



INDRADHANUSH GAS GRID LIMITED (IGGL)
(Joint Venture of IOCL, ONGC, GAIL, OIL and NRL)
GUWAHATI, ASSAM

NORTH -EAST GAS GRID PIPELINE PROJECT

CORRIGENDUM # 1 FOR

**LAYING & CONSTRUCTION OF STEEL GAS PIPELINE
AND TERMINALS ALONG WITH ASSOCIATED
FACILITIES FOR DULIAJAN FEEDER LINE (DFL)
PROJECT OF M/S INDRADHANUSH GAS GRID LIMITED
(IGGL)**

OPEN DOMESTIC COMPETITIVE BIDDING

Tender ID: 2026_IGGL_288973_1

Bid Document No.: 05/51/E-0085/IGGL/001(i)



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



CORRIGENDUM # 1
LAYING & CONSTRUCTION OF STEEL GAS PIPELINE AND TERMINALS ALONG WITH ASSOCIATED FACILITIES FOR DULIAJAN FEEDER
LINE (DFL) PROJECT OF M/S INDRADHANUSH GAS GRID LIMITED (IGGL)
Tender Doc. No.: 05/51/E-0085/IGGL/001(i) (2026_IGGL_288973_1)



Date: 19.09.2026

Sl. No.	Description	Volume	Page No.	Clause / Para / Section	Amendment / Addition / Modification / Deletion	
1	Schedule of Rates / BoQ	Vol I		Section-VII	Modification	The revised BoQ is enclosed as Annexure-I to this Corrigendum 1 . The only change is that option for the bidder to quote percentage in plus ('+') or minus (' - ') in column M of BoQ1 is enabled and Description of Item no. CIV 5 has been modified.

All other terms & conditions of tender document remain unaltered.

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Rev-01

Tender Inviting Authority: Owner: INDRADHANUSH GAS GRID LIMITED.; EPMC- MECON Ltd.

Name of Work: DULIAJAN FEEDER LINE PROJECT FOR M/s. INDRADHANUSH GAS GRID LIMITED

Tender No: 05/51/E-0085/IGGL/001(i) (Tender ID No. 2026_IGGL_288973_1)

Name of the Bidder/ Bidding Firm / Company :						
<u>PRICE SCHEDULE</u> (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)						
Sl. No.	Item Description	Quantity	GST In percentage(%)	GST Amount	Total Amount including all Taxes	TOTAL AMOUNT In Words
1	2	4	14	15	53	55
1	Total for Part-A (BOQ1+Sheet1)	1.000	18%	78249222.00	512967122.00	INR Fifty One Crore Twenty Nine Lakh Sixty Seven Thousand One Hundred & Twenty Two Only
Total in Figures				78249222.00	512967122.00	INR Fifty One Crore Twenty Nine Lakh Sixty Seven Thousand One Hundred & Twenty Two Only
Quoted Rate in Words		INR Fifty One Crore Twenty Nine Lakh Sixty Seven Thousand One Hundred & Twenty Two Only				

Tender Inviting Authority: Owner: INDRADHANUSH GAS GRID LIMITED.; EP MC- MECON Ltd.

Name of Work: DULAJAN FEEDER LINE PROJECT FOR M/s. INDRADHANUSH GAS GRID LIMITED

Tender No: 05/51/E-0085/IGGL/001(i) (Tender ID No. 2026_IGGL_288973_1)

Name of the Bidder/ Bidding Firm / Company :								
PRICESCHEDULE BoQ1								
(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)								
NUMBER #	TEXT #	TEXT #	NUMBER #	TEXT #	NUMBER	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Amount (against last item) for itemized details refer Sheet1	UNIT RATE INCLUSIVE OF ALL TAXES, DUTIES, LEVIES, FREIGHT, INSURANCE, INCLUDING INSURANCE OF FREE ISSUE MATERIALS, TAXES ON BUILDING AND OTHER CONSTRUCTION WORKERS, ETC. BUT EXCLUDING GST AS DEFINED IN BID DOCUMENT (IN FIGURES)	TOTAL AMOUNT INCLUSIVE OF ALL TAXES, DUTIES, LEVIES, FREIGHT, INSURANCE, INCLUDING INSURANCE OF FREE ISSUE MATERIALS, TAXES ON BUILDING AND OTHER CONSTRUCTION WORKERS, ETC. BUT EXCLUDING GST AS DEFINED IN BID DOCUMENT (IN FIGURES)	TOTAL AMOUNT INCLUSIVE OF ALL TAXES, DUTIES, LEVIES, FREIGHT, INSURANCE, INCLUDING INSURANCE OF FREE ISSUE MATERIALS, TAXES ON BUILDING AND OTHER CONSTRUCTION WORKERS, ETC. BUT EXCLUDING GST AS DEFINED IN BID DOCUMENT (IN WORDS)
1	2	3	4	5	6	13	53	55
1	SECTION-A: PIPELINE LAYING / INSTALLATION							
2	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 :							
3	"Receiving and taking-over", handling, loading (except for cases, where loading of bare/coated line pipe is arranged by owner), transportation and unloading of Owner supplied externally corrosion coated and bare line pipes and other Owner supplied materials from Owner designated place(s) of issue/ dump site(s) to Contractor's own stock-yard(s) 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 :							
4	Staking and installation of temporary construction markers, clearing, grubbing & grading (as required) of Right of Use/ Right of Way;							

5	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.							
6	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 experts in all types of soils (including soft/hard rock), including 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;							
7	Trenching in rocky terrain by use of rock hammer/Rock breaking tool or any other suitable and approved method including chemical cracking and controlled blasting (if required) with due approval of EIC.							
8	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.							
9	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.							
10	Thorough internal cleaning of all pipes by suitable methods to remove debris, shots, grits etc. to the satisfaction of Engineer-in-Charge;							
11	Stringing of line pipes along ROU/ROW including providing straw and sand.							
12	Aligning, bending, cutting and beveling (as required) of pipes for welding and field adjustments, NDT of rebevelled area by welding, carrying out non-destructive testing (100%) using X-Ray by Computed Radiography (CR) 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 Digital re-radiography and other non-destructive tests such as ultrasonic test etc. as required on repaired joints, etc. as mentioned in SCC & Particular Jobs Specification.							
13	Installation of carrier pipe including concrete coated pipes (wherever required) at all crossings including roads/ car track/ pathway / drain / canals/ nala/ marshy lands/ ponds/ other water crossing etc. (except at crossings by HDD method). Cased crossings, Crossings by machine muling 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 water body crossings) duly accepted by Competent Authority as defined as per specification.							
14	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.							
15	Coating of all field weld joints, long radius bends, buried fittings, valves etc.;							
16	Training and diversions of streams in steep slope areas, wherever required.							
17	Crossing all the foreign pipeline/ HT line / Power lines/ cable / any other utilities etc. with necessary concrete/ PVC protection including coordination with all agencies.							
18	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 cohesionless select backfill for pipeline in seismic zone (excluding backfilling with selected soil for seismic area covered separately).							
19	Lowering the pipelines in trench as per specification and standard drawing including providing sand bag separator for parallel pipelines at the specified spacing (when applicable), providing padding around pipe as per specifications/codes/guidelines 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;							

20	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.								
21	Supply and installation of slope breaker as per specifications and drawings in steep slope areas, wherever required;								
22	Installation of LR Bend, as per specification wherever required depending on site condition.								
23	Supply and installation of warning mat as per relevant clause mentioned in PJS and specifications enclosed in the bid document.								
24	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								
25	(Note: Leak detection, its rectification and successful 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.								
26	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.								
27	Carrying out all temporary ancillary, auxiliary works and all incidental works required to make the pipeline ready for pre-commissioning;								
28	Repair of defects recorded during EGP/gauge plate run or otherwise including cutting, beveling, welding, radiography field joint coating etc; as applicable,								
29	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								
30	Restoration of land, facilities, boundary wall and roads etc. and associated facilities dismantled/damaged by the Contractor during construction to the original condition / satisfaction of concerned authority and obtaining NOC from concerned authorities/ landowners/ farmers etc.								
31	Obtaining work permits/NOC from various statutory authorities having jurisdiction, before and after execution of the work and complying with all stipulation/conditions/recommendation of the said authorities.								
32	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 provisions of contract document. All above works, line pipe laying and installation all above works for buried pipelines as per following details:								
33	Installation of Coated Line Pipes as per following details:								
34	Line pipe details								
35	Size OD (mm) Thk. (mm) Grade Coating Type Length of each Pipe Type of Soil Terrain/ Area								
36	For All Type of Soil Excluding Hard Rock (Refer Notes)								
37	609.6mm, 11.13mm thk, Gr API 5L Gr. X-70 PSL-2, 3-Layer PE Coating Bevel End, Double random (approx. 11.5 to 12.5 mtr.), All type of soil excluding hard rock (Refer note-18), Flat / Slightly Undulating/ Undulating	A001101	26750	Meter			0.00	INR Zero Only	
38	609.6mm, 12.7mm thk, Gr API 5L Gr. X-70 PSL-2, 3-Layer PE Coating Bevel End, Double random (approx. 11.5 to 12.5 mtr.), All type of soil excluding hard rock (Refer note-18), Flat / Slightly Undulating/ Undulating	A001102	122500	Meter			0.00	INR Zero Only	

39	609.6mm, 15.88mm thk, Gr API 5L Gr. X-70 PSL-2, 3-Layer PE Coating Bevel End, Double random (approx. 11.5 to 12.5 mtr.), All type of soil excluding hard rock (Refer note-18), Flat / Slightly Undulating/ Undulating	A001103	360	Meter			0.00	INR Zero Only
40	For Hard Rock/Soil with Hard Rock Strata (Refer Notes)							
41	609.6mm, 11.13mm thk, Gr API 5L Gr. X-70 PSL-2, 3-Layer PE Coating Bevel End, Double random (approx. 11.5 to 12.5 mtr.), Hard Rock/Soil with hard rock (Refer note-18), Flat / Slightly Undulating/ Undulating	A001104	250	Meter			0.00	INR Zero Only
42	609.6mm, 12.7mm thk, Gr API 5L Gr. X-70 PSL-2, 3-Layer PE Coating Bevel End, Double random (approx. 11.5 to 12.5 mtr.), Hard Rock/Soil with hard rock (Refer note-18), Flat / Slightly Undulating/ Undulating	A001105	250	Meter			0.00	INR Zero Only
43	Notes :							
44	1. This item rate is applicable for complete work of laying of underground pipeline of Duliagan Feeder Line (DFL), i.e., Mainline of 24"x 174.239 Km (Approx.) From DT at OIL's CGGS at Madhuban (Duliagan) to RT at existing SV-14 of GNPL (Jorhat) and Branchline of 24"x 6.027 Km DT at BCPL. Source Lepekkata to RT cum Injection point at SV-03 of DFL mainline as per Schematic Route Diagram (Refer Drg. No.: MEC/05/28/E/0085/M/1024) enclosed as APPENDIX-IV to PJS) including installation of above ground insulating joint & flow tee and station approach pipeline but excluding above ground & underground installation of SV Station & Tap-off (tie-in to tie-in with mainline) which are covered separately.							
45	2. The length of pipeline are tentative.							
46	3. It may be noted that only about 69.3 Km ROU is fresh ROU. Rest of the pipeline shall be laid for 75.948 km in the existing shared ROU of BCPL, 52.942 km in existing shared ROU of ONGC and 6.556 km in existing shared ROU of other IGGP pipelines. Approved Standard Operating Procedure (SOP) as well as all the conditions specified by the existing ROU entity to be followed without any cost implication for laying of pipeline in the shared ROU.							
47	4. The pipeline route also passes through Lokai Reserved Forest for about 0.767 Km. There may be restricted ROU in the forest area. Approved Standard Operating Procedure (SOP) as well as all the conditions specified by the forest authority to be followed without any cost implication for laying of pipeline in the restricted ROU of Forest.							
48	5. Rate for laying of OFC & duct shall be quoted in relevant Schedule of Rates (SOR) of Telecommunication works, hence not to be included in Pipeline Laying works.							
49	6. For soil strata details, refer Alignment Sheets, Soil Investigation Report and Detailed engineering survey report with Bid.							
50	7. The above rate shall be inclusive of hydrotesting of complete pipeline including hydrotesting of all crossing sections (including those of HDDs performed by separate agency, if any) along with the mainline.							
51	8. 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.							
52	9. 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.							
53	10. 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 or any other method on his own, then no additional payment shall be admissible on this account.							
54	11. Contractor shall return all surplus material to defined storage yard as mentioned in Annexure-2 to SCC, as directed by Engineer-In-Charge.							
55	12. Payment for supply & application of continuous concrete weight coating will be made as per other relevant SOR item.							
56	13. The above item rate excludes crossings by HDD, zero HDD, Cased crossings, crossings by Open cut conventional method and Crossings by Moiling technique (which are covered separately in relevant SOR items). For other crossings deemed to be inclusive in above item rate.							
57	14. For detail of pipeline route and ground profile, refer Survey report & Alignment sheets enclosed with the bid document.							
58	15. Any additional working strip, if required, for laying of pipeline is deemed to be included in quoted rates.							
59	16. It may be noted that pipeline may pass through undulating terrain in some stretches. Contractor to quote accordingly.							
60	17. Quantity indicated above is tentative. Execution of pipeline laying in rocky strata shall be jointly recorded at site.							

61	18. Classification of Soil (with or without hard rock) shall be done based on the equipments used in trenching the pipeline section. Rocky strata (hard rock) will be considered where Contractor has to use rock breaking tool/ rock hammer or other equivalent tools including chemical cracking, controlled blasting (if required for preparation of trench with due approval of EIC. Supply and installation of rock shield as per specification including padding using sand/soft soil is inclusive in item. Bidder has to quote accordingly Contractor has to maintain documentary evidence to establish rocky strata by means of photography/videography/ Geo-technical investigation data/Bore Hole survey data without any extra cost to owner. Payment in hard rock shall be considered only when minimum 25 % of excavated qty qualifies under hard rock.							
62	19. Payment for magnetic cleaning and EGP is to be made as per rates available elsewhere in the relevant SOR item.							
63	20. This item includes laying of pipeline in water bodies (all marshy land/water filled area/pond and canal/drain/nala/other minor water body crossing having bank width of 12 mtr. or less), however, execution of major water body crossings (i.e. all Rivers and canal/drain/nala/other water body crossing beyond 12 mtr bank width) through concrete coated pipe shall be dealt with item available else where in SOR with due approval of EIC.							
64	21. Contractor has to carry out X-ray by Computed Radiography (CR) in place of traditional Radiography for mainline joints. Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedure/codes/direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
65	22. Shifting of Pole (Electrical/Telecom) from ROU and re-installation to other location including coordination with concerned authority shall be payable through separate item available else where in SOR.							
66	23. Contractor to note that 5% of total line pipe length may be supplied with each pipe length of approx. 10.0 Meter to less than 11.5 Meter.							
67	24. Contractor to note that pipeline routes passing through tea gardens in various stretches. This item shall include scope of uprooting tea garden plantations (as required), diverting drains, supply and installation of RCC hume pipes, providing extra cover (as required), disposal of plantations, etc. No extra payment shall be applicable for any laying activity or to laying of pipeline in tea gardens.							
68	25. DGPS to mandatorily be utilized by Contractor at the time of lowering for accurate recording of weld-joint location.							
69	26. Benchmarks being established by the survey agency shall be provided to the contractor, however, post route survey contract cost its own cost shall establish and maintain (upto completion of lowering) additional benchmarks if required in order to facilitate the recording of accurate coordinate and level data of each weld-joint post lowering.							
70	27. Unless otherwise permitted by MECON/IGGL, Lowering shall be done with PIMS pipebook.							
71	CONTINUOUS CONCRETE COATING							
72	Additional work over and above SOR item for "PIPELINE LAYING / INSTALLATION", for supply of all consumable materials and application of continuous concrete weight coating of minimum density 2245 Kg/m ³ 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 /water body crossings covered separately under SOR item for "RIVER CROSSING (by HDD Method)" & SOR item for "RIVER/ WATERBODY CROSSINGS BY OPEN CUT CONVENTIONAL METHOD", and performing all works as per specifications and instructions of Engineer-in-Charge and other provisions of Contract.							
73	Pipes as per following details :							
74	Pipe OD-609.6 mm, WT- 11.13/ 12.7 mm for X-70, Coating Thickness -90 mm	A001106	7000	Meter			0.00	INR Zero Only
75	Note: (i) This item shall be applicable for laying of pipeline in water bodies (all marshy land/water filled area/pond and canal/drain/nala/other minor water body crossing having bank width of 12 mtr. or less), however, execution of major water body crossings (i.e. all Rivers and canal/drain/nala/other water body crossing beyond 12 mtr bank width) through concrete coated pipe shall be dealt with item available else where in SOR with due approval of EIC.							
76	2. Laying of concrete coated pipeline is not covered under this item, only supply & application of concrete coatings is covered under this item.							
77	3. Above quantity is tentative and for various locations at site. Qty. may vary as per actual site requirement.							
78	BACKFILLING WITH SELECT SOIL							
79	BACKFILLING WITH SELECT SOIL (For Station Approach)							

