THE TATA POWER COMPANY LIMITED

SPECIFICATION

FOR

CONSTRUCTION OF VARIOUS UTILITIES AS PEB BUILDINGS

(Specification No – CA/SPEC/002/2022)

Tata Power

Project Engineering

Revision	Date	Revision History	Approvals		
			Prepared by	Checked by	Approved by
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1. INTRODUCTION :

TPSODL,Odisha has proposed to construct Pre-fabricated CRC, DO, SDO, PSS, and SECTION OFFICE etc. at various locations of southern Odisha. The specification covers the detailed scope and technical requirements of civil works related to construction of pre-fabricated shed for stores.

2. APPROVED VENDOR LIST & PRE QUALIFYING REQUIREMENTS :

Bidders should meet the qualifying requirements stipulated here under.

2.1 The main Bidder solely or along with selected PEB vendor should have experience of successfully completing projects involving pre-engineered Building along with foundation and other civil works like plumbing, sanitation etc. The Bidder must have completed at least two similar nature of project in the last 3 years.

Bidder to submit the supporting documents against their claimed experience as per the qualifying requirements.

List of suggested vendors for PEB:

1. M/s Tata BlueScope.
2. M/s JSW ever glow

3. SYSTEM DESCRIPTION AND SCOPE:

SCOPE OF WORK

The scope of this tender includes:

Supply and Construction works pertaining to Civil, Structural, Architectural, plumbing, and all other services necessary for complete execution of works for the proposed utility buildings at TPSODL. The project broadly covers following construction works:

a. CRC- approximate area of 1000 to 2000 sqft.
b. PSS -350 to 500 sqft
c. Section and cash collection office-600 sqft area
d. SDO-800 sqft
e. DO-1500 sqft
f. Circle office-1800 sqft

Tentative clear height of all the buildings shall be 3.5 m. Requirement of intermediate columns will be finalized based on the approved architecture drawing.

3.1 The detailed description of the components of work are as noted below:

Bidder must visit site and assess the various practical constructability aspects prior to quoting for this tender enquiry. The bidder shall submit the project schedule along with the bid document. The CONTRACTOR"s scope of work shall cover, but not limited to,

3.1.1 Site grading, levelling, setting out works as per the building layout plans as per drawings and with reference to property lines and coordinates.

3.1.2 PEB vendors scope shall include analysis & designing of proposed PEB structures, preparation of Fabrication drawings, submitting the design calculations and drawings General Arrangement, Details (Connections, Splicing, Base Plate, Anchor bolts), fabrication, Erection & As built drawings for approval from Owner, procuring, fabricating, supplying, erecting/installing and Painting the structure with all materials required for the construction including structural steel, side cladding & roof sheeting, bracing system, rain water gutters and down takes, cut-outs with framing (for utilities, louvers etc), day light/sky light panels, ridge vent, framing for openings (Doors, windows, rolling shutters etc.), flashings, ridge boards, barge boards, roof insulation (as required) & liner panels (If required) etc. including supply of anchor bolts with templates for foundation as per design loads, furnishing / employing equipment, plant, labour, transport, tools and all other services necessary for the complete execution of works, including all surveying and setting out levels necessary for the works, housekeeping, contractors site office, maintaining safety of workers and other people at site and clean-up of working areas after completion of the works.

3.1.3 The Contractor/PEB vendor shall provide the loading on foundation due to superstructure to Owner well in advance in order to finalize the foundation drawing of the shed.

3.1.4 Contractor shall be responsible for construction of foundation of the shed as per the RFC drawings issued by OWNER.

3.1.5 Design, supply and execution of ventilation arrangement as required for the PEB shed.

3.1.6 The CONTRACTOR/ PEB vendor shall supply the anchor/foundation bolts on pedestal well in advance and its layout details shall be furnished along with design and drawings submitted for approval and get approved well within the time. The correctness and alignment of the bolts will be PEB contractor's responsibility. PEB contractor shall depute his representative to supervise the bolt erection at site.

