



**SUMMARY OF SCHEDULE OF RATES FOR
BHAGYANAGAR GAS LIMITED
CITY GAS DISTRIBUTION PROJECT AT HYDERABAD, VIJAYAWADA AND KAKINADA
LAYING OF 6" & 4" NB U/G STEEL P/L FOR ROs CONNECTIVITY, INSTALLATION
OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| Sl. No. | Description | Indian Rupees (In Figures) | Indian Rupees (In Words) |
|---------|--|-------------------------------|---|
| 1 | Total amount of quoted price for Mainline Works SOR | | |
| 2 | Total amount of quoted price for Piping & Mechanical Works at RO SOR | | |
| 3-I | Total amount of quoted price for Structural Works SOR | | |
| 3-II | Total amount of quoted price for Civil Works SOR | | |
| 3-III | Total amount of quoted price for Electrical Works SOR | | |
| 3-IV | Total amount of quoted price for TCP Works SOR | | |
| 3-V | Total amount of quoted price for Instrumentation Works SOR | | |
| 4 | Gross Total Amount (inclusive of all applicable taxes & duties except service tax) [1+2+(3-I)+(3-II)+(3-III)+(3-IV)+(3-V)] | | |
| 5 | Service Tax @ 15.00% on 40 % of Total Amount mentioned at Sl. No. 4 above | | |
| 6 | Service Tax @ 15.00% on 40 % on free issue material of INR 95 Lakhs | 570,000 | Rupees Five Lakhs Seventy Thousand only |
| 7 | Gross Total Amount (Sl. No. 4 + 5 + 6) | | |



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| 1 | MAINLINE WORKS | | | | |
|-------------|---|------|----------------|---|--|
| Sl. No. | Description of Item | Unit | Total Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (a) | (b) | (c) | (d) | (e) | (f) |
| ML-1 | CARBON STEEL PIPES | | | | |
| 1.1 | PIPELINE LAYING / INSTALLATION | | | | |
| | <p>Receiving after inspection , loading , unloading and transportation and stacking of 3-Layer PE coated and bare line pipes / other materials issued by BGL as free issue materials from BGL designated store yard at Vijayawada to Contractor's stock yard/workshop/work-site. The scope of contractor includes handling, stacking, stringing on the pipeline route alignment, laying/ installation of coated linepipes including preparation of drawings (wherever required for crossing etc.) as per specification.</p> <p>Arrangement of all additional lands required for Contractor's storage, fabrication, access for construction, procurement and supply of all materials (except Owner supplied materials), consumables, equipment, labour and other inputs, carrying out all temporary, ancillary, auxiliary works, ready for commissioning of pipeline as per drawings, specifications, other provisions of Contract document and instructions of Engineer-in-charge, including but not limited to carrying out the following works:</p> | | | | |
| | Surveying of route and detours required at the time of execution including marking the same in topographical sheet, preparation of construction drawings showing survey details, and submit same to Owner for review / approval. | | | | |
| | Clearing, full filling all the requirements of various statutory/ environment authorities to the entire satisfaction of concerned authorities, grading of work area. Relocating of any obstruction within the Pipeline route alignment / Approved route viz. electrical lines/ poles, telephone line / poles, foreign pipeline, etc. in co-ordination with concerned authorities and obtain permissions from these authorities for pipeline execution. | | | | |
| | <p>Trenching to all depths by excavation in all types of soils except built up sections on top as different type of pavement / footpath / roads etc. as required by using mechanical excavator or manually depending on the site condition and storing excavated soil, reusable materials at designated area as directed by Engineer in charge and to a width to accommodate the pipeline as per the relevant standard/ specification etc. [The minimum depth of the top of pipeline shall be 1.0m measured from top of pipeline coating to the top of undisturbed surface of the soil or as per SCC/ relevant code, whichever is higher]. Dewater of trenches if required as per site condition is included in the scope of contractor.</p> <p>As SVs shall be buried on the pipeline alignment itself with RCC pits with covers. The steel pipeline has to be taken to the required lower depth by use of slope or vertical bends to accommodate the above without additional cost to BGL</p> <p>Supply and back filling of the trench with sand/ stone dust where required by the permission sanctioning authorities is included without any additional cost.</p> | | | | |
| | During the execution of the work, the construction area shall be barricaded to ensure the smooth execution of work and safety of the public/ working area. The item also includes fabrication, transportation and placing the barricading at the site. Barricading to be made as per approved drawing and to the entire satisfaction of Owner / Engineer-in-charge. | | | | |
| | Carrying out repairs of pipe defects/ replacement in case of irreparable defects and repairs of defects of pipe coating not attributable to Owner including defects/ damages occurring during transportation / handling. | | | | |



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| | Stringing of line pipes along pipeline trench /sand / soft soil bags including supply of bags and its filling materials. | | | | |
| | Checking, cleaning, aligning, bending, cutting and bevelling (as required) of pipes for welding and field adjustments including pipe fittings, welding, carrying out non-destructive testing of welds as required including 100% radiography by Gamma-ray / x ray and providing all requisite equipment, labour, supervision, materials, films, consumables, all facilities and personnel to process, develop, examine and interpret radiographs and other tests as required, carrying out repairs of weld joints found defective by Engineer-in-Charge, carrying out re-radiography and other tests as required on repaired joints. | | | | |
| | Carrying out installation of carrier line pipe at all minor crossing viz. road, cartrack, pathway, water bodies etc. at designated depth by open cut (except at crossing by HDD method/ moling / Augur boring). | | | | |
| | The above item also include liaisoning with state authorities / owners : Obtaining ROU and all permissions from the concerned land-owning / statutory authorities along the proposed route / area. However, the required statutory / mandatory fees will be paid by M/s BGL against demand note. The liaisoning during the pipeline laying execution with local authorities & local officials, traffic police, police and any other utility companies / agencies such OFC operators etc are in the scope of the contractor. Repairing/replacement of all damaged utilities if any, and payment of any compensation (if claimed by owner/other utility agencies) is in scope of the contractor. Liaisoning for other associated works like SV station / DRS Station & valve pits etc. also included in this. | | | | |
| | Coating of field weld joints, long radius bends (R=3D), elbows, buried fittings and valves etc. including supply of coating materials etc. (i.e. heat shrinkable sleeves and high build epoxy etc.) as per PJS & Technical Specification compatible with 3 layer PE coating material of the line pipe. | | | | |
| | Installation of LR Bend (R = 3D) , as per specification wherever required depending on site condition. | | | | |
| | Installation / lowering the pipeline in trench to required depth as per PJS, Technical Specification & drawings including padding around pipeline with suitable soil duly approved by EIC including supply of padding material, backfilling and its compaction to the satisfaction of concerned authorities with excavated earth / borrowed select soil including supply of borrowed select soil duly approved by EIC. | | | | |
| | Supply & Installation of warning mat (OD+100 mm width and 0.5 mm thick) on the entire length of the pipeline as per specification. | | | | |
| | Supply and installation of slope breakers, wherever required or, as directed by Owner / Engineer-in-charge. | | | | |
| | Crossing the all-foreign pipeline / HT line / cable / any other utilities etc. with necessary concrete / PVC protection including coordination with all agencies and obtaining NOC. | | | | |



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| | Carrying out air cleaning, flushing, cleaning and hydrostatic testing of complete pipeline with required quantity of corrosion inhibitor including pre-testing of designated sections complete as per specification and approved by Engineer-in-charge to specified pressures indicated elsewhere and duration after stabilization as per specification, providing all equipment, pumps, fittings, instruments, dead weight tester, pressure recorder, thermocouples etc., and services, supervision, labour, consumables, water including supply of corrosion inhibitor, air, etc. as required, locating of leaks and rectification of defect attributable to Contractor (rectification of defects in linepipe material not attributable to contractor shall be paid separately as per other item of schedule of rate), re-testing after rectification, dewatering after successful completion of hydrotesting of entire section and as approved by Engineer-in-Charge. | | | | |
| | (Note : Leak detection, its rectification and successfully re-hydrotesting shall be carried out by Contractor with a view that completion of all activity for successful hydrotesting is not inordinately extended, which will hamper the overall project schedule. Further, no extra payment claim shall be entertained for re-hydrotesting and leak detection if defects found attributable to Contractor. | | | | |
| | All tying-in, including the tie-in(s) of the pipeline with the adjacent sections of pipeline including cutting of test header, rebeveling as required, radiography and other NDT examination, joint coating as per specification. | | | | |
| | Final clean-up & restoration of right-of-use or area disturbed by contractor including obtaining NOC from respective land owner and statutory authorities during their construction activities for laying of pipeline works and disposal of debris, excess soil to designated disposal areas as per local authorities/BGL and returning all surplus material to designated storage yard and backfilling of trench and compaction of the same as per satisfaction of Owner and / Or as directed by Engineer-in-charge. | | | | |
| | Restoration of land, facilities and boundary wall etc. and associated facilities dismantled/damaged by the Contractor during construction; | | | | |
| | Installation of all buried valves inside the valve pit and making provision to operate the valve. | | | | |
| | Protective coating of 500 micron thick two component (applied with the help of minimum three coats) liquid epoxy including supply of materials duly approved by Owner for all piping valves, fittings, structural steels etc. for buried installation and inside the valve pit as approved by the Engineer-in-charge. | | | | |
| | Carrying out all temporary, ancillary, auxiliary works and all incidental works required to make the pipeline ready for pre-commissioning; | | | | |
| | Preparation of as-built drawings, pipe-books including collection of GPS co-ordinates.(Drawings /documents to be submitted as per SCC) All the works shall be executed in accordance with the provision of contract including carrying out all temporary/ ancillary/ auxiliary works required for the performance of the works and all other acts, deeds, matters and things necessary to make the pipeline ready for precommissioning activities. | | | | |
| | Installation of Coated Line Pipes as per following details: | | | | |