80	Unit rate over and above SOR item for "PIPELINE LAYING / INSTALLATION" 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 and 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	A001107	600	cum			0.00	INR Zero Only
81	BACKFILLING WITH SELECT SOIL (For Seismic Areas)							
82	Providing specified and approved quality of backfill material as defined in contract document at seismic zone along pipeline route (wherever applicable) as per standards and specifications over and above SOR item for "PIPELINE LAYING / INSTALLATION", including supply of select backfill in place of available excavated material and/or other suitable soil including backfilling of excavated trench after laying of pipeline and optical fiber cables/ cable conduit (wherever applicable) including transportation of such special backfill material overall distances and disposal of surplus excavated soil (Refer Doc. No. MEC/TP/05/21/01A/004)		3360	Cum			0.00	INR Zero Only
83	PIPING WORKS FOR SECTIONALISING VALVE STATION							
84	All works for installation of all piping, valves, Insulating joints, QOEC, IJ and flow tee above ground at all elevations and below ground at all depth for Sectionalising Valve Station in all type of terrain and soils including transportation and handling of all Owners supplied material such as line pipe and all contractor supplied material i.e., extended stem full bore 24" (609.6mm OD) butt welded, AV/ GOV Sectionalising Ball valve, Insulating Joint of all size, all type of valves (all sizes), Flow tees of all size, QOEC, line pipes for mainline etc. to work site. Supply of gaskets, studs, nuts, copper jumpers, nipples & coupling etc. Installation / Erection of instrumentation items i.e. pressure gauge, SS tubing and temperature gauge including tubing works, consumables, manpower, machineries tools & tackles for carrying out all mechanical works of underground and above ground piping including fabrication, welding, non-destructive testing of welds, weld repairs/ re-testing, cleaning/ flushing, pre-hydrotesting & hydrostatic testing, dewatering, functional testing, cutting of mainline and bevelling (if required) tie-in of valve assembly, including X-ray by computed 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 SV Station 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; painting, finishing, clean-up and restoration of site; preparation of as-built drawings, documents and project records and per							
85	Sectionalising Valve Station-01		1	Lumpsum			0.00	INR Zero Only
86	Sectionalising Valve Station-02		1	Lumpsum			0.00	INR Zero Only
87	Sectionalising Valve Station-03 (excluding RT cum Injection point)		1	Lumpsum			0.00	INR Zero Only
88	Sectionalising Valve Station-04		1	Lumpsum			0.00	INR Zero Only
89	Sectionalising Valve Station-05		1	Lumpsum			0.00	INR Zero Only
90	Sectionalising Valve Station-06		1	Lumpsum			0.00	INR Zero Only
91	Sectionalising Valve Station-07		1	Lumpsum			0.00	INR Zero Only
92	Sectionalising Valve Station-08		1	Lumpsum			0.00	INR Zero Only
93	Sectionalising Valve Station-09		1	Lumpsum			0.00	INR Zero Only

94	Notes: 1. This work is exclusive of all works associated with main pipeline covered at SOR item for "PIPELINE LAYING / INSTALLATION" above. 2. All Civil/ structural works (which is not mentioned above) will be paid separately as per rates provided elsewhere. 3. Work is inclusive of receiving, taking over, loading & unloading of company supplied material and return of surplus material to Company's defined stockyard/store as mentioned in Annexure-2 to SCC as directed by Engineer-in-charge. 4. All Instrumentation works pertaining to SV Station 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 of all size, mainline valves, all types of other valves (all sizes) and flanges & fittings (all sizes) shall be paid as per rates provided elsewhere in the SOR. 7. Future tap-off within the SV station is part of the SV station work. 8. Installation of SV station assembly at SV-03 is included in above quoted rates. However, other piping works (Refer Line no. 24"-P-04-0403-D1A8"-P-04-0402-D1Aend 24"-P-04-0401-D1A) shall be paid separately as per SOR items mentioned elsewhere in the tender document. 9. Future tap-off at Ch 85.0 km approx. for Lakwa shall be paid as per separate SOR provided elsewhere in the tender document. 10. Contractor has to carry out X-ray by Computed Radiography (CR) in place of traditional Radiography for all joints (>=2"). Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedure codes/direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
95	(Refer plot plan drawing and P&ID for Sectionalising Valve Stations enclosed with tender document for ascertaining quantum of mechanical work associated with SV Station)							
96	PIPING WORKS FOR TAP-OFF POINT							
97	All works for installation of all piping and valves assembly on above/below ground at all depth for Tap-off in all types of terrain and soils including transportation and handling of all supplied materials but welded Ball valve, all valves of all types and sizes, flow tees of all size and all fittings from designated places(s) of issue to work site. Supply of assorted pipes, consumables, manpower, machineries, tools & tackles for carrying out all mechanical works on above/below ground including fabrication, welding, non-destructive testing of welds, weld repairs/retesting, cleaning/flushing, pre-hydrotesting & hydrostatic testing, dewatering, functional testing, cutting of mainline and beveling (if required), tie-in of valve assembly, including radiography of tie-in joints, corrosion coating (by heat shrink sleeves) 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) excavation and filling in all types of soils including soft/ hard rock for installation of piping, painting, finishing, clean-up and restoration of site, preparation of as-built drawings, documents and project records and performing all works as per drawings, specifications.							
98	12" Future Tap-off Point (at Ch 85.0 Km Approx.)		1	Nos			0.00	INR Zero Only
99	Notes: 1. This work is exclusive of all works associated with main pipeline covered at SOR item for "PIPELINE LAYING / INSTALLATION" above. 2. All Civil/ structural works (which is not mentioned above) will be paid separately as per rates provided elsewhere. 3. Work is inclusive of receiving, taking over, loading & unloading of company supplied material and return of surplus material to Company's defined stockyard/store as mentioned in Annexure-2 to SCC as directed by Engineer-in-charge. 4. All Instrumentation works pertaining to tap-off Point 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 of all size, all types of valves (all sizes) and flanges & fittings (all sizes) shall be paid as per rates provided elsewhere in the SOR. 7. Qty for tap-off point mentioned above is excluding the future tap-off point(s) at SV station which is included in SOR item for "PIPING WORKS FOR SECTIONALISING VALVE STATION". 8. Contractor has to carry out X-ray by Computed Radiography (CR) in place of traditional Radiography for all joints (>=2"). Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedure codes/direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							

100	(Refer plot plan drawing and relevant drawings for Tap-off Station enclosed with tender document for ascertaining quantity of mechanical work associated with Tap-off Station)							
101	RIVER CROSSING (by HDD Method)							
102	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 owners supplied three layer PE coated line pipes from owner's designated places of issue, dump site(s) and transportation to Contractor's stock yard/ 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 and 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.							
103	However, contractor shall verify the authenticity of the data so provided and may conduct Geotechnical Survey if necessary, without any additional cost to the COMPANY. Further for crossings not listed in App.-VIII, PJS and requiring to be executed by HDD / crossings listed in App.-VIII, PJS and requiring change in methodology to HDD, contractor has to carry out geotechnical investigation (at least 3 no. for rivers (1 on either side of river and 1 in the waterway) and 2 no. for the crossings) as per technical specification for geotech survey as per tender document at no additional cost to the COMPANY. Also, geo-technical & topographical survey for all plots of stations/terminals are being carried out by the COMPANY and shall be shared during execution of the contract.							
104	For water body in-situ pre-construction survey including auger bore(s) of minimum 15.0M depth (one in the waterway, at least 1 in each on either side of water body) to establish bed strata, its bore log by soil testing; topographic survey hydrological survey and collection of data to establish the bed of the water body; obtaining historical data/ scour data from concerned authority; calculation of scour depth of water body crossings, ascertaining underneath soil & strata, necessary cover required over the carrier pipeline from lowest bed level of the stipulated water crossing including design & calculation, 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.							
105	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.							
106	Design & calculation, detail engineering and making of crossing drawing and preparation of work procedures, etc. 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.							
107	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 conduits 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 minimum 5m below the lowest bed level or as duly approved/ accepted by concerned authority (under whose jurisdiction the crossing lies) whichever is more--- For rivers with rocky bed or (ii) Minimum 2.5m below the scour level / profile or min 10m below lowest bed level or as duly approved/ accepted by concerned authority (under whose jurisdiction the crossing lies) whichever is more--- For major rivers (listed below). and (iii) In addition to point (i) & (ii), In case of multiple combined X-ing i.e. river along with road/drain, minimum cover requirement as per specification/ concerned authority for each type of crossing has also to be fulfilled.							
108	Laying of pipeline by the approved HDD method across the river crossing including strings preparation of pipes, welding, testing, 100% NDT by digital radiography, 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.							
109	String preparation and laying of 6 inch CS conduit for OFC by HDD method, welding etc.							

110	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 for as directed by Concerned Authority.							
111	Gauging, Pigging, Cleaning, Post installation hydro testing, dewatering, swabbing and tie-in with pipeline at either bank 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.							
112	Crossing of TINGRAI RIVER at chainage 11.656 Km for carrier pipeline of size 609.6 mm OD x 12.7 mm of API 5L 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.	450	Meter				0.00	INR Zero Only
113	Crossing of BUDHI DIHING RIVER at chainage 50.214 Km for carrier pipeline of size 609.6 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.	2000	Meter				0.00	INR Zero Only
114	Crossing of BORBIL LAKE at chainage 56.769 Km for carrier pipeline of size 609.6 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.	700	Meter				0.00	INR Zero Only
115	Crossing of IDEMOW RIVER at chainage 60.006 Km for carrier pipeline of size 609.6 mm OD x 12.7 mm of API 5L 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.	400	Meter				0.00	INR Zero Only
116	Crossing of TILUJAN RIVER at chainage 61.959 Km for carrier pipeline of size 609.6 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.	250	Meter				0.00	INR Zero Only
117	Crossing of DIROI RIVER at chainage 76.440 Km for carrier pipeline of size 609.6 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.	410	Meter				0.00	INR Zero Only
118	Crossing of DISANG RIVER at chainage 84.348 Km for carrier pipeline of size 609.6 mm OD x 12.7 mm of API 5L 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.	1000	Meter				0.00	INR Zero Only
119	Crossing of DARIKA RIVER at chainage 102.492 Km for carrier pipeline of size 609.6 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.	250	Meter				0.00	INR Zero Only
120	Crossing of DIKHOW RIVER at chainage 107.413 Km for carrier pipeline of size 609.6 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.	320	Meter				0.00	INR Zero Only
121	Crossing of NAMDANG RIVER at chainage 120.727 Km for carrier pipeline of size 609.6 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.	250	Meter				0.00	INR Zero Only
122	Crossing of JANJI RIVER at chainage 146.057 Km for carrier pipeline of size 609.6 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.	250	Meter				0.00	INR Zero Only
123	Notes: (i) Crossings indicated in crossing detail drawing enclosed with the tender are tentative. Crossing width may vary as per site condition. Variation in HDD length during execution shall only be payable through above mentioned respective river item rate. 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 calculation so that pipe is not under stress as permitted by codes/specifications. Final length of strings shall be decided after decision of minimum cover requirement by concerned Authority/ Engineer-in-charge.							
124	(ii) The Contractor has to quote for all crossings along with 01 nos of 6" CS conduit for each crossing. It is sole discretion of the Contractor to do HDD crossing of main line pipe as well as CS conduit pipes either by suitably strapping together with the carrier pipe & CS conduit and pulled through the same drill hole or making separate HDD for 6" CS conduits for OFC laying at approx. 4m distance from centre line of carrier pipeline HDD. No separate payment for HDD for 6" CS conduits shall be payable.							
125	(iii) Payments 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. Payable HDD length shall be measured as actual curvilinear length between tie-ins at entry and exit or tie-in length as per approved profile, whichever is less.							
126	(iv) Geo-technical investigation and hydrological survey data / report of the above crossings are enclosed in the bid document, to the extent available. Contractor may verify the survey data, if deemed necessary.							

127	(v) Contractor may verify the authenticity of the data provided during execution and if required, additional geo-technical investigation & hydrological survey may be carried out by the contractor for HDD crossings without any cost and time implication.							
128	(vi) Contractor shall not be entitled for any extra payment due to change in location / area constraint, capacity of river etc.							
129	(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.							
130	(viii) Post Hydrotesting shall be carried out as per approved procedure.							
131	(ix) Payment for supply of CS conduit shall be made as per rates available elsewhere in the SOR.							
132	(x) On the basis of strata and other site conditions, Contractor shall judiciously assess requirement if any additional protective coating (such as Abrasion Resistant Overlay (ARO) etc.) over and above 3LPE coated pipe/joint coating for successful pulling / execution of HDD. Any such additional protection shall be supplied and installed by the contractor after due approval by EIC without any additional cost to Company. The cost of supply and installation of any such additional protection measures is deemed to be included in the above quoted rates. The contractor shall propose vendor of the ARO system having an extensive proven and successful track record in India or globally on 3LPE coated pipe in a rocky HDD environment for ARO applied on the entire HDD string. This needs to be substantiated by Coating Integrity Test (CIT) reports after completion of the HDD.							
133	(xi) The pipeline and joint coatings shall be examined visually and with holiday detectors for defect. The length to be inspected shall, as a minimum, be one pipe length and one joint coating. In case damages/holidays are detected in the first pipe length/joint, the subsequent pipe length/joint shall be exposed and full circle holiday shall be done. If found acceptable by Company, the first pipe length/joint shall be repaired and/or replaced as directed by Company. If the coating of second pipe length/joint is also found damaged, Contractor shall propose further course of action and Company's instructions shall be followed. All repair/ replacement works shall be done at no extra cost to Company. In case of significant gouge damage to coating all along the length of pipe, the contractor may be asked to carry out remedial actions including but not limited to repair of coating, executing HDD again (if deemed unacceptable per CIT), any other remedial measures as deemed fit by EIC etc. at no extra cost to company.							
134	(xii) In case CIT survey after pulling fails, the contractor shall be liable for carrying out new HDD for the crossing at his own risk & cost. Also, payments shall be made only for the successful HDD (i.e. result of hydrotest & EGP and CIT are satisfactory as per technical specification). For acceptance of CIT survey, refer CP Design basis (Doc no. MEC/E-0085/05/E9/02/CP/001, R-1, Pg 9/23) Clause no. 7.1 (Sr.no.5 of Table-2) for "Acceptable Coating current".							
135	(xiii) Contractor have to carry out X-ray by Computer Radiography in place of traditional radiography for all joints. Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedures codes & direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computer radiography for certain joints due to site constraint then the Contractor shall be liable to pay penalty as defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
136	RIVER/ WATERBODY CROSSINGS BY OPEN CUT CONVENTIONAL METHOD							

137	Complete work of the crossings (between the limits as defined in approved drawing) including "Receiving and taking over" of owners supplied corrosion coated line pipes from owner's designated places of issue/dump site(s) and transportation to Contractor's stock yard/ 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 and 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.								
138	For water body crossings: 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.								
139	Following data shall be obtained from concern authority/ local sources (for river) to finalise scour depth :-								
140	(i) Past Historical flood level data indicating HFL to determine highest flood level.								
141	(ii) River flow data including velocity of water flow.								
142	(iii) Necessary information regarding type of soil and strata underneath the river bed.								
143	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 overtop 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.								
144	String preparation of pipes, welding, testing, 100% digital radiography, 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.								
145	Final string 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.								
146	Supply and application of Continuous concrete weight coating of minimum density 2245 kg/m ³ 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. Coating thickness - min. 90								
147	Laying of the pipeline by the approved crossing method across the water crossing in the approved trench.								
148	Supply and installation of warning mat as per relevant clause mentioned in PJS and specifications enclosed in the bid document.								
149	Backfilling of the trench including supply and padding by select backfill as required restoration of banks to original condition duly accepted by Competent Authority and getting NOC from concerned authority, restoration of disturbed areas and clean-up etc.								
150	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.								
151	River/ Water Crossings wherever required at minimum cover mentioned as above.								
152	Crossing of river/ water body for carrier pipeline of size 604.8 mm OD x 11.53/12.7 mm thk of API 5L Grade X-70 along with CS conduit of size 150 mm X 6.4 mm thk. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC		4000	Meter				0.00	INR Zero Only
153	Note: (i) The width indicated is not for any single crossing. This shall be as per requirement at site for crossing at different locations.								
154	(ii) Final length of string & cover from top of pipe for each crossing shall be decided and approved by concerned Authority/ Engineer-in-charge.								
155	(iii) Payment for the length of final tie-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.								

156	(iv) Payment for laying of concrete coated portion (limited to bank to bank) shall be made as per above mentioned payment for rest of the portion shall be made by other relevant SOR item 1.0 (Pipeline Laying/ Installation). (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 separately as per rates provided elsewhere in the SOR.							
157	(vi) This item shall be applicable for execution of major waterbody crossings (i.e. all Rivers and canal/drain/nala/other waterbody crossing beyond 12 mtr bank width) through concrete coated pipe with due approval of EIC based on actual site condition. The above item rates also applicable in case of change in crossing methodology of any particular crossing (as indicated in APPENDIX-VIII to PJS) duly approved by EIC. (vii) Payment for supply of CS conduit shall be made as per rates available elsewhere in the SOR.							
158	viii) Contractor have to carry out X-ray by Computed Radiography (CR) in place of traditional radiography for all joints. Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractors as per specification/procedures/codes/direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
159	PIPELINE LAYING/CROSSING (by HDD Method)							
160	Complete work of laying of pipeline in ROU/ along road/ across crossings (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" owner supplied three layer PE coated line pipes from Owner's designated place to issue/ dump site(s) and transportation to Contractor's stock yard/ work shop/ work site including all handling, loading, unloading, aligning etc. 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 provisions of Contract Document.							
161	Contractor has to mandatorily carry out geotech investigation (at least 3 no. for rivers and 2 no. for other crossings as per technical specification attached in the tender.							
162	For waterbody in-situ pre-construction survey including auger bore (s) of minimum 10 M depth [at least 2 nos. boreholes - one in the middle of waterbody one on bank; and at interval of 50 M centre to centre for waterbodies having higher width] to establish bed strata, its bore log by soil testing; topographical survey, hydrological survey and collection of data to establish the bed of the waterbody wherever above data is not available; obtaining historical data/ scour depth (in case of river) from concerned authority ascertaining under neath soil & strata, necessary cover required over the carrier pipe; 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 including auger bore (s) of minimum 10 M depth [at least 1 no. on each side] to establish strata, its bore log by soil testing; topographical survey, wherever above data is not available; 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 crossings as well as utility crossings (if any) encountered during crossing prior to start of execution of work.							