3.1.7 The tentative layout and size of the Store is indicated in the tender purpose drawing. Details indicated in the tender purpose drawing are tentative and preliminary, for the purpose of understanding only, which may vary suitably as per requirements during detailing.

3.1.8 The PEB CONTRACTOR should follow all relevant INDIAN codes of standards or equivalent ACI/BS codes with explanation of the detailed correlation with respect to the clause of the Indian codes for design and fabrication of the building.

3.1.9 It is not the intent to specify completely herein all details of erection and fabrication. However, the WORK executed shall conform in all respects, to high standards of engineering design and workmanship and be capable of performing in continuous commercial operation in a manner acceptable to OWNER.

3.1.10 Any other civil, structural and architectural works for successful commissioning of the project is under the scope of EPC Contractor. No extra shall be paid under this work to the bidder.

3.1.11 Bidder must ensure compliance of all other necessary statutory requirements such as but not limited to Collector's permissions (Royalty), permissions from Debris Management Cell of local statutory authority including relevant payments for the same at no extra cost to the Owner.

3.1.12 Construction / Potable water and power supply arrangements shall be under the scope of the bidder for the entire duration of the contract.

3.1.13 PEB Vendor/Contractor is responsible for entire design and detail engineering and construction of the PEB shed. "Good for Construction" drawings must be prepared, submitted to the OWNER and approval must be sought from the OWNER prior to manufacturing, supply, fabrication, erection, construction at the project site.

3.1.14 Contractor must also submit detailed steel fabrication drawings to the OWNER for their information. However, OWNER shall have the right to review and improvise the fabrication drawings in case of any discrepancies.

3.1.15 Contractor is responsible for the preparation, submission and approval of "As built drawing" after successful completion of the project.

This work to be executed based on Survey drawing, BOQ items & release for construction drawing. However, tender drawing shall be issued only for understanding of Bidder. During post award of contract, release for construction drawing will be provided by Owner.

All the civil work has to be executed as per above mentioned scope and standard specifications shared along with bid in Annexure -I

SPECIAL NOTES TO BIDDERS: -

The above is only a brief indicative scope of work which helps the Bidder to understand the nature of works involved in this project. The Bidder is advised to visit the project site and thoroughly refer the above scope of work, detailed technical specifications and tender purpose drawings before submitting the bid documents to the OWNER. The tender purpose drawings are indicative and may undergo changes during detail engineering phase of the project. In addition to this, BIDDER shall assume whatever is necessary for successful completion and commissioning of the project. Such assumptions must be clearly mentioned in the bid.

In case of conflict between clauses of different sections of this specification, the following sections will govern.

a. RFC Drawing and Bill of Quantity
b. Technical Specification
c. Special condition of contract.
d. General condition of contract.

4. TERMINAL POINTS:

NA

5. EXCLUSIONS

NA

6. PROJECT MILESTONE

Bidder shall submit with the bid a detailed project schedule. Bidder to ensure that the maximum time period shall 3 months;

Time is the essence of this contract. The CONTRACTOR shall, within one week of receipt of the Letter of Intent has to submit to the OWNER for his approval, a detailed work schedule before starting the foundation work to achieve completion schedule both interim

and ultimate. After the OWNER has agreed with the schedule, the CONTRACTOR shall prepare detailed program of each work front/activity breaking it down giving daily/weekly quantifiable/measure of progress. The schedules are to be reviewed periodically with the OWNER to ensure that the completion date will be met or to institute corrective steps (at no extra cost to the OWNER) to adhere to the completion dates. The OWNER reserves the right to revise the schedule at his discretion in order to keep up to the completion date and to suit the project requirement and such alterations shall not entitle the CONTRACTOR to any extra payment

The CONTRACTOR shall arrange for the mobilisation of all equipment, material, personnel and all other resources to progress the work at the site to suit the completion dates of works of scope of enquiry. No financial, time extension or other claims for idling or under-utilisation of CONTRACTOR's resources will be entertained or paid by OWNER unless certified by OWNER's ENGINEER.

The whole works must be proceeded with, within such sections and at such times and in such order and manner as described in these specifications and as directed by the ENGINEER. No extra payment or relaxation in the rates will be permitted on account of this.

To achieve the completion schedule stipulated, BIDDER shall furnish along with the bid a list of machinery with its capacity and other equipment he proposes to employ in the work. CONTRACTOR shall provide and maintain all equipment and plants necessary in good working conditions to perform the work at site. All arrangements for transporting machinery, equipment, men and material to and from the site shall be made by the CONTRACTOR at his own expense.

CONTRACTOR shall identify suitable quarries for uninterrupted supply of coarse and fine aggregates and make necessary arrangements for transportation of the same. Since quarries are located faraway, CONTRACTOR shall at all time have a reserve storage of coarse and fine aggregates to meet peak requirement for one month

The CONTRACTOR shall make his own arrangements for providing accommodation for all staff outside our premises and necessary storage space for equipment and consumables such as but not limited to petrol, diesel, lubricants, oxygen, acetylene, welding rods, etc., together with sufficient quantity of spare parts for efficient and uninterrupted execution of the work.

The CONTRACTOR shall furnish the ENGINEER with two levels of report in the frequency noted below:

		Frequency	Required by Date
RL 1:	Report Level 1	Monthly	29th of each month for reporting period until 27th.
RL 2:	Report Level 2	Weekly	Friday evening for week stating from Friday to Thursday.

Report Level 1: This report to give in brief describing the summary of the progress / milestones achieved on each of the major fronts during the month accompanied with Photographs. The other details shall be given in the following format:

ID no	Activity Group	%of progress in that Month		Cum% progress		Reasons for shortfall and steps taken to make up
		Sch.	Act.	Sch.	Act.	

Report Level 2 : Report should be given in the following format:

ID no	Activity Group	Original comp date	Scope of work (measured)	% progress in the month		Cum % progress		Reason s for delay	Steps to cover shortfall	Target next week	Remaining duration to complete the activity
				Sch	Act	Sch	Act				

Apart from this the CONTRACTOR is required to submit a daily report of the skilled labour and plant, equipment and other resources deployed by him at the project site. This shall include the resources of the sub-CONTRACTOR if any.

Extension of contract period only under force majeure conditions for completion of work shall be granted by the OWNER, equal to the time `Force Majeure' conditions were in existence and as applicable to this contract. Monsoon or inclement weather shall not be considered as a reason for extension of time.

Idle time charges for any reason whatsoever shall not be entertained by the OWNER

If the CONTRACTOR fails to maintain the stipulated time of completion specified hereinabove, he shall be liable to pay penalty as set out in `General Conditions of Contract'. It shall be clearly understood that failure to meet interim completion dates shall also attract penalty.

CONTRACTOR'S SCOPE OF SUPPLY

The CONTRACTOR will be required to provide at his own cost all facilities for his office, warehouse, tool room, change room or any other building/structure required to execute his work.

CONTRACTOR will establish his own office / shed at specified place inside the plant for his worker/staff. The CONTRACTOR’s office/shed will be porta-cabin type. Only the shed for storing Cement will be in brick masonry. In addition the office/shed will have proper ventilation lighting and sanitary facilities. CONTRACTOR will plan their site facilities and obtain clearance from the OWNER before construction of the Office/shed

All royalties will be paid by the CONTRACTOR as also all tolls, local and other taxes, etc. at no extra cost to OWNER. The rates quoted for excavation will include Collector’s permissions for Excavation permits, all payments etc.

All materials supplied by the CONTRACTOR will be of the best quality and will conform to this specification. Approval in writing will be obtained from OWNER before any alternative or equivalent material is proposed to be used by the CONTRACTOR.

CONTRACTOR will obtain all necessary permits and licenses before commencement of work at no extra cost to OWNER.

The CONTRACTOR will have PF coverage, for all workmen in his permanent employee as well as those temporarily hired by him for the said project. He will also have ESIC cover for all workmen, permanent as well as temporary if required by law. The cost for both the above viz. PF as well as ESIC will be deemed to have been covered in the rate quoted by contractor. The OWNER will not pay any extra charges over and above the rates quoted for these statutory payments.

MATERIALS SUPPLIED BY CONTRACTOR

All materials supplied by the CONTRACTOR will be of the best quality and will conform to the given specifications. Approval in writing will be obtained from the ENGINEER, before any alternative or equivalent material is used, other than what is specifically mentioned in the drawings.

The CONTRACTOR will get tested all material supplied by him in a OWNER approved laboratory, as directed by ENGINEER or as specified in the corresponding code of practice, at no extra cost to the OWNER. This is in addition to furnishing the Manufacturer's Test Certificate where available.

7 SPECIFICATION AND PROJECT SPECIFIC DESIGN GUIDELINES FOR PEB

SPECIFIC DESIGN & TECHNICAL REQUIREMENTS FOR THE PROJECT

Bidder to adhere to the following design requirements for civil and structural works-

Structure / Item	Applicable code / standard (Note: All latest versions of the codes to be applied) / specific design requirements
DESIGN SEISMIC FORCES	Seismic Zone III; conforming to IS: 1893-2016 to be considered.
DESIGN WIND FORCES	Basic Wind speed Vb = 50 m/s Coefficients k1, k2, k3 and k4 to be obtained from IS: 875 Part 3
EARTH PRESSURE	Earth pressure means the horizontal pressure of the soil acting on the underground structure and foundation. A surcharge load of 20 kN/sqm, to be considered for the design of underground structures including channels, sumps, cable and pipe trenches etc to take into account the vehicular traffic in the vicinity of the structure wherever required.
FACTOR OF SAFETY IN SLIDING	Factor of Safety against Sliding without Wind or Seismic Loads: 1.4.
FACTOR OF SAFETY IN OVERTURNING	Factor of Safety against Overturning with and without Wind or Seismic Loads:1.4
LOADS AND LOAD COMBINATIONS	1) Shall be as per IS: 456 for RCC works 2) Shall be as per IS: 800 for Steel structures 3) Shall be as per IS: 875 Part 3 for wind loads 4) Shall be as per IS: 1893 for earthquake loads 5) Dead and Live loads and load combinations shall be as per IS: 875, IS: 800,IS:802, IS: 456, IS: 1893 as applicable. 6) Equipment loads (if any) and associated loading combination to be applied for design in addition to the

	above noted loads as per IS: 456 (for RCC) / IS: 800 (for steel works) 7) Earth pressure along with surcharge to be considered as acting for all retaining walls, underground structures, tanks, sumps, trenches etc. (Refer above) Specific Live Loading criteria is as mentioned below as a minimum for design purpose: Office areas - 0.5 T / sqm Roof (accessible) - 0.15 T / sqm Roof (inaccessible) - .075T/sqm Staircases - 0.5 T / sqm Walkways - 0.5 T / sqm Toilet floors - 0.2 T / sqm Equipment loading to be considered as acting over and above the above mentioned specific loads. Load combinations must take care of the same as per IS: 456 / IS: 800 / IS: 1893 / IS: 875 stipulations.
RCC DESIGN	
RCC Foundation sizing and design	1) Based on geotechnical investigation report 2) As per IS: 1904 for shallow foundations 3) As per IS: 2911 for pile foundations, if necessary 4) As per IS: 456 Limit State Method 5) As per IS: 2974 (all parts) for machine foundations
RCC Super-structure	1) As per IS: 456 Limit State Method
Concrete Mix design	1) As per IS: 10262
STRUCTURAL STEEL DESIGN	Shall be as per IS: 800,
MATERIALS	
Cement	Ordinary Portland Cement 43 grade as per IS: 8112 or 53 grade as per IS: 12269. OR

	Portland Pozzolona Cement as per IS: 1489. Only one type of cement to be used for the entire project.
Reinforcement Steel	Fe 500 D HYSD Corrosion Resistant Steel bars conforming to IS: 1786
Structural steel	IS: 2062-For rolled steel and built-up sections/ plates. IS: 4923- For Hollow Rectangular and Square sections. IS: 1161 - Tubular sections for structural use
Roof Sheeting	Galvalume 550MPa with minimum thickness of 0.50 TCT (AZ 150)
Wall Cladding	Galvalume 550MPa with minimum thickness of 0.50 TCT (AZ 150)
Paint	1 Base Coat + 2 Coat Primer + 2 Coat Plastic Paint
Fly ash brick masonry	Masonry walls must be designed and provided as per IS: 1905. Minimum compressive strength must be 5 N / sqmm. All parameters shall be as per relevant IS code guideline.
Galvanization	Minimum galvanization zinc coating of 610gsm for all structural steel members where functionally required
Rainwater downtake pipes	UPVC pipes of 160mm dia (minimum)
MINIMUM SIZES / WIDTHS	
Minimum thickness of Structural steel members and plates	6mm
Minimum thickness of chequered plates	8mm

Minimum depth of gratings	30mm
Minimum size of weld	6mm
DEFLECTION CRITERIA FOR STRUCTURAL MEMBERS	For Steel structures: As per IS: 800 stipulations For RCC structures: As per IS: 456 stipulations

7.1 DESIGN APPROACH

7.1.1 Primary structural framing shall include the transverse rigid frame, column, corner columns, end wall wind columns and frames for door and window frames.

7.1.2 Primary members are fabricated from plates and section with minimum yield strength of 350MPa.

7.1.3 All the miscellaneous structural members, rod bracing, angle bracing, wind bracings, pipe bracings, sag rods etc shall confirm to IS 2062 with minimum yield strength of 250 MPa.

7.1.4 All structural steel members shall be provided suitable treatment of shot blasting before application of primer.

7.1.5 All the structural steel members shall be applied with Zinc silicate primer (minimum 75micron DFT) over shot blasted / cleaned surface. Applying intermediate coat of Titanium dioxide / Micaceous Iron Oxide of minimum 75micron DFT. Final coat must be of high build epoxy poly-amide cured paint of minimum 75micron DFT. The topmost coating must be of polyurethane colour pigmented finish of 25-micron DFT.

7.1.6 Purlins, Grits, necessary clips and other cold rolled structural members shall conform to IS code having a minimum yield strength of 340 MPa and shall be pre galvanized having a total coating thickness of 275gsm.

7.1.7 Minimum thickness of secondary members shall be minimum 2.5mm.

7.1.8 For day lighting purpose, a minimum 2mm thk approved translucent polycarbonate sheet shall be fixed with wall lighting in addition to windows. The poly carbonate sheets shall be fixed with necessary EPDM/ rubber gaskets, silicon sealants, cold forged fasteners, aluminium profiles etc. including MS supporting structural steel frame to ensure watertight arrangement.

7.1.9 All primary bolted connections shall be provided with galvanized high strength bolts, washers, nuts, conforming to specification of grade 8.8 of IS 1367/IS 3357

7.1.10 All secondary bolted connections shall be furnished with bolts, nuts, washers to specification of grade 4.6 of IS1367

8 PROJECT INFORMATION

1.0	Owner	TPSODL
2.0	Consulting Engineer	The Tata Power Company Limited
3.0	Location of the buildings	Various locations in southern Odisha
4.0	Nearest Rail head	Berhampore railway station.
5.0	Transport	Access roads are Located on NH59..
6.0	Plant Elevation	35m above MSL.
7.0	**Climatic conditions**	
7.1	Temperatures:	
	(a) Maximum dry bulb temperature	32°C
	(b) Minimum dry bulb temperature	23°C
	(c) Design temperature for electrical equipment / devices	50°C
7.2	Relative humidity	
	(a) Maximum	89%
	(b) Minimum	64%
8.0	Rainfall	Annual average rainfall is about 1021 mm
9.0	Wind data	

	Calculations for wind effect will be in accordance with IS: 875-1987(Part-3). considering the following: a) Basic wind speed = 50 m/sec b) Risk coefficient K1 = 1.06 c) Category of terrain = Category 2 d) Topography factor K3 – as per IS 875 e) Importance Factor for Cyclonic Region (k4) – as per IS: 875	
10.0	Seismic conditions	Zone- III/Zone II as per the specific location As per IS: 1893 - 2002 Calculations for seismic effect shall be in accordance with IS:1893-Part 4 (2015)
11.0	Latitude	19°19'N
	Longitude	84°47'E

9 CONSTRUCUTION REQUIREMENTS FOR THE EQUIPMENT / SYSTEM:

Refer tender purpose drawings attached as annexures.

10 TECHNICAL PARAMETER (INCL. DATA SHEET):

Refer annexures.

11 QUALITY REQUIREMENTS, INSPECTION & TESTING (INCL. SQP & SFP):

Refer Annexures and Field quality plan

12 DATA SUBMISSION BY BIDDER

Bidder shall submit the following Data sheets / information along with the Technical Bid.

- Dully filled in schedules, listed in section 'C'.
- Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP)
- Project Schedule to be prepared and submitted by the bidder along with the bid documents.

a. ALONGWITH BID: NA

b. AFTER AWARD OF CONTRACT:

Bidder has to submit

a. Field Quality Plan

b. Activity wise construction method statements.

C1 - SCHEDULE OF QUANTITIES AND PRICES

SUPPLY: Please refer BOQ in separate sheet provided

NOTES ON SCHEDULE OF QUANTITIES AND PRICES (CIVIL)

Civil Works

1. The Schedule of Quantities and Rates shall be read in conjunction with the specifications, tender drawings and tender documents. Bidder shall not rely merely on the description given in the Schedule of Quantities and Rates. All the work shall conform to specifications and the quoted rates shall be deemed to include all works necessary to achieve this whether actually indicated under the item description or not

2. Quantities of work indicated in the Schedule of Quantities and Rates are only approximate and are given to provide a common basis for tendering. No claim shall be entertained from Contractor if the actual quantities or items of work differ to any extent from those indicated herein with a cap of +/- 25% of overall contract price.

3. The quotation submitted by Bidder should be based on the approximate estimated quantities of the several items of work, which are furnished for Bidder's convenience in the Schedule of Quantities and Rates. The approximate estimated quantities nor the values of the individual items nor the aggregate value of the entire tender will form a part of the Contract and the Owner does not in any way assure or guarantee Bidder that the work would correspond there to.

4. The quantities of work actually carried out (as evaluated from construction drawings and or field measurements) if directed by the Engineer against each item will be measured and paid at the rates quoted in the Schedule of Quantities & rates, where applicable or otherwise at such rates and prices as may be fixed within the terms of the Contract.

5. Unit or lump sum prices shall be quoted for all items and they shall be firm. If unit or lump sum prices are not quoted against any of the items, it shall be deemed to have been covered in the prices quoted elsewhere. These rates shall include cost of all plant, labour, materials, oil and lubricant, transport, wastage, supervision, insurance, taxes, overheads, profits, etc. and every incidental and contingent cost and charges whatsoever required for completing the items of work in all respects and as per specifications.

6. Bidder shall be deemed to have allowed in his rates and prices for the provision, maintenance and final removal of all temporary works of whatsoever nature required for the proper execution of the works, except for those temporary works for which specific items have been provided in Schedule of Quantities and Rates. The prices inserted against these specific items of particular temporary works shall be for the provision, maintenance and their final removal. The rates shall also be deemed to include cost of any survey works that may be required to be carried out for setting out of all the works involved.

7. Rates and prices shall be written in ink and shall be entered both in figures and in words. Where there is a discrepancy between rates quoted in figures and in words, the rates quoted in words shall prevail. Where there is a discrepancy between the unit rates and the amount entered, the unit rate shall govern for evaluating the correct amount. Rates and prices shall be written only in the Schedule of Quantities and Rates and given in any other format will be rejected and Bidder will be disqualified.

8. The rates quoted shall hold good for works above ground level irrespective of elevations including lifts or below ground/grade level inclusive of dewatering where necessary. No extra amount is payable for dewatering under any circumstances. This shall also include the cost of materials utilised for testing.

9. The rates quoted shall hold good even if the shapes and sizes of members shown on bid drawings are modified while issuing the final drawings stamped 'Released for Construction'. No extra claims shall be entertained in this regard.

10. Rates quoted by the BIDDER shall be firm for the entire period of construction and is valid even if the contract is split.

11. Suitable admixture shall be used in concrete to achieve necessary slump and to reduce cement content shall be provided by BIDDER as directed by the Engineer at no extra cost to the OWNER.

12. Bidder shall quote his rates for all items in Schedule of Quantities. The Owner reserves the right to operate /increase or decrease quantities in each item or omit any item included in Schedule of Quantities at his discretion. Contractor shall have no claim, whatsoever, on grounds of loss of anticipated profit, etc. on account of the same.

13. All works shall be carried out strictly as per the specification

14. For all reinforced concrete works, bar bending schedule shall be prepared by the Contractor and approval shall be taken from the Engineer at site before cutting and placing the reinforcement.

15. For any deviations taken from the drawings released for construction, during actual execution of work, a sketch / drawing shall be furnished by the Contractor and got approved from the Engineer-in-Charge.

16. Cement used shall be Portland Pozzolana cement (PPC) conforming to IS: 1489- Part 2. In case PPC is not available readily, OPC conforming to IS: 8112 will be used.

17. Under- ground protection shall be provided for all concrete surfaces coming in contact with earth.

18.The rate for concreting items for work below ground shall provide for dewatering during concreting operation and shall continue for a period of seven days to prevent concrete before setting, coming into contact with ground water.

19.The CONTRACTOR, desires to use any brand/manufacture other than those listed below shall be used only after written consent from ENGINEER.

Structural Steel

1.The quantities indicated against various items are based on preliminary design based on data available. Quantities are liable for change.

2.Supply of all structural steel material such as plates, rolled sections, M.S. rounds for Anchor bolts, chequered plates, M.S pipes for handrails, G.I. Pipe handrails, Electro forged gratings will be supplied by the Contractor.

3.Fabrication shall commence only based on fabrication drawings, which shall be prepared by the Contractor based on design drawings furnished by OWNER and approved by ENGINEER.

4.All Structural steel works covered in Schedule of Quantities of the specification shall be provided with protection painting system described in the relevant item

5.Field Quality Plan will be prepared by the CONTRACTOR on award of work, describing in detail the type and extent of various quality checks/test which he will be performing and which are included in his rates. These checks/tests will be in line with the requirements of specification enclosed in section ‘1’. The OWNER will review and approve the field quality plan before the fabrication commences, Tests as per item of Schedule of Quantities are tests which will be specifically ordered in writing by ENGINEER over and above those included in the Field Quality Plan.

6.Grouting work below the base plate shall be taken up only after alignment and final welding of columns are completed. The supply of premixed non-shrinking grout shall be the responsibility of CONTRACTOR and shall be of approved brand like Conbextra, Non-shrinktop, Sunepoxy 368, etc. The strength of grout shall be one grade higher than that of the base concrete.

C2- PROJECT TIME SCHEDULE

Seal of the Company

Signature

Designation

Note: The bidder shall indicate schedule of milestones and also attach/furnish a detailed bar chart identifying customer inputs.

C3- SCHEDULE OF DEVIATIONS FROM TECHNICAL SPECIFICATIONS

All deviations from this specification, shall be set out by the Bidders, indicating clause no and page in this schedule. Unless specifically mentioned in this schedule, the tender shall be deemed to conform to the purchaser's specifications:

Sr. No.	Clause No.	Details of deviation with justifications
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We confirm that there are no deviations apart from those detailed above.

Seal of the Company Signature

Designation

C4- SCHEDULE OF DEVIATIONS FROM GENERAL & SPECIAL CONDITIONS OF CONTRACT

All deviations from this specification, shall be set out by the Bidders, indicating clause no and page in this schedule. Unless specifically mentioned in this schedule, the tender shall be deemed to conform to the purchaser's specifications:

Sr. No.	Clause No. with justifications	Details of deviation
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We confirm that there are no deviations apart from those detailed above.

Seal of the Company Signature

Designation

SECTION-D

(TENDER PURPOSE DRAWINGS)

Standard PSS Model

Option - 1

Option - 1

TPSODL CIVIL TEAM