregate liability of the Contractor to the Corporation, in cases where the Contract has been determined and the Corporation is constrained to get the balance work executed as per clause 3.7, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Corporation.

3A. (Conditions in case Work is not commenced)

In case the Work cannot be started due to reasons not within the control of the Contractor within one-eighth (1/8th) of the stipulated time for completion of Work or one (1) month, whichever is higher, either party may close the Contract by giving notice to the other party stating the reasons thereof. In such an eventuality, the Performance Guarantee of the Contractor shall be refunded with the approval of Tender Accepting Authority within following time limits:

Tendered Value of Work	Time Limit for Refund of Performance Guarantee
If the Tendered value of work is up to Rs. 1 crore	15 days
If the Tendered value of work is more than Rs. 1 crore and up to Rs. 10 crores	21 days
If the Tendered value of work exceeds Rs. 10 crores	30 days

- Neither party shall Claim any compensation for such an eventuality.
- This Clause shall not apply in the event of any breach of Contract by either Party.

Note: The decision of the Tender Accepting Authority regarding actions taken under this clause, including the justification or reason claimed by Contractor as being beyond his control, shall be final and binding on the Contractor.

3B. Frustration of Contract (Post-Commencement of work)

- 3B.1 If, after the commencement of the work, the performance of the Contract is prevented or delayed by circumstances of an exceptional nature, such as **war, hostilities (whether war be declared or not), invasion, act of foreign enemies, rebellion, revolution, insurrection, military or usurped power**, or by any act of Government in India or of any State Government or by **natural calamities** such as earthquake, floods, or other causes beyond the control of either party, so as to render the performance of the Contract impossible or illegal, the Contractor shall immediately give notice in writing to the Engineer-in-Charge.
- 3B.2 Upon receipt of such notice, if the Engineer-in-Charge is satisfied, after due verification, that the performance of the Contract has become impossible or unlawful under Section 56 of the Indian Contract Act, 1872, the Contract shall, **after approval of the Competent Authority**, be treated as **frustrated and closed**. The Performance Guarantee shall be returned to the Contractor, and the Contractor shall be paid for:
- a) The work executed and measured up to the date of such closure, in accordance with the Contract provisions.
 - b) The value of approved materials, plant, or equipment reasonably brought to Site for execution of the work, provided the same are handed over to the Corporation; and
 - c) Any other dues legitimately payable under the Contract, subject to certification by the Engineer-in-Charge.
- 3B.3 No Claim shall be entertained for **loss of anticipated profit, damages, or consequential losses** on account of such frustration or closure.
- 3B.4 The decision of the Competent Authority of the Corporation as to the existence or extent of the circumstances justifying such frustration shall be **final and binding** on the Contractor.

4. Contractor Liable to Pay Compensation even if Action not taken under Clause 3

In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause 3 hereof shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof; and such powers shall, notwithstanding, be exercisable in the event of any future case of default by the Contractor, and the liability of the Contractor for compensation shall remain unaffected.

In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause, he may, if he so desires, after giving a notice in writing to the Contractor, take possession of (or, at the sole discretion of the Engineer-in-Charge, which shall be final and binding on the Contractor, use as on hire — the amount of hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works or the Site thereof belonging to the Contractor, or procured by the Contractor and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current Market Rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final and binding on the Contractor.

The Engineer-in-Charge may require the Clerk of Works, Foreman, or other authorised agent of the Contractor to remove such tools, plant, materials, or stores from the premises within a time to be specified in such notice. In the event of the Contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the Contractor's expense, or sell them by auction or private sale on account of the Contractor and at his risk in all respects, and the certificate of the Engineer-in-

Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the Contractor.

5. Time and Extension for Delay

The time allowed for execution of the Works as specified in the Tender Document /LOA or the extended time in accordance with these Conditions shall be the essence of the Contract.

The execution of the Work shall commence from such time period as mentioned in Tender Document /LOA or from the date of handing over of the Site, as notified by the Engineer-in-Charge, whichever is later.

If the Contractor commits default in commencing the execution of the work as aforesaid, the Performance Guarantee shall be forfeited by the Engineer-in-Charge and shall be absolutely at the disposal of the Corporation without prejudice to any other right or remedy available in law.

5.1 As soon as possible, but within seven (7) working days of award of work and in consideration of –

- (a) Schedule of handing over of Site, as specified in the Tender Document /LOA
- (b) Schedule of issue of designs, as specified in the Tender Document /LOA

I. The Contractor shall submit a Time and Progress Chart for each milestone. The Engineer-in-Charge may within seven (7) working days thereafter, if required, modify and communicate the approved programme to the Contractor, failing which the programme submitted by the Contractor shall be deemed to be approved by the Engineer-in-Charge.

The Work programme shall include all details of balance drawings and decisions required to complete the Contract with specific dates by which these details are required by Contractor without causing any delay in execution of the Work along with the method statement which the Contractor proposes to adopt for the execution of Works. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the Works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of Work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents.

- II. In case of non-submission of Construction Programme by the Contractor, the programme approved by the Engineer-in-Charge shall be deemed to be final.
- III. The approval by the Engineer-in-Charge of such programme shall not relieve the Contractor of any of the obligations under the Contract.
- IV. The Contractor shall submit the Time C Progress Chart and Progress Report using the mutually agreed software or in another format decided by Engineer-in-Charge for the Work done during previous month to the Engineer-in-charge on or before 5th day of each month, failing which a recovery of **Rs. 700 per week**, shall be made on per week or part-time in case of delay in submission of the monthly progress report.

5.2 If the Work(s) be delayed by **force majeure**: Conditions beyond control of Corporation and Contractor like

- a. war, hostility, acts of public enemy, sabotage, epidemic, Acts of God, or
- b. serious loss or damage by fire, or
- c. civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or if the delay is due to **other reasons** like:
- d. on the part of other Contractors or tradesmen, engaged by Engineer-in- Charge in executing

- work, not forming part of the Contract, or
- e. abnormally bad weather or,
 - f. any other cause like the above which, in the reasoned opinion of the Engineer-in-Charge, is beyond the Contractor's control.

then upon the happening of any such event causing delay, the Contractor shall within 30 days, give notice thereof in writing to the Engineer-in-charge but shall nevertheless consistently employ his best endeavors to prevent or make good the delay caused and shall do all that may be reasonably required to the satisfaction of the Engineer-in- Charge to proceed with the Works.

The Contractor shall have no Claim of damages for extension of time granted or rescheduling of milestone(s), if any for events listed in Sub-Clause 5.2. However, if the Force majeure conditions mentioned in (a), (b) and (c) above continues for a period exceeding 120 days, either party may, at its option, terminate the Contract by giving notice to the other party. This shall not lead to the forfeiture of Performance Guarantee or Security Deposit of the Contractor.

- 5.3** In case the Work is hindered by the Department or for any reasons / event, for which the Department is responsible, the Engineer-in-Charge shall, if justified, give a fair and reasonable extension of time and reschedule the milestones for completion of Work.

Such extension of time or rescheduling of milestones shall be without prejudice to any other right or remedy of the parties in Contract or in law; provided further that for concurrent delays under this Sub-Clause and Sub-Clause 5.2 to the extent of the delay is covered under Sub-Clause 5.2, the Contractor shall be entitled to only extension of time and no damages.

- 5.4** Request for rescheduling of milestones or extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing the delay. The Contractor shall indicate in such a request period by which rescheduling of milestone/s or extension of time is desired.

With every request for rescheduling of milestones, or if at any time the actual progress of work falls behind the approved programme by more than 10% of the stipulated period of completion of Contract, the Contractor shall produce a revised programme which shall include all details of pending drawings and decisions required to complete the Contract and also the target dates by which these details should be available without causing any delay in execution of the Work. A recovery of Rs. 100 per day shall be made on per day basis in case of delay in submission of the revised programme.

- 5.4.1** In any such case, the Engineer-in- Charge may give a fair and reasonable extension of time for completion of Work or reschedule the milestones.

The Engineer-in- Charge shall finalize/reschedule a particular milestone before taking an action with respect to the subsequent milestone. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the Engineer-in-Charge or his authorized Engineer in writing within 21 days from the date of receipt of such request from the Contractor.

In the event of non-application by the Contractor for extension of time or in case of an ongoing critical delay, the Engineer-in-Charge, after affording due opportunity to the Contractor, may give a fair and reasonable interim extension, supported with a programme (as specified under Clause 5.4 above), within a reasonable period of occurrence of the event. After the final stage of completion is reached (Final Taking-Over Certificate issued), EOT and LD may be reviewed, if required. At the time of such final review, the Engineer-in-Charge shall assess whether, and by how much, the intended completion date should be extended without LD based on the analysis of excusable delays, concurrent delays

and in- excusable delays (Contractors' own fault) up to actual date of completion.

- 5.5 In case, the work is delayed, in the opinion of the Engineer-in-Charge, by the Contractor for reasons other than those mentioned in Clause 5.2 , Clause 5.3 or Clause 5.4 and beyond the justified extended date, then, without prejudice to the right to take action under Clause 3, the Engineer-in-Charge may grant such extension of time as required for completion of the Work without rescheduling of milestones. The Contractor shall, however, be liable for levy of compensation for delay for the period of such extension of time.

6 Measurements of Work Done

1. Unless otherwise provided, the Engineer-in-Charge shall ascertain and determine the value of Work done in accordance with the Contract through proper measurements. The Engineer-in-Charge may authorize Corporation Engineers for this purpose, such authorization being communicated through the Letter of Acceptance (LOA) or other formal amendments.
2. The Corporation may also deploy a Project Management Consultant (PMC) at the Work Site for the physical supervision, quality checks, and measurement verification. The duties and actions of the PMC under this Clause shall apply only when such agency is formally deployed by the Corporation.
3. All measurements of items with financial value shall be entered by the Contractor into a Computerized Measurement Book (CMB)/Electronic Measurement Book (EMB) using the Corporation's Contract Management System (CMS)/EMB-APP/ Portal, in the specified departmental format prescribed for maintaining a complete record of all executed Works.
4. The CMB/CLB (Computerized Level Book) shall be a digital, non-editable XLS or PDF document digitally signed by all relevant parties, including those responsible for recording, checking, certifying, and accepting the measurements.
5. The EMB shall be uploaded or entered online on the Corporation's designated CMS/EMP APP/digital platform.
6. Measurements and levels recorded by the Contractor or its authorized representative shall be checked periodically by the Corporation Engineers and, where applicable, the PMC, at intervals or schedules determined in consultation with the Engineer-in-Charge.
7. In the case of CMB/CLB, any corrections suggested by the Corporation Engineers or PMC shall be incorporated by the Contractor before final resubmission for approval and digital signatures of all parties.
8. Before the submission of any bill, the Contractor shall present draft computerized measurement sheets (with supporting Excel sheets) for preliminary verification by the Corporation Engineers and/or PMC. Upon incorporation of all corrections, the Contractor shall submit the final digitally signed CMB/CLB containing all details such as date, page number, measurement book (MB) number, and Contract number.
9. The finalized CMB/CLB shall be accurate and free of overwriting or cutting. Any errors identified thereafter shall require cancellation of the previous document and resubmission of a corrected version by the Contractor.
10. The approved CMB/CLB shall be assigned a unique identification number and entered into the Corporation's records before submission of the corresponding bill for payment.
11. All finalized CMBs/CLBs shall be digitally signed by the Corporation Engineers, PMC (if deployed), and the Contractor, with all details recorded in the Corporation's e-office system for reference.
12. Measurements recorded in the EMB shall be entered online via the CMS/EMB APP. The Contractor shall raise a Request for Inspection (RFI) online for verification by the Corporation Engineers and/or PMC Consultant as per the agreed schedule.
13. Any changes or discrepancies identified during verification shall be communicated to the Contractor, who shall incorporate the changes and resubmit the updated measurements for approval. Final

authorization shall rest with the Corporation Engineers and PMC, if deployed.

14. EMB records, including detailed measurement sheets and cost abstracts in digital format, shall be maintained on the CMS/EMB APP/portal for ready reference.
15. The Contractor shall, without extra charge, provide all necessary assistance, labor, equipment, and other resources for measurement and verification by the Engineer-in-Charge or authorized representatives.
16. Except where explicitly stated otherwise, measurements shall follow the procedures outlined in the Technical Conditions of Contract and relevant Specifications. For items not covered therein, measurements shall conform to the applicable standards of the Bureau of Indian Standards (BIS) or, where unavailable, any mutually agreed method.
17. The Contractor shall give not less than seven (7) days' notice to the Corporation Engineers and PMC (if deployed) before covering or rendering any work inaccessible for measurement or verification.
18. No Work shall be covered without written consent from the Corporation Engineers or PMC. If any Work is covered without such consent, the Contractor shall uncover it at his own expense. Failure to comply may result in non-payment for the affected Work or materials.
19. The Engineer-in-Charge, Corporation Engineers, or PMC may independently verify, or test-check measurements recorded by the Contractor. All provisions of this clause shall equally apply to such verification.
20. Verification or payment of any interim or final bill shall not be considered conclusive evidence of the sufficiency or the quality of the Work or materials. The Contractor shall remain liable for over-measurements or defects identified up to the expiry of the Defects Liability Period.
21. The Engineer-in-Charge may direct the adoption of alternative digital methods for recording C certifying measurements for payment purposes based on digitalization technologies adopted by the Corporation. Such methods, even if not expressly described in these clauses, shall aim to improve efficiency and transparency and the Contractor shall implement them without any additional financial Claim or extension of time.

7 Payment on Intermediate Certificate (to be Regarded as Advances)

- 7.1** No payment shall be made until the executed C billed value of works is less than Rs. Twenty lakhs or the amount corresponding to the relevant payment milestone mentioned in Price Schedule, whichever is higher, until the entire work has been completed and a Certificate of Completion has been issued.
- 7.2** For works estimated to cost over Rs. Twenty lakhs or containing more than one item of Work in the scope, the Contractor may submit interim or running-account bills for the Work executed, based on recorded measurements or Payment Milestones stipulated in the Price Schedule, using the Department's prescribed format and procedure. These bills shall be submitted on or before the date fixed by the Engineer-in-Charge.
 - a) The Contractor shall not be paid any such interim payment if the gross work completed, together with the net payment or adjustment of advances for materials collected since the last payment, is less than five percent (5%) of the Tendered Value (excluding secured advances). In such cases, the interim bill shall be prepared on the appointed date of the month after the requisite progress has been achieved.
 - b) However, to expedite the progress of Work, the Engineer-in-Charge, on the Contractor's request, may make interim payment(s) even before the net payment limit specified above is achieved. In such case(s), no interest or compensation shall be recoverable from Contractor. Such payment by Engineer-in-Charge shall not be construed as a waiver of the limit specified above for subsequent interim payment(s). The relaxation under this sub-clause shall not be exercised more

than once during the Contract Period.

- c) The Engineer-in-Charge shall arrange verification of the bill by taking, or causing to be taken, the requisite measurements of the Work through Corporation Engineers. In the event of the Contractor's failure to submit the bills, no Claim of any nature, including interest for delay in payment, shall be sustained.
- d) Payment of the admissible amount shall be made on the Engineer-in-Charge's acceptance and certification of the amount the Contractor is entitled to as an interim payment. The rates shall be determined by the Engineer-in-Charge in accordance with the Contract.
- e) Items provided by the Contractor under the Price Schedule or the Scope of Work that are expressly stated to be reimbursable by the Corporation must be invoiced to the Corporation with detailed supporting documentation, including but not limited to, high-quality copies of relevant receipts and a detailed statement of usage and purpose. All such supporting documents shall be reviewed and approved by the Corporation representative before submission of the invoice.

7.3 Invoices: The Contractor shall submit to the Corporation an invoice detailing the amounts payable to the Contractor under this Contract. Each invoice shall, in addition to the requirements of the Price Schedule C Technical Conditions /Specifications of Contract: -

- a) be in duplicate and generally in the format prescribed in APPENDIX-G XVIII.
- b) bear the Contract Number, LOA number, name of Work/services, date of start and completion of Work; and
- c) be accompanied by supporting evidence of Work done and itemized documentation in accordance with the Corporation's requirements as set out below:

7.3.1 Mandatory Documents:

- a) Copy of Valid Insurance Policies (Contractor's All Risk (CAR) and Work Men Compensation)
- b) Copy of CMB/EMB duly certified by Corporation Engineers over the CMS /EMB APP Portal of the Corporation, or as directed by the Engineer-in-charge.

7.3.2. Other Documents:

- a. Copy of paid challans of PF/ESI (as applicable) of a period preceding month.
 - b. register of Skilled/Semiskilled/Unskilled labor supplied, deployed on the work during the month, muster roll.
 - c. Theoretical Issue C Consumption Statement of cement, steel C bitumen (if used in the work), paint and floor hardener or any other items if required by engineer in charge to the extant consumed in the works and claimed in the bill.
 - d. invoice of Cement, Steel, Bitumen, Paint, Primer, Distemper, Varnishes, Tile Adhesive, Admixture, Anti-termite chemical, Water proofing compound material, Floor hardener (as brought for use at Site) or any other items as decided /asked by Engineer in Charge to the extant consumed in the works and claimed in the bill.
 - e. Third party test reports of the works claimed in the bills (Mandatory Items as per field quality plan) or certificate of CORPORATION ENGINEERS on acceptance of quality of work claimed in bills in case tests are conducted at Site lab and where third-party testing is not required.
- Invoices and mentioned documents in the Contract shall submitted by the Contractor as per Bill Proforma enclosed through CWC online Bill Tracking System (BTS) only to the Engineer in charge.

7.3 Currency of Payment: All payments under this Contract shall be made in Indian Currency Only.

7.4 While retaining five percent (5%) of the invoice amount as retention money against the Security Deposit in accordance with Clause 1A of the GCC, in the case of invoices towards Works completed with Defect Liability / Warranty obligations, the Corporation shall pay ninety-five percent (95%) of the certified invoice amount in the following manner:

- a. Where the Contractor submits a correct invoice under Clause 7.3 along with the Mandatory Documents but without the Other Documents stipulated therein, the Corporation shall make an initial payment of seventy-five percent (75%) of the amount duly certified by the Corporation Engineers in the claimed bill, after deducting necessary retention amount/Liquidated Damages/ TDS, wherever applicable and/or any other technical/ financial withholding/recovery as suggested by the Corporation Engineers and Accepted by the Engineer in-Charge. This payment shall be made within seven (7) working days from the date of receipt of such invoice with EMB in BTS.
- b. The balance payment (net of any withheld amounts, deductions, recoveries, retentions etc.) shall be released within fifteen (15) working days of receipt of the complete set of Other Documents in accordance with Clause 7.3. The Contractor may raise the next bill only after the submission of the complete supporting documents with respect to any previous bill pending for submission by him if any.
- c. Where the Contractor submits a correct invoice under Clause 7.3 along with all the documents stipulated therein, full payment of the amount duly certified by the Corporation Engineers in the claimed bill, after deducting the necessary retention amount/Liquidated Damages/ TDS, shall be made within Fifteen (15) working days from receipt of such complete invoice.

Note:

- In case of any technical deficiencies, lapses on account of non-compliance of PF/ESI, Insurance (WC Policies), Labour License or any other reasons not covered in any Clause of tender documents etc. are noticed by the Corporation Engineer/Engineer-in-charge/CWC Vigilance Deptt./CTE Organization, then a sum, as recommended or decided by Corporation Engineer/Engineer-in-charge may be withheld, till rectification/remedy/compliance of the deficiencies.
- Recoveries, if any, on account of uncovered period of insurance (WC Policies), defective work, loss to CWC or any other liability not fulfilled by Contractor etc., shall be affected from the Contractor's bill / any other due(s) amount (i.e. Final Bill, Security Deposit C Performance Bank Guarantee etc.).
- Water charges @ 1 % of tendered rates shall be deducted if the water is supplied by CWC. Certificate of Corporation Engineer shall be required in case water is provided by Contractor.
- Electricity Charges shall be deducted based on actual electricity consumed and the rates charged by electricity supplying Agency. Certificate of Corporation Engineer shall be required in case of electricity is taken from Corporation.
- No bill (invoice) shall be accepted without mandatory documents as mentioned above.
- No bill (invoice) shall be accepted if it is not submitted through online BTS.
- Contractor can submit other documents mentioned at above subsequently within 15 days of submitting the bills on BTS but submission of EMB duly certified by the Corporation Engineers along with Bill is mandatory.
- For intermediate RA bills, any of above other documents (Clause 7.3), if not available due to reasons stated by Contractor with undertaking to comply and submit, may be relaxed by Engineer-in-charge. However, Contractor must comply the statutory and other provisions.

Contractor shall indemnify the CWC against all losses / damages due to non-compliance of any of above provisions at intermediate stage, if any.

- No interest shall be payable, if payment is delayed beyond the stipulated period due to any reason.
- Income Tax as well as Goods and Service Tax or any other Tax / Levy, as applicable by the Central / State Govt., shall be recovered on the gross amount of each bill.
- To enhance the transparency in processing and settlement of bills /Invoices, Central Warehousing Corporation have introduced a bill tracking system for its Contractors or vendors. The Contractor will have to register on CWC BTS (Bill tracking system). His registration will enable the Contractor and CWC officials to see the bill status with dates which is under process of payment through various stages of processing of bills, the stage at which it is lying, the amount for which it is passed and other details. The BTS system includes history feature also so that a Contractor can see the history of the bills submitted by them. The Contractor will register to BTS through following link. He may take the assistance of the CWC officials to ensure his registration on BTS.
- Links shall be given by Engineer in charge upon request of Contractor.
- Contractor already registered, shall be provided with login id and password, on their registered email accounts which can be changed by Contractor on 1st login to ensure the safety of their account.
- Uploading of Invoices/bills: Contractor will submit his invoice for payment through BTS only.
- In case the invoices/bills are digitally signed, as per Govt. guidelines, the vendor shall not be required to submit the hard copy of invoices/bills. The vendor can directly submit the digitally signed invoice along with the supporting documents by selecting the concerned Region/ Corporate Office C the concerned Division, for which invoice is intended. However, the supporting documents as per the requirement of Contract/work order/purchase order etc. to be submitted in hard copy also.
- In case of ink signed invoices/bills, the vendor shall be required to upload the invoice/bill including supporting documents in BTS and also submit the hard copy of the original Invoice/bill and supporting documents.
- The dealing assistant/officials of CWC upon examining the invoice and supporting documents will return the invoice to Contractor If:
 - (a) The invoice is wrong/ calculation mistake/ wrong GSTIN etc.
 - (b) If the uploaded invoice by the vendor is not digitally signed and digital signatures cannot be verified online.

7.5 Any invoice not complying with the provisions hereof may be returned by the Corporation to the Contractor whereupon the Contractor shall submit a rectifying invoice. The Corporation shall make payment of such rectifying invoice in accordance with this Clause above.

7.6 No payment made by the Corporation shall be construed as acceptance in whole or in part of the performance by the Contractor of any of its obligations under this Contract. All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Corporation Engineers relating to the Work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the Contract and specifications. Any such interim payment, or any part thereof

shall not in any respect conclude, determine or affect in anyway powers of the Engineer-in-Charge or Corporation Engineers under the Contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the Contract.

- 7.7** Pending consideration of Contractor request for extension of date of completion, interim payments shall continue to be made as herein provided without prejudice to the right of the department to take action under the terms of this Contract for delay in the completion of work, if the extension of date of completion is not granted by the Engineer-in-Charge.
- 7.8** The Engineer-in-Charge in his sole discretion on the basis of a certificate from the Corporation Engineers to the effect that the Work has been completed up to the level in question make interim advance payments without detailed measurements for work done (other than foundations, items to be covered under finishing items) up to lintel level (including sunshade etc.) and slab level, for each floor working out at seventy five percent (75%) of the assessed value. The advance payments so allowed shall be adjusted in the subsequent interim bill to be submitted by the Contractor within ten (10) days of the interim payment. In case of delay in submission of bill by the Contractor, a simple interest at the rate of ten percent (@10%) per annum shall be paid to the Corporation from the date of expiry of prescribed time limit which will be compounded on yearly basis.
- 7.9** Corporation's Right to Dispute Invoices: If the Corporation disputes any item or portion of an invoice submitted under this Contract, it shall be entitled to withhold, without payment of interest, the amount in dispute until such dispute is resolved to the satisfaction of the Engineer-in-Charge. The undisputed portion of the invoice, if any, shall be processed and paid in accordance with the provisions of this Contract.
- 7.10** Payments Due to the Contractor: The Corporation shall be entitled to deduct from any payment due or becoming due to the Contractor under this Contract or any other Contract and/or from the Performance Bank Guarantees, withheld amount(s), Security Deposit (SD), all costs, damages, recoveries or expenses for which the Contractor is liable to the Corporation under this Contract or any other Contract.
- 7.11** Payment in Composite Contracts: In case the main Contractor fails to make any payment to the associate Contractor engaged by him for any component of the Works within fifteen (15) days of receipt of the corresponding running account payment, then the following procedure shall apply:
- Upon a written complaint from such associate Contractor, the Engineer-in-charge or his authorized Engineer shall issue a show cause notice to the main Contractor.
 - If the main Contractor fails to respond within the time stipulated in the notice, or if the reply is found unsatisfactory, the Engineer-in-Charge may, after due verification, make direct payment to the associate Contractor in accordance with the terms and conditions of the agreement drawn between main Contractor and associate Contractor.
 - Any such payment made to the associate Contractor shall be recovered by Engineer-in-charge from the next R/A/ final bill payable to the main Contractor, whether for the major or minor component, as the case may be.
- 7.12** Audit: The Contractor shall maintain proper and accurate records relating to all transactions under this Contract and shall provide copies thereof to the Corporation upon request. The Corporation, or its duly appointed representative, shall have the right to audit the relevant books and accounts of the Contractor in respect of any reimbursable charges paid for by the

Corporation under this Contract. This right of audit shall survive for a period of three (3) years following expiry or termination of the Contract. Any incorrect or excess payment identified through such audit shall be adjusted or recovered between the parties, as appropriate.

7.13 Liens:

- a) The Contractor shall not Claim or create any lien, charge, encumbrance, or similar right on any part of the Work, the Facilities or on any property belonging to the Corporation Group. The Contractor shall defend, indemnify and hold harmless the Corporation Group from and against any Claim, lien, charge or encumbrance arising out of or in connection with any act, default, or omission of the Contractor Group in the performance of the Contract.
- b) Without prejudice to the foregoing, if any act or omission of the Contractor Group results in the creation or existence of any lien, charge or encumbrance or the like existing upon the property of the Corporation Group, the Contractor shall, upon demand, refund to the Corporation all monies which the Corporation Group may be compelled to pay in order to discharge any such lien or encumbrance.

7.14 Subcontracts: The Contractor shall ensure that the provisions of the foregoing Clauses i.e. Clause 7.13 (Audit) and Clause 7.14 (Liens) are incorporated in all sub-contracts / agreements it shall enter into with any of the subcontractors for the supply any labour, equipment or materials in connection with this Contract.

7.15 The Contractor shall. Upon request, promptly furnish to the Corporation a comprehensive statement confirming that all the Contractor's suppliers, subcontractors and vendors have been paid in full for work executed or materials supplied in connection with the performance of the Works.

7A.

- a) No Running Account Bill/Final Bill shall be processed or paid until the Contractor has submitted to the Engineer-in-charge valid copies of all the applicable labour licenses, registration certificates with the EPFO, ESIC and BOCW Welfare Board, as applicable under law.
- b) Before any payment is made, the following documents, each of which shall remain the property and responsibility of the Contractor, shall accompany the bill submitted to the Engineer-in-Charge: -
 - (i) Details of all persons employed on the Work, indicating the date of their engagement/employment up to preceding month.
 - (ii) Evidence of salary or wage payments made directly into the employees' bank accounts up to the preceding month.
 - (iii) Attendance records maintained in the manner prescribed or approved by the Engineer-in-Charge, up to the preceding month.
 - (iv) Proof of deposit of EPF and ESI contributions into the respective employees' accounts, up to the preceding month.
 - (v) Details of any penalties imposed upon the Contractor for delay in disbursement of wages or in deposition of EPF / ESI contributions into employees' accounts, up to the preceding month.
 - (vi) Any other document(s) required under statutory provisions and/or as may be directed by Engineer-in-Charge.
- c) If any document furnished by the Contractor under this Clause is subsequently found to be false or forged, the Engineer-in-Charge shall initiate action for debarment of the Contractor in accordance with the applicable rules and policies of the Corporation, without prejudice

to any other legal remedies available.

7B. Payment to Third party

If the exigencies of the work demand, the Engineer-in-Charge may authorize direct payment to a third party (creditor of the Contractor), subject to the following conditions:

- a) The Contractor furnishes an **authority letter** on non-judicial stamp paper of appropriate value of Rs. 100/- in the prescribed format, authorizing CWC to make payment on his behalf, and confirming that he remains fully responsible for quality, quantity, and compliance obligations under the Contract.
- b) The total payment(s) made to third parties under this provision shall not exceed **10% of the agreement cost of the work** (defined as the LOA value, unless formally amended in writing due to deviations in the Contract).
- c) Such direct payment shall not relieve the Contractor of any contractual or statutory liability (including labour cess, EPF, ESI, GST, or any other Tax/levy). The Contractor shall indemnify and hold harmless CWC from any claims, penalties, or liabilities arising therefrom.
- d) Direct payment shall be considered only in **exceptional circumstances** where continuity of work is at risk, and the Contractor has failed to pay despite due notice.
- e) Any such payment shall be deemed to have been made **on account of the Contractor**, and the amount shall be adjusted against his RA bills or other dues.

Format of the authority letter:

- "I/We authorize the Central warehousing Corporation to pay directly on my/our behalf to (name of the third party) an amount of Rs..... (Rupeesin words) for the work done or supplies made by..... (name of the third party).
- I/We shall be responsible for the quality and quantity of the same under the provisions of agreement number
- I/we shall be responsible of any contractual or statutory liability (including labour cess, EPF, ESI, GST, or any other Tax/levy) and I/we shall indemnify and hold harmless CWC from any claims, penalties, or liabilities arising therefrom

Signature of the Contractor

7C. MSME Reliefs in Works Contracts

This Contract pertains to a works Contract. In line with the Ministry of MSME's *Public Procurement Policy for Micro and Small Enterprises (MSEs), Order 2012* and clarifications issued thereafter, the purchase preference and relief provisions for MSEs (including but not limited to exemption from Earnest Money Deposit, issue of tender documents free of cost, and L1+15% purchase preference) are not applicable to works contracts, unlike in the case of procurement of goods and services. CWC shall, however, remain bound by the provisions of the MSMED Act, 2006, including any amendments notified from time to time, in respect of any separate procurement of goods or services from MSEs other than this works Contract.

Further, if the Department of Public Enterprises (DPE), the Administrative Ministry of CWC, or any other competent authority under law (including through statutory notifications under the MSMED Act, 2006) issues guidelines, notifications, or amendments extending such benefits or reliefs to MSEs in respect of works contracts, the same shall be deemed to apply automatically to this

Contract and shall be implemented by CWC to the extent made applicable, subject to the validity of this Contract and applicability thereto.

8. Completion Certificate and Completion Plans

- i. Within ten (10) days of completion of the Work or where applicable, upon part completion of one or more independent building(s) or section(s) of an infrastructure project, as required or specified in APPENDIX-I of the tender, the Contractor shall give written notice of such completion to the Engineer-in-Charge. That within thirty (30) days of receipt of such notice, the Engineer-in-Charge or his authorized representative shall inspect the Works and furnish the Contractor with a Part Completion Certificate or Final Completion Certificate, as the case may be, indicating:
 - a) defects to be rectified by the Contractor; and/or
 - b) the items for which payment shall be made at reduced rates.
- ii. No Final Completion Certificate shall be issued, nor shall the Works be deemed complete, until the Contractor has removed from the Site all scaffolding, surplus materials, debris, huts, and sanitary facilities erected or used by his workmen in connection with execution of the Works; thoroughly cleaned all woodwork, doors, windows, walls, floors, and all other parts of the building(s) or structures under or about his possession for the purpose of execution; and complied with all requirements of the Contract in respect of measurement of the Works by the Engineer-in-Charge. Only upon satisfactory fulfilment of the foregoing requirements shall the Works be measured and the Final Completion Certificate issued.
- iii. If the Contractor shall fail to comply with the requirements of this Clause in respect of the removal of scaffolding, surplus materials, debris, huts, sanitary arrangements or cleaning of the Site on or before the date fixed for the completion of Work, the Engineer-in-Charge may, at the Contractors risk and cost, remove and dispose of such scaffolding, surplus materials, debris, huts, sanitary arrangements and rubbish etc., and perform the necessary cleaning operations in such manner as he deems fit. The Contractor shall have no Claim in respect of scaffolding, surplus materials, or debris etc. so removed, save for any sum actually realized from their sale.

8A. Issuance of Experience Certificate in relation of the work completed by Contractor

- i. Upon satisfactory completion of the work under the Contract or upon substantial completion (upon request of the Contractor for tendering purposes to others), the Corporation may issue an Experience Certificate to the Contractor, in the format prescribed under **APPENDIX-G XIX**, duly indicating the scope of work executed, value of work completed, and date of completion and other details as per format. The Remarks given by Engineer in charge, on Quality and other details on the contractor's mobilization, technical and financial soundness and general behavior shall be final and acceptable to the Contractor without any dispute.
- ii. The Experience Certificate shall be issued by the **Engineer-in-Charge** who has sign the Contract agreement with the Contractor but not below the rank of **Deputy General Manager (DGM, Engg)**. However, in the case of contracts having an awarded value of **less than ₹100 lakh**, the Experience Certificate may be issued by the Engineer-in-Charge holding the rank of **Senior Manager (Engg) or below**, as applicable. Any such certificate issued by an officer holding the rank junior than above, shall not be valid for consideration of technical experience of the Contractor.
- iii. The Corporation may, upon a written request from the Contractor, furnish additional details such as quantities executed, relevant milestones, or any other performance-related particulars that may be reasonably required for supporting eligibility in other tenders or empanelment. The graded remarks related with quality, performance, technical proficiency, resources, behaviour etc given by Experience issuing authority shall be final and acceptable to Contractor and will not be arbitrable.
- iv. The Experience Certificate may be **digitally, or ink signed** by the issuing officer and only such

certificates issued by authorized officers of the corporation as above shall be considered **valid and authentic** for any purpose, including submission to third parties.

- v. The Corporation reserves the right to subject any issued Experience Certificate to **independent third-party verification**, either directly or through any authorised agency, at any stage.

8B. Design Data/Drawings & Completion Plans to be Submitted by the Contractor

1. Ownership of Design Data/Drawings:

- (i) All Design Data/Drawing(s) prepared or developed under this Contract shall be the property of the Corporation from the date of their creation or development. No Data/ Drawing(s) created or developed by the Contractor under this Contract shall become the property of the Contractor, provided that the risk and responsibility for any loss of or damage to such Data/Drawing(s) shall remain with the Contractor until their delivery to the Corporation.
- (ii) All Data /Drawings shall be fit for the purposes specified in the Contract.
- (iii) All items created or developed by the Contractor outside the scope of this Contract shall remain the property of the Contractor, provided that the Corporation shall have the right to use any such item if it is provided to the Corporation as part of the Work.

2. Delivery of Design Data/Drawings:

- (i) When explicitly mentioned in Items of Works described in the Price Schedule or when required asked by the Engineer -in -charge, The Contractor shall deliver to the Corporation Engineer or to any other party designated by the Engineer -in -charge, all Data/ Drawings, promptly upon preparation or receipt.
- (ii) In the event of suspension or termination of the Contract, the Contractor shall immediately deliver to the Engineer -in -charge/Corporation Engineers all undelivered Data/ Drawings.
- (iii) The Contractor shall not retain copies of such Data/Drawings without the prior written consent of the unless it shall have first obtained the Engineer -in -charge's written consent. The Contractor shall take all necessary possible measures to ensure that no magnetic medium (tape, disk or other) is exposed to any will be passed through, or otherwise come into the vicinity of, any form of magnetic device during transport of the Data/ Drawings. Prior to such the transport, of any Data/Drawings by the Contractor, the Contractor shall notify advise the Engineer -in -charge or his Representative of the shipping and packing details.

3. Delivery of Completion Plans/Drawings

1. In Works involving construction of buildings, yards, roads or similar facilities, the Contractor shall prepare completion drawings, showing the final layout of all completed Works. These drawings shall include dimensions, slopes, and details of structures, reinforcements, pavements, camber details, drains, cable trenches, machine foundations and other relevant features. The cost of preparing such drawings shall be borne by the Contractor.
2. The Contractor shall submit completion plans for both internal and external civil, electrical, and mechanical services where such service plans were issued for execution by the Engineer-in-charge. If directed by the Engineer-in-charge to prepare such plans, the Contractor shall be bound to do so.
3. If the Contractor fails to submit the completion plan(s) (three sets of drawings along with soft copies) within thirty (30) days of completion of the Work or along with the Final Bill, whichever is later, he shall be liable to pay a sum as specified in the table below. The decision of the Engineer-in-charge in this regard shall be final and binding on the Contractor. GST, as applicable under law, shall be levied in addition to the above so recovered. Recovery Rates for Non-Submission of Completion Plans.

For Contracts with executed value above Rs. 25 Lakhs and up to Rs. 1 cr	Lumpsum-Rs. 10,000/-
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For Contracts with executed value above Rs. 1cr and up to Rs. 3 cr	Lumpsum-Rs. 30,000/-
For Contracts with executed value above Rs. 3cr and up to Rs. 5 cr	Lumpsum-Rs. 50,000/-
For Contracts with executed value above Rs. 5cr and up to Rs. 10 cr	Lumpsum-Rs. 100,000/-
For Contracts with executed value above Rs. 10cr and up to Rs. 20 cr	Lumpsum-Rs. 200,000/-
For Contracts with executed value above Rs. 20cr	0.1% of executed value of work*

***Executed value of work for purpose of actions under above clause shall be inclusive of all Taxes and CESS.**

G. Payment of Final Bill

- (i) Upon expiry or termination of the Contract, the Contractor shall prepare and submit to the Corporation within thirty (30) days, a statement in the form of a final account, specifying the outstanding amounts which the Contractor intends to invoice to the Corporation for payments due to the Contractor in accordance with the provisions of the Contract.
- (ii) The Final Bill, in respect of such statement, shall be submitted by the Contractor in the same manner as specified for interim bills, within three (3) months (90 days) of physical completion of the Work or within one month from the date of issue of the Final Completion Certificate by the Engineer-in-Charge, whichever is earlier, or within ninety (90) days upon termination of the Contract.
- (iii) The Contractor acknowledges that once the Final Bill has been submitted, it shall have no further or additional Claim(s) whatsoever under the Contract. No Claim shall be maintainable after submission of the Final Bill, and such claims shall be deemed to have been waived and extinguished.
- (iv) Submission of the Final Bill beyond the period specified above may be considered by the Corporation only in exceptional circumstances, and solely upon the Contractor's written request stating the reasons for delay, to the satisfaction of the Engineer-in-Charge.
- (v) Payment for items included in the Final Bill shall be made as follows—
 - a) Items in respect of which there is no dispute shall be paid in full.
 - b) Items under dispute, whether on account of quantity or rate, shall be paid provisionally at the quantities and/or rates approved by the Engineer-in-Charge.

Such payment shall, as far as possible, be made within the period specified below, reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Corporation Engineer, complete with the account of materials issued by the Department and of dismantled materials.

Tendered Value of Work	Period for Payment of Final Bill
If the Tendered Value of work is up to Rs. 10 crores	3 months
If the Tendered Value of work exceeds Rs. 10 crores	6 months

- VI. In case of foreclosure or determination of the Contract, if the Contractor fails to submit the Extension of Time (EOT) case, final measurements, and final bill within thirty (30) days of such foreclosure or determination, the EOT case and the final bill shall be prepared and decided by the Department. The final bill shall be processed for payment only after withholding an amount equivalent to the maximum compensation that may be levied on the Contractor under the provisions of this Contract.

VII. Following the expiry or termination of the Contract, the Corporation shall not be required to make payment of any invoice not submitted in accordance with this Clause 9 (Payment upon Completion).

VIII. No interest or compensation shall be payable to either party for early release or delayed payment of the final bill beyond the time limits specified herein, irrespective of the cause of such delay.

10A. Materials to be provided by the Contractor.

The Contractor shall, at his own expense, provide all materials required for the Works other than those stipulated to be supplied by the Corporation.

The Engineer-in-Charge or his authorized representative shall, at all times, have access to the Works and to all workshops and places where Work is being prepared or from where materials, manufactured articles, or machinery are being obtained for the Works. The Contractor shall afford every facility and assistance to enable such access.

Maintenance of Material at Site (MAS) Register:

- i. MAS registers for the key materials including Cement, Steel, Bitumen, Paint, Primer, Distemper, Varnishes, Tile Adhesive, Admixture, Anti-termite chemical Water proofing compound material, Floor hardener, and any other items required by Corporation Engineers/ Engineer-in-Charge shall be maintained in the proforma given by corporation.
- ii. All entries in the MAS Registers shall be made by the designated staff of the Contractor and be reviewed by the Contractors authorized representative as well as by the Corporation Engineer / Engineer-in-Charge upon inspection from time to time. However, the Contractor shall remain fully responsible for the maintenance and safe custody of the MAS Registers.
- iii. Self-attested copies of Tax-paid bills for all materials entered in the MAS Register shall be submitted by the Contractor at the time of each review by representative of Corporation Engineer / Engineer-in-Charge. In case of any doubt regarding the genuineness of such bills by the Corporation Engineer / Engineer-in-Charge, however, genuineness of Tax paid bills shall rest solely with the Contractor.

10B. ADVANCES

(I) Secured Advance on Materials:

- a) Secured advance may be granted on the security of materials which, in the opinion of the Engineer-in-Charge, are not combustible, fragile, or perishable in nature, are in accordance with the Contract, and have been brought to the Site for incorporation in the Works. Such materials shall be adequately stored and protected against damage by weather or other causes. The advance shall be limited to seventy-five percent (75%) of the invoice value or seventy-five percent (75%) of the corresponding value determined on the basis of BOQ rates, whichever is less, subject to the conditions that:
 - i. the quantities are not excessive,
 - ii. the materials shall be utilized within ninety (90) days, and
 - iii. all other stipulations of the Contract are complied with.
- b) Before release of such advance, the Contractor shall execute an Indenture Bond hypothecating the materials to the Corporation and shall remain responsible for their safe custody. The Corporation Engineer may inspect the Site prior to release of the advance to

verify that the materials have been properly safeguarded against pilferage and deterioration.

- c) The Contractor shall not raise or avail any loan/ credit facility from any bank or financial institution by hypothecating the materials against which secured advance is claimed. An undertaking to this effect shall be submitted by the Contractor along with their request for grant of secured advance.
- d) The Contractors shall submit proof of the cost of materials and evidence of the delivery of materials at Site while claiming the advance. The amount of secured advance shall be recovered from each succeeding running bill or interim bill to the extent that the materials, for which advance has been paid, have been incorporated in the Works. In all cases, the advance shall be fully recovered after expiry of a period of one hundred and twenty (120) days from the date of payment of such advance, whether or not the materials have been consumed in the Works.
- e) Secured advance may also be granted, with the approval of the Engineer-in-charge, for materials of a perishable, fragile and/or combustible nature, provided that the Contractor furnishes comprehensive insurance cover for the full cost of such materials. The decision of the Engineer- in-charge shall be final and binding on the Contractor in this matter.
- f) No secured advance shall, however, be payable for high-risk materials such as ordinary glass, sand, petrol, or diesel.

(II) Mobilization Advance

- a) Where specifically mentioned in APPENDIX-V of the Tender (Special Conditions of Contract), an interest-free Mobilization Advance not exceeding ten percent (10%) of the tendered amount may be granted, if requested by the Contractor in writing within six (6) months of the order to commence the Work. Such advance shall be released in two or more installments as determined by the Engineer-in-Charge. The amount of any installment shall not exceed five percent (5%) of the Tendered Value of Work. The first installment shall be released upon commencement of work. The second and subsequent installments shall be released only
- b) after the Contractor furnishes proof of satisfactory utilization of the full amount of the previous installment(s) to the satisfaction of the Engineer-in-Charge, and
- c) upon certification by the Corporation Engineer that the Contractor has achieved financial progress of ten percent (10%) of the Contract Price, together with provision of a Bank Guarantee for the corresponding part of the advance.
- d) Mobilization expenditure shall not include margin money, bank commission, or other charges paid by the Contractor for procurement of Bank Guarantees against Performance Security or Mobilization Advance.
- e) The Mobilization Advance may be utilized for the following:
- f) (a.1) Establishment of Site office for contractors, testing lab, labour camps C basic amenities services for labour/staff, cement godown, reinforcement yard, stores etc.
- g) (a.2) Purchase or mobilization of tools, plant and machinery required for execution of work, such as concrete batch mix plant, mixtures, transit mixtures, loader, excavators, dumpers, DG sets, vibrators, hot mix bitumen plant, paver, rollers, testing lab equipment's etc.
- h) (a.3) Barricading of Site and procurement of centering / shuttering / staging material etc.
- i) (a.4) Any other item specified in the NIT.
- j) For assessment of the utilized amount of Mobilization Advance, ninety percent (90%) of the price of new items and fifty percent (50%) of the depreciated price of old items shall be considered.

- k) Expenditure incurred on items/materials that are measurable and payable under the agreement (including extra items) or materials that are eligible for secured advance shall be excluded from such assessment.
- l) The assessment of the Engineer-in-Charge in this respect shall be final and binding. Before release of any installment, the Contractor shall execute unconditional Bank Guarantee Bonds, not exceeding six (6) in number, from a scheduled commercial bank, for an amount equal to one hundred and ten percent (110%) of the advance, valid until full recovery of the advance. The Bank Guarantee shall be renewed from time to time to cover the balance amount and the likely period of complete recovery.
- m) Mobilization Advance for items at (a.2) and (a.3) and (a.4) above shall not be exceed five percent (5%) of the Contract Price and shall bear simple interest at the rate of 10 percent (10%) per annum, calculated from the date of payment to the date of recovery (both days inclusive) on the outstanding amount. Recovery shall commence after the after the first ten percent (10 %) of the gross value of work has been executed and paid and shall continue on a pro-rata basis so that the entire advance together with interest is recovered by the time eighty percent (80%) of the gross value of the Contract is executed and paid.
- n) The advance for items mentioned (a.2) and (a.3) and (a.4) as above shall not exceed fifty percent (50%) of the depreciated cost of such plant and machinery/items. The plants and machinery under advance shall be hypothecated on name of Corporation before the payment of advance is released. This advance shall be subject to the following conditions: (i) the Contractor produces satisfactory proof of payment for the equipment; (ii) such equipment is considered necessary by the Engineer-in-charge for the works; (iii) the equipment has been verified to have been brought to Site; (iv) the Contractor gives an undertaking on stamp paper that the equipment will work only on that job and will not be removed from the Site without obtaining written approval from the engineer; and (v) the Contractor furnishes a BG to cover the advance. No advance shall be admissible on equipment purchased under a hire purchase scheme/ financing arrangement or on hired equipment.
- o) If considered reasonable by the Engineer-in-Charge, the six-month period stipulated above for requesting Mobilization Advance may, upon the Contractor's written request, be extended at the discretion of the Engineer-in-Charge.
- p) All advances shall be used by the Contractor exclusively for mobilization expenditure, including the acquisition of construction-related plant and equipment or items mentioned for the purpose of advance in Contractor request letter. If any portion of the advance is misappropriated, the amount shall become immediately due and payable, and no further advance shall thereafter be granted. The Contractor shall also be liable to such further action as the Engineer-in-Charge may determine under the Contract.

10 C. Price Variation

Unless specifically provided in Appendix V of NIT (Special conditions of Contract), the prices of all items of work/services to be provided by the Contractor under this Contract, once accepted, shall remain firm and fixed during the entire Contract Period including any extensions granted for any reason whatsoever. No compensation shall be payable to Contractor or Corporation on account of change in price of input material, TCP and labor post award of Contract.

10.D Dismantled Material be Corporation Property

The Contractor shall treat all materials obtained during dismantling of a structure, excavation of the Site for a work etc. as Corporation's property and such materials shall be disposed off to the best advantage of Corporation according to the instructions issued by the Engineer-in-Charge in writing.

The Contractor shall ensure the neat and proper disposal of these dismantled materials as directed by Corporation Engineers. An amount equivalent to the value of such materials, based on the quantity removed for disposal and the credit rates fixed by the Engineer-in-Charge (unless otherwise stipulated in the Tender/Financial Bid under the schedule of credit items), shall be recoverable from the Contractor's dues.

11. Work to be Executed in Accordance with Specifications, Drawings, Orders etc.

The Contractor shall execute the whole and every part of the Works in the most substantial and workman like manner, both as regards materials and otherwise, in every respect in strict accordance with the specifications.

The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the Contractor shall be furnished free of charge one copy of the Contract documents together with specifications, designs, drawings and instructions, as are not included in the standard specifications of Central Public Works Department, specified in **APPENDIX-I of Tender (see tender information summary -TIS)** or in any Bureau of Indian Standard or any other, published standard or code or Schedule of Rates or any other printed publication referred to elsewhere in the Contract.

The Contractor shall comply with the provisions of the Contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the Contract.

The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

12. Deviations/ Variations Extent and Pricing

The Engineer-in-Charge shall have the power –

- (i) to make alterations in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the Work, and
- (ii) to omit a part of the Works in case of non-availability of a portion of the Site or for any other reasons and the Contractor shall be bound to carry out the Works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the Contract as if originally provided therein and any altered, additional or substituted Work which the Contractor may be directed to do in the manner specified above as part of the Works, shall be carried out by the Contractor on the same conditions in all respects including price on which he agreed to do the main Work except as hereafter provided.

12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the Tendered Value being ordered, be extended, if requested by the Contractor, as

follows:

- (i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original Tendered Value plus 25% of the time calculated in (i) above or such further additional time, as may be considered reasonable by the Engineer-in-Charge

12.2 Deviation, Extra Items, Substituted Items and Pricing

- A. In case of substituted items C extra item(s) i.e. the items that are completely new and are in addition to the items contained in the contract, the Contractor may within fifteen days of receipt of order or occurrence of the item(s) submit Market Rate, Claim rates, supported by proper analysis which shall include Contractor purchase invoices, vouchers etc. and manufacturer's specifications for the work, failing which the rate approved later by the Engineer-in-charge shall be binding.

Where the Contractor submits Claim for Market Rate(s) in the manner prescribed above, the Engineer-in-charge shall, within a reasonable time **limit of forty-five (45) days of the receipt** of the claims, duly supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis as defined in in next paragraph and the Contractor shall be paid in accordance with the rates so determined.

The rate(s) of extra items so determined by the Engineer-in-Charge shall be final and binding on the Contractor and shall not be arbitrable.

- B. Any item of work carried out by Contractor on the instructions of the Corporation Engineer /Engineer in charge which is not included in the accepted Schedule of Rates (Tender price schedule) shall be executed at the rates set forth in the Published Schedule as mentioned in APPENDIX-I of Tender document , (See TIS) modified by tender /Contractor percentage and for such items not contained in the later, as per following procedure:

- (i) As far as possible the rates for such items shall be derived from analysis of rates of nearer or similar items mentioned in respective Schedule of rates (Civil/ ECM belonging to the years as mentioned in the tender APPENDIX-I) for Civil and ECM works respectively as given above, modified by Contractor Percentage (CP) quoted by Contractor in his Financial bid over the respective Schedule of rates given in tender /price sub Schedule for Civil and ECM works respectively.
- (ii) If direct working of rates from these Schedules, by method described above, is not possible or when Item is not Given in these Schedules and/or In case of any item of General Maintenance works / Services not mentioned in Tender Sub Schedule, the Contractor shall be paid on the basis as under:

(a) Material, labor either or both: Reasonable cost of materials plus reasonable cost of labor inclusive of tools, plants, machinery, and GST C Labor Cess as applicable and plus 15% of so derived cost to cover Contractor profit, supervision, overheads, establishments, etc.

(b) The rates so worked out shall be modified by Contractor Percentage (CP) quoted by Contractor in his Financial bid over the respective Schedule of rates in tender / price Sub Schedule for Civil / ECM /General Maintenance Works C Services as per nature of works (as the case may be) containing the Market rate items.

The decision of Engineer in charge regarding reasonable labor cost and material consumption/ cost shall be final and binding on Contractor.

For avoiding confusion, reasonable rates, for the purpose of sub-clause above, shall be decided by Engineer based on lowest of (x) and (y) below:

- (X) = Market Rate of material, manpower, TCP (as enquired C received by Engineer in charge/Corporation Engineers from not less than 3 suppliers) and
 (Y) = purchase price (mentioned in Invoices) of the items purchased by Contractor.

Variation in quantities & Vitiating:

As there are multiple Sub-Schedules in the Contract, there exists the possibility of vitiating of the Contract due to variations in quantities. Accordingly, in the event of any variation in the quantities or in the originally contracted amount under any Sub-Schedule, a Vitiating Statement shall be prepared at the time of approval of the Deviation Statement and/or processing of payment. The vitiating amount, i.e., the difference required to ensure that the originally lowest tenderer (L1) remains L1 after the variation in quantities, shall be recovered from the Contractor's bill. No compensation, Claim, or additional payment shall be admissible to the Contractor on account of such quantity variation or recovery of the vitiating amount.

(iii) Deviation, Deviated Quantities and Pricing: Powers of Modification to Contract:

The Engineer-in-charge, on behalf of the Corporation, shall be entitled by order in writing to enlarge or extend, diminish or reduce the works or make any alterations in their design, character position, Site, quantities, dimensions or in the method of their execution or in the combination and use of materials for the execution thereof. The Engineer-in-Charge may also direct that any additional work be carried out or that any portion of the Works be omitted. The Contractor shall not be entitled to any compensation whatsoever on account of any increase or reduction in the quantities of work, or on account of such alterations, but shall be paid only for the actual quantity of work executed and for approved materials supplied against a specific written order, at the rates determined in accordance with the following provisions.

- i. Unless otherwise specified in the special conditions of the Contract, the accepted variation in quantity of items of the Contract would be up to +25% of the quantity originally contracted i.e. the Contract rates shall remain firm till the value of Contract changes as mentioned in subclause (iv) below.
- ii. The Contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any Claim or any compensation whatsoever up to the limit of -100% variation in quantity of items of works i.e. there will be no Claim or compensation in case the quantity of items of Work(s) are reduced or becomes '0' zero.
- iii. In case an increase in quantities by more than +25% of the agreement quantities is considered unavoidable, then the same shall be executed at the following rates -
 - (a) Quantities operated in excess of 125% but up to 140% of the agreement quantities shall be paid at 98% of the contracted rate for the items of such escalated quantities.
 - (b) Quantities operated in excess of 140% but up to 150% of the agreement quantities shall be paid at 96% of the contracted rate for the items of such escalated quantities.
 - (c) Variation in quantities of items beyond 150% should be avoided but can be permitted in unavoidable circumstances to complete the project and in such cases, these shall be paid at 96% of the contracted rate for the items of such escalated quantities
- iv. (a) The limit of +25% would apply to the total value of all items of work specified in Price

sub-schedule based on the Published Schedule other than Market Rate Schedule (as mentioned in financial bid/APPENDIX-I of Tender -TIS) as a whole and not on individual items of such sub-schedule. i.e. when there is an excess in total completed value of all items of such sub schedule by +25 % or more, the limits on individual items as mentioned in (iii) a, (b), (c) shall be applicable and awarded rates in Contract shall be modified accordingly otherwise these provisions of rate modifications shall not be applicable.

- v. (b) These limit would be applicable upon the variations of the contracted quantities of the individual items in case of Market Rate based items specified in the Market Rate sub schedule, irrespective of the manner of quoting the rate (single percentage rate or individual item rate in these sub schedule) and rates of such items in Contract with escalating quantities shall be modified as mentioned in (iii) a, (b), (c) irrespective of change in overall value of Contract.
- vi. The Contractor shall prepare a tentative deviation statement incorporating all quantities of works including all anticipated substituted /extra items of works based on the design/drawings issued/approved by Corporation or prevailing Site conditions/verbal or written instructions by Corporation Engineers or any higher authority during the Site visit or due to any circumstances likely to cropped up etc. , which are necessary to execute for completing the project as per specifications, within 15 days of such notices /events and will submit the same to the corporation engineer for consideration/approval or instruction in writing for execution, before 1st RA bill and then along with his each RA Bill . Corporation engineers shall examine such statement and after obtaining the approval from competent authority will timely convey the written instructions to execute the extra items/substituted items or additional quantities or not to execute any particular items of work contained in boq of awarded Contract.

In case Contractor fails to submit any such TDS statement before his 1st RA bill or along with subsequent RA bill, his responsibility for not executing additional quantities shall not be ceased and he will not hold the work on halt awaiting the written instructions/approval of Engineer in charge for executing the same. However, upon execution of these quantities without intimating the same in advance may crop up the situation where the payment of such additional quantities is withheld till final approval of CA is received .

- vii. Revised Contract value i.e. total value based on executed quantities and extra works if any under the original Contract, including variations in all sub-schedules of Financial Bid, shall be normally not allowed to go beyond +25% of awarded Contract value/Tendered Value of work. Any Variations beyond this limit, if found necessary to complete the Awarded project in all respect shall be executed by Contractor only upon receipt of written prior Instructions from the Engineer in charge. Engineer in charge shall timely convey the instructions to execute such enlarged quantities/extra works only with approval of Tender Acceptance Authority / competent authority in Corporation based on financial DOP

12.3 The following works shall be treated as works relating to foundation, unless C otherwise defined in the Contract:

- (i) For Buildings: All works up to 1.2 meters above ground level or up to floor 1 level, whichever is lower
- (ii) For Abutments, Piers and Well Staining: All work up to 1.2 m above the bed level
- (iii) For Retaining Walls, Wing Walls, Compound Walls, Chimneys, Overhead

Reservoirs/Tanks and other elevated structures: All works up to 1.2 meters above the ground level

- (iv) For Reservoirs/Tanks (other than overhead reservoirs/tanks): All works up to 1.2 meters above the ground level
- (v) For Basement: All works up to 1.2 m above ground level or up to floor 1 level, whichever is lower
- (vi) For Roads: All items of excavation and filling including treatment of sub-base

12.4 Any operation that is incidental to, or that ought reasonably to have been contemplated by the tenderer while quoting the tender, or that is necessary for the proper execution of any item included in the Schedule of Quantities or in the Schedule of Rates referred to above, whether or not such operation is specifically mentioned in the description of the item or in the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or in the rates provided in the said Schedule of Rates, as the case may be. No extra payment whatsoever shall be admissible on account of the performance of any such incidental or contingent operations.

13. Foreclosure of Contract due to Abandonment or Reduction in Scope of Work:

If at any time after the acceptance of the tender or during the progress of work, the purpose or object for which the Work is being done changes due to any supervening cause and as a result of which the Work has to be abandoned or reduced in scope, the Engineer-in-Charge shall, give a notice in writing, to that effect to the Contractor stating the decision as well as the cause for such decision and the Contractor shall act accordingly in the matter. The Contractor shall have no Claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full, but which he did not derive in consequence of the foreclosure of the whole or part of the Works.

The Contractor shall be paid at Contract rates, full amount for works executed at Site and in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the Work to the full extent in view of the foreclosure:

- i. Any expenditure incurred on preliminary Site work, e.g. temporary access roads, temporary labour huts, staff quarters and Site office, storage accommodation and water storage tanks.
- ii. Corporation shall have the option to take over the Contractor's materials or any part thereof either brought to Site or of which the Contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however, the Corporation shall be bound to take over the materials or such portions thereof as the Contractor does not desire to retain. For materials taken over or to be taken over by Corporation, cost of such materials as detailed by Engineer-in-Charge shall be paid. The cost shall, however, take into account the purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the Contractor.
- iii. Reasonable compensation for transfer of T C P from Site to contractor's permanent stores or to his other works, whichever is less. If T C P are not transported to either of the said places, no cost of transportation shall be payable.
- iv. Reasonable compensation for repatriation of the Contractor's Site staff and imported labour to the extent necessary.

The Contractor shall, if required by the Engineer-in-Charge, furnish to him, books of account, wage books, time sheets and other relevant documents and evidence, as may be necessary

to enable him to certify the reasonable amount payable under this condition.

The reasonable amount of items on (i), (iii) and (iv) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e. total stipulated cost of the work as per accepted tender less the cost of work actually executed under the Contract and less the cost of Contractor's materials at Site taken over by the Corporation as per item (ii) above.

Provided always that against any payments due to the Contractor on this account or otherwise, the Engineer-in-Charge shall be entitled to recover or be credited with any outstanding balances due from the Contractor for advance paid in respect of any tool, plants and materials and any other sums which at the date of termination were recoverable by the Corporation from the Contractor under the terms of the Contract.

In the event of action being taken under Clause 13 to reduce the Scope of Work, the Contractor may furnish fresh Performance Guarantee on the same conditions, in the same manner and at the same rate for the balance tendered amount and initially valid up to the extended date of completion or stipulated date of completion, if no extension has been granted plus 60 days beyond that. Wherever such a fresh Performance Guarantee is furnished by the Contractor, the Engineer-in-Charge may return the previous Performance Guarantee

14. Carrying out Part Work at Risk G Cost of Contractor

A. If the Contractor:

- I. At any time, makes default during the currency of Work or does not execute any part of the Work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge: or
- II. Commits default in complying with any of the terms C conditions of the Contract and fails to remedy it or take effective steps to remedy such default within 7 days after a notice in writing has been given in that behalf by the Engineer-in-Charge: or
- III. Fails to complete the Work(s) or items of Work with individual dates of completion, on or before the date(s) so determined and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge,

The Engineer-in-Charge, without invoking action under Clause 3 may, without prejudice to another right or remedy against the Contractor which have either accrued or accrue thereafter to Corporation, by a notice in writing to take the part Work / part incomplete Work of any item(s) out of his hands and shall have powers to:

- (a) Take possession of the Site and any materials, constructional plant, implements, stores, etc. thereon; and/or
- (b) Carry out the part Work / part incomplete Work of any item(s) by any means at the risk C cost of the Contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the Contractor for completion of the part Work / part incomplete Work of any item(s) taken out of his hands and execute at the risk C cost of the Contractor, the liability of the Contractor on account of loss or damage suffered by Corporation because of action under this Clause shall not exceed 10% of the Tendered Value of the work.

In determining the amount, credit shall be given to the Contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original

Contractor under the terms of his Contract, the value of Contractor's materials taken over and incorporated in the work and use of plant & machinery belonging to the Contractor.

The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the Contractor, provided always that action under this Clause shall only be taken after giving notice in writing to the Contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the Contractor at his agreement rates, the difference shall not be payable to the Contractor.

Any excess expenditure incurred or to be incurred by Corporation in completing the part work / part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by Corporation as aforesaid after allowing such credit shall, without prejudice to another right or remedy available to Corporation in law or per as agreement, be recovered from any money due to the Contractor on any account, and if such money is insufficient, the Contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the Contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the Contractor's unused materials, constructional plant, implements, temporary building at Site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the Contractor under the Contract and if thereafter, there remains any balance outstanding, it shall be recovered in accordance with the provisions of the Contract.

In the event of the above course being adopted by the Engineer-in-Charge, the Contractor shall have no Claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the Work or the performance of the Contract.

- B. (i) At the final stage of completion and commissioning of Work, in case the Contractor's failure is limited to only some of the works costing not more than 2% of the original Contract value, and the Contractor request the engineer that such Works may be offloaded from him and got executed through another agency and additional cost incurred, if any, should be recovered from his dues; the Engineer-in-charge, on being convinced that the anticipated additional cost for such works will not be substantial and can be recovered from the dues of the Contractor and that such offloading will help in completion and commissioning of work, may agree to such offloading without any adverse repercussion on the performance guarantee and security deposit of the Contractor. However, the Engineer-in-charge will not be under any compulsion to agree to such a request.
- (ii) Further, before issuing letter of acceptance to another agency for such Work, the Contractor shall be informed of the rates at which the work will be got executed and the Contractor should give his consent to do so and certify that he would have no future Claim on this account and that the extra expenditure so incurred, if any, by the Engineer-in-charge in getting the offloaded Work done, shall be recovered from subsequent Bills or any other dues of the Contractor. In case the Contractor fails to give such consent within three working days, the Engineer-in-charge may treat the same as not acceptable to Contractor and proceed accordingly.
- (iii) In any case, CWC shall deduct 10% of cost of such Work or Rs. One Lakh, whichever is lower, from the Contractor's dues as administrative charges for the process of finalizing new agency for such work irrespective of whether or not such Work is finally offloaded from Contractor or not.

15. Suspension of Work

- (i) The Contractor shall, on receipt of the order in writing of the Engineer- in-Charge, (whose decision shall be final and binding on the Contractor) suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons :
 - (a) on account of any default on the part of the Contractor or,
 - (b) for proper execution of the Works or part thereof for reasons other than the default of the Contractor; or
 - (c) for safety of the works or part thereof. The Contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in- Charge.
- (ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:
 - (a) the Contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of Work for which a separate period of completion is specified in the Contract and of which the suspended Work forms a part, and,
If the total period of all such suspensions in respect of an item or group of items or Work for which a separate period of completion is specified in the Contract exceeds thirty (30) days, the Contractor shall, in addition, be entitled to such compensation as the Engineer-in-Charge may consider reasonable in respect of salaries and/or wages paid by the Contractor to his employees and labour at Site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the Contractor, provided the Contractor submits his Claim supported by details to the Engineer-in-Charge within fifteen days of the expiry of the period of 30 days.
- (iii) If the Works or any part thereof are suspended by order of the Engineer-in-Charge for a period exceeding three (3) months at a time, except where such suspension has been ordered for the reason stated in sub-para (i)(a) above, the Contractor may, upon receipt of such order, serve a written notice on the Engineer-in-Charge requiring permission, within fifteen (15) days from receipt of the said notice, to proceed with the work or part thereof in respect of which progress has been suspended. If such permission is not granted within that period, the Contractor, if he intends to treat the suspension (i) where it affects only a part of the works, as an omission of that part by the Corporation, or (ii) where it affects the whole of the works, as an abandonment of the works by the Corporation, shall, within ten (10) days of expiry of the said period of fifteen (15) days, give written notice of such intention to the Engineer-in-Charge.
- (iv) In the event of the Contractor treating the suspension as an abandonment of the Contract by Corporation, he shall have no Claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the Work in full, but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Engineer-in-Charge may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at Site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the Contractor provided the Contractor submits his Claim supported by details to the Engineer-in-Charge within 30 days of the expiry of the period of 3 months.

16. Action in case Work is not done as per Specifications

All Works under or in course of execution or executed in pursuance of the Contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-charge, his authorized subordinates-in-charge of the work and all the superior officers, officer of the Quality Assurance Unit of the Department or any organization engaged by the Department for Quality Assurance and of the e Technical Examiner's Office and the Contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Contractor, either himself be present to receive orders and instructions or have a responsible agent, duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the Contractor himself.

If it appears to the Engineer-in-Charge, or to any of his authorized subordinates in charge of the Works, or to the Chief Engineer (Quality Assurance) or his subordinate officers, or to officers of any organization engaged by the Corporation for Quality Assurance, or to the Chief Technical Examiner or his subordinate officers, that any portion of the work has been executed with unsound, imperfect or unskilled workmanship, or with materials or articles which are unsound, of inferior quality, or otherwise not in accordance with the Contract, the Contractor shall, upon a written demand made within twelve (12) months of completion of the work (or six (6) months in the case of works costing ₹10 lakh and below, except for road works), rectify, remove and reconstruct such defective work or replace the defective materials or articles, as may be required, entirely at his own cost and risk, notwithstanding that such work may have been previously passed, certified, or paid for. If the Contractor fails to comply with the said demand within the period specified by the Engineer-in-Charge, he shall be liable to pay compensation at the same rate as provided under Clause 2 (for delay in completion of work) of the Contract, and such failure shall constitute a default under the Contract.

In such case, the Engineer-in-charge may not accept the item of work at the rates applicable under the Contract, but may accept such items at reduced rates as considered reasonable during the preparation of on account bills or final bill, if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk C cost of the Contractor. Decision of the Engineer-in-charge to be conveyed in writing in respect of all of the above shall be final and binding on the Contractor and shall be excepted matter(s).

17. Contractor Liable for Damages, Defects during Defect Liability Period

17.1 Maintenance after Completion: Unless specifically modified in special conditions of Contract, all works executed under this Contract shall be maintained by the Contractor at his own cost against defects cropped up during the defect liability period-DLP and the Contractor shall have obligation to rectify such defects during defect liability period as mentioned in Table Below.

The defects have to be rectified within a reasonable time not exceeding forty-five days after issue of notice by Engineer- in Charge. If Contractor does not take corrective action within 45 days, then action for debarring of the agency for 2 years shall be taken by the appropriate authority.

This DLP period shall be reckoned from the actual date of completion of all works in scope.

Type of work	DLP
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all works executed for Building or other infrastructure except items mentioned below.	12 Months
CC Floor of warehouse, metal roof sheets of Godown, M40-M50 grade Paved yard/ M30 grade or higher Cement Concrete Road / Bituminous Road.	36 Months

The Defect Liability Period (DLP) for the work shall be as specified in the Contract. However, for certain special works, the DLP may be longer than the period mentioned above, as may be provided in the Special Conditions of Contract or the Technical Conditions of Contract.

For works of specific nature where -

- (i) there is no provision for retention of Security Deposit during the extended DLP period, or
- (ii) the guarantee or warranty period exceeds three (3) years, as per industry practice, manufacturer's terms, or as otherwise stipulated, the Contractor shall, along with his final bill Claim, furnish a specific Guarantee undertaking responsibility for the rectification and removal of any defect that may appear in such works during the said guarantee period.

The form of the Guarantee to be executed by the Contractor shall be as prescribed by the Engineer-in-Charge and shall conform to the format appended as Appendix G-XVII.

This Guarantee shall remain valid for the full duration of the applicable guarantee period and shall be binding on the Contractor until all defects, if any, are duly rectified to the satisfaction of the Engineer-in-Charge.

- 17.2** (a) If the Contractor or any of his workmen, employees, or agents breaks, defaces, injures, or destroys any part of the building in which they are working, or any adjoining building, road, kerb, fence, enclosure, water pipe, cable, drain, electric or telephone post or wire, tree, grass, or cultivated ground contiguous to the premises on which the work or any part thereof is being executed, or if any damage occurs to the work while in progress from any cause whatsoever, or if any defect, shrinkage, or other fault appears in the work within the stipulated maintenance or Defect Liability Period (DLP) as specified in the Contract, after a certificate (final or otherwise) of its completion has been issued by the Engineer-in-Charge, arising out of defective or improper materials or workmanship, then the Contractor shall, upon receipt of a written notice in that behalf, make good the same at his own expense.

In default, the Engineer-in-Charge shall cause the same to be made good by other workmen, and the cost thereof shall be recovered from any sums due or becoming due to the Contractor, or from his Security Deposit, or from the proceeds of sale thereof, or from a sufficient portion of the same.

- (b) In addition, overhead and departmental supervision charges of thirty percent (30%) over and above the actual expenditure incurred by the Corporation shall be recovered from the Contractor in cases where the Corporation has to execute or cause the rectification, repair, or reinstatement of such defects or damages as referred to above.

18. OTHER OBLIGATIONS OF Contractor

18.1 Performance

1. The Contractor shall perform the Work with all due skill, diligence and care and in a safe, competent and workmanlike manner in accordance with good and prudent industry practice and in accordance with the provisions of the Contract.
2. Except to the extent that it may be legally or physically impossible or create a hazard to safety,

the Contractor shall comply with the instructions and directions of Engineer in Charge and or His representative or any other officer authorized by Corporation on all matters relating to the Work.

3. The Contractor shall provide all management, supervision, personnel, materials, equipment and supplies, plant, consumables, facilities and all other things, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract for performance of Contract.
4. Where the Contractor has to work along with other agencies in and around the area allotted for his Works, it shall execute all the Works in complete coordination and cooperation with all such agencies, so that at no time either its work or the works of other agencies is stopped or delayed. In case of any dispute in this regard, the decision of Engineer In charge will be final and binding on the Contractor. The Contractor shall not Claim to the Corporation any compensation for any idle labor, plant and machinery etc.
5. During execution of the work, the Corporations Warehouse may be operational unless specifically mentioned in APPENDIX-I of Tender. Contractor has to execute all works in complete coordination and cooperation with all activities confined to the area within the Scope of Work, so as not to affect the operation of Warehouses under any circumstances. In case of any dispute in this regard, the decision of the Engineer in charge or their representative will be final and binding on the Contractor. The Contractor shall also note that work shall progress in a phased manner as per operational requirement of CWC Complex, if any, as may be informed by the Corporation Engineer or CWC Complex Manager at the time of execution of the Work.

The Contractor acknowledges that it has assessed CWC operations at Site of work and shall deploy the needful resources after proper planning in such a way that each work/service, under this Contract, is completed within time schedule despite running transactions/ operations of CWC.

Contractor quoted rates after taking into account the restrictions due to warehouse operation, if any on entry/exist of vehicles and labour to/from the Site of work, as laid down by Central Warehousing Corporation and other Govt. authorities. If any entry fee/other charges are levied by any authority on entry of the vehicle/material/labour, same shall be paid by the Contractor. Contractor shall have no Claim or compensation on this account

Where the Work(s) executed by the Contractor are ultimately to be delivered to the Corporation, the risk and responsibility for the damage, loss, care and maintenance of such Work(s) shall remain with the Contractor until the date of issue of the Completion Certificate in respect of the whole of the Facilities.

6. The Contractor acknowledges that it has already inspected the Site and satisfied itself about the actual Site conditions and has collected any other information which may be required by the Contractor for completing the works. The Contractor shall not be entitled for any Claim(s) whatsoever, in case of variance of Site conditions prior to or after execution of this Contract.
 7. Work shall be carried out in a manner complying in all respects with the requirements of prevalent by-laws of the local Municipality/Municipal Corporation/Industrial development board/development authority as the case may be.
 8. **Obligations during Rains:** The Contractor shall effort to keep the Site conditions workable and bail out rainwater from Site to avoid waterlogging including the rainwater collected in excavated trenches during execution of work from at his own cost. Nothing extra shall be payable on this account.
- G. Trespass:** The Contractor shall, at all times, be responsible for any damages or trespass,

committed by his agents and workmen in carrying out the work, unless such trespass is authorized by the Engineer-in-Charge at Site.

10. Night Work: Contractor shall plan and deploy his all resources to complete the work within time as per agreed program of completion. The Contractor would be required to carry out the work even at night, without conferring any right on the Contractor for claiming for extra payment for introducing night working.

11. Contractor shall maintain in good condition all works executed till the completion of entire work, allotted to the Contractor.

12. Contactor shall clean the Site thoroughly of all rubbish etc. left out of his materials on completion of the work and roughly dress the Site around the building line to the satisfaction of the Engineer-in-Charge.

18.1 Quality Assurance and Quality Control

1. Unless otherwise not specifically mentioned in LOA, the Contractor shall, within 10 days after commencement of work, provide quality assurance and quality control systems and quality plans for approval by the Engineer-in-charge. Such systems and plans shall be in accordance with good industry practice and field quality plans given in Tender document or otherwise by Corporation Engineering Division, Corporate office.
2. The Contractor shall ensure, and shall also procure that all its sub-contractors and vendors ensure, that the Work is executed strictly in accordance with the Quality Assurance and Quality Control (QA/QC) systems and Quality Plans duly approved in writing by the Engineer-in-Charge, as well as in conformity with any QA/QC systems or Quality Plans subsequently issued or prescribed by the Engineer-in-Charge during the execution of the Contract.
3. **Approval of Quarries and Borrow Areas and Materials:** The Contractor shall obtain approval of the Corporation Engineer for each quarry and borrow area to be used in the project, prior to commencement of quarrying and/ or borrow area excavation activities. All materials (whether natural, processed, manufactured, or designed) proposed by the Contractor to be used on the works shall be first approved by the Corporation Engineer to comply with the requirements of specifications.

18.2 Sampling, Inspection and Testing

1. The Contractor shall, at his own expense and without delay, supply to the Corporation Engineer samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications, if any, laid down or referred to in the Contract. The Contractor shall, if requested by the Corporation Engineer furnish proof, to their satisfaction that the materials so comply.
2. Corporation Engineer shall, within 7 **days** of supply of samples or within such further period as he may require, intimate to the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Corporation Engineer for his approval fresh samples complying with the specifications laid down in the Contract. When materials are required to be tested in accordance with specifications, approval of the

Corporation Engineer shall be issued after the test results are received.

3. The Contractor shall at his risk C cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Corporation Engineer. The Contractor shall not be eligible for any Claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.
4. The Contractor shall, at his risk C cost, make all arrangements and shall provide all facilities as the Corporation Engineer may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the Corporation Engineer and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the Contract or specifications. The Corporation Engineer shall, at all times, have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the Contractor shall afford every facility and every assistance in obtaining the right to such access.
5. The Corporation Engineer and Engineer in charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Corporation Engineer shall be at liberty to employ at the expense of the Contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Corporation Engineer shall also have full powers to require other proper materials to be substituted thereof and in case of default, the Corporation Engineer may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the Contractor.
6. The Contractor may, at his own expense, provide a material testing field lab. at the Site for conducting routine field tests. The lab. should be equipped at least with the testing equipment, as specified in APPENDIX -I of tender (TIS). Contractor will be required to establish a field laboratory for new works of Building Construction or Road /Floor up gradation works or in all such composite works containing concrete works majorly.
7. Setting of field laboratory for the new works of value more than Rs.2 crore is a mandatory requirement.
8. Contractor shall be responsible for setting up laboratory facilities, equipment's and arranging technical manpower at his cost, as directed by the Engineer-in- charge for conducting Site/field test. All the equipments shall be BIS approved makes and will be got checked C calibrated regularly. All equipments of the laboratory shall be kept in good working conditions.
9. **External Laboratory:** In case Contractor fails to conduct field laboratory test for new works, all required tests shall be carried out in the reputed / approved outside laboratory. So far as conducting required test for upgradation / repairing works, same would be carried out in the reputed/approved outside laboratory. Payment of testing charges of such tests will be borne by the Contractor in both the cases.
10. Letter for submitting sample(s) for testing of material shall be sent through e- mail to the Lab by authorized representative of Engineer-in-Charge or Corporation Engineer along with name(s) of test(s) to be done on the material.
11. The Contractor shall collect the sample(s) from the Site and submit it to the lab; make necessary payment for the testing charges. He will inform on the same day through email to authorized representative of Engineer in- Charge and Corporation Engineer regarding submission of sample (s) and payment made to the lab. If he either fails to collect or submit the sample(s) to the lab within 03 days or in time as prescribed in the specifications, whichever is earlier, the Corporation Engineer shall collect and submit the sample(s) and make necessary payment for testing charges to the lab. In such case, Engineer-in-Charge/ Corporation Engineer shall make recovery on account of collection and

submission of sample(s) to the lab and paid testing charges etc., from the next R/A bill / Final bill of the Contractor. This action of Engineer-in-Charge/ Corporation Engineer shall be final and binding.

12. **Debaring for failure on part of Contractor:** If the Contractor fails on three occasions to collect and/or submit the required sample(s) and/or fails to make payment of testing charges as stipulated under the Contract, the Contractor shall be debarred from participating in any tendering process of the Corporation for a period of two (2) years from the date of such default, without prejudice to any other action that may be taken under the Contract or applicable law.
13. Testing and acceptance criteria for cement, steel and any other materials, supplied by Contractor should be as per BIS codes/Technical Specification or as decided by Engineer-in-charge as per stipulated testing frequency given in enclosed list (field quality Plan) or CPWD Specifications.
14. Sample of material for testing will be supplied free of cost by the Contractor, including its transportation to the approved test houses/laboratory, as directed by the Engineer-in-Charge or inspecting officials.
15. For outside testing, test of materials and stipulated samples shall be carried out by one of the following laboratories/tests houses - (1) IIT, (2) NIT, (3) National Test Houses, (4) National Council of Cement C Building Material, (5) Govt. Engg. College/National Accreditation Board Approved Lab (NABL), as per decision of the Project-in-charge/Site Engineer. Testing charges shall be borne by the Contractor.
16. All Routine tests on various materials shall be carried out as per the field quality plan -List of Mandatory Tests (enclosed) at the cost of the Contractor. Wherever it is not specified, it will be carried out as per decision of Corporation Engineer, which will be final and binding on the Contractor.
17. In addition to the tests required under above clauses thereof, the Engineer or his representative may order tests to be carried out by an independent person appointed by him at such place or in such laboratory, as he may determine in accordance with the appropriate Clauses of relevant Standard Specifications and cost of such tests shall be borne by the Contractor.
18. Testing record shall be maintained as per standard Testing Performa, enclosed in tender document for proper testing and their record by the Contractor.
19. In case, test results indicate that the cement, steel, bitumen or any other material brought or arranged by the Contractor for incorporation in work does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from Site by the Contractor at his own cost within a week's time of written order from the Engineer-in-charge to do so.
20. Any inspection by the Corporation, test or examination, or any failure by the Corporation to carry out any inspection, test or examination, shall not relieve the Contractor of any of its obligations under the Contract.

18.3 Material, Tools G Plants G Site offices with Stores

1. The Contractor shall provide at his own cost all machinery, tools C plants as specified in **APPENDIX -I of tender (TIS)** except such special materials, if any, as may in accordance with the Contract be supplied by Corporation).
2. In addition to this, appliances, implements, other plants, machinery, vibratory, trucks, road rollers ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the Contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer- in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work.
3. The Contractor shall provide a temporary Site office with requisite furniture C appliances and godown (stores) for storing/ stacking construction materials at their own cost .

Space, to construct temporary store/ godown and to provide temporary Site office shall be provided by Warehouse Manager of the Corporation in consultation with Contractor and Engineer in charge, without charging any rent, based on availability of space in CWC complex. The area to be provided shall be decided based on availability and CWC operational requirements.

The Contractor undertakes that no construction material, goods or any other items/materials is/are placed in the CWC complex in haphazard manner or stored at any place other than designated. The CWC Warehouse Manager, with consultation of Corporation Engineers may, in all such cases, have the power to remove such material(s) from the CWC Complex or may relocate the same to the designated place at risk and cost of Contractor.

The decision of the Warehouse Manager in such cases shall be final and binding on the Contractor and shall be an exempted matter.

4. No excavated earth or building material shall be stacked on area, where other buildings, roads, services or compound wall are to be constructed.
5. No areas outside work Site/depot will be made available to the Contractor for storage of construction materials, Site office construction etc. and if required, Contractor will make his own arrangement for the same by personal negotiation with the owners at his own cost.

18.4 EQUIPMENT

1. The Contractor warrants that the Contractor's Equipment shall be adequate to perform the Work, shall be new or as new, of good quality and workmanship and shall comply in all respects with the Specification.
2. The Corporation shall be entitled, at any time, to inspect all or any part of the Contractor's Equipment. If any part of the Contractor's Equipment does not, at any time, meet the requirements of the Contract, then the Contractor shall upon notice from the Corporation promptly replace or repair such part of the Contractor's Equipment to ensure compliance with the Contract.
3. The Contractor shall at its own expense, if required by the Government or if required by the Corporation for operational reasons, promptly remove from the Site, any Contractor's Equipment which may have been rendered unserviceable through any cause during the course of operations hereunder or otherwise deal with the Contractor's Equipment in accordance with the Corporation's instructions, notwithstanding that the Contractor's Equipment may be insured and whether or not declared a loss.
4. The Contractor warrants good title to all Contractor's Equipment.
5. The Contractor warrants that the Contractor's Equipment has been examined by inspectors of any relevant certifying authority no more than six months prior to the Effective Date and shall, for the duration of the Contract and any extension thereof, conform in all respects with all applicable current laws or statutory instruments setting out regulations to be observed in the conduct of oilfield operations.
6. Any inspection of any item of Contractor's Equipment necessarily required during the currency of the Contract to ensure continued compliance with certification requirements, or for any other reason, shall be conducted at a time convenient to the Corporation (subject to any overriding limitation imposed by any certification authority). All costs connected with any such inspection shall be to the account of the Contractor.
7. The Contractor shall ensure that the Contractor's operational base at the Site is at all times stocked with spare parts for the Contractor's Equipment that meet the requirements of the Contract, together with all necessary or desirable packing and marking for that purpose and that such spare parts are sufficient to ensure that the Work /services can continue in the event of failure of the Contractor's

Equipment.

8. In the event that the Contractor fails to carry out its obligations under these Clauses, within seven days of receiving notice from the Corporation, the Corporation shall be entitled to take such measures in respect of any such equipment and, at its sole discretion, shall be entitled to elect, at any time thereafter, to remove the same and shall be entitled to recover all costs and expenses so incurred from the Contractor (including, without limitation, any customs duties or Taxes which may be incurred).
9. Where any item of Contractor's Equipment is ultimately intended to become the property of the Corporation pursuant to this Contract (whether through incorporation in the Facilities or otherwise), title to such item shall be transferred to the Corporation with effect from the first arrival of such item at the Site but the risk and responsibility for the damage, loss, care and maintenance of such item shall remain with the Contractor until the date of issue of the Completion Certificate in respect of the whole of the Facilities.

18.5 PERSONNEL

1. Subject to all the compliances of Labour regulations stipulated in the tender documents, Contractor shall, at its expense, provide and keep available for the Work the Contractor's Personnel and shall ensure that the Contractor's Personnel comply with applicable laws and, where necessary for the performance of the Work, are in possession of valid passports and work permits, wherever applicable.
2. The contractor shall supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. The Contractor shall ensure that the Contractor's Personnel shall be sufficient in number, experience and quality to carry out the Work in accordance with the terms and conditions of the Contract.
3. No key member of the Contractor's Personnel assigned to the Works may be replaced without the Engineer in charge's prior written approval, except in the case of death, serious injury or illness of the key member or their immediate family and/or resignation of such personnel not followed by any hiring back by the Contractor during the term of the Contract. Any replacement shall work with the person to be replaced for a reasonable handover period. For the purposes of this Clause, the term "key member" shall mean any member of the Contractor's Personnel who, in the reasonable opinion of the Corporation, performs an important role in the performance of the Work and shall include, without limitation, any project manager, supervisory staff, project engineer or lead discipline engineer.
4. The Corporation reserves the right to reject any member of the Contractor's Personnel, prior to that member commencing any part of the Work.