163	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 river crossings by HDD methods for providing with minimum cover either (i) Minimum 1.5m below the scour level / profile or minimum 5m below the lowest bed level or as duly approved/accepted by concerned authority (under whose jurisdiction the crossing lies) whichever is more—For minor water bodies with rocky bed. or (ii) Minimum 2.5m below the scour level / profile or as duly approved/accepted by concerned authority (under whose jurisdiction the crossing lies) whichever is more—For minor water bodies with soft strata and (iii) In addition to point (i) & (ii), In case of multiple combined X-ing i.e. river along with road/drain, minimum cover requirement as per specification/ concerned authority for each type of crossing has also to be fulfilled.							
164	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 land.							
165	Laying of the pipeline (for waterbody, road and Railway crossing) by the approved HDD method across the crossing including strings preparation of pipes, welding, testing, 100% NDT by computed radiography, 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.							
166	String preparation and laying of 6 inch CS conduit for OFC by HDD method, welding etc.							
167	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.							
168	Gauging, Pigging, Cleaning, Post installation hydrotest, dewatering, swabbing and tie-in with pipeline at either bank etc. as per specifications, codes, approved drawings/ procedures, calculations, methods and as directed by Engineer-in-charge and provision of contract document; getting NOC from all concerned authority of the facilities crossed.							
169	Preparation of as-built drawings and other records etc., All other works not specifically listed herein, but required as per drawings, scope of work, specifications, standards provision of contract document, calculations, and instruction of Engineer-in-Charge, leading to successful completion of works.							
170	Details of Laying/Crossing by HDD Method							
171	For all types of soil (Refer Notes)							
172	Laying/Crossing by HDD of carrier pipeline of size 609.6mm OD x 12.7/15.88mm of API 5L Grade X-70 and CS conduit of size 150NB X 6.4mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC (Applicable for HDD tie-in length upto 750 m)	13350	Meter				0.00	INR Zero Only
173	Laying/Crossing by HDD of carrier pipeline of size 609.6mm OD x 12.7/15.88mm of API 5L Grade X-70 and CS conduit of size 150NB X 6.4mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC (Applicable for HDD tie-in length beyond 750 m upto 1500 m)	1000	Meter				0.00	INR Zero Only
174	For Rocky Strata/ Cobbles/ Boulders/ Mixed Strata (Refer Notes)							
175	Laying/Crossing by HDD of carrier pipeline of size 609.6mm OD x 12.7/15.88mm of API 5L Grade X-70 and CS conduit of size 150NB X 6.4mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC (Applicable for HDD tie-in length upto 750 m)	250	Meter				0.00	INR Zero Only
176	Laying/ Crossing by HDD of carrier pipeline of size 609.6 mm OD x 12.7/ 15.88 mm of API 5L Grade X-70 and CS of size 150NB X 6.4mm thick. of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC (Applicable for HDD tie-in length beyond 750 m upto 1500 m)	800	Meter				0.00	INR Zero Only
177	Note :							

178	(i) HDD length indicated above is tentative and not for any single location/ crossing. This shall be as per requirement for locations/ crossings at different locations.							
179	(ii) Bidders are advised to visit the site for actual assessment of extent of HDD laying/crossing and to assess the maximum extent of cover which may have to be provided. 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 string & cover from top of pipe shall be decided and approved by concerned Authority / Engineer-in-charge.							
180	(iii) The Contractor has to quote for all crossings along with 01 nos of 6" CS conduit for each crossing. It is sole discretion of the Contractor to do HDD crossing of mainline pipe as well as CS conduit pipes either by suitably strapping together with the carrier pipe & CS conduit and pulled through the same drill hole or making separate HDD for 6" CS conduits for OFC laying at approx. 4m distance from centreline of carrier pipeline HDD. No separate payment for HDD for 6" CS conduits shall be paid.							
181	(iv) Payment for the length of final tied-in carrier pipeline string with mainline and CS conduits laid by HDD method are inclusive in the above item rate and no separate payment shall be made under other clause mentioned elsewhere. HDD length shall be measured as actual curvilinear length between tie-ins at entry and exit or tie-in length as per approved profile, whichever is less.							
182	(v) This SOR item shall be executed as per site condition after due approval from EIC. This item is applicable for all crossings (waterbody/Railway, Road, Hillock etc.) and laying along the road/restricted ROU duly approved by EIC. The above rate is also applicable in case of change in crossing methodology of any particular crossing (as indicated in APPENDIX-VIII to P/S) by EIC.							
183	(vi) Payment for supply of CS conduit shall be made as per rates available elsewhere in the SOR.							
184	(vii) Geo-technical investigation and hydrological survey data / report of the above crossings are enclosed in the bid document, to the extent available. Contractor may verify the survey data, if deemed necessary. Contractor shall submit profile drawing along with design calculations for approval of Owner/PMC. Geotechnical and Hydrological survey data for crossings will be furnished by IGGL/MECON to the extent available. However, MECON/IGGL shall not be held responsible for the change of strata if found to be variable. Contractor has to carry out geotechnical investigation for the crossings where survey data is not available. There shall be no compensation due to change in strata, rig capacity and depth of crossing, etc. Further there shall be no compensation for additional no. of boreholes if required as per site conditions.							
185	(viii) The crossings shall be classified as rocky crossings only if contractor is able to demonstrate after superimposing bore log data that rock is encountered in minimum 50% profile drill path. Also, only those crossings shall be considered under rocky strata where Contractor has to use rock tools like mud motor, rock cutters/rockreamers etc. In case geotechnical survey does not show any rock, the crossings shall not be paid as rocky strata under any conditions.							
186	(ix) On the basis of strata and other site conditions, Contractor shall judiciously assess requirement of any additional protective coating such as Abrasion Resistant Overlay (ARO) etc. over and above 3LPE coated pipe joint coating for successful execution of HDD. Any such additional protection shall be supplied and installed by the contractor after due approval by EIC without any additional cost to Company. The cost of supply and installation of any such additional protection measures is deemed to be included in the above quoted rates. The contractor shall propose vendors of the ARO system having an extensive proven and successful track record in India or globally on 3LPE coated pipeline in a rocky HDD environment for ARO applied on the entire HDD string. This needs to be substantiated by Coating Integrity Test (CIT) reports after completion of the HDD.							

187	(x) The pipeline and joint coatings shall be examined visually and with holiday detectors for defect. The length to be inspected shall, as a minimum, be one pipe length and one joint coating in case of damages. Holidays are detected in the first pipe length joint, the subsequent pipe length joint shall be exposed and full circle holidays shall be done. If found acceptable by Company, the first pipe length joint shall be repaired and/or replaced as directed by Company. If the coating of second pipe length joint is also found damaged, Contractor shall propose further course of action and Company's instructions shall be followed. All repair/ replacement works shall be done at no extra cost to Company. In case of significant damage to coating all along the length of pipe, the contractor may be asked to carry out remedial actions including but not limited to repair of coating, executing HDD again (if deemed unacceptable per CIT), any other remedial measures as deemed fit by EIC etc. at no extra cost to company.							
188	(xi) Contractor has to carry out CIT survey after HDD pulling has been completed. For acceptance of CIT survey refer CP Design Basis (Doc no. MEC/E-0085/05/E9/02/CP/001 R-1, Pg 9/23) Clause no. 7.1 (Sr. no. S of Table-2) for "Acceptable Coating current". In case CIT survey after pulling fails, HDD shall not be acceptable and the contractor shall be liable for carrying out new HDD for the crossing at his own risk & cost. Also, payment shall be made for the successful HDD (i.e. results of hydrotest, EGP and CIT are satisfactory as per technical specification).							
189	(xii) Contractor has to carry out X-ray by Computed Radiography (CR) in place of traditional radiography using films for main line joints. Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedure of codes directed by EIC without any cost implication to owner. In case the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalties defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
190	(xiii) Contractor shall not be entitled for any extra payment due to change in location/ area constraint, capacity of rig etc. This item shall also be applicable for re-routed section, if any.							
191	(xiv) The pipeline route also passes through Jokai Reserved Forest for about 0.767 Km. There may be restricted Forest area. Approved Standard Operating Procedure (SOP) as well as all the conditions specified by the forest authority shall be followed without any cost implication for laying of pipeline in the restricted ROU of Forest. Pipeline laid by HDD in the forest area, shall be payable under this SOR item.							
192	SUPPLY OF 24" NB BARE PIPE							
193	Complete scope of supply of Bare Line Pipes as per API 5L PSL-2 (46th Edition), Technical Specifications No. MEC/TS/05/21/012B, Amendment to Technical Specification and ITP no. 05/21/12B/002 and PJS including all taxes, duties, transportation, inspection charges, maintenance, storage charges, insurance, handling, loading/unloading etc. in accordance with relevant Specifications & ITP indicated in SCC, PJS, specification and as per all provisions of the CONTRACT DOCUMENT.							
194	609.6(24"NB), 12.7 mm thick, API 5L Gr. X-70, PSL-2, Bare, PE & Bevel End, Double random (approx. 11.5 to 12.5 mtr.) SAWL, Color Marking on Pipes- Violet		285	Meter			0.00	INR Zero Only
195	INSTALLATION OF CASING PIPE AND CS CONDUIT							
196	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.							
197	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.							
198	String preparation of pipes (carrier pipes- 24" NB, API 5L Gr. X-70, 11.1/ 12.7/ 15.88 mm thick.), welding, testing, 100% by Computed Radiography (CR), 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 repair patch) as per specification, pre-hydrotest of complete strings made for crossing etc.							

199	String preparation of 6 inch CS conduit for OFC, welding.							
200	Installation of casing pipe and CS conduit crossing for OFC by Jacking/ boring and open cut wherever required for 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 joint.							
201	Preparation of required length of carrier pipeline welded string including all other works as mentioned in SOR item for "PIPELINE LAYING / INSTALLATION" above and as per specification/drawings. Insertion of carrier pipe in casing pipe after above ground pre testing at specified test pressure including installation of casing insulators as per approved design calculation, specification/drawings. Installation of vent and drain assembly, fixing of end seals, backfilling and restoration as original of the facilities crossed.							
202	Backfilling of the ditch/trench including restoration and clean up of area to the satisfaction of Engineer-in-charge and/or as directed by concerned Authority.							
203	Pigging, cleaning, Post installation hydro test, dewatering, sabbaging and tie-in with pipelines 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.							
204	For 24" NB pipeline							
205	Installation of Casing Pipe by Jacking with auger Boring of Casing Pipe - minimum 30" NB x 12 mm wall thk. (for 24" NB pipeline)		72	Meter			0.00	INR Zero Only
206	Installation by Open Cut of Casing Pipe - minimum 30" NB x 12 mm wall thk. (for 24" NB pipeline)		36	Meter			0.00	INR Zero Only
207	Installation by Pipe Jacking with auger Boring of CS Conduit 150mm, 6.4mm wall thk. (for OFC & their conduit)		108	Meter			0.00	INR Zero Only
208	Installation by Open Cut of CS Conduit 150 mm, 6.4mm wall thk. (for OFC & their conduit)		108	Meter			0.00	INR Zero Only
209	Supply of Casing pipe of minimum 30" x 12 mm wall thk., IS 3589, Fe:410 or equivalent (for 24" NB carrier pipe).		108	Meter			0.00	INR Zero Only
210	Complete work for removal of 3LPE coating from minimum 30" NB line pipe through heating/ chiseling including mechanical cleaning of pipe surface as per specification. Supply of all consumables, deployment of tools/ tackles, manpower, equipment for performing the works to entire satisfaction of EIC.		108	Meter			0.00	INR Zero Only
211	Note : (i) The width indicated are not for any single crossings. This shall be as per requirement at site for crossing at different locations.							
212	(ii) Actual length & cover from top of casing pipe string may vary depending upon site conditions, crossing methods approved drawings etc. and/ or as decided by concerned Authority/ Engineer-in-charge.							
213	(iii) Exact centre line location of boring of 6" NB CS conduit for HDPE Ducts / OFC as a casing pipe shall be minimum 4.0m at all cases 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.							
214	(iv) Payment for the length of carrier pipeline string shall be bored casing pipeline length plus two meters and is in the above item. Payment for additional length of carrier pipeline string shall be paid under SOR item for "PIPELINE LAYING / INSTALLATION" (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) Before placement of order the contractor shall take due approval of EIC. (viii) Payment for supply of CS conduit shall be made as per rates available elsewhere in the SOR. (ix) Contractor has to carry out Computed Radiography (CR) in place of traditional Radiography for all joints. Other than (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification procedures/ codes/ direction of EIC without any cost implication to owner. In case, the Contractor fails to perform Computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography at no extra cost to the Client.							
215	PERMANENT MARKERS							
216	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/rock, 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 instruction of Engineer-in-charge.							
217	Pipeline Warning Signs		850	Nos.			0.00	INR Zero Only

218	Right-of-way boundary markers		1440	Nos.			0.00	INR Zero Only
219	Kilometer Posts		145	Nos.			0.00	INR Zero Only
220	Direction Markers		620	Nos.			0.00	INR Zero Only
221	Aerial Markers		36	Nos.			0.00	INR Zero Only
222	Navigable Waterway Markers		10	Nos.			0.00	INR Zero Only
223	Note : Final quantities of Marker may vary. This may be confirmed by EIC before fabrication.							
224	REPAIR OF DEFECTS IN LINE PIPE AND PIPE COATING (ATTRIBUTABLE TO OWNER)							
225	Repair of Ownersuppliedline pipe and externalcorrosioncoatingof all thicknessesnotedat the time of taking deliveryby Contractor, including performing all works as per specifications and directions of Engineer-in-charge.							
226	Repair of coating defects in 3-Layer PE Coating Line Pipe							
227	Repair of Holiday in Coating							
228	Supply of all coatingrepa materialsas perspecification to be compatiblewith line pipe coatingmaterial andas perthe requirements of the relevant specifications, supply of all consumables, utilities, equipment, and all manpower requ cleaning and surface preparationrepairingof coating defects (resulting in holiday in coating) andtesting includingall handling, transportation,etc. for line pipes, performingall works necessary forthe completionof the works strictlyin accordancwith the relevantspecificationand instructionsof Engineer-in-chargeThis rateshall be applicable persq.cm of the exposed steel area.		800	sq. cm			0.00	INR Zero Only
229	Repair of Defects in Pipes							
230	Cutting and rebeveling (dents / damage in bevels exceeding 3mm in depth)		50	No.			0.00	INR Zero Only
231	Jack out (dents in bevels ranging between 1mm and 3mm in depth)		50	No.			0.00	INR Zero Only
232	LEAKS/ BURSTS (Attributable to Owner)							
233	Major Leak/ Bursts (Detected by visual method): All works for locating & detection of leak/burst (occurreduring hydrostatictesting)including necessaryrepairing/replacingdefective pipe lengths, includingcutting out and removingthe defectivepipe, pretestingthe replacementpipe, welding into mainline, andNDT of welds, repair and re-testingof defective welds, coatingof welded joints, clean-up, retestingthe full test sectionof pipelineincluding providingall labour, materials, consumables and inputs other than Owner supplied materials and performingall works as per drawings, specifications enclosed with the tender/ contract document and directions of Engineer-in-charge							
234	Major leak (Detected by visual method) For pipeline size 609.6 mm (24") OD		1	Lumpsum			0.00	INR Zero Only
235	Note: (1) This rate is applicable for any number of repairsrequiredin the sectionfor manufacturingdefects in Owner supplied material only.							
236	(2) Leak detection, its rectification and successfully re-hydrotestingshall be carried outas perapproved procedureby Contractowith a view thatcompletion of all activity for successfulhydrotestingis not inordinalelyextended which will hamper the overall project schedule.							
237	Minor Leak (Detected by sectionalizing method) Works for locating leak by sectionalizing or any other methods w can not be locatedby visual means, (occurreduring hydrostatictesting) including necessaryrepairing/replacingdefective pipe lengths, includingcutting out and removingthe defectivepipe, pretestingthe replacementpipe, welding into mainline and NDT of welds, repair and re-testingof defective welds, coatingof welded joints, clean-up, retestingthe full test section of pipeline including providing all labour, materials, consumables and inputs other than Ownersupplied materialsand performingall works as per drawings, specifications enclosed with the tender/ contract document and directions of Engineer-in-charge							
238	Minor leak (Detected by sectionalizing method) For pipeline size 609.6 mm (24") OD		1	Lumpsum			0.00	INR Zero Only
239	Note (1) This rate is applicable for any number of repairsrequiredin the sectionfor manufacturingdefects in Owner supplied material only.							
240	(2) Leak detection, its rectification and successfully re-hydrotestingshall be carried outas perapproved procedureby Contractowith a view thatcompletion of all activity for successfulhydrotestingis not inordinalelyextended which will hamper the overall project schedule.							
241	VIDEOGRAPHY & PHOTOGRAPHY							

