



## **Bharat Heavy Electricals Limited**

**High Pressure Boiler Plant**

**Tiruchirappalli – 620 014. India**

**Civil Engineering Department (Factory)**

| <b>TENDER DOCUMENT (PRICE BID)</b>  |   |  |
|---|---|--|
| <b>Name of work</b>   | : | <b>Annual Maintenance contract for Structural works Including structural fabrication, erection, painting, roof sheeting and FRP lining in BHEL-Trichy, factory complex</b> |
| <b>Tender Schedule No</b>   | : | <b>CF: TS: 015 / 20 - 21</b>   |
| <b>Estimate Cost</b>  | : | <b>Rs. 50.00 Lakhs + Applicable GST</b>  |
| <b>Tender Evaluation Cost</b><br>(50% max based on split and award condition for 3 vendors) | : | <b>Rs. 25.00 Lakhs</b>   |
| <b>EMD</b>  | : | <b>Rs. 50,000/-</b><br>(Rupees Fifty Thousand only)  |
| <b>Period of Contract</b>   | : | <b>15 (Fifteen) Months</b>   |
| <b>Date of Notification</b>   | : | <b>19.11.2020</b>  |
| <b>Last Date of Receipt of Tender</b>   | : | <b>12.12.2020 @ 10:00 hrs.</b>   |
| <b>Date of Tender Opening</b>   | : | <b>12.12.2020 @ 10:00 hrs.</b>   |



**BHARAT HEAVY ELECTRICALS LIMITED**  
**TIRUCHIRAPPALLI - 620 014**

**SCHEDULE - A**

**Name of Work:** **Annual Maintenance Contract for Structural works including structural fabrication, erection, painting, roof sheeting and FRP lining in BHEL - Trichy, Factory Complex**

I / We \_\_\_\_\_ have read the condition of tender attached here to and agree to abide by such conditions. I / We offer to execute the works in **CF: TS: 015 / 20 - 21** for a period of **15 (Fifteen) months** at the percentage below / at par / above the rates contained in Bill of Quantities appended **below from Page No. 03.**

I / We further agree to sign an Agreement Bond to abide by the General Conditions of Contract and to carryout all works according to the specifications for materials and works of Bharat Heavy Electricals Limited, Tiruchirapalli-620 014. In case of acceptance of the tender by the BHEL, I / We bind myself / ourselves to execute the contract documents within 7 days after notice that my/our tender has been accepted and this contract has been awarded to me / us and thus failing which I/We shall have no objection to the forfeiture of the Earnest Money amount to **Rs. 50,000.00** lodged with Bharat Heavy Electricals Limited, Tiruchirapalli-620 014.

I / We further agree to include all tools & plants and consumables required for the work in my / our scope but required power and water will be provided at one point by BHEL at free of cost and based on this, we have quoted our percentage.

**Note:** Details & Quantities of each item of work shown in the BILL OF QUANTITIES are only approximate and the same is appended below. They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the overall percentage quoted by the contractor **Below (100-X) % / At par (100%) / Above (100+X) %** of the rates provided in Bill of Quantities appended below from **Page No. 03.**

| Sl. No. | Approx. Value of work                                   | Common single Percentage Rate (Below (100 - X)% / At Par (100%) / Above (100 +X) %) to be quoted with respect to the rates provided in the Bill of Quantities (all items as enclosed in the Price Bid of the Tender Document) from <b>Page No. 3</b> |          |
|---------|---|--|----------|
|         |   | In Figures   | In Words |
| 1.      | Rate shown in Bill of Quantities (Excluding GST = 100%) |  |          |

**Note: BHEL estimate total 100% is given below. Contractor has to quote Common single percentage. Below (100-X) % / At par (100%) / Above (100+X) %, with respect to the estimate total in Bill of Quantities below, at page 2 both in figures and in words.**