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| | Specified dia (mm) NB | Thk (mm) | Material | Coating Type | Length of each pipe | | | | |
| 1.1.1 | 150 | 6.4 | API 5L Gr. X-52 | 3 Layer PE Coating (Externally) | Double random (approx. 11.5 m to 12.5 m) | Meter | 600 | | |
| 1.1.2 | 100 | 6.4 | API 5L Gr. X-52 | 3 Layer PE Coating (Externally) | Double random (approx. 11.5 m to 12.5 m) | Meter | 425 | | |
| | Note: | | | | | | | | |
| i) | This item shall be applicable for the underground steel grid main pipeline & branch pipeline including tap-off for distribution pipelines, valves, barred tees, insulating joints, bends (R=3D), flanges & fittings, accessories etc. , tie-in of valve assembly including radiography of tie-in joints as per Schematic Layout Drawings of respective sections, Technical Specification and aboveground approach pipeline upto Insulating Joint (including installation of aboveground / underground insulating joint) for various stations. | | | | | | | | |
| ii) | Supply of all valves, flanges, fittings, assorted pipes, barred tees & insulating Joints, etc. shall be paid by separate item mentioned elsewhere in SOR. | | | | | | | | |
| iii) | In above item, backfilling of pipeline trench by borrowed select soil duly approved by Owner / EIC shall be paid by separate item mentioned elsewhere in the SOR. | | | | | | | | |
| iv) | Contractor shall not perform any pipeline activities along Pipe alignment without specified barricading as per Std. Drg. and other safety measures. | | | | | | | | |
| v) | The lengths of pipelines are tentative. All items required to complete the laying and commissioning except the Items covered separately in this SOR are included under the scope of this item | | | | | | | | |
| vi) | Cutting of Hard Rock shall be paid on CUM basis as per separate SOR. | | | | | | | | |
| | | | | | | | | | |
| 1.2 | Same as item 1.1 above but with built up sections (different type of pavement / footpath / roads etc.) on the top surface | | | | | | | | |
| | Installation of Coated Line Pipes as per following details: | | | | | | | | |
| | Specified dia (mm) NB | Thk (mm) | Material | Coating Type | Length of each pipe | | | | |
| 1.2.1 | 150 | 6.4 | API 5L Gr. X-52 | 3 Layer PE Coating (Externally) | Double random (approx. 11.5 m to 12.5 m) | Meter | 300 | | |
| 1.2.2 | 100 | 6.4 | API 5L Gr. X-52 | 3 Layer PE Coating (Externally) | Double random (approx. 11.5 m to 12.5 m) | Meter | 175 | | |
| | | | | | | | | | |
| 1.3 | Cutting/ breaking of hard rock found in trenches using mechanical means such as rock breakers / excavators (blasting prohibited) etc. Scope also includes disposal of rocky earth after breaking to designated disposal areas as per local authorities/BGL. (wherever hard rock of single piece exceeding 1.0 m in length along the trench direction as per the decision & direction of EIC) | | | | | CUM | 50 | | |



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| ML-2 | Restoration of asphalted roads / concrete roads / pavements / foot paths, wherever instructed by EIC. Job includes getting NOC from the concerned authorities. | | | | |
| a) | Asphalt road : Restoration of bitumen Asphalt road after laying of Pipe line as per the drawing, specifications and instruction of Engineer-In-Charge. Restoration of roads shall be done to fullest satisfaction of EIC and / or concerned Owners having jurisdiction. | Meter | 100 | | |
| b) | Restoration of the all kind of pathway by using excavated material such as tiles/pavers/granite/red stone etc by providing PCC 1:4:8 of 75mm thickness below or as per construction found and making it as original . Item includes providing of extra material if required due to breakage during excavation work such as Tiles/Paver/Granite etc matching to original pathways. | Meter | 100 | | |
| c) | Cement Concrete road/ Cement Concrete pavement: Restoration of concrete road and pavements shall be done by providing concrete of 1:2:4 (volumetric mix) of 100 mm thickness. | Meter | 170 | | |
| ML-3 | BORROWED SELECT SOIL FOR BACKFILLING | | | | |
| | Additional work over and above item 1.5 for supply of specified and approved quality of borrowed foreign soft graded soil / sand in place of available excavated material and / or other suitable soil as per applicable standards / specifications, including backfilling of excavated trench for specified length after laying and padding of pipeline, including transportation of such special backfill material over all distances, complete. (Also to be used in open cut road crossing if required as per decision of EIC) | CUM | 50 | | |
| ML-4 | Steel Pipeline CROSSINGS BY HDD | | | | |
| | Complete work of the road /Nala crossing (between the limits are defined as in approved drawings) or Concrete roads by HDD method including "Receiving and taking over" owner supplied three layer PE coated line pipes from Owner's designated place to issue/ dump site(s) and transportation to Contractor's stock yard/ work shop/ work site including all handling loading, unloading, aligning etc., manpower, equipment, other resources and acquiring the required land for storage, fabrication including string preparation of pipes(carrier), welding, welding repair, radiography, coating of field joints with special type Heat Shrink Sleeve (DIREX SLEEVE)and repair of pipeline coating with special repair patch materials as per specification, pre-testing etc. of complete string made for crossing access for Contractor etc. and execution of, but not limited to, following works in accordance with specifications and instruction of Engineer-in-charge and as per all provision of Contract Document. | | | | |
| | Pre-construction survey based on site visit, collection of data (if required) from concerned Authority including design and detail engineering and making of crossing drawings for getting their approval from concerned Authority/ & Engineer-in-charge, getting work permit/ NOC for road/ Nala crossing as well as utility crossings (if any) encountered during road/ Nala crossing prior to start the execution of work. | | | | |
| | Directional drilling to required depth from top of road/ Nala Bed including maintenance of drill hole in all types of strata including rocky terrain at all depth to accommodate the pipeline at all conditions encountered during road/ Nala crossing by approved HDD methods for providing minimum cover specified in code/ specification or the actual depth as decided by concerned authority, whichever is more. | | | | |



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| | Backfilling of the ditch/ trench including restoration and cleanup of area and all other works including pigging, cleaning, final hydrotesting etc. alongwith mainline works (as mentioned in item no. 1.0 above) required as per specification, approved drawings, calculations, methods and to the satisfaction of Engineer-in-charge and/or as directed by concerned Authority. | | | | |
| 4.1 | ROAD/Nala CROSSINGS by HDD: in all type of soil | | | | |
| 4.1.1 | For carrier pipeline of 3LPE Coated Carbon Steel Pipeline with Line pipe detail 4" NB, 6.4 mm thk API 5LX52 at Mustabada Canal / Vijayawada By-pass Road in Gollapudi Y junction. | Meter | 230 | | |
| 4.1.2 | For carrier pipeline of 3LPE Coated Carbon Steel Pipeline with Line pipe detail 6" NB, 6.4 mm thk API 5LX52 at peripheral road crossings and concrete surface near Bhavanipuram chainage 0.2 km and 0.8 km approx. | Meter | 200 | | |
| ML-5 | REPAIR OF DEFECT IN PIPES (NOT ATTRIBUTED TO CONTRACTOR) | | | | |
| | Repair of defects on Owner supplied linepipes of all grades and wall thickness as specified in following items, noted and recorded at the time of "receiving and taking over" by Contractor in the presence of Engineer-in-charge. | | | | |
| 5.1 | Cutting and rebeveling for dents in bevels exceeding 3 mm in depth for pipe sizes: | | | | |
| | Specified NB, mm | | | | |
| 5.1.1 | 6" | Nos. | 5 | | |
| 5.1.2 | 4" | Nos. | 5 | | |
| 5.2 | Jack out of dents in bevels ranging between 1 mm and 3 mm in depth for pipe sizes: | | | | |
| | Specified NB, mm | | | | |
| 5.2.1 | 6" | Nos. | 5 | | |
| 5.2.2 | 4" | Nos. | 5 | | |
| ML-6 | REPAIR OF COATING DEFECTS (NOT ATTRIBUTED TO CONTRACTOR) | | | | |
| 6.1 | Repair of Holiday in Coating (Noted and recorded at the time of "receiving and taking over") | | | | |
| | Supply of all coating repair materials as per requirements of specification to be compatible with line pipe coating material, supply of all consumables, utilities, equipments and all manpower required, pipe cleaning and surface preparation, repairing of coating defects (resulting in holiday) and testing including all handling, transportation, etc. for line pipes, performing all works necessary for the completion of the works strictly in accordance with relevant specification and instructions of Engineer-In-Charge. This rate shall be applicable per sq. cm of the exposed steel area exposed steel area. | Sq. cm | 75 | | |
| ML-7 | PERMANENT MARKERS | | | | |
| | Supply, fabrication and installation of all types of permanent markers along the route including all associated civil works such as excavation in all types of soil, construction in all types of soil, construction of pedestals and grouting with concrete, clearing, supply and application of approved colour and quality of primer and paint, stencil letter cutting for numbers, direction, change etc., restoration of area to original condition and performing all works as per drawing, specification and instruction of engineer-in-charge. | | | | |
| 7.1 | Pipeline RCC boundary / route marker as per drawing - Not applicable | NA | NA | NA | NA |



