



# **M/s Andhra Pradesh Gas Distribution Corporation Ltd. (APGDC)**

A Joint Venture Company between GAIL Gas Limited (a wholly owned subsidiary of GAIL (India) Ltd.), a Central Government Public Sector Enterprise (PSU) and APGIC, an Andhra Pradesh State Government Public Sector Enterprise

## **VISAKHAPATNAM-SRIKAKULAM PIPELINE PROJECT (KSPL PHASE-II)**

### **CORRIGENDUM 5 FOR SUPPLY, LAYING & CONSTRUCTION OF NATURAL GAS PIPELINE & TERMINALS ALONG WITH ASSOCIATED FACILITIES**

#### **DOMESTIC COMPETITIVE BIDDING**

*E-Tender ID 586494*

**Bid Document No.:05/51/Q7TH/APGDC/001(i)**



**PREPARED AND ISSUED BY  
MECON LIMITED  
(A Govt. of India Undertaking)  
Delhi, India**



**CORRIGENDUM 5**  
**SUPPLY, LAYING & CONSTRUCTION OF NATURAL GAS PIPELINE & TERMINALS ALONG WITH**  
**ASSOCIATED FACILITIES FOR VISAKHAPATNAM-SRIKAKULAM PIPELINE PROJECT**  
**(KSPL PHASE-II)**

Bid Document : 05/51/Q7TH/APGDC/001(i)  
E-Tender Id : 586494



Dated : 10.03.2023

Sl. No.	Description	Volume	Page No.	Clause / Para / Section	Amendment / Addition / Modification / Deletion	
1	AVAILABILITY OF TENDER DOCUMENT ON WEBSITE(S)	Vol I & Corrigendum 4	5 of 1308 & 2 of 4	2(G), Section-I	Amendment	The Sl. No. 2(G) of Section-I shall be read as : From 19.01.2023 to <b>20.03.2023</b> (1400 Hrs., IST) on following websites: (i) APGDC's Website – <a href="http://www.apgdc.in">http://www.apgdc.in</a> (ii) APGDC's e-Procurement Portal (e-Portal)- <a href="https://tender.apecurement.gov.in">https://tender.apecurement.gov.in</a> or (iii) MECON's Tender Website:- <a href="http://www.meconlimited.co.in">www.meconlimited.co.in</a>
2	DUE DATE & TIME OF BID-SUBMISSION (ON OR BEFORE)	Vol I & Corrigendum 4	6 of 1308 & 2 of 4	2(I), Section-I	Amendment	The Sl. No. 2(I) of Section-I shall be read as : Date : <b>20.03.2023</b> Time : Upto 1400 Hrs (IST)
3	DATE AND TIME OF UN-PRICED BID OPENING	Vol I & Corrigendum 4	6 of 1308 & 2 of 4	2(J), Section-I	Amendment	The Sl. No. 2(J) of Section-I shall be read as : Date: <b>20.03.2023</b> Time: At 1500 Hrs (IST) Shall be conducted through Video Conferencing Details of VC via Google Meet - Google Meet joining info Video call link: <a href="https://meet.google.com/tqj-orej-zqj">https://meet.google.com/tqj-orej-zqj</a>
4	CUT-OUT SLIP	Vol I & Corrigendum 4	9 of 1308 & 4 of 4		Amendment	The revised Cutout slip is enclosed as <b>Annexure-I to this Corrigendum</b>
5	Schedule of Rates	I		SOR	Amendment	The revised SOR is enclosed as <b>Annexure-II to this Corrigendum</b> . The unit of measurement & quantity indicated against Telecommunication Work-II SOR item no. T.S.3 has been removed. <b>Rest SOR is same as earlier.</b>

**All other terms & conditions of tender document remain unaltered.**

**ANNEXURE-I to CORRIGENDUM 5**

**DO NOT OPEN - THIS IS A QUOTATION**

***Bid Document No.*** : 05/51/Q7TH/APGDC/001(i)

***Description*** : SUPPLY, LAYING & CONSTRUCTION OF  
NATURAL GAS PIPELINE & TERMINALS  
ALONG WITH ASSOCIATED FACILITIES FOR  
VISA KHAPATNAM-SRIKAKULAM PIPELINE  
PROJECT (KSPL PHASE-II)

***Due Date & Time*** : at 1500 Hrs (IST) on 20.03.2023

***From:***



***To:***



	<p><b><i>The Sr. General Manager(Contracts)</i></b> <b><i>MECON LIMITED</i></b> <b><i>15TH FLOOR, NORTH TOWER,</i></b> <b><i>SCOPE MINAR,LAXMI NAGAR,</i></b> <b><i>DELHI – 110092</i></b> <b><i>Ph No.: 91-11-22401143/22401224</i></b> <b><i>Fax No.: 91-11-22041214</i></b> <b><i>Email : <a href="mailto:cont-delhi@mecon.co.in">cont-delhi@mecon.co.in</a></i></b></p>
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***(To be pasted on the envelope containing Physical documents)***

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**ANNEXURE-II to CORRIGENDUM 5**



		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)					
APGDC Limited				Prices in INR		MECON LIMITED	
SI. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words		
1.0	<b>MAINLINE WORKS</b>						
1.0	<b>PIPELINE LAYING / INSTALLATION</b>						
	Laying/ installation of coated line pipe, associated fittings and accessories, etc. as per specifications, drawings, other provisions of Contract and instructions of Engineer-in-Charge of the sizes mentioned herein, including but not limited to carrying out the following : "Receiving and taking-over", handling, loading, transportation and unloading of line pipes and other materials from Contractor's own stock-yard(s) to workshop(s)/ work-site(s) including stringing on the pipeline Right-of-Use (ROU)/ Right of way (ROW); Arrangement of all additional land required for Contractor's storage, fabrication, access for construction (other than Owner provided ROU/ROW); supply of all materials (except Owner supplied materials), consumables, equipment, labour, etc. and other incidental works; carrying out all temporary, ancillary, auxiliary works required to make the pipeline ready for pre-commissioning as per drawings, specifications, scope of work indicated in SCC and other provisions of Contract document and instructions of Engineer-in-charge, including but not limited to carrying out the following works :  Staking and installation of temporary construction markers, clearing, grubbing, grading (as required) of Right of Use/ Right of Way;						
	Counting the number and type of trees cut in presence of DFO/concerned authorities and keeping record thereof; shifting of all obstruction within the ROU / pipeline route alignment viz. electrical line / pole, telephone line (poles), foreign pipeline; coordination with concerned authorities.  Trenching to all depths and to a width to accommodate the pipeline and/or optical fiber cable/cable duct/ conduit during lowering & backfilling as specified in scope document and as per the relevant standards, specifications, etc by excavation in all types of soils (including soft/hard rock), including controlled blasting, chiseling or otherwise cutting etc.; providing depth of padding in trench bed & above and around the pipeline, HDPE duct and OFC as required with sand / graded earth approved by Engineer-in Charge; <i>Trenching in rocky terrain by use of rock hammer/ Rock breaking tool or any other suitable and approved method, including controlled blasting (if required) with due approval of EIC.</i>						
	Survey of the detours, if required at the time of construction including marking the same in topographical sheet, preparation of AFC drawings showing survey detail and submitting same to Owner to review.						
	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 after taking over from Owner by Contractor including management of their own dump site, if required. Thorough internal cleaning of all pipes by suitable methods to remove debris, shots, grits etc. to the satisfaction of Engineer-in- Charge; Stringing of line pipes along ROU/ROW including providing straw and sand.						
	Aligning, bending, cutting and beveling (as required) of pipes for welding and field adjustments, NDT of rebevelled area, welding, carrying out non-destructive testing (100%) by X-Ray of welds as required and providing all requisite equipment, labor, 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 nondestructive tests such as ultrasonic test etc. as required on repaired joints, etc. as mentioned in SCC & Particular Jobs Specification.  Installation of carrier pipe including concrete coated pipes (wherever required) at all crossings including roads/ cartrack / pathway / drain / canals/ nala/ marshy lands/ ponds/ other water crossings etc. (except at crossings by HDD method, Cased crossings, Crossings by Thrust boring and by open cut conventional method that are specifically covered separately elsewhere in the (SOR) by open cut after prehydrotest of the section, if required, including re-storation of the banks to original conditions (in case of waterbody crossings) duly accepted by Competent Authority as defined as per specification.						
	Supply of coating materials for all field joints, Long Radius Bends, Buried Fittings, Valves, etc. including heat shrinkable sleeves and high build liquid epoxy etc. as per specifications compatible with 3-Layer PE Coating as per tender specifications with prior approval of Engineer-in-charge. Coating of all field weld joints, long radius bends, buried fittings, valves etc.;						
	Training and diversions of streams in steep slope areas, wherever required.						
	Crossing all the foreign pipeline / HT line / Power lines/ cable / any other utilities etc. with necessary concrete / PVC protection including coordination with all agencies.						
	For seismic area - the trenching and backfilling shall be carried out as per specification and drawing no. MEC/TYP/05/21/01A/004 - Trench dimensions and cohesion less select backfill for pipeline in seismic zone (excluding backfilling with selected soil for seismic area covered separately).  Lowering the pipelines in trench as per specification and standard drawing including providing sand bag separators for parallel pipelines at the specified spacing (when applicable), providing required padding with sand/graded material approved by Engineer-In-Charge, over and around the pipeline, OFC & HDPE Duct, in rocky areas, including supply of sand/graded material. In addition to padding, rock shield to be supplied and installed over the pipeline in rocky areas, backfilling with available, approved excavated material and/or other suitable soil approved by Engineer-In-Charge; Taking DGPS coordinates of each weld joint (including tie in joints) and including the same in field inspection report. The coordinate must have X,Y,Z (ground level) along with depth of cover.  Supply and installation of slope breaker as per specification and drawing in slightly undulating areas (having slope 6° to < 20°); slope stabilisation as per specification and drawing in highly undulating areas (having slope ≥ 20°)						
	Installation of LR Bend, as per specification wherever required depending on site condition.						
	Supply and installation of warning mat as per relevant clause mentioned in PJS and specifications enclosed in the bid document.						



		<p align="center"><b>SCHEDULE OF RATES</b>  <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b>  <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b>  <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b>                      Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</p>									
APGDC Limited										Prices in INR MECON LIMITED	
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)				
				In Figure	In Words						
1.0	<b>MAINLINE WORKS</b>										
	Carrying out cleaning, pigging and hydrostatic testing including air cleaning, flushing, filling, gauging, pressurization of complete pipeline in various test sections as approved by Engineer-In-Charge to the specified test pressure, providing all equipment, pumps, fittings, instruments, dead weight tester, test headers, pressure recorder, all types of pigs etc., and services, supervision, labour, consumables, water including supply of corrosion inhibitor, air, etc. as required, locating of leaks, if any, occurred during hydrotesting attributable to contractor either by further sectionalising or any other suitable standard recommended practice with due approval of Engineer-in-Charge and rectification of defects, retesting after rectification, successful completion of hydrotesting of pipeline to acceptance criteria defined in the specifications.										
	(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 tie-ins, including the tie-in(s) of the pipeline / piping installed with the adjacent section of pipeline by others including cutting of test header, re-beveling as required, radiography and other NDT examination, joint coating as per specification.										
	Carrying out all temporary, ancillary, auxiliary works and all incidental works required to make the pipeline ready for pre-commissioning;										
	Repair of defects recorded during EGP/gauge plate run or otherwise including cutting, beveling, welding, radiography, field joint coating etc; as applicable,										
	Final clean-up and restoration of right of way/ right of use including disposal of debris and returning all surplus material to defined disposal areas and storage yards as mentioned in Annexure-2 to SCC, as directed by Engineer-In-Charge;										
	Restoration of land, facilities, boundary wall and roads etc. and associated facilities dismantled/damaged by the Contractor during construction; Complying with all stipulation/conditions/recommendation of the authorities before and after execution of the work; Preparation of as-built drawings, pipe-book and other records as specified in the specifications. SOR shall be read in conjunction with scope of work, job specific requirements, specifications, standards, drawings and other provision of contract document. All above works, line pipe laying and installation all above works for buried pipeline as per following details:										
	Installation of Coated Line Pipes as per following details:										
	<b>Line pipe details</b>										
	Size Thk. Grade Coating Type Length of each Pipe Type of Soil Terrain/ Area										
	OD (mm) (mm)										
1.1	457.2 8.7 API 5L Gr. X-70 PSL-2 3 Layer PE Coating Double random (approx. 11.5 to 12.5 mtr.) & Bevel End All type of Soil Flat / Undulating	M	65000								
1.2	457.2 8.7 API 5L Gr. X-70 PSL-2 3 Layer PE Coating Double random (approx. 11.5 to 12.5 mtr.) & Bevel End Rocky strata (with/without soil) Flat / Undulating	M	500								
1.3	457.2 10.3 API 5L Gr. X-70 PSL-2 3 Layer PE Coating Double random (approx. 11.5 to 12.5 mtr.) & Bevel End All type of soil Flat / Undulating	M	26000								
1.4	457.2 10.3 API 5L Gr. X-70 PSL-2 3 Layer PE Coating Double random (approx. 11.5 to 12.5 mtr.) & Bevel End Rocky strata (with/without soil) Flat / Undulating	M	500								
1.5	457.2 12.7 API 5L Gr. X-70 PSL-2 3 Layer PE Coating Double random (approx. 11.5 to 12.5 mtr.) & Bevel End All type of strata Flat / Undulating	M	1200								



		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)					
APGDC Limited				Prices in INR		MECON LIMITED	
1.0	MAINLINE WORKS	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	
SI. No.	Description of Item			In Figure	In Words	In Figure	Service Accounting Codes (SAC)
	<p><b>Notes :</b></p> <p>1. This item rate is applicable for complete work of laying of underground pipeline of PHASE-II consisting of Visakhapatnam to Srikakulam Pipeline Section (18" x 102.3 Km)- From DT at SV-4 (Visakhapatnam) to Receiving Terminal at NAEL Industries (Srikakulam) as per Schematic Route Diagram. (Refer Drg. No.: MEC/Q7TH/05/28/M/0021 enclosed as APPENDIX-IV to PJS) including installation of aboveground insulating joints, flow tee and station approach pipeline but excluding aboveground &amp; underground installation of SV Station (tie in to tie in with mainline) which are covered separately. The length of pipeline are tentative.</p> <p>2. Rate for laying of OFC &amp; duct shall be quoted in relevant Schedule of Rates (SOR) of Telecom works, hence not to be included in Pipeline Laying works.</p> <p>3. For details of pipeline route, refer enclosed Alignment Sheets and Detailed engineering survey report enclosed in tender document. <b>It is advised that Bidder should study the pipeline route (ROU restrictions, terrain, soil strata etc.) carefully before quoting.</b></p> <p>4. The above rate shall be inclusive of hydrotesting of complete pipeline section including hydrotesting of all crossing sections along-with the mainline.</p> <p>5. Payment for Preparation of as-built drawings, pipe-book and other records as specified in the specifications is to be covered in this SOR rate.</p> <p>6. List of crossings indicating tentative Crossing methodology is enclosed as APPENDIX-VIII to PJS in tender document. Bidders are advised to visit the site for actual assessment of various crossings. Payment shall be made as per approved Crossing methodology as per relevant SOR item.</p> <p>7. In case of change of crossing methodology (as indicated in APPENDIX-VIII to PJS) by EIC, the rates shall be payable as per relevant SOR item. In case, Contractor changes crossing methodology from open cut to trenchless/any other method on his own, then, no additional payment shall be admissible on this account.</p> <p>8. Void</p> <p>9. Payment for supply &amp; application of continuous concrete weight coating will be made as per other relevant SOR item.</p> <p>10. The above item rate excludes crossings by HDD, crossings by Open cut conventional method (which are covered separately in relevant SOR items). For other crossings, it is deemed to be inclusive in above item rate.</p> <p>11. Classification of soil and rocky strata shall be done on the basis of following definition;</p> <p>a) <b>All types of Soils</b> - Generally any strata, such as sand, gravel, loam, clay, mud, black cotton moorum, shingle, river or nallah bed boulders, siding of roads, paths etc. and hard core, macadam surface of any description (Water bound, grouted tarmac etc.) lime concrete mud concrete and their mixtures which for excavation yields to application of picks, shovels, jumper, sacrifiers, ripper and other manual digging implements.</p> <p>b) <b>Rocky Strata</b> - Lime stone, sand stone, hard laterite, hard conglomerate and un-reinforced cement concrete or any rock / boulder such as Quartzite, granite, basalt, reinforced cement concrete of which requires blasting/chiseling/wedging/use of rock hammers and cutters or any other agreed method for excavation.</p> <p>11. Execution of pipeline laying in rocky strata shall be jointly recorded at site. Installation of rock shield and padding with sand /soft soil are to be done by contractor where rocky strata is encountered. Supply of rock shield and padding using sand/soft soil are inclusive in above rate. Bidder has to quote accordingly.</p> <p>12. Rocky strata shall be considered if rock is encountered across any layer of trench depth &amp; width.</p> <p>13. Supply of line pipes shall be made separately as per relevant SOR item</p>						
2.0	<p><b>CONTINUOUS CONCRETE COATING</b></p> <p>Additional work over and above SOR SI. No. 1 for supply of all consumables and materials and application of continuous concrete weight coating of minimum density 2245 Kg/m<sup>3</sup> of minimum grade M-35 (design mix), on pipes of all wall thicknesses and concrete coating of the field joints thereof, in all areas of work (wherever required) except rivers /waterbody crossings covered separately under SOR item no. 6, and performing all works as per specifications and instructions of Engineer-in-Charge and other provisions of Contract document.</p> <p>Pipes as per following details :</p>						
2.1	Pipe OD-457.2 mm, WT- 10.3 mm for X-70, Coating Thickness -80 mm	M	500				
3.0	<p><b>BACKFILLING WITH SELECT SOIL</b></p> <p><b>BACKFILLING WITH SELECT SOIL (For Station Approach)</b></p>						
3.1	Unit rate over and above SOR SI. No. 1 for supply of specified and approved quality of sand / rock / other types of soil including supply of 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 of pipeline, including transportation of backfill material over all distances and disposal of surplus excavated soil, complete.	M <sup>3</sup>	250				
4.0	<p><b>PIPING WORKS FOR SECTIONALISING VALVE STATION</b></p> <p>All works for installation of all piping, valves, insulating joints, flow tee and QOEC above ground at all elevations and below ground at all depth for Sectionalising Valve Station in all type of terrains and soils including transportation and handling of all materials i.e. extended stem full bore 18" (457 mm OD) butt welded AV Sectionalising Ball valve, Insulating Joint of all size, all types of valves, Flow tees of all size, QOEC, line pipes for mainline and flanges &amp; fittings from Contractor's yard to work site. Supply of gaskets, studs, nuts, copper jumpers, nipples &amp; coupling etc. Installation / Erection of instrumentation items i.e. pressure gauge, SS tubing and temperature gauge including tubing works, consumables, manpower, machineries, tools &amp; tackles for carrying out all mechanical works of underground and above ground piping including fabrication, welding, nondestructive testing of welds, weld repairs/ re-testing.</p> <p>Cleaning/ flushing, pre-hydrotesting &amp; hydrostatic testing, dewatering, functional testing, cutting of mainline and bevelling (if required), tie-in of valve assembly, including radiography of tie-in joints, corrosion coating (by heat shrink sleeves) for buried piping and external painting for buried fittings by high build epoxy of min. 600 micron of R-95 or equivalent as required, obtaining all statutory clearances, approvals and permissions for the works (wherever required), making of valve pit (for detail refer relevant drawings (i.e. P&amp;ID, Plot Plan) for SV Station enclosed with tender) filled with sand, excavation and filling in all types of soils including soft/ hard rock for installation of piping/ pipe supports including all associated civil works (pertaining to supports only); painting, finishing, clean-up and restoration of site; preparation of as-built drawings, <del>and other records as specified in the specifications</del></p>						
4.1	Sectionalising Valve Station-01	Lumpsum	1				
4.2	Sectionalising Valve Station-02	Lumpsum	1				
4.3	Sectionalising Valve Station-03	Lumpsum	1				
4.4	Sectionalising Valve Station-04	Lumpsum	1				







		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					
APGDC Limited				Prices in INR		MECON LIMITED	
1.0	MAINLINE WORKS	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item			In Figure	In Words	In Figure	
	<b>Notes:</b> 1. This work is exclusive of all works associated with main pipeline covered at SOR SI No. 1.0 above. 2. All Civil/ structural works except for piping supports will be paid separately as per rates provided elsewhere. 3. Void 4. All other works pertaining to SV Station (Instrumentation works) shall be paid as per rates provided elsewhere in the tender document. 5. Length shall be considered from tie-in to tie-in with mainline. 6. Supply of assorted pipes, valves, flanges & fittings shall be paid as per rates provided elsewhere in the SOR. 7. Payment against Non-Destructing testing (X-ray / Gamma) of fabricated joints of all sizes of Sectionalizing Valve Station is included in above item rate. (Refer Plot plan drawing and P&ID enclosed with tender document for ascertaining quantum of mechanical work associated ).						
5.0	<b>RIVER CROSSING (by HDD Method)</b> Complete work of the river crossings (between the limits as defined in drawing - detailed construction drawings shall be prepared by the contractor duly approved by OWNER/PMC) by Horizontal Directional Drilling (HDD) method including "Receiving and taking over" of three layer PE coated line pipes from Contractor's Stockyard and transportation to work shop/ worksite including all handling, loading, unloading, aligning etc. supply of all consumables, deployment of manpower, equipments, other resources to work site(s) and acquiring the required land for storage, fabrication, site office access for Contractor etc. and execution of but not limited to the following works in accordance with specifications, scope of work and instructions of Engineer-in-charge and as per provision of Contract Document. Contractor may ascertain the bore hole data by taking random samples, obtain historical data/ scour depth (in case of river) from concerned authority ascertaining under neath soil & strata, necessary cover required over the carrier pipeline from lowest bed level of the stipulated water crossing if they feel the necessity.  Design & calculation, detail engineering and making of crossing drawing for getting approval from concerned Authority/ Engineer-in-charge, getting work permit/ NOC for water crossings as well as utility crossings (if any) encountered during water crossing prior to start of execution of work.						
	Drilling to the required depth on the banks and bed including maintenance of drill hole in all types of strata including hard rock, all depth to accommodate the pipeline and CS conduit for OFC laying at all conditions of the river crossings by HDD methods for providing with minimum cover either (i) Minimum 1.5m below the scour level / profile or as duly approved/ accepted by concerned authority (under whose jurisdictions the crossing lies) whichever is more---- For rivers with rocky bed or (ii) Minimum 2.5m below the scour level / profile or as duly approved/ accepted by concerned authority (under whose jurisdictions the crossing lies) whichever is more---- For major rivers. and (iii) In addition to point (i) & (ii), In case of multiple combined X-ing i.e. river alongwith road/ drain, minimum cover requirement as per specification/ concerned authority for each type of x-ing has also to be fulfilled.						
	Laying of pipeline by the approved HDD method across the river crossing including strings preparation of pipes, welding, testing, 100 % NDT by AUT/ radiography by X-ray, welding repair and retest, coating of field joints with special type Dirax Heat Shrink Sleeve or equivalent (including supply of coating material) and repair of pipeline coating with special PERP-60E repair patch or equivalent material (including supply of repair patch) as per specification, pre-hydrotest of complete strings made for crossing etc. as per specification.						
	String preparation and laying of 6 inch CS conduit for OFC by HDD method, welding etc.						
	Backfilling of the ditch/ trench including restoration and clean-up of area, disposal of drilling fluid & waste etc. to the satisfaction of Engineer-in-charge and /or as directed by Concerned Authority.						
	Gauging, Pigging, Cleaning, Post installation hydrotest, dewatering, swabbing and tie-in with pipeline at either banks etc.as per specifications, codes, approved drawings, calculations, methods and as directed by Engineer-in-charge and provision of contract document; getting NOC from all concerned authority of the facilities crossed.						
5.1	Crossing of Gostani River at Ch. 41.278 Km for carrier pipeline of size 457 mm OD x 10.3 mm of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. (For all type of strata excluding hard rock)	M	400				
5.2	Crossing of Gostani River at Ch. 41.278 Km for carrier pipeline of size 457 mm OD x 10.3 mm of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. (For hard rock)	M	100				
5.3	Crossing of Champavati River at Ch. 63.569 Km for carrier pipeline of size 457 mm OD x 10.3 mm of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. (For all type of strata excluding hard rock)	M	500				
5.4	Crossing of Champavati River at Ch. 63.569 Km for carrier pipeline of size 457 mm OD x 10.3 mm of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. (For hard rock)	M	100				
5.5	Crossing of Kandivalasa River at Ch.76.776 Km for carrier pipeline of size 457 mm OD x 12.7 mm of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. (For all type of strata excluding hard rock)	M	400				



 <b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)						
APGDC Limited		Prices in INR MECON LIMITED				
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words	In Figure
1.0	<b>MAINLINE WORKS</b>					
5.6	Crossing of Kandivalasa River at Ch.76.776 Km for carrier pipeline of size 457 mm OD x 12.7 mm of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. <b>(For hard rock)</b>	M	100			
	<p><b>Notes:</b></p> <p>(i) Crossings indicated in crossing detail drawing enclosed with the tender are tentative. Crossing width may vary as per site condition. Bidders are advised to visit the site for actual assessment of extent of crossing and to assess the extent of cover which may have to be provided. Actual string length for HDD shall be as per design calculations so that pipe is not under stress as permitted by codes/ specifications. Final length of string shall be decided after decision of minimum cover requirement by concerned Authority/ Engineer-in-charge.</p> <p>The above HDD lengths are tentative only and final length shall be decided as per actual ground profile taken during execution. Realignment may be required for some of the crossings. In case, any of the river crossings is not possible by HDD due difficult terrain/soil strata, then, the same shall be executed by open cut conventional method and payment shall be regulated as per separate accordingly.</p> <p>(ii) The Contractor has to quote for all crossings alongwith 6" CS conduit. It is sole discretion of the Contractor to do HDD crossing of mainline pipe as well as CS conduit pipe either by suitably strapping together both the carrier pipe &amp; CS conduit and pulled through the same drill hole or making separate HDD for 6" CS conduit for OFC laying at minimum 4m distance apart from centreline of HDD of mainline either side. No separate payment for HDD for 6" CS conduit shall be paid.</p> <p>(iii) Payment shall be made only for the length of final tied-in carrier pipeline string with mainline and CS conduit laid by HDD method under the above item rate and no separate payment shall be made under any other clause mentioned elsewhere.</p> <p>(iv) <b>Geo-technical investigation, Hydrographical and Hydrological survey shall be carried out by the successful bidder</b> during execution of the contract as per specification. Contractor shall submit design calculation and all construction (profile) drawings in line with the survey data for Owner / PMC approval. Work shall start only after approval of the above. <b>Payment for Geo-technical investigation, Hydrographical and Hydrological survey shall be done as per relevant SOR item cover in CIVIL SOR.</b></p> <p>(v) Void</p> <p>(vi) Contractor shall not be entitled for any extra payment due to location / area constraint, capacity of rig, etc.</p> <p>(vii) In case of change of crossing methodology for any above listed crossing as decided by EIC, the payment for that crossing shall be made as per relevant SOR item.</p> <p>(viii) Post Hydrotesting shall be carried out as per approved procedure.</p> <p>(ix) Payment for supply of 6" CS conduit is inclusive in above SOR.</p> <p>(x) <b>In case hard rock is encountered during geo-technical investigation / during execution , payment for the hard rock (Length to be calculated as per philosophy defined below) shall be made as per relevant SOR on running meter basis . Hard rock is defined as rock sample having UCS value greater than 25 Mpa along the line of drill of HDD. Laboratory test shall be carried out by NABL or equivalent accredited laboratory as per ISO/IEC 17025. The philosophy for calculating the HDD length in hard rock strata shall be as per followings :</b></p> <p>a) Hard rock is found along the line of drill in ≤ 50% of number of bore holes as per Geotechnical Survey Reprt - Payment as per relevant SOR for hard rock strata shall be made for half of HDD length. Balance half of HDD length shall be paid as per relevant SOR for all type of strata excluding hard rock.</p> <p>b ) Hard rock is found along along the line of drill in &gt; 50% of number of bore holes as per Geotechnical Survey Reprt - Payment as per relevant SOR for hard rock strata shall be made for full HDD length.</p>					
6.0	<b>RIVER/ WATERBODY CROSSINGS BY OPEN CUT CONVENTIONAL METHOD</b>					
	Complete work of the crossings (between the limits as defined in approved drawing) including "Receiving and taking over" of corrosion coated line pipes from Contractor's Stockyard and transportation to work shop/ worksite including all handling, loading, unloading, etc. supply of all Contractor supplied material to worksite(s) including consumables, deployment of manpower, equipments, other resources and acquiring the required land for storage, fabrication, access for Contractor etc. and execution of, but not limited to, following works in accordance with specifications and instructions of Engineer-in-charge and as per all provision of Contract Document.					
	<b>For waterbody crossings:</b> Pre-construction survey, obtaining scour depth (for river) from concerned authority (if required), necessary cover required over the carrier pipeline from lowest bed level of the stipulated water crossing to be obtained from concerned authority, bed strata data including design & detail engineering and making of crossing drawing for getting their approval from concerned Authority/ Engineer-in-charge, getting work permit/ NOC for water crossings as well as utility crossings, (if any), encountered during water crossing prior to start of execution of work.					
	Following data shall be obtained from concern authority/ local sources (for river) to finalise scour depth :-					
	(i) Past Historical flood level data indicating HFL to determine highest flood level.					
	(ii) River flow data including velocity of water flow.					
	(iii) Necessary information regarding type of soil and strata underneath the river bed.					
	All works related to construction of cofferdam, dewatering and stream diversion etc. (as required); Trenching to the required depth on the banks and bed including maintenance of trench in all types of strata, all depth to a width to accommodate the pipeline and CS conduit at all conditions of the water crossings for providing with minimum cover over top of the pipe at all point across the maximum possible width of water bed (as per drawing) either 1.5 mtrs. below the predicted scour profile expected during the life time of the pipeline or 2.5 mtrs. below the available lowest firm bed (if scour profile/ depth not available) of the water crossing by ascertaining bed level upto 50 mtrs. both the side from crossing location or the actual depth as per code/ specification or as decided by concerned Authority/ Engineer-in-charge whichever is more.					



 <b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)							
APGDC Limited		Prices in INR MECON LIMITED					
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words		
1.0	<b>MAINLINE WORKS</b>						
-	Strings preparation of pipes, welding, testing, 100 % radiography by AUT/ X-ray, welding repair and retest, coating of field joints with Heat Shrink Sleeve or equivalent (including supply of coating material) and repair of pipeline coating with repair patch or equivalent material (including supply of repair patch) as per specification, pre-hydrotest of complete strings made for crossing etc.						
-	Final strings preparation of pipes as per approved drawing & specification or as decided by Engineer-in-charge depending on site condition, repair of coating damages, coating of field joints, etc. as per respective technical specification.						
-	Supply and application of Continuous concrete weight coating of minimum density 2245 kg/m <sup>3</sup> of minimum grade M-35 (design mix) on pipes and field joints thereof in all areas of work wherever required as per site condition and performing all works as per specification. Concrete Coating thickness for 18" - 80 mm						
-	Laying of the pipeline by the approved crossing method across the water crossing in the approved trench.						
-	Supply and installation of warning mat as per relevant clause mentioned in PJS and specifications enclosed in the bid document.						
-	Backfilling of the trench including supply and padding by select backfill as required: re-storation of banks to original condition duly accepted by Competent Authority and getting NOC from concerned authority, restoration of disturbed area and clean-up etc.						
-	Pigging, cleaning, Post installation hydrotest, dewatering, swabbing and tie-in with pipeline at either banks etc.as per specification, codes, approved drawings, calculations, methods and as directed by Engineer-in-charge.						
6.1	<b>River/ Water Crossings wherever required at minimum cover mentioned as above.</b>						
6.1.1	Crossing of river/ waterbody for carrier pipeline of size 457 mm OD x 8.7 mm / 10.3 mm thk of API 5L Grade X-70 along with CS conduit of size 150 mm X 6.4 mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC	M	200				
	Note: (i) The width indicated is not for any single crossing. This shall be as per requirement at site for crossing at different locations. (ii) Final length of string & cover from top of pipe for each crossing shall be decided and approved by concerned Authority/ Engineer-in-charge. (iii) Payment for the length of final tied-in carrier pipeline string with mainline and CS conduit made for crossing laid by open cut conventional method are inclusive in the above item rate and no separate payment shall be made under other clause mentioned elsewhere.						
	(iv) Payment for concrete coated portion (limited to bank to bank) shall be made by SOR item no. 6.1 and payment for rest of the portion shall be made by other relevant SOR item. (v) If need for bank and bed stabilization arises as per instructions of Engineer-in-charge, the scheme for Bed & Bank Stabilisation as per standards MEC/05/11/STD/015 & MEC/05/11/STD/016. shall be executed and the same shall be paid separately as per rates provided elsewhere in the SOR. (vi) This item rate is applicable for Minor / Major river crossings. The above item rate is also applicable in case of change in crossing methodology of any particular crossing (as indicated in <b>APPENDIX-VIII to PJS</b> ) duly approved by EIC. (vii) Payment for supply of 6" CS conduit. is inclusive in above SOR.						
7.0	<b>CROSSING (by HDD Method)</b>						
	Complete work of any crossing (between the limits as defined in approved drawing - detailed construction drawings shall be prepared by the contractor duly approved by OWNER/PMC) by HDD method including "Receiving and taking over" three layer PE coated line pipes from Contractor's stock yard and transportation to work shop/ work site including all handling, loading, unloading, aligning etc. supply of all Contractor supplied material including consumables, deployment of manpower, equipment, other resources to work site(s) and acquiring the required land for storage., 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.						
-	For waterbody, In-situ pre-construction survey including auger bore(s) of minimum 10.0 M depth [in the middle third of waterway; at least 1 in each waterbody and at interval of 50M centres] to establish bed strata, its bore log by soil testing; obtaining historical data/ scour depth (in case of river) from concerned authority ascertaining under neath soil & strata, necessary cover required over the carrier pipeline from lowest bed level of the stipulated water crossing including design & calculation and detail engineering and making of crossing drawing for getting the approval from concerned Authority/ Engineer-in-charge, getting work permit/ NOC for water crossings as well as utility crossings (if any) encountered during water crossing prior to start of execution of work.  For road and railway crossings, 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 the crossing as well as utility crossings (if any) encountered during crossing prior to start of execution of work.						
	In case of water body crossings  Drilling to the required depth on the banks and bed including maintenance of drill hole in all types of strata including hard rock, all depth to accommodate the pipeline and CS conduit for OFC laying at all conditions of the waterbody crossings by HDD methods for providing with minimum cover either (i) Minimum 1.5m below the scour level / profile or as duly approved/ accepted by concerned authority ( under whose jurisdictions the crossing lies) whichever is more---- For rivers with rocky bed or (ii) Minimum 2.5m below the scour level / profile or as duly approved/ accepted by concerned authority ( under whose jurisdictions the crossing lies) whichever is more---- For major rivers. or (iii) Minimum 1.5 m below the bed level / profile or as duly approved/ accepted by concerned authority ( under whose jurisdictions the crossing lies) whichever is more---- For minor waterbody crossings. and (iv) In addition to point (i) & (ii), In case of multiple combined X-ing i.e. river alongwith road/ drain, minimum cover requirement as per specification/ concerned authority for each type of x-ing has also to be fulfilled.						