The Corporation may, at any time after the commencement of the Work and at its sole discretion, direct the Contractor in writing to remove any member of the Contractor's Personnel from the performance of the Work. The Contractor shall immediately comply with such direction and shall, as soon as reasonably practicable, replace, or procure the replacement of, such person with another person suitably qualified and acceptable to Corporation. The Contractor shall bear the costs of any such removal and replacement.

5. The Contractor shall, at all times, be responsible for the conduct of the Contractor's Personnel and shall ensure that they comply with all applicable laws and honor and observe Indian standards of morality and behaviors.
6. The Contractor shall comply with, and ensure that its sub-contractors comply with, all labor laws, regulations, standards and practices applicable in respect of the Site. Wherever applicable, the

Contractor shall provide a copy of Labor License to the Corporation promptly/immediately after execution of this Contract.

7. No guarantee will be provided by CWC for accommodation of the Contractor or any of his personnel deployed for the Work(s). The Contractor may, however, be allowed by the Corporation at its discretion, to erect labor camps for housing the labor/ personnel at or near the Site of work on available CWC Land.
8. Neither the Contractor nor any of the Contractor's Personnel shall, except for bona fide medical purposes, keep, sell, barter, give, dispense or otherwise dispose of any drugs or alcoholic liquors to any person at the Site or permit the same to be done by any person. Alcohol shall not be permitted at the Site save in a form generally used in medicine and forming a bona fide constituent of a medical kit. The Corporation's Representative reserves the right to search the property and person of any member of the Contractor's Personnel to ensure compliance with the provisions of this Clause. The Corporation's Representative may at his absolute discretion prohibit any member of the Contractor's Personnel to go on to the Site or other facility in the control of Corporation or may require such person to leave the Site where he has reasonable grounds to suspect non-compliance with the provisions of this Clause. The Contractor shall at all times comply with the provisions of **APPENDIX-G XXI** (Substance Abuse Conditions).

18.6 Transportation

Unless otherwise specified in the Contract, the Contractor shall be responsible for providing any and all transportation for all Contractor's Material, Tools C Plants, Persons and Equipment required in connection with the performance of the Work.

18.7 Recovery on failure on Part of Contractor

- i. If Contractor fails to provide field laboratory for new works within one month of commencement of work, shall attract a penalty of Rs. 25,000 per month, recoverable from the running bills. In all routine tests, which can normally be done in the field laboratory/in situ, testing charges will be borne by the Contractor.
- ii. If food grains / goods stored in Warehouse are lost, stolen or damaged during execution of construction work by the Contractor or his labourers, cost of the same @ twice of the prevailing Market Rate will be recovered from the Contractor's dues and Contractor will have no Claim, whatsoever on this account.
- iii. During execution of work, if CWC materials (cables, pipelines, drains etc.) are damaged, same will be set right by Contractor at his cost within a reasonable time, as decided by the Engineer-in-charge. In case Contractor fails to rectify the damages caused during construction/under their custody, cost of the damaged material shall be recovered from the Contractor @ twice of prevailing Market Rates from the Contractor dues/bills due with CWC under any Contract and Contractor will not have any Claim whatsoever on this account.
- iv. If the Contractor fails to comply with any of its obligations under the Contract, the Engineer-in-Charge may cause such obligation to be performed or provided at the Contractor's expense. All expenses so incurred shall be recoverable from any money due or becoming due to the Contractor under this Contract or otherwise, and/or from his Security Deposit or the proceeds of sale thereof, or of a sufficient portion thereof.

18.8A Recovery of Compensation paid to Workmen

In every case where by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensation Act, 1923, the Corporation is obliged to pay compensation to workman employed by

the Contractor, in execution of the works, Corporation will recover from the Contractor, the amount of the compensation so paid; and, without prejudice to the rights of the Corporation under sub-section (2) of Section 12 of the said Act, the Corporation shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Corporation to the Contractor whether under this Contract or otherwise.

The Corporation shall not be bound to contest any Claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the Contractor and upon his giving to Corporation full security for all costs for which the Corporation might become liable in consequence of contesting such Claim.

18.8B Ensuring Payment and Amenities to Workers, if Contractor Fails

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, the Corporation is obliged to pay any amounts of wages to a workman employed by the Contractor in execution of the works or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the CPWD's Contractor's Labour Regulations or under the Rules framed by Govt. from time to time for the protection of health and sanitary arrangements for workers employed by Central Warehousing Corporation's Contractors; the Corporation will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Corporation under sub-section (2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970; Corporation shall be at liberty to recover such amount or any part thereof by deducting it from the Security Deposit or from any sum due by Corporation to the Contractor whether under this Contract or otherwise.

Corporation shall not be bound to contest any Claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the Contractor and upon his giving to the Corporation full security for all costs for which Corporation might become liable in contesting such Claim.

18.8 Use of CWC Materials Secured with Government Assistance

Where any raw materials for the execution of the Contract are procured with the assistance of CWC or the Government either by issue from CWC or Government stocks, or through purchases under arrangements made, permits, or licenses issued by CWC or the Government, the Contractor shall hold such materials as trustee for CWC/Government. The Contractor shall use these materials economically and solely for the purpose of the Contract against which they are issued and shall not dispose them without prior written permission of CWC/Government. The Contractor shall return, if required by CWC/Government, all surplus or unserviceable materials remaining after completion or upon termination of the Contract, for which the Contractor shall be paid such price as CWC/Government may fix with due regard to the condition of the materials. The Contractor shall bear the freight charges for the return of such materials as directed. In the event of termination of the Contract due to Contractor's default, the decision of CWC/Government regarding the disposal of such materials shall be final and binding.

18.G Damage from Accidents or Floods or Tides

- i. The Contractor shall take all precautions against damages from accidents, floods or tides. No

compensation will be payable by CWC to the Contractor for his tools, plants, materials, machines and other equipment lost or damaged by any cause, whatsoever. The Contractor shall be liable to make good the damages to any structure or part of structure, plant or material of every description belonging to the CWC administration, lost or damaged by any cause during the course of Contractor's work.

- ii. The CWC will not be liable to pay to the Contractor any charges for rectification or repairs to any damages, which may have occurred from any cause whatsoever, to any part of the new structures during construction. No claims in this regard will be arbitrable.

18.10 Notice to Public Bodies

Contractor shall give to the Municipality, Police and other authorities, all notices that may be required by the law and obtain all requisite licenses for temporary obstructions, enclosures and pay all fees, Taxes and charges, which may be leviable on account of his own operations in executing the Contract. He should make good any damage to adjoining premises, whether public or private and provide C maintain any light etc. required at night and no extra payment will be made on this account.

18.11 Plea of Custom

The plea of 'Custom' prevailing will not, on any account, be permitted as an excuse for infringement of any of the conditions of Contract or specifications.

18.12 Arrangements for Electric Connection, Lighting G Other Purpose

- i. Procurement of electricity for execution of works including sufficient illumination at work place night shall be in scope of Contractor.
- ii. If for reasons of urgency to expedite or complete the work within time, work has to be executed at night, Contractor shall make his own arrangement for illuminating the Site. Nothing extra will be paid for doing works at night.
- iii. Contractor shall make his own arrangements for arranging electricity, if the same is required for illumination purposes or for running of any plant or machinery and nothing extra will be paid for the same.
- iv. CWC may allow electric power, if available on actual electric energy consumption basis by putting separate electric energy meter and payment of such electricity consumption shall be done by Contractor.

1G. Labour Laws to be Complied by the Contractor:

- i. The Contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971.
- ii. The Contractor shall also obtain a valid license under the said Act before the commencement of the work and continue to have a valid license until its completion.
- iii. The Contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.
- iv. The Contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, '1986, amended by Amendment Act No. 35 of 2016 and thereafter time to time.
- v. The Contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment C Conditions of Service) Act, '1996 and the building and other Construction Workers Welfare Cess Act,1996.
- vi. The Contractor shall also comply with the provisions of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time.
- vii. **Any failure to fulfil these requirements by the Contractor shall attract penal action under the relevant statutory provisions, and shall also constitute a breach of this Contract, making the Contractor liable to penalties, recoveries, or other actions as prescribed under the terms of this Contract.**

1GA. No person below the age of fourteen shall be employed on the work. However Adolescent Persons (A

person who has completed his/her fourteenth year of age but as not Completed his eighteenth year) can be employed on non- hazardous works/ process. Hazardous process/works means the works as defined in the clause (cb) of the Factory Act 1948.

1GB. Payment of Wages

Payment of Wages:

- i. The Contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971 **and Gazette Notification 1G.01.2017, S.O 188 (E) Extra ordinary part 2 - sec. 3 (ii) Amended time to time.**

Thus higher of the wages either notified by Govt. of India, Ministry of Labour and/or that notified by the local administration of the State Govt. both relevant to the place of work and the period of reckoning shall be paid by the Contractor to the labourer.

- ii. The Contractor shall, notwithstanding the provisions of any Contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.
- iii. In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this Contract, the Contractor shall comply with or cause to be complied with the Contractor's Labour Regulations made by Govt. from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorizedly made, maintenance of wage books or wage slips, publication of scale of wage and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation C Abolition) Act, 1970, and Contract Labour (Regulation C Abolition) Central Rules, 1971, wherever applicable.
- iv. (a) The Engineer-in-Charge concerned shall have the right to deduct from the money due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the Contract for the benefit of workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the Contract or non-observance of the Regulations.
 (b) Under the provision of Minimum Wages (Central) Rules, 1950, the Contractor is bound to allow to the labours directly or indirectly employed in the works one-day rest for 6 days' continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the Contractor by the Engineer-in-Charge concerned.
 In the case of Union Territory of Delhi, however, as the all-inclusive minimum daily wages fixed under Notification of the Delhi Admin. no. F.12(162) MWO/DAB/43884-91, dated 31.12.1979 as amended from time to time are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.
- v. The Contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, '1923, Industrial Disputes Act, '1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and

Abolition) Act '1970, Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 - sec. 3 (ii) and the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

- vi. The Contractor shall indemnify and keep Corporation indemnified against payments to be made under and for the observance of the laws aforesaid and the Contractor's Labour Regulations without prejudice to his right to Claim indemnity from his sub- contractors.
- vii. The laws aforesaid shall be deemed to be a part of this Contract and any breach thereof shall be deemed to be a breach of this Contract.
- viii. Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the Contractor to the workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise. The Contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

1GC. Safety Provisions

In respect of all labour directly or indirectly employed in the work for the performance of the Contractor's part of this Contract, the Contractor shall at his own expense arrange for the safety provisions as per the Contract Safety Code (**APPENDIX-G XV**), framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the Contractor fails to make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty as decided by the Corporation Engineer (Sr. Manager, or above rank) for each default and in addition, the Engineer- in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the Contractor.

1GD. Submission of Statements

The Contractor shall submit by the 4th and 19th of every month to the Engineer-in-Charge, a true statement showing in respect of second half of the preceding month and the first half of the current month respectively:

- (i) the number of laborers employed by him on the work
- (ii) their working hours
- (iii) the wages paid to them
- (iv) the accidents that occurred during the said fortnight showing the circumstances under which they happened, and the extent of damage and injury caused by them
- (v) the number of female workers who have been allowed maternity benefit according to Clause 19F and the amount paid to them Failing which the Contractor shall be liable to pay to the Corporation, a sum as decided by the Corporation Engineer (Sr. Manager or above rank) for each default or materially incorrect statement. The decision of the Engineer-in-Charge shall be final in deducting from any bill due to the Contractor, the amount levied as fine and be binding on the Contractor.

1GE. Health and Sanitary Arrangements

In respect of all labor directly or indirectly employed in the works for the performance of the Contractor's part of this Contract, the Contractor shall comply with or cause to be complied with all the rules framed by the Government from time to time for the protection of health and sanitary arrangements for workers employed by the Corporation and its Contractors.

1GF. Maternity Leave and Pay

Leave and Pay during leave shall be regulated as follows –

1. Leave:

- i. in the case of delivery - maternity leave not exceeding 8 weeks, 4 weeks upto and including the day of delivery and 4 weeks following that day
- ii. in the case of miscarriage - upto 3 weeks from the date of miscarriage

2. Pay:

- i. in the case of delivery - leave pay during maternity leave will be at the rate of the women's average daily earnings, calculated on total wages earned on the days when full time work was done during a period of three months immediately preceding the date on which she gives notice that she expects to be confined or at the rate of Rupee one only a day whichever is greater.
- ii. in the case of miscarriage - leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.

3. Conditions for the grant of Maternity Leave:

No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave. The Contractor shall maintain a register of Maternity (Benefit) in the Prescribed Form as shown in **APPENDIX-G I & G II**, and the same shall be kept at the place of work

1GG. Default G Breach of Provisions

In the event of the Contractor(s) committing a default or breach of any of the provisions of the Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Corporation a sum as decided the Corporation Engineer (Sr. Manager or above rank) for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the Contractor(s) defaulting continuously in this respect, the penalty may be enhanced to **Rs. 200 per day** for each day of default subject to a maximum of 5 per cent of the estimated cost of the work put to tender. Decision of the Engineer-in-Charge shall be final and binding on Parties.

Should it appear to the Engineer-in-Charge that the Contractor(s) is/are not properly observing and complying with the provisions of the Contractor's Labour Regulations C Model Rules and the provisions of the Contract Labour (Regulation C Abolition) Act 1970, and the Contract Labour (RCA) Central Rules 1971, for the protection of health C sanitary arrangements for work-people employed by the Contractor(s) (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the Contractor(s) requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the Contractor(s) shall fail within the period specified in the notice to comply with and/observe the said Rules and to provide the amenities to the work- people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities herein before mentioned at the cost of the Contractor(s).

The Contractor(s) shall erect, make C maintain at his/their own expense and to approved standards all necessary huts and sanitary arrangements required for his/their work-people on

the Site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the Contractor(s) requiring that the said huts and sanitary arrangements be remodelled and/or reconstructed according to approved standards, and if the Contractor(s) shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the Contractor(s).

1GH. Logistics for Labors

The Contractor(s) shall at his/their own cost provide his/their labour with a sufficient number of huts (hereinafter referred to as the camp) of the following specifications on a suitable plot of land to be approved by the Engineer-in-Charge.

- (i) (a) The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and the floor area to be provided will be at the rate of 2.7 sq.m. (30 sq.ft.) for each member of the worker's family staying with the labourer.
- (b) The Contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.
- (c) The Contractor(s) shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.
- (d) The Contractor(s) shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.
- (ii) (a) All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobri on both sides. The floor may be kutcha but plastered with mud gobri and shall be at least 15 cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the Contractor shall ensure that throughout the period of their occupation, the roofs remain water-tight.
- (b) The Contractor(s) shall provide each hut with proper ventilation.
- (c) All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.
- (d) There shall be kept an open space of at least 7.2m (8 yards) between the rows of huts which may be reduced to 6m (20 ft.) according to the availability of Site with the approval of the Engineer-in-Charge. Back-to-back construction will be allowed.
- (iii) Water Supply - The Contractor(s) shall provide adequate supply of water for the use of labourers. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purposes and three gallons of clean water per head per day for bathing and washing purposes. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The Contractor(s) shall also at his/ their own cost make arrangements for laying

pipelines for water supply to his/ their labour camp from the existing mains wherever available, and shall pay all fees and charges therefore.

- (iv) The Site selected for the camp shall be high ground, with removed from jungle clearances, if required.
- (v) Disposal of Excreta - The Contractor(s) shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the Local Health Authorities. If trenching or incineration is not allowed, the Contractor(s) shall make arrangements for the removal of the excreta through the Municipal Committee/authority and inform it about the number of labourers employed so that arrangements may be made by such Committee/authority for the removal of the excreta. All charges on this account shall be borne by the Contractor and paid direct by him to the Municipality/authority. The Contractor shall provide one sweeper for every eight seats in case of dry system.
- (vi) Drainage - The Contractor(s) shall provide efficient arrangements for draining away sullage water so as to keep the camp neat and tidy.
- (vii) The Contractor(s) shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid accidents to the workers.
- (viii) Sanitation - The Contractor(s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Local Public Health and Medical Authorities.

1GI. Conduct of Contractor Labors

The Engineer-in-Charge may, at any time, require the Contractor to dismiss or remove from the Site any person employed by the Contractor who, in the opinion of the Engineer-in-Charge, is incompetent, negligent, disorderly, or guilty of misconduct. The Contractor shall forthwith comply with such directions and shall not re-employ such person on the Site without prior approval of the Engineer-in-Charge. In respect of works where labourers have access to the offices, godowns, or residential premises of the Corporation or its employees, the Contractor shall issue identity cards to all labourers, whether temporary or permanent, and shall be fully responsible for any untoward act, omission, or misconduct on the part of such labour.

1GJ. Removal of Illegal Occupation

It shall be the responsibility of the Contractor to see that the building under construction is not occupied by anybody unauthorized during construction and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy up **to 5% of** Tendered Value of work may be imposed by Engineer in charge whose decision shall be final both with regard to the justification C quantum and be binding on Contractor.

However, the Engineer in charge, through a notice, may require the Contractor to remove the illegal occupation any time on or before construction and delivery.

1GK. Employment of Skilled / Semi- Skilled Workers

The Contractor shall, at all stages of work, deploy skilled/semi-skilled tradesmen who are

qualified and possess certificate in particular trade from CPWD Training Institute / Industrial Training Institute / National Institute of Construction Management and Research (NICMAR) / National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/certified by State/Central Govt. Number of such qualified tradesmen shall not be less than 20% of total skilled/semi-skilled workers required in each trade at any stage of work. Contractor shall submit number of man-days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer-in-charge for approval.

Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the Contractor shall substitute such tradesmen within two days of written notice from the Engineer-in-Charge. Failure on the part of Contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract compensation to be paid by Contractor at the rate specified in **General Conditions of Contract hereunder** per such tradesman per day. The decision of Engineer-in-Charge, as to whether particular tradesman possesses requisite skill and amount of compensation in case of default, shall be final and binding.

Provided always that the provisions of this Clause shall not be applicable for works with estimated cost put to tender being less than Rs. 5 crores.

For works costing more than Rs. 10 crores, and up to Rs. 50 crores, the Contractor, on demand of corporation, shall arrange on Site training as per National Skill Development Corporation (NSDC) norms for at least 20% of the unskilled workers engaged in the project in co-ordination with the CPWD Regional Training Institute C National Skill Development Corporation (NSDC) for certification at the level of skilled/semi-skilled tradesmen.

For works costing more than Rs. 50 Crores, the Contractor shall arrange on Site training as per National Skill Development Corporation (NSDC) norms for at least 30% of the unskilled worker engaged in the project in coordination with the CPWD Regional Training Institute C National Skill Development Corporation (NSDC) for certification at the level of skilled/ semi-skilled tradesmen.

The cost of such training as stated above shall be borne by the Corporation. The necessary space and workers shall be provided by the Contractor, and no Claim whatsoever shall be entertained.

1GL. Contribution of EPF and ESI

1. It will be the responsibility of the Contractor to obtain a separate code/identification No. for Contractor's deposit of PF dues, with concerned authority directly. Copy of PF Registration / Code no. shall be submitted along with First Running Account Bill.
2. The ESI and EPF contributions on the part of the employer in respect of this contract shall be paid by the Contractor. The ESI, EPF and other labor compliance will be sole responsibility of Contractor; CWC will not provide anything over, and above rate quoted by Contractor.
3. The Contractor shall provide documentary proof to the Corporation (CWC) evidencing the deposit of ESI and EPF contributions to the respective statutory authorities. Such proof shall be submitted along with each running bill and compulsorily with the final bill, together with evidence of the final amount deposited with the concerned authorities for ESI and EPF in respect of all employees engaged on the Work.

1G M. Sexual Harassment of Women at Workplace

The Contractor shall comply with all provision(s) and guideline(s) of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time or any other rules framed under any labour law affecting women worker(s).

1GN. Employment of Coal Mining or Controlled Area Labor Not Permissible

The Contractor shall not employ any labour falling under the category of coal mining or controlled area labour, whether directly or indirectly, on or in connection with the execution of the Works, nor shall the Contractor recruit any labour from within a radius of 32 kilometres (20 miles) of the controlled area.

Subject to the foregoing, the Contractor shall employ only imported labour, i.e. labour permitted to be imported from areas outside the controlled zone. Where a ceiling wage or rate for such imported labour has been fixed by the State or Regional Labour Committee, the Contractor shall not pay such labourers at rates exceeding the prescribed ceiling.

The Contractor shall forthwith remove any labourer identified by the Engineer-in-Charge as belonging to the coal mining or controlled area labour category. Failure to comply shall render the Contractor liable to pay the Corporation a sum of Rs. 10 per labourer per day for each day of non-compliance. The certificate of the Engineer-in-Charge as to (a) the number of such labourers employed and (b) the period of their employment shall be final and binding on all parties to the Contract.

It is expressly declared and agreed between the Parties that the stipulations contained in this Clause are in the nature of public interest obligations and fall within the exception under Section 74 of the Indian Contract Act, 1872, being necessary for enforcement of statutory and regulatory restrictions relating to labour employment. Explanation: Controlled Area means the following areas: Districts of Dhanbad, Hazaribagh, Jamtara - a Sub-Division under Santhal Pargana Commissionery, Districts of Bankura, Birbhum, Burdwan, District of Bilaspur. Any other area which may be declared a Controlled Area by or with the approval of the Central Government.

1GO. Employment of Labour from Scarcity Area

If the Government declares a state of scarcity or famine to exist in any village situated within 15 kms of the work, piece worker/Contractor shall employ upon such parts of the works as unskilled labour any person found suitable and certified to him by the Engineer-in-charge or by any person to whom the Engineer-in-charge may have delegated in writing, to be in need to relief and shall be bound to pay to such person, the wages not below the minimum, which Government may have fixed in this behalf. Any dispute which may arise in connection with the implementation of this Clause shall be decided by the CWC, whose decision shall be final and binding on the piece worker/Contractor.

20. Minimum Wages Act to be Complied with

The Contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, Gazette Notification 19.01.20'17, S.O 188 (E) extra ordinary part 2 - sec. 3 Amended from time to time and rules framed there under and other labour laws affecting Contract labour that may be brought into force from time- to time.

21. Assignment, Subcontracting, Insolvency and Actions thereof**21.1 Assignment**

- 21.1.1 The Contractor shall not assign either the Contract or any part of it or any benefit or interest in or under it without the prior written approval of the Corporation 'Tender Accepting Authority'. Any assignment in violation of this provision shall be considered a breach of Contract liable for determination of the Contract.
- 21.1.2 The Corporation shall be entitled to assign the Contract or any part of it or any benefit or interest in or under it to any other Party (Department or Corporation). Any assignment by the Corporation

to any other party shall require the prior written approval of the Contractor, the approval of which approval shall not be unreasonably withheld or delayed with reasons thereof being given in writing within 5 working days of receipt of such request for approval from the corporation. If the approval is not provided within this specified period, the approval from the Contractor shall have deemed to be given.

- 21.1.3 In the event of an assignment by a Party pursuant to Clause 21.1.1 or 21.1.2, and if requested by that Party, the other Party undertakes to enter into such documentation as is reasonably necessary to transfer the first Party's obligations under the Contract, in accordance with the original terms of the Contract.

21.2 Subcontracting

- 21.2.1** The Contractor shall not sublet or subcontract the Work or any part of the Work without the prior written approval of the Corporation Tender Accepting Authority. If the Contractor assigns or sublets the Contract, or attempts to do so, without the Corporation's approval, the Engineer-in-Charge on behalf of the Corporation shall have the power to adopt the course specified in Clause 3 hereof in the interest of the Corporation, and in the event of such course being adopted, the consequences specified in the said Clause 3 shall ensue.

The Contractor may get specified works executed from sub-contractors included in the pre-qualification application or later when approved by the Competent Authority (Tender Accepting Authority), with a caveat that the responsibility for all sub-contract work rests with the prime Contractor.

Any Sub-contracting may generally be permitted for specialized items of work, such as reinforced earth retaining walls, pre-stressing works, and so on. Procurement of material, hire of equipment or engagement of labour shall not be construed as subcontracting. The total value of subcontracted work shall not exceed 25 (twenty-five) percent of the contract price.

Sub-contracting by the Contractor without the approval of the Corporation shall constitute a breach of Contract.

- 21.2.2** The Contractor shall not be relieved from any of its obligations or liabilities under the Contract by virtue of any subcontract, even if such subcontract is approved by the Corporation. The Contractor shall remain fully responsible for all work, acts, defaults, and omissions of its subcontractors, employees, or consultants, as though they were the work, acts, defaults, and omissions of the Contractor itself. The Contractor's obligations under the Contract are non-transferable.

- 21.2.3** No subcontract shall bind or purport to bind the Corporation, and each subcontract shall provide for its immediate termination in the event of termination of this Contract, and for immediate suspension of the services under the subcontract in the event of suspension of the Work under this Contract.

- 21.2.4** All subcontractors shall be responsible only to the Contractor. Notwithstanding the foregoing, the Corporation shall retain the same rights in respect of inspection of any services carried out by any subcontractor as are provided for in this Contract in respect of the Work.

21.3 Action in case of Insolvency - Corporation's Right to Terminate: In the event that the Contractor, at any time during the term of this Contract:

- a. becomes insolvent under any applicable law, or
- b. makes a voluntary assignment of its assets for the benefit of creditors, or

- c. is adjudged bankrupt, whether upon its own petition or upon that of any creditor, or
- d. suffers any judgment, execution, attachment, lien or encumbrance to be levied or enforced upon its goods, equipment, or assets, or
- e. has a receiver, administrator, administrative receiver, or manager appointed in respect of all or any part of its undertaking or assets, or
- f. becomes subject to any order, resolution, or proceeding for winding-up, liquidation, administration, or dissolution (whether voluntary or compulsory), or
- g. becomes subject, under the applicable laws of any jurisdiction, to any event having an analogous legal effect to any of the foregoing,

then, the Engineer-in-Charge, on behalf of the Corporation, may terminate this Contract forthwith by notice in writing to the Contractor or to the receiver, administrator, liquidator, or any other person in whom the Contract may have become vested, in accordance with Clause 3 (Termination for Contractor's Default). Upon such termination, the provisions of Clause 3 relating to the consequences of default and determination shall apply mutatis mutandis.

22. Reasonability of Compensation

All sums payable by way of compensation under any of the Contract conditions shall be considered as reasonable compensation to be applied to the use of the Corporation without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

23. Changes in Firm's Constitution to be Intimated

Where the Contractor is a Partnership Firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or a Hindu Undivided Family business concern, such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership agreement where under the Partnership Firm would have the right to carry out the works hereby undertaken by the Contractor. If previous approval as aforesaid is not obtained, the Contract shall be deemed to have been assigned in contravention of Clause 21 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

24. Life Cycle Cost

The Contractor, though the works completed as per Directions of the Corporation Engineer, shall be responsible for the safety, quality and soundness of the buildings C roads, workmanship, materials etc., including all structural elements even beyond the maintenance period.

The Contractor has an obligation to rectify such defects minimum during defect liability period from the date of completion of all works in scope. The defects have to be rectified within a reasonable time not exceeding forty-five days after issue of notice by Engineer- in- Charge. If the Contractor does not take corrective action within 45 days, **then action for debarring of the agency/** Contractor shall be taken by the Corporation along with recoveries due as per Contract conditions.

25. GOVERNING LAW, JURISDICTION AND RESOLUTION MECHANISM

25.1 General – Governing Law and Jurisdiction

25.1.1 This Contract shall be interpreted, governed by and construed in accordance with the laws of India for the time being in force.

25.1.2 Subject to the provisions of this Clause 25, all disputes, differences, claims or questions arising out of or in connection with this Contract shall be subject to the exclusive jurisdiction of the courts

having jurisdiction as stipulated □□ □□□ – □□□□□□□□ – □, and no other court shall have jurisdiction, save as required under applicable law regarding pecuniary and territorial competence.

- 25.1.3 The Parties expressly agree and acknowledge that arbitration shall not be a method of dispute resolution under this Contract. No dispute arising out of or in connection with this Contract shall be referred to arbitration, and any contrary term in any document, correspondence or standard conditions of the Contractor shall be deemed excluded and of no effect.

25.2 Amicable Resolution and Internal Escalation

- 25.2.1 Any dispute, difference, or controversy of whatever nature, howsoever arising under, out of, or in relation to this Contract between the Parties and so notified in writing by either Party to the other (the "Dispute") shall, in the first instance, be attempted to be resolved amicably through good faith discussions between the Engineer-in-Charge / designated officer(s) of the Corporation and the authorized representative(s) of the Contractor.
- 25.2.2 A Joint Committee with an equal number of representatives from the Corporation and the Contractor (who are not directly involved in the day-to-day business operations at the facility / site) may be constituted by the Corporation, wherever considered appropriate, for the administration of the Contract and for examining Disputes arising out of its implementation.
- 25.2.3 The Joint Committee shall, inter alia, be empowered to make recommendations for modifying or clarifying operational aspects of the Contract for its effective execution, provided such modifications or clarifications do not adversely affect the overall contractual structure, risk allocation, and financial interests of the Corporation.
- 25.2.4 In the event of any Dispute, either Party may require such Dispute to be referred to the Managing Director of the Corporation and the Chairman / Managing Director of the Contractor, or such senior persons as they may respectively nominate, for amicable settlement.
- 25.2.5 Upon such reference, the said senior representatives shall meet, either physically or through electronic means, as far as practicable within thirty (30) days of the date of such request (or within such extended period as may be mutually agreed in writing) to discuss and attempt to amicably resolve the Dispute.
- 25.2.6 If such meeting does not take place within the period mentioned above, or if the Dispute is not amicably settled within **thirty (30)** days of such meeting (or mutually agreed extended period), the Dispute may be processed further in accordance with Clauses **25.3** and **25.4**, as applicable.
- 25.2.7 All efforts and proceedings relating to amicable resolution under this Clause shall be properly documented and signed by both Parties, and such records shall be admissible in any subsequent proceedings, subject to the provisions of Clause 25.7 regarding "without prejudice" communications.
- 25.2.8 Pending resolution of any Dispute, the Contractor shall continue to perform and diligently proceed with the Works and its obligations under the Contract, unless otherwise directed in writing by the Corporation. No Dispute or claim shall, by itself, entitle the Contractor to suspend, slow down or stop the Works.

25.3 Dispute Resolution with CPSEs / Government Organizations (AMRCD)

- 25.3.1 Subject to amicable resolution as provided in Clause 25.2 above, in the event of any Dispute (other than those relating to taxation matters) or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs / Port Trusts) inter se, and also between CPSEs and Government Departments / Organizations, such Dispute or difference shall be taken up by either party for resolution only through the Administrative

Mechanism for Resolution of CPSEs Disputes (AMRCD), as per DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018 and any amendments / replacements issued from time to time.

25.3.2 Any party aggrieved with the decision of the Committee at the first level (tier) may prefer an appeal before the Cabinet Secretary at the second level (tier), within the period stipulated in the applicable DPE guidelines, through its Administrative Ministry / Department. The decision of the Cabinet Secretary shall be final and binding on all concerned.

25.3.3 The Parties agree that recourse to AMRCD shall be a **condition precedent** to the initiation of any legal proceedings before any court in respect of Disputes falling within the scope of this Clause.

25.4 Dispute Resolution with Parties other than CPSEs / Government Organizations

25.4.1 General

25.4.1.1 Any Dispute, disagreement, claim, or difference arising out of or in connection with this Contract with Parties other than CPSEs / Government Organizations shall, in the first instance, be dealt with in accordance with Clause 25.2 above (amicable resolution and internal escalation).

25.4.1.2 If the Dispute is not resolved through the mechanisms referred to in Clause 25.2 within a reasonable period, either Party may invoke the mediation and/or legal proceedings mechanism set out in Clauses 25.4.2 and 25.4.3 below.

25.4.2 Mediation and High-Level Committee (HLC)

25.4.2.1 Without prejudice to the rights and remedies available under law, and in alignment with the guidelines of the Department of Expenditure on Arbitration and Mediation in Contracts of Domestic Public Procurement and the Mediation Act, 2023, the Parties may, at any stage before or during legal proceedings, agree to refer any Dispute to **mediation** with the objective of achieving an amicable settlement.

25.4.2.2 Mediation may be undertaken:

- (a) through a mediator appointed under the Mediation Act, 2023, including through any mediation service provider / institution as may be approved by the MD of the Corporation; and/or
- (b) through a High-Level Committee (HLC) / Settlement Committee constituted by the MD of the Corporation, which may act as mediator or may examine and recommend on any mediated/negotiated proposal placed before it.

25.4.2.3 The composition, mandate and procedure of such HLC / Settlement Committee shall be as decided by the MD of the Corporation from time to time. The Contractor shall have no right to insist on any particular composition, member or procedure, and the constitution of HLC / Settlement Committee shall be the exclusive prerogative of the Corporation.

25.4.2.4 The costs and expenses of mediation, including fees payable to the mediator and/or members of the HLC / Settlement Committee in terms of applicable Government guidelines / orders, shall, unless otherwise provided in a final settlement, be borne equally by the Parties. Each Party shall bear its own internal and professional costs of participation.

25.4.2.5 Any settlement arrived at through mediation and/or approved by the HLC / Settlement Committee and accepted by the Parties, and thereafter approved by the Competent Authority of the Corporation, shall be recorded in writing and signed by the Parties. To the extent of the matters covered therein, such settlement shall be final and binding on the Parties.

25.4.3 Legal Proceedings – Courts of Competent Jurisdiction (No Arbitration)

- 25.4.3.1 If a Dispute is not settled through the mechanisms described in Clauses 25.2 and 25.4.2 above, or if either Party, acting reasonably, considers that mediation is not likely to resolve the Dispute within a reasonable time, the aggrieved Party may seek adjudication of such Dispute by way of appropriate legal proceedings before courts of competent jurisdiction in India, in accordance with Clause 25.1.
- 25.4.3.2 The Parties expressly agree that no Dispute arising out of or in connection with this Contract shall be referred to arbitration, whether under the Arbitration and Conciliation Act, 1996 or otherwise. The Contractor hereby waives any right or entitlement, whether statutory, contractual or otherwise, to seek reference of any such Dispute to arbitration, and agrees that any plea or proceeding seeking such reference shall be treated as contrary to the express terms of this Contract.
- 25.4.3.3 Nothing in this Clause shall prevent the Corporation from seeking urgent interim or protective relief (including injunctions or orders for security, preservation of property or evidence, etc.) from any court of competent jurisdiction at any time, as may be considered necessary by the Corporation to safeguard its interests.

25.5 Limitation for Raising Claims and Initiating Legal Proceedings

- 25.5.1 No claim, Dispute, or demand arising out of or in connection with this Contract, including those relating to final bill payment or execution issues prior to completion of the Works, shall be raised or made the subject-matter of legal proceedings by the Contractor after expiry of the statutory limitation period of **three (3) years**, as prescribed under the Limitation Act, 1963, or such longer or shorter period as may be prescribed by law and applicable to the particular claim.
- 25.5.2 For the purposes of Clause 25.5.1, the limitation period shall be reckoned from the latest of the following:
- (a) the date of completion of the Works as certified by the Engineer-in-Charge; or
 - (b) the date of payment by the Corporation against the Contractor's final bill; or
 - (c) the date of formal rejection of any pending claim by the Corporation, if such rejection occurs within the period of limitation.
- 25.5.3 No claim, Dispute, or demand arising out of or in connection with this Contract regarding security deposit, or execution issues during the Defect Liability Period (DLP), shall be raised or made the subject-matter of legal proceedings by the Contractor after expiry of the statutory limitation period of **three (3) years**, as prescribed under the Limitation Act, 1963, or such other period as may be prescribed by applicable law.
- 25.5.4 For the purposes of Clause 25.5.3, the limitation period shall be reckoned from the latest of the following:
- (a) the date of expiry of the Defect Liability Period (DLP); or
 - (b) the date of formal rejection of any pending claim by the Corporation, if such rejection occurs within the period of limitation.
- 25.5.5 Any claim or legal proceeding initiated by the Contractor beyond the period of limitation as determined above shall be deemed barred by limitation, and no reference or proceedings shall be maintainable thereafter. Invocation of amicable resolution or mediation shall not, by itself, extend or suspend limitation, except to the extent specifically provided by applicable law.

25.6 Survival

The right to initiate legal proceedings under this Clause shall survive the expiry or termination of the Contract, subject always to the law of limitation and the other provisions of this Clause 25.

26. Contractor to Indemnify Corporation Against Patent Rights

1. **Indemnity:** The Contractor shall be solely responsible for and shall, at its own cost and expense,

defend, indemnify, and hold harmless the Corporation Group from and against any and all Claims, actions, suits, damages, losses, liabilities, costs, charges, and expenses (including legal expenses) arising out of or in connection with any actual or alleged infringement of any patent, copyright, trademark, trade secret, or other intellectual property right of any third party resulting from or related to the design, manufacture, use, supply, or delivery of any goods, materials, equipment, technology, or services under this Contract.

2. **Continued Performance:** If the Contractor is prevented or restrained from performing any part of the Work due to any such infringement or alleged infringement, the Corporation shall not be liable to make any payment for the portion of Work so affected. The Contractor shall, at its own cost, promptly take all reasonable steps, including procuring licenses, modifying the infringing material, or substituting equivalent non-infringing material, to enable the Work to proceed without infringement and in compliance with the Contract requirements.
3. **Exception:** The provisions of this Clause shall not apply to the extent that any such Claim for infringement arises directly and necessarily from the Corporation's own written specifications or detailed instructions, provided that the Contractor has, prior to implementation, notified the Corporation in writing of any known or reasonably foreseeable risk of infringement and the Corporation has instructed the Contractor to proceed regardless.

27. Lumpsum Provisions in Tender

When the estimate on which a tender is made includes lump sum in respect of parts of the work, the Contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this Contract for such items, or if the part of the work in question is not, in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and conclusive against the Contractor with regard to any sum or sums payable to him under the provisions of the Clause.

28. Action where no Specifications are Specified:

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications.

In case, there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per State / District Specifications.

In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the good industry practices and instructions and requirements of the Engineer-in-Charge.

2G. Withholding and Lien in Respect of Sum Due from Contractor

- i. Whenever any Claim or Claims for payment of a sum of money arises out of or under the Contract or against the Contractor, the Engineer-in-Charge or the Corporation shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the Contractor and for the purpose aforesaid, the Engineer-in-Charge or the Corporation shall be entitled to withhold the Security Deposit, if any, furnished as the case may be and also have a lien over the same, pending finalization or adjudication of any such Claim.

In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Contractor, the Engineer-in-Charge or the Corporation shall be entitled to

withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under the same Contract or any other Contract with the Engineer-in-Charge or the Corporation or any contracting person through the Engineer-in-Charge pending finalization of adjudication of any such Claim.

It is an agreed term of the Contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Corporation will be kept withheld or retained as such by the Engineer-in-Charge or Corporation till the Claim arising out of or under the Contract is determined by the arbitrator (if the Contract is governed by the Arbitration Clause) by the competent court, as the case may be and that the Contractor will have no Claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor.

For the purpose of this Clause, where the Contractor is a Partnership Firm or a Limited Company, the Engineer-in-Charge or the Corporation shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any Partner/Limited Company as the case may be, whether in his individual capacity or otherwise found payable to any Partner/Limited Company as the case may be, whether in his individual capacity or otherwise.

- ii. The Corporation shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc. to be made after payment of the final bill and if as a result of such audit and technical examination, any sum is found to have been overpaid in respect of any work done by the Contractor under the Contract or any work claimed to have been done by him under the Contract and found not to have been executed, the Contractor shall be liable to refund the amount of over-payment and it shall be lawful for the Corporation to recover the same from him in the manner prescribed in Sub-Clause (i) of this Clause or in any other manner legally permissible; and if it is found that the Contractor was paid less than what was due to him under the Contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Corporation to the Contractor, without any interest thereon whatsoever.

Provided that the Corporation shall not be entitled to recover any sum overpaid, nor the Contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Corporation Engineers on one hand and the Contractor on other under any term of the Contract permitting payment for work after assessment by the Corporation Engineer not less than in rank of DGM.

2GA. Lien in Respect of Claims in other Contracts

Any sum of money due and payable to the Contractor (including the Security Deposit returnable to him) under the Contract may be withheld or retained by way of lien by the Engineer-in-Charge or the Corporation or any other contracting person or persons through Engineer-in-Charge against any Claim of the Engineer-in-Charge or Corporation or such other person or persons in respect of payment of a sum of money arising out of or under any other Contract made by the Contractor with the Engineer-in-Charge or the Corporation or with such other person or persons.

It is an agreed term of the Contract that the sum of money so withheld or retained under this Clause by the Engineer-in-Charge or the Corporation will be kept withheld or retained as such by the Engineer-in-Charge or the Corporation or till his Claim arising out of the same Contract or any other Contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the Contractor shall have no Claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this Clause and duly notified as such to the Contractor.

30. Water for Works

1. The Contractor(s) shall make his/their own arrangements for the water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions:
 - a) That the water used by the Contractor(s) shall be fit for construction purposes to the satisfaction of the Corporation Engineer.
 - b) The Corporation Engineer shall make alternative arrangements for the supply of water at the risk C cost of Contractor(s), if arrangements made by the Contractor(s) for procurement of water are in the opinion of the Corporation Engineer, unsatisfactory.
2. **Departmental water supply, if available:** Water on the request of Contractor and, if available may be supplied to the Contractor by the Corporation, subject to the following conditions:
 - a) The water charges @ 1% shall be recovered on gross amount of the work done.
 - b) The Contractor(s) shall make his/their own arrangement of water connection and laying of pipelines from existing main source of supply.
 - c) The Corporation does not guarantee to maintain uninterrupted supply of water and it will be incumbent on the Contractor(s) to make alternative arrangements for water at his/their own cost in the event of any temporary break down in the Corporation water main so that the progress of his/their work is not held up for want of water. No Claim of damage or refund of water charges will be entertained on account of such break down.
3. No lead is payable on water for works done and scheduled under any section of PRICE SCHEDULE.

30A. Alternate Water Arrangements

The Contractor shall be allowed to construct temporary wells/ borewells in Corporation land for taking water for construction purposes only after he has got permission of the Engineer-in-Charge in writing. No charges shall be recovered from the Contractor on this account, but the Contractor shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

31. HEALTH, SAFETY AND ENVIRONMENT

1. Safety

The Contractor shall observe and comply with all applicable laws, regulations, and guidelines issued by any authority having jurisdiction over the Site relating to health, safety, and the environment, including those outlined in (**APPENDIX-G XV**), of GCC. The Contractor, at its own expense, shall ensure the safety of all labor/personnel directly or indirectly employed for execution of the work under this Contract by adhering to the Safety Code, a copy of which the Contractor acknowledges receiving. The Contractor shall provide all necessary facilities and safety arrangements as required by the Safety Code. In case of non-compliance, the Contractor shall be liable to pay a penalty as determined by the Corporation. The Corporation reserves the right to make arrangements and provide such facilities, recovering the associated costs from the Contractor.

2. Compliance with Corporation HSE Requirements

The Contractor shall adhere to all health, safety, and environmental requirements prescribed by statutory authorities and specified within the various clauses of this Contract.

3. Obligations of the Contractor

- i. The Contractor shall assess at all times whether the Work can be safely undertaken, including ensuring that all Contractor's Equipment is properly stored, loaded, and suitable for the existing conditions.
- ii. Materials brought to the Site for incorporation into the Work must be stored to prevent damage to their physical or material properties. Storage must comply with manufacturer recommendations and not disrupt circulation areas or CW Complex aesthetics. Materials like bricks, sand, aggregates, and TMT must be stored at designated areas identified by the Corporation's Engineer. Excavated earth must be disposed of neatly at the end of each day. Failure to comply allows the Corporation to relocate materials at the Contractor's risk and cost.
- iii. No inflammable materials such as petroleum or oil, within the meaning of the Indian Petroleum Act and Indian Explosives Act, shall be stored at the Site without prior approval from the Corporation and necessary licenses. The Contractor shall adhere to all precautions required under the Acts.
- iv. The Contractor shall promptly collect and store equipment, rubbish, or other waste generated from the Work in designated areas for removal to maintain Site cleanliness and safety.
- v. Contractor must take all precautions to avoid accidents by exhibiting day and night the necessary caution boards, speed limit boards, red flags / red lights and providing barriers. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during execution of work.

4. Responsibility for Safety of Contractor Personnel

- i. The Contractor shall be responsible for the safety of its personnel throughout the Contract's duration. The Contractor's Personnel must participate in and comply with safety drills and measures as directed by the Corporation.
- ii. Regular safety meetings shall be held by the Contractor to educate and update personnel on safety requirements. Evidence of such meetings shall be provided to the Corporation upon request. The Contractor must supply all personnel with appropriate personal protective and safety equipment.
- iii. The Contractor shall ensure effective supervision of Work execution by its personnel to promote safe practices. For offshore Work, the Contractor's Personnel must have undergone sea survival training.

5. Contractor's HSE Policy

- i. The Contractor when specifically asked, is liable to submit its health, safety, and environmental policy to the Corporation before commencing the Work. The policy must:
 - Specify the allocation of responsibility for HSE matters and name the individual with overall responsibility.
 - Clearly outline practices, procedures, and measures to protect resources at the Site, including personnel and materials.
 - Include emergency procedures for injuries, damage to works, and environmental pollution. This policy must align with and complement the Corporation's HSE policy and guidelines.
- ii. **First Aid:** The contractor shall maintain in a readily accessible place First Aid Appliance including an adequate supply of sterilized dressing C sterilized cotton wool. Appliances shall be placed under charge of responsible person who shall be readily available during working hours.

6. Compliance with Corporation's Instructions

The Contractor shall comply with all safety instructions issued by the Corporation, including those from other contractors working on the Site. Upon request, such instructions shall be confirmed in writing by the Corporation's Representative.

7. Authority of Warehouse Manager and Corporation Engineer

The Contractor acknowledges the authority of the Warehouse Manager and/or Corporation Engineer designated by the Engineer in charge. These representatives are responsible for:

- Matters affecting safety, emergency response, health, welfare, and discipline.
- Issuing instructions to the Contractor's Personnel and others on or near the Site.

The Contractor shall ensure its personnel recognize and comply with the authority and instructions of these representatives.

8. Reporting

- i. The Contractor shall immediately report in writing to the Corporation any incident or accident connected with the Work. Such reporting shall include, but not be limited to, fatalities, lost-time incidents, medical treatment cases, first-aid cases, near-miss events, or any other loss-related occurrences. All major accidents or fatalities shall be reported within 24 (twenty-four) hours of occurrence. Additionally, the Contractor shall submit to the Corporation a monthly summary report of all incidents, including their causes, corrective and preventive measures adopted, and the current status of implementation..
- ii. The Contractor shall investigate all fatal or major accidents and submit to the Corporation a detailed report containing findings, root-cause analysis, recommendations, and remedial measures within seven (7) days of the occurrence. The Corporation reserves the right to participate in such investigations or conduct an independent inquiry into any incident. Such participation or inquiry by the Corporation shall not relieve the Contractor of its obligations to investigate, report, and implement corrective measures under this Clause.

32. Employment of Technical Staff and Employees:

Contractor's Superintendence, Supervision, Technical Staff C Employees:

- i. The Contractor shall provide all necessary superintendence during execution of the work and all along thereafter, as may be necessary for proper fulfilling of the obligations under the Contract.
- ii. The Contractor shall immediately after receiving letter of award of the tender and before commencement of the work, intimate in writing to the Engineer in charge , the name(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising and measuring the work.
- iii. The minimum requirement of such technical representative(s) and their qualifications and experience shall not be lower than specified in General Conditions of Contract hereunder and in APPENDIX 1 (TIS) of NIT, (if any additional). Even if the Contractor {or partner(s) /Director in case of firm/company} is himself / herself an Engineer, it is necessary on the part of the Contractor to employ principal technical representative / technical representative(s) as per stipulation in Table below.
- iv. The Engineer in charge shall, within 3 days of receipt of such communication, intimate in writing his approval or otherwise of such a representative(s) to the Contractor. If due to any reason, such approval is not received by Contractor in writing, he shall continue to deploy the technical representative(s) considering they are meeting the specified criteria
Any such approval may at any time be withdrawn or if at any stage, it is found by Engineer in charge that technical representative(s) do not meet the specified criteria or they are not technically competent, then in all such cases, the Contractor shall appoint another such representative(s) according to the provisions of this Clause.
- v. The decision of Tender Accepting Authority shall be final and binding on the Contractor in case of any conflict/dispute in this respect.
- vi. Such a principal technical representative and other technical representative(s) shall be appointed by the Contractor soon after receiving the approval from the Engineer-in-charge and shall be available at Site before starting work.
- vii. All the provisions applicable to the principal technical representative under the Clause will also be applicable to other technical representatives. Instructions given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the Contractor.

- viii. The principal technical representative and other technical representative(s) shall be actually available at Site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Engineer in charge and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative(s) in the Site order book and shall affix his/their signature in token of noting down the instructions and in token acceptance of measurements / checked measurements / test checked measurements.
- ix. These representatives should not look after any other work which is not in the scope of Contractor). Substitutes of these representatives, duly approved by the Engineer in charge for work in a similar manner to the aforesaid, shall be provided in the event of absence of any of the representative(s) by more than two days.
- x. If the Engineer-in-Charge , whose decision in this respect is final and binding on the Contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this Clause, **a recovery** (non- refundable) shall be effected from the Contractor, as specified in Table below in General Conditions of Contract and in APPENDIX 1 (TIS) of NIT (if any additional) and the decision of the Corporation Engineers, as recorded in the Site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the Contractor.
- xi. Further, if the Contractor fails to appoint suitable technical Principal technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days, during the requirement at work place, without duly approved substitute or do not discharge their responsibilities satisfactorily, the Corporation Engineers shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are appointed and the Contractor shall be held responsible for the delay so caused to the work.
- xii. The Contractor shall submit a certificate of employment of the technical representative(s) (in the format given by corporation or CPF deduction issued to the Engineers employed by him) along with every on-account bill / final bill and shall produce evidence if at any time so required by the Engineer in charge.
- xiii. The Contractor shall provide and employ on the Site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff, as are competent to give proper supervision to the work. The Contractor shall provide and employ skilled, semiskilled and unskilled labor as is necessary for proper and timely execution of the work/delivery of services. The Engineer-in-Charge shall be at liberty to object to and require the Contractor to remove from the work any person who in his opinion misconducts himself or his representative or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such a person shall not be employed again at the works Site without the written permission of the Engineer in charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

Requirement of Technical representative and specified criteria thereof (minimum strength to be deployed by Contractor) to be referred from APPENDIX -G XXII

33. Levy/Taxes Payable by Contractor

1. Except as expressly provided elsewhere in the Contract, the Contractor shall be solely responsible for the following:
 - i. Payment of all Taxes now or hereafter levied or imposed on the Contractor, its subcontractors, or their personnel by any Government Authority on account of wages, salaries, or other remuneration (referred to as Personal Income Tax).
 - ii. Payment of all Taxes now or hereafter levied or imposed on the Contractor or its subcontractors by any Government Authority on their profits and gains (referred to as Corporate Income Tax).
 - iii. Payment of all Goods and Services Tax (GST) or similar levies now or hereafter levied or imposed by any Government Authority on the supply of goods and/or services to the Corporation.
 - iv. Payment of any other Tax, cess, or levy now or hereafter imposed by any Government Authority in connection with the performance of this Contract by the Contractor or its subcontractors, whether on inputs or outputs, except to the extent expressly provided elsewhere in these General Conditions of Contract. No Claim in this regard shall be entertained by the Corporation.
 - v. Payment of Building and Other Construction Workers' Welfare Cess at rates prescribed by Government Authorities. This cess shall be deemed included in the Contractor's quoted rates and shall be recovered by the Corporation from the Contractor's bills for onward payment to the concerned authority.
2. The Contractor shall deposit applicable royalty and obtain necessary permits for procurement and transportation of materials such as red bajri, stone, kankar, etc., from local authorities. If, under any law or Government order, any royalty, cess, or levy becomes payable by the Corporation in respect of materials used by the Contractor, which is not otherwise payable by the Contractor, the Corporation shall have the right to recover such amounts from the Contractor's dues.

33 A.**1. Withholding of Taxes and Issuance of Certificates:**

- i. The Corporation shall withhold applicable Taxes from payments to the Contractor, as required under prevailing laws, unless the Contractor furnishes a valid certificate from the competent Government Authority entitling the Contractor to exemption or reduced rate of deduction.
- ii. The Corporation shall issue the necessary Tax deduction certificates to the Contractor within the time prescribed under the applicable laws to enable the Contractor to Claim credit or refund from the Tax authorities.

2. Responsibility for Tax Filings:

- i. The Contractor shall be solely responsible for filing all required Tax returns, including but not limited to Corporate Income Tax, Personal Income Tax, and GST, with the relevant Government Authorities in compliance with applicable laws.
- ii. The Contractor shall ensure that its subcontractors also comply with the applicable Tax laws, file necessary returns, and furnish any information as may be required by Government Authorities.
- iii. The Corporation shall be responsible for filing withholding Tax returns only to the extent of Taxes withheld by it from the Contractor under this Clause.

3. Corporation's Rights if Treated as Representative Assessee:

In the event any Government Authority treats the Corporation as the representative assessee of the Contractor or its subcontractors:

- i. The Corporation shall have the right to recover from the Contractor all Taxes, penalties, interest, and associated costs paid on behalf of the Contractor or its subcontractors by way of deduction from amounts due to the Contractor under this or any other Contract.

- ii. The Corporation may require the Contractor to furnish relevant details, documents, or clarifications. Any failure or delay in doing so, resulting in any penalty or loss to the Corporation, shall be recoverable from the Contractor and the Contractor shall immediately furnish the same to the Corporation. If the Contractor fails to comply with the foregoing, any penalty/interest levied on the Corporation for non-filing or late filing of details or documents in this regard shall be recoverable from the Contractor.

4. Indemnity:

The Contractor shall defend, indemnify, and hold harmless the Corporation Group from and against any claims, demands, losses, penalties, or liabilities in connection with Taxes levied or imposed on the Contractor or its subcontractors by any Government Authority arising out of or in connection with the performance of this Contract.

1. Withholding Taxes and Withholding certificates

- i. The Corporation shall, at the time of its payments due to the Contractor, withhold the necessary Taxes at such rate as is required by any Government Authority, unless and to the extent that the Contractor shall produce to the Corporation any certificate issued by a Government Authority (having authority to issue such certificate) entitling the Contractor to receive the payments under the Contract for a prescribed period without deduction of any Tax or deduction at a lower rate.
- ii. The Corporation shall provide the necessary withholding Tax certificates to the Contractor within the time stipulated by the relevant law to enable the Contractor to file the same with the Government Authority as proof of payment of such Taxes.

2. Person Responsible for filing of returns / information to Government Authorities

- i. The Contractor shall be responsible for filing all necessary Tax returns (including, without limitation, returns for Corporate Income Tax, Personal Income Tax, GST as applicable) with the relevant Government Authorities in accordance with all applicable statutory requirements and shall be responsible for providing all information requested by such Government Authorities.
- ii. The Contractor shall also ensure that its subcontractors file such returns as stipulated by the relevant Government Authorities and furnish such information as requested for by the relevant Government Authorities.
- iii. The Corporation, with respect to the Tax withheld from the Contractor in accordance with Clause (Withholding Tax and Withholding Tax Certificates), shall be responsible for filing the withholding Tax returns with the relevant Government Authorities in accordance with applicable statutory requirements.

3. Corporation's rights, if treated as representative assessee by Government Authorities

In certain situations, a Government Authority may treat the Corporation as the representative assessee of the Contractor and/or its subcontractors and recover the Taxes due to the Government Authority by the Contractor or its subcontractors from the Corporation. In such situations, the Corporation shall have the following rights:

- i. The Corporation shall be entitled to recover from the Contractor, the Taxes paid on behalf of the Contractor or its subcontractors (together with any costs and expenses incurred by the Corporation in connection therewith) or to retain the same out of any amounts to be paid to the Contractor or its subcontractors that may be in its possession (whether due under this Contract or otherwise) and shall pay only the balance, if any, to the Contractor; and
- ii. If the Corporation is required to furnish any details or documents in such capacity, the Corporation shall request the details or documents to be furnished to it by the Contractor,

and the Contractor shall immediately furnish the same to the Corporation. If the Contractor fails to comply with the foregoing, any penalty/interest levied on the Corporation for non-filing or late filing of details or documents in this regard shall be recoverable from the Contractor.

4. Indemnity

The Contractor shall defend, indemnify and hold the Corporation Group harmless from and against any Claim in connection with any Taxes which may be levied or imposed on the Contractor or its subcontractors by any Government Authority arising out of or in connection with the performance of this Contract.

34. Change in Law: Conditions for Reimbursement of Levy/Taxes, if Levied after Receipt of Tenders

1. All tendered rates shall be inclusive of any Tax, levy or cess applicable on last stipulated date of receipt of tender including extension if any. No adjustment i.e. increases, or decrease shall be made for any variation in the rate of GST, Building and Other Construction Workers Welfare Cess or any Tax, levy or cess applicable on inputs. However, effect of variation in rates of GST or Building and Other Construction Workers Welfare Cess or imposition or repeal of any other Tax, levy or cess applicable on output of the works Contract shall be adjusted on either side, increase or decrease.

Provided further that for Building and Other Construction Workers Welfare Cess or any Tax (other than GST), levy or cess varied or imposed after the last date of receipt of tender including extension if any, any increase shall be reimbursed to the Contractor only if the Contractor necessarily and properly pays such increased amount of Taxes/ levies/cess.

Provided further that such increase, including GST shall not be made in the extended period of Contract for which the Contractor alone is responsible for delay as determined by Engineer in charge under the provisions of Contract Clauses.

2. The Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the Government and/or the Engineer-in Charge and shall also furnish such other information/document as the Engineer-in Charge may require from time to time.
3. The Contractor shall, within a period of 30 days of the imposition of any such further Tax or levy or cess, or variation or repeal of such Tax or levy or cess give a written notice thereof to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.
4. the provisions of this (Change in Law) shall not apply to changes in Personal Income Tax or Corporate Income Tax or to changes in non-Indian Taxes.

35. Termination of Contract on Death of Contractor

Without prejudice to any of the rights or remedies under this Contract, if the Contractor dies, the Engineer in charge on behalf of the Corporation shall have the option of terminating the Contract without levy of compensation to the Contractor.

36. Insurances

36.1 Contractor Insurances: The Contractor shall procure and maintain, at its sole expense, in full force and effect throughout the duration of the Contract (including extension if any), the insurances set out below:

- a) "Employer's Liability and/or Workmen's Compensation insurance to the full extent

required under all applicable laws in the country:

- i. Where this Contract is being performed; and
- ii. In which the Contractor is incorporated.

Note: Compliance with **Employees' State Insurance Act, 1948**, is required where applicable

- b) Construction All Risks insurance covering loss of or damage to the Facilities to the full replacement value thereof, as applicable in case of new construction/upgradation works mentioned in the Tender. Such insurance shall be procured and maintained from an insurer registered with the Insurance Regulatory and Development Authority of India (IRDAI), in joint names of the Employer (Central Warehousing Corporation) and the Contractor, with the Employer's name appearing first.

This insurance shall:

- I. Commence from the scheduled date of work initiation and remain valid until virtual completion of the Contract.
 - II. Cover loss or damage due to Acts of God, including but not limited to Fire, Earthquake (Fire C Shock), Storm, Tempest, Flood, Inundation, and similar perils.
 - III. Extend to cover existing buildings and properties of the Employer (CWC) adjoining or near the work Site.
 - IV. Include add-on covers such as debris removal and off-site storage.
 - V. Provide for inclusion of Claim assessment fees and services.
 - VI. Exclude Contractor's and subcontractor's own equipment and property.
 - VII. Include a clear description of the work location, as per the Tender and confirmed by the Engineer-in-Charge.
 - VIII. Comply with minimum deductibles/excess as mandated by GIC/IRDAI guidelines.
- The total sum insured shall be equal to the total Contract value including any escalation or variation, irrespective of subsequent revisions.

- c) Any other insurances which the Contractor is obliged to cover under any applicable laws or as may otherwise be adequate in type, scope, and limits to cover the Contractor's liabilities under this Contract.

36.2 **No Limitation:** The insurances set out in Clause 36 are minimum requirements and shall not be construed in any way as limits of liability or as constituting acceptance by the Corporation of responsibility for financial liabilities in excess of such limits. The liabilities assumed by the Contractor under Clause 37 below are separate from and independent of the Contractor's obligations under this Clause.

36.3 **General Requirements:** The Contractor undertakes that its insurances and those of its subcontractors:

- a) Shall be issued by insurers duly registered with the Insurance Regulatory and Development Authority of India (IRDAI), possessing sound financial standing and a credible claims settlement track record preferably with consent of Corporation as possible.
- b) Shall be primary and shall not be considered contributory insurance with any insurance provisions of the Corporation Group;
- c) Shall have the Corporation Group's interests endorsed as additional assured (other than in relation to Employers Liability/Workers Compensation insurance) to the extent of the liability assumed by the Contractor hereunder.
- d) Shall contain waivers of any rights of recourse including, in particular, subrogation rights,

to the extent permitted by applicable law, against the Corporation Group arising out of or in connection with the performance of this Contract to the extent of liabilities assumed by the Contractor hereunder.

- e) Shall be endorsed to provide the Corporation with at least thirty (30) days' written notice of a material change, cancellation, or non-renewal by the underwriters.

36.4 Certificates of Insurance:

Within thirty (30) days of the signing of the Contract or commencement of Work, whichever is earlier, the Contractor shall deposit the CAR insurance policy along with the premium payment receipt with the Corporation. Any deviation from this timeline shall require express written instruction from the Corporation. Original policy documents or certified copies shall be produced by the Contractor upon request by the Corporation, for audit, verification, or any other purpose.

In the event of failure by the Contractor to procure such insurance within the stipulated time, the Corporation shall have the right, but not the obligation, to procure the same on behalf of the Contractor and deduct the premiums paid from any sums due or becoming due to the Contractor.

36.5 Subcontractors: The Contractor shall procure that its subcontractors are insured to appropriate levels as may be relevant to their work. The Contractor shall be liable to the Corporation Group for any absence or insufficiency of the insurances of its subcontractors.

36.6 Co-operation:

- i. Each Party shall afford the other all such reasonable assistance as may be required for the preparation and negotiation of insurance claims. The Contractor shall remain responsible for the preparation of documents for claims under any of the policies referred to in this Clause. Where the Contractor is engaged in handling claims, actions, or proceedings in respect of which it has granted an indemnity as provided above, the Contractor shall ensure that the Corporation is informed if the Corporation's operations, safety standards, or working practices are called into question by any party or if the Contractor wishes to use information relating thereto in handling those claims, actions, or proceedings. The Corporation shall, at its sole option, have the right to participate in and/or make representations in relation to the defense of such matters, and the Contractor shall allow the Corporation full opportunity to do so.
- ii. Nothing in this Clause shall prejudice the Corporation's right to seek remedies in the event of the Contractor's failure to procure or maintain adequate insurance coverage.
- iii. Following any loss or damage covered under the CAR insurance, the Contractor shall, upon settlement of the insurance Claim or initiation of reinstatement by the insurer, proceed diligently with the completion of the Works in accordance with the original Contract conditions, as though the incident had not occurred. The Contractor shall be entitled to an extension of time for completion as may be reasonably determined by the Corporation. The decision of the Engineer-in-Charge in this regard shall be final and binding.

37. Indemnities

37.1 General:

- i. The indemnities provided under this Clause shall be full, primary, and continuing obligations of the Contractor, and shall apply notwithstanding the existence of, or failure by the Contractor to obtain, insurance coverage as required under Clause 36.
- ii. Each Party shall promptly notify the other in writing of any Claim made against it in respect of which it intends to seek indemnification under this Clause, providing reasonable details of the Claim, including the facts and circumstances giving rise to it. Such notification shall not be a condition precedent to the indemnifying Party's liability, unless otherwise specified herein.
- iii. The provisions of this Clause shall survive the expiration or termination of the Contract.

37.2 Property and Injury to Personnel:

The Contractor shall be liable for, and shall defend, indemnify, and hold harmless the Corporation Group from and against any Claim arising out of or in connection with:

- i. Loss of or damage to the property of the Contractor Group (including, without limitation, the Contractor's Equipment);
- ii. Loss of or damage to the property of the Corporation Group (including Free Issue Material); and
- iii. Death, injury, or illness to any member of the Contractor Group (including its personnel), in each case whether or not resulting from the negligence, breach of statutory duty, or other act or omission of the Corporation Group.

37.3 Third-Party Liability:

The Contractor shall be liable for, and shall defend, indemnify, and hold harmless the Corporation Group from and against any Claim in respect of:

- i. Loss of or damage to third-party property; or
- ii. Death, injury, or illness to any third party, to the extent caused by the negligence, willful misconduct, or breach of statutory duty of the Contractor Group in connection with the performance of the Contract.

Note: For this purpose, "Third Party" means any person or entity other than the Corporation Group or Contractor Group.

37.4 Pollution and Contamination:

The Contractor shall be liable for, and shall defend, indemnify, and hold harmless the Corporation Group from and against any Claim arising out of pollution or contamination caused by:

- i. Any property or equipment of the Contractor Group; and/or
- ii. Spillage or discharge of fuels, lubricants, oils, chemicals, waste, or other effluents within the care, custody, or control of the Contractor Group,

in each case arising from or in connection with the Contract, regardless of negligence or fault, except to the extent attributable to the Corporation Group's gross negligence or will full misconduct. The decision of the Engineer-in-Charge shall be final and binding in connection with

any disputes regarding the applicability or interpretation of the above.

37.5 Responsibility for the Facilities:

Without prejudice to the Contractor's obligations under this Contract and applicable laws, the Contractor shall be solely responsible for the care of the Facilities (limited to the Site under work awarded to the Contractor) from the Commencement Date until the issue of the Completion Certificate for the entire Facilities.

In the event of any loss of or damage to the Facilities during this period, the Contractor shall, upon instruction by the Corporation, promptly reconstruct, repair, or replace the affected works at its own cost and in accordance with this Contract.

38. Theoretical Consumption of Material

1. After completion of the work and also at any intermediate stage in the event of non-reconciliation of materials issued, the theoretical quantity of materials used in the work shall be calculated on the basis and method given hereunder:
 - i. The quantity of cement C bitumen shall be calculated on the basis of quantity of cement C bitumen required for different items of work as shown in the Schedule of Rates mentioned in Tender. In case any item is executed for which standard constants for the consumption of cement or bitumen are not available in the above-mentioned schedule/statement or cannot be derived from the same, shall be calculated on the basis of standard formula, to be laid down by the Engineer-in-Charge.
 - ii. Theoretical quantity of steel reinforcement or structural steel sections shall be taken as the quantity required as per design or as authorized by Engineer-in-Charge, including authorized lappages, chairs etc. plus 3% wastage due to cutting into pieces, such theoretical quantity being determined and compared with the actual issues each diameter wise, section-wise and category wise separately.
 - iii. Theoretical quantity of G.I. C C.I. or other pipes, conduits, wires and cables, pig lead and G.I./M.S. sheets shall be taken as quantity actually required and measured plus 5% for wastage due to cutting into pieces (except in the case of G.I./ M.S. sheets it shall be 10%), such determination C comparison being made diameter wise C category wise.
 - iv. For any other material, as per actual requirements. Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Technical Specifications. For Non-Scheduled items, the decision of the Corporation Engineer (Sr. Manager and above rank), regarding theoretical quantities of materials which should have been actually used, shall be final and binding on the Contractor.
2. The said action under this Clause is without prejudice to the right of the Corporation to take action against the Contractor under any other conditions of Contract for not doing the work according to the prescribed specifications.

3G. Compensation During War-like Situations

The work (whether fully constructed or not) and all materials, machines, tools C plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the Contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the Site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike

operation, the Contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the Site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the Contract rates in accordance with the provision of this agreement for the work of clearing the Site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation upto the value of the work originally executed before being damaged or destroyed and not paid for.

In case of works damaged or destroyed, but not already measured and paid for, the compensation shall be assessed by the Engineer-in-Charge upto Rs. 2,00,000 and by the next higher officer concerned for a higher amount. The Contractor shall be paid for the damage/destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the Contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this Contract.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations –

- (a) unless the Contractor had taken all such precautions against air raid, as are deemed necessary by the A.R.P. (Air Rail Precaution) Officers or the Engineer-in-Charge
- (b) for any material etc. not on the Site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work

In the event of the Contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion, as is considered reasonable by the Engineer-in-Charge.

40. Apprentices Act Provisions to be Complied With

The Contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the Contract and the Engineer in charge may, in his discretion, cancel the Contract.

The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

41. Release of Security Deposit after Labor Clearance

- i. The Security Deposit of the work shall be refunded if no labor complaint has been received from the labor officer till the due date of its payment. If a labor complaint is received during this period, the Engineer-in-Charge shall, after issue of notice in this regard to the Contractor, deduct the amount required to settle the complaint from his security deposit and refund the balance amount.
- ii. In the case, if a part completion certificate of work is recorded, despite the security deposit shall be released only after recording final completion certificate of the work and after completion of defect liability period whichever is later or specified otherwise in the Contract.

42. Debarring of Bidder/Contractor

A. Events/Situation invoking the debarring of Bidder/Contractor

The Bidder/ Contractor shall be debarred if he has been convicted of an offence or breach the Contract as below:

- 1. if Bidder/ Contractor has been convicted of an offence
 - (a) under the Prevention of Corruption Act, 1988; or

- (b) the Indian Penal Code or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a Contract.
2. If Bidder/ Contractor breaches the Code of Integrity.
 3. In the event of any of the document (s) submitted by Bidder/ Contractor along with their bid, in support of their qualification for bid, is found fabricated/ tempered/ forged/ altered/ manipulated/ false during the evaluation of bid or later at any stage even after award of work.
 4. In case the Bidder/ Contractor fails to submit the requisite Performance Guarantee even after the period specified in tender OR by extended due date in case extended by Engineer in charge.
 5. In case the Contract is terminated under clause 3 due to default under the provision of Contract.
 6. In case the Contractor is required to be debarred for the actions mentioned in various conditions of Contract other than Clause 3

NOTE:

- i. In the event where Corporation blacklist or debar any bidder or firm owing to any reason as stipulated in above or in the tender document, then the same shall also mean debarring/ blacklisting of: -
 - a) Proprietor in case of proprietorship firm(s).
 - b) All Partners in case of Partnership firm(s)/ LLP firm(s).
 - c) All Directors in case of Pvt Ltd/ PSUs/ any company under Companies Act 2013.
 - d) All members of the Co-Operative societies.
- ii. The Debarment shall be automatically extended to all its allied firms. In case of joint venture/ consortium is debarred all partners will also stand debarred for the period specified in Debarment Order.
- iii. The address and details of the blacklisted/ debarred firm(s) including the details and names of proprietor/ partners/ directors/ members, as per information available in the Technical Bid or through websites on Public Domain, shall be published on the website of CWC and CPP portal along with the period of blacklisting or debarment.
- iv. The bidder shall not be debarred unless such a bidder has been given a reasonable opportunity to represent against such debarment. Managing Director (MD) of Corporation shall be the competent Authority to debar the Contractor/Bidder where Tendered Value is More than Rs. 3 cr and in rest cases, Director MCCP of the Corporation shall be the competent Authority for debarring the Bidder. The decision of the MD, CWC and Director MCCP, as the case may be, shall be final and acceptable to Contractor.
- v. The debarment/ blacklisting can be done for a maximum period of **02 years**. The list of debarred/ backlisted bidders shall be published on the website of Corporation along with the relevant details.
- vi. The period of debarment shall start from the date of issue of debarment order. Ordinarily, the period of debarment should not be less than six months. The Order of debarment will indicate the reason(s) in brief that lead to debarment of the firm.

B. Revocation of Orders

- i. An order for debarment passed shall be deemed to have been automatically revoked on the expiry date of that specified period and it will not be necessary to issue a specific formal order of revocation. However, necessary updates may be published on websites where detailed debarred/ blacklisted bidders have been published.
- ii. A debarment order may be revoked before the expiry of the Order, by the authority who has approved the debarring of the bidder/Contractor, if it is of the opinion that the disability already suffered is adequate in the circumstances of the case or for any other reason.

C. Other Provisions

- i. No Contract of any kind whatsoever shall be placed to a debarred firm, including its allied firms after the issue of a debarment order. Bids from only such firms shall be considered for placement of Contract, which are neither debarred on the date of opening of tender (first bid, normally called as technical bid, in case of two packet/two stage bidding) nor debarred on the date of Contract. Even in cases of risk purchase, no Contract shall be placed on such debarred firms.
- ii. In case, any debarred/ blacklisted firm has submitted the bid, the same will be ignored. In case such firm is lowest (L-1), the next lowest firm shall be considered as L-1. Bid security submitted by such debarred firms shall be returned to them.
- iii. Contracts concluded before the issue of the debarment order shall not be affected by the debarment Orders.
- iv. Debarment in any manner does not impact any other contractual or other legal rights of CWC.

43. Survival of Clauses upon Expiry/Termination: -

The provisions of the Agreement and following Clauses shall survive the expiry or termination of the Contract and shall remain in full force and effect after such date.

- a) (Liquidated Damages),
- b) (Patents),
- c) (Warranty),
- d) (Payment),
- e) (Taxation),
- f) (Indemnities),
- g) (Consequential Loss),
- h) (Termination),
- i) (Confidentiality and Publicity),
- j) (General Legal Provisions), and
- k) (Governing Law and Jurisdiction).

Section III

Model Rules

For the Protection of Health and Sanitary Arrangements for Workers Employed by Central Warehousing Corporation or its Contractors under this Contract

1. APPLICATION

These rules shall apply to all buildings and construction works in charge of Central Warehousing Corporation in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period when the Contract work is in progress.

2. DEFINITION

Workplace means a place where twenty or more workers are ordinarily employed in connection with construction work on any day during the period when the Contract work is in progress.

3. FIRST-AID FACILITIES

- (i) At every workplace, there shall be provided and maintained, so as to be easily accessible during working hours, First-Aid Boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.
- (ii) The First-Aid Box shall be distinctly marked with a red cross on white background and shall contain the following equipments:
 - (a) For work-places in which no. of contract labour employed does not exceed 50 –
 - (1) 6 small sterilised dressings
 - (2) 3 medium size sterilised dressings
 - (3) 3 large size sterilised dressings
 - (4) 3 large sterilised burn dressings
 - (5) 1 (30 ml) bottle containing a two per cent alcoholic solution of iodine
 - (6) 1 (30 ml) bottle containing Salvolatile having the dose and mode of administration, indicated on the label
 - (7) 1 snakebite lancet
 - (8) 1 (30 gm) bottle of potassium permanganate crystals
 - (9) 1 pair scissors
 - (10) 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Govt. of India
 - (11) 1 bottle containing 100 tablets (each of 5 gm) of aspirin
 - (12) Ointment for burns
 - (13) A bottle of suitable surgical antiseptic solution
 - (b) For workplaces in which the no. of contract labour exceeds 50 –
 - (1) 12 small, sterilised dressings
 - (2) 6 medium size sterilised dressings
 - (3) 6 large size sterilised dressings

- (4) 6 large size sterilised burn dressings
 - (5) 6 (15 gm) packets sterilised cotton wool
 - (6) 1 (60 ml) bottle containing a two per cent alcoholic solution iodine
 - (7) 1 (60 ml) bottle containing Salvolatile having the dose and mode of administration, indicated on the label
 - (8) 1 roll of adhesive plaster
 - (9) 1 snake bite lancet
 - (10) 1 (30 gm) bottle of potassium permanganate crystals
 - (11) 1 pair scissors
 - (12) 1 copy of the first-aid leaflet issued by the Director General Factory Advice Service and Labour Institutes /Government of India
 - (13) A bottle containing 100 tablets (each of 5 gm) of aspirin
 - (14) Ointment for burns
 - (15) A bottle of suitable surgical antiseptic solution
- (iii) Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.
 - (iv) Nothing except the prescribed contents shall be kept in the First-aid box.
 - (v) The First-Aid Box shall be kept in the charge of a responsible person who shall always be readily available during the working hours of the workplace.
 - (vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment in the workplaces where the number of contract labour employed is 150 or more.
 - (vii) In workplaces where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works; First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all hours when the workers are at work.
 - (viii) Where workplaces are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

4. DRINKING WATER

- (i) In every workplace, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water, fit for drinking.
- (ii) Where drinking water is obtained from an intermittent public water supply, each workplace shall be provided with storage where such drinking water shall be stored.
- (iii) Every water supply or storage shall be at a distance of not less than 15 metre from any latrine drain or other source of pollution. Where water has to be drawn from an existing well, which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust C waterproof.
- (iv) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection, which shall be done at least

once a month.

5. WASHING FACILITIES

- (i) In every workplace, adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.
- (ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.
- (iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

6. LATRINES AND URINALS

- (i) Latrines shall be provided in every workplace on the following scale, namely:
 - (a) Where females are employed, there shall be at least one latrine for every 25 females.
 - (b) Where males are employed, there shall be at least one latrine for every 25 males. Provided that, where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100 and one for every 50 thereafter.
- (ii) Every latrine shall be under cover and so partitioned off as to secure privacy and shall have a proper door and fastenings.
- (iii) Construction of Latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting non-absorbent materials and shall be cement washed inside and outside at least once a year, Latrines shall not be of a standard lower than borehole system.
- (iv) (a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men Only" or "For Women Only" as the case may be.
 - (b) The notice shall also bear the figure of a man or of a woman, as the case may be.
- (v) There shall be at least one urinal for male workers upto 50 and one for female workers upto 50 employed at a time, provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient, if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereafter.
- (vi) (a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.
 - (b) Latrines and urinals other than those connected with a flush sewage system, shall comply with the requirements of the Public Health Authorities.
- (vii) Water shall be provided by means of tap or otherwise, so as to be conveniently accessible in or near the latrines and urinals.
- (viii) Disposal of Excreta: Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).
- (ix) The Contractor shall at his own expense, carry out all instructions issued to him by

the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the Contractor's workmen or employees on the Site. The Contractor shall be responsible for payment of any charges which may be levied by Municipal or Cantonment Authority for execution of such on his behalf.

7. PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest, separately for the use of men and women labour. The height of each shelter shall not be less than 3 metres (10 ft) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sqm (6 sft) per head.

Provided that the Engineer-in-Charge may permit, subject to his satisfaction, a portion of the building under construction or other alternative accommodation, to be used for the purpose.

8. CRECHES

- (i) At every workplace, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a playroom for the children and the other as their bedroom. The rooms shall be constructed with specifications as per Clause 19H
(ii) a, b & c.
- (ii) The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.
- (iii) The Contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.
- (iv) The Contractor shall provide one Ayaa to look after the children in the Creche when no. of women workers does not exceed 50 and two when the no. exceeds 50.
- (v) Use of the rooms earmarked as Creche shall be restricted to children, their attendants and mothers of the children.

9. CANTEENS

- (i) In every workplace where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour, numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the Contractor for the use of such contract labour.
- (ii) The canteen shall be maintained by the Contractor in an efficient manner.
- (iii) The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.
- (iv) The canteen shall be sufficiently lighted at all times when any person has access to it.
- (v) The floor shall be made of smooth and impervious materials and inside walls shall be limewashed or colour washed at least once in each year. Provided that the inside walls of the kitchen shall be lime-washed every four months.
- (vi) Premises of the canteen shall be maintained in a clean and sanitary condition.
- (vii) Wastewater shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.
- (viii) Suitable arrangements shall be made for the collection and disposal of garbage.
- (ix) The dining hall shall accommodate at a time 30 per cent of the contract labour working at a time.
- (x) Floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one square metre (10 sqft) per diner to be accommodated as prescribed in Sub-Rule 9.
- (xi) (a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number.
(b) Washing places for women shall be separate and screened to secure privacy.
- (xii) Sufficient tables, stools, chairs or benches shall be available for the number of diners to be accommodated as prescribed in Sub-Rule 9.

- (xiii) (a) 1. There shall be provided and maintained sufficient utensils, crockery, furniture and any other equipment, necessary for the efficient running of the canteen.
2. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.
- (b) 1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.
2. A service counter, if provided, shall have top of smooth & impervious material.
3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils & equipments.
- (xiv) Food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.
- (xv) The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No Profit, No Loss' and shall be conspicuously displayed in the canteen.
- (xvi) In arriving at the price of foodstuffs and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely:
 - (a) Rent of land and building
 - (b) Depreciation and maintenance charges for the building & equipments provided for the canteen
 - (c) Cost of purchase, repairs and replacement of equipments including furniture crockery, cutlery and utensils
 - (d) Water charges and other charges incurred for lighting and ventilation
 - (e) Interest and amounts spent on the provision and maintenance of equipments provided for the canteen
- (xvii) Accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

10. ANTI-MALARIAL PRECAUTIONS

The Contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the filling up of any borrow pits which may have been dug by him. The above rules shall be incorporated in the contracts and in notices inviting tenders and shall form integral part of the contracts.

11. AMENDMENTS

Government may, from time to time, add to or amend these rules and issue directions, it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

12. COVID- CONSTRUCTION SITES PROTOCOLS

Contractor shall maintain health safety of their employees, labour, workers, vendors deployed by them at the Site of work and shall follow all guidelines C protocol issued by State C Central Govt. with respect of COVID. Contractor shall ensure vaccination of workers deployed for the job at construction Site. All protocols related to the Covid covering preventive measure, health advisory etc as issued by local administration, Govt. shall be followed without any additional Claim or compensation

Section - IV

(Contractor's Labour Regulations)

Corporation (CWC) Contractor's Labour Regulations

THESE REGULATIONS SHALL MUTATIS-MUTANDIS APPLY TO THE WORK OF THE CENTRAL WAREHOUSING CORPORATION

1. SHORT TITLE

These regulations may be called the CWC Contractors' Labour Regulations. And these are based on CPWD Contractors labour Regulations.

2. DEFINITIONS

- (i) **Workman** means any person employed by Corporation Contractor directly or indirectly through a sub-contractor with or without - knowledge of the Corporation to do any skilled, semiskilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment are expressed or implied, but does not include any person:
 - (a) Who is employed mainly in a managerial or administrative capacity; or
 - (b) Who, being employed in a supervisory capacity draws wages exceeding five hundred rupees per mensem or exercises either by the nature of the duties attached to the office or by reason of powers vested in him, functions mainly of managerial nature; or
 - (c) Who is an out worker, that is to say, person to whom any article or materials are given out by or on behalf of the principal employers to be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the trade or business of the principal employers and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the Principal Employer.

No person below the age of 14 years shall be employed to act as a workman.

- (ii) **Fair Wages** means wages whether for time or piece work, fixed and notified under the provisions of the Minimum Wages Act from time to time.
- (iii) **Contractors** shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a sub-contractor.
- (iv) **Wages** shall have the same meaning as defined in the Payment of Wages Act.

- 3. (i) Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.
- (ii) When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week, he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.
- (iii) (a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time irrespective of whether such worker is governed by the Minimum Wages Act or not.

- (b) Where the minimum wages prescribed by the Govt. under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same Contractor for a continuous period of not less than 6 days.
- (c) Where a Contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day on one of the five days immediately before or after the normal weekly holiday and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

4. DISPLAY OF NOTICE REGARDING WAGES ETC.

The Contractor shall, before he commences his work on Contract, display and correctly maintain and continue to display and correctly maintain in a clear C legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers giving the minimum rates of wages fixed under Minimum Wages Act, the actual wages being paid, the hours of work for which such wage are earned, wages periods, dates of payments of wages and other relevant information as per **Appendix-G III**.

5. PAYMENT OF WAGES

- (i) The Contractor shall fix wage periods in respect of which wages shall be payable.
- (ii) No wage period shall exceed one month.
- (iii) The wages of every person employed as contract labour in an establishment or by a Contractor where less than one thousand such persons are employed shall be paid before the expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.
- (iv) Where the employment of any worker is terminated by or on behalf of the Contractor, the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.
- (v) All payment of wages shall be made on a working day at the work premises and during the **working** time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
- (vi) Wages due to every worker shall be paid to him direct by Contractor through bank or ECS or online transfer to his Bank account.
- (vii) All wages shall be paid through Bank or ECS or online transfer
- (viii) Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act, 1956.
- (ix) A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the Contractor to the Engineer-in- Charge under acknowledgment.
- (x) It shall be the duty of the Contractor to ensure the disbursement of wages through bank account of labour.
- (xi) The Contractor shall obtain from the Junior Engineer or any other authorised representative of the Engineer-in-Charge as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum- Muster

Roll" as the case may be in the following form:

"Certified that the amount shown in Column No. _____ has been paid to the workman concerned **through his/her bank account** on ____/____/____ at _____."

6. FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

- (i) The wages of a worker shall be paid to him without any deduction of any kind except the following:
 - (a) Fines
 - (b) Deductions for absence from duty i.e. from the place or the places whereby the terms of his employment he is required to work. The amount of deduction shall be in proportion the period for which he was absent.
 - (c) Deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to his neglect or default.
 - (d) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.
 - (e) Any other deduction which the Central Government may from time to time allow.
 - (ii) No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved of by the Chief Labour Commissioner.
- Note:** An approved list of Acts and Omissions for which fines can be imposed is enclosed at **Appendix-G X**.
- (iii) No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.
 - (iv) The total amount of fine which may be imposed in any one wage period on a worker shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.
 - (v) No fine imposed on any worker shall be recovered from him by instalment, or after the expiry of sixty days from the date on which it was imposed.
 - (vi) Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

7. LABOUR RECORDS

- (i) The Contractor shall maintain a **Register of persons employed** on work on Contract in Form XIII of the CL (RCA) Central Rules 1971 (**Appendix-G IV**).
- (ii) The Contractor shall maintain a Muster Roll register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (RCA) Rules 1971 (**Appendix-G V**).
- (iii) The Contractor shall maintain a Wage Register in respect of all workmen employed by him on the work under Contract in Form XVII of the CL (RCA) Rules 1971 (**Appendix-G VI**).
- (iv) Register of Accident - The Contractor shall maintain a register of accidents in such form as may be convenient at the workplace but the same shall include the following particulars:

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- (a) Full particulars of the labourers who met with accident
 - (b) Rate of Wages
 - (c) Sex
 - (d) Age
 - (e) Nature of accident and cause of accident
 - (f) Time and date of accident
 - (g) Date and time when admitted in Hospital
 - (h) Date of discharge from the Hospital
 - (i) Period of treatment and result of treatment
 - (j) Percentage of loss of earning capacity and disability as assessed by Medical Officer
 - (k) Claim required to be paid under Workmen's Compensation Act
 - (l) Date of payment of compensation
 - (m) Amount paid with details of the person to whom the same was paid
 - (n) Authority by whom the compensation was assessed
 - (o) Remarks
 - (v) The Contractor shall maintain a Register of Fines in the Form XII of the CL (RCA) Rules 1971 (**Appendix-G XI**)
 - (vi) The Contractor shall display in a good condition and in a conspicuous place of work the approved list of Acts & Omissions for which fines can be imposed (**Appendix-G X**)
 - (vii) The Contractor shall maintain a Register of Deductions for damage or loss in Form XX of the CL (RCA) Rules 1971 (**Appendix-G XII**)
 - (viii) The Contractor shall maintain a Register of Advances in Form XXIII of the CL (RCA) Rules 1971 (**Appendix-G XIII**)
 - (ix) The Contractor shall maintain a Register of Overtime in Form XXIII of the CL (RCA) Rules 1971 (**Appendix-G XIV**)

8. ATTENDANCE CARD-CUM-WAGE SLIP

- (i) The Contractor shall issue an Attendance Card-cum-Wage Slip to each workman employed by him in the specimen form at (**Appendix-G VII A & B**).
- (ii) The Card shall be valid for each wage period.
- (iii) The Contractor shall mark attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.
- (iv) The Card shall remain in possession of the worker during the wage period under reference.
- (v) The Contractor shall complete the Wage Slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.
- (vi) The Contractor shall obtain signature or thumb impression of the worker on the Wage Slip at the time of disbursement of wages and retain the card with himself.

9. EMPLOYMENT CARD

The Contractor shall issue an Employment Card in Form XIV of the CL (RCA) Central Rules 1971 to each worker within three days of the employment of the worker (**Appendix-G VIII**).

10. SERVICE CERTIFICATE

On termination of employment for any reason whatsoever, the Contractor shall issue to the workman whose services have been terminated, a Service Certificate in Form XV of the CL (RCA) Central Rules 1971 (**Appendix-G IX**).

11. PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 C 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in-Charge or Labour Officer or any other officers authorised by the Ministry of Urban Development in this behalf.

12. POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY

The Labour Officer or any person authorised by Corporation on their behalf shall have power to make enquires with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and the Provisions of these Regulations. He shall investigate into any complaint regarding the default made by the Contractor or subcontractor in regard to such provision.

13. REPORT OF LABOUR OFFICER

The Labour Officer or other persons authorised as aforesaid shall submit a report of result of his investigation or enquiry to the Corporation Engineer concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the Contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the Contractor under Clause 13 of these regulations, actual payment to labourers will be made by the Corporation after Engineer in charge has given his decision on such appeal.

The Corporation shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer or the Engineer in charge, as the case may be.

14. APPEAL AGAINST THE DECISION OF LABOUR OFFICER

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorised may appeal against such decision to the General Manager (Engineering) concerned within 30 days from date of decision, forwarding simultaneously a copy of his appeal to the Corporation Engineer, but subject to such appeal, the decision of the officer shall be final and binding upon the Contractor.

15. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

- (i) A workman shall be entitled to be represented in any investigation or enquiry under these regulations by:
 - (a) An officer of a registered Trade Union of which he is a member.
 - (b) An officer of a federation of Trade Unions to which the Trade Union referred to in Clause (a) is Affiliated.
 - (c) Where the employer is not a member of any registered Trade Union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed.
- (ii) An employer shall be entitled to be represented in any investigation or enquiry under

these regulations by:

- (a) An officer of an association of employers of which he is a member.
 - (b) An officer of a Federation or Associations of Employers to which association referred to in SubClause (a) is Affiliated.
 - (c) Where the employer is not a member of any association of employers, by an officer of association of employer connected with the industry in which the employer is engaged or by any other employer, engaged in the industry in which the employer is engaged.
- (iii) No party shall be entitled to be represented by a legal practitioner in any investigation or enquiry under these regulations.

16. INSPECTION OF BOOKS AND SLIPS

The Contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorised by the Central Government on his behalf.

17. SUBMISSIONS OF RETURNS

The Contractor shall submit periodical returns as may be specified from time to time.

18. AMENDMENTS

The Central Government may from time to time add to or amend the regulations and on any question as to the application / interpretation or effect of those regulations, the decision of the Engineer in charge of rank not less than DGM, concerned shall be final.

ADDITIONAL PROVISIONS FOR LABOUR

19. Apprentices Act: The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued thereunder from time to time in respect of apprentices directly or through petty Contractors or sub-contractors employed by him for the purpose of carrying out the Contract.

If the Contractor directly or through petty Contractors or sub-contractors fails to do so, his failure will be a breach of the contract and the Corporation may, in its discretion, rescind the Contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the Act.

20. Provisions of Payments of Wages Act : The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made thereunder in respect of all employees employed by him either directly or through petty Contractors or sub-contractors in the works. If in compliance with the terms of the contract, the Contractor directly or through petty Contractors or sub-contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Engineer whether in connection with the works to be executed hereunder or otherwise for the purpose of the Engineer, such labour shall nevertheless be deemed to comprise persons employed by the Contractor and any moneys which may be ordered to be paid by the Engineer shall be deemed to be moneys payable by the Engineer on behalf of the Contractor and the Engineer may on failure of the Contractor to repay such money to the Corporation deduct the same from any moneys due

to the Contractor in terms of the Contract. The Corporation shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Govt. of India all moneys paid or payable by the Corporation by way of compensation of aforesaid or for costs of expenses in connection with any Claim thereto and the decision of the Engineer upon any question arising out of the effect or force of this Clause shall be final and binding upon the Contractor.

21. Provisions of Contract Labour (Regulation and Abolition) Act, 1970 :

21.(1) The Contractor shall comply with the provision of the Contract Labour (Regulation and Abolition) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules 1971 as modified from time to time, wherever applicable and shall also indemnify the Corporation from and against any claims under the aforesaid Act and the Rules.

21.(2) The Contractor shall obtain a valid license under the aforesaid Act as modified from time to time before the commencement of the work and continue to have a valid license until the completion of the work. Any failure to fulfil the requirement shall attract the penal provision of the Act.

22. Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952:

The Contractor shall comply with the provisions of Para 30 C 36-B of the Employee Provident Fund Scheme, 1952; Para 3 C 4 of Employees' Pension Scheme, 1995; and Para 7 C 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of "Employees Provident Fund C Miscellaneous Provisions Act, 1952", wherever applicable and shall also indemnify the Corporation from and against any claims under the aforesaid Act and the Rules.

23. Provisions of "The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996" and "The Building and Other Construction Workers' Welfare Cess Act, 1996":

The tenderers, for carrying out any construction work, shall get themselves registered with the Registering Officer under Section-7 of the Building and Other Construction Workers Act, 1996 and Rules made thereto by the concerned State Govt., and submit Certificate of Registration issued by Registering Officer of the concerned State Govt. (Labour Dept.). The Cess shall be deducted from Contractor's bills as per provisions of the Act.

24. Reporting of Accidents: The Contractor shall be responsible for the safety of all employees directly or through petty Contractors or sub-contractor employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Engineer or the Engineers Representative and shall make every arrangement to render all possible assistance.

25. Provision of Workmen's Compensation Act: In every case in which by virtue of the provisions of Section 12 Sub-Section (1) of the Workmen's Compensation Act 1923, Contractor is to abide by the provisions of various labour laws in terms of above clause.

26. Corporation not to Provide Quarters for Contractors: No quarters shall normally be provided by the Corporation for the accommodation of the Contractor or any of his staff employed on the work. In exceptional cases where accommodation is provided to the Contractor at the Corporation's discretion, recoveries shall be made at such rates as may be fixed by the Corporation for the full rent of the buildings and equipments therein as well as charges for electric current, water supply and conservancy.

27. Labour Camps: The Contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workmen, directly or through the petty Contractors or sub-contractors and for temporary creche (Bal-Mandir) where 50 or more women are employed at a time. Suitable sites on Corporation land, if available, may be allotted to the Contractor for the erection of labour camps, either free of charge or on such terms and conditions that may be prescribed by the Corporation. All camp sites shall be maintained in clean and sanitary conditions by the Contractor at his own cost.

28. Compliance to Rules for Employment of Labour : The Contractor(s) shall conform to all laws, bye-laws rules and regulations for the time being in force pertaining to the employment of local or imported labour and shall take all necessary precautions to ensure and preserve the health and safety of all staff employed directly or through petty Contractors or sub-contractors on the works.

29. Preservation of Peace: The Contractor shall take requisite precautions and use his best endeavours to

- (i) Prevent any riotous or unlawful behaviour by or amongst his workmen and other employed directly or through the petty Contractors or sub-contractors on the works and for the preservation of peace and protection of the inhabitants and
- (ii) Security of property in the neighbourhood of the works. In the event of the Corporation requiring the maintenance of a Special Police Force at or in the vicinity of the Site during the tenure of works, the expenses thereof shall be borne by the Contractor and if paid by the Corporation shall be recoverable from the Contractor.

30. Sanitary Arrangements: The Contractor shall obey all sanitary rules and carry out all sanitary measures that may from time to time be prescribed by the Corporation Medical Authority and permit inspection of all sanitary arrangements at all times by the Engineer, the Engineer's Representative or the Medical Staff of the Corporation. Should the Contractor fail to make the adequate sanitary arrangements, these will be provided by the Corporation and the cost thereof recovered from the Contractor.

31. Outbreak of Infectious Disease: The Contractor shall remove from his camp such labour and their families as refuse protective inoculation and vaccination when called upon to do so by the Engineer or the Engineer's Representative on the advice of the Corporation Medical Authority. Should cholera, plague, or other infectious disease break out, the Contractor shall burn the huts, beddings, clothes and other belongings of or used by the infected parties and promptly erect new huts on healthy sites as required by the Engineer, failing which within the time specified in the Engineer's requisition, the work may be done by the Corporation and the cost thereof recovered from the Contractor.

32. Medical Facilities at Site: The Contractor shall provide medical facilities at the Site as may be prescribed by the Engineer on the advice of the Corporation's Medical Authority in relation to the strength of the Contractor's resident staff and workmen.

APPENDIX – G-I**REGISTER OF MATERNITY BENEFITS [Clause 19F]**

Name and Address of the Contractor(s) _____

Name and Location of the Work _____

Name of the Employee	Father's/Husband's Name	Nature of Employment	Period of Actual Appointment	Date on which Notice of Confinement Given
1	2	3	4	5

Date on which Maternity Leave Commenced and Ended

Date of Delivery	In case of Delivery		In case of Miscarriage	
	Commenced	Ended	Commenced	Ended
6	7	8	9	10

Leave Pay Paid to the Employee

In case of Delivery		In case of Miscarriage		Remarks
Rate of Leave Pay	Amount Paid	Rate of Leave Pay	Amount Paid	
11	12	13	14	15

APPENDIX – G-II

SPECIMEN FORM OF THE REGISTER

REGARDING MATERNITY BENEFIT ADMISSIBLE TO THE CONTRACTOR'S LABOURIN
CENTRAL WAREHOUSING CORPORATION WORKS

Name and address of the contractor _____

Name and location of the work _____

1. Name of the woman and her husband's name
2. Designation
3. Date of appointment
4. Date with months and years in which she is employed
5. Date of discharge/dismissal, if any
6. Date of production of certificates in respect of pregnancy
7. Date on which the woman informs about the expected delivery
8. Date of delivery/miscarriage/death
9. Date of production of certificate in respect of delivery/miscarriage
10. Date with the amount of maternity/death benefit paid in advance of expected delivery
11. Date with amount of subsequent payment of maternity benefit
12. Name of the person nominated by the woman to receive the payment of the maternity benefit after her death
13. If the woman dies, the date of her death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment
14. Signature of the contractor authenticating entries in the register
15. Remarks column for the use of Inspecting Officer

APPENDIX – G-III

Labour Board

- ❖ Name of Work _____
- ❖ Name of Contractor _____
- ❖ Address of Contractor _____
- ❖ Name and Address of Corporate Office _____
- ❖ Name and Address of CWC Labour Officer _____
- ❖ Name of Labour Enforcement Officer _____
- ❖ Address of Labour Enforcement Officer _____

SL	Category	Minimum Wage Fixed	Actual Wage Paid	Number Present	Remarks

- ❖ Weekly Holiday _____
- ❖ Wage Period _____
- ❖ Date of Payment of Wages _____
- ❖ Working Hours _____
- ❖ Rest Interval _____

APPENDIX – G-IV

FORM XIII [See Rule 75]

Register of Workman Employed by Contractor

Name & Address of Contractor _____

Name & Address of Establishment under which Contract is Carried on _____

Nature & Location of Work _____

Name & Address of Principal Employer _____

			1	SL
			2	Name & Surname of Workman
			3	Age & Sex
			4	Father' s/ Husband' s Name
			5	Nature of Employment/ Designation
			6	Permanent Home Address of the Workman (Village and Tehsil, Taluk and District)
			7	Local Address
			8	Date of Commencement of Employment
			9	Signature or Thumb Impression of the Workman
			10	Date of Termination of Employment
			11	Reasons for Termination
			12	Remarks

FORM XVI [(See Rule 78 (2) (a))]

MUSTER ROLL

- ❖ Name & Address of Contractor _____
 - ❖ Name & Address of Establishment under which Contract is Carried on _____
 - ❖ Nature & Location of Work _____
 - ❖ Name & Address of Principal Employer _____ For the Month/Fortnight _____

[illegible]

APPENDIX –G- VI

FORM XVII [See Rule 78 (2) (a)]

REGISTER OF WAGE

❖ Name & Address of Contractor _____

❖ Name & Address of Establishment under which Contract is Carried on _____

❖ Nature & Location of Work _____

❖ Name & Address of Principal Employer _____ Wage Period : Monthly / Fortnightly _____

			1	SL	
			2	Name of Workman	
			3	SL in the Register of Workman	
			4	Designation / Nature of Work done	
			5	No. of Days Worked	
			6	Unit of Work Done	
			7	Daily Rate of Wages / Piece Rate	
			8	Basic Wages	Amount of Wages Earned
			9	Dearness Allowance	
			10	Over-time	
			11	Other Cash Payments (Indicate Nature)	
			12	Total	
			13	Deduction, if any (Indicate Nature)	
			14	Net Amount Paid	
			15	Signature / Thumb Impression of Workman	
			16	Initials of Contractor or his Representative	

WAGE CARD

Wage Card No. _____

Name & Address of Contractor_____

Date of issue _____

Name and Location of Work_____

Designation _____

Name of Workman_____

Month / Fortnight _____

Rate of Wages _____

Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Morning																															
Evening																															
Initial																															

Received from _____ the sum of Rs. _____ on account of my wages.

Signature

FORM XIX

[See Rule 78(2) (b)]

WAGES SLIP

Name and Address of Contractor _____

Name and Father's / Husband's Name of Workman _____

Nature and Location of Work _____

For the Week / Fortnight / Month Ending _____

1. No. of Days Worked _____

2. No. of Units Worked in case of Piece Rate Workers _____

3. Rate of Daily Wages/piece Rate _____

4. Amount of Overtime Wages _____

5. Gross Wages Payable _____

6. Deduction, if any _____

7. Net Amount of Wages Paid _____

**Initial of the Contractor
or His Representative**

APPENDIX –G- VIII

FORM XIV

[See Rule 76]

EMPLOYMENT CARD

Name and Address of Contractor _____

Name and Address of Establishment under which Contract is carried on _____

Name of Work and Location of Work _____

Name and Address of Principal Employer _____

1. Name of the Workman _____

2. SL in the Register of Workman Employed _____

3. Nature of Employment / Designation _____

4. Wage Rate (with particulars of unit in case of piece work) _____

5. Wage Period _____

6. Tenure of Employment _____

7. Remarks _____

Signature of Contractor

FORM XV [See Rule 77]**SERVICE CERTIFICATE**

Name & Address of Contractor _____

Nature & Location of Work _____

Name & Address of Workman _____

Age or Date of Birth _____

Identification Mark _____

Father's / Husband's Name _____

Name and Address of Establishment in/under which Contract is carried on _____

Name and Address of Principal Employer _____

SL	Total Period for which Employed		Nature of Work Done	Rates of Wage (with Particulars of Unit in case of Piece Work)	Remarks
	From	To			
1	2	3	4	5	6

Signature

APPENDIX – G-X

LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

{In accordance with Rule 7 (v) of CPWD's Contractor's Labour Regulations, to be displayed prominently at the site of Work, both in English and local Language}

1. Wilful insubordination or disobedience, whether alone or in combination with other
2. Theft, fraud or dis-honesty in connection with the contractors beside a business or property of Central Warehousing Corporation
3. Taking or giving bribes or any illegal gratifications
4. Habitual late attendance
5. Drunkenness, fighting, riotous or disorderly or indifferent behaviour
6. Habitual negligence
7. Smoking near or around the area where combustible or other materials are locked
8. Habitual indiscipline
9. Causing damage to work in the progress or to property of the Central Warehousing Corporation or of the Contractor
10. Sleeping on duty
11. Malingering or slowing down work
12. Giving of false information regarding name, age, father's name etc.
13. Habitual loss of wage cards, supplied by the employers
14. Unauthorised use of employer's property of manufacturing or making of unauthorised particles at the work place
15. Bad workmanship in construction and maintenance by skilled workers which is not approved by the Corporation and for which the contractors are compelled to undertaken rectifications
16. Making false complaints and/or misleading statements
17. Engaging on trade within the premises of the establishments
18. Any unauthorised divulgence of business affairs of the employees
19. Collection or canvassing for collection of any money within the premises of an establishment unless authorised by the employer
20. Holding meeting inside the premises without previous sanction of the employers
21. Threatening or intimidating any workman or employee during the working hours within the premises

APPENDIX – G-XI

FORM XII

[See Rule 78 (2)(d)]

REGISTER OF FINES

Name & Address of Contractor

Name & Address of Establishment in/under which Contract is carried on _____

Name & Location of Work _____

Name & Address of Principal Employer _____

			1	SL
			2	Name of Workman
			3	Father' s / Husbands Name
			4	Designation / Nature of Employment
			5	Act / Omission for which Fine Imposed
			6	Date of Offence
			7	Whether Workman Showed Cause Against Time
			8	Name of Person in whose Presence Employee' s Explanation was Heard
			9	Wage Periods and Wages Payable
			10	Amount of Fine Imposed
			11	Date on which Fine Realised
			12	Remarks

APPENDIX –G- XII

REGISTER OF DEDUCTION FOR DAMAGE OR LOSS

Name & Address of Contractor

Name & Address of Establishment in/under which Contract is carried on _____

Name & Location of Work _____

Name & Address of Principal Employer _____

			1	SL	
			2	Name of Workman	
			3	Father' s /Husband' s Name	
			4	Designation/ Nature of Employment	
			5	Particulars of Damage or Loss	
			6	Date of Damage or Loss	
			7	Whether Workman showed Cause against Deduction	
			8	Name of Person in Whose Presence Employee' s Explanation was Heard	
			9	Amount of Deduction Imposed	
			10	No. of Instalments	
			11	First Instalment	Date of Recovery
			12	Last Instalment	
			13	Remarks	

FORM XXII

[See Rule 78 (2)(d)]

APPENDIX –G- XIII

Name & Address of Contractor _____

Name & Address of Establishment in/under which Contract is carried on _____

Name & Location of Work _____

Name & Address of Principal Employer _____

			1	SL
			2	Name of Workman
			3	Father' s / Husband' s Name
			4	Designation/ Nature of Employment
			5	Wage Period and Wages Payable
			6	Date & Amount of Advance Given
			7	Purpose(s) for which Advance Made
			8	No. of Instalments by Which Advance to be Repaid
			9	Date & Amount of each Instalment Repaid
			10	Date on which Last Instalment was Repaid
			11	Remarks

APPENDIX – G-XIV

REGISTER OF OVER TIME

Name & Address of Contractor _____

Name & Address of Establishment in/under which Contract is carried on _____

Name & Location of Work _____

Name & Address of Principal Employer _____

			1	SL
			2	Name of Workman
			3	Father' s/ Husband' s Name
			4	Sex
			5	Designation/ Nature of Employment
			6	Date on which Overtime Worked
			7	Total Over Time Worked or Production in Case of Piece Rated
			8	Normal Rate of Wages
			9	Overtime Rate of Wages
			10	Overtime Earnings
			11	Rate on which Overtime Wages Paid
			12	Remarks

SAFETY CODE

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handhold shall be provided on the ladder, and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to 1 ($\frac{1}{4}$ horizontal and 1 vertical).
2. Scaffolding of staging more than 3.6 m (12 ft) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm (3 ft) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12 ft) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in Para 2. above.
4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 ft).
5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m (30 ft) in length while the width between side rails in rung ladder shall in no case be less than 29 cm (11½") for ladder up to and including 3 m (10 ft) in length. For longer ladders, this width should be increased at least $\frac{1}{4}$ " for each additional 30 cm (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept.

Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit; action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.

6. (a) Excavation and Trenching – All trenches 1.2 m (4 ft) or more in depth, shall at all times be supplied with at least one ladder for each 30 m (100 ft) in length or fraction thereof. Ladder shall extend from bottom of the trench to at least 90 cm (3 ft) above the surface of the ground. The side of the trenches which are 1.5 m (5 ft) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m (5 ft) of the edges of the trench or half of the depth of the trench, whichever is more. Cutting shall be done from top to bottom. Under no circumstances, undermining or undercutting shall be done.
- (b) Safety Measures for Digging Bore Holes –
 - (i) If the bore well is successful, it should be safely capped to avoid caving and collapse of the borewell. The failed and the abandoned ones should be completely refilled to avoid caving and collapse

- (ii) During drilling, sign boards should be erected near the site with the address of the drilling contractor and the Engineer in-charge of the work
 - (iii) Suitable fencing should be erected around the well during the drilling and after the installation of the rig on the point of drilling, flags shall be put 50 m around the point of drilling to avoid entry of people
 - (iv) After drilling the bore well, a cement platform (0.5 m x 0.5 m x 1.2 m) 0.6 m above ground level and 0.6 m below ground level should be constructed around the well casing.
 - (v) After completion of the bore well, the contractor should cap the bore well properly by welding steel plate, cover the bore well with drilled wet soil and fix thorny shrubs over the soil. This should be done even while repairing the pump
 - (vi) After the bore well is drilled, the entire site should be brought to the ground level.
7. Demolition - Before any demolition work is commenced and also during the progress of the work,
- (i) All roads and open areas adjacent to the work site shall either be closed or suitably protected
 - (ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged
 - (iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
8. All necessary personal safety equipment, as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

The following safety equipment shall invariably be provided –

- (i) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
- (ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes, shall be provided with protective goggles.
- (iii) Those engaged in welding works shall be provided with welder's protective eye shields.
- (iv) Stone Breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- (v) When workers are employed in sewers and manholes, which are in active use, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measure are adhered to:
 - (a) Entry for workers into the line shall not be allowed except under supervision of the Site Engineer or any other higher officer.
 - (b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
 - (c) Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
 - (d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen Kit.
 - (e) Safety belt with rope should be provided to the workers. While working inside the manholes, such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
 - (f) The area should be barricaded or cordoned off by suitable means to avoid mishaps of any

kind. Proper warning signs should be displayed for the safety of the public, whenever cleaning works are undertaken during night or day.

- (g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.
- (h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
- (i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge shall decide the time upto which a worker may be allowed to work continuously inside the manhole.
- (j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
- (k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non-sparking gas engines also could be used, but they should be placed at least 2 m away from the opening and on the leeward side protected from wind, so that they will not be a source of friction on any inflammable gas that might be present.
- (l) Workers engaged for cleaning the manholes/sewers should be properly trained before allowing to work in the manhole.
- (m) Workers shall be provided with Gumboots or non-sparking shoes, bump helmets and gloves, non-sparking tools, safety lights, gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
- (n) Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung, fixed to manhole well.
- (o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
- (p) The extent to which these precautions are to be taken depends on the individual situation, but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
- (vi) Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, following precautions should be taken:
 - (a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - (b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.
 - (c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.
- (vii) Workmen executing work on scaffolds or other structures above specified height shall be provided with full body harness and fall arresters.

9. An additional Clause (viii)(i) of Safety Code (iv) - the Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form, wherever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use:

- (i) White lead, sulphate of lead or product containing this pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
- (ii) Measures shall be taken, wherever required in order to prevent danger arising from

The application of paint in the form of spray.

- (iii) Measures shall be taken, wherever practicable, to prevent danger arising out of from dust, caused by dry rubbing down and scraping.
 - (iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
 - (v) Overall, shall be worn by working painters during the whole of working period.
 - (vi) Suitable arrangement shall be made to prevent clothing put off during working hours, being spoiled by painting materials.
 - (vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man, appointed by competent authority of Central Warehousing Corporation.
 - (viii) The Central Warehousing Corporation may require, when necessary, medical examination of workers.
 - (ix) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.
10. When the work is done near any place where there is risk of drowning, all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during course of the work.
11. Use of hoisting machines and tackling including their attachments, anchorage and supports shall conform to the following standards or conditions:
- (i) (a) These shall be good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.
 - (b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from patent defects.
 - (ii) Every Crane Driver or Hoisting Appliance Operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to the operator.
 - (iii) In the case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the condition under which it is applicable, shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - (iv) In the case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-Charge. As regards the contractor's machines, the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and gets it verified by the Electrical Engineer concerned.
12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.
- ~~13. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in~~

Safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

14. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the Safety Code shall be named therein by the contractor.
15. To ensure effective enforcement of the rules & regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspection by the Labor Officer or Engineer-in-Charge of the department or their representatives.
16. Notwithstanding the above Clauses from (1) to (15), there is nothing in these to exempt the contractor from operations of any other Act or Rule in force in the Republic of India.

Form of Performance and Security Bank Guarantee Bond

In consideration of Central Warehousing Corporation (A Govt. of India Undertaking), Warehousing Bhawan, 4/1 Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi - 110016 (hereinafter called "THE CORPORATION"), having offered to accept the Letter of Acceptance no. _____, dated _/ _/ _ and the terms & conditions of the proposed agreement between CORPORATION and _____ {hereinafter called "THE said CONTRACTOR(s)"} for the work of _____

(hereinafter called "THE said AGREEMENT") having agreed to production of an irrevocable Bank Guarantee for Rs. _____ (Rupees _____ only) as a Security/Guarantee from the CONTRACTOR(s) for compliance of his obligations in accordance with the terms C conditions in the said Agreement.

We _____ (indicate name of the Bank) _____ (hereinafter referred to as "the BANK") hereby undertake to pay CORPORATION an amount not exceeding Rs. _____ (Rupees _____ only), on demand by the CORPORATION.

1. We _____ (indicate name of the Bank) _____ do hereby undertake to pay the amounts due and payable under Guarantee without any demure, merely on a demand from the CORPORATION, stating that the amount claimed is required to meet the recoveries due or likely to be due from the said CONTRACTOR(s). Any such demand made on the BANK shall be conclusive as regards the amount due and payable by the BANK under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. _____ (Rupees _____ only).

2. We, the said BANK further undertake to pay to the CORPORATION any money so demanded notwithstanding any dispute or disputes raised by the CONTRACTOR(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond, shall be valid discharge of our liability for payment thereunder, and the CONTRACTORS (s) shall have no claim against us for making such payment.

3. We _____ (indicate name of the Bank) _____ further agree that the Guarantee herein contained shall remain in and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the CORPORATION under or by virtue of the said agreement have been fully paid and its claim satisfied or discharged or till Engineer-in-Charge on behalf of the CORPORATION certified that the terms C conditions of the said agreement have been fully and properly carried out by the said CONTRACTOR(s) and accordingly discharges this Guarantee.

4. We ___(indicate name of the Bank)_____further agree with the Central Warehousing Corporation that the CORPORATION shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms C conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Central Warehousing Corporation against the said CONTRACTOR(s) and to forbear or enforce any of the terms C conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension, being granted to the said CONTRACTOR(s) or for any forbearance, act if omission on the part of the Central Warehousing Corporation or any indulgence by the Central Warehousing Corporation to the said CONTRACTOR(s) or by any such matter or things whatsoever which under the law relating to sureties would, but for this provision, have effect of so reliving us.
5. This guarantee will not be discharged due to the change in the constitution of the BANK or the CONTRACTOR(s).
6. We ___ (indicate name of the Bank)_____lastly undertake not to revoke this Guarantee except with the previous consent of the Central Warehousing Corporation in writing.
7. This Guarantee shall be valid upto_____, unless extended on demand by Central Warehousing Corporation. Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs. _____(Rs. _____only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this Guarantee, all our liabilities under this Guarantee shall stand discharged.

Dated the_____date of_____for___(indicate name of the Bank)

**GUARANTEE BOND TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF _____WORKS**

The Agreement made this ____ day of ____ Two thousand and ____ between M/s _____, (hereinafter called the Guarantor of the one part) and the Central Warehousing Corporation (hereinafter called CWC of the other part).

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract) dated _____ and made between the GUARANTOR of the one part and the CWC of the other part, whereby the Contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water and leak-proof for ____ years from the date of completion of work.

NOW THE GUARANTOR hereby guarantees that _____ work executed by him will render the structures completely leak-proof and the minimum life of such _____ work shall be ____ years to be reckoned from the date after the maintenance period prescribed in the contract.

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

- (a) Misuse of roof shall mean any operation which will damage the sheeting work, like chopping of firewood and things of the same nature which might cause damage to the roof;
- (b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby ____ work is removed in parts
- (c) The decision of the Engineer-in-Charge with regard to cause of leakage shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found, render the building leakage-proof to the satisfaction of the Engineer-in-Charge at his cost, and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-Charge calling upon him to rectify the defects, failing which the work shall be got done by the Department by some other contractor at the GUARANTOR'S cost and risk. The decision of the Engineer- in-Charge as to the cost, payable by the Guarantor shall be final and binding.

That if GUARANTOR fails to execute the sheeting work or commits breach thereunder then the GUARANTOR will indemnify the Principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the CWC, the decision of the Engineer-in-Charge will be final and binding on the parties.

IN WITNESS WHEREOF these presents have been executed by the Obligor M/s _____ and by Engineer in charge and for and on behalf of the CWC on the day, month and year first above written. Signed, sealed and delivered by OBLIGOR in the presence of

- 1.
- 2.

Signed for and on behalf of Central Warehousing Corporation by Engineer in charge in the presence of

- 1.

BILL PROFORMA {On Letter Head Of Contractor}

Name of Work _____

Date of Start _____

Agreement No. _____

Due Date of Completion _____

Date of Preparation of Bill _____

Details of Service Provider

Details of Service Receiver

Name _____

Address _____

City _____

State _____

State Code _____

GSTIN _____ GSTIN (if Registered) _____

Invoice Serial No. _____

HSN _____

Date of Invoice _____

Description of Services _____

SL	Item No.	Description of Items	Unit	Qty. as per Agt.	Rate as per Agt.	Qty. as per Pre. Bill	Qty. as per this Bill	Cumulative Qty.	Amt. as per Previous Bill	Amt. as per this Bill	Cumulative Amount
1.											
2.											
3.											
4.											
						Total					
						Grand Total					

Total Invoice Value (in figures)

Total Invoice Value (in words)

Amount of Tax Subject to reverse Charge : Nil

Total Taxable Value		
Tax	Rate	
CGST	_____ %	
SGST	_____ %	
IGST*	_____ %	
Total Invoice Amount		

Signature _____

Name of the Signatory _____

Designation / Status _____

क्रम संक : सीडब्ल्यूसी/सीओ-ईएनजीजी// 25-26

Date:

TO WHOM IT MAY CONCERN

This is to certify that the M/sAddress.....
.....
has executed the work satisfactorily. The detail of the work is as under:

1	Name of work/project & location	
2	Name of Contractor	M/s
3	Scope of work	
4	Agreement/WO no. and date	
5	Agreement amount	Rs
6	Date of commencement of work	
7	Stipulated date of completion	
8	Actual date of completion	
9	Details of compensation levied for delay (indicate amount) if any	No
10	Gross amount of work completed and paid	Rs
11	Name and address of the authority under whom works executed	Senior General Manager Central Warehousing Corporation Hauz Khas, New Delhi-110016
12	Whether the contractor employed qualified Engineer/Overseer	Yes
13	a- Quality of work (indicate grading) b- Amount of work paid on reduced rates, if any	Outstanding/Very Good/Good/Poor NIL
14	a- Did the Contractor go for arbitration? b- If yes, total amount of claim c- Total amount awarded	No Nil Nil
15	Comments on capabilities of the contractor Technical Proficiency Financial Soundness Mobilization of adequate T C P Mobilization of manpower General behaviour	Outstanding/Very Good/Good/Poor Outstanding/Very Good/Good/Poor Outstanding/Very Good/Good/Poor Outstanding/Very Good/Good/Poor Outstanding/Very Good/Good/Poor

The certificate is issued at the request of the Contractor for tendering purpose only.

For Senior General Manager

Corporate Office: 4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016

☎ - 011-49857894

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📘 📺 🌐

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📷 @centralwarehousingcorporation



FORM 31

INDENTURE FOR SECURED ADVANCES

(Ref : Para 10.2.20 and 10.2.22 of CPW A Code)

{For use in cases in which the contract is for finished work and the contractor has entered into an agreement for execution of a certain specified quantity of work in a given time}

THIS INDENTURE made the ____ day of ___, 20 BETWEEN (hereinafter called the Contractor which expression shall where the context so admits or implies, be deemed to include his executors administrators and assigns) of the one part and the WAREHOUSING CORPORATION (hereinafter called the Corporation which expression shall where the context so admits or implies, be deemed to include his successors in office and assigns) of the other part.

WHEREAS by an agreement dated / / (hereinafter called the said agreement), the Contractor has agreed AND WHEREAS the Contractor has applied to the Corporation that he may be allowed advances on the security of materials absolutely belonging to him and brought by him to the site of the works, the subject of the said agreement for use in the construction of such of the works as he has undertaken to execute at rates fixed for the finished work (inclusive of the cost of materials and labour and other charges) AND WHEREAS, the Corporation has agreed to advance to the Contractor the sum of Rupees _____ on the security of materials, the quantities and other particulars of which are detailed in Accounts of Secured Advances, attached to the Running Account Bill for the said works signed by the Contractor on ___ and the Corporation has reserved to himself the option of making any further advance or advances on the security of other materials brought by the Contractor to the site of the said works.

Now THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rupees _____ on or before the execution of these presents, paid to the Contractor by the Corporation (the receipt whereof the Contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as aforesaid the Contractor doth hereby covenant and agree with the Corporation and declare as follows :

- (1) That the said sum of Rupees _____, so advanced by the Corporation to the Contractor as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the Contractor in or towards expediting the execution of the said works and for no other purpose whatsoever.
- (2) That the materials detailed in the said Account of Secured Advances which have been offered to and accepted by the Corporation as Security are absolutely the Contractor's own property and free from encumbrances of any kind and the contractor will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractor indemnifies the Corporation against all claims to any materials in respect of which an advance has been made to him as aforesaid.
- (3) That the materials detailed in the said Account of Secured Advances and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Chief Engineer / Superintending Engineer, Corporate Office (hereinafter called the Chief Engineer / Superintending Engineer) and in the term of the said agreement.
- (4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid, the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility and shall at all times be open to inspection by the Chief Engineer / Superintending Engineer or any officer authorised by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof, the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same as required by the Chief Engineer / Superintending Engineer.

- (5) That the said materials shall not on any account be removed from the site of the said works except with the written permission of the Chief Engineer / Superintending Engineer or an officer authorised by him on that behalf.
- (6) That the advances shall be repayable in full when or before the Contractor receives payment from the Corporation of the price payable to him for the said works under the terms C provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done than on the occasion of each such payment the Corporation will be at liberty to make a recovery from the Contractor's bill for such payment by deducting there from the value of the said materials then actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of advances made under these presents were calculated.
- (7) That if the Contractor shall at anytime make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing to the Corporation shall immediately on the happening of such default be repayable by the Contractor to the Corporation together with interest thereon at twelve per cent per annum from the date or respective dates of such advance or advances to the date or e- payment and with all costs charges, damages C expenses incurred by the Corporation in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the Corporation to repay and pay the same respectively to him accordingly.
- (8) That the Contractor hereby charges all the said materials with the repayment to the Corporation of the said sum of Rupees_____and any further sum or sums advanced as aforesaid and all costs charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whenever the covenant for payment and repayment herein before contained shall become enforceable and the money owing shall not be paid in accordance therewith, the Corporation may at any time thereafter adopt all or any of the following courses as he may deem best :
- (a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the Contractor in accordance with the provisions in that behalf contained in the said agreement debiting the Contractor with the actual cost of effecting such completion and the amount due in respect of advances under these presents and crediting the Contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the Contractor he is to pay same to the Corporation on demand.
- (b) Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Corporation under these presents and pay over the surplus (if any) to the Contractor.
- (c) Deduct all or any part of the moneys owing out of the Security Deposit or any sum due to the Contractor under the said agreement.
- (9) That except in the event of such default on the part of the Contractor as aforesaid, interest on the said advance shall not be payable.
- (10) That in the event of any conflict between the provisions of these presents and the said agreement, the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents, the settlement of which has not been herein before expressly provided for the same, shall be finally resolved as per provisions of Clause 25 of the contract.

In witness whereof the said_____and_____by the order and under the direction of the Corporation have hereunto set their respective hands the day and year first above written.

Signed, sealed and delivered by _____, the said Contractor in the presence of -

Signature _____

Witness Name _____

Address _____

Signed by _____ by the order and direction of the Corporation / Engineer-in-Charge of the Corporation in the presence of -

Signature _____

Witness Name _____

Address _____

SUBSTANCE ABUSE CONDITIONS

The Corporation is committed to the provision of safe work places for its employees and other persons working on or visiting premises on which work is being carried out for the Corporation. This policy is put into operation to help to achieve the foregoing commitment. The Contractor shall promote and comply with this policy concerning substance abuse.

This policy is applicable to all persons including, without limitation, the Contractor, its Affiliates, agents and subcontractors who carry out services on Corporation premises (hereinafter jointly referred to as the "Contractor"). The term "Corporation premises" shall mean all property owned, operated, leased by or under the control of the Corporation, whether onshore or offshore and shall include, without limitation, any drilling unit, barge or vessel on contract to the Corporation. The term "employee" shall for the purpose of this Appendix include all persons including agency staff engaged by the Contractor.

The use, possession, concealment, transportation, promotion or sale of prohibited substances (as hereinafter defined) on Corporation premises is strictly forbidden. Any contravention by a Contractor's employee shall result in that employee being excluded forthwith and prohibited from Corporation premises. Additionally, any Contractor's employee who is suspected of being under the influence of any prohibited substance shall be prohibited from Corporation premises.

For the purposes of this Appendix, "prohibited substances" are defined as:

- (i) any substance which an individual may not sell, possess, use or distribute under applicable Indian legislation;
- (ii) any other legal but unlawfully used substance, e.g. prescription drugs obtained or used without permission or such drugs not being used for their originally intended purpose;
- (iii) any solvent (including, without limitation, glue) used or intended to be used for the purpose of intoxication; or
- (iv) any alcoholic beverage.

It is not the intention of this policy to prevent onshore-based personnel partaking of alcoholic beverage off Corporation premises in their own time provided that the individual's subsequent behavior on-site is not (in the reasonable opinion of the Corporation) hazardous to health and safety and provided that the limits specified below are not exceeded. Alcohol is prohibited from all offshore installations and vessels and at the Corporation's process terminal.

Drug paraphernalia associated with substance abuse are prohibited from Corporation premises.

Contractor must have and administer a formal substance abuse policy. Contractor shall, if requested by Corporation, promptly submit a copy of its policy and programme to the Corporation's Representative. Such policy must provide for substance testing of Contractor's employees and must meet standards acceptable to the Corporation. The Corporation reserves the right to deny entry to Corporation premises for the employees of any Contractor which fails, when requested by Corporation, to present a written policy which, in the Corporation's opinion, meets such standards or which fails to administer an acceptable policy.

Except as stated below, substance testing results will not be disclosed to the Corporation. However, as a condition of their employees being entitled to enter Corporation premises, Contractors must certify that each employee has passed a substance test that meets the standards of this policy. Contractors must maintain records of substance testing which are subject to audit by Corporation.

The results of substance tests performed for reasonable suspicion or accident/incident investigations as outlined below must be disclosed to local Corporation management upon request.

The Contractor shall bear all costs associated with testing and shall be responsible at its own cost for replacing forthwith any employee prohibited from Corporation's premises.

Refusal by a Contractor's employee to submit to testing required by this policy or a confirmed positive result will result in the Contractor's employee being prohibited from Corporation premises.

In the event that it suspects a breach of this Appendix by the Contractor, the Corporation may conduct or may authorize other parties to conduct unannounced searches and inspections on Corporation premises of Contractors or Contractor's employees, including their effects, lockers, baggage, desks, tool boxes, clothing and vehicles. The purpose of such searches and inspections is to ensure compliance with this policy.

Any prohibited substances or items prohibited by this policy, or any materials that are illegal to possess, will be retained by the Corporation and may be destroyed or turned over to the appropriate law enforcement authorities.

Refusal by a Contractor's employee to submit to a search or inspection or discovery of prohibited substances in the possession of such employee will result in the Contractor's employee being prohibited from Corporation premises. Contractors will be responsible at their own cost and expense for replacing any such person.

The Corporation reserves the right to audit the Contractor's records periodically to verify compliance with this policy.

Audit results will be treated as confidential.

In all cases where the Contractor is permitted to employ a sub-contractor, the Contractor is responsible for ensuring that the sub-contractor and sub-contractor's employees shall comply with this policy, without prejudice to the Corporation's rights herein.

The Contractor must obtain a signed consent demonstrating each employee's agreement to release to the Contractor and the Corporation the results of any substance testing performed.

The Contractor shall carry out tests that, at minimum, seek to determine whether the following substances are abused: cannabis, amphetamines, cocaine, benzodiazepines, opiates, barbiturates, secobarbital, and alcohol.

In the event onsite testing (e.g. at a heliport or onshore terminal) for alcohol consumption is required using an approved breathalyzer unit, the standard shall be a level of alcohol in breath not greater than 35 micrograms per 100 milliliters of breath.

Requirement of Technical Staff for a Work and Rate of Recovery

SL	Cost of Work	Minimum Qualification of Technical Representative	Designation (Principal Technical / Technical Representative)	Minimum Experience (years)	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 32
1.	More than 100 Cr.	i)Graduate Engineer (Major Component)	Project Manager with degree in major discipline of Engineering Civil/Electrical	20 (and having experience of one similar nature of work)	1	Rs.60,000/- PM
		ii)Graduate Engineer	Deputy Project Manager	12 (and having experience of one similar nature of work)	2+1	Rs.40,000/- PM per person
		iii)Graduate Engineer or Diploma Engineer	Project/Site Engineer	5 or 10 respectively	4+2	Rs.25,000/- PM per person
		iv)Graduate Engineer	Quality Engineer	8	1+1	Rs.25,000/- PM per person
		v)Diploma Engineer	Surveyor	8	1	Rs.15000/- PM per person
		vi)Graduate Engineer	Project Planning/billing	6	1+1	Rs.20000/- PM per person.
2	More than 50 to 100 Cr.	i)Graduate Engineer	Project Manager	20 (and having experience of one similar nature of work)	1	Rs.60,000/- PM

		ii)Graduate Engineer	Deputy Project Manager	12(and having experience of one similar nature of work)	1+1	Rs.40,000/- PM per person
		iii)Graduate Engineer or Diploma Engineer	Project/Site Engineer	5 or 10 respectively	1+1	Rs.25,000/-PM per person
		iv)Graduate Engineer	Quality Engineer	8	1+1	Rs.25,000/-PM per person
		v)Diploma Engineer	Surveyor	8	1	Rs.15000/-PM per person
		vi)Graduate Engineer	Project Planning/billing Engineer	6	1+1	Rs.20000/- PM per person.
3.	More than 20 to 50 cr.	i)Graduate Engineer	Project Manager	20 (and having experience of one similar nature of work)	1	Rs.60,000/- PM
		ii)Graduate Engineer	Deputy Project Manager	12(and having experience of one similar nature of work)	1	Rs.40,000/- PM per person
		iii)Graduate Engineer or Diploma Engineer	Project/Site Engineer	5 or 10 respectively	1+1	Rs.25,000/-PM per person
		iv)Graduate Engineer or Diploma Engineer	Quality Planning/quality / billing Engineer	2 or 5 respectively	1+1	Rs.15,000/-PM per person
4.	More than 10 to 20cr.	(i) Graduate Engineer (Civil)	Principal Technical Representative/P roject Manager	10 Years	1	Rs. 30,000 pm
		(ii) Graduate Engineer (Civil)	Technical Representative	5 Years	1	Rs. 25,000 pm

		(iii) Graduate Engineer (Civil) Or Diploma Engineer (Civil)	Project / Site Engineer and Project Planning / Billing Engineer	2 Years 5 Years	2 2	Rs. 15,000 pm Rs. 15,000 pm
5	More than 5 to 10Cr.	(i) Graduate Engineer (Civil)	Principal Technical Representative	5 Years	1	Rs. 25,000 pm
		(ii) Graduate Engineer (Civil) Or Diploma Engineer	Project/ Site Engineer And Engineer	2 Years 5 Years	2 2	Rs. 15,000 pm Rs. 15,000 pm
6.	Above 1.5 cr. CUp to 5Cr.	i)Graduate Engineer Or Diploma Engineer	Principal Technical Representative Project Planning / Site / Billing Engineer	2 Years 5 Years	1 1	Rs. 15,000 pm Rs. 15,000 pm
7.	More than 1.5 lacs to 1.5 crore	ii)Graduate Engineer (Civil) or Diploma Engineer (Civil)	Project Manager cum Planning/Quality/ Site/billing Engineer	2 or 5 respectively	1 of major component	Rs.15,000/-PM

- Assistant Engineers retired from Govt. Services that are holding Diploma will be treated at par with Graduate Engineers.
- Diploma holder with minimum 10 years relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

VOLUME-III

TECHNICAL SPECIFICATIONS OF WORKS

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Disclaimer

The Contractor shall execute the Works in strict compliance with the provisions of the Bill of Quantities (BOQ) and Volume-III Technical Specifications, both of which shall be read together and shall be deemed to form an integral part of the Contract.

Where requirements are specified in both the BOQ item descriptions and the Technical Specifications, the requirement that is more stringent in terms of technical performance, structural safety, durability, corrosion protection, quality control, testing, workmanship, and service life shall prevail, irrespective of whether such requirement is expressly repeated in the BOQ.

This principle shall apply only where both provisions are technically permissible. Any provision in the BOQ that is technically inferior to, or inconsistent with, the minimum requirements prescribed in the Technical Specifications or applicable Indian Standards shall be deemed to be superseded by the Technical Specifications.

Commercial provisions, including measurement methodology, payment milestones, and rate structure, shall be governed by the BOQ.

The decision of the Engineer-in-Charge regarding interpretation of technical stringency and compliance shall be final and binding.

Chapter- I : General Specifications of work

1. Unless modified otherwise by Particular Specifications stipulated in this tender document or any supplementary or additional specifications given by Engineer in charge, those works in scope which are covered under DSR or mentioned in Price Schedule covering DSR of Civil /E&M works, shall be executed as per **CPWD Specifications 2019** (Vol-I for Building Works; Vol-II for Water Supply, Sanitary & Drainage & CPWD specifications 2025 for E&M Works) and the provisions particularly stipulated for material specifications, workmanship, execution, **measurement**, coverage of Rates (inclusion /exclusion) and **testing** provisions etc shall be followed.

A brief description of these works & specifications is given below.

- 1.1 Enabling, Setting-Out, Site Clearance & Earthwork (Building side) before construction of any building covering the activities viz,** clearing & grubbing, and excavation of foundations, plinths, etc in all soils/rock covering, dewatering, backfilling, compaction, disposal/stacking, filling with approved material, proof-rolling and sub-grade preparation, Damp proof course (DPC) and Pre-construction anti-termite soil treatment, where specified in contract Scope, provisions of **CPWD Specifications 2019 – Earthwork (Vol-I) including other relevant chapters** shall be followed.
- 1.2 For the construction of foundations of Buildings by cement concrete -cast in situ, viz. PCC/ RCC, Formwork & Reinforcement (Foundations, Plinth, Frames) etc including all** Concrete works covering-Concrete materials supplies, batching, placing, compaction, curing; construction /expansion/ seismic joints, formwork/centring and removal, admixtures, reinforcement cutting/ bending/ placing, cover blocks, tests and acceptance-provisions as per CPWD Specifications 2019 – Concrete/ RCC chapters (Vol-I) **including other relevant chapters** shall be followed.
- 1.3 For construction of foundations of Buildings in masonry or other masonry works in sub structure or superstructure of building viz. wall / Blockwork (Stone/AAC/FA/Brick), Lintels/Chajjas including** Mortars, workmanship, curing, measurements etc. shall be executed as per **CPWD Specifications 2019 – Masonry chapter (Vol-I) including other relevant chapters and provisions stipulated therein shall be followed.**
- 1.4 Plastering & Wall/ Ceiling Finishes (Ancillary / Office Blocks) covering** Cement plaster, putty/skim coats, primers and paint systems, substrate preparation and curing. (where covered) shall be executed as per **CPWD Specifications 2019 –Finishing (Plastering & Pointing; Painting/Polishing) chapters (Vol-I), including other relevant chapters and provisions stipulated therein, shall be followed.**
- 1.5 Standard Floors (IPS/CC floors, granolithic, stone/marble/granite, vitrified/ceramic/industrial tiles, epoxy paints in the buildings etc as per scope) including Dado Finishing, wall tiling shall** be executed as per **CPWD Specifications 2019 – Flooring, Paving & Dado chapters and provisions stipulated therein shall be followed.** High-performance TR34 FM floors (laser-screeded FM2/FM2 Special) shall be governed by the Particular Specification “High-Performance Warehouse Floor” mentioned in the tender document.
- 1.6 General Roofing/ Waterproofing/ Rainwater Goods of building, including** Conventional roofing elements/flashings, waterproofing of roofs/ toilets/ terraces, rainwater pipes and fittings, shall be executed as per **CPWD Specifications 2019 – Roofing chapter; Damp-Proofing & Waterproofing (Vol-I), including other relevant chapters and provisions stipulated therein, shall be followed.**

- 1.7 General Steelwork (Non-structural & Structural other than PEB) covering MS/SS works, doors, frames, shutters, inserts, gratings, ladders & handrails** shall be executed as per **CPWD Specifications 2019 – Steel works (Vol-I), including other relevant chapters and provisions stipulated therein shall be followed.**

PEB primary/secondary members, HSFG bolts/torquing, shop coatings/galvanising/AL-ZN coated and profiled sheeting shall be governed by the Particular Specification “Pre-Engineered Building (PEB) /Roofing System mentioned in the tender document.

- 1.8 General Doors/ Windows/ Shutters (in ancillary blocks/ Office buildings, etc.) covering steel, wood, aluminium, UPVC hardware and finishes, etc,** shall be executed as per **CPWD Specifications 2019 – Doors/Windows/Shutters chapters (Vol-I), including other relevant chapters and provisions stipulated therein, shall be followed.**
- 1.9 Internal Water Supply, Sanitary & Drainage of building covering Pipes, fittings, valves, fixtures, testing & disinfection; soil/waste/rainwater lines, manholes/ICs, traps and testing etc.** shall be executed as per **CPWD Specifications 2019 – Water Supply, Sanitary Installation & Drainage (Vol-II), including other relevant chapters and provisions stipulated therein shall be followed.**
- 1.10 Boundary Wall/ Fencing, Gate Complex (civil works), Weighbridge (civil works) construction covering execution of** all associated earthwork, concrete/RCC, masonry and non-PEB steel within DSR coverage; sleeves/conduits/embedded items for services etc. relevant specifications of these items stipulated in **CPWD Specifications 2019 (Vol-I) including other relevant chapters and provisions stipulated therein shall be followed.**
- 1.11 Internal Roads and circulation area:** All pavement compositions (layers, thicknesses, mixes) shall be **as shown on drawings/BOQ/tender document.** Materials, laying, compaction, joints, temperature/wind precautions, and **field QA** for GSB/WMM/bituminous works shall follow the workmanship and testing provisions customarily practised as per **MoRTH QC regime** (sampling, density, binder content, gradation, core extraction) as directed by the Corporation Engineer.

A field lab/testing arrangement adequate for the tendered bituminous quantity shall be arranged by the Contractor at his cost. Road furniture/markings/RPMs shall be installed only where indicated in BOQ/drawings; workmanship and acceptance shall follow standard practice under CPWD/MoRTH.

1.12 Electrical Works (Internal & External-Building):

All electrical works—internal and external—shall be executed strictly as per IFC drawings and BOQ, with workmanship, materials, testing and measurement conforming to CPWD General Specifications for Electrical Works (E&M).

The design obligation shall rest on the contractor unless otherwise specified in the BOQ. Wiring, containment, segregation, panels/DBs, terminations and IP integrity shall follow CPWD E&M practice; earthing/bonding to building steel and metallic services shall be provided at sizes and locations shown on drawings. Lightning Protection (LPS)—air terminations, down conductors, test links and earth terminations—shall be installed strictly as per drawings; workmanship and testing shall follow CPWD E&M. External/site lighting (poles, brackets, luminaires), cable routes/depths, warning tapes and feeder pillar terminations shall be completed as detailed. Pre-energisation tests (IR, polarity/phasing, CPC continuity, earth resistance, functional checks, and, where specified, lux verification) shall be carried out with calibrated instruments arranged by the Contractor; all testing,

retesting and consumables are included in the rates, and no extra shall be payable. As-built single-line diagrams, cable/DB schedules, earthing/LPS records and O&M manuals (hard + editable soft copies) shall be submitted before final billing; permanent labelling for panels, DBs, circuits and earth pits shall be done mandatorily.

Measurement and rate inclusion provision shall be as per CPWD E&M.

2. Following additional conditions shall prevail over the specifications covered or described in clauses (1) above, and contractor scope and rates shall cover and include their execution wherever directed by the engineer in charge.

2.1 Testing responsibility and cost (no separate payment shall be made):

- The Contractor shall provide, calibrate and use all measuring and testing devices (field and laboratory), arrange sampling, transport and consumables, and bear the full cost of all testing stipulated in the specifications/ drawings/ITP, without any separate measurement or payment.
- Rates quoted shall be deemed inclusive of all such testing required to demonstrate compliance and achieve acceptance.

2.2 Materials approval, rejection and BIS compliance:

- All materials shall be new, unused and of current manufacture, conforming to relevant IS specifications and, as far as possible, bearing valid BIS certification unless otherwise exempted or not required by contract BOQ/Items covered in price schedule.
- The Contractor shall submit manufacturer's certificates and, if directed, get materials tested at an approved laboratory at his cost. Materials not conforming to specifications or the Engineer-in-Charge's (Corporation Engineer) satisfaction shall be rejected and removed from the site at the Contractor's risk and cost, without any claim.

2.3 Setting-out, levels, protection and leads for disposal:

- The Contractor is fully responsible for accurate setting-out/levels and protection of works and adjoining services.
- The Contractor shall verify the geotechnical baseline and existing levels before any pour; discrepancies, if any, shall be notified and rectified within 7 days. All temporary dewatering from foundations and roads, pumping, and keeping works dry for rainwater are deemed included in scope, rates, and nothing extra shall be payable.
- The default lead for deposition/disposal of excavated material shall be considered as 200 m. In case the BOQ item specifies a different lead, the higher of the two (200 m or the lead stated in the BOQ) shall be considered default and included in rates.; only leads beyond 200 m are measurable for payment under "extra lead" when not specifically covered under item rates. Measurement of lead shall be by the shortest practicable route on the plan. No extra is admissible for difficult, slopy haul routes or marshy/kacha ground, terrain.

2.4 Excavation/ backfilling around services (method and safety):

- Backfilling of trenches around foundations, pipes, cables and conduits shall commence only after testing/clearance.
- Layer thickness, compaction, and selection of fine material around services shall comply with the detailed method herein to prevent damage; deleterious materials shall not be used in backfilling.
- The Contractor shall be responsible for safeguarding all existing utilities during excavation/backfilling and shall be liable, without any cost to the corporation, to rectify, repair and make good the same if damaged during works.

2.5 Formwork (quality, scope and payment):

- Formwork supply, erection, stripping and measurement shall generally follow the CPWD specification.
- Unless otherwise stated, formwork is deemed included in RCC item rates.

- No deductions for openings shall be made $\leq 0.40 \text{ m}^2$.
- Only steel (MS) centring/shuttering and scaffolding shall be used unless Corporation Engineer specifically approves marine-ply.
- Dented/warped/rusted plates are prohibited for use in formwork.
- Plates shall be cleaned mechanically and coated with an approved chemical release agent before rebar placement. These requirements shall apply at all heights without extra cost.

2.6 Reinforcement—grade, documentation and cover control:

- TMT bars shall conform to IS 1786 of grade Fe415D/Fe500D (or as noted in BOQ/drawings).
- Approved spacers/ cover blocks shall be used to maintain the specified cover.
- improvised mortar lumps are not permitted unless specifically approved.
- Manufacturer's test certificates shall be produced for each lot/diameter; additional testing may be ordered by Corporation Engineer at Contractor's cost.

2.7 Concrete—mix design timeline, w/c ratio, moisture control and placement:

- Unless otherwise specified, the maximum water-cement ratio shall not exceed 0.50.
- The Contractor shall submit mix design with 7-day results within 15 days of commencement intimation and 28-day results within 40 days.
- Concreting shall start only after approval of the corporation's Engineer.
- Moisture content in aggregates shall be checked frequently and batch weights corrected; accordingly, added water shall be adjusted to maintain the approved w/c.
- Placement shall preclude segregation and free-fall limits as per IS shall be applicable, and chute /pump use shall follow the Engineer's directions.
- Combined Services Drawings (CSD), trench/cable route approvals and sleeve/block-out schedules shall be submitted and frozen before any relevant RCC pour or sheeting. Missed sleeves/openings shall be rectified by core-cutting and making-good at Contractor's risk and cost.
- Anchor-bolt setting for PEB columns shall be as per PEB vendor templates. Civil pedestals (bolt lift) shall be cast by the contractor only with the approval of PEB- supplier/ Vendor, along with its field engineer's approval on the bolt-setting in foundations.
- Final non-shrink grouting shall be executed by the Civil contractor only after alignment/ tightening by the PEB vendor and receipt of confirmation on acceptance of erection checks.

2.8 Concrete—acceptance criteria and rate adjustment for low strength:

- Decision of the acceptance of concrete works where test results do not comply with prescribed limits of IS 456 and other relevant IS codes, shall be discretionary and lies with the Engineer in charge based on structural importance, life cycle assessment, construction timelines, operational requirements, etc. In the event of non-acceptance of the work, the contractor shall replace the sub-standard work within a time frame decided by the Engineer in Charge (not later than 30 days) without any additional cost to the Corporation. Otherwise, the Corporation shall execute the same as per the relevant terms of the General Conditions of Contract.
- Where the average compressive strength of samples is below the specified but $\geq 70\%$, payment shall be reduced proportionately to the strength achieved.
- if the average is $< 70\%$ of the specified, the represented work shall be rejected. Based on mandatory field tests, further actions shall follow CPWD guidance.
- Corporation Engineer may order additional tests at Contractor's cost and impose remedial measures at Contractor's risk and cost.

2.9 Non-PEB structural steel—shop drawings, producers and QA:

- The Contractor shall prepare and obtain approval of fabrication/ connection/ shop drawings before fabrication.

- Review by Corporation Engineer does not absolve the Contractor of responsibility for correctness/safety.
- Corporation Engineer may demand manufacturers' certificates and independent tests for each consignment.
- No payment shall be made for materials drawn for testing.

2.10 Plumbing & drainage—licensed personnel, shop drawings, authority approvals:

- Plumbing/ sanitary works shall be executed by licensed plumbers under a dedicated site engineer for QA.
- The Contractor shall obtain all permits/ approvals and is responsible for shop drawings in AutoCAD, coordinated with other services; discrepancies shall be resolved before work, with no cost/ time implication to CWC.
- Leakage-free joints and conduits, pipes, sleeves, etc, during Hydraulic testing shall be the acceptance criteria of plumbing works.

2.11 Pipeline cleaning and disinfection—chlorination method:

- After hydraulic testing and cleaning, pipelines shall be disinfected by dosing not less than 50 ppm free chlorine and holding for the prescribed period (≤ 24 h) with residual checks; the process shall be repeated until samples are certified potable by a recognised laboratory.
- Dosing quantities and repeat procedures shall be as directed/approved.

2.12 Mandatory tests—field quality plan hook:

- Mandatory tests list (cement, steel, aggregates, bituminous mixes, brick/stone, paver blocks, etc) and their minimum frequencies shall be as per the approved Field Quality Plan and relevant appendices given in CPWD specifications.
- Failure to maintain designated registers and submit results shall be sufficient ground to withhold payments/security till compliance.

2.13 Rate inclusions (holes/chases, heights, pre-testing):

- Quoted rates are deemed inclusive of all heights and locations (shafts/ceilings), cutting holes/chases in RCC/masonry and making good, and of all pre-testing/on-site testing and commissioning within the scope, unless otherwise stated in BOQ.

2.14 Measurement & rate coverage

- Where details are shown on drawings but not itemised, they are deemed included in the relevant BOQ item if normally covered under CPWD Specifications 2019; where neither CPWD coverage nor a BOQ line exists, it shall be executed only against written instruction as per contract provisions.
- Unless specifically provided otherwise in the BOQ, dewatering, keeping works dry, barricading, traffic management, testing and retesting shall be included in the rates and will not be paid separately.

3. Execution Instructions — special prohibitions (“DON’Ts”) for various works covered in scope.

3.1 General

Unless otherwise specified in the scope of works/Tender BOQ, the Corporation shall issue architectural/structural designs, drawings and BOQ, and the contractor will execute the works accordingly. Nothing in these Standard Specifications shall be construed to change the design intent. In case of discrepancy, the order of precedence shall be:

BOQ (CWC) → 2) Particular/Standard Specifications (the tender document) → 3) GFC Drawings & CPWD latest Specifications of works (Civil; E&M) → 4) MoRTH (for workmanship/ testing of road/ pavement items where applicable) → 5) NBC/ IS/ other codes as background guidance.

Statutory approvals/byelaws shall always prevail, and nothing herein relaxes the requirements of authority approvals up to the extent covered in the Contractor scope.

3.2 Prohibitions:

3.1.1 Earthwork, Carriage & Substructure (EW/RD)

- i. The Contractor shall not commence excavation without verifying benchmarks/levels and obtaining clearance from the Corporation Engineer.
- ii. The Contractor shall not excavate beyond lines/levels shown in the drawings; any over-excavation shall be made good at the Contractor’s risk and cost.
- iii. The Contractor shall not leave vertical faces unsupported in unstable/filled/loose soils; suitable shoring/benching shall be provided.
- iv. The Contractor shall not stockpile spoil at trench edges or surcharge slopes; safe offsets and heights shall be maintained.
- v. The Contractor shall not obstruct natural/temporary drainage; temporary drains, sumps and silt traps shall be maintained functional at all times.
- vi. The Contractor shall not damage existing utilities; trial pits/location verification shall precede excavation; any damage shall be made good at Contractor’s cost without delay.
- vii. The Contractor shall not backfill around foundations/pipes/ducts/cables before completion of tests/clearances and inspection.
- viii. The Contractor shall not use deleterious/organic/expansive material in backfill; only approved material shall be used.
- ix. The Contractor shall not place fill in thick dumps or outside specified moisture; compaction shall be in thin layers (150-200 mm) at OMC to the required density.
- x. The Contractor shall not run heavy equipment on prepared subgrade/sub-base before protection or directed proof-rolling.
- xi. The Contractor shall not execute embankment/subgrade works during heavy rain or on soaked foundation layers without written clearance.
- xii. The Contractor shall not omit proof-rolling where directed; soft spots shall not be patched superficially and shall be reworked to full depth.
- xiii. The Contractor shall not lay granular/base/bituminous layers over muddy/contaminated/under dense surfaces; deficient areas shall be corrected first.
- xiv. The Contractor shall not cut trenches across newly prepared layers without reinstating layer-wise compaction and density.
- xv. The Contractor shall not choke drainage; temporary drainage arrangements shall be maintained.
- xvi. Disposal within default lead (as per clause 2.3)- by the shortest practicable route shall be deemed included in rates unless stated otherwise.
- xvii. No claims shall be admissible for haul on soft ground.
- xviii. The Contractor shall not reuse unsuitable excavated material; segregate and cart it away as directed.
- xix. The Contractor shall not backfill against green masonry or concrete; curing/strength windows shall be observed.

- xx. The Contractor shall not leave trenches open at crossings and gates; safe access/ramps and warning signs shall be maintained.
- xxi. The Contractor shall not install pipes/cables without proper bedding, haunching and specified cover; sharp stones adjacent to services shall not be permitted.
- xxii. The Contractor shall not pour blinding/PCC over loose debris or water; formation shall be cleaned, dewatered and checked for level/compaction.
- xxiii. The Contractor shall not alter founding levels without written instructions; unauthorised deviation will not be measured for payment.
- xxiv. The Contractor shall not relax barricading/night reflectors without Corporation Engineer approval; safety controls shall be maintained till reinstatement is accepted.
- xxv. The Contractor shall not bury undocumented sleeves/conduits; routes/sleeves shall be frozen and inspected before closure.
- xxvi. The Contractor shall not request separate payment for routine tests/field lab arrangements; testing/retesting is included.
- xxvii. The Contractor shall not close works (backfill/cover) without recording levels and obtaining Corporation Engineer checks.
- xxviii. The Contractor shall not claim for hidden items normally covered under CPWD specification of works unless expressly excluded in the BOQ.

3.1.2 Concrete Works — Cast-in-situ & Precast (CN)

- i. When design Mix Concrete is in scope -as mentioned in BOQ, it shall not be produced without an approved mix design, batching calibration and documented moisture corrections.
- ii. Transit-mixed concrete shall not be re-tempered or used beyond permitted time/temperature limits.
- iii. Formwork shall not be released without Corporation Engineer approval; reshoring shall not be removed prematurely.
- iv. Concrete shall not be poured on laitance, debris, standing water or unapproved blinding; unapproved cold joints shall not be formed.
- v. Immersion vibrators shall not be used to move concrete laterally; segregation/ honeycombing/ exposed bars shall not be accepted.
- vi. Admixtures shall not be changed mid-work without approval; chloride-bearing admixtures for RCC shall not be used.
- vii. Cover blocks of wood/stone or improvised mortar lumps shall not be used; only approved cover blocks shall be used.
- viii. Curing shall not be skipped or curtailed; curing compounds shall not be used where incompatible with later finishes.
- ix. Embedded items/sleeves not frozen in CSD shall not be omitted; post-pours by chasing/core-cutting shall not proceed without written approval and repair method at Contractor's cost.
- x. Rejected/low-strength concrete shall not be concealed; core/ND tests and remedials shall not be bypassed.
- xi. Concrete shall not be placed after initial set or pumped without slump/temperature checks.
- xii. Free-uncontrolled water addition at the site shall not be permitted.
- xiii. Incompatible release agents shall not be used; damaged/dirty form faces shall not be permitted.
- xiv. Inadequate cover shall not be accepted.
- xv. Sleeves/embeds not frozen in CSD shall not be omitted; deviations require written approval.
- xvi. Expansion/seismic joints shall not be bridged or filled with unsanctioned materials.
- xvii. Concrete with strength <70% of the specified average shall not be accepted for payment.
- xviii. Test registers and approvals shall not be withheld; billing without QA/QC records will not be entertained.
- xix. Cement/SCMs/admixtures shall not be substituted without approval.
- xx. Chloride-bearing admixtures for RCC shall not be used.

- xxi. Placing after initial set or without checks shall not be allowed.
- xxii. Placing on frozen/overheated substrates shall not be done.
- xxiii. Vibration shall not be misused to make concrete flow.
- xxiv. Curing windows shall not be shortened.
- xxv. Post-pours by chasing/core-cutting shall not proceed without approval.
- xxvi. Low-strength concealment shall not occur.
- xxvii. Combined Services Drawings (CSD) and sleeve/insert schedules shall be frozen before concrete pours as per the programme.
- xxviii. Missed sleeves/embeds shall be core-drilled and reinstated at the Contractor's cost using an approved method statement without compromising durability or strength.
- xxix. The RMC plant shall be approved by Engineer for capacity, QA, storage and moisture correction protocols. An uninterrupted supply plan with backup plant shall be provided by Contractor. Change of source shall require new trials and approval of Corporation Engineer.

3.1.3 Foundations, Piles, Pile Caps & Ground Improvement (FD)

- i. Excavation to the founding level shall not proceed without strata verification; over-excavation shall not be paid.
- ii. Pile boring shall not commence without approved rig calibration, slurry plan and cage drawings.
- iii. Slurry shall not be reused beyond density/viscosity/sand limits; contaminated discharge to drains shall not be permitted.
- iv. Pile toe cleaning shall not be omitted; tremie interruptions shall not be allowed.
- v. Pile cut-off methods compromising integrity shall not be permitted.
- vi. Pile integrity/load tests shall not be bypassed; failed piles shall not be incorporated without approved remedials.
- vii. Raft/foundation PCC shall not be poured without verified levels and cleanliness.
- viii. Backfilling around foundations shall not start before waterproofing/ATT (if any) and inspection clearances.
- ix. Slurry control, tremie continuity and test compliance requirements shall not be relaxed.
- x. Remedial works for deficient piles shall not proceed without written approval.
- xi. Bored holes shall not be left unsupported against collapse where required by method.
- xii. Pile cages shall not be lifted or dropped causing distortion.
- xiii. Concrete interruption during tremie shall not be allowed.
- xiv. Anchor bolts for PEB shall not be set without templates and sign-off; grouting shall not precede alignment acceptance.

3.1.4 Masonry, RCC Interfaces & Plaster (MS)

- i. Masonry shall not be raised on green slabs/walls; daily lift limits shall not be exceeded.
- ii. Unsoaked bricks/blocks (where soaking/moistening is specified) shall not be used; saline/efflorescent units shall not be accepted.
- iii. Junctions with RCC shall not omit shear keys/bonding; random butting shall not be accepted.
- iv. Chasing in masonry beyond permitted depth/width or after plaster (without approval) shall not be done.
- v. Mortar mixes shall not be altered or re-tempered.
- vi. Plaster shall not be applied on dusty, oily or unstable substrates; single-coat thickness beyond specified shall not be accepted.
- vii. Drip courses, throating and parapet/copings shall not be omitted.
- viii. AAC/brick/stone units shall not be used outside approved quality parameters.
- ix. Movement joints shall not be bridged rigidly.
- x. Plaster shall not be applied before substrate readiness is certified.
- xi. Fly-ash bricks/AAC blocks shall not be laid without prescribed soaking/adhesive as applicable.
- xii. Daily lifts shall not exceed limits; masonry on green slabs/walls shall not proceed.

- xiii. RCC interfaces shall not be executed without keys/bonding agents or mechanical connectors.
- xiv. Chases shall not be hammered; only permitted cutting methods shall be used.
- xv. Efflorescent units shall not be accepted.
- xvi. Random toothed joints without proper bonding shall not be permitted.

3.1.5 Flooring (Concrete, TR34/VDF, Screeds, Tile/Stone) (FL)

- i. Screeds shall not be laid over dusty/under dense bases; debonding layers shall not be omitted where detailed.
- ii. Panel sizes/joints for concrete floors shall not be altered; saw cuts shall not be delayed beyond window.
- iii. Power-trowelling shall not commence before bleed water evaporates; dry-shake rates shall not be reduced.
- iv. Flatness/levelness acceptance (F-numbers/straightedge/TR34) shall not be diluted; random grinding without instruction shall not be done.
- v. For dock door arrises and high-impact thresholds, proprietary armoured joint profiles shall be used where indicated. Racking dowels/inserts, line-marking and cleaning regimes shall conform to the Particular Specification for FM2 floors.
- vi. Tile/stone shall not be fixed on uncured screeds or without approved adhesives/primers; spot-bonding shall not be permitted.
- vii. Expansion/isolation joints shall not be bridged by rigid toppings.
- viii. TR34/VDF parameters shall not be altered without approval.
- ix. Tile/stone adhesives and primers shall not be substituted without approval.
- x. Joint protection and saw-cut timing shall not be neglected.
- xi. Dry-shake application below specified rate shall not be done.
- xii. Selection shall not deviate from approved makes/shades and slip-resistance class.
- xiii. Book-matching/grain direction where specified shall not be ignored.
- xiv. Edge arris protection and sealing shall not be omitted.
- xv. Marble/stone with open defects or incompatible meshes shall not be accepted.
- xvi. Movement/transition joints shall not be bridged rigidly.
- xvii. Bedding thickness outside tolerance shall not be accepted.
- xviii. Lippage beyond tolerance shall not be accepted.
- xix. Cleaning/acid-wash methods incompatible with stone/tile shall not be used.

3.1.6 Waterproofing (Roofs, Wet Areas, Below-Grade) (WP)

- i. Substrate defects shall not remain untreated prior to membrane.
- ii. Application outside temperature/humidity windows shall not occur; dilution beyond datasheet shall not be done.
- iii. Terminations/chases/upstands/coves shall not be omitted; laps/primers shall not be curtailed.
- iv. Water-ponding tests shall not be skipped; concealed membranes shall not be covered without Corporation Engineer clearance.
- v. Incompatible stacks (e.g., PU over bitumen without separation) shall not be installed.
- vi. Roof drainage points shall not be fewer/smaller than on drawings; temporary protection shall not be omitted.
- vii. Below-grade protection boards/geotextiles shall not be omitted where specified.
- viii. Membrane repairs shall not be attempted without approved method.
- ix. Termination bars/fixings shall not be spaced beyond limits.
- x. Ponding due to blocked outlets shall not be left unattended.
- xi. Primer/membrane coverage rates shall not be reduced.
- xii. Flood-test duration shall not be shortened.
- xiii. Backfilling over membranes without protection shall not be permitted.

- xiv. Below-grade and wet-area waterproofing shall be tested by flood/pond tests of the specified duration. Adhesion and coverage shall be verified as per manufacturer's TDS; no cover-up is permitted without Corporation Engineer clearance.

3.1.7 Roads, Pavements, Kerbs, Markings & Drains (RD)

- i. GSB/WMM placement shall not proceed without approved source/gradation/MDD-OMC; dry or slurry rolling shall not be allowed.
- ii. Prime/tack coat shall not be applied on wet/dirty/cold surfaces; application rates shall not be altered ad hoc.
- iii. Bituminous temperature/compaction windows shall not be violated; joint hand-packing shall not be ignored.
- iv. Core density checks shall not be skipped; segregation/bleeding/flush shall not be accepted.
- v. Kerbs/channels shall not be set without line/level control and haunching; negative cross-falls shall not be left.
- vi. Markings/RPMs/signage shall not be placed on dusty, moist or uncured surfaces; reflectivity/placement shall match drawings.
- vii. Drain inverts and silt traps shall not be altered on site; covers shall not be mismatched.
- viii. Bituminous mixes outside window shall not be laid.
- ix. Borrow/quarry sources not approved shall not be used.
- x. Proof-rolling omissions shall not occur.
- xi. Traffic on finished layers without protection shall not be allowed.
- xii. Shoulder drop-offs shall not be left.
- xiii. Cold joints without proper treatment shall not be left.
- xiv. Tack/prime under or over-application shall not be accepted.
- xv. Silt management during rains shall not be neglected.
- xvi. Edge restraints shall be precast kerbs or RC edge beams with concrete haunching as detailed. In heavy-duty areas, rectangular pavers shall be laid in 45° or 90° herringbone pattern to maximize interlock; acceptance shall be per IS 15658.

3.1.8 Structural Steel/PEB & Roofing (SS)

- i. Erection without torque/tension control (HSFG where specified) shall not be permitted; temporary bracing shall not be removed prematurely.
- ii. Site drilling/enlarging of critical holes shall not be done without approval; flame-cutting of connections shall not be allowed unless detailed.
- iii. Roof sheeting shall not be fixed without closures, sealants, stitch-screws and Butyl tape; walking on sheets without spreader boards shall not be allowed.
- iv. Nominated coatings/fasteners shall not be substituted; cut edges shall not be left unprotected.
- v. Fabrication without approved drawings, WPS/PQR and qualified welders shall not proceed.
- vi. Heat-affected uncontrolled cutting shall not be performed.
- vii. Weld defects beyond tolerance shall not be accepted; damp electrodes shall not be used.
- viii. Uncalibrated torque on HSFG bolts shall not be allowed; mixing of classes/lubes shall not be done.
- ix. Temporary supports shall not be removed in high winds.
- x. Ovalized holes shall not be accepted.
- xi. Sheeting laps/fastener spacing/sealant runs shall not be altered.
- xii. Gutters with wrong falls or debris entrapment shall not be left.

3.1.9 Doors, Windows, Glazing & Louvres (DW)

- i. Frames shall not be installed without plumb/level/anchorage checks; visible packers/wedges shall not remain.
- ii. Fire-rated assemblies shall not be altered on site; uncertified hardware shall not be fitted.
- iii. Glazing shall not proceed without edge cover, setting blocks and compatible sealants; water testing where required shall not be omitted.

- iv. Alignment tolerances shall not be exceeded.
- v. Weather seals/thresholds shall not be omitted.
- vi. Hardware substitutions shall not proceed without approval.
- vii. Fixings into weak substrates without anchors shall not be done.
- viii. Powder-coat/finish damage shall not be left unrepaired.
- ix. Glass with edge chips, scratches or mismatched make shall not be installed.

3.1.10 Electrical — LT/HT, Wiring, Conduiting, Installation & LPS (EL)

- i. Mixed containment of incompatible services shall not be permitted; minimum separations shall not be compromised.
- ii. Sharp bends, kinks and over-pulling shall not be accepted; spare capacity where specified shall not be ignored.
- iii. Earthing/bonding jumpers across flexible joints shall not be omitted; dissimilar metal contact without isolation shall not occur.
- iv. Live terminations without shrouds, incorrect ferruling or unlabeled circuits shall not be accepted.
- v. HT/LT works shall not proceed without sanctioned shutdown/LOTO; resealing HV chambers without IR/pressure tests shall not be done.
- vi. Lightning Protection installation shall not deviate from drawings; test links/records shall not be omitted.
- vii. Uncalibrated instruments shall not be used for testing and commissioning.
- viii. QA/commissioning records shall not be withheld; payment without documentation will not be entertained.
- ix. All panels, DBs, circuits and earth pits shall be labelled with engraved/UV-stable tags. O&M manuals and spare lists shall be submitted prior to charging and are a prerequisite to payment for the associated BOQ items.

3.1.11 Plumbing, Fire Water & Pumps (PL)

- i. Pipes/fittings without markings or incompatible metallurgy shall not be installed; hemp/oil on stainless joints shall not be used.
- ii. Supports/hangers spacing shall not exceed limits; drilling into prestressed members shall not be done.
- iii. Hydrostatic tests/disinfection shall not be skipped; backfilling before clearance shall not proceed.
- iv. Pump foundations/alignment without grout cure and coupling checks shall not be accepted.
- v. Hydraulic testing/leakage shall not be accepted; joints must be leak-free for acceptance.
- vi. Deleterious backfill near services shall not be permitted.

3.1.12 Coordination, CSD & Interfaces (CX)

- i. Unapproved sleeves/conduits/cores shall not be buried.
- ii. Route changes without written approval shall not be made.
- iii. Deviations from coordinated drawings shall not be executed.
- iv. Post-pour chasing/core-cutting shall not proceed without method approval.

3.1.13 HSE, Housekeeping & Temporary Works (HS)

- i. Barricades, warning lights and signage shall not be removed before making the area safe and accepted.
- ii. Hot works shall not proceed without permits, fire watch and extinguishers; LOTO shall not be bypassed.
- iii. Waste, slurry and washings shall not be discharged into storm drains or open ground; approved disposal only.
- iv. Barricading/reflectors for trenches/crossings shall not be relaxed until reinstatement.
- v. Works shall not proceed under unsafe weather/wind conditions where lifting/erection is involved.

3.1.14 Documentation, Testing, Measurement & Commercial Clarity (DM)

- i. Routine testing/retesting, dewatering, keeping works dry, scaffolding/working at heights, sleeves/cores and making-good normally included in CPWD items shall not be claimed separately.
- ii. Use of uncalibrated instruments (IR meter, earth tester, compression machine, density gauges, torque wrench) shall not be permitted.
- iii. Mandatory QA records (ITP, cube registers, density logs, bolt tension logs, torque charts, test/commissioning reports, as-builts/O&M) shall not be withheld; payment processing without complete documentation will not be entertained.
- iv. Disposal beyond approved leads or to unauthorized dumps shall not be undertaken; shortest practicable route within default lead is deemed included unless stated otherwise.
- v. Claims for hidden items normally covered under CPWD shall not be raised unless expressly excluded in BOQ.
- vi. Interim levels/photographic records shall not be omitted prior to cover-up.
- vii. Retesting after rectification shall not be claimed as extra.
- viii. Material without test certificates/approvals shall not be brought to site.
- ix. Change of approved make/model without authorisation shall not be done.
- x. Withholding of statutory/NOC compliances shall not be permitted.

4 DELEGATED DESIGN AND ENGINEERED TEMPORARY WORKS:

4.1 The Contractor shall design, detail and submit for approval (with sealed calculations/ drawings) the following, as applicable:

- PEB connection details and erection stability-when in scope;
- slab pour plans and joint schedules where not issued;
- stormwater hydraulic checks where only intent is given.
- craneage and rigging studies.
- scaffolding/falsework/shoring for excavations and trenches.
- formwork and back-propping.
- Temporary traffic diversions within site.
- utility protection and temporary supports.
- lifting frames; and any temporary works necessary for safe execution.

No work shall commence before written “Approved for Construction” (AFC) status is issued by the Corporation Engineer for each design package.

5 SUBMITTAL & APPROVAL REGISTER (Technical Appendices):

The Contractor shall maintain a Submittal & Approval Register (Appendixes) listing all submittals with due dates and responsibility.

6 CHANGE CONTROL / RFI / SITE INSTRUCTION PROTOCOL:

- All technical clarifications shall be raised as Requests for Information (RFIs).
- Site Instructions (SIs) and Variation Orders (VOs) shall be issued in writing by the Corporation Engineer.
- No claim for time or cost shall be entertained without a written SI/VO referencing the BOQ item and measurement basis

7 RECORDS, QA DOSSIER AND DIGITAL HANDOVER

- Payment for any item reaching a milestone shall be contingent upon submission of current QA records and photographs before cover-up.
- Final bill shall be contingent upon a compiled, indexed QA dossier containing, as applicable including O&M/warranty papers, and as-built drawings in native CAD and searchable PDF.

8 CALIBRATION AND COMPETENCE

- All measuring equipment shall have valid calibration certificates traceable to national standards, including but not limited to: compression testing machine, slump cones, thermometers, rebound hammers/UPV, DFT gauges, torque wrenches, density gauges, Dipstick/F-Profiler, weighing balances,

IR/earth testers and meggers. Operators shall be competent and licensed where required (plumbers, electricians, welders, riggers, crane and MEWP operators).

9 THIRD-PARTY TESTING TRIGGERS:

- The following minimum third-party (NABL/TPI) checks shall apply unless waived in writing by the Corporation Engineer: FM floor TR34 survey; escalation NDT for structural steel (UT/Radiography beyond routine); waterproofing flood/pull-off tests paver lot tests for water absorption/strength; road works core densities and binder content.

10 NON-CONFORMANCE AND CONCESSION:

- Non-conformities shall be recorded through an NCR.
- The Contractor shall submit containment, root cause, corrective and preventive actions.
- The Corporation Engineer shall decide disposition: accept-as-is with concession/derating, repair, or reject and replace.
- All re-tests shall be at the Contractor's cost. Derating, if any, shall be reflected through recovery items.

11 Other Important:

11.1 The Contractor shall submit signed temporary works designs and obtain permits prior to execution for the following:

- excavation (with utility search/trial pits),
- shoring/strutting,
- scaffolding/MEWP use,
- lifting & rigging,
- hot works,
- confined space entry and work at height.

Works shall not proceed without active permits.

11.2 A site traffic plan shall be submitted and maintained covering- internal haul roads, one-way systems, speed limits, marshal points, night lighting. No operational road of CW Complex shall be fouled by site mud; violations shall invite recovery as decided by Corporation Engineer.

11.3 Wherever required, the Contractor shall implement sediment and erosion control, concrete washout management, waste segregation, spill control, noise control and emission limits as per local regulations. Non-compliances may attract stoppage of work and penalties.

11.4 The specifications mentioned in Volume III cover major work components and technically complex activities; however, they are not exhaustive of all project requirements.

11.5 Any work not explicitly detailed herein shall be executed in accordance with industry best practices, relevant CPWD specifications, and accepted engineering standards as directed by the Engineer-in-Charge.

11.6 In cases where the Engineer-in-Charge has not issued specific instructions or design details, the contractor shall prepare, propose, and adopt suitable designs, methodologies, and specifications for approval.

11.7 The Corporation reserves the right to review, modify, or supplement these specifications at any stage, in the interest of ensuring quality, structural soundness, safety, and long-term performance of the project.