**BHEL / TRICHY-620 014 , CIVIL ENGINEERING DEPARTMENT (FACTORY)**

**BILL OF QUANTITIES**

**Name of work:** **Annual Maintenance Contract for Structural works including structural fabrication, erection, painting, roof sheeting and FRP lining in BHEL – Trichy, Factory Complex**

| Sl. No. | SR No. | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|--------|--|-------|--------------|
| 1       | 0501   | Collection from BHEL stores and transporting the raw structural steel sections to the contractor's site fabrication shop, fabrication of steel work including all materials going into the process of fabrication and forming an integral part of the steel work together with all shop welding including using low hydrogen electrode wherever necessary, all as per drawings and standard specifications. Rate includes delivery of fabricated steel work at erection site ready for erection, including preparation and supply of drawing office despatch list for BHEL's approval, all charges for packing (wherever called for) handling, conveying, stacking and all other incidental charges both for raw materials and fabricated steel works. Rate excludes raw structural steel sections which will be supplied by BHEL at stores at free of cost. | MT    | 12,371.75    |
| 2       | 0502   | Same as 0501, but excluding all consumables which will be supplied by BHEL at Stores at free of cost.  | MT    | 9,505.75     |
| 3       | 0503   | Same as 0501, but fabrication using ERW / seamless steel tubes with necessary plates etc. instead of structural steel sections for columns, trusses, purlins, tie runners etc. (all tubular). Rate excludes ERW / seamless steel tubes, plates etc. which will be supplied by BHEL at stores at free of cost.  | MT    | 13,608.90    |
| 4       | 0504   | Same as 0503, but excluding all consumables which will be supplied by BHEL at Stores at free of cost. (Also excludes energy charges)   | MT    | 10,456.30    |
| 5       | 0505   | Carrying from stacks at erection site to erection positions and erection of fabricated steel work including all handling, conveying, assembling, hoisting, erecting in position and site welding and or bolting, alignment of structures, all as per drawings and standard specifications. Rate includes bolts and nuts, hire for welding tools and plants, labour etc., but excluding cost of fabricated components. If required, power will be given free of cost by BHEL. Weight of fasteners will not be accounted for payment.  | MT    | 6,667.90     |
| 6       | 0506   | Same as 0505 but excluding all consumables such as electrodes, bolts, nuts, washers etc. which will be supplied by BHEL at Stores at free of cost.   | MT    | 6,364.10     |

**CONTRACTOR**

**ACCEPTING OFFICER**

| Sl. No. | SR No. | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|--------|--|-------|--------------|
| 7       | 0507   | Fabrication and fixing in position of M.S frames for cable trench cover slabs in required sizes using M.S angles, plates, flats etc., which will be supplied by BHEL at Stores at free of cost, all as per drawings and instructions of Engineer-in-charge. Rate includes conveyance of raw materials from BHEL stores to contractors fabrication shop, fabrication charges including cutting, welding, preparing and supplying DODL's for BHEL's approval, supply of fabricated frames at site of work, fixing in proper position etc., complete.   | MT    | 7,550.25     |
| 8       | 0508   | Same as 0507 but excluding all consumables such as electrodes which will be supplied by BHEL at Stores at free of cost.  | MT    | 6,910.30     |
| 9       | 0509   | Conveying from BHEL stores to site of work cutting to size and fixing in position of 75 x 75 x 6 mm or other size M.S angles in required lengths for forming the rebates in cable trench (for fixing the cable trench cover slabs) including welding in position of dowel bars to the angles and embedding the angle iron frame in the flooring concrete in proper line and level, all as per drawings and instructions of Engineer-in-charge. Rate includes loading, unloading, handling, welding and other incidental charges, preparing and supplying of DODL's for approval etc. complete, but excluding cost of M.S angles and dowel bars which will be supplied by BHEL at Stores at free of cost. | MT    | 8,041.55     |
| 10      | 0510   | Same as 0509 but excluding all consumables which will be supplied by BHEL at Stores at free of cost. (Also excludes energy charges)  | MT    | 7,397.25     |
| 11      | 0511   | Fabrication and fixing in position of M.S inserts out of M.S plates, flats, rounds, angles etc., including necessary lugs made of rounds or flats, sizing and cutting to required lengths, threading, bolting and welding as required and placing the same in position in both plain and reinforced cement concrete members, including adjusting the shuttering if necessary, tying and holding to correct level and line. Rate includes cost of all materials, labour etc., complete but excluding raw steel sections which will be supplied by BHEL at Stores at free of cost.   | KG    | 28.20        |
| 12      | 0512   | Same as 0511 but excluding all consumables which will be supplied by BHEL at Stores at free of cost. (Also excludes energy charges)  | KG    | 26.80        |
| 13      | 0513   | Fabrication of various sizes steel partitions (not exceeding 4.00 x 2.40 m) using M.S angles for outer frame work and flats for vertical and horizontal stiffeners etc. Bottom panels are to be welded with M.S sheets for a height of one metre (approx.) and top panels with BRC fabric (75 x 25 mm) All as per drawings and as directed by the Engineer-in-charge. Rate includes providing necessary holes for inter connections and also base plates for fixing on the floor, all labour, electrodes, conveyance of raw materials from stores to fabrication site, etc. complete, but excluding cost of steel sections and BRC fabrics which will be supplied by BHEL at Stores at free of cost.     | M2    | 247.95       |
| 14      | 0514   | Same as 0513 but excluding all consumables which will be supplied by BHEL at Stores at free of cost.   | M2    | 216.65       |