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| 7.2 | Pipeline warning markers with post & foundations | Nos. | 10 | | |
| 7.3 | Pipeline warning plate markers without post & foundations | Nos. | 2 | | |
| 7.4 | Pipeline direction marker with post & foundations | Nos. | 15 | | |
| 7.5 | Pipeline KM with post & foundations | Nos. | 2 | | |
| ML-8 | LEAK / BURST (ATTRIBUTABLE TO OWNER) | | | | |
| | All works for locating leak / burst in Company's supplied material only (occurred during hydro-static testing) including necessary repairing/replacing defective pipe lengths including cutting and out and removing the defective pipe, pre-testing and welding of replacement pipe, NDT of welds, repair and retesting of defective welds, coating/painting of replacement pipe, pretesting the replacement pipe into mainline/branch line, coating/painting of welding joints, cleanup, retesting including cost of all labour materials, consumables and performing all works in accordance with the provisions of the Contract document and as directed by Owner /Engineer-in-charge/ Engineer in-charge | | | | |
| 8.1 | For 6" NB Line | Nos. | 1 | | |
| 8.2 | For 4" NB Line | Nos. | 1 | | |
| | Note: | | | | |
| i) | This rate is applicable for manufacturing defects in Owner supplied material only. | | | | |
| ii) | Leak detection, its rectification and successfully re-hydrotesting shall be carried out as per approved procedure by Contractor with a view that completion of all activity for successful hydrotesting is not inordinalely extended which will hamper the overall project schedule. | | | | |
| ML-9 | PRE-COMMISSIONING AND ASSISTANCE IN COMMISSIONING OF PIPELINE SYSTEM | | | | |
| | Swabbing, drying, purging with nitrogen of the complete pipeline network and the associated facilities being installed to the specified acceptance criteria, carrying out pre-commissioning works, providing assistance during the complete duration of commissioning operations for entire pipeline network system including supply of all equipment, man-power, consumables (including pigs & nitrogen required for purging with maintaining nitrogen column of minimum 10% of pipeline geometric volume) materials for all temporary works and performing all associated works, complete as per the relevant specifications, other provisions of Contract document and instructions of Engineer-in-charge. | | | | |
| 9.1 | For 6" NB Line | Meter | 900 | | |
| 9.2 | For 4" NB Line | Meter | 600 | | |
| ML-10 | LONG RADIUS BENDS | | | | |
| 10.1 | Supply of Long Radius Bends (R = 3D) for 6" dia.pipe, (thk. 6.4 mm) as per specification enclosed in Tender Document. (Installation of bends is included in the pipeline laying and measured along with the pipeline) | | | | |
| i) | 61° - 90°, MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 5 | | |
| ii) | 23° - 45°, MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 2 | | |



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| iii) | 22.5 ° and lower MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 4 | | |
| 10.2 | Supply of Long Radius Bends (R = 3D) for 4" dia.pipe, (thk. 6.4 mm) as per specification enclosed in Tender Document. (Installation of bends is included in the pipeline laying and measured along with the pipeline) | | | | |
| i) | 61° - 90°, MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 3 | | |
| ii) | 46° - 60°, MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 2 | | |
| iii) | 23 °- 45°, MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 2 | | |
| iv) | 22.5 ° and lower MSS-SP-75, Gr. WPHY-42, 6.4 mm thk. | Nos. | 1 | | |
| | Note : The quantities of LR Bends may vary. For final quantity, approval from EIC shall be taken before order. | | | | |
| ML-11 | SUPPLY & ERECTION OF VALVE | | | | |
| 11.0 | Complete work of supply of Ball valves including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with relevant specifications indicated in clause of SCC & scope of work indicated in SCC, drawings, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT. | | | | |
| | Handling including lifting and transportation from CONTRACTOR'S Stores and/or work site and installation of all types of valves, including assembly of valve accessories, (if any) by bolting, threading or welding, supply and insertion of gaskets, nuts & bolts, nipples, etc. at all elevations of pipe sleepers, supports or overhead on racks, equipments nozzle, skid & painting etc. supply of all consumables, manpower, equipment, etc. for completion of all works as per scope of work and as per drawings, specifications and instructions of Engineer-in-charge including servicing/ cleaning of valve wherever required. | | | | |
| 11.1 | Ball Valves | | | | |
| | Manufacturing std. - BS EN ISO 17292:2004 / API 6D, Body & Ball material - A216 Gr.WCB/A234 Gr.WPB , Stem material- AISI 4140 , Rating- 300#, Ends-BW ,Full Bore as per PMS | | | | |
| i) | 6" NB | Nos. | 4 | | |
| ii) | 4" NB | Nos. | 4 | | |
| iii) | 2" NB | Nos. | 6 | | |
| 11.2 | Ball Valves (with one end flanged and other end butt welded) | | | | |
| | Manufacturing std. - BS EN ISO 17292:2004 / API 6D, Body & Ball material - A216 Gr.WCB/A234 Gr.WPB , Stem material- AISI 4140 , Rating- 300#, Full Bore as per PMS | | | | |
| | Size | Rating/ Schedule | | | |
| i) | 2" NB | 300# | Nos. | 2 | |



**SCHEDULE OF RATES FOR
BHAGYANAGAR GAS LIMITED
CITY GAS DISTRIBUTION PROJECT AT HYDERABAD, VIJAYAWADA AND KAKINADA
LAYING OF 6" & 4" NB U/G STEEL P/L FOR ROs CONNECTIVITY, INSTALLATION
OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 1 | MAINLINE WORKS | | | | |
|--------------|---|------|----------------|---|--|
| Sl. No. | Description of Item | Unit | Total Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (a) | (b) | (c) | (d) | (e) | (f) |
| ii) | 1" NB (As per BS 5351) 800# | Nos. | 2 | | |
| ML-12 | SUPPLY & ERECTION OF FITTINGS AND FLANGES IN VALVE PIT | | | | |
| | Complete work of supply of fittings and flanges including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with relevant specifications indicated in clause of SCC & scope of work indicated in SCC, drawings, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT. | | | | |
| | Handling including lifting, transportation from Contractor Stores to CONTRACTOR's workshop for fabrication and/ or to work site for field fabrication and erection for all piping items supplied by Contractor. | | | | |
| 12.0 | EQUAL BARRED TEE (A234, Gr. WPB (Charpy), B-16.9, 1.5D), BW as per specification | | | | |
| i) | 4" | Nos. | 1 | | |
| 12.1 | UN-EQUAL BARRED TEE (A234, Gr. WPB (Charpy), B-16.9, 1.5D), BW | | | | |
| i) | 12" x 6" (Barred Tee as per specification) | Nos. | 1 | | |
| ii) | 6" x 4" (Barred Tee) | Nos. | 1 | | |
| 12.2 | EQUAL TEE (A234, Gr. WPB (Charpy), B-16.9, 1.5D), BW | | | | |
| i) | 2" | Nos. | 2 | | |
| ii) | 1" | Nos. | 2 | | |
| 12.3 | UNEQUAL TEE (A234, Gr. WPB (Charpy), B-16.9, 1.5D), BW | | | | |
| iii) | 4" x 2" | Nos. | 7 | | |
| 12.4 | ELBOW | | | | |
| | 90° Elbow (A234, Gr. WPB (Charpy), B-16.9, 1.5D), BW | | | | |
| i | 6" | Nos. | 1 | | |
| ii | 4" | Nos. | 6 | | |
| iii | 2" | Nos. | 4 | | |
| 12.5 | INSULATING JOINTS (As per Standard Specification) | | | | |
| i) | 12" | Nos. | 3 | | |
| ii) | 6" | Nos. | 1 | | |
| iii) | 4" | Nos. | 2 | | |
| iv) | 2" | Nos. | 2 | | |
| 12.6 | Flanges as per ASTM A-105 (As per Standard Specification) | | | | |
| i | 6" - 300# | Nos. | 1 | | |
| ii | 4" - 300# | Nos. | 1 | | |
| 12.7 | Blind Flanges (with gaskets, Bolts and Nuts As per Standard Specification) | | | | |
| i | 6" - 300# | Nos. | 1 | | |



**SCHEDULE OF RATES FOR
 BHAGYANAGAR GAS LIMITED
 CITY GAS DISTRIBUTION PROJECT AT HYDERABAD, VIJAYAWADA AND KAKINADA
 LAYING OF 6" & 4" NB U/G STEEL P/L FOR ROs CONNECTIVITY, INSTALLATION
 OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
 Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 1 | MAINLINE WORKS | | | | |
|--|---|------|----------------|---|--|
| Sl. No. | Description of Item | Unit | Total Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (a) | (b) | (c) | (d) | (e) | (f) |
| ii | 4" - 300# | Nos. | 1 | | |
| 12.8 | Weldolet (BW, as per MSS-SP97, Carbon Steel) | | | | |
| i | 12" x 4" | Nos. | 1 | | |
| ii | 6" x 2" | Nos. | 3 | | |
| 12.9 | Sockolet (BW, S160, Carbon Steel) | | | | |
| i | 6" x 1" | Nos. | 1 | | |
| ii | 4" x 1" | Nos. | 10 | | |
| Total Amount in INR (inclusive of all applicable taxes & duties except Service Tax) | | | | | |



Bhagyanagar Gas Ltd.