- 11.8 MEASUREMENT EXCEPTIONS:** The following are deemed included in rates unless specifically provided in the BOQ: mockups and trials; sampling/testing and re-testing; cutting, chases and small openings; protection and housekeeping; temporary works and access; as-built documentation; warranties; and third-party inspections where specified in Tender document/BOQ.
- 11.9 PROGRAMME & MILESTONES:** The baseline program be submitted by Contractor shall always include logic ties, access dates, inspection windows and key hold points. Monthly updates and 3-week look-ahead schedules shall be provided. QA hold points shall be integrated with the program.
- 11.10 TRAINING & HANDOVER:** Where systems are provided, the Contractor shall conduct training sessions for the Corporation's designated staff and submit attendance records and O&M manuals. Handovers shall include labelled assets, test certificates and spares as listed in the BOQ/Particular Specifications.

Chapter – II : Roofing system of Warehouse building.

Section-I

1. Scope:

When covered in the contract BOQ or directed by the Engineer-in-Charge, the scope shall include the supply, installation and testing of pre-painted PPGL or Galvalume roofing and cladding systems. The systems shall include through-fixed trapezoidal sheets and standing-seam sheets as required by the drawings. The scope shall include fasteners, sealants, butyl tapes, closures, ridges, flashings, profiled polycarbonate skylights, gutters and downpipes when in scope, and all accessories necessary to deliver a watertight and durable roof. The work shall be executed over the warehouse PEB frame or roof truss as per the structural construction scheme. The Contractor shall complete the works in accordance with the detailed technical provisions described in the following paragraphs. No deviation shall be made without written approval of the Corporation.

2. Applicable Standards:

IS 15961 for cold-formed steel sections. IS 15965 for organic coated steel performance and test methods. IS 277 for galvanized coatings where applicable to components. IS 875 Part 3 for wind loads and pressure zoning on roofs and cladding. IS 800 for structural design coordination with purlins and fixings. IS 1608 for mechanical testing of metals where referenced in MTCs. IS 4000 for HSFG bolted connections where used in roofing accessories. IS 4759, ISO 1461 and ISO 14713 for hot-dip galvanizing and guidance where applicable. ISO 12944 for corrosion protection categories and paint system selection. ISO 8501-1 for abrasive blast cleanliness where repairs require painting. ISO 9227 for neutral salt spray corrosion testing of coated fasteners. EN 13501 or ASTM E84 for reaction to fire of skylight materials. OEM system manuals and approved drawings for profile geometry and installation.

3. Materials Item Requirement (minimum unless noted otherwise)

3.1 Roofing/ Cladding Sheets

Pre-painted Galvalume or PPGL steel to IS 15961 and IS 15965. Base metal thickness shall be 0.52 mm BMT minimum. Total coated thickness shall be approximately 0.60 mm TPT unless a richer specification is called in the BOQ. Yield strength shall be not less than 550 MPa. Metallic coating shall be AZ150 with a total mass of 150 g per square metre on both sides. Organic coating shall be Class-3 Super Durable Polyester or better with total paint dry film thickness not less than 35 microns. Sheet back-print shall state manufacturer, coil identification, grade, BMT, AZ class and date or batch. Profile shall be a high-crest trapezoidal profile for through-fix sheets that has not less than five major ribs, a rib height between 28 and 32 millimetres (28 and 32 mm) and a rib pitch between 180 and 220 millimetres (180 and 220 mm) . Effective cover width shall be 1000 millimetres plus or minus 5 millimetres or as shown on approved shop drawings. Wider covers to reduce the number of sheets shall not be permitted. A standing seam profile shall be used for concealed fix where specified or where required by slope or sheet length. When sheet length exceeds fourteen metres, standing seam shall be adopted unless otherwise approved.

3.2 Fasteners (through-fixed)

Self-drilling screws with integral EPDM sealing washers shall be used. The fastener material and coating shall be suitable for the site environment. The minimum requirement shall be stainless steel grade 304 or bi-metal carbon steel with a stainless cap for roof crown fixings in inland or moderate environments. In severe coastal exposure the fasteners shall be stainless steel 316. Side-lap stitching screws shall be provided at the specified spacing. Fastener lengths and diameters shall match the approved selection and the substrate thickness. EPDM washers shall be UV stable and

resistant to heat and ozone. Fasteners shall be supplied with manufacturer certificates showing corrosion performance where applicable.

3.3 Clips (standing seam)

Concealed sliding clips compatible with the system shall be supplied. Clip bases and fasteners shall be as per the OEM. Clip material shall be Z275 galvanized steel or stainless steel in inland or moderate exposure. Clip material shall be stainless steel in severe coastal exposure. Clip spacing shall follow the approved wind-zone fastening layout based on IS 875 Part 3 for the building location and geometry.

3.4 Sealants and Tapes

Butyl tape shall be non-curing pressure sensitive butyl rubber. Thickness shall be between 1.5 and 3.0 millimetres and width shall be between 12 and 20 millimetres. Solids shall be not less than 98 percent. The service temperature range shall be from minus 20 degrees Celsius to plus 80 degrees Celsius. Butyl shall be compatible with PPGL or Galvalume and EPDM. It shall be used at end laps, side laps and under flashings. Neutral cure silicone shall be used only where specifically permitted by the sheet OEM and the CORPORATION ENGINEER. All sealants shall be chemically compatible with PPGL or Galvalume and shall not promote corrosion.

3.5 Closures

UV resistant profiled foam closures shall be provided at eaves, ridges, barges, valleys and penetrations. Closures shall be factory cut or CNC cut to match the sheet profile. The closures shall be of closed cell type and shall be installed on clean dry surfaces with continuous butyl tapes as detailed.

3.6 Flashings, Ridge and Trims

Flashings and trims shall be manufactured from the same base material and coating class as the sheets. The base metal thickness shall not be less than the adjoining sheet. Flashings shall be formed to the approved developed girths. Colour shall match the sheet colour unless otherwise specified.

3.7 Skylights (where provided)

Solid polycarbonate sheets shall be two millimetres (2mm) thick minimum. The sheets shall have co-extruded UV protection. Fire performance shall be EN 13501 class B-s1 d0 or ASTM E84 Class A for the offered grade. Skylights shall be thermo-profiled to the same standing seam profile and fixed with the original concealed system. Through-fasteners shall not be used on the crown of the standing seam. Expansion clearances shall be provided. Only compatible tapes and sealants shall be used. The OEM limits on purlin spacing and sheet length shall be observed.

3.8 Gutters and Downpipes

When included in scope the gutters and downpipes shall be formed metal components sized to the project intensity-duration-frequency data. The corrosion class shall be the same as for the sheets. Straps or hangers shall be provided in accordance with the OEM.

4. Workmanship and Execution Methodology

4.1 General

All works shall be executed strictly to the approved shop drawings, the manufacturer's installation manuals and this specification. The Contractor shall submit a roof fastening layout based on IS 875 Part 3 wind zones with clip and fastener spacing and edge and corner intensification. Profile and pitch shall be as per the approved profile drawings. No change in rib height, rib pitch, effective cover

or pan fluting pattern shall be made after approval. The Contractor shall not commence work until written approval is issued by the Corporation against the hold on supply and erection. A mock-up bay of minimum six metres by six metres shall be completed to demonstrate profiles, laps or seams, flashings, closures and drainage. Acceptance of the mock-up by Corporation Engineers shall be obtained before bulk execution.

4.2 Pre-installation of sheeting

The Contractor shall verify the line, level and plumb of purlins and girts and shall report any deviation exceeding allowed tolerances. Instructions of Corporation Engineers shall be obtained before laying sheets in case of any deviation. The Contractor shall confirm that the roof slope is not less than the system minimum specified in the drawings. Layout setting marks, sheet numbers and lifting sequences shall be prepared to prevent damage and to maintain lap direction down the slope.

4.3 Through-fixed trapezoidal roofing and cladding

Each side lap shall have a factory formed anti-capillary groove along the under-lap edge. Each over-lap edge shall have a return leg that nests over the under-lap. These features are mandatory in order to stop capillary rise and wind driven rain, to improve stiffness and peel resistance and to enhance durability by reducing dust ingress and under-lap corrosion. Flat-to-flat laps without a groove and return leg are not permitted. Minor stiffening beads in the pan shall be provided to control oil canning, to improve handling strength and to reduce noise or flexing under wind suction. Sheets shall be laid with ribs aligned and laps oriented away from the prevailing wind. Through-fixed trapezoidal roofing shall be used only where the roof slope is one in fifteen or steeper. Where the Corporation retains through-fixed trapezoidal roofing between slopes of one in twenty and one in eighteen, the Contractor shall submit an OEM certification for low-slope use. In such cases single piece sheets shall be used without end laps wherever practical. Where end laps are unavoidable the end lap shall be not less than two hundred and fifty millimetres (50 mm) with two parallel beads of butyl. The lap shall be located over a purlin. Side lap stitching shall be at not more than one hundred and fifty millimetres (50 mm) centres in edge and corner zones and not more than two hundred millimetres (200 mm) centres in interior zones. Where the roof slope is one in fifteen or steeper the end lap shall be not less than one hundred and fifty millimetres (50 mm) with continuous butyl. Side lap stitching shall be at not more than three hundred millimetres (300 mm) centres along the lap. Crown fasteners at purlins shall be spaced in accordance with the approved fastening layout for wind zones.

Cutting shall be by cold cutting methods only. Hot abrasive cutting is not permitted. Cut edges shall be de-burred and treated in accordance with the OEM. All penetrations shall use OEM compatible formed flashings and butyl seals. Site punching of profiles for penetrations is not permitted unless shown on approved details. Cladding shall be installed vertically as the preferred arrangement, or horizontally with water shedding laps with base and head closures, sill and trim flashings and sealant tapes as detailed. Horizontal cladding shall use down slope water shedding laps only. Up laps are not permitted.

4.4 Standing seam roofing (concealed fix)

Standing seam sheets shall be installed using concealed sliding clips at the approved spacing. Clip bases shall be fixed to purlins. The Contractor shall verify clip alignment before placing sheets. Sheets shall be laid in single continuous lengths wherever practical. Seams shall be formed using the OEM seaming tool to the specified seam geometry, such as a full 360 degree seam when so specified. Through fasteners on the crown shall not be permitted. Thermal expansion and contraction shall be accommodated by the clip system. Stitch screws shall not be used to restrain movement. Closures and flashings shall be provided at eaves, ridges, valleys and barges exactly as detailed and shall be sealed with continuous butyl tapes.

4.5 Flashings, ridge, barge and closures

Flashings and ridge assemblies shall be lapped not less than one hundred and fifty millimetres (50 mm) with continuous butyl tape. Individual lengths shall be generally not longer than two point four metres for handling. Fixings shall be as per the erection drawings. UV resistant profiled foam closures shall be installed at all discontinuities to provide a weather seal, to prevent pest ingress, to control drafts and to give support to flashings so that the butyl seal is compressed uniformly.

5. Skylights

Skylights shall be supplied by the roof system OEM or by an approved partner. The skylights shall be thermo-profiled to the identical standing seam profile and shall be fixed using the original concealed system. Through fasteners are not permitted on the crown of standing seam sheets. Expansion allowances shall be respected. Only compatible tapes and sealants shall be used. The OEM limits on purlin spacing and sheet length shall be observed.

Fastener selection criteria Site exposure Roof sheet fasteners for crowns and stitching Standing seam clip fasteners to purlin Notes on washers, coatings and galvanic control Inland or urban non-marine Bi-metal carbon steel with stainless cap or stainless steel 304 with long life coating such as Ruspert or zinc-aluminium. Bi-metal long life coated or stainless steel 304. EPDM washers shall be UV stable. For bi-metal fasteners require a minimum corrosion performance such as one thousand hours neutral salt spray to first red rust as per ISO 9227. Coastal moderate between one and five kilometres from sea or estuary Stainless steel 304 as a minimum. Bi-metal fasteners only if the OEM certifies coastal use with one thousand hours neutral salt spray and sealed heads. Stainless steel 304. Provide butyl at all penetrations. Intensify fastening patterns at edges and corners. Stainless rivets shall be preferred for flashings. Coastal severe within one kilometre or surf spray zone Stainless steel 316 is mandatory. Stainless steel 316. Use EPDM only and avoid neoprene. Avoid dissimilar metal contact and provide isolators where required.

5.1 Sealant system

Butyl tape shall be the primary water seal at side laps, end laps and under flashings, ridges and barges. It blocks capillary rise and wind driven rain at the lap even when sheets or flashings have small waviness or erection tolerances. It follows thermal movement and micro movement at fasteners without cracking because it does not hard cure.

5.2 Butyl tape performance schedule minimum

Solids not less than 98 percent with specific gravity between 1.2 and 1.6. Service temperature from minus 20 degrees Celsius to plus 80 degrees Celsius. Peel adhesion to pre-painted steel not less than 10 Newton per 25 millimetres when fresh with cohesive failure preferred. Weathering shall show no cracking or bleeding and the material shall be resistant to fungus and mildew. Shelf life shall be not less than twelve months in original cool and dry storage.

Silicone even when neutral cure shall not be used except in very exceptional cases. Silicone cures to an elastic rubber and on coil coated surfaces it can lose adhesion under thermal cycling, attract dirt and is not a substitute for the compressive gap filling seal that butyl provides along long linear laps. Acetic cure silicones release acid during cure and shall not be used on aluminium-zinc coated steel because of corrosion risk.

5.3 Rainwater management

Gutters and downpipes when in scope shall be installed to approved slopes and outlet spacing. Downpipes shall be connected into the site storm network with approved shoes and sumps. Overflow paths shall be provided as detailed.

5.4 Handling, protection and housekeeping

Packs shall be stored on level dunnage above ground and under cover. Sheets shall be lifted with spreader bars or appropriate slings. Dragging across other sheets is prohibited. Swarf and drill filings shall be removed at the end of each shift. Footprints and contaminants shall be cleaned using OEM approved methods. All waste including butyl release paper shall be collected and removed daily.

6. Safety

Full fall arrest arrangements shall be in place before accessing the roof. Foot traffic shall be only over ribs or walk boards as per OEM guidance. Cutting, seaming and sealant application shall follow the manufacturer's safety data sheets. The Contractor shall maintain barricades below the work and shall keep exclusion zones clear of non essential movement during lifting and sheet handling.

Tolerances, QA-QC and Test Methods Mandatory Third-Party Laboratory Tests for acceptance of works
Material or Feature Name of Test Code reference Acceptance or tolerance in field checks
PPGL or Galvalume substrate Base metal thickness on coupons IS 15961 and relevant product tolerances BMT shall be not less than specified. No negative deviation below the specified BMT is allowed. Actual readings shall be recorded and attached to the lot.

PPGL or Galvalume substrate Metallic coating mass by XRF or gravimetric triple spot IS 15961 tables for AZ classes
For AZ150 the triple spot minimum shall be 150 grams per square metre total both sides. The single spot minimum shall be 135 grams per square metre total both sides. The one surface single spot minimum shall be 60 grams per square metre.

Organic coating pre-paint Paint dry film thickness for top, primer and backer IS 15965 test methods
Top coat shall be not less than 20 microns. Primer shall be not less than 5 microns. Backer shall be not less than 5 microns or as declared by OEM when a high build system is adopted. Total build shall meet the richer of OEM declaration or BOQ requirement.

Organic coating adhesion or cure indicator Either T-bend adhesion or MEK double rubs solvent resistance IS 15965 T-bend and MEK methods T-bend shall show no paint removal on tape with bend not larger than 5T. MEK shall be not less than fifty double rubs without film failure. Fasteners for inland and moderate coastal sites Neutral salt spray corrosion ISO 9227

One thousand hours to first red rust on head or shank for coated carbon steel fasteners. For severe coastal exposure adopt stainless steel 316 and salt spray test is not required.

Skylight panels when in BOQ Thickness and fire classification Caliper and EN 13501 or ASTM E84 Thickness shall be two millimetres (2 mm) minimum for solid polycarbonate. Fire classification shall be EN B-s1 d0 or ASTM E84 Class A for the offered grade.

7. Note:

For coastal severe sites and for any non listed or or equal make an additional reverse impact test as per IS 15965 shall be carried out with a requirement of at least ten joules and no loss of adhesion for each colour per lot.

Items Accepted on Supplier MTC with ready reference limits Material or Feature Test or Declaration
What the MTC shall show Acceptance or tolerance Substrate grade Mechanical properties Declared grade such as YS550/YS350 with tested values of yield strength, ultimate tensile strength and elongation with the test method such as IS 1608

TECHNICAL SPECIFICATIONS OF WORKS

Yield strength shall be not less than 550/350 MPa as specified and UTS and elongation shall comply with the grade table.

Metallic AZ Coating mass factory QC Triple spot and single spot values with the method used such as XRF or gravimetric Values shall meet or exceed AZ150 minima of 150, 135 and 60 grams per square metre as applicable. Paint system Chemistry and layer build Chemistry such as Class-3 super durable polyester or PVDF and DFT for top, primer and backer Class and DFT shall meet or exceed the minima specified in this document.

8. Paint production tests

T-bend, reverse impact, pencil hardness and MEK Individual results per IS 15965 methods T-bend not larger than 5T. Reverse impact not less than ten joules. Pencil hardness not less than HB. MEK not less than fifty double rubs.

Appearance Colour and gloss RAL reference, coil or batch and date with gloss value Colour shall match approved sample within agreed Delta E and gloss within agreed range.

8.1 Traceability

Coil and sheet identification Coil identification, batch and date, width, BMT and TPT and colour Site sheets shall be back printed with grade, BMT, AZ class, coil identification, date and batch. The data shall match the MTC.

8.2 Suitability

Environment fit Declaration that the Class-3 system offered is suitable for the declared exposure inland, coastal moderate or coastal severe

The declaration shall align with the coating schedule and the use of PVDF and stainless steel 316 where required by exposure.

9. Warranty

9.1 Perforation and paint

Warranty templates in the CWC's name

Not less than twenty years for perforation and not less than twelve years for paint performance.

Sampling Frequency

Per coil one coupon for BMT and DFT.

Per three coils or minimum one per colour per lot for AZ mass by XRF or gravimetric.

Per colour per lot one adhesion indicator either T-bend or MEK.

Fasteners one ISO 9227 neutral salt spray report per fastener type and finish per lot for inland and moderate coastal exposure.

For coastal severe sites or for non-listed or or equal makes add reverse impact tests.

10. Documentation for Acceptance

Material Test Certificates coil wise and OEM conformance certificates for AZ class and paint system shall be submitted for each lot. NABL or approved laboratory reports for BMT and DFT tests shall be submitted when called by the CORPORATION ENGINEER. Warranties shall be issued in the name of the Corporation for not less than twenty years against perforation and not less than twelve years for paint performance.

11. Leakage and Water Tightness Checks

The Contractor shall conduct a controlled hose test on representative roof areas and around flashings and penetrations after completion of a bay. The water delivery rate and duration shall follow the OEM guidance. Any leakage observed shall be rectified and the area retested. Where directed by the CORPORATION ENGINEER, wet vacuum testing of laps and seams shall be carried out for standing seam roofs using OEM approved equipment.

12. Sign-off and Responsibility

All inspections shall be categorised as Review, Witness or Hold Point. The Contractor shall prepare inspection requests and quality records. The PEB vendor or roofing system specialist shall witness the mock-up, the fastening layout, the clip installation and the seaming. The Engineer-in-Charge shall accept Hold Points. Joint surveys and sign-offs shall be carried out for anchor line installation, fastening layouts in edge and corner zones, water tests and final acceptance of each bay. No work shall proceed beyond a Hold Point without written clearance of the CORPORATION ENGINEER.

13. Rectification

Any leakage, improper lap or seam, missing closures, unacceptable colour variation, coating damage or non conformity with the fastening layout shall be rectified or replaced as directed at no extra cost. Unauthorised site modifications such as through fastening of standing seam, hot cutting or unapproved penetrations shall be removed and redone to the specification.

14. Measurement

Sheets for roof and cladding shall be measured as net plan area laid with laps and side laps included. Standing seam shall be measured on plan area with clips, seaming and tapes deemed included in the rate. Ridges and flashings shall be measured in running metre by the developed girth as per BOQ breakdowns. Skylights shall be measured as net plan area in square metres. Gutters and downpipes when in scope shall be measured separately as per BOQ provisions.

15. Payment

Rates shall be inclusive of preparing shop drawings, the mock-up, hoisting, setting out, lap or clip design as per wind zones, fasteners, butyl tape and EPDM seals, closures, waste and cutting. No separate payment shall be made for testing, seaming or leak tests. The rate shall include all QA or QC sampling and testing and the preparation and submission of warranties and quality dossiers as specified.

TECHNICAL SPECIFICATIONS OF WORKS

Chapter- III : Insulation in Warehouse building.

Scope of Work of the Contractor

The work covered under this item shall consist of the complete supply, delivery, handling, cutting, shaping, fixing, sealing, and installation of factory-laminated crosslinked polyethylene (XLPE) foam thermal insulation sheets below roof sheeting or wall cladding in warehouse/industrial applications. The contractor shall ensure installation strictly as per manufacturer's guidelines, including sealing of all overlaps, joints, and punctures, to achieve a continuous insulation envelope. The contractor's responsibility shall include provision of all labour, consumables, fasteners, tapes, tools, equipment, supervision, testing, and rectification of any defects until final acceptance. Any damage to installed insulation during execution shall be made good by the contractor at no extra cost.

1. Materials and Specifications

The following specifications shall be used-

- a) The insulation material shall be factory-laminated XLPE foam sheets of minimum thickness 9 mm and minimum density 28 kg/m^3 , laminated on both sides with reinforced aluminum or metallized foil facing.
- b) The material shall be crosslinked (physically or chemically), conforming to **Class 0 fire performance as per BS 476 Part 6 & 7**, with a fire propagation index less than 5.5, and tested as per **ASTM E-84** with flame spread rating ≤ 25 and smoke development ≤ 50 .
- c) The thermal conductivity shall not exceed $0.032 \text{ W/m}\cdot\text{K}$ at 23°C . The insulation shall have a minimum water vapour resistance factor (μ) of 14,000, be anti-fungal and anti-microbial as per ASTM G21 and ASTM E2180, and free from CFC/HCFC compounds.
- d) Rolls shall be factory-finished with overlapping flange edges for joint sealing. Fasteners shall be galvanized screws with rawl plugs and washers, supplemented with crisscrossed GI wires between purlins/wall supports.
- e) Aluminium foil tape or self-adhesive XLPE strips shall be used for airtight sealing of overlaps and punctures.

2. Sequence of Execution

The execution of insulation works shall be carried out in a systematic manner as follows:

3. Pre-Execution Preparation

- Verify completion of roof/wall sheeting framework and ensure all structural members are aligned and free from sharp projections or rust that may damage the insulation.
- Ensure site is clean, dry, and free of debris, oil, or moisture before commencing insulation works.
- Confirm availability of approved drawings, manufacturer's installation manual, and required safety gear.

4. Material Inspection and Storage

- Inspect each roll of insulation upon delivery for physical damage, moisture ingress, delamination of foil, or edge tears.
- Store rolls upright in a dry, shaded, and ventilated area, off the ground on pallets, covered with polyethylene sheet, and protected from UV exposure and mechanical damage.

5. Layout and Marking

TECHNICAL SPECIFICATIONS OF WORKS

- Mark grid lines on purlins/wall supports to ensure straight and aligned fixing.
- Identify areas requiring cut-outs for penetrations (pipes, ducts, bolts) before spreading insulation.

6. Placement of Insulation Sheets

- Position insulation rolls under the roof sheeting or along wall cladding, aligning with the structural members.
- Ensure overlapping flange edges face in the same direction to maintain continuity.
- Unroll carefully to avoid stretching, tearing, or damaging foil surface.

7. Fixing of Insulation

- Secure insulation sheets using crisscrossed galvanized GI wires between purlins or wall supports at specified spacing.
- Where GI wires are not sufficient, fix sheets additionally with self-tapping screws, rawl plugs, and washers to prevent sagging.
- Ensure no gaps remain between insulation sheets and structural elements.

8. Joint Treatment and Sealing

- Seal all longitudinal and transverse joints, overlaps, and cut edges with 75 mm wide aluminium foil tape or self-adhesive XLPE strips.
- Pay special attention around penetrations, ridges, and corners to avoid thermal bridges and air leakage.
- Double-seal critical junctions such as wall–roof interfaces.

9. Finishing and Detailing

- Check for wrinkles, loose edges, or sagging and rectify immediately.
- Ensure reflective foil facing is continuous and undamaged for maximum thermal efficiency.
- Remove waste pieces, trims, and debris from the roof or wall surface daily.

10. Final Inspection, Testing & Handover

- Conduct joint inspection with Engineer-in-Charge for alignment, continuity, sealing quality, and mechanical fixation.
- Prepare punch list of deficiencies, rectify, and present for final approval.
- Submit completion report with warranty certificates, test reports, and as-built drawings.

11. Machinery & Plant Required

The following equipment and tools shall be arranged by the contractor: portable cutting tools for XLPE foam, drilling machines with bits for fasteners, manual/mechanical tensioning tools for GI wires, ladders, scaffolding, safety harnesses, sealing tape applicators, and general hand tools for fixing and adjustments. All safety gear for working at height must be provided.

12. Checklist for Site Engineer / Quality Tests

A. Material Verification

- Confirm insulation thickness (≥ 9 mm) and density (≥ 28 kg/m³) through random sampling.
- Verify both-sided reinforced aluminium/metallized foil lamination.
- Check compliance with BS 476 Part 6 & 7 Class 0 fire performance and ASTM E-84 certificates for flame spread/smoke.
- Verify test reports for thermal conductivity (≤ 0.032 W/m·K at 23°C).
- Confirm manufacturer's anti-fungal and antimicrobial test reports (ASTM G21, E2180).
- Ensure rolls have overlapping flange edges for joint sealing.

TECHNICAL SPECIFICATIONS OF WORKS

B. Pre-Installation Checks

- Verify roof/wall structure is ready, clean, and free from moisture or sharp projections.
- Ensure scaffolding, ladders, and fall-protection systems are in place.
- Confirm correct tools, GI wires, fasteners, and foil tapes are available.

C. During Installation

- Ensure insulation rolls are handled carefully without stretching or tearing foil.
- Check that all sheets are laid in proper alignment with no mis-matches.
- Verify overlaps are as per manufacturer's recommendations (≥ 50 mm minimum).
- Confirm GI wire tensioning is adequate and sheets are not sagging.
- Ensure no open gaps remain at ridges, corners, or penetrations.
- Check all joints, overlaps, and punctures are sealed with approved foil tape.

D. Post-Installation Checks

- Confirm insulation envelope is continuous and airtight.
- Verify foil facing is intact, wrinkle-free, and reflective surface unbroken.
- Inspect for sagging, loose fasteners, or unsealed edges.
- Check penetrations (pipes, ducts, bolts) are sealed with additional strips/tape.
- Confirm workmanship meets approved drawings and manufacturer's guidelines.

E. Documentation & Handover

- Collect and verify manufacturer's warranty certificates.
- Review and file compliance certificates and third-party test reports.
- Check completeness of as-built drawings showing insulation layout.
- Sign off quality checklists jointly with contractor before final acceptance.

13. Measurement

The work shall be measured in **square metres (m^2)** of insulation provided and fixed in place, measured as the net covered area of roof or wall surface, excluding overlaps, wastage, and sealing accessories. No extra payment shall be made for laps, wastage, cutting, sealing tapes, or fixing arrangements.

14. Rate

The rate shall include complete cost of providing and fixing factory-laminated XLPE insulation sheets including supply, transport, storage, handling, cutting, shaping, fixing, sealing with tapes, fasteners, GI wires, scaffolding, machinery, labour, testing, documentation, warranties, and all incidentals to complete the work in all respects as per specifications and directions of the Engineer-in-Charge.

CHAPTER- IV : Vacuum Dewatering Flooring

1.0 Vacuum Dewatering Flooring

This specification covers the complete execution of Vacuum Dewatered Concrete Flooring (VDF), including preparation of panels using mild steel channels, placing and compacting design mix concrete, performing vacuum dewatering using approved machinery, finishing the surface with mechanical trowel/trimix machines, forming and sealing joints, installing dowel plates, providing isolation joints, curing and protecting the finished slab.

The flooring thickness shall be **75 mm to 150 mm**, and the work shall be executed strictly as per drawings and the directions of the Engineer-in-Charge.

2.0 Applicable Standards

The work shall comply with the latest editions of the following standards:

- IS 456 – Code of Practice for Plain & Reinforced Concrete
- IS 383 – Specification for Aggregates
- IS 9103 – Concrete Admixtures
- IS 1199 / IS 516 – Testing of Fresh & Hardened Concrete
- CPWD Specifications 2019
- Manufacturer technical literature for PU/Polysulphide sealants

3.0 Materials (Paragraph + Points)

All materials used in the work shall be of approved quality.

Cement: OPC 43/53 grade as per IS standards.

Aggregates: Natural source, well graded, conforming to IS 383.

Admixtures: IS 9103 compliant, non-chloride, compatible with cement.

Water: Potable, free from impurities.

Channels: Straight MS channels set to correct line, level and slope.

VDF Equipment: Filter mat, top mat, suction lines, vacuum pump and mechanical/ride-on trowels.

Dowel Plates: Diamond Dowel Plates of **100 × 100 × 6 mm @ 450 mm c/c**, with PVC sleeve at one end.

Sealants:

- PU Sealant (Shore A 28–45) for construction/control joints.
- Polysulphide (Shore A 15–20) for isolation joints.
- Isolation Joint Filler: 10 mm (walls) and 20 mm (columns), full-depth, compressible type.

4.0 Workmanship & Execution (Paragraph Format)

The subbase shall be prepared to achieve 98% MDD and finished to a tolerance of ± 10 mm over a 3 m straightedge. Channels shall be fixed firmly to form panels of approved dimensions. Concrete shall be design-mixed, workable, pumped/placed continuously and fully compacted with vibrators. Immediately thereafter, vacuum dewatering shall be performed using filter mats, top mats and suction lines until surface sheen disappears. Mechanical trowelling shall then be carried out in successive passes to obtain a smooth, dense and closed surface. Groove cutting for joints shall be done at designated intervals within 4–24 hours, followed by cleaning, insertion of backer rods and sealing as specified. Dowel plates shall be installed using alignment jigs to ensure correct positioning. Isolation joints shall be formed at walls and around columns and sealed with polysulphide. Full curing shall be applied for minimum 7 days, and the surface shall be protected from premature traffic or damage.

5.0 Specific Execution Requirements (Point-wise)

5.1 Subbase Preparation

- Compaction to 98% MDD.
- Surface tolerance ± 10 mm over 3 m.
- Remove soft spots before concreting.

5.2 Concrete Placing

- Use approved design mix as per IS 10262.
- Slump suitable for VDF: 110–130 mm.
- Concrete pumping included.

5.3 Vacuum Dewatering

- Spread filter mat uniformly.
- Cover with top mat; attach suction lines.
- Dewater until sheen disappears uniformly.
- Avoid over-dewatering to prevent surface cracking.

5.4 Mechanical Trowel / Trimix Finish

1. Begin trowelling once concrete stiffens uniformly.
2. Apply multiple passes for closed, dense finish.
3. No burns, chatter marks or undulations permitted.

5.5 Control & Construction Joints

- Cut grooves within 4–24 hours.
- Depth: $\geq 1/3$ rd slab thickness.
- Clean groove; insert backer rod.
- Fill top 10 mm with PU sealant (Shore A 28–45).

5.6 Isolation Joints

- Provide 10 mm wall filler, 20 mm column filler.
- Seal top 10 mm with polysulphide (Shore A 15–20).

5.7 Dowel Plates

- Provide 100 × 100 × 6 mm dowels @ 450 mm c/c.

- One end sleeved with PVC for longitudinal movement.
- Align using dowel setting jigs.

5.8 Curing & Protection

- Minimum 7 days continuous curing.
- Prevent waterlogging, staining or premature loading.

6.0 QA/QC Requirements (Hybrid Format)

Fresh Concrete Tests:

- Slump test (IS 1199): Every 20 cum
- Temperature: Every load
- Density: As directed

Hardened Concrete Tests:

- Cube strength (IS 516): As per IS frequency
- Additional NDT tests if required

Joint Quality Verification:

- Saw-cut depth as per design
- Correct Shore A hardness (PU: 28–45; Polysulphide: 15–20)
- No raveling or misalignment
- Proper sealing and bonding

7.0 Measurement

VDF flooring shall be measured in square metres of finished surface area. Concrete, reinforcement, dowel plates, joint sealants, backer rods, isolation joint filler, and any associated works not explicitly included in the VDF item shall be measured and paid under their respective BOQ items.

8.0 Rate

The rate for Vacuum Dewatered Concrete Flooring (VDF) shall include the complete cost of providing and fixing mild steel channels for forming the concrete panels to the required size, carrying out vacuum dewatering using approved equipment including filter mats, top mats, suction lines and vacuum pump, and finishing the surface by mechanical trowel or trimix machine to achieve the specified smooth, dense, and closed industrial finish. The rate shall also include the cost of cutting groove lines to the required alignment and depth (excluding sealing). The use of all labour, tools, plants, machinery, consumables and supervision necessary for executing the work, and all incidental operations required to complete the flooring in accordance with the specifications and as directed by the Engineer-in-Charge. If any separate item is executed for cutting or filling and is available in BOQ as per direction of engineer incharge, the amount of cutting attributable to the VDF work shall be recovered from the VDF item at the applicable rate as per the Corporation's approved analysis of rates.

The rate shall not include the cost of design mix concrete, cement, aggregates, admixtures, batching, mixing, conveying, pumping, curing, reinforcement, centering, shuttering, dowel plates, PVC sleeves, joint sealing materials such as PU sealant and polysulphide sealant, backer rods, or isolation joint filler boards, all of which shall be measured and paid separately under the corresponding BOQ items.

Chapter -V : CC Paver blocks - circulation /parking bay area in CW Complex

CEMENT CONCRETE PAVER BLOCKS FOR CIRCULATION AREA

0.0 TITLE & SCOPE

This Particular Specification covers the supply, testing, delivery, laying, compaction, joint filling and finishing of factory-made, mono-layer concrete paver blocks of Grade M40 and M50 for heavy-duty pavements in container yards, circulation roads, docking areas and industrial platforms as specified in drawings/BOQ or directed by Engineer in charge. The item shall be executed strictly in accordance with the Bill of Quantities, approved drawings and this specification. Unless otherwise stated or permitted by Engineer in charge, the pavers shall be rectangular or approved I-shape in work dimensions 100 × 200 × 100 mm (thickness 100 mm), with chamfered edges, manufactured on fully automatic hydraulic vibro-presses with mechanical compaction in steel moulds. The work includes 30–35 mm compacted bedding of coarse sand, plate compaction to achieve interlock and seating, joint filling with clean dry sand, trimming/cutting at edges, sweeping and removal of excess sand, and all labour, materials, equipment and incidentals necessary for completion.

1.0 APPLICABLE STANDARDS AND CONFLICT HIERARCHY

The following conflict hierarchy shall apply in the order of precedence: (a) CWC's (CWC/Owner's) approved Technical Specifications and drawings; (b) NBC 2016 and relevant Indian Standards; (c) WDRA/WAI functional guidance as applicable; (d) CPWD Specifications 2019 (Vol. I & II) including correction slips; (e) International/industry best practices where Indian Standards are silent and as approved by the Engineer-in-Charge (CORPORATION ENGINEER).

Primary standards: IS 15658:2021 (Concrete Paving Blocks—Specification, First Revision) or IS 15658:2021 with amendments where specifically called in BOQ; IS 383 (Aggregates); IS 2386 series (aggregate testing); IS 455/IS 269/IS 8112/IS 12269 (cements); IS 9103 (admixtures); IS 1200 (measurement); IRC:SP-63 as good practice for ICBP detailing; CPWD 2019 for general workmanship. Where there is any divergence between editions, the latest published BIS edition shall be adopted unless the BOQ explicitly fixes otherwise and the CORPORATION ENGINEER concurs.

2.0 MATERIALS

- 2.1 Cement shall be OPC 43/53, conforming to relevant IS, from a single approved source for a lot.
- 2.2 Aggregates shall conform to IS 383, clean, hard, durable, well graded and free from deleterious matter.
- 2.3 Water shall be clean and potable.
- 2.4 Admixtures shall conform to IS 9103; chlorides are not permitted.
- 2.5 Pigments for coloured pavers shall comply with latest IS 15658 clauses; zinc compounds and lead pigments are not permitted.
- 2.6 Jointing sand shall be clean, dry, well-graded natural/crushed sand with 0–2 mm grading; bedding sand shall be coarse, washed, free of silt/clay; both shall be non-reactive.
- 2.7 Paver manufacturing: fully automatic hydraulic vibro-press with mechanical compaction in steel moulds. Pavers shall be mono-layer as specified in BOQ or twin layer when not specified and provided wearing layer thickness complies with latest IS 15658.

3.0 PRODUCT REQUIREMENTS (FACTORY)

TECHNICAL SPECIFICATIONS OF WORKS

- 3.1 Grade & thickness. Pavers shall be Grade M40 or M50 as listed in BOQ, thickness 100 mm unless otherwise shown.
- 3.2 Dimensions & tolerances. Work dimensions 100 × 200 × 100 mm (or approved I-shape of equivalent plan area). Tolerances and arris/chamfer shall comply with latest IS 15658 Table on dimensions (width/length $\pm 2/\pm 3$ mm, thickness $\pm 3/\pm 4$ mm as applicable), aspect ratio ≤ 4 . Wearing layer thickness (for two-layer pavers) as per IS 15658.
- 3.3 Water absorption. Average $\leq 6\%$ by mass; individual $\leq 7\%$ (latest IS 15658).
- 3.4 Compressive strength. Average and minimum 28-day compressive strength shall meet grade designation (M40 = 40 MPa; M50 = 50 MPa) after applying thickness/arris correction factors per latest IS 15658.
- 3.5 Abrasion resistance. To be tested per latest IS 15658 (Annex method); limits shall be as approved by CORPORATION ENGINEER for heavy-duty use and stated in the inspection request; manufacturer shall declare typical abrasive wear.
- 3.6 Marking. Each strapped pack shall bear manufacturer identification, grade, thickness and date of manufacture; ISI mark/licence where available.

4.0 WORKMANSHIP & EXECUTION METHODOLOGY

- 4.1 Sub-base/base. Pavement layer works (GSB/WMM/DLC/lean concrete) shall be as per road works drawings/specifications and are measured under separate items. Tolerances for the base course finished surface shall be within ± 10 mm under a 3 m straightedge. Edge restraints/kerbs and haunching shall be completed before laying pavers.
- 4.2 Bedding layer. Provide and compact a 30–35 mm thick bedding of coarse, well-graded sand, screeded to true line and level. The bedding shall not be disturbed by traffic prior to laying pavers. Screed rails shall be removed progressively and voids filled and re-screeded.
- 4.3 Laying. Pavers shall be laid from straight lines, typically in 45° or 90° herringbone pattern for rectangular units in heavy-duty zones to maximise interlock; orientation shall be as per drawings. Maintain uniform joint gaps of 2–4 mm using spacer nibs. Cut pieces shall be not less than one-third of a full unit in plan; use a paver splitter or wet saw to obtain neat cuts.
- 4.4 Compaction & joint filling. After an initial run of a plate compactor, spread clean dry jointing sand and broom into joints. Compact with a high-frequency plate compactor (centrifugal force typically $\geq 18\text{--}20$ kN for 100 mm units; frequency ≥ 75 Hz) making at least two orthogonal passes. Re-fill joints and re-compact until joints are full and pavers are fully seated. Excess sand shall be swept off. No heavy vehicle traffic shall be permitted until completion of compaction and joint filling.
- 4.5 Surface levels & drainage. Finished surface shall conform to drawings with crossfall/camber to drain without ponding. Level differences between adjacent units shall not exceed 2 mm under a 300 mm straightedge in trafficked areas.
- 4.6 Protection. Completed work shall be protected from contamination by mud, cement slurry and traffic until accepted. Damaged or rocking units shall be lifted, bedding corrected and units re-laid and compacted.

5.0 QA/QC REQUIREMENTS, TEST METHODS & SAMPLING

- 5.1 General. QA/QC shall comply with latest IS 15658, CPWD and this specification. Stages shall be categorised as Review (R), Witness (W) and Hold (H). No supply or laying shall proceed beyond a Hold Point without written clearance of the CORPORATION ENGINEER.

TECHNICAL SPECIFICATIONS OF WORKS

TABLE A – FACTORY QA FOR PAVERS (PER LOT)

Sl.	Property	Requirement	Reference	Sampling	Responsibility (Submit/Witness/Accept)
A1	Dimensions, tolerances, arris/chamfer	Within IS 15658 limits	IS 15658 (Dimensions Table)	4 (16) units as per IS sampling	Manufacturer submits; CORPORATION ENGINEER accepts
A2	Water absorption	Avg $\leq 6\%$, individual $\leq 7\%$	IS 15658 Annex C	3 units	Manufacturer/NABL lab; CORPORATION ENGINEER accepts
A3	Compressive strength (28d)	M40 ≥ 40 MPa; M50 ≥ 50 MPa; individual \geq as specified in latest IS15658; apply correction factors for thickness/arris	IS 15658 Annex D & Correction factor table	8 units	Manufacturer/NABL lab; CORPORATION ENGINEER accepts
A4	Abrasion resistance (declared)	As approved by CORPORATION ENGINEER for heavy-duty use	IS 15658 Annex E	3 units	Manufacturer/NABL lab; CORPORATION ENGINEER reviews
A5	Visual/defects, colour/texture	No cracks/flaking; colour match to approved sample	IS 15658	Lot visual	Manufacturer; CORPORATION ENGINEER accepts

TABLE B – SITE QA FOR LAYING WORKS

Sl.	Activity	Check	Frequency	Category	Responsibility
B1	Base surface	Level tolerance ± 10 mm over 3 m; clean & sound	Each panel	H	Contractor/CORPORATION ENGINEER
B2	Bedding sand	Grading & moisture; compacted thickness 30–35 mm	Each 500 m ²	W	Contractor/CORPORATION ENGINEER
B3	Pattern & lines	Herringbone/approved pattern; joints 2-4 mm	Continuous	W	Contractor/CORPORATION ENGINEER
B4	Compaction	Plate compactor passes & coverage	Each 250 m ²	W	Contractor/CORPORATION ENGINEER
B5	Jointing sand	Dry, clean, joints fully filled after final pass	Each panel	W	Contractor/CORPORATION ENGINEER
B6	Levels & smoothness	Crossfall/camber; 2 mm under 300 mm straightedge	Each panel	H	Contractor/CORPORATION ENGINEER

TECHNICAL SPECIFICATIONS OF WORKS

TABLE C – ACCEPTANCE & SAMPLING (REFERENCE)

Item	IS 15658 Clause	Minimum sample numbers (typical)	Acceptance notes
Dimensions & tolerances	6.2.2 & Annex B	As per IS Table 4	Within tolerance for length/width/thickness, arris and squareness
Water absorption	6.2.4 & Annex C	Avg of 3 units	Avg $\leq 6\%$; any unit $\leq 7\%$
Compressive strength	6.2.5 & Annex D	8 units	Grade average meets the criteria as mentioned in IS 15658:2021; apply correction factors for 100 mm & chamfer
Abrasion resistance	6.2.6 & Annex E	3 units	Limits as approved/declared for heavy duty

6.0 MEASUREMENT

Paver surfacing shall be measured in square metres of finished area on plan. The rate shall include supply of factory-made pavers, all QA sampling/testing, delivery, storage, laying to line/level/pattern, cutting/trimming, bedding sand, jointing sand, plate compaction, sweeping and cleaning. Edge restraints/kerbs, sub-base/base layers, drainage and geotextiles (if any) shall be measured separately unless otherwise specified.

7.0 PAYMENT

Payment shall be as per BOQ MR-24(a). No extra payment shall be made for pattern, colour, cutting of specials, ISI marking, pre-dispatch and third-party testing, QA records, or incidental protection. Defective areas shall be rectified at the Contractor's cost to the satisfaction of the CORPORATION ENGINEER.

8.0 EHS & HANDLING

Packs shall be stored on firm level ground, not more than two pallets high, protected from contamination. Mechanical lifting shall avoid damage to arrises. Cutting shall be by splitter or wet saw with dust suppression. Work areas shall be barricaded to control traffic.

9.0 NOTES & OPTIONS

- 9.1 Where M50 grade is specified in drawings/BOQ for very heavy duty or crane pads, all provisions of this specification apply with grade substitution and the same dimensional tolerances.
- 9.2 Where two-layer pavers are used, the wearing layer thickness and material shall comply with latest IS 15658; verify layer bond.
- 9.3 Permeable paver systems, geotextiles, geogrids and polymeric joint stabilisers are outside the scope unless included in the BOQ; if used, submit manufacturer method statements and approvals.

10.0 SUBMISSIONS

Before supply: manufacturer credentials, ISI licence copy, mix design summary, QA plan, routine test certificates for each lot (water absorption, compressive strength with correction factor applied, abrasion test declaration), approved colour/pattern samples. During execution: daily laying logs, base and bedding checks, compaction records, non-conformance and rectification logs, as-built area records.

CHAPTER- VI : Road works in CW Complex

These works shall be carried out for restoration and upgradation of existing roads in Complex exhibiting distress such as raveling, potholes, edge breaks, depressions, and erosion of bituminous layers and where the underlying WMM/WBM base is generally intact.

1.1 The scope

- i. The scope of works normally includes supply of all needful material and laying the same including all ancillary, contingent, incidental works, supplies, services with T&P, machinery etc and shall not be limited to the key component as described in below paragraphs:
 - Surface preparation, cleaning and pre-treatment of the entire carriageway including trimming, scraping and boxing of potholes in sizes up to 2.0 m², priming, tack coating, and preparation of the road surface for bituminous overlay.
 - Pothole restoration using **cold bituminous ready-mix** or **WMM/WBM**, depending on depth, as specified before bituminous overlay.
 - Profile correction and strengthening using **Dense Bituminous Macadam (DBM)**.
 - Laying Tack coat and then laying top wearing course using **Bituminous Concrete (BC)**.
 - Associated works including drainage improvement, berm trimming and finishing.
 - Quality assurance/testing as mentioned in this document in line with MoRTH and CPWD norms.
- ii. These specifications supplement CPWD and MoRTH specifications. Should any discrepancy arise, the following order of precedence shall apply:
 - CWC Technical Specifications.
 - MoRTH Specifications
 - IRC Standards
 - CPWD Specifications 2019
 - Manufacturer's Recommendations
- iii. Unless otherwise specifically mentioned in contract price schedule /BOQ, Latest revision including all amendments of Following STANDARDS shall be applicable to these works and procedures/provisions mentioned therein shall be followed.
 - a) **Indian Roads Congress (IRC)-Latest revision including all amendments.**
 - IRC:37 – Design of Flexible Pavements
 - IRC:116 – Ready-Made Cold Bituminous Patching Mix
 - IRC SP:100 – Use of Cold Mix Technology
 - IRC:81 – Field Density (Sand Replacement Method)
 - IRC SP:42 – Road Drainage
 - b) **MoRTH Specifications.**
 - Section 300 – Earthwork
 - Section 400 – GSB/WMM
 - Section 500 – Bituminous Pavements
 - Clause 503 – Prime & Tack Coat
 - Clause 507 – Dense Bituminous Macadam

TECHNICAL SPECIFICATIONS OF WORKS

- Clause 509 – Bituminous Concrete
- Section 1100 – Traffic Safety and Control
- c) **CPWD Specifications 2019 (Vol. II – Roads)**
 - Clause 16.13 – WBM/WMM
 - Clause 16.17 – Bituminous Macadam
 - Clause 16.29- Prime Coat
 - Clause 16.30 – Bituminous Concrete
 - Clause 16.31 – Tack Coat
- d) **BIS Standards**
 - IS:73–2021 – Bitumen (VG Grades)
 - IS:8887 – Bitumen Emulsion
 - IS:2720 (Series) – Compaction, Density, Soils

1.2 MATERIALS

1.2.1 Bitumen (VG-40)

- i. Bitumen shall be paving grade **VG-40**, conforming to **IS:73–2021**. Material shall be procured only from approved refinery sources (IOCL, HPCL, BPCL, MRPL or equivalent).
- ii. Bulk storage, heating, and handling shall conform to MoRTH cl 111, 501 & 502.
- iii. Bitumen shall not be overheated beyond **170°C** and shall not be reheated more than twice.
- iv. Each batch shall be accompanied with **Manufacturer's (Refinery) Test Certificate** specifying consistency, viscosity, flash point, and softening point.

1.2.2 Bitumen Emulsion (BE)

- i. BE For prime coat shall be **SS-1 / SS-1h grade and confirming IS:8887**.
- ii. And for tack coat, it shall be **RS-1 / RS-1h** grade and confirming as per IS:8887.
- iii. Emulsion must be uniform, free from lumps, and shall not break before spraying.

1.2.3 Aggregates for DBM and BC

- i. Aggregates shall be machine-crushed, angular, free of clay and deleterious material, conforming to MoRTH cl 507.2 and 509.2.
- ii. **Physical properties shall be in compliance of below requirement:**

Property	Requirement
Los Angeles Abrasion	≤ 30%
Aggregate Impact Value	≤ 24%
Flakiness Index	< 25%
Water Absorption	< 2%

- iii. It's Grading shall conform to
DBM: **Grading 1 or 2** (MoRTH Table 500-8) as per JMF
BC: **Grading 2 or 3** (MoRTH Table 500-17) as per JMF

1.2.4 Dense Bituminous Macadam (DBM)

TECHNICAL SPECIFICATIONS OF WORKS

- i. DBM shall conform to **MoRTH Clause 507**, with binder content and grading approved through a Job Mix Formula (JMF).
- ii. DBM shall be produced in a **batch-type Hot Mix Plant** of minimum capacity 100–160 TPH.
- iii. Filler shall conform to MoRTH 507.2.2.
- iv. Binder shall be VG 40 grade and aggregate Grading shall be in compliance of MORTH Table 500-8

1.2.5 Bituminous Concrete (BC)

- i. BC shall conform to **MoRTH Clause 509**, with grading as per MoRTH Table 500-17 and binder content approved through JMF.
- ii. BC shall be produced in a **batch-type Hot Mix Plant** of minimum capacity 100–160 TPH.
- iii. Only machine-laid BC using a self-propelled mechanical paver finisher with sensor controls is permitted.

1.2.6 Ready-Made Cold Bituminous Mix (MR-3)

- i. Cold mix shall conform to **IRC:116** and **IRC SP:100**.
- ii. **Approved Makes:**
STP ShaliPatch®; EZ Street®; BitChem® Cold Mix Or equivalent as approved by Engineer-in-Charge.
- iii. Properties of cold mix:
 - Premixed, sealed, ready-to-use
 - Residual binder: **3.0% ± 0.3%**
 - Workability at ambient temperature
 - Shelf life minimum **3 months**

1.2.7 WMM / WBM for Deep Repairs

- i. Material shall conform to MoRTH 406 and CPWD 16.13.
- ii. Compaction requirement: **98% MDD (Modified Proctor)**

1.3 Tools & Plants (T&P)

The following equipment shall be deployed by the contractor as and when required to lay the material and execute the works:

- Hot Mix Plant (Batch Type)
- Mechanical Paver Finisher with Electronic Sensor
- Bitumen Pressure Sprayer
- Tandem Vibratory Roller (8–10 T)
- Pneumatic Tyred Roller
- Plate Compactor (for cold mix)
- Water Tanker with Sprinkler
- Air Compressor
- Cutting Saw
- Trucks & Tippers
- Thermometers (Bitumen + Mix + Mat)
- 3 m Straightedge

- Camber Boards, Templates, Depth Gauges

1.4 WORKMANSHIP & EXECUTION

1.4.1 Surface Preparation before overlay/recarpeting with Bituminous top.

- The surface shall be cleaned of all dust, loose particles, debris, vegetation, standing water and foreign matter using brooms, brushes, mechanical sweeping and air blowers.
- Loose and disintegrated bituminous layers shall be scraped off.
- Edges shall be trimmed up to **1.0 m width** for uniformity.
- Potholes up to plan area shall be cut to regular shapes with vertical faces using mechanical cutters.
- Exposed granular surface (WMM/WBM) shall be primed with SS-1/SS-1h at $0.7-1.0 \text{ Kg/m}^2$ (Emulsion Prime coat).
- Emulsion prime coat shall be preferred in case of road recarpeting where existing WMM is intact in complex over cutback prime coat.
- Existing bituminous surface shall be tack-coated with RS-1 at **0.25–0.30 kg/m²**.

Note: Post surface preparation -pot holes restoration shall be carried out by filling with cold mix, DBM or WMM etc which shall be decided based on the depth of potholes. The treatment methods is described in following paragraphs.

1.4.2 Pothole Restoration

- Potholes of Depth ≤ 50 mm (shallow -potholes):** Such depressions will be levelled during DBM overlay in one go and no separate treatment required.
- Potholes of Depth > 50 mm and ≤ 150 mm (moderate size potholes)**
 - After preparation as described in 3.1 above, cold mix shall be placed in layers **≤ 50 mm** thick.
 - Each layer shall be compacted using a plate compactor or a light roller to obtain a firm, dense patch.
 - Finished surface shall be flush with adjoining pavement.
 - Cold mix shall be allowed to settle under traffic for minimum 24 hours before DBM overlay. Any settlement observed shall be rectified at contractor's cost.
 - Cold mix shall be measured in **MT** based on actual supply & consumed in the works.
- Potholes of Depth > 150 mm (Deep potholes)**
 - The treatment methods of such potholes shall include repacking of Potholes using WMM/WBM -based on original subbase course materials after Excavating the same up to a firm base. All loose materials shall be removed.
 - Excavated area shall be filled with WMM/WBM in layers of ≤ 100 mm.
 - Compaction of filled material to be done to **98% MDD**.
 - Apply prime coat and tack coat before subsequent DBM/BC overlay.

TECHNICAL SPECIFICATIONS OF WORKS

1.4.3 Dense Bituminous Macadam (DBM)

- i. *All procedures given in CPWD specifications of works CL 16.17 & MoRTH 507 shall be followed.*
- ii. DBM shall be prepared at controlled temperature (**150–165°C**) and transported in covered tippers. It shall be laid at **140–160°C** and Compaction shall commence while mix temperature is above 130°C and shall be completed before the mix temperature falls below 100°C.
- iii. DBM shall be laid only with mechanical paver. DBM shall be laid in normal thickness of 75–100 mm unless otherwise given in engineering drawings. It shall include profile correction course.
- iv. Compaction shall be done using vibratory + pneumatic rollers till specified density is achieved.
- v. No feather edging will be allowed below **25 mm** compacted thickness.

1.4.4 Tack Coat Between DBM & BC

- i. *All procedures given in CPWD specifications of works CL and CPWD DSR 2023 item number 16.31 & MoRTH 503 shall be followed.*
- ii. Surface must be completely clean, dry and dust-free before tack coat is applied.
- iii. Emulsion shall be of RS-1 / RS-1h grade to be spread at Rate: **0.25–0.30 kg/m²**.
- iv. Uniform spraying via calibrated distributor shall be ensured and Tack shall break (turn brown) before placing BC.

1.4.5 Bituminous Concrete (BC)

- i. *All procedures & Provisions given in CPWD specifications of works CL 16.30 & MoRTH 509 shall be followed.*
- ii. BC shall be mixed at temperature 150–165°C and shall be laid in thickness 30–40 mm at 140–160°C and Compaction shall commence while mix temperature is above 130°C and shall be completed before the mix temperature falls below 110°C.
- iii. Surface evenness shall not exceed **4 mm** under a 3 m straightedge.
- iv. Joints shall be butt-joint type. The cold edge shall be **heated using LPG torch**, tack coat applied on the vertical face, and the new hot mix shall **overlap 25–30 mm** before compaction.

Note:

- **For works where total bituminous quantity is less than 800 MT, the contractor shall arrange mix from an existing approved batch-type HMP only. No claim due to smaller quantity shall be entertained.**
- **Only MoRTH-compliant batch-type Hot Mix Plants (stationary or mobile) shall be permitted. Mobile drum-mix plants, improvised heating drums, mini portable plants, or any non-batch type hot mix plant shall not be used for DBM or BC production.**
- Engineer-in-Charge or his authorised representative shall inspect the HMP, storage tanks, temperature control system, and batching controls. Only after approval, the plant shall be permitted for production.

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- Paver screed shall be pre-heated before starting BC/DBM work. And Pre-heating shall continue until screed temperature reaches at least 120°C to prevent drag marks and tearing.
- *Compaction shall be done using vibratory + pneumatic rollers and then Finish Roller.*
- Segregated or cold mix shall be rejected.
- DBM/BC to be laid /used preferably within **2 hours** of production ensuring temperature does not falls below **140 °C** and Fully insulated, tarpaulin-covered tippers with temperature monitoring devices to be used for maintaining & monitoring of desired temperature if haul distance from production to site of laying > 25 km or time > 90 minutes.
- Finish rolling on BC shall be done only in static mode. Vibratory mode shall not be used on BC layers ≤ 40 mm.

1.4.6 Road Camber & Crossfall

The camber shall be oriented toward roadside drains. Transverse drainage across roads shall be avoided. Typical Recommended Camber / Crossfall and Longitudinal Slopes of roads in warehouses shall be as per Table below unless otherwise specifically mentioned in Engineering drawings or directed by Engineer in charge.

Type of Road Work	Surface Type	Camber / Crossfall	Longitudinal Slope	Remarks / Applicability
New Construction	PQC / CC Roads	2.0% (1 in 50) — Standard 2.5% (1 in 40) — High rainfall regions	0.5% – 1.0% (Preferred 1.0%)	Recommended for warehouse aprons, circulation roads, docks. Ensures rapid drainage.
New Construction	BT / Bituminous Roads	2.5% (1 in 40) — Standard 3.0% (1 in 33) — High rainfall	0.5% – 1.0% (Preferred 0.75% – 1.0%)	As per MoRTH & IRC SP:42. BT surfaces need slightly higher camber for faster runoff.
Existing Roads – Overlays / Rehabilitation	PQC / CC Roads	Maintain if 1.5% – 3.0% Else correct to 2.0%	0.5% – 1.0%	If slope <0.5%, provide drop chambers, sumps or intermediate drains.
Existing Roads – Overlays /	BT Roads	Maintain existing camber if 2.0% – 3.0% Else correct to	0.5% – 1.0%	For eroded BT surfaces, camber

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Rehabilitation		2.5%		correction with profile correction layer is mandatory.
Docking Area Aprons (Heavy Truck Zones)	PQC / CC Roads	2.0% – 2.5%	0.75% – 1.25%	Higher runoff required due to heavy axle loads. Water stagnation strictly prohibited.
High Rainfall (>75 mm/hr), Low Natural Slope Areas	PQC / CC Roads	2.5%	1.0% – 1.25%	Use of saucer drains & trench drains mandatory near docks.
High Rainfall (>75 mm/hr), Low Natural Slope Areas	BT	3.0%	1.0% – 1.25%	Higher crossfall essential; BT surface deteriorates faster under stagnant water.
Low-Lying Warehouse Complexes (Outfall Higher Than Site)	PQC / CC Roads/BT	As per above table	Minimum 0.5%, maintain positive gradient	Use shallow drains + sump + pump as per CWC drainage philosophy.
Internal Lanes (Forklift / Light Vehicles)	PQC / CC Roads	1.5% – 2.0%	0.5% – 1.0%	Lower camber for forklift safety.
Peripheral Roads / Boundary Roads	BT	2.5% – 3.0%	0.5% – 1.0%	Ensure quick discharge into peripheral drains.

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1.5 CC Pavement:

- i. In locations subjected to heavy braking, sharp turning, slow-speed manoeuvring or repetitive concentrated axle loads—such as warehouse entrances, exit gates, internal sharp bends, truck turning radii, intersections, weighbridge approaches and loading/ unloading aprons—the pavement shall preferably be constructed in Cement Concrete unless otherwise specifically given in Contract BOQ or engineering drawings for laying in bituminous layers.
- ii. All materials, workmanship, joints, dowels (where applicable), curing and finishing shall conform to CPWD Specifications 2019, Vol-2 (Roads), Clauses 6.1 to 6.6 and related provisions for CC pavements, and MoRTH Clauses 601, 602 and 602.5 for concrete roads.
- iii. Design & Construction requirement shall be as per Table below.

S.No.	Location / Condition	Requirement	Technical Provisions
1.1	Warehouse main entrance (inbound/ outbound)	CC pavement	<ul style="list-style-type: none">• RCC/PQC M30 or NM 1:1:2 or richer, thickness 200 mm, over M10 -PCC 100 mm or as specified in Contract BOQ.• Reinforcement in Steel Mesh: T10 @ 200 mm c/c both ways, placed at top 1/3 depth of slab and At edges, provide extra T12 bars @ 150 mm c/c for width 600 mm. Chair bar height to ensure exact cover of 75 mm (bottom) and 50 mm (top).• GSB-Grade I (CBR \geq 30) in 150 mm thickness over well compacted subgrade Prepared & compacted to \geq97% MDD and Minimum design CBR = 8% (if lower, reinforced GSB of 200 mm shall be used).
1.2	Sharp bends (turn radius < 15 m)	CC pavement	<ul style="list-style-type: none">• Construction of structure Crust as above in 1.1• widened pavement on outer radius by 1.0–1.5 m for truck off-tracking.
1.3	Internal turning radius near docks / warehouse corners	CC pavement	<ul style="list-style-type: none">• Construction of structure Crust as above in 1.1• 1.2–1.5 m flared widening; surface broom-textured to avoid skidding.
1.4	Weighbridge approaches (5 m before & after platform)	CC pavement	<ul style="list-style-type: none">• Construction of structure Crust as above in 1.1• dowelled expansion joint at weighbridge interface;

- iv. Unless otherwise specified in engineering drawings, Joints and Groove cutting and sealing shall be as per specifications given in Table below.

TECHNICAL SPECIFICATIONS OF WORKS

S.No.	Type of Joint	Location	Specification
2.1	Expansion Joint	At intersections with steel structures, weighbridge edges, building plinths	Joint width 20 mm, filled with closed-cell neoprene; sealant: Polysulphide / PU.
2.2	Contraction Joint	Every 4.0–4.5 m panel in CC pavement	Groove 5 mm wide × 25 mm deep; saw-cut within 24 hours; sealed with PU sealant.
2.3	Construction Joint	Interruptions in daily concreting	Vertical joint with dowels 32 mm dia × 450 mm @ 300 mm c/c; half-length de-bonded.

v. Surface Finish:

- Broom finish perpendicular to traffic direction shall be provided and No trowel burning permitted.
- Surface tolerance- 3 m straightedge gap ≤ 4 mm
- Slab level tolerance ±5 mm.

1.6 Quality Acceptance Criteria.

- **QA/QC TEST FREQUENCY & ACCEPTANCE CRITERIA** for these works shall be as per **TABLE below**. For detailed procedure and compliances relevant section of *MoRTH, IRC & CPWD latest specifications to be followed*.

S. No.	Item / Layer	Test	Standard Clause	Frequency	Acceptance Criteria
1	Prime Coat	Application rate check	MoRTH 503	1 per 500 m ²	0.7–1.0 kg/m ² (emulsion)
2		Surface dryness & cleanliness	Visual	Continuous	Surface dry, dust-free
3	Tack Coat	Application rate check	MoRTH 503	1 per 500 m ²	0.25–0.30 kg/m ²
4		Break (curing) check	Visual	Continuous	Brownish break, non-tacky
5	WMM/WBM	Field Density (Sand Replacement)	IS:2720 (Part 28), MoRTH 406	1 per 200 m ²	≥ 98% MDD
6		Moisture content	IS:2720	1 per 200 m ²	OMC ± 1%
7		Aggregate grading	MoRTH 406	1 per 100 m ³	As per MoRTH Table

TECHNICAL SPECIFICATIONS OF WORKS

					400-10
8	Cold Mix Patching	Residual binder content	IRC:116	1 per lot	3.0% ± 0.3%
9		Compacted thickness	Vernier / Depth Gauge	1 per patch	As per approved depth
10	DBM	Bituminous mix temperature	MoRTH 507	Every truck	> 140°C at placing
11		Binder content	IS:1203	1 per 50 MT	As per JMF
12		Aggregate grading	IS:2386	1 per 50 MT	As per JMF
13		Core density	MoRTH 507	1 per 300 m ²	≥ JMF target -1.0%
14		Thickness	Core / Dipstick	1 per 200 m ²	±6 mm
15	BC	Mix temperature	MoRTH 509	Every truck	> 140°C at placing
16		Core density	MoRTH 509	1 per 200 m ²	≥98% of Marshall
17		Binder content	IS:1203	1 per 40 MT	As per JMF
18		Surface evenness	3 m straightedge	1 per 200 m ²	≤ 4 mm
19	General	Traffic safety compliance	MoRTH 112	Continuous	Proper signs, cones, lights
20		Calibration of paver / sprayer	OEM/Engineer approval	Once before start	Mandatory
21	CC Pavement	Various Test on Concrete & Steel Quality	As given and approved in Field Quality Plan for concrete works		

1.7 MEASUREMENT

Activity/works	Reference	Unit of measurement	Measurement for payment.
Surface Preparation	NS-Item; as given in Contract BOQ. (Schedule-I)	Sqm	Area of surface treated.
Pothole Restoration using Cold Mix	MR-Item; as given in Contract BOQ. (Schedule-II)	MT	Actual weight of Cold mix bought at site and consumed in works.

TECHNICAL SPECIFICATIONS OF WORKS

Pothole Restoration through WBM packing	DSR item; as given in Contract BOQ. (Schedule-I)	Cum	Compacted volume of Potholes treated.
Prime coat /Tack coat prior to DBM overlays.	NS-Item; as given in Contract BOQ. (Schedule-I)	-covered in Surface preparation / treatment item.	No Exclusive measurement; Area of Surface treated / prepared shall be covered by this activity too.
DBM	MR-Item; as given in Contract BOQ. (Schedule-II)	MT	Actual weight of DBM bought at site and laid in roads -CWC weighment slips.
Tack coat over DBM prior to BC.	DSR item; as given in Contract BOQ. (Schedule-I)	Sqm	Area of Surface -tack coat applied at specified rate and grade.

- Measurement for CC pavement construction works shall be carried as per the Procedures & Provisions defined in CPWD specifications of works for construction activities. Each of these shall be measured individually, *activity item- wise*, referencing the corresponding CPWD DSR or NS or Market rate items appearing in the Contract BOQ/Price schedule.

1.8 PAYMENT

- Payment shall be made at BOQ rates.
- No double payment shall be made for operations covered in composite items.
- Deductions for deficient density/thickness shall be made as per MoRTH Clause 900.
- Contractor shall maintain and produce daily records of mix, temperature and compaction along with Bills claimed for payment.
- If core samples fail in density or binder content due to temperature loss, the affected stretches shall be removed and re-laid at contractor's own cost otherwise no payment shall be m

SECTION_S: Drainage works in warehousing complex.

1.1. SCOPE

- i. This Technical Specification covers the design, construction, installation, testing and commissioning of the complete **Storm Water Drainage System** for CWC warehouse complexes. These works shall be executed along with upgradation works of old existing roads or new road construction works or along with land development works in complex as described in contract BOQ or directed by Engineer in charge. The scope includes but not be limited to:
 - Excavation, preparation of formation, consolidation, dewatering where required.
 - Construction of **RCC cast-in-situ drains, precast RCC drains, brick drains** (where permitted), **heavy-duty dock saucer drains, Hume pipe culverts, catchpits, drop chambers, manholes, sumps, pumping systems, gratings, RCC covers** and related items.
 - Laying, jointing, aligning and finishing of drains, including sealing of joints, bedding and haunching.
 - Restoration of surfaces, backfilling, compaction and allied civil works.
 - Testing and commissioning of the drainage network to achieve full functionality.
- ii. The drainage system, under this contract shall be constructed to ensure efficient interception, conveyance, and disposal of runoff from:
 - Internal roads, circulation roads, loading/unloading aprons, docking areas.
 - Roof drainage from warehouses when connected to surface drains.
 - Paved yards, parking areas, and other hard standing.
- iii. The works shall include all necessary incidental works/supplies to ensure:
 - No stagnation of water near warehouse plinths.
 - No flooding of circulation roads, docking aprons or internal roads.
 - Safe conveyance of storm water to designated outfalls or sumps.
 - Functional connectivity between drains, manholes, drop chambers and sumps/ pumps.
- iv. This specification incorporates the engineering philosophy, material standards, workmanship requirements and QA/QC norms along with design-related relevant provisions.
- v. Nothing contained in this specification shall relieve the Contractor of the responsibility to provide a fully functional drainage system meeting the operational requirements of the CWC warehouses.

1.2. APPLICABLE STANDARDS & ORDER OF PRECEDENCE

- i. All materials and workmanship shall conform to the latest versions of the following as applicable:
 - CPWD Specifications 2019 (Vol. I & II)
 - MoRTH Specifications – Sections 100, 200, 300, 500, 900
 - IRC SP:42 – Guidelines on Road Drainage
 - IS 456 – Plain and Reinforced Concrete
 - IS 383 – Aggregates
 - IS 1786 – Steel Reinforcement
 - IS 2502 – Bending and Fixing of Bars
 - IS 458 – Concrete Pipes (NP2/NP3)
 - IS 1200 – Measurement Standards
 - IS 15916 – Precast Concrete Elements

- ii. In case of conflict, the following order shall apply:
- CWC Technical Specifications (this document)
 - MoRTH Specifications
 - IRC Codes
 - CPWD Specifications
 - BIS Codes
 - Manufacturer's instructions shall be followed wherever proprietary materials (joint sealants, admixtures, etc.) are used.

1.3. GENERAL DRAINAGE DESIGN PHILOSOPHY

1.3.1 General

Drainage system inside the complex shall be designed to:

- Maintain shallow and economical drain depths,
- Subdivide the complex into manageable drainage zones,
- Provide intermediate manholes and drop chambers,
- Use sump and pump arrangements wherever gravity discharge to city drains is not feasible,
- Avoid deep excavation beyond 1.25–1.75 m purely to obtain gravity flow.

1.3.2 Zoning of Drainage system

- i. Drainage layout shall be divided into multiple independent zones for economy, effective drainage length, and ease of maintenance. Zoning shall be decided on the basis of:
- natural ground slope of the complex,
 - road layout and circulation pattern,
 - dock locations and water inflow directions,
 - limiting depth of drains,
 - sump placement for each zone.
- ii. The complex shall be divided into independent drainage zones as per the guidance below:

Total Complex Area	Recommended No. of Zones	Typical coverage of Zone
Up to 5 acres	~2	~5 acres
>5 to 15 acres	~3	~8 acres
>15 to 30 acres	~4	~10 acres
>30 to 75 acres	~5	~15 acres

- iii. No drain shall serve more than ~10–15 acres without an intermediate sump or drop chamber.
- iv. No single gravity drain reach shall exceed 150–200 m without a catchpit, manhole or drop chamber.
- v. Runoff shall be directed to roadside drains and not to unpaved peripheral areas. Preferably, the discharge from each zone should be into a **local sump (wherever local catchment is lower and**

not adequate to dispose runoff directly to city drains), which pumps water to the external main drain/outfall.

1.3.3 Location of Drains

- i. **The slopes and locations of the drains should be such as road camber crossfalls into the drains.**
- ii. Drains shall be located:
 - Drains run preferably parallel to road edge and maintain minimum 1.0 m distance away (as a general thumb rule) from warehouse plinth but in constrained corridors between two godowns where road width is limited (9–12 m), this offset may be reduced to 0.5 m with RCC lined drains and appropriate foundation checks, as approved by the Engineer-in-Charge. otherwise, drain can be put on only one side of a 9–10 m lane instead of both sides, depending on camber.
 - On the lower side of road camber,
 - Avoiding obstruction to truck circulation and not to be interfering with forklift circulation at docks.
 - Avoiding intersecting buried utilities.
 - Such that lowest natural point or artificially created low point house the zone sump.
- iii. For docking aprons, heavy-duty saucer drains may be provided aligning with the apron edge.

1.3.4 Design of Drain flow [Gravity vs. Pumped System]

- i. When the complexes lie lower than city roads, **deep gravity drains shall be prohibited** to avoid excessive cost and safety hazards. In such cases, following arrangement shall be preferred over normal gravity flow drains:
 - Construction of Shallow drains ($\leq 1-1.5$ m depth),
 - Discharging into a sump located in each drainage zone. The storm water holding capacity of such sumps, which shall be constructed mainly as balancing chamber, shall be at least 5000-10000 Ltrs in each zone. Sump usable depth shall be minimum 1.5 m unless restricted by groundwater level, existing utilities or structural constraints. Correct Capacity and locations to be decided based on land topography.
 - Pumping to city drains/outfall from the sumps through mechanized / pumping and at least Three pumps (2 Working + 1 Standby) of minimum discharge capacity of 20-40 LPS (for zone up to 8 acre) and 30 -50 LPS (for zone >8 acre and up to 15 acre) shall be provided in such each sump. Correct Capacity and numbers of pumps to be decided based on catchment size and rain fall intensity.
- ii. The drain layout should be designed to avoid any waterlogging with economy in construction as well and following guiding principles to be followed when deciding drain sizes and locations.
 - Upsizing drains rather than deepening drains,
 - Using intermediate drop chambers,
 - Dividing drainage into zones,
 - Minimizing deep excavation.
- iii. Drains deeper than **2.0 m** shall not be executed unless specifically approved by the Engineer-in-Charge.

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1.3.5 Longitudinal Slopes (Detailed Criteria)

- Drains shall maintain uniform slopes between 1 in 400 to 1 in 200 but preferably 1 in 300.
- Slope selection shall consider drain size, flow length and rainfall intensity in local catchment and in no case shall reverse gradients be allowed.
- At locations where natural slope is insufficient, intermediate drop chambers shall be installed.

1.3.6 Drain Size Selection criteria.

Unless otherwise provided in engineering drawings approved by Engineer in charge, the dimensions of the drains and manholes chambers etc. shall be decided based road **width**, **contributing area**, and **traffic zone type**. Typical sizes (minimum internal sizes) of Drains and Manhole chambers shall be as per Table below.

Table (1) – Minimum Internal Sizes of Drains

Road Type	Width	Zone Area	Slope	Min. Internal Size
Internal Road	5–7 m	≤5 acres	1:400–1:300	300×300 mm
Internal Road	5–7 m	5–10 acres	1:400–1:300	450×300 / 450×450 mm
Main Road	7–10 m	≤5 acres	1:400–1:300	450×450 mm
Main Road	7–10 m	5–10 acres	1:350–1:300	600×450 mm
Dock Apron	>10 m	≤10 acres	1:350–1:250	600×600 mm
Dock Apron	>10 m	10–15 acres	1:300–1:200	600×750 mm

Note:

- Upsizing of drains shall be preferred over deepening it to increase the flow capacity.
- For longer reaches (>150 m) or steeper terrain, next higher size shall be adopted.

Table (2) -Manholes, Catchpits & Drop Chambers sizes and Locations.

Drain Type / Condition	Drain Internal Size	Maximum Spacing of Manholes / Drop Chambers	Minimum Internal Chamber Size	Remarks
Small / Medium Drains	Up to 450 mm × 450 mm	Every 50 – 60 m	600 mm × 600 mm (square)	Suitable for internal roads, small zones, short runs.
Large Drains	≥ 600 mm width or depth	Every 60 – 80 m	900 mm × 900 mm (square)	For main drains, apron drains, long reaches.

Note:

- In addition, Chambers shall be provided in above sizes at every bend, Junction (T/Y Connection) and at every location where sizes of drain changes.
- Chambers shall be provided mandatorily at all horizontally deflections. Their sizes and construction should be to ease flushing and inspection.
- Drop chambers shall provide vertical drops of 0.20–0.50 m.
- Chambers shall be watertight and constructed in RCC.

TECHNICAL SPECIFICATIONS OF WORKS

1.4. MATERIAL SPECIFICATIONS

Unless otherwise specifically required and mentioned in contract BOQ /Price schedule or directed by Engineer in charge, the Materials for constructions of various drains shall be confirming requirements given in Table below.

Drain Component / Item	Material Specification	Grade / Type	Relevant Code / Notes
Cement	OPC / PPC Cement	OPC 43 / OPC 53 Grade/ PPC	IS 269 / IS 12269 IS 1489 (part1)
Coarse Aggregates	Crushed hard stone, well graded	As per IS 383	Clean, angular aggregates only
Fine Aggregates	River sand, washed	Zone II / III	IS 383
PCC Bedding	Plain Cement Concrete	M10/ Nominal Mix-1:3:6 OR as per contract BOQ	Used under drains / precast units
RCC Drains (Cast-in-Situ)	Reinforced Concrete	M20 OR Nominal Mix-1:1.5:3 M30-in heavy duty docking /truck crossing areas. OR as per contract BOQ	For internal & peripheral drains
Precast RCC Drains	High-strength precast elements	M40 OR as per contract BOQ	IS 15916; steam-cured preferred Cement -shall be OPC.
Dock Saucer Drains	Heavy-duty reinforced concrete	M30 / M40	Mandatory for docks / heavy truck areas
Manholes & Chambers (Walls, Slabs)	Reinforced Concrete	M20 / M25 OR as per contract BOQ	Internal plastering in CM 1:3
Reinforcement Steel	TMT bars	Fe500 / Fe500D	IS 1786
Binding Wire	Soft annealed wire	16–18 gauge	IS 280
Precast Drain Wall Thickness	Structural wall	100 -120 mm (min). OR as per contract BOQ	Steam-cured, vibrated
Precast Drain Base	Structural base	150 mm (min). OR as per	Machine finish

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Thickness		contract BOQ	
Brick Masonry Drains	Bricks in CM 1:4	Class 75 Bricks	IS 1077; only in non-traffic areas
Hume Pipes	RCC pipes	NP3 (preferred in road crossings). NP2 – non traffic area	IS 458; collar jointing in 1:2 mortar
Jointing Mortar	Polymer modified mortar	As approved	For precast drain joints
Sealants	Elastomeric sealants	PU / Polysulphide	For watertight joints
RCC Covers (Heavy-Duty)	Reinforced concrete covers	M40, Class-AA load OR as per contract BOQ	Thickness: 100–150 mm
Bearing Width for Covers	RCC ledge seating	≥ 75 mm	As per structural design
Gratings	Steel or ductile iron	Heavy-duty (if used)	Prefer RCC covers in truck zones

Notes:

- All concrete shall use potable water and approved admixtures (IS 9103).
- For precast units, dimensional tolerance shall be as per IS 15916.
- Brick drains allowed only in pedestrian / non-traffic areas; not allowed in truck lanes.
- All reinforcement shall have rust-free surface and proper cover blocks.
- All concrete for drains in vehicle movement areas must be vibrated mechanically.
- All covers in heavy truck lanes shall be RCC Class-AA load bearing only.

1.5. WORKMANSHIP & EXECUTION METHODOLOGY.

1.5.1 General Requirements

- All drainage works shall be executed strictly as per approved drawings, lines, levels and slopes issued by the Engineer-in-Charge.
- A detailed topographic survey of the complex shall be carried out by contractor to determine finished road levels, plinth levels, existing drains, outfall/city drain levels).
- The Contractor and Corporation authorized Engineer shall verify all site levels before commencing work and any discrepancy shall be reported immediately for correctly.
- Work shall proceed only after proper barricading, signage and safety arrangements.
- No concrete shall be done during rain unless adequate protection is provided.

1.5.2 Excavation

- i. Procedures & Provisions given in CPWD specifications of Excavation works (CL 2.6/2.8) and MORTH CL 301/304-305 shall be followed. Over-excavation shall be rectified by filling with PCC M10 (or NM-1:3:6) at Contractor's cost. Dewatering, whenever required, shall be executed using pumps, well-points or bailing as per requirement and approval of Corporation Engineers.

1.5.3 Preparation of Subgrade

- i. The base of excavation shall be compacted to 95% Modified Proctor Density.
- ii. No water or muck shall remain at the invert before laying bedding.
- iii. Geotextile separation layers may be provided in marshy soils with approval of Engineer in charge.
- iv. Procedures & Provisions given in CPWD specifications of works (CL 2.27/16.1) and MORTH CL 305/902 shall be followed.

1.5.4 PCC Bedding

- i. A uniform PCC M10 or in Nominal Mix (1:3:6) or as specified in contract BOQ or as directed by Engineer in charge (if richer mixes) bedding shall be laid to thickness specified in drawings otherwise it shall be typically 75–100 mm (minimum).
- ii. Levels of bedding shall be checked with straightedge and dumpy level.
- iii. Bedding shall be cured for minimum 24 hours before placing precast elements.
- iv. Procedures & Provisions given in CPWD specifications of works (CL 4.1) and MORTH CL 1500 shall be followed.

1.5.5 RCC Cast-in-Situ Drains

Procedures & Provisions given in CPWD specifications of works (CL 5.9, 5.1 & 5.22) and MORTH CL 1500,1600 shall be followed as per applicability.

i. Formwork

- Shall be rigid, watertight and true to alignment.
- Release agents shall not impair concrete bond.
- Formwork joints shall be sealed to prevent slurry leakage.

ii. Reinforcement

- Shall be placed as per drawings and IS 2502.
- Clear cover shall be 30 mm minimum, unless specified otherwise.
- Bars shall be clean, rust-free and securely tied.

iii. Concreting

- Transit mixers or site batch plant shall be used for making and mixing the concrete.
- Vibration using needle vibrators is mandatory.
- Construction joints shall be provided at every 3–5 m and shall be sealed with PU sealant.

iv. Finishing

- Surfaces shall be finished smooth using steel trowel.

- Internal corners shall be rounded (20 mm radius) to improve flow.

v. Curing

- Minimum 7 days with wet hessian.
- Curing compounds may be used with permission where wet hessian curing is not possible.

1.5.6 Precast RCC Drains

- Unless otherwise specified in Contract BOQ or engineering drawings issued by Engineer in charge, Precast RCC 'U' drains of minimum internal size 600×600 mm (M40- grade), with wall thickness not less than 100 mm and base thickness not less than 150 mm, shall be provided along docking roads where trucks of up to 60 MT ply. Size may be increased to 600×750 mm for larger catchments when directed.
- Precast units shall be placed using cranes or chain pulleys without damage.
- Bedding shall be checked for alignment before lowering.
- Joints shall be tongue & groove type otherwise shall be at least 25 mm thick and to ensure water tight bonding, all such joints shall be sealed with polymer-modified mortar or PU sealant.
- Internal steps or offsets shall be avoided.
- Backfilled with granular material in layers of 150 mm and Compaction to be achieved shall be not less than 95% MDD.
- All drain Covers shall seat firmly on RCC ledges and shall include two MS lifting hooks of 12–16 mm diameter.
- Precast RCC M40 covers for heavy truck zones shall be 120–150 mm thick, designed for Class-AA loads, with clear bearing not less than 75 mm on each side. Where perforated covers are used, slot width shall not exceed 25 mm and openings shall be oriented transverse to direction of travel.
- The Procedures & Provisions described in CPWD specification of works -cl 4.2 & 5.3 and MORTH CL 2900 & 1300 shall be referred for detailed understanding and shall be followed as applicable.

1.5.7 Brick Masonry Drains (Non-Traffic Areas Only)

- Brick drains may be permitted only in office and pedestrian areas.
- Unless otherwise specified in drawings or contract BOQ, Bricks shall be Class 75 built with Cement mortar of grade note less than 1:4.
- 12–15 mm thickness watertight plaster in CM 1:3 shall be applied over brick walls and curing for minimum 7 days shall be ensured post plastering the surface.
- The Procedures & Provisions described in CPWD specification of works -cl 6.1 & 13.1/13.4 shall be followed. Fly ash bricks shall not be used for construction of underground -water retaining structure/drains/sumps.
- Brick drains shall conform to CPWD Specification 2019 Vol.2 – Section 19.*

1.5.8 Heavy-Duty Dock Saucer Drains (RCC Trench Drains)

- These drains shall be used along docking platforms, truck aprons and high runoff paved zones.
- Construction Requirements for heavy duty area:**
 - Clear hydraulic width: **250-450 mm** and Effective invert depth: **150-250 mm**.

- *Minimum thickness of saucer drain slab shall not be less than 150 mm for heavy truck zones.*
 - Side walls/haunches shall be fully reinforced.
 - Drains shall be designed for **Class-AA wheel loads** and Tyre movement over covers shall not cause cracking.
 - Surface profile of saucer shall be smooth, trowelled finish and shaped to guide sheet flow.
- iii. Along light-duty internal roads, saucer drains (PCC/RCC) of **450-600 mm** top width and 75–100 mm depth may be provided where approved, restricted to non-heavy truck areas.

1.5.9 Hume Pipe Culverts (NP2/NP3)

- The Hume pipes can be provided in the complex at following locations
 - At road crossings where cross-drainage is needed (one side drain to opposite side);
 - At entry/exit gates under internal roads.
 - Under short crossings, not as long culverts running the length of the complex (hard to maintain).
- Hume pipes under roads shall be NP3 class with diameter not less than 450 mm and in case of main cross-drains from zones exceeding 5 acres, its diameter shall generally not be less than 600 mm. Higher sizes shall be used in case of large catchment and high rain fall intensity area.
- NP2 pipes may be used only in **non-traffic, shallow cover landscaping areas**.
- The Procedures & Provisions described in CPWD specification of works -cl 19.1 and MORTH CL 2900 & 1000 shall be followed.
- Pipes shall conform to IS 458 and shall be laid beginning from downstream end.
- Its collars shall be jointed with 1:2 cement mortar and Haunching shall be compacted to prevent settlement.
- Top cover (earth cushion) shall be maintained as per drawings and design approved for laying Hume Pipe. If not specified, minimum cushion of 600 mm shall be maintained in all cases and Where this cover cannot be achieved, pipes shall be encased in RCC cradle as per design.

1.5.10 Backfilling & Compaction

- The Procedures & Provisions described in CPWD specification of works -cl 2.25 & 2.27 and MORTH CL 305 & 2500 shall be followed.
- No heavy compaction directly over unsupported precast drains shall be permitted.

1.5.11 SPECIAL PROVISIONS FOR WAREHOUSE COMPLEXES

- i. The finished ground around the warehouse plinth shall be properly compacted and graded to slope away from the building with a minimum outward gradient of **1.5%**, so that no surface water, roof water or wash water can stagnate against the plinth.
- ii. Any local depressions or settlements forming near the plinth during execution shall be corrected by filling and re-compacting earth to restore the outward slope before final handing over.
- iii. Drains in dock and apron zones (truck crossing bay) shall be of **heavy-duty RCC construction (minimum M30)** with adequate reinforcement and haunching to withstand repeated loading from forklifts and multi-axle trucks. The alignment and position of dock drains shall be such that they do

not obstruct forklift turning paths, reversing truck paths, trailer parking or approach to loading platforms.