242	Carrying out high definition (min 1080p) videography and photography including aerial shots of pre-construction condition as well as all the construction activities i.e. Grading, Staking, Stringing, Welding, Radiography, Joint Coating, Lowering, Backfilling, HDD, cased crossing, zero-HDD, tie-in, mainline hydrotest, restoration station installation, golden joint, MGP, EGP, vacuum drying, etc. using drones & other equipment, editing/mixing (as required) using appropriate software to prepare final video of minimum 1 hour for each phase along with audio commentary in English, conversion of the final video to DVD/ USB format and submission of 3 copies in USB drive/hard drive as per PJS, other provisions of contract document and instructions of EIC.							
243	Phase 1: Videography & photography of the entire route using aerial videography of entire route using drone prior to construction activities i.e. pipeline route, location of various stations, TOP, all crossing like road/ railways, river, etc. The final video must have following information superimposed layer on the video using appropriate software: a. ROU boundaries as well as centreline b. Chainages of critical locations such as major crossings etc. c. Chainages at every km d. Marking of critical areas (Forests, eco-sensitive zone, etc. if any)		180	Km			0.00	INR Zero Only
244	Phase 2: Videography & photography during construction activities of Mainline Works, i.e., Grading, Stringing, Welding, Radiography, Joint Coating, Lowering, Backfilling, crossings, golden tie-in, station installation, HDDs, MGP, EGP, vacuum drying, etc. performing all works as per specification and instructions of EIC and other provision of contract document. The videography of all major activities to be captured. The videography to also capture condition of ROU restoration after the work has been completed specially of any disputed areas. The video must be accompanied with proper photographs of each activity.		180	Km			0.00	INR Zero Only
245	Highlight Video: Preparing a fully edited 5 min long project highlight with VFX effects highlighting all the major activities, events, achievements of the project.		1	Lumpsum			0.00	INR Zero Only
246	Notes							
247	1. Video of each phase-1 & 2 shall be min. 1 hour long and duration of highlight video shall be min. 5 minutes.							
248	2. All videos shall be provided after fully editing/mixing with appropriate software. However, raw footage videos and photographs shall also be submitted.							
249	3. All the videos shall be of high definition (min 1080 p) quality and shot with professional camera/ device.							
250	4. The raw footage photographs to be submitted with each RA bill and as part of QCR.							
251	5. Drone shall be used for videography & photography of Phase-1 activities and restoration activities as a minimum.							
252	MAGNETIC CLEANING AND ELECTRONIC GEOMETRY PIGGING							
253	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 work 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 Contractor's facility as per specification and provisions of the Bid Document.							
254	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jhhat)		174	Km			0.00	INR Zero Only
255	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepetkata to RT cum injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
256	Note: In case more than 05 defects beyond permissible limit are found in the pipeline stretch for which EGP tool run has been carried out, contractor shall have to carry out re-run of EGP tool for above stretch/ barrel to barrel, till satisfactory completion of EC.							
257	PRE-COMMISSIONING OF ENTIRE UNDERGROUND PIPELINE AND TERMINALS / STATIONS.							
258	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.							
259	Precommissioning Checks							
260	Pre-commissioning of pipeline including terminals / stations.							
261	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jhhat)		174	Km			0.00	INR Zero Only

262	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
263	Dewatering and swabbing							
264	Dewatering and swabbing of pipeline including terminals / stations.							
265	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jorhat)		174	Km			0.00	INR Zero Only
266	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
267	DRYING							
268	Complete work of carrying out drying by vacuum drying method of pipeline section including supply of manpower, equipment, 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.							
269	Drying by vacuum drying method							
270	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jorhat)		174	Km			0.00	INR Zero Only
271	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
272	COMMISSIONING ASSISTANCE AND COMMISSIONING							
273	Providing commissioning assistance to other section and commissioning of the section including all stations and in supply of all consumables, nitrogen, all equipment, manpower, etc., complete as per requirements of specifications, other provisions of contract document and instruction of Engineer in-charge.							
274	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jorhat)		174	Km			0.00	INR Zero Only
275	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
276	IDLE TIME PRESERVATION:							
277	Preservation of complete pipeline section including sub sections, associated facilities and terminal facilities (such as SVs, IPs, DT, RT, etc 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.							
278	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jorhat)		174	Km			0.00	INR Zero Only
279	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
280	Preservation and Maintenance of pipeline at a positive pressure of 2 bars (g) beyond 1 month.							
281	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulajjan) to RT at existing SV-14 of GNPL (Jorhat)		174	Km			0.00	INR Zero Only
282	For Branch line of 24"x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
283	Note: i) If the pipeline commissioning after pressure testing (i.e., hydrotest) is anticipated to be delayed beyond six (06) months, the pipeline section shall be dewatered, dried and filled with nitrogen at a positive pressure of min. 2 barg or as directed by EIC. ii) If the pipeline commissioning after pressure testing is anticipated to be delayed beyond six (06) months, all piping and equipment in stations (Dispatch, receiving, IP, SV, tap-off etc.) to be preserved by filling with any inert gas such as nitrogen at a positive pressure. iii) Arrangement required for idle time preservation, i.e. all required fabrication works for blanketing both ends, providing the provision for filling & venting of nitrogen and all necessary arrangements required shall be done by the contractor as per instruction of EIC. iv) If month is partially completed, payment shall be made on pro-rata basis. v) The SOR item for preservation beyond 1 month shall be operated after taking due approval from EIC. In case it is							
284	DUMP YARD/ STORAGE YARD MANAGEMENT							

285	Taking over, management and restoration of existing Storage Yard / Dump Yard including but not limited to the following: - Taking-over/land lease of one of the existing storageyard/ dumpyard or leasing a new land well connected by all-weather approach road and developing new storageyard/ dumpyard within approx. 15 kms radius of existing dumpyard. pipeline route being maintained by line pipe/coating contractor. Address of the existing dumpyard shall be intimated after award of work. - In case of more than one dumpyard, taking over/ loading, handling, transportation of pipes from one of the existing dumpyard to the other dumpyard, unloading at new dumpyard and stacking as per approved procedures shall be the responsibility of the contractor. However, charges for transportation shall be paid by a separate SOR item available elsewhere in the tender document. - Maintaining records, stock register, entry/ exit logs, etc., and carrying out all types of documentation etc. as per instructions of IGL/ MECON. - Maintaining suitable Storageyard/ dumpyard facilities including proper stacking of pipes, preservation & traceability of pipes, good condition of road(s)/fencing, security, suitable lighting, handling facilities including crane/ forklift, and insurance of pipes, etc. - Loading of line pipes on trailers at Storage yard / Dump Yard. - Arranging round the clock security. - Restoration of land to original status before handing over the land to the land owner. - Furnishing No Dues / No objection certificate from land owner upon handing over the land to its owner after completion of work.	12	Per month				0.00	INR Zero Only
286	Notes:							
287	1. This item shall be operated only on the specific written instructions of EIC.							
288	2. In case the contractor is not able to take-over the lease of existing storageyard/ dumpyard then the contractor shall be required to lease a new land of suitable size sufficient to store remaining pipes and develop the storage including but not limited to filling, development of road, fencing, lighting, security, arranging suitable equipment for lifting/ handling/ loading, unloading of pipes, etc. The new dumpyard shall be well connected with all-weather approach road for movement of pipes, trailers and shall be within approx 15 km of existing dumpyard.							
289	3. The contractor shall intimate IGL/ MECON regarding any coating damage, if any, before taking over of pipes. Joint report for receipt of pipes signed by Laying Contractor and Dumpyard Contractor (Line Pipe Coating Supplier) to be provided. Any defect/ damage to coating/ pipe recorded during takeover of pipe shall be payable to the Laying contractor as per relevant SOR item(s). Any defect/ damage afterwards shall be to laying contractor's account.							
290	4. In case the area of the new leased land is less than the existing dumpyard or the contractor wishes to reduce the size of the existing dumpyard, then the quoted rate shall be payable at prorata basis.							
291	5. Charges for transportation of pipe from any other yard to the yard being taken over shall be paid by a separate SOR item available elsewhere in the tender document.							
292	6. The charges for maintaining dumpyard/ pipe yard shall be payable only till 100% panchnama/ ROU or 100% mainline welding (whichever is earlier) has been completed. After 100% panchnama/ 100% mainline welding (whichever is earlier), no such charges shall be payable to the laying contractor.							
293	7. The quoted unit rate shall be applicable for each storage yard/ dump yard separately.							
294	LONG RADIUS BENDS							
295	Supply of Long Radius Bends (R = 6D) for 24" dia. pipe, X-70 (thk. 12.7/ 15.88/ 17.88 mm) as per T.S. (No. MEC/TS/05/62/015) & Data Sheet No. MEC/E0085/05/28/M/001/DS-016 enclosed in Tender Document (Bare pipe for LR Bends shall be free issue to the contractor).							
296	20° - 30°	150	Nos.				0.00	INR Zero Only
297	31° - 45°	150	Nos.				0.00	INR Zero Only
298	46° - 60°	25	Nos.				0.00	INR Zero Only
299	61° - 90°	30	Nos.				0.00	INR Zero Only
300	Note : The quantities of LR Bends may vary. For final quantity, approval shall be taken from EIC before order.							
301	SUPPLY AND COATING OF CS CONDUIT							
302	Complete work of supply of carbon steel pipes required for crossing, 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. And also Handling including lifting, transportation from Contractor Stores to CONTRACTOR's workshop for fabrication and/or to work.							
303	All works related to supply of CS conduit of size 150mm (6"NB), 6.4mm thick IS 3589 (Fe410) or equivalent ERW pipe for various crossings.	27000	Meter				0.00	INR Zero Only

304	All works related to coating of CS conduit of size 150mm (6"NB), 6.4mm thick with coal tar epoxy coating of minimum 600 microns (after proper cleaning) including supply of coating material, consumables etc.		27000	Meter			0.00	INR Zero Only
305	TRANSPORTATION OF FITTINGS, FLANGES, VALVES ETC.							
306	"Receiving and taking over", handling, lifting, loading on truck, transportation and unloading of Company supplied fittings, flanges and valves etc from any storage yard in (other than the designated storage yard for the project) to worksite/contractor's storage yard/ any other storage yard or as decided by EIC. The above work also includes stacking the 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.							
307	Through Truck		15000	MT-Km			0.00	INR Zero Only
308	Through Light Motor Vehicle (LMV)		5000	MT-Km			0.00	INR Zero Only
309	Notes: i) The quantities given in above SOR item are tentative only. The quantities may be increased, decreased or deleted as per the actual site requirement and instructions / recommendations of Owner. The unit rates shall be operated to work out the final payment to the contractor.							
310	ii) Above price shall be inclusive of all type of taxes & duties, transit insurance during transportation & other insurance etc. including all financial & commercial implications as per the tender document. No other payment except as per quoted unit rate & executed quantities will be payable by the Owner.							
311	(iii) This rate is applicable for transportation of flanges, fittings & valves etc. from any location in India to the work or any other location							
312	TRANSPORTATION OF LINE PIPE							
313	"Receiving and taking over", handling, lifting, loading on trailers, transportation and unloading of Company supplied line pipe from one dump yard to other dump yards 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.		56100	MT-Km			0.00	INR Zero Only
314	Notes: i) The quantities given in above SOR item are tentative only. The quantities may be increased, decreased as per the actual site requirement and instructions / recommendations of Owner. The unit rates shall be operated to work out the final payment to the contractor.							
315	ii) Above price shall be inclusive of all type of taxes & duties, transit insurance during transportation & other insurance etc. including all financial & commercial implications as per the tender document. No other payment except as per quoted unit rate & executed quantities will be payable by the Owner. (iii) This rate is applicable for transportation of Line pipe from any location in India to the work site/store or any other location or transportation of line pipe from work site to other location (Other than designated)							
316	DE-MOBILIZATION AND RE-MOBILIZATION							
317	De-Mobilisation of complete manpower, equipment, tools and tackles etc (in case of complete site activities are stalled or due to reasons solely attributable to owner or due to Force Majeure) and remobilization of the same within 1 month including setting up of various facilities required to carry out the works as per direction of Engineer-In-charge. Time interval between any set of Demobilisation and Re-Mobilisation shall be maximum 6 months. List of various equipment and manpower to be remobilized for this purpose shall be as per APPENDIX-X and XI to PJS (mechanical) respectively.		1	Lumpsum			0.00	INR Zero Only
318	Note : Contractor have to take permission from IGGL/ MECON before de-mobilization & re-mobilization.							
319	GEO TEXTILE BAGS FOR ANTI-BUOYANCY							
320	Additional works over and above SOR Sl. No. 1.0 (Pipeline Laying/Installation) for design, manufacture and supply of 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.		50	Nos.			0.00	INR Zero Only
321	Note : Quantity mentioned above is tentative and may increase/decrease or delete as per site condition. Contractor take prior approval from EIC for execution of above item.							
322	PIPE LAYING BY THRUST BORING/ MACHINE MOLING TECHNIQUE (WITHOUT CASING) FOR CARRIER PIPE AND HDPE DUCT							

323	Complete work of any type of crossing (between the ROW limits as defined in Crossing Drawings enclosed with Bid Document) using Thrust Boring/ Machine Molding technique for Carrier pipe along with HDPE duct for OFC including "Receiving and taking over" owners supplied three layer PE coated line pipes from Owner's designated place to issue/ dump site(s) and transportation to Contractor's stock yard/ work shop/ work site including all handling, loading, unloading, aligning etc. supply of all Contractor supplied material including consumables, manpower, equipment, other resources to work site(s). 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. Execution of works in accordance with specifications and instruction of Engineer-in-charge and as per all provisions of Contract Document.							
324	Installation of 24" (609.6) mm OD, 11.13 mm/12.7 mm wall thk of API 5L Grade X-70 carrier pipe along with 01 Nos HDPE duct using Thrust Boring/ Machine Molding technique (without Casing).		72	Meter			0.00	INR Zero Only
325	Notes: 1. This item rate is applicable for complete work of crossing using Thrust Boring/ Machine Molding technique (without Casing) for Carrier pipe including stringing, welding, 100% computed radiography (CR), joint coating, restoration of pit etc. 2. The length of pipeline are tentative and for multiple crossings at different locations wherever required. 3. This SOR item shall be applicable in case of soft soil and as per instruction and after due approval of Engineer-in-charge. 4. It is sole discretion of the Contractor to carry out the crossing of carrier pipe along with 01 Nos HDPE Duct through the same drill hole or making separate holes for carrier pipes and HDPE duct. No separate payments shall be made for HDPE duct for said crossing.							
326	ROU MANAGEMENT FOR MAINLINE WORKS							
327	ROU management of pipeline route covered under SOR item for "PIPELINE LAYING / INSTALLATION" above, during pre-construction survey, opening of ROU and maintenance of ROU upto completion of entire Mainline works (including CP and Telecom works); the Contractor shall, at its own cost and responsibility, carry out all necessary liaison/ coordination with local people/ villagers, farmers, land owners or any other person/ institution, Central/ State Government authorities, local bodies, statutory authorities, utility agencies and other local organizations 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; Liaisoning/ Coordination and obtaining work permit from various statutory authorities having jurisdiction for execution of the crossings by open cut method covered under mainline works (SOR item for "PIPELINE LAYING / INSTALLATION") and complying with all stipulations/ conditions/ recommendations of the said authorities. No separate payment shall be made for such liaisoning activities, and the quoted rates shall be deemed to include all costs associated therewith. However, statutory fees payable to Government departments wherever specifically reimbursable under the Contract, shall be borne/ reimbursed by the Owner as per the Contract provisions.							
328	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Dulaijan) to RT at existing SV-14 of GNPL (Jharkhat)		139	Km			0.00	INR Zero Only
329	For Branch line of 24" x 6.027 Km DT at BCPL Source Lepetkata to RT cum Injection point at SV-03 of DFL mainline		6	Km			0.00	INR Zero Only
330	ZERO DEGREE HDD							
331	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" owner supplied three layer PE coated line pipes from Owner's designated place to issue/ dump site(s) and transportation to Contractor's stock yard/ work shop/ work site including all handling, loading, unloading, aligning etc. 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 provisions of Contract Document.							
332	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.							
333	Making tie-in pits at entry and exit sides as required, drilling to required depth including maintenance of drill hole in 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.							

334	Trenching at pipeside as required for 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 computed radiography 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 hydro testing and holiday testing before or during installation of pipeline etc. Coating integrity shall also be ensured after pulling.							
335	String preparation and laying of 01 nos of 6 inch CS conduit for OFC by HDD method, welding etc.							
336	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.							
337	Cleaning and tie-in with pipeline at either side 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.							
338	Note:							
339	a. Length for zero HDD shall be considered as 75 feet on either side from road centreline (i.e. 150 feet) or road ROU plus two 2m for payment purpose. Beyond this length, length (if any) shall be paid as per SOR item for "Pipeline Laying/ installation".							
340	b. Contractor has to carry out Computed Radiography (CR) in place of traditional Radiography for all joints. Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/ procedures/ codes/ direction of EIC without any cost implication to owner. In case, the Contractor performs computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalties defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
341	Details of Crossing							
342	Any type of crossing for carrier pipeline of size 609.6mm OD x 11.1mm / 12.7mm thk of API 5L Grade X-70 along with CS conduit of size 150 NB X 6.4 mm thick of IS 3589 or equivalent ERW Pipe for HDPE duct and OFC.		5250	Meter			0.00	INR Zero Only
343	Note: (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.							
344	(ii) Width of the crossings are indicated in respective Crossing drawing enclosed with the tender document. Crossing 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 / Engineer-in-charge.							
345	(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.							
346	(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.							
347	(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 water body 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.							
348	(vi) Payment for supply of CS conduit shall be made as per rates available elsewhere in the SOR.							