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APGDC Limited				Prices in INR		MECON LIMITED	
1.0	MAINLINE WORKS	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item			In Figure	In Words	In Figure	
-	In case of road crossing, drilling to required depth from top of road including maintenance of drill hole in all types of strata including hard rock, all depth to accommodate the pipeline and CS conduit for OFC laying at all conditions encountered during road 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.						
-	In case of railway crossing, drilling to required depth from top of rail including maintenance of drill hole in all types of strata including hard rock, all depth to accommodate the pipeline and CS conduit for OFC laying at all conditions encountered during railway crossing by approved HDD methods for providing minimum cover of 7 m below ground level throughout railway land width and also at least 7 meters below formation level in cutting throughout the railway land width or as specified in RDSO guidelines / code / specification or the actual depth as decided by concerned authority, whichever is more. For railway crossings, class 4 pipe shall be used within railway land and up to a distance of risk radius outside the railway boundary (ROU/ROW) on either side.						
-	Laying of the pipeline (for water body, road and Railways crossing) by the approved HDD method across the crossing including, strings preparation of pipes, welding, testing, 100% NDT by AUT/ radiography by x-ray, welding repair and retest, coating of field joints with special type Dirax Heat Shrink Sleeve or equivalent (including supply of coating material) and repair of pipeline coating with special PERP-60E repair patch or equivalent material (including supply of repair patch) as per specification, pre-hydrotest of complete strings made for crossing etc.						
-	String preparation and laying of 6 inch CS conduit for OFC by HDD method, welding etc.						
-	Backfilling of the ditch/ trench including restoration and clean-up of area, disposal of drilling fluid & waste etc. to the satisfaction of Engineer-in-charge and /or as directed by Concerned Authority.						
-	Gauging, Piggging, Cleaning, Post installation hydrotest, dewatering, swabbing and tie-in with pipeline at either banks etc. as per specifications, codes, approved drawings, calculations, methods and as directed by Engineer-in-charge and provision of contract document; getting NOC from all concerned authority of the facilities crossed.						
7.1	<b>Details of Crossing</b>						
7.1.1	Any type of crossings for carrier pipeline of size 457 mm OD x 10.3 mm thk of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. <b>(For all type of strata excluding hard rock)</b>	M	8000				
7.1.2	Any type of crossings for carrier pipeline of size 457 mm OD x 10.3/12.7 mm thk of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. <b>(For Hard rock)</b>	M	1500				
7.1.3	Any type of crossings for carrier pipeline of size 457 mm OD x 12.7 mm thk of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC. <b>(For all type of strata excluding hard rock)</b>	M	300				
	<b>Notes:</b>						
	(i) The width indicated are not for any single crossings. This shall be as per requirement at site for crossing at different locations.						
	(ii) Width of the crossings are indicated in respective Crossing drawing enclosed with the tender document. Crossing width may vary as per site condition. String length for HDD shall vary as per design calculations so that pipe is not under stress as permitted by codes/ specifications. However final length of string & cover from top of pipe shall be decided and approved by concerned Authority / Engineer-in-charge.						
	(iii) It is sole discretion of the Contractor to do HDD crossing of mainline pipe as well as CS conduit pipe either by suitably strapping together both the carrier pipe & CS conduit and pulled through the same drill hole or making separate HDD for 6" CS conduit for OFC laying at minimum 4m distance apart from centreline of HDD of mainline either side. However, authority requirement shall be binding on Contractor. No separate payment for HDD for 6" CS conduit shall be paid.						
	(iv) Payment for the length of final tied-in carrier pipeline string with mainline and CS conduit laid by HDD method are inclusive in the above item rate and no separate payment shall be made under other clause mentioned elsewhere.						
	(v) <b>This item is applicable for unspecified crossings including Railway crossings, specific road crossings (in case of requirement as per concerned authority permission or as decided by EIC) and waterbody crossings duly approved by EIC.</b> The above rate is also applicable in case of change in crossing methodology of any particular crossing (as indicated in APPENDIX-VIII to PJS) by EIC.						
	(vi) Payment for supply of 6" CS conduit is inclusive in above SOR.						
	(vii) <b>In case hard rock is encountered during geo-technical investigation / during execution , payment for the hard rock (Length to be calculated as per philosophy defined below) shall be made as per relevant SOR no. 7.1.2 on running meter basis . Hard rock is defined as rock sample having UCS value greater than 25 Mpa along the line of drill of HDD. Laboratory test shall be carried out by NABL or equivalent accredited laboratory as per ISO/IEC 17025. The philosophy for calculating the HDD length in hard rock strata shall be as per followings ;</b> a) Hard rock is found along the line of drill in $\leq 50\%$ of number of bore holes as per Geotechnical Survey Reprt - Payment as per SOR item no. 7.1.2 shall be made for half of HDD length. Balance half of HDD length shall be paid as per SOR item no. 7.1.1 above. b ) Hard rock is found along along the line of drill in $> 50\%$ of number of bore holes as per Geotechnical Survey Reprt - Payment as per SOR item no. 7.1.2 shall be made for full HDD length.						
8.0	<b>PERMANENT MARKERS</b>						
	Supply, fabrication and installation of following types of permanent markers along the route including all associated civil works such as excavation in all types of soil, construction of pedestals and grouting with concrete, cleaning, supply and application of approved colour and quality of primer and paint, stencil letter cutting for numbers, direction, chainage, etc., restoration of area to original condition and performing all works as per drawings, specifications and instructions of Engineer-in-charge.						
8.1	Pipeline Warning Signs	Nos.	260				
8.2	Right-of-way boundary markers	Nos.	820				



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APGDC Limited				Prices in INR		MECON LIMITED	
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words		
1.0	<b>MAINLINE WORKS</b>						
8.3	Kilometer Posts	Nos.	102				
8.4	Direction Markers	Nos.	90				
8.5	Aerial Markers	Nos.	20				
8.6	Navigable Waterway Markers	Nos.	6				
	<b>Note:</b> Final quantities of Marker may vary. This shall be confirmed by EIC before fabrication.						
9.0	<b>VIDEOGRAPHY &amp; PHOTOGRAPHY</b>						
9.1	Carrying out the videography & Photography of the pipeline section construction activities. The work shall be carried out in two phases. <b>Phase 1:</b> Videography & photography of the entire route prior to construction activities i.e. pipeline route, location of various stations, TOP, all crossing like road / railways, river, etc. <b>Phase 2:</b> Videography & photography during construction activities of Mainline Works i.e. Stringing, Welding, Radiography, Joint Coating, Lowering, Backfilling, etc. performing all works as per specification and instructions of EIC and other provision of contract document.	Km	103				
	<b>Notes:</b> 1. Drone shall be used for videography & photography of Phase-1 activities and restoration activities. 2. Videography shall be of High definition quality.						
10.0	<b>MAGNETIC CLEANING AND ELECTRONIC GEOMETRY PIGGING</b>						
10.1	Mobilisation/demobilisation of pigging tools, tackles, consumables, accessories and personnel by contractor at work site including but not limited to magnet pig, electronic geometry pigs and pig tracking device, temporary launcher and receiver as per specification and other provision of the bid document including supply of material, equipment, manpower, etc. as required for geometry inspection and magnet cleaning including calibration of magnetic and caliper tools at works site, running of adequate no. of magnet pigs and electronic geometry pigs (caliper) including pig tracking at 5 to 10 Km interval, preparation of site report on pipeline, data analysis at Contractors facility as per specification and provisions of the Bid Document.	Km	103				
11.0	<b>PRE-COMMISSIONING OF ENTIRE UNDERGROUND PIPELINE AND TERMINALS / STATIONS.</b>						
	Pre-commissioning activities and pre-commissioning checks to the specified acceptance criteria, making the entire pipeline system ready for commissioning, providing assistance during the complete duration of commissioning operations, supply of all equipment, manpower, consumables (including pigs and required quantity of nitrogen for valve operations) 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						
11.1	<b>Precommissioning Checks</b>						
11.1.1	Pre-commissioning of pipeline including terminals / stations	Km	103				
11.2	<b>Dewatering and swabbing</b>						
11.2.1	Dewatering and swabbing of pipeline including terminals / stations	Km	103				
11.3	<b>DRYING</b>						
	Complete work of carrying out drying by vacuum drying method of pipeline section including supply of manpower, equipments & consumables, 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.						
11.3.1	Drying by vacuum drying method	Km	103				
12.0	<b>COMMISSIONING ASSISTANCE AND COMMISSIONING</b>						
12.1	Providing commissioning assistance to other sections (if applicable) and commissioning of the section including all stations and including supply of all consumables, nitrogen, all equipment, manpower, etc., complete as per requirement of specifications, other provisions of contract document and instruction of Engineer In-charge.	Km	103				
13	<b>IDLE TIME PRESERVATION:</b>						
13.1	Preservation of complete pipeline section including sub sections, associated facilities and terminal facilities (installed by Contractor) for a period of one month and its maintenance by filling and pressurising with nitrogen to a positive pressure of 2 bars (g). Supply and maintenance of nitrogen at required pressure, including supply of all consumables, nitrogen, all equipment, manpower, etc., complete as per requirement of specifications, other provisions of contract document and instruction of Engineer In-charge	Km	103				
13.2	Preservation and Maintenance of pipeline at a positive pressure of 2 bars (g) beyond 1 month.	Km/month	103				
	<b>Note:</b> i) Arrangement required for idle time preservation i.e. all required fabrication works for blanking at both ends, providing the provision for filling & venting of nitrogen and all necessary arrangement as required shall be done by the contractor as per instruction of EIC. ii) If month is partially completed, payment shall be made on pro-rata basis.						
14	<b>DIGITIZATION OF RADIOGRAPHY FILMS:</b>						



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APGDC Limited				Prices in INR		MECON LIMITED	
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words		
1.0	<b>MAINLINE WORKS</b>						
14.1	Carrying out digitization of all radiographic films (mainline and terminal piping) in the form of digital images (which can then be archived safely for long life and electronic retrieval) complying to all the legal local rules, codes and international standards. Submission of digital images of radiographic film along with compatible software in 6 sets of CD/DVD for electronic viewing /retrieval. Note ; In case, bidder performs radiography against AUT, Digitization of the same is also inclusive in the quoted rates.	Lumpsum	1				
15	<b>TRANSPORTATION OF FITTINGS, FLANGES, VALVES, EQUIPMENT ETC.</b>						
15.1	"Receiving and taking over", handling, lifting, loading on truck, transportation and unloading of Company supplied fittings, flanges, valves, equipment etc from any storage yard to worksite / contractor's storage yard/ any other storage yard or as decided by EIC. The above work also includes stacking the flanges, fittings and valves etc. properly. Above work shall be carried out as per standard drawing, specification, instruction of Owner and other provision of contract document.	MT-Km	200				
	Notes: i) The quantities given in above item no. are tentative only and shall not be considered to be binding. The quantities may be increased, decreased or deleted as per the actual site requirement and instructions / recommendations of Owner. The unit rate shall be operated to work out the final payment to the contractor. ii) Above price shall be inclusive of all type of taxes & duties, transit insurance during transportation & other insurance etc. including all financial & commercial implication as per the tender document. No other payment except as per quoted unit rate & executed quantities will be payable by the Owner. iii) The above rate is applicable for shifting of Owner supplied material only.						
16.0	<b>TRANSPORTATION OF LINE PIPE</b>						
16.1	"Receiving and taking over", handling, lifting, loading on trailers, transportation and unloading of Company supplied line pipe from one dumpyard to other dumpyard as decided by EIC. The above work also includes stacking the pipes on wooden sleepers/ sand pads. Above work shall be carried out as per standard drawing, specification, instruction of Owner and other provision of contract document.	MT-Km	5000				
	Notes: i) The quantities given in above item no. are tentative only and shall not be considered to be binding. The quantities may be increased, decreased or deleted as per the actual site requirement and instructions / recommendations of Owner. The unit rate shall be operated to work out the final payment to the contractor. ii) Above price shall be inclusive of all type of taxes & duties, transit insurance during transportation & other insurance etc. including all financial & commercial implication as per the tender document. No other payment except as per quoted unit rate & executed quantities will be payable by the Owner. iii) The above rate is applicable for shifting of Owner supplied line pipes only.						
17.0	<b>GEO TEXTILE BAGS FOR ANTI-BUOYANCY</b>						
17.1	Additional works over and above SOR Sl. No. 1.0 for design, manufacture and supply of Non-biodegradable geo-textile bags (made of polypropylene fabric) materials and installation of geo-textile bags duly filled with gravel / stone ballast on pipelines of all wall thickness for anti buoyancy as per specification, drawing, and instructions of Engineer-in-charge and other provisions of the contract document.	Nos.	50				
18.0	<b>ROU MANAGEMENT FOR MAINLINE WORKS</b>						
18.1	ROU management of entire pipeline route covered under SOR item no. 1 above, during preconstruction survey, opening of ROU and maintenance of ROU upto completion of entire Mainline works (including CP and Telecom works); all type of liasoning/coordination with local people/villagers, farmers, land owners or any other person/ institution etc. directly or indirectly linked with the pipeline/affected by the pipeline laying activities for ensuring hindrance-free construction works at site; obtaining NOC from respective land owner(s), farmers etc. as and when required; Liasoning/Coordination and obtaining work permits, NOC from various statutory authorities having jurisdiction for execution of the crossings by open cut method cover under mainline works (SOR item 1) and complying with all stipulations/ conditions/ recommendations of the said authorities.	M	93200				
	Notes: 1. Statutory fees/ Payment as per govt. guidelines to farmers etc against ROU opening shall be paid by the owner. 2. Payment shall be made as below- a) 40% after completion of welding b) 50% after completion of lowering & back-filling c)10% after obtaining NOC (after restoration) from respective land owner / farmers and statutory authorities as required .						
19.0	<b>ZERO DEGREE HDD</b>						
	Complete work of any crossing (between the ROW limits as defined in Crossing Drawings enclosed with Bid Document) by Zero degree HDD method including "Receiving and taking over" of three layer PE coated line pipes from Contractor's stockyard and transportation to work shop/ work site including all handling, loading, unloading, aligning etc. supply of all Contractor supplied material including consumables, deployment of manpower, equipment, other resources to work site(s) and acquiring the required land for storage., 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, getting work permit/ NOC for the crossing as well as utility crossings (if any) encountered during crossing prior to start of execution of work.						
	Making tie-in pits at entry and exit sides as required, drilling to required depth including maintenance of drill hole in all types of strata including hard rock, all depth to accommodate the pipeline and CS conduit for HDPE duct for OFC laying at all conditions encountered during 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.						
	Trenching at pipside as required, laying of the pipeline by the approved HDD method at zero degree angle across the crossing including, strings preparation of pipes, welding, testing, 100% NDT by AUT/ radiography by x-ray, welding repair and retest, coating of field joints with special type Dirax Heat Shrink Sleeve or equivalent (including supply of coating material) and repair of pipeline coating with special PERP-60E repair patch or equivalent material (including supply of repair patch) as per specification, pre-installation hydrotesting and holiday testing before or during installation of pipeline etc. Coating integrity shall also be ensured after pulling.						
	String preparation and laying of 6 inch CS conduit for OFC by HDD method, welding etc.						



		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18" X 102.3 KM.)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					
APGDC Limited				Prices in INR		MECON LIMITED	
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words		
1.0	<b>MAINLINE WORKS</b>						
	Backfilling of the ditch/ trench including restoration and clean-up of area, disposal of drilling fluid & waste etc. to the satisfaction of Engineer-in-charge and /or as directed by Concerned Authority.						
	Cleaning and tie-in with pipeline at either sides as per specifications, codes, approved drawings, calculations, methods and as directed by Engineer-in-charge and provision of contract document; getting NOC from all concerned authority of the facilities crossed.						
19.1	<b>Details of Crossing</b>						
19.1.1	Any type of crossing for carrier pipeline of size 457 mm OD x 10.3 mm thk of API 5L Grade X-70 and CS conduit of size 150 NB X 6.4 mm thick of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC.	M	500				
	<b>Note :</b> (i) Width of above crossings indicated are tentative. The width indicated are not for any single crossings. This shall be as per requirement at site for crossing at different locations. (ii) Width of the crossings are indicated in respective Crossing drawing enclosed with the tender document. Crossing width may vary as per site condition. During installation, pipe shall not be under stress as permitted by codes/ specifications. Final length of string & cover from top of pipe shall be decided and approved by concerned Authority / (iii) It is sole discretion of the Contractor to do HDD crossing of mainline pipe as well as CS conduit pipe either by suitably strapping together both the carrier pipe & CS conduit and pulled through the same drill hole or making separate HDD for 6" CS conduit for OFC laying at minimum 4m distance apart from centreline of HDD of mainline either side. However, requirement of authority shall be binding on Contractor. No separate payment for HDD for 6" CS conduit shall be paid. (iv) Payment for the length of final tied-in carrier pipeline string with mainline and CS conduit laid by approved HDD method are inclusive in the above item rate and no separate payment shall be made under other clause mentioned elsewhere. Payment for the installed length shall be limited to ROU width plus 2 meters. (v) This item is applicable for all type of road crossings except specific road crossings for which alternate crossing methodology is adopted as per authority permission as decided by EIC. This item is also applicable for small waterbody crossings duly approved by EIC and also in case of change in crossing methodology of any particular crossing (as indicated in APPENDIX-VIII to PJS) by EIC. (vi) Payment for supply of 6" CS conduit is inclusive in above SOR.						
20.0	<b>SERVICES FOR IMPLEMENTATION OF PIPELINE INFORMATION MANAGEMENT SYSTEM</b>						
20.1	The complete scope of providing services for implementation of GIS based & web based Pipeline Information Management System (PIMS) for 18" x 102.3 Km (approx.) (mainline and all stations) but not limited to setting up of requisite office (as required) along with all requisite equipment & manpower. GIS survey, mapping, transferring & conversion of data for configuration of application, tracking pre-construction activities, ROU & land management, material tracking, planning, monitoring construction, commissioning and post construction activities, uploading of all as-built drawings/ reports/ procedures/ manuals/ documents, integration of different activities / functions in electronic form. The scope shall also include supply of equipment and hardware, training of owner's personnel, handing over of software developed along with requisite license complete in all respect as per scope of work detailed in SCC, Particular Job Specification, General technical specifications, SOR etc. enclosed in tender document and as per directions of Engineer-In-charge.	Lumpsum	1				
	Above services for implementation of GIS based & Web Based Pipeline information management system for 18" x 102.3 Km (approx.) +/- 5% long Mainline and all Associated Stations / Terminals) as per the details given below :						
	Refer Schematic drawing attached in the tender for more details						
	<b>Notes:</b> i) The above SOR item includes the cost of setting up of 1 no. back-up support office at Kakinada/Visakhapatnam/Srikakulam/ Delhi/ NCR throughout the project duration. No separate payment shall be made for the same. ii) Though client & consultant shall extend their full support and will try to facilitate, however it shall be the sole responsibility of the PIMS contractor to liaison with the concerned party (client, consultant, contractors etc.) for obtaining all the documents for uploading in PIMS module. Client/ consultant will not be responsible for any delays in obtaining documents from concerned party. iii) The contractor shall be responsible for implementation of PIMS system in pipeline projects (mainline as well as stations). The work may be executed in multiple stretches by multiple contractors. iv) The cost towards supply & making operational / functional of 2 Nos. GPS instruments as per Scope of Work / Supply, other specifications enclosed with the tender document are included in the above SOR item. v) The cost towards supply & installation of One (01) Nos. hardware (for Kakinada/Visakhapatnam/ Srikakulam/ Delhi/ NCR) including computer with complete accessories and peripheral for PIMS application display as per tender and making operational / functional including training to owner's personnel and final handing over of the entire system in excellent working condition to owner are included in the above SOR item. vi) The above SOR includes the cost of handing over of PIMS software Application with requisite license						
20.2	Providing Technical Assistance for Twelve (12) months beyond contractual completion date or date of handing over of complete PIMS system, whichever is later. This per man-day rate includes transportation, lodging, boarding, local travel, food and all other expenses required to provide technical assistance.	Man-day	30				
21.0	<b>SUPPLY OF COATED LINE PIPES</b>						
	Complete work of supply of 3LPE coated API 5L PSL-2 Carbon steel line pipes including all taxes, duties, handling including lifting, transportation and inspection charges but not limited to, the following items in accordance with relevant specifications indicated in scope of work indicated in SCC/PJS, drawings, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT.						
	Line pipe details						
	Size	Thk.	Grade	Length of each Pipe			
	Inch (NB)	(mm)					
21.1	18"	8.7 mm thk	API 5L Gr. X-70, PSL-2	Double random (approx.11.5 to 12.5 mtr.) & Bevel End	M	68050	
21.2	18"	10.3 mm thk	API 5L Gr. X-70, PSL-2	Double random (approx.11.5 to 12.5 mtr.) & Bevel End	M	36500	
21.3	18"	12.7 mm thk	API 5L Gr. X-70, PSL-2	Double random (approx.11.5 to 12.5 mtr.) & Bevel End	M	1550	



 <b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)						
APGDC Limited		MECON LIMITED				
		Prices in INR				
1.0	MAINLINE WORKS	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item			In Figure	In Words	In Figure
	<b>Notes:</b> 1. For final quantity of linepipes, approval shall be taken from APGDC/MECON before placement of order. Unused linepipes (after execution) of length 11.5 meter to 12.5 meter for each pipe shall be returned to the Owner's designated dumpyard within the radius of 100 Km without any additional cost implication to Owner. Unused linepipes up to length of 11.5 meter for each pipe shall not be accepted by owner and hence need not to be returned. Bidder has to quote accordingly. 2. The proposed line pipe manufacturer (s) shall have minimum domestic value addition on inputs such as Round/Billets/Blooms/HR coils as applicable as per latest addition of DMI & SP policy for manufacturing of steel pipes. 3. The Contractor shall furnish the Affidavit of self-certification issued by the proposed line pipe manufacturer to the procuring agency declaring that the iron & steel products are domestically manufactured in terms of the domestic value addition as per latest edition of DMI&SP policy.					
22.0	<b>SUPPLY OF BARE LINE PIPES</b>					
	Complete work of supply of Bare API 5L PSL-2 Carbon steel line pipes including all taxes, duties, handling including lifting, transportation and inspection charges but not limited to, the following items in accordance with relevant specifications indicated in scope of work indicated in SCC/PJS, drawings, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT.					
	Line pipe details					
	Size	Thk.	Grade	Length of each Pipe		
	Inch (NB)	(mm)				
22.1	18"	12.7 mm thk	API 5L Gr. X-70, PSL-2	Double random (approx.11.5 to 12.5 mtr.) & Bevel End	M	435
	<b>Notes:</b> 1. For final quantity of linepipes, approval shall be taken from APGDC/MECON before placement of order. Unused linepipes (after execution) of length 11.5 meter to 12.5 meter for each pipe shall be returned to the Owner's designated dumpyard within the radius of 100 Km without any additional cost implication to Owner. Unused linepipes up to length of 11.5 meter for each pipe shall not be accepted by owner and hence need not to be returned. Bidder has to quote accordingly. 2. The proposed line pipe manufacturer (s) shall have minimum domestic value addition on inputs such as Round/Billets/Blooms/HR coils as applicable as per latest addition of DMI & SP policy for manufacturing of steel pipes. 3. The Contractor shall furnish the Affidavit of self-certification issued by the proposed line pipe manufacturer to the procuring agency declaring that the iron & steel products are domestically manufactured in terms of the domestic value addition as per latest edition of DMI&SP policy.					
23.0	<b>SUPPLY OF LONG RADIUS BENDS</b>					
23.1	Supply of Long Radius Bends (R = 6D) for 18" dia. pipe, X-70 (thk. 11.9/14.3 mm) as per T.S. (No. MEC/TS/05/62/015) & Data Sheet enclosed in Tender Document (Payment for supply of Bare pipe for LR Bends shall be made as per separate SOR item).					
23.1.1	20° - 30°	Nos.	35			
23.1.2	31° - 45°	Nos.	40			
23.1.3	46° - 60°	Nos.	12			
23.1.4	61° - 90°	Nos.	5			
	<b>Note:</b> The quantities of LR Bends may vary. For final quantity, approval shall be taken from EIC before placement of order.					
24	<b>INSTALLATION OF CASING PIPE AND CS CONDUIT</b>					
	Complete work of installation of casing (between the limits as defined in approved drawings) including handling, loading, transportation, unloading to Contractor's own stock yard/ work site.					
	Pre-construction survey and making of crossing drawing based on site visit and getting their approval from concerned Authority/ Engineer-in-charge prior to starting the execution of work.					
	String preparation of pipes (carrier pipes-18"NB, API5L Gr. X-70, 10.3/12.7 mm thk.), welding, testing, 100 % NDT by X-ray, welding repair and retest, coating of field joints with Heat Shrink Sleeve or equivalent (including supply of coating material) and repair of pipeline coating with repair patch or equivalent material (including supply of repair patch) as per specification, pre-hydrotest of complete strings made for crossing etc.					
	String preparation of 6 inch CS conduit for OFC, welding.					
	Installation of casing pipe and CS conduit for OFC by Jacking/ boring and open cut wherever required for all depth in all type of soils and terrain separately for carrier pipe insertion and OFC/ HDPE duct. All other Contractor supplied materials like casing insulators and casing end seals as per enclosed specification/ drawings materials for casing vents and drain assembly etc. including supply of all other materials, equipments, consumables, manpower, welding including visual inspection of all weld joints.					
	Preparation of required length of carrier pipeline welded string including all other works as mentioned in SOR Sl. No. 1.0 above and as per specification/ drawings. Insertion of carrier pipe in casing pipe after above ground protection at specified test pressure including installation of casing insulators as per approved design calculation, specification/ Backfilling of the ditch/ trench including restoration and cleanup of area to the satisfaction of Engineer-in-charge and/or as directed by concerned Authority.					
	Pigging, cleaning, Post installation hydrotest, dewatering, swabbing and tie-in with pipeline as per specification, approved procedure, drawing etc. and instruction of Engineer-in-charge and provision of contract document, getting NOC from all concerned Authority of the facilities crossed.					
24.1	For 18" NB pipeline					







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1.0	<u>MAINLINE WORKS</u>	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item			In Figure	In Words	In Figure	
241.1	Supply & Installation of Casing Pipe by Jacking with auger Boring of Casing Pipe -minimum 28" NB x 10 mm wall thk. (for 18" NB pipeline) , IS 3589 , Fe 410 or equivalent	Mtr	66				
24.1.2	Supply & Installation by Open Cut of Casing Pipe -minimum 28" NB x 10 mm wall thk. (for 18" NB pipeline) , IS 3589 , Fe 410 or equivalent	Mtr	12				
24.1.3	Supply & Installation by Pipe Jacking with auger Boring of CS Conduit 150mm, 6.4mm wall thk. (for OFC & their conduit)	Mtr	66				
24.1.4	Supply & Installation by Open Cut of CS Conduit 150mm, 6.4mm wall thk. (for OFC & their conduit)	Mtr	12				
	Note : (i) The width indicated are not for any single crossings. This shall be as per requirement at site for crossing at different locations. (ii) Actual length & cover from top of casing pipe string may vary depending upon site conditions, crossing methods, approved drawings etc. and/ or decided by concerned Authority/ Engineer-in-charge. (iii) Exact centreline location of boring of 6" NB CS conduit for HDPE Ducts / OFC as a casing pipe shall be minimum 4.0m either side based on as installed centreline dimension of carrier pipe inside casing pipe at all cased crossing. The cover to top of CS conduit pipe for HDPE Ducts / OFC shall be same as cover to top of the pipeline/ casing pipe as applicable. (iv) Payment for the length of carrier pipeline string shall be bored casing pipeline length plus two meters and is inclusive in the above item. Payment for additional length of carrier pipeline string shall be paid under SOR item no. 1.0 (v) Methodology for National / State highway and Railway crossing shall be decided during execution as per the permissions available. (vi) This rate is also applicable in case of change in crossing methodology of any particular crossing (as indicated in APPENDIX-VIII to PJS) by EIC. (vii) Payment for supply of 28" casing pipe and 6" CS conduit is inclusive in above SOR. (viii) For final hydrotest with mainline section , please refer SOR item no. 1.0 above.						
	<b>Note:</b> (i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).			<b>Total Amount of quoted price (inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST)</b>			
Place				Signature of Authorised Signatory			
Date				Name :			
Tender No.:				Designation :			
Offer No. & Date :				Seal :			



 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES</b> <b>FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				 MECON LIMITED	
				<b>Prices in INR.</b>			
<b>CATHODIC PROTECTION WORK (TCP &amp; PCP)</b>							
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)	
				In Figure	In Words	in Figure	
<b>1 TEMPORARY CATHODIC PROTECTION</b>							
1.1	Survey, Design, detail engineering, Manufacturing, Inspection/FAT (Factory acceptance test), supply, Packing, transportation to site, storage, installation, testing & commissioning of the temporary Cathodic protection system using Mg (Min 5.0 Kg Each)/ Zn galvanic anodes to protect the external surface of <b>18"x 102.30 Kms.(Appx.)</b> long 3LPE Coated pipeline from DT (at Ch 0.00km) to RT (at Ch 102.30km) against corrosion for a design life of minimum 2 year or till commissioning of PCP system as per scope of work, standard specification & datasheets, statutory requirement etc as per tender for temporary cathodic protection system, approved	Lump-sum	1				
a)	Temporary CP system shall be installed immediately of the any lowered section but not later than 15 days from the time of lowering of pipeline segments. If TCP system is not provided for any of the lowered section in the specified time, necessary deduction shall be carried out from the contractor's head as non-compliance of work as recommended by the Engineer-In-Charge as per						
b)	Measurement of soil resistivity along the right of way of the main pipeline (At 500mtr Interval at depths of 1.5Mtr, 2.5Mtr & 3.5Mtr depths) & collection of soil & water samples along ROW at depths of 1Mtr, 2Mtr & 3Mtr at every 10 km interval (Min 03 sample at each location) for its chemical & microbial analysis along the pipeline route as per specification for corrosion survey MEC/T5/05/21/016C & NACE Standard TM0106-2006 for detection of SRB, ARB, TDS, pH, Rx, Moisture & Total dissolved H <sub>2</sub> S etc. These samples shall be stored in sealed container and stored						
c)	Collection of additional data related to cathodic protection along the right of way of pipeline as per scope of work & standard specifications						
d)	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.Total number of anodes shall be calculated as per total length, current requirement & total test station requirement						
e)	Supply, installation, testing & commissioning of Mg (Min 5.0 Kg)/ Zn Galvanic anodes as per the standard specification- MEC/T5/05/E9/016A. The weight of the Mg Anode & the total nos. of anodes shall be calculated as per the 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						
f)	Supply, Installation, Testing & commissioning of Test stations (Big Size & Normal Size) weather proof (IP-55) as per specification & enclosed drawings.Selection of TLP size will be as per the nos. of cables terminating at the station. TLP shall be sealed at both ends by means of foam sealing/solid sealing. Termination plate inside the TLP should have high insulation level (FRP or						



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<i>Prices in INR.</i>							
<b>CATHODIC PROTECTION WORK (TCP &amp; PCP)</b>							
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST	
				In Figure	In Words	in Figure	
g)	Supply, installation, testing & commissioning of one set of spark gap arrester (100 kA@ 10/350 uS rating for lightning protection and 8/20 uS 100kA for surge protection) across each insulating joint provided at tap-off, SV & various consumer terminals as per P&D/scope of work / specification. All the monolithic insulating joints (MIJs) on the main line, on the tapings for the instruments viz. pressure transmitter, densitometers etc. shall be provided with surge diverters. Note-Surge diverter cable needs to be terminated without any joints across the IJ. Surge diverter with its pre-wired connecting cables with suitable length & size should be provided and installed at the Isolating joint. The un-protected/above ground pipeline shall be earthed through GI earth electrodes with separate						

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Prices in INR.								
CATHODIC PROTECTION WORK (TCP & PCP)								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
h)	Supply, installation, testing & commissioning one set of polarization cell (Solid state) with zinc anode at all railway tractions (electrified)/ high tension electrical power transmission line/equipments (all 66 KV & above) crossing or running parallel to the pipeline for grounding purpose as per specification/design basis. (Polarization cell shall be installed underground in cemented tank to avoid theft). Grounding shall be done at regular intervals of maximum 1 km where transmission lines run parallel within 1km of the pipeline and have separation distance of 100 mtr on both side of the pipeline. The rating of the cell shall depend upon anticipated fault current & ground bed resistance at the location of installation and the calculation of the same shall be furnished to MECON for review & selection of rating of the Polarization Cell. However, the rating of polarization cell shall not be less than 3.7 KA @ 30 Cycle & number of 20 kg net weight zinc anode shall not be less than two. Zn Ribbon anode (Dia min. 12x14 mm with back fill in trench)/ pre-packed AC mitigator wire of MATCOR make or equivalent may also be used for the grounding purpose to get lower grounding resistance (for soil resistivity higher than 25 Ohm-Cm) as per the direction of engineer in-charge. The resistance of grounding shall be limited to 1 ohms max. If any proposed additional line of voltage rating 66kV & above is envisaged during construction, the same shall also be considered in the design document. Contractor shall supply polarization cell along with necessary grounding.							
i)	Earthing of above ground cathodically unprotected pipeline at consumer station/DRS station/Metering skid etc, the earth electrode shall be 65 mm dia, 4.5 mm thickness & 3000mm long. Total grounding resistance shall be limited to 1 Ohm max. Earthing of MOV's at SV stations shall be carried out by Zn anodes with min installation of 02 nos. of electrode or by Zn ribbon							
j)	Supply, installation, testing & commissioning of external electrical resistance Probe (02 Nos Probe with 1 no. ER probe reading instrument) utilizing the electrical resistance technique shall be provided along the pipeline at marshy / vulnerable locations to monitor the external corrosion activity on the pipeline. Location of external ER probe shall be decided during detail engineering. Care shall be taken during installation of ER probes so that probe element is opposite							



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<b>CATHODIC PROTECTION WORK (TCP &amp; PCP)</b>								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
k)	Supply, installation, testing & commissioning of Polarization coupons (01 no. at every 10Km of pipeline) having total area of 100mm x 100mm having one side exposed area of 25 mm x 25 mm without permanent reference cell shall be provided along the pipeline and at additional vulnerable locations (River crossings, Marshy locations, Interference prone area, stray current source locations, foreign pipeline crossings/parallel (at every KM in case of parallel), at CP stations) to monitor the external corrosion activity on the pipeline as per enclosed standard specification. Location of external Polarization coupons & Number of magnetic devices for operation of magnetic switch shall be decided during detail engineering in consultation with APGDC/MECON. Permanent Reference cell shall be manufactured & constructed in line with drawing no. MEC/SD/05/E9/E/CP/1610 Rev-0. Care shall be taken during installation of polarization coupon that bare face of polarization coupon is opposite to pipe & polarization coupon shall not be installed between TLP & Pipeline. The works related to collection of approximately 2-5 m of pipeline material (In pieces of 300 to							
l)	Supply, laying of HDPE sheets (1200mm wide, 6mm thick) between the APGDC pipeline and the other CP protected foreign pipelines at the crossing locations for providing electrical isolation and							
m)	Bonding of pipeline with foreign pipeline crossing or parallel run as per the scope of work.							
n)	Supplying, laying, termination, Glanding, ferruling & testing of all the cables of TCP system, Cu-Conductor, XLPE insulated, PVC sheathed, Arm'd/Unarmed (1Cx6 mm2, 1Cx10 mm2, 1Cx25 mm2, 1Cx35mm2) as required. Cable coming from 60 Mtr for Current measurement test stations (Type_B) & cables for foreign pipeline crossing shall be provided with black sleeves for the identification purpose. Calibration factor of similar thickness pipeline section shall be carried out by the Bidder at each B Type test stations by arranging separate power source. Bidder shall refer							
o)	Cable to pipe connection by thermit welding (for un-charged pipeline) / Pin brazing (for charged pipeline) for 35, 25, 10, 6 sq.mm copper cable including excavation and exposing piping, recoating							
p)	Coating Integrity test of HDD section of the pipeline shall be conducted immediately after the completion of the HDD of each HDD section by separate temporary power source and anode bed. Bidder shall submit the procedure as per the NACE requirements for approval along with the design							
q)	PSP Monitoring on monthly basis of the TCP system till commissioning of the permanent cathodic protection system including the coupon OFF & AC PSP.							
r)	All civil/ structural works related to TCP system including supply of bricks, cement & steel etc. required for completion of the system with other miscellaneous works specified in scope of work.							
2	<b>PERMANENT CATHODIC PROTECTION WORK</b>							