**SCHEDULE OF RATES FOR
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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) | RETAIL OUTLET WORKS | | | | |
|--|--|------------------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| RO-1 | SUPPLY AND ERECTION OF ABOVEGROUND STEEL PIPING | | | | |
| A | SUPPLY AND ERECTION OF ASSORTED PIPE FITTINGS AND FLANGES | | | | |
| | Complete work of supply of pipes, flanges and fittings including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with PMS (piping material specification), relevant specifications & drawings indicated in scope of work, in SCC and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT. | | | | |
| | Handling including lifting, transportation from Contractor Stores to CONTRACTOR's workshop for fabrication and/ or to work site for field fabrication and erection for all piping items supplied by Contractor. | | | | |
| | Erection including prior cleaning, lifting, placing on pipe sleepers and supports, overhead on racks, skids and at all elevations including installation and carrying out connected activities for all types of valves including supply and fixing of gaskets, studs/ bolts, nuts wherever required for all sizes, levelling, aligning, joining of flanges, blind flanges, connecting with equipment, nozzles, strainers, tie-in with existing piping/facilities, painting as per specification etc. tapping for inline instruments like pressure gauges, thermowells, sample connection, etc. | | | | |
| A1.1 | Carbon Steel Pipe (A 106, Gr. B, Seamless, B-36.10) | | | | |
| a | 2" NB, BE | XS | Meter | 50 | |
| b | 1" NB, BE | XS | Meter | 36 | |
| A1.2 | FLANGES | | | | |
| A1.2.1 | Weld Neck (B-16.5, A105 (Charpy), 125 AARH, RF) (with gaskets, Bolts and Nuts As per Standard Specification) | | | | |
| | (End Thickness to match pipe thickness) | | | | |
| i | 4" | | Nos. | 2 | |
| A1.2.2 | Blind Flanges (B-16.5, A105 (Charpy), 125 AARH, RF) (with gaskets, Bolts and Nuts As per Standard Specification) | | | | |
| i | 4" | | Nos. | 2 | |
| A1.3 | Elbow (Seamless) | | | | |
| a) | 90° Elbow (A234 Gr. WPB, B-16.9, 1.5D) | | | | |
| | Size | Rating/ Schedule | | | |
| i) | 4" NB | STD | Nos. | 5 | |
| ii) | 2" NB | XS | Nos. | 5 | |
| iii) | 1" NB | XS | Nos. | 2 | |



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**SCHEDULE OF RATES FOR
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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) | RETAIL OUTLET WORKS | | | | |
|--|---|------------------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| b) | 45° Elbow (A234 Gr. WPB, B-16.9, 1.5D) | | | | |
| | Size | Rating/ Schedule | | | |
| i) | 4" NB | STD | Nos. | 2 | |
| ii) | 2" NB | XS | Nos. | 2 | |
| | Note: | | | | |
| | The quantities mentioned above are tentative. | | | | |
| | For all the supply items mentioned above, procurement shall be made as per specification after due approval of Engineer-in-charge. | | | | |
| B | ERECTION OF STATION PIPING FITTINGS AND FLANGES (ABOVEGROUND) | | | | |
| | Transportation of all piping items from Owner's and/ or Contractor's storage point to work at site/ workshop as applicable, complete work of fabrication, erection, painting, testing of pipes, flanges and fittings including making ready for further Commissioning / Start-up of carbon steel piping of all sizes and ratings including supply of all consumables, equipment, manpower and other resources and execution of, but not limited to, the following works in accordance with relevant specifications listed in list of specification / standards for mechanical works attached with Section-D under Part-III of Volume - II of II and scope of work, Typical layout drawings of MS and station at bus depot, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT. | | | | |
| | Fabrication including cutting, edge preparation, inclusive of grinding the edges of pipes, fittings, flanges etc. to match with the matching edges of uneven/different thickness wherever required, welding, attachment of all pipe fittings like elbows, tees, reducers. Supply of nipples, coupling etc. as required for completion of job. | | | | |
| | Weldolets, sockolets, flanges, vent and drain point connection etc., including providing stub-in connections, fabricated fittings and reinforcement pads etc., as required. | | | | |
| | Erection including prior cleaning, lifting, placing on pipe sleepers and supports, overhead on racks, skids and at all elevations including installation and carrying out connected activities for all types of valves including supply and fixing of gaskets, studs/ bolts, nuts wherever required for all sizes, levelling, aligning, joining of flanges, blind flanges, connecting with equipment, nozzles, strainers, tie-in with existing piping/facilities, etc. tapping for inline instruments like pressure gauges, thermowells, sample connection, etc. | | | | |
| | Preparation of final bill of material based on piping GADs. | | | | |
| | Preparation of isometric and fabrication drawings. | | | | |



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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) | RETAIL OUTLET WORKS | | | | |
|--|--|-------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| | Carrying out Non-destructive testing including Performance of radiographic inspection by gamma radiation as per scope of work and as per specifications in piping of all types and thickness including providing/hiring of all necessary equipments, supply of all consumables, and whatever else even though not expressly mentioned but required to perform the work as per specifications and instructions of Engineer-in-Charge (full circle re-radiography of the repaired joint and additional radiography necessitated due to poor performance of contractor's welder shall be carried out by the Contractor at his own cost and shall not be paid extra by Company). Radiographs shall be submitted to the Engineer-in-Charge for acceptance, whose decision shall be final and binding. | | | | |
| | Surface preparation before application of primer by means of sand blasting including supply of approved quality of sand, manpower, machineries, tools & tackles to achieve required roughness as per specification and as per instruction of Engineer-in-charge. | | | | |
| | Painting of entire system (including aboveground all pipes fittings, flanges and accessories) as per specification MEC/S/05/62/07A suitable for highly corrosive area environment including supply of approved paints and primers, application of primer and paints, identification lettering/ numbering, colour coding, etc. as specified including rub down & touch up of shop primer or scrapping of shop primer wherever required by COMPANY and providing scaffolding for all heights etc. | | | | |
| | Cleaning and flushing by water/ compressed air, testing of the systems including hydrostatic, pneumatic and any other type of testing as specified, draining, drying by compressed air/other methods approved by COMPANY. | | | | |
| | Precommissioning & making operational all piping system and equipments. | | | | |
| | For Commissioning Contractor shall provide all necessary assistance in term of supply of man-power, equipment, tools and tackles required amount of nitrogen for purging of entire station piping system including equipments etc. to the company during commissioning activities. | | | | |
| | Completion of all such work in all respects as per scope of work and as per drawings, specifications and instructions of the COMPANY and keeping the system ready in all respects for further commissioning and start up. | | | | |
| | Hook-up works (with client/ consumer piping at battery limits): | | | | |
| | Complete Carbon Steel aboveground Piping Work with painting including all fittings, flanges and supply of all required gaskets, studs bolts & nuts etc. | | | | |
| B1 | Carbon Steel Pipe (A 106, Gr. B, Seamless, B-36.10) | | | | |
| | Size | | | | |
| | Rating/ Schedule | | | | |
| i) | 4" NB, BE STD | Meter | 50 | | |



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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) | RETAIL OUTLET WORKS | | | | |
|--|---|------------------------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| <u>Note:</u> | 1) Pipe Specification and thickness may vary depending upon availability of pipe. No extra payment shall be made for this. 2) All butt welded fittings end shall generally match with connecting pipe wall thickness. However, in case of misalignment, Contractor shall have to do end preparation without any extra cost. 3) All coupling, nipples stud, bolts, nuts and gaskets etc. as required shall be supplied by contractor but no separate payments shall be made as it is covered under erection rate. | | | | |
| C | Supply & Erection of valves | | | | |
| | Complete work of supply of Ball valves including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with relevant specifications indicated in clause of SCC & scope of work indicated in SCC, drawings, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT. | | | | |
| | Handling including lifting and transportation from CONTRACTOR'S Stores and/or work site and installation of all types of valves, including assembly of valve accessories, (if any) by bolting, threading or welding, supply and insertion of gaskets , nuts & bolts, nipples, etc. at all elevations of pipe sleepers, supports or overhead on racks, equipments nozzle, skid & painting etc. supply of all consumables, manpower, equipment, etc. for completion of all works as per scope of work and as per drawings, specifications and instructions of Engineer-in-charge including servicing/ cleaning of valve wherever required. | | | | |
| | Manufacturing std. - BS EN ISO 17292:2004 / API 6D, Body & Ball material - A216 Gr.WCB/A234 Gr.WPB , Stem material- AISI 4140 , Rating- 300#, Ends-BW , Reduced Bore | | | | |
| | Welded Valves | | | | |
| C1 | Ball | | | | |
| | Size | Rating/ Schedule | | | |
| | ii) | 1" NB (As per BS 5351) | 800# | Nos. | 2 |
| C2 | With one flanged end and other end butt welded | | | | |
| | i) | 4" NB | 300# | Nos. | 2 |
| | ii) | 2" NB | 300# | Nos. | 4 |
| | iii) | 1" NB (As per BS 5351) | 800# | Nos. | 4 |
| C3 | Manufacturing std. - API 6D /BS 5353 Body & Plug material - A216 Gr.WCB/A234 Gr.WPB , Stem material AISI 4140 , Rating- 300#, Ends-BW | | | | |
| | Plug | | | | |
| | Size | Rating/ Schedule | | | |
| | 2" NB | 300# | | Nos. | 2 |
| | 1" NB | 800# | | Nos. | 2 |



