



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-15-May-26

CORRIGENDUM- 01

PROJECTs	:	2000 TPD BCGCL COAL TO AMMONIUM NITRATE - LSTK 1
PACKAGE	:	INDUCED DRAFT COOLING TOWERS (IDCT)
ENQUIRY NO	:	77/26/6036/AMI dated 13.05.2026
SUBJECT	:	Change in NIT conditions

Type of Corrigendum			
Technical Corrigendum -	<input type="checkbox"/>	Commercial Corrigendum -	<input checked="" type="checkbox"/>

Bidders are requested to note the following -

1. Annexure I to NIT: *PRICE ADJUSTEMENT-PVC* has been revised. Revised Annexure-I to NIT enclosed.
2. Annexure VII to NIT: *Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix)* has been updated with Annexure A - Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites and "LAYOUT OF WORKMEN COLONY ". Revised Annexure-VII to NIT enclosed.

All the other terms and conditions of the tender enquiry remain unchanged. All the bidders are requested to quote accordingly.

Yours faithfully,
For and on behalf of BHEL

Amit Kumar
Manager/BOP

PRICE ADJUSTMENT-PVC payment terms and conditions

The price adjustment provisions shall be applicable separately for **EACH ORDER** price components relating to Supply of Equipment/O&M Spare, Civil and E&C Works, as per price break-up furnished by the Contractor in price schedule.

Price adjustment amounts towards aforesaid components of Contract Price shall be paid in the respective currencies of Contract(INR).

Vendor shall submit L2 schedule along with BID and detailed L3 schedule after award of work. PVC payment shall be linked to approval of L3 schedule.

PVC shall be applicable only, during the extended period of contract (if any) after contractual completion period and for the portion of work delayed / backlog for the reasons not attributable to the Contractor

The total amount of PVC payable shall not exceed 20 % of the BASIC contract value for respective order.

Negative price variation (without any limit) shall be passed on to BHEL.

A) PRICE ADJUSTMENT FORMULA FOR SUPPLY AND O&M SPARES-

The amount of price adjustment towards variable portion payable/recoverable on each shipment/despatch shall be computed as under:

$$EC = EC1 - EC0$$

EC1 will be computed as follows:

$$EC1 = EC0 \{F + a \times A_1/A_0 + Lb \times L_1/L_0\}$$

Above formula, is further expressed as follow considering all component.

$$EC1 = EC0 \{F + a \times (0.45 \times AP_1/AP_0 + 0.35 \times AS_1/AS_0 + 0.2 \times AE_1/AE_0 + Lb \times L_1/L_0)\}$$

Where

EC = Adjustment to Ex-Works supply and O&M spare Price Component expressed in the currency of The Contract (INR) payable to the contractor for each shipment/despatch.

EC1 = Adjusted Amount of Ex-Works supply and O&M spare Price Component expressed in the currency of the Contract (INR) payable to the Contractor for each shipment/despatch.

EC0 = Ex-Works supply and O&M spare Price expressed in the currency of the Contract (INR), shipment/despatch wise.

- "F" shall be fixed portion of the Ex-Works Component of the Contract and shall be considered as 0.15.

- "a" shall be co-efficient of major materials/items involved in the Ex-Works Component of the Contract Price and shall be considered as 0.5.

- 'AP, AS, AE', shall be published price indices of corresponding major materials/items. For this purpose, indices available for Plastics, Steel and Electrical equipment, based RBI bulletin Whole Price Index (https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=22884).

and

'L' shall be per Other consumer price index number for industrial workers (All India Monthly Average) as published (https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=22882)

Price Indices to be considered (As per RBI)

Material	RBI Index
Plastics-AP	Table No 22, Sl.no 1.3.12.3
Steel -AS	Table No 22,Sl.no 1.3.14.3
Electrical equipment - AE	Table No 22, Sl.no 1.3.17
Industrial labour -L	Table No. 20, Sl. no.1

- 'Lb" shall be co-efficient for labour component in the Ex-Works Component of the Contract Price which shall be considered as 0.35.

For the indices, subscript '0' refers to indices of the month immediate after expiry of contractual delivery period.

Subscript '1' refers to indices as on month before actual delivery date/month of Shipment / despatch.

B) PRICE VARIATION COMPENSATION FOR ERECTION & COMMISSIONING

1. Formula for calculation of price variation:

$$ER = ER1 - ER0$$

ER1 will be computed as follows

$$ER1 = ER0 (0.15 + 0.85 L1/L0)$$

Where,

ER = Adjustment to Erection & commissioning component of contract price expressed in the currency of contract (INR) payable to the contractor for each billing.

ER1 = Adjusted amount of Erection & commissioning component of contract price expressed in the currency of contract (INR) at the time of billing to the Contractor.

ER0 = Value of the Erection & commissioning work in INR done.

L: Labour indices shall be Other consumer price index number for industrial workers (All India Monthly Average) as published by Labour Bureau, RBI.

(https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=22882)

For the indices, subscript '0' refers to indices of the month immediate after expiry of contractual completion period.

Subscript '1' refers to indices as on month of execution of E&C work.

Price Indices to be considered (As per RBI)

Material	RBI Index
Industrial labour	Table No. 20, Sl. no.1

C) PRICE VARIATION COMPENSATION FOR CIVIL WORK PORTION

1. Formula for calculation of Price variation for civil works :

$$CV = CV1 - CV0$$

CV1 will be computed as follows:

$$CV1 = CV0 (F + m \times M1/M0 + d \times D1/D0 + s \times S1/S0 + Lb \times L1/L0)$$

Where,

CV = Adjustment to civil works Price component in the currency of (INR) of the contract payable to the contractor for the work done.

CV1 = Adjusted amount of Civil Works Price Component of contract price (INR)

CV0 = Value of Civil Works executed in billing period (INR)

F = Fixed portion of the contract price which will not be subjected to any adjustment under this formula or otherwise which will be **0.20**.

m = Coefficient of material (excluding cement & reinforcement steel) content in the cost of civil portion of the work which will be **0.30**.

d = Coefficient of High Speed Diesel Oil content in the cost of civil portion of the work which will be **0.05**.

s = Coefficient of structural steel content in the cost of civil portion of work which will be **0.05**

Lb = Coefficient of labour (for all categories) content in the cost of civil portion of the work which will be **0.40**

The component in civil work formula shall be taken from Indices published by GOI and RBI from monthly basis. Details mentioned below.