 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES</b> <b>FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				 MECON LIMITED		
Prices in INR.								
CATHODIC PROTECTION WORK (TCP & PCP)								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
2.1	Survey, Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, packing, transportation to site, installation, testing and commissioning of the permanent cathodic protection system by impressed current method using MMO coated Titanium anodes to protect the external surface of 3LPE Coated pipeline against corrosion for a service life of 35 years, as per Standard Specification No. MEC/TS/05/21/016B for Permanent Cathodic Protection system. The scope shall include complete Permanent Cathodic Protection system, including carrying out the soil resistivity measurement for anode ground beds, design of anode ground beds considering size / rating of anode bed not less than the minimum requirements of the anode ground bed specified, AC/DC Interference detection and mitigation, AC/DC interference on pipeline and CP System due to proximity of foreign AC/DC source, detection and mitigation of high induced voltage at pipeline due to proximity of HT lines, substations etc, close interval potential logging survey for entire length of <b>18"x 102.30 Kms.(Appx.) long 3LPE Coated pipeline from DT (at Ch 0.00km) to RT (at Ch 102.30km)</b> and additional post commissioning surveys i.e. CAT survey (Full length), CAT with frame 'A' /DCVG etc at selected locations which shall be decided from the abnormal areas of close interval potential logging survey results & CAT survey result to identify coating defects/holiday, conducting pipeline line current & coating resistance test at selected locations where current measurement test stations installed, preparation of commissioning report and as built drawings etc. All work shall be carried out conforming to the Scope of work, Design Basis, Data Sheets, standard specifications enclosed, statutory requirements, etc as per tender & other standards as applicable. Scope shall also include disconnection of TCP system which does not form part of PCP system.	Lump-sum	1					
a)	Selection of plot for shallow type anode groundbed/ Deepwell anode groundbed at CP station at proposed locations of CP stations given under scope of work. Deepwell type AGB shall be preferred (Min. three plots nearby each location shall be selected for the survey out of which the most favorable plot shall be considered for installation of anode ground bed). Details of CP stations are provided in the scope of work.							
b)	Carrying out the soil resistivity survey for design of anode ground bed at the selected CP station locations. (Min. at three locations shall be selected for the soil resistivity survey & necessary data shall be collected to determine the most suitable anodebed location) as per specification for							
c)	Preparation & submission of design document as per the results of surveys, specification & data sheet for procurement of CP System equipment/materials, drawing/document to the Engineer-in-charge for review & approval, preparation of site engineering & installation drawings for installation work wherever applicable or required by the Engineer-in-charge, and submit the same for approval and comments. All documents of PCP system including survey, Design, review of collected survey data, installation procedures, post commissioning surveys and complete PCP system of pipeline							




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Prices in INR.								
CATHODIC PROTECTION WORK (TCP & PCP)								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
d)	Design, Supply, installation, testing & commissioning of anode ground bed (Shallow bed size Min. 46x3 mtr or size may increase as per the design calculation), consisting of minimum ten (10) numbers Mixed Metal Oxide Coated Titanium Hollow Tubular Anodes of 25mm dia. / 1000mm long size and 8A Rating along with tail cable of 1C x 10mm <sup>2</sup> Annealed Stranded Copper conductor, PVDF insulated, HMWPE sheathed/Jacket (Kynar Cable) shall be terminated at AJB at the CP station locations, with anode canister in normal resistivity area (0-100 Ohm-m). Actual numbers of anodes shall be finalized during the approval of design calculation submitted by the Contractor. In high resistivity area (where resistivity ≥100) anodes shall be installed without canister & anode bed trench of cross-section 300mmx300mm for horizontal type of anode bed shall be backfill by Coke breeze (In slurry form) for its full length. Anode Ground Bed resistance should be maintained less than 1 Ohms (Max.). MMO anodes shall							
e)	Incase of deep-well anode bed, supply, installation, testing & commissioning of individual anodes in vertical installation, consisting of minimum ten (10) numbers of Mixed Metal Oxide Coated Titanium Tubular Anodes of 25mm dia./ 1000mm long size and 8A Rating with tail cable of 1C x 10mm <sup>2</sup> Annealed Stranded Copper conductor, PVDF insulated, HMWPE sheathed/Jacket (Kynar Cable) shall be terminated at AJB. Actual numbers of anodes shall be finalized during the approval of design calculation submitted by the Contractor. Design of deep anode-bed shall be as per NACE:0572:2007 requirements. Anode Ground Bed resistance should be maintained less than 1 Ohms. <i>Minimum depth of anode bed shall be 48m (As per drawing) &amp; it may increase as per the survey.</i>							
f)	Disconnection of temporary cathodic protection system which does not form part of permanent cathodic protection system, prices for disconnection of temporary cathodic protection system is <del>integral part of bid &amp; deemed to be inclusive in prices quoted by the Bidder.</del>							
g)	Supply, laying, termination, glanding and ferruling of all the cables of CP system, including all							
h)	Acquisition of land for Anode ground bed and ROU of land for anode header cable from anode ground bed/AJB to TR unit (Land size Min 46mx3m for shallow and Min. 5mx5m, for deepwell type), ROU for laying of cables (1mtr wide) from AJB to CP unit. Transferring the title of the acquired land in favour of APGDC at the CP station locations (as per Scope of Work & finalized during detailed engineering) including change in title in revenue records. .  The item scope includes acquiring land and Change of land ownership to the name of APGDC including NA conversion (where required), area grading / levelling to a suitable grade level to avoid water logging. The item scope also includes acquiring ROU (where required) for cable laying between CP unit and Anode bed and Submit cleared documents with Legal certification to APGDC							



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<b>CATHODIC PROTECTION WORK (TCP &amp; PCP)</b>								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
i)	Supply including design, manufacturing, shop testing, inspection, packing, forwarding, delivery erection/ installation, civil/ structural support, earthing, testing & commissioning of CPTR/PPSM unit each at CP station locations confirming to design basis, scope of work, standard specification No. MEC/05/S/26/82A/82, data sheet & Drawing. The CP units shall be installed inside the control room. All the CP units shall have SCADA monitoring facility, current interruption facility with timer (GPS Synchronized) etc as per specification including commissioning spares as required. Current shall start/stop/reset from local as well as from remote thru SCADA. Current interrupter shall be configurable from 0.1 sec to 999 sec. Minimum 30 mtr GPS cable shall be provided with each CP.							
j)	Supply, installation & commissioning of Min 3 Nos. permanent references cell (CU/CuSo4 type) each at the proposed locations for CP stations locations, Installation locations of reference cell shall be decided during detail engineering.  Bidder to note that at D/T, R/T, TOP/TOT, IP stations min 02 additional ref cells shall be installed at each pipeline terminating/originating from the stations & all measurement /Ref cable shall be terminated to the CP stations. CP unit shall have selector switches for required no. of inputs of ref available as per the nos. of ref cells of pipeline terminating/originating at station and provision to select the ref PSP of any of pipeline in CP unit. Separate local monitoring meter shall also be provided in CP units. Multi-core signal cable of suitable pair shall be considered for the measurement cable & reference cell cable from CJB to CPunit. (For this bidder may consider 8/12 pair, Multi-core, FRLS, 2.5 Sqmm, 8/12 pair, twisted pair, shielded, armoured, signal cables as per IS/BS).							
k)	Supply, installation, testing & commissioning of Computerized Test Stations (CTSU) @ 04 nos. with Permanent Zn/Cu-CuSo4 ref electrode & portable data readers 1 nos. along with permanent reference cell (Zn/Cu ref cell) and central Monitoring server with PC (Intel 5th Generation Processor, Core i5, and 19" LED Monitor) at one maintenance base for automatically monitoring through GPS and recording the pipe to soil potential, pipe current etc of the pipeline. Locations of CTSU shall be decided during detailed engineering. Central monitoring server shall have facility to interface the CP unit signals available in SCADA system and the work related to interfacing the signals is in the scope of the bidder, including supply & installation of all items. Notes- All hardware & software required for the central Monitoring of the system shall be supplied for automatically monitoring of the CTSU from central server.							
l)	Bonding in between pipelines running parallel or crossing as required. Taking of permission from the owner (By Owner) of the foreign pipeline wherever required for effective PCP protection and to							





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Prices in INR.								
CATHODIC PROTECTION WORK (TCP & PCP)								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
m)	The contractor shall carry out interference detection and mitigation measures for entire 18" pipeline including detection of AC and DC interference on pipeline's and its mitigation due to proximity of foreign AC and DC source i.e. HT line (Parallel, Crossing), Underground HT Cables in proximity, substation, railway traction, welding yard, existing pipeline running parallel or crosses & other foreign pipeline/structure/utilities, HVDC Interference. For the interference detection & mitigations (AC & DC interference study & mitigation) the contractor shall include the services of specialist agencies having proven track records & experience on software modeling & recommendation for its mitigation, as per scope of work. Pipeline AC & DC (HVDC Line) Interference studies & Mitigations measures including measurement of AC/DC pick-up due to long term (Induced, conducting due to transformer neutral, fault) & short term interference (Ground Fault, Lightning, conducting etc) as per field data collected, AC corrosion study, Effect of HT line/ Cables running parallel/crossing the pipeline and discharge of current from nearest HT tower/Substations due to fault or lightning etc. Implementations of interference mitigative measures on pipeline's bring down these voltages (touch & step potentials) to safe limits as per the National/International standards & other mitigation measures to reduce the AC corrosion densities. Mitigation measures suggested by the bidder shall.							
n)	Supply, laying, termination, Glanding, ferruling, testing and commissioning of all the cables of CP system, including all incoming power cable and outgoing CP cables of CPTR/ CPPSM units including making of under ground trenches, testing, commissioning of all interconnecting cables among Power Supply, CP Unit, battery bank etc including supply of tinned-Cu lugs, double compression type cable glands, cable marker, cable tags etc as required for completion of the work.							
o)	Contractor shall carry out following post commissioning surveys (As per OISD/PNGRB)- 1) Close interval potential logging survey for entire length of 18" pipeline, 2) CAT survey (entire length of 18" pipeline) including measurement of depth of the buried pipeline, 3) Specific Coating resistance/conductance test at current measurement test location and pipeline current mapping with direction of the current (After PCP system commissioning), including calibration factor of same thickness pipelines. 4) Current drainage test at bonding locations. 5) CAT with frame 'A' and DCVG survey (Both) at selected locations which shall be decided from							
p)	Interconnection PVC water pipeline of 1.5" between AGB & Terminal water supply system to maintain the lower grounding bed resistance, including supply, installation & all connection at all CP							
q)	Supply, Installation, Testing & commissioning of AC corrosion coupons (exposed area 1cm <sup>2</sup> ) for monitoring of AC corrosion densities at HT line crossings and AC interference prone area along with high accuracy AC shunt (Additional 10% quantity of coupons shall be also be considered).							
r)	Supply of Two Years O&M Spares as described in Appendix-II of scope of work							

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Prices in INR.								
<b>CATHODIC PROTECTION WORK (TCP &amp; PCP)</b>								
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST)		Service Accounting Codes (SAC)
				In Figure	In Words	in Figure		
s)	Supply and installation of the power supply cable from switch fuse unit/ MCC /PDB of OWNER'S Electrical substation to CPPSM/CPTR Units shall be CP CONTRACTOR's scope of work.							
t)	Monitoring & maintenance (as a whole) of PCP System of entire length of 18" 3LPE Coated pipelines for 6 months (Monthly Basis) including collection of data from data loggers after commissioning of PCP works simultaneously with post commissioning survey work.							
u)	Supply & Installation of Chainlink Fencing for Anodebed & AJB as per approved drawings & instruction of Engineer-In-Charge.							
v)	All civil/ structural works related to PCP system including supply of bricks cement & steel etc.							
<b>Note:</b>	<b>Currency must be Indian Rupees (INR) only.</b>			<b>Total Amount inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>				
Place				Signature of Authorised Signatory				
Date				Name :				
Tender No.:				Designation :				
Offer No. & Date:				Seal :				



 <b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES</b> <b>FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>							
 APGDC Limited		 MECON LIMITED				Prices in INR	
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or	Service Accounting Codes (SAC)
				In Figure	In Words		
<b>3</b>	<b>CORROSION MONITORING SYSTEM WORK</b>						
<b>1</b>	<b>Supply, installation, testing &amp; commissioning of the Corrosion Monitoring System including Two Years O&amp;M spares as per Scope of Work enclosed with the tender, approved design document, data sheets &amp; drawings. Scope shall also include but not limited to the following for completion of jobs:</b>						
1.0	Design, engineering, selection, supply of high pressure, retrievable type ER probes flush mounting, body SS 316, with element same as per pipe material or API 5L Gr B material and the element thickness 20 mils, suitable for measurement of Corrosion rate in the range of 0-10mpy along with adaptor with cable as per Scope of work of Corrosion Monitoring System.	Nos.	2				
2.0	Design, engineering, supply of flare weld Access fitting assembly ( non-tee), body carbon steel, acme thread outlet with hollow plug assembly in AISI-316 along with heavy duty protective CS cover, essential spare Rating 6000 psi and sustained design temperature of 65 DEG.C etc. for corrosion ER Probes as per Scope of work of Corrosion Monitoring System.	Nos.	2				
3.0	Design, Engineering, supply, Installation, testing & commissioning of ER Probe panel mounted transmitters with mounting bracket and receivers (online corrosion meter), connecting to existing UPS/Power supply including required cables and suitable to interfacing with existing DCS / SCADA (ModBus RTU protocol) along with all accessories for ER Probes as per Scope of work of Corrosion Monitoring System.	Nos.	2				
4.0	Installation testing & commissioning of ER probes, access fitting assemblies etc without hot tapping, but including welding with the pipeline, testing & commissioning as mentioned in Scope of	No.	2				
5.0	Design, engineering, supply of disc coupons of 1.25" dia & 0.125" thickness as per Scope of work of Corrosion Monitoring System. The coupons shall be of same as of pipe material grade & its material of construction.	Nos.	16				
6.0	Design, engineering, supply of retrievable flush disc coupon holders of SS 316 for flush disc coupon as per Scope of work of Corrosion Monitoring System.	Nos.	2				
7.0	Design, engineering, supply of flare weld Access fitting assembly ( non-tee), body carbon steel, acme thread outlet with solid plug assembly of SS 316 alongwith heavy duty protective CS cover, essential spare, Rating 6000 psi and sustained design temperature of 65 DEG.C etc for installation of corrosion coupons as per Scope of work of Corrosion Monitoring System.	Nos.	2				
8.0	Installation, testing & commissioning of coupons with coupon holder and access fitting assembly without hot tapping but including welding with the pipeline, testing & commissioning.	No.	2				
9.0	Supply and installation/laying of all connecting cables (Signal cables) from ER Probe location to control room to interface with DCS/SCADA.	Mtr	600				

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<u>Prices in INR</u>									
<b>CORROSION MONITORING SYSTEM WORK</b>									
Sl. No.	Description of Item	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST)	Service Accounting Codes (SAC)		
<b>3</b>	<b>CORROSION MONITORING SYSTEM WORK</b>			<u>In Figure</u>	<u>In Words</u>	<u>In Figure</u>			
10.0	Supply of retriever kit complete with repair and seal kit with all accessories as per Scope of work of Corrosion Monitoring System including first demo at site for online retrieval to client personnel.	No.	1						
11.0	Supply of service valve kit complete with all accessories as per Job specification of Corrosion Monitoring System including first demo at site for online retrieval to client personnel.	No.	1						
<b>Note:</b>	<b>Currency must be Indian Rupees (INR) only.</b> (i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies). (iii) Two Years O&M Spare's prices are deemed to be inclusive in Bidder's quoted price as clearly mentioned in Corrosion Monitoring System's Scope of Work of Tender			<b>Total Amount inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>					
Place				Signature of Authorised Signatory					
Date				Name :					
Tender No.:				Designation :					
Offer No. & Date:				Seal :					



 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES</b> <b>FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>						 MECON LIMITED	
		Prices in INR							
4(i)	PIPING & MECHANICAL WORKS	Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item					In Figure	In Words	In Words	
1.0	<b>PLANT PIPING (ABOVEGROUND/ UNDERGROUND) FABRICATION, ERECTION, INSTALLATION AND TESTING OF PIPING :</b>								
	Transportation including loading, unloading, handling of all piping items from Contractor's storage point to work site/ workshop as applicable, complete work of fabrication, erection, painting, testing of pipes, flanges and fittings and 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 indicated in SCC & scope of work indicated in SCC.								
	- 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.								
	- Preparation of final bill of material based on piping GADs.								
	- Preparation of isometric and fabrication drawings.								
	- Carrying out 100% Non-destructive testing.								
	- 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								
	- Painting of entire system (including aboveground all pipes fittings, flanges and accessories) as per specification MEC/S/05/21/07 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								
	- Underground portion of piping system shall be protected from external corrosion by providing 3LPE coated heat shrink sleeve or equivalent and application of the same shall be extended upto 500 mm above FGL/ plant area NGL, whichever is higher.								
	- 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 and provide all necessary assistance in terms of supply of man-power, equipment, tools and tackles required amount of nitrogen for purging of entire terminal piping system including equipments etc.								



4(i) PIPING & MECHANICAL WORKS		SCHEDULE OF RATES SUPPLY, LAYING & CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM) Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)				Prices in INR		MECON LIMITED	
Sl. No.	Description of Item	Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
						In Figure	In Words	In Words	
-	Clean-up and restoration of site, preparation of as built drawings, documents and project records; transportation of surplus free issue material to Owner's designated place(s) as mentioned in Annexure-2 to SCC; completing all works in all respects as per the AFC drawing, specifications, standards and other provisions of Contract and instruction of Engineer-in-charge.								
-	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 commissioning and start up.								
-	Hook-up works (with client/ consumer piping at battery limits) wherever required.								
1.1	Complete Carbon Steel Piping Work with painting including all fittings, flanges and supply of all required gaskets, studs/bolts & nuts etc. as described under item 1.0 above								
1.1.1	API 5L, Gr. X52, PSL-2, SAW, BE	Inch-Dia	18" NB	11.9	200				
1.1.2	API 5L, Gr. X52, PSL-2, SAW, BE	Inch-Dia	18" NB	S60	1000				
1.1.3	API 5L, Gr. X52, PSL-2, , Seamless, BE	Inch-Dia	12" NB	S60	180				
1.1.4	API 5L, Gr. X52, PSL-2, , Seamless, BE	Inch-Dia	10" NB	XS	50				
1.1.5	API 5L, Gr.B, PSL-2, Seamless, BE	Inch-Dia	8" NB	14.3	120				
1.1.6	ASTM A 106 Gr. B (Charpy), Seamless, BE	Inch-Dia	6" NB	XS	500				
1.1.7	ASTM A333 Gr 6, Seamless BE	Inch-Dia	6" NB	XS	300				
1.1.8	ASTM A 106 Gr. B (Charpy), Seamless, BE	Inch-Dia	4" NB	XS	600				
1.1.9	ASTM A 106 Gr. B (Charpy), Seamless, BE	Inch-Dia	2" NB	S80	500				
1.1.10	ASTM A333 Grade 6 Seamless, BE	Inch-Dia	2" NB	XS	150				
1.1.11	ASTM A 106 Gr. B, Seamless, PE	Inch-Dia	1½" NB	S80	50				
1.1.12	ASTM A 106 Gr. B, Seamless, PE	Inch-Dia	1" NB	S80	20				
1.1.13	ASTM A 106 Gr. B, Seamless, PE	Inch-Dia	¾" NB	S160	150				
1.1.14	ASTM A333 Grade 6 Seamless, PE	Inch-Dia	¾" NB	S160	20				



APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES</b> <b>FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>						MECON LIMITED	
APGDC Limited		Prices in INR						MECON LIMITED	
4(i)	PIPING & MECHANICAL WORKS	Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item					In Figure	In Words	In Words	
<b>Note:</b>	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 etc. as required shall be supplied by contractor but no separate payments shall be made as it is covered under erection rate. 4) NDT of Joints below 2" is to be included in above rate. However, payment of radiography of joints (2" and above) shall be paid separately under SOR item for RADIOGRAPHY mentioned elsewhere in this SOR. 5) Surplus free issue material shall be transported to Owner's designated place(s)								
<b>2.0</b>	<b>ERECTION OF VALVES ( As per P &amp; ID )</b>								
2.1	Handling including lifting and transportation from CONTRACTOR'S Stores to 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								
	<b>Welded Valves (Full Bore/ Reduced Bore)</b>								
	<b>Ball/ Plug/ Globe Valves</b>								
2.1.1		Nos.	8"	600#	1				
2.1.2		Nos.	6"	600#	4				
2.1.3		Nos.	4"	600#	10				
2.1.4		Nos.	2"	600#	24				
	<b>Flanged Valves (Full Bore/ Reduced Bore)</b>								
	<b>Ball/ Plug/ Globe Valves</b>								
2.1.5		Nos.	12"	600#	1				
2.1.6		Nos.	6"	600#	6				
2.1.7		Nos.	4"	600#	12				
2.1.8		Nos.	2"	600#	12				
	<b>Sockolet Welded Valve (Ball / Plug Valves)</b>								
2.1.9		Nos.	¾"	800#	40				
	<b>Ball Valve (Welded End, AV/HOV/GOV)</b>								
2.1.10		Nos.	18"	600#	4				
	<b>Ball Valve (Flanged End, AV/HOV/GOV)</b>								



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		Prices in INR							
4(i)	PIPING & MECHANICAL WORKS	Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item					In Figure	In Words	In Words	
2.1.11		Nos.	18"	600#	3				
<b>3.0</b>	<b>QOEC (D4A)</b>								
3.1	Installation of QOEC	Nos.	6"	600#	2				
<b>4.0</b>	<b>SAFETY RELIEF VALVES</b>								
	Installation of safety relief valve of inlet size range (1" to 2") and outlet size range (2" to 3") on scrapper trap alongwith companion flanges with all accessories including but not limited to gaskets, nuts, bolts, fixtures, clamps etc. required and providing high vent for discharge. Installation shall be as per API RP 520; final coat of painting, set pressure testing & commissioning as per scope of work								
4.1	Installation of PSV (on Scrapper Trap)	Nos.	-	600#/150#	2				
<b>5.0</b>	<b>PIPE SUPPORTS &amp; OTHER STRUCTURES</b>								
5.1	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; frames for canopy, approach ladders and platforms, crossover, cable tray supports, etc. including painting suitable for highly corrosive area 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 will not be paid seperately). The	MT	-	-	4				
<b>6.0</b>	<b>RADIOGRAPHY</b>								
	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								
6.1		Nos. of Joint	18"		65				
6.2		Nos. of Joint	12"		15				
6.3		Nos. of Joint	10"		5				
6.4		Nos. of Joint	8"		15				
6.5		Nos. of Joint	6"		120				
6.6		Nos. of Joint	4"		150				
6.7		Nos. of Joint	2"		300				



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		Prices in INR							
4(i)	PIPING & MECHANICAL WORKS	Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item					In Figure	In Words	In Words	
7.0	<b>ERECTION OF VESSELS, SKIDS &amp; EQUIPMENTS</b>								
	Handling, including lifting, transportation from Owner's / Contractor's stores to Contractor's work-shop for fabrication or/ and to worksite for field fabrication, assembly of parts/ sub-assemblies, erection for all vessels, equipments supplied by company above ground/ underground at all elevation/ depth, fixing of foundation bolts, welding wherever required, aligning, grouting, hooking-up, cleaning and flushing by water draining, drying by compressed air, providing all mountings, ancillary, enabling works as required and completing in all respect as per drawings, specification and instruction of Engineer-in-charge. Contractor's scope shall include supply of all material and accessories including but not limited to any fixtures, clamps, gasket, nut bolts, finish coat of painting including rub down & touch up of shop primer/ paint scrapping of shop primer/ paint and further their painting after								
	Approx. erection weight and Details of major equipments are as under (Refer P&ID included with Tender).								
	Details of major equipments are as under								
7.1	Scrapper Trap with Pig Handling Device, Jib Crane/Chain Pulley Block, Metering skid etc.	MT			30				
8.0	<b>SUPPLY OF ASSORTED PIPE, FLANGES AND FITTINGS</b>								
	Complete work of supply of assorted pipes, flanges and fittings including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with relevant specifications indicated in 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.								
8.1	<b>CARBON STEEL PIPES</b>								
8.1.1	API 5L, Gr. X52, PSL-2, SAW, BE	m	18" NB	S60	96				
8.1.2	API 5L, Gr. X52, PSL-2, , Seamless, BE	m	12" NB	S60	6				
8.1.3	API 5L, Gr. X52, PSL-2, , Seamless, BE	m	10" NB	XS	6				
8.1.4	API 5L, Gr.B, PSL-2, Seamless, BE	m	8" NB	14.3	6				
8.1.5	ASTM A 106 Gr. B (Charpy), Seamless, BE	m	6" NB	XS	120				
8.1.6	ASTM A333 Gr 6, Seamless BE	m	6" NB	XS	120				
8.1.7	ASTM A 106 Gr. B (Charpy), Seamless, BE	m	4" NB	XS	96				
8.1.8	ASTM A 106 Gr. B (Charpy), Seamless, BE	m	2" NB	S80	150				
8.1.9	ASTM A333 Grade 6 Seamless, BE	m	2" NB	XS	36				
8.1.10	ASTM A 106 Gr. B, Seamless, PE	m	1½" NB	S80	6				

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Sl. No.	Description of Item	Unit	Size	Rating/ Thk./ Sch.	Quantity				
						In Figure	In Words	In Words	
8.1.11	ASTM A 106 Gr. B, Seamless, PE	m	1" NB	S80	12				
8.1.12	ASTM A 106 Gr. B, Seamless, PE	m	¾" NB	S160	24				
8.1.13	ASTM A333 Grade 6 Seamless, PE	m	¾" NB	S160	12				
8.1.14	API 5L, Gr. X70, PSL-2, LSAW, BE	m	18" NB	14.3	18				
<b>8.2</b>	<b>FLANGES</b>								
8.2.1	Weld Neck [B-16.5, ASTM A694 Gr.F-52 (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness)	Nos.	18"	600#	13				
8.2.2	Weld Neck [B-16.5, ASTM A694 Gr.F-52 (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness)	Nos.	12"	600#	3				
8.2.3	Weld Neck [B-16.5, ASTM A105, (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness)	Nos.	8"	600#	6				
8.2.4	Weld Neck [B-16.5, ASTM A105, (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness)	Nos.	6"	600#	8				
8.2.5	Weld Neck [B-16.5, ASTM A 350 GR LF2, CL-I., 125 AARH, RF]	Nos.	6"	600#	8				
8.2.6	Weld Neck [B-16.5, ASTM A105, (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness)	Nos.	4"	600#	16				
8.2.7	Weld Neck [B-16.5, ASTM A105, (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness)	Nos.	2"	600#	20				
8.2.8	Weld Neck [B-16.5, ASTM A 350 GR LF2, CL-I., 125 AARH, RF]	Nos.	2"	600#	14				
8.2.9	Socket Welded (B-16.5, ASTM A105, 125 AARH, RF)	Nos.	¾"	600#	4				
8.2.10	Blind Flanges [B-16.5, ASTM 105 (Charpy), 125 AARH, RF]	Nos.	18"	600#	2				
8.2.11	Blind Flanges [B-16.5, ASTM 105 (Charpy), 125 AARH, RF]	Nos.	8"	600#	6				
8.2.12	Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF]	Nos.	18"	600#	5				
8.2.13	Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF]	Nos.	12"	600#	1				
8.2.14	Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF]	Nos.	8"	600#	4				
8.2.15	Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF]	Nos.	6"	600#	4				
8.2.16	Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF]	Nos.	4"	600#	6				
8.2.17	Spectacle Blind [B-16.48, ASTM A350 Gr. LF2 CL-I, 125 AARH, FF]	Nos.	2"	600#	10				
<b>8.3</b>	<b>ELBOW</b>								
8.3.1	90° Elbow [MSS- SP -75 GR.WPHY52, MSS-SP-75, 1.5D, BW]	Nos.	18"	S60	8				
8.3.2	90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW]	Nos.	8"	14.3	4				
8.3.3	90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW]	Nos.	6"	XS	28				

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Sl. No.	Description of Item	Unit	Size	Rating/ Thk./ Sch.	Quantity		In Figure	In Words	In Words	
8.3.4	90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW]	Nos.	4"	XS	16					
8.3.5	90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW]	Nos.	2"	S80	40					
8.3.6	90° Elbow [ASTM A105, B-16.11, SW]	Nos.	¾"	S160	12					
8.3.7	90° Elbow [ASTM A420 GR. WPL6, B-16.9, 1.5D, BW]	Nos.	6"	XS	12					
8.3.8	90° Elbow [ASTM A420 GR. WPL6, B-16.9, 1.5D, BW]	Nos.	2"	XS	8					
8.3.9	90° Elbow [ASTM A350 Gr. LF2, B-16.11, SW]	Nos.	¾"	S160	4					
8.3.10	45° Elbow [MSS- SP -75 GR.WPHY52, MSS-SP-75, 1.5D, BW]	Nos.	18"	S60	4					
<b>8.4</b>	<b>EQUAL TEE</b>									
8.4.1	ASTM A234, Gr. WPB (Charpy), BW	Nos.	6"	XS	6					
8.4.2	ASTM A234, Gr. WPB (Charpy), BW	Nos.	4"	XS	4					
8.4.3	ASTM A234, Gr. WPB (Charpy), BW	Nos.	2"	S80	2					
8.4.4	ASTM A105, SW	Nos.	¾"	S160	26					
<b>8.5</b>	<b>UNEQUAL TEES</b>									
8.5.1	ASTM A234, Gr. WPB (Charpy), BW	Nos.	6"x6"x4"	S60xS60x XS	2					
8.5.2	ASTM A234, Gr. WPB (Charpy), BW	Nos.	4"x4"x2"	XSxXSxS80	10					
8.5.3	ASTM A420 Gr. WPL6, SW	Nos.	2"x2"x¾"	Xs x XS x S160	6					
8.5.4	ASTM A350 GR. LF2, SW	Nos.	1"x1"x¾"	XS x XS x S160	2					
<b>8.6</b>	<b>WELDOLET</b>									
8.6.1	ASTM A694 GR.F-52(Charpy), BW	Nos.	18" x 6"	S60 x XS	4					
8.6.2	ASTM A694 GR.F-52(Charpy), BW	Nos.	18" x 4"	S60 x XS	10					
8.6.3	ASTM A694 GR.F-52(Charpy), BW	Nos.	18" x 2"	S60 x S80	2					
8.6.4	ASTM A694 GR.F-52(Charpy), BW	Nos.	12" x 2"	S60 x S80	2					
8.6.5	ASTM A105 (Charpy), BW	Nos.	8" x 2"	14.3 x S80	12					
8.6.6	ASTM A105 (Charpy), BW	Nos.	6" x 2"	XS x S80	8					
8.6.7	ASTM A350 GR. LF2, BW	Nos.	6" x 2"	XS x XS	6					
<b>8.7</b>	<b>SOCKOLET</b>									

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Sl. No.	Description of Item	Unit	Size	Rating/ Thk./ Sch.	Quantity				
						In Figure	In Words	In Words	
8.7.1	ASTM A694 Gr. F52 (Charpy), SW	Nos.	18" x 1½"	3000#	4				
8.7.2	ASTM A694 Gr. F52 (Charpy), SW	Nos.	18" x ¾"	6000#	2				
8.7.3	ASTM A105 (Charpy) , SW	Nos.	8" x ¾"	6000#	6				
8.7.4	ASTM A105 (Charpy) , SW	Nos.	6" x ¾"	6000#	8				
8.7.5	ASTM A105 (Charpy) , SW	Nos.	4"x¾"	6000#	4				
<b>8.8</b>	<b>REDUCER</b>								
8.8.1	MSS-SP-75 Gr. W WPHY-52	Nos.	10" x 8"	XS x 14.3	4				
8.8.2	MSS-SP-75 Gr. W WPHY-52	Nos.	10" x 6"	XS x XS	8				
8.8.3	ASTM A234, Gr. WPB (Charpy)	Nos.	2" x 1"	S80 x S160	2				
8.8.4	ASTM A234, Gr. WPB (Charpy)	Nos.	2"x ¾"	S80 x S160	16				
<b>9.0</b>	<b>Supply of Valves</b>								
	Complete work of supply of valves including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work indicated in SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT. <b>All Ball Valves with Butt Welded ends shall have Fully welded body.</b>								
9.1	<b>Plug Valves</b>								
	<b>D1A</b>								
9.1.1	BW	Nos.	6"	600#	2				
9.1.2	BW, Ext. Stem	Nos.	6"	600#	4				
9.1.3	FE	Nos.	4"	600#	2				
9.1.4	BW	Nos.	4"	600#	4				
9.1.5	BW	Nos.	2"	600#	5				
9.1.6	FE	Nos.	2"	600#	2				
9.1.7	SW	Nos.	¾"	800#	2				
	<b>D4A</b>								
9.1.8	FE	Nos.	6"	600#	6				
9.1.9	BW	Nos.	2"	600#	8				

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Sl. No.	Description of Item	Unit	Size	Rating/ Thk./ Sch.	Quantity		In Figure	In Words	In Words	
9.1.10	FE	Nos.	2"	600#	4					
<b>9.2</b>	<b>Ball Valves</b>									
	<b>D1A</b>									
9.2.1	FB, BW, Ext. Stem, Sectionalising Valve (AV type)	Nos.	18"	600#	4					
9.2.2	RB, BW, Remote Operated Ball Valve (AV type), With Auto-closure facility	Nos.	18"	600#	1					
9.2.3	RB, BW, Remote Operated Ball Valve (AV type)	Nos.	18"	600#	1					
9.2.4	FB, BW, Remote Operated Ball Valve (AV type)	Nos.	18"	600#	2					
9.2.5	FB, FE, HOV	Nos.	18"	600#	2					
9.2.6	RB, FE, HOV	Nos.	18"	600#	1					
9.2.7	RB, FE	Nos.	12"	600#	1					
9.2.8	RB, BW	Nos.	8"	600#	5					
9.2.9	RB, FE	Nos.	6"	600#	4					
9.2.10	RB, BW	Nos.	6"	600#	6					
9.2.11	RB, BW, Ext. Stem	Nos.	6"	600#	8					
9.2.12	RB, FE	Nos.	4"	600#	6					
9.2.13	RB, BW	Nos.	4"	600#	6					
9.2.14	RF, FB	Nos.	2"	600#	6					
9.2.15	BW, FB	Nos.	2"	600#	35					
9.2.16	BW, FB, LO	Nos.	2"	600#	2					
9.2.17	SW, FB	Nos.	¾"	800#	70					
	<b>D4A</b>									
9.2.18	BW, FB	Nos.	2"	600#	8					
9.2.19	SW, FB	Nos.	¾"	800#	8					
<b>9.3</b>	<b>Globe Valves</b>									
	<b>D1A</b>									
9.3.1	FE	Nos.	4"	600#	4					
<b>10.0</b>	<b>QOEC (D4A)</b>									

APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES</b> <b>FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>						MECON LIMITED	
		Prices in INR							
4(i)	PIPING & MECHANICAL WORKS								
Sl. No.	Description of Item	Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
						In Figure	In Words	In Words	
10.1	Supply of QOEC with accessories (O'ring etc.)	Nos.	6"	600#	6				
<b>11.0</b>	<b>SAFETY RELIEF VALVES</b>								
	Supply of safety relief valve of inlet size range (1" to 2") and outlet size range (2" to 3") on scrapper trap alongwith companion flanges with all accessories including but not limited to gaskets, nuts, bolts, fixtures, clamps etc. as per TS and datasheet.								
11.1	Supply of PSV (for Scrapper Trap) with accessories as per Specification / Drawing	Nos.	-	600#/150#	2				
<b>12.0</b>	<b>SUPPLY OF FLOW TEE</b>								
12.1		Nos.	18"x18"x18"	600#	2				
12.2	Supply of Flow Tee as per specification/drawings. (D1A)	Nos.	18"x18"x10"	600#	12				
<b>13.0</b>	<b>SUPPLY OF INSULATING JOINTS</b>								
13.1		Nos.	18"	600#	2				
13.2	Supply of Insulating Joints as per specification/drawings. (D1A)	Nos.	8"	600#	4				
13.3		Nos.	6"	600#	4				
<b>14.0</b>	<b>Supply of Bi-Directional Scrapper Trap (i.e., Pig Launcher/Receiver of Size 24"x 18"NB &amp; ANSI Class 600#) System along with accessories</b>								
14.1	Supply of Bi-Directional Scrapper Trap (i.e., Pig Launcher/Receiver of Size 24"x 18"NB & ANSI Class 600#) along with Quick Opening End closure as per Specification and Data Sheet	Nos.	24"x18"	600#	2				
14.2	Supply of Non Intrusive Pig Signallers mounted on Bi-Directional Scrapper Trap mentioned in 6.1 above as per Technical specification and Data Sheet attached.	Nos.	-	600#	4				
14.3	Supply of Door Seal for Quick Opening End Closure (QOEC) welded on Bi-Directional Scrapper Traps as mentioned in item no. 6.1 above	Nos.	-	600#	4				
14.4	Supply of Non Intrusive Pig Signaller for mounting on 18" NB Pipeline as per as per Technical specification and Data Sheet attached.	Nos.	-	600#	2				
14.5	Supply of jib crane of capacity 1.0 ton to suit the pig handling for scrapper trap specified in 6.1 above.	Nos.	-	-	2				
14.6	Supply of Pig Handling System with insertion / retraction facilities for inserting/pulling the SS Tray / Pigs to suit scrapper trap specified in 6.1 above.	Nos.	-	-	2				
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies). (iii) the proposed supplier(s)/manufacturer(s) shall have minimum domestic value addition on inputs as per requirement of latest edition of DMI&SP policy, wherever applicable . (iv) The Contractor shall furnish the Affidavit of self-certification issued by the proposed supplier/ manufacturer (wherever applicable) declaring that the iron & steel products is domestically manufactured in terms of the domestic	<b>Total Amount of quoted price (inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>							
Place				Signature of Authorised Signatory					
Date				Name :					

4(l) PIPING & MECHANICAL WORKS		Unit	Size	Rating/ Thk./ Sch.	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Item					In Figure	In Words		
Tender No.:						Designation :			
Offer No. & Date :						Seal :			



APGDC Limited

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**FOR**  
**KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II**  
**VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)**  
**Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)**

Prices in INR



MECON LIMITED



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MECON LIMITED

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SI. No.	Description of Item	Unit	Quantity	In Figure	In Words		
<b>CIV-1</b>	<b>TOPOGRAPHICAL SURVEY</b>						
	To carry out detailed Topographic Survey covering specified plots/area of Despatch / Receiving Station, Tap-Off's and SV Stations and any other locations from approved agency and as directed by Engineer in Charge using survey instruments and giving complete details in the form of drawings (in the scale of 1:100) and reports in 4 copies on white paper sheets and CAD output on CD/DVD all complete as per specifications, drawings and direction of the Engineer-in-Charge.	<b>SQM</b>	<b>43500</b>				
	Note :- 1. Tentative Number of Plots for Topographical Survey is 6 Nos. 2. Area of plot shall be surveyed up to 10m beyond plot boundary and up to approach road on front side of the plot. 3. Number of trees along with type and girth area of plot shall be given. 4. HFL of plot shall be reported. 5. To be read along with relevant Technical Specification for Survey Works.						
<b>CIV-2</b>	<b>GEOTECHNICAL INVESTIGATION IN PLOTS</b>						
	Carrying out Drilling holes of 150mm dia. in all type of soil by shell and auger method upto a max. depth required or refusal strata (REFUSAL means when N> 100 for 30 cms of penetration) including recording of water table (if met with within the depth drilled) after completion of boring and conducting the required laboratory tests (See Note ) from NABL or equivalent accredited laboratory as per ISO/IEC 17025 and as directed by Engineer in Charge including providing all manpower, tools, tackles, materials, survey equipments, drilling rigs, soil testing equipment, other equipments, other support facilities necessary for the survey and associated work and submitting Final Geotechnical Report (along with the soft copy) incorporating all field and laboratory data and recommending the type of shallow foundation and the safe bearing capacity and recommendation of Load bearing capacity of Pile if required (See Note) for the proposed sites, Drawings, Data etc. (One Lot) in an approved format drawings, approved QAP, implementation schedule and other provisions of the Tender Document and instructions of the Engineer-in-charge. Note :- Tentative Number of Plots for geotechnical investigation is 6 Nos.						
	0-10m or Refusal	<b>NOS.</b>	<b>12</b>				
	Note :- 1. Required Laboratory Test such as natural moisture content, liquid limit, plastic limit, shrinkage limit, dry and bulk density, specific gravity, particle size distribution by sieve and hydrometer analysis, triaxial compression test (undrained), permeability test, chemical test on soil samples and water samples, differential free swell test and direct shear test all as per Technical Specifications and direction of Engineer-in-Charge.						