- iv. In dock areas, only properly designed RCC trench drains, or heavy-duty dock saucer drains shall be used; light-duty surface drains shall not be permitted.
- v. Wherever drains cross internal roads, truck circulation routes, docking aprons or entry/exit points, the drain shall be covered with **precast RCC covers of grade M40**, designed for **Class-AA vehicular loading**, with cover thickness generally between **200 mm and 300 mm**, unless otherwise specified.
- vi. Drains shall ordinarily be kept open for inspection and cleaning, and shall be covered only at road crossings, gate entries and other locations as directed by the Engineer-in-Charge
- vii. The top of drain covers in traffic areas shall be finished flush with the adjacent road or pavement surface to avoid impact loading and tripping hazards.
- viii. Steel gratings, where used, shall be restricted to inspection openings, non-traffic areas or narrow utility crossings and shall not be used in heavy truck or forklift traffic zones.
- ix. Rainwater harvesting shall not be provided as a routine default provision. It shall be adopted only where it is technically justified and approved by the Engineer-in-Charge, after considering soil conditions, groundwater levels and water quality.
- x. **RWH shall not be provided** where any of the following conditions exist:
 - Groundwater table is high (generally within **2.0 m** of the natural ground level).
 - Soils are predominantly clayey, highly impermeable or expansive, making recharge ineffective.
 - There is a risk of contamination due to nearby industrial or polluted catchments.
 - The proposed location of recharge pits/wells is too close to warehouse plinths, electrical installations or underground structures, creating risk of seepage or dampness.
 - The quality of rooftop runoff or paved surface runoff is such that substantial treatment would be required beyond normal silt traps and filter chambers.
 - **RWH shall not be provided where roof runoff contains dust or contaminants from foodgrain handling leading to clogging of recharge pits.**
- xi. **RWH may be considered** where:
 - Soil is moderately to highly permeable (sandy/sandy loam),
 - Adequate clear distance (preferably **6.0 m** or more) from any building plinth or underground structure is available,
 - Roof runoff is relatively clean and free from industrial pollutants, and Proper silt traps and filtration chambers can be provided before recharge structures.
 - Wherever RWH is adopted, each connection shall be provided with suitable silt traps and filter units, and the layout shall ensure no backflow or flooding towards buildings.
 - The cases, where RWH is adopted as soil conditions permit, intermediate soak pits or mini recharge pits, in sizes as given in engineering drawings /directed by Engineer in charge, shall also be provided along drains to locally dissipate storm water into the subsoil and reduce load on sumps/pumps. These shall be provided only after suitable silt traps and at adequate distance from building plinths

xii. Non-Interference with Utilities

- Drains shall not be routed directly over or through essential underground utilities such as electrical cables, communication lines, water-supply mains, fire-hydrant lines, sewage lines or specialized process pipelines.
- Where unavoidable, utility crossings shall be detailed with proper encasement, structural protection and access, as directed by the Engineer-in-Charge.
- Any diversion, lowering or raising of existing utility lines to accommodate drain alignment shall be executed only after written approval of the Engineer-in-Charge and in conformity with utility owner's requirements.

xiii. Situations Where Drains May Be Omitted:

New drains may be omitted only when **all** of the following conditions are satisfied simultaneously:

- The contributing paved or semi-paved catchment area is **300 m² or less**, and does not belong to a heavy truck docking or circulation zone.
- The natural ground slope is **not less than 1.5%** in the direction of an existing functional drain or safe outfall.
- There is no risk of runoff approaching warehouse plinths, building entrances, weighbridges, electrical yards, fuel storage, or other sensitive installations.
- The natural path of runoff is stable, non-eroding and not likely to be blocked by proposed structures, boundary walls, fencing or landscaping.
- If any of the above conditions is not met, an appropriate drain shall be designed and constructed as per this Specification.

xiv. Measures for Prevention of Silting in Drains

- All unpaved areas draining directly into a drain, where the area exceeds approximately **200 m²**, shall, as far as practicable, be provided with grass turfing, gravel filter strips, paved shoulders or geotextile to reduce silt entry.
- In stretches where soil is loose or easily erodible, catchpits or silt traps shall be provided at intervals of about **30–40 m**, or at such other distances as directed by the Engineer-in-Charge.
- The inverts of drains shall be finished smooth with a steel-trowelled surface to minimize deposition of fine silt and to facilitate easy flushing during maintenance.
- No uncompacted earth berms or spoil heaps shall be left adjacent to completed drains
- Excavated soil shall be suitably disposed of or compacted and graded to prevent erosion into the drain.
- *All drains shall include silt-trap chambers at upstream ends to prevent ingress of soil, silt and grain residues into the drain network."*
- The Contractor shall be responsible for periodic removal of silt, construction debris and foreign materials from drains, manholes, catchpits and chambers during execution and prior to final handing over.

xv. Field Decision by Engineer-in-Charge

- The Corporation or CWC-PMC Engineers authorized by Engineer-in-Charge shall have full authority to adjust drain sizes, slopes, locations, the necessity for drop chambers, peripheral

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drains and/or RWH connectivity based on actual site conditions, rainfall behaviour and operational requirements of the warehouse.

- No drainage element essential for functional performance of the system shall be omitted merely due to absence of a specific BOQ line item; where required, suitable Non-Schedule (NS) items shall be operated with due approval of the competent authority.

1.6. QUALITY ASSURANCE (QA) AND QUALITY CONTROL (QC) REQUIREMENTS

1.6.1 General

- All drainage works shall be executed under a comprehensive QA/QC regime. All testing shall comply with CPWD, MoRTH and BIS requirements.
- Material used for construction of drains shall be tested as per standard frequency and field quality plans mentioned in contract and approved by Engineer in charge.
- Other important test for drains shall be as below.

Item	Test	Code	Frequency
Bedding & backfill	Compaction test (MDD)	IS 2720	1 test per 30 m
Precast drains	Dimensional check	IS 15916	Each piece
Slope	Level verification	MoRTH	Each 20 m
Flow	Water flow test	CPWD/ MoRTH	Each reach before handover
Pumps	Discharge rate		Auto & Manual mode both.

1.6.2 Acceptance Criteria (applicable to drains, chambers and sumps)

- Concrete strength shall achieve characteristic strength.
- Drain invert levels shall not deviate more than **±5 mm**.
- Longitudinal slope deviation shall not exceed **±0.05%**.
- These should be free from debris, silts, sands, earth and neatly dressed and finished before handover.
- Flow tests shall confirm uninterrupted drainage. There should be no backflow, no stagnation and no leakages from joints when **Flow test shall be done by releasing water at upstream end @ 1 L/s for small drains and 3–5 L/s for main drains**.
- Discharge rate of pumps shall not be less than minimum required or designated capacity which ever is higher and its operations should be free from noise and vibrations.

1.6.3 MEASUREMENT

- Measurement for drain construction works shall be carried as per the Procedures & Provisions defined in CPWD specifications of works for construction activities. Each of these shall be measured individually, *activity item-wise*, referencing the corresponding CPWD DSR or NS or Market rate items appearing in the Contract BOQ/Price schedule.

1.7. PAYMENT

- Payment shall be made under the respective BOQ/NS items after certification by the Corporation Engineer authorized by Engineer-in-Charge.

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- ii. No payment shall be made for Over-excavation beyond drawings, Rework due to defective execution and /or Non-functional drainage requiring rectification.
- iii. Pump sets shall be paid only after successful commissioning and performance testing.
- iv. Precast drains shall be paid only when properly aligned, jointed and backfilled.

RCC drains shall be paid after concrete strength and dimensional conformity are certified.

SECTION T: TECHNICAL SPECIFICATIONS FOR PQC (RIGID PAVEMENTS) IN WAREHOUSE COMPLEXES

1.1 SCOPE

1.1.1 General Scope

The work covered under this section shall consist of the construction of Rigid Pavements / Pavement Quality Concrete (PQC) in CWC warehouse complexes. The rigid pavement shall be executed for all truck movement areas, heavy-duty cargo handling zones, entrance bays, intersections, turning radii, loading/unloading aprons, dock areas, and circulation corridors subjected to multi-axial wheel loads of trucks up to 60 MT and container trailers of 40 ft and above.

1.1.2 Pavement Configurations

Pavement configurations as permitted, by the Engineer-in-Charge as per appropriate configuration based on existing ground levels, soil CBR, drainage, traffic intensity and geometry.

Table 1.1: Pavement Configurations Allowed

Slab Type	Layer Composition	Recommended Use	Governing Standard
Standard PQC Rigid Pavement	PQC M30 (225 mm) + DLC (100 mm) + WMM (150 mm) + GSB (150mm)	Internal heavy-duty roads, container truck routes	MoRTH Section 600, IRC SP 62-2014, IRC:15, IRC 58.

1.2 APPLICABLE CODES AND STANDARD SPECIFICATIONS

1.2.1 Applicable Standards

All workmanship, testing, materials, equipment and execution shall comply with the latest revisions of the following:

Table 1.2: Standards Applicable

Code	Title	Relevance
MoRTH Section 600	Rigid Pavements	Primary execution standard
IRC: 15- 2011	Standard specifications and code of practice for construction of concrete roads	Standard and specification of materials and construction.
IRC:58 – 2015	Design of Plain Jointed Rigid Pavements	Governs slab thickness & joints
CPWD Specifications 2019 Vol-II	Cement Concrete Roads (Clause 6.1–6.6)	Execution & workmanship
IRC SP 62 -2014	Construction of Cement concrete pavement for low volume roads	Standards for construction of pavement.
IS 456:2000	Plain & RCC	Concrete & reinforcement
IS 383	Aggregates	Coarse & fine aggregates
IS 10262	Concrete Mix Design	PQC mix design
IS 9103	Chemical Admixtures	Use of superplasticizers
IS 1786	Reinforcement	Tie bars & dowels
IS 516	Flexural Strength Testing	PQC flexural testing

1.2.2 Conflict Hierarchy

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If there arises any discrepancy or conflict between different standards, the following precedence shall apply:

1. CWC Technical Specifications
2. MoRTH Specifications
3. IRC Standards
4. CPWD Specifications
5. BIS Standards
6. Industry Best Practices

1.3 MATERIALS

All materials shall be of approved quality and obtained from reliable sources. Material testing shall be carried out at the frequency specified by MoRTH/IRC and as directed by the Engineer-in-Charge.

1.3.1 Cement

Only OPC 43 or OPC 53 grade cement conforming to IS 269 / IS 12269 shall be used for DLC, PQC and RCC pavements.

1.3.2 Aggregates

Aggregates for PQC and DLC shall conform to IS 383 and shall be machine-crushed, angular, hard and free from dust or deleterious substances. The grading can be adopted in pavement constructed with roller compacted concrete as given table 6.2 of IRC: SP:62-2014.

Table 1.3: Aggregate Requirements

Parameter	Requirement	Standard
Los Angeles Abrasion	≤ 30%	IS 2386
Aggregate Impact Value	≤ 24%	IS 2386
Flakiness Index	≤ 20%	IS 2386
Water Absorption	≤ 2%	IS 2386
Soundness	As per IS 383	IS 2386 (part V)

1.3.3 Water

Water for concreting and curing shall be potable, clean and free from salts, oils and harmful chemicals as per IS 456.

1.3.4 Chemical Admixtures

Admixtures shall conform to IS 9103. Only non-chloride superplasticizers shall be used.

1.3.5 Reinforcement (for dowels, tie bars, RCC pavements)

Reinforcement steel shall be Fe-500 / Fe-500D confirming to IS 1786 with proper test certificates. The specifications of dowel bars shall be as per clause 8.3.6 of IRC 15 -2011 "STANDARD SPECIFICATIONS AND CODE OF PRACTICE FOR CONSTRUCTION OF CONCRETE ROADS". Similarly, the tie bars Specification shall conform to IS 432 Part 1 or deformed steel bars complying with IS 1786 and in accordance with requirements given in clause 8.4 of IRC 15 -2011 "STANDARD SPECIFICATIONS AND CODE OF PRACTICE FOR CONSTRUCTION OF CONCRETE ROADS".

1.3.6 Joints and Joint Sealing

The material specifications of sealing joints in concrete shall be as per IS 1834 -1984 "SPECIFICATION FOR HOT APPLIED SEALING COMPOUNDS FOR JOINTS IN CONCRETE". If sealant is of hot poured type, it shall conform to Hot applied sealant : IS:1834 or ASTM : 3406-95, as applicable.

1.4 SUBGRADE PREPARATION

1.4.1 General

The subgrade shall be prepared as per MoRTH Clause 305. All soft pockets shall be removed and replaced with approved granular material.

1.4.2 Compaction

The subgrade shall be compacted to a minimum of 97% Modified Proctor Density (MDD).

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Table 1.4: Subgrade Specifications

Item	Requirement	Standard
CBR (Soaked)	≥ 8%	IRC:58
Density	97% MDD	IS 2720
Tolerance	±20 mm	MoRTH 305

1.5 GRANULAR SUB-BASE (GSB)

1.5.1 Material

GSB shall be constructed with Grade-II material as per MoRTH Clause 401 and table 400-2 of MORTH.

1.5.2 Compaction

GSB shall be compacted to 98% MDD.

Table 1.5: GSB Requirements

Layer	Thickness	Compaction Requirement	Standard
GSB Grade II	150 mm (compacted)	98% MDD	MoRTH 401

- The surface finish of construction shall conform to the requirements of Clause 902 of MORTH.
- Control on the quality of materials and works shall be exercised by the Engineer in accordance with Section 900 of MORTH.
- If the thickness of the compacted layer does not exceed 100 mm, a smooth wheeled roller of 80 to 100 kN weight may be used. For a compacted single layer upto 200 mm the compaction shall be done with the help of a vibratory roller of minimum 80 to 100 kN static weight capable of achieving the required compaction as per clause 401.3.2 of MORTH specification of road.

1.6 Wet Mix Macadam (WMM)

1.6.1 Material

WMM shall be constructed with materials as per MoRTH Clause 406 and table 400-13 of MORTH.

1.6.2 Compaction

GSB shall be compacted to 100% MDD.

Table 1.6: WMM Requirements

Layer	Thickness	Compaction Requirement	Standard
WMM	150 mm (compacted)	100% MDD	MoRTH 406

- The surface finish of construction shall conform to the requirements of Clause 902 of MORTH.
- Control on the quality of materials and works shall be exercised by the Engineer in accordance with Section 900 of MORTH.
- After final compaction of wet mix macadam course, the road shall be allowed to dry for 24 hours

1.7 DRY LEAN CONCRETE (DLC)

1.7.1 General

DLC shall be laid as per MoRTH Clause 601.

Table 1.7: DLC Specifications

Property	Requirement
Compressive Strength	7.5 MPa at 7 days
Thickness	100 mm
Cement Content	≥ 150 kg/m ³
Density	≥ 100% of theoretical

1.7.2 Curing

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DLC shall be cured for a minimum of 7 days using water or curing compound. The Dry Lean Concrete sub-base shall be overlaid with concrete pavement only after 7 days of sub-base construction.

1.7 PQC (PAVEMENT QUALITY CONCRETE)

1.7.1 General Requirements

PQC shall be constructed in accordance with MoRTH 602 and IRC:58. Concrete shall be M30 grade with controlled mix proportions.

Table 1.7: PQC Requirements

Item	Requirement	Standard
Grade	M30	IS 456
Flexural Strength	3.83 MPa at 28 days	IRC:58
w/c ratio	≤ 0.45	IS 10262
Slump	25–50 mm	IS 1199
Thickness	225 mm (min.)	MoRTH 602

1.7.2 Placing and Laying

Concrete shall be laid using fixed-form pavers, screed vibrators and internal vibrators. Concrete shall be placed and compacted within 90 minutes of batching.

1.8 DOWEL BARS & TIE BARS

Table 1.8: Dowel Bar Specifications

Dowel Bar Specifications shall be as per clause 8.3.6 of IRC 15 -2011.

Parameter	Requirement
Diameter	30 mm
Length	450 mm
Spacing	300 mm
Coating	50% de-bonded with epoxy

Table 1.8(b): Tie Bar Specifications

Parameter	Requirement
Diameter	12 mm
Length	650 mm
Spacing	700 mm

1.9 JOINTS

1.9.1 Types of Joints

- Contraction joints
- Expansion joints
- Longitudinal joints

It is advised to finish the day's work at contraction joints to avoid creating additional construction joints.

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Table 1.9: Joint Details

Joint Type	Spacing		Depth / Specification
Contraction	4.0–4.5 m		5-6 mm saw-cut
Expansion	20 m and near fixed structures	Complying with the requirements of IS:1838	20-25 mm filler board
Longitudinal	Along edges of bays	width of pavement >4.5m	Tie bars mandatory

1.10 GEOMETRY & DRAINAGE

Table 1.10: Geometric Requirements

Parameter	Requirement
Camber/Crossfall	1.5–2.0%
Minimum Longitudinal Slope	0.3% (preferred 0.5–1.0%)

1.11 CURING

1.11.1 Curing Method

- PQC shall be cured initially using curing compound which will be sprayed on the cement concrete surface when no free water is visible on the surface and texturing has been completed. Wet hessian cloth should be gently placed after the curing compound has lost its sheen. Wet curing shall continue thereafter at least for 14 days in case of OPC. (IRC 15)
- It is to be noted that traffic restrictions to be maintained until the curing is satisfactorily completed for pavements.

1.12 SURFACE FINISH

The finished surface shall be broom-textured perpendicular to the direction of travel. Surface irregularity shall not exceed 4 mm under a 3 m straightedge. As per clause 10.1.16 of IRC 15.

1.13 QUALITY CONTROL (QC)

Table 1.13: QC Requirements

Item	Test	Frequency	Acceptance
Cement	Standard tests	1 per 200MT	
Aggregates	Sieve & LA Abrasion	1 per 100 m ³	
PQC Mix	Slump	Every batch	25–50 mm
Strength	Flexural and compressive	2 cube set samples and 2 beam set samples per 150 cum or part thereof for each day production.	IS 516
Thickness	Core	1 per 200 m ²	±5 mm

1.15 PAYMENT

Payment shall be made at rates quoted in the BOQ. Deductions for deficient strength, thickness or finish shall be applied in accordance with MoRTH Section 600, CPWD Specifications.

Chapter- VII : Specifications for Electrical works.

1. Tender Drawings and Construction Drawings :

- 1.1 These drawings are meant for Tenderer's guidance only. "Approval for Construction" drawings will be furnished to the contractor during the progress of work to supplement the bid drawings. Construction drawings will be revised and fresh copies issued to the contractor from time to time to incorporate any change to be adopted in the work as per final design to suit any change to be adopted in the work as per final design to suit any condition encountered during the progress of work. Hence, "Approved for Construction" drawings will be furnished progressively during the progress of work, broadly conforming to construction schedule.
- 1.2 HT/LT main panel, other major equipments, other Distribution Board drawings and cable route shall be submitted by the contractor for approval of CWC / Consultant before starting fabrication, manufacture.
- 1.3 Details shown either on the drawings or stated in the Specification shall prevail upon drawings in case of doubts. However, in case of ambiguity, the more stringent shall be applicable.
- 1.4 **Conformity to IE Act, IE Rules and Standards :** All Electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 2003 and Indian Electricity Rules, 1956 amended up-to-date (date of call of tender unless otherwise specified).
- 1.5 Earthing

Earthing shall be carried out as per IS rules 3043 code of practice for earthing with latest amendments and as per specification and site requirement.

2.0 Guarantee

The tenderer shall guarantee the equipments offered for satisfactory performance for a period of 12 months from the date of commissioning and handing over the installation to the employer against defects arising out of faulty design, material & workmanship. The tenderer should make good all the defects free of costs during the guarantee period and replace or repair the defective equipments/parts free of cost promptly and satisfactorily.

3.0 Inspection & Testing

The purchase representative shall be free to visit the manufacturer's work at all reasonable times to witness and inspect the testing of equipments. It is duty of the tenderer to see all the equipments supplied are tested as per relevant IS/BS specifications. The contractor shall furnish three copies of manufacturer's test certificate for the routine and type test conducted on the equipments offered. If necessary the contractor shall arrange to conduct all the routine tests at the manufacturer's premises in presence of CWC representative. On receipt of the equipments/materials at site, the tenderer shall offer equipments/materials for inspection of electrical engineer and get approved before installation.

4.0 Pre-Commissioning Tests of Equipment

HT/LT switchgear, Transformer LT cables and DG set shall be subjected to the pre-commissioning tests as per approved Performance by employer. The pre-commissioning test report shall be sent to the Consultant/CWC for approval for electrical installation/license for release-sanctioned load.

5.0 Approval of Drawings

The drawings for HT Panels and LT Panels, High Mast, DG set and cable layout shall be offered by the tenderer for approval of CWC and manufacturing/laying of these items can be taken in hand only after approval of the drawings by CWC. The tenderer shall also supply three copies of approved drawings for LT switchgear and transformers (both the dimensional and schematic) along with 3 copies route drawings & earthing positions etc.

6.0 The contractor shall provide all kinds of facilities for inspection of the works by the Engineer of CWC.

7.0 The electrical work shall conform to CPWD General Specifications for external with up-to-date amendments and for internal electrification works with up-to-date amendments.

7.1 The electrical works other than internal & external electrification like DG Set, Substation, High Mast, Fire Detection & Alarm system, Heating, Ventilation & Air Conditioning System (HVAC) and Lifts & Escalators shall conform to latest CPWD's General Specifications with up-to-date amendments.

8. Liaisoning / Approval Work with Statutory Authorities

It will be responsibility of the contractor to do liaisoning work for obtaining necessary approvals / clearances for electrical load sanction and power supply connection etc. to energizing the terminal, the statutory charges as per the State Electricity Board demand note will be paid by the CWC.

ANNEXURE-I
(Field Quality Plan)

LIST OF MANDATORY TESTS

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
1.	Cement (Approved Brand)	Physical & Chemical Properties	IS: 4031	Lab	Initial Test-01 test for each brand of cement. Subsequently, 01 test for 200MT or part thereof for each brand. Cement should be of approved brand and each lot should be accompanied by manufacturer's test certificates
2.	Reinforcement Steel (Approved Brand)	Physical & Chemical Properties	IS :1786	Lab	Initial Test-01 test for each brand and each dia of reinforcement steel , Subsequently - One test for every 25/35/45 MT or part thereof (As specified in Special condition of Contract Para 6.7) Reinforcement Steel should be of approved brand and each lot should be accompanied by manufacturer's test certificates
3.	Water	PH Value, Chlorides, Sulphates, Alkalinity Test, Acidity Test, Suspended Matter, Organic Matter and Inorganic Matter	IS:3025	Lab	Initial Test- Source approval at commencement of work and Subsequently- every six months or change of source.
4.	Coarse Aggregate - Building Works	Gradation	IS 2386 - I	Field / Lab	Minimum one test for every 50 cum or part thereof.
		Deleterious Material	IS 2386 - II	Field / Lab	
		Specific Gravity	IS 2386 - III	Field / Lab	
		Crushing Value	IS 2386 - IV	Field / Lab	
		Impact Value	IS 2386 - IV	Field / Lab	
		10% Fine Value	IS 2386 - IV	Field / Lab	
5.	Fine Aggregate - Building Works	Organic Impurities	Appendix 'A' of Chapter 3, CPWD Specifications	Field	Minimum one test for every 50 cum or part thereof.

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
		Silt Content	Appendix 'C' of Chapter 3, CPWD Specifications	Field	
		Bulking of Sand	Appendix 'D' of Chapter 3, CPWD Specifications	Field	
		Gradation	Appendix 'B' of Chapter 3, CPWD Specifications	Field / Lab	
6.	Coarse Aggregate - Road, Pavement Works	Gradation	IS 2386 - I	Field / Lab	One test for everyday's work
		Flakiness and Elongation Index	IS 2386 - I	Field / Lab	Once for each source of supply and subsequently on monthly basis
		Deleterious Material	IS 2386 - II	Lab	Once for each source of supply and subsequently on monthly basis
		Water Absorption	IS 2386 - III	Lab	Once for each source of supply and subsequently on monthly basis
		Los Angeles Abrasion Value/Aggregate Impact Value	IS 2386 - IV	Lab	Once for each source of supply and subsequently on monthly basis
		Soundness	IS 2386 - V	Lab	Before approving the aggregates and every month subsequently.
		Alkali aggregate reactivity	IS 2386-VII, IS:456	Lab	Before approving the aggregates and every month subsequently.
7.	Fine Aggregate - Road, Pavement Works	Gradation	IS 2386 - I	Field / Lab	One test for everyday's work.
		Deleterious material	IS 2386 - II	Lab	Once for each source of supply and subsequently on monthly basis.
		Water Absorption	IS 2386 - III	Lab	Once for each source of supply and subsequently on monthly basis.
		Silt Content	Appendix 'C' of Chapter 3, CPWD Specifications	Field	Once for each source of supply and subsequently on monthly basis.

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
8.	Slump Test - Building Works		Appendix 'D' of Chapter 4, CPWD Specifications	Field	Minimum one test for every 20 cum of concrete or part thereof
9.	Slump Test - Pavement Works		IS 1199	Field	One test per each dumperload at both Batching Plant Site and Paving Site initially when work starts. Subsequently, sampling may be done from alternate dumper.
10.	Cube Test				
(i)	Reinforced Cement Concrete - Buildingworks	7 days and 28 days Compressive Strength	IS 516	Lab	One sample of six cubes for every 50 cum or part thereof
(ii)	Pavement Quality Concrete(PQC) - Pavement Work	Compressive Strength, Flexure Strength	IS 516	Lab	2 cube set samples and 2 beam set samples per 150cum or part thereof for each day production.
11.	Earthwork				
	Control Test on Borrow Pits	Gradation	IS 2720 -IV	Lab	One or two tests per 8000 cum
		Plasticity	IS: 2720-V	Lab	
		Proctor Test	IS 2720- VIII	Lab	
		Maximum Dry Density / OMC	IS 2720-VIII	Lab	
		Deleterious Content		Lab	As and when required by Engineer
		Moisture Content	IS 2720-II	Lab	250 cum
	Embankment under (OMC Conditions)	Field Density	IS 2720-XXVIII		250 cum
		Moisture Content	IS 2720-II		250 cum
12.	Granular Sub-Base	Gradation	IS 2386-I	Field / Lab	Minimum 1 test per source and additional test after every 1000 cum
		Water Absorption	IS 2386-III	Lab	Minimum 1 test per source and additional test as required by Engineer

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
		Wet Aggregate Impact Value test (if WA > 2%)	IS 5640	Lab	As required by Engineer
		Aggregate Impact Value	IS 2386-IV	Lab	Minimum 1 test per source and additional test after every 2000 cum
		Atterberg's Limit	IS 2720-V	Lab	Minimum 1 test per source and additional test after every 1000 cum
		Maximum Dry Density / OMC	IS 2720-VIII	Lab	Minimum 1 test per source and additional test as required by Engineer
		Moisture Content prior to compaction	IS 2720-II	Field	Minimum 1 test every 400 cum
		Field Density	IS 2720-XXVIII	Field	one test per 2000 Sqm or part thereof
		Deleterious Material	IS 2720-XXVII	Lab	Minimum 1 test per source and additional test as required by Engineer
		CBR	IS 2720-XVI	Lab	Minimum 1 test per source and additional test as required by Engineer
13.	Water Bound Macadam	Gradation	IS 2386-I	Field / Lab	Minimum 1 test per source and additional test after every 500 cum
		Aggregate Value or Aggregate Impact Value	IS 2386-IV or IS 5640	Lab	Minimum 1 test per source and additional test after every 500 cum
		Combined Flakiness	IS 2386-I	Lab	Minimum 1 test per source and additional test after every 500 cum
		Los Angles	IS 2386-IV	Lab	Minimum 1 test per source and additional test after every 500 cum or part thereof
14.	Wet Mix Macadam	Gradation	IS 2386-I	Field / Lab	Minimum 1 test per source and additional test after every 500 cum
		Water Absorption	IS 2386-III	Lab	Minimum 1 test per source and additional test as required by Engineer

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
		Soundness (if WA > 2%)	IS 2386-V	Lab	As required by Engineer
		Atterberg's Limit of Portion of Aggregate Passing 425 micron Sieve	IS 2720-V	Lab	Minimum 1 test per source and additional test after every 500 cum or part thereof
		Aggregate Impact Value	IS 2386-IV or IS 5640	Lab	Minimum 1 test per source and additional test after every 500 cum
		Maximum Dry Density / OMC	IS 2720-VIII	Lab	Minimum 1 test per source and additional test as required by Engineer
		Combined Flakiness and Elongation Indices	IS 2386-I	Lab	Minimum 1 test per source and additional test after every 500 cum
		Moisture Content	IS 2720-II	Field	Minimum 3 tests per day
		Field Density	IS 2720-XXVIII	Field	One set of three tests per 2000 sqm or part thereof
15.	Bitumen	As prescribed in IS 73	As prescribed in IS 73	Lab	As required by the Engineer-in-charge
16.	Dense Bituminous Macadam / Bituminous Concrete	Quality of Binder	IS 73	Lab	As required
		Los Angeles Abrasion Value / Aggregate Impact Value	IS 2386-IV	Lab	100 cum
		Stripping Value	IS 6241	Lab	100 cum
		Water Absorption	IS 2386-III	Lab	100 cum
		Flakiness Index	IS 2386-I	Lab	One test for 100 cum.
		Sieve Analysis for Filler	IS 2386-I	Lab	One test for each consignment subject to minimum one test per 5 cum
		Mix Grading	IS 2386-I	Lab	One set of test on individual constituent and mixed aggregates from dryer of each 100 tonnes of mixed subject to a minimum of two sets per plant per day

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
		Stability of Mix	ASTM D-1559	Lab	Three Marshal Specimen per 100 tonnes of mix, subject to a minimum of two sets being tested per plant per day
		Binder Content		Field	Minimum 2 tests per day
		Thickness, Density of Compacted Layer	Appendix 'B' of CPWD Specification	Field	One test of 3 samples per 500 sqm
17.	Brickwork / Brick Tiles / Sewer Brick / Burnt Clay Perforated Building Bricks	Dimension	Appendix A, B, C & D of Chapter 6 of CPWD Specifications	Lab	Minimum one test for every 50000 bricks or part thereof
		Compressive Strength		Lab	
		Water Absorption		Lab	
		Efflorescence		Lab	
18.	Stone Work	Water Absorption	IS 1124	Lab	Minimum one test for every 200 sqm / 100 cum or part thereof
		Transverse Strength	IS 1121 - II		
		Resistance to Wear	IS 1706		
		Durability	IS 1126		
19.	Marble	Moisture Absorption	IS 1124	Lab	Minimum one test for every 100 sqm or part thereof
		Hardness Test	Mho's Scale		
		Specific Gravity	IS 1122		
20.	Granite	Moisture	IS 1124	Lab	Minimum one test for every 100 sqm or part thereof
		Specific Gravity	IS 1122		
21.	Structural Steel (other than PEB)	Tensile Strength	IS 1599	Lab	Minimum one test for every 20 tonnes or part thereof per source and also manufacturer's test certificates for each consignment
		Bend Test			
22.	Steel Tubular Pipes	Tensile Test	IS 1608	Lab	Minimum one test for every 8 tonne or part thereof per source and also manufacturer's test certificates for each consignment
		Bend Test	IS 2329		
		Flattening Test	IS 2328		
23.	M-40/50 Grade Cement Concrete Paver Blocks				

SL	Description of Material	Test	Ref. of IS Code/Specs for Testing	Field / Laboratory Test	Frequency of Testing
(i)	M-40/50 Grade Pre-Cast Concrete Paving Blocks	Compressive Strength	As per IS Code 15658	Field / Lab	Minimum one test for every 50000 bricks or part thereof
		Water absorption	As per IS Code 15658	Field / Lab	
		Dimensions	As per IS Code 15658	Field / Lab	
(ii)	Sand for Bedding Layer	Percentage of Deleterious material	IS 2386	Lab	Minimum one test for every 50 cum or part thereof
		Particle Size Distribution	As per Technical specification	Field / Lab	
		Silt Content	As per Appendix 'C' of Chapter 3 of CPWD Specifications	Field	
		Moisture Content	IS 2720	Field	
(iii)	Sand for Joint Filling	Particle Size Distribution	As per Technical Specification	Field / Lab	Minimum one test for every 50 cum or part thereof.

Note :

1. For items not covered above may be dealt with as per the Technical Specifications in the contract / mandatory tests will be carried out as per CPWD's Specifications.
2. The test frequencies specified shall be treated as the minimum mandatory requirements.
3. If the detailed technical specifications or the BOQ call for additional tests or higher test quantities, the contractor shall be fully responsible for conducting all such additional tests at its own cost.
4. In case of any discrepancy between the various specifications or minimum test requirements stipulated in various chapters of this document (Volume 3 technical specifications of work), the most stringent and technically demanding requirement shall prevail and the decision of the Engineer-in-Charge regarding the suitability or acceptability of any shall be final and binding on the contractor.

**Quantities of Materials for Areas of Surfacing to be considered For
Working out Minimum Period of Road Roller**

SL	Material of Surfacing	Quantity / Area
1.	Consolidation of earth subgrade	1860 Sqm
2.	Consolidation of stones soling 15 cm to 22.5 cm thick	170 Cum
3.	Consolidation of brick soling 10 cm to 20 cm thick	230 Cum
4.	Consolidation of wearing coat of stone ballast 7.5 cm to 11.5 cm thick	30 Cum
5.	Consolidation of wearing coat of brick ballast 10 cm thick	60 Cum
6.	Spreading and consolidation of red bajri 6 mm	1860 Sqm
7.	Painting one coat using stone aggregate 12.5 mm nominal size -	930 Sqm
(a)	@ 1.65 m ³ per 100 m ² and paving bitumen A-90 or S-90 @ 2.25 Kg/m ² or	
(b)	@ 1.50 m ³ per 100 m ² and bitumen emulsion or Road tar @ 2.25 Kg/m ²	
8.	Painting two coats using -	
(a)	For first coat, stone aggregate 12.5 mm nominal size:	600 Sqm
(i)	@ 1.50 m ³ per 100 m ² with paving bitumen A-90 or S-90 @ 2 Kg/m ² or	
(ii)	@ 1.35 m ³ per 100 m ² with bitumen emulsion @ 2 Kg/m ² or	
(iii)	@ 1.25 m ³ per 100 m ² with road tar @ 2.25 Kg/m ²	
(b)	For 2 nd Coat, stone aggregate 10mm nominal size 0.9 Cum per 100 Sqm with -	600 Sqm
(i)	1 Kg of paving bitumen A-90 or S-90 or bitumen emulsion per Sqm or	
(ii)	1.25 Kg of road tar per Sqm	
9.	Re-painting with stone aggregate 10mm nominal size 0.9 Cum per 100 Sqm with -	1670 Sqm
(a)	1 Kg of paving bitumen A-90 or S-90 per Sqm or	
(b)	1.25 Kg of Bitumen emulsion per Sqm	
10.	2 cm premix carpet surfacing using 2.4 m ³ of stone aggregate 10 mm nominal size per 100 m ² and binder including tack coat, the binder being hot cut back bitumen or bitumen emulsion specified quantities	930 Sqm
11.	2.5 cm. premix carpet surfacing using 3 m ³ of stone aggregate 10 mm nominal size per 100 m ² and binder including tack coat, the binder being hot cut back Bitumen or bitumen emulsion in specified quantities	930 Sqm

Execution Compliance Checklist

Work	Check on the quality by contractor /Corporation Engineer
Foundation	Visual inspection for: <ul style="list-style-type: none"> • Honey combing, surface smoothness in case of cement concrete and bond, tooth connections, joints in case of masonry. • levels & plumbs, • reinforcement projecting from the pedestals size of the pit & back filling completion etc.
	Physical testing for: <ul style="list-style-type: none"> • as required for concrete works in super structures in case of CC foundation, • as required for masonry works in super structure in case of masonry foundation.

Work	Check on the quality by contractor /Corporation Engineer
Masonry works in super structure	Visual inspection for: <ul style="list-style-type: none"> • bond in the masonry, • tooth connections with transverse walls, • thickness of the mortar in bed & joints, • levels & vertical plumbs, • Finishing & racking of joints.
	Physical testing for: <ul style="list-style-type: none"> • size of bricks, bricks soundness, compressive strength and water absorption
Concrete works in building super structure frames like beam, columns, slab etc.	Visual inspection for: <ul style="list-style-type: none"> • honey combing surface smoothness • levels & plumbs, • reinforcement projecting from the columns, beam dowels bars, cover to the reinforcement etc. (if any) • quality of scaffolding, centring & shuttering.

	<p>Physical testing for:</p> <ul style="list-style-type: none"> • Cube testing for Compressive strength (if any due at the time of test check). • Physical weight of the reinforcement & cement bags. • Rebound hammer test on CC frame at least one time at one site.
Cement Concrete works in floors & pavement roads	<p>Visual inspection for:</p> <ul style="list-style-type: none"> • Homogeneity, surface smoothness • Levels, cambers & slopes. • Joint spacing, cutting, filling etc. • projecting reinforcement for the columns, beams, dowels bars, cover to the reinforcement etc. (if any). <p>Physical testing:</p> <ul style="list-style-type: none"> • Compression strength testing & thickness testing by core cutting method in case of pavement road & rebound hammer testing in case of floor.

Work	Check on the quality by contractor /Corporation Engineer
Structural Steel works	<p>Visual inspection for:</p> <ul style="list-style-type: none"> • quality of welding, bolting, riveting etc. • surface smoothness, rusting of the steel members, quality of primer etc. • cambers, levels & vertical plumbness. • Use of the cut pieces in the steel members. • Any gap between steel column base plate & concrete columns, purlin & rafter connection, any other places where steel member is inter connected to each other or connected with the cement concrete members. • Arrangement of winch/ pully/crane for erection of steel columns, rafter, truss, purlins etc. • Arrangement of welding & cutting of steel, quality of electrodes (grade & make) • Arrangement of site fabrication facility like electrode heating oven, gas cutting, oxygen cylinders, welding rectifier, power connections etc. • Grade, type, make of structural steel brought at site. <p>Physical testing for:</p> <ul style="list-style-type: none"> • weightment of steel members, their thickness & sizes.

Work	
Roofing & cladding works with metal sheets.	<p>Visual inspection for:</p> <ul style="list-style-type: none"> • Colour & edges of profiled sheets • Surface, smoothness, rusting of the sheet. • Make of the galvalume sheet & stamping of the make, yield strength in MPA, GSM coating. • Make, size & type of screws • Pattern of fixing screws, number of screws per sheet • Overlapping of the sheets at joints/ purlins etc. • Levels & slopes. • Connection at the ridges, at eve, at gables etc. • Fixing of ridges, flashing and minimum projection if there is no flashing. • Unplugged holes & gap, sunlight from joints in roofing & cladding. • Clamping, alignment, slope of valley gutter. • Connection of down take pipe with drains and overhead gutter. • Sealing of joints in gutter/ Down take pipes.
	<p>Physical testing for:</p> <ul style="list-style-type: none"> • Thickness & dimensions of the sheets. Valley gutters etc. • Sheet profile. • Water leakage test from gutter and down take pipes.

Work	
Finishing works: Plastering, painting, pointing etc.	Visual inspection for: <ul style="list-style-type: none"> • Surface smoothness. • Undulation & unevenness • Levels & plumbness. • Micro Cracks on the surface • Joints, groove cutting, racking, finishing, pointing etc. • Quality of finish, physical appeal, dampness, peeling of surface, fading of paint colour etc. • Arrangement of curing. Extent of curing done. • Colour, age, make of the painting material
	Physical test for: <ul style="list-style-type: none"> • Thickness of the plaster work
CC pavement works with paver block	Visual inspection for <ul style="list-style-type: none"> • Finish of paver block, noticeable cracks at the edges. • Levels, cambers & slopes. • Alignment of Joints & filling with fine sand. • Arrangement for edge protection & connection with the drains.
	Physical test for: <ul style="list-style-type: none"> • Size of the paver block including thickness. • Thickness of sand bed. • Compressive strength of paver block on randomly selected samples. • Grading of the sand used in the sand bed.
Earth work in plinth filling, Subgrade, GSB, WBM, WMM in floors/roads.	Visual inspection for <ul style="list-style-type: none"> • Camber/levels/slopes • Consolidation, • deleterious content in filling. • Arrangement of stacking of loose aggregates, soil etc. • Water logging, edge/ slope protection of subbase, side slope, shoulder formation etc.
	Physical testing for: <ul style="list-style-type: none"> • Field Compaction test • Levels on finished/completed works

Work Base work with lean concrete: PCC /DLC etc.	
	Visual inspection for <ul style="list-style-type: none"> • Camber/levels/slopes • Compaction
	Physical testing for: thickness
Other works: Joinery works, Tile flooring works, stone works, false ceiling works etc.	Visual inspection for <ul style="list-style-type: none"> • Levels, plumbness. • Clamp support & connections at joints. • Bed firmness. • Quality of surface finish. • Sealing of gaps, joints etc.
	Physical testing for: thickness and other parameters required in contract specification/ manufacturer recommendations etc.
Building services like water supply, plumbing, sanitary, drainage etc.	Visual inspection for <ul style="list-style-type: none"> • Levels, slopes, plumbness. • Clamp support & connections at joints. • Arrangement of drains & disposal, connections into the chambers. • Filling, covering etc. if required. • Source of leakage, water stagnation etc. • Make, grade, type of the pipe & pipe fitting (faucets etc), ceramic items, plumbing fixtures, man hole covers, traps etc.
	Physical testing for: <ul style="list-style-type: none"> • Leakage at joints by water flow test, smoke test etc. as feasible. • Thickness of pipe & fitting used • Weighment of steel man hole covers or similar items brought at site

Work	
Building services like general electrical works	<p>Visual inspection for:</p> <ul style="list-style-type: none"> • Levels, plumbness. • Installation, clamping, alignment, any overhanging etc. • Conduit & wire quality, size, make, grade & type. • Make, grade, type, rating & warranty period of electrical fixtures etc. • Arrangement of earthing, safety measures etc. <p>Physical testing for:</p> <ul style="list-style-type: none"> • Thickness of conduit, wires wherever required. • Physical working of electrical installations.
Other special works like E&M works of firefighting, HVAC system, DG set etc.	Visual inspection & physical testing as per contract specification & manufacturer recommendation.

STANDARD CHECKS ON QUALITY & WORKMANSHIP IRRESPECTIVE OF STAGE OF COMPLETION OF WORKS:

It is to be checked physically to confirm that following are in line of contract /technical specifications permitted in relevant IS codes.

- i) Type, grade, age & make of the cement brought by the contractor at site.
- ii) Cement storage arrangement & Quantity of the cement available in the cement store.
- iii) Theoretical consumption of cement viz a viz cement brought to site of work/ issued & consumed in work.
- iv) Physical weight of cement bags selected randomly.
- v) Type of the earth excavated from the foundation & its disposal arrangement. In case of black cotton soil, it is required to be removed without any temporary dumping/stacking at the site.
- vi) Source of earth/ borrowed pit for supply and filling in Plinth, under subgrade etc. check for organic component, garbage, plasticity, colour of such soil.
- vii) Source of water being used in the construction. Collection & storage of the water in UG tank/overhead tank.
- viii) Quality of water used in the construction. It should normally be a potable water.
- ix) Quality of bricks, sand, aggregate brought at site. Their source of supply and method of stacking etc. check on grading & deleterious/silt content in coarse & fine aggregates. Other than visual inspection, it is to be checked that mandatory field/lab test are being conducted at site regularly and the test results meet the acceptance criteria. Material test register to be checked.
- x) Quality of cement, structural steel, reinforcement steel, metal roofing sheets, round pipes for plumbing/water supply/sanitation/drainage etc brought at site and their arrangement of stacking. Other than visual inspection, it is to be checked that mandatory field/lab test are being conducted at site regularly and the test results meet the acceptance criteria. Material test register & manufacturer test certificates to be checked.
- xi) Arrangement of making mortar, soaking the bricks & carriage of material from store to work place.
- xii) Arrangement of batching, weighing & mixing of cement, water & aggregates for making concrete. Arrangement of placing the concrete into formwork. Compaction of concrete etc.
- xiii) Arrangement of Roller for compacting subgrade, earth filling in plinth. Plate vibrators etc as per requirement.
- xiv) Arrangement of pumping of rain water, disposal of surface runoff from construction site. Jungle clearance from work place.
- xv) Arrangement of curing, illumination of work place at site.
- xvi) Facility extended to construction workers at site. Arrangement for their Sanitation, drinking water etc.
- xvii) Arrangement of safety in works. Quality of Scaffolding erected, centring and shuttering for works at height, below roof slab etc. Arrangement of safety shoes & Helmet for working in steel fabrication /erection area. Safety belt

/lifelines for working at slope/height etc. Loose or unsafe power connection & water stagnation at site should not be allowed.

- xviii) Installation of CCTV camera at site of construction of building.
- xix) Records being updated/maintained in site register viz Hindrance register, site order book, Material test registers, Cement Register and other important registers as per requirement of contract.
- xx) Contractor All risk Policy, Workman compensation policy is live during construction.
- xxi) All construction drawings & technical specifications, CPWD specification copy (hard binded book) are available at site of work.
- xxii) Filed testing lab is well equipped and is in working conditions.
- xxiii) Deployment of technical staff by contractor is in line of contract.
- xxiv) An overall quality of workmanship, general physical appearance of work.
- xxv) Garbage, dismantled or construction debris at site. Its disposal mechanism, lead etc.

ANNEXURE-II

Miscellaneous Formats - Technical Appendices and Registers

SITE ORDERS BOOKS

NAME OF WORK

DATE OF COMMENCEMENT / PERIOD FOR COMPLETION

SL	REMAKRS OF THE INSPECTING OFFICER OR CONTRACTOR	ACTON TAKEN AND BY WHOM	REMARKS
1	2	3	4

HINDRANCE REGISTER

SL	Nature of Hindrance	Items of Work that Could Not be Executed Due to this Hindrance	Date of Start of Hindrance	Date of Removal of Hindrance	Over-Lapping Period if any	Net Hindrance in Days	Sign of AE	Weightage of the Hindrance	Net Effective Days of Hindrance	Sign of EE	Remarks of Reviewing Officer
1	2	3	4	5	6	7	8	9	10	11	12

MATERIAL AT SITE ACCOUNTS

❖ Region _____

❖ Name of Work _____

❖ Name of Article _____

❖ Estimate Requirements _____

❖ Issue Rate _____

SL	Date of Receipt	Received From	Unit	Qty. Received	Progressive Received Qty.	Date of Issue	To Whom Issued	Qty. Issued	Progressive Issued Qty.	Balance	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

APPENDIX -IV

CEMENT REGISTER

Date of Receipts	Quantity Received	Progressive Recd. Quantity	Date of Issue	Quantity Issued	Items of Work For Which Issued	Quantity Returned at the End of The Day	Total Issue	Progressive Total	Daily Balance at Hand	Contractor's Initial	Site Engineer's Initial	Remarks of AE/EE at Periodical Checks
1	2	3	4	5	6	7	8	9	10	11	12	13

REGISTER FOR RECORDING LEVELS

SL	Change s	Back Sight	Intermediate Sight	Fore Sight	Height of the Instrument	Reduced Level	Remarks
1	2	3	4	5	6	7	8

APPENDIX -VI

REGISTER FOR SILT CONTENT OF FINE / COARSE SAND

SL	Date of Test	Source of Material	Height of Silt After Setting (V1)	Height of Sand After Setting (V2)	%age of Silt Content (V1/V2x100)	Acceptability As Per Specification	Sign. of Site Engineer With Date	Sign. of Contractor With Date	Location Where Sand Used	Remarks / Action Taken
1	2	3	4	5	6	7	8	9	10	11

REGISTER FOR SLUMP TEST

SL	Date of Testing	Item of Work & Location	Vibrator Used Yes/No	Quantity of Water Added per Bag of Cement (Litre)	Height of Specimen After Removal of Mould (mm)	Slump (mm)	Acceptability of Result or Action Taken	Sign of Site Engineer With Date	Sign. of Contractor With Date	Remarks
1	2	3	4	5	6	7	8	9	10	11

SAMPLE REGISTER

Material & Identification Mark	No. of Samples Collected	Sl. No. of Sample	Place From Where Sample Collected	Qty. of Work/Lot Represented By Each Sample	Test	Field / Lab	Letter No. & Date By Which Sample Sent For Testing	Signature of Official Drawing Sample	Signature of the Contractor	Reference for the Results Received	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

APPENDIX -IX

REGISTER FOR PARTICLE SIZE DISTRIBUTION FOR COARSE AGGREGATE & FINE AGGREGATE

SL	Date	Weight of Sample (Gram)	Size of Sieves	Weight Retained on Each Sieve	%Age of Weight Retained	Cumulative %Age of Weight Retained	%Age of Weight Passing	Specified %age of Weight Passing	Sign. of Contractor With Date	Sign. of Site Engineer With Date	Remarks / Action Taken
1	2	3	4	5	6	7	8	9	10	11	12

Note : Size of Sieve should be as per CPWD Manual / BIS Specifications

PHYSICAL WEIGHMENT REGISTER

Tor Steel Bars / Truss Members / Other Misc. Items

SL	Date	Description of Sample	Actual Weight per Unit	Theoretical Weight per Unit	Actual Thickness (Outer Dia.)	Theoretical Thickness (Outer Dia.)	Remarks Accepted / Rejected	Initials of Site Engineer	Contractor Signature
1	2	3	4	5	6	7	8	9	10

								1	SL	
								2	Date of Collection	
								3	Grade of Mix	
								4	Mark of Specification	
								5	Date of Testing	7 Days' Test Result
								6	Load in KN	
								7	Compressive Strength (KN/mm ²)	
								8	Average Compressive Strength (KN/mm ²)	
								9	Date of Testing	28 Days' CUBE TEST Test Result
								10	Load in KN	
								11	Compressive Strength (KN/mm ²)	
								12	Average Compressive Strength (KN/mm ²)	
								13	Required Specified Strength	
								14	Approx. Qty. Represented By Specimen	
								15	Item of Work from Where the Sample is Collected	
								16	Sign. of Site Engineer With Date	
								17	Contractor's / Contractor's Rep. Sign. With Date	

Density Test by Core Cutter Method

MDD As Per Lab. Test W5 _____

						1	SL
						2	Location (C.H.) / Area Represented by the Test
						3	Core Cutter Nos.
						4	Weight of Core Cutter + Weight of Soil (gram) (W1)
						5	Weight of Empty Core cutter (gram) (W2)
						6	Weight of Wet Soil (gram) $W = W1 - W2$
						7	Volume of Core Cutter (in CC) V
						8	Bulk Density (gram/cc) $W3 = W/V$
						9	Moisture Content of compaction layers (M)
						10	Dry Density gram/cc $W4 = W3 /$ $(1 + M)$
						11	Degree of compaction $W4/W5$
						12	Acceptability Limit
						13	Sign. of Site Engineer with Date
						14	Contractor / Contractor's Representative Signature with Name & Date

APPENDIX -XIII

TEST FOR THICKNESS AND DENSITY OF THE COMPACTED LAYER

(BY SAND REPLACEMENT METHOD)

For Asphalt Concrete / Bitumen Macadam / CC Pavement

Lab Test Density in gm/CC _____

						1	SL	
						2	Date of Test	
						3	Qty. Represented by the Test	
						4	Location of Holes	
						5	Individual l(mm)	Thickness of Layer
						6	Average (mm)	
						7	A gm	Weight of Materials Removed from the Carpet Hole
						8	W gm	Initial Weight of Sand taken in Cylinder
						9	W1 gm	Weight of Sand Filling in Cone of Cylinder
						10	W2 gm	Weight of Sand Remaining in Cylinder
						11	d gm/C	Predetermined Bulk Density of Sand
						12	gm/CC	Density = $\frac{A \times d}{W - (W_1 + W_2)}$
						13	Remarks / Acceptability	
						14	Sign. of Site Engineer	
						15	Contractor / Contractor's Representative Signature with Name & Date	
						16	Action Taken	

DENSITY TEST REGISTER FOR SOIL - BY SAND REPLACEMENT METHOD

APPENDIX -XIV

Wt. of Standard Sand in gram/cc (W6) = _____
 Unit Lab Test MDD in gram/cc (W10) = _____

				1	SL	
				2	Date of Test	
				3	Qty. Represented by the Test	
				4	Location of Holes	
				5	Individual	Thickness of Layer (mm)
				6	Average	
				7	(W) gm	Wt. of Material from the Hole
				8	(Y)	Moisture Content %age
				9	(W1)	Initial Weight of Sand Taken in the Cylinder before Filling in Hole in gm
				10	(W2)	Wt. of Sand after Filling in hole in gm
				11	(W3) = W1-W2	Wt. of Sand in Hole & Cone (gm)
				12	(W4)	Wt. of Sand in Cone (gm)
				13	W5 = (W3-W4)	Wt. of Sand in Hole (gm)
				14	(W7) = W5/W6	Volume of Hole in CC
				15	(W8) = W/W7	Bulk Density in gm/CC
				16	(W9) = W8/Y	Dry Density in gm/CC
				17	W9/W10 x 100	Degree of Compaction
				18	W9/W10 x 100	Remarks / Acceptability
				19	Sign. of Site Engineer with Date	
				20	Contractor's / Contractor's Representative Signature with Name & of Date	
				21	Action Taken	

TEST OF THE BRICK / BRICK TILES FOR COMPRESSIVE STRENGTH

APPENDIX - XV

						1	SL
						2	Date of Collection of Sample
						3	Date of Testing
						4	Wt. (in Kg)
						5	No. of Specimen
						6	Size in cm/Area in cm ²
						7	Compressive Strength Obtained for Individual Bricks in Kg. per cm ²
						8	Average Strength in Kg/cm ²
						9	Specified Compressive Strength in Kg/cm ²
						10	Acceptability
						11	Sign. of Site Engineer with Date
						12	Contractor's / Contractor's Representative Signature with Name & Date
						13	Action Taken / Remarks

ROAD ROLLER REGISTER

SL	Date	Period		Hours	Description of Item Rolled	Qty. of Area Rolled	Theoretical Qty. / Area to be Rolled	Signature of Site Engineer	Signature of Contractor	Remarks
		From	To							
1	2	3	4	5	6	7	8	9	10	11

REGISTER FOR DISMANTLED MATERIAL

Name of Work _____

Name of Division _____

SL	Date of Receipt	Ref. to No. & Page of MB	Full Particulars of Material giving Size etc. if any	Opening Balance	Qty. Recd.	Total	Ref. to its Disposal Whether by Write off Sale or Transfer to Other Works	Qty. Issued or Dispose off	Closing Balance	Dated Initial of the Site Engineer	Date of Verification of Balance by Whom Verified	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13

REGISTER FOR BULKING OF SAND

SL	Date Of Testing	Particulars of Work Represented by Sample	Qty. of Lot/Qty. of Material	Height of Dry Sand (X)	Height of Sand after Mixing Water (Y)	Bulking of Sand $(X/Y-1) \times 100$	Action Taken for Bulkage	Signature of Site Engineer	Signature of Contractor	Remarks
1	2	3	4	5	6	7	8	9	10	11

ANNEXURE III

Pre Approved Makes (Civil)s

S. No.	Name of Material	Approved Make(s)
1	Ordinary Portland Cement (OPC)	ACC, UltraTech, Ambuja, Shree Cement, JK Cement, Jaypee Cement, Century Cement, Nuvoco, birla corporation, Damlia, Ramco, JSW cement, Heidelberg, India cments
2	Portland Pozzolana Cement (PPC)	ACC, UltraTech, Ambuja, Shree Cement, JK Cement, Jaypee Cement, Century Cement, Nuvoco, birla corporation, Damlia, Ramco, JSW cement, Heidelberg, India cments
3	White Cement	Birla White, JK White, Travancore Cements
4	Reinforcement Steel (TMT Fe 500)	SAIL, Tata Steel, RINL, JSW Steel, Jindal Steel & Power, Electrosteel, AM/NS
5	Structural Steel / MS Sections	SAIL, Tata Steel, RINL, JSW Steel, Jindal Steel & Power, Electrosteel, AM/NS
6	Shuttering Plywood	Century, Archidply, Merino, Kitply, Greenply, Duro
7	Construction Chemicals / Admixtures	Fosroc, Sika, BASF, Pidilite, CICO, MYK Schomburg, Ultracon, ECMAS, Kunal Conchem, Ardex Endura, MC-Bauchemie
8	Waterproofing – Crystalline / Integral	Kryton, Xypex, Fosroc, Sika, BASF, Pidilite
9	Waterproofing Membrane (APP / HDPE / Self Adhesive)	Pidilite, Fosroc, Ardex Endura, Asian Paints, STP, Index/Soprema
10	PU / Elastomeric Waterproofing	Fosroc, Sika, BASF, Pidilite, MC-Bauchemie
11	Gypsum Plaster	Ferrous Crete, Elite, Ultratech, KK, Gyproc, JK Gypsomax
12	Glass Wool Insulation	UP Twiga, Owens Corning, Gupta Glass Wool
13	Rock Wool Insulation	Rockwool India, Roxul, Lloyds, Thermax Insulations
14	Doors – Flush / Fire Rated	Century, Greenply, Merino, Duro, Archidply, Godrej, Shakti, Navair, Hormann, sainik
15	Tiles – Ceramic / Glazed	Kajaria, Somany, NITCO, AGL, Johnson, Orientbell
16	Tiles – Vitrified	Kajaria, Somany, NITCO, AGL, Johnson, Orientbell
17	Tile Adhesive / Epoxy Grout	MYK Laticrete, Fosroc, BASF, Ferrous Crete, Ardex Endura
18	Wall Putty	Birla Wall Care, JK White, Saint Gobain
19	Paints – Interior / Exterior / Enamel / Epoxy	Asian Paints, Berger, Nerolac, Dulux (Akzo Nobel), Kansai Nerolac, Indigo paints
20	Expansion Joint Systems	Sanfield, Vexcolt, Hercules, Z-Tech, Devin
21	Fasteners / Anchors	Hilti, Fischer, Trutek, Bosch, Boun Fasteners
22	Floor Hardener	Ironite, Fosroc, Sika, BASF MasterTop
23	Calcium Silicate Boards	Everest, Aerolite, Hilux, NCL
24	Aluminium Sections / Windows	Hindalco, Jindal, Indalco, Nalco, Bhoruka
25	Glass – Float / Toughened / Performance	Saint Gobain, AIS, Modi Guard, Guardian, Gold Plus
26	Signage	Hindustan Signage, PR Graphics, Galaxy Signage, Signsutra
27	Self drilling/ tapping Zinc plated screws size 5.5x55mm for Galvalume sheets	HILTI, HP or equivalent
28	Galvalume Sheet	TATA colorbond, JSW radiance
29	Dock leveller	Gandhi Automation, Shakti hormann, Assa Abloy
30	Polycarbonate Sheet	abic Lexan, Covestro Makrolon, Palram, Tuflite, Everest Ecolite, Danpal, Gallina Polygal

31	XLPE	Aerofoam, Supreme, Trocellen, NMC, XLPE Shield
32	Fire Rated Door	Hormann, Shakti Hormann, Godrej, NAVAIR, Promat, Assa Abloy
33	Construction / Control Joints Sealant	Sika, Fosroc, BASF MasterFlex, DCP, Bostik
34	Floor Densification & Burnishing	Euco Diamond Hard, Sika Cure Hard, Ameripolish, MYK, Tremco
35	M60 Cementitious Grout	Fosroc Conbextra, Sika Grout, BASF Masterflow
36	Geo Cells / Geo Grids	Strata Geosystems, Tensar, Maccaferri, techfab
37	Rubber Bumpers / Fenders	Durocrete, Tirupati Rubbers, ATS ELGI, Safeguard Rubber, Assa Abloy
38	Motorised Rolling Shutter	Hormann, Gandhi Automation, Avians, Technocrat, ASSA Abloy
39	Speed Breakers	3M, Frontier, AXN, NILKAMAL
40	Road Studs	3M, DarkEye, ReflectoSafe, RoadStar
41	Steel Bollards	TATA Steel, Jindal Pipe
42	Sanitary Ware	Jaquar, Cera, Hindware, Kohler, Toto, Roca, American Standard, Duravit, Parryware, Grohe, Somany
43	CP Fittings	Jaquar, Grohe, Kohler, Hindware, Cera, Roca, American Standard, Parryware, Essco, Hansgrohe, TOTO
44	UPVC / CPVC / PVC Pipes	Finolex, Astral, Supreme, Prince, Ashirvad, JK Pipes, Cera, Kisan
45	Water Tanks	Sintex, Vectus, Polycon, Supreme
46	Gypsum board partitions	Gyproc (Saint-Gobain), USG Boral, Knauf, Armstrong, Shera
47	Gypsum board false ceiling	Gyproc (Saint-Gobain), USG Boral, Armstrong, Knauf
48	UPVC doors and windows	Fenesta, Lingel, Aparna Venster, NCL Veka, Prominace
49	Aluminium doors and windows	Jindal Aluminium, Alumil, Saint-Gobain Ecosystem, Hindalco
50	Glass	Saint-Gobain, Asahi India (AIS), Modi Guard, Gold Plus
51	SS Handles, Hinges, Locks etc.	Dorma, Godrej, Dorset, Hafele, Ozone, Yale
52	Door Closers	Dorma, Hafele, Godrej, Ozone, Geze
53	Aluminium composite panel (ACP)	Aludecor, Alucobond, Alstrong, Viva, Eurobond, Reynobond
54	Laminate	Merino, Greenlam, Century Laminates, Royal Touche, Virgo Laminates, Sundek
55	White wash	Surya Cem, Birla White, Magic White Wash, MG CEM

Note-

- 1) The makes listed above are approved subject to compliance with the technical specifications. The contractor shall obtain specific make approval from the Engineer-in-Charge before procurement and installation.
- 2) In case any of the preferred makes are unavailable locally, the contractor may propose an equivalent make, which shall be used only after prior approval of the Senior General Manager (Engg.).
- 3) For items not covered in the approved make list, the contractor shall submit details of the proposed make for review. The decision of the Engineer-in-Charge regarding acceptability of any make shall be final and binding.

ANNEXURE III

Pre Approved Makes (Electrical)

S. No.	Name of Material	Approved Make(s)
1	Wires (PVC Insulated copper conductor cable FRLS – ISI marked) / Telephone cables / Submersible cables / Co-axial / TV cables	Havells, Anchor, Finolex, KEI, RR Kabel, Goldmedal, AKG, Asmon
2	Modular Switches / Sockets / TV Socket / Telephone sockets / Data sockets / Electronic Regulators / AC Starter Switch etc.	Legrand (Myris), MK (Blenze Plus), Panasonic (Vision), Havells (Crabtree Murano), Wipro (Northwest, Stylus+), Goldmedal
3	MCBs / MCBDB / RCBO / Isolators	Legrand, Schneider Electric, Hager, L&T, ABB, Siemens, C&S Electric
4	1200 mm sweep ceiling fan with BLDC motor	Orient, Crompton, Havells, Atomberg, Bajaj
5	300 mm / 450 mm sweep Heavy Duty Exhaust Fan	Crompton, Orient, Almonard, Bajaj, Atomberg, Halonix
6	250 mm sweep (Plastic body) Exhaust Fan	Havells, Crompton, Orient, Bajaj, Halonix, Atomberg, Almonard
7	LED Luminaires (ISI Marked)	Philips, Wipro, Bajaj, Havells, K-Lite, Crompton Greaves
8	PVC Conduits (ISI marked) – Colour: Ivory / Grey	Precision, AKG, BEC, GM, Sudhakar, Goldmedal
9	GI Pipe	Tata, Jindal, Surya, Zenith
10	All other items not covered	As approved by Engineer-in-Charge
11	MS Conduit (ISI marked)	BEC/AKG/NIC/Steel craft/M-Key, SK (E.R.W)
12	PVC Conduit and accessories	Polycab/AKG/Asian
13	1.1 KV aluminium armoured XLPE insulated and PVC sheathed Cable (LT Cable)	Havells/KEI/Gloster/Grandlay
14	FRLS PVC insulated copper conductor stranded flexible wire i/c control cables	Havells/Finolex/KEI/Grandlay/RR Kabel/Gloster
15	Cable Raceway floor/wall mounted and accessories	Schneider/Legrand/Cooper
16	Modular Switch & Socket	Legrand (Mirus)/M.K (Element)/Schneider (Zencelo India)/Havells/ABB
17	Metal clad Industrial Socket	Legrand/Siemens/Schneider/C&S/ABB
18	Cat-6 Cable	Belden/Siemon/Legrand/Penduit (Pannet)
19	Cable Glands	Dowells/Commet/Gripwell/Raychem
20	Crimp Patch Cord	Belden/Siemon/Legrand/Penduit (Pannet)
21	Protection Device (MCB/RCCB/DB/ELCB)	Siemens (Betagard)/Hager/Schneider/Legrand/C&S/ABB
22	MCCBs	Siemens (3VA)/L&T/Schneider/Legrand/C&S/ABB
23	Power contactor	Siemens/L&T/Schneider/Legrand/ABB/C&S
24	Surge Protection Devices	Siemens/L&T/Schneider/Legrand
25	Panel Accessories	Siemens/L&T/Schneider/Legrand/Teconic/ABB/C&S/Neptune
26	Selector Switch	Salzer/Siemens/BCH/Kacee
27	Auxiliary Relays	Siemens/L&T/Schneider/Legrand/ABB

28	LED/Metal Halide/Fluorescent Internal Lighting Fixture	Philips/Wipro/Havells/Crompton/Decon
29	External Lighting Fixture	Philips/Wipro/Havells/Crompton
30	Emergency Lighting/ Exit Sign boards	Philips/Havells/Lighting Technologies/Tilux/Prolite
31	Ceiling Fan (ISI marked & BEE rated 5 star)	Havells/Almond/Orient/Usha/Bajaj
32	Paint	Nerolac/Asian/Berger
33	Advance Lightning Protection System (Early Streamer Emission Type)	LPI (Australia) by allied power/SGI Dupval/Messien-satellite (France)-by SGI/Bradlay (USA)-by JM/Erigo (USA)-by security shoppe/ABB
34	GI Pipe	Tata/Jindal/SAIL
35	Main LT Panels/MCC Panel	Main LT panel/MCC Panel board should be IEC 61439 part-1 and II manufacturer has to produce relevant test certificate as per IEC code; Nicotic, Delhi/Siemens/Schneider/Milestone/Neptune
36	Air Circuit Breaker	Siemens/Schneider/L&T/Legrand/C&S/ABB
37	Surge Voltage Protection	Siemens/Schneider/L&T/Legrand/ABB
38	Earth fault module	Siemens/Schneider/L&T/Legrand
39	Protection relays	Siemens/Areva/L&T/Legrand
40	C.Ts and P.Ts	Kappa/AE/Matrix
41	Digital Meters	Siemens (PAC)/ Schneider/ (conzerv) / Secure Enersol / L&T/ Neptune
42	Change Over Switch	L&T/Havells /Socomec/ABB/C&S
43	Indicating lamps	ESBEE/Schneider/Siemens/Vaishno/Neptune
44	Power capacitors	Epcos/ Neptune / Legrand /ABB/ L&T
45	Automatic Power factor correction relay/controller	Epcos/Siemens (PAC) /Schneider (Conzerv)/L&T/Neptune
46	Sealed Maintenance Free Batteries	Exide/Panasonic/Hitachi/Shinkobe
47	Battery charger	Caldyne/Chhabi Electricals/Statcon/Max Power
48	Cable Trays (Factory Fabricated/Overhead & Floor Raceways	Legrand/MEM/OBO/ Milestone/ Neptune
49	HDPE underground cable duct	Rex Polyextrusion/Tirpura/Plasomatics/Duraline
50	Insulation Mats	DL Miller & Co. Ltd.?Premier Polyfilm Ltd./RMG Polyvinyl India Ltd/Jyoti
51	Smoke/Heat detectors	Apollo/ System Sensor/ Agni
52	Manual Call point	PRD/System-Tek/ Simplex/ System Sensor/Agni
53	Response indicators	PRD/System-Tek/ Simplex/ System Sensor/Agni
54	Fire Exit Signs	System-Tek/ Simplex/ Agni
55	Fire Control Panel	System-Tek/ Morley /Agni
56	Speaker / Hooter	System-Tek/ Philips /Agni
57	Occupancy Sensors/ Movement Sensor	Legrand/ Philips/ Wipro
58	Flush type switch /socket	Anchor/ Kinjal/ SSK/ Havells Reo
59	Fuse switches unit / switch fuse unit /HRC fuse	L&T / Siemens/ Havells/ C&S
60	Exhaust fan	Almonard/ Alstom/ Crompton/ Havells
61	XLPE insulated HT cables	Gloster /KEI/Havells
62	Cable lug	Ascon (Heavy gauge) Jainson Dowells
63	Lamp Holder (Brass)	Kay/SSK/Kinjal
64	Telephone wires/Telephone Cable / jelly filled telephone cables	Finolex /Delton/Havell's /R.R. Kabel

65	Telephone tag blocks	Krone/ Pouyet
66	Telephone outlet	MK Electric /Legrand (Mosaic)/Crabtree (Piccadilly)
67	GI raceways	Milestone Engineering /Legrand/MDS/Neptune Systems Pvt. Ltd./MK
68	PVC raceways	Legrand/ MK
69	Electronic ballast	Philips /Wipro/Bajaj/Decon/Crompton/Havells
70	DLP plastic trunking	Legrand/MK
71	Geysers	Recold /Venus /Usha Lexus /Sphere hot
72	Tower Light	Ligman/Simes/Bega
73	HT/LT transformers	ABB/Schneider /CGL (Crompton Greaves Ltd.)
74	HT SF-6 circuit breakers/VCB	Siemens /ABB/CGL/Schneider
75	Programmable Logic Controller(PLC)	Siemens/Allen-Bradley/Schneider
76	Earthing (Chemical Earthing)Plate Earthing	JMV/As per CPWD Norms
77	Octagonal Pole	Bajaj / Crompton / Phillips
78	11 kV HT panel Incoming relay	CGL/Schneider/ABB/ Siemens
79	Control Relay Panel	CGL/Schneider/ABB
80	Lightning Arrestor	ABB/Alltec/JMV
81	Temp. Gauge	Guru
82	Gate Valve	Leader/Sant
83	Electrical Backup	Spare hot/ Racold
84	PVC Tank	Syntex/ Polycon
85	Thermostat	ISI Marked
86	Flat Collector Plate	Solocrome/ Tata BP/ Racold
87	S.S Sheet	Jindal / National
88	HT/LT cable joints (Straight through/outdoor/indoor)	3M/ Denson/ M Seal/Raychem/ Cabseal
89	Alternator	STAMFORD/Crompton Greaves
90	DG Set	Sterling & Wilson /Caterpillar/Commins Power / eneration/ Kirloskar
91	Makes of accessories of HT / LT Panel / Transformers	As per standard practice of manufacturer.
92	Bus Trunking	C&S / L&T/ Schneider as per standard practice of OEM manufacturer / channel partner
93	HT Panel 11 KV	ABB/Schneider /CGL (Crompton Greaves Ltd.)
94	Bus Duct	Neptune/ Milestone/Tricolite
95	Fire Fighting Pipes	Tata, Jindal, SAIL
96	Valves	Zoloto, Kirloskar, Sant, Audco
97	Fire Pumps	Kirloskar, Grundfos, KSB, Siemens
98	Fire Extinguishers	Ceasefire, Minimax, Safex, Newage, Superex
99	Hoses & Accessories	Superex, Newage, Safex, Eversafe

Note-

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- 2) In case any of the preferred makes are unavailable locally, the contractor may propose an equivalent make, which shall be used only after prior approval of the Senior General Manager (Engg.).
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ANNEXURE III

Pre Approved Makes (Fire Fighting)

S. No.	Description	Approved Make(s)
1	Fire Fighting Pipes (MS / GI)	Tata, Jindal, SAIL
2	Hydrant Valves / Fire Brigade Inlet	Newage, Safeguard, Lifeguard
3	Sluice Valves	SKS, Sant, AIP
4	Butterfly Valves	SKS, Sant, AIP, CIM, Advance, Intervolve
5	Non-Return Valves (NRV)	SKS, Sant, AIP, Kamala, Hawa, Venus
6	Ball Valves	SKS, Sant, AIP
7	Air Release Valves	Leader, Sant
8	Fire Hose Pipe	Newage, Safeguard, Lifeguard
9	Hose Reel	Newage, Safeguard, Lifeguard
10	Branch Pipe & Nozzle	Newage, Safeguard, Lifeguard
11	Fire Pumps (Electric / Diesel / Jockey)	Kirloskar, Grundfos, KSB, Siemens
12	Fire Extinguishers	Ceasefire, Lifeguard, Minimax, Safex, Newage, Superex
13	Sprinklers	Tyco, HD
14	Installation Control Valve (ICV)	Tyco, HD
15	Sprinkler Annunciator Panel	Tyco, HD, Honeywell, Notifier
16	Flow Switch	HD, Lifeguard
17	Pressure Switch	As approved by Engineer-in-Charge
18	Pressure Gauge	Guru, FIBIG
19	Anchor Fasteners / U-Clamp / Clevis / Sprinkler Hangers	Hilti, Fischer, Easyflex, Charlie, Victaulic
20	Fire Alarm Control Panel	Honeywell, Notifier, Morley, Agni
21	Multi-Sensor Detector	Honeywell, Notifier
22	Smoke / Heat Detector	Apollo, System Sensor, Agni
23	Aspirating Smoke Detector	Honeywell, Notifier
24	Manual Call Point	PRD, System-Tek, Simplex, System Sensor, Agni
25	Response Indicator	PRD, System-Tek, Simplex, System Sensor, Agni
26	Interface / Control Module	Honeywell, Notifier
27	Electronic Hooter / Sounder	Honeywell, Notifier, Philips, Agni
28	Exit / Emergency Signage	Agni, System-Tek, Simplex, Legrand, Glow Light
29	Fire Control Room Equipment	Honeywell, Notifier
30	Hoses & Fire Accessories	Newage, Safeguard, Lifeguard, Superex, Eversafe
31	Valves – General (Fire Duty)	Zoloto, Kirloskar, Sant, Audco

Note-

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- 2) In case any of the preferred makes are unavailable locally, the contractor may propose an equivalent make, which shall be used only after prior approval of the Senior General Manager (Engg.).
- 3) For items not covered in the approved make list, the contractor shall submit details of the proposed make for review. The decision of the Engineer-in-Charge regarding acceptability of any make shall be final and binding.



Logistics Driving Progress

केंद्रीय भंडारण निगम

(भारत सरकार का एक उपक्रम)

CENTRAL WAREHOUSING CORPORATION

(A Govt. of India Undertaking)

Corporate Office

4/1, Siri Institutional Area, August Kranti Marg, Hauz Khas, New Delhi-110016,

Ph. No. & Fax No. (011) 49857894

Email Id: tendercell.co@cewacor.nic.in

E- Tender

Reference Number: E NIT_CWC/CO/Engg. /26-27/06

Name of the Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

E- Tender

Tender Reference Number : E NIT_CWC/CO/Engg./26-27/06

For Procurement of Works:

Name of Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.)