349	(vii)Contractorhasto carryoutX-ray by ComputerRadiography(CR) in place of traditionalRadiagrahyfor all joints. OtherNDT work (UT, LPT, MPT, etc.)as requiredfor fabricationweldinghas to be performed by the contractoras per specification,procedures, codes & direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraint, then the Contractor shall be liable to pay penalty as defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
350	GROUND PENETRATING RADAR SURVEY							
351	Carrying out subsurface utility survey along the ROU/ROW or proposed pipeline route and/or as specified by Engineer-in-Charge for provided ROU/ROW/Corridor (Min. 5 meter) using Ground Penetrating Radar (GPR) for depth upto 5m below the existing ground level to locate and identify all existing underground utilities/buried objects including but not limited to pipelines, sewers, conduits, cables, drains, manholes, appurtenances etc in the proposed corridor along with location DGPS coordinates, depth, shape and dimensional details of utilities. Four (4) Copies of Report and Drawings including all collected data shall be submitted as per scope of work and direction of the Engineer-in-charge. Scale of Drawing shall be Planimetry (X Axis 1:1000, Y Axis 1:100), Longitudinal Section (Z Axis 1:100) and Transverse Section at critical location.	2000	Meter				0.00	INR Zero Only
352	Note :-							
353	1. Survey Agency for execution of GPR Survey Work to be engaged by the Contractor shall be submitted for approval of IGGL/MECON prior to start of work.							
354	2. GPR Work shall be carried in presence of Contractor's Representative.							
355	3. Quantity mentioned above is tentative and may be increased/ decreased or deleted as per site requirement.							
356	SHIFTING & RE-INSTALLATION OF ELECTRIC/TELECOM POLES							
357	Complete work of shifting & re-installation of Electric poles (HT-11 KV) HT Cable as per guidelines and in co-ordination/ liaison with the concerned state electricity board (SEB).	10	Nos.				0.00	INR Zero Only
358	Complete work of shifting & re-installation of Electric poles (LT) and Telephoneline (poles), as per guidelines and in co-ordination/ liaison with the concerned state electricity board (SEB).	15	Nos.				0.00	INR Zero Only
359	Note : i) Quantity mentioned above is tentative and may increase/decrease or delete as per site condition. Contractor has to get prior approval from EIC for execution of above item. ii) Statutory fees for shifting will be paid by IGGL. iii) Activity to be strictly performed as per guidelines and in co-ordination with concerned statutory authority							
360	HOT TAPPING WITH DOUBLE STOPPLING WORKS WITH/ WITHOUT BY-PASS							
361	Complete scope of hot tapping & double-double stoppling work (using min. four nos. of splittees) with or without by-pass as per instruction of EIC through specialized approved agency including supply of all materials, consumables, manpower & equipment, hot tapping and stoppling machine and all the required tools and tackles required for carrying out double double hot tapping and stoppling including but not limited to the following:							
362	Excavation, removal of 3LPE coating on 24" NB existing underground NPL pipeline, Supply and welding of split tee on 24" pipeline for 24" tapping using flow tee (as per P&ID), NDT of welded joints, testing prior to hot tapping, supply and installation of full bore valve, mobilizing hot tapping machine & stoppling machine with all accessories, cutting tool, stopper etc. for hot tapping & stoppling works, obtaining all permissions/clearances/permits from Owner/concerned authorities, submitting all procedures for approval & obtaining approval thereon prior to start of works, carrying out hot tapping & double double stoppling works including installation of split tee & full bore ball valve, along with supports, on existing 24" pipeline including							
363	Carrying out all works as per the requirements of specification, other provisions of contract document and instructions of Engineer-in-charge. Final restoration of area to its original to the entire satisfaction of Engineer-in-charge.							
364	Supply, fabrication, Installation/ Laying of By-pass line as per specifications & direction of EIC.							
365	Making pipe/valve supports and valve pit along with access ladder at tap-off point as per approved drawing; arranging all the materials required for the same.							

366	Coating of split tee with heat shrink sleeves compatible with existing mainline coating, coating of all buried valves, flanges, fittings, nut & bolts suitably with heat-shrink sleeve/cold tape/coaltar epoxy coating of min. 2 coats of 300 micron each.								
367	Supply & installation of Blind Flange of required size with stud & Bolts and pig guide bar as per standard procedure.								
368	Carrying out all works as per the requirements of specification, other provisions of contract document and instructions of Engineer-in-charge. Final restoration of area to its original to the entire satisfaction of Engineer-in-charge.								
369	Complete work of Hot tapping and double double stoppering work for tap-off of 24" NB dia from existing 24" NB dia Pipeline at existing SV-14 of GNPL Pipeline.								
370	Without By-pass (by stopping the flow of gas)		1	Lumpsum				0.00	INR Zero Only
371	With by-pass (without affecting the flow of gas in existing pipeline)								
372	Additional work over and above SOR item for "Without By-pass (by stopping the flow of gas)" in case of by-pass line (without affecting the flow of gas in existing pipeline)		1	Lumpsum				0.00	INR Zero Only
373	Notes:								
374	The decision of EIC regarding with or without by-pass shall be final and binding on the contractor. In case, double hot tapping and stoppering is done without by-pass line, then only SOR item for "Without By-pass (by stopping the flow of gas)" shall be payable. In case, double double hot tapping and stoppering is done with by-pass line, both SOR item for "Without By-pass (by stopping the flow of gas)" and SOR item for "With by-pass (without affecting the flow of gas in existing pipeline)" shall be payable.								
375	The cost of stud, nuts, bolts, gaskets, washers, electrodes, gases, cutting of flats from plates and providing splices, paints, tools, plants etc., as required for the work shall be deemed to be included in the quoted rates.								
376	All handling and transport charges of raw materials and fabricated structures including handling, as required, for completion of work in accordance with time schedule, are deemed to be included in the quote.								
377	Supply & installation of cutter housing, temporary and switch valve/full bore valve, bleed valves, vents, pipe, 3-ways, spool piece, LOR+ plugs, TOR, flanges, blind flanges, assorted pipes, temporary and switch valve/full bore valve, bleed valves, vents, pipes, drains, elbows, gas bags etc. (as required), are deemed to be included in quote.								
378	For Hot tapping works, contractor has to submit Past Track record (PTR) of Hot tapping Agency having experience of similar nature of work before execution of work. Detailed scheme shall be submitted by Contractor prior to start of execution for approval of PMC/Owner. The scheme shall be suitable for the piggable pipeline so that pigging is not affected after hot tapping work.								
379	Cost of arranging tractor with trolley, water tanker, dewatering pump, grinding and cutting machine, hydra, crane, excavator, d-shackle, slings, welding machines, UT machine, DG sets, diesel, muffler etc. are deemed to be included in the quoted rates.								
380	Scope includes arranging temporary power and area lighting (using flame proof lighting).								
381	Scope of work includes arranging fabricated structures including double handling, tents, ladders, temporary platforms, scaffolding, barricades, caution tapes etc.								
382	Supply and installation of flow tee shall be paid as per separate SOR item mentioned elsewhere in tender.								
383	PANCHNAMA OF ROU								
384	Panchanama of ROU including but not limited to mobilizing manpower, equipment and all tools & tackles required for identifying/transferring landmarks/benchmarks, RoU survey, measuring, marking with choona, damage assessment, identification of owners, collecting/verifying revenue records, contacting land owners, recording current status, identifying and categorizing trees and crops, mapping/sketching (as required), preparing panchnama records, document collection, Latkajari etc. which are required to finalize Award by the Competent Authority, Assam).								
385	For mainline of 24" x 174.236 Km DT at OIL's CGGS at Madhuban (Duliajan) to RT at existing SV-14 of GNPL (Jorhat)		174	Km				0.00	INR Zero Only
386	For Branch line of 24" x 6.027 Km DT at BCPL Source Lepatkata to RT cum Injection point at SV-03 of DFL mainline		6	Km				0.00	INR Zero Only
387	DIG SITE VERIFICATION AND SURVEY USING LOCATOR								
388	Complete scope of survey in shared ROU using locator or other techniques for locating the existing and verifying the same through dig verification at every 500 meter or TP or as directed by EIC by excavating pits including but not limited to coordination with asset owner, obtaining work permit, manual excavation to expose the existing pipeline, immediate backfilling, flag installation/choona marking, preparing site sketch showing location of pipelines, depth etc. The scope includes but is not limited to, if necessary, the depth of the pit need to be increased, then payment shall be made on prorata basis considering a single pit of approx. 4c.								
389	Survey using locator for locating existing pipelines		141	Km				0.00	INR Zero Only
390	Dig verification survey (Pit size upto Width 2m x Length 1m x depth 2m)		350	No				0.00	INR Zero Only
391	Note:								
392	In case of multiple pipelines in the existing ROU, if width of the pit need to be increased, then payment shall be made on prorata basis considering a single pit of approx. 4c.								
393	SUPPLY OF MUD MAT								

394	Supply of Large Heavy Duty inter-linkable Mud Mats suitable for movement of heavy equipment along with require of fasteners(locking pins/ fasteners etc. as applicable)and tool kit for tightening/ untighteningof fastenersfor interconnection of warning mats as per specification attached in tender.		100	Sqm			0.00	INR Zero Only
395	SERVICES FOR IMPLEMENTATION OF PIPELINE INFORMATION MANAGEMENT SYSTEM							
396	The complete scope of providing services for implementation of GIS based & web based Pipeline Information Management System (PIMS) for 24"x 174.236Km (approx.) and 24" x 6.027 Km (approx.) (mainline and all stations) but not limited to setting up of requisite offices in each section (as required) along with all requisite equipment & manpower, liaison for collection of data from owner/ owner's representative/owner's execution agencies (i.e. FIM Suppliers, Contractor for Pipeline System, Stations Works, Terminal Works, SCADA Works, Telecom Works, HDD works, PCP Works, etc. as applicable), 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/handover of software developed along with requisite license complete in all respects as per scope of work detailed in SCC, Particular Job Specification, General technical specifications, SOR etc. enclosed in tender documents and as per direction of Engineer-in-charge.		1	LS			0.00	INR Zero Only
397	Above services for implementation of GIS based & Web Based Pipeline information management system for 24"x 174.236Km (approx.) and 24" x 6.027 Km (approx.) +/-5% long Mainline, Branch line and all Associated Stations/ Terminals) as per the details given below :							
398	Refer Schematic drawing attached in the tender for more details							
399	Notes:							
400	i) The above SOR item includes the cost of setting up of 1 no. back-up support office at Dulaijan/ Jorhat/Guwahati 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 the documents for uploading in PIMS module. Client/ consultant will not be responsible for any delays in obtaining documents from concerned party.							
401	iii) The contractor shall be responsible for implementation of PIMS system in pipeline projects (mainline as well as stations). The work shall 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 Jorhat/ Dulaijan) 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.							
402	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.		30	Man-day			0.00	INR Zero Only
403	Sub-Total Section A							
404	SECTION-B: PIPING & MECHANICAL WORKS							
405	PLANT PIPING (ABOVEGROUND/ UNDERGROUND) FABRICATION, ERECTION, INSTALLATION AND TESTING OF PIPING							
406	Transportation including loading, unloading, handling of all piping items from Owner's and/or Contractor's storage point to work site/ workshop as applicable, complete work of fabrication, erection, painting, testing of pipes, flanges and fittings 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, drawings, specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT DOCUMENT.							
407	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.							
408	Weldolets, sockolets, flanges, vent and drain point connection etc., including providing stub-in connections, fabricated fittings and reinforcement pads etc., as required.							

409	Erection including prior cleaning, lifting, placing on pipe sleepers and supports, overhead racks, skids and at all elevations including installation and carrying out connected activities for all types of valves including supply and fixing of gaskets, studs/bolts, nuts wherever required for all sizes, levelling, aligning, joining of flanges, blind flanges, connecting with equipment, nozzles, strainers tie-in with existing piping/facilities, etc. tapping for inline instruments like pressure gauges, thermowells, sample connection, etc.								
410	Preparation of final bill of material based on piping GADs.								
411	Preparation of isometric and fabrication drawings.								
412	Carrying out 100% Non-destructive testing.								
413	Surface preparation before application of primer by means of sand blasting including supply of approved quality of sand, manpower, machineries, tools & tackles to achieve required roughness as per specification and as per instruction of Engineer-in-charge.								
414	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, humboring colour coding, etc. as specified including rub down & touch up of shop primer or scraping of shop primer wherever required by COMPANY and providing scaffolding for all heights up to 10m.								
415	Underground portion of piping system shall be protected from external corrosion by providing 3LPE coated heatshrink sleeve or equivalent and application of the same shall be extended upto 500 mm above FGL/plant area NGL, whichever is higher.								
416	Cleaning and flushing by water/ compressed air, card board blasting, 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.								
417	Pre-commissioning & making operationable 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.								
418	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-2a 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.								
419	Completion of all such work in all respects as per scope of work and as per drawings, specifications and instruction of COMPANY and keeping the system ready in all respects for commissioning and start up.								
420	Hook-up works (with client/ consumer piping at battery limits) wherever required.								
421	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 ab								
422	24" NB API 5L, Gr. X-52, PSL-2, SAW, BE, 19.1		350	Meter				0.00	INR Zero Only
423	12" NB API 5L, Gr. X-52, PSL-2, Seamless, BE, S60		40	Meter				0.00	INR Zero Only
424	12" NB ASTM A333 Grade 6, B 36.10, Seamless, BE, S60		40	Meter				0.00	INR Zero Only
425	10" NB API 5L, Gr. X-52, PSL-2, Seamless, BE, XS		50	Meter				0.00	INR Zero Only
426	8" NB API 5L, Gr. X-52, PSL-2, Seamless, BE, 14.3		275	Meter				0.00	INR Zero Only
427	8" NB ASTM A333 Grade 6, B 36.10, Seamless, BE, XS		440	Meter				0.00	INR Zero Only
428	4" NB API 5L, Gr. X-52, PSL-2, Seamless, BE, XS		135	Meter				0.00	INR Zero Only
429	4" NB ASTM A333 Grade 6, B 36.10, Seamless, BE, XS		40	Meter				0.00	INR Zero Only
430	3" NB ASTM A 106 Gr. B (Charpy), Seamless, BE, XS		6	Meter				0.00	INR Zero Only
431	2" NB ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S80		130	Meter				0.00	INR Zero Only
432	2" NB ASTM A333 Grade 6, B 36.10, Seamless, BE, S80		10	Meter				0.00	INR Zero Only
433	1½" NB ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S80		8	Meter				0.00	INR Zero Only
434	1" NB ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S80		6	Meter				0.00	INR Zero Only
435	¾" NB ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S160		50	Meter				0.00	INR Zero Only
436	¾" NB ASTM A333 Grade 6, B 36.10, Seamless, BE, S160		6	Meter				0.00	INR Zero Only
437	½" NB ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S160		6	Meter				0.00	INR Zero Only