CONTRACTOR

4

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION   | Units | Rate (Rs. P) |
|---------|--------|---|-------|--------------|
| 15      | 0515   | Erection of fabricated steel partitions including handling, leading, assembling, erecting in position, site bolting, riveting, site welding etc., wherever required including cost of drilling holes in concrete floor and grouting bolts for fixing the base plates of steel partitions wherever necessary, all as per instructions of Engineer in charge. Rate includes all labour, incidentals etc., complete.   | M2    | 131.60       |
| 16      | 0516   | Same as 0515 but excluding all consumables which will be supplied by BHEL at Stores at free of cost.  | M2    | 124.55       |
| 17      | 0517   | Fabrication of S.S tubes / ERW tubes to the design specified for railing. Rate includes conveyance of raw materials and fabricated railings, fabrication charges, preparation of DODLs, incidentals etc., complete. Tubes and other steel materials required for the work will be supplied by BHEL at Stores at free of cost.   | MT    | 12,371.75    |
| 18      | 0518   | Carrying from stacks to site of work and fixing in position in line, level and alignment of fabricated railings at places as directed by the Engineer-in-charge. Excavation for pits and concrete bed will be paid separately under relevant items.   | MT    | 4,857.50     |
| 19      | 0521   | Providing and fixing in position of M.S rivets of required sizes at site of work.   | KG    | 116.55       |
| 20      | 0522   | Welding by gas plant or electric plant including transportation of plant to site of work, cost of consumables, labour charges etc. complete.  | CM    | 2.65         |
| 21      | 0523   | Tightening of loosened bolts and nuts of all connections of steel structures such as columns, truss girders, trusses, crane girders, bracings, purlins etc. of buildings at all heights. Rate includes drilling holes wherever required, providing/replacement of bolts and nuts, (excluding cost of bolts and nuts), labour etc. Payment will be made based on the corresponding floor area of the buildings.  | M2    | 12.60        |
| 22      | 0526   | Removing cobwebs from the structures of buildings at all heights including cleaning of roof walls, undersurface of A.C sheets etc., complete. Rate includes providing working platforms, ladder, safety nets, labour etc., complete. Payment will be made based on the floor area of the buildings.   | M2    | 5.20         |
| 23      | 0541   | Conveying the Gantrail MKVII 122 mm wide steel reinforced vulcanized rubber pad from BHEL stores to site of work and lifting the same to EOT crane girder level, laying, aligning and fixing in proper position along the top of crane girder at 8.00 m from floor level including sizing and correct to alignment by using chisel and filing the edges to match with the adjoining pad. Rate includes all labour, tools and plants and all other incidentals etc., complete.   | RM    | 91.50        |
| 24      | 0542   | Conveying the Gantrail weldable base type 9116/10/32 adjustable crane rail clip including captive bolts, nuts, washers and integral vulcanized rubber nose from BHEL stores to site of work, lifting to EOT crane girder level and fixing them by welding using special electrodes to hold the EOT crane rail in correct level and alignment. Rate includes all labour, scaffolding, tools and plants, tightening the clamps after rail erection etc., complete and all other incidentals. Special electrodes and power will be supplied by BHEL at free of cost. | SET   | 137.25       |