**SCHEDULE OF RATES FOR
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LAYING OF 6" & 4" NB U/G STEEL P/L FOR ROs CONNECTIVITY, INSTALLATION
OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) | RETAIL OUTLET WORKS | | | | |
|--|---|------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| RO-2 | SS TUBE SUPPLY, LAYING & TESTING | | | | |
| | Complete works of supply and procurement, fabrication including cutting, fit up, Bending, laying/installation in the tray of cable trench or direct in the trench including all types of tubes, valves, fittings, flanges etc, NDT, cleaning, hydro and pneumatic testing, dewatering, Nitrogen purging and system ready for commissioning of SS tube from compressor outlets to Mobile & static cascades, Dispensers and other equipments with pipes, fittings, flanges, valves etc. for required size and thickness including installation & calibration system instruments such as PG, TG, PT, TT (wherever required), supply of all consumables, equipment, manpower and other resources and execution of but not limited to the following works in accordance with relevant specifications, drawings, scope of works and instruction of company and as per all provisions of the contract documents] | | | | |
| | Cleaning and Flushing of water/compressed air, testing of the system including hydrostatic, pneumatic and any other type testing as specified, draining and drying by compressed air/ other methods approved by OWNER | | | | |
| | Preparation of fabrication drawings, bill of materials as per specification, drawings and instructions of the OWNER | | | | |
| | Preparation and submission of as-built drawings and documents as per the tender specification requirement | | | | |
| 2.1 | SUPPLY OF SS TUBES as per Technical Specification | | | | |
| i) | 3/4"OD X 0.095" min Wall thk. ,Material SS316 SS Tube | M | 500 | | |
| ii) | 1/2"OD X 0.083" min Wall thk.,Material SS316 SS Tube | M | 60 | | |
| 2.2 | Laying, testing and commissioning of SS tubes along with fittings and valves as indicated below and as per Technical Specification and scope of work including handling, lifting, transportation from contractors stores to RO. | | | | |
| i) | 3/4"OD X 0.095" min Wall thk. SS Tube | RM | 500 | | |
| ii) | 1/2"OD X 0.083" min Wall thk. SS Tube | RM | 60 | | |
| 2.3 | Supply and erection of SS Fittings and Valves | | | | |
| 2.3.1 | Plug | | | | |
| i) | Size : 1/2" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| ii) | Size : 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| 2.3.2 | Caps | | | | |
| i) | Size : 1/2" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 6 | | |
| ii) | Size : 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 6 | | |
| 2.3.3 | Union | | | | |
| i) | Size : 1/2" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| ii) | Size : 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 80 | | |



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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) | RETAIL OUTLET WORKS | | | | |
|--|---|------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| 2.3.4 | Equal Tee | | | | |
| i) | Size: 1/2" OD x 1/2" OD x 1/2" OD, Material: SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 10 | | |
| ii) | Size: 3/4" OD x 3/4" OD x 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 24 | | |
| 2.3.5 | Reducing Union Tee | | | | |
| | 3/4" x 1/4" x 3/4" OD , Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 10 | | |
| 2.3.6 | Nut | | | | |
| i) | 1/2" OD, Material : SS316 (Rated pressure : 6000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| ii) | 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 20 | | |
| 2.3.7 | Front Ferrule | | | | |
| i) | 1/2" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| ii) | 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 20 | | |
| 2.3.8 | Back Ferrule | | | | |
| i) | 1/2" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| ii) | 3/4" OD, Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 20 | | |
| 2.3.9 | Cross | | | | |
| i) | 3/4" OD X 3/4" X 3/4" OD X 3/4" OD Material : SS316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F) | Nos. | 4 | | |
| 2.4 | SS Ball Valves, conforming to MECON's Technical Specification No. MEC/TS/05/62/048 for SS Ball Valves of following sizes, specifications as indicated below : | | | | |
| i) | 2-Way Floating Normal Bore Ball Valve 3/4" with union on both sides | Nos. | 15 | | |
| ii) | 2-Way Floating Normal Bore Ball Valve 1/2" | Nos. | 8 | | |
| RO-3 | SUPPLY AND ERECTION OF GI PIPING | | | | |
| 3..0 | GI pipe works as per the tender specification & site requirements (From air compressor to Dispenser) | | | | |
| | Complete works of procurement and supply of Heavy duty GI pipes of 1/2" size confirming to IS 1239, All sizes fitting, All types & sizes of valves and fabrication, installation, erection, Hydrotesting, Dewatering, pneumatic testing at 7 bar, installation on structural supports or tray or in trench & commissioning of system (Excluding civil works as per detailed scope of works mentioned in the Tender) | | | | |
| | Cleaning and Flushing of water/compressed air, testing of the system including hydrostatic, pneumatic and any other type testing as specified, drawing approved by OWNER | | | | |



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**SCHEDULE OF RATES FOR
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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| 3-(I) RETAIL OUTLET WORKS | | | | | |
|--|---|------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| | Completion of all such work in all respects as per the scope of work and as per drawings, specifications and instructions of the OWNER and keeping the system ready in all respects for commissioning | | | | |
| | Hook up and works up to battery limit | | | | |
| | Preparation of fabrication drawings, bill of materials as per specifications, drawings and instructions of the OWNER | | | | |
| | Preparation and submission of as-built drawings and documents as per the tender specification requirement | | | | |
| 3.1 | ½" GI Pipes (Heavy duty conforming to IS 1239 with fittings and Valves) | RM | 300 | | |
| RO-4 ERECTION OF MECH. EQUIPMENT | | | | | |
| 4.0 | Receiving and taking over, handling, loading, transportation and unloading of following items from owners designated stokyard at Vijayawada including manpower and Equipment supply, tools & tackle etc to require for complete the works, Erection / Installation on civil foundation and hooking up at all height including with associated facilities for following including manpower and Equipment supply, tools & tackles etc to require for complete the works | | | | |
| 4.1 | Dual Arm Car dispenser | Nos. | 3 | | |
| 4.2 | Cascade 3000 litre water capacity. Erection at a height of upto 4.0 M level | Nos. | 4 | | |
| Note: | The quantities given above against individual items are indicative and shall not be considered to be binding. The quantities may increase or decrease at site at the time of actual execution and as per the discretion of Owner/ Engineer-in-charge. The unit rate shall be operated to work out the final payment due to Contractor. | | | | |



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**SCHEDULE OF RATES FOR
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CITY GAS DISTRIBUTION PROJECT AT HYDERABAD, VIJAYAWADA AND KAKINADA
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OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
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| 3-(I) RETAIL OUTLET WORKS | | | | | |
|--|--|------|------------|--|---|
| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
| Mechanical & Piping Works at RO | | | | | |
| RO-5 | SUPPLY, ERECTION & COMMISSIONING OF MISCELLANEOUS ITEM | | | | |
| 5..0 | Supply, erection & commissioning of following miscellaneous items as per technical specification and at locations (within the stations) as directed by EIC | | | | |
| | Fire fighting Equipments | | | | |
| 5.1 | DCP -10 Kg | Nos. | 8 | | |
| 5.2 | DCP -75 Kg | Nos. | 4 | | |
| 5.3 | CO2 – 4.5 Kg | Nos. | 4 | | |
| | Total Amount in INR (inclusive of all taxes & duties except Service Tax) | | | | |
| | Notes: | | | | |
| i) | The quantities indicated above are tentative estimated values and hence are approximate. Final payment will be made based on actual quantities to be certified by the Owner/Owner representative. | | | | |
| ii) | The cost of MS bolts (permanent and service), washers, electrodes, putty, gases, cost of straightening the raw materials, cutting of flats from plates and providing splices, paints, tools, plants etc., as required for the work shall be deemed to be included in the quoted rates. | | | | |
| iii) | All handling and transport charges of raw materials and fabricated structures including double handling, as required, for completion of work in accordance with time schedule, are deemed to be included in the quoted rates. | | | | |



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| 4-(I) | STRUCTURAL WORKS | | | | |
|-------------|--|------|----------|---|--|
| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (1) | (2) | (3) | (4) | (5) | (6)=(4) x (5) |
| ST-1 | STEEL WORKS (Dispenser safety guard) | | | | |
| | Supply, fabrication, erection installation of Dispenser guards, supply of all piping materials including GI pipes, fittings, bends, coupling, sockets plugs, reducers, nipples, long screws etc. , and jointing B-class GI pipes of ISI mae like Zenith or equivalenet of the following size confirming to ISI 1239. Rate shall include making chases in the walls on concrete floors chiseling and fixing GI pipes with clamps at every 1 metre center to center including testing pipe lines for leakage before painting and painitng the pipes with hot bitumen, wrapping pipe and tension cloth as per specificaitons. In case of exposed GI pipes painting shall be done with 2 coats of Synthetic enamel paint and in case of under ground piping painting with two coats of bitumastic painting shall be provided. Rat to includ cost of all labour, tools, tackles, equipment, hire chargers, supply of all materials to complete the all respective works | RM | 30 | | |
| ST-2 | STEEL WORKS (cascade structure) | | | | |
| | Supply , Fabricating and erecting in position at all levels bolted and / or welded steel trusses made up of structural steel memebrrs, plates, gusssets, purlin including cutting, hoisting fixing in position and applying a priming coat of approved steel primer, welded and bolted etc, complete as per drawing and specifications and direction of Engineer In charge. All other consumables required to complete all the jobs to be supplied by the bidders | MT | 2 | | |
| ST-3 | Structure Steel Works for Miscellaneous Structures like Grating , Handrails etc | | | | |
| | Supplying, Fabricating & Erecting in position steel structures fabricated out of MS Girders, channels, Tees, angle, flats, plate, square hollow sections pipes etc. conforming to IS:2062 and/or from pipes conforming to IS:1161 for structural purpose for cascade supporting structure, loading/unloading platform, Gratings for platform, catladder,handrails etc. of any size/dia for required design including cutting, welding, bolting, hoisting, fixing in position, including application of one coat of primer at shop and second coat of primer at site after erection and two coats of finishing paint at site .The work is to be completed in all respect as per specification ,scope of work, detailed construction drawings and directions of the Engineer-in-charge. Upto Height of 5.0Mtrs. Item includes required scofolding etc all complete. | KG | 300 | | |