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	2. Safe bearing pressure at 1.5m, 2.0m and 2.5m below existing ground level or at other depths for open and raft footing.					
	3. Geotechnical design for cast in situ pile of 500mm diameter of 30T Capacity end bearing/ skin friction type shall be recommended if required.					
	4. Existence of black cotton soil with swelling property and swelling index shall be reported with remedial measures.					
	5. RQD value of under laying strata encountered shall be reported.					
<b>CIV-3</b>	<b>SITE CLEARANCE</b>					
<b>CIV-3.1</b>	<b>DEMOLITION OF R.C.C./BRICKS/STONE MASONARY</b>					
	Site clearance by demolition of R.C.C./PCC/Brickwork/Stone Masonry/Stone Soling, Flexible pavements etc. along with removing the debris and disposal of unserviceable material to any lead and staking of serviceable materials, handing over serviceable material to concerned department if required as per technical specifications and direction of Engineer-in-charge.	<b>CUM</b>	<b>150</b>			
	Note:					
	1. Rate includes cost of all labour, tools, tackles, hire charges, royalties, levies, leads, loading/unloading, transportation, water, electric power, illumination etc. complete in all respects as per scope of work, detailed construction drawings, technical specifications and direction of Engineer-in-charge.					
	2. Demolition of RCC/PCC/Brick Masonry/Road will be paid in NET CUM after deductions for air voids as demolished.					
<b>CIV-3.2</b>	<b>CLEANING VEGETATION</b>					
	Cleaning bushes including uprooting of rank vegetation, green bush wood, trees and saplings of girth upto 30cms (measured at a height of 1m above ground), stacking the serviceable materials and disposal of the same including rubbish etc. upto any lead and all lift as per specification and direction of the Engineer-in-charge. (payment will be made for actual site clearance area only).	<b>SQM</b>	<b>35000</b>			
<b>CIV-3.3</b>	<b>TREE CUTTING</b>					
	Tree cutting (only of girth more than 30 cm above 1m above ground) along with removal of roots and stumps and handing over the same to Owner / Owner's Representative including paying royalties, disposal, taking approval from competent authorities etc. all complete, as per technical specifications and direction of Engineer-in-charge.	<b>NOS.</b>	<b>15</b>			
	Note:					
	1. Rate includes cost of all labour, tools, tackles, hire charges, royalties, levies, loading/unloading, transportation, electric power, illumination and cost of handing over to owner/or his representative etc. complete in all respects as per scope of work and direction of Engineer-in-charge.					
<b>CIV-4</b>	<b>EARTH WORK IN EXCAVATION AND BACKFILLING</b>					



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Sl. No.	Description of Item	Unit	Quantity			
	Earthwork in excavation for foundations in ordinary soils including soft rock / disintegrated rock in both dry and wet conditions including pumping and bailing out surface and subsoil water, shoring, strutting, slush removal including backfilling in all positions in layers of 300mm at all heights and depths as per drawings and specifications wherever required, in foundation pits and other places with excavated suitable surplus earth including reclaiming from spoil heaps kept within the plot including dressing and levelling, watering and mechanical compaction etc., transporting surplus unserviceable soil upto any lead and spreading in layers and as per specifications and direction of Engineer in charge. The Measurement for payment shall be for the theoretical volume only and it shall be the volume of the block of the excavation having maximum bottom dimension of the levelling course/PCC as per drawing and to actual depth.					
<b>CIV-4.1</b>	For depth upto 1.5 m.	<b>CUM</b>	<b>6500</b>			
<b>CIV-4.2</b>	For depth beyond 1.5 m	<b>CUM</b>	<b>500</b>			
	Note:					
	1.The Contractor shall take into account in his rate, the provision for excess excavation required for necessary working space, cutting in slopes etc., which may be required for excavation and other allied works and refilling the side slopes and working space in layers as per requirement.					
<b>CIV-5</b>	<b>EARTH WORK IN EXCAVATION/ SITE GRADING IN HARD ROCK</b>					
	Earth work in excavation in hard rock including 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 levelled and neatly dressed complete in all respect as per scope of work, detailed construction drawings and directions of the Engineer-in-charge. The Measurement for payment shall be for the theoretical volume only and it shall be the volume of the block of the excavation having maximum bottom dimension of the levelling course/PCC as per drawing and to actual depth.	<b>CUM</b>	<b>100</b>			
	Note:-					
	1. The Contractor shall take into account in his rate, the provision for excess excavation required for necessary working space, cutting in slopes etc., which may be required for excavation and other allied works as per requirement.					
<b>CIV-6</b>	<b>EARTH WORK IN FILLING</b>					



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						Service Accounting Codes (SAC)
	Supply and controlled earth filling with good quality imported earth from approved source for filling in plots, under floors and other places with special compaction to achieve dry density of 95% standard proctor density as per instruction of the Engineer at all heights/depths upto any lead transporting, depositing, compacting and dressing, trimming complete as desired in layers not exceeding 30cm including watering, consolidating by mechanical means as per specifications and instructions of the Engineer.	CUM	54000			
<b>CIV-7</b>	<b>EARTH WORK IN BOX CUTTING FOR ROADS</b>					
	Earth work in Box cutting for roads in embankment/existing ground, in all kinds of soils for formation of subgrade to required camber, gradient including rolling, compaction with 8 to 10 t power roller to get 95% proctor density and dressing up the surface, breaking clods, removal of slush and water, transporting and depositing or stacking unserviceable earth elsewhere upto any lead as directed by Engineer in charge for all heights etc., complete as per specification.	CUM	1000			
<b>CIV-8</b>	<b>SAND FILLING</b>					
	Supplying and filling approved quality coarse sand/ m-sand (Zone II or Zone III) in foundation or under floor, trenches, pits and other places, at all locations in layers of 150 mm thickness including watering and ramming, all lead, lift and depth complete as per drawing and specification and direction of the Engineer.	CUM	550			
	Note: 1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, cost of sand, right of way, cess, and backfilling using sand in all conditions, etc.					
<b>CIV-9</b>	<b>PLAIN CEMENT CONCRETE</b>					
<b>CIV-9.1</b>	Supplying and laying plain cement concrete of Grade 1:2:4 (M 15) with stone aggregate 20mm down grade (including shuttering if required) in foundations, floors, roof screed, aprons, pits, drains and other mass concrete works, steps, coping of wall, sill etc., at all depths and heights/levels as per drawings, specifications and directions of the Engineer-in-charge.	CUM	425			
	Note: 1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, cement, shuttering in all conditions etc. with all bye works and sundry works.					
<b>CIV-9.2</b>	Supplying and laying plain cement concrete of Grade 1:3:6 (M 10) with stone aggregate 40mm down grade (including shuttering if required) in all levelling courses under foundations, mass concrete works, road works, chambers, trenches, floors and any other locations at all depths complete in all respects as per drawings, specifications and directions of the Engineer-in-charge.	CUM	700			
	Note: Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, cement, shuttering in all conditions etc. with all bye works and sundry works.					



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CIV-10	<b>REINFORCED CEMENT CONCRETE</b>					
	Providing and Laying in position machine batched and machine mixed Design mix/ Ready mixed for Reinforced Cement Concrete work of Grade M-25 using 20mm down size graded aggregate at all depths and heights using cement content as per approved design mix manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of RMC as applicable, including cost of centering, shuttering and admixtures in recommended proportions as per IS: 9103 to accelerate/retard setting of concrete (improve workability without impairing strength and durability) but excluding cost of reinforcement as per direction of Engineer-in-charge. Mechanical mixers with Hopper along with Weigh Batchor.	CUM	3000			
	Note:					
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade OPC cement including sulphate resistant cement if required, coarse and fine aggregates, admixtures, other minor construction materials, testing of concrete, curing etc. with all bye works complete.					
	2. The reinforcement shall be paid separately vide respective item.					
	3. In case of non availability of OPC Cement, PPC Cement can be used in place of OPC after approval from Engineer-in-charge. Suitable rate analysis for rebate along with mix design using PPC shall be submitted by the Contractor.					
CIV-11	<b>REINFORCEMENT STEEL</b>					
	Supplying, Fabricating and Fixing in position TMT Grade Fe 500D reinforcement conforming to IS1786 at all levels and positions including the cost of transport, straightening, cutting, bending, cranking, welding, provision of necessary chairs and spacers, preparation of bar bending schedule and getting the same approved by EIC etc., complete as per drawings and specifications and including cost of binding wire, labour, testing etc., all complete in all respects as per detailed construction drawings, technical specifications and direction of Engineer-in-charge. The chairs and spacer bars provided will not be measured for payment.	MT	350			
	Note:					
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as reinforcement steel, binding wire etc. with all bye works and sundry works complete.					
	2. Chairs, Unauthorised Laps, Spacers, Binding wire, Wastage etc. shall be to contractor's account.					
CIV-12	<b>BRICK WORK</b>					



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	Providing and laying BRICK WORK straight or curved on plan to any radius using best quality bricks with frog/indent, conforming to sub-class A as per IS:1077 having crushing strength of not less than 50 kg/cm <sup>2</sup> in cement mortar 1 :6 (1 Cement : 6 Coarse Sand) in all types of foundation and superstructure at all depths/heights including projections, pillars, parapets, ornamentals of any shape, cornices, all complete including cut work, curing, scaffolding, including filling of joints with Cement Mortar 1:6 and racking of joints, etc. as per specifications, drawings and directions of the Engineer.	CUM	1800				
	Note:						
	Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as cement, bricks, finishes, bitumen, other minor construction materials, shuttering, staging, masonry work, painting with bitumen on faces in contact with soil etc. as per requirement with all bye-works and sundry works complete as per drawings.						
<b>CIV-13</b>	<b>INSERTS</b>						
	Supplying, Fabricating, Fixing at all levels and positions Steel embedments/ Inserts like Plates, Angle, Channels, Anchor boxes, MS pipe Sleeves including threading etc., including two coats of approved quality Synthetic enamel paint over a primer coat on the exposed Surfaces wherever necessary, complete as per Drawings, Specifications and directions of the Engineer-in-charge. (Jigs, Templates and Fixtures will not be paid separately).	MT	9				
<b>CIV-14</b>	<b>G.I.PIPES</b>						
	Providing and fixing of following size of G.I. pipes (medium duty) as per IS 1239 complete with G.I. fittings and clamps including cutting by hack saw, bending by hydraulic machine, trenching and refilling etc. including all labour and material complete as per approved drawing and direction of EIC.						
<b>CIV-14.1</b>	100 mm nominal bore	RM	150				
<b>CIV-14.2</b>	150 mm nominal bore	RM	150				
<b>CIV-15</b>	<b>PRE CAST COVERS</b>						
	Providing, hoisting and fixing up precast reinforced cement concrete of M-25 grade (20mm nominal size) in trenches, pits, tanks and the like including the cost of required centering, shuttering (with smooth surface) complete but excluding cost of reinforcement.	CUM	5				
	Note :-						
	1.The reinforcement shall be paid separately vide respective item.						
<b>CIV-16</b>	<b>CONCRETE PIPES (NP3 TYPE)</b>						
	Providing and laying non-pressure NP3 class (medium duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including trenching and filling complete as per direction of Engineer in charge.						



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CIV-16.1	150 mm diameter	RM	100				
CIV-16.2	300 mm diameter	RM	100				
CIV-17	<b>CONCERTINA COIL</b>						
CIV-17.1	Providing and fixing Concertina Coil fencing with Punched tape concertina coil 600mm dia 10 metre openable length (total length 90 m), having 50 nos. rounds per 6 m length, upto 3 m height of wall with existing angle iron Y- shaped placed 3 m apart and with 9 horizontal RBT reinforced barbed wire, stud tied with GI staples and GI clips to retain horizontal, including necessary bolts or GI barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape (RBT)/spring core(2.5mm thick) wire of high tensile strength of 165 kg/sq.mm with tape (0.52mm thick) and weight 43.478 gm/metre (cost of MS angle, CC blocks shall be paid separately)	RM	1800				
CIV-17.2	Supplying, Fabricating, Fixing at all levels and positions Steel Y angle embedments/ Inserts in boundary wall column with CC blocks including two coats of approved quality Synthetic enamel paint over a primer coat on the exposed Surfaces wherever necessary, complete as per Drawings, Specifications and directions of the Engineer-in-charge. Note- Read this item along with tender drawing MEC/05/11/STD/022.	KG	5600				
CIV-18	<b>RAIN WATER HARVESTING PIT</b>						
	Providing,constructing and finishing of rain water harvesting pit including boring up to ground water table, provision of filter media and construction of pit complete as per scope of work, detailed construction drawings and directions of the Engineer-in-charge.	NOS.	8				
	Note- Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, such as cement, bricks of class designation M-5.0 of IS: 1077 in CM 1:4 (1 cement; 4 sand),bitumen,other minor construction materials, shuttering, staging, providing and placing R/F steel, inserts etc. with all by works and sundry works complete.						
CIV-19	<b>BOULDER SOLING</b>						
	Providing and laying stone boulder soling with stone boulders of different sizes including packing filling interstices with smaller size stones dry and wet consolidation with moorum as coarse aggregate in foundation, trenches, pavements including ramming, consolidating with mechanical means and tamping etc. completed as directed at the site (Compacted thickness shall be measured for payment)	CUM	50				
CIV-20	<b>CONCRETE PAVEMENT</b>						



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	Providing and laying reinforced cement concrete pavement 150 mm thick in M-25 grade with 20 mm and down grade crushed stone aggregate in pavement, including earthwork in excavation, preparation of base (i.e. compacted subgrade, 200 thick sand and 100 thick PCC M-10 grade), leaving pockets if necessary, making recess, projections, fixing inserts conduit pipes (GI, PVC, HDPE, etc.) laying in alternate panels, filling the gaps between the panels with bitumen sand mix filler material etc., making slopes, finishing edges, leaving bars for pedestals & sleepers including providing sand fill isolation, shuttering, providing and fixing reinforcing steel, curing, chipping and modification works etc. as specified in any shape, thickness, position and finishing the top surface smooth as per requirement etc. all complete as per drawings, specifications and directions of the Engineer-in-charge.						
CIV-20.1	150mm thick in Pavements for Process Area (Type - I)	SQM	2450				
CIV-21	<b>PLASTERING IN DRAINS</b>						
	Providing and applying 15mm thick cement plaster 1 : 4 (1 cement : 4 medium coarse sand) smooth finish (1 neat coat of cement) with waterproofing compound at all depths & heights on faces of walls, pillars, projection, bands, etc., including raking out joints if any left out, necessary dabbing, curing, scaffolding complete at all heights as per specification and drawings.	SQM	3200				
	Note:						
	Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as cement, coarse sand and other minor construction materials as per requirement with all bye-works and sundry works complete as per drawings.						
CIV-22	<b>JOINT FILLER</b>						
CIV-22.1	Providing and filling expansion joints in boundary wall with 25mm thick bitumen impregnated fibre board conforming to IS 1838 including cost of primer all complete.	RM	250				
CIV-22.2	Providing and filling 12mm deep groove on top and on both sides of vertical surface with bituminous sealant all complete.	RM	500				
CIV-23	<b>ROAD WORKS</b>						
CIV-23.1	Providing, laying, spreading, and compacting graded stone aggregate Granular Sub Base over subgrade, aggregate gradation shall be as per Table No 400 - 1 of Grading 1 of MORTH specifications (See Note 1) including transportation of material to site, laying in uniform layers with well prepared surface and compacting with vibratory roller to achieve the desired density as per specifications complete in all respect. Same shall be laid in layers of 200 mm thickness each. Rate to include preparation of existing subgrade surface to the proper line and level and compacted as directed by Engineer in charge.	CUM	475				
	Note 1:						



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	<b>IS Sieve Designation                      % Passing</b> 75.0 mm                                      100 53.0 mm                                      80-100 26.5 mm                                      55-90 9.50 mm                                        35-65 4.75 mm                                        25-55 2.36 mm                                        20-40 0.425 mm                                      10-25 0.075 mm                                      3-10						
CIV-23.2	Providing, laying, spreading, and compacting graded stone aggregate to wet mix macadam specifications as per Table no 400 - 11 of MORTH specifications (See Note 1) including the premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, laying in uniform layers with paver/grader/manual in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per specifications complete in all respect. Same shall be laid in a layer of 100mm thickness over GSB Layer.	CUM	250				
	Note 1:						
	<b>IS Sieve Designation                      % Passing</b> 53.0 mm                                      100 45.0 mm                                      95-100 26.5 mm                                      --- 22.40 mm                                      60-80 11.20 mm                                      40-60 4.75 mm                                        25-40 2.36 mm                                        15-30 0.06 mm                                        8-22 0.075 mm                                      0-8						
CIV-23.3	REINFORCED CEMENT CONCRETE IN PAVING/GRADE SLAB WITH VACUUM DEWATERED CONCRETING USING TREMIX OR EQUIVALENT METHOD						





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	Providing and Laying in position machine batched and machine mixed Design mix / Ready mixed M-30 grade concrete for slab/paving work at all depths and heights using 20 mm down size graded aggregate in panels of 4.0m x 4.0 m or as per approved drawing by using vacuum dewatering method (tremix flooring or equivalent) using cement content as per approved design mix manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads having continuous agitated mixer and providing necessary formwork with MS Channel sections, curing, edge treatment, making necessary slope, vibrating with needle and surface vibrators and finishing with broom finish including cost of centering & shuttering, admixtures in recommended proportions as per IS: 9103 to accelerate/retard setting of concrete (improve workability without impairing strength and durability) but excluding cost of reinforcement all complete in all respects and as per direction of Engineer-in-Charge. Cost of providing and laying 12 mm wide 25 mm deep polysulphide sealant in contraction joint in RCC floor including groove cutting is included within this SOR Item. Mechanical mixers with Hopper along with Weigh Batcher shall also	CUM	475				
	Note:						
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade OPC cement, coarse and fine aggregates, admixtures, other minor construction materials, testing of concrete, curing etc. with all bye works and sundry works complete.						
	2. Reinforcement & Expansion Joints shall be paid separately vide respective item.						
	3. In case of non availability of OPC Cement, PPC Cement can be used in place of OPC after approval from Engineer-in-charge. Suitable rate analysis for rebate along with mix design using PPC shall be submitted by the Contractor.						
<b>CIV-24</b>	<b>EXPANSION JOINTS</b>						
<b>CIV-24.1</b>	Providing & laying expansion joint 25 mm thick with approved bitumen impregnated fibre board in between & sealing the top 25 mm depth with bituminous sealant at all heights & location with all byeworks complete as per drawing, standard practice and as directed by the Engineer-in-charge.	RM	150				
<b>CIV-24.2</b>	Providing & laying 25 mm dowel bars with metal cap @200 mm c/c across the full road width at expansion joint location as per drawing, standard practice and as directed by the Engineer-in charge.	NOS.	750				
<b>CIV-25</b>	<b>PAVER BLOCK</b>						
	Supplying and placing in position as per approved pattern of Cement Concrete Inter locking/grass jointed paver block 60 mm thick of approved shape, rough finish, M-30 strength of approved brand laid over the sand bed of minimum 100 mm thick. The CC interlocking blocks to be of uniform Grey colour or as approved by EIC complete in all respects as per scope of work, detailed construction drawings, technical specifications and directions of the Engineer-in-charge.	SQM	350				
	Note :-						



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	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such paver blocks, sand, earth work in excavation in cutting earth in all conditions, shuttering with all bye works and sundry works.					
	2.PCC below paver block shall be paid separately vide respective item.					
<b>CIV-26</b>	<b>KERB STONE FIXING</b>					
	Providing and fixing precast concrete Kerb stones (125 wide X 300 deep approx.) of M-30 grade or equivalent of approved make and shape at or near ground level as per approved pattern and setting in position with cement mortar 1:3 (1 cement : 3 coarse sand) including the cost of required centering, shuttering and finishing smooth with 6 mm thick cement plaster 1:3 (1 cement : 3 fine sand) wherever required over 75 mm thick PCC M-10 levelling course, complete in all respects as per scope of work, detailed construction drawings, technical specifications and directions of the Engineer-In-Charge.	RM	500			
	1. Rate to include all labour, tools, tackles, factory manufactured & steam cured Kerb Stones, shuttering, transportation, water charges, earth work if any, PCC etc complete.					
<b>CIV-27</b>	<b>AUTOCLAVED AERATED CEMENT BLOCKS</b>					
	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mmmm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	CUM	615			
<b>CIV-28</b>	<b>ANTI TERMITE TREATMENT</b>					
	Providing and injecting with approved quality chemical emulsion for pre-constructional antitermite treatment and creating a chemical barrier as per IS:8944 and IS:6313 under and around the column pits, trenches, wall trenches, plinth filling (complete area underneath the floor), junctions of wall and floor, expansion joints, surrounding of pipes, conduits etc., along the perimeter of the building and all wood work in ground floors, complete as per specification and direction of the Engineer. Only Ground Floor Plinth area of the building will be measured for payment in the following three stages : 50% after completion of foundations, 30% after completion of ground floor flooring and 20% after completion of all treatment works including ground floor doors and windows.	SQM	1100			
	NOTE: Contractor shall give at least 10 years performance guarantee for anti termite treatment works					
<b>CIV-29</b>	<b>DAMP PROOF COURSE</b>					



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	Providing 40 mm thick Damp proof course over plinth with cement concrete grade 1:1.5:3 using aggregate of 10 mm and down graded and mixing approved water proof admixture with cement as per manufacturer's specification including necessary formwork/ shuttering, one coat of hot bitumen of grade VG-10 over the top surface of Damp proof coarse and all necessary byeworks complete as per specification, drawing and as directed by the Engineer.	SQM	140			
CIV-30	<b>PLINTH PROTECTION</b>					
	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	SQM	225			
CIV-31	<b>KHURRAS</b>					
	Making Khurras 45cm x 45cm with average thickness of 50mm in PCC (1:2:4) using 20mm and down stone chips over PVC sheet 1m x 1m x 400micron, finished with 12mm cement plaster (1:3) and a coat of neat cement rounding the edges and making, finishing the outlet.	NOS.	32			
CIV-32	<b>GOLA</b>					
	Providing gola 75 x75mm in cement concrete 1:2:4 ( 1 cement : 2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75x75mm deep chase	RM	375			
CIV-33	<b>CPVC PIPES - EXPOSED WORK</b>					
	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes of approved make having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge - Exposed Work.					
CIV-33.1	32 mm nominal bore	RM	200			
CIV-33.2	25 mm nominal bore	RM	42			
CIV-33.3	20 mm nominal bore	RM	10			
CIV-33.4	15 mm nominal bore	RM	10			
CIV-34	<b>CPVC PIPES - CONCEALED WORK</b>					



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	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes of approved make having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. - Concealed Work including cutting chases and making good the walls etc.						
CIV-34.1	25 mm nominal bore	RM	72				
CIV-34.2	20 mm nominal bore	RM	72				
CIV-34.3	15 mm nominal bore	RM	60				
CIV-35	<b>NON RETURN VALVE</b>						
	Supplying, fitting and fixing superior quality Gun metal non return valve of approved quality						
CIV-35.1	32mm dia	NOS.	17				
CIV-35.2	25mm dia	NOS.	10				
CIV-36	<b>SINTEX OR EQUIVALENT HDPE WATER TANK</b>						
	Providing and fixing 1000 litres capacity SINTEX or equivalent approved HDPE water tank ISI : 12701 marked with PVC fittings for inlet, outlet, over flow, scour float valve, air lock release pipe, connections of required size and diameter including connections and fixing the tank on roof at all heights with all bye-works complete as per manufacturer's specification and direction of the Engineer. (Support of tank on Brick/RCC/PCC will be paid under relevant items)	NOS.	10				
CIV-37	<b>SAND CAST IRON/ CAST SPUN SOIL,WASTE &amp; VENT PIPE AND FITTINGS</b>						
	Providing, laying and jointing in position sand cast iron/ cast iron spun soil, waste and vent pipe conforming to IS 1729 including all fittings like offsets, bends, tees etc. including lead caulked joints 45 mm deep and fixing them on floors or vertically against walls by M.S. brackets or clamps so as to keep the pipes away from the wall. Rate to include scaffolding, water testing after laying the pipes and painting with two coats of paint of any colour such as chocolate grey, buff etc. over a coat of primer of approved quality all complete.						
CIV-37.1	100 mm dia	RM	90				
CIV-37.2	75 mm dia	RM	48				
CIV-38	<b>GULLY TRAP</b>						



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	Providing and fixing square mouth S.W. 100x100 mm size P type gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.5 kg and frame to be not less than 2.70 kg as per standard design with common burnt clay bricks of class designation 5.0	NOS.	7				
<b>CIV-39</b>	<b>BRICK MASONRY MANHOLES</b>						
	Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 coarse sand ) with RCC top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design including excavation,backfilling and disposal of surplus earth complete as per specifications, drawings and direction of Engineer-in-Charge.						
<b>CIV-39.1</b>	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg with common burnt clay bricks of class designation 5.0	NOS.	11				
<b>CIV-39.2</b>	Extra for depth for manholes	RM	5				
<b>CIV-40</b>	<b>GLAZED STONEWARE PIPES</b>						
	Providing, laying and jointing glazed stone ware pipe class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 ( 1 Cement : 1 Fine Sand) including embedding in PCC M-10, making haunches, necessary excavation, backfilling and testing of joints etc complete as per specification and upto 1.5m depth. (PCC shall be paid separately).						
<b>CIV-40.1</b>	100 mm dia	RM	72				
<b>CIV-40.2</b>	150 mm dia	RM	15				
<b>CIV-41</b>	<b>FLOOR TRAP</b>						
<b>CIV-41.1</b>	Providing and fixing PVC floor trap of self cleansing design conforming to IS specs with 100mm inlet, 100mm outlet and 150mm CP hinged heavy brass grating of 6mm thick with rim. Rate shall include making all necessary leak proof connections etc.	NOS.	25				
<b>CIV-41.2</b>	Providing and fixing PVC floor trap of self cleansing design conforming to IS specs with 100mm inlet, 75mm outlet and 150mm CP hinged heavy brass grating of 6mm thick with rim. Rate shall include making all necessary leak proof connections etc.	NOS.	10				
<b>CIV-42</b>	<b>SEPTIC TANK</b>						



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	Providing and construction of septic tank (Type-I for 20 Users) in brick masonry with common burnt clay bricks of class designation 5.0 and base and top slab in RCC M25 complete in all respect as per scope of work, detailed construction drawings , technical specifications and directions of the Engineer-in-charge.	NOS.	7				
	Note:						
	Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade cement including CI vent, CI manhole cover, SW fittings, PVC coated rungs, brick, inserts, bolts covers, aggregates / sand fill conduits finishes in excavation and backfilling using strutting, bailing and pumping out water, masonry work, plastering, plumbing, sanitation, etc. with al bye works and sundry works. Scope of construction is from inlet chamber to outlet chamber. Over all depth of chamber may vary as per site condition.						
CIV-43	<b>SOAK PIT</b>						
	Making soak pit 2.5 m outside diameter and effective depth of 2.5m with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design with common burnt clay bricks of class designation 7.5.	NOS.	7				
CIV-44	<b>BORE WELL</b>						
CIV-44.1	Supply, laying, drilling and commissioning of G.I. Bore well of 150 mm diameter and up to 50 m depth including submersible pump with all accessories, panel, wiring and all other works required to make it operational all complete in all respects as per scope of work and directions of the Engineer-in-charge.	NOS.	6				
CIV-44.2	Extra over and above for more than 50 m depth.	RM	60				
	Note:						
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials including pipes, water meter, valves, boring, priming, cabling, pumps, clearing, earth work, etc. with all bye works and sundry works and consumables.						
CIV-45	<b>HAND PUMP</b>						
CIV-45.1	Supply, providing, placing in position Deep Well hand pump of approved quality & make (as per IS 9301 and installation as per IS 11004 Part-1) for 40 mm dia GI pipe (medium class) complete with all accessories, fittings including providing and placing in position filter of 40 mm dia GI pipe (medium class) with brass strainer of approved quality. Boring shall be 100 mm dia including casing pipe up to required depth for Hand pump in all soils and tested up to a depth of 50.0 m complete in all respects as per scope of work and directions of the Engineer-in-charge.	NOS.	6				
CIV-45.2	Extra over and above 50 m Depth.	RM	60				
	Note:						



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	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials including pipes, boring, priming, clearing, earth work, etc. with all bye works and sundry works and consumables.						
<b>CIV-46</b>	<b>PILING WORKS</b>						
<b>CIV-46.1</b>	Providing and fixing in position "Bored cast in situ RCC piles skin friction/end bearing type upto 500 mm diameter and 30 T capacity in M 25 Concrete " excluding the cost of reinforcement and getting the designs of same approved by CLIENT/ MECON including driving in ground at specified locations by using standard tools for constructing a rigid support base for supporting the pipe line, boundary wall, buildings etc including all bye works, complete as per drawings, specification and directions of the Engineer-in-charge.	<b>RM</b>	<b>1000</b>				
	Notes- 1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade OPC cement including sulphate resistant cement if required, shuttering, providing and fixing reinforcement steel testing etc. with all bye works and sundry works and consumables. 2. Reinforcement will be paid separately in respective SOR item. 3. In case of non availability of OPC Cement, PPC Cement can be used in place of OPC after approval from Engineer-in-charge. Suitable rate analysis for rebate along with mix design using PPC shall be submitted by the Contractor.						
<b>CIV-46.2</b>	Vertical load testing of piles in accordance with IS 2911 (Part IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.						
	Single pile upto 30 tonne capacity						
<b>CIV-46.2.1</b>	Initial test	<b>NOS.</b>	<b>1</b>				
<b>CIV-46.2.2</b>	Routine test	<b>NOS.</b>	<b>2</b>				
<b>CIV-46.3</b>	Lateral load testing of piles in accordance with IS 2911 (Part IV) including cost of tolls and tackles required for testing etc. complete as per specification & the direction of Engineer in-charge.						
	Single pile upto 2.0 tonne capacity						
<b>CIV-46.3.1</b>	Initial test	<b>NOS.</b>	<b>1</b>				
<b>CIV-47</b>	<b>BANK &amp; BED PROTECTION</b>						



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**VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)**  
**Bid Doc. No.: 05/51/Q7TH/APGDC/001(I)**