CONTRACTOR

5

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|--------|--|-------|--------------|
| 25      | 0543   | Supply, drilling and driving 10/12 mm dia. anchor fasteners of length not exceeding 125 mm at 500 mm both sides of crane rail having tensile and shear capacity of minimum 1.50 MT into the RCC crane girder as indicated in the drawing to secure cover plate rigidly with the crane girder. Rate includes cost of fasteners, labour for drilling holes, etc., complete, all as per the instructions of Engineer-in-charge. Rate also includes provision for wastage of fasteners or repeat work in driving of fasteners due to infringement of reinforcement if any and also filling up the unwanted holes drilled on concrete girder due to repeat work with suitable high strength non-shrink cement.  | SET   | 186.90       |
| 26      | 0544   | Removing the old rigidly welded rail clamp and bolt by gauging the welded joint without damaging the bolt. Rate includes labour, consumables, tools and plants and making good all damages by welding and grinding the top surfaces of girder.   | SET   | 52.15        |
| 27      | 0546   | Providing fibre glass reinforcement with UV resistant polyurethane compound lining, to a minimum thickness of 3 mm on newly fabricated M.S gutters at floor level and jointing and filling the gap finishing etc., after erection at a height ranging from 12-24m from FFL, and making the gutters leak proof as per instructions of Engineer-in-charge. The work consists of thoroughly cleaning the surface of the gutters and applying an undercoat of resin over which the alternate layers (min. three layers) of fibre strand and resin to the required thickness before applying polyurethane compound coating at top with one coat of Gel coat with surface mat and polish to provide even surface, preparation of surface with fibre reinforced plastic with 50 microns thick polyurethane lining, testing, etc., complete all as per instruction of Engineer-in-charge. Rate quoted shall also include cost of labour, material with all taxes, scaffolding charges, if any and all other incidental charges etc., complete.   | M2    | 956.40       |
| 28      | 0547   | Providing fibre glass reinforcement with UV resistant polyurethane compound lining, to a minimum thickness of 3 mm on M.S gutters of factory buildings at a height ranging from 12-24m from FFL, and making the gutters leak proof as per instructions of Engineer-in-charge. The work consists of removing the adjoining North light Glazing, A C Sheets and existing paint in the gutter completely and thoroughly cleaning the surface including the damaged portion of the gutters and applying an undercoat of resin over which the alternate layers (min. three layers) of fibre strand and resin to the required thickness before applying polyurethane compound coating at top with one coat of Gel coat with surface mat and polish to provide even surface, preparation of surface with fibre reinforced plastic with 50 microns thick polyurethane lining, testing, refixing the removed north light glazing and AC sheets and also filling with fibre reinforcement prior to lining in areas badly worn out both in the bottom as well as sides of gutters etc., complete all as per instructions of Engineer-in-charge. Rate quoted shall also include cost of labour, material with all taxes, scaffolding charges, if any and all other incidental charges etc., complete (The Contractor is required to take all safety precautions during working and obtain work permit from the concerned departments. Working hour is restricted as it depends on shutdown by production department that may not be more than 4 hours at a stretch and only intermittent). | M2    | 1,259.20     |

CONTRACTOR

6

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION   | Units | Rate (Rs. P) |
|---------|--------|---|-------|--------------|
| 29      | 0549   | Welding of 90 Lbs. / CR 80 rail joints erected already in alignment in crane girders / gantry girder up to + 14.00 meter including edge preparation, preheating welding using special type electrode (Elec grade 11018). The rate includes all labour charges, electrodes and incidental charges for dismantling the rail from its original position, edge preparation, preheating, welding, post heating as per the instructions of BHEL Engineer in charge. Also include cost of consumables for pre heating and post heating and labour charges for re fixing the 90 Lbs. / CR 80 rail to alignment, level after welding etc., complete.   | JOINT | 2,170.30     |
| 30      | 552    | Supply and fixing cup type rail clamp with fittings over the insert plate which is embedded in the concrete. Rate includes welding including cost of consumables, all labour and other incidentals etc. complete, all as per instructions of Engineer-in-charge.  | Each  | 252.45       |
| 31      | 553    | Collection from BHEL stores and transporting of rails CR 80 / R 45 etc to the contractor's site fabrication shop, straightening the rails using Gim screw or any other equipments, preparation of edge for welding the rail joints as per drawing and erecting in position at all elevations (i.e, in floor or over the girders) using cup type rail clamps with fittings. The scope includes rail alignment after erection, fixing in position, welding the joints by using approved electrode (E 11018 for CR 80 & E7018 for R 45 rails), pre heating & post heating the joints, grinding the joints neatly etc. as per drawings and instruction of Engineer in charge. Rate shall include cost of providing one coat of red oxide primer as per IS specification and supply of DODL's for BHEL approval in compact disc with two copies of print outs. Quoted rate shall also include cost of consumables, hire charges for tools and plants, labour and incidentals etc. complete but exclude cost of rails which will be supplied by BHEL at free of cost. | MT    | 11,500.00    |
| 32      | 701    | Carrying , hoisting and fixing in position of 0.47 to 0.50mm thick colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, North light curves, end curves, etc., for roofing at all heights with necessary xylon coated self-tapping / self-drilling screws with EPDM washers at every ribs etc., complete. All as per drawings, manufacturers specifications and instructions of Engineer-in-charge. Rate includes cost of self-tapping/ self-drilling screws with EPDM washers etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, cost of providing life line and other provisions for safety, scaffolding and all other incidental charges etc., complete but excluding cost of Aluminium zinc alloy coated high tensile steel sheets and its accessories such as ridge pieces, barge boards, curves, etc., which will be supplied by BHEL at Stores at free of cost. The payment will be made for the actual laid area only.       | M2    | 88.60        |