Vol – IV: Price bid and schedules

Name of Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

Schedule-I Items of General Civil works Scheduled in Civil DSR 2023 and Items directly driven from DSR 2023

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
1	2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.				
1.1	2.6.1	All kind of Soil	14086.81	cum	₹ 177.50	₹ 25,00,408.78
2	2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
2.1	2.8.1	All kinds of soil.	3653.78	cum	₹ 260.30	₹ 9,51,078.93
3	2.10.	Excavating trenches by mechanical / manual means of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, for all depth,				

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
3.1	2.10.1	All kinds of soil				
4.1.1	2.10.1.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	125.48	metre	₹ 352.15	₹ 44,187.78
4	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	17253.04	cum	₹ 196.00	₹ 33,81,595.84
5	2.26	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
5.1	2.26.1	All Kind of Soil	1326.73	cum	₹ 126.80	₹ 1,68,229.36
6	2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete. For verandah	284.71	cum	₹ 2,123.75	₹ 6,04,652.86
7	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
7.1	4.1.5	1:3:6 (1 Cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded	100.10	cum	₹ 7,294.70	₹ 7,30,199.47

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		stone aggregate 20 mm nominal size derived from natural sources)				
7.2	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	745.31	cum	₹ 6,812.00	₹ 50,77,051.72
8	5.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
8.1	5.1.2	1:1.5:3(1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	672.00	cum	₹ 9,045.75	₹ 60,78,744.00
9	5.9	Centering and shuttering including strutting, propping etc. and removal of form at all level, height and depth				
9.1	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	6788.64	sqm	₹ 392.15	₹ 26,62,165.18
9.2	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	11662.80	sqm	₹ 842.50	₹ 98,25,909.00
9.3	5.9.3	Suspended floors, roofs, landings, balconies and access platform	152.62	sqm	₹ 927.25	₹ 1,41,516.90
9.4	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	6733.98	sqm	₹ 736.40	₹ 49,58,902.87
9.5	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	4029.60	sqm	₹ 961.30	₹ 38,73,654.48
9.6	5.9.15	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed	69.00	sqm	₹ 392.15	₹ 27,058.35

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		plates, anchor blocks and the like				
11	5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto and above plinth level.				
11	5.22.5	Hard drawn steel wire fabric	51012.00	kg	₹ 102.20	₹ 52,13,426.40
12	5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
12	5.22A.4	Hot rolled deformed bars	6295.99	Kg	₹ 107.85	₹ 6,79,022.52
13	5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	532539.78	kg	₹ 107.85	₹ 5,74,34,415.27
14	5.33	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the				

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
14	5.33.2	All works above plinth level upto floor V level				
14.2.1	5.33.2.1.	Concrete of M25 grade with minimum cement content of 330 kg /cum	766.00	cum	₹ 9,860.40	₹ 75,53,066.40
15	6.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
15	6.1.1	Cement mortar 1:4(1 cement :4 coarse sand)	21.72	cum	₹ 7,370.65	₹ 1,60,090.52
15	6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	722.00	cum	₹ 7,132.25	₹ 51,49,484.50
16	6.13	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.				
16	6.13.2	Cement mortar 1:4 (1 cement :4 coarse sand)	0.46	sqm	₹ 1,123.80	₹ 516.95
17	6.23	Honey-comb brick work 10 / 11.4 cm thick with common burnt clay bricks of class designation 7.5 in super structure above plinth level upto floor V level with cement mortar 1:4 (1 cement : 4 coarse sand).	2.34	sqm	₹ 711.50	₹ 1,664.91

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
18	6.34	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor V level in :				
18	6.34.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	3098.34	cum	₹ 8,752.55	₹ 2,71,18,375.77
19	10.1	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. : For Veranadah	14480.00	kg	₹ 117.35	₹ 16,99,228.00
20	10.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	6421.35	kg	₹ 133.70	₹ 8,58,534.50
21	10.5	Providing and fixing 1mm thick M.S. sheet steel door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners all necessary fittings complete, including applying a priming coat of approved steel primer. Note: fittings like bush hinges, handles, tower bolts, sliding door bolts shall be as per drawing				
21	10.5.1	Using M.S. angels 40x40x6 mm for diagonal braces:	3.78	sqm	₹ 5,804.35	₹ 21,940.44

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
22	10.6	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.				
22	10.6.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	485.00	sqm	₹ 3,653.20	₹ 17,71,802.00
23	10.7	Providing and fixing ball bearing for rolling shutters.	224.00	each	₹ 492.35	₹ 1,10,286.40
24	10.19	Providing and fixing mild steel round holding down bolts with nuts and washer plates complete.	3864.07	kg	₹ 97.20	₹ 3,75,587.60
25	10.25	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
25	10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	52849.60	kg	₹ 172.60	₹ 91,21,840.96

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
26	11.3	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.				
26	11.3.1	40 mm thick with 20 mm nominal size stone aggregate	23.00	sqm	₹ 614.20	₹ 14,126.60
27	13.1	12 mm cement plaster of mix :				
27	13.1.2	1:6 (1 cement: 6 fine sand)	22624.58	sqm	₹ 333.35	₹ 75,41,903.74
28	13.2	15 mm cement plaster on the rough side of single or half brick wall of mix :				
28	13.2.2	1:6 (1 cement: 6 fine sand)	2125.74	sqm	₹ 383.00	₹ 8,14,158.42
29	13.4	12 mm cement plaster of mix :				
29	13.4.2	1:6 (1 cement: 6 coarse sand)	89.00	sqm	₹ 343.65	₹ 30,584.85
30	13.5	15 mm cement plaster of mix:-				
30	13.5.2	1:6 (1 cement: 6 coarse sand)	60.00	sqm	₹ 395.35	₹ 23,721.00
31	13.8	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix :				
31	13.8.1	1:3 (1 cement: 3 fine sand)	72.61	sqm	₹ 494.30	₹ 35,891.12
32	13.16	6 mm cement plaster of mix :				
32	13.16.1	1:6 (1 cement: 3 fine sand)	3185.52	sqm	₹ 300.45	₹ 9,57,089.48
33	13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete. White washing with lime to give an even shade.	60.00	sqm	₹ 262.70	₹ 15,762.00

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		New work (three or more coats)				
34	13.37	White washing with lime to give an even shade :				
34	13.37.1	New work (three or more coats)	11775.00	sqm	₹ 39.05	₹ 4,59,813.75
35	13.48 A	Finishing walls with 100% Premium acrylic emulsion paint having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade (Company Depot Tinted) with silicon additives.				
35	13.48 A.1	New work (Two or more coats applied @ 1.43 litre/ 10 sqm. Over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm.	13161.52	sqm	₹ 181.25	₹ 23,85,525.50
36	13.61	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
36	13.61.1	Two or more coats on new work	3531.79	sqm	₹ 155.90	₹ 5,50,606.06
37	13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand	11520.00	sqm	₹ 156.05	₹ 17,97,696.00
38	16.2	Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	41041.00	cum	₹ 24.85	₹ 10,19,868.85
39	16.43	Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement				

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer- in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately). Note:- Cement content considered in M-30 is @ 340 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately.				
39	16.43.1	Cement concrete prepared with batch mixing machine	4702.50	cum	₹ 10,529.35	₹ 4,95,14,268.38

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
40	16.45	Providing and fixing pre-moulded joint filler in expansion joints of RCC roads / CC pavements after making the joints dust free with high pressure air jet cleaners, all complete as per direction of the Engineer-in-Charge. (Pre-moulded joint fillers shall be made of bitumen hot sealing compound impregnated fibre board having impregnation more than 35%, conforming to IS:1838 for fibre board and IS: 1834 for hot sealing bitumen compound grade A.)	11666.67	per cm depth per cm width per metre length	₹ 5.30	₹ 61,833.35
41	16.46	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge.				
41	16.46.1	Using grade 'A' sealing compound conforming to IS: 1834.	19800.00	per cm depth per cm width per metre length	₹ 8.65	₹ 1,71,270.00
42	16.53	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including	1098.00	metre	₹ 375.80	₹ 4,12,628.40

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Springcore (2.5mm thick) wire of high tensile strength of 165 kg/sq.mm with tape (0.52 mm thick) and weight 43.478 gm/metre (cost of M.S. angle, C.C. blocks shall be paid separately)				
43	16.78	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. : With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30				
43	16.78.1	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	3135.00	cum	₹ 2,784.00	₹ 87,27,840.00
44	16.79	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads &	7284.00	cum	₹ 2,914.30	₹ 2,12,27,761.20

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
		lifts, laying in uniform layers with mechanical paverfinisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.				
45	16.80.	Construction of dry lean cement concrete sub base over a prepared sub-grade with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per specifications, cement content not to be less than 150 Kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-in-charge.	2090.00	cum	₹ 4,148.65	₹ 86,70,678.50

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
46	19.4	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
46	19.4.1	100x100 mm size P type				
47.1.1	19.4.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	4.00	metre	₹ 2,707.65	₹ 10,830.60
47	19.6	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :				
47	19.6.4	300 mm dia. R.C.C. pipe	15.00	metre	₹ 994.30	₹ 14,914.50
48	23.1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.				
48	23.1.1	All types of soil				

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
49.1.1	23.1.1.1	300 mm dia	46.60	metre	₹ 707.75	₹ 32,981.15
49	23.3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
49	23.3.3.	200 mm nominal size dia	57.00	metre	₹ 1,113.35	₹ 63,460.95
50	23.4	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
50	23.4.3	200 mm nominal size dia	12.40	metre	₹ 1,255.70	₹ 15,570.68
51	23.5	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	1.60	cum	₹ 1,509.80	₹ 2,415.68
52	23.6	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer- in-charge.	0.70	cum	₹ 1,538.25	₹ 1,076.78

SLNo	DSR 2023 No.	Description	Qty	Unit	Rate	Amount
53	23.7	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.	0.65	cum	₹ 1,538.25	₹ 999.86
54	23.13	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:				
54	23.13.3	200 mm dia	1.00	each	₹ 321.15	₹ 321.15
55	23.15	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				
55	23.15.3	200 mm dia	1.00	each	₹ 357.60	₹ 357.60

		NON SCHEDULED ITEMS				
1	NSI 1	Providing and fixing channels for preparing panels of required size and then dewatering of the concrete with vaccum dewatering machine finishing with mechanical trowel with trimix matching (thickness of flooring 75 to 150 mm, along with cutting groove joints at appropriate spacing as per direction of engineer in charge (concrete and steel to be paid separately as per relevent item)	1446.00	cum	₹ 635.70	₹ 9,19,222.20
2	NSI 2	Conosolidation of sub - grade with road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth	10200.00	Sqm	₹ 3.25	₹ 33,150.00

		or quarry spoils etc. and rerolling the subgrade				
3	NSI 3	<p>Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; excluding pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete.</p> <p>Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement. : All works upto plinth level : All works upto plinth level Concrete of M25 grade with minimum cement content of 330 kg /cum</p>	5232.90	cum	₹ 8,902.40	₹ 4,65,85,368.96
		Total cost for this sub-schedule I				₹ 31,04,08,335.97

Name of Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

Schedule-II Items of General Civil works not scheduled in Civil DSR 2023 (Market Rate Items)

SN	MR No.	Description	Qty	Unit	Rate	Amount
1	MR 1	Excavating, supplying, and filling of local earth (including royalty) by mechanical means, transported from the source(s) located beyond 5 km , including loading, unloading, spreading in layers not exceeding 20 cm thickness, watering, and compacting each layer by manual/mechanical means say with vibratory rollers (for road /yard works) to achieve the required density (minimum 95% of modified Proctor density unless otherwise specified) in trenches, plinths, roads, yards, sides of foundations, or any other specified location, complete in all respects as per directions of the Engineer-in-Charge. The rate shall include: Cost of excavation at borrow area, Royalty, loading, and mechanical transport beyond 5 km with all lifts, leads (beyond 5 km), and stacking (as and when required) , spreading, watering, manual or mechanical ramming/ compaction , All tools, labour, taxes, and incidental charges. Lead measurement shall be verified based on location of borrow area and shortest route plan approved by Engineer in charge.	38675.00	cum	₹ 534.40	₹ 2,06,67,920.00
2	MR 2	Providing and spreading non-metallic, ready-to-use, factory-blended dry shake floor hardener conforming to IS 1237:2012 and of approved make, containing specially graded mineral aggregates, cement, and performance-enhancing additives, over freshly laid concrete surface by manual or mechanical means at the specified rate. The material shall be applied in two stages (broadcasting and trowelling)	88281.59	kg	₹ 16.60	₹ 14,65,474.39

SN	MR No.	Description	Qty	Unit	Rate	Amount
		and thoroughly worked into the surface using mechanical trowels or hand floats to ensure full bonding with the base concrete. The minimum application rate shall be 4.5 kg/sqm for light to medium-duty floors and 6.0 kg/sqm for heavy-duty floors, unless otherwise specified in the technical specification of the contract or directed by Engineer in charge in writing. The item includes supply of material, surface preparation, application, finishing, curing, protection, and all labour, tools, equipment, and consumables required to complete the work in all respects as per manufacturer's instructions and as directed by the Engineer-in-Charge.				
	Note	Payment shall be made on the basis of the actual quantity of floor hardener consumed at site, as verified from manufacturer's supply invoices and usage records. No extra payment shall be admissible if the manufacturer recommends a quantity higher than the specified minimum rate, unless approved in the technical specifications or instructed in writing by the Engineer-in-Charge.				
3	MR 4	Providing and laying a single layer of low-density polyethylene (LDPE) sheet of 200 micron thickness (800 gauge), of approved quality and make, over the compacted sub-base as a moisture barrier below concrete flooring. The sheet shall be laid continuously with joints overlapped by a minimum of 150 mm in the longitudinal direction and 300 mm in the transverse direction, and the overlaps shall be sealed with adhesive tape or heat welded as per site conditions to ensure a continuous barrier. The sheet shall be free from tears, pinholes, or wrinkles and shall be protected from damage during concrete pouring operations.	17957.79	Sqm	₹ 57.05	₹ 10,24,491.92

SN	MR No.	Description	Qty	Unit	Rate	Amount
		The item includes supply of LDPE sheet, joint treatment, laying, trimming, fixing, sealing of overlaps, labour, tools, and all materials required to complete the work in all respects as per manufacturer's specifications and direction of the Engineer-in-Charge.				
4	MR 5	<p>Providing and fixing at all height, on warehouse roof structure, pre-painted ZINCALUME/GALVALUME roof sheet (Make : Tata Bluescope Steel/ JSW Radiance) profiled roofing sheets of approved profile and colour (as per approved RAL), with profile and pitch as mentioned in technical specs or approved by Engineer in charge, with subtle square fluting in the pan, and anti-capillary groove along return leg on end rib, fixed with self-drilling fasteners including EPDM washers, necessary overlaps, flashing, accessories, complete in all respects as per direction of Engineer-in-Charge</p> <p>Coil Specifications - The base steel of sheet material shall be 0.52 mm Base Metal Minimum Thickness (BMT) substrate and 0.6 mm minimum Total Painted Thickness (TPT), coated with hot-dipped Aluminium Zinc alloy coating AZ150 (i.e. minimum of 150 g per Sqm Al-Zn alloy coating mass total on both sides) having yield strength of 550MPa conforms to IS15961 and factory painted and oven baked with total 35 micron paint DFT conforms to IS15965- Durability class 3. On exposed surface of the sheet shall be having minimum 20-micron DFT of HDCS (based on Super Durable Polyester paint system)exterior quality paint system (free from Lead and heavy metals) over minimum 5-micron DFT corrosion inhibitive polyester</p>				

SN	MR No.	Description	Qty	Unit	Rate	Amount
		primer and on reverse side of sheet shall have 5-micron DFT polyester coat over 5-micron corrosion inhibitive polyester primer. The paint system shall be Super Durable Polyester equivalent for durability class 3 (Category C3) or above as per IS 15965.				
		The roof's product should be dust proof and GRIHA or IGBC GreenPro certified Product. The steel manufacturer shall provide an Environmental Product Declaration (EPD) to the Central Warehousing Corporation, ensuring transparency in the material's environmental impact. The coated steel finish shall be free from defects and shall provide branding on back side with product details such as thickness, grade, coating mass, date, mfg. name and Batch number				
		The steel manufacturers test certificate for the chemical and mechanical properties of steel must be approved by the concerned engineer authorised by Engineer-in-charge prior to installation. Material Warranty: Manufacturer through Contractor shall provide a written warranty for 20 yrs against perforation of metal roof panels due to corrosion under normal weather and atmospheric conditions and 12 yrs exterior paint film warranty against film cracking, peeling and color fading for roof and wall panels from coated steel supplier. The color panels shall not fade (Delta E) more than 6 in light color, not more than 9 in intermediate colors and not more than 12 in dark color, confirms to IS 15965:2012. Warranty shall be signed by both the metal roof system manufacturer and the contractor. Weather tightness warranty: Contractor shall provide a written weathertightness warranty for a minimum of 3 years against leaks in roof panels, arising out				

SN	MR No.	Description	Qty	Unit	Rate	Amount
		of or caused by ordinary wear,C3 environment and tear under C3 environment weather and atmospheric conditions. All coil batches used shall be traceable through mill test certificates, and coil IDs should be stamped and submitted with delivery challan /MTC/Invoice at site				
		Note :60% of the quoted item rate may be relased upon claim by contractor after satisfactory supply and stacking of the sheeting material at the Central Warehouse (CW) campus, as per the instructions of the Engineer-in-Charge, and upon submission of: (a) NABL approved Third-party laboratory test reports, (b) Manufacturer's test certificates (MTCs) , and (c) An indemnity bond from the contractor affirming material quality and conformance to specifications. The balance 40% payment shall be released after satisfactory installation/erection of the sheeting, including all flashings, closures, and accessories, as per the approved drawings and to the satisfaction of the Engineer-in-Charge.				
4.1	(a)	Roofing sheets over warehoue roof and platform canopy (RAL 9002): minimum five major ribs having rib height between 28–32 mm and rib pitch between 180–220 mm	13050.65	sqm	₹ 918.60	₹ 1,19,88,327.09
4.2	(b)	Cladding Sheets over outer wall & Partition works (RAL 9007). minimum five major ribs having rib height between 28–32 mm and rib pitch between 180–220 mm-See technical specifications for special instructions for cladding works.	3631.21	sqm	₹ 918.60	₹ 33,35,629.51

SN	MR No.	Description	Qty	Unit	Rate	Amount
5	MR 6	<p>Providing and fixing factory-finished single-skin standing seam roofing system using pre-painted ZINCALUME/GALVALUME steel sheet of , with concealed fastening using high-strength ST clips (snap-on type) to ensure a seamless appearance and water-tight installation. The sheeting shall be in RAL 9002 colour or as approved by the Engineer-in-Charge, of approved make (Tata Bluescope Lysaght / JSW Radiance Seam Lok or equivalent), laid over steel purlins without any exposed fasteners.</p> <p>Sheets shall have anti-capillary grooves and return legs at end ribs, and subtle square fluting in pan. Installation shall be carried out using factory-supplied ST concealed clips, securely fastened to the steel structure using stainless steel fasteners. Sheet seaming shall be done using manufacturer-recommended seam closing tools to ensure thermal movement, air-tight sealing, and watertight finish without sheet perforation. All overlaps, joints, and terminations shall be treated with compatible sealants and accessories.</p> <p>Coil Specifications - The base steel of sheet material shall be 0.52 mm Base Metal Minimum Thickness (BMT) substrate and 0.6 mm minimum Total Painted Thickness (TPT), coated with hot-dipped Aluminium Zinc alloy coating AZ150 (i.e. minimum of 150 g per Sqm Al-Zn alloy coating mass total on both sides) having yield strength of 550MPa conforms to IS15961 and factory painted and oven baked with total 35 micron paint DFT conforms to IS15965-Durability class 3. On exposed surface of the sheet shall be having minimum 20-micron DFT of HDCS (based on Super Durable Polyester paint system)exterior quality paint system (free from Lead and heavy metals) over minimum 5-micron</p>	10671.90	sqm	₹ 1,083.00	₹ 1,15,57,667.70

SN	MR No.	Description	Qty	Unit	Rate	Amount
		DFT corrosion inhibitive polyester primer and on reverse side of sheet shall have 5-micron DFT polyester coat over 5-micron corrosion inhibitive polyester primer. The paint system shall be Super Durable Polyester equivalent for durability class 3 (Category C3) or above as per IS 15965.				
		The roof's product should be dust proof and GRIHA or IGBC GreenPro certified Product. The steel manufacturer shall provide an Environmental Product Declaration (EPD) to the Central Warehousing Corporation, ensuring transparency in the material's environmental impact. The coated steel finish shall be free from defects and shall provide branding on back side with product details such as thickness, grade, coating mass, date, mfg. name and Batch Number.				
		The steel manufacturers test certificate for the chemical and mechanical properties of steel must be approved by the concerned engineer authorised by Engineer-in-charge prior to installation. Material Warranty: Manufacturer through Contractor shall provide a written warranty for 20 yrs against perforation of metal roof panels due to corrosion under normal weather and atmospheric conditions and 12 yrs exterior paint film warranty against film cracking, peeling and color fading for roof and wall panels from coated steel supplier. The color panels shall not fade (Delta E) more than 6 in light color, not more than 9 in intermediate colors and not more than 12 in dark color, confirms to IS 15965:2012. Warranty shall be signed by both the metal roof system manufacturer and the contractor. Weather tightness warranty: Contractor				

SN	MR No.	Description	Qty	Unit	Rate	Amount
		shall provide a written weathertightness warranty for a minimum of 3 years against leaks in roof panels, arising out of or caused by ordinary wear,C3 environment and tear under C3 environment weather and atmospheric conditions				
		Note : 60% of the quoted item rate may be relased upon claim by contractor after satisfactory supply and stacking of the sheeting material at the Central Warehouse (CW) campus, as per the instructions of the Engineer-in-Charge, and upon submission of: (a) NABL approved Third-party laboratory test reports, (b) Manufacturer's test certificates (MTCs) , and (c) An indemnity bond from the contractor affirming material quality and conformance to specifications. The balance 40% payment shall be released after satisfactory installation/erection of the sheeting, including all flashings, closures, and accessories, as per the approved drawings and to the satisfaction of the Engineer-in-Charge.				
6	MR 7	Providing and fixing factory-formed colour coated Galvalume ridge profile in cover width ranging from 1200-1500 mm as per approved drawing of approved make (Tata Bluescope Colorbond / JSW Radiance or equivalent) in matching profile and colour to roof sheeting, made from precoated coil of base metal thickness not less than that of the roof sheet, aluminium-zinc alloy coating of AZ150 (minimum 150 g/m ² total), minimum yield strength 550 MPa, and factory-applied Super Durable Polyester paint coating system of total DFT not less than 35 microns, including supply and fixing of UV-resistant foam filler blocks or equivalent profile-matched accessories to seal the gap between ridge and roof	734.50	metre	₹ 637.25	₹ 4,68,060.13

SN	MR No.	Description	Qty	Unit	Rate	Amount
		sheet, with all necessary self-drilling fasteners, EPDM washers, sealants, and overlaps to ensure a watertight joint, complete in all respects as per manufacturer's specification and as directed by the Engineer-in-Charge.				
7	MR 8	Providing and fixing colour coated Galvalume flashings, corner trims, barge boards, verge covers and other sheeting accessories of approved make (Tata Bluescope Colorbond / JSW Radiance or equivalent) fabricated from precoated coils of base metal thickness not less than that of the adjoining sheeting, with aluminium-zinc alloy coating of AZ150, minimum yield strength 550 MPa and paint system with total DFT not less than 35 microns in matching colour to the cladding/roofing system, including making proper overlaps, fixing with self-drilling fasteners and EPDM washers, application of sealants, cutting to required shapes and lengths, and finishing edges with appropriate closures to ensure dustproof and watertight construction, complete all as per manufacturer's specifications and as directed by the Engineer-in-Charge.				
7.1	A	in sizes Upto 300mm	2962.00	metre	₹ 302.05	₹ 8,94,672.10
7.2	B	in sizes more than 300mm but upto 600mm	5391.00	metre	₹ 555.45	₹ 29,94,430.95
8	MR-9	Providing and fixing factory-formed translucent polycarbonate skylight sheets of minimum 2.0 mm thickness, co-extruded UV-resistant, of approved make, thermo-formed to match the exact profile and seam height of standing seam metal roofing, for integration as skylight panels. The polycarbonate sheets shall be high-impact resistant, fire-retardant (Class B-s1, d0 or equivalent), having a minimum light transmission of 50-60% and designed to match thermal movement	608.00	Sqm	₹ 2,289.60	₹ 13,92,076.80

SN	MR No.	Description	Qty	Unit	Rate	Amount
		<p>characteristics of metal roof sheeting. The skylight sheets shall be supplied in factory-cut lengths as per layout and fixed using the original standing seam clip mechanism or manufacturer-supplied concealed fasteners, without any through-fixing or perforation of the sheet, and with watertight sealing. The joints and end laps shall be sealed using compatible sealants or tapes as per manufacturer guidelines. All accessories including clips, sealing strips, joint tapes, fasteners (if any), and edge trims shall be included in the rate. The item includes supply, hoisting, alignment, cutting to shape, joint sealing, and complete installation as per manufacturer's specifications and to the satisfaction of the Engineer-in-Charge.</p> <p>Note: Skylight sheet material shall be compatible with adjacent metal sheet in terms of thermal expansion and fixation system. These sheets shall be thermo-profiled by original roofing sheet manufacturer or approved partner to ensure seamless fit and no leakage and Maximum unsupported span should not to exceed manufacturer's recommended limit (typically 1.2–1.5 m); else support purlins shall be added. 10-year UV and weathering warranty to be provided by manufacturer.</p>				
9	MR-10	Roof truss				

SN	MR No.	Description	Qty	Unit	Rate	Amount
9.1	A.	<p>Supply, fabrication, painting and erection of Roof Truss syste. The truss shall include the members of high tensile steel of grade E350 made of ROUND/RECTUANGULAR/SQUARE HOLLOW SECTIONS as per IS:2062:2011 with Purlins. connecting with the plates (E350 grade) & bolts of grade 8.8 (connecting bolts) and grade 4.6(for anchor bolts) including purlins (secondary members- Z or C sections) in cold formed steel, bracings & Sag rods etc.</p> <p>The work includes all activities like shop cutting & welding, one primer coat, and two coats of painting, hoisting, fixing in position as per drawings and Technical Specifications. Finishing works includes surface preparation for smooth finish, rust free surface followed by a coat of approved zinc Chromate primer and top coats of Epoxy paint (total DFT not less than 105 micron). all complete as per approved structural drawings.</p> <p>All Steel material shall be confirming to IS-2062 and tender specification. The rate includes all works like supply, fabrication & erection of holding down bolts, base plates, stub columns, connecting plates & nut,washers , bolts, stiffeners, intermediate bracings & Lacings etc, sheet runners & roof purlins , sag rods of grade Fe 250, guard bars, canopy on both sides platforms including priming and painting all steel works complete as per Direction of Engineer in charge and Drawings & specifications.</p> <p>Fabrication drawings shall be prepared by contractor for approval of CWC before cutting /fabrication of the structure.</p> <p>Final coat of painting shall be done post complete erection of system.</p> <p>Roof truss system with purlins as above.</p> <p>Weight shall be measured for the items</p>	405124.00	KG	₹ 124.50	₹ 5,04,37,938.00

SN	MR No.	Description	Qty	Unit	Rate	Amount
		supplied and erected as per standard weight given in IS:2062:2011 excluding wastage, welding and weight of painting etc.				
		<p>Fabricated members shall be shot-blasted to SA 2.5 surface finish as per ISO 8501-1 and given one coat of approved epoxy zinc phosphate/zinc chromate primer (DFT not less than 40 microns) followed by two coats of epoxy-based polyurethane paint in approved RAL shade (e.g., RAL 7024 on columns and RAL 9002 on rafters or other colour scheme as approved by Engineer in charge), with total dry film thickness (DFT) not less than 120 microns unless otherwise specified. Painting to conform to IS 1477 Part 2 and manufacturer's datasheet.</p> <p>All structural steel materials must be accompanied by manufacturer's test certificates (MTCs) for physical and chemical properties, to be submitted to Engineer-in-Charge prior to fabrication. Third-party lab tests, if ordered by CWC, shall be at contractor's cost.</p>				

SN	MR No.	Description	Qty	Unit	Rate	Amount
		All erection shall be done using cranes, proper rigging equipment, plumb alignment and bolting to achieve structural integrity. No site cutting or welding shall be permitted unless approved in writing. Holding-down bolts and templates shall be supplied and fixed prior to concreting of foundations as per foundation layout drawings.				
		The scope shall include submission of fabrication/shop drawings and erection plans by the contractor for approval of the Engineer-in-Charge before commencement of work. Only approved drawings shall be used for cutting and fabrication. Contractor shall submit fabrication & erection plan and drawings for review within mentioned timeline. Approval of fabrication drawings by CWC is mandatory prior to any cutting/fabrication Measurement & Payment: Payment shall be made on the basis of weight (in Kg) of completed and erected structural steel, computed from standard unit weights as per relevant IS codes or actual physical weight determined as per standard procedures — whichever is less. Weight shall exclude that of welding material, paint, shop primer, erection bolts, field wastage, packing, and other incidental components.				

SN	MR No.	Description	Qty	Unit	Rate	Amount
9.1		<p>Special Note: 70% of the quoted item rate may be released upon claim by contractor after satisfactory supply of fully fabricated, surface-treated, and painted Roof truss system, and stacking of materials at the Central Warehouse (CW) campus, as per instructions of the Engineer-in-Charge, and upon submission of the following: (1) NABL approved Third-party laboratory test reports, (2) Manufacturer's Test Certificates (MTCs), and (3) An Indemnity Bond affirming conformity of materials and workmanship to the approved specifications and drawings. The balance 20% payment shall be released after satisfactory erection of the structure, including all primary and secondary members, connections, bolts, bracings, and fixtures, duly verified and certified by the Engineer-in-Charge. The balance 10 % payment shall be released upon final commissioning including final finishing / recoat as per requirement . All painted surfaces shall receive final touch-up coats and/or site recoating wherever damaged during transportation or erection, using matching approved epoxy paints, to achieve a uniform and aesthetically pleasing finish across all exposed surfaces, to the satisfaction of the Engineer-in-Charge.</p>				
10	MR-14	<p>Providing and fixing factory-fabricated fixed S-type louver system of total depth 100 mm, fabricated from pre-painted Galvalume steel sheet (PPGL) of total coated thickness (TCT) 0.50 mm, with AZ150 aluminium-zinc coating (150 g/m² total both sides) and colour finish as directed by Engineer-in-Charge. The louvers shall be made from colour-coated steel sheets of approved make (TATA Bluescope / JSW Radiance or equivalent), and formed into</p>	374.40	Sqm	₹ 3,322.25	₹ 12,43,850.40

SN	MR No.	Description	Qty	Unit	Rate	Amount
		<p>aerodynamic S-profile blades mounted at uniform spacing inside a louver frame. Each louver panel shall be of standard size 600 mm height (or as per approved drawing) and factory-assembled to maintain structural alignment and water resistance. The louver opening shall be provided with a birdscreen fabricated from Stainless Steel 304 welded wire mesh of aperture size 12.7 mm × 1.1 mm (wire diameter), securely fixed on the rear side of the louver frame with concealed fasteners or rivets. The entire frame of the louver shall be fabricated from the same PPGL sheet as that of the blades and fixed to the cladding/structural wall using self-drilling stainless steel screws with EPDM washers at required intervals, complete with silicone sealing around periphery to ensure weather-tightness.</p> <p>The item includes all materials, fabrication, transportation, lifting, scaffolding, fixing, anchoring, cutting to fit around columns or wall contours, rivets, sealants, labour, and all incidental works complete, as per approved technical specifications and as directed by the Engineer-in-Charge.</p>				
11	MR-17	<p>Providing and fixing diamond-shaped dowel plates of 6 mm thick mild steel, 100 mm × 100 mm in size, placed at 450 mm centre-to-centre spacing across construction joints to allow controlled movement and load transfer, including fabrication, accurate placement using dowel chairs or cages, and provision of PVC sleeves or de-bonding caps at one end to facilitate longitudinal movement. Dowel plates shall be installed precisely in the middle-third depth of the slab and aligned horizontally with ±2 mm tolerance. The non-bonded (free) end shall be provided with PVC sleeve or de-bonding compound to ensure</p>	2939.00	No.	₹ 221.50	₹ 6,50,988.50

SN	MR No.	Description	Qty	Unit	Rate	Amount
		unrestrained longitudinal movement during contraction/expansion. All dowel setting fixtures shall be removed only after concrete has achieved initial set, and joint opening must be preserved as per specification. Scope of The work includes cutting and fixing in proper alignment as per approved joint drawings, ensuring level and parallel positioning to avoid joint locking or edge damage, and all tools, labour, materials, welding/tack work (if required), handling, and installation complete as per manufacturer's guidelines and instructions of Engineer-in-Charge.				
12	MR-18	Providing and sealing control and construction joints in industrial concrete flooring after Cutting such joints in concrete slab using diamond blade saw to required depth and width (typically 5 mm wide × 40–50 mm deep or as given in engineering drawings), cleaning the groove with air compressor, and disposal of slurry and debris, complete as per industry best practices and filling the top 10 mm of the groove with polyurethane (PU) based elastic sealant of Shore A Hardness 28–45, conforming to ASTM C920 / ISO 11600, such as DCP / BASF MasterFlex 474 / Sika / Fosroc or equivalent, as approved by the Engineer-in-Charge. The lower portion of the joint shall be filled with a compressible closed-cell polyethylene backer rod of suitable diameter to ensure correct joint geometry and prevent three-sided adhesion. The item includes groove cutting, surface preparation, backer rod installation, sealant filling, masking, finishing, removal of excess material, tools, equipment, cleaning, protection, and disposal of waste, complete in all respects as per manufacturer's	11601.00	rmt	₹ 179.95	₹ 20,87,599.95

SN	MR No.	Description	Qty	Unit	Rate	Amount
		specifications and directions of the Engineer-in-Charge.				
13	MR-19	Providing and fixing isolation joints at wall-slab and column-slab interfaces by supplying and placing 10 mm thick closed-cell compressible filler board (for walls) and 20 mm thick board (for columns), of approved make and material, to act as a separation barrier between the concrete floor slab and adjacent vertical elements. The work includes cutting and cleaning of the top 10 mm of the joint after curing, followed by filling with polysulphide-based elastomeric joint sealant of Shore A hardness 15-20, conforming to BS 4254 / ASTM C920, such as Sika / Fosroc or equivalent, all complete as per manufacturer's specifications and as directed by the Engineer-in-Charge. The item includes all labour, equipment, surface preparation, masking, sealant application using manual or pneumatic gun, finishing, removal of masking, cleaning, and protection until acceptance.	1819.00	metre	₹ 193.80	₹ 3,52,522.20
		Note: Isolation joint filler shall be placed firmly against the structural face prior to floor concreting. Sealant shall be installed only after full curing of the slab, using compatible primer where recommended by the manufacturer. All joint surfaces shall be free of laitance, dust, and moisture. Polysulphide sealant shall be applied in a uniform, bubble-free manner with neat finishing and proper tooling to ensure complete sealing and long-term flexibility. Any rejected or debonded portion shall be re-executed at the contractor's cost.				
14	MR-22	Supplying and fixing of parts for rooling shutters of size 6' x 8' or more in size/clear opening Worm Wheel set & plates	224.00	Each	₹ 3,045.40	₹ 6,82,169.60

SN	MR No.	Description	Qty	Unit	Rate	Amount
15	MR-23	Gear box	112.00	Each	₹ 4,152.85	₹ 4,65,119.20
16	MR 31	<p>Providing and fixing factory-laminated crosslinked polyethylene (XLPE) foam thermal insulation sheet, of minimum thickness 9 mm and minimum density 28 kg/m³, laminated on both sides with reinforced aluminum or metallized foil facing, suitable for use below roof sheeting or wall cladding for thermal insulation. The insulation material shall be physically or chemically crosslinked and conform to Class 0 fire performance as per BS 476 Part 6 & 7 with fire propagation index less than 5.5, and shall meet ASTM E-84 requirements with flame spread/smoke development ratings of less than 25/50.</p> <p>The thermal conductivity (K-value) of the insulation shall not exceed 0.032 W/m·K at 23°C, and the material shall have a minimum water vapour resistance factor (μ) of 14,000, ensuring high moisture resistance. It shall be anti-microbial and anti-fungal as per ASTM G21 and ASTM E2180 standards. The product must be free from CFC and HCFC compounds, and environmentally safe for industrial and warehouse applications.</p> <p>Each roll shall have overlapping flange edges for sealing of longitudinal joints. The insulation shall be fixed using mechanical fasteners such as screws with rawl plugs and washers, and secured with crisscrossed galvanized steel (GI) wires running between purlins or wall supports. All joints, overlaps and punctures shall be sealed with aluminium foil tape or self-adhesive XLPE strips to ensure an airtight and continuous insulation envelope.</p> <p>The work shall include supply, handling, cutting, shaping, fixing, sealing and installation of the insulation complete in</p>	23599.35	sqm	₹ 235.35	₹ 55,54,107.02

SN	MR No.	Description	Qty	Unit	Rate	Amount
		all respects as per the manufacturer's installation guidelines and to the satisfaction of the Engineer-in-Charge.				

SN	MR No.	Description	Qty	Unit	Rate	Amount
17	MR 39	<p>Providing and fixing heavy-duty solid moulded rubber dock bumpers/fenders of size not less than 450 mm (length) × 250 mm (height) × 100 mm (thickness), manufactured from a high-grade blend of natural and synthetic rubber, vulcanized under high pressure to ensure resistance against deformation, ozone, UV radiation, oil, and weathering. The bumpers shall have a minimum Shore A hardness of 70 ± 5 and tensile strength of at least 10 MPa, confirming to relevant ASTM standards. Each bumper shall be factory-moulded with smooth chamfered or rounded edges, pre-formed countersunk holes or metal inserts for anchoring, and free from air pockets or surface defects. The minimum weight of each bumper shall not be less than 10 kg.</p> <p>The bumpers shall be installed on the dock face, walls, or other vulnerable locations to protect structural elements and fire-fighting pipelines from impact damage by heavy vehicles, trailers, or forklifts. Each unit shall be fixed using a minimum of two hot-dip galvanized steel anchor fasteners of 16 mm diameter and 150 mm embedment length (Hilti/HIL/HFS or equivalent), complete with galvanized washers and protective end caps. All fasteners shall be torque-tightened and installed with minimum 100 mm edge distance from concrete edges. Bumpers shall be installed at a minimum 50 mm clear height above floor level to avoid water stagnation at base.</p> <p>The item includes supply, loading, transportation to site, surface preparation of fixing location, drilling, fixing of anchor fasteners, positioning of bumper as per approved shop drawings and manufacturer's guidelines, testing of</p>	448.00	Each	₹ 1,931.07	₹ 8,65,117.12

SN	MR No.	Description	Qty	Unit	Rate	Amount
		anchorage, and final handing over in working condition. The product shall be sourced from a reputed OEM such as Durocrete, Tirupati Rubbers, ATS ELGI, or equivalent, having a proven track record in heavy-duty warehouse applications. All work shall be carried out as per the instructions of the Engineer-in-Charge.				
18	MR 40	Providing and fixing heavy-duty steel bollards of circular hollow section (CHS) 100 mm outer diameter, 5 mm wall thickness, and 1200 mm height (900 mm above FFL and 300 mm embedded in PCC 1:2:4 block of size 400×400×400 mm) for protection of fire hydrants, electric panels, dock corners, and other critical infrastructure. Bollard shall be fabricated from MS steel tube (IS 1161/1239) and hot-dip galvanized to 80 microns, then coated with synthetic enamel paint in yellow with black reflective bands. Bollards shall be sealed at the top with welded steel cap and base shall be grouted firmly in RCC block with anti-rust epoxy primer on embedment zone. The item includes	16.00	Each	₹ 3,467.89	₹ 55,486.20

SN	MR No.	Description	Qty	Unit	Rate	Amount
		excavation, concrete, supply, fixing, and finishing complete in all respects as per direction of Engineer-in-Charge.				
19	MR 41	Providing and fixing standardized reflective signage boards of size 600 mm × 900 mm or as approved, made from retro-reflective sheeting (Type-IV HIP grade, ASTM D4956) laminated on 3 mm thick ACP or GI sheet, including GI frame, supports, and hot-dip galvanized MS pole of 50 mm dia with suitable foundation in PCC 1:2:4 (size 400×400×600 mm). Signage text, graphics, and pictograms shall be screen printed or digitally printed using UV-resistant ink as per warehouse traffic and safety layout, such as "No Parking," "Speed Limit," "Forklift Crossing," "Fire Exit," "Assembly Point" etc. The work includes layout, design, fabrication, installation and lettering as per direction of Engineer-in-Charge.	8.00	Each	₹ 5,262.32	₹ 42,098.59
20	MR 42	Providing and fixing pre-moulded heavy-duty interlocking rubber speed breakers of approved make, minimum 350 mm wide × 50 mm high × 500 mm long modular sections, manufactured from recycled rubber with reflective yellow and black chevron pattern, including end caps, anchor fasteners (minimum 10 mm dia × 100 mm long) and sealing with cold bitumen where required. Speed breakers shall be fixed over RCC/Bituminous surface at location approved by Engineer-in-Charge. The item includes all labour, material, tools, transportation, and fixing complete.	40.00	Meter	₹ 2,695.88	₹ 1,07,835.08
21	MR 43	Providing and fixing heavy-duty polycarbonate-based road studs (cat eyes) of size not less than 100 mm × 100 mm × 20 mm, fitted with two-way acrylic prismatic reflectors and body made of tough plastic/polycarbonate of impact resistance not less than 16 ton, confirming to ASTM D4280 and EN 1463. Reflectors shall be fixed to	70.00	Each	₹ 290.70	₹ 20,348.85

SN	MR No.	Description	Qty	Unit	Rate	Amount
		concrete/paved surfaces using epoxy resin-based adhesive and stainless steel anchor pins as per manufacturer's recommendation. The item includes cleaning of surface, alignment, adhesive application and fixing complete as per direction of Engineer-in-Charge.				
SN	MR No.	Description	Qty	Unit	Rate	Amount
		Total for this sub-schedule-II				₹ 11,83,53,931.30

Name of Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

Schedule-III Items of E&M works scheduled in DSRE&M 2022 (Scheduled Rate Items)

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
1	DSR EM22 1.17.3	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required. 3x1.5 sq.mm	3,340.80	Meter	95.00	3,17,376.00
2	DSR EM22 1.17.4	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required. 4x1.5 sq.mm	360.00	Meter	120.00	43,200.00
3	DSR EM22 1.19.5	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required. 5x1.5 sq.mm	105.00	Meter	155.00	16,275.00
4	DSR EM22 1.17.6	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required. 6x1.5 sq.mm	125.00	Meter	181.00	22,625.00
5	DSR EM22 1.17.7	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required. 7x1.5 sq.mm	240.00	Meter	216.00	51,840.00
6	DSR EM22 1.17.21	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required. 3X4 sq.mm	849.00	Meter	206.00	1,74,894.00
7	DSR EM22 1.20	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required. 20 MM Dia	5,019.80	Meter	223.00	11,19,415.40

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
8	DSR EM22 12.34	Supplying and fixing of 32 mm dia X 2.00 metres long G.I. pipe (medium class) bracket for mounting of fluorescent / HPMV / HPSV street light fitting on pole including bending the pipe to the required shape, 2 nos 40 mm X 3 mm flat iron clamps with nuts, bolts and washer, painting the flat iron with primer and finish paint etc. as required.	149.00	Each	1,477.00	2,20,073.00
9	DSR EM22 1.33	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	464.00	Each	87.00	40,368.00
10	DSR EM22 2.3.3	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) 12 way , Double door	33.00	Each	2,315.00	76,395.00
11	DSR EM22 2.3.4	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) way, 16 Way Double door	5.00	Each	3,141.00	15,705.00
12	DSR EM22 2.10.1	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Single pole	526.00	Each	256.00	1,34,656.00
13	DSR EM22 2.15.3	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 63 amps	20.00	Each	2,872.00	57,440.00
14	DSR EM22 2.14.1	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 25 amps	38.00	Each	2,028.00	77,064.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
15	DSREM 22 2.11	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	200.00	Each	13.00	2,600.00
16	DSR EM22 1.30	Supplying and fixing metal box of 180mm X 100mm X 60mm deep (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including providing and fixing 6 pin 5/6 & 15/16 amps socket outlet and 15/16 amps piano type switch, connection, painting etc. as required.	38.00	Each	488.00	18,544.00
17	DSR EM22 2.4.1	Supplying and fixing , horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) 4 way (4 + 12), Double door	20.00	Each	4,091.00	81,820.00
18	DSR EM22 2.21	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	62.00	Each	269.00	16,678.00
19	DSR EM22 2.19	Supplying and fixing 20 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 20 amps "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	16.00	Each	2,590.00	41,440.00
20	DSR EM22 9.1.25	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required. 3½ X 120 sq. mm (45mm)	8.00	Each	613.00	4,904.00
21	DSR EM22 14.16.2	Supplying and laying of following size owe HOPE pipe .ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. in the existing trench, complete as required. 90 mm dia (OD-90 mm & ID-76 mm nominal)	490.00	Meter	290.00	1,42,100.00
22	DSR EM22 14.14.4	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required. 300 mm dia	120.00	Meter	1,108.00	1,32,960.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
23	DSR EM22 7.5.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required. Upto 35 sq. mm	198.80	Meter	37.00	7,355.60
24	DSR EM22 7.8.1	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required. Upto 35 sq. mm (clamped with 1mm thick saddle)	634.00	Meter	45.00	28,530.00
25	DSR EM22 7.5.3	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required. Above 95 sq. mm and upto 185 sq. mm	372.40	Meter	77.00	28,674.80
26	DSR EM22 7.7.1	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required. Upto 35 sq. mm (clamped with 1mm thick saddle)	16.88	Meter	55.00	928.40
27	DSR EM22 7.7.1	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.	1,668.00	Meter	55.00	91,740.00
28	DSR EM22 2.4.2	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) 6 way (4 + 18), Double door	1.00	Each	4,974.00	4,974.00
29	DSR EM22 2.10.5	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Triple pole and neutral 32A	2.00	Each	1,228.00	2,456.00
30	DSR EM22 1.1.3	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required. Group C	50.00	Each	1,823.00	91,150.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
31	DSR EM22 1.1.3	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required. Group B	10.00	Each	1,823.00	18,230.00
32	DSR EM22 1.7.2	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	200.00	Meter	369.00	73,800.00
33	DSR EM22 1.7.3	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required 2 X 4 sq. mm + 1 X 4 sq. mm earth wire	150.00	Meter	428.00	64,200.00
34	DSR EM22 19.1	Brush Less Direct Current (BLDC) Fan with Remote Supply, Installation, Testing and Commissioning of ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. metal(Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body. Power Factor not less than 0.9, Service Value (CM/M/W) minimum as below, 350 RPM (tolerance as per IS : 374-2019), THD (Total Harmonic Distortion) less than 10%, remote (preferably mobile app based) for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 0C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC supply Ceiling Fan compliant to IS 374:2019 fan i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required 1200mm, service value ≥ 6.0 CM/Min/Watt, air delivery 210 CM/Min (Minimum)	7.00	Each	2,730.00	19,110.00
35	DSR EM22 1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	15.00	Each	586.00	8,790.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
36	DSR EM22 1.57	Supplying & fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, "C" curve including connections, painting etc. as required.	5.00	Each	727.00	3,635.00
37	DSR EM22 5.2	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	47.00	Each	6,855.00	3,22,185.00
38	DSR EM22 5.15	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	375.00	Meter	244.00	91,500.00
39	DSR EM22 4.1.2	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required. 150 mm width X 50 mm depth X 1.6 mm thickness	735.00	Meter	604.00	4,43,940.00
40	DSR EM22 5.16	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	80.00	Meter	70.00	5,600.00
41	DSR EM22 6.2	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	22.00	Each	518.00	11,396.00
42	DSR EM22 6.3	Fixing of lightning conductor finial (single prong) with base plate including holes etc. complete as required.	22.00	Meter	339.00	7,458.00
43	DSR EM22 6.7	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For horizontal run)	610.00	Meter	126.00	76,860.00
44	DSR EM22 6.8	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	610.00	Meter	197.00	1,20,170.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
45		<p>(a) Supplying, installation, testing and commissioning of diesel engine driven main fire pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump)</p> <p>(b) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520.</p> <p>(c) Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required.</p> <p>(d) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered and with anti vibration pads.</p>				
	DSREM 18.2.5	2280 lpm at 70 m Head	2.00	Each	6,12,065.00	12,24,130.00
46		<p>(A) Supplying, installation, testing and commissioning of electric driven terrace pump suitable for automatic operation and consisting of following, complete in all respects, as required: (Terrace Pump)</p> <p>(B) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical confirming to IS: 1520</p> <p>(C) Suitable HP squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase, 50 Hz, AC supply with IP55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(D) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered and with anti vibration pads.</p>				

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
	DSREM 18.4.1	900 Ipm at 35 m Head	4.00	each	1,01,859.00	4,07,436.00
47		Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :				
	DSREM 18.7.7	100 mm dia	140.00	metre	2,555.00	3,57,700.00
	DSREM 18.7.9	200 mm dia (wall thickness 6.3 mm)	140.00	metre	5,463.00	7,64,820.00
48		Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.				
	DSREM 18.15.2	100mm dia	4.00	each	6,664.00	26,656.00
	DSREM 18.15.4	200mm dia	2.00	each	22,265.00	44,530.00
49		Supplying, fixing, testing & commissioning of double flanged sluice valve of rating PN 1.6 with non rising spindle, bronze/gun metal seat, ISI marked complete with nuts, bolts, washers, gaskets and conforming to IS 780 of following sizes as required :				
	DSREM 18.12.5	100mm dia	4.00	each	14,641.00	58,564.00
	DSREM 18.12.7	200mm dia	2.00	each	39,332.00	78,664.00
		Total for this sub-schedule-III				72,93,555.20

Name of Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

Schedule-IV Items of General E&M works not scheduled in DSR E&M 2022 (E&M Market Rate Items)

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
1	EMR 1	Supplying, Installation, Testing and Commissioning of 40W LED Well Glass Light Fitting suitable for 230–240V, 50Hz AC supply, industrial type, complete with pressure die-cast aluminium housing with heat sink, UV-stabilized polycarbonate lens/diffuser, constant current isolated electronic driver, with minimum 5000 lumens output and system efficacy not less than 125 lm/W, power factor ≥ 0.95 , THD $\leq 10\%$, CCT 5700K, CRI ≥ 70 , beam angle 90°, internal surge protection, IP65 protection against dust and water ingress, IK07 mechanical impact resistance, Class-I electrical protection, suitable for operating temperature range -20°C to $+50^{\circ}\text{C}$. The fitting shall be complete with hook/eye bolt mounting arrangement, safety chain, cable gland, internal wiring, connection to existing wiring including proper earthing, testing and commissioning as required and as per the direction of Engineer-in-Charge. The luminaire shall be provided with a comprehensive onsite warranty of 5 (Five) years from the date of handing over, covering LED module and driver against manufacturing defects and performance failure.	434.00	Each	3,204.00	13,90,536.00
2	EMR 2	Supplying, Installation, Testing and Commissioning of 70 Watt LED Street Light Luminaire suitable for 230V, 50Hz AC supply, complete with pressure die-cast aluminium housing powder coated, UV stabilized polycarbonate diffuser, high efficiency LED module with minimum system efficacy ≥ 120 lm/W, CCT 5700K, CRI ≥ 70 , PF ≥ 0.95 , THD $\leq 10\%$, IP66 protection, inbuilt surge protection device (minimum 4kV), constant current driver, suitable for pole mounting, operating temperature -10°C to $+45^{\circ}\text{C}$, complete with mounting bracket, nut bolts, glands, connection to existing wiring including earthing, testing and commissioning as required at site.	101.00	Each	3,966.00	4,00,566.00
3	EMR 3	Supplying testing and installation of 100 watt LED Floodlight System Wattage 100W Luminous flux ($\pm 10\%$) 12,000 lm Luminaire efficacy 120 lm/W Correlated Color Temperature 5700K	48.00	Each	5,350.00	2,56,800.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		(5665 ± 355K) Color Rendering Index >70 Maintenance of lumen output 50,000 hrs. Operating Temperature Range -10C to 50C Input Voltage 120 to 277V AC Input Frequency 50 Hz System Current in Amp. @240V AC 0.21A Power Factor >0.95 THD (@240V) <10% Built-in Surge protection 4 kV Ingress Protection IP65 Mechanical impact protection IK07 with complete drive and accessories required to install the light on the wall as per the instruction of the engineer incharge				
4	EMR 4	Supplying and fixing 100A rating, 415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Triple pole and neutral	4.00	Each	10,417.00	41,668.00
5	EMR 5	Supply and installation of Type 2 AC Surge Protection Device (SPD) suitable for 420V AC, 3+1 pole configuration (L1, L2, L3 + PE), designed to protect low voltage electrical systems against transient overvoltages as per IEC 61643-11. The SPD shall be metal oxide varistor (MOV) based, suitable for DIN rail mounting, housed in thermoplastic flame-retardant material (UL94-V0), IP20 protection class, and capable of operating in temperature range -40°C to +70°C. The item includes all necessary connections, accessories, and mounting arrangements as required and as per direction of Engineer-in-Charge.	17.00	Each	3,213.00	54,621.00
6	EMR 6	Supplying, installing, testing, and commissioning of Type 2 Single Phase Surge Protection Device (SPD) suitable for 230V, 50Hz AC supply system, complying with IS/IEC 61643-11. The SPD shall have a nominal discharge current (In) of minimum 10kA and maximum discharge current (Imax) of minimum 20kA (8/20 μs waveform), voltage protection level ≤1.5 kV, and a visual fault indicator. The SPD shall be mounted on a DIN rail inside the distribution board or separate enclosure as required, and shall be properly connected to earth using minimum 6 mm ² copper wire. Complete in all respects including all accessories for proper operation. Make: Siemens / Schneider / L&T / OBO / DEHN or equivalent approved.	3.00	Each	2,134.00	6,402.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
7	EMR 7	<p>Supplying, installation, testing and commissioning of LT Sub Panel Board, floor/wall mounted, fabricated out of 2.0 mm thick CRCA sheet steel, dust and vermin proof, powder coated, suitable for 415V, 3 Phase, 4 Wire, 50 Hz AC supply, complete with busbars, internal wiring and earthing arrangements, comprising of the following:</p> <ul style="list-style-type: none"> •1 No. 160A TPN MCCB incomer (25kA breaking capacity or as required) •2 Nos. 100A TPN MCCB outgoing feeders •2 Nos. 63A TPN MCCB outgoing feeders •Suitable copper busbars (electrolytic grade) with heat shrinkable sleeves •Neutral and earth busbars of adequate rating •Phase indication lamps with control MCB •Digital voltmeter with selector switch •Interconnections with copper links •Cable glands, gland plates and termination arrangement •Earthing with 2 Nos. earth studs • Proper labeling and danger notice plate 	1.00	Each	76,180.00	76,180.00
8	EMR 8	Supply & testing of XLPE insulated aluminium conductor steel armoured power cable of 1.1 KV grade confirming to IS :7089 (part 1) 1988 or latest amendment and as per instructions of official-in-charge. 3.5 X 120 sq.mm	200.00	Meter	1,489.00	2,97,800.00
9	EMR 9	Supply, installation, testing and commissioning of new LT electrical service connection including preparation and submission of application to TNEB, payment of necessary charges, arranging inspection, providing approved energy meter, meter box, service cable from TNEB pole to meter, earthing as per TNEB standards, obtaining safety certificate from licensed electrical contractor, and securing sanction/approval from TNEB for connected load of upto 110 kW / (Three Phase) complete in all respects as directed by Engineer-in-Charge and as per TNEB rules and regulations	1.00	Job	48,450.00	48,450.00
10	EMR 10	Supplying, fixing, testing and commissioning of three phase, 4-wire, CT operated, static electronic energy meter, accuracy class 1.0 or better, conforming to IS 14697/IEC standards and TNEB regulations, suitable for LT service, with LCD display, tamper-proof features, optical port, AMR compatibility, housed in weatherproof polycarbonate meter box with sealing arrangement, complete with: <ul style="list-style-type: none"> • MCCB at the main incomer of suitable rating (as per connected load, 35kA/50kA breaking 	1.00	Job	62,329.00	62,329.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		capacity, adjustable thermal-magnetic release). • HRC fuse carriers with links as required on incoming/outgoing sides. Proper earthing, lugs, glands, wiring, and sealing provisions. The scope includes complete installation, connections, testing and commissioning in presence of TNEB officials as per regulations.				
11	EMR 11	<p>Sub Distribution Pannel 1: Supply of 3 phase and Neutral 415V 4 wire Free Standing Floor mounted double door MV panel made out of 2mm thick CRCA sheet for main frame and 2mm thick partitions after seven tank process and painting with Epoxy powder coating. The panel shall consist of suitable rating TPN Al busbar (at the rating of 1.6A/Sq.mm) supported with DMC/SMC barriers and color coded with Heat shrinkable sleeves. The Metering shall be provided as specified. The panel shall have Short circuit withstanding capacity of minimum 50KA and consist of the switchgear as mentioned below.</p> <p>The PCC shall have at least two spare cubicles. The size of all Panel Mounting Meters shall be 96X96mm. The Panels shall be mounted on U channels including supply and fixing of the same. All MCCB rating 300A and above shall be with microprocessor releases All MCCBs below 300A shall be with adjustable thermal magnetic based releases. All MCCBs shall be with spreader links and rotary handle. All breakers shall be over load & short circuit releases with Icu=100% Ics. All Controlling wiring shall be FRLS cables, all the bus bar sleeves shall be Heat shrinkable kits.</p> <p>INCOMING:</p> <p>(a) 400A, 50KA FP MCCB with extended rotary handle, spreader terminals and magnetic release based Over load, short circuit releases, etc. - 1set</p> <p>(b) Busbars : 500A TPN Al busbars - 1 set (Neutral shall be 100% Phase busbar)</p> <p>OUTGOING:</p> <p>(a) 100A, 4Pole, 25kA MCCB with extended rotary handle, spreader terminals and magnetic release based Over load, short circuit releases, etc. - 5 Nos:</p> <p>(b) 250A 4Pole, 25kA MCCB with Thermal release, extended rotary handle, spreader terminal with cable connection provision etc. - 1 Nos:</p> <p>(c) 63A 4 pole, 25LA MCCB with Thermal release, extended rotary handle, spreader terminal with cable connection provision etc. - 4Nos:</p>	1.00	Job	3,46,275.00	3,46,275.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		C) Some spare 3 No for future need METERING PANEL:A multifunction energy meter for a tender should include specifications like voltage and current ratings, accuracy class, communication protocols (like Modbus or BACnet), and the ability to measure parameters like voltage, current, active power, reactive power, apparent power, power factor, and energy (both active and reactive) One in each outgoing and incoming (iii) LED Phase indication lamps with individuals MCBs and control with toggle switches- 1set in each out going feeder.				
12	EMR 12	Supply & testing of XLPE insulated aluminium conductor steel armoured power cable of 1.1 KV grade confirming to IS :7089 (part 1) 1988 or latest amendment and as per instructions of official-in-charge. 3.5X 95 sq. mm	180.00	Meter	1,429.00	2,57,220.00
13	EMR 13	Supply & testing of XLPE insulated aluminium conductor steel armoured power cable of 1.1 KV grade confirming to IS :7089 (part 1) 1988 or latest amendment and as per instructions of official-in-charge. 4 X 35 sq. mm	284.00	Meter	461.00	1,30,924.00
14	EMR 14	Supply & testing of XLPE insulated aluminium conductor steel armoured power cable of 1.1 KV grade confirming to IS :7089 (part 1) 1988 or latest amendment and as per instructions of official-in-charge. 4 X 25 sq. mm	280.00	Meter	461.00	1,29,080.00
15	EMR 15	Supply & testing of XLPE insulated Al conductor steel armoured power cable of 1.1 KV grade confirming to IS :7089 (part 1) 1988 or latest amendment and as per instructions of official-in-charge. 4 X 16 sq. mm	560.00	Meter	349.00	1,95,440.00
16	EMR 16	Supply & testing of XLPE insulated copper conductor steel armoured power cable of 1.1 KV grade confirming to IS :7089 (part 1) 1988 or latest amendment. and as per instructions of official-in-charge. 5 x 2.5 sq. mm	1,668.00	Meter	346.00	5,77,128.00
17	EMR 17	Supply and installation of IP65 waterproof 4-way junction box Suitable for outdoor/external wiring terminations and field cable junctions. made of UV-resistant thermoplastic/polycarbonate, with 4 entries, terminal/connector plate, suitable for cable sizes up to 25 mm ² . The enclosure shall include neoprene gaskets, mounting screws, IP-rated cable glands, and all necessary internal fittings,	149.00	Each	444.00	66,156.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		ensuring dustproof and waterproof sealing (IP65). The item includes complete installation with all accessories, as per direction of Engineer-in-Charge. Make: Equivalent to Hensel / WAGO / Polycab / HPL / approved equivalent				
18	EMR 18	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Triple pole and neutral 63A MCB	1.00	Each	1,947.00	1,947.00
19	EMR 19	Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140- 270 Volt, frequency 50/60 hz, Operating temp range -5 °C to 40 °C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10%, P. F.≥0.95, IP20, CRI >80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K / 6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-inCharge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). 36 watt	35.00	Each	1,165.00	40,775.00
20	EMR 20	Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency	5.00	Each	750.00	3,750.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		>85%, Operating voltage AC 140- 270 Volt, frequency 50/60 hz, Operating temp range -5 °C to 40 °C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10%, P. F.≥0.95, IP20, CRI >80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-inCharge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). 18 watt				
21	EMR 21	Supplying, installation, testing and commissioning of Exhaust Fan of approved make, in the existing opening/ making suitable hole in the wall and finishing the same, including necessary mounting arrangements, providing proper supports, flexible connection, suitable size 3-core flexible copper cable up to ceiling rose/ connector block, earthing of body, making good the damages, and giving satisfactory performance test at site, complete as required, conforming to IS: 2312. Exhaust Fan – 300 mm sweep, 900 RPM, single phase, 230V AC, including louvers/shutters.	3.00	Each	4,002.00	12,006.00
22	EMR 22	Supplying, installation, Testing & Commissioning of following capacity at full load (Unity Power Factor) ON LINE Uninterrupted Power Supply (UPS) system suitable for Single Phase input, Single Phase output AC Supply. The UPS shall include a Rectifier, inverter, battery bank suitable for 30 minutes back up (Battery VAH capacity shall not be less than 1600 VAH per KVA of UPS rating per Hour backup time) on full load (Battery shall be VRLA, SMF in ABS Container) and Static Bypass switch along with	1.00	Each	1,44,325.00	1,44,325.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		<p>provision for manual bypass, suitable isolation transformer for additional protection against neutral faults etc. The UPS systems shall be Microprocessor based Digital Control, using Insulated Gate Bipolar Transistor (IGBT)'s both for the rectifier & inverter with PWM (Pulse Width Modulation) Technology. The quality of design, manufacturing and inspection process should confirm to the relevant Inter-national standards such as IEC/EN/VDE. The operating efficiency of the UPS systems shall be >95% at 100% non-linear loads. Current total harmonic distortion(ITHD)/ total demand distortion (TDD) on the input grid shall be < 5% at 100 %load. (The required LC filters shall be included in UPS cost), extreme power factor kit to be include to limit the input pf to 0.99 and output power factor shall be unity (i.e. kw rating of the UPS shall be kva rating x 1) however UPS shall be suitable to take load at 0.7 lagging to 0.7 leading power factor loads. UPS shall be suitable for incoming supply AC single phase 160-270V 50 Hz and delivering output AC supply true sine wave single phase 220/230/240 Volt, 50 Hz +/- 0.2Hz, Overload capacity of 120% for 10 mins and 150% for 1 minute. Operating temperature 0 to 40 0C, Relative humidity 0-95% non condensing, noise level less than 60db at 1 meter distance, Protection for Under voltage, over voltage, abnormal output voltage, battery over charging, output over current, shortcircuit, battery deep discharge , 10 KV surge. Display for watt/VA,Amp and Voltage power parameters etc. UPS shall comply with low voltage electromagnetic compatibility (EMC) achieved as per EN 6204, EN6204 Part I and Part 2, it shall be a Voltage and Frequency Independent (VFI) type UPS (as per standard IEC 62040-1, 2 & 3) . The UPS should be with IGBT Based Inverter Technology, Communication RS232/ RS485/ SNMP port open protocol for BMS integration as per approved by Engineering in charge. Required battery racks, DC breaker of suitable rating and interconnecting copper conductor cable of suitable size and connectors and all required accessories are inclusive in the cost. The UPS should have QR code which should contain drawing, test report OEM manual, Geo-Tag of manufacturing location etc 6kva</p>				

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
23	EMR 23	Supplying , Installation, Testing and Commissioning of Air Cooled Hi Wall split type Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (closed cell elastomeric nitrile rubber tubular pipe section) upto 3 Mtr (IDU to ODU), copper power cable upto 3.5 Mtr (IDU to ODU) i/c drain pipe R-32/R-410/ R-407 Green Refrigerant, wireless Remote control, suitable for working between 180- 260V with low & high voltage cutoff and 50 hz ,1 phase AC supply capable of performing cooling, dehumidification, air circulation of following capacity with Scroll / rotary compressor. The system shall be able to deliver 100% of the rated capacity upto 42 0C. Min 5 year Original Equipment Manufacturer (OEM) warranty both compressor and Printed Circuit Board (PCB). Must comply : Electrical cable IS 694 or IS 9968 temperature sensing control IS /International Electrotechnical Commission (IEC) 60730, hermetic compressor IS 10617, heat exchanger IS 11329, capacitor IS 2993 and motor IS 12615. Complete as per CPWD specification and IS : 1391 Part II 2023. The system shall be able to operate up to 50 0C (out door ambient temperature). 1.5 TR with 5 Star BEE Rating	2.00	Each	46,069.00	92,138.00
24	EMR 24	Supplying, installation, testing and commissioning of 9.0 metre high hot dip galvanized octagonal street light pole made out of MS sheet, continuously tapered, suitable for wind load as per IS 875 (Part-3), with minimum 70 micron hot dip galvanization, including the following: a) Single arm bracket (1.0-1.5 metre length) suitable for LED street light luminaire b) Base plate of suitable thickness welded at bottom c) Anchor/foundation bolts (minimum 4 Nos., 20mm dia with nuts, washers and templates) d) Cable entry provision with junction box and terminal connectors e) Excavation for foundation f) PCC/RCC foundation of suitable size as per approved structural design g) Erection of pole with proper alignment and verticality h) Grouting, curing and making good the surface i) All complete as required at site.	6.00	Each	38,888.00	2,33,328.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
25	EMR 25	Automatic Power Factor Correction (APFC) (50kvr) System Supply, Installation, testing and commissioning of Automatic Power Factor Correction (APFC) panel, indoor type floor mounted free standing totally enclosed, extendable, IP 42, of following capacity for 3 phase, 415 V + 10 %, 50 Hz AC System for Ambient temperature -5°C to +40°C, fabricated in compartmentalised designed made of CRCA sheet steel of 2.0mm thick for framework & covers, 3 mm thick for gland plate i/c cleaning & finishing complete with 9 tank process for powder coated of approved shade (RAL 7032-Siemens Gray or as approved by Engineer-in-Charge), having front section (switch gear and control accessories) and rear section capacitor and reactor, front and rear access, having suitable current carrying capacity, extensible TPN Aluminium alloy bus bar of high conductivity, DMC/SMC bus bar supports, bottom base channel of MS Section, fabrication shall be done in transportable section, entire panel shall have common copper earth bar of minimum size of 25mm x 5mm with 2 nos. earth studs, the earth terminals provided on the body of capacitor bank shall also be bonded to the main capacitor panel earth bus with 2 nos. 8 SWG or 6 SWG GI earth wires/ equivalent size of copper conductor cable, forced ventilation for maintaining temperature rise not more than 5°C from ambient, interconnections, connections with 14% detuned reactor and heavy duty 525 V ISI marked Impregnated MPP(Metalized Polypropylene) Capacitor (IS 13340 Part -1 & 2) APFC Panel shall be in compliance with IS:16636 & CPWD Specifications etc. as per below details. (A) Incomers Suitable capacity MCCB Microprocessor base with O/C, S/C, E/L release of TPN 50KA breaking capacity (Ics=Icu), ON, OFF, Trip, R, Y, B - LED Indicating Lamp set along with required Instruments and accessories with extended rotary handle and door interlocking arrangement. Current rating of the Incomer in ampere shall be APFC Panel rating in KVAR x 1.4 x 1.5 or Nearest higher standards rating. (B) Instruments & Indications i) 3-Phase current sensing APFC microprocessor relay/controller , advance 8/12 stages (8 stages for capacity below 100 KVAR and 12 stages 100 KVAR & above) with Communication Ethernet/RS485/SNMP port open protocol for BMS integration as per approved by Engineering in charge and having	1.00	Each	2,73,533.00	2,73,533.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		display of Phase wise V, A, PF, Cos-Phi, Kw, KVA, KVAR, THD-V , THD-I, harmonics up to 31 level. 3 nos of dual core CT's accuracy class 1, 15VA at incomer of PCC Panel for APFC relay. ii) Auto Manual Selector switch, auxiliary contactors with timer for delay in manual mode. iii) Digital Multi function meter with LED Display for V, A, PF, KW, KVA, KVAR, THD-V & I, Frequency. iv) Suitable rating control transformer shall be provided for control and indication circuit. v) All components like control transformer, meter, relay and indicating lamp shall be protected by using suitable rating individual MCB's. vi) Wiring of the control circuit shall be done by using 2.5 sq mm, FRLS/HFFR 1100 V grade, PVC insulated multi stranded copper control wire. (C) Bus Bars 1.3 Amp per Sq.mm,TPN, Electrolytic grade Aluminium bus bar of capacity 1.25 times of incomer rating as per CPWD specification. (D) Outgoings (APFC Section) Selection of the capacitors combinations shall be for continuous rating and each capacitor bank shall have suitable capacity Heavy Duty ISI Marked Capacitor, capacitor duty contactor,the capacitor shall be mounted on channel with base of perforated M S Powder coated sheet, connections inter connections etc. and other features as per CPWD Specifications and relevant IS Code having following: (i) Capacitor bank ratings & stages shall be as per the technical specifications sheet of NIT. (ii) Capacitor will be MPP self healing type with discharge resistor, pressure release mechanism. (iii) Since Capacitor Voltage is 525 Volts, thus higher KVAR has to be considered to get rated output at 415 Volts. (iv) 14% Detuned Reactor of class H insulation & 150% linearity in series with Capacitor. (Note: Technical specifications sheet for selection of the capacitors combinations shall be provided by the NIT Approving Authority with due consideration of number of capacitors i.e. 1 KVAR, 2 KVAR, 3 KVAR, 5 KVAR, 10 KVAR for smooth correction). 50Kvr				
26	EMR 26	Supply, installation, testing and commissioning of 4 kg ABC Dry Chemical Powder (DCP) Fire Extinguisher (stored pressure type), suitable for Class A, B & C fires, complete with discharge hose, pressure gauge, safety pin, wall mounting bracket and all accessories, ISI marked conforming to IS 15683, installed and commissioned as per IS 2190 & NBC 2025. The	22.00	each	3,666.00	80,652.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		item shall include minimum 5-year comprehensive warranty covering cylinder, valve, and accessories.				
27	EMR 27	Supply, installation, testing and commissioning of 6kg CO ₂ Fire Extinguisher, suitable for Class B and electrical fires, complete with seamless steel cylinder, discharge horn, high-pressure valve assembly, safety pin, wall mounting bracket and all accessories, duly ISI marked and conforming to IS 2878. The extinguisher shall be supplied fully charged and installed at site as per IS 2190 & NBC 2025 guidelines, including fixing, labeling, testing and commissioning, complete in all respects. The item shall include 5-year comprehensive warranty covering cylinder, valve assembly, discharge horn and all accessories, including repair/replacement of defective parts during the warranty period.	22.00	each	8,799.00	1,93,578.00
28	EMR 28	Supply, installation, testing and commissioning of 6kg Water Type Fire Extinguisher (stored pressure type) suitable for Class A fires, complete with internally coated MS cylinder, squeeze grip valve, discharge hose, nozzle, pressure gauge, safety pin, wall mounting bracket and all accessories, duly ISI marked and conforming to IS 940 / IS 10204. The extinguisher shall be supplied fully charged and installed at site as per IS 2190 & NBC 2025 guidelines, including fixing, labeling, testing and commissioning, complete in all respects. The item shall include 5-year comprehensive warranty covering cylinder, valve assembly, hose, nozzle, pressure gauge and all accessories, including repair/replacement of defective parts during the warranty period.	60.00	each	4,400.00	2,64,000.00
29	EMR 29	Providing, fabricating, supplying and placing fire bucket stand with 6 Nos. fire buckets, conforming to IS 2546 and as per IS 2190, complete as required. The fire buckets shall be of 9 litre capacity, made of galvanized steel sheet of minimum 24 SWG (≈0.63 mm thickness), of deep drawn/conical shape, provided with handle and grip, painted inside and outside with two coats of synthetic enamel paint (fire red) over one coat of primer, and marked "FIRE" / "SAND" in white paint. The bucket stand shall be fabricated from MS angle sections not less than 35×35×5 mm and MS flat not less than 50×6 mm, including base frame, supports and bracing, all joints properly welded, finished smooth and painted with one coat red oxide primer and two coats synthetic enamel paint (fire red). The buckets shall be	30.00	Set	6,599.00	1,97,970.00

Sr. No.	Ref	Description of the Materials	Qty	Unit	Rate	Amount
		filled with clean dry sand (3 Nos.) and water (3 Nos.) and placed at designated locations ensuring accessibility and visibility. The item includes all materials, fabrication, painting, transportation, loading/unloading, labour, tools & tackles, minor civil works such as grouting/fixing (if required), complete in all respects.				
		Total for this sub-schedule-IV				58,75,577.00

Name of Work: Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).

Schedule-V: - (Office Block and Ancillary Buildings)

SL. No.	Description	Qty	Unit	Rate	Amount
	Office Block and Ancillary Buildings				
1	Design, Engineering, Proof Checking, Procurement, and Construction of the Office Block and Ancillary Buildings on EPC basis, including architectural planning, detailed structural and services design as per IS 456, IS 875 (Parts 1-5), IS 1893, IS 13920, NBC-2016 and all relevant BIS codes, with mandatory design proof-checking by IIT/NIT/Govt. Engineering College; complete site development including clearances, levelling, earthwork, sub-structure and super-structure works, internal and external finishes, plumbing and sanitary works, electrical installations, waterproofing, drainage, testing and commissioning, all in accordance with CPWD Specifications (2019), CPWD Works Manual, DPAR provisions, approved drawings and directions of the Engineer-in-Charge, including all materials, labour, equipment, statutory approvals, insurance, documentation and as-built drawings, complete in all respects. Note : Payment shall be made as per payment schedule attached in NIT.				
1.1	Office block (RCC framed)	163.00	sqm	31,588.00	51,48,844.00
1.2	Electricity room / Panel Room(RCC framed)	36.00	sqm	23,000.00	8,28,000.00
1.3	Santri post, (RCC framed)	12.00	sqm	23,432.00	2,81,184.00
1.4	Labour hut, public toilets & drinking water facilities (RCC framed)	100.00	sqm	23,382.00	23,38,200.00
	Total for this sub-schedule-V				85,96,228.00

Technical Specification for construction of Office block and Ancillary Buildings mentioned in Schedule V above.

1.0 Foundation & Superstructure	
Location	Specification
1.1 Foundation & Superstructure (Plinth area >250 sqm)	<ul style="list-style-type: none"> RCC framed structure shall be constructed with RCC foundations in sizes and depth decided based on soil investigation and approved structural design. Framed Structure shall consist of RCC isolated/raft/pile foundations with plinth beams/tie beams/lintel beams -bands supported by columns. Slabs shall be supported by designed T beams and L beams as per requirements. Design shall be following IS 456:2000, IS 1893:2016 (Earthquake resistance), IS 13920 (Ductile detailing), IS 875 (Load analysis). Concrete Grade: M25 (min.) with PPC/PSC cement containing fly ash/slag within permissible limit IS 1489 (Part 1 & 2), IS 455, IS 10262:2019 Reinforcement: Fe-500D (IS 1786) TMT to be used by a primary manufacturer. Curing to be done using curing compounds/water-efficient methods avoiding wastage of water. Note: New & Emerging Tech (Monolithic construction/3D panels/LGSF) can be permitted with prior approval. Structural Design and Good for construction Drawings shall be prepared by contractor through approved structural designer and vetted by reputed institutes/ Engg college etc and will be got approved from EIC before execution
1.2 Foundation & Superstructure (Plinth area <250 sqm)	<ul style="list-style-type: none"> Composite structure shall be constructed with RCC beam columns and Load-bearing walls in Fly ash/AAC blocks as per structural design. Earthquake resistant detailing shall be as per IS 4326. Foundations sizes and depth shall be decided based on soil investigation and approved structural design. Design shall be following IS 456:2000, IS 1893:2016 (Earthquake resistance), IS 13920 (Ductile detailing), IS 875 (Load analysis) for RCC element of building. Brick masonry wall should be in compliance of IS 2212 Concrete Grade: M25 (min.) with PPC/PSC cement containing fly ash/slag within permissible limit IS 1489 (Part 1 & 2), IS 455, IS 10262:2019 Reinforcement: Fe-500D (IS 1786) TMT to be used by a primary manufacturer. Curing to be done using curing compounds/water-efficient methods avoiding wastage of water. Note: Structural Design and Good for construction Drawings shall be prepared by contractor through approved structural designer and vetted by reputed institutes/ Engg college etc and will be got approved from EIC before execution.

1.3 Internal Walls / Partitions	<ul style="list-style-type: none"> Internal Partition walls shall be constructed using following materials as per architectural details and approved design/drawings. Preferred: Fly ash bricks (Class 10.5, IS 12894). Alternatives: AAC blocks (IS 2185), lightweight autoclaved blocks. Last Resort: First class red clay bricks (Class 7.5, IS 1077) with written justification when neither fly ash nor AAC blocks are available. Gypsum board (low-VOC, moisture-resistant) or Toughened Glass may be provided where shown in approved drawings. Partition walls shall be constructed as per technical notes in Tables below.
1.4 Sunken Floor (Toilets / W.C.)	<ul style="list-style-type: none"> No sunken slabs shall be constructed; only shallow depression for slopes may be provided. All Service lines to be concealed in false ceiling as per architect drawings. <ul style="list-style-type: none"> Waterproofing treatment of wet areas/toilets etc shall be done using 4-course treatment with cement slurry, waterproofing compound and protective screed.
2.0 Flooring and wet area wall finishes	
Office Areas	<ul style="list-style-type: none"> 600 × 600 mm matt-finish vitrified tiles of premium /non-commercial grade (polished/matt as approved), thickness ≥8 mm, water absorption <0.08% (IS 15622). Tiles to be Laid with polymer modified tile adhesive as per IS 15477 (C2/T or C2TE S1) in lieu of cement slurry in a nominal adhesive bed thickness 3–6 mm (thin-set method). All Tile joints shall be ≤2 mm and finished with epoxy or polymer-modified grout. 100 mm (4") high skirting of same tile, flush with wall plaster. Tile Colors shall be got approved from palette (light tones for daylight reflectance). <p>Note: Tiles shall be in neutral corporate tones such as Ivory, Beige, or Light Grey or any other pre-approved by EIC. Only reputed make such as Kajaria, Somany, Johnson, Nitco, or RAK or equivalent approved by EIC shall be used; local or non-renowned products shall not be acceptable.</p>
lobbies, entrances, staircases.	<ul style="list-style-type: none"> 16-18 mm thick pre-polished granite slabs of approved shade/colour (as per approved colour code, details mentioned in tender). Granite shall be laid with machine-cut edges, edge moulding at nosing using cement mortar 1:4 (20 mm bed) or polymer-modified adhesive with slurry backing. Joints shall be ≤2 mm, filled with pigmented cement/epoxy grout. <p>Note:</p> <ul style="list-style-type: none"> Stainless Steel railing shall be provided along staircases and entry ramps. Handrails shall be fabricated from stainless steel tubular sections of Grade 304, with satin/brushed natural finish. Only SS-304 is permitted; SS-202 or other cheaper variants are expressly prohibited. Weld-free joints or neatly ground and polished joints are preferred for aesthetics and durability. All sections shall be ISI-certified and installed true to line and level.

	<ul style="list-style-type: none"> Handrails and balustrades shall be fabricated from tubular sections with top rail external diameter 40–50 mm and nominal wall thickness ≥1.2 mm (for rigidity; 1.5 mm preferred for exposed public use). Vertical balusters or infill shall be spaced so that a 150 mm sphere cannot pass (or maximum spacing ≤175 mm depending on design) to prevent fall-through. Height of top handrail: 900–1000 mm above finished stair nosing/landing; for balconies/terraces minimum 1100 mm unless local codes require more. All handrail fixings to be through plate anchored into structural elements; welds to be ground and passivated. Surface finish to be free of sharp edges and burrs. The entrance steps and ramps shall be finished in Premium Group I granite, pre-polished, of approved shade such as Black Galaxy, Absolute Black, or Hassan Green or any other equivalent aesthetic and grace but pre-approved by EIC. Only Group I premium granite with water absorption not exceeding 0.4% shall be permitted. Use of “commercial black,” dyed, or resin-treated granite is strictly prohibited. Entire supply shall be from the same quarry batch to ensure uniformity of colour and pattern. Each tread and riser shall be made of single-piece granite, with nosing edges rounded for safety and durability. Jointed, patched, or resin-filled granite will not be accepted. The tread depth shall be minimum 300 mm and riser height 150–170 mm as per space availability, Architectural drawings but it shall be consistent across a flight; nosing rounded radius shall be 10–12 mm. Provide anti-slip treatment on treads (textured finish or concealed abrasive strip). Lobby floors, corridors, and waiting areas shall be finished with Premium Group I granite slabs, of approved shades such as Kashmir White, Crystal Yellow, Steel Grey, or Red Multi or any other equivalent aesthetic and grace but pre-approved by EIC. Preferably Large continuous slabs shall be used, with book-matching of veins and patterns wherever feasible. Entire lot shall be uniform in shade and finish and must be approved by the Architect/Engineer before installation. The entrance steps and ramps shall be finished in Premium Group I granite, pre-polished, of approved shade such as Black Galaxy, Absolute Black, or Hassan Green or any other equivalent aesthetic and grace but pre-approved by EIC. Only Group I premium granite with water absorption not exceeding 0.4% shall be permitted. Use of “commercial black,” dyed, or resin-treated granite is strictly prohibited. Entire supply shall be from the same quarry batch to ensure uniformity of colour and pattern. Each tread and riser shall be made of single-piece granite, with nosing edges rounded for safety and durability. Jointed, patched, or resin-filled granite will not be accepted. The tread depth shall be minimum 300 mm and riser height 150–170 mm as per space availability, Architectural drawings but it shall be consistent across a flight; nosing rounded radius shall be 10–12 mm. Provide anti-slip treatment on treads (textured finish or concealed abrasive strip). Lobby floors, corridors, and waiting areas shall be finished with Premium Group I granite slabs, of approved shades such as Kashmir White, Crystal Yellow, Steel Grey, or Red Multi or any other equivalent aesthetic and grace but pre-approved by EIC. <p>Preferably Large continuous slabs shall be used, with book-matching of veins and patterns wherever feasible. Entire lot shall be uniform in shade and finish and must be approved by the Architect/Engineer before installation.</p>
Toilets / Wet	Floor: Matt finish vitrified tiles of min. size 300 × 300 mm (or ≥12" in either

Areas including kitchen, pantry, lavatories	<p>direction), water absorption <0.08% (IS 15622), slip-resistant (R9/R10 class). Tiles shall be Laid with polymer modified tile adhesive to IS 15477 (C2/T or C2TE S1), joints epoxy grouted.</p> <p>Granite or Green Marble platform 16–18 mm thick shall be provided in pantry block in suitable sizes as shown in approved architectural drawings. Platforms shall be polished with edge molding, supported on RCC/brick masonry counter. Granite/Marble slabs for counters shall be single piece for spans ≤ 2.0 m; for longer spans provide stainless-steel support undercut or routed joint with mechanical support. All Fixings and anchorage shall be hidden and corrosion resistant.</p> <p>Dado: Glazed ceramic wall tiles of min. size 450 × 300 mm (or ≥ 18" in any direction), 6–8 mm thick, of approved shade/pattern shall be provided up to full ceiling height above finished floor level by laying it using polymer tile adhesive with spacers or appropriate thickness Cement mortar. Highlight pattern / accent tile bands shall be laid in approved colour code.</p> <p>Note:</p> <ul style="list-style-type: none"> • Floor/wall tiles shall be of Colours /theme viz Grey, Rustic Beige, or Stone finish or Ivory or White colour theme in pleasing appearance, with approved highlight strips in vibrant, high aesthetic, colour theme in premium grade for cooled aesthetic effect as approved by Architect/Engineer in charge. Only premium make such as Kajaria, Somany, Nitco, RAK, or Johnson or equivalent approved by EIC shall be used; local or unbranded products shall not be acceptable. • Shade samples shall be submitted and approved before procurement to ensure consistency. • Laying shall ensure a uniform slope of 1:100 towards the floor drain, without water stagnation over floors.
Utility / Service Areas	<ul style="list-style-type: none"> • Kota stone or local available stone such as kadappa stone etc. (machine-cut, mirror polished) to be laid in available thickness 20-25 mm using cement mortar 1:4 (20 mm bed) or polymer-modified adhesive with slurry backing. Joints shall be ≤ 2 mm, filled with pigmented cement/epoxy grout.
3.0 Doors & Windows	
Door Frames	<ul style="list-style-type: none"> • First class hardwood (teak, sal, hollock, champ as per IS:1003, IS 4021) OR WPC solid section frame, density 750–1000 kg/m³, screw-holding strength ≥ 800 N, size not less than 100×60 mm to be used in dry areas. • WPC / PVC / FRP solid door frames, density 750–1000 kg/m³, section not less than 90×55 mm to be used in wet areas viz toilets etc. <p>Note:</p> <ul style="list-style-type: none"> • Hard Wood shall be FSC-certified Teak or Steam Beech (seasoned, moisture content <12%).
Door Shutters	<ul style="list-style-type: none"> • 35 mm thick ISI-marked flush door shutters (IS:2202 Part 1), decorative type, block board core with first-class hardwood /WPC frame, teak veneered both sides, finished with minimum 0.6 mm veneer, lipping with second-class teak battens (≥ 25 mm). • PVC / FRP / WPC shutters (≥ 30 mm thick, factory made, solid core, waterproof) 100% termite & moisture proof; machine-molded edges, non-delaminating type shall be provided for wet areas/toilets etc.
Windows/	<ul style="list-style-type: none"> • Three-track (sliding with mesh) or two-track (sliding/fixed) systems with

ventilators	<p>proper slope & drainage.</p> <ul style="list-style-type: none"> • Frames shall be of uPVC multi-chambered profiles (wall thickness ≥ 2.5 mm), white colour, extruded & fusion welded, steel reinforced with GI section 1.6 ± 0.2 mm. • Sliding/fixed shutters with 5 mm (single glazing) or 6 mm (for large spans >1.2 m) float glass, Integrated mosquito-proof SS 304 mesh with wire dia 0.36 mm (fly-proof grade). Profiles shall be lead-free, and UV stabilized.
Hardware	<ul style="list-style-type: none"> • SS 304 hinges/handles, branded locksets (Godrej/Europa/Equiv.), hydraulic door closers.
Glazed Partitions	<ul style="list-style-type: none"> • Panels of toughened safety glass (minimum 10 mm thick for heights up to 2.4 m; 12 mm thick if >2.4 m) with Joints sealed with silicone sealant shall be provided along with Aluminum powder-coated frame minimum 1.6 mm thick extrusions, powder-coated (≥ 60 micron), as per design in Glazed partitions frames shown in Architectural drawings.

4.0 Roofing

Flat RCC Roofs and waterproofing treatment	<ul style="list-style-type: none"> • Base Slab: RCC roof slab as per IS 456, minimum thickness as per structural design (generally ≥ 125 mm for non-trafficable, ≥ 150 mm for trafficable roofs). • Waterproofing: 2-component polyurethane-modified cementitious coating (minimum 1.5 mm DFT in 2–3 coats) OR nano-based elastomeric liquid-applied membrane (minimum elongation $\geq 300\%$, crack bridging ≥ 2 mm). Compliant with IS 16471/ASTM C836 along with Protective Screed: PCC screed (1:2:4), minimum 40 mm thick, slope $\geq 1:100$ towards rainwater outlets. • Surface Finish: Cool roof tiles (IS 15622, glazed/unglazed, thickness ≥ 8 mm, Solar Reflective Index ≥ 78 as per ECBC). Tiles fixed with adhesive/concrete bedding.
Shed Roofing	<ul style="list-style-type: none"> • Erect tubular steel shed with clear headroom ≥ 2.4 m (8 ft) above finished roof tiles. Columns, rafters, purlins in hollow steel sections (IS 1161 / IS 4923, minimum thickness 3 mm) anchored or embedded into RCC structure. • Steel Surfaces to be red oxide primed + two coats epoxy/polyurethane paint. • Sheeting Material: Galvalume sheeting as per IS 15961, minimum 0.5 mm total coated thickness (TCT) with AZ150 GSM Al-Zn coating (55% Al, 43% Zn, 1.5% Si) and Profile shall be of Trapezoidal/standing seam with crest height ≥ 28 mm, pitch 200–250 mm, factory pre-coated with polyester top coat (≥ 20 μm) and epoxy back coat (≥ 5 μm). <p>Sheet Fixing: Self-drilling/self-tapping screws (SS 304 fastener, minimum dia. 5.5 mm, length as per overlap), with EPDM weather sealing washers (≥ 3 mm thick).</p>

5.0 Finishes

External Plaster up to Plinth (Stone Grit / Grit Wash Finish)	<ul style="list-style-type: none"> • Backing coat: 12 mm thick cement mortar (CM) 1:4 (cement: sand). • Topcoat: 6–8 mm CM 1:3, roughened while green for grit adhesion. • Stone grit finish: 2–3 mm thick layer of washed stone grit (size 1.5–3 mm, hard granite/quartz) mixed with white/grey cement in approved shade, applied while backing is green. • Surface prep: Brickwork/RCC to be wire-brushed, joints raked 10 mm, surface pre-wetted to SSD. • Drip molds: At all projections >50 mm. • Curing: Minimum 7 days continuous water curing. • Mock-up panel: ≥1.0 m × 1.0 m for approval before bulk execution.
External Plaster above Plinth	<ul style="list-style-type: none"> • Thickness: 15 mm CM 1:6 in single coat. • Finish: Two coats cement-based putty (≤2 mm total). POP is strictly restricted. • Painting: One coat alkali-resistant primer + two coats UV-resistant 100% acrylic exterior emulsion paint (IS 15489, min SRI ≥78 for lighter shades). • Curing: Min 7 days for plaster before putty/painting.
Internal Plaster (General Areas)	<ul style="list-style-type: none"> • Thickness: 12 mm CM 1:6 (±2 mm tolerance). • Sand: As per IS 2116, zone II/III, free from silt/organic matter. • Finish: Smooth trowel finish. • Alternative finishing: POP punning (IS 2542/2547, 1–2 mm) or gypsum skim coat (only in dry internal walls). Not allowed in toilets, kitchens, wet areas (these to be tiled or epoxy painted). • Curing: Min 7 days.
Internal Putty & Painting	<ul style="list-style-type: none"> • Putty: Cement-based/acrylic putty, max thickness 1.5 mm in 2 coats. • Primer: One coat acrylic primer compatible with paint. • Painting: Two coats premium interior acrylic emulsion (low-VOC, washable). • Surface prep: Dust-free, properly dried between coats.
POP Punning (Dry Areas Only)	<ul style="list-style-type: none"> • Material: Factory-manufactured gypsum POP (IS 2542/2547), no site-mixed POP. • Thickness: 1–2 mm over fully cured plaster. • Application: Smooth trowel finish, sanding only after full set. • Restrictions: Not permitted externally or in wet areas.
Doors & Windows (Wood / Metal Painting)	<ul style="list-style-type: none"> • Woodwork: Sanded, knotholes filled, one coat wood preservative, one coat wood primer, two coats synthetic enamel paint (IS 2932). • Metalwork: Wire-brushed, degreased, one coat zinc phosphate primer (IS 12744), two coats synthetic enamel paint (IS 2932). • - Application: Brushing/spraying, uniform film, no thinning beyond manufacturer recommendation.

6.0 Plumbing & Sanitary

Item	Technical Specification & Execution Requirements	Preferred Makes / Models (Indicative, IS-compliant)
European Commode (WC)	<ul style="list-style-type: none"> • White vitreous china, wall hung, IS 2556 compliant. Soft-close urea formaldehyde seat cover (heavy duty, ≥1.8 kg). Dual-flush concealed cistern (3/6 L or 2/4 L as per ECBC/GRIHA). Outlet: 	Hindware (Varese / Element), Cera (Cloister), Kohler (Presqu'île / Forefront), Jaquar (Opal), Parryware (Agate).

	horizontal, \geq P trap 75 mm depth. Fixing with SS 304 bolts & nylon washers. Mosquito-proof coupling.	
Wash Basin	<ul style="list-style-type: none"> White vitreous china, IS 2556. Counter-top or wall-hung basin $\geq 550 \times 400$ mm. Fixing on CI brackets or granite/marble counter. With 15 mm CP brass pillar cock (quarter-turn, IS 8931), pop-up waste (32 mm CP brass), flexible waste pipe (EPDM). All joints sealed watertight with silicone. 	Kohler (ModernLife / Forefront), Jaquar (Opal / Arc), Hindware (Element), Cera (Cloister).
Urinals	<ul style="list-style-type: none"> Flat-back / half stall urinal, vitreous china, IS 2556. Size $\geq 430 \times 260 \times 350$ mm. Fitted with CP brass spreader with unions, concealed auto-flush cistern (ceramic/PVC, IS 7231), 32 mm CP brass waste. Partition between urinals: white vitreous china OR 25 mm marble slab ≥ 600 mm wide \times 1200 mm high. Fixing with SS bolts & anchor fasteners. 	Hindware (Lara / Integrated sensor urinals), Jaquar (Sensor-based models), Cera (Compact), Kohler (Patina).
Urinal Flush Controls	<ul style="list-style-type: none"> Automatic sensor flush valves (DC/AC powered, concealed type), ≤ 1.5 L per flush (as per IGBC/GRIHA norms). 	Jaquar (Urinal Sensor), Kohler (Sensor Flush), Hindware Sensor range.
C.P. Brass Fittings	<ul style="list-style-type: none"> Heavy duty, quarter-turn CP brass fittings with brass cartridge (IS 8931/781). Flow restrictors ≤ 6 L/min for wash basins, ≤ 8 L/min for showers. Chrome plating ≥ 10 micron thickness. 	Jaquar, Kohler, Grohe, Hindware, Cera.
Internal Water Supply Pipes	<ul style="list-style-type: none"> CPVC (IS 15778, SDR 11/13.5), hot & cold-water compatible, concealed with clamps at 1 m c/c. For exposed lines, G.I. medium class IS 1239 with anti-corrosion epoxy coating. Joints solvent-cemented (CPVC) or threaded with PTFE tape (GI). Sleeve with firestop at wall penetrations. Plumbing Drawings shall be prepared by contractor and will be got approved from EIC before 	Astral, Supreme, Ashirvad, Finolex.

	execution.	
Soil, Waste & Vent Pipes (SWV)	<ul style="list-style-type: none"> 100 mm dia hubless centrifugally cast-iron pipes (IS 15905) epoxy-coated (inside/outside). Joints with SS 304/EPDM rubber couplings, CI clamps @ 2 m intervals. Gully trap IS 4111 with CI grating. For rainwater pipes, ≥100 mm uPVC (IS 13592) with SS 304 grating. 	NECO, Saint Gobain, Electrosteel, Supreme (for uPVC RW pipes).
Floor Traps	<ul style="list-style-type: none"> SS 304 deep floor trap, min 125×125 mm, with cockroach/mosquito-proof sealed cover. Water seal ≥50 mm. 	Chilly, Jaquar, Hindware.
Valves	<ul style="list-style-type: none"> Butterfly / Ball / NRV / PRV, PN 10 rating, IS 13095/13013/778. Body material: ductile iron/forged brass, with epoxy coating inside/outside. Accessible valve chambers with CI covers. 	Audco, Kirloskar, Zoloto, L&T, KSB.
Septic Tank / Manholes / Inspection Chambers	<ul style="list-style-type: none"> RCC / brickwork chambers as per IS 2470 & IS 4111. Heavy duty CI cover (IS 1726). Drawings shall be prepared as per IS specified building occupancy(users) by contractor and will be got approved from EIC before execution. Benchings plastered with 1:3 cement mortar. Manholes min 900×900 mm internal size up to 1.2 m depth. Proper vent pipe with mosquito-proof cowl. 	RCC precast covers (RCC spun/NECO CI).
Accessories	<ul style="list-style-type: none"> Grab bars (SS 304, Ø32 mm, 600 mm long) in at least One toilet (barrier-free requirement per NBC/UDCPR). Mirror above each wash basin ≥600×450 mm with SS frame. Soap dispensers with each wash basin (SS 304 automatic preferred). Two Towel holder (SS) in each toilet. 	