- "M" and "D" shall be published price indices of corresponding major materials/items. For this purpose, indices available for Material index under head of "all commodities" and HSD based on office of economic adviser, GOI, Whole Price Index (All India Monthly Average) as published on (https://eaindustry.nic.in/display_data_201112.asp) (path to be followed - [Whole price Index \(WPI\) --- WPI press release.](#))
- "S" shall be published price indices of corresponding major materials/items. For this purpose, indices available for Steel, other non-metallic mineral product, based on RBI bulletin Whole Price Index (https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=22884).

and

- 'L' shall be per Other consumer price index number for industrial workers (All India Monthly Average) as published (https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=22882)

Price Indices to be considered (As per RBI / Office of Economic adviser, GOI)

Material	Office of Economic adviser Index
Material Index "All commodities" M	Annexure -III, Sl.no 1
HSD -D	Annexure -III, Fuel & power Sl. no.3
Material	RBI Index
Mild Steel Long product - S	Table No 22, Sl.no 1.3.14.4
Industrial labour - L	Table No. 20, Sl. no.1

For the indices, subscript '0' refers to indices of the month immediate after expiry of contractual completion period.

Subscript '1' refers to indices as on month of execution of civil work.

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.1	Establishment:			
3.1.1	For Construction Purpose:			
a	Open space for office (as per availability inside project premises)	Yes		Location will be finalized after joint survey with owner.
b	Open space for storage (as per availability inside project premises)	Yes		Location will be finalized after joint survey with owner.
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipment, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc.		Yes	
f	Firefighting equipment like buckets, extinguishers etc.		Yes	
g	Fencing of storage area, office, canteen etc. of the bidder		Yes	
3.1.2	For living purpose of the bidder:			
a	Land for Labour colony.		Yes	
b	Labour Colony with internal roads, sanitation, in compliance of Standard Guidelines issued by BHEL and statutory compliances.		Yes	Contractor shall develop the worker's accommodation sheds along with proper approach roads, internal roads & drains, electricity / water arrangements at their own cost in compliance of Standard Guidelines issued by BHEL and statutory compliances.
3.2	Electricity:			

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.2.1	Electricity for construction purposes (for Site/Project works only) 3 Phase 415/440 V			
a	Single point source	Yes		Construction power shall be provided by BHEL free of cost at one point near the site at a distance of approx. 500M.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	Electricity for office, stores, canteen etc. of the bidder			
a	Single point source		Yes	Contractor has to make his own arrangements
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors, labour Hutment etc.			Contractor has to make his own arrangements
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Payment/Duties and deposits including statutory clearances if applicable		Yes	
3.3	Water Supply:			
3.3.1	For construction purposes:			

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Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
a	Making the water available at single point	Yes	Yes	BHEL shall provide water supply free of cost (at single point source) for construction purpose. However, contractor may initially make his own arrangement for water supply till source is obtained from Customer/owner.
b	Further distribution as per the requirement of work including supply of materials and execution.		Yes	
3.3.2	Water supply for bidder's office, stores, canteen etc.			Contractor has to make his own arrangements
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.3	Water supply for Living Purpose			Contractor has to make his own arrangement
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4	Lighting			
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
b	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc. during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5	<i>Communication facilities for site operations of the bidder</i>			
a	Téléphone, fax, internet, intranet, e-mail etc.		Yes	
3.6	<i>Compressed air wherever required for the work</i>		Yes	
3.7	<i>Demobilization of all the above facilities</i>		Yes	
3.8	<i>Transportation</i>			
a	For site personnel of the bidder		Yes	
b	For bidder's equipment and consumables (T&P, Consumables etc.)		Yes	

3.10	Land/Open Space:
3.10.1	Availability of land within plant boundary is very limited and the contractor has to plan and use the existing land considering the use of land by other Civil /mechanical/ electrical contractors and the storage of plant machineries and materials. The existing land shall be shared by all erection agencies. BHEL shall provide free of charge limited open space for office, storage shed and laydown area as and where made available by Customer/owner. It is the responsibility of the contractor to construct sheds, fabrication yard, establish batching plant, provide all utilities and dismantle and clear the site after completion of work or as and when required, as a part of his scope of work.

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

3.10.2	Contractor shall maintain one centralized store cum bar bending yard at his own cost. Hard surfacing of this yard and all-round drain shall be carried out by the contractor at his own cost within the quoted rate.
3.10.3	On completion of work, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and leveled and all debris shall be removed as per instructions of BHEL by the contractor at his cost. In the event of his failure to do so, the expenditure towards clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.
3.11	Labour and Staff Colony: Following are in the Bidder's scope of work for labour & staff colony:
3.11.1	BHEL shall not provide any space or residential accommodation to the contractor for his staff or labour and the contractor has to make his own arrangements at his cost. Labour colony is to be developed by bidder for all the labourers required to be deployed for the works. Bidder has to identify the land for labour colony at their cost and no land will be given by BHEL for labour colony purpose. The contractor to develop/ construct labour colony/ hutment fulfilling the minimum requirements as specified in the "HSE Plan for Site Operations by Subcontractors" enclosed along with this tender as well as meeting the statutory norms. Ownership of the labour hutment shall be of the contractor and contractor shall keep BHEL indemnified from any statutory obligations/ legal compliances w.r.t. labour hutment establishment during as well as after the completion of contract.
3.11.2	Necessary levelling/ dressing of land shall be done by the contractor. All arrangement for electricity and drinking/service water to be arranged by the contractor within his quoted price. The contractor shall provide adequate water arrangement for drinking/ washing/ bathing with required toilets, drainage system, and electrification etc. in labour colony at his own cost.
3.11.3	Development of Bidder's temporary staff colony and labour colony having adequate no. of rest rooms along with toilets & fencing etc.
3.11.4	All Civil and Structural work associated with drinking and service water for Bidder's labour and other personnel at the work site/colony/offices including pump houses, pipes, overhead tank, tube wells etc.
3.11.5	Providing and maintaining facilities for safety, welfare, drinking water and sanitation, hygiene, biennial health check-up etc. for construction workers at their workplaces as well as at labour & staff colonies.
3.11.6	Development and maintenance of above facilities for construction workers/staff/office deployed by the Contractor shall solely rest with the Contractor.
3.11.7	To help maintain clean and environmentally sustainable workplace, the use of Single-Use plastic and containers & plates made of Thermocol for food or other purposes is banned within the plant premises.