CONTRACTOR

7

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION   | Units | Rate (Rs. P) |
|---------|--------|---|-------|--------------|
| 33      | 702    | Carrying , hoisting and fixing in position of 0.47 to 0.50mm thick colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, etc., for side sheeting at all heights with necessary xylon coated self-tapping / self-drilling screws with EPDM washers at every valleys, etc., complete .All as per drawings, manufacturers specifications and instructions of Engineer-in-charge .Rate includes cost of self-tapping/ self-drilling screws with EPDM washers etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, cost of providing life line and other provisions for safety, scaffolding and all other incidental charges etc., complete but excluding cost of Aluminium zinc alloy coated high tensile steel sheets and its accessories such as ridge pieces, barge boards, curves, etc., which will be supplied by BHEL at Stores at free of cost. The payment will be made for the actual laid area only.   | M2    | 114.35       |
| 34      | 703    | <p>Supplying at site of work, hoisting and fixing in position of 0.47 to 0.50mm thick colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, North light curves, end curves, etc., as per technical specifications given in note below for roofing at all heights with necessary xylon coated self-tapping / self-drilling screws with EPDM washers at every ribs etc., complete. All as per drawings, manufacturers specifications and instructions of Engineer-in-charge .Rate includes cost of all materials like colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, etc., wherever required self-tapping / self-drilling screws with EPDM washers at every ribs etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, providing lifeline and other provisions for safety, and all other incidental charges etc., complete. The payment will be made for the actual laid area only.</p> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. The Aluminium zinc alloy coated high tensile steel sheets and specials shall be 0.47 to 0.50mm thick (TCT) Aluminium (around 55%, Zinc around 43%) alloy coated high tensile steel (Yield strength 550 MPA) colour coated rib profile sheets as per ASTM A792M, coating standard as per AS 1397-1933 Conforming to AZM 150 (Min Coating mass of 150 gsm) having cover width of 1000 plus or minus 10mm and over all width of 1060mm of any length to suit site conditions.</li> <li>2. About 90% area of the Aluminium zinc alloy coated high tensile steel sheets shall be colour coated with Light Blue RAL 5012 and 10% of the covered area is of with off white. All ridge pieces and barge boards are of off white.</li> <li>3. The Aluminium zinc alloy coated high tensile steel sheets shall be Pre-Primed with a Primer of 5µm and finished with a final paint coat of 17-20 µm on top surface. A single backing coat of 7-10µm should be applied on reverse side</li> </ol> | M2    | 559.80       |