MECON LIMITED

		Prices in INR					
4(II)	CIVIL WORKS						
Sl. No.	Description of Item	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
	Providing, laying and constructing mattresses of size 4m (max.) x 2m (max.) x 0.25 m (LxBxH) with partitions at 1m interval filled with boulders of size 90-150 mm in compacted layers, keyed to the ground and laid over a layer of minimum 1.5 mm thick geotextile to prevent migration of fines, all complete as per specifications, approved drawings and as directed by Engineer-In-Charge. Mattresses shall be mechanically woven, double twisted, min internal diameter of 2.2 mm galvanised hexagonal steel wire with mesh size not exceeding 60 mm x 80 mm and zinc coating as per manufacturer specification. All adjacent mattresses shall be laced together with minimum 2.2 mm galvanised steel wire. Geotextile shall be made of polyethylene or Polypropylene or polyester or similar fibres.	SQM	1000				
	Note						
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, etc. with all bye works and sundry works.						
	2. Tolerance of $\pm 5\%$ of the width, length and 2.5 cm of the height shall be permitted.						
	3. Minimum Average Roll Values of Geotextile shall be : i. Unit Weight - 150 gram/sqm (minimum) ii. Grab Tensile Strength - 550 N						
CIV-48	<b>SAND BAGS</b>						
	Supplying, providing and placing sand bags filled with cement and sand mixture in ratio 1:10 (1 Cement : 10 Sand) in HDPE bags for retaining earth work by using standard tools and practices including sewing the bags, watering, etc. complete as per drawings, specification and directions of the Engineer-in-charge. Rate to include cost of all labour, tools, tackles, supply of all materials, clearing, earth work, etc. with all bye works and sundry works and consumables.	NOS.	1750				
CIV-49	<b>HYDROGRAPHICAL &amp; HYDROLOGICAL SURVEY OF RIVERS</b>						
	Collection of Historical / Hydrological data such as maximum velocity & discharge at HFL, scour bed level, width of water body at HFL, other hydrological data and other river details such as meandering and river bed profile, existence of any bridge, hydraulic structure or reservoir within 10 Km U/S and D/S of the crossings for each river crossing site from the local / regional agencies such as CWC, Deptt of irrigation, Flood control Authority, PWD etc. including conducting Topographic / Hydrographic survey for 50 meters on either sides of proposed pipeline alignment and dry bed shall be surveyed upto widths of 150 m or upto HFL whichever is higher on either bank of crossing and spot levels shall be taken at grids at 5m interval. Scope to include all manpower, tools, tackles, materials, survey boats, echo-sounder, drilling rigs, soil testing equipment, other equipment, other support facilities (including mobilization and demobilization and relocation of equipments, necessary plant and personnel at the sites on land and in water) necessary for the survey and associated work and submitting Draft and Final Survey Report, Drawings, Maps, Data etc. (One Lot) in an approved format with full scale for Hydrological and Hydrographical Survey, Scour						





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CIV-49.1	GOSTANI RIVER CROSSING at CH.41+183.92 m (Bank to Bank width 158 m approx.)	LUMPSUM	1				
CIV-49.2	CHAMPAVATI RIVER CROSSING at CH.63+272.89m (Bank to Bank width 208 m approx.)	LUMPSUM	1				
CIV-49.3	KANDIVALASA RIVER CROSSING at CH.75+905.01m (Bank to Bank width 114 m approx.)	LUMPSUM	1				
CIV-50	<b>GEOTECHNICAL INVESTIGATION IN RIVER CROSSINGS</b>						
	Carrying out complete Geotechnical Investigation for the depth specified against each crossing as specified or as per Engineer-In-Charge at River crossings as enlisted in scope of work including providing borehole location coordinates, photographs, manpower, tools, tackles, materials, survey boats, echo-sounder, drilling rigs, soil testing equipment, other equipment, other support facilities necessary for the survey and associated work and submitting Final Geotechnical Report (along with soft copy) incorporating all field and laboratory data, Drawings, Maps, Data etc. (One Lot) in an approved format with full scale for Soil Investigation, Scour Depth etc. in accordance with the Technical Specification, Specifications, S&P, and other documents attached to the Tender.						
CIV-50.1	By Boring of minimum 150 mm dia boreholes as specified in specific requirement through all kinds of strata excluding hard rock						
CIV-50.1.1	On River Banks	RM	90				
CIV-50.1.2	In River Bed including making necessary arrangement for supplying floating platform, boring / drilling/ other associated equipment & shifting etc all complete.	RM	175				
CIV-50.2	Drilling through hard rocky strata (considered when RQD is min 25%) with minimum Nx size bit as per instruction of Engineer-in-charge.						
CIV-50.2.1	On River Banks	RM	10				
CIV-50.2.2	In River Bed including making necessary arrangement for supplying floating platform, boring / drilling/ other associated equipment & shifting etc all complete.	RM	15				
CIV-50.3	Field Investigations						
CIV-50.3.1	Conducting Standard Penetration Tests in Boreholes as specified or as decided by EIC.	NOS.	175				
CIV-50.3.2	Collecting 100 mm dia undisturbed sample form boreholes as specified or as decided by EIC.	NOS.	30				
CIV-50.3.3	Collecting Disturbed samples from Bore Holes	NOS.	145				
CIV-50.4	Conducting the following laboratory tests in NABL or equivalent accredited laboratory as per ISO/IEC 17025						
CIV-50.4.1	Atterberg's Limit (Liquid Limit & Plastic Limit)	NOS.	175				
CIV-50.4.2	Natural Moisture Content	NOS.	175				
CIV-50.4.3	Bulk and Dry Density	NOS.	175				
CIV-50.4.4	Specific gravity and Void ratio	NOS.	175				







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CIV-50.4.5	Ground Water level	NOS.	13				
CIV-50.4.6	Grain Size Analysis and IS Classification	NOS.	175				
CIV-50.4.7	Shear Strength Parameters (Cohesion and Friction Angle)	NOS.	26				
CIV-50.4.8	Chemical Analysis of Soil	NOS.	13				
CIV-50.5	Laboratory test on rock sample in NABL or equivalent accredited laboratory as per ISO/IEC 17025						
CIV-50.5.1	Core Recovery (RQD)	RM	25				
CIV-50.5.2	Mohr's Scale of Hardness	NOS.	10				
CIV-50.5.3	Unconfined Compressive Strength	NOS.	10				
	<b>Note :-</b>						
	1. Survey for individual river crossing would be carried out and drawings for each crossing shall be submitted on separate sheets.						
	2. The numbers of Boreholes as well as depth may vary depending on site condition / direction of Engineering - In-charge. The depth of Borehole inside water bodies shall be from the bed level.						
	3. Actual bank to bank width of rivers may change depending on the crossing locations at the time of survey.						
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).	Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).					
Place				Signature of Authorised Signatory			
Date				Name :			
Tender No.:				Designation :			
Offer No. & Date :				Seal :			

 <b>APGDC LIMITED</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X 102.3 KM.)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LIMITED</b>	
				Prices in INR				
4(III)	STRUCTURAL WORKS	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except Service Tax		Total Amount inclusive of all applicable taxes & duties except Service Tax	Service Accounting Codes (SAC)	
SI.No.	Description of Item			In Figure	In Words			In Figure
<b>ST-1</b>	<b>Supply, fabrication &amp; erection of Steel structure</b>							
	Supply, fabrication and erection of columns, column bracing, portals, platforms, crossovers, walkways, stairs, ladders, handrails, chequered Plate/Grating for platforms, pipe supports, or any other structures required for completion of works, etc. including surface preparation, painting as per specification, including loading, transportation and unloading, delivery at erection site of all fabricated structures, storage and handling at site, site assembly and finally erection of structures at appropriate location, alignment and welding of all structures true to line, level, plumb and dimension. The work shall be completed in all respect as per drawings, technical specification and direction of the Engineer-in-Charge. (The cost & weight of MS bolts and nuts (permanent and service), washers, electrodes, putty, gases, shims, packs, cost of straightening of raw materials, Built up section at any shape, cutting of flats from plates and providing splices, paints, tools, plants, testing of materials, etc and all other consumables as required for the work shall be deemed to be included in the quoted rates.)	<b>KG</b>	<b>17700</b>					
<b>ST-2</b>	<b>Providing and fixing of chain link fencing</b>							
	Supply, fabrication and erection of structures such as angle iron post, Channel post, Strainer and strut, etc. with necessary holes for fixing the chain link fencing, site assembly and finally erection of structures at appropriate location including surface preparation with painting as per specification, including 2.4m high G.I. Chain link fabric fencing mesh size 50x50x3.15 mm dia, with 0.6m height barbed wire (type-A) as per IS:278-1978 shall be made from two strands of galvanized steel wire of nominal dia 2.5 mm twisted together fixed on angle iron posts with GI staples, turn buckles, all necessary fitting etc, including strengthening with 4 mm dia wire Nuts bolts and washer complete in all respects. All work as per Specification and drawings and as per direction of the Engineer-In-Charge. (excluding foundation, Refer Tender drawing)	<b>R.M.</b>	<b>35</b>					
<b>ST-3</b>	<b>Providing and fixing of chain link Fencing Gates</b>							
	Supply, fabrication & fixing of fencing Mild steel gate 3.0m high with Chain link fencing mesh (as per detail in item no 2 above) upto 2.4m height and 0.6m barbed wire fencing including all fixtures like MS Pivot, locking arrangement, tower bolt etc., complete in all respects including surface preparation, painting as per specification. The work is to be completed in all respect as per drawings, technical specification and direction of the Engineer-In-Charge (excluding foundations, Refer Tender drawing)							

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				Prices in INR				
4(III)	<b>STRUCTURAL WORKS</b>	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except Service Tax		Total Amount inclusive of all applicable taxes & duties except Service Tax	Service Accounting Codes (SAC)	
SI.No.	Description of Item			In Figure	In Words			In Figure
a)	<b>2m Wide Gate</b>	Nos.	2					
<b>ST-4</b>	<b>Fabrication &amp; Erection of MS Gate</b>							
	Supply, fabrication and fixing in position steel entrance gate (as per the design shown in the tender drawing) supply of raw materials, transportation and delivery at site, unloading, storage and handling at site, site assembly and finally erection at appropriate locations. gates shall be fabricated out of channel and Sq. Bar with all fixtures like MS Pivot, M.S sheet boxing, locking arrangement, MS tower bolts, gate stopper, hold fast, MS wheel with ball bearing, MS tee bend to shape and embedded in the road surface for gate opening track, etc. including painting as per specification. The work is to be completed in all respect as per drawings and technical specification and direction of the Engineer-in-Charge							
a)	5.5m clear opening width of gate in two panels with wicket gate	Nos.	1					
b)	4.0m clear opening width of gate in two panels	Nos.	5					
c)	1.2m wide emergency gate	Nos.	6					
<b>ST-5</b>	<b>Providing and fixing chequered plate covers</b>							
	Providing and fixing chequered plate in approved panel or over steel structure platform,cable and pipe trench including cutting, welding, hoisting, fixing in position,including painting as per specification, complete in all respect as per drawings, technical specifications and directions of the Engineer-In-Charge.	KG	8250					
<b>ST-6</b>	<b>Supply, fabrication &amp; erection of Display/Information/Warning Sign Board</b>							
	Supply, fabrication and fixing in position of steel sign boards fabricated from pipes,angles, flats section including 3 mm thick plate with necessary cleat, clamps or necessary fixing arrangement including primer and paining of approved colour as per specification including Alphabets of approved size and font and Logo to be painted on Display,informatary,warning sign board with day glow paint shall be completed as per standard detail as per direction of E/C including fixing at appropriate location, ture alignment and embedded in PCC block .The work is to be completed in all respect as per drawings and technical specification and direction of the Engineer-in-Charge (excluding PCC Block)	KG	2750					
	<b>Notes:</b>							

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				Prices in INR			
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SI.No.	Description of Item			In Figure	In Words		
1	The quantities indicated are estimated values and hence are approximate. Final payment will be made based on actual quantities to be certified by the Purchaser.						
2	The cost & weight 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, electric power, water, other consumables, as required for the work shall be deemed to be included in the quoted rates.						
3	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.						
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).	<b>Total Amount of quoted price (inclusive of all applicable taxes &amp; duties except Service Tax)</b>					
Place				Signature of Authorised Signatory			
Date				Name :			
Tender No.:				Designation :			
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		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>						
APGDC Limited		Prices in INR					MECON LIMITED	
4(IV)	ARCHITECTURAL WORKS							
Item No.	DESCRIPTION OF ITEM	Unit	QTY	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)	
				In Figure	In Words	In Figure		
<b>I</b>	<b>FLOORING</b>							
AR-1.1	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge	sqm	35					
AR-1.2	Providing and laying Stone tile (polished) work for wall lining including dado, skirting, risers of steps, planter walls, etc., over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete. 8mm thick	sqm	285					
AR-2	Providing and laying kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :							
AR-2.1	25 mm thick	sqm	750					
AR-3	Providing and laying mirror polished Kota stone slabs 12 mm thick in risers of steps, skirting, dado, pillars, external cladding laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	sqm	150					
AR-4	Extra for nosing in treads of steps of:							
AR-4.1	Granite slab	m	18					
AR-4.1	Kota stone slab	m	450					
AR-5	Providing and fixing 20mm thick polished granite/ kota stone of 300mm wide of approved shades for window sills, coping, etc. & including 20mm thick mortar bed CM 1:4, curing, polishing of exposed surfaces and all bye works complete.							
AR-5.1	Granite	m	225					
AR-5.2	Kota	m	150					
AR-6	Providing & laying rectified Vitrified floor tile 1st quality of approved make in different sizes (thickness as per approved manufacturer's detail) with water absorption's less than 0.08% and conforming to IS:15622 of approved quality,shade,range and pattern, using cementitious modified quick set tile adhesive, water based conforming to IS:15477 using 5kg adhesive per m2 area in average thickness of 3 mm, laid to proper level and joints pointed with tile jointing compound of approved make including curing, finishing and cleaning etc. complete as directed by the EIC. The measurements shall be based on laid area of floor and no extra payment shall be paid for wastage. The rates shall include cost of laying protective PVC sheets/ POP which shall keep the floor covered at all times till handing over of the site etc. complete. Item shall be inclusive of screed bed of minimum thickness 15mm in CM 1:4.							
AR-6.1	Size of Tile 600x600 minimum and minimum thickness 9 mm.	sqm	760					

AR-7	Providing and laying vitrified floor tiles 1st quality of approved make (thickness as per approved manufacture's detail but not less than 7 mm) matching / same as the size and colour of flooring in skirting, riser, dados and wall facing (lining) and pillars using cementitious modified quick set tile adhesive, water based conforming to IS:15477 using 5kg adhesive per m2 area in average thickness of 3 mm, of approved make, laid to proper level and joints pointed with tile jointing compound of approved make including finishing and cleaning etc. complete as directed by the EIC.	sqm	120				
AR-8	Providing & laying approved make and colour heavy duty vitrified tiles in floors and skirting over 20 mm cement mortar bed 1:4 including cutting of tiles wherever required, pointing the joints in neat white cement with matching pigment, cleaning, washing, curing, etc., complete as per specification and direction of the engineer.						
AR-8.1	Size of Tile 300x300 mm and minimum thickness 12 mm	sqm	400				
AR-9	Providing and laying glazed/ matte finish ceramic tiles for Dado with a recycle content of 35-55% of Group - I classification, conforming to IS:13754 of approved colour at all levels and locations with necessary specials etc. using approved first quality tiles as shown in the drawing laid over and including minimum 12 mm thk. CM 1:3 backing or tile fixing adhesive with volatile organic compounds not exceeding 65 g/l mixed to cement paste used for fixing the tiles, joints filled with white cement mixed with matching shade of pigment etc. at all leads and lifts, complete with all byeworks as per specification and direction of Engineer Incharge.						
AR-9.1	Size of tile 300 mm X 600 mm (approx.)	sqm	400				
AR-10	Providing and laying anti-skid MATTE FINISH ceramic tiles in flooring with a recycle content of 35-55% of Group - IV classification, conforming to IS:13754 and of approved colour at all levels and locations using approved first quality tiles in flooring of toilets, pantry etc. and as shown in the drawing laid over and including minimum 35 mm bed (CM 1:3) joints filled with white cement mixed with matching shade of pigment etc. at all leads and lifts, complete with all byeworks as per specification and direction of Engineer Incharge. Grooves to be filled with water proof grouting compounds.						
AR-10.1	Size of tile 30 cm X 30 cm (approx.)	sqm	40				
AR-11	Providing and laying Crazy ceramic tile flooring, with under layer 12 mm thick cement mortar 1:4 (1 cement: 4 coarse sand), with joints not exceeding 5 mm, including filling the gaps with ordinary cement mixture & mixing with synthetic polyester fibre, triangular in shape having specific gravity of 1.34 to 1.40, cross section size ranging from 10 to 40 micron & length upto 6 mm, mixing fibre @ 125 grams per 50 kg of cement in cement mortar, including providing and mixing water proofing material in mortar @ 1 kg per 50 kg of cement, all complete as per direction of Engineer-in-charge.	sqm	2300				
AR-12	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.						
AR-12.1	40 mm thick with 20 mm nominal size stone aggregate	sqm	100				
AR-13	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge.						
AR-13.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)	sqm	210				
AR-13.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)	sqm	340				
II	FINISHING						
AR-14	Providing 12 mm thick cement plaster 1:4 (1 cement : 4 sand) smooth finish with water proofing compound as per architectural shapes marked in the drawings, at all depths and heights in one layer on internal faces of walls, pillars, projection, bands, cornices etc., including necessary dabbing, curing, scaffolding, providing chicken mesh at junctions of columns,beams etc.,complete at all heights as per specification and drawings.	sqm	5800				
AR-15	Providing 15 mm thick cement plaster 1:4 (1 cement : 4 sand) as per architectural shapes marked in the drawings, at all depths and heights, providing chicken mesh at junctions of columns,beams etc.,complete at all heights as per specification with water proofing compound.	sqm	15600				

AR-16	Providing 6 mm thick cement plaster 1:4 (1 cement : 4 sand) to ceiling of slabs, chajjas including drip course, bands, beams, columns, loft slabs, staircases, and any other location at all heights wherever required with all bye works dabbing, curing, scaffolding, including providing chicken mesh at junction of columns, beams etc., complete at all heights and levels as per specification and drawings.	sqm	3000				
AR-17	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections						
AR-17.1	Providing drip mould of size 20mm x 8mm over cement plastering of chajjas, roof projections etc. at all heights and levels in cement mortar 1:3, hacking, curing, scaffolding etc at all heights and lifts, all complete as per specifications and instructions of the Engineer Incharge.	metre	175				
AR-17.2	Forming groove of uniform size from 10x10mm in plastered surface as per approved pattern using wooden battens, nailed to the under layer including removal of wooden battens, repairs to the edges of plaster panel and finishing the groove complete as per specifications and direction of the Engineer-in-Charge.	metre	13500				
AR-18	Providing and applying two coats of Expa Cool Premium Exterior Emulsion from British paints (Certified Green building product) or Exterior emulsion paint (Eco friendly paint with low Volatile Organic Compounds) of Asian paints or equivalent make of approved brand over a coat of approved primer consisting of volatile organic compounds less than 50g/L, at all heights and levels, including surface preparation, scaffolding at all locations and heights with all byeworks complete as per manufacturer's specification and direction of the Engineer Incharge.	sqm	16050				
AR-19	Providing and applying two coats of acrylic oil bound washable distemper- Eco friendly paint with low Volatile Organic Compounds ( not exceeding 50 g/L ) over walls & ceiling, of approved shade & make over one coat of approved cement primer consisting of volatile organic compounds less than 50g/L as per specifications and as directed by Engineer Incharge etc. complete.	sqm	8000				
AR-20	Providing and applying wallcare Putty on plastered surfaces on internal walls for smooth and dry surface essential for painting, after removing all loosely adhering material from the wall surface. The substrate should be clean, free from dust, grease and loose materials. Dry and absorbent surfaces should be moistened with sufficient quantity of clean water. Apply the first coat on already moistened wall surface from bottom to upward direction uniformly. After drying of first coat of putty just rub the surface gently with wet sponge or rub the surface very gently with the putty blade in order to remove the loose particles. Allow the surface to dry for atleast 3 hours and then apply second coat of putty. Leave the surface to dry completely. After drying of second coat remove marks if any with the help of moist sponge or rub the surface very gently with the putty blade. Leave the surface to dry preferably for overnight. The total thickness of the coats should be limited to maximum 1.5mm.	sqm	8000				
AR-21	Painting with synthetic enamel paint - Eco friendly paint with low volatile organic compounds ( limit not exceeding 50g/L) over a coat of primer consisting of volatile organic compounds less than 50g/L of approved brand as per approved manufacturer's spec. to give an even shade Two coats of synthetic enamel paint on new work over one coat of zinc chromate primer.	sqm	235				
AR-22	Providing and making company logo on boundary wall (on alternate panels) with prefabricated mould to be pressed on the plastered surface within a recess (1200mm x 1500mm x 30mm thk. deep) while it is green. Necessary, touch ups, etching, chiseling to be done as per requirement for depicting the exact logo. The dimensions of the logo shall be 900mm X 550mm (approx.). The logo shall be painted with external acrylic emulsion paint in company corporate colours.	no.	60				
AR-23	Providing and installing acrylic backlit LED signage of company logo of size 900mm X 1200mm approx. on building façade wall.	no.	5				
III	STONE WORK						
AR-24	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished) machine cut for kitchen platforms, vanitycounters, window sills , planters facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) using neat cement slurry @ 4 kg of cement per sqm with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, edge moulding and polishing to edge to give high gloss finish etc. complete at all levels.						
AR-24.1	Granite of any colour and shade Area of slab over 0.50 sqm	sqm.	6				
AR-25	Extra for providing edge moulding to granite stone counters including machine polishing to edge to give high gloss finish etc.. Complete in all respects	metre	150				
AR-26	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	each	5				



AR-27	Providing and fixing 18 mm thick granite stone slab of approved shade, table rubbed, edges rounded and polished of size 75x50 cm deep and 1.8 cm thick fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.	no.	10				
<b>IV</b>		<b>STEEL WORK</b>					
AR-28	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp of internal dia. 140 mm, 73mm height, top lid of 1.5mm thick MS sheet with its top surface hacked for proper bonding, top lid shall be screwed into the Cast Iron/ MS sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	each	27				
AR-29	Steel work welded in built up sections/framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc.as required.						
AR-29.1	In stringers, treads, landings, balustrades etc. of staircases including use of chequered plate wherever required. all complete including all bye-works.	kg	2050				
AR-29.2	In gratings, frames, guard bar, ladders, brackets, gates, grill door and similar works.	kg	1000				
AR-30	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, landing railing, and staircase railing as per IS 4923 including applying a priming coat of approved steel primer 66x36x3.6 m.s. hollow section approximately.	kg	1720				
AR-31	Supplying and fixing mechanically operated rolling shutters/ rolling grills of approved make operable from inside and outside conforming to IS : 6248, made of 80x1.25mm size M.S. laths with 1.25 mm thick top cover, interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade No.2, M.S. top cover of required thickness for rolling shutters, with approved quality red oxide zinc primer and two coats of synthetic enamel paint of approved make (ICI or equivalent), making good all damaged surfaces, complete with all byeworks as per drawing, specification and instruction of engineer, in general conforming to IS : 248.	sqm	35				
<b>V</b>		<b>ALUMINIUM WORK</b>					
AR-32	Providing & fixing in position aluminium doors, windows, ventilators, louvres, fixed glazing, sliding/composite windows, aluminium rough ground etc. with extruded & integral colour powder coating with minimum 60 microns, Aluminium sections, Powder coated Aluminium beadings, Powder coated Aluminium profile panel sheets, manufactured to relevant I.S. codes & using minimum 2mm thick (or as specified) heavy sections from environmentally compatible products containing minimum of 15 to 25 % of recycled content and shall be manufactured within 500 kms from project site from approved make including cost of providing required no. of heavy duty stainless steel butt hinges, pivots, approved door and windows handles, EPDM Gasket, PVC/Neoprene Gasket Lining, Stainless steel screws, mastic filling, weather strips, tower bolts, nuts, washers, rollers etc. as required and as per drawing etc. all complete at all heights and as directed by the Engineer-in-Charge. The rate shall also include giving a coat of bitumastic paint on the aluminium surfaces in contact with masonry / concrete and closing the gaps around the frame and the adjoining surface with approved silicone sealant with volatile organic compounds content less than 250 g/l on both faces to achieve watertightness. All fitting shall be of matching colour powder coated aluminium sections						
	All doors, windows & ventilators shall have float glass of the following specifications SHGC - 0.25 to 0.3, U Value 3.8W/sqm-k or less, of approved make or / double side prelaminate particle board flat pressed three layer or graded wood particle board bonded with BWP type synthetic resin adhesive as per IS : 848 and prelaminate conforming to IS: 12823 Grade I Type II, in panelling( for doors) as per design						
AR-32.1	Casement windows, single or composite units and ventilators with 5.5 mm thick float / frosted glass, frame size of 44mm x 46mm x 1.1mm, weight 0.522 kg/m min. amd middle frame (horizontal & vertical) 59mm x 38mm x 1.4mm, weight 0.729 kg/m min(approx.), as per approved drawing and as per approved manufacturer's detail.						
AR-32.1.1	Fixed portion	sqm.	130				
AR-32.1.2	Openable portion, section size 44mm x 46mm x 1.4 mm, weight 0.575 kg/m min. as per approved drawing and as per approved manufacturer's specification.	sqm.	7				

AR-32.2	Composite sliding windows with fixed and openable portion, fixed to frame size min. 101.6mm X 44.45mm x 2.01mm, weight 1.605 kg/m (approx.) and 63.5mm x 38.1mm x 1.5mm, weight 0.861 kg/m min. as per requirement. Sliding shutters fixed to frame size 92mm X 31.75mm x 1.5mm min. & weight 1.060 kg/m min and 61.85mm x 31.75mm x 1.5mm, wt. 0.784 kg/m min as per requirement. Shutter side, bottom and interlock shall be 40mm x 18mm x 1.55mm wt. 0.547kg/m min., as per approved drawing and as per approved manufacturer's detail. Frame for grill shall be 63.5mm x 38.1mm x 2mm & wt. 1.054kg/m. Windows shall have 5.5 mm thick float glass. The sliding fittings/ accessories shall be derailing wheels with Nylon brackets with SS pin – 2 Nos. per shutter. The lock handle, safety plates, nylon antilift and joinery shall be as per specification.	sqm.	260				
AR-32.3	Doors with 8.0mm minimum thick float glass panels/ aluminium louvre with wire mesh/ double side prelaminate particle board flat pressed three layer or graded wood particle board bonded with BWP type synthetic resin adhesive as per IS : 848 and prelaminate conforming to IS: 12823 Grade I Type II, in panelling fixed with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of E-I/C with decorative lamination on both sides of approved make; frames of size 101.6mm x 44.45mm x 3.18mm minimum weight 2.541 kg/m min(approx.)						
AR-32.3.1	fixed portion	sqm.	18				
AR-32.3.2	Openable portion, section size 85.00mm x 44.45mm x 3.00mm weight 2.050 kg/m min.(approx.) for shutter vertical and top, 114.3mm x 44.5 x 3.18mm weight 2.646 kg/m min. for shutter bottom and 83.5mm x 44.5mm x 3.18mm weight 2.145 kg/m min. for shutter middle.	sqm.	160				
AR-33	Providing and fixing double action hydraulic floor spring with stainless steel cover plate of approved brand and manufacturer, for doors including cost of cutting floors as required, embedding in floors and cover plates with brass / SS pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.	each	50				
AR-34	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer of approved brand and manufacturer (door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	each	30				
AR-35	Providing and fixing aluminium grills of approved make of approved design made up of 10 mm dia aluminium rod and maximum size of opening (diagonal/ hexagonal/ circular) 100 mm x 100 mm internal, and specification as per manufacturer's detail	sqm.	280				
VI	PVC WORK						
AR-36	Providing and fixing factory made door frame (single rebate) made out of single piece extruded solid PVC foam profile with homogenous fine cellular structure having smooth outer integral skin having 62 mm width & 32 mm thickness, frame will be mitred & jointed with self driven self tapping screws of size 38 mm x 4 mm & PVC solvent cement, including fixing the frame to wall with suitable dia & length anchor fastener as per manufacturer's specification and direction of Engineer-in-charge.	m	120				
AR-37	Providing and fixing factory made 30 mm thick non decorative finish door shutter made of solid PVC foam profile. The styles & rails shall be of size 75 mm x 30 mm having wall thickness 5 mm. The styles, top & bottom rails shall have one side wall thickness of 15 mm integrally extruded on the hinge side of the profile for better screw holding power. The styles and rails shall be reinforced with M.S. tubes of size 33 mm x 17 mm x 1 mm, painted with primer, all four corners of reinforcement to be welded or sealed. Solid PVC extruded bidding (push fit type) will be set inside the styles and the rails with a cavity, to receive single piece extruded 5 mm PVC sheet as panel. The styles and rails will be mitred cut and joint with the help of PVC solvent cement & self driven self tapping screws. Single piece extruded solid PVC lock rail of size 100 mm x 30 mm with wall thickness 5 mm & 15 mm integrally extruded in the middle of the lock rail & fixed with styles with the help of PVC solvent cement & self driven self tapping screws of size 100 mm x 8 mm complete as per manufacturer's specifications and direction of Engineer-in-charge.	Sqm	40				
VII	FALSE CEILING						



<b>AR-38</b>	Providing and fixing false ceiling at all heights with integral densified calcium silicate reinforced with fibre and natural filler false ceiling tiles of Size 595X595 mm of approved texture, design and patterns having NRC (Noise Reduction Coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum), non combustible as per BS:476 (part-4), fire performance as per BS:476 (part-6 & 7), humidity resistance of 100%, thermal conductivity <0.043 W/m K as per ASTM 518:1991, in true horizontal level suspended on inter-locking metal powder coated T-Grid of hot dipped galvanised iron section of 0.40mm thick on Silhouette profile, rotary stiched double webbed white with 6mm reveal profile (white/black), comprising of main -T runners of size 15x42mm of length 3000mm, cross-T of size 15x42mm of length 1200mm and secondary intermediate cross-T of size 15x42mm of length 600mm to form grid module of size 600x600mm, suspended from ceiling using galvanised mild steel items (galvanised @ 80 grams per sqm) i.e. 50mm long, 8mm outer diameter M-6 dash fasteners, 6mm dia fully threaded hanger rod upto 1000mm length and L-shape level adjuster of size 85x25x2mm. Galvanised iron perimeter wall angle of size 22x19x0.40mm of length 3000mm to be fixed on periphery wall/ partition with the help of plastic rawl plugs at 450mm center to center and 40mm long dry wall S.S screws. The work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge. With 15mm thick integral densified micro edge light weight calcium silicate false ceiling tiles	<b>sqm.</b>	<b>410</b>				
<b>AR-39</b>	Providing and fixing in position 12.5 mm thick gypsum board false ceiling conforming to IS 2095 -1982 with approved G.I Frame work and hangers including openings for lights, air conditioning grills, fire detectors, nozzles, recess for hanging blinds,etc. as per specification and description complete. Rate shall include vertical as well as horizontal surfaces as per design drawing and actual 'seen' surface of horizontal and vertical will be measured and paid for. Layout and design of false ceiling with cutouts & decorative mouldings etc.to be approved by EIC	<b>sqm.</b>	<b>85</b>				
<b>VIII</b>	<b>MISCELLANEOUS</b>						
<b>AR-40</b>	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion (Single socketed pipes). 110 mm diameter	<b>metre</b>	<b>210</b>				
<b>AR-41</b>	Waterproofing System for Roof Slab Surface Preparation: remove all surface laitance and contamination free from loose aggregate or other sharp protrusions with fairly smooth finish by wire brush and grinding method and surface shall be DRY for application of single component pitch modified polyurethane cures by reaction with atmospheric moisture to give a tough elastomeric waterproof membrane. System : Providing and applying 1.2 mm thick roller applied single component Bitumen Modified Polyurathene coating, having elongation capability of 450% as per ASTM D412, having Tensile strength 1.5N/mm <sup>2</sup> as per ASTM D 412, Tear Resistance of 15N as per ASTM D 624 and having shore A Hardness 50 as per ASTM D 2240. Waterproofing treatment to be provided after proper surface preparation as per manufacturer specification and making of coving at the junction of horizontal and vertical surface by Polymer Modified Mortar and treatment of crack if any on the surface by ow viscous epoxy resin injection. screed to slope : Providing and laying 50mm thick screed concrete of M20 grade mixed with approved water proofing compound like Integral waterproofing compound conforming to IS 2645) over the coated surface including application of 300 GSM geotextile layer over the waterproofing.	<b>sqm.</b>	<b>2300</b>				



<b>AR-42</b>	<p>Providing and fixing noncombustible 600mm high false flooring / cavity floor of modular 600 x 600 size and min thickness of 35mm approximate with pre moulded (USF 1000 grade) in filled access floor tile made from steel and cementitious infill material (M/S Unittile or equivalent), with edge beading and faced with 2 mm thick antistatic high pressure laminates. The Panels shall conform to Class O &amp; Class 1 Fire Ratings tested as per BS 476 and ASTM E84. The panel shall be designed for minimum concentrated load of 450 kgs, ultimate concentrated load of 1050 Kgs, Rolling load of 225 kgs.</p> <p>The other components such as stringers, pedestals, supports, check nuts, etc shall be designed suitable in-line with the design parameter of the false floor panel.</p> <p>The panels shall be placed on GI snap lock grid system stringers channels supported over MS galvanized pedestal supports at 600mm c/c approximate both ways.</p> <p>Jack heads shall be die formed, out of min 4mm thick galvanized M.S. plate out of 90 mm X 90 mm, electroplated, with die cut notches to hold stringers 'snap on' and threaded holes, in addition, to hold the rigid grid type stringers. The jack heads shall have stud for housing into the pedestal. The pedestal head shall consist of an anti-vibrational conductive cap</p> <p>Stringers shall be M.S. rigid grid type minimum 30 mm X 20 mm X 1.2 mm thick tubes and shall rest on the jack heads notches and shall be fixed by means of screws. The stringers shall be spray painted with conductive paint or galvanized to prevent rust &amp; corrosion.</p> <p>The pedestal supports shall be rigidly fixed on to the floor with glue and mechanical fasteners and shall be made of 150 x 150 mm x 8mm thick base plate with CRC pipe of size 32mm dia X 3mm and minimum 19 mm thick MS stools with a coupling and check nut for level adjustment. The sub structure assembly shall be suitably anchored to the floor.</p> <p>The work includes necessary opening for cables and panel mounting and cutting of tiles to required size and strengthening of pedestals with 300 x 300 mm RCC pedestal at location of panels. The floor panels and stringers shall be completely removable and shall remain in position without screwing. The shade of the flooring material shall be as specified in the drawing or as directed by Engineer. ( The cost includes supply of 1% spare tile)</p>	sqm.	150				
<b>IX</b>	<b>LANDSCAPING</b>						
<b>AR-43</b>	<p><b>SHRUB PLANTATION</b></p> <p>Digging of beds of required size and 60 cms.depth in any type of soil. Refilling the pits after deweeding, with a mixture of good earth and cow dung organic manure in the ratio of 3:1 (Three part of good earth and one part of organic manure). Flooding the bed with water so that the earth and manure mixture settles down in pits. Supply and plantation of approved shrub species sapling of good quality, disease free, healthy, fully established 1-2 year old with well developed root system in the centre of pit, with a clear minimum height of 1 feet after plantation and spacing 1.5 feet. Maintaining &amp; watering for 06 months regularly as the minimum guarantee period, all complete including supplying &amp; mixing of good earth &amp; manure. Healthy properly grown shrubs (atleast 3 months old after planting at site) should be provided during handover on completion of the project. (Varieties : Approved local equivalent species).</p>	nos.	120				
<b>AR-44</b>	<p><b>HEDGE PLANTATION</b></p> <p>Digging of trenches of size 60 cms x 45 cms x running mts length in all type of soil. Rest all the item are same as that of Shrub plantation except that the minimum 07 number of hedge sapling be planted per running metre (Varieties : Approved local equivalent species).</p>	metre	605				
<b>X</b>	<b>SANITARY INSTALLATIONS</b>						
<b>AR-45</b>	<p>Providing and fixing vitreous chinaware white/ colour wall mounted type European water closet with concealed cistern of dual flush type, 3/6 litres capacity (In-wall tanks), concealed flush pipes complete in all respects. Kohler Cat. No. REPLAY K-6098IN-S-O, face plate cat. no. D3-K-75891IN-M-CP &amp; concealed cistern cat no. INSTAFLUSH K-77028IN-NA with connector accessory Cat no. 1046327-s &amp; rack bolt Cat no. 1213309-0 or approved equivalent.</p>	no.	9				
<b>AR-46</b>	<p>Providing &amp; fixing C.P. brass health faucet : Kohler cat no. 12927IN-CP or approved equivalent.</p>	no.	9				
<b>AR-47</b>	<p>Providing and fixing white vitreous china European water closet with all fittings and fixtures complete including cutting and making good the walls and floors wherever required. Cat no.CNS-WHT-353S of Jaquar or equivalent + attached Cistern Cat No. CNS-WHT-203 or approved equivalent.</p>	no.	1				
<b>AR-48</b>	<p>Providing &amp; fixing vitreous china ware white/ colour under counter wash basin with Cp brass waste, Kohler Cat. No.CAXTON 2211IN-0 or approved equivalent, including providing &amp; fixing C1 / MS brackets duly painted with two or more coats of synthetic enamel paint, complete in all respect with single control pillar tap, Cat no. JULY 75377IN-4-CP of Kohler or approved equivalent.</p>	no.	11				
<b>AR-49</b>	<p>Providing and fixing white vitreous china semi-pedestal type wash basin Cat. no. K-96051IN-0 of Kohler or approved equivalent, including providing &amp; fixing C1 / MS brackets duly painted with two or more coats of synthetic enamel paint, complete in all respect and pillar cock Cat No. JULY 75377IN-4-CP of Kohler or approved equivalent, complete in all respect completely recessed at the back for the reception of pipes and fittings all complete</p>	no.	10				



<b>AR-50</b>	Providing and fixing white vitreous china flat back half stall urinal cat no. Bardon Mid size 4978IN-ER-0 of Kohler or approved equivalent with PATIO Urinal Sensor (Direct-fed) 8791T-C01-CP/SC of Kohler or approved equivalent.	no.	9				
<b>AR-51</b>	5.5 mm thick float glass frameless mirror fixed with stainless steel studs, all complete	sqm.	11				
<b>AR-52</b>	Providing and fixing Glass Shelf - Cat no. COMPLIMENTARY K-5636IN-CP of Kohler or approved equivalent, complete in all respect.	no.	2				
<b>AR-53</b>	Providing and fixing toilet paper holder - Cat no. COMPLIMENTARY K-5632IN-CP of Kohler or approved equivalent, complete in all respect.	no.	3				
<b>AR-54</b>	Providing and fixing C.P. brass bib cock:						
<b>AR-54.1</b>	Kohler Cat No, JULY K-16093IN-4-CP or approved equivalent	no.	17				
<b>AR-54.2</b>	Two in one bib cock, Kohler Cat No. JULY K-16094IN-4-CP or approved equivalent	no.	17				
<b>AR-55</b>	Providing and fixing C.P. brass concealed stop cock Kohler cat. no. JULY K-16087IN-4-CP or approved equivalent	no.	11				
<b>AR-56</b>	Providing and fixing CP brass coat hook/ robe hook in position - Kohler cat. no. COMPLEMENTARY K-5635IN or approved equivalent	no.	9				
<b>AR-57</b>	Providing and fixing CP Brass Grid drain with overflow hole for wash basin and sink, of Kohler Cat No. K-45432IN-CP or approved equivalent	no.	13				
<b>AR-58</b>	Providing and fixing CP brass Bottle Trap for Wash basin and sink of Kohler Cat No. COMPLEMENTARY K-7314IN-CP or approved equivalent	no.	13				
<b>AR-59</b>	Providing and fixing CP brass towel rail - Cat no. K-5630IN-CP of Kohler or approved equivalent, complete with all respect.	no.	10				
<b>AR-60</b>	Providing and fixing sinks (without drainboard) made of stainless steel 1mm thick kitchen with plugs, washers and wastes including bedding in Cement mortar to dwarf wall or including fixing cantilever brackets & connecting unions to pipe, coupling & strainer, painting of fittings and brackets, cutting and making good the walls wherever required. Overall size 610 mm x 510 mm Make : Celebrity 8" or India King 8" of Neelkanth or equivalent	no.	1				
<b>AR-61</b>	Providing and fixing C.P. brass long body sink cock with Regular Swinging Spout (Wall Mounted Model) With Wall Flange of Kohler cat. no. CUFF K-37314IN-4-CP or equivalent.	no.	1				
<b>AR-62</b>	Providing and fixing Eye/face wash, model no.7001 pedestal-mounted from Tobit Engineers or equ. (supply connection & provision of bottle trap and connection to nearest drain to be done)	no.	2				
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).	Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).					