438	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) paid separately under SOR item for RADIOGRAPHY mentioned elsewhere in this SOR. 5) Contractor has to carry out gamma ray inspection using Computed Radiography (CR) in place of traditional gamma ray Radiography for all joints (>=2"). Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedure/codes/direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client. 6) Surplus free issue material shall be transported to Owner's designated place(s) as mentioned in Annexure-2 to SCC								
439	SUPPLY OF ASSORTED PIPE, FLANGES AND FITTINGS								
440	Complete scope 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 <u>CONTRACT DOCUMENT</u> .								
441	Handling including lifting, transportation from Contractor's Stores to CONTRACTOR's workshop for fabrication and/or work site for field fabrication and erection for all piping items supplied by Contractor.								
442	CARBON STEEL PIPES								
443	24" NB ,API 5L, Gr. X-52, PSL-2, SAW, BE, 19.1	350	Meter					0.00	INR Zero Only
444	12" NB ,API 5L, Gr. X-52, PSL-2, Seamless, BE, S60	40	Meter					0.00	INR Zero Only
445	12" NB ,ASTM A333 Grade 6, B 36.10, Seamless, BE, S60	40	Meter					0.00	INR Zero Only
446	10" NB ,API 5L, Gr. X-52, PSL-2, Seamless, BE, S60	50	Meter					0.00	INR Zero Only
447	8" NB ,API 5L, Gr. X-52, PSL-2, Seamless, BE, 14.3	275	Meter					0.00	INR Zero Only
448	8" NB ,ASTM A333 Grade 6, B 36.10, Seamless, BE, XS	440	Meter					0.00	INR Zero Only
449	4" NB ,API 5L, Gr. X-52, PSL-2, Seamless, BE, XS	135	Meter					0.00	INR Zero Only
450	4" NB ,ASTM A333 Grade 6, B 36.10, Seamless, BE, XS	40	Meter					0.00	INR Zero Only
451	3" NB ,ASTM A 106 Gr. B (Charpy), Seamless, BE, XS	6	Meter					0.00	INR Zero Only
452	2" NB ,ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S80	130	Meter					0.00	INR Zero Only
453	2" NB ,ASTM A333 Grade 6, B 36.10, Seamless, BE, S80	10	Meter					0.00	INR Zero Only
454	1½" NB ,ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S80	8	Meter					0.00	INR Zero Only
455	1" NB ,ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S80	6	Meter					0.00	INR Zero Only
456	¾" NB ,ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S160	50	Meter					0.00	INR Zero Only
457	¾" NB ,ASTM A333 Grade 6, B 36.10, Seamless, BE, S160	6	Meter					0.00	INR Zero Only
458	½" NB ,ASTM A 106 Gr. B (Charpy), B 36.10, Seamless, BE, S160	6	Meter					0.00	INR Zero Only
459	FLANGES								
460	24" Weld Neck [B-16.5, ASTM A694 Gr.F-52 (Charpy), 125 AARH, RF] (WN, Thickness to match pipe thickness), 600#	50	Nos.					0.00	INR Zero Only
461	12" Weld Neck [B-16.5, ASTM A694 Gr.F-52 (Charpy), 125 AARH, RF] (WN, Thickness to match pipe thickness), 600#	10	Nos.					0.00	INR Zero Only
462	12" Weld Neck [B-16.5, ASTM A 350 GR LF2, CL-1, 125 AARH, RF] (End Thickness to match pipe thickness), 600#	6	Nos.					0.00	INR Zero Only
463	8" Weld Neck [B-16.5, ASTM A694 Gr.F-52 (Charpy), 125 AARH, RF] (WN, Thickness to match pipe thickness), 600#	70	Nos.					0.00	INR Zero Only
464	8" Weld Neck [B-16.5, ASTM A 350 GR LF2, CL-1, 125 AARH, RF] (End Thickness to match pipe thickness), 600#	30	Nos.					0.00	INR Zero Only
465	4" Weld Neck [B-16.5, ASTM A 105 (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness), 600#	125	Nos.					0.00	INR Zero Only
466	4" Weld Neck [B-16.5, ASTM A 350 GR LF2, CL-1, 125 AARH, RF] (End Thickness to match pipe thickness), 600#	8	Nos.					0.00	INR Zero Only
467	2" Weld Neck [B-16.5, ASTM A 105 (Charpy), 125 AARH, RF] (End Thickness to match pipe thickness), 600#	120	Nos.					0.00	INR Zero Only
468	2" Weld Neck [B-16.5, ASTM A 350 GR LF2, CL-1, 125 AARH, RF] (End Thickness to match pipe thickness), 600#	36	Nos.					0.00	INR Zero Only
469	1½" ,Socket Welded (B-16.5, ASTM A105, 125 AARH, RF), 800#	30	Nos.					0.00	INR Zero Only
470	1" ,Socket Welded (B-16.5, ASTM A105, 125 AARH, RF), 800#	4	Nos.					0.00	INR Zero Only
471	¾" ,Socket Welded (B-16.5, ASTM A105, 125 AARH, RF), 800#	30	Nos.					0.00	INR Zero Only
472	½" ,Socket Welded (B-16.5, ASTM A105, 125 AARH, RF), 800#	4	Nos.					0.00	INR Zero Only
473	24" Blind Flanges [B-16.5, ASTM 105 (Charpy), 125 AARH, RF], 600#	8	Nos.					0.00	INR Zero Only
474	12" Blind Flanges [B-16.5, ASTM 105 (Charpy), 125 AARH, RF], 600#	12	Nos.					0.00	INR Zero Only

475	12",Blind Flanges (B-16.5, ASTM A350 Gr. LF2 CL-1, 125 AARH, RF),600#		3	Nos.			0.00	INR Zero Only
476	8",Blind Flanges [B-16.5, ASTM 105 (Charpy), 125 AARH, RF],600#		4	Nos.			0.00	INR Zero Only
477	8" Blind Flanges (B-16.5, ASTM A350 Gr. LF2 CL-1, 125 AARH, RF),600#		2	Nos.			0.00	INR Zero Only
478	4" Blind Flanges (B-16.5, ASTM A105, (Charpy), 125 AARH, RF),600#		20	Nos.			0.00	INR Zero Only
479	4" Blind Flanges (B-16.5, ASTM A350 Gr. LF2 CL-1, 125 AARH, RF),600#		8	Nos.			0.00	INR Zero Only
480	2" Blind Flanges (B-16.5, ASTM A350 Gr. LF2 CL-1, 125 AARH, RF),600#		2	Nos.			0.00	INR Zero Only
481	1½",Blind Flanges (B-16.5, ASTM A105, 125 AARH, RF),600#		2	Nos.			0.00	INR Zero Only
482	1" Blind Flanges (B-16.5, ASTM A105, 125 AARH, RF),600#		2	Nos.			0.00	INR Zero Only
483	¾",Blind Flanges (B-16.5, ASTM A105, 125 AARH, RF),600#		2	Nos.			0.00	INR Zero Only
484	½",Blind Flanges (B-16.5, ASTM A105, 125 AARH, RF),800#		2	Nos.			0.00	INR Zero Only
485	24",Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF],600#		15	Nos.			0.00	INR Zero Only
486	8",Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF],600#		15	Nos.			0.00	INR Zero Only
487	4",Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF],600#		40	Nos.			0.00	INR Zero Only
488	2",Spectacle Blind [B-16.48, ASTM A105 (Charpy), 125 AARH, FF],600#		70	Nos.			0.00	INR Zero Only
489	8",Spectacle Blind [B-16.48, ASTM A350 Gr. LF2 CL-1, 125 AARH, FF],600#		18	Nos.			0.00	INR Zero Only
490	2",Spectacle Blind [B-16.48, ASTM A350 Gr. LF2 CL-1, 125 AARH, FF],600#		12	Nos.			0.00	INR Zero Only
491	ELBOW							
492	90° Elbow, D1A							
493	24",90° Elbow [MSS- SP -75 GR.WPHY52, 1.5D, BW], B-16.9,17.5		8	Nos.			0.00	INR Zero Only
494	12",90° Elbow [MSS- SP -75 GR.WPHY52, 1.5D, BW], B-16.9,S60		12	Nos.			0.00	INR Zero Only
495	8",90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW],XS		30	Nos.			0.00	INR Zero Only
496	4",90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW],XS		34	Nos.			0.00	INR Zero Only
497	2",90° Elbow [ASTM A234, Gr. WPB (Charpy), B-16.9, 1.5D, BW],S80		140	Nos.			0.00	INR Zero Only
498	1½" NB ,90° Elbow [ASTM A105, B-16.11, SW],S160		2	Nos.			0.00	INR Zero Only
499	1" NB ,90° Elbow [ASTM A105, B-16.11, SW],S160		2	Nos.			0.00	INR Zero Only
500	¾" NB ,90° Elbow [ASTM A105, B-16.11, SW],S160		30	Nos.			0.00	INR Zero Only
501	½" NB ,90° Elbow [ASTM A105, B-16.11, SW],S160		2	Nos.			0.00	INR Zero Only
502	90° Elbow, D4A							
503	8",90° Elbow [ASTM A420 GR. WPL6, B-16.9, 1.5D, BW],XS		18	Nos.			0.00	INR Zero Only
504	2",90° Elbow [ASTM A420 GR. WPL6, B-16.9, 1.5D, BW],XS		10	Nos.			0.00	INR Zero Only
505	45° Elbow, D1A							
506	24",45° Elbow [MSS- SP -75 GR.WPHY52, MSS-SP-75, 1.5D, BW],17.5		4	Nos.			0.00	INR Zero Only
507	8",45° Elbow [MSS- SP -75 GR.WPHY52, MSS-SP-75, 1.5D, BW],XS		4	Nos.			0.00	INR Zero Only
508	EQUAL TEE							
509	24",MSS-SP-75 GR.W PHY-52, BW,XS		6	Nos.			0.00	INR Zero Only
510	8",ASTM A 234 GR WPB (CHARPY), BW,XS		8	Nos.			0.00	INR Zero Only
511	4",ASTM A 234 GR WPB (CHARPY), BW,XS		15	Nos.			0.00	INR Zero Only
512	2",ASTM A 234 GR WPB (CHARPY), BW,S80		8	Nos.			0.00	INR Zero Only
513	3/4",ASTM A 105, SW,S160		80	Nos.			0.00	INR Zero Only
514	UNEQUAL TEES							
515	D1A							
516	24"x 24"x12",MSS-SP-75 GR.W PHY-52,19.1 x S60		2	Nos.			0.00	INR Zero Only
517	8"x 8"x4",ASTM A 234 GR WPB (CHARPY),14.3 x XS		6	Nos.			0.00	INR Zero Only
518	4"x4"x2",ASTM A 234 GR WPB (CHARPY),XS x XS		30	Nos.			0.00	INR Zero Only
519	4"x4"x2",ASTM A 234 GR WPB (CHARPY),XS x S80		2	Nos.			0.00	INR Zero Only
520	2"x2" x ½",ASTM A 234 GR WPB (CHARPY), SW 3000#,S80 x S160		30	Nos.			0.00	INR Zero Only
521	D4A							
522	12" x12"x 8",ASTM A 420 GR WPL6,XS x S160		1	Nos.			0.00	INR Zero Only
523	WELDOLET							
524	D1A							
525	24"x8",ASTM A 694 GR.F-52 (CHARPY),19.1 x 14.3		12	Nos.			0.00	INR Zero Only
526	24"x4",ASTM A 694 GR.F-52 (CHARPY),19.1 x XS		45	Nos.			0.00	INR Zero Only
527	24"x 2",ASTM A 694 GR.F-52 (CHARPY),19.1 x S80		12	Nos.			0.00	INR Zero Only
528	12"x2",ASTM A 105 (Charpy),S60 x S80		22	Nos.			0.00	INR Zero Only
529	8"x2",ASTM A 105 (Charpy),14.3 x S80		100	Nos.			0.00	INR Zero Only
530	12" x 4",ASTM A 350 GR LF2,19 "x XS		8	Nos.			0.00	INR Zero Only
531	D4A							

532	8"x2",ASTM A 350 GR LF2,S80 x XS		10	Nos.			0.00	INR Zero Only
533	SOCKOLET							
534	D1A							
535	24" x 1½",ASTM A 694 GR.F-52 (CHARPY),3000#		8	Nos.			0.00	INR Zero Only
536	24" x ¾",ASTM A 694 GR.F-52 (CHARPY),6000#		10	Nos.			0.00	INR Zero Only
537	12" x ¾",ASTM A 105 (Charpy),6000#		12	Nos.			0.00	INR Zero Only
538	8"x ¾",ASTM A 105 (Charpy),6000#		20	Nos.			0.00	INR Zero Only
539	4"x ¾",ASTM A 105 (Charpy),6000#		12	Nos.			0.00	INR Zero Only
540	Conc Reducer							
541	D1A							
542	12"x8",MSS-SP-75 GR.W PHY-52,S80 x 14.3		18	Nos.			0.00	INR Zero Only
543	2" x ¾",ASTM A 234 Gr.WPB (Charpy),S80 x S160		56	Nos.			0.00	INR Zero Only
544	2" x H",ASTM A 234 Gr.WPB (Charpy),S80 x XS		1	Nos.			0.00	INR Zero Only
545	D4A							
546	12" X 8",ASTM A 420 GR.WPL6,XS x XS		1	Nos.			0.00	INR Zero Only
547	2" x H",ASTM A 420 GR.WPL6,XS x 5.5		1	Nos.			0.00	INR Zero Only
548	Supply Of Restricted Orifice							
549	8",RO, D4A,600#		1	Nos.			0.00	INR Zero Only
550	2",RO, D4A,600#		2	Nos.			0.00	INR Zero Only
551	Supply of Valves							
552	Complete scope of supply of valves including all taxes, duties, transportation and inspection charges but not limited to the following items in accordance with relevant Specifications, Data Sheets, QAP, MR, ITP, scope of work, drawings, specifications, SCC and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT. All ball valves with butt welded ends shall have fully welded body. In this context, kindly note FE- Flanged End, BW- Butt weld end, FB- Full bore valve, RB- Reduced Bore Valve, ES- Extended Stem Valve, GOV- Gas-over-Oil actuator operated valve, HOV - Hydraulic Oil operated valve.							
553	Plug Valves							
554	D1A							
555	8",FE,600#		5	Nos.			0.00	INR Zero Only
556	8",BW, ES,600#		9	Nos.			0.00	INR Zero Only
557	4",FE,600#		14	Nos.			0.00	INR Zero Only
558	4",BW,600#		11	Nos.			0.00	INR Zero Only
559	2",FE,600#		48	Nos.			0.00	INR Zero Only
560	¾",FE,600#		6	Nos.			0.00	INR Zero Only
561	D4A							
562	8",FE,600#		16	Nos.			0.00	INR Zero Only
563	2",FE,600#		14	Nos.			0.00	INR Zero Only
564	Ball Valves							
565	24"Mainline Sectionalizing Valves							
566	Sectionalizing undergroundBall Valves with autoclosureformainline, FB,ExtendedStem,GOV with actuator andall accessories as per MECON TS and approved data sheet		9	Nos.			0.00	INR Zero Only
567	D1A							
568	24",FE, FB,H0V,600#		13	Nos.			0.00	INR Zero Only
569	24",BW, FB,H0V,600#		5	Nos.			0.00	INR Zero Only
570	24",BW, FB,GOV (without autoclosure),600#		10	Nos.			0.00	INR Zero Only
571	24",BW, FB,GOV (with autoclosure),600#		2	Nos.			0.00	INR Zero Only
572	24",FE, FB,GOV,600#		10	Nos.			0.00	INR Zero Only
573	12",BW, FB,600#		10	Nos.			0.00	INR Zero Only
574	8",FE, RB,GOV,600#		2	Nos.			0.00	INR Zero Only
575	8",BW, RB,ES,600#		18	Nos.			0.00	INR Zero Only
576	8",FE, RB,600#		12	Nos.			0.00	INR Zero Only
577	8",BW, RB,600#		15	Nos.			0.00	INR Zero Only
578	4",BW, RB,600#		3	Nos.			0.00	INR Zero Only
579	4",FE, RB,600#		46	Nos.			0.00	INR Zero Only
580	4",FE, FB, LO,600#		2	Nos.			0.00	INR Zero Only
581	2",BW, FB,600#		160	Nos.			0.00	INR Zero Only
582	2",FE, FB,600#		20	Nos.			0.00	INR Zero Only

583	2",FE, FB, LO,600#		8	Nos.			0.00	INR Zero Only
584	1½",FE, FB,800#		1	Nos.			0.00	INR Zero Only
585	1½",SW, FB,800#		1	Nos.			0.00	INR Zero Only
586	1",FE, FB,800#		1	Nos.			0.00	INR Zero Only
587	1",SW, FB,800#		1	Nos.			0.00	INR Zero Only
588	¾",SW, FB,800#		240	Nos.			0.00	INR Zero Only
589	¾",FE, FB,800#		1	Nos.			0.00	INR Zero Only
590	D4A							
591	¾",SW, FB,800#		2	Nos.			0.00	INR Zero Only
592	Globe Valves							
593	D1A							
594	4",FE,600#		18	Nos.			0.00	INR Zero Only
595	NRV							
596	D1A							
597	24",FE,600#		2	Nos.			0.00	INR Zero Only
598	PSV							
599	h" x H",PSV,900#		6	Nos.			0.00	INR Zero Only
600	Note: h"-Inlet size range =0.5" to 2" and H"-Outlet size range = 2" to 3"							
601	Supply of Mainline Equipment							
602	Complete scope of design, manufacture, fabrication, procurement of bought out components & materials, assembly of mainline equipment along with spares as per Material Requisition (MR) datasheet including all taxes, duties, handling, shipment, packing, inland transportation/ delivery, and inspection charges but not limited to, the following: accordance with relevant Specifications & relevant Data Sheets, MR, QAP, ITP, scope of work, SCC, drawings, specification and instructions of EIC and as per all provisions of the CONTRACT DOCUMENT. The scope shall include supply of nuts, bolts, foundation bolts, gaskets, associated accessories, matching flanges for all flanged end nozzles							
603	24",Monolithic Insulating Joint,600#		8	Nos.			0.00	INR Zero Only
604	8",Monolithic Insulating Joint,600#		9	Nos.			0.00	INR Zero Only
605	2",Monolithic Insulating Joint,600#		18	Nos.			0.00	INR Zero Only
606	24"x30",600# Rating, Bi-directional Scraper Trap (Launcher/ Receiver) suitable for handling intelligent pigs along with jib crane, chain pulley block, hoist, pig handling system, winch, pig signaler, etc.		6	Nos.			0.00	INR Zero Only
607	24"x24"x24",Flow Tee, 600#		9	Nos.			0.00	INR Zero Only
608	24"x24"x12",Flow Tee,600#		28	Nos.			0.00	INR Zero Only
609	8",Flame Arrestor LTCS (D4A), 600#		13	Nos.			0.00	INR Zero Only
610	ERECTION OF VALVES (As per P & ID)							
611	Handling including lifting and transportation from COMPANY'S warehouse to CONTRACTOR'S Stores (as applicable) and/or work site and installation of all types of valves, including assembly of valve accessories, (if any) by bolting, threading or welding, supply and insertion of gaskets, nuts & bolts, nipples, etc. at all elevations of pipe sleepers, carrying out pre-hydrotesting of valve and seat test of valve before installation of valve at specified pressure as per instruction of EIC, supports or overhead racks, equipment nozzle, skid & painting etc., testing, 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 valves wherever required							
612	Ball Valve							
613	D1A							
614	24",FE, FB,HOV,600#		13	Nos.			0.00	INR Zero Only
615	24",BW, FB,HOV,600#		2	Nos.			0.00	INR Zero Only
616	24",BW, FB,GOV,600#		12	Nos.			0.00	INR Zero Only
617	24",FE, FB,GOV,600#		10	Nos.			0.00	INR Zero Only
618	12",BW, FB,600#		10	Nos.			0.00	INR Zero Only
619	8",FE, RB,GOV,600#		2	Nos.			0.00	INR Zero Only
620	8",FE, RB,600#		12	Nos.			0.00	INR Zero Only
621	8",BW, RB,600#		15	Nos.			0.00	INR Zero Only
622	4",BW, RB,600#		3	Nos.			0.00	INR Zero Only
623	4",FE, RB,600#		46	Nos.			0.00	INR Zero Only
624	4",FE, FB, LO,600#		2	Nos.			0.00	INR Zero Only
625	2",BW, FB,600#		155	Nos.			0.00	INR Zero Only
626	2",FE, FB,600#		17	Nos.			0.00	INR Zero Only
627	2",FE, FB, LO,600#		8	Nos.			0.00	INR Zero Only