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| 4-(I) | STRUCTURAL WORKS | | | | |
|-------------|---|------|----------|---|--|
| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (1) | (2) | (3) | (4) | (5) | (6)=(4) x (5) |
| ST-4 | Pipe Supports & Other Structures | - | | | |
| | Supply, fabrication and erection of all types of pipe supports like clamps, saddle, guide stops, cradles, turn buckles, anchors, T-posts; stockade/ trestle and pipe bridge for overhead piping; approach ladders and platforms, crossover, cable tray supports, etc. including painting as per specification labour and supervision & complete work as per drawings, specifications and instruction of Engineer-in-charge. (Bolts, nuts, washers, U-clamps etc. for supporting shall be supplied by the Contractor within the rates quoted. These items will not be measured and paid seperately). HDPE/ rubber sheet is to be provided between support & pipe wherever required. The work is to be completed in all respect as per scope of work and specification. | KG | 1000 | | |
| | [Rate to include cost of all labour, nut, bolts, tools, tackles, hire charges royalties, levies, transportation, scrap value, gas cutting, welding, other consumables, paints, compressed air, water, electric power, supply of all materials to complete the all repective works etc. all complete.] | - | - | | |
| | Total Amount in INR (inclusive of all applicable taxes & duties except Service Tax) | | | | |



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| 5-(I) CIVIL WORKS | | | | | |
|-------------------|---|------|----------|---|--|
| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| CIV-1 | EARTH WORK IN EXCAVATION/ SITE GRADING AND BACKFILLING | | | | |
| a) | Earth work in excavation,site grading and backfilling in all kinds of soil including soft rock in any plan dimension up to 3.0M depth including disposal of excavated surplus and unserviceable earth up to any lead in all conditions. Soil to be leveled and neatly dressed complete in all respect as per scope of work, detailed construction drawings, as per technical specifications and directions of the Engineer-in-charge. | M3 | 50 | | |
| CIV-2 | EARTH WORK IN EXCAVATION/ SITE GRADING IN HARD ROCK | | | | |
| a) | Earth work in excavation in hard rock requiring blasting for all type and size of foundations in any plan dimension up to required depth including disposal of excavated material up to any lead in all conditions, and disposal of surplus and unserviceable material. Surface to be leveled and neatly dressed complete in all respect as per scope of work, detailed construction drawings and directions of the Engineer-in-charge. | M3 | 25 | | |
| CIV-3 | EARTH WORK IN FILLING | | | | |
| a) | Earth work in filling with good quality earth from approved source in the layers of 150 mm and compacted up to 95% to its MDD up to 3 m depth and any plan dimension including all testing, watering, rolling each layer with 1/2 tonne roller or wooden or steel rammers, and dressing / filling up ground depressions etc. complete in all respect as per scope of work, detailed construction drawings , as per technical specifications and directions of the Engineer-in-charge. | M3 | 10 | | |
| CIV-4 | PLAIN CEMENT CONCRETE | | | | |
| a) | Supplying and laying plain cement concrete with stone aggregate 20mm down grade (including shuttering if required) in all types of concrete works including levelling courses below foundations, columns, pedestals, pedestal bases, pipe supports,floors, chambers, cable trench, under floors and any other locations (which are not covered as part of composite items) , at all levels and locations as per drawings, specifications and directions of the Engineer-in-charge. | | | | |
| | i) 1:2:4 | M3 | 5 | | |
| | ii) 1:4:8 | M3 | 3 | | |



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| 5-(I) | CIVIL WORKS | | | | |
|--------------|---|------|----------|---|--|
| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| CIV-5 | REINFORCED CEMENT CONCRETE | | | | |
| | Providing and laying RCC (reinforced cement concrete) of grade M-25 with 20mm and down grade crushed stone aggregate in all types of structures like Beams, foundations, walls, columns, pedestals, pedestal bases, pipe supports, sleepers, cable trench, RCC retaining wall foundation for boundary wall including construction joints, shuttering at all depths and levels complete as per drawings, specifications and directions of the Engineer-in-charge. | | | | |
| | i) Sub structures | M3 | 25 | | |
| | ii) Super structures | M3 | 6 | | |
| CIV-6 | REINFORCEMENT STEEL | | | | |
| | Supplying and Fabricating and Fixing in position HYSD Steel Reinforcements/ TMT Grade Fe-415 conforming to IS1786-1985 at all levels (all depth & heights) and positions including the Cost of transport, Straightening, Cutting, Bending, Cranking, Binding, Welding, Provision of necessary Chairs and Spacers, Preparation of bar bending schedule, getting the same approved by EIC etc., complete as per Drawings and Specifications and including Cost of binding wire, Labour etc., all complete in all respects as per scope of work, detailed construction drawings, technical specifications and direction of Engineer-in-charge. The chairs and spacer bars provided will not be Measured for payment. | MT | 2 | | |
| CIV-7 | BRICK WORK | | | | |
| | Providing and laying brick work with brick class designation M-7.5 of IS:1077 in Cement Mortar 1:4 (1cement : 4 sand) in steps, compound wall, drains, or at any other location at all depths & height for all leads including providing required finishes, curing, scaffolding, etc., complete as per specifications and drawings with all bye-works as per direction of the Engineer-in-charge. | M3 | 10 | | |
| CIV-8 | SAND FILLING | | | | |
| | Providing and filling with river sand at any location within the RO for U/G pipeline as per directions of Engineer-in-charge work includes disposal of surplus earth from the site and the area cleaning. | M3 | 5 | | |
| | Total Amount in INR (inclusive of all applicable taxes & duties except Service Tax) | | | | |



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|---|---|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| EL-1 :- ELECTRICAL WORKS -SUPPLY | | | | | |
| 1 | Supply of Street light pole with lighting fixtures complete with mounting bracket, flame proof/non flame proof, control gear box as per the type of fixture, lamps, interconnecting cables, glands, lugs etc. including civil works with pipe inserts for cables and connecting work as per specifications, drawings and instruction of Engineer-in-charge. Work to be completed in all respects. | - | - | - | - |
| a) | Street lighting pole 6mtr high GI octagonal pole complete with bracket, GI clamps for fixing flame proof control gear box as per standard drawing (MEC/23R8/01/E1/D2/CN/ST/0413) & specification (MEC/23R8/01/E1/S2/CN/ST/0406).(Make shall be from approved vendor list) . | No's | 4 | | |
| b) | 4 x 14 W Flame proof street light Ex-d type fixture with T5 lamp, control gear in cast aluminium allow LM6 enclosure and toughened glass cover. The enclosure shall be of IP: 65 suitable for Zone 1& 2 gas group IIA & IIB with all accessories. (Similar to CGL model FSL 424 or equivalent) | No's | 4 | | |
| c) | FLP Junction box for terminating Loop in & Loop Out cable. | No's | 4 | | |
| d) | FLP Switch mounted in support structure for controlling 4 street light poles. The scope also includes supply of all accessories and support structures with civil foundation. | No | 2 | | |
| 2 | Design & supply of power distribution board (PDB),Emergency panel and etc : | - | - | - | - |
| a) | 415V, 50Hz, TPN, 10kA (1sec) indoor, single front, fixed type, type tested, compartmentalised, single ended PDB panel in IP 52 enclosure with incoming MCCB feeders and outgoing feeders, control/ metering/ indication equipment as per approved control schemes, complete with brass double compression cable glands and tinned crimping type copper lugs suitable for bottom cable entry for incoming and outgoing cables as per SLD drg no MEC/23R8/01/E1/D2/CN/ST/0414 (R-0) | No. | 2 | | |