Place  
Date  
Tender No.: \_\_\_\_\_  
Offer No. & Date : \_\_\_\_\_



Signature of Authorised Signatory  
Name :  
Designation :  
Seal :

 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 MECON LTD	
					Prices in INR			
4 (V)	INSTRUMENTATION WORKS	Unit	Qty.	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
Sl. No.	Description of Items			In Figure	In Words	In Figure		
<b>FIELD INSTRUMENTS</b>								
1.00	Supply of <b>Pressure Gauges</b> as per tender document (inclusive of supply of necessary piping materials/tubings, alongwith all necessary valves & fittings, impulse lines/manifolds as per installation standard)	Nos.	38					
1.01	Installation, testing, calibration and commissioning of <b>Pressure Gauges</b> as per tender document (inclusive of necessary piping materials/tubings, alongwith all necessary valves & fittings, impulse lines/manifolds as per installation standard)	Nos.	38					
2.00	Supply of <b>Pressure Gauges alongwith Gauge Saver</b> as per tender document (inclusive of necessary piping materials/tubings, alongwith all necessary valves & fittings, impulse lines/manifolds as per installation standard)	Nos.	6					
2.01	Installation, testing, calibration and commissioning of <b>Pressure Gauges alongwith Gauge Saver</b> as per tender document (inclusive of necessary piping materials/tubings, alongwith all necessary valves & fittings, impulse lines/manifolds as per installation standard)	Nos.	6					
3.00	Supply of <b>Pressure Transmitters</b> as per tender document (inclusive of supply of yoke, supports for impulse lines (wherever required), SS manifolds/ SS impulse lines & SS valves & fittings with supports, as per installation std. no. MEC/05/E5/SD/PT/001)	Nos.	12					
3.01	Installation, testing, calibration and commissioning of <b>Pressure Transmitters</b> as per tender document (inclusive of yoke, supports for impulse lines (wherever required), SS manifolds/ SS impulse lines & SS valves & fittings with supports, as per installation std. no. MEC/05/E5/SD/PT/001)	Nos.	12					
4.00	Supply of <b>Temperature Transmitters</b> as per tender document (inclusive of supply of yoke, supports, etc)	Nos.	10					
4.01	Installation, testing, calibration and commissioning of <b>Temperature Transmitters</b> as per tender document (inclusive of yoke, supports, etc)	Nos.	10					
5.00	Supply of <b>Temperature Gauges with flanged thermowells</b> inclusive of thermowell and other necessary items as per installation standard	Nos.	2					
5.01	Installation, Calibration, Testing & Commissioning of <b>Temperature Gauges with flanged thermowells</b> inclusive of installation of thermowell on the nozzle and installation of instruments as per installation standard	Nos.	2					
6.00	Supply of <b>RTD with flanged thermowell</b> inclusive of thermowell and other necessary items as per installation standard	Nos.	2					
6.01	Installation, Calibration, Testing & Commissioning of <b>RTD with flanged thermowell</b> inclusive of installation of thermowell on the nozzle and installation of instruments as per installation standard	Nos.	2					
7.00	Supply of <b>RTD (Skin Type)</b> as per tender document (inclusive of supply of mounting pad, yoke, supports, etc as per installation standard)	Nos.	8					
7.01	Installation, testing, calibration and commissioning of <b>RTD (Skin Type)</b> as per tender document (inclusive of mounting pad, yoke, supports, etc as per installation standard)	Nos.	8					



 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LTD</b>	
		<b>Prices in INR</b>						
<b>4 (V)</b>	<b>INSTRUMENTATION WORKS</b>			<b>Unit Rate inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>		<b>Total Amount inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>		<b>Service Accounting Codes (SAC)</b>
<b>Sl. No.</b>	<b>Description of Items</b>	<b>Unit</b>	<b>Qty.</b>	<b>In Figure</b>	<b>In Words</b>	<b>In Figure</b>		
8.00	Supply, Installation, testing and commissioning of all the components and accessories of the LEL Detection System comprising of Controller rack, Monitoring card (in Control Panel) & LEL Detectors (in the field) as per tender document (inclusive of yoke, supports, calibration kit, etc).							
8.01 a	Supply of LEL Sensor (point type) with controller cards alongwith accessories	Sets	8					
8.01 b	Installation, testing and commissioning of LEL Sensor (point type) with controller cards alongwith accessories	Sets	8					
8.02 a	Supply of LEL Controller Rack alongwith accessories	Nos.	2					
8.02 b	Installation, testing and commissioning of LEL Controller Rack alongwith accessories	Nos.	2					
9.00	<b>FULLY WIRED PANELS ALONGWITH ACCESSORIES</b>							
9.01 a	Design, Engineering and Supply of <b>Fully wired Control Panel cum TIC Panel (Free standing type, 2115 (mm) H (including 100 mm base + 15 mm anti-vibration pad) x 1200 (mm) W x 800 (mm) D)</b> alongwith all accessories including valve auto-closure as per tender document. All the signals of electrical, instrumentation, RTU/SCADA, CP, metering skid, etc. are to be interfaced through this Panel and necessary TBs alongwith accessories shall be provided for the same.	Nos.	4					
9.01 b	Installation, testing and commissioning of <b>Fully wired Control Panel cum TIC Panel (Free standing type, 2115 (mm) H (including 100 mm base + 15 mm anti-vibration pad) x 1200 (mm) W x 800 (mm) D)</b> alongwith all accessories including valve auto-closure as per tender document. All the signals of electrical, instrumentation, RTU/SCADA, CP, metering skid, etc. are to be interfaced through this Panel and necessary TBs alongwith accessories shall be provided for the same.	Nos.	4					
10.00	<b>Panel Mounted Items (rest of the items are to be included in above panels supply)</b>							
10.01 a	Supply of Barriers cum Signal Distribution Card	Nos.	30					
10.01 b	Installation, testing and commissioning of Barriers cum Signal Distribution Card	Nos.	30					
10.02 a	Supply of Digital Indicators	Nos.	30					
10.02 b	Installation, testing and commissioning of Digital Indicators	Nos.	30					
10.03 a	Supply of lamps, push buttons, relays, wiring, etc. required for each AV/HOV	Nos.	14					
10.03 b	Installation, testing and commissioning of lamps, push buttons, relays, wiring, etc. required for each AV/HOV	Nos.	14					
11.01	Supply of SS tubes and fittings, manifold/isolation valves, sockolets etc.along with supports for impulse lines(whenever required), hydraulic oil(if required) for each Gas Actuated Ball Valves (AV) /HOV as per the direction of Engineer-In Charge .	Nos.	10					
11.02	Electrical Connection, SS Tube Connection, Testing and Commissioning of Gas Actuated Ball Valves (AV) /HOV including the installation of SS tubes and fittings along with supports for impulse lines (whenever required), hydraulic testing, hydraulic oil (if required), functional test, painting of supports as per std, etc for each Gas Actuated Ball Valves (AV) /HOV as per the direction of Engineer-In Charge.	Nos.	10					
11.03	Testing , Commissioning , Electrical termination, calibration of <b>Non Intrusive Pig Signallers</b> including all manpower, tools & tackles, equipments, consumables, etc. required as per direction of Engineer-in-charge.	Nos.	8					



 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 MECON LTD		
					Prices in INR				
4 (V)	INSTRUMENTATION WORKS								
Sl. No.	Description of Items			Unit	Qty.	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	
						In Figure	In Words	In Figure	
11.04	Testing & Commissioning of free issued Metering Skids (alongwith free issued Metering Panels, free issued cables, etc.) including all manpower, tools & tackles, equipments, consumables, etc. required as per direction of Engineer-in-charge. Scope also includes installation of free issued metering panel in control room & laying of free issued cables (within skid & from skid to control room). However, cost of laying, testing & commissioning of free issued cables shall be paid through SOR line item 11.04 a),			Nos.	6				
11.04 a)	Laying, testing and commissioning of free issued cables upto 8P/16C/6T as per site requirement & tender document			Mtrs.	1900				
11.04 b)	Laying, testing and commissioning of free issued cables upto 16P/32C/11T as per site requirement & tender document			Mtrs.	1900				
11.05	Calibration of <b>Pressure Safety Valves</b> installed on Scrapper trap, vessels, etc. alongwith all equipment, man-power, consumables etc as required to the satisfaction of company and as per instructions of Engineer-in-charge.			Nos.	2				
12.00	<b>Installation of Junction Boxes including Supply of Junction Boxes with glands, plugs for unused entries, supply, fabrication and installation of supports, plugging of unused entries and painting.</b>								
12.01 a)	Supply of Explosionproof electrical junction boxes along with supply of yoke, support, stand, glands, plugs, etc. for 6 pair/ 6 Triad/ 12 Core cable entry			Nos.	12				
12.01 b)	Installation, testing and commissioning of Explosionproof electrical junction boxes along with supply of yoke, support, stand, glands, plugs, etc. for 6 pair/ 6 Triad/ 12 core cable entry			Nos.	12				
13.00	Supply of <b>Canopies</b> fabricated out of powder coated MS for electronic transmitters including supply, fabrication of support and reflective painting.			Nos.	30				
13.01	Installation, testing and commissioning of <b>Canopies</b> fabricated out of powder coated MS for electronic transmitters including installation of canopy with support and reflective painting.			Nos.	30				
14.00	<b>Supply, laying, testing of FRLS cables (control, signal, power, triad cables) including supply of all required cable glands (Explosion proof double compression type) and consumables like ferrules, clamps, PVC tubes, aluminium/SS tag plates etc., clamping, ferruling, glanding of the cables, termination at both ends, including shield/drain/ communication wire, providing/fixing of identifying tags and megger testing and loop testing. Supply and installation of GI pipes / Hume pipes (in road crossings, buildings, etc.) and PVC pipes (for crossing of electrical cables) is included in the scope of cable laying but exclusive of supply &amp; erection of GI Perforated tray.</b>								
14.01 a)	Supply of 1 P x 1.5 mm <sup>2</sup> (Type I), Signal Cable			Mtrs.	1500				
14.01 b)	Installation, testing and commissioning of 1 P x 1.5 mm <sup>2</sup> (Type I), Signal Cable			Mtrs.	1500				
14.02 a)	Supply of 6 P x 0.5 mm <sup>2</sup> (Type II) Signal Cable			Mtrs.	900				
14.02 b)	Installation, testing and commissioning of 6 P x 0.5 mm <sup>2</sup> (Type II) Signal Cable			Mtrs.	900				
14.03 a)	Supply of 4C x 1.5 mm <sup>2</sup> - Quad Cable (Type-I), RTD Cables			Mtrs.	400				
14.03 b)	Installation, testing and commissioning of 4C x 1.5 mm <sup>2</sup> - Quad Cable (Type-I), RTD Cables			Mtrs.	400				
14.04 a)	Supply of 12C x 1.5 mm <sup>2</sup> (Type - I), Control Cable			Mtrs.	1100				
14.04 b)	Installation, testing and commissioning of 12C x 1.5 mm <sup>2</sup> (Type - I), Control Cable			Mtrs.	1100				
14.05 a)	Supply of 3C x 1.5 mm <sup>2</sup> , (Type - I) Control Cable			Mtrs.	750				
14.05 b)	Installation, testing and commissioning of 3C x 1.5 mm <sup>2</sup> , (Type - I) Control Cable			Mtrs.	750				
14.06 a)	Supply of 1 TRIAD x 1.5 mm <sup>2</sup> (Type I), Signal Cables			Mtrs.	750				
14.06 b)	Installation, testing and commissioning of 1 TRIAD x 1.5 mm <sup>2</sup> (Type I), Signal Cables			Mtrs.	750				
14.07 a)	Supply of 6 TRIAD x 1.5 mm <sup>2</sup> (Type IV), Signal Cables			Mtrs.	400				
14.07 a)	Installation, testing and commissioning of 6 TRIAD x 1.5 mm <sup>2</sup> (Type IV), Signal Cables			Mtrs.	400				







 APGDC Limited		SCHEDULE OF RATES SUPPLY, LAYING & CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM) Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)					 MECON LTD	
		Prices in INR						
4 (V)	INSTRUMENTATION WORKS	Unit	Qty.	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)	
Sl. No.	Description of Items			In Figure	In Words	In Figure		
15.00	Supply of Multi cable Transit blocks for all the cables entering in control room for all the Terminals (including 100% spares)	Lot	1					
15.01	Installation , testing and commissioning of Multi cable Transit blocks for all the cables entering in control room for all the Terminals (including 100% spares)	Lot	1					
16.01 a	Supply of <b>Insulated cable glands</b> for all the instruments and AV of all the <b>SV</b> Terminals. Size of cable gland shall be as per site requirement.	Nos.	32					
16.01 b	Installation , testing and commissioning of <b>Insulated cable glands</b> for all the instruments and AV of all the <b>SV</b> Terminals. Size of cable gland shall be as per site requirement.	Nos.	32					
16.02 a	Supply of dielectric fittings for tubing works at all SV stations.	Lot	1					
16.02 b	Installation, testing and commissioning of dielectric fittings for tubing works at all SV stations.	Lot	1					
17.00	<b>Supply and erection of prefabricated perforated GI trays of thickness 2 mm including tees, bends and elbows, supply, fabrication and erection of required supports and painting of supports with one coat of primer as per IS:2074 and 2 coats of finished paint including supply of paint as per std. and direction of Engineer In-Charge.</b>							
17.01 a	Supply of 60 mm wide X 30 mm high	Mtrs.	400					
17.01 b	Installation, testing and commissioning of 60 mm wide X 30 mm high	Mtrs.	400					
17.02 a	Supply of 100 mm wide X 30 mm high	Mtrs.	300					
17.02 b	Installation, testing and commissioning of 100 mm wide X 30 mm high	Mtrs.	300					
17.03 a	Supply of 200 mm wide X 30 mm high	Mtrs.	300					
17.03 b	Installation, testing and commissioning of 200 mm wide X 30 mm high	Mtrs.	300					
17.04 a	Supply of 300 mm wide X 30 mm high	Mtrs.	250					
17.04 b	Installation, testing and commissioning of 300 mm wide X 30 mm high	Mtrs.	250					
18.00	Excavation of trenches for burying the cables, preparation of same for laying of cable, filling with river sand, laying of brick, back filling and compacting of the excavated earth, cable route markers, etc. as per specifications including supply of sand and bricks and removal of surplus earth as per instructions of Engineer-in-Charge. Size of Trench : 600 mm (Width) X 675 mm ( Depth)	Mtrs.	550					
19.00	<b>EARTHING</b>							
19.01	Supply, Laying, testing and Termination of 6 sqmm Copper Wire for instrumentation earthing (in tray and conduits as required) as per site requirement required for the complete Project.	Lumpsum	1					
20.00	Start up & Commissioning of complete terminal instruments , including all labour, test equipments and other auxiliaries as required, tagging of all the instrumentation items including cables, etc., complete in all respects as per specifications/ drawings/ directions of Engineer-in-Charge. All necessary Testing and commissioning reports, as-built drawings etc., shall also be prepared and to be submitted to the purchaser/consultant	Lumpsum	1					
Notes	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).	Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).						
Place	:						Signature of Authorised Signatory	



4 (V) INSTRUMENTATION WORKS		Unit	Qty.	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
Sl. No.	Description of Items			In Figure	In Words		
Date :						Name :	
Tender No.:						Designation :	
Offer No. & Date :						Seal :	



 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LIMITED</b>	
		Prices in INR					Service Accounting Codes (SAC)	
4(VI)	<b>TELECOMMUNICATION WORKS - I</b>	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		
SI.No	Description of Item			In Figure	In Words	In Figure		
	Telecommunication Work related to OFC Network has to be carried out by the Bidder as defined in Scope of Work of Job specification, other specifications, drawings, other provisions of Contract and instructions of Engineer-in-Charge including but not limited to followings works. For all supply, the scope covers design, manufacturing, factory testing, inspection, packaging, forwarding, transportation, insurance, handling and storage at site etc. as per tender. All the works as per tender is included in scope of bidder, irrespective of whether the SOR line item is available for it or not.							
<b>1</b>	<b>SUPPLY OF OFC AND ACCESSORIES (as per MECON Technical specification MEC/TS/05/E5/T/096).</b>							
1.1	Supply of 24 fibre composite Optical fibre cable (6 Fibre G-655 & 18 Fibre G-652) of 4000 Meter $\pm$ 2.5 % cable drums (Qty as per pipeline length) (Shorter length drum (less 4 KM - 2.5 %) shall be strictly treated as per the clause no . 4.3 (e) of OFS TS No. MEC/TS/05/E5/T/096. Any additional necessary requirements due to shorter length as per TS /Scope of work is in vendor scope.	Meter	<b>108000</b>					
1.2	Supply of Jointing Closures (suitable for 24 Fibre OFC ) including all accessories of approved make of CLIENT/MECON only,(Planned Qty : 27 Nos , Spares:3)	Nos.	<b>30</b>					
<b>2.0</b>	<b>Supply of Permanently Lubricated Telecom HDPE Duct &amp; Accessories as per MECON TECHNICAL SPECIFICATION No. MEC/TS/05/E5/T/037.</b>							
2.1	Supply of 40 mm, permanently lubricated HDPE Telecom DUCT (1000 meter drum ), Factory Acceptance Testing as per specification. (Qty with spares) (Supply of HDPE accessories required including Plastic Couplers (PC), End Plugs (EP), Cable Sealing Plugs (CSP), End Caps (EC) etc suitable & sufficient for supplied Duct as per the site requirement, complete in all respect as per specification and as per direction of EIC). (This duct is for blowing of 24 F for total length of pipeline as per spec. and drawing)	Meter	<b>108000</b>					
<b>3.0</b>	<b>SITE WORK (as per scope of work, specification etc of Bid documents)</b>							
3.1	Submission of optical fiber cable & HDPE alignment sheets as per the requirements of specification based on the existing pipe line survey (No separate survey reqd.), estimation of OFC & HDPE duct including all accessories in accordance with the alignment sheet and specifications. Laying work can not be started without approval of these documents from Client / Consultant / EIC.	Lumpsum	<b>1</b>					
3.2	<b>Erection and testing of HDPE Duct as per specification</b>							

 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LIMITED</b>	
		Prices in INR						
4(VI)	<b>TELECOMMUNICATION WORKS - I</b>	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
SI.No	Description of Item			In Figure	In Words	In Figure		
	Installation of 40mm OD, permanently lubricated HDPE ducts, in same pipeline trench, direct buried or cased crossing through CS conduit (2 duct in cased crossing) in all type of soil & terrain, all work as defined in mainline work, for terminal area and non pipeline area - excavation, padding, backfilling, Laying of common warning mat/ mesh (as supplied for main line), cleaning and sealing of ducts, for river crossing additional blowing pit at both end of the river bank, jointing of HDPE conduit, supply and installation of all erection accessories as required, Testing of laid permanently lubricated HDPE ducts, rectification if required, cleaning and sealing of ducts at the end after testing, preparation of report, joint location marking in CAS, GPS location marking of each coupler, final acceptance / Handing over of the same to client, Drawings and documentation, all complete as per specifications provided in the bid document. ( Scope also includes Supply and installation of HDPE accessories required including Plastic Couplers (PC), End Plugs (EP), Cable Sealing Plugs (CSP), End Caps (EC) etc suitable & sufficient for supplied Duct as per the site requirement, complete in all respect as per specification and as per direction of EIC). (This duct is for blowing of 24 F for total length of pipeline as per spec. and drawing)	Per Meter of Trench Length	102000					
3.3	Supply and installation of OFC Pits (Blowing pits / Jointing pit) (RCC pit as per dwg & at every 1 KM distance for BP and every joint location for JP, at approx 450 mm away from the main pipeline), including sand , etc all complete as per spec for all planned BP/JP, drawing provided in the bid document. Any unplanned BP/JP will not be paid. GPS location marking of each pit (both planned and unplanned) shall be done and included in OFC blowing report and Pit installation report	Nos.	107					

 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LIMITED</b>	
		Prices in INR						
4(VI)	TELECOMMUNICATION WORKS - I	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)	
SI.No	Description of Item			In Figure	In Words	In Figure		
3.4	<b>Blowing / Laying of Optical Fiber Cable</b>							
	All activities pertaining to Blowing / Laying of optical fiber cable in same pipeline trench inside 40 mm HDPE telecom duct (after testing of OFC drum at site), in separate trech inside terminal area and non-pipeline area inside 40 mm HDPE telecom duct (after testing of OFC drum at site), through CS conduits at crossing, testing of OFC before Blowing/laying, cable sealing etc. using all materials required complete as per specifications and drawing provided in the bid document & as per direction of EIC. (spare loop of 10 Meter at Blowing Pit, 20 Meter at Jointing Pit & 15 Meter at each station on wire-mesh (if applicable) shall be provided- No payments for laying shall be made for these spare loops).The optical fibre cable shall be as per MECON Technical specification MEC/TS/05/E5/T/096	Per Meter of Trench Length	102000					
3.5	Supply & installation of 300 dia cable markers at all pipeline warning markers locations on same pipeline markers post as per specifications & drawing provided in the bid document and direction of consultant.	Nos.	102					
3.6	Installation of Joint closure, Splicing, Jointing of optical fiber cable , final Jointing / splicing, Testing of OFC after jointing , all completed as per specifications & drawing provided in the bid document and as per instruction of EIC.	Nos.	30					
3.7	Supply and installation of Joint Marker at all jointing locations as per MECON's drawing all complete as per spec., drawing provided in the bid document and the direction of Engineer In-Charge (EIC)	Nos.	30					
3.8	<b>Supply, Installation &amp; Commissioning of Electronic Marker System as per specification , test certificate and documents etc. consisting of :</b>							
3.8.1	Electronic Markers (To be buried underground along with OFC Joints at all jointing location) (planned 27 nos spare 03 nos)	Nos.	30					
3.8.2	Electronic Marker Locator and accessories (Including probe and locator electronics)	Nos.	1					
3.9	Supply of set of FTC (in & out) (approved Make ) with zero dB connectors & wiremesh (structural size 1.5 Mtr x 1 mtr and mesh size 15 cm x 15 cm) and other accessories, as per the tender, for termination of OFC - 24 fibre in the equipment room (at all control room locations) (tentative). At common locations such as SV, IP; contractor has to provide FTC for 48 F with Zero dB connector for both direction OFC termination as per channeling plan. The channeling plan will be provided to succesful bidder during detailed engineering.	Sets	5					
3.10	Installation of FTC for OFC termination (in and out)(approved Make ) with zero dB connectors, installation of wiremesh (structural size 1.5 Mtr x 1 mtr and mesh size 15 cm x 15 cm) and other accessories, as per the tender, for termination of OFC in FTC including all the items required for installation of FTC.	Lot	5					



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		Prices in INR						
4(VI)	TELECOMMUNICATION WORKS - I	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)	
SI.No	Description of Item			In Figure	In Words	In Figure		
3.11	<b>Termination and Testing</b>  Termination of each fibre of OFC on each FTC with Zero Db connector at each station and all work as required for complete termination of OFC on FTC (including splicing) at each station , Slicing with street fibre, Test of each fibre for the smooth operation system on wavelengths, station wise and end to end OTDR Test of the laid OFC, station wise and end to end Power Testing of laid OFC, Identification of the fault, Rectification of fault, preparation of reports, reconciliation of OFC etc., all testing reports in the format provided in the tender, hard-disk with all fibre OTDR traces, work complete in all respect with all necessary accessories for all location, final acceptance / Handing over of the same to Client/ other contractor and as per the direction of Engineers in charge, all work complete in all respect as per the tender. For Testing & Termination details, Refer PJS .	Lumpsum	1					
<b>Note:</b>	<b>(i) The bidder must indicate currency(ies) against each quoted item of the SOR.</b> <b>(ii) The total amount shall also be given by the bidder in the quoted currency(ies).</b> <b>(iii) The payment will be made for actual measurements as per scope given in PJS. Some of the may / may not be execute as per site requirements.</b>			<b>Total Amount of quoted price (inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>				
Place :	_____			Signature of Authorised Signatory				
Date :	_____			Name :				
Tender No.:	_____			Designation :				
Offer No. & Date :	_____			Seal :				



 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 MECON LIMITED		
					Prices in INR				
4(VII)		Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)	
Sl.No	Description of Item			In Figure	In Words	In Figure			
	<b>TELECOMMUNICATION WORKS -II</b>  Project Management, System Design, Detail Engineering, Supply of Materials, Inspection & Factory Acceptance Testing (Equipment & Integrated with subsystem, Packaging, forwarding, Insurance, Transit Insurance, Shipping, Port Handling, Custom Clearance, Inland Transportation to store, Supply of all related erection goods including Mandatory spares, Commissioning spares, power supply, surge protection device, Loading, Unloading & Handling, Storage & Safe custody, Transportation from store to site , Supply of all type of Erection Items, Erection, erection of foundation support channel on trench for panel erection, Pre-commissioning activity, Integration with existing Telecom system, Testing, Trial Run, Commissioning, Training, Warranty, Extended warranty, Post Warranty Maintenance contract – comprehensive for 5 years for all supplied equipment, Including minor civil works, documentation of MPLS-TP based Digital Fibre Optic Communication System covering IP EPABX system, CCTV system, Leased Lines, Complete in all respect and shall be executed as Turnkey individual work contract basis as per Job Specification PJS No. : MEC/S/05/E5/T/U999/PJS-097 and technical specification TS No : MEC/05/E5/T/TS-97 for Kakinada - Vizag- Srikakulam Phase-II Pipeline Project. Interfacing with KSPL existing IP EPABX and SDH networks of Phase-I as per requirements is also in bidder's scope. Location details will be provided during detailed engineering. In addition to Phase-II equipment; Bidder has to replace/upgrade existing supplied SDH equipment with new proposed MPLS-TP equipment only of Phase I.								
<b>T.S</b>	<b>Supply: Supply with all works defined above</b>								
<b>T.S.1</b>	OFC based MPLS-TP (10 G) equipments, fully wired with Rack as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Sets	4						
<b>T.S.1.1</b>	<b>For the existing equipment of KSPL Ph-I project location:</b> Replacement/upgradation of existing SDH-16 (03 nos) & SDH-04 (08 nos) in same available rack by MPLS-TP (10 G) equipment considering taken back cost of existing equipment (in case of replacement) and interfacing of existing telephone ,CCTV Camera etc. in close coordination with existing SDH supplier (M/s Tejas) and existing system integrator (M/s Commtel Network) complete in all respect as per the PJS, TS and instruction of EIC . (Bidder has to provide rate less than taken back cost of SDH-16 & SDH-04 equipments)	Sets	11						
<b>T.S.2</b>	MPLS-TP (10G) equipment Network Management System (NMS) Server (Rack Mounted) including all Hardware & Softwares, accessories for Telecommunication System as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement								
<b>T.S.2.1</b>	All Hardware and accessories, as required, as per above	Set	1						
<b>T.S.2.2</b>	All Software (including MPLS- TP) as per above	Set	1						
<b>T.S.2.3</b>	<b>For the existing equipment of KSPL Ph-I project location:</b> Replacement/upgradation of existing SDH-NMS by MPLS-TP NMS in existing client workstations considering taken back cost of existing SDH-NMS (in case of replacement). In case of upgradation include cost of integration with line item no. T.S.2 for KSPL Ph-I new MPLS-TP equipments.	Sets	1						
<b>T.S.3</b>	MPLS-TP (10G) equipment Network Management System (NMS) Client work station including all Hardware & Softwares, accessories for Telecommunication System as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement								
<b>T.S.3.1</b>	All Hardware and accessories, as required, as per above	Set	2						



 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LIMITED</b>	
		<b>Prices in INR</b>						
4(VII)	<b>TELECOMMUNICATION WORKS -II</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Rate inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>		<b>Total Amount inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST).</b>		<b>Service Accounting Codes (SAC)</b>
<b>Sl.No</b>	<b>Description of Item</b>			<b>In Figure</b>	<b>In Words</b>	<b>In Figure</b>		
T.S.3.2	All Software (including MPLS- TP) as per above	Set	2					
T.S.4	Primary Reference Clock (Redundant GPS) with antenna & necessary cables, accessories as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	1					
T.S.5	IP EPABX SYSTEM fully wired configured and equipped with all interfaces, cables, connectors, MDF, etc for 50 Lines (20 Analogue & 30 IP) Expandable to 100 Lines(40 Analogue & 30 IP) as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	1					
T.S.6	IP EPABX Network Management System (NMS) Server and Client Workstation including all Hardware & Softwares, accessories as required for Telecommunication System as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	1					
T.S.7	Local Craft Terminal with required software for Optical system MPLS-TP, CCTV and IP EPABX, as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	1					
	<b>Telephones as per specifications -</b>							
T.S.8	PoE based standard IP telephones including power supply adaptor, Ethernet Cable & patch cord, mounting kit with required hardware, cabling / accessories, etc. as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	8					
T.S.9	Standard analog telephones with LCD display, Caller identification, complete with all the patch cord and mounting accessories with required hardware, cabling / accessories, etc as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	4					
T.S.10	Explosion Proof IP Telephones inside Acoustic Booth (including Explosion Proof howler & Explosion Proof flashing beacon, explosion proof light) with required hardware, cabling / accessories as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. The scope also includes supply of acoustic booth with all accessories as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	2					
T.S.11	CCTV Systems : CCTV System consisting of Redundant Network Video Recorder (NVR) server, Server Rack including necessary hardware, software, NAS based storage, necessary Ethernet switches, Converter, KVM Switch, Gateways, furniture and accessories complete in all respect with required server Rack, cabling / accessories, etc as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement (All the cameras with storage shall be available for viewing at work stations. The recording only at server location.)	Set	1					
T.S.12	CCTV System client work stations including necessary hardware and software, accessories as required for Telecommunication System, as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	1					
T.S.13	65" LED display monitor for CCTV system including necessary hardware, software, erection accessories etc. as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	2					
T.S.14	PTZ Camera with IR illuminator with housing accessories, Mounting Arrangements, Ethernet switches, Converter, Gateways and necessary accessories etc. as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	6					







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		Prices in INR						
4(VII)	TELECOMMUNICATION WORKS -II	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
Sl.No	Description of Item			In Figure	In Words	In Figure		
T.S.15	Fixed Camera with IR illuminator with housing accessories, Mounting Arrangements, Ethernet switches, Converter, Gateways and necessary accessories as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	6					
T.S.16	Test Instruments as per the specifications having following: a)OTDR Meter : 01 No. b)Laser Source : 01 No. c)Power Meter : 01 No. d)Ethernet tester : 01 No. e)Digital Multimeter : 01 No. f)Industrial standard Tool kit for telecom : 01 Set equipments with leather bag.	LOT	1					
T.S.17	Mandatory Spare for all supplied equipments such as MPLS-TP (10G), CCTV Cameras (Fixed & PTZ), IP EPABX System, Gateways, power supply, Converters etc (Bill of Material has to be provided along with offer, any fraction quantity should be round off to nearest number in higher side). Unit rate for Mandatory spares with cards details, part no., make etc. shall be given separately. (10% Spare or Minimum One shall be calculated based on the total quantities); as per the above respective Line items of MPLS-TP,CCTV, EPABX systems, as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. For existing mandatory spare of SDH also to be taken back as: <b>Bidder has to calculate the spare of MPLS-TP for the replacement/upgradation of existing equipment for KSPL Ph-I; Considering taken back cost of existing SDH spare as available</b> a) SDH-STM-16 Interface Card : 01 Set b) SDH-STM-04 Interface Card : 01 Set c) SDA-STM-16 Power Supply Unit/Card : 01 Set STM-04 Power Supply Unit/Card : 01 Set : 02 Set f) SFP-STM-04 : 02 Set d) SDA-STM-04 : 01 Set e) SFP-STM-16 : 02 Set	LOT	1					
T.S.18	Fully wired CRCA Console with chair, consisting all Hardware, necessary accessories, etc complete in all respect, as required and as defined complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	3					