628	1½".FE, FB,800#		1	Nos.			0.00	INR Zero Only
629	1½".SW, FB,800#		1	Nos.			0.00	INR Zero Only
630	1".FE, FB,800#		1	Nos.			0.00	INR Zero Only
631	1".SW, FB,800#		1	Nos.			0.00	INR Zero Only
632	¾".FE, FB,800#		1	Nos.			0.00	INR Zero Only
633	¾".SW, FB,800#		220	Nos.			0.00	INR Zero Only
634	D4A							
635	¾".SW, FB,800#		2	Nos.			0.00	INR Zero Only
636	Plug Valve							
637	D1A							
638	8".FE,600#		5	Nos.			0.00	INR Zero Only
639	4".FE,600#		14	Nos.			0.00	INR Zero Only
640	4".BW,600#		11	Nos.			0.00	INR Zero Only
641	2".FE,600#		48	Nos.			0.00	INR Zero Only
642	¾".FE,800#		6	Nos.			0.00	INR Zero Only
643	D4A							
644	8".FE,600#		16	Nos.			0.00	INR Zero Only
645	2".FE,600#		14	Nos.			0.00	INR Zero Only
646	NRV							
647	24".FE,600#		2	Nos.			0.00	INR Zero Only
648	Globe Valve							
649	4".FE,600#		18	Nos.			0.00	INR Zero Only
650	Flame Arrestor (D4A)							
651	8".Installation of Flame arrestor (D4A),600#		13	Nos.			0.00	INR Zero Only
652	SAFETY RELIEF VALVES							
653	Installation of safety relief valve of inlet size range (.5"to 2")and outlet size range(2" to 3") on scrapper trap along with 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							
654	PSV (on Scrapper Trap) , 600#/150#		6	Nos.			0.00	INR Zero Only
655	PIPE SUPPORTS & OTHER STRUCTURES							
656	Supply, fabrication and erection of all types of pipe supports like clamps, saddle, guide stops, cradles, turnbuckles, 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 areas as per specification, labour and supervision & complete work as per drawings, specifications and instruction of Engineer-in-charge (Bolts, nuts, washers, U-clamp etc. for supporting shall be supplied by the Contractor within the rates quoted. These items will not be measured and will not be paid separately). The work is to be completed in all respect as per scope of work and specification		8	MT			0.00	INR Zero Only
657	RADIOGRAPHY							
658	Performance of computed radiography (CR) 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 in of Engineer-in-Charge (full circle re-radiography of the repaired joint and additional radiography necessitated due to poor performance of contractor's welder shall be carried out by the Contractor at his own cost and shall not be paid extra by Company). Radiographs shall be submitted to the Engineer-in-Charge for acceptance, whose decision shall be final and binding.							
659	24"		380	Nos. of Joint			0.00	INR Zero Only
660	16"		2	Nos. of Joint			0.00	INR Zero Only
661	12"		82	Nos. of Joint			0.00	INR Zero Only
662	8"		515	Nos. of Joint			0.00	INR Zero Only
663	4"		274	Nos. of Joint			0.00	INR Zero Only
664	2"		1280	Nos. of Joint			0.00	INR Zero Only

665	Note: Contractor has to carry out gamma ray inspection using Computed Radiography (CR) in place of traditional gamma ray Radiography for all joints (>=2") Other NDT work (UT, LPT, MPT, etc.) as required for fabrication/welding has to be performed by the contractor as per specification/procedure/codes/direction of EIC without any cost implication to owner. In case, the Contractor fails to perform computed radiography for certain joints due to site constraints then the Contractor shall be liable to pay penalty as defined in SCC. Further, the Contractor shall be required to digitize all such radiography films carried out by traditional radiography technique at no extra cost to the Client.							
666	ERECTION OF VESSELS, SKIDS & EQUIPMENTS							
667	Handling, including lifting, transportation from Company'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 contractor above ground/ underground at all elevation/ depth, fixing of foundation bolts, welding wherever required, 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 rubdown & touch up of shop primer/ paint, scrapping of shop primer/ paint and further their painting after application of primer as per specification, wherever required by Company.							
668	Approx. erection weight and Details of major equipments are as under (Refer P&ID included with Tender).							
669	Details of major equipments are as under		40	MT			0.00	INR Zero Only
670	Scraper Trap with Pig Handling Device, Chain Pulley Block, Metering skid etc.							
671	LEAKS/ BURSTS (ATTRIBUTABLE TO OWNER) FOR TERMINAL PIPING							
672	All works for leak/burst (occurring during hydrostatic testing including necessary repair/replacement of defective pipe length, including cutting and removing of defective pipes, welding, NDT of welds, repair and re-testing of defective welds, painting of welded joints, clean-up, rehydro testing of the pipe segment including providing all necessary equipments, labour, materials, consumables and inputs other than Owners supplied materials and performing all works as per drawings specifications enclosed with the Contract and directions of Engineer-in-Ch.		30	Inch Mtr.			0.00	INR Zero Only
673	Note : This rate shall be applicable for manufacturing defects in Company supplied materials only.							
674	UNLOADING OF FREE ISSUE MATERIAL							
675	Complete work of unloading of Free Issue Materials (Metering Skids etc.) from Goods Carrier (i.e. Truck, Trailer, etc.) at Company's Designated Store. After unloading, free issue material shall be placed / stacked inside the store at all elevations of racks including supply of all associated consumables, manpower, equipment etc. for completion of all works as per instructions of Engineer-in-charge.		12	MT			0.00	INR Zero Only
676	Sub-Total Section B							
677	SECTION-C: TEMPORARY CATHODIC PROTECTION WORKS							
678	Survey, Design, Detail engineering, manufacturing inspection, P&A (Factor, acceptance test) supply, Packing, Insurance, transportation to site, storage, installation, testing & commissioning of the temporary Cathodic protection system using Mg (Min 5.0 Kg) / Zn anodes (min. 5.0 Kg) to protect the external surface of 24" NB x 174.236 Kms. (approx.) pipeline (Dulajjar feeder line) from DT CGS MADHUBAN of OIL (CH. 0.00km) to RT at SV-14 of GNPL (JORHAT) (CH. 174.236 km) 24"x6.027KM (From BCPL Lepetkatato Lepetkatato injection point) against corrosion for a design life of minimum 2 years or till commissioning of PCP system, whichever is later. All CP design shall be reviewed by the Min NACE CP Level #3/Level #4 certified personnel before submitting to IGGL/MECON and all the site inspection work shall be witnessed by Min NACE CP Level #1 personnel at site in charge from Contractor's side. All work mentioned below shall be carried out as per design basis, scope of work, standard specification & data sheets & drawings, statutory requirement etc.		1	LS			0.00	INR Zero Only
679	Temporary CP system shall be installed immediately after lowering of the pipeline segment 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 segment in the specified time, necessary deduction shall be carried out from the contractor's head as non-compliance of work. The deduction shall be 1000 rs per day per lowered segment in each spread, example, 1000x nos of days TCP unprotected x lowered segments. Non-compliance / non-performance of TCP system will be noted in the completion cert.							
680	TCP Design & Survey Measurement of soil resistivity along the right of way of the main pipeline (At 500mtr interval and at 1.5, 2.5 & 3.5mtr depths) & at HDD locations, and collection of soil & water samples along ROW at depth of 1M, 2M & 3M at every 5km interval & at HDD locations (Min 03 sample at each location) for its chemical & microbial analysis along the pipeline route as per specification for corrosion survey MEC/T S/05/21/016C & NACE Standard TM0106-2000 for detection of SRB, ARB, TDS, pH, Rx, Moisture & Total dissolved H2S etc. These samples shall be stored in sealed container and stored in the dark place for testing.							

681	Collection of additional data related to cathodic protection along the right of way of pipeline, along with GPS coordinates as per standards/specifications enclosed with tender. Site survey report shall include detailed layout drawings of pipeline/facilities, reflecting all foreign pipeline/ Overhead power transmission lines crossings & parallelism, Power cables, river, railway traction (electrified/non-electrified), substations (HVAC/HVDC), fabrication yard, existing CP facilities (such as transformer rectifiers, anode grounds, test facilities etc.), soil resistivity survey locations, road crossing locations, etc. Site survey report shall include details of all AC & DC interfering elements all along pipeline ROW. Site survey shall be carried out along the pipeline route to identify the HVAC crossing locations and/or HVAC line parallelisms. Site survey report shall include a comprehensive list which includes the HVAC line rating in KV, distance of HVAC line / tower footings from pipelines and length of parallelism. Survey shall also include AC potential measurement of stations in the pipeline section.							
682	Preparation of TCP 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. Design life of TCP system- 2 Year or till commissioning of PCP whichever is later. In case of commissioning of PCP is delayed, Pipeline contractor shall ensure that pipeline is fully protected by installing additional anodes for extending the life. Total number of anode shall be calculated as per total anode weight requirement & total protection current.							
683	Test stations (Normal Size)- 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 higher grade) to avoid drainage of CP current due to insulation leakage. All the test stations and junction boxes shall be provided with shrouded Allen screws to avoid vandalism. Test station (Normal size) installation interval- Every 1 KM (avg) along the pipeline, both side of HDD crossings as mentioned in specification. Test station (Big size) installation location - Every HT Crossing 66 KV or above along the pipeline and AC/DC interference locations. Current measurement test station- Every 5 KM. TLP installed in the SV/IP stations shall be FLP type and PESO approved in case of installations in Hazardous area for safe area IP-55 TLP. Note- Cable coming from 60 Mtr for Current measurement test stations (Type B) & cables for foreign pipeline crossing shall							
684	Mg anodes (5 KG)- Supply, installation, testing & commissioning of Mg Min 5.0 Kg (High/Low potential type) with backfill as per the standard specification- MEC/TS/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 KM with test station.							
685	Mg anodes (10 KG) on both side of HDD- Supply, installation, testing and commissioning of additional 10 kg Mg anodes (High potential type) at both side of River crossings/ HDD, and Road/ Railway/ Nallah crossing (for casing pipe) encountered in the laying package.							
686	Cable to pipe connections- Cable to pipe connection by thermit welding/ Pin brazing (for charged pipeline) for 35, 25, 10, 6 sq. mm copper cable including excavation and exposing piping, recoating with epoxy, testing, holiday detection etc.							
687	Supply & laying of HDPE sheets (1200mm wide, 6mm thick) between the IGGL pipeline and the other CP protected foreign pipelines at the crossing locations for providing electrical isolation and discharge of the CP System current between the pipelines.							
688	Earthing or above ground cathodically unprotected pipeline at RT/SV stat Three earthing shall be advanced maintenance free earthing system (2 nos. at each IJ location) with 3m trearthe electrode of low carbon steel with 250 micron copper coating with carbon based backfill compound (Resistivity of compound shall be less than 1 ohm-m) as per IS 3043/IEEE-80. Total grounding resistance of station earthing shall be limited to 1 Ohm (max). Additional protection of IJ at RT/DT/IP & SV station in case of AC interference is observed along the pipeline: Solid state DC De-couples shall be considered along with maintenance free earthing (2 nos) & its connection to the main ground protected side at RT/DT & IP terminals to provide grounding to the pipeline and protect							

689	Surge Arrestor on Insulating Joint Supply, installation, testing & commissioning of one set of Explosion proof type spark gap arrestor (100 kA @ 10/350 µSec rating for lightning protection and 100 kA @ 8/20 µSec for surge protection) across each insulating joint provided at dispatch terminal, receiving terminal, tap-off, SV & various consumer terminals as per P&ID / specification, including all the monolithic insulating joints (MLJs) on the tapings for the instruments viz. pressure transmitter, density meters etc. Surge diverter cable needs to be terminated without any joints across the IJ & No encapsulation by epoxy harder. Surge diverter with its prewired connecting cables with suitable length & size should be provided and installed at the isolating joint.							
690	Solid state de-coupler with grounding at HT line crossings/ railway tractions/ for interference Crossings of HT line crossings/ railway tractions/ HVAC cables for interference mitigation- Supply, installation, testing & commissioning one set of polarization cell (Solid state DC - De coupler) with zinc anode at all railway tractions (electrified) HVAC cables (33kV & above) high tension electrical power transmission line/equipment (all 66 KV & above) crossing or running parallel to the pipeline for grounding purposes as per specification/design basis for existing & proposed high tension electrical power transmission lines. The rating of the cell shall depend upon anticipated fault current & grounded resistance at the location of installation and the calculation of the same shall be furnished to MECO 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. If required Zn Ribbon anode (Dia min. 12x14 mm with back fill in trench) / pre-packed AC mitigator wire of MATCOR/Equivalent make 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. Running parallel of HT line crossings/ railway tractions/ HVAC cables for interference mitigation- Groundings shall be done at regular intervals of maximum 1 km where transmission lines run parallel within 1 km of the pipeline and have separation distance of 100 mtr on both side of the pipeline. 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 system same. If it is observed during the monthly monitoring that the source of the AC interferences due to the HT lines less than 66kV or LT line, Contractor shall provide the grounding of the pipeline through SSD to lower impact of the AC interferences on the pipeline. Note-1 Bidder to note that HT line (>11KV) which is crossing the HDD section of the pipeline (executed by other contractors) supply, installation, testing and commissioning of the SSD with grounding anodes is in the scope of contractor to achieve the lower AC PSP. Note-2 If it is observed during the monthly monitoring that the source of the AC interferences due to the HT lines less than 66kV or LT line or pole mounted substation etc, Contractor shall provide the grounding of the pipeline through SSD to lower impact of the AC interference on the pipeline to achieve the lower AC F.							
691	External ER Probes & Reader Supply, installation, testing & commissioning of external electrical resistance Probe (02 no. ER probe with 1 no. ER 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 to pipe (Not facing the pipeline). Location of Probe-To-be decided by CP contractor during detail engineering based on specifications and in consultation with the Owner/Consultant							

692	Polarization Coupon Supply, installation, testing & commissioning of Polarisation coupons (Min. 1 no. at every 5km interval along pipeline ROW) each of total area of 100mm x 100mm (min.) having one side exposed area of 10cm² without permanent reference cell, shall be provided along the pipeline and at additional vulnerable locations (both side of HDD crossings, In between parallel pipelines at every km, 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 on the pipeline as per enclosed standard specification. Location of external Polarisation coupons & Number of magnetic devices for operation of magnetic switch shall be decided during detail engineering in consultation with IGG/MECON. Care shall be taken during installation of polarization coupon that bare face of polarisation coupon is opposite to pipe & polarisation 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 1000mm length) for fabrication of Polarisation coupons is in the scope of the contract and the required pipeline material shall be supplied by the Owner.							
693	Bonding in between pipelines running parallel or crossing as required including taking of permission from the owner of the foreign pipeline (Permission shall taken by the Pipeline Owner and any fee required for the same shall be paid by the Owner, however contractor shall assist in all respect to get such permissions from foreign pipeline owner). i) Bonding of pipelines shall be carried out through bonding stations (variable resistance of suitable value + shunt + required). Polarization coupons shall be installed at every test station in the parallel section and at crossings. ii) The Contractor shall supply and install bonding stations as provision to bond the pipelines. iii) Provision for interference mitigation Bonding Junction box (BJB) shall be installed as a minimum at the following locations- a. Where the new pipeline runs parallel to the existing pipelines, at start and end of parallelism and at every five (5) km intervals. As a minimum, all existing parallel pipelines laid with a separation distance of 10 m shall be provided with bonding provision. b. Where the pipeline crosses or intersects the existing buried pipelines or buried section of pipelines / Piping. c. BJB shall have provision to terminate 25/35mm² bonding cables and a 6 mm² potential monitoring cables connected to each foreign pipeline as well as new pipelines. BJB shall be provided with appropriately rated shunts and resistors for each circuit. Rating of the resistors shall be calculated based on the mitigation requirement.							
694	TCP Cables- Supply, laying, termination, Glanding, ferruling & testing of all the cables of TCP system, Cu-Conductor, XLPE insulated PVC sheathed, Arm'd/Unarm'd (1Cx6 mm², 1Cx10 mm², 1Cx25 mm², 1Cx35mm²) as required. Cable coming from for Current measurement test stations (Type_B) & cables for foreign pipeline crossings shall be provided with black sleeves for the identification purpose.							
695	Coating Integrity test at HDD section - Coating Integrity test of HDD section (for all HDD sections) 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. Bidders shall submit the procedure as per the ISO/ NACE requirements (NACE TM 102:2023) for approval along with the design document for the current density for the HDD section is defined in the design basis, accordingly CIT test shall be carried out in of HDD section with mainline.							
696	Monthly Monitoring- PSP Monitoring on monthly basis of the TCP system till commissioning of the permanent cathodic protection system including the coupon OFF & AC PSP.							
697	Miscellaneous work- 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.							
698	Sub-Total Section C							
699	SECTION-D: PERMANENT CATHODIC PROTECTION WORKS							
700	PART 1 : CP SURVEY-INTERFERENCE STUDY & SIMULATIONS							