CONTRACTOR

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|--------|--|-------|--------------|
| 35      | 704    | <p>Supplying at site of work, hoisting and fixing in position of 0.47 to 0.50mm thick colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, etc., as per technical specifications given in note below for side sheeting at all heights with necessary xylon coated self-tapping / self-drilling screws with EPDM washers at every valleys, etc., complete. All as per drawings, manufacturers specifications and instructions of Engineer-in-charge. Rate includes cost of all materials like colour coated Aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves, self-tapping / self-drilling screws with EPDM washers at every valleys, etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, providing lifeline and other provisions for safety, and all other incidental charges etc., complete. The payment will be made for the actual laid area only.</p> <p>Note:</p> <ol style="list-style-type: none"> <li>1. The Aluminium zinc alloy coated high tensile steel sheets and specials shall be 0.47 to 0.50mm thick (TCT) Aluminium (around 55%, Zinc around 43%) alloy coated high tensile steel (Yield strength 550 MPA) colour coated rib profile sheets as per ASTM A792M, coating standard as per AS 1397-1933 Conforming to AZM 150 (Min Coating mass of 150 gsm) having cover width of 1000 plus or minus 10mm and over all width of 1060mm of any length to suit site conditions.</li> <li>2. About 90% area of the Aluminium zinc alloy coated high tensile steel sheets shall be colour coated with Light Blue RAL 5012 and 10% of the covered area is of with off white. All ridge pieces and barge boards are of Off white.</li> <li>3. The Aluminium zinc alloy coated high tensile steel sheets shall be Pre-Primed with a Primer of 5µm and finished with a final paint coat of 17-20 µm on top surface. A single backing coat of 7-10µm should be applied on reverse side</li> </ol> | M2    | 585.6        |
| 36      | 705    | <p>Supplying at site of work, hoisting and fixing in position of 2mm thick embossed clear poly carbonate roof light sheets in specified locations and at all heights with necessary xylon coated self-tapping / self-drilling screws with EPDM washers at every ribs, etc., complete to match the profile of Aluminium zinc alloy coated high tensile steel roof sheets, as per instructions of Engineer-in-charge. The rate includes cost of poly carbonate sheets, self-tapping / self-drilling screws with EPDM washer, at every ribs, and labour charges, all scaffolding charges, tools and plants and all other incidental charges etc., complete.</p>   | M2    | 1,540.90     |
| 37      | 706    | <p>Supplying roof extractors (Turbo Air Ventilators ) of dia. 600mm or thereabouts, fixing in position on AC / Aluminium zinc alloy coated high tensile steel sheet roofs at all heights with necessary screws,, bolts etc., and finishing to match with existing roof. Rate to include cost of all labour charges for fixing the roof extractors with necessary cutting of sheets to the required size ,drilling to suit the screws/ bolts, and finishing to match the existing profile including cost of roof extractors / ventilators. All as per manufacturers specifications and as directed by the Engineer in charge</p>  | EACH  | 8,800.00     |

CONTRACTOR

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|--------|--|-------|--------------|
| 38      | 0707A  | Supply and fixing corrugated fibre glass reinforced polyester translucent roof light sheets of all colours including white of following thickness to match with the existing A.C. sheet roofing including cost of G.I. bolts, nuts, washers and bitumen washers etc., complete. Payment will be based on the laid area. FRP Sheet 1 mm thick.  | M2    | 474.60       |
| 39      | 0707B  | Supply and fixing corrugated fibre glass reinforced polyester translucent roof light sheets of all colours including white of following thickness to match with the existing A.C. sheet roofing including cost of G.I. bolts, nuts, washers and bitumen washers etc., complete. Payment will be based on the laid area. FRP Sheet 2 mm thick.  | M2    | 791.80       |
| 40      | 0708   | Supply and fixing in position of galvanised iron plain sheets of 1.60 mm thick for flashing using G.I bolts, nuts, limpet washers etc. complete bent to shape and fixed in walls with cement mortar 1:3, all as per drawings and specifications.   | M2    | 824.75       |
| 41      | 0709   | Conveying G.I sheets from BHEL stores to site of work, bent to shape and fixing in proper position for flashing fixed with G.I bolts, nuts, limpet washers etc., complete and fixed in walls with cement mortar 1:3, all as per drawings and specifications. G.I sheet alone will be supplied by BHEL at Stores at free of cost.   | M2    | 445.05       |
| 42      | 0710   | Supply and fixing in position of 6 mm thick wired glass in roof north light glazing including straightening the aluminium astrangle as required. Rate includes cost of glass, labour etc. complete.  | M2    | 988.70       |
| 43      | 0711   | Conveying from BHEL stores to site of work 6 mm thick wired glass and fixing in position for roof north light glazing including straightening the aluminium astrangle as required. Rate includes labour, conveyance and other incidentals, removing the broken glasses from its position etc. complete.  | M2    | 102.25       |
| 44      | 0723   | Conveying from BHEL stores to site of work, hoisting and fixing in position of 4 mm / 6 mm thick multi walled clear (UV coated) polycarbonate sheet for north light glazing runner (inclined and vertical) as per drawing including provision of suitable aluminium frames as required. The scope of work includes supply of aluminium frames (top and bottom) in required profiles fitted with EPDM rubber gaskets and fixing in the glazing runner using SDST screws of approved make and polycarbonate sheets are suitably placed between the aluminium frames before driving the top frame screws all as per Drg.no and as per the instructions of Engineer in Charge. The top and bottom portion of polycarbonate sheets shall be closed with aluminium U channels to prevent dust and insects. Rate shall include cost of aluminium frames, U channels, EPDM rubber gaskets, SDST screws required labour, tools and plants, etc., except polycarbonate sheets which will be supplied by BHEL at free of cost | M2    | 1,179.50     |