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		Prices in INR						
4(VII)	<b>TELECOMMUNICATION WORKS -II</b>	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
Sl.No	Description of Item			In Figure	In Words	In Figure		
T.E	<b>Service and Site Work</b> Site work, Installation, Integration with existing systems, testing, commissioning, trial run, handover (including supply and erection of all installation materials, accessories, connectors, Distribution boxes, MDF, IDF, cables {FRLS Armoured Power cables, FRLS Armoured control cables, co-axial cable, multi-pair armoured telephone cables, FRPVC Armoured CAT-6 Ethernet Cables, Armoured Optical fibre cable}, cable glands {ex-proof as per the area classification}, pole { 3, 6, 8 mtrs} with shades & mounting arrangement, civil foundation for all the supplied system, cable trays, SPD, double pole MCBs, power supply converters, LIU Box, OFC Splicing, OFC connectors, patch cords, pigtails, cable management, Cable tails, earthing, junction boxes, mounting arrangements for EPABX, CCTV System, MDF Krone modules, NMS, leased line , as required complete in all respect as per the site condition), trenching & backfilling, cabling, glanding, termination, seamless integration with telecom system of APGDC Phase-I, etc for all the functions as specified under various clause of tender line, MPLS-TP, CCTV, EPABX System etc., Training, Warranty, Post Warranty Comprehensive Maintenance Contract (after warranty), Mandatory & commissioning spares, , Power testing of already laid 24 F OFC fiber, supply of OFC connectors, minor civil works & documentation of Telecommunication Equipment such as MPLS-TP system, IP EPABX system with Telephones, CCTV system, etc, and all other items / work not indicated here but required for completion of the scope of work., complete in all respect as specified in various documents attached with tender Particular job specification, technical specification and various clauses as per tender requirement and as per the site condition. In addition to Phase-II equipment; Bidder has to replace/upgrade existing supplied SDH equipment with new proposed MPLS-TP equipment only. of Phase -I.							
T.E.1	All the work as defined above at respective stations (all Despatch, SV and Receiving stations) complete in all respect for MPLS-TP, IP EPABX system with Telephones, CCTV System with Cameras, Clocks, consoles etc as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. Interfacing with the existing SDH and IP-EPABX is also in bidder's scope as per instruction of EIC. All the work for Redundancy of MPLS-TP network in case of OFC cut through backup leased line link and for exchange as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. One Lot comprises of all the works as defined above at one station (DT/SV/RT)	LOT	5					
T.E.1.1	All the work as defined above at respective stations of KSPL Ph-I for replacement/upgradation of SDH-16/SDH-04 equipment by MPLS-TP equipments and interfacing with CCTV, IP EPABX and clocks as required to complete in all respect including any work for interfacing of MPLS-TP equipment of KSPL Phase-I & Phase-II.	LOT	11					
T.E.2	Leased lines (10 mbps) with end to end solution (Hardware & software as required) complete in all respect for 02 year from the date of acceptance of Telecom system as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. Lease lines are required as: a) DT to RT for MPLS-TP and exchange b) RT of Phase-II to IP-3 of Phase-I for SCADA Server c) DT of Phase-II to IP-3 of Phase-I for SCADA Workstation  (Quantity may vary and will be finalised during detailed engineering; for same location if two leased line required shall be provided from different service provider.) One Lot shall comprise of all the work required and associated with one lease line.	LOT	3					
T.E.3	Training for MPLS-TP System, CCTV system, IP EPABX & GATEWAYS, equipment with respective NMS, Test instruments at site with OEM and at OEM works / integration centre, as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	LOT	1					



 APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 MECON LIMITED	
		Prices in INR						
4(VII)		Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
Sl.No	Description of Item			In Figure	In Words	In Figure		
T.P.W	Post warranty maintenance contract (PWMC) as defined in the Particular Job specification / bid document for complete telecommunication system including respective NMS (for all supplied system including Mandatory spares, Test equipments, etc) for 5 years after completion of main warranty, as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. Payment will be made on quarterly basis.	Lumpsum	1					
	<b>Notes :</b>							
	1. Bidder has to note that the Time schedule shall be as define in the tender. 2. Commissioning spare as required will be part of the offer and shall be available at the time of commissioning. 3. Details of Mandatory spares with part no., make etc. shall be given separately with the offer & enclosed with techno-commercial documents. 4. The quantity and location of the stations may change due to any change in site location/ requirements; bidder shall to take prior approval for procurement and erection. 5. The Main warranty is for period of 24 months (two years) from the date of successful completion of trial run / acceptance of the system by the owner. All materials will be considered in custody of contractor with applicable conditions of warranty till handing over of the system to Client. 6. Bidder has to complete the work as per the schedule. Bidder shall maintain store at site for storage of all the supplied materials. The store has to be maintained for each state /regions of pipeline and billed as per the requirements. Insurance of all materials in the store is included in scope of the bidder. 7. Post warranty maintenance contract (comprehensive) as define in the tender shall be provided by original equipment supplier along with telecom system integrator selected by bidder for 05 years of periods as defined in the tender for complete scope of supply. PWMC work will start after completion of Main warranty. At the time of FOA; order for supply and site services shall be placed, however client will placed separate order for Post Warranty Maintenance as per terms & condition of the contract on or before 3 months of completion of main warranty. 8. Operation & maintenance OEM suggestive spares (for 2 years) required after PWMC, each module, with complete list, part no, unit rate shall be provided. The validity of rates shall be upto contractual period including PWMC from date of commissioning / acceptance of complete work (i.e. 7 years – 2 year warranty + 5 year PWMC). Refer PJS for details							
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies). (iii) The payment will be made for actual measurements as per scope given in PJS. Some of the may / may not be execute as per site requirements.	Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).						
Place				Signature of Authorised Signatory				
Date				Name :				
Tender No.:				Designation :				
Offer No. & Date :				Seal :				

		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>						
		Prices in INR						
4(VIII)	<u>SCADA WORKS</u>	Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)	
Sl.No	Description of Item			In Figures	In Words	In Figure		
	The Scope of work for IP based SCADA system shall be (but not limited to) Project Management, Design, Engineering, Procurement of Materials, fabrications/ manufacturing, Inspection & Factory Acceptance Testing at works, Supply, Packaging, Shipping, Insurance, Port Handling, Custom Clearance, Inland Transportation to site, Storage & Safety, Installation along with necessary software, installation material, cables, connectors, servers, workstations, RTU panels, erection of foundation support channel on trench for panel erection, cable trays, test instruments / equipments, Site Acceptance testing & Integration, Test Run, Pre-commissioning activity, Commissioning, Integration with existing SCADA system of APGDC Phase-I, integration with Telecom System, APPS System & local IEDs, Training, technical support, Warranty, Extended Warranty, Post warranty for comprehensive maintenance for 5 years (after completion of main warranty), Mandatory spares & commissioning spares, Documentation for IP based Supervisory Control & Data Acquisition (SCADA) System (of existing make of SCADA system of APGDC Phase-I) with Remote work station & Remote Telemetry Unit and shall be executed on turnkey indivisible works contract basis as per details							
T.5	<b>Supply: Supply with all works defined above</b>							
T.S.1	SCADA System at Back-up Master Station (BMS) consisting all Hardware (all servers, workstations, switches, routers etc), Server Rack, CRCA consoles, 65" HMI screen with work stations with necessary accessories, furniture etc., complete in all respect, as required and as defined in Particular job specification, technical specification and various clauses as per tender requirement. All the hardware has to be provided for the complete scope, complete in all respect, as required and as defined in Particular job specification, technical specification and various clauses as per tender requirement	LOT	1					
T.S.2	Operating System Software, SCADA server software, SQL Server software, HMI software/ Engineering Work Station Software, SCADA EWS cum OWS software, History Server Software, OPC server software, etc as finally configured on the system readable storage media shall be provided. Licenses for operating system, SCADA server software, SQL Server software, HMI software, Engineering Work Station cum operator work station (EWS cum OWS) Software, History Server Software, OPC server software, etc shall be provided for complete SCADA System at BMS location. All software with License has to be provided for the complete scope, complete in all respect, as required and as defined in Particular job specification, technical specification and various clauses as per tender requirement. All the software shall be provided of the existing make of respective software as per existing SCADA system of APGDC Ph-I	LOT	1					
T.S.3	Remote terminal units (RTU) with accessories For Sectionalising Valve (SV) Stations consisting all Hardware, necessary accessories, etc complete in all respect, as required and as defined complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	2					
T.S.3.1	Remote terminal units (RTU) with accessories For Receiving, Dispatch stations consisting all Hardware, necessary accessories, etc complete in all respect, as required and as defined complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	2					
T.S.3.2	PDT with all accessories including all cables & connectors as per the Technical specifications of RTU with RTU configuration software consisting all Hardware, software, necessary accessories, etc complete in all respect, as required and as defined complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement	Set	1					



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4(VIII)		Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
Sl.No	Description of Item			In Figures	In Words	In Figure		
T.S.4	<u>Mandatory Spares:</u> Supply of loose Mandatory Spares (For all RTU with spare - 10% of all type of Installed cards, converters, power supply/ converters, termination boards, OEM cables between cards and termination boards, backplanes, relays, RTU chassis etc accounted & calculated considering total quantities of RTU of respective regions / states), during calculation of mandatory spares as defined in Particular Job Specification, PJS No. MEC/05/E5/T/U999/PJS-094(RTU) (Bill of Material has to be provided along with offer, any fraction quantity should be round off to nearest number in higher side). Unit rate for Mandatory spares with cards details, part no, make etc. shall be given separately with the offer & price part. (10% Spare or Minimum One shall be calculated based on the total RTU quantities; region / state wise;)	LOT	1					
T.E	<u>Service and Site Work</u> Site work, Installation, Integration with existing systems, testing, commissioning, trial run, handover (including supply and erection of all installation materials, accessories, connectors, Distribution boxes, MDF, IDF, cables {FRLS Armoured Power cables, FRLS Armoured control cables, FRLS Armoured signal cables, FRLS Armoured communication cables, FRPVC Armoured CAT-6 Ethernet Cables, Armoured Optical fibre cable}, cable glands {ex-proof as per the area classification}, erection & mounting arrangement, civil foundation for all the supplied system, cable trays, SPD, double pole MCBs, power supply converters, LIU Box, OFC Splicing, OFC connectors, patch cords, pigtailed, cable management, Cable tails, junction boxes, mounting arrangements for SCADA system , as required complete in all respect as per the site condition), trenching & backfilling, cabling, glanding, termination, seamless integration with SCADA system of APGDC Phase-I, etc for all the functions as specified under various clause of tender line, Training, Warranty, Post Warranty Comprehensive Maintenance Contract (after warranty), Mandatory & commissioning spares, & documentation of SCADA system, etc, and all other items / work not indicated here but required for completion of the work., complete in all respect as specified in various documents attached with tender Particular job specification, technical specification and various clauses as per tender requirement and as per the site condition.							
T.E.1	All the work as defined above at respective stations (all Despatch, SV and Receiving stations) complete in all respect for complete SCADA system and RTU as required complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement. One Lot comprises of all the works as defined above at one station (DT/SV/RT)	LOT	5					



		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>						
							Prices in INR	
4(VIII)		Unit	Qty	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Service Accounting Codes (SAC)
Sl.No	Description of Item			In Figures	In Words	In Figure		
T.E.2	All Site work as define above for interfacing and integration of bidder supplied SCADA system with existing SCADA system of APGDC Ph-I with all Hardware & Software (at both the ends - at the end of bidder supplied SCADA system and at the end of existing SCADA system) as required for integration, complete in all respect, as per Particular job specification, technical specification and various clauses as per tender requirement.	Lumpsum	1					
T.E.3	Training (as defined in PJS, Technical Specifications and other documents provided in the tender) at OEM works / OEM testing facilities and at site for SCADA system before the final acceptance of the SCADA system by the Client , complete in all respect, as per Particular job specification, technical specification and various clauses as per tender requirement.	LOT	1					
T.P.W	Post warranty maintenance contract (PWMC) – comprehensive for complete supplied SCADA system and RTU, as defined in the Particular Job specification / bid document for complete supplied system for 5 years after completion of main warranty, complete in all respect as per Particular job specification, technical specification and various clauses as per tender requirement.	Lumpsum	1					
<b>Notes :</b> 1. Bidder has to note that the Time schedule shall be as define in the tender. 2. Commissioning spare as required will be part of the offer and shall be available at the time of commissioning. 3. Details of Mandatory spares with part no., make etc. shall be given separately with the offer & enclosed with techno-commercial documents. 4. The quantity and location of the stations may change due to any change in site location/ requirements; bidder shall take prior approval for procurement and erection. 5. The Main warranty is for period of 24 months (two years) from the date of successful completion of trial run / acceptance of the system by the owner. All materials will be considered in custody of contractor with applicable conditions of warranty till handing over of the system to Client. 6. Bidder has to complete the work as per the schedule. Bidder shall maintain store at site for storage of all the supplied materials. The store has to be maintained for each state /regions of pipeline and billed as per the requirements. Insurance of all materials in the store is included in scope of the bidder. 7. Post warranty maintenance contract (comprehensive) as defined in the tender shall be provided by original equipment supplier along with telecom system integrator selected by bidder for 05 years of periods as defined in the tender for complete scope of supply. PWMC work will start after completion of Main warranty. At the time of FOA; order for supply and site services shall be placed, however client will placed separate order for Post Warranty Maintenance as per terms & condition of the contract on or before 3 months of completion of main warranty. 8. Operation & maintenance OEM suggestive spares (for 2 years) required after PWMC, each module, with complete list, part no, unit rate shall be provided. The validity of rates shall be upto contractual period including PWMC from date of commissioning / acceptance of complete work (i.e. 7 years – 2 year warranty + 5 year PWMC). Refer PJS for details								
<b>Note:</b> (i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies). (iii) The payment will be made for actual measurements as per scope given in PJS. Some of the may / may not be execute as per site requirements.		Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST)).						
Place : _____ Date : _____ Tender No. : _____ Offer No. & Date : _____				Signature of Authorised Signatory Name : _____ Designation : _____ Seal : _____				



 <b>A.P. GAS DISTRIBUTION CORP. LTD.</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				<b>Prices in INR</b>		 <b>MECON LIMITED</b>	
		ITEM NO.	DESCRIPTION	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST)	Service Accounting Codes (SAC)
4(IX)	<b>FIRE PROTECTION SYSTEM</b>				In Figures	in Words	In Figure		
A	<b>FIRE ALARM &amp; CLEAN AGENT SYSTEM</b>								
1.0	<b>DESIGN, ENGINEERING, SUPPLY, HANDLING, TRANSPORTATION, INSTALLATION, TESTING &amp; COMMISSIONING OF HIGH PRESSURE CLEAN AGENT (INERT GAS) FIRE SUPPRESSION SYSTEM</b>  Clean Gas Fire Suppression Centralised System (Inert Gas High Pressure) complete with required accessories with main and standby bank of cylinders & each cylinder filled with Clean agent Fire extinguishing Agent (Inert Gas) as Main Bank and Standby Bank (As per NFPA 2001 latest edition & UL Listed / FM / VDS / LPCB approved) with Pressure Switch & Locking Device, Discharge Nozzles designed to provide the proper flow rate and distribution of Clean Agent to total flood the hazard area: 180 deg. / 360 deg. ( As per NFPA 2001 & UL Listed / FM / VDS / LPCB approved ), ASTM A106 Gr. B ,Piping, fittings & supports, etc. . Manifold fabricated from seamless pipe, A106 Gr. B Sch. 80 having inlets with supports etc. with activation through intelligent addressable Fire Detection and Alarm System panels after receiving signals from detectors, response indicators etc. all complete supply as per approved scheme & MECON TS MEC/TS/05/28/081/J and instructions of Engineer-in-charge. The bidder shall include mandatory spares as described in PJS along with recommended list of spares required for 2 years trouble free operation. Inert gas shall be used as Clean Gas Agent @300 Bar Pressure .  Complete work of supply, installation, testing, commissioning includes Handling including lifting and transportation from Owner's / Contractor's own storage yard to work site and inspection charges, installation, testing, commissioning & handing over in accordance with relevant Specifications & relevant Data Sheets indicated in PJS, scope of work, SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT. The areas of rooms to be protected are listed below:								
1.1	Control Room Building of size 26m X 8 m comprising of Instrumentation/Scada/Telecom room of size 8m X 6m X 4 (h) & Electrical Room of Size 7m X 6m X 4m (h) & Battery Room of Size 7m X 6 X 4m (h) - at SV-4 cum DT at Ch. 0.00 km	LS	1						
1.2	Control Room Building of size 19m X 8 m comprising of Instrumentation/Scada/Telecom room of size 7m X 6m X 4 (h) & Electrical Room of Size 7m X 6m X 4m (h) & Battery Room of Size 5m X 6 X 4m (h) -at SV-2 at 40.0 km & SV-4 at 80 km.	LS	2						
1.3	Control Room building as per enclosed drawing of size 29m X 14.35m comprising Control Room of size 9.725m X 6m X 4m (h), Telecom / Scada Room of size 5m X 6m X 4m (h), Electrical Room of Size 8m X 6m X 4m (h) & Battery Room of Size 7m X 6m X 4m (h) at RT - NACL industries at 102.3 km.	L.S.	1						
	Note - 1. Design shall be done based on largest room size with provision to discharge gas in affected room through directional valves including Room void, Ceiling Void & Floor void/ Cable trenches. While designing for highest room size, NOAEL in smallest room shall not be more the criteria as per NFPA 2001.								
2.0	<b>DESIGN, ENGINEERING, SUPPLY, ERECTION, TESTING &amp; COMMISSIONING OF FIRE DETECTION &amp; ALARM SYSTEM FOR CONTROL ROOM BUILDING</b>  Intelligent addressable Fire Detection and Alarm System with fire alarm cum gas release panels which will also have provision to receive signals from detectors, response indicators, cabling , cable trays, manual gas release switch , manual gas abort switch, hooter with flasher, manual call points etc. all complete as per approved scheme & enclosed drawings. Work shall be carried out as per MECON TS No. MEC/TS/05/28/081/11 & enclosed drawing. Manual call points shall be installed at strategic operating locations.  Complete work of supply includes transportation to store and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work, SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT.  Handling including lifting and transportation from Owner's/ Contractor's own storage yard to work site and installation & commissioning of FIRE DETECTION & ALARM SYSTEM including performance testing of the system, 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 wherever required. The area of control room buildings to be protected are listed below:								
2.1	Control Room Building of size 26m X 8 m comprising of Instrumentation/Scada/Telecom room of size 8m X 6m X 4 (h) & Electrical Room of Size 7m X 6m X 4m (h) & Battery Room of Size 7m X 6 X 4m (h), Fire Fighting Room of Size 4m X 6 X 4m (h) and Varandah of Size 26m X 2 X 4m (h) - at SV-4 cum DT at Ch. 0.00 km	LS	1						
2.2	Control Room Building of size 19m X 8 m comprising of Instrumentation/Scada/Telecom room of size 7m X 6m X 4 (h) & Electrical Room of Size 7m X 6m X 4m (h) & Battery Room of Size 5m X 6 X 4m (h), Fire Fighting Room of Size 3m X 3 X 4m (h) and Varandah of Size 19m X 2 X 4m (h) -at SV-2 at 40.0 km & SV-4 at 80 km.	LS	2						
2.3	Control Room building as per enclosed drawing of size 29m X 14.35m comprising Control Room of size 9.725m X 6m X 4m (h), Telecom / Scada Room of size 5m X 6m X 4m (h), Electrical Room of Size 8m X 6m X 4m (h), Battery Room of Size 7m X 6m X 4m (h) . Engineers Room of Size 4m X 6m X 4m (h), Documentation Room of Size 2.5m X 6m X 4m (h), Server Room of Size 5m X 6m X 4m (h) Fire Fighting Room of Size 4m X 6m X 4m (h), Incharge Room of Size 4m X 6m X 4m (h), Pantry of Size 2m X 2m X 4m (h) & Corridor of Size 29m X 2.35m X 4m (h) at RT - NACL industries at 102.3 km.	L.S.	1						



 <b>A.P. GAS DISTRIBUTION CORP. LTD.</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					 <b>MECON LIMITED</b>	
ITEM NO.	DESCRIPTION	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST)	Service Accounting Codes (SAC)	
				In Figures	In Words			
4(IX)	<b>FIRE PROTECTION SYSTEM</b>							
	Note: Fire Alarm Panel & Gas Release Panel shall have provision to work on 230 V AC / DC (Input Power supply ) as per availability of Input power at Stations.							
3.0	<b>SUPPLY, INSPECTION, LAYING, TERMINATION &amp; TESTING OF FRLS CABLES FOR AC / FAN TRIPPING</b> Supply, inspection, laying, termination with fire alarm panel & testing of FRLS cables in control room for AC /exhaust/fan tripping, all required realsys & cable glands (Explosion proof double compression type) and consumables like ferrules, clamps, lugs, sleeves, aluminium/SS tag plates etc., clamping , ferruling, glanding of the cables, termination at both ends, including shield/drain, providing/fixing of identifying tags and megger testing and loop testing.							
3.1	2 core 1.5 Sqmm copper cable	Mtrs	250					
<b>B</b>	<b>HAND APPLIANCES (for All SVs, DT &amp; RT)</b>							
1.0	<b>CO2 TYPE FIRE EXTINGUISHERS</b> Supply & Installation of CO2 type fire extinguishers with steel cylinder with discharge valve as per MECON TS no. MEC/TS/05/28/081/25 and conforming to IS:15683. Extinguisher shall be painted with red enamel paint. Complete work of supply includes transportation to store and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work,SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT							
1.1	Capacity 4.5 kg.	Nos.	10					
2.0	<b>DRY CHEMICAL POWDER TYPE FIRE EXTINGUISHER (STORED PRESSURE TYPE)</b> Supply & Installation of Dry Chemical Powder type fire extinguisher as per IS: 15683-2006 & MECON TS no. MEC/TS/05/28/081/26 suitable for inverted operation with anticorrosive treatment and hydraulically tested to a pressure of 25 kg/ sq.cm . Extinguishers externally painted with red enamel and fixed to wall with brackets complete with internal charge and spanner complete. Complete work of supply includes transportation to store and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work,SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT							
2.1	9 Kg Capacity as per IS:15683	Nos.	20					
2.2	75 Kg Capacity Trolley Mounted Type as per IS :16018	Nos.	2					
3.0	<b>CLEAN AGENT TYPE FIRE EXTINGUISHER</b> Providing & fixing clean agent type fire extinguisher suitable for inverted operation with anticorrosive treatment and hydraulically tested as per NFPA 2001. The product should be UL /LPCB/VDS/FM listed. The gas shall be stored at a pressure of not less than 15 bar and range shall be 2-5 meter.Complete work of supply includes transportation to store and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work,SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT							
3.1	2.0 Kg Capacity	Nos.	4					
4.0	<b>FIRE BUCKETS</b> Supply and installation of galvanised steel set of 4 fire buckets (9 Ltrs. Cap) as per technical specification no. MEC/TS/05/28/081/03 and confirming to IS: 2546 1974 RA2000 & MECON TS No MEC/TS/05/28/081/03. Buckets shall be painted with red enamel paint and fixed to suitable location . Complete work of supply includes transportation to store and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work,SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT	Nos.	8					
<b>C</b>	<b>SAFETY EQUIPMENTS (for All SVs, DT &amp; RT)</b>							
1.0	<b>SUPPLY OF FIRST AID &amp; SAFETY EQUIPMENT</b> Complete work of supply includes transportation to store and inspection charges but not limited to, the following items in accordance with relevant Specifications & relevant Data Sheets indicated in scope of work,SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT							
1.1	Supply,Installation,Testing and Commissioning of Electrical/Electronic Siren( 1 Km range Unidirectional) & Interfacing with Fire Alarm Panel/Gas Release Panel	Nos.	6					
1.2	Supply,Installation,Testing and Commissioning of Stainless Steel (SS-304) Eye Wash including Piping and associated works.	Nps	8					
1.3	Supply & Installation of Hand operated siren IS-6194-1971 RA- 2006	Nos.	6					
1.4	Safety Helmet - IS-2925-1984 RA2000	Nos.	28					
1.5	First Aid Box	Nos.	6					







 <b>A.P. GAS DISTRIBUTION CORP. LTD.</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				<b>Prices in INR</b>		 <b>MECON LIMITED</b>	
		ITEM NO.	DESCRIPTION	Unit	Quantity	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST)	Service Accounting Codes (SAC)
In Figures	in Words								
<b>4(IX)</b>	<b>FIRE PROTECTION SYSTEM</b>								
1.6	Cotton Hand Gloves	pair	90						
1.7	Low Temperature Rubber Hand Gloves	Pair	8						
1.8	Rubber Hand Globes for Electrical Purpose IS-4770 –1991 RA-2001	Pair	2						
1.9	Portable Oxygen cum LEL Detector (PESO Approved)	Nos.	8						
1.10	Rechargeable LED type Safety Hand Lamp (PESO Approved)	Nos.	6						
1.11	Safety Torch (PESO Approved)	Nos.	8						
1.12	Trolley to carry the above items etc.	Nos.	6						
1.13	Ear Muff	Nos.	16						
1.14	Ear Plug	Nos.	60						
1.15	Resuscitator	Nos.	8						
1.16	Supply & Installation of Wind Shock	Nos.	6						
1.17	Stretcher with Blanket -IS-4037-1967 RA-2001.	Nos.	2						
1.18	Water Gel Blanket	Nos.	2						
1.19	Self contained breathing apparatus with one spare cylinder (30 min. capacity)	Nos.	4						
1.20	Portable Automatic Defibrillator	Nos.	2						
1.21	Fire Proximity Suit	Nos.	2						
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).					<b>Total Amount of quoted price (inclusive of all applicable taxes &amp; duties except GST (CGST&amp;SGST/UTGST or IGST))</b>			
Place				Signature of Authorised Signatory					
Date				Name :					
Tender No.:				Designation :					
Offer No. & Date :				Seal :					



		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>					
APGDC Limited		Prices in INR				<b>MECON LIMITED</b>	
4(X)	ELECTRICAL WORKS						
Item No.	DESCRIPTION OF ITEM	Unit	QTY	Unit Rate inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).		Total Amount inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).	Service Accounting Codes (SAC)
				In Figure	In Words		
<b>OVERHEAD LINE WORKS UPTO TRANSFORMER YARD</b>							
1.0	Supply Erection, Testing and Commissioning of all the following items including all miscellaneous materials required, digging, trenching, backfilling, compaction, making of foundations/ pedestal, fixing the fencing and gate, spreading of blue granite material, etc as required to complete the HT & LT installation as per datasheet, specifications of this tender, approved drawings and as per Engineer-In-Charge. These quantities are approximate and payment shall be made for actual equipment / materials installed by the Contractor as part of permanent installation based on Issued for Construction drawings. <b>(All electrical equipments shall be approved from Purchaser/Consultant/SEB).</b>						
1.1	Double pole Structure with MS joint ISMB 200 x 100 mm, 9 m long complete with 100 x 50 mm MS channels of required length and size ; 11 kV 3 Ph. Gang operated Air Break switch, DO fuse, lightning arrestors of suitable ampere rating; pin insulators, disc insulators, operating rod, handle, locking arrangement, copper wire for jumper connection, stay set complete with all accessories etc as required inclusive of paint (two coats of primer & two coats of final aluminum paint) and concrete foundation.	Set	6				
1.2	11 kV, ACSR weasel conductor as required for stringing between SEB Distribution point Double Pole and client Double Pole Structures.	RM	1200				
1.3	9 m long Pole complete with lightning arrestors of suitable ampere rating; pin insulators, disc insulators etc complete with all accessories as required inclusive of paint (two coats of primer & two coats of final	EACH	24				
1.4	Outdoor type dust & weather proof sheet steel (2 mm thick) enclosed 4P MCCB for mounting on wall or pedestal. 250A, 415V, AC-23 duty and suitable for termination of 3.5c x 185 A2XFY cable on incomer terminals and outgoing terminals.	EACH	4				
1.5	Outdoor type dust & weather proof sheet steel (2 mm thick) enclosed 4P MCCB for mounting on wall or pedestal. 400A, 415V, AC-23 duty and suitable for termination of 3.5c x 185 A2XFY cable on incomer terminals and outgoing terminals. For 2 Runs each.	EACH	2				
1.6	Chain link fencing of (height 2.5 m) for the sub station area with ISA 50 x 50 x 6 mm angle and 4 mm thick welded wire mesh and 1 no. gate ( 3x2.5 mtr.) complete with all material, welding and labour.	RM	120				
1.7	Supply and Laying of 40mm size gravels in one layer of 150 mm thick including dressing of soil surface and laying the aggregate in uniform layer and density including all labour and materials for spreading in the fenced area.	M <sup>3</sup>	60				
1.8	Supply, Laying, Termination, Testing and Commissioning of 3Cx 150 Sqmm, 11 KV (UE) Aluminum conductor, XLPE insulated, extruded PVC inner sheathed, PVC outer sheath and G.I. armoured, FRLS power cables from SEB distribution point to client Double Pole Structure. Scope also includes supply & spreading of approved fine river sand in cable trenches, approved second class bricks of 75mm thickness in cable trenches for cable protection laid lengthwise inclusive of all consumables such as clamps including trefoil clamps at every 3 meters, cable tags (cable tags at every 30m and on bents), hardware, trefoil clamps etc including supply and installation of cable markers for underground cable routes, including excavation of soil up to the required depth, installation of cables, back filling and compacting of soil and disposing the excess soil etc. including supply and installation of suitable GI pipes from buried trench to the equipment as per installation details and IFC layouts including supply and installation of crimping type tinned Aluminium, heavy duty tubular lugs as required at site complete as per approved drawings, specifications of this tender and directions of Engineer-in-Charge.	RM	600				
<b>DISTRIBUTION TRANSFORMER</b>							



 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				 <b>MECON LIMITED</b>	
		Prices in INR					
<b>4(X)</b>	<b>ELECTRICAL WORKS</b>						
<b>2.0</b>	Supply & installation,erection on pole, testing and commissioning of 11 kV/433 V outdoor type,3Ph,50Hz,copper wound, Dyn11, ONAN distribution transformer complete with all accessories as per SEB/REC specification 11/1976 and/or IS 2026/1180. and Energy Efficient with latest amendments there of and first oil filled. Termination arrangement for HV side : HT bushing & LV side Cable end box/Terminal box of following rating.						
<b>2.1</b>	25kVA for Manual SV Station.	EACH	2				
<b>2.2</b>	63kVA for Remote SV Stations	EACH	2				
<b>2.3</b>	100kVA for DT	EACH	1				
<b>2.4</b>	200kVA for RT	EACH	1				
<b>2.5</b>	Spares for Distribution Spares.	Lot	1				
	<b>POWER and LIGHTING DISTRIBUTION BOARDS</b>						
<b>3.0</b>	Supply, Installation, testing, and commissioning of following lighting/power panels, Surface/Recess mounting type in weather/flame proof (with hinged cover) sheet steel enclosure of approved make having 4 Pole MCCB(LSIG)/RCBO as incoming and SP/DP/TP MCB (9KA type) for out going circuit complete with wiring,indication lamp, ammeter etc including all labour and materials as per specification and the direction of Engineer-in-charge.						
	<b>DT - VISAKHAPATNAM</b>						
<b>3.1</b>	415 V, 30 kA single front type indoor <b>PDB-1</b> to receive input power at <b>DT</b> consisting of bus bar chamber, cable alley, 250 Amp incomer 4P MCCB (with LSIG & Shunt trip) & 5 nos. 100 Amp TPN MCCB, 5 nos. 63 Amp TPN MCCB, 5 nos. 32 Amp TPN MCB, 8 Nos 20/16 Amp TPN MCB & 10 Nos 20/16 Amp DP MCB outgoing complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) etc including all labour and materials with operating mechanism, all accessories, mandatory spares as per specification, auxiliaries etc complete in all respects as specified in technical specification, data sheet & as per Tender SLD. All MCCBs shall have LSIG protection. PDB shall be equiped for MODBUS communication.	EACH	1				
<b>3.2</b>	Surface/Recess mounted Lighting Panel ( <b>I/E-LDB</b> ) for <b>DT</b> Building Lighting consisting of 2 nos. 32 Amp (100mA sensitivity) 4 Pole RCBO as incomer(Grid+Invertor supply) along with two isolated Cu busbar and 10 Nos. 10A DP MCBs & 10 Nos. 16A DP MCBs as out goings complete with ammeter ,indication lamp etc. Refer Tender SLD..	EACH	1				
<b>3.3</b>	Surface/Recess mounted Building Power Point Panel ( <b>PP-LDB</b> ) for Building Power Points, AC's etc for <b>DT</b> consisting of 100 Amp (100mA sensitivity) 4 Pole RCBO as incomer and 10 nos. 20A DP MCB & 8 nos. 16A DP MCBs as out goings complete with indication lamp etc. Refer Tender SLD.	EACH	1				
<b>3.4</b>	Outdoor Lighting Panel ( <b>O-LDB</b> ) consisting of 80 Amp (100mA sensitivity) 4 Pole RCBO as incomer and 5 nos. 20/16A TPN MCBs & 5 nos. 20A DP MCBs as out goings complete with Contactor, timer, A/M switch, PB with timer and 5 Nos. 20/16 Amp DP MCB, 5 Nos. 20A TPN MCB without timer etc indication lamp. Refer Tender SLD.	EACH	1				
<b>3.5</b>	Spares for LT Panels for each DT/RT//SV stations based on Tender SLD for 2 years operation & maintenance as per the Scope of Work attached with Tender.	LOT	1				
	<b>SV STATIONS</b>						
<b>3.6</b>	415 V, 30 kA single front type indoor <b>PDB-2</b> for <b>SV Stations</b> consisting of bus bar chamber, cable alley, 160 Amp incomer TPN MCCB (with LSIG & Shunt trip) & 4 nos. 100 Amp TPN MCCB, 5 Nos 63 Amp TPN MCCB, 5 nos. 32 Amp TPN MCB, 5 Nos 20/16 Amp TPN MCB & 5 Nos 20/16 Amp DP MCB outgoing complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) etc including all labour and materials with operating mechanism, all accessories, mandatory spares as per specification, auxiliaries etc complete in all respects as specified in technical specification, data sheet & as per Tender SLD. All MCCBs shall have LSIG protection.PDB shall be equiped for MODBUS communication.	EACH	2				
<b>3.7</b>	FLP, IP-55 weather proof, Three Phase <b>LT Distribution board</b> consisting 1no. 80A TPN MCCB(100mA sensitivity) as Incomer,Energy Meter, Cu busbar and 3 nos. 63A TPN MCCB, 5nos. 32/20A TPN MCBs & 5nos. 20A DP MCBs as complete with as outgoing at <b>Manual SV Station</b> near boundary (inside client terminal) Refer Tender SLD.	EACH	2				