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

	<p>In addition, plastic wrapper & Thermocol used for supplied items, scrap glass wool & insulation materials are to be stacked in proper designated place. These items along with any other waste/debris etc. are to be disposed off on regular time interval.</p> <p>Improper disposal of these materials thereby affecting the cleanliness of construction site and creating environmental hazards, is not allowed. It is advised to use reusable steel/ biodegradable containers.</p>
3.11.8	<p>Installation of necessary amenities- and temporary infrastructure for construction activities at Project site locations. Following are the minimum amenities to be provided by the bidder within the quoted price including removal/disposal of the same in environment friendly manner after its intended use/completion of scope of work:</p> <ul style="list-style-type: none"> i. Labour rest sheds near work spot. ii. Canteen facility creation. iii. Drinking water facility. iv. Labour Bio toilets near work spot in sufficient nos. with regular cleaning & maintenance arrangement. v. Labour colony should have all hygienic condition, dining hall, toilets, proper sewerage system, good drinking water arrangements. vi. Crèche facility is also to be provided.
3.11.9	<p>Contractor shall ensure establishment & maintenance of workmen/labour colony in line with BHEL layout drawings & Guidelines (As per Annexure A - Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites). Scope demarcation shall be as per the drawing "LAYOUT OF WORKMEN COLONY ".</p>
3.11.10	<p>Any other development and maintenance of above facilities for construction workers deployed by the Contractor shall solely rest with the Contractor.</p>
3.13	<p>Construction Power:</p>
3.13.1	<p>Construction power (three phase, 415 V/ 440 V) shall be provided by BHEL free of cost at one point near the site at a distance of approx. 500M within 03 months from the date of start of work. Further, distribution shall be arranged by the contractor at his own cost and services.</p> <p>However, contractor has to deploy DG Sets to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project at no extra cost to BHEL.</p> <p>If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor shall be</p>

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

	responsible for fulfilment of all requirements including statutory requirements in this regard.
3.13.2	Contractor shall deploy and install required energy meter, cables, fuses, distribution boards, switchboards, bus bars, earthing arrangements, protection devices and any other installation as specified by statutory authority/act. Contractor shall also obtain approvals of appropriate authority and pay necessary fees, levies etc. towards the clearance of such installations, prior to use.
3.13.3	Sufficient power factor compensation equipment like capacitor shall be provided by contractor for reactive loads like welding machines etc. In case of any fine/penalty on account of low power factor, same shall be shared by contractor proportionately according to power consumption.
3.13.4	Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/erection etc. and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.
3.13.5	It shall be the responsibility of the Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply in all respects with the appropriate statutory requirements. The installation and maintenance of this shall be done by licensed and experienced electrician.
3.13.6	While reasonable efforts will be made to ensure continuous electric power supply, interruptions cannot be ruled out and no claim from the Contractor shall be entertained on this account such as idle labour, extension of time etc. The Contractor shall adjust his working shift accordingly and deploy additional manpower, if necessary, so as to achieve the target.
3.13.7	Contractor to note that till construction power is made available by BHEL; contractor shall make his own arrangement like DG set etc. The contractor shall also take the approval/ permission of statutory authorities for his DG set installation. The Contractor has to make his own arrangement for the same as required to carry out the job under the scope of work within the quoted rate. Nothing extra shall be paid on this account of DG set up and running for construction and office, maintenance etc.
3.13.8	Contractor shall be well equipped with back-up power supply arrangement like DG set and diesel operated welding machine etc. to tackle situations arising due to failure of supplied power, so as to ensure continuity and completion of critical processes that are underway at the time of power failure or important activities planned in immediate future.

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

3.13.9	BHEL is not responsible for any loss or damage to the Contractor's equipment as a result of variations in voltage or frequency or interruptions in power supply.
3.13.10	The bidder will have to procure & install General mobile illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with DG back-up, within the quoted price. The illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.
3.13.11	Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.
3.14	Construction water:
3.14.1	BHEL shall provide water supply free of cost (at single point source) for construction purpose as and when made available by customer/owner within 3 months from date of start of work for construction purpose. Contractor has to make arrangement of further distribution. However, contractor shall make alternate arrangement of construction water till the same is made available by BHEL.
3.14.2	The Contractor should make arrangements for storage of sufficient quantity of water required for work. The agency should also construct sumps (if required) of suitable size for storage of construction water as per their requirement for use in construction purposes.
3.14.3	Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes. Necessary tests as per FQP to be carried out time to time and reports to be submitted to BHEL.
3.15	RECORDS TO BE MAINTAINED AT SITE
3.15.1	Record of Quantity of free/Chargeable items issued by BHEL must be maintained during contract execution. Also, reconciliation statement to be prepared at regular intervals.
3.15.2	The below mentioned Records/ Log-books/ Registers applicable to be maintained. <ul style="list-style-type: none"> a) Hindrance Register b) Site Order Book. c) Test Check of measurements.

Annexure VII: Facilities in the Scope of Contractor/BHEL (Scope Matrix).