CONTRACTOR

10

ACCEPTING OFFICER

| Sl. No. | SR No. | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|--------|--|-------|--------------|
| 45      | 0724   | To collect and cleaning of all the damaged north light glazing materials (polycarbonate sheets) at roof top for all heights and removing/repairing the north light glazing bars (aluminium beading) wherever required in line, level and alignment as per the instructions of Engineer in charge. The aluminium beadings and polycarbonate sheets shall be re fixed using 2 nos. of 50mm X 6mm MS Hexagonal bolts, nuts and washers at top horizontal 8 nos. of 35mm X 12mm Self-drilling fasteners with EPDM washers at both the vertical sides and 2 nos. of 50mm X 12mm self-drilling screws with EPDM washers at bottom horizontal in each panel. The rate shall include cost of all labour charges, incidental charges for removing repairing and cost of all required fasteners for re fixing work but excludes cost of polycarbonate sheets and aluminium beading which will be supplied at free of cost. Payment will be made only for the actual area of repair work executed.  | M2    | 116.00       |
| 46      | 725    | Supplying at site of work, hoisting and fixing in position of 4 / 6 mm thick multi-walled clear (UV coated) Polycarbonate sheet for north light glazing / glazing in monitor type roof to suit the rows of glazing runner (inclined and vertical) as per drawing including provision of suitable aluminium frames as required. The scope of work includes supply of polycarbonate sheets, aluminium frames (top & bottom) in required profile fitted with EPDM rubber gaskets and fixing in the glazing runner using SDST screws of approved make and the polycarbonate sheets are suitably placed between the aluminium frames be-fore driving the top frame screws all as per standard specification , instructions of Engineer-in-charge. The top and bottom portion of polycarbonate sheets shall be closed with aluminium U channels to prevent dust and insects. Rate shall include cost of polycarbonate sheets, aluminium frames, U channels, EPDM rubber gaskets, SDST screws, required labour, tools and plants etc., complete | M2    | 1,800.00     |
| 47      | 0829A  | Painting with aluminium paint of approved brand and manufacture on surfaces to give an even shade, all as per standard specifications. <b>Two coats.</b>   | M2    | 61.45        |
| 48      | 0829B  | Painting with aluminium paint of approved brand and manufacture on surfaces to give an even shade, all as per standard specifications. <b>One coat</b>   | M2    | 39.15        |
| 49      | 0830A  | Painting with black anti corrosive bitumastic paint of approved brand and manufacture on surfaces to give an even shade, all as per standard specifications. <b>Two coats.</b>   | M2    | 45.55        |
| 50      | 0830B  | Painting with black anti corrosive bitumastic paint of approved brand and manufacture on surfaces to give an even shade, all as per standard specifications. <b>One coat</b>   | M2    | 30.60        |
| 51      | 0833A  | Painting one priming coat with approved primer on surfaces including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matters and scoured with wire brushes, fine steel wool scrapers and sand paper, all as per standard specifications. <b>Zinc Chromate primer</b>   | M2    | 28.35        |
| 52      | 0833B  | Painting one priming coat with approved primer on surfaces including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matters and scoured with wire brushes, fine steel wool scrapers and sand paper, all as per standard specifications. <b>Red oxide primer</b>   | M2    | 20.40        |