701	AC-DC Interference study on pipeline and CP System due to proximity of foreign AC/DC source, HVDC Line, AC-DC Interference Detection survey & submission of report with recommended mitigation measures by software modelling as per design basis, scope of work, specifications including all survey i.e. soil survey, field survey for data collection etc. Scope of services under this includes following - Measurement of Soil resistivity Measurement of Soil resistivity at various specified spacing wherever required for modelling & simulation as per scope of work mentioned in the tender document AC & DC Interference Study AC & DC Interference study using Modelling and Simulation Software for the pipeline as per design basis & scope of work mentioned in tender document which shall include: (i) Collection of interference source data from utilities such as power line, foreign pipeline, railways, substations, cables etc. along pipeline ROU. (ii) Profiling/Mapping of all interference sources such as AC power lines, Substations, HVDC Transmission lines, foreign pipelines & DC/AC traction sources along pipeline ROU for the pipeline sections, Solar PV farms, Plant CP, Pole mounted transformers etc. (iii) Pre-Mitigation validation of the model. (iv) Carrying out software modelling & simulation for steady state & fault state, pre-mitigation validation of survey results and recommendations of mitigation measures & submission of pre-mitigation interference study report. (v) Recommendation on installation of AC corrosion coupons. (vi) Submission of post-mitigation interference study report after considering the mitigation measures.		180.263	KM			0.00	INR Zero Only
702	PART 2 : PERMANENT CATHODIC PROTECTION WORKS : SURVEY, SUPPLY, INSTALLATION, MONITORING, TESTING & COMMISSIONING							
703	Survey, Design, Detailed Engineering, manufacturing, installation, testing, commissioning, supply, painting, insurance, transportation to site, storage, installation, testing and commissioning of the permanent cathodic protection system by impressed current method of 24" NB x 174.236 Kms. (approx. pipeline (Dulajar feeder line) from DT CGS MADHUBAN of OIL (CH. 0.00 km) to RT at SV-14 of GNPL (JORHAT) (CH. 174.236 kms) and 24"x6.027 KM (From BCPL Lepetkatao Lepetkatao junction point) using MMO coated Titanium anodes with backfill, CPPSM/TR Units, AJB's, CJB's, all interconnecting cables, reference cells, monitoring systems and all other equipment and hardware's required for completeness of job as specified in tender document, to protect the external surface of 3LPE Coated pipeline against corrosion for service life of 35 years. All work shall be carried out conforming to the Scope of work, Design Basis, Data Sheets, standards specifications enclosed, statutory requirements as applicable. 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 pipelines and additional surveys i.e. CAT survey (Full length), CAT with frame 'A' /ACVG (full length), Coating conductance survey at B type stations, Casing & Carriers short surveys and preparation of commissioning report etc. as built drawing 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. Equipments coming under TCP system if useful & required in PCP system shall be used effectively in designing of PCP system. If any inadequacy present in these equipments at the time of commissioning of PCP, in such case all work associated with supply, installation, testing and commissioning shall be in scope of CP contractor with no extra cost. Scope shall include all completion of PCP work in all respect but not limited to completion of following work:							
704	PCP system survey & design- Design, Detailed Engineering, submission of Permanent Cathodic Protection system design package including carrying out the soil resistivity survey at anode ground bed locations, site data collection, submission of all drawings, installation & commissioning procedures as per tender documents. All documents of PCP system including survey, Design, review of collected survey data, installation procedure, commissioning surveys and complete PCP system of pipeline shall be designed & signed by NACE certified CP specialist having valid CP specialist certificate. Overlapping in protection - Shall be provided (If one CP station failed, another near station/s will take care the CP protection & none of pipeline part shall be left unprotected)		1	LS			0.00	INR Zero Only

705	Supply, installation, testing & commissioning of CPTR/CPSPM unit - Min 48V/25A output, Automatic, Air cooled, Indoor type with remote monitoring through SCADA facility as per the tender documents & specifications.		11	Nos.			0.00	INR Zero Only
706	Deep well type anode bed- Supply, installation, testing & commissioning of deep bed anode ground bed 200mm dia, min 48m length as per drawing no. MEC/SD/05/E9/E/CP/1611 including 1" dia & 1 M long 8A rating LIDA MMO anode with anodes (min 10 nos) to cable joints, MS pipe casing pipe (Class B), Carbonaceous back-fill [lubricated calcined petroleum coke breeze] (bulk density > 1200 kg/m ³), vent pipe etc as per tender drawings & documents.		7	Set			0.00	INR Zero Only
707	Shallow bed type anode bed- Supply, installation, testing & commissioning of shallow bed anode ground bed (46mtr x 3.0 mtr) as per drawing no. MEC/SD/05/E9/E/CP/1611 including 1" dia & 1 M long 8A rating LIDA MMO anode with anodes (min 10 nos) to cable joints, Carbonaceous back-fill [lubricated calcined petroleum coke breeze] (bulk density > 1200 kg/m ³), brick cover marking post etc as per tender drawings & documents.		4	Set			0.00	INR Zero Only
708	Supply, installation including civil works of Chain-link Fencing for Anode bed & AJB for Deep AGB at CP stations, as per approved drawings & instruction of Engineer-In-Charge.		7	Set			0.00	INR Zero Only
709	Supply, installation including civil works of Chain-link Fencing for Anode bed & AJB Shallow AGB at CP stations, as per approved drawings & instruction of Engineer-In-Charge.		4	Set			0.00	INR Zero Only
710	Anode Junction Boxes Supply, installation, testing & commissioning of Anode Junction Boxes (IP-55, Weather Proof) as per tender drawing, dimension Min 800mm x 600mm x 300mm (L x W x D).		7	Nos.			0.00	INR Zero Only
711	Cathode Junction Boxes Supply, installation, testing & commissioning of Cathode Junction Boxes/PCP Bond Junction Boxes (IP-55, Installation in safe area) Cathode Junction Boxes/PCP Bond Junction box, dimension min 600mm x 400 mm x 250 mm (L x W x D).		10	Nos.			0.00	INR Zero Only
712	Permanent Reference Cell : Supply, installation, testing & commissioning of Cu/CuSO ₄ Permanent Reference cell for CP units as per tender drawing.		55	Nos.			0.00	INR Zero Only
713	PCP Cables- Supply, laying, termination, testing, glanding, ferruling & commissioning of all PCP cables including excavation, making of under ground/buried trenches, including supply & installation of tinned-Cu lugs, double compression type cable glands, cable marker, cable tags etc as required for completion of the work at selected CP station locations.							
714	1c x 6 mm ² - armoured for potential measurement & Ref Cell/ Measurement cable from Pipe to CJB.		3800	Meter			0.00	INR Zero Only
715	1c x 10 mm ² - un-armoured for anode tail cable (KYNAR Cable).		3900	Meter			0.00	INR Zero Only
716	1Cx 25 mm ² - armoured for Bonding/ Grounding, AC mitigation etc.		1100	Meter			0.00	INR Zero Only
717	1Cx 35 mm ² - armoured for Anode & Cathode Header Cable.		2200	Meter			0.00	INR Zero Only
718	3C X 10mm ² - armoured for TR/CPSPM unit incoming cable.		550	Meter			0.00	INR Zero Only
719	Multi-core, FRILS, 2.5 Sqmm, 8/12 pair, twisted pair, armoured, signal cables as per IS/BS from CJB to CP units etc.		1700	Meter			0.00	INR Zero Only
720	Supply, Installation, Testing & commissioning of AC corrosion coupons (exposed area 1cm ²) 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).		35	Nos.			0.00	INR Zero Only
721	Making all Cable to pipe connections by Pin brazing / Thermit welding method for all sizes (Upto 1C x 35mm ²) for complete PCP system including all materials & consumables, Holiday test, coating repair. (Note- Header cable pipe to cable connection shall be above ground section of the pipeline)		1	LS			0.00	INR Zero Only
722	Supply, installation testing & commissioning of Computerized Test Stations (CTSUs) with Permanent Zn/Cu-CuSO ₄ reference electrode & portable data readers 2 nos. along with permanent reference cell (Zn/Curef cell) for automatically monitoring through GPS and recording the pipe to soil potential, pipe current etc of the pipeline. Location of CTSU shall be decided during detailed engineering. Note- CTSU shall be able to record simultaneous recording of 3 No. analogue channels, generate +ve & -ve sign for recorded PSP values, Battery Low alarm. Spare Battery Pack shall be supplied with each CTSU. The test stations shall be designed for installing and mounting portable data logger inside with theft proof.		10	Nos.			0.00	INR Zero Only
723	Testing & Commissioning of Complete Permanent Cathodic Protection System as per the approved procedure.		180.263	KM			0.00	INR Zero Only
724	Supply of recommended spares for 2 Years Operation & Maintenance of CP systems as perspare list enclosed. (As per Appendix-II).		2	Lot			0.00	INR Zero Only
725	Supply of recommended Spares for CP units as per scope of work (As per Appendix-II).		2	Lot			0.00	INR Zero Only
726	Monitoring & maintenance (as a whole) of PCP System of entire length of 24" 3LPE Coated pipelines (on Monthly Basis) including collection of data from data loggers after commissioning of PCP works simultaneously with post commissioning survey work.		6	Months			0.00	INR Zero Only
727	All civil/ structural works related to PCP system including supply of bricks, cement & steel etc. required for the completion of system.		1	LS			0.00	INR Zero Only
728	Preparation and submission of As-Built drawings/documents including installation reports, final commissioning report for PCP system.		1	LS			0.00	INR Zero Only

729	PART-3 : CP-Post Commissioning Surveys : Below mentioned surveys shall be carried out preferably within one (1) month after the commissioning of Impressed Current Cathodic Protection system.							
730	Close interval potential logging survey- Every 1 meter, including submission of draft report (1 hard & 1 soft copy)		180.263	KM			0.00	INR Zero Only
731	CAT Survey (Full length of pipeline) @ every 50 m of pipeline ROW including submission of draft report (1 hard & 1 soft copy)		180.263	KM			0.00	INR Zero Only
732	CAT with frame 'A' /ACVG survey at Full length of pipeline. (All defects including minor holidays shall be excavated and repaired by the Mainline contractor)		180.263	KM			0.00	INR Zero Only
733	Pipeline total protective current density measurement at CJB and current drainage at bonding stations : Shall be carried out by measurement of the total CP current in the CJB, total surface area of the structure. After completion of all post commissioning surveys, interference mitigation, before handover of the CP system to Owner. Current drainage test at all bonding locations with foreign pipeline for measurement of current interaction b/w two pipeline with its polarity.	1		LS			0.00	INR Zero Only
734	Coating conductance survey at B type stations (B type TLP to be given in every 5 KM. Survey to be carried out as per NACE TM102) including submission of final report with line diagram of each sections & its specific coating resistance .	1		LS			0.00	INR Zero Only
735	AC-DC Interference Mitigation as per results from simulation report- All required mitigation measures as per tender specification & recommended with simulation report shall be carried by the bidder, this work also includes PSP (AC & DC) data logging (pre mitigation & post mitigation) at each HT line crossings >33kV with AC corrosion density measurement (before mitigation), also at pole mounted transformer locations, at Foreign pipeline crossings, HVDC as per the scope of work and design basis. Post mitigation/Validation by data logging (24-48 hrs) including all deliverables as per the simulation studies and presentation to MECON/Owner & submission of draft report (1 hard & 1 soft copy).	1		LS			0.00	INR Zero Only
736	PART-4 : PERMANENT CATHODIC PROTECTION WORK-ANODE BED LAND							
737	Acquisition of land or Lease (for 99 years/ as per statutory regulations) for Anode bed, Anode junction boxes and anode ground bed ROU for cable laying (Title transfer in the name of the Owner). Land size Min 4m x 3m for shallow type AGB and Min. 5m x 5m for deep well type AGB. ROU for laying of cables (1mtr wide) from AJB to CPTR. Transferring the title of the acquired land in favour of IGGL at the CP station locations. Preferably, anode ground bed should be located within IGGL's station boundary if electrical remoteness is achieved, otherwise separate land shall be procured during project stage for installation of anode ground bed. Scope includes acquiring land and Change of land ownership to the name of IGGL including NA (Non-Agricultural) conversion (where required) are grading/ levelling to a suitable grade level to avoid water logging, supply and fixing of chain-link fencing and gate. The item scope also includes acquiring ROU (where required) for cable laying between CP Unit and Anode bed and Transferring the title of the acquired land in favour of IGGL at the following CP station locations including change in title in revenue records at following locations. i- DT- Madhuban, Ch 00.00 Km ii- SV-01, Ch. 16.00 km ii- SV-02, Ch. 32.50 km iii- SV-03, Ch. 48.00 km iv- SV-04, Ch. 64.00 km v- SV-05 Ch. 80.00 km vi- IP-01 Ch. 96.00 km vii- SV-06 Ch. 112.0 km viii- SV-07 Ch. 128 km ix- SV-08 Ch. 144 km x- SV-09 Ch. 160 km Note : Above mentioned locations are tentative & indicative only, same may change during detail engineering as per							

738	Deepwell type Anode Bed-Acquisition of land or Lease (for 99 years) as per statutory regulations for Anode bed, Anode junction boxes and anode ground bed ROU for cable laying (Title transfer in the name of the Owner). Land size Min 46mx3m for deepwell type AGB. ROU for laying of cables (1mt wide) from AJB to CPTR. Transferring the title of the acquired land in favour of IGGL at the CP station locations. Preferably, anode ground bed should be located within IGGL's station boundary if electrical remoteness is achieved otherwise separate land shall be procured during project stage for installation of anode ground bed. Scope includes acquiring land and Change of land ownership to the name of IGGL including NA (Non-Agricultural) conversion (where required) area grading/levelling to a suitable grade level to avoid water logging, supply and fixing of chain-link fencing and gate. The item scope also includes acquiring ROU (where required) for cable laying between CP Unit and Anode bed and Transferring the title of the acquired land in favour of IGGL at the following CP station locations including change in title in revenue records at above locations.		7	Nos.			0.00	INR Zero Only
739	Shallow Anode Bed-Acquisition of land or Lease (for 99 years) as per statutory regulations for Anode bed, Anode junction boxes and anode ground bed ROU for cable laying (Title transfer in the name of the Owner) Land size Min 46mx3m for shallow type AGB and ROU for laying of cables (1mt wide) from AJB to CPTR. Transferring the title of the acquired land in favour of IGGL at the CP station locations. Preferably, anode ground bed should be located within IGGL's station boundary if electrical remoteness is achieved otherwise separate land shall be procured during project stage for installation of anode ground bed. Scope includes acquiring land and Change of land ownership to the name of IGGL including NA (Non-Agricultural) conversion (where required) area grading/levelling to a suitable grade level to avoid water logging, supply and fixing of chain-link fencing and gate. The item scope also includes acquiring ROU (where required) for cable laying between CP Unit and Anode bed and Transferring the title of the acquired land in favour of IGGL at the following CP station locations including change in title in revenue records at above locations.		4	Nos.			0.00	INR Zero Only
740	Sub-Total Section D							
741	SECTION-E: CORROSION MONITORING SYSTEM WORKS							
742	PART-1 :SUPPLY OF CMS SYSTEM							
743	Design, fabrication assembly painting Inspection/FA (Factor acceptance test) packing & preservation Supply, Transportation insurance, delivery at storage (storage in scope of Bidder), shipment, including Mandatory spares, Pre-commissioning/ Commissioning spares, loading/unloading, documentation of complete CMS system for Dulaijan Feeder pipeline project in accordance with scope of work enclosed with Tender & Approved design document, data sheets, drawings, codes and standards for as per attached specification, statutory requirement as applicable. Scope shall include, all the work required for completion of CMS work in all respect, but, not limited to supply of following items.							
744	Design, engineering, selection, supply of high pressure, retrievable type ER probes flush mounting with all required materials (holder, connector etc), min. 5 m cable, probe holder, body SS 316, with elements same as per pipeline material or API 5L Gr B and the element thickness of min 20 mils, suitable for measurement of Corrosion rate in the range of 0-10 mpy along with adaptor with cable as per scope of work of Corrosion Monitoring System.		4	Nos.			0.00	INR Zero Only
745	Supply of spare ER probes (Flush Mounted as per design) body SS 316, with element same as per pipeline material or API 5L Gr B and the element thickness 20 mils, suitable for measurement of Corrosion rate in the range of 0-10 mpy as per scope of work of Corrosion Monitoring System.		2	Nos.			0.00	INR Zero Only
746