	<ul style="list-style-type: none">d) Steel and Cement Supply and Consumption Daily Register.e) Records of Test reports of Field tests.f) Records of manufacture's test certificates.g) Records of disposal of soil/ rock generated during and after the work completion.h) Records of disposal of scraps generated during and after the work completion.i) List of T&Ps and MMEs.
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**Standard Guidelines
for
Worker's
Accommodation
at
BHEL-Project Sites.**

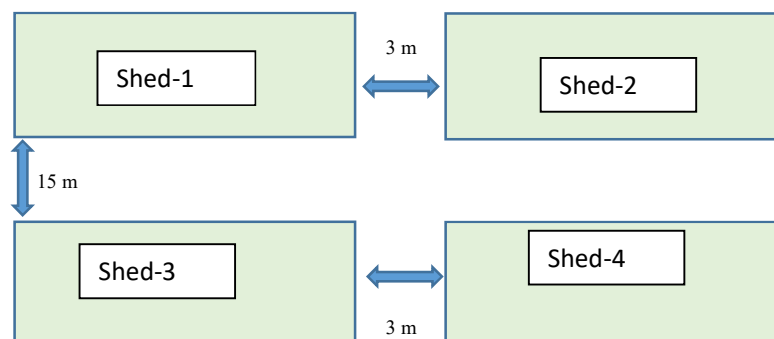
Annexure-A

Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

1) Key Parameters for Construction of Workers' Accommodation / Establishments at Project Sites: -

To ensure the well-being, safety, and comfort of all construction workers, the following parameters shall be adhered to during the development of labour accommodations and associated facilities:

- a) **Land Arrangement:** - The contractor shall arrange suitable land for the labour colony at their own cost, preferably within five kilometres of the project site. The land must be properly levelled and dressed by the contractor. All arrangements for electricity and drinking or service water shall also be made by the contractor within their quoted price. However, BHEL may provide land on a sharing basis for worker establishments if such land is made available to BHEL by the project owner.
- b) **Utilities – Water and Electricity:** - The contractor shall make suitable arrangements for the water network and electricity for all worker establishments. Installation of total electrical layout including transformers (if required), proper electrical wiring and fittings shall be provided to ensure safety and reliability.
- c) **Welfare, Health, and Sanitation Facilities:** - The agency shall provide and maintain facilities for safety, welfare, drinking water, sanitation, hygiene, and biennial health check-ups for all construction workers. These facilities must be available both at workplaces and within the labour and staff colonies.
- d) **Layout and Approval:** - All worker accommodation sheds, barracks, and hutments shall be constructed as per the layout plan approved by BHEL. The construction of temporary colonies, huts, and toilets must follow the attached drawings and shall only commence after obtaining prior approval from the BHEL site. A general layout plan for accommodating 120 workers, including toilet facilities, has been provided. If the agency needs to deploy a larger or smaller number of workers, the number and size of sheds may be adjusted accordingly in consultation with BHEL. The proposed layout of worker accommodations must be reviewed and approved by BHEL before construction begins. The design and construction of all worker accommodation sheds must be uniform and in line with the stipulated guidelines. This uniformity will ensure an organized and aesthetically pleasing appearance of the labour establishment colony.
- e) **Space and Layout Requirements:** - Each accommodation barrack shall have a minimum clear ceiling height of 3(three) metres. There should be at least 3(three) feet of spacing between beds to maintain hygiene and privacy. Only standard metal beds are permitted; substandard types will not be accepted by BHEL. Each hall should be equipped with wardrobes or shelves with locking arrangements for the secure storage of personal belongings. Each worker must be provided a minimum space of 3.6 square metres. A minimum spacing of three metres must be maintained between two barracks side-by-side and fifteen metres between barracks front-to-front. A typical layout plan of the labour colony, illustrating these requirements, is attached for reference.



Annexure-A

Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

- f) **Facilities for Women Workers:** - Separate and exclusive facilities must be provided for women workers. These shall include separate sheds, bathrooms, and toilets, designed to ensure privacy, safety, and comfort

2). Facilities to be Provided at Labour Establishment

a) Toilet, Bathing & Washing: -

- i). Sufficient numbers of toilets, urinals and bathing room within each barrack/shed with complete water supply system. Minimum 1 nos. urinal cum toilet for every 10 persons and 1 no. bathing room for every 10 persons should be ensured. There should not be any open bathing place in the labour colony to maintain proper hygiene.
- ii). Septic tank/Bio-digester with proper inlet/outlet connection to be provided for each shed of adequate size as per applicable standard codes / specifications to cater the requirement of minimum 120 workers.
- iii). Suitable / proper arrangements for washing clothes & drying washed clothes shall be made.
- iv). Toilet and Bathing Room doors shall be of metal frame with PVC doors (25 thk. double skin) of approved make and as per specification, drawing and instructions of BHEL Engineer In-charge.

b) Service & Drinking Water: -

- i.) Proper storage facilities for both service water & drinking water in the labour colony.
- ii.) Bore wells (wherever feasible) to be provided to draw the ground water with submersible pumps of adequate capacity and associated piping and fittings for filling overhead water tank and for connection with Water Treatment Plant. Borewell should be of adequate capacity to fulfil the water requirement (both drinking and service water) for both 'Worker Accommodation Sheds' and 'Medical Centre' building.
- iii.) In case ground water is the source for both service & drinking purpose, water purification plant/RO system should be installed for both service & drinking water purpose.

c) Medical Facilities: -

- i). One Medical centre (24 x7 working), well finished & furnished, of approx. 150 sqm shall be constructed by the contractor in the labour establishment area for the workmen. Relevant drawing of medical centre & list of equipments is attached.
 - Doctor's room with attached toilet.
 - Nurses Room with attached toilet.
 - Dispensary area.
 - Procedure room/hall (Balance area) with common toilets.
- ii). Deployment of Two (2) MBBS-qualified Doctors and Four (4) trained Male/Female Nurses to ensure round-the-clock (24 x 7) medical services with running medicines.
- iii). Dedicated ambulance in the labour colony for 24x7 hrs emergency medical situation fully equipped with ventilation and life support facilities.
- iv). Periodic medical check-ups and free medicines shall be provided to all workers/labourers at free of cost

Annexure-A

Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

- v). The management of the medical centre like monthly cost distribution, ensuring timely availability of adequate medical staff like doctors, nurses, lab technician shall be responsibility of Project Site Contractor Association and the same shall be monitored by BHEL Site HR along with respective package in charges.
- vi). Recurring expenses like payments for medical staffs such as doctors, nurse, ambulance services, consumables, medical instruments/devices & running medicines cost has to be borne by the availing agencies on sharing basis as decided by BHEL Site. No cost shall be borne by the workers/labours at site.