Notes:

General Execution & Documentation Requirements

1. **Shop Drawings** – Contractor to submit for approval before execution:
 - Layouts of plumbing lines, sanitary fixtures, traps, venting.
 - Structural supports / hangers for pipes.
 - Typical toilet fixture elevations & details.
 - MEP coordination (plumbing, electrical) – single line diagrams (SLDs), pump curves, breaker schedules.
 - Fabrication details for supports, brackets, and sleeves.
2. **Testing** –
 - **Hydrostatic pressure test:** all water supply pipes tested at $1.5 \times$ working pressure.
 - **Smoke/water test:** all soil & waste pipes.
 - **Flow test:** taps, urinals, flushing cisterns.
3. **Warranty** – All C.P. fittings and flushing systems shall have OEM given minimum **5 years warranty** or higher as per OEM policy.

Technical Specification (Electrical Works) for construction of Office block and Ancillary Buildings mentioned in Schedule V above.

Electrical Works (CWC Office Block, 15 kW or Load assessment as per sanctioned load / connected load calculations, diversity as per IS 732 / CPWD practices; SLD and load schedule to be submitted/approved-whichever is higher)

Reference Standards: CPWD GS Electrical Works Part I, NBC 2016, IS 732:2019, IS 3043, IS 694, IS 9537, IS 8623, IS/IEC 60898, IS 12640, IS/IEC 61643, IS 374, IS 1391, IS 16101/06/08

Scope:

This document defines the minimum technical requirements, sequence of activities, testing, and documentation for electrical installation in a CWC office block with maximum 15 kW load. It covers incoming supply, main/sub-distribution boards, wiring, earthing, lighting, fans, AC, sockets, UPS, exhaust, internet/telephone, and accessories.

O. Planning & Preparation

1. **Load Assessment:**
 - Confirm maximum demand (15 KW or Load assessment as per sanctioned load / connected load calculations, diversity as per IS 732 / CPWD practices; SLD and load schedule to be submitted/approved-whichever is higher).

- Prepare load schedule per room/area (lighting, sockets, AC, technical loads).
 - Prepare detail drawings and BOQ.
2. Design Verification:
 - Confirm all equipment specifications are as per IS/NBC/CPWD.
 - Verify DB segregation, earthing layout, wiring routes, and conduit requirements.
 3. Material Approval:
 - Obtain approval for lights, fans, sockets, AC, UPS, switches, conduits, cables, DBs, SPDs, RCCBs.
 - Ensure 5-year warranty for all LED fixtures.
 4. Site Preparation:
 - Confirm utility connection availability.
 - Mark routes for conduits, cable trays, and equipment locations.
 5. contractor shall size DBs/feeders with 20–25% spare capacity

I. Power Source & Main Distribution

1. Incoming Supply

1. The incoming power supply shall be **3-phase, 4-wire, 415 V AC, TN-S earthing system**, sanctioned for a maximum demand of **15 kW**.
2. In case the existing source of supply is not available, the contractor shall obtain the **sanction of load from the local DISCOM**. All required supporting documents shall be provided by this office.
 - Statutory charges payable directly to the DISCOM shall be reimbursed by this office on submission of valid receipts.
 - All other expenses such as labour charges, documentation fees, liaison charges, inspection/testing charges, and incidental costs shall be deemed to be included in the contractor's scope and rates.
3. The arrangement of the electrical meter, CTs (as applicable), fuse box, and necessary switchgear shall be under the scope of the contractor and shall be provided as per DISCOM requirements, CPWD Specifications, and relevant IS codes.

2. Feeder Cable from Utility to Main DB

1. The main incoming feeder cable from the utility point to the Main LT Panel shall consist of 2 runs of $4 \times 16 \text{ mm}^2$ XLPE Aluminium cable (one in service and one as standby) along with 1 run of $1 \times 6 \text{ mm}^2$ Copper earth conductor, laid in heavy-duty ISI-marked steel conduit/cable tray/HDPE/GI pipe as per site conditions.
2. For road crossings, GI pipe shall be used compulsorily.
3. No portion of the cable shall be laid bare at any point; the entire length shall be routed only through HDPE/GI pipe even along wall surfaces.

3. Main Distribution Board

A **double-door, sheet-metal clad, wall/floor-mounted 8-way TPN DB** (IP-42 minimum, IS/IEC 61439 compliant) shall be provided as the **main DB**.

- (a) Incomer: 63 A, 4P MCB, 10 kA, IS/IEC 60898-2, with 300 mA RCCB (4P, IS 12640) and Type 2 SPD (40 kA, 4P, IS/IEC 61643).
- (b) Protection devices: **300 mA, 4P RCCB** for fire protection (IS 12640). **Type 2 SPD, 40 kA, 4P** (IS/IEC 61643) at incomer level.
- (c) Metering & Indications: **Digital energy meter (Class 1 accuracy, IS 13779 / IEC 62053)** with CTs. R, Y, B phase indicating lamps.
- (d) All outgoing circuits shall be fed via **MCBs (10 kA)** with proper segregation for:
 - Lighting circuits, UPS supply, Technical/server room DB
 - Power sockets, AC units, External / common area loads
- (e) Outgoing Cable from Main DB to Sub-DBs:
 - Type: 6 sq.mm Cu FRLS, in concealed conduit
 - Phases: 3-phase, 4-wire, balanced
 - Notes: Ensure phase balance and voltage drop within limits

Load shall be as per approved load schedule and sanctioned load; contractor shall size DBs/feeders with 20–25% spare capacity

II. Sub-Distribution Board

1. DB Segregation & Load Allocation

DB Name	Load Fed	Incomer & Protection	Outgoing Circuits	Remarks
Lighting & Workstation UPS DB	All office lighting points + 6A workstation sockets + Server/Communication Room 6A sockets	RCCB 30 mA, 2P (single-phase) / 4P (three-phase), Type 2 SPD 20–40 kA	MCBs 6A/10A (lighting), 6A (sockets)	Entire DB fed from UPS / Inverter
Power DB	Raw power sockets (16A), AC circuits	RCCB 30 mA, 2P / 4P, Type 2 SPD	MCBs 16A (sockets), 20A (AC)	AC circuits included here; technical room high-power sockets fed via Main DB outgoing
Technical Room DB (optional minimal)	16A sockets for lab/technical equipment	RCCB 30 mA, 2P, Type 2 SPD 20–40 kA	MCBs 16A	Fed directly from Main DB; no UPS required

2. DB Construction & Protection

- Double-door, wall-mounted, IP42, powder-coated, sheet steel; copper busbars with 25% spare capacity.
- Labelling: Laminated circuit chart + ferrule identification.
- Earthing: Separate earth bar per DB, connected to main earth grid.

3. Wiring Notes:

- UPS DB circuits: $3 \times 2.5 \text{ mm}^2$ Cu FRLS + PE (lighting & 6A sockets).
- Power DB circuits: $3 \times 4 \text{ mm}^2$ Cu FRLS + PE (AC, 16A sockets).

- Technical room high-power sockets: $3 \times 6 \text{ mm}^2$ Cu FRLS + PE from Main DB.

4. Protection Devices:

- RCCB: 30 mA for human protection (all DBs).
- SPD: Type 2, 20–40 kA (all DBs).
- Outgoing MCBs rated per load: 6A/10A for lighting, 16A for sockets, 20A for AC.

5. Labelling & Maintenance:

- All DBs are clearly labelled with load categories.
- Circuit numbers indicated on laminated chart.
- All cabling & conduits installed per IS 732:2019 & CPWD specifications.

III. Wiring & Conduits

1. Standards & Compliance

- All internal wiring shall conform to IS 694 (FRLS PVC insulated copper conductor) and IS 732:2019.
- Conduits shall be heavy-duty PVC, ISI marked as per IS 9537 Part III, with suitable bends, junction boxes, and inspection covers.
- Wiring fill in conduits shall not exceed 40%, and adequate provision shall be made for future pull-through. Standards & Compliance.
- the Indian Standard IS 9537 Part III and IS 732:2019. These standards offer comprehensive tables detailing the maximum number of cables permissible in conduits of different sizes, based on the wire gauge and insulation type.

Conduit Size	1.5 mm ²	2.5 mm ²	4 mm ²	6 mm ²
20 mm	3	2	1	1
25 mm	6	4	2	1
32 mm	12	8	4	2

2. Wiring Sizes & Circuits

Circuit Type	Wiring Size & Type	Conduit Size	Max. # of Wires per Conduit	Remarks
Lighting circuits (UPS-fed)	$3 \times 1.5 \text{ mm}^2$ Cu FRLS + PE	25 mm	6–8 wires	Max 10 points / 10A MCB; fed from UPS DB
Workstation sockets (6A, UPS-fed)	$3 \times 2.5 \text{ mm}^2$ Cu FRLS + PE	25 mm	4–6 wires	Max 6 sockets / 16A MCB
Raw power	$3 \times 2.5 \text{ mm}^2$ Cu FRLS + PE	25 mm	4–6 wires	Max 6 sockets /

sockets (16A, Power DB)				MCB
AC circuits (Power DB)	$3 \times 4 \text{ mm}^2 \text{ Cu FRLS} + \text{PE}$	32 mm	2-4 wires	Dedicated per AC; includes isolator
Technical Room sockets	$3 \times 2.5 \text{ mm}^2 (6\text{A}), 3 \times 4 \text{ mm}^2 (16\text{A})$	32 mm	2 sets of 6A, 1 set of 16A	Fed from Main DB outgoing
Sub-DB incomers (if any)	$3 \times 6 \text{ mm}^2 \text{ Cu FRLS} + \text{PE}$	32 mm	1 set	Minimal dedicated DB
Main incomer (utility to Main DB)	$4 \times 16 \text{ mm}^2 \text{ XLPE Al} + \text{PE}$	HDPE/GI/Steel pipe 50 mm min	1 set per run	Two runs (active + backup); road crossing in GI pipe compulsory

3. Testing & Verification

- All circuits shall be tested for continuity, polarity, insulation resistance, and earth loop impedance as per IS 732:2019.
- Tests shall be carried out before commissioning, with all results recorded and submitted.
- All wiring shall be routed neatly, with colour-coded insulation per phase (R-Y-B-N) and clear labelling at junction boxes, DBs, and panels.

IV. Earthing

- Standards:
Earthing shall conform to IS 3043:2018 (Code of Practice for Earthing).
- DB Earth Continuity: Each Distribution Board (DB) shall have a separate earth continuity conductor, minimum $6 \text{ mm}^2 \text{ Cu FRLS}$.
- Main Earth Grid: The main earthing grid shall be made of $25 \times 3 \text{ mm}$ copper strip, laid as per IS 3043 recommendations.
- Earth Pits: Two earth pits shall be provided using copper plate or pipe electrodes:
 - UPS System: One dedicated earth pit for the UPS system.
 - General Installation: One earth pit for general electrical installation.
- Additional Notes:**
 - All earth connections must ensure low resistance and continuity. (LESS THAN 10HM)
 - The UPS earth should be isolated from general equipment earth to prevent interference.
 - Periodic testing of earth resistance is recommended, with records maintained.

V. Lighting Fixtures (LED)

- Standards: IS 16101/06/08, NBC 2016, CPWD norms.
- Design Parameters with Models, Switches, Earthing, Higher Efficacy, and Updated Lux Levels:

Area	Fixture Type	Wattage	Min Efficacy	Lux / Performance	Density / Quantity	Control	Earthing	Remarks
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Open Office	LED Panel	36 W	120 lm/W	400–500 lux	1 per 4–5 m ²	Individual switch	Mandatory	5-year warranty
Corridors	LED Panel	36 W	120 lm/W	200 lux	1 per 6–8 m ²	Individual switch	Mandatory	5-year warranty
Meeting / Manager Room	LED Panel	24 W	120 lm/W	400 lux	1 per 4–5 m ²	Individual switch	Mandatory	5-year warranty
Pantry / Toilets	LED Downlight	15 W	120 lm/W	150 lux	1 per 3–4 m ²	Individual switch	Mandatory	5-year warranty
Server / Technical Room	LED Batten Light	36 W	120 lm/W	600–700 lux	1 per 2–3 m ²	Individual switch	Mandatory	5-year warranty, high-intensity for technical work

2. Ceiling Fans

- BLDC, 1200 mm sweep, 5-star rated, IS 374 compliant.
- Density: 1 fan per 12 m² area.
- Control: Dedicated switch per fan.
- Earthing: Compulsory.

3. Air-Conditioning

- Split AC, inverter type, 1.5 Ton, 5-star BEE rated (IS 1391) one in manager room one in workstation.
- Electrical Provision: Dedicated circuit with 20 A MCB, local isolator, 3 × 4 mm² Cu FRLS wiring.
- **Control:** Local isolator + switch near AC unit.
- **Earthing:** Compulsory.

5. Sockets & Outlets

- Modular 6 A universal type, IS 1293 compliant, minimum 2 per room + 1 per 10 m² area.
- UPS sockets: 1 per workstation; 2 per meeting/manager room.
- Technical Room: 15 × 6 A and 5 × 16 A sockets, served by dedicated DB.
- Control: Each socket shall have a dedicated switch.
- Earthing: Compulsory for all sockets.

6. Exhaust Fans

- Purpose: For toilets, pantry, and server/technical rooms to maintain ventilation and remove heat/odors.
- Type: Energy-efficient, IS 374 compliant wall-mounted or ceiling-mounted exhaust fans.
- Density / Size:
 - Toilets: 250 mm sweep, 1 per toilet.

- Pantry: 300 mm sweep, 1 per room.
- Server / Technical Room: 400 mm sweep, 1–2 as per room size.
- Control: Each fan shall have a dedicated switch.
- Earthing: Compulsory for all exhaust fans.

7. Internet & Telephone Sockets

- Standards: Cat-6 UTP for internet (data), IS 10810 / IS 694 for telephone.
- Density:
 - Workstations: 1 internet + 1 telephone per workstation.
 - Meeting / Manager rooms: 2 internet + 1 telephone per room.
 - Server / Technical room: As per network requirements (minimum 4 internet points).
- Control: No MCB required; connected to patch panel / LAN switch.
- Earthing / Shielding: Ensure proper earthing of shielded cables and outlets for surge protection.
- Recommended Models: Schneider Electric, Legrand, Havells, or equivalent IS-compliant modules.

VI. UPS Specification (Detailed)

1. Type & Technology

- Type: Online UPS with isolation transformer
- Technology: True double-conversion (VFI – Voltage Frequency Independent)
 - Converts incoming AC to DC and back to AC for clean, stable output
 - Provides galvanic isolation to protect sensitive equipment.

2. Capacity & Sizing

- Rated Capacity: ≥ 5 kVA (total connected load + 20–25% future expansion)
- Input Voltage: 415 V, 3-phase, 4-wire, 50 Hz (TN-S system)
- Output Voltage: 230 V $\pm 1\%$, single-phase, 50 Hz
- Power Factor: ≥ 0.9 at full load
- Efficiency: $\geq 90\%$ at 100% load

3. Battery Specifications

- Type: Dry-type VRLA (Sealed, Maintenance-Free)
- Backup Time: 3 hours at full load
- Voltage & Capacity: As per UPS manufacturer calculation for 3-hour autonomy
- Battery Protection: Overcharge, deep discharge, short-circuit protection

4. Input & Output Protection

- Overload protection
- Short-circuit protection
- Surge protection on input side (SPD Type 2, 20–40 kA)
- Isolation transformer ensures voltage spikes and harmonics are minimized

5. Distribution & DB

- UPS-fed Circuits:
 - Office & corridor lighting

- Workstation sockets (6 A)
- Server/technical room sockets (6 A)
- Emergency lighting points
- Wiring: $3 \times 2.5 \text{ mm}^2$ Cu FRLS + PE per circuit
- Dedicated UPS DB:
 - RCCB: 30 mA, 2P
 - MCBs for individual circuits
 - SPD Type 2 for surge protection

6. Monitoring & Indicators

- LED/LCD display showing:
 - Input/output voltage & frequency
 - Load percentage
 - Battery voltage & charge status
 - Fault indicators

VII. Standards & Compliance

- IS 14697: UPS safety & performance
- IEC 62040 series: International UPS standards
- IS 3043: Earthing requirements
- IS 732: Electrical wiring standards
- IS/IEC 60898: MCBs & RCCBs
- CPWD GS Electrical Works Part I

VIII. Installation Requirements

- Indoor installation, dry, ventilated, and temperature-controlled room
- Easy access for inspection, maintenance, and battery replacement
- Adequate clearances around UPS as per manufacturer recommendations

IX. Maintenance

- Monthly VRLA battery check (voltage & health)
- Quarterly UPS panel cleaning
- Semi-annual test of RCCB and SPD function
- Maintain logbook for load, battery runtime, and fault events
- UPS output wiring shall be $3 \times 2.5 \text{ mm}^2$ Cu FRLS + PE per circuit.

VII. Lightning Protection System (LPS) – Design & Copper Termination SOP

- **Objective:** Safely conduct lightning currents to earth, protecting buildings, equipment, and personnel.
- **Air Terminals:**
 - Install at highest points, corners, and roof projections, minimum 1 m above roof level.
 - Use tinned copper rods; follow rolling sphere/mesh method (IS/IEC 62305).
 - Number of air terminals based on building area and height:

Building Height (m)	Roof Area per Terminal (m ²)	Approx. Spacing (m)
Up to 5	25–30	5–6
5–10	40–50	6–8
10–20	60–80	8–10
20–30	100–120	10–12
>30	150+	12+

- **Down Conductors:**

- Material: Copper strip 25 × 3 mm (IS/IEC 62305).
- Routing: Straight, vertical; avoid sharp bends.
- Multiple conductors spaced 10–12 m apart.

- **Earthing & Integration:**

- Bond all down conductors to earth pits, SPDs, and DB earth bars.
- Target earth resistance <1 Ω OR as per design/soil resistivity and applicable standard.
- Earth pits:
 - Minimum 2–3 pits recommended for a typical building.
 - Can be merged with system (electrical) earthing if soil resistivity and pit design allow, otherwise separate LPS earth pits are preferred.
 - Connect all pits with copper strip interconnection to form a common low-resistance network.

2. Copper Termination

- Air Terminal Connection: Use tinned copper clamps; ensure mechanical strength and electrical continuity.
- Down Conductors: Connect directly to earth pits with copper clamps; maintain straight routing.
- Bonding/Splicing: Use copper lugs or compression connectors; avoid loose or corroded joints.

3. Testing & Quality

- Check all connections for tightness and corrosion.
- Measure earth resistance of LPS network: should be <1 Ω.
- Document layout, conductor routing, earth pit locations, and test results.

4. Example

- Warehouse: 20 m × 40 m, height 8 m → Roof area 800 m²
- Recommended air terminals: 16–20
- Down conductors: 4–5
- Earth pits: 2–3, either merged with system earthing or separate as per soil resistivity.

Note:

- All switchboards, switches and sockets are modular as per IS 14772 compliant, flame-retardant, and with safety shutters.
- Conduit & junction boxes shall allow ≤ 40% wire fill, future pull-out provision, and inspection covers.
- All panels, DBs, and circuits shall be clearly labelled with laminated ferrules and DB charts.
- Testing certificates for wiring, earthing, insulation, RCCBs, and UPS installation shall be submitted before commissioning.

Detail Check List for the execution of office block electrical works:

S.No	Activity / Item	Specification / Standard	Check Criteria
O. Planning & Preparation			
1	Load Assessment	Max 15 kW, diversity factor applied	Load schedule prepared for lighting, sockets, AC, UPS, technical loads
2	Design Verification	CPWD GS, IS 732, NBC 2016	DB segregation, wiring routes, earthing, conduit layout verified
3	Material Approval	LED, fans, sockets, AC, UPS, SPDs, RCCBs, DBs	Approval obtained; 5-year warranty for LEDs
4	Site Preparation	-	Utility connection confirmed, conduit/cable tray routes marked
I. Power Source & Main Distribution			
5	Incoming Supply	3-phase, 4-wire, 415 V, TN-S	Sanctioned load 15 kW; DISCOM approval (if required)
6	Feeder Cable	2 × 4 × 16 mm ² XLPE Al + 1 × 6 mm ² Cu PE	Concealed in HDPE/GI/Steel; bare cable prohibited
7	Main DB	8-way TPN, IP42, IS/IEC 61439	Incomer: 63 A 4P MCB + 300 mA RCCB + Type 2 SPD 40 kA; outgoing circuits segregated
8	Metering & Indications	Digital meter Class 1, CTs	Phase indicator lamps, meter installed
II. Sub-Distribution Board			
9	DB Segregation	Lighting & UPS DB, Power DB, Technical DB	Correct load allocation, RCCB 30 mA, Type 2 SPD
10	DB Construction	Double-door, wall-mounted, IP42	Copper busbars, 25% spare capacity, labelled laminated chart
11	Wiring to DB	UPS DB: 3×2.5 mm ² ; Power DB: 3×4 mm ² ; Tech sockets: 3×6 mm ²	Correct wire size, conduit, colour coding R-Y-B-N
12	Protection Devices	RCCB 30 mA; SPD Type 2	MCBs rated as per load; tested and labelled
III. Wiring & Conduits			
13	Wiring Standard	IS 694, FRLS copper; IS 732	Correct wire size, insulation, route as per layout
14	Conduits	Heavy-duty PVC, IS 9537 Part III	Conduit fill ≤ 40%; bends & junction boxes adequate

15	Circuit Wiring	As per SOP table (Lighting, Sockets, AC, Tech)	Correct wire, conduit, max wires per conduit
16	Testing	Continuity, insulation, polarity, earth loop impedance	Results recorded and verified
IV. Earthing			
17	DB Earth Continuity	6 mm ² Cu FRLS	Separate earth conductor per DB
18	Main Earth Grid	25×3 mm Cu strip	Laid as per IS 3043; interlinked
19	Earth Pits	2 pits min (UPS & general)	Resistance <1 Ω; connection verified
20	Additional Checks	UPS earth isolated; periodic testing	Earth resistance measured, documented
V. Lighting, Fans & AC			
21	LED Lighting	IS 16101/06/08; NBC 2016	Correct wattage, lux, efficacy, switch, earthing; 5-year warranty
22	Ceiling Fans	BLDC, 1200 mm, IS 374	1 fan per 12 m ² , dedicated switch, earthed
23	AC Units	Split, inverter, 1.5 T, IS 1391	Dedicated 20 A MCB, isolator, proper wiring & earthing
24	Exhaust Fans	IS 374	Correct sweep & density; dedicated switch; earthed
25	Sockets & Outlets	Modular 6 A, IS 1293	Correct quantity per room, dedicated switch, earthed
26	Internet / Telephone	Cat6 UTP / IS 10810	Proper density, earthing/shielding, connected to patch panel
VI. UPS System			
27	UPS Type & Capacity	Online, 5 kVA, double-conversion	Isolation transformer, 3 hr backup, dry VRLA battery
28	UPS Protection	Overload, short-circuit, SPD input	RCCB 30 mA, Type 2 SPD, isolation verified
29	UPS Wiring & DB	3×2.5 mm ² Cu FRLS per circuit	Lighting & sockets fed, labelled, tested
30	UPS Monitoring	LED/LCD indicators	Voltage, frequency, load, battery status, faults
VII. Lightning Protection (LPS)			
31	Air Terminals	Tinned Cu, 1 m above roof, spaced per IS/IEC 62305	Number & spacing correct per building height & area

32	Down Conductors	25×3 mm Cu	Straight routing, spaced 10–12 m; securely clamped
33	Earth Integration	Bonded to earth pits & DB earth bars	Earth resistance <1 Ω OR as per design/soil resistivity and applicable standard; proper connection documented
34	Testing & Quality	Earth resistance, connection tightness	Results recorded; corrosion checked
VIII. Panels, Switches & Safety			
35	Switch Boards / Switches / Sockets	Modular, IS 14772, flame-retardant, safety shutters	Installed as per layout; labelled; functional
36	Conduits & Junction Boxes	Adequate size & wire fill	Inspection covers provided; future pull provision
37	DBs & Circuits Labelling	Laminated ferules & DB charts	All circuits identified clearly
IX. Testing & Documentation			
38	Wiring Test	Continuity, insulation, polarity, earth loop	Passed and recorded
39	Earthing Test	Earth resistance measurement	<1 Ω OR as per design/soil resistivity and applicable standard; recorded
40	RCCB & MCB Test	Function, trip test	Correct operation
41	SPD Test	Correct installation & rating	Verified
42	UPS Test	Load, battery, voltage regulation	Performance documented
43	Completion Documentation	Drawings, BOQ, test certificates	Submitted and approved

VIII. fire & life safety provisions

- All fire & life safety provisions required for occupancy/approvals of the Office Block (G+1) shall be deemed included in the tendered rates and shall be executed as directed by the Engineer-in-Charge, even if not individually itemized, provided they are normally required under NBC/CPWD practice for such building.

(a) Minimum FLS deliverables (portable level + egress)

Notwithstanding anything contained elsewhere, the Contractor shall provide and install, test and commission fire & life safety provisions for the G+1 Office Block (approx. 263 sqm) in compliance with NBC 2016 (with amendments), applicable State Fire Service requirements and the drawings. The minimum scope shall include:

(i) portable fire extinguishers of suitable type and rating placed at conspicuous locations on each floor and near electrical rooms/panels, with signage and mounting brackets; (ii) emergency lighting with battery backup in exit routes/staircase/corridors, and internally illuminated/photoluminescent EXIT signage as applicable; (iii) fire action/evacuation instructions displayed near exits and electrical rooms; (iv) fire-stopping/sealing of service penetrations through floors/walls in office block using approved fire-stop system; and (v) mandatory earthing/bonding of metallic services and equipment.

(b) Cabling/containment fire performance requirement (simple but important)

All wires/cables used in the office block, including UPS-fed circuits, shall be FRLS (or LSZH where specified/required) of approved make. Containment in escape routes (stair/corridor) shall be metal conduit/trunking as per CPWD E&M practice; penetrations shall be fire sealed.

No extra shall be payable for fire-stopping, sealing compounds, sleeves and making good.

(c) Electrical panel safety, labeling, and shut-off

All DBs/panels shall have circuit identification charts, permanent labelling, and clear access. A clearly marked main isolator/emergency shut-off for office supply shall be provided at accessible location as per drawings/Engineer-in-Charge directions. Testing and documentation (IR, earth resistance, RCCB trip test, functional checks) is mandatory and included in rates.

(d) Detection / alarm (keep flexible but not vague)

Automatic fire detection and alarm system, if required by local statutory approvals/Fire Officer for the Office Block occupancy, shall be provided as per approved drawings/specifications and shall be deemed included unless separately scheduled. Where detection is not mandated, at minimum a manual alarm arrangement / hooter (as approved) shall be provided for alerting occupants.

Payment Schedule for the work mentioned in Schedule V (Office Block and Ancillary Buildings)

Stage	Description / Deliverable	% of Total Tendered Value for Building in - Schedule V To be paid.	Milestone completion -eligibility criteria for stage wise payment.
1	Design & Engineering Approvals	1%	Upon submission of all architectural detailing, structural design and drawings, MEP drawings incorporating all necessary changes suggested by Engineer in charge upon approval of Design /Drawings.
2	Completion of Foundation & Substructure	15%	Excavation, foundation, PCC, RCC for plinth beam. All work up to Plinth Level complete in all respect.
3	Completion of Superstructure (Walls, Columns, Roof Slabs)	25%	Brickwork, RCC columns, beams, roof slab(s) and floor slab (s) -completed in all respect.
4	Completion of External Envelope (Plaster, Windows, Doors, Waterproofing)	15%	Upon -External walls finished, all the windows and doors fixed, Terrace waterproofing (wherever in scope) completed in all respects.
5	Internal Works Phase-1: Electrical & Plumbing (Concealed)	10%	Upon completion of Conduits, pipes, wiring embedded, and successful completion of pressure & insulation tests done in all respect-as per scope.
6	Internal Works Phase-2: Finishes (Flooring, Painting, Joinery)	24%	All internal finishing, tiles, painting, fittings, doors, installation of all the electrical items/equipment along with installation of plumbing items etc- as per scope- completed in all respect.
7	Final Completion & Handover	10%	Final paint finish (external as well internal) and all balance work completion - Building cleaned, as-built drawings submitted and ready for occupancy

CENTRAL WAREHOUSING CORPORATION
(A Govt. of India Undertaking)

Price Bid

Schedule-I Items of General Civil works Scheduled in Civil DSR 2023 and Items directly driven from DSR 2023

Name of Work			Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).			
NIT Number			E NIT_CWC/CO/Engg. /26-27/06			
NAME OF CONTRACTOR						
Sr.No.	Name of Work	Total Amount as per price schedule (In Rs.)	Quoted rates (Above/Below/At par)	Rate to be quoted in percentage (%)	Quoted %	Quoted amount in figure
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Schedule-I Items of General Civil works Scheduled in Civil DSR 2023 and Items directly driven from DSR 2023	₹ 31,04,08,335.97				-
				TOTAL QUOTED PRICE=		-
Amount Quoted (In Words)						

CENTRAL WAREHOUSING CORPORATION
(A Govt. of India Undertaking)

Price Bid

Schedule-II : Items of General Civil works not scheduled in Civil DSR 2023 (Market Rate Items)

Name of Work		Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).				
NIT Number		E NIT_CWC/CO/Engg. /26-27/06				
NAME OF CONTRACTOR						
Sr.No.	Name of Work	Total Amount as per price schedule (In Rs.)	Quoted rates (Above/Below/At par)	Rate to be quoted in percentage (%)	Quoted %	Quoted amount in figure
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Schedule-II Items of General Civil works not scheduled in Civil DSR 2023 (Market Rate Items)	₹ 11,83,53,931.30				-
				TOTAL QUOTED PRICE=		-
Amount Quoted (In Words)						

CENTRAL WAREHOUSING CORPORATION
(A Govt. of India Undertaking)

Price Bid

Schedule-III: - Items of General Electrical works Scheduled in E&M DSR 2022 and Items directly driven from DSR 2022 items

Name of Work			Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).			
NIT Number			E NIT_CWC/CO/Engg. /26-27/06			
NAME OF CONTRACTOR						
Sr.No.	Name of Work	Total Amount as per price schedule (In Rs.)	Quoted rates (Above/Below/At par)	Rate to be quoted in percentage (%)	Quoted % In Words	Quoted amount in figure
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Schedule-III Items of General Electrical works Scheduled in E&M DSR 2022 and Items directly driven from DSR 2022 items	72,93,555.20				-
				TOTAL QUOTED PRICE=		-
Amount Quoted (In Words)						

CENTRAL WAREHOUSING CORPORATION
(A Govt. of India Undertaking)

Price Bid

Schedule-IV: - Items of General E&M works not scheduled in E&M works DSR 2022 (Market Rate Items)

Name of Work			Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).			
NIT Number			E NIT_CWC/CO/Engg. /26-27/06			
NAME OF CONTRACTOR						
Sr.No.	Name of Work	Total Amount as per price schedule (In Rs.)	Quoted rates (Above/Below/At par)	Rate to be quoted in percentage (%)	Quoted % In Words	Quoted amount in figure
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Schedule-IV: - Items of General E&M works not scheduled in E&M works DSR 2022 (Market Rate Items)	58,75,577.00				
				TOTAL QUOTED PRICE=		
Amount Quoted (In Words)						

CENTRAL WAREHOUSING CORPORATION
(A Govt. of India Undertaking)

Price Bid

Sub Schedule V (Office Block and Ancillary Buildings) based on CPWD PAR 2023

Name of Work		Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).				
NIT Number		E NIT_CWC/CO/Engg. /26-27/06				
NAME OF CONTRACTOR						
Sr.No.	Name of Work	Total Amount as per price schedule (In Rs.)	Quoted rates (Above/Below/At par)	Rate to be quoted in percentage (%)	Quoted % In Words	Quoted amount in figure
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Sub Schedule V (Office Block and Ancillary Buildings) based on CPWD PAR 2023	85,96,228.00				
				TOTAL QUOTED PRICE=		
Amount Quoted (In Words)						

	CENTRAL WAREHOUSING CORPORATION		
	(A GOVT. OF INDIA UNDERTAKING)		
NIT Number	E NIT_CWC/CO/Engg. /26-27/06		
Name of Work	Construction of 34160 MT (1,95,000 sqft) Capacity in 4 units along with internal roads, drains, electrification works, Allied Amenities and Ancillary buildings for CWC at SIPCOT Park, Theni (T.N.).		
	Brief of Schedules	Amount as per Tender Price Schedule (In Rs.) {A}	Total CWC estimated Cost for this Schedule including cost index, labour cess & applicable GST (Rs.) {B}
Sd.-I	Schedule-I Items of General Civil works Scheduled in Civil DSR 2023 and Items directly driven from DSR 2023	₹ 31,04,08,335.97	₹ 25,73,28,510.52
Sd.-II	Schedule-II Items of General Civil works not scheduled in Civil DSR 2023 (Market Rate Items)	₹ 11,83,53,931.30	₹ 11,83,53,931.30
Sd.-III	Schedule-III Items of General Electrical works Scheduled in E&M DSR 2022 and Items directly driven from DSR 2022 items	72,93,555.20	93,73,742.24
Sd.-IV	Schedule-IV: - Items of General E&M works not scheduled in E&M works DSR 2022 (Market Rate Items)	58,75,577.00	58,75,577.00
Sd.-V	Sub Schedule V (Office Block and Ancillary Buildings) based on CPWD PAR 2023	85,96,228.00	71,26,273.01
	Grand Total (In Figures)		39,80,58,034.07

Note: Contractor has to quote his rate against the Tender Price Schedule in column "A" as mentioned in the table.



REFERENCES:

- 1. EXISTING GODOWN
- 2. PLANNED GODOWN
- 3. BOUNDARY WALL
- 4. EXISTING ROAD
- 5. PLANNED ROAD
- 6. HIGH MAST LIGHT
- 7. TREE PLANTATION
- 8. DRAIN
- 9. SEPTIC TANK
- 10. OVER HEAD TANK



NOTES:

- 1. All dimensions are outer to outer(O/O) or inner to inner(I/I) as indicated and are in meters.
- 2. This LOP is prepared based on information received from field at RO.
- 3. Planned capacity is based on clear vacant land visible in LOP.

INDEX	
1	Name of Centre
2	Region
3	State
4	City/ Rural
5	Latitude Longitude and Address
6	Nearest Airport
7	Nearest Railway Station
8	Nearest Highway
S.No. Land Detail of Complex	
1	Total Plot Area (Acre)
3	Ground coverage after planned capacity
4	Permissible Ground Coverage
5	Actual FAR
6	Permissible FAR

GODOWN SPECIFICATIONS	
S.No.	
1	Existing Covered Storage Capacity
2	Planned Covered Storage Area
3	Food Grain Storage Capacity as per stack plan @ 140 MT
S.No. Basic Amenities	
1	Security Cabin
2	Visitor Car Parking/Scooter/Cycle
3	Office Block
4	Weigh Bridge
5	Labour Shed & Public Toilet
6	Electrical room/Panel room
7	UGT
8	Septic Tank
9	Rain water Harvesting Pits.
10	High Mast Lighting
11	Green Area
12	Proposed Road Area
13	Fire Fighting Arrangements
14	Boundary Wall with Concertina wire
15	Internal Roads
16	Water Supply
17	Electrical Connection

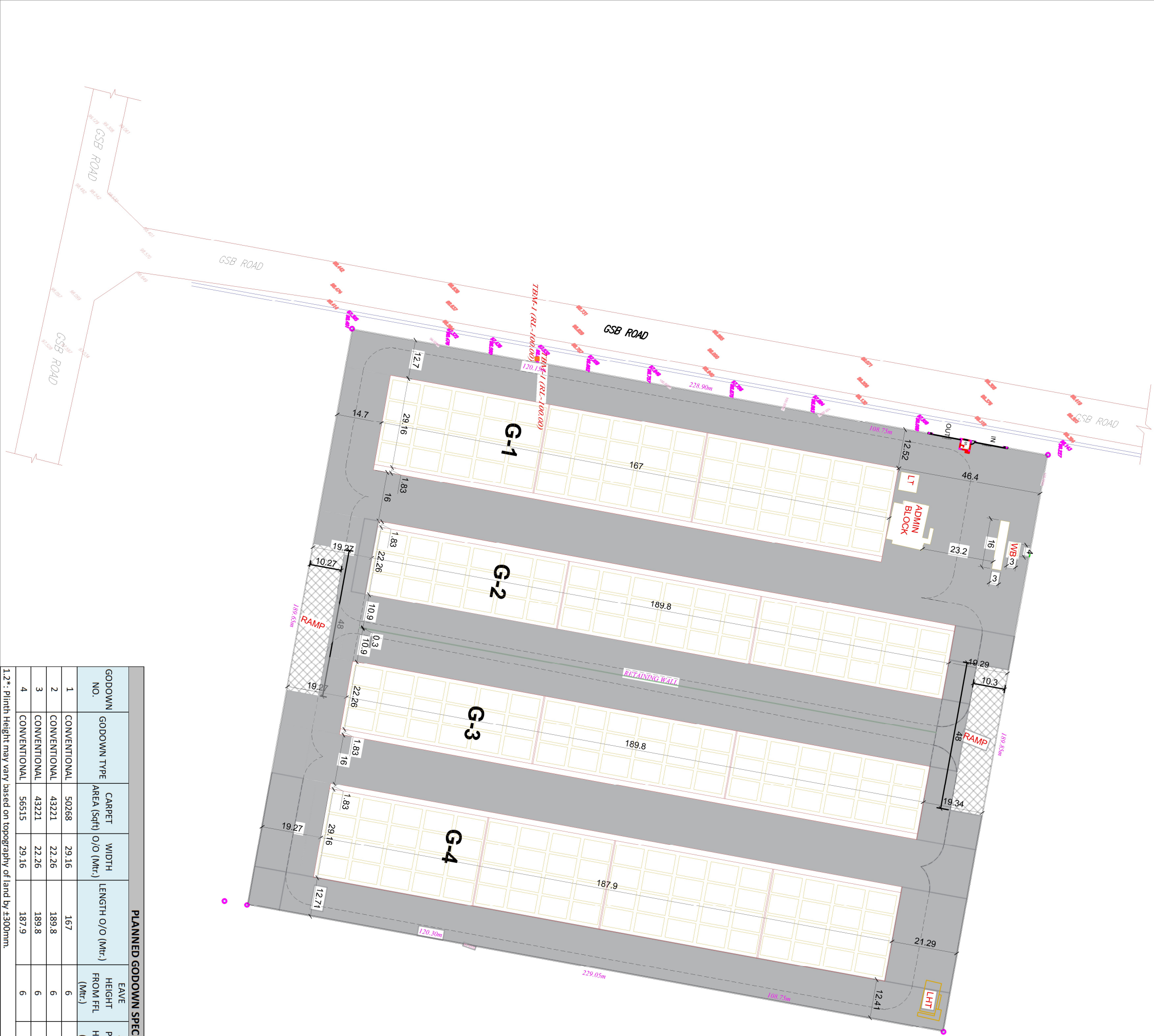
Rev.	Date	Description	Checked By,	Approved By,
CENTRAL WAREHOUSING CORPORATION				
DRG. NO. : CMC/ENG/CHENNAI /THENI/LOP 1B		SCALE:		
DATE: 12/05/2026		Prepared By: Gurvinder Kaur		

LAYOUT PLAN OF CENTRAL WAREHOUSE AT THENI, TAMIL NADU.

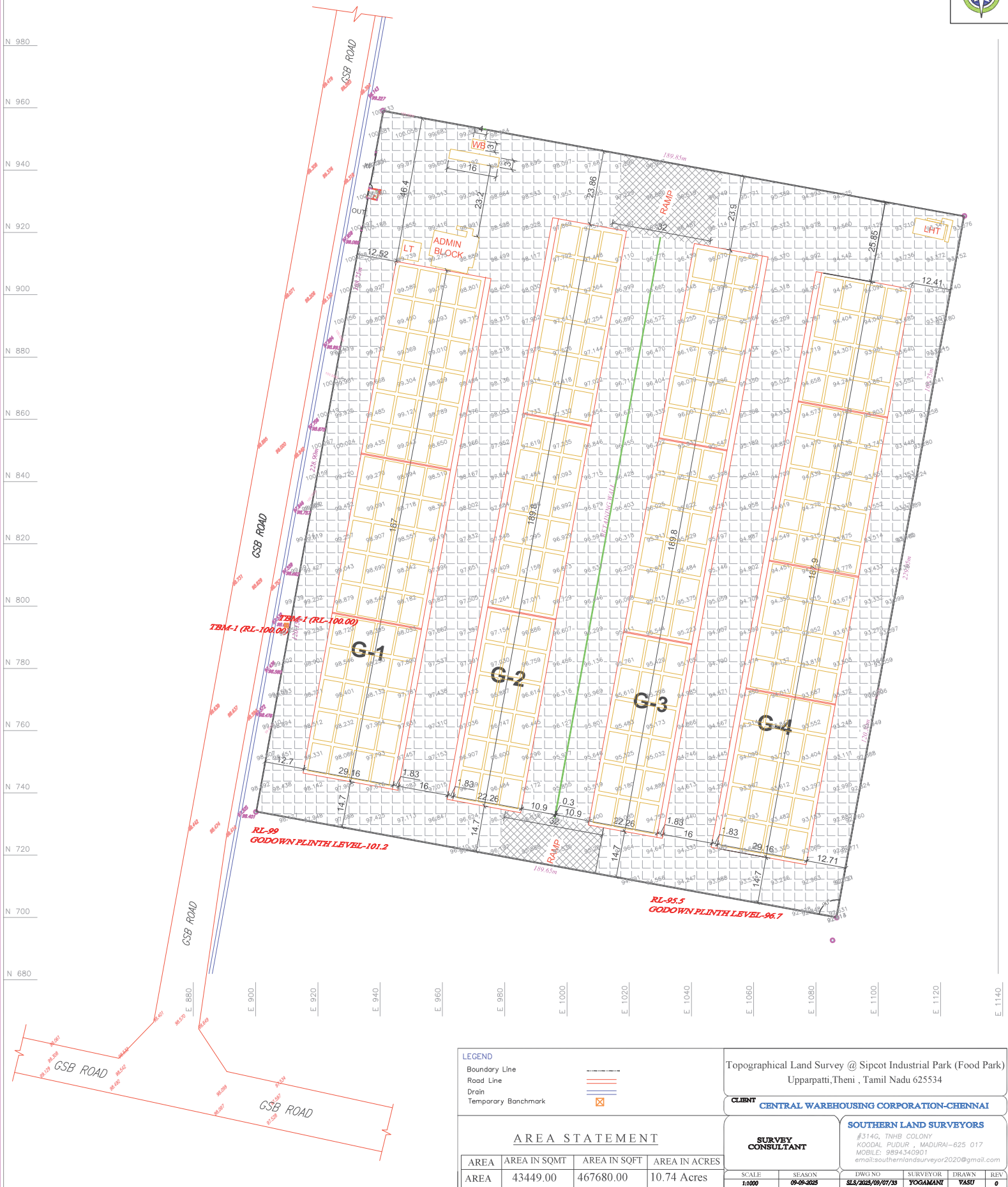
HOE (RO)	EE (CO)	SE (CO)
RM	GGM(Comm.)	CE

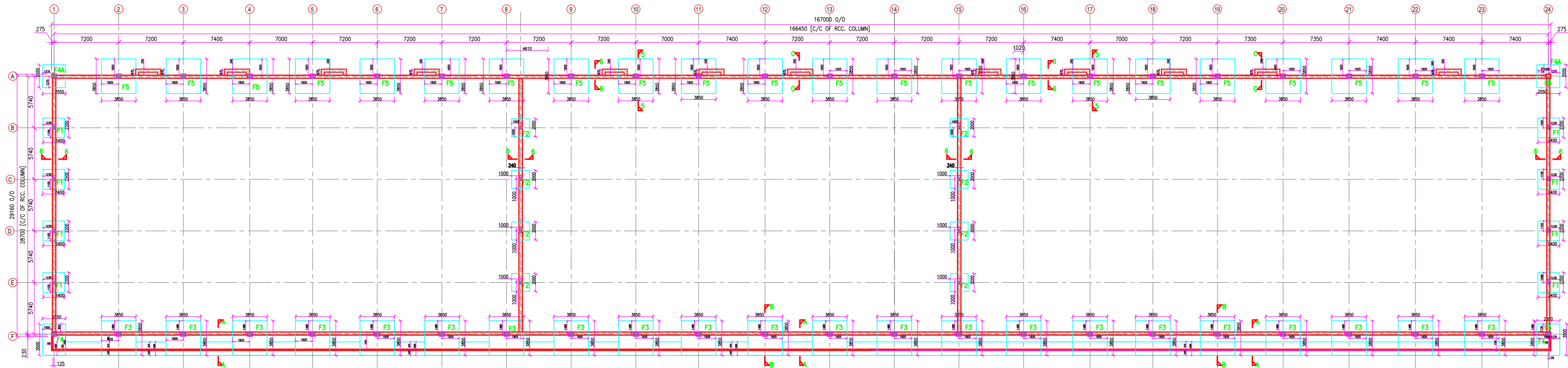
PLANNED GODOWN SPECIFICATIONS						
GODOWN NO.	GODOWN TYPE	CARPET AREA (Sqft)	WIDTH O/O (Mtr.)	LENGTH O/O (Mtr.)	EAVE HEIGHT FROM FFL (Mtr.)	PLINTH HEIGHT (Mtr.)
1	CONVENTIONAL	50268	29.16	167	6	1.2*
2	CONVENTIONAL	43221	22.26	189.8	6	1.2*
3	CONVENTIONAL	43221	22.26	189.8	6	1.2*
4	CONVENTIONAL	56515	29.16	187.9	6	1.2*
ROOF		CLADDING		CONSTRUCTION PHASE		
PPGL		340mm Thick Wall		-		
PPGL		340mm Thick Wall		-		
PPGL		340mm Thick Wall		-		

1.2* : Plinth Height may vary based on topography of land by ±300mm.



NORTH





FOUNDATION PLAN

- GENERAL NOTES:-**
- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL AND SERVICES DRAWINGS.
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 - ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
 - UNLESS SPECIFIED OTHERWISE, ALL LEVELS SHOWN IN STRUCT. DRAWINGS ARE STRUCTURAL LEVELS ONLY.
 - REINFORCEMENT : REINF. STEEL SHALL BE TMT BARS OF GRADE Fe500 CONFIRMING TO IS 1786-2008
 - DETAILING OF REINFORCEMENT SHALL BE ACCORDING TO SP-34:1987, IS-456:2000, IS-13920:2016

- ALL LEVELS ARE TO BE TAKEN FROM ARCHITECTURAL DRAWINGS.
- BUILDING IS DESIGNED FOR SINGLE STORY ONLY.
- SBC OF 9.0T/M2 OF FOUNDATION CONSIDERED AT 1.50m DEPTH FROM N.G.L
- ALL CONCRETE ELEMENTS/MEMBER SHOULD BE RESTED OVER COMPACTED EARTH.

IMPORTANT NOTE

- ALL CONCRETE ELEMENTS / MEMBER SHOULD BE RESTED OVER COMPACTED EARTH (TILL 95% PROCTOR VALUE).

NOTE

- THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
- THIS IS A STANDRAD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
- THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
- THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE

ELEMENT	COVER	CONCRETE	STEEL	ELEMENT
RAFT	50mm	M:25	Fe-500	BEAM SLAB
FOOTING	50mm	M:25	Fe-500	FOOTING,COLUMN
COLUMN	40mm	M:10	-	PCC/DPC
PILES	40mm			
PEDESTAL	40mm			
RC WALL	30mm			
RETAINING WALL	40mm			
SOIL/WATER FACE	40mm			
OTHER	30mm			
BEAMS	25mm			
SLAB	20mm			
STAIR	20mm			
1. CONCRETE MIX				

PURPOSE OF DRAWING	TENDER INFORMATION/ESTIMATION ONLY
GOOD FOR CONSTRUCTION	
PROOF CHECKING	
APPROVAL ONLY	

LOAD CONSIDERED :-				
DEAD LOAD	:-	0.15 kn/m ²		
LIVE LOAD	:-	0.6 kn/m ²		
COLLATERAL LOAD	:-	0.25 kn/m ²		
WIND SPEED	:-	UP TO 50M/S		
SEISMIC ZONE	:-	IV		
BRICK WALL HEIGHT	:-	5.7M		

TENDER DRAWINGS



CENTRAL WAREHOUSING CORPORATION

DRG. NO. CWC-CHENNAI/THENI CIVIL-DWG-RC-01

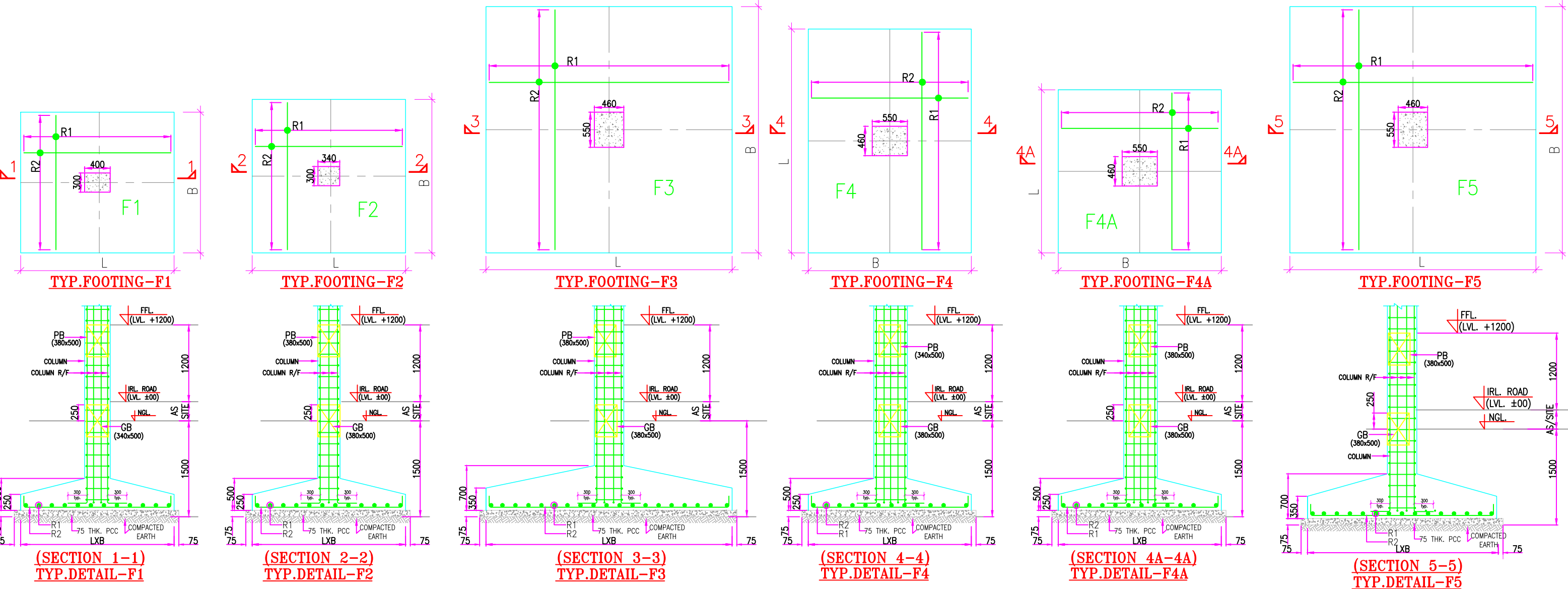
NAME OF THE PROJECT:- CONSTRUCTION OF CONV. GODOWN 1 OF 28.7 M C/C SPAN (29.16M X 167.00M).

**FOUNDATION LAYOUT PLAN & DETAILS
(28.70M C/C)**

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.



FOOTING SCHEDULE

FOOTING MARK	L	B	D	d	R/F. ALONG LENGTH (R1)	R/F. ALONG WIDTH (R2)
F1	2400	2200	500	250	T10@100c/c	T10@125c/c
F2	2000	2000	500	250	T10@100c/c	T10@100c/c
F3	3850	3850	700	350	T12@100c/c	T12@100c/c
F4	2550	3500	500	250	T10@100c/c	T10@100c/c
F4A	2550	2550	500	250	T10@100c/c	T10@100c/c
F5	3850	3850	700	350	T12@100c/c	T12@100c/c

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- UP TO 50 M/S
SEISMIC ZONE	:- IV
BRICK WALL HEIGHT	:- 5.7M

GENERAL NOTES:-

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- DETAILING OF REINFORCEMENT SHALL BE ACCORDING TO SP-34:1987, IS-456:2000, IS-13920:2016

7. ALL LEVELS ARE TO BE TAKEN FROM ARCHITECTURAL DRAWINGS.

8. BUILDING IS DESIGNED FOR SINGLE STORY ONLY.

9. SBC OF 9.0T/M2 OF FOUNDATION CONSIDERED AT 1.50m DEPTH FROM N.G.L

10. ALL CONCRETE ELEMENTS/MEMBER SHOULD BE RESTED OVER COMPACTED EARTH.

IMPORTANT NOTE


11. ALL CONCRETE ELEMENTS / MEMBER SHOULD BE RESTED OVER COMPACTED EARTH (TILL 95% PROCTOR VALUE).

NOTE

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- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE

ELEMENT	COVER
RAFT	50mm
FOOTING	50mm
COLUMN	40mm
PILES	40mm
PEDESTAL	40mm
RC WALL	30mm
RETAINING WALL	40mm
SOIL/WATER FACE	40mm
OTHER	30mm
BEAMS	25mm
SLAB	20mm
STAIR	20mm
1. CONCRETE MIX	

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM, SLAB
M:25	Fe-500	FOOTING, COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION/ESTIMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

**CENTRAL WAREHOUSING CORPORATION**

DRG. NO. CWC-CHENNAI/THENI CIVIL-DWG-RC-01

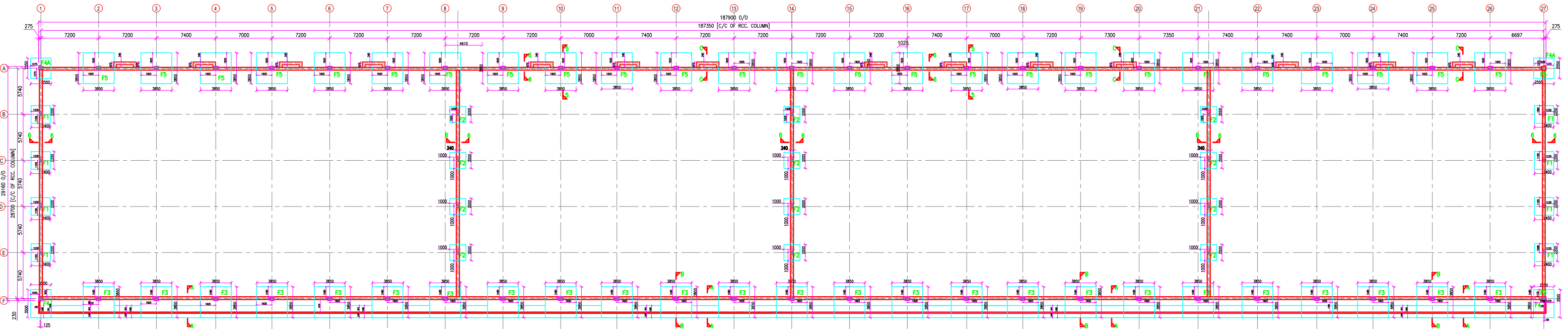
NAME OF THE PROJECT:- CONSTRUCTION OF CONV. GODOWN 1 OF 28.7 M C/C SPAN (29.16M X 167.00M).

FOUNDATION LAYOUT PLAN & DETAILS (28.70M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.



FOUNDATION PLAN

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IMPORTANT NOTE
11. ALL CONCRETE ELEMENTS / MEMBER SHOULD BE RESTED OVER COMPACTED EARTH (TILL 95% PROCTOR VALUE).

- NOTE**
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 - THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
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 - INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE

LOAD CONSIDERED :-				
DEAD LOAD	:-	0.15	kn/m ²	
LIVE LOAD	:-	0.6	kn/m ²	
COLLATERAL LOAD	:-	0.25	kn/m ²	
WIND SPEED	:-	UP TO	50M/S	
SEISMIC ZONE	:-	IV		
BRICK WALL HEIGHT	:-	5.7M		

ELEMENT	COVER	CONCRETE	STEEL	ELEMENT
RAFT	50mm	M:25	Fe-500	BEAM SLAB
FOOTING	50mm	M:25	Fe-500	FOOTING,COLUMN
COLUMN	40mm	M:10	-	PCC/DPC
PILES	40mm			
PEDESTAL	40mm			
RC WALL	30mm			
RETAINING WALL	40mm			
SOIL/WATER FACE	40mm			
OTHER	30mm			
BEAMS	25mm			
SLAB	20mm			
STAIR	20mm			
1. CONCRETE MIX				
PURPOSE OF DRAWING				
GOOD FOR CONSTRUCTION				
TENDER INFORMATION/ESTIMATION ONLY				
PROOF CHECKING				
APPROVAL ONLY				

TENDER DRAWINGS

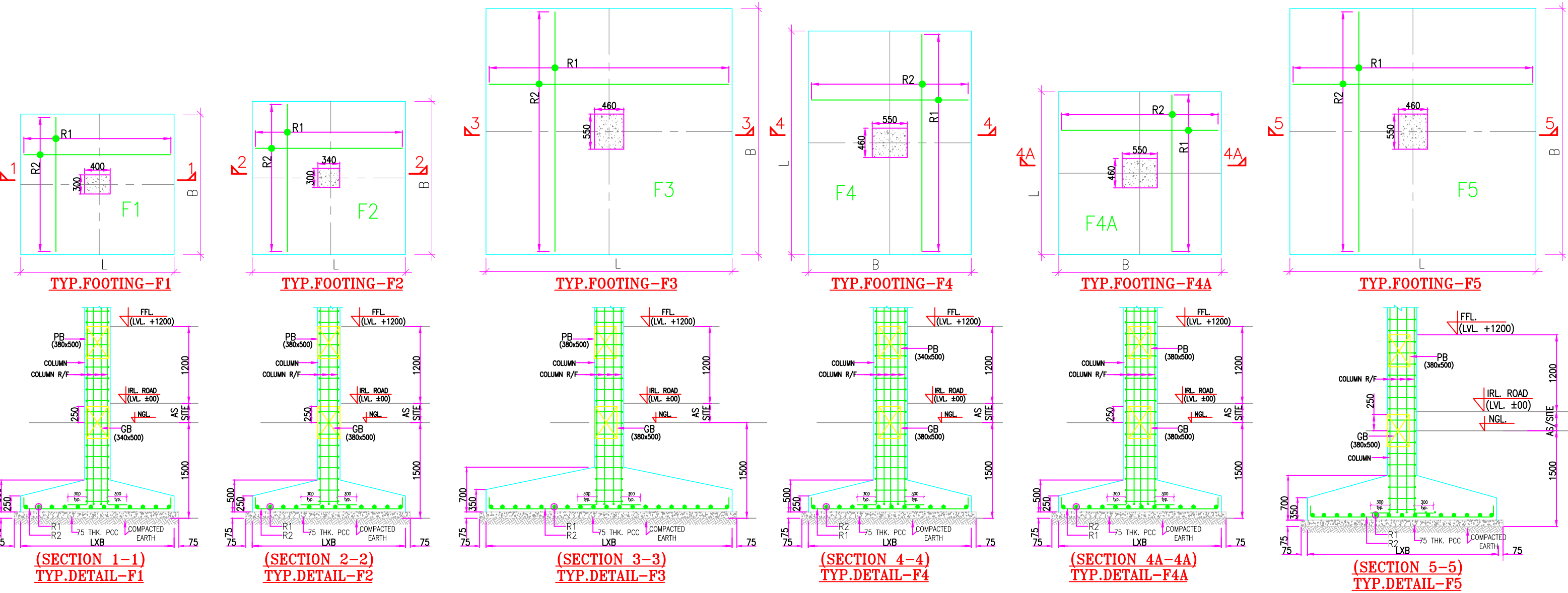


DRG. NO. CWC-CHENNAI/THENI CIVIL-DWG-RC-01

NAME OF THE PROJECT:- CONSTRUCTION OF CONV. GODOWN 4 OF 28.7 M C/C SPAN (29.16M X 187.90M).

FOUNDATION LAYOUT PLAN & DETAILS
(28.70M C/C)

EXECUTIVE ENGINEER. SUPTDG. ENGINEER. CHIEF ENGINEER.



FOOTING SCHEDULE

FOOTING MARK	L	B	D	d	R/F. ALONG LENGTH (R1)	R/F. ALONG WIDTH (R2)
F1	2400	2200	500	250	T10@100c/c	T10@125c/c
F2	2000	2000	500	250	T10@100c/c	T10@100c/c
F3	3850	3850	700	350	T12@100c/c	T12@100c/c
F4	2550	3500	500	250	T10@100c/c	T10@100c/c
F4A	2550	2550	500	250	T10@100c/c	T10@100c/c
F5	3850	3850	700	350	T12@100c/c	T12@100c/c

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- UP TO 50 M/S
SEISMIC ZONE	:- IV
BRICK WALL HEIGHT	:- 5.7M

GENERAL NOTES:-

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ELEMENT	COVER
RAFT	50mm
FOOTING	50mm
COLUMN	40mm
PILES	40mm
PEDESTAL	40mm
RC WALL	30mm
RETAINING WALL	40mm
SOIL/WATER FACE	40mm
OTHER	30mm
BEAMS	25mm
SLAB	20mm
STAIR	20mm
1. CONCRETE MIX	

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM, SLAB
M:25	Fe-500	FOOTING, COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION/ESTIMATION ONLY
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROOF CHECKING	APPROVAL ONLY	
<input type="checkbox"/>	<input type="checkbox"/>	

TENDER DRAWINGS



CENTRAL WAREHOUSING CORPORATION

DRG. NO. CWC-CHENNAI/THENI CIVIL-DWG-RC-01

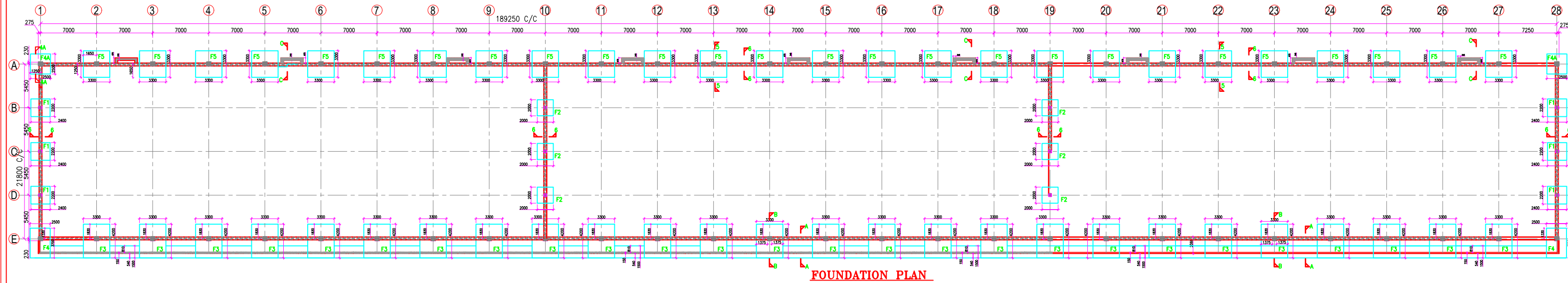
NAME OF THE PROJECT:- CONSTRUCTION OF CONV. GODOWN 4 OF 28.7 M C/C SPAN (29.16M X 187.90M).

FOUNDATION LAYOUT PLAN & DETAILS (28.70M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.



FOUNDATION PLAN

LOAD CONSIDERED :-				
DEAD LOAD	:-	0.15	kn/m ²	
LIVE LOAD	:-	0.6	kn/m ²	
COLLATERAL LOAD	:-	0.25	kn/m ²	
WIND SPEED	:-	UP TO 50M/S		
SEISMIC ZONE	:-	IV		
BRICK WALL HEIGHT	:-	5.7M		

TENDER DRAWINGS



CENTRAL WAREHOUSING CORPORATION

DRG. NO. CWC-CHENNAI/THENI CIVIL-DWG-RC-01

NAME OF THE PROJECT:- CONSTRUCTION OF CONV. GODOWN 2 & 3 OF 21.8 M C/C SPAN (22.26M X 189.8M).

FOUNDATION LAYOUT PLAN & DETAILS (21.80M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.

GENERAL NOTES:-

- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL AND SERVICES DRAWINGS.
- DO NOT SCALE. FOLLOW WRITTEN DIMENSIONS ONLY.
- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
- UNLESS SPECIFIED OTHERWISE, ALL LEVELS SHOWN IN STRUCT. DRAWINGS ARE STRUCTURAL LEVELS ONLY.
- REINFORCEMENT : REINF. STEEL SHALL BE TMT BARS OF GRADE Fe500 CONFIRMING TO IS 1786-2008
- DETAILING OF REINFORCEMENT SHALL BE ACCORDING TO SP-34:1987,IS-456:2000, IS-13920:2016

- ALL LEVELS ARE TO BE TAKEN FROM ARCHITECTURAL DRAWINGS.
- BUILDING IS DESIGNED FOR SINGLE STORY ONLY.
- SBC OF 9.0T/M2 OF FOUNDATION CONSIDERED AT 1.50m DEPTH FROM N.G.L
- ALL CONCRETE ELEMENTS/MEMBER SHOULD BE RESTED OVER COMPACTED EARTH.

IMPORTANT NOTE

- ALL CONCRETE ELEMENTS / MEMBER SHOULD BE RESTED OVER COMPACTED EARTH (TILL 95% PROCTOR VALUE).

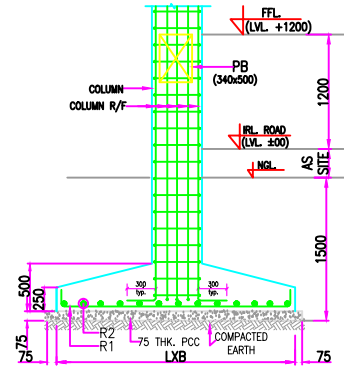
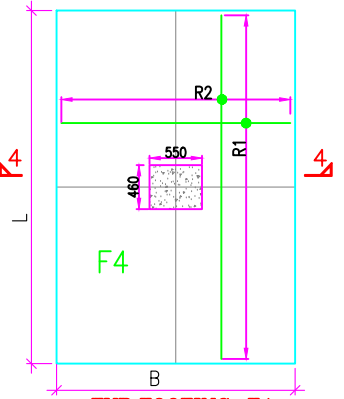
NOTE

- THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
- THIS IS A STANDRAD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
- THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
- THE STONE MASONRY OF THICKNESS 380 MM OR ANY OTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE

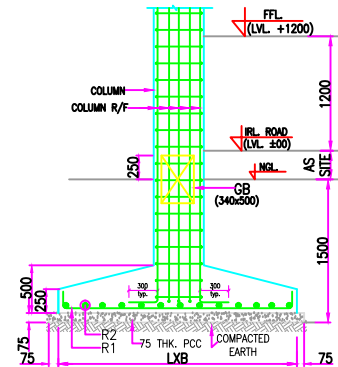
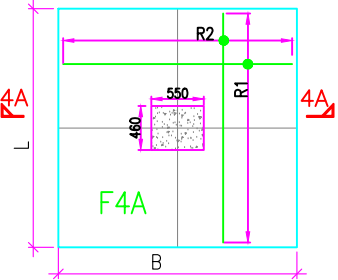
ELEMENT	COVER	CONCRETE	STEEL	ELEMENT
RAFT	50mm	M:25	Fe-500	BEAM SLAB
FOOTING	50mm	M:25	Fe-500	FOOTING,COLUMN
COLUMN	40mm	M:10	-	PCC/DPC
PILES	40mm			
PEDESTAL	40mm			
RC WALL	30mm			
RETAINING WALL	SOIL/WATER FACE 40mm OTHER 30mm			
BEAMS	25mm			
SLAB	20mm			
STAIR	20mm			
1. CONCRETE MIX				
PURPOSE OF DRAWING				
GOOD FOR CONSTRUCTION TENDER ESTIMATION/INFORMATION ONLY				
PROOF CHECKING APPROVAL ONLY				

FOOTING SCHEDULE

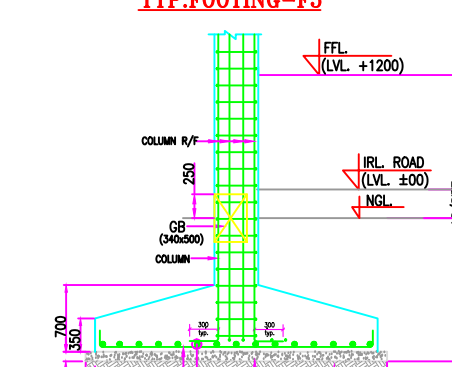
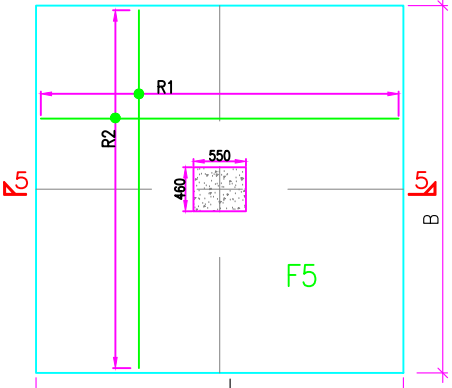
FOOTING MARK	L	B	D	d	R/F. ALONG LENGTH (R1)	R/F. ALONG WIDTH (R2)
F1	2400	2200	500	250	T10@100c/c	T10@125c/c
F2	2000	2000	500	250	T10@100c/c	T10@100c/c
F3	4200	3300	700	350	T12@100c/c	T12@100c/c
F4	3700	2500	500	250	T10@100c/c	T10@100c/c
F4A	2500	2500	500	250	T10@100c/c	T10@100c/c
F5	3300	3300	700	350	T12@100c/c	T12@100c/c



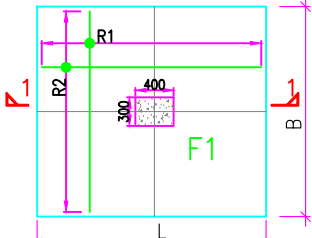
(SECTION 4-4)
TYP.DETAIL-F4



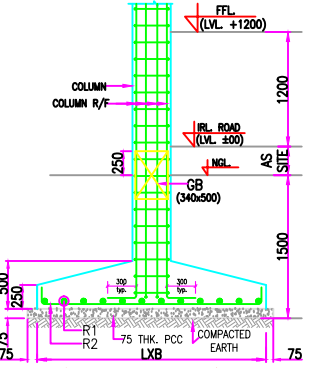
(SECTION 4A-4A)
TYP.DETAIL-F4A



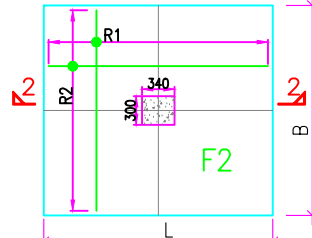
TYPICAL SECTION 5-5
TYP.DETAIL-F5



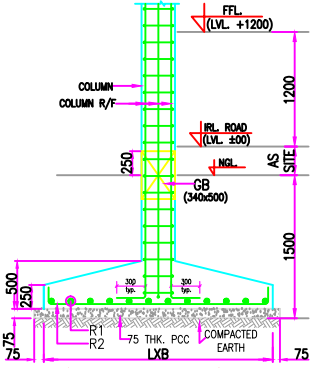
TYP.FOOTING-F1



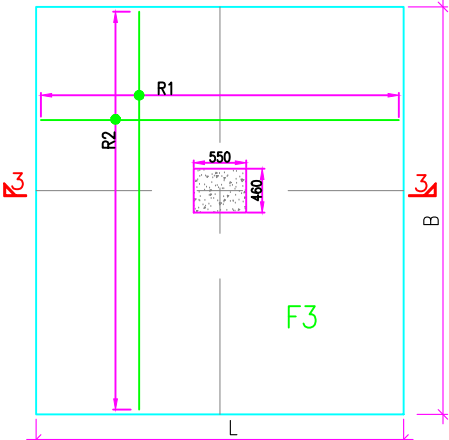
(SECTION 1-1)
TYP.DETAIL-F1



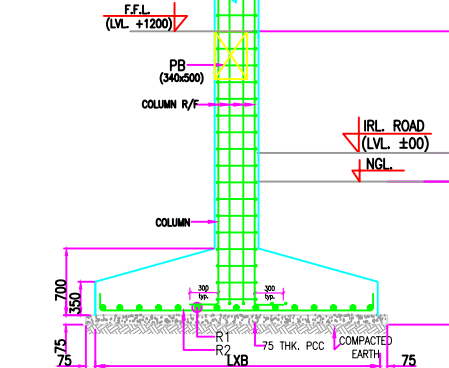
TYP.FOOTING-F2



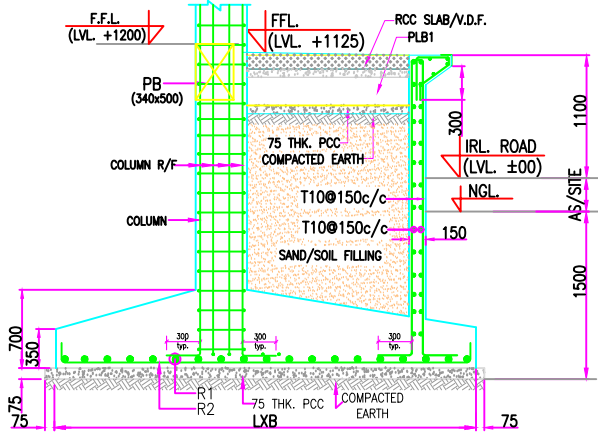
(SECTION 2-2)
TYP.DETAIL-F2



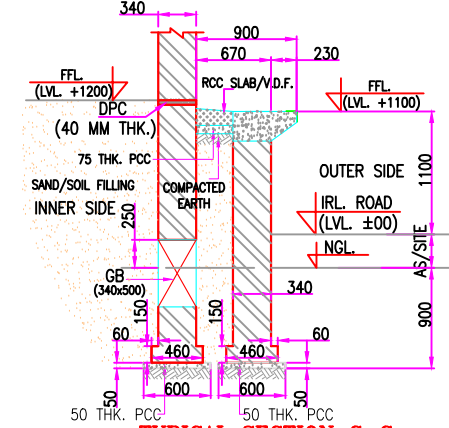
TYP.FOOTING-F3



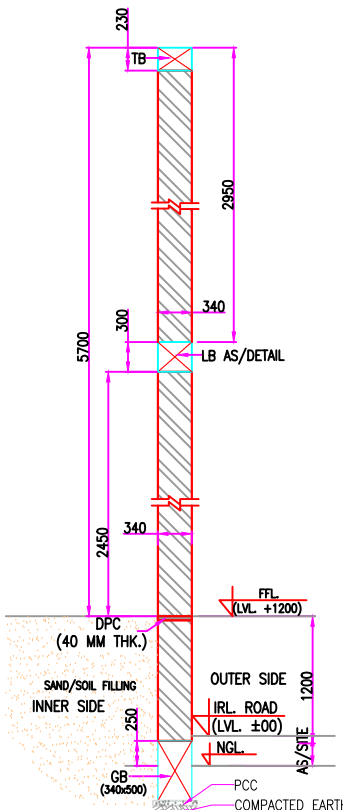
TYPICAL SECTION 3-3
TYP.DETAIL-F3



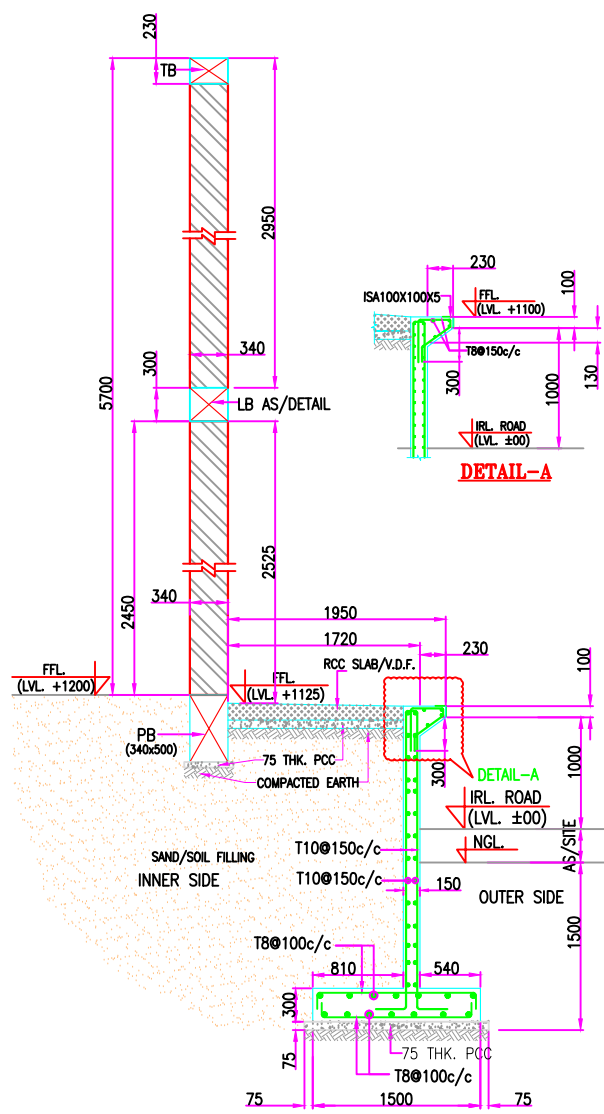
TYPICAL SECTION B-B



TYPICAL SECTION C-C



TYPICAL SECTION 6-6



TYPICAL SECTION A-A

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- UP TO 50 M/S
SEISMIC ZONE	:- IV
BRICK WALL HEIGHT	:- 5.7M

GENERAL NOTES:-

- STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL AND SERVICES DRAWINGS.
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- ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE SPECIFIED.
- UNLESS SPECIFIED OTHERWISE, ALL LEVELS SHOWN IN STRUCT. DRAWINGS ARE STRUCTURAL LEVELS ONLY.
- REINFORCEMENT : REINF. STEEL SHALL BE TMT BARS OF GRADE Fe500 CONFIRMING TO IS 1786-2008
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- SBC OF 9.0T/M2 OF FOUNDATION CONSIDERED AT 1.50m DEPTH FROM N.G.L
- ALL CONCRETE ELEMENTS/MEMBER SHOULD BE RESTED OVER COMPACTED EARTH.

IMPORTANT NOTE
11. ALL CONCRETE ELEMENTS / MEMBER SHOULD BE RESTED OVER COMPACTED EARTH (TILL 95% PROCTOR VALUE).

NOTE

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- 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
- 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE

ELEMENT	COVER	CONCRETE	STEEL	ELEMENT
RAFT	50mm	M:25	Fe-500	BEAM SLAB
FOOTING	50mm	M:25	Fe-500	FOOTING,COLUMN
COLUMN	40mm	M:10	-	PCC/DPC
PILES	40mm			
PEDESTAL	40mm			
RC WALL	30mm			
RETAINING WALL	SOIL/WATER FACE 40mm OTHER 30mm			
BEAMS	25mm			
SLAB	20mm			
STAIR	20mm			
1. CONCRETE MIX				

PURPOSE OF DRAWING

GOOD FOR CONSTRUCTION TENDER INFORMATION/INFORMATION ONLY

PROOF CHECKING APPROVAL ONLY

TENDER DRAWINGS



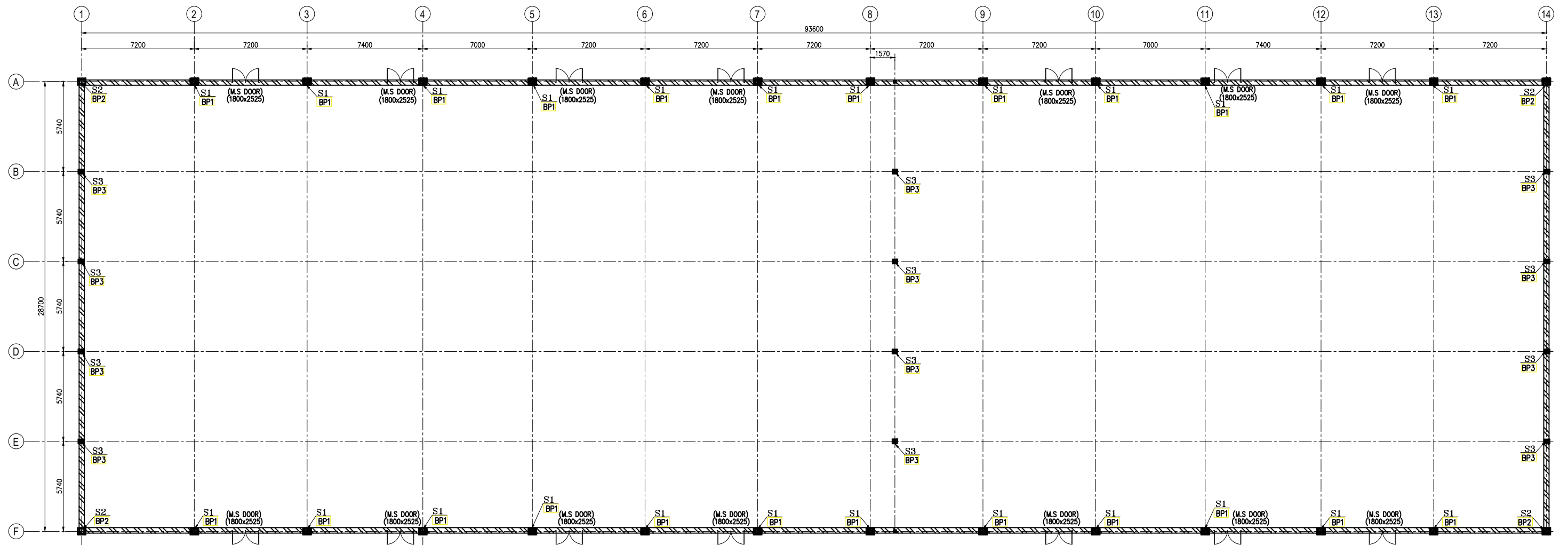
CENTRAL WAREHOUSING CORPORATION

DRG. NO. CWC-CHENNAI/THENI CIVIL-DWG-RC-01

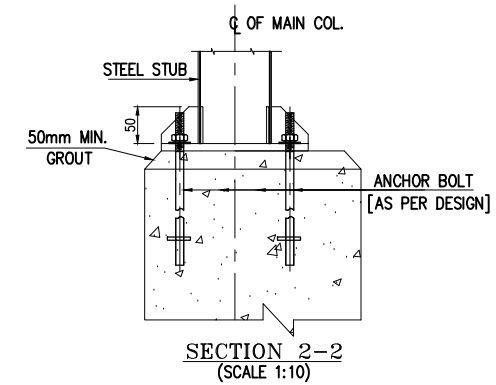
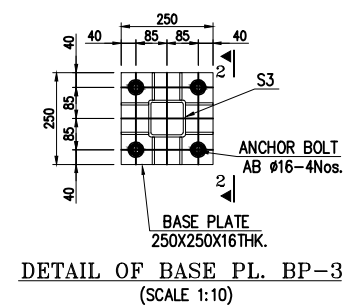
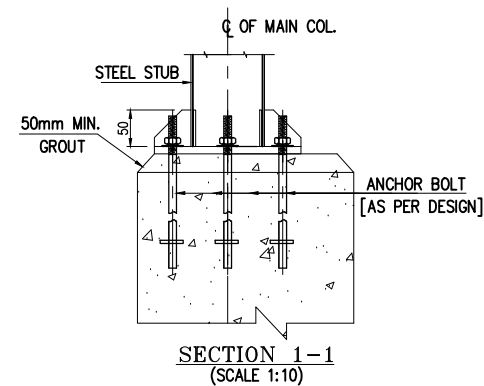
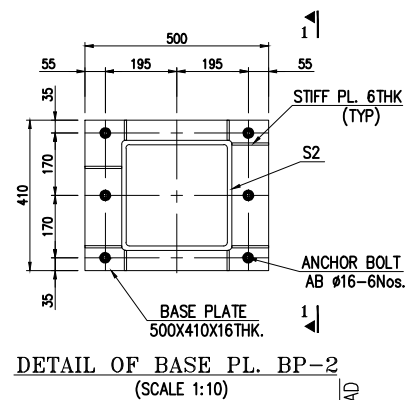
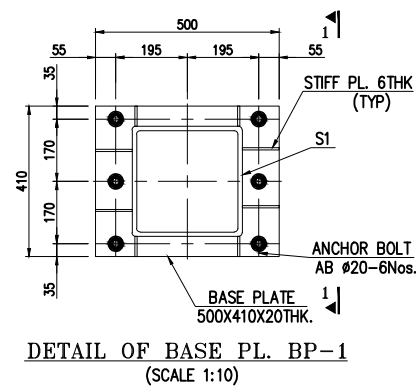
NAME OF THE PROJECT:- CONSTRUCTION OF CONV. GODOWN 2 & 3 OF 21.8 M C/C SPAN (22.26M X 189.8M).

FOUNDATION LAYOUT PLAN & DETAILS
(21.80M C/C)

EXECUTIVE ENGINEER. SUPTDG. ENGINEER. CHIEF ENGINEER.