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|-------------------------|--|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| | b) 415V, 50Hz, TPN, 10kA (1sec) indoor, single front, fixed type, type tested, compartmentalised, double ended Emergency panel in IP 52 enclosure with incoming MCCB feeders and outgoing feeders, control/ metering/ indication equipment as per approved control schemes, complete with brass double compression cable glands and tinned crimping type copper lugs suitable for bottom cable entry for incoming and outgoing cables as per SLD drg no DRG.No. MEC/23R8/01/E1/D2/CN/ST/0414 (R-0) | No. | 2 | | |
| 3 | Supply of complete earthing system, earth electrodes/ pit, earth main ring, earthing of electrical equipments, instrument panels, field instruments, process equipments and pipes/ flanges including all associated civil work with all material and labour as per specification and drawings approved by the company. | - | - | - | - |
| | a) Earth Pits- GI PIPE Electrode with 6 mm thick chequered plate cover | Nos. | 4 | | |
| | b) GI Strip (50X6) mm | Mtr. | 200 | | |
| | c) GI Strip (25X5) mm | Mtr. | 100 | | |
| | d) GI Wire, wire rope and all balance earthing material including copper strip (50 mm x 2 mm thick) jumper for flanges etc. as per the specification. | Lot | 2 | | |
| | e) Supply of complete Electronic earthing system with necessary accessories like copper stranded conductor, GI strips, Funnel with wire Mesh, Cast Iron pipe, PVC conduit, bolts, nuts, concrete chamber with CI cover, coke/charcoal, salt & sand etc., | No's | 4 | | |
| 4 | Supply of 1.1kV grade XLPE insulated, PVC sheathed ST2 , FRLS armoured Cables (conforming to IS:7098 and specification) of following sizes: | - | - | - | - |
| | a) 3.5 x 185 mm ² A2XFY | Mtr. | 400 | | |
| | b) 3.5 x 120 mm ² A2XFY | Mtr. | 160 | | |
| | c) 4 x 25 mm ² A2XFY | Mtr. | 60 | | |
| | d) 4 x 10 mm ² 2XWY | Mtr. | 120 | | |
| | e) 4 x 6 mm ² 2XWY | Mtr. | 500 | | |
| | f) 4 x 4 mm ² 2XWY | Mtr. | 500 | | |



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|---|--|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| | g) 2 x 6 mm ² 2XWY | Mtr. | 420 | | |
| 5 | Supply of following sizes of class 'B' G.I.Pipe | - | - | - | - |
| | a) 50 mm NB | Mtr. | 40 | | |
| | b) 80 mm NB | Mtr. | 40 | | |
| 6 | Supply of following including the supply of necessary clamp, bolts, rawl plugs etc. | - | - | - | - |
| | a) Shock hazard charts complete with frame and glass | Nos. | 2 | | |
| | b) First Aid Boxes | Nos. | 2 | | |
| | c) Carbon-di-oxide(CO ₂) type fire extinguisher 4.5 Kg capacity Complete with gunmetal valve conforming to IS : 3224 With ISI mark , Discharge horn with bend & wall fixing Bracket With Mfg. Test certificate. | Nos. | 6 | | |
| | d) Caution boards including supply of necessary clamps, bolts and other hardware. | Nos. | 6 | | |
| | e) Single Line Diagram complete with frame and glass | No. | 2 | | |
| 7 | Supply of 1.1kV grade insulated mats required for maintenance of electrical equipment in substation as required including cutting to required shape in running length and including all labour and materials etc. complete and as per directions of Engineer-In-Charge as per IS 15652 and Indian Electricity Rules. | Mtr. | 12 | | |
| 8 | Supply of electrical accessories including brackets, cable tags, cable marker, lugs, double compression cable glands, for mechanical protection of cable etc. as required / as per specification. | Lot. | 2 | | |
| TOTAL AMOUNT in INR FOR ELECTRICAL (SUPPLY) WORKS (inclusive of all taxes & duties except Service tax) | | | | | |



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|--|---|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| EL-2: ELECTRICAL WORKS - ERECTION | | | | | |
| 1 | Erection, Testing & Commissioning of Street light pole with lighting fixtures complete with mounting bracket, flame proof/non flame proof, control gear box as per the type of fixture, lamps, interconnecting cables, glands, lugs etc. including civil works with pipe inserts for cables and connecting work as per specifications, drawings and instruction of Engineer-in-charge. Work to be completed in all respects. | - | - | - | - |
| a) | Street lighting pole 6mtr high GI octagonal pole complete with bracket, GI clamps for fixing flame proof control gear box as per standard drawing (MEC/23R8/01/E1/D2/CN/ST/0413) & specification (MEC/23R8/01/E1/S2/CN/ST/0406).(Make shall be from approved vendor list) . | No's | 4 | | |
| b) | 4 x 14 W Flame proof street light Ex-d type fixture with T5 lamp, control gear in cast aluminium allow LM6 enclosure and toughened glass cover. The enclosure shall be of IP: 65 suitable for Zone 1 & 2 gas group IIA & IIB with all accessories. (Similar to CGL model FSL 424 or equivalent) | No's | 4 | | |
| c) | FLP Junction box for terminating Loop in & Loop Out cable. | No's | 4 | | |
| d) | FLP Switch mounted in support structure for controlling 4 street light poles. The scope also includes supply of all accessories and support structures with civil foundation. | No | 2 | | |
| 2 | Erection, Testing & Commissioning of power distribution board (PDB), Emergency panel and etc : | - | - | - | - |
| a) | 415V, 50Hz, TPN, 10kA (1sec) indoor, single front, fixed type, type tested, compartmentalised, single ended PDB panel in IP 52 enclosure with incoming MCCB feeders and outgoing feeders, control/ metering/ indication equipment as per approved control schemes, complete with brass double compression cable glands and tinned crimping type copper lugs suitable for bottom cable entry for incoming and outgoing cables as per SLD drawing no DRG.No. MEC/23R8/01/E1/D2/CN/ST/0414 (R-0) | No. | 2 | | |



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|-------------------------|--|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| | b) 415V, 50Hz, TPN, 10kA (1sec) indoor, single front, fixed type, type tested, compartmentalised, double ended Emergency panel in IP 52 enclosure with incoming MCCB feeders and outgoing feeders, control/ metering/ indication equipment as per approved control schemes, complete with brass double compression cable glands and tinned crimping type copper lugs suitable for bottom cable entry for incoming and outgoing cables as per SLD drg no DRG.No. MEC/23R8/01/E1/D2/CN/ST/0414 (R-0) | No. | 2 | | |
| 3 | Erection, Testing & Commissioning of complete earthing system, earth electrodes/ pit, earth main ring, earthing of electrical equipments, instrument panels, field instruments, process equipments and pipes/ flanges including all associated civil work with all material and labour as per specification and drawings approved by the company. | - | - | - | - |
| | a) Earth Pits- GI PIPE Electrode with 6 mm thick chequered plate cover | Nos. | 4 | | |
| | b) GI Strip (50X6) mm | Mtr. | 200 | | |
| | c) GI Strip (25X5) mm | Mtr. | 100 | | |
| | d) GI Wire, wire rope and all balance earthing material including copper strip (50 mm x 2 mm thick) jumper for flanges etc. as per the specification. | Lot | 2 | | |
| | e) Supply of complete Electronic earthing system with necessary accessories like copper stranded conductor, GI strips, Funnel with wire Mesh, Cast Iron pipe, PVC conduit, bolts, nuts, concrete chamber with CI cover, coke/charcoal, salt & sand etc., | No's | 4 | | |
| 4 | Laying, Termination, Testing & Commissioning of 1.1kV grade XLPE insulated, PVC sheathed ST2 , FRLS armoured Cables (conforming to IS:7098 and specification) of following sizes: | - | - | - | - |
| | a) 3.5 x 185 mm ² A2XFY | Mtr. | 400 | | |
| | b) 3.5 x 120 mm ² A2XFY | Mtr. | 160 | | |
| | c) 4 x 25 mm ² A2XFY | Mtr. | 60 | | |
| | d) 4 x 10 mm ² 2XWY | Mtr. | 120 | | |
| | e) 4 x 6 mm ² 2XWY | Mtr. | 500 | | |
| | f) 4 x 4 mm ² 2XWY | Mtr. | 500 | | |
| | g) 2 x 6 mm ² 2XWY | Mtr. | 420 | | |



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|-------------------------|--|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| 5 | Erection, Testing & Commissioning of following sizes of class 'B' G.I.Pipe | - | - | - | - |
| | a) 50 mm NB | Mtr. | 40 | | |
| | b) 80 mm NB | Mtr. | 40 | | |
| 6 | Fixing of following including the supply of necessary clamp, bolts, rawl plugs etc. | - | - | - | - |
| | a) Shock hazard charts complete with frame and glass | Nos. | 2 | | |
| | b) First Aid Boxes | Nos. | 2 | | |
| | c) Carbon-di-oxide(CO2) type fire extinguisher 4.5 Kg capacity Complete with gunmetal valve conforming to IS : 3224 With ISI mark , Discharge horn with bend & wall fixing Bracket With Mfg. Test certificate. | Nos. | 6 | | |
| | d) Caution boards including supply of necessary clamps, bolts and other hardware. | Nos. | 6 | | |
| | e) Single Line Diagram complete with frame and glass | No. | 2 | | |
| 7 | Laying of 1.1kV grade insulated mats required for maintenance of electrical equipment in substation as required including cutting to required shape in running length and including all labour and materials etc. complete and as per directions of Engineer-In-Charge as per IS 15652 and Indian Electricity Rules. | Mtr. | 12 | | |
| 8 | Erection, Testing & Commissioning of electrical accessories including brackets, cable tags, cable marker, lugs, double compression cable glands, for mechanical protection of cable etc. as required / as per specification. | Lot. | 2 | | |



Bhagyanagar Gas Ltd.