d) Safety, Cleaning & Hygiene: -

- i). The regular cleaning and housekeeping of labour establishments, storage water tank, open areas should be ensured by the agencies to maintain proper hygiene. Dedicated persons to be deployed for cleaning of toilets on daily basis.
- ii). Proper ventilation and lighting in both day & night. Proper false ceiling (in extreme hot conditions) & ceiling fans/coolers shall be provided in the barracks.
- iii). Readily accessible adequate first aid boxes, minimum 4 numbers each of fire extinguishers & dust bins shall be provided in each barrack/shed.
- iv). Centralised garbage dumping storage area in the labour colony & its regular clearance should be ensured by the agencies.
- v). Suitable arrangement for regular Pest / ants / Rodent / Rats / Snakes / Mosquito control in the labour colony shall be made with a reputed firm/ organisation by the vendor at their cost. Window mesh for prevention from mosquito shall be ensured.
- vi). Proper surface water drainage system to be followed by the agencies as per BHEL approved layout plan of the labour colony. No water logging should take place in and around labour colony even during peak rainy season.
- vii). Proper security deployment 24x7 for labour establishment by the respective agency along with provision for fencing/boundary wall and gate for labour colony.
- viii). **The contractor shall ensure availability of support personnel** such as an electrician, plumber, and other essential technicians on a **need-based** and **as-required** basis for the labour colony.

e) General Points: -

- i). Proper approach road to the labour colony & its connectivity with each barrack with necessary hard surfacing preferably with brick flat soling/paver blocks/PCC paving.
- ii). Separate kitchen facilities with dining hall & clean cooking fuel (without smoke) should be used uniformly in labour establishments to avoid health hazards.
- iii). Space for recreation facilities of the workers like playground etc. The maintenance of the recreation facilities should be ensured by the agencies on sharing basis. Also, weekly or fortnightly games/get-together/entertainment to be organised by the vendor for building motivation & team spirit amongst the labour.
- iv). Proper transportation arrangement / conveyance for going to work place from labour colony would have to be ensured by agency. No two-wheelers would be permitted inside plant premises.
- v). Flooring for Worker's accommodation sheds, kitchen shed, washing area and other sheds i.e. pump house for water treatment plant along with RO system

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shall be of cement concrete flooring with metallic hardener. Flooring details shall be as under:

- a) Providing and laying 50 mm thick heavy-duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring.
 - b) Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand: 4 stone aggregates 12.5 mm 20 well graded) and
 - c) top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardener mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete.
- vi). Supply and fixing of metal frame bed for each worker accommodation shed of size min. 6 feet by 3 feet and min. 3-inch thick coir mattress for each bed. Top of bed shall be made of minimum 18 mm thick ply wood board using standard quality commercial plywood. Bed frames shall be strong and durable enough for comfortable and standard use.

Note: Make & model shall be approved from BHEL Engineer-In-charge before procurement.

- vii). Supply and fixing of calibrated energy meter (digital) separately for each shed i.e. 1 no. for each shed.

f) Electrical Guidelines: -

- i). Illumination Design Requirements
 - Lighting system shall be designed using best engineering practices ensuring **uniform, reliable, glare-free** illumination.
 - Lighting fixtures must be finished to avoid bright spots from direct or reflected light.
 - Diffusers/louvers shall be made of **impact-resistant, non-yellowing polystyrene**.
- ii). Minimum Illumination Levels & Fixture Types

Location	Avg. Lux Level	Minimum Fixture Requirement
Inside Sheds	200 Lux	LED Batten/Tube, IP20 or better
Kitchen & Toilets	200 Lux	LED Batten/Tube/Downlighter, IP54 or better
Street Lighting	20 Lux	LED street lights, IP55 or better
Peripheral Lighting	10 Lux (min. 10m width from wall)	LED street/flood lights, IP55 or better

- iii). Lighting System Components
 - System shall include distribution boards, isolating lighting transformer, lighting panels, fixtures, junction boxes, receptacles, switch boards, poles/masts, conduits, cables and wires.
 - Coverage must include interior sheds, toilets, kitchen, street lighting, and area lighting.
- iv). Outdoor Lighting Control
 - All outdoor lighting must operate through an **automatic synchronous timer**.
 - Bypass provision shall be included in the lighting panel.
- v). LED Performance Requirements
 - Minimum LED chip efficacy: **≥ 120 lm/W**.
 - Minimum luminaire efficacy: **≥ 100 lm/W**.

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- Indoor LED colour temperature: $\geq 5700\text{K}$ (cool daylight).
- Outdoor LED colour temperature: $\geq 4000\text{K}$.
- vi). Ceiling Fans
 - Provide **minimum 1 ceiling fan per 10 sq.m** area.
 - Fans shall be:
 - a) 240V $\pm 10\%$, 50 Hz single-phase,
 - b) Class 'E' or better insulated motor,
 - c) 1200 mm sweep, aerodynamically balanced aluminium blades,
 - d) BEE 5-star rated,
 - e) With stepped electronic regulator,
 - f) PF not less than 0.9.
- vii). Electrical Socket Outlets
 - Provide at least **one 6/16A, 240V AC universal socket** per 10 sq.m area.
 - Install sockets at an ergonomically appropriate operating height.
- viii). Street & Peripheral Lighting
 - Design street and peripheral lighting as per applicable engineering guidelines.
 - Peripheral lighting:
 - a) **Minimum 70W LED** fixture at every shed column.
 - b) **Minimum 120W LED** if column spacing exceeds 5 metres.
- ix). Flood Lights / High Mast
 - Provide flood light poles/high mast lighting in recreation areas based on site requirements.
- x). Illumination Testing & Compliance
 - Contractor must **demonstrate and record** average lux levels for all designated areas after installation.
 - Illumination levels must meet specification requirements to the satisfaction of the **Engineer-in-Charge**.

3). Compliances of Guidelines: -

The contractor shall maintain the labour colony for its workmen as per BHEL guidelines. 0.25 % of every RA Bill shall be linked on certification from BHEL for compliance with the guidelines of labour colony.