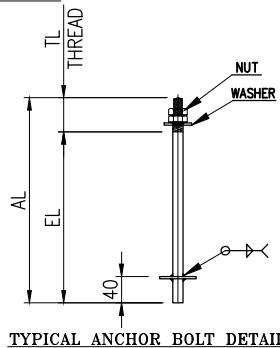
ANCHOR BOLT COLUMN LAYOUT PLAN.
(5.7M WALL HEIGHT)



STUB MRK.	STUB SIZE
BUILT-UP BOX SECTION-S1	300x300x12
BUILT-UP BOX SECTION-S2	300x300x12
BUILT-UP BOX SECTION-S3	100x100x6

ANCHOR BOLT SCHEDULES

S.NO	APPLICATION (SCHUDLE FOR ONE ANCHOR BOLT.)	NO. OF BOLT	DIA. OF BOLT	DIA. OF HOLE	THREAD LENGTH TL	EMBEDD LENGTH EL	ANC.BOLT LENGHT AL	TOTAL QTY.	BEARING PLATE
1	DETAIL- BP1	6	M20	24	100	350	450	144	50x50x6
2	DETAIL- BP2	6	M16	18	100	350	450	24	50x50x6
3	DETAIL- BP3	4	M16	18	100	350	450	24	50x50x6
TOTAL								192 NOS.	



LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC

PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	



CENTRAL WAREHOUSING CORPORATION

DRG. NO.

CWC/STD-28.70(FG.)/CIVIL-DWG-ST-01

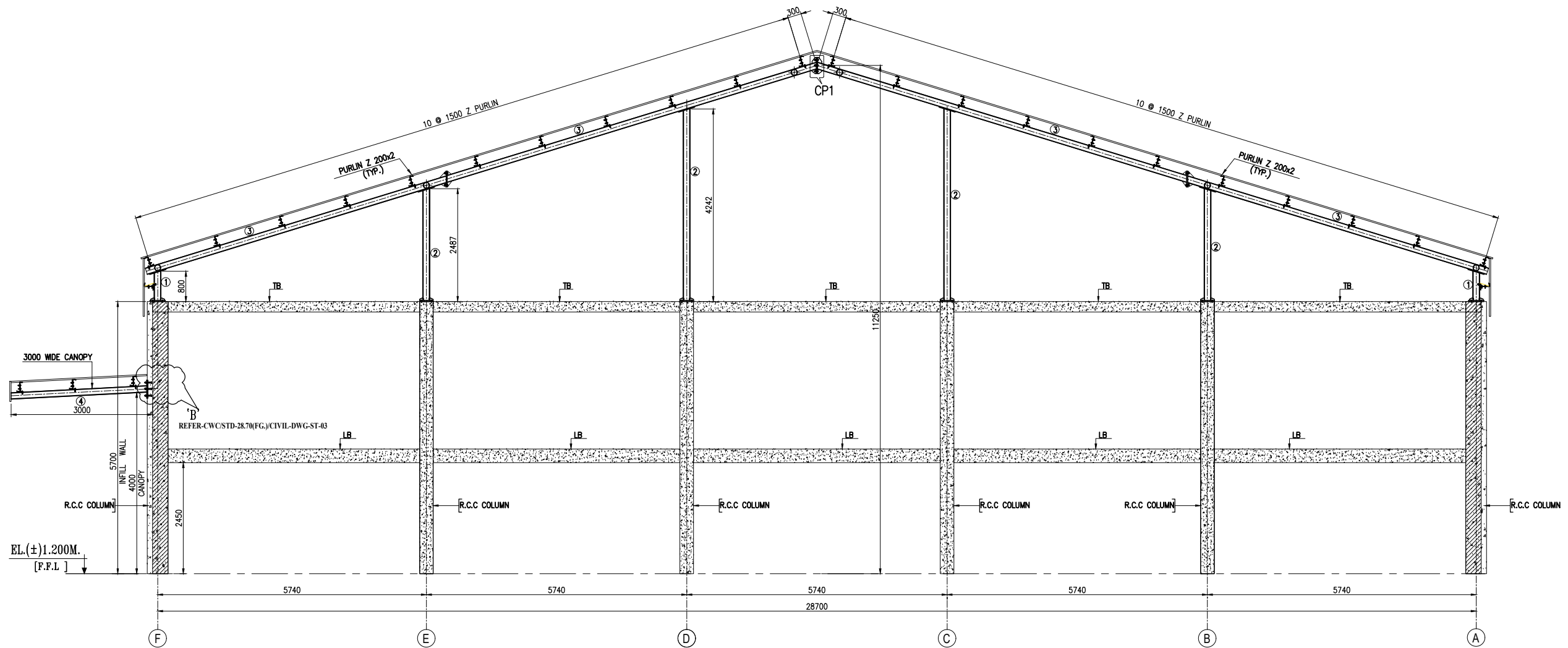
ANCHOR BOLT & COLUMN LAYOUT PLAN.
(28.70M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER

NOTE
1. THE BAY SPACING OF GONDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GONDON. HOWEVER LENGTH OF THE GONDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 300 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.



ELEVATION ALONG GRID-1 & 14
(GABLE END)
(SCALE 1:50)

MEMBER SIZE SCHEDULE		
MARK	DESCRIPTION	SYMBOL
1.	(BUILT-UP BOX SECTION) 300x300x12	<input type="checkbox"/>
2.	(BUILT-UP BOX SECTION) 100x100x6	<input type="checkbox"/>
3.	200x100x6 (RHS)	<input type="checkbox"/>
4.	200x200x10 (SHS)	<input type="checkbox"/>

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

NOTE
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3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 300 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

LOAD CONSIDERED :-		
DEAD LOAD	:-	0.15 kn/m ²
LIVE LOAD	:-	0.6 kn/m ²
COLLATERAL LOAD	:-	0.25 kn/m ²
WIND SPEED	:-	50M/S
SEISMIC ZONE	:-	IV
INFILL WALL HEIGHT	:-	5.7M

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC

PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	



CENTRAL WAREHOUSING CORPORATION

DRG. NO.

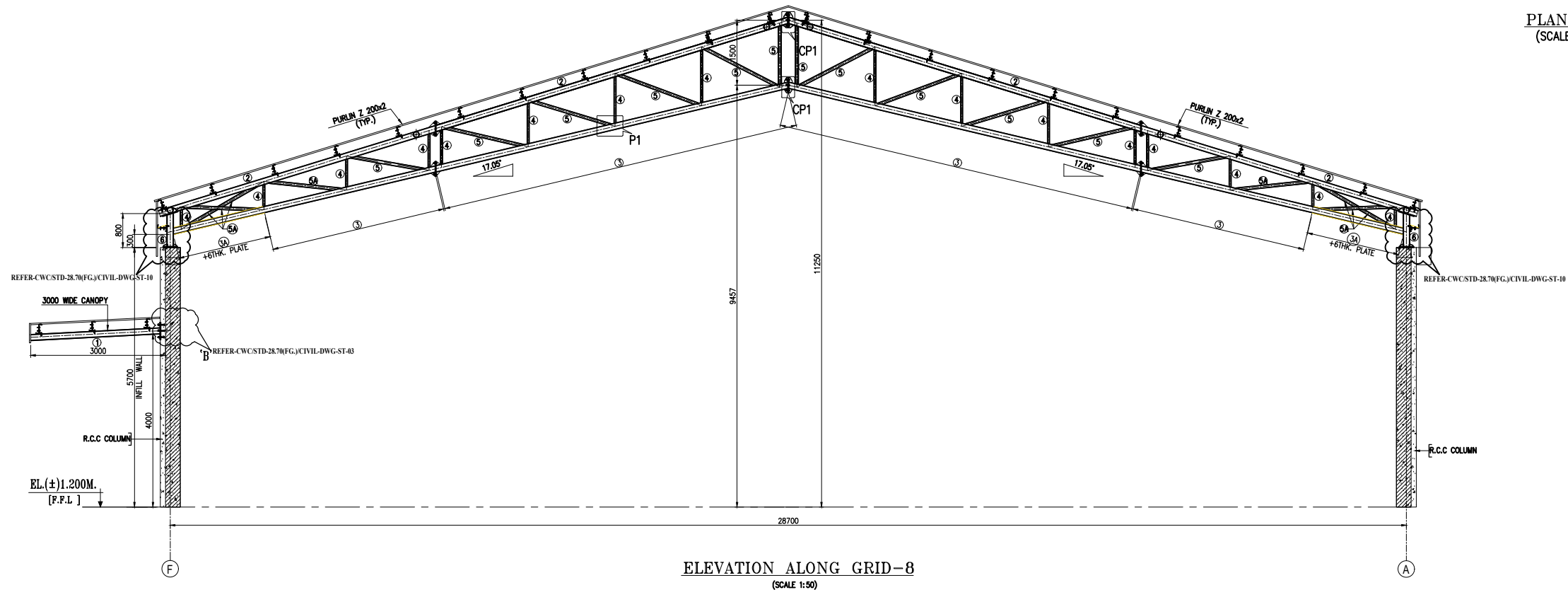
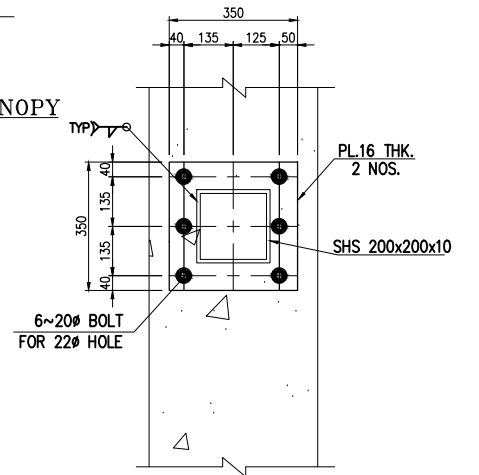
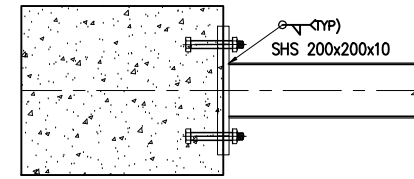
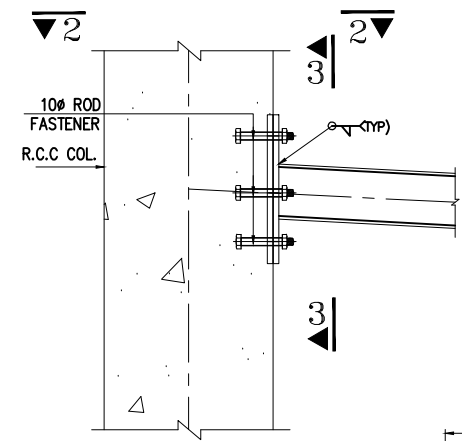
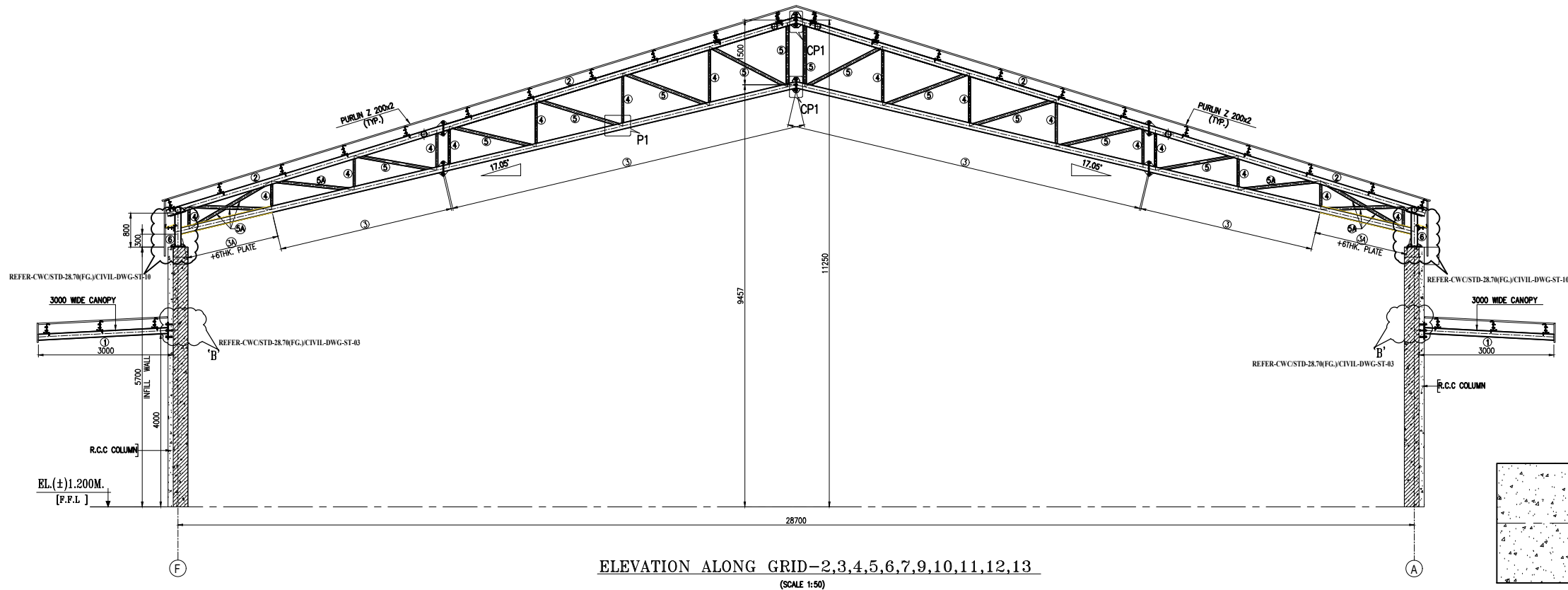
CWC/STD-28.70(FG.)/CIVIL-DWG-ST-02

GABLE END ELEVATION ALONG GRID-1 & 14
(28.70M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

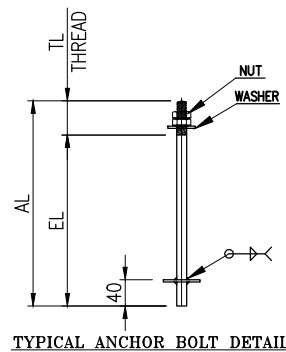
CHIEF ENGINEER



MEMBER SIZE SCHEDULE		
MARK	DESCRIPTION	
1.	200x200x10 (SHS)	<input type="checkbox"/>
2.	200x100x5 (RHS)	<input type="checkbox"/>
3.	200x100x4 (RHS)	<input type="checkbox"/>
3A.	200x100x4 (RHS) +6THK.PLATE (B/S)	<input type="checkbox"/>
4.	50x50x2.6 (SHS)	<input type="checkbox"/>
5.	60x60x4 (SHS)	<input type="checkbox"/>
5A.	72x72x8 (SHS)	<input type="checkbox"/>
6.	(BUILT-UP BOX SECTION) 300x300x12	<input type="checkbox"/>

ANCHOR BOLT SCHEDULES								
S.NO	APPLICATION (SCHUDLE FOR ONE ANCHOR BOLT.)	NO. OF BOLT	DIA. OF BOLT	DIA. OF HOLE	THREAD LENGTH	EMBEDD LENGTH	ANC.BOLT LENGTH	TOTAL QTY.
1	DETAIL- B	6	M20	22	100	250	350	12
TOTAL								12 NOS.

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
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7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa



LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m²
LIVE LOAD	:- 0.6 kn/m²
COLLATERAL LOAD	:- 0.25 kn/m²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

NOTE
 1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
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 3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
 4. THE STONE MASONRY OF THICKNESS 300 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC



CENTRAL WAREHOUSING CORPORATION

DRG. NO.

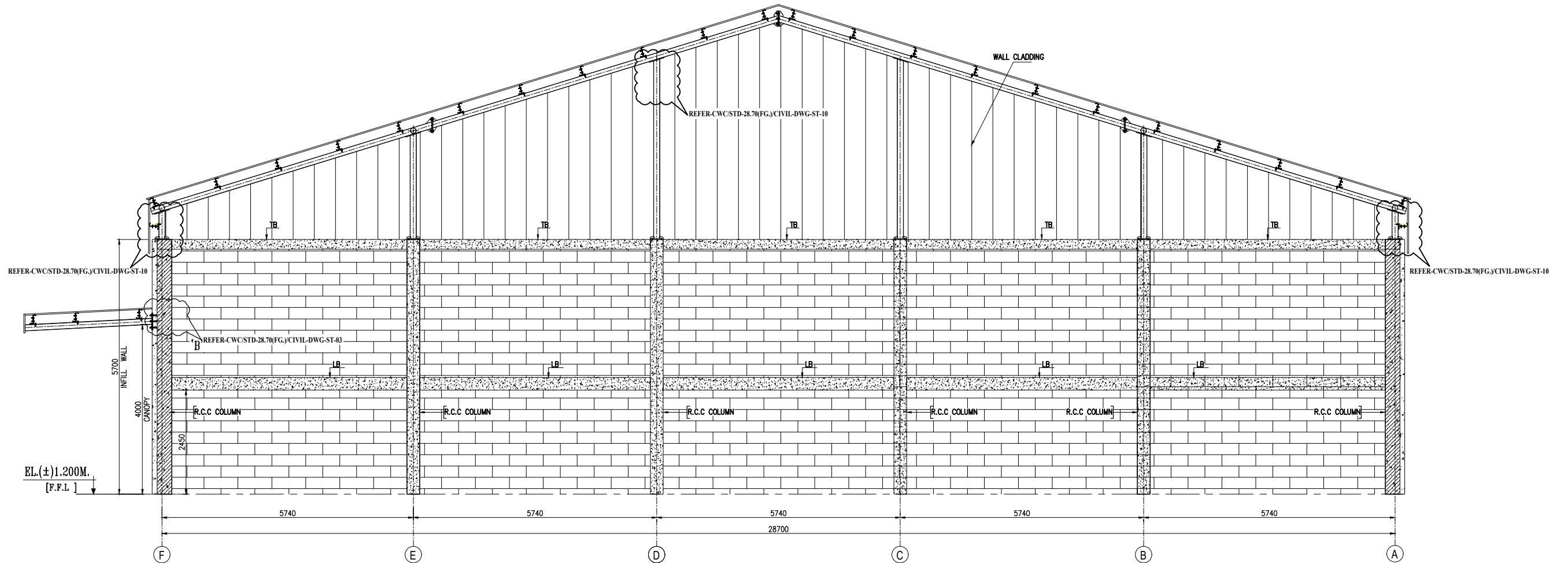
CWC/STD-28.70(FG.)/CIVIL-DWG-ST-03

**ELEVATION ALONG GRID-2,3,4,5,6,7,9,10,11,12, 13
& ELEVATION ALONG GRID-8
(28.70M C/C)**

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER




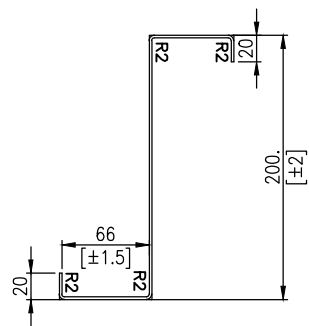
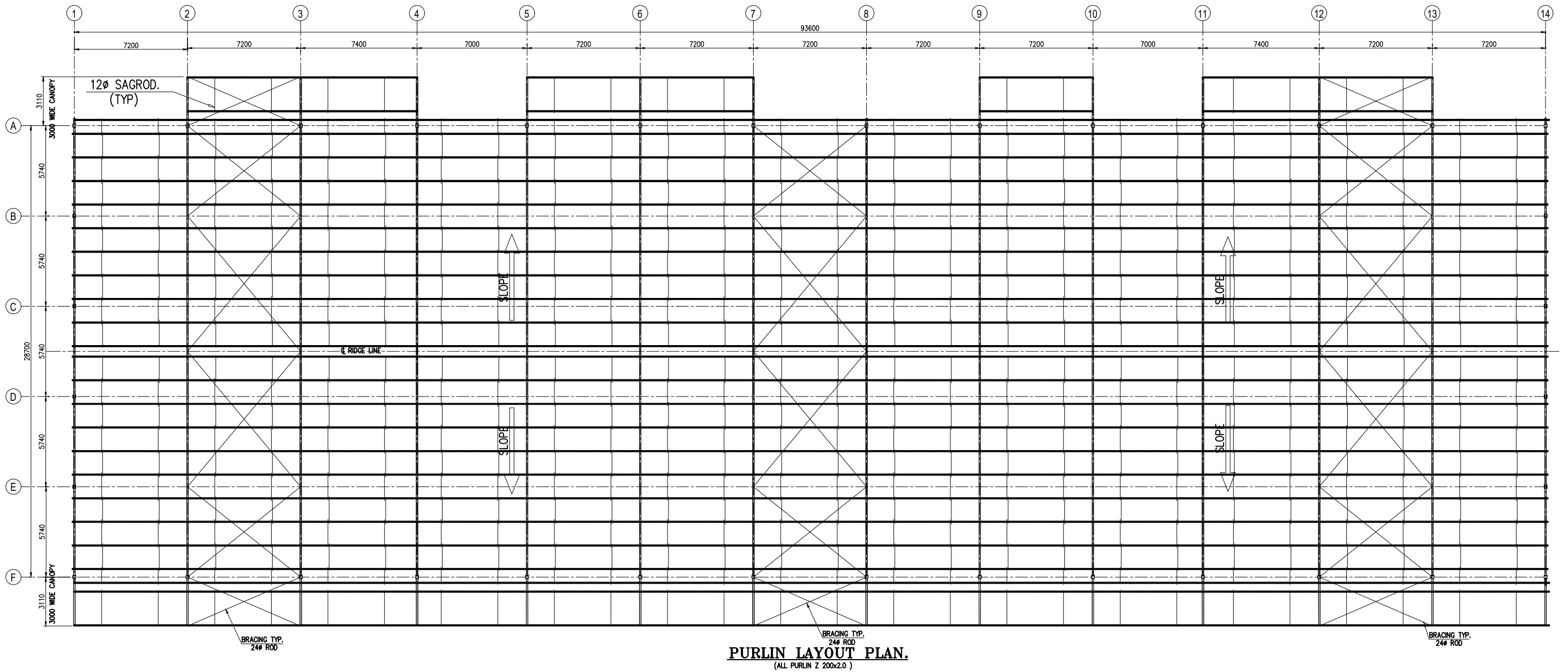
END WALL ELEVATION ALONG GRID-1 & 14
(SCALE 1:50)

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

NOTE
1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT.
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UND) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

LOAD CONSIDERED :-		
DEAD LOAD	:-	0.15 kn/m ²
LIVE LOAD	:-	0.6 kn/m ²
COLLATERAL LOAD	:-	0.25 kn/m ²
WIND SPEED	:-	50M/S
SEISMIC ZONE	:-	IV
INFILL WALL HEIGHT	:-	5.7M
CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

 CENTRAL WAREHOUSING CORPORATION		
DRG. NO. CWC/STD-28.70(FG.)CIVIL-DWG-ST-04		
END WALL ELEVATION ALONG GRID-1 & 14 SHOWING END WALL (28.70M C/C)		
EXECUTIVE ENGINEER.	SUPTDG. ENGINEER.	CHIEF ENGINEER



LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

NOTE

1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.

2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.

3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.


4. THE STONE MASONRY OF THICKNESS 300 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT

5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL

6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE

7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UND) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

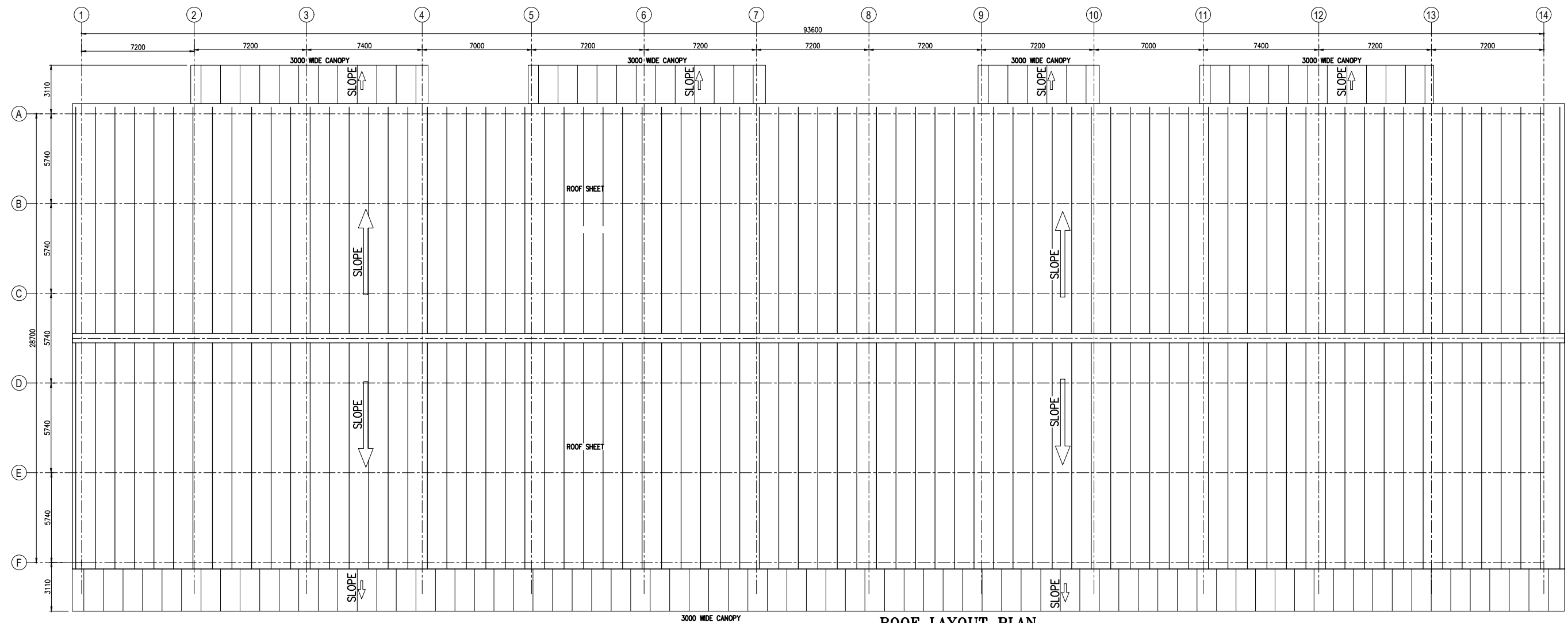
LOAD CONSIDERED :-		
DEAD LOAD	:-	0.15 kn/m ²
LIVE LOAD	:-	0.6 kn/m ²
COLLATERAL LOAD	:-	0.25 kn/m ²
WIND SPEED	:-	50M/S
SEISMIC ZONE	:-	IV
INFILL WALL HEIGHT	:-	5.7M
CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

**CENTRAL WAREHOUSING CORPORATION**

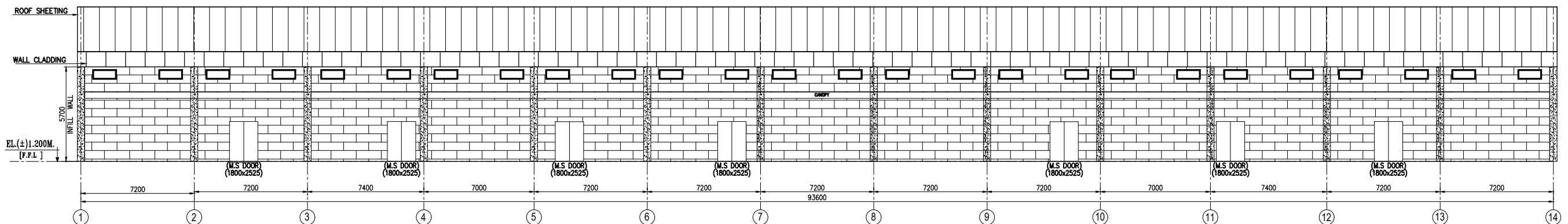
DRG. NO.
CWC/STD-28.70(FG.)/CIVIL-DWG-ST-05

PURLIN LAYOUT PLAN
(28.70M C/C)

EXECUTIVE ENGINEER.	SUPTDG. ENGINEER.	CHIEF ENGINEER.
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ROOF LAYOUT PLAN




SIDE WALL ELEVATION ALONG GRID-A & F

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

NOTE
1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C18C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C18C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UND) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

LOAD CONSIDERED :-		
DEAD LOAD	:-	0.15 kn/m ²
LIVE LOAD	:-	0.6 kn/m ²
COLLATERAL LOAD	:-	0.25 kn/m ²
WIND SPEED	:-	50M/S
SEISMIC ZONE	:-	IV
INFILL WALL HEIGHT	:-	5.7M

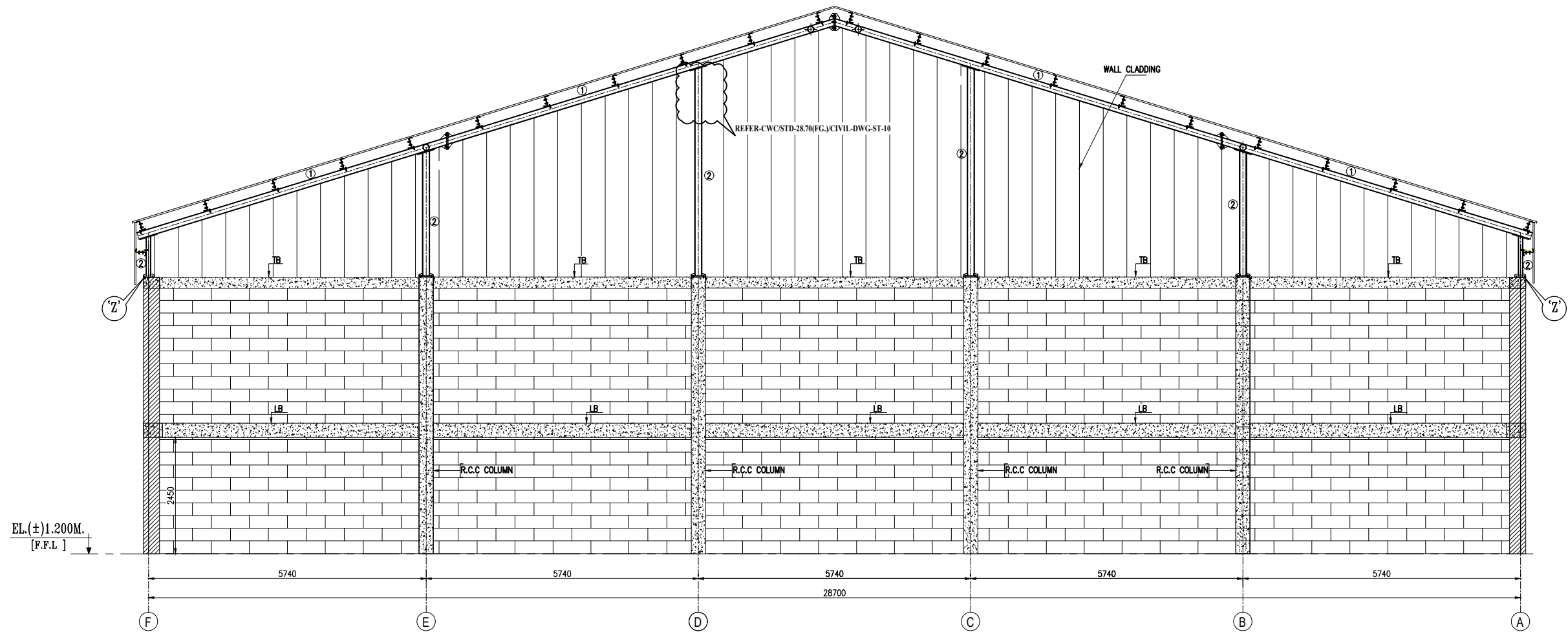
CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION TENDER INFORMATION ONLY		
PROOF CHECKING APPROVAL ONLY		

**CENTRAL WAREHOUSING CORPORATION**

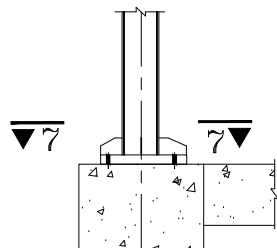
DRG. NO.
CWC/STD-28.70(FG.)/CIVIL-DWG-ST-06

**ROOF LAYOUT PLAN
SIDE WALL ELEVATION ALONG GRID-A & F
(28.70M C/C)**

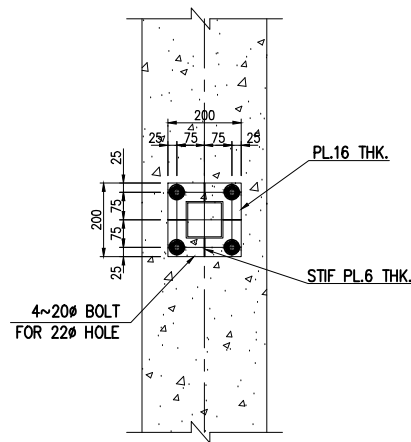
EXECUTIVE ENGINEER.	SUPTDG. ENGINEER.	CHIEF ENGINEER
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TYPICAL PARTITION WALL ELEVATION (OPTIONAL)



DETAIL 'Z'
(SCALE 1:10)



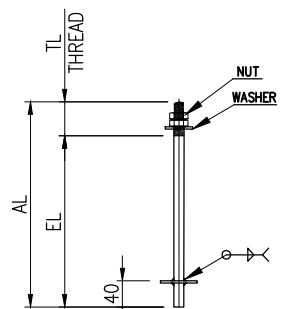
PLAN 7-7
(SCALE 1:10)

ANCHOR BOLT SCHEDULES

S.NO.	APPLICATION (SCHUDLE FOR ONE ANCHOR BOLT.)	NO. OF BOLT	DIA. OF BOLT	DIA. OF HOLE	THREAD LENGTH	EMBEDD LENGTH	ANC.BOLT LENGTH	TOTAL QTY.	BEARING PLATE
1	DETAIL- A	4	M20	22	100	250	350	8	50x50x6
TOTAL								8 NOS.	

LEGEND

S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4,6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa



TYPICAL ANCHOR BOLT DETAIL

LOAD CONSIDERED :-		
DEAD LOAD	:-	0.15 kn/m ²
LIVE LOAD	:-	0.6 kn/m ²
COLLATERAL LOAD	:-	0.25 kn/m ²
WIND SPEED	:-	50M/S
SEISMIC ZONE	:-	IV
INFILL WALL HEIGHT	:-	5.7M

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC

PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

NOTE
1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

MEMBER SIZE SCHEDULE		
MARK	DESCRIPTION	SYMBOL
1.	200x100x6 (RHS)	□
2.	(BUILT-UP BOX SECTION) 100x100x6	□



CENTRAL WAREHOUSING CORPORATION

DRG. NO.

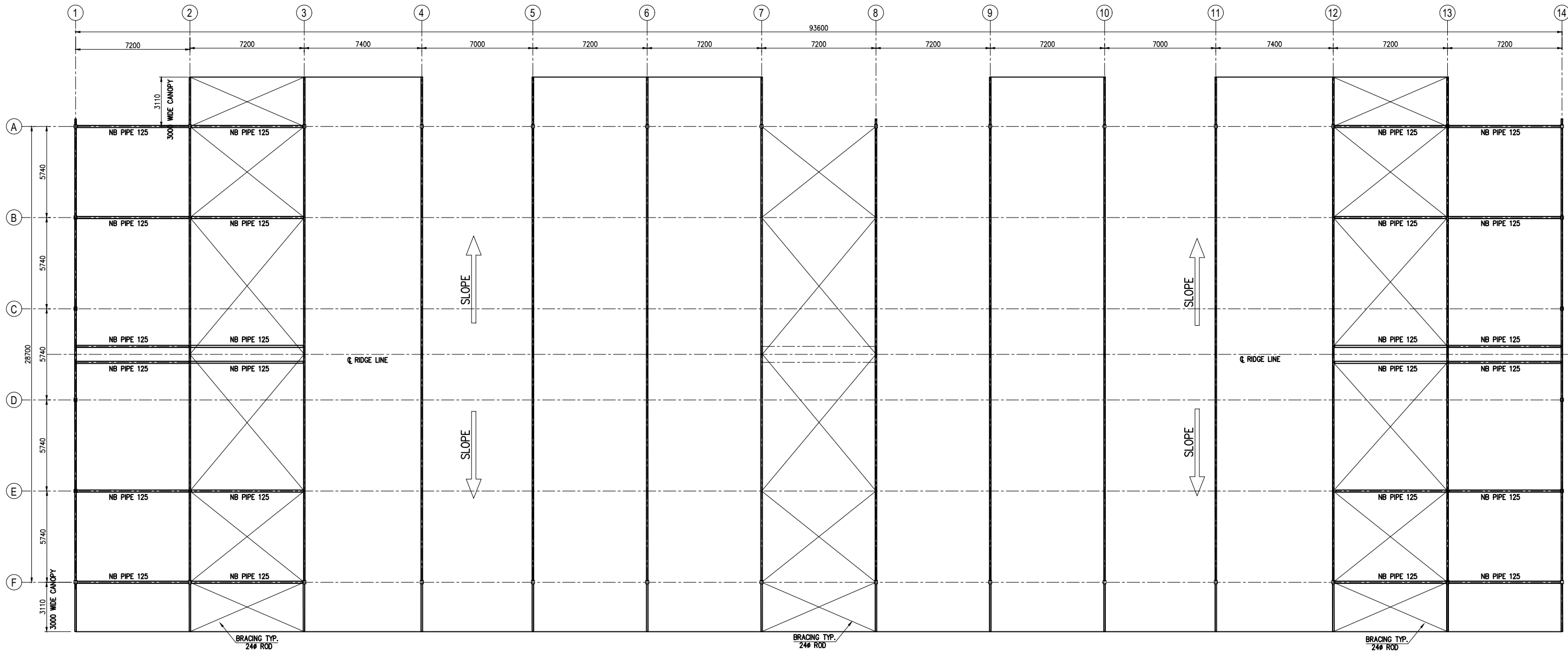
CWC/STD-28.70(FG.)/CIVIL-DWG-ST-07

TYPICAL PARTITION WALL
(28.70M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER



RAFTER LAYOUT PLAN.
(SCALE 1:125)

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4,6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

NOTE
1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

LOAD CONSIDERED :-		
DEAD LOAD	:-	0.15 kn/m ²
LIVE LOAD	:-	0.6 kn/m ²
COLLATERAL LOAD	:-	0.25 kn/m ²
WIND SPEED	:-	50M/S
SEISMIC ZONE	:-	IV
INFILL WALL HEIGHT	:-	5.7M
CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
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PROOF CHECKING	APPROVAL ONLY	
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CENTRAL WAREHOUSING CORPORATION

DRG. NO.

CWC/STD-28.70(FG.)/CIVIL-DWG-ST-08

**RAFTER LAYOUT PLAN
(28.70M C/C)**

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER



S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

NOTE

NOTE

1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MT GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5. GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6. INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7. TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE, WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	—	PCC/DPC



DRG. NO.

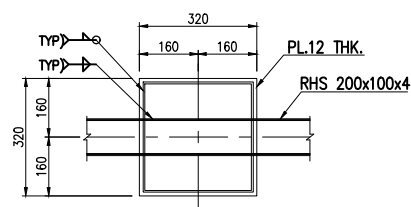
CWC/STD-28.70(FG.)/CIVIL-DWG-ST-09

TYPICAL DETAILS
(28.70M C/C)

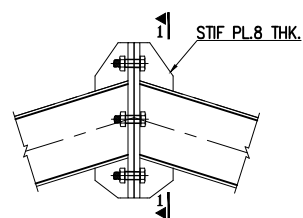
EXECUTIVE
ENGINEER.

SUPTDG.
ENGINEER.

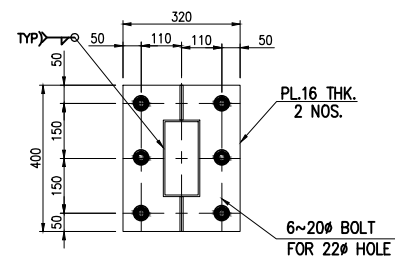
CHIEF ENGINEER.



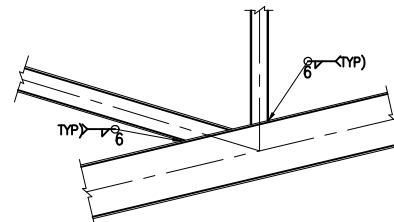
TYP. CONNECTION DETAIL
OF COLUMN TO RAFTER
(SCALE 1:10)



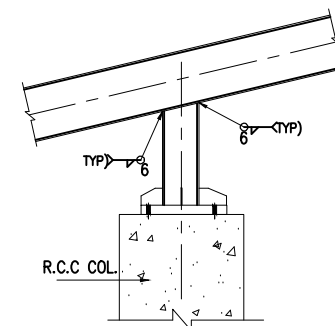
CONNECTION DETAIL OF CP-1
(SCALE 1:10)



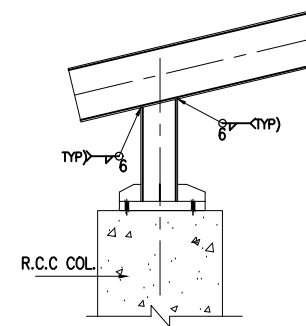
SECTION 1-1
(SCALE 1:10)



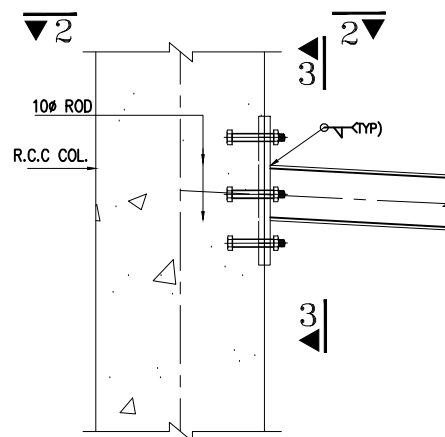
DETAIL OF P-1
(SCALE 1:10)



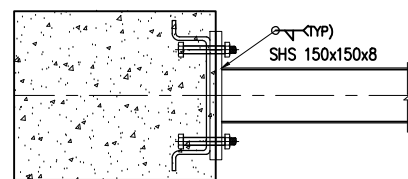
TYP. CONNECTION DETAIL STUB AT
CENTER OF RAFTER
(SCALE 1:10)



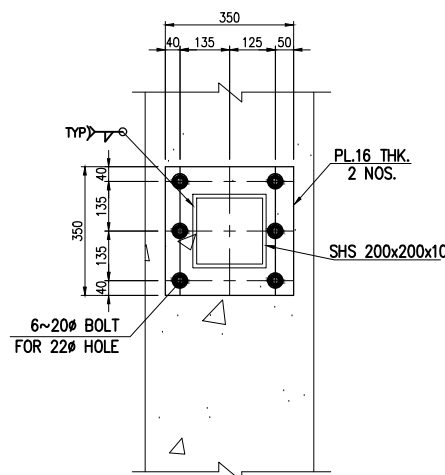
TYP. CONNECTION DETAIL STUB AT
END OF RAFTER
(SCALE 1:10)



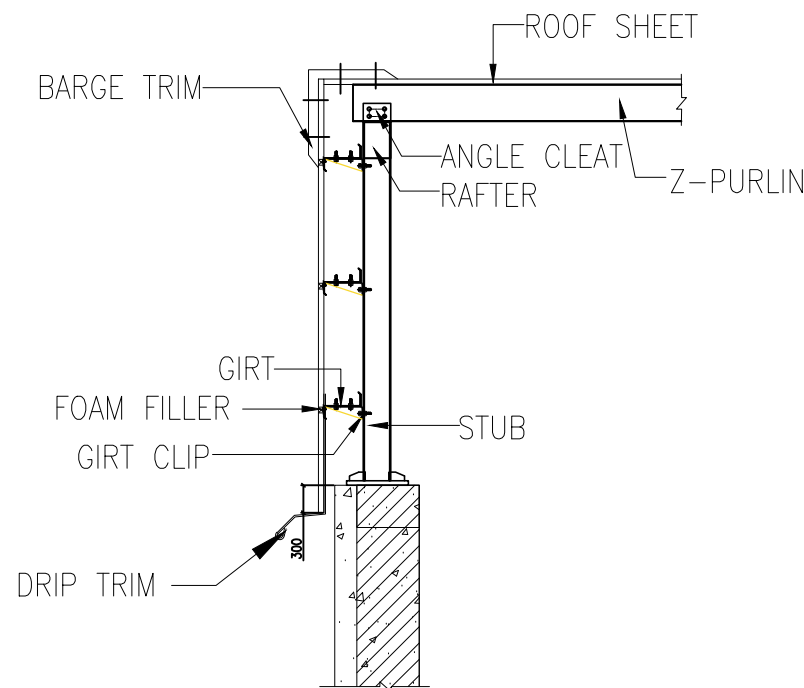
TYP. CONNECTION DETAIL
OF COLUMN TO CANOPY
(SCALE 1:10)



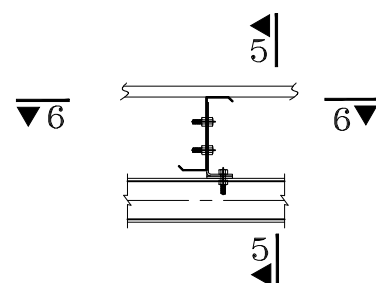
PLAN 2-2
(SCALE 1:10)



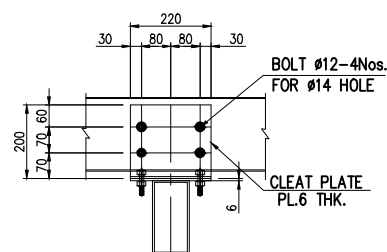
SECTION 3-3
(SCALE 1:10)



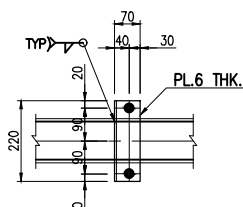
TYP. END GABLE WALL SHEET DETAIL



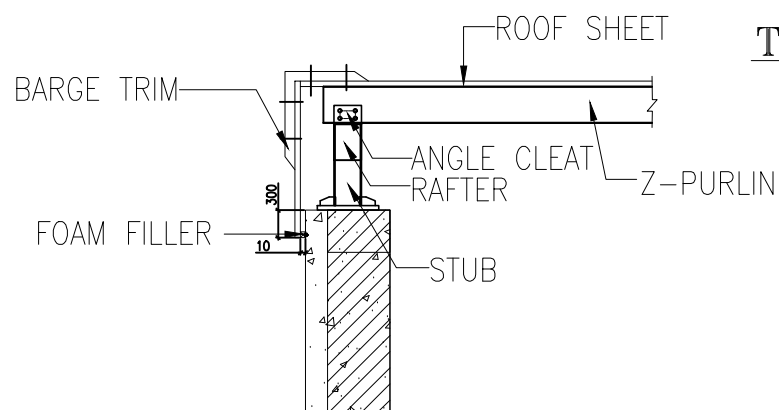
TYP. CONNECTION
DETAIL OF PURLIN
(SCALE 1:10)



SECTION 5-5
(SCALE 1:10)



PLAN 6-6
(SCALE 1:10)




TYP. END WALL SHEET DETAIL

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

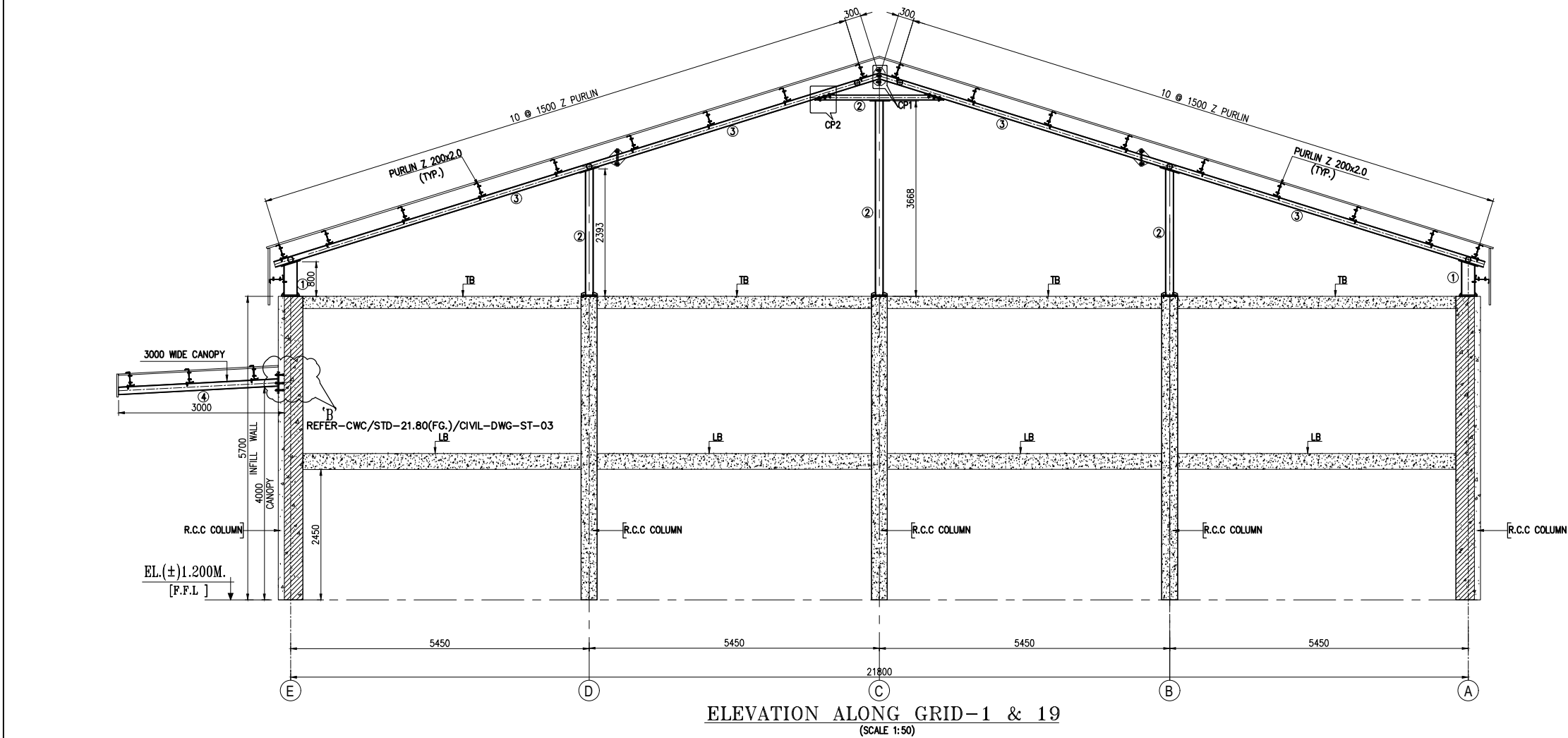
NOTE
1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 300 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C18C4 COLUMN AND WALL
6- INNER SIDE OF GABLE WALL AND RCC COLUMN C18C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UND) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

 CENTRAL WAREHOUSING CORPORATION		
DRG. NO. CWC/STD-28.70(FG.)/CIVIL-DWG-ST-10		
TYP. CONNECTION DETAIL (28.70M C/C)		
EXECUTIVE ENGINEER.	SUPTDG. ENGINEER.	CHIEF ENGINEER.

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Brocing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Kai Electrode	Futs=480 Mpa



LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL, WALL HEIGHT	:- 5.7M

NOTE	
1.	THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2.	THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3.	THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4.	THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT.
5.	GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6.	INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FINISHED FROM INSIDE
7.	TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

MEMBER SIZE SCHEDULE		
MARK	DISCRIPTION	SYMBOL
1.	(BUILT-UP BOX SECTION) 250x250x12	□
2.	(BUILT-UP BOX SECTION) 100x100x4	□
3.	100x100x8 (SHS)	□
4.	200x200x10 (SHS)	□

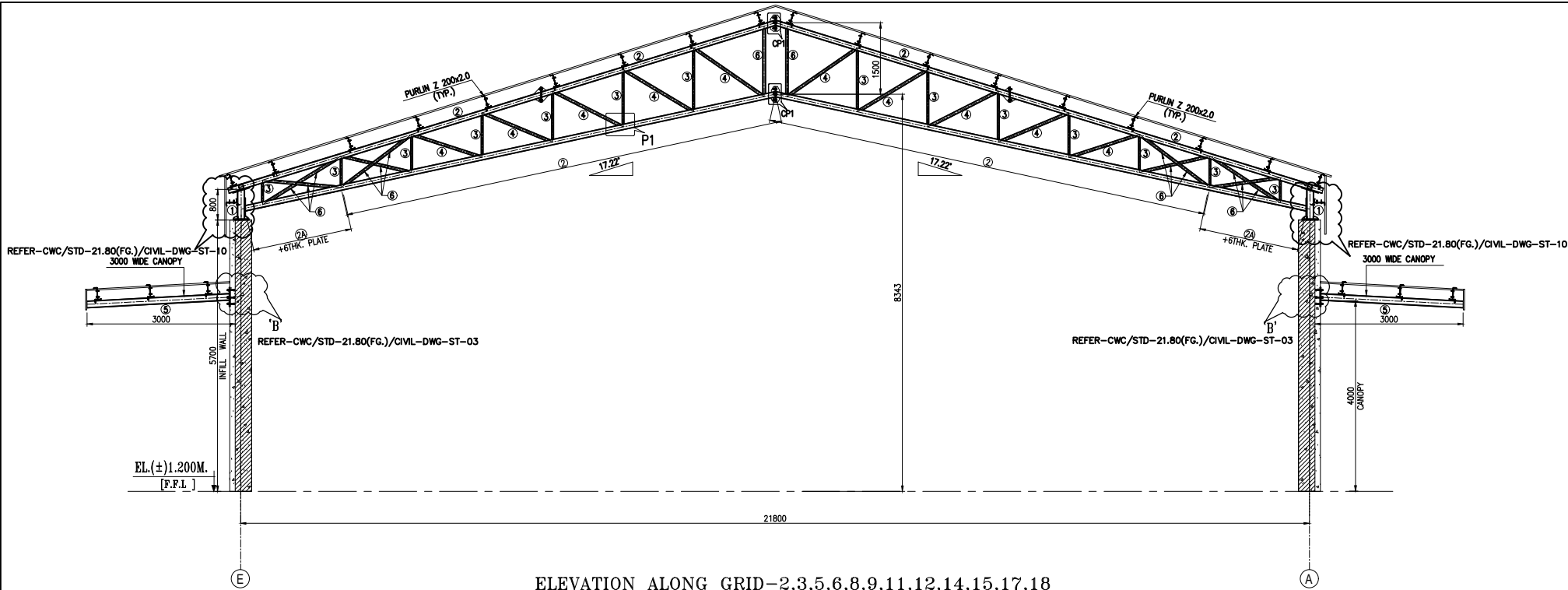


CENTRAL WAREHOUSING CORPORATION

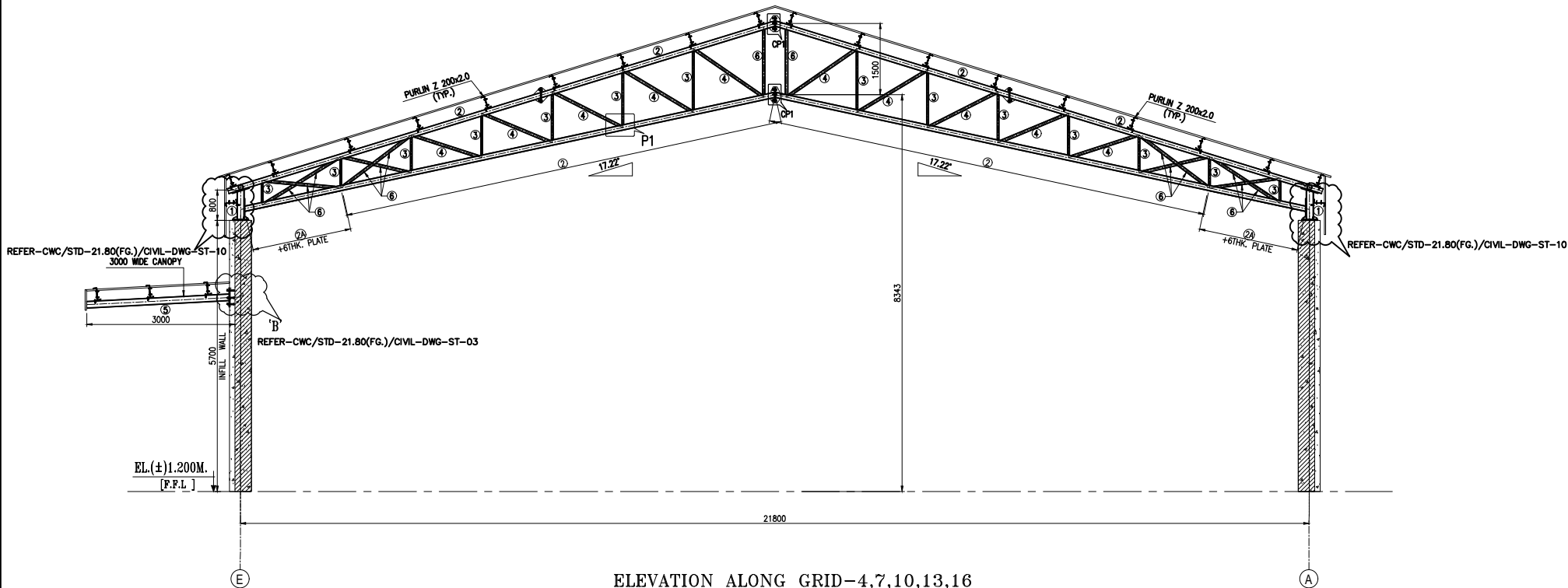
DRG. NO.
CWC/STD-21.80(FG.)/CIVIL-DWG-ST-02

GABLE END ELEVATION ALONG GRID-1 & 19
(21.80M C/C)

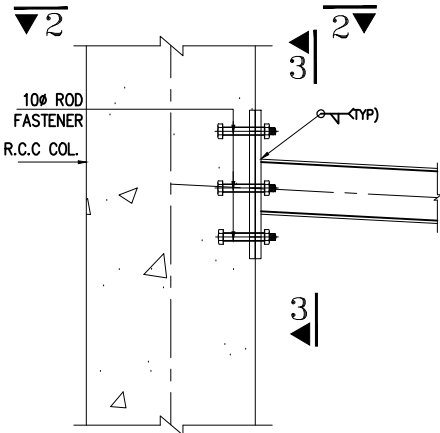
EXECUTIVE ENGINEER. SUPTDG. ENGINEER. CHIEF ENGINEER



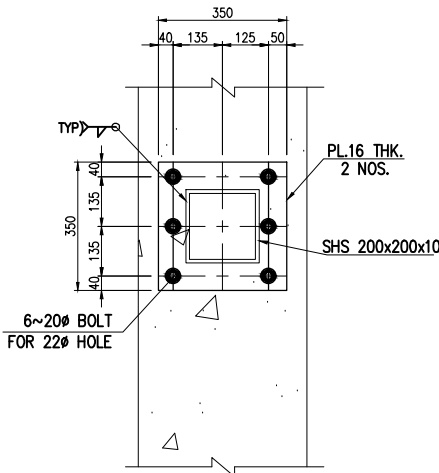
ELEVATION ALONG GRID-2,3,5,6,8,9,11,12,14,15,17,18
(SCALE 1:50)



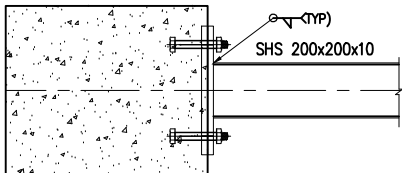
ELEVATION ALONG GRID-4,7,10,13,16
(SCALE 1:50)



DETAIL-B
OF COLUMN TO CANOPY
(SCALE 1:10)



SECTION 3-3
(SCALE 1:10)



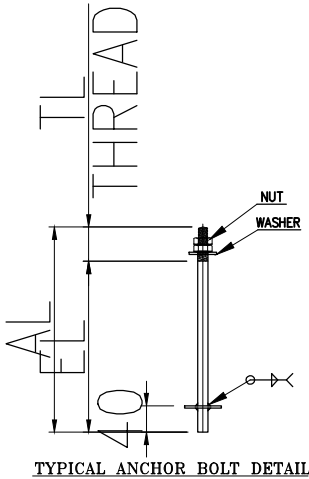
PLAN 2-2
(SCALE 1:10)

MEMBER SIZE SCHEDULE

MARK	DISCRIPTION	SYMBOL
1.	(BUILT-UP BOX SECTION) 250x250x12	□
2.	100x100x6 (SHS)	□
2A.	100x100x6 (SHS) +6THK.PLATE (B/S)	□
3.	40x40x2.6 (SHS)	□
4.	50x50x4.0 (SHS)	□
5.	200x200x10 (SHS)	□
6.	60x60x5 (SHS)	□

ANCHOR BOLT SCHEDULES								
S.NO	APPLICATION (SCHUDLE FOR ONE ANCHOR BOLT.)	NO. OF BOLT	DIA. OF BOLT	DIA. OF HOLE	THREAD LENGTH	EMBEDED LENGTH	ANC.BOLT LENGTH	BEARING PLATE
1	DETAIL- B	6	M20	22	100	250	350	50x50x6
TOTAL							12 NOS.	

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Brocing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Kai Electrode	Futs=480 Mpa




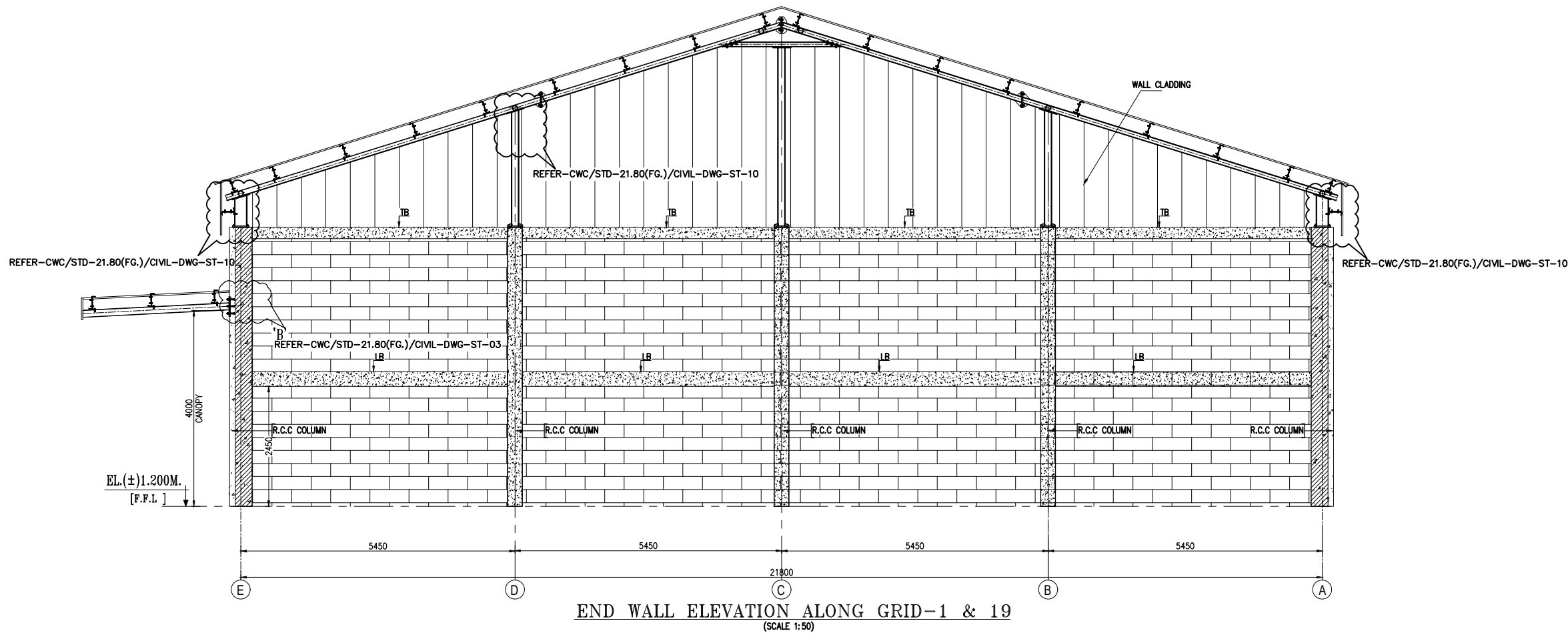
TYPICAL ANCHOR BOLT DETAIL

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

NOTE
 1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
 2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
 3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
 4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING GOOD FOR CONSTRUCTION <input checked="" type="checkbox"/> TENDER <input type="checkbox"/> INFORMATION ONLY <input type="checkbox"/> PROOF CHECKING <input type="checkbox"/> APPROVAL ONLY <input type="checkbox"/>		

 CENTRAL WAREHOUSING CORPORATION		
DRG. NO. CWC/STD-21.80(FG.)/CIVIL-DWG-ST-03		
ELEVATION ALONG GRID-2,3,5,6,8,9,11,12,14,15, 17,18 ELEVATION ALONG GRID-4,7,10,13,16 (21.80M C/C)		
EXECUTIVE ENGINEER.	SUPTDG. ENGINEER.	CHIEF ENGINEER




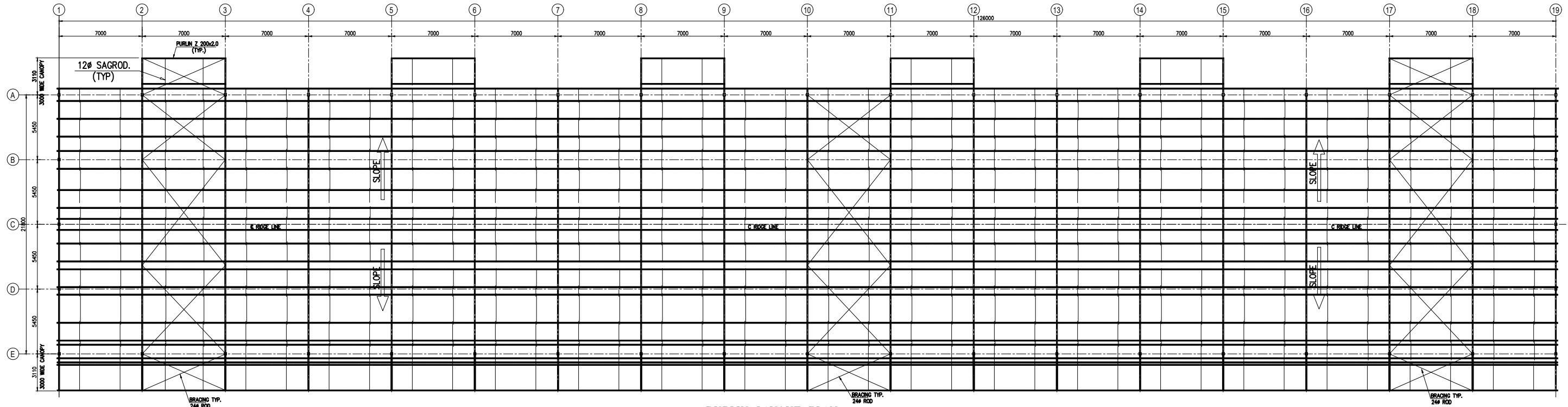
LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

NOTE
 1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
 2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
 3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
 4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

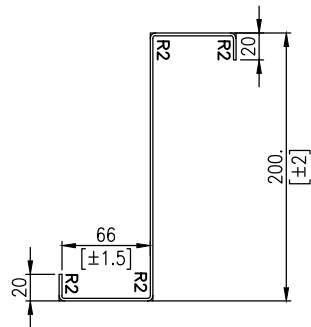
CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Kai Electrode	Futs=480 Mpa

 CENTRAL WAREHOUSING CORPORATION		
DRG. NO. CWC/STD-21.80(FG.)/CIVIL-DWG-ST-04		
END WALL ELEVATION ALONG GRID-1 & 19 SHOWING END WALL (21.80M C/C)		
EXECUTIVE ENGINEER.	SUPTDG. ENGINEER.	CHIEF ENGINEER



PURLIN LAYOUT PLAN.
(ALL PURLIN Z 200x2.0)
(SCALE 1:170)



Z SECTION
[thk.=2.00mm.]

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

NOTE

1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
- 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
- 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
- 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

PURPOSE OF DRAWING		
CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
GOOD FOR CONSTRUCTION TENDER INFORMATION ONLY		
PROOF CHECKING	APPROVAL ONLY	



CENTRAL WAREHOUSING CORPORATION

DRG. NO.

CWC/STD-21.80(FG.)/CIVIL-DWG-ST-05

PURLIN LAYOUT PLAN.
(21.80M C/C)

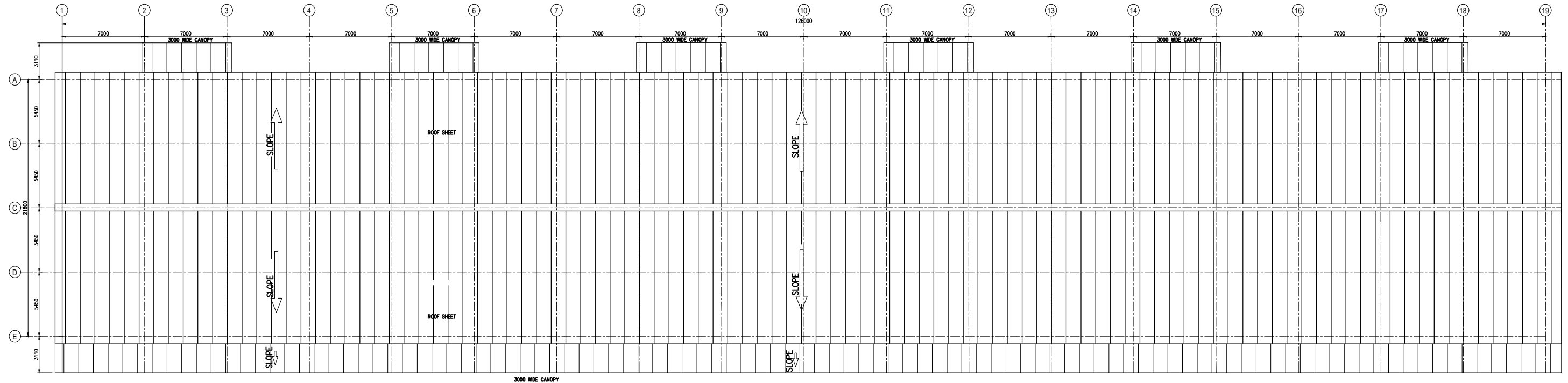
EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

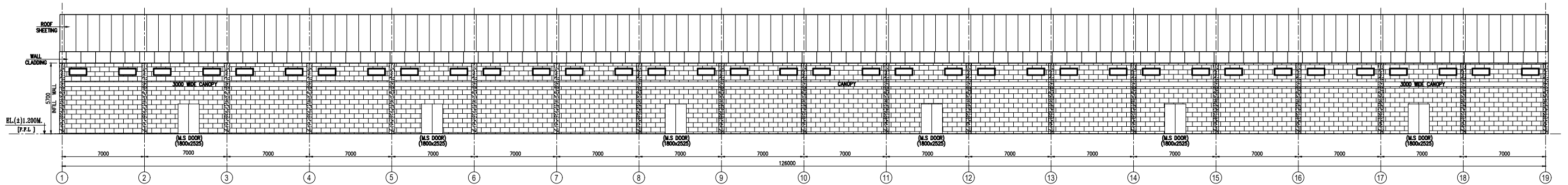
CHIEF ENGINEER

LEGEND

S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa



ROOF LAYOUT PLAN



SIDE WALL ELEVATION ALONG GRID-A & E

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ksi Electrode	Futs=480 Mpa

LOAD CONSIDERED :-	
DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

- NOTE
1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
 2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
 3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
 4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
 - 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
 - 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
 - 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	



CENTRAL WAREHOUSING CORPORATION

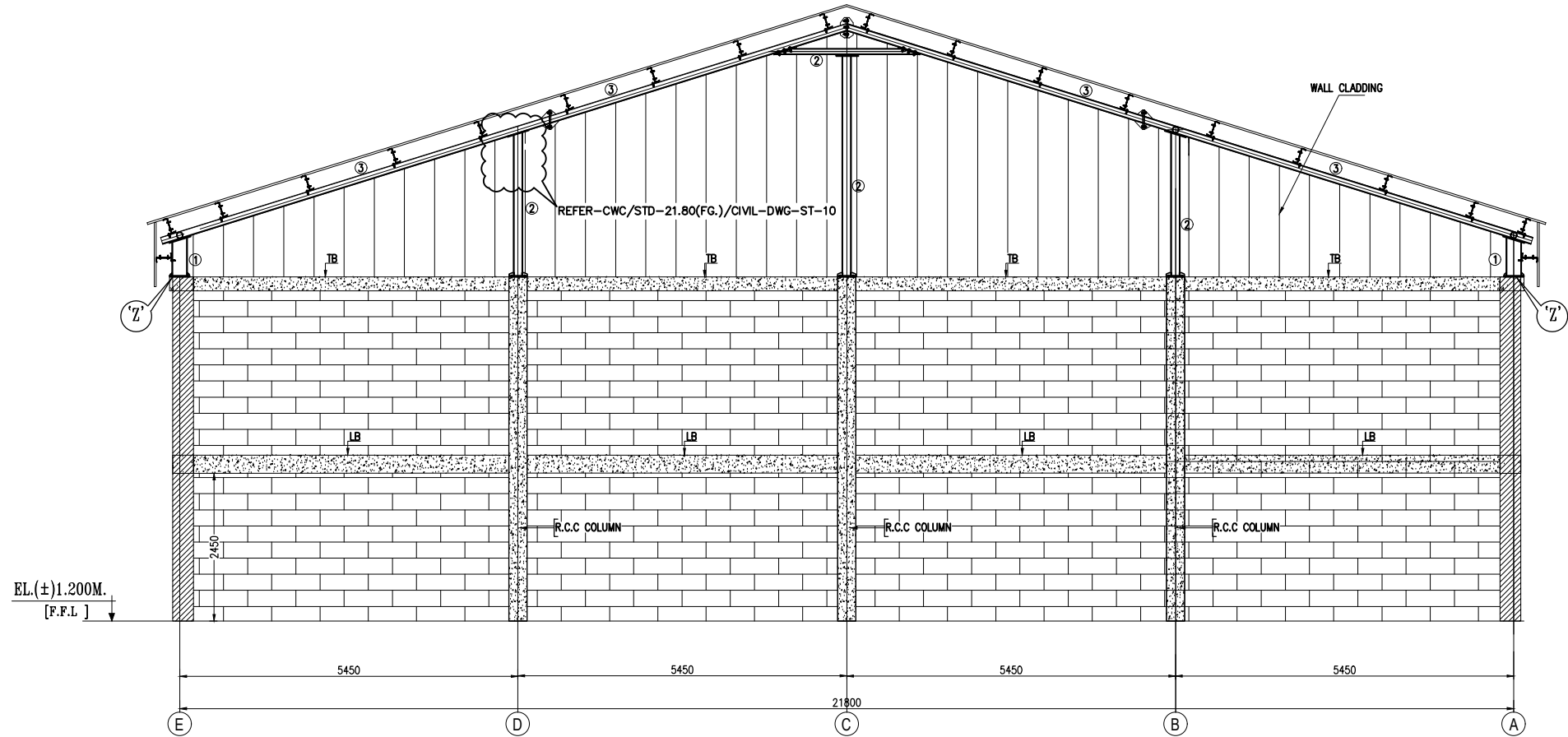
CWC/STD-21.80(FG.)/CIVIL-DWG-ST-06

ROOF PLAN & SIDE WALL ELEVATION ALONG GRID A&E
(21.80M C/C)

EXECUTIVE ENGINEER.

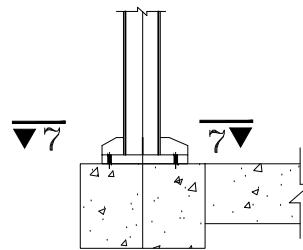
SUPTDG. ENGINEER.

CHIEF ENGINEER.

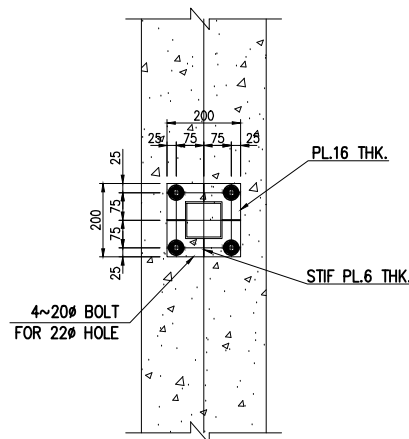


TYPICAL PARTITION WALL ELEVATION

(SCALE 1:75)



DETAIL 'Z'
(SCALE 1:10)



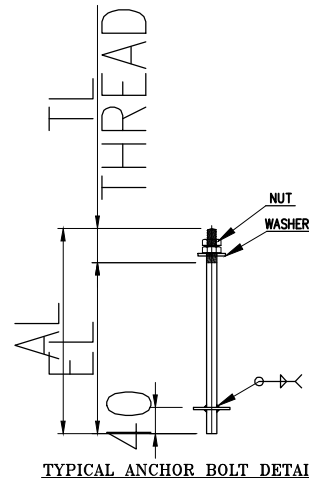
PLAN 7-7
(SCALE 1:10)

ANCHOR BOLT SCHEDULES

S.NO	APPLICATION (SCHUDLE FOR ONE ANCHOR BOLT.)	NO. OF BOLT	DIA. OF BOLT	DIA. OF HOLE	THREAD LENGTH	EMBEDD LENGTH	ANC.BOLT LENGHT	TOTAL QTY.	BEARING PLATE
1	DETAIL - A	4	M20	22	100	250	350	8	50x50x6
TOTAL								8 NOS.	

LEGEND

S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Ks Electrode	Futs=480 Mpa



LOAD CONSIDERED :-

DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M

NOTE

- THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
- THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
- THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
- THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
- TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
PROOF CHECKING	APPROVAL ONLY	

MEMBER SIZE SCHEDULE		
MARK	DESCRIPTION	SYMBOL
1.	(BUILT-UP BOX SECTION) 250x250x12	□
2.	(BUILT-UP BOX SECTION) 100x100x4	□
3.	100x100x8 (SHS)	□



CENTRAL WAREHOUSING CORPORATION

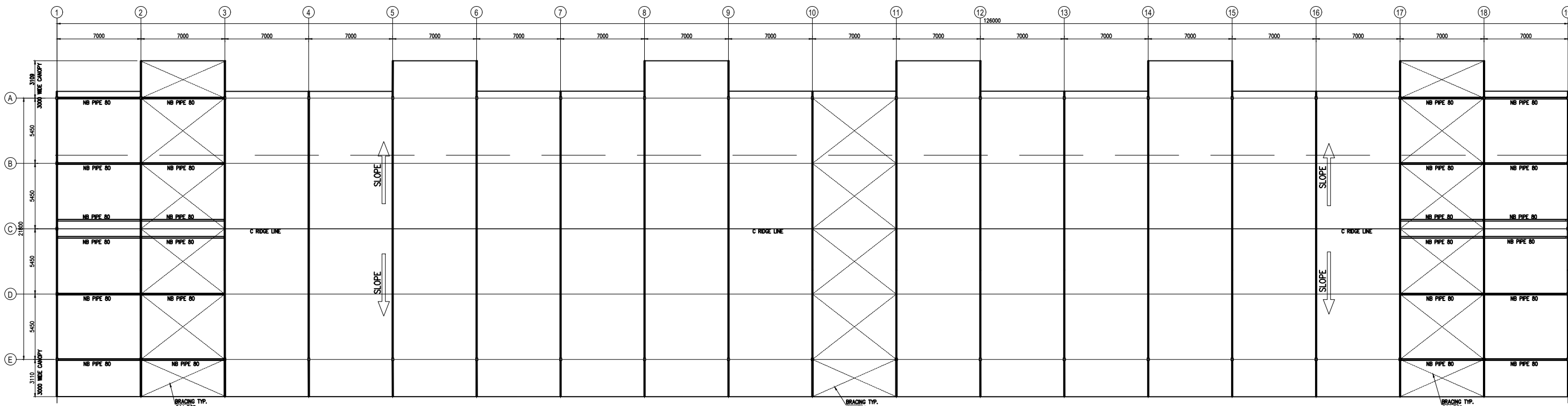
CWC/STD-21.80(FG.)/CIVIL-DWG-ST-07

TYPICAL PARTITION WALL ELEVATION (OPTIONAL)
(21.80M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.



RAFTER LAYOUT PLAN.
(SCALE 1:125)

LOAD CONSIDERED :-

DEAD LOAD	:- 0.15 kn/m ²
LIVE LOAD	:- 0.6 kn/m ²
COLLATERAL LOAD	:- 0.25 kn/m ²
WIND SPEED	:- 50M/S
SEISMIC ZONE	:- IV
INFILL WALL HEIGHT	:- 5.7M



CENTRAL WAREHOUSING CORPORATION

DRG. NO.

CWC/STD-21.80(FG.)/CIVIL-DWG-ST-08

RAFTER LAYOUT PLAN.
(21.80M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.

LEGEND			
S.NO.	Material type	Material specification	Steel Yield's
1	Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
2	Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
3	Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
4	X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
5	Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
6	High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
7	Welding (Double side full welding)	IS 814:2004:70 Kai Electrode	Futa=480 Mpa

NOTE

1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
- 5- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
- 6- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
- 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
M:10	-	PCC/DPC
PURPOSE OF DRAWING		
GOOD FOR CONSTRUCTION	TENDER	INFORMATION ONLY
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PROOF CHECKING	APPROVAL ONLY	
<input type="checkbox"/>	<input type="checkbox"/>	

TYP.CONNECTION DETAIL COL.TO RAFTER

TYP. SHEETING END LAP DETAIL

TYP. RIDGE DETAIL

TYP. GABLE DETAIL

TYP. END WALL BOTTOM DETAIL

Z SECTION
[thk.=2.00mm.]

CURVED RIDGE PANEL
RSH-3

STANDARD ROD BRACING DETAIL

CURVED RIDGE PANEL

SAG RODS

FIXING PROCEDURE FOR ROOFING SHEETS

FIXING PROCEDURE FOR CLADDING SHEETS

EXPANDED SIDE LAP DETAIL

ROOF PANEL FIXING DETAIL

TYP.CONNECTION DETAIL SHEETING.TO WALL

LEGEND

0. Material type	Material specification	Steel Yield's
Hollow Section Member	IS:2062:2011 Gr.A	Fy=310 Mpa
Built-up Section	IS:2062:2011 Gr.A	Fy=350 Mpa
Hot Rolled Secondary Member	IS:2062:2011 Gr.A	Fy=250 Mpa
X-Bracing Member,Rods	IS:2062:2011 Gr.A	Fy=250 Mpa
Anchor bolt	IS:2062:2011 Gr.A (4.6)	Fy=240 Mpa
High Strength Bolts for Primary member.	IS 4000-1992 CLASS 8.8	Grade 8.8
Welding (Double side full welding)	IS 814:2004-70 Kai Electrode	Eute=480 Mpa

LOAD CONSIDERED :-	NOTE
DEAD LOAD :- 0.15 kn/m ²	1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
LIVE LOAD :- 0.6 kn/m ²	2. THIS IS A STANDRAD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
COLLATERAL LOAD :- 0.25 kn/m ²	3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
WIND SPEED :- 50 M/S	4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
SEISMIC ZONE :- IV	6- GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL.
INFILL WALL HEIGHT :- 5.7M	7- INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE

CONCRETE	STEEL	ELEMENT
M:25	Fe-500	BEAM SLAB
M:25	Fe-500	FOOTING,COLUMN
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PURPOSE OF DRAWING

GOOD FOR CONSTRUCTION

TENDER

INFORMATION ONLY

PROOF CHECKING

APPROVAL ONLY

CENTRAL WAREHOUSING CORPORATION

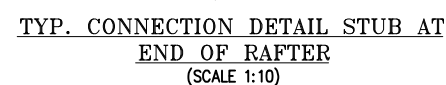
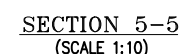
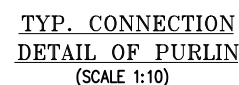
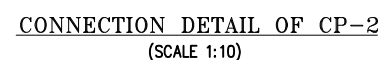
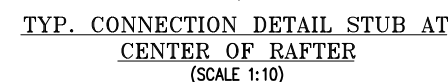
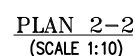
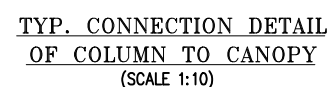
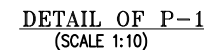
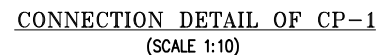
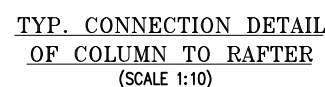
TYPICAL DETAILS

(21.80M C/C)

EXECUTIVE ENGINEER.


SUPTDG. ENGINEER.

CHIEF ENGINEER.



NOTE

1. THE BAY SPACING OF GOWDON CANNOT BE INCREASED WITHOUT REDESIGN OF STRUCTURAL FRAME.
2. THIS IS A STANDARD LAYOUT 5000 MTC GOWDON. HOWEVER LENGTH OF THE GOWDON CAN BE INCREASED/DECREASED AS PER REQUIREMENT WITHOUT CHANGING THE BAY WIDTH OR SPAN AND WILL NOT REQUIRE REDESIGN OF STRUCTURE.
3. THIS DESIGN APPLICABLE UP TO 50M/S WIND SPEED.
4. THE STONE MASONRY OF THICKNESS 380 MM OR ANY ANOTHER MASONRY LIKE FLY ASH/BRICK WORK 340 MM OR CC BLOCK 300 MM CAN BE DONE AS PER LOCAL AVAILABILITY / SITE REQUIREMENT
5. GRID AT GABLE WALL WILL REPRESENT CENTRE LINE OF C1&C4 COLUMN AND WALL
6. INNER SIDE OF GABLE WALL AND RCC COLUMN C1&C4 WILL BE IN SAME LINE AND WILL BE FLUSHED FROM INSIDE
- 7-TYPICAL WELD SIZE BETWEEN TWO STEEL MEMBERS SHALL BE 6 MM (UNO) OR THICKNESS OF MEMBER SIZE WHICHEVER IS LESS.


Central Warehousing
Corporation

CENTRAL WAREHOUSING CORPORATION

DRG. NO.

CWC/STD-21.80(FG.)/CIVIL-DWG-ST-10

TYP. CONNECTION DETAIL

(21.80M C/C)

EXECUTIVE ENGINEER.

SUPTDG. ENGINEER.

CHIEF ENGINEER.