**SCHEDULE OF RATES FOR
BHAGYANAGAR GAS LIMITED
CITY GAS DISTRIBUTION PROJECT AT HYDERABAD, VIJAYAWADA AND KAKINADA
LAYING OF 6" & 4" NB U/G STEEL P/L FOR ROs CONNECTIVITY, INSTALLATION
OF ONLINE STATIONS AND ASSOCIATED WORKS AT VIJAYAWADA
Bid Document No.: MEC/23R8/01/51/S2/ST/00/0004**



| Item No. | Description | Unit | Quantities | Unit Rate inclusive of all applicable taxes & duties except service tax (in Rs.) | Total Amount inclusive of all applicable taxes and duties except service tax (in Rs.) |
|-------------------------|---|------|------------|--|---|
| ELECTRICAL WORKS | | | | | |
| 9 | <u>Cable Trench for direct buried cable in Soil</u> Excavation of soil including bushes/debris clearing wherever required along the cable route to required width filling with 150mm sand above and below cables and good quality approved bricks covering the cable through out the trench,back filling after cable laying and compacting the back filled soil as per Mecon standard drgs including fixing of cable route marker at a interval of 30mts | - | - | - | - |
| | a) 450mm wide x 1000mm depth | Mtr. | 300 | | |
| | TOTAL AMOUNT in INR FOR ELECTRICAL (ERECTION) WORKS (inclusive of all taxes & duties except Service tax) | | | | |
| | TOTAL AMOUNT in INR FOR ELECTRICAL (SUPPLY + ERECTION) WORKS (inclusive of all taxes & duties except Service tax) | | | | |
| | Note for Electrical : | | | | |
| 1 | Above quantities are estimated quantities and may change during detail engineering as per site condition. Successful Tenderer shall supply the equipments, at the same rate ,as per these change quantities. Payment shall be made as per quantities erected. | | | | |
| 2 | The cable size mentioned in SLD are indicative.The final size shall be based on the actual requirement and the size shall be selected from SOR . | | | | |
| 3 | Makes of all equipemnts shall be as per preferred make list.Items for which preferred makes are not indicated shall be provided only after approval of the make by owner / consultant. | | | | |



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| TEMPORARY CATHODIC PROTECTION WORKS | | | | | |
|--|--|------|----------|---|--|
| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (1) | (2) | (3) | (4) | (5) | (6) = (4) x (5) |
| TCP-1 | TEMPORARY CATHODIC PROTECTION SYSTEM | | | | |
| 1.1 | Survey, Design, detail engineering of the temporary Cathodic protection system using Mg (Min 3.0 Kg Each)/ Zn galvanic anodes to protect the external surface of 6", 4" dia , 3LPE Coated pipeline in the Geographical Area (GA) of Vijayawada against corrosion for a design life of minimum 2 year as per standard specification enclosed with the tender for temporary cathodic protection system, approved design document, data sheets & drawings. Scope shall also include but not limited to the following for completion of jobs: | | | | |
| a) | Measurement of soil resistivity along the right of way of the main pipeline & take atleast one soil sample for one pipeline section for its chemical & microbial analysis along the pipeline route as per specification for corrosion survey MEC/STS/01/E/011C. | | | | |
| b) | Collection of additional data related to cathodic protection along the right of way of pipeline as per standard specifications. | | | | |
| c) | Design, Detailed Engineering, Preparation of Design Document, Preparation of Test station schedule & Bill of Material as per the corrosion survey & Chemical analysis of Soil / Water samples for Temporary Cathodic Protection system. | | | | |
| i) | 6" Pipeline section from IJ to IJ with varying length and for requisite No. of sections | km | 0.90 | | |
| ii) | 4" Pipeline section from IJ to IJ with varying length and for requisite No. of sections | km | 0.60 | | |
| | Note: Design shall be carried out from Insulation Joint to Insulation Joint. Each stretch of length will be vary from location to location | | | | |
| 1.2 | Manufacturing, Inspection/FAT (Factory acceptance test), supply, Packing, transportation to site, storage, installation, testing & commissioning of the temporary Cathodic protection system using Mg (Min 3.0 Kg Each)/ Zn galvanic anodes to protect the external surface of 6", 4" dia , 3LPE Coated pipeline in the Geographical Area (GA) of Vijayawada against corrosion for a design life of minimum 2 year as per standard specification enclosed with the tender for temporary cathodic protection system, approved design document, data sheets & drawings. Scope shall also include but not limited to the following for completion of jobs: | | | | |
| a) | Supply, installation, testing & commissioning of Mg/ Zn Galvanic anodes including carrying out Thermit welding on main pipeline, supply of clits, cables to connect to anodes as per the standard specification- MEC/STS/01/E/011A. The weight of the Mg Anode & the total nos. of anodes shall be calculated as per the result of corrosion survey, soil chemical analysis, total weight and current requirement of the pipeline section. However, Min one anode is to be installed at every one KM with test station. The scope of work includes the the following:and also to be carried out as per approved design including supply of all item | | | | |
| b) | Supply, Installation, Testing & commissioning of Test stations (Big Size & Normal Size) weather proof (IP-55) as per specification & enclosed drawings. | | | | |
| c) | Supply, installation, testing & commissioning of one set of spark gap arrester 100 kA (Solid State) across each insulating joint provided at tap-off, SV & various consumer terminals as per scope of work / specification. The un-protected/above ground pipeline shall be earthed through GI earth electrodes with separate earth pit. The resistance of grounding shall be limited to 5 ohms max. | | | | |
| d) | Supply, installation, testing & commissioning one set of polarization cell (Solid State) with zinc anode at all high tension electrical power transmission line/equipments /railway tractions (all 66 KV & above) crossing or running parallel to the pipeline for grounding purpose as per specification. The rating shall depend upon anticipated fault current & ground bed resistance at the location of installation. However, the rating of polarisation cell (solid state) shall not be less than 3.7 KA @ 30 cycle & number of 20 kg net weight zinc anode shall not be less than two.The resistance to earth of grounding shall be limited to 5 ohms max. | | | | |
| e) | Supply & installation of Zinc Ribbon Anodes at 4-8 O'clock position in the interval of 2 meter (max.) on carrier pipes where casing pipe is coated and no additional protection for carrier pipe where casing is bare which also includes Zn bentonite filling b/w carrier & casing cased crossings i.e. roads etc as per specification & Scope of work. | | | | |
| f) | Bonding in between pipelines running parallel or crossing as required. | | | | |
| g) | Supply, Laying of HDPE/PVC sheets between the GAS pipeline and the other CP protected foreign pipelines at the crossing locations for providing electrical isolation. | | | | |



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| TEMPORARY CATHODIC PROTECTION WORKS | | | | | |
|---|--|-------------|-----------------|--|---|
| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
| (1) | (2) | (3) | (4) | (5) | (6) = (4) x (5) |
| h) | Earthing of above ground cathodically unprotected pipeline at , SV, R/T & D/T etc, as applicable the earth electrode shall be 65 mm dia, 4.5 mm thickness & 3000mm long. | | | | |
| i) | Supply, installation, testing & commissioning of Electrical resistance Probes (1 No. with 1 no. of ER probe reading Instrument)(if applicable) utilizing the electrical resistance technique shall be provided along the pipeline at marshy areas and at vulnerable locations to monitor the external corrosion activity on the pipeline. Location of external ER probe shall be decided during detail engineering. | | | | |
| j) | Supply, installation, testing & commissioning of Polarisation coupons (2 Nos.) (if applicable) have one side exposed area of 100 mm x 100 mm with 2 nos. of spare coupons shall be provided along the pipeline at marshy areas and at vulnerable locations to monitor the external corrosion activity on the pipeline as per enclosed standard specification. Location of external Polarisation coupons shall be decided during detail engineering. Magnetic devices for operation of magnetic switch shall be provided. | | | | |
| k) | Supplying,laying ,testing of 35 ,25,10 ,6 sq.mm, 600/1100 V grade copper cables XLPE insulated /PVC sheath of including excavation in soil or rock of minimum 1.2m depth below GL, | | | | |
| l) | Making cable to pipe jointing by thermit welding/Pin brazing (for charged pipeline) for 35 ,25,10 ,6 sq.mm copper cable including excavation and exposing piping , recoating with epoxy, testing etc. | | | | |
| m) | Monitoring of the TCP system till commissioning of PCP system & handing over of the pipeline system to BGL. | | | | |
| n) | All civil/ structural works related to TCP system including supply of bricks, cement & steel etc. required for completion of the system. | | | | |
| i) | 6" Pipeline section from IJ to IJ with varying length and for requisite No. of sections | km | 0.90 | | |
| ii) | 4" Pipeline section from IJ to IJ with varying length and for requisite No. of sections | km | 0.60 | | |
| Total Amount (inclusive of all applicable taxes & duties except Service Tax) | | | | | |



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7-(i) INSTRUMENTATION WORKS

| Sl. No. | Description of Item | Unit | Quantity | Unit Rate inclusive of all applicable taxes & duties except Service Tax | Total Amount inclusive of all applicable taxes & duties except Service Tax |
|-------------|---|------|----------|---|--|
| | (2) | (3) | (4) | (5) | (6) |
| IN-1 | Supply, Calibration and Installation of instrumentation items listed below | | | | |
| 1.1 | Supply, installation and calibration of pressure Gauges (up to 50 kg/sq.cm) and their accessories inclusive of supply of necessary piping materials/tubings alongwith all necessary valves & fittings, fabrication and installation of impulse lines/manifolds. | Nos. | 4 | | |
| 1.2 | Supply, installation and calibration of pressure Gauges (up to 300 kg/sq.cm) and their accessories inclusive of supply of necessary piping materials/tubings alongwith all necessary valves & fittings, fabrication and installation of impulse lines/manifolds. | No. | 8 | | |
| 1.3 | Temperature Gauges [Range 0 - 100°C] | Nos. | 4 | | |
| | Total Amount (inclusive of all applicable taxes & duties except Service Tax) | | | | |