In case labour establishment is not completed as per the layout drawing and compliance with statutory norms/BHEL Guidelines and any penalty is imposed by Customer, same shall be recovered from contractor's RA Bill.

Regular visit of workmen establishment shall be done by team from BHEL to ensure implementation of above guidelines. Any irregularities observed shall have to be rectified by agencies on immediate basis.

In case, the report submitted by BHEL team is not satisfactory, necessary actions including recoveries (0.25% of RA Bill value) shall be done as per contract. In addition to the recoveries as per contract (0.25% of RA Bill value), expenses incurred (if any) for maintenance & rectification by BHEL shall be recovered from agency along with 5% overheads.

In case Owner/Customer specific guidelines & drawings w.r.t worker's establishment are available in any project, the same shall prevail over and above the BHEL guidelines. Also, in case of conflict of guidelines stipulated in BHEL HSE documents, the more stringent guidelines shall prevail.

Any other welfare measures which the Central Government considers, under the set of circumstances, as required for decent life of workers shall be ensured as per following applicable Labour Laws: -

- Contract Labour (Regulation & Operative) Act, 1970,

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Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

- Inter-State Migrant Workmen (Regulation of Employment and Condition of Services) Act, 1979,
- The Building and Other Construction Workers Act, 1996.
- Labour Code on Occupational Safety, Health and Working Conditions issued by Government of India

Central Procurement Cell (CPC), BHEL-PSHQ

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Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

Guidelines for Maintenance of Facilities at Labour Colony

Formation and Operation of Common Management Association (CMA) for Labour Colony & Medical Centre

1. Purpose

A "Common Management Association (CMA)" shall be formed to ensure uniform management, maintenance, and monitoring of the Labour Colony and Medical Centres constructed at Project Sites. The CMA shall aim to maintain consistent living, health, and welfare standards for all workers through shared responsibility, coordinated management, and standardized procedures.

2. Scope

This SOP/Guidelines shall apply to all contractors, subcontractors, and service providers engaged at the project site who are responsible for labour accommodation and welfare facilities, including medical centres and ambulance services.

3. Objectives

The primary objectives of the CMA are to:

- Establish a common management framework for Labour Colony and Medical Centres constructed at Project Sites.
- Ensure compliance with statutory and contractual welfare, health, and safety standards.
- Promote efficient use of shared resources such as medical staff, ambulances, and infrastructure.
- Standardize inspection, recordkeeping, and reporting practices.
- Facilitate joint welfare, health, and awareness programs for all workmen.

4. Composition of the CMA

The CMA shall comprise the following members: -

BHEL Project Director	Chairperson
BHEL Site HR	Secretary
BHEL Package In charge	Executive Member
Welfare/HSE (Health, Safety & Environment) Officer	Member (HSE)
One Representative from Each Major Contractor	Members (Working)
Senior Doctor / Chief Medical Officer	Medical Advisor
Nominated Contractor Representative (rotational every 6 months)	Secretary / Coordinator
Finance/Accounts Officer	Accounts Officer

4.1 Formation of Working Committees

To ensure effective day-to-day management of the Labour Colony and Medical Centre, the CMA shall form two dedicated **Working Committees** as follows:

A. Cleanliness & Housekeeping In charge

- **In-Charge:** Nominated by Project Director

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The Cleanliness & Housekeeping In charge shall:

- Conduct weekly inspections and record findings in the **Colony Inspection Register**.
- Identify maintenance issues and coordinate with contractors for timely rectification.
- Verify availability of cleaning materials, consumables, and manpower.
- Recommend improvements in hygiene standards, pest control measures, and sanitation infrastructure.

The In charge is authorized to:

- Issue instructions to all contractors regarding cleanliness and housekeeping improvements.
- Direct immediate corrective actions in case of hygiene deficiencies or unsafe conditions.
- Submit non-compliance reports to CMA Chairperson for necessary action, including penalties as per contract.
- Recommend temporary stoppage of colony facilities if conditions pose a health risk.

B. Medical & Health Services Committee (MHSC)

- **In-Charge:** BHEL HSE Officer

The Medical & Health Services In charge shall:

- Monitor functioning of the Medical Centre, availability of doctors, nurses, and ambulance staff.
- Ensure adequate medicines, consumables, and life-saving equipment in the Medical Centre.
- Conduct monthly health check-ups, vaccination drives, and awareness programs for workers.
- Review patient registers, incident reports, and emergency response records.
- Verify ambulance logbooks, maintenance, and 24×7 readiness.
- Coordinate with nearby hospitals for referrals and emergency support.
- Identify gaps in medical preparedness and propose enhancements.

The In charge is authorized to:

- Direct medical staff to ensure compliance with CMA standards and statutory requirements.
- Recommend immediate procurement of essential medicines or equipment during shortages.
- Authorize emergency use of ambulance or medical facilities without delay.
- Report non-compliance or negligence by any contractor to the CMA Chairperson.

4.2 Reporting

- Each committee shall submit a **Weekly Report** to the CMA Secretary.
- Key findings, non-compliance issues, and recommendations shall be reviewed in the monthly CMA meeting.

5. Responsibilities of CMA: -

5.1 General

- Ensure smooth operation and upkeep of labour colonies and medical centres.
- Conduct monthly inspections and audits to ensure compliance with approved standards.
- Develop and implement uniform maintenance and welfare procedures.
- Review and address issues related to worker accommodation, sanitation, and healthcare.

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5.2 Labour Colony Management

- Maintain cleanliness, hygiene, lighting, water supply, power, and sanitation systems.
- Ensure availability of safe drinking water and waste disposal arrangements.
- Oversee canteen, recreational, and welfare facilities.
- Attend to labour grievances promptly and maintain a grievance register.
- Ensure regular cleaning, disinfection, and maintenance of all toilets, bathrooms, and wash areas through a designated housekeeping agency. Proper usage of cleaning chemicals, disinfectants, and daily checklists shall be mandatory.
- Engage a separate specialized agency for landscaping, garden development, greenery improvement, and routine maintenance. The agency shall also support overall colony cleanliness and upkeep of open spaces.