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| Sl. No. | SR No.  | DESCRIPTION   | Units | Rate (Rs. P) |
|---------|---------|---|-------|--------------|
| 53      | 0834A   | Painting one priming coat with approved primer over structural steel works in roof structures, columns etc., including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matters and scoured with wire brushes, fine steel wool scrapers and sand paper, all as per standard specifications.<br><b>Zinc Chromate primer</b>   | MT    | 955.35       |
| 54      | 0834B   | Painting one priming coat with approved primer over structural steel works in roof structures, columns etc., including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matters and scoured with wire brushes, fine steel wool scrapers and sand paper, all as per standard specifications.<br><b>Red oxide primer</b>   | MT    | 562.35       |
| 55      | 0835A   | Painting (excluding priming coat) on structural steel works in roof structures, columns etc. with synthetic enamel paint of approved brand and shade, brushing to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, scaffolding charges etc. complete. All as per standard specifications. <b>Two coats</b>   | MT    | 1,580.50     |
| 56      | 0835B   | Painting (excluding priming coat) on structural steel works in roof structures, columns etc. with synthetic enamel paint of approved brand and shade, brushing to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, scaffolding charges etc. complete. All as per standard specifications. <b>One coat</b>  | MT    | 937.20       |
| 57      | 0836A   | Painting (excluding priming coat) on structural steel works in roof structures, columns etc. with aluminium paint of approved brand, brushing to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, scaffolding charges etc. complete. All as per standard specifications. <b>Two coats</b>  | MT    | 1,461.85     |
| 58      | 0836B   | Painting (excluding priming coat) on structural steel works in roof structures, columns etc. with aluminium paint of approved brand, brushing to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, scaffolding charges etc. complete. All as per standard specifications. <b>One coat</b>   | MT    | 859.35       |
| 59      | 1001A22 | Dismantling / removing / demolishing as the case may be of the following by manually / mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the nearby low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge. A.C sheets from roofs and side cladding including ridges, valleys, gutters etc.  | M2    | 22.90        |
| 60      | 1001A23 | Dismantling / removing / demolishing as the case may be of the following by manually / mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the nearby low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge. G.I / Aluminium sheets / Aluminium Zinc alloy coated sheets from roofs and side cladding including ridges, valleys, gutters etc. | M2    | 49.30        |

CONTRACTOR

12

ACCEPTING OFFICER

| Sl. No. | SR No.  | DESCRIPTION  | Units | Rate (Rs. P) |
|---------|---------|--|-------|--------------|
| 61      | 1001A24 | Dismantling / removing / demolishing as the case may be of the following by manually / mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the nearby low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge. Steel structures / steel works in built up sections including bolts, nuts, cutting rivets, welding, dismembering, preparation of DODL etc.  | MT    | 1,549.00     |
| 62      | 1001A25 | Dismantling / removing / demolishing as the case may be of the following by manually/mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the nearby low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge. Steel partitions including bolts, nuts, cutting rivets, welding etc. and dismembering.  | M2    | 68.00        |
| 63      | 1001A26 | Dismantling / removing / demolishing as the case may be of the following by manually / mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the nearby low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge. North light glasses at various levels ranging from 9 to 24 metre.   | M2    | 77.55        |
| 64      | 1531    | Cleaning and removing all the unwanted things from the rain water gutters available at an elevation of 12 to 20 m from FFL and making the gutter free from all accumulations, all as per instructions of Engineer-in-charge. Scope includes thorough cleaning off all dirt, dust, silt, leaves, other foreign matters etc. complete from the gutters using wire brush without damaging to the existing treatment given in the gutters, collecting the wastes in bags, lowering and conveying the same to the floor and dumping in the low lying areas. Rate includes all labour, tools, other incidentals etc. complete. Since the work is to be carried out at elevated levels / DSL EOT crane areas, the contractor is required to take all safety precautions during working and obtain work permit from the concerned departments. Working hour is restricted as it depends on shut down by the Production department that may not be more than 4 hour at a stretch and only intermittent. | M2    | 11.30        |

**Mentioned rates excludes GST% and Quantity of work will be given in work order.**

Note:

1. Actual Bill of Quantities (Items with quantity to do the work) will be provided in the sub work order only.

**CONTRACTOR**

13

**ACCEPTING OFFICER**