		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(I)</b>					
APGDC Limited		Prices in INR				MECON LIMITED	
4(X)	ELECTRICAL WORKS						
3.8	Surface/Recess mounted Lighting Panel (I/E-LDB) for SV Station Building Lighting consisting of 2 nos. 63 Amp (100mA sensitivity) 4 Pole RCBO as incomer(Grid+Invertor supply) along with two isolated Cu busbar and 3nos. 32A TPN MCB, 8 Nos. 10A DP MCBs & 8 Nos. 16A DP MCBs as out goings complete with ammeter ,indication lamp etc. Refer Tender SLD.	EACH	2				
3.9	Surface/Recess mounted Building Power Point Panel (PP-LDB) for Building Power Points, AC's etc for SV Station consisting of 63 Amp (100mA sensitivity) 4 Pole RCBO as incomer and 10 nos. 20A DP MCB & 10 nos. 16A DP MCBs as out goings complete with indication lamp etc. Refer Tender SLD..	EACH	2				
3.10	Outdoor Lighting Panel (O-LDB) consisting of 80 Amp (100mA sensitivity) 4 Pole RCBO as incomer and 5 nos. 20/16A TPN MCBs & 5 nos. 20A DP MCBs as out goings complete with Contactor, timer, A/M switch, PB with timer and 5 Nos. 20/16 Amp DP MCB, 5 Nos. 20A TPN MCB without timer etc indication lamp. Refer Tender SLD .	EACH	2				
3.11	Spares for LT Panels for each DT/RT//SV stations based on Tender SLD for 2 years operation & maintenance as per the Scope of Work attached with Tender.	LOT	1				
<b>RT-SRIKAKULAM</b>							
3.12	415 V, 30 kA single front type indoor PDB-1 to receive input power at RT consisting of bus bar chamber, cable alley, 400 Amp incomer 4P MCCB (with LSIG & Shunt trip) & 3 nos. 250 Amp TPN MCCB , 4 nos. 100 Amp TPN MCCB, 5 nos. 63 Amp TPN MCCB, 5 nos. 32 Amp TPN MCB, 8 Nos 20/16 Amp TPN MCB & 10 Nos 20/16 Amp DP MCB outgoing complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) etc including all labour and materials with operating mechanism, all accessories, mandatory spares as per specification, auxiliaries etc complete in all respects as specified in technical specification, data sheet & as per Tender SLD. All MCCBs shall have LSIG protection.PDB shall be equiped for MODBUS communication.	EACH	1				
3.13	Surface/Recess mounted Lighting Panel (I/E-LDB) for RT Building Lighting consisting of 2 nos. 32 Amp (100mA sensitivity) 4 Pole RCBO as incomer(Grid+Invertor supply) along with two isolated Cu busbar and 10 Nos. 10A DP MCBs & 10 Nos. 16A DP MCBs as out goings complete with ammeter ,indication lamp etc. Refer Tender SLD.	EACH	1				
3.14	Surface/Recess mounted Building Power Point Panel (PP-LDB) for Building Power Points, AC's etc for RT consisting of 100 Amp (100mA sensitivity) 4 Pole RCBO as incomer and 10 nos. 20A DP MCB & 8 nos. 16A DP MCBs as out goings complete with indication lamp etc. Refer Tender SLD.	EACH	1				
3.15	Outdoor Lighting Panel (O-LDB) consisting of 80 Amp (100mA sensitivity) 4 Pole RCBO as incomer and 5 nos. 20/16A TPN MCBs & 5 nos. 20A DP MCBs as out goings complete with Contactor, timer, A/M switch, PB with timer and 5 Nos. 20/16 Amp DP MCB, 5 Nos. 20A TPN MCB without timer etc indication lamp. Refer Tender SLD.	EACH	1				
3.16	Spares for LT Panels for each DT/RT//SV stations based on Tender SLD for 2 years operation & maintenance as per the Scope of Work attached with Tender.	LOT	1				
<b>UPS SYSTEM</b>							
4.0	Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at Client designated store,loading/unloading, transportation from warehouse/store (hired by bidder) to site, Installation, testing, commissioning and performance test at site of complete UPS system alongwith battery set mentioned below & as per tender specification, data sheet, drawings enclosed including commissioning spares as required at terminals :						
<b>DT-VISAKHAPATNAM</b>							
4.1.1	5KVA, 230 V Single phase, 50 Hz, parallel redundant industrial type, UPS system suitable for input Power supply voltage of 320 V-460V- TPN (184-265V/Ph), output 230 V +/- 1%, AC with solid state voltage stabilizer for Bypass supply, ACDB and 12.0 hrs. Battery backup (Ni-Cd, 1.2V) and battery capacity shall not be less than 93 KVAh (where KVAh = battery AH x 1.2 V x No. of cells). Charger rating Shall not be Less than 27 KW.	EACH	1				
4.1.2	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (800 W) (ii)24 V DCDB (1000 W)	EACH	1				



 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18°X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				 <b>MECON LIMITED</b>	
		Prices in INR					
<b>4(X)</b>	<b>ELECTRICAL WORKS</b>						
<b>4.1.3</b>	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50 mtr shall be considered between battery bank and UPS panel, 30 mtr cable shall be considered between ACDB/DCDB and UPS panel).	<b>Set</b>	<b>1</b>				
<b>4.1.4</b>	Spares for 5 KVA UPS System as per the Scope of Work attached with Tender.	<b>Lot</b>	<b>1</b>				
	<b>RT SRIKAKULAM</b>						
<b>4.2.1</b>	20KVA, 230 V Single phase, 50 Hz, parallel redundant industrial type, UPS system suitable for input Power supply voltage of 320 V-460V- TPN (184-265V/Ph), output 230 V +/- 1%, AC with solid state voltage stabilizer for Bypass supply, ACDB and 12.0 hrs. Battery backup (Ni-Cd, 1.2V) and battery capacity shall not be less than 372 KVAh (where KVAh = battery AH x 1.2 V x No. of cells). Charger rating Shall not be Less than 108 KW.	<b>EACH</b>	<b>1</b>				
<b>4.2.2</b>	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (1200 W) (ii) 24 V DCDB (1000 W)	<b>EACH</b>	<b>1</b>				
<b>4.2.3</b>	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50 mtr shall be considered between battery bank and UPS panel, 30 mtr cable shall be considered between ACDB/DCDB and UPS panel).	<b>Set</b>	<b>1</b>				
<b>4.2.4</b>	Spares for 20 KVA UPS System as per the Scope of Work attached with Tender.	<b>Lot</b>	<b>1</b>				
	<b>SOLAR SYSTEM</b>						
<b>5.1</b>	<b>SYSTEM-I-SPV POWER SOURCE FOR CATHODIC PROTECTION (PCP), INSTRUMENTATION, SCADA &amp; TELECOM FOR REMOTELY OPERATED SV STATIONS</b>						
<b>5.1.1</b>	System Design, Detailed Engineering, procurement of materials, Inspection/FAT (Factory acceptance test), Supply of materials, Transportation, loading/unloading, insurance, Storage at warehouse/store (hired by bidder), loading/unloading, transportation from warehouse/store (hired by bidder) to site, Installation, testing, commissioning and performance test at site of complete of complete Solar PV based Power source with <b>two days (48 hours)</b> autonomy for 1500W DC load for twenty four hours per day operation as per tender specification, data sheet, scope of work and block diagram enclosed including commissioning spares as required at each SV station. The system shall include following- (i) Solar PV array with junction boxes, Anodized AL/ Hot dipped Galvanized M-Steel structure (ii) Solar PV charge controller-MPPT type (output 96V DC) (iii) Ni-Cd (1.2V/Cell) Pocket Plate Battery Bank (96V DC) (iv) DC-DC Converter (output 24V DC & (-)48 - 0 - (+)48V DC) and DCDBs [24V & 48V] (v) Interconnecting cables among arrays, charge controller, battery bank, Grid charger, DCDBs, junction boxes etc including supply of all accessories like cable glands, cable tray, tinned-cu lugs etc as required. vi) Earthing and lightning protection system as required to complete the system. vii) Supply of 2 year O&M spares as per list attached in scope of work viii) Erection materials & Other miscellaneous work						
<b>5.1.2</b>	Solar PV Modules (Min 300Wp) BIS certified for SPV array 20 KWp (2X10000 Wp) @ 96V for system-IA along with junction boxes, Anodized AL/ Hot dipped Galvanized M-Steel structure as per specification and scope of work.	<b>Set</b>	<b>2</b>				
<b>5.1.3</b>	MPPT Solar Charger (2X220A) @ 96V as per specification and scope of work with DC_DC Converter (80-130V DC I/P to 24V 500W & 80-130V DC I/P to (-)48 - 0 - (+)48V DC, 1000W convertor with +/- 1% accuracy) and DCDB [24V & 48V] as per specification and scope of work.	<b>Set</b>	<b>2</b>				
<b>5.1.4</b>	Ni-Cd Battery bank (Pocket Plate type) in (2x50%) arrangement, 155 KVAh @ 96V, (where KVAh = battery cell AH x 1.2 V x No. of cells) as per specification and scope of work.	<b>Set</b>	<b>2</b>				
<b>5.1.5</b>	Balance of System materials & equipments- 1) Interconnecting cables among arrays, charge controller, battery bank, Grid charger, DCDBs, junction boxes etc including supply of all accessories like cable glands, cable tray, tinned-cu lugs etc as required. 2) Earthing and lightning protection system as required to complete the system. 3) Supply of 2 year O&M spares as per list attached in scope of work 4) Erection materials, Civil & Other miscellaneous work	<b>Lot</b>	<b>1</b>				



 APGDC Limited		SCHEDULE OF RATES SUPPLY, LAYING & CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM) Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)					 MECON LIMITED	
		Prices in INR						
4(X)	ELECTRICAL WORKS							
5.1.6	<b>GRID CHARGER FOR BATTERY BANK</b> Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at warehouse/store (hired by bidder), transportation from warehouse/store (hired by bidder) to site, Installation, testing, commissioning and performance test at site of FCBC CHARGER (2x100%) to charge the battery bank from grid supply, including commissioning spares as required, as per specifications, data sheet and instruction of Engineer-in-charge required for Solar System. The charger shall operate on the single phase with the input voltage supply of 415Vac, 3 Phase with Neutral, 50 Hz 330 ~ 460 Vac, 47 ~ 53 Hz. FCBC shall consist of three single phase chargers connected in parallel fed by R-Y-B phase respectively. The rating of each FCBC shall be as per the Battery	Set	2					
5.2	<b>SYSTEM-III-SPV POWER SOURCE FOR CATHODIC PROTECTION (PCP) AT MANUAL OPERATED SV STATIONS</b> System Design, Detailed Engineering, procurement of materials, Inspection/FAT (Factory acceptance test), Supply of materials, Transportation, loading/unloading, insurance, Storage at warehouse/store (hired by bidder), loading/unloading, transportation from warehouse/store (hired by bidder) to site, Installation, testing, commissioning and performance test at site of complete of complete Solar PV based Power source with <b>two days (48 hours)</b> autonomy for 200W DC load for twenty four hours per day operation as per tender specification, data sheet, scope of work and block diagram enclosed including commissioning spares as required at each SV station. The system shall include following- (i) Solar PV array with junction boxes, Anodized AL/ Hot dipped Galvanized M-Steel structure (ii) Solar PV charge controller-MPPT type (output 96V DC) (iii) Ni-Cd (1.2V/Cell) Pocket Plate Battery Bank (96V DC) (iv) DC-DC Converter(output 24V DC & -48-0-48V DC) and DCDBs [24V & 48V] (v) Interconnecting cables among arrays, charge controller, battery bank, Grid charger, DCDBs, junction boxes etc including supply of all accessories like cable glands, cable tray, tinned-cu lugs etc as required. vi) Earthing and lightning protection system as required to complete the system. vii) Supply of 2 year O&M spares as per list attached in scope of work viii) Erection materials & Other miscellaneous work <b>Rating of SPV array, charge controller and battery bank shall be selected to meet the load requirement as specified above. However, each subsystem rating shall not be less than the value given below-</b>							
5.2.2	Solar PV Modules (Min 300Wp) BIS certified for SPV array 3 KWp (2X1500 Wp) @ 96V for system-IA along with junction boxes, Anodized AL/ Hot dipped Galvanized M-Steel structure as per specification and scope of work.	Set	2					
5.2.3	MPPT Solar Charger (Dual - 2X62.5A) @ 48V or (Dual - 2 x 31.25A)@96V as per specification and scope of work with DC_DC Converter (80-130V DC I/P to 48V 200W convertor with +/- 1% accuracy) and DCDB [48V] as per specification and scope of work.	Set	2					
5.2.4	Ni-Cd Battery bank (Pocket Plate type) in (2x50%) arrangement, 20 KVAH @ 96V or 35KVAH @48V, (where KVAH = battery cell AH x 1.2 V x No. of cells) as per specification and scope of work.	Set	2					
5.2.5	Balance of System materials & equipments- 1) Interconnecting cables among arrays, charge controller, battery bank, Grid charger, DCDBs, junction boxes etc including supply of all accessories like cable glands, cable tray, tinned-cu lugs etc as required. 2) Earthing and lightning protection system as required to complete the system. 3) Supply of 2 year O&M spares as per list attached in scope of work 4) Erection materials, Civil & Other miscellaneous work	Lot	1					



 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				 <b>MECON LIMITED</b>	
		Prices in INR					
4(X)	ELECTRICAL WORKS						
5.2.6	<b>GRID CHARGER FOR BATTERY BANK</b> Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at warehouse/store (hired by bidder) of FCBC CHARGER (2x100%) to charge the battery bank from grid supply, including commissioning spare excluding O&M spares as required, as per specifications, data sheet and instruction of Engineer-in-charge. The charger shall operate on the single phase with the input voltage supply of 415Vac, 3 Phase with Neutral, 50 Hz 330 ~ 460 Vac, 47 ~ 53 Hz. FCBC shall consist of three single phase chargers connected in parallel fed by R-Y-B phase respectively. The rating of each FCBC shall be as per the Battery bank size calculated for the solar system, shall be calculated such that it can charge fully discharged complete battery bank at C10 rating.	Set	2				
6.0	<b>OUTDOOR LIGHTING</b> Supply, installation, testing, commissioning of lighting fixtures complete with mounting bracket, flame proof/non flame proof, control gear box as per the type of fixture, lamps, 4 way junction boxes etc. including civil work with pipe inserts for cables and connecting work, with all material and labour as per specifications, drawings and instruction of Engineer-in-charge. Work to be completed in all respects.						
6.1	Street lighting, integral flame proof well glass fixture (CMIFR approved for Zone-1/2 gas group IIA & IIB) with 72 W LED luminaire with flame proof control gear Model no. FLPW-1095 of Baliga make or equivalent)	EACH	36				
6.2	Street lighting Non flame proof luminaire (lighting fixture : Type LSTP-45-CDL of M/s CG make or equivalent, with 45W LED).	EACH	72				
6.3	Non flame proof Integral flood lighting fixture (for 72W LED) on building/ structure/pole, lighting fixture type : LSFN-72-CDL of M/s CG make or equivalent	EACH	12				
6.4	Flame proof Integral flood lighting fixture (for 150W LED) on building/ structure/pole, lighting fixture type : FLPW-2595 of M/s Baliga make or equivalent	EACH	12				
6.5	Non flame proof bracket mounted integral LED lighting fixture on building/ structure, lighting fixture type : LSTP-45-CDL of M/s CG make or equivalent	EACH	24				
6.6	Electric Illuminated Station detail board (6ftx3ft) alongwith mounting structure (Station detail will be decided in detail engineering).	EACH	8				
6.7	Supply, installation and testing of Hot dip galvanized, Octagonal type, Street lighting pole of 6 mtr height with single arm of 1mtr length suitable for mounting of 1 nos of 90W/70W, LED, including Junction box inside the pole suitable for looping of 415V, TPN, 50 Hz incoming supply, internal cabling from pole to light fixture. Item includes all accessories like foundation plate with foundation bolts, nuts, washers, two nos. GI/HDPE pile of 50mm dia for cable entry, and cable glands and lugs at marshalling / junction box and fixtures etc. Poles shall be hot dip galvanized to 610 gms per sq.m. Supply of above material with all accessories as per approved drawings, layouts, specifications, datasheets etc.	EACH	50				
6.8	Supply, installation and testing of Hot dip galvanized, octagonal type, Street lighting pole of 6 mtr height with single arm of 1mtr length suitable for mounting of 1 nos of 90W/70W, Integral flame proof LED light, including flame proof Junction box having provision for four nos. of cable entry with mounting clamp suitable for looping of 415V TPN, 50 Hz incoming supply, including cabling within pole. Item also included all accessories like foundation base plate with foundation bolts, nuts, washers, two nos. GI/HDPE pile of 50mm dia for cable entry, and flame proof cable glands and lugs at marshalling / junction box and fixture etc. Poles shall be hot dip galvanized to 610 gms per sq.m. Supply of above material with all accessories as per approved drawings, layouts, specifications, datasheets etc.	EACH	58				
6.9	Construction of foundation for 6 mtr. pole - Reinforced cement concrete M20 grade 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) including reinforcement bars, excavation, shuttering, PCC M10, fixing of Foundation bolt, fixing GI/HDPE pipe, backfilling of soil and disposal of surplus soil etc complete in all respect as per drawing, layout, specification etc.	EACH	108				

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APGDC Limited						Prices in INR	
4(X)	ELECTRICAL WORKS						
6.10	Phase Distributed with separate MCB for each fixture Flame Proof High Mast Lighting system on 20m high pole consisting for 12 nos. of lighting fixtures (250W LED Lamp , lumens/watt not less than 100) including all Civil Work as per OEM standard and site requirement and standard Specification No. MEC/DS/05/E9/077A.	EACH	2				
6.11	Integral LED Post top lantern Non flame proof luminaire (lighting fixture : Type LPTO-40/CDL of M/s CG make or equivalent on post top at Main Enterance gate of station with all mounting aggements.	EACH	16				
6.12	Landscape Lighting decorative 9/ 10Watt LED Garden Bollard light complete with integrated drivers, pillars with top head : LBLA1-10-CDL of M/s CG make or equivalent	EACH	6				
6.13	Design, manufacture, testing at works, supply, storage, transportation to site, Installation, testing, commissioning and performance test at site of <b>Solar Street lighting system</b> complete with GI pole and GI mounting bracket, control gear box, internal cable from fitting to junction box, and 15W LED fixture , three days battery backup with solar Module, earthing, electronics, dusk-dawn operation etc including pipe inserts for cables and connecting work and commissioning spares as required, with all material and labour as per specifications, drawings and instruction of Engineer-in-charge. Nominal height of GI pole shall be 6m. Work to be completed in all respects.	EACH	8				
6.14	Supply of flame proof type portable type emergency light fed by a self- contained SMF battery and charger operating on input supply 240 V AC.	EACH	8				
<b>INDOOR LIGHTING &amp; POINT WIRING</b>							
7.0	Supply, Installation, testing & commissioning of point wiring as per details in construction drawing & specification includes PVC conduits in ceiling, complete wiring including flexible wire (FRLSH PVC), switch boxes & switches (ANCHOR ROMA make or equivalent), Multi strand Flexible FRLSH PVC insulated copper conductor wires/cables for following items (Wiring from DB to Switchboard is included in the point wiring)-						
7.1	Continuous slim, linear office Luminire LED lamp, 230V, 50 Hz, 36W (min), Surface/Recess Mounted LED light fixtures whose Initial LED luminaire efficacy shall not less than 120 lm per W.Approximately dimension is 600mmx600mm.	EACH	120				
7.2	Industrial Flame proof fluorescent lamp fitting with LED lamp (type EXTN2LT8-20 of CG make or equivalent).	EACH	24				
7.3	Emergency LED Exit Light For Emergency Evacuation and Fire Purpose with 3 hours battery backup (type - PEL 111 E/NM/V PEL or Equivalent)	EACH	20				
7.4	Exhaust fan (Industrial type 300 mm sweep) with louvers,950 rpm,55watt.	EACH	12				
7.5	Exhaust fan (Industrial type 450 mm sweep) with louvers,950 rpm,145watt.	EACH	12				
7.6	Flame Proof (CMIFR approved) 12" Exhaust Fan.0.25HP motor,1440 rpm. (Preferred Make: Baliga, FCG, CGL, Prompt)	EACH	16				
7.7	Socket outlet (5/15 Amp combination) of ANCHOR ROMA make or equivalent	EACH	54				
7.8	20 Amp sheet steel enclosed industrial type socket with 20 Amp DP MCB for AC.	EACH	28				
7.9	Ceiling fan with electronic regulator ( Energy efficient, 50W, 1200 mm sweep)	EACH	21				
7.10	Wall mounted fan with electronic regulator ( Energy efficient, 50W, 400 mm sweep, 1300 rpm) etc complete in all respect for wall mounting	EACH	18				
7.11	Lighting Switchboard unit - pre wired , flush mounted with thick bakelite cover with conduit knock outs on the sides & having 240V, 5A switches – 8 Nos. & 5A Switch Sockets – 2 No. or as per requirement.	EACH	44				
7.12	Supply, installation, testing & commissioning of 1600VA (min.)sine wave Inverter system with 2x150Ah Battery backup tubular type battery for critical lighting in control room building & outdoor area ( <b>Make Inverter: Su-Kam, Genius, Luminus, Microtek, Battery: Exide, Amaraja</b> ).	EACH	8				
7.13	Supply, Installation, testing and commissioning of latest model (5 stars BEE certified inverter AC) min 1.8 T industrial split AC complete with remote, 5 KVA stablizer, 8 Hr timer, MS Stand for outdoor unit etc.	EACH	28				
<b>Telephone &amp; LAN :</b>							



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		Prices in INR					
4(X)	ELECTRICAL WORKS						
8.1	Supply, Installation, testing and commissioning of telephone sockets (Piano reed Type) in recess PVC conduit including PVC conduit,telephone socket,cable,accessories etc as required.	EACH	38				
8.2	Supply, Installation, testing and commissioning of LAN sockets (Piano reed Type) in recess PVC conduit including PVC conduit,telephone socket,cable,accessories etc as required.	EACH	35				
8.3	supply of 10 pairs,0.61mm, jelly filled/aerial self supporting armoured Telephone Cable, including accessories etc as required.	RM	50				
8.4	supply of 2 pairs,0.5mm, self supporting unarmoured Telephone Cable, including accessories etc as required.	RM	1000				
8.5	Supply of UTP cable (CAT 6), Make : D Link/Amp/Lucent	RM	800				
8.6	Main Distribution Frame - 20 pair	EACH	6				
8.7	Managed LAN switch with single in-comer and 8 nos out going port complete in all respect.	EACH	2				
8.8	Managed LAN switch with single in-comer and 16 nos out going port complete in all respect.	EACH	4				
9.0	Supply of Mandatory Spares as per of scope of work for each station.	Lot	1				
<b>LT POWER and CONTROL CABLES</b>							
10.0	Supply, laying, termination, testing and commissioning of 1.1kV grade XLPE insulated, PVC sheathed, FRLS power and control cables (conforming to IEC 60502 and specification) of following sizes as per specification and datasheets inclusive of all consumables such as clamps for cleating of cables on surface, hardware etc., including chipping of wall/surface, installing conduit (concealed) and making wall/surface good, including the cost of all labours, material, equipment etc. complete as per approved drawings, specifications of this tender and directions of engineer-in-charge. Job includes supply and installation of nickel-plated, double compression type, Industrial, brass cable glands as required with all accessories as required at site. Job includes supply and installation of Industrial/hazardous type reducers and/or adapters as required at site. Job includes supply and installation of Crimping type Tinned copper/Aluminium, insulated, Pin type/Ring type lugs/heavy duty tubular/long barrel type tubular lugs for bolted connection as required at site in trenches/ excavated under ground trench /trays, pulling through pipes and its proper sealing, cutting of paved area, roads etc. , including, cable tags, cable marker,brass adaptor/reducers/nipples ( Refer SLD attached with this tender)						
10.1	3.5x 185 mm2 A2XFY	RM	600				
10.2	3.5x 120 mm2 A2XFY	RM	400				
10.3	3.5x 95 mm2 A2XFY	RM	450				
10.4	3.5x 70 mm2 A2XFY	RM	300				
10.5	3.5x 35 mm2 A2XFY	RM	1370				
10.6	3.5x 25 mm2 2XFY	RM	450				
10.7	4x 6 mm2 2XWY	RM	1050				
10.8	4x 4 mm2 2XWY	RM	1050				
10.9	4x 2.5 mm2 2XWY	RM	5600				
10.10	2x 4 mm2 2XWY	RM	450				
10.11	2.5 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire	RM	1200				
10.12	4 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire	RM	800				
10.13	6 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire	RM	400				
<b>Burried Trench</b>							

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		Prices in INR					
<b>4(X)</b>	<b>ELECTRICAL WORKS</b>						
<b>11.0</b>	Excavation to required width and depth (in all types of soil including rock cutting, jungle / debris clearing wherever required along the cable route) filling with 150 mm sand above and below cables and good quality approved bricks (75 mm thick) covering the cables through out the trench, back filling (after cable laying), and finally compacting as per tender specification and approved drawings, including one run of warning tape.						
<b>11.1</b>	300mm wide x 1000mm depth	RM	1800				
<b>11.2</b>	600mm wide x 1000mm depth	RM	1100				
<b>11.3</b>	1000mm wide x 1000mm depth	RM	600				
	<b>EARTHING AND LIGHTNING PROTECTION SYSTEM</b>						
<b>12.0</b>	Supply, installation, testing, commissioning of the complete earthing and lightning protection 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.						
<b>12.1</b>	Earth Pits- GI PIPE Electrode with 6 mm thick chequered plate cover	EACH	54				
<b>12.2</b>	Earth Pits- Copper plate Electrode with 6 mm thick chequered plate cover	EACH	20				
<b>12.3</b>	GI Strip (50X6) mm	RM	750				
<b>12.4</b>	GI Strip (25X3) mm	RM	2100				
<b>12.5</b>	Copper Strip (25X3) mm	RM	250				
<b>12.6</b>	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	1				
<b>12.7</b>	GI lightning rod 25 mm dia. 1800 mm long including supply of all hardware bare copper rope labour etc. complete as per approved drawings, specifications and directions of Engineer-In-Charge.	Set	24				
<b>12.8</b>	Advance maintenance free earthing system with 3mtr earth electrode of low carbon steel with 250 micron copper coating with carbon based backfill compound (Resitivity of compound shall be less than 1 ohm-m) as per IS 3043/IEEE-80.	EACH	24				
	<b>CABLE TRAY</b>						
<b>13.0</b>	Supply Erection, Testing and Commissioning of Prefabricated GI Perforated cable trays and GI raceways, hot dip galvanized to 610 gms per sq.m. with all accessories like coupler plates, nuts, bolts, covers with clamps etc. including the transportation upto the site/yard, unloading, storage at site and including supply of installation material as per installation details with any additional material as per actual site requirement and/or instructions of site-in-charge etc. so as to ensure the completeness of installation work. Note that the quantities are tentative and shall be supplied based on IFC (Issued for Construction) documents and actual site requirements by Contractor. Actual billing shall be done only on permanently installed quantities and not on supplied quantities. Any balance material supplied by Contractor but not permanently installed at site shall be taken back by Contractor and shall not be billed to Purchaser and/or Consultant.						
	Ladder type, made from 50mm height and 2.5 mm thick sheet steel & galvanized (86 microns) of following sizes.						
<b>13.1</b>	150 mm wide	RM	100				
<b>13.2</b>	300 mm wide	RM	250				
	Perforated type, made from 50mm height and 2.5 mm thick sheet steel & galvanized (86 microns) of following sizes.						
<b>13.3</b>	150mm wide	RM	150				
<b>13.4</b>	300mm wide	RM	250				
	<b>Welding Socket</b>						

 <b>APGDC Limited</b>		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				 <b>MECON LIMITED</b>	
		Prices in INR					
4(X)	ELECTRICAL WORKS						
14.1	Supply , Installation, Testing and Commissioning of Flameproof type (suitable for Ex-d, Zone-1&2, Gas grp IIA/IIB, Temp. class T3), wall/structure mount, metal-clad, Ultra violet resistant, IP55, Switch receptacles having 63A, 5 pin socket / receptacles with plug top, 63A 4P MCB+ELCB with terminal suitable for cable termination (size - 3.5C x25 Sq.mm) LM6 die cast body with loop in loop out facility. Each socket shall be provided with 4 way flameproof Junction box with suitable entries, metallic plugs, flameproof glands etc. and all other accessories as required at site.	EACH	4				
14.2	Supply Erection, Testing and Commissioning of Industrial type, wall/structure mount, Ultra violet resistant, IP55, Switch receptacles having 63A, 415V, 3Ph+1N+1E, 5 Pin socket / receptacles with plug top, 63A 4P MCB+ELCB with terminal suitable for cable termination (3.5C x25 Sq.mm Cu/XLPE/SWA/PVC FRLS cable) plastic body with loop in loop out facility. Each socket shall be provided with 4 way Junction box with suitable entries, metallic plugs, glands (Suitable for 4C x16 Sq.mm Cu/XLPE/SWA/PVC FRLS cable) etc. and all other accessories as required at site for Electrical room.	EACH	4				
<b>Junction Boxes</b>							
15.1	IP-55 weather proof, structure/surface mounted junction box with canopy with 4 Sqmm terminals, cable glands & all other accessories required for termination of cables (4Way).	EACH	12				
15.2	FLP, IP-55 weather proof, structure/surface mounted junction box with 4 Sqmm terminals with cable glands & all other accessories required for termination of cables (2Way).	EACH	12				
<b>GI PIPE</b>							
16.0	Supply and laying of following sizes of class 'B' G.I.Pipe in required length fixed on steel, concrete or similar structure, laid in trenches, ready to be buried in concrete including cutting, threading, bending and similar works, supply of clamps, small iron structures, spacers and installation of seats, plugs, bushings etc. small civil works, including all labour and materials complete as per approved drawings and directions of Engineer-In-Charge.						
16.1	50 mm NB	RM	100				
16.2	80 mm NB	RM	120				
16.3	100 mm NB	RM	120				
<b>Erection Material</b>							
17.1	Supply, Fabrication and erection of MS base frame support for switch gear and bracket for misc. electrical equipment, cable and cable tray support out of roled MS section, pipes, plates etc including welding, bolting, reveting, supply of necessary anchor bolts and grouting etc supply of paints applying one coat of anti rust primer two finish coats of approved synthetic enamel paints including bracking walls, floors etc for structure as required including supply of all GI hardware materials including all labour and materials complete as required and the direction of Engineer-in-charge for all stations.	Lot	1				
17.2	Supply and installation of electrical accessories including, cable tags, cable marker, MCT blocks of suitable size for cable entry in Electrical rooms/building, nickle plated lugs, double compressed brass cable glands, brass adaptor/reducers/nipples, fixing of metallic anchor fasteners for supporting of cable trays and misc. electrical switchgear including all labour and materials complete as required and as per directions of Engineer-In-Charge for all stations.	Lot	1				
18.0	Supply and installation of the following including the supply of necessary clamp, bolts, rawl plugs etc. breaking and making good of walls, if required , and including all labour and materials complete as per directions of Engineer-In-Charge and applicable standards & norms:						
18.1	Shock hazard charts complete with frame and glass	EACH	6				
18.2	First Aid Boxes	EACH	8				
18.3	Carbon-di-oxide(CO2) type fire extinguisher 4.5 Kg capacity Complete with gunmetal valve conforming to NFPA, UL/FM Approved , Discharge horn with bend & wall fixing Bracket With Mfg. Test certificate	EACH	12				
18.4	Caution boards (Danger, High Voltage) including supply of necessary clamps, bolts and other hardware.	EACH	4				
18.5	Single Line Diagram complete in glass frame.	EACH	4				

APGDC Limited		<b>SCHEDULE OF RATES</b> <b>SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>				Prices in INR		MECON LIMITED
<b>4(X)</b>	<b>ELECTRICAL WORKS</b>							
<b>19.0</b>	Supply and laying of Insulating Mats 11kV grade (as per IEC 61111) of 1000mm width, 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 applicable National & International standards	RM	120					
<b>20.0</b>	Supply of rust, fire & dust proof light-weighted step ladder of Aluminium suitable for 6 Mtr street lighting poles.	EACH	4					
<b>21.0</b>	All works relating to statutory approvals, taking power connections, liaisoning from competent authority like Electrical Inspectorate, CEA, SEB etc including carrying out of all required modifications in design / Manufacturer / Installation to meet the requirement of Indian Electricity rules and other statutory regulations in force, carrying out necessary paper work and liaison with the authorities to obtain all necessary clearances for charging of installation as per relevant national standards. The statutory approval also includes equipments installed or commissioned by others within the battery limit. However, any fee paid to the Electrical Inspectorate etc in this regard shall be reimbursed by the owner on submission of bills alongwith documentary evidence.	LS	1					
	<b>Electrical Note:</b> Quantities are tentative and shall be supplied based on IFC (Issued for Construction) documents and actual site requirements by Contractor. Actual billing shall be done only on permanently installed quantities and not on supplied quantities. Any balance material supplied by Contractor but not permanently installed at site shall be taken back by Contractor and shall not be billed to Purchaser and/or Consultant.							
<b>Note:</b>	(i) The bidder must indicate currency(ies) against each quoted item of the SOR. (ii) The total amount shall also be given by the bidder in the quoted currency(ies).	Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).						

Place \_\_\_\_\_  
Date \_\_\_\_\_  
Tender No.: \_\_\_\_\_  
Offer No. & Date : \_\_\_\_\_

Signature of Authorised Signatory  
Name : \_\_\_\_\_  
Designation : \_\_\_\_\_  
Seal : \_\_\_\_\_

**SCHEDULE OF RATES**

ANNEXURE-II to Corrigendum 5

<b>SUMMARY OF PRICES (To be submitted with priced part of the offer)</b> <b>PROJECT: SUPPLY, LAYING &amp; CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR</b> <b>KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II</b> <b>VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)</b> <b>Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)</b>			
SI. No.		Price in INR	
		(In Figures)	(In Words)
1	Total amount of quoted price for Mainline Works SOR		
2	Total amount of quoted price for Temporary Cathodic Protection Works SOR		
3	Total amount of quoted price for Corrosion Monitoring System Works SOR		
4	Terminal Works		
4 I)	Total amount of quoted price for Piping & Mechanical Works SOR		
4 II)	Total amount of quoted price for Civil works SOR		
4 III).	Total amount of quoted price for Structural works SOR		
4 IV).	Total amount of quoted price for Architectural works SOR		
4 V).	Total amount of quoted price for Instrumentation Works SOR		
4 VI).	Total amount of quoted price for Telecommunication -I Works SOR		
4 VII).	Total amount of quoted price for Telecommunication -II Works SOR		
4 VIII).	Total amount of quoted price for SCADA Works SOR		
4 IX).	Total amount of quoted price for Fire Protection Works SOR		
4 X).	Total amount of quoted price for Electrical Works SOR		
5	Gross Total Amount (inclusive of all applicable taxes & duties excluding GST (CGST&SGST/UTGST or IGST)) [1+2+3+(4-I)+(4-II)+(4-III)+(4-IV)+(4-V)+(4-VI)+(4-VII)+(4-VIII)+(4-IX)+(4-X)]		
6	<b>GST (CGST&amp;SGST/UTGST or IGST) @ 18% on net Total Amount mentioned at SI. No. 5 above.</b>		
7	<b>Total Amount (SI. No. 5 + 6)</b>		
<b>Notes:</b> 1) The total amount shall also be given by the bidder in the quoted currency(ies). 2) In case, any item is covered in scope of work but is not present in Schedule of Rates (SOR), it will be assumed that bidder has included cost implication of those items in their total price.			
Place : _____ Date : _____ Tender No.: _____ Offer No. & Date : _____		Signature of Authorised Signatory Name : _____ Designation : _____ Seal : _____	

**SUMMARY OF PRICES (To be submitted with priced part of the offer)**

**SUPPLY, LAYING & CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR KAKINADA SRIKAKULAM PIPELINE PROJECT PHASE-II VISAKHAPATNAM TO SRIKAKULAM PIPELINE SECTION (18"X102.3 KM)**  
**Bid Doc. No.: 05/51/Q7TH/APGDC/001(i)**

- 1.00 Rate of extended stay compensation beyond the time schedule and grace period mentioned in bidding document for reasons solely attributable to Owner.

		Price In INR	
		In Figures	In Words
1a	Extended Stay compensation (per month) excluding GST (CGST&SGST/UTGST or IGST)		
1b	GST (CGST&SGST/UTGST or IGST) @18% on 1a above		
1c	Total Extended Stay Compensation including GST (CGST&SGST/UTGST or IGST) per month		

**Notes:**

- Any amount/ price filled-up by the Bidder shall also be suffixed/ prefixed by currency(ies) in above format.
- Bidder shall submit this format in Un-priced part duly stamped and signed without indicating the price. The price shall be submitted in the price party only.
- Extended stay compensation shall be loaded on the quoted prices as per clause no. 42 of Special Conditions of Contract (SCC).
- In case no rate for Extended Stay Compensation is stipulated, it will be considered that Extended Stay Compensation is not required by the Bidder and the rates quoted by them shall be valid till completion of works in all respects.

Place : \_\_\_\_\_  
 Date : \_\_\_\_\_  
 Tender No.: \_\_\_\_\_  
 Offer No. & Date : \_\_\_\_\_

Signature of Authorised Signatory  
 Name : \_\_\_\_\_  
 Designation : \_\_\_\_\_  
 Seal : \_\_\_\_\_