5.3 Medical Centre Management

- Ensure 24 x 7 availability of doctors, nurses, and ambulance service.
- Procurement & Maintain adequate stock of medicines, consumables, and emergency equipment.
- Conduct regular medical check-ups, vaccination drives, and health awareness programs.
- Maintain patient records, stock registers, and incident reports in prescribed formats.
- Medicines & consumables shall be of high standard/reputed brands.

5.4 Labour Entry, Exit & ID Card Management

The CMA shall ensure the following procedures for control and security of labour movement at the Labour Colony and Project Site:

5.4.1 ID Card Issuance

- All workers shall be issued a **unique Labour ID Card** by their respective contractors upon joining.
- The standard format for labour ID cards shall be finalized by the CMA.
- The CMA shall maintain a **centralized Labour ID Register** indicating worker details, contractor name, date of issue, and validity.
- No worker shall be allowed entry into the Labour Colony or Project Site without a valid ID card.

5.4.2 Entry & Exit Control

- Entry and exit from the Labour Colony shall be controlled through a **security gate**, where ID cards must be shown and verified.
- Security personnel shall maintain a **Daily Attendance/Movement Register** for tracking resident workers.
- Workers returning after leave/holiday must present their ID card for re-validation.

5.4.3 Surrender of ID Cards

- **Workers proceeding on long leave (above 3 days)** shall surrender their ID cards to their contractor's representative or security in-charge.
- **Workers resigning or completing their work** must compulsorily surrender the ID card before final exit from the project.
- Contractors shall notify the CMA of all labour exits, and the surrendered ID cards shall be recorded and safely retained for audit.

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5.4.4 Misuse Prevention

- Any lost or damaged ID card must be reported immediately to the contractor and CMA.
- Duplicate ID cards may be issued only after due verification and approval from the CMA Secretary.
- Misuse of ID cards, unauthorized entry, or allowing others to use one's ID shall be treated as a security violation and dealt with as per project rules.

5.4.5 Monthly Review

- The CMA shall review:
 - Total labour count
 - Issued and surrendered ID cards
 - Discrepancies found during entry/exit audit
- Any mismatch shall be escalated to the Chairperson for necessary action.

6. Meetings

- CMA meetings shall be conducted once every month or more frequently as required.
- Minutes of Meetings (MoM) shall be prepared by the Secretary and circulated within 3 working days.
- The Chairperson shall review the previous month's action points for closure and compliance.

7. Reporting

- CMA shall prepare a Monthly Status Report including:
 - Labour colony occupancy and maintenance condition
 - Medical centre operations and staff attendance
 - Health check-ups, awareness sessions, and medical incidents
 - Issues identified and corrective measures taken
- The report shall be submitted to the BHEL HR Head for review and record.

8. Funding and Cost Sharing

8.1 A **Common Welfare Fund** shall be created to meet expenses related to the operation and maintenance of the labour colonies and medical centres under the CMA.

8.2 All contractors working under the project shall contribute to this fund as follows:

- **Fixed Expenses:**
Fixed expenses (such as infrastructure maintenance, common staff salaries, utilities, and insurance) shall be distributed among all contractors in proportion to their individual contract value on pro-rata basis.
- **Running Costs:**
Running or variable expenses (such as medicines, consumables, ambulance fuel, and equipment servicing) shall be shared as per actual usage or consumption, based on monthly records maintained by the CMA.

8.3 The CMA Secretary shall maintain a detailed cost register reflecting both fixed and running cost allocations.

8.4 All expenditures shall be approved by the CMA Chairperson and verified by the Project Management / Accounts team before disbursement.

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Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

8.5 A monthly financial statement shall be circulated to all member contractors for review and reconciliation.

9. Compliance and Audit

- The CMA shall ensure strict compliance with Labour Welfare, Health, and Safety Regulations applicable to the project.
- Periodic audits and inspections shall be conducted by the Project/Corporate/ Headquarters HR & HSE Teams.
- Non-compliance or negligence by any contractor shall be reported to Project Management and may lead to penalty or deduction as per contract conditions.

10. Coordination with External Agencies

The CMA shall coordinate with:

- Local health and labour authorities for inspections and compliance.
- Nearby hospitals and emergency services for referrals and medical emergencies.
- Project HSE and Welfare Officers to align operations with overall project health and safety strategy.

11. Documentation

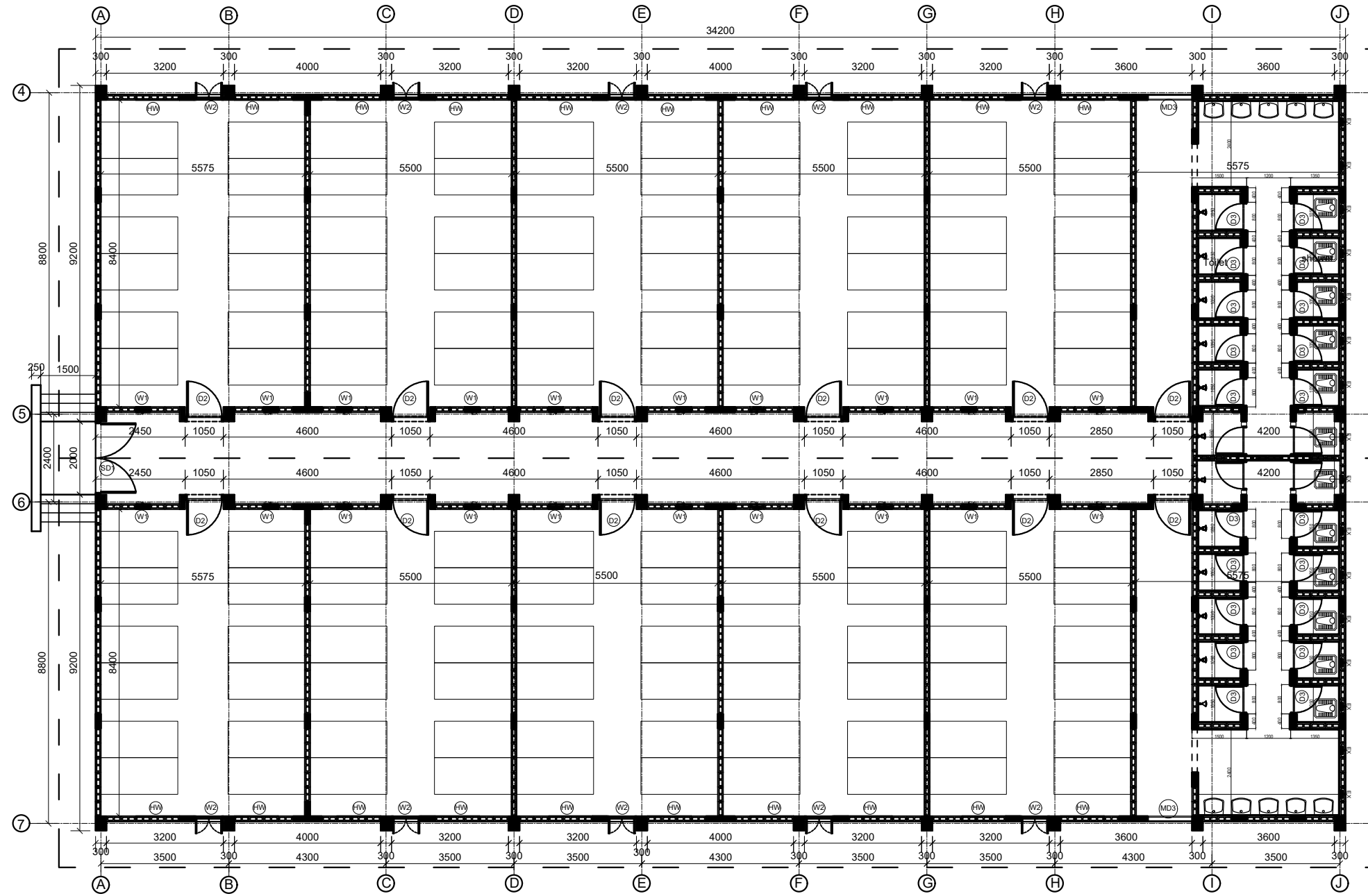
The following records shall be maintained and updated regularly under CMA supervision:

- Labour Colony Inspection Register
- Medical Centre Patient Register
- Medicine & Equipment Stock Register
- Ambulance Log Book
- Health Check-up & Awareness Program Register
- Monthly Meeting Minutes and Status Reports
- Cost Register (Fixed & Running Expenses)
- All documents/records shall also be prepared and saved in Digital format.

12. Review and Continuous Improvement

- The CMA's performance and activities shall be reviewed quarterly by Project/Corporate/ Headquarters HR & HSE Teams.
- Worker feedback and inspection findings shall be used for continuous improvement.
- This SOP shall be revised annually or as required by management or statutory authorities.

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TYPICAL LAYOUT FOR WORKMEN'S SHED (120 nos.)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRE AND ELEVATIONS ARE IN METRE U.N.O.
2. DRAWING SHALL BE READ IN CONJUNCTION WITH THE TERM & CONDITIONS, AS SPECIFIED IN ANNEXURE A-STANDARD GUIDELINES.
3. GENERAL LAYOUT PLAN FOR ACCOMMODATING 120 WORKERS WITH TOILET FACILITIES HAVE BEEN PROVIDED IN THE DRAWING. IN CASE, AGENCIES ARE REQUIRED TO DEPLOY MORE/LESS NUMBER OF WORKMEN AT SITE, THE SIZE/ NO. OF SHED MAY BE INCREASED/DECREASED ACCORDINGLY IN CONSULTATION WITH BHEL SITE.
4. THE TYPE AND NATURE OF CONSTRUCTION FOR WORKER ACCOMMODATION SHEDS SHOULD BE PREFERABLY UNIFORM FOR ALL THE AGENCIES SO AS TO BRING OUT A PLEASANT AESTHETIC VIEW OF THE WORKER'S ESTABLISHMENT.
5. FOR WOMEN WORKERS DEPLOYED AT SITE, EXCLUSIVE SEPARATE FACILITIES (SHEDS, BATHROOMS, ETC) CONSIDERING THE PRIVACY & SAFETY OF WOMEN SHOULD BE PROVIDED BY THE AGENCY.
6. THE CLEAR CEILING HEIGHT OF THE BARRACKS SHOULD BE MINIMUM 3 METRES.
7. DOORS & WINDOWS SHALL BE OF WOOD/METAL MAKE.
8. LAND FOR LABOUR COLONY SHALL BE ARRANGED BY CONTRACTOR AT THEIR OWN COST AS PER AVAILABILITY OUTSIDE PROJECT AREA PREFERABLY WITHIN 5KM. NECESSARY LEVELLING/DRESSING OF LAND SHALL BE DONE BY THE CONTRACTOR.
9. WATER & ELECTRICITY FOR WORKER ESTABLISHMENTS SHALL BE SUITABLY ARRANGED BY THE AGENCY WITH PROPER ELECTRICAL WIRING AND FITTING.
10. SUFFICIENT NUMBERS OF TOILETS, URINALS AND BATHING ROOM WITHIN EACH BARRACK/SHED WITH COMPLETE WATER SUPPLY SYSTEM. MINIMUM 1 NOS. URINAL CUM TOILET FOR EVERY 10 PERSONS AND 1 NO. BATHING ROOM FOR EVERY 10 PERSONS SHOULD BE ENSURED.
11. SEPTIC TANK/BIO-DIGESTER WITH PROPER INLET/OUTLET CONNECTION TO BE PROVIDED FOR EACH SHED.
12. PROPER APPROACH ROAD TO THE LABOUR COLONY & ITS CONNECTIVITY WITH EACH BARRACK WITH NECESSARY HARD SURFACING PREFERABLY WITH BRICK FLAT SOLING/PAVER BLOCKS/PCC PAVING.



BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
CENTRAL PROCUREMENT CELL (CPC)
PSHQ

TITLE

TYPICAL LAYOUT FOR WORKMEN'S SHED (120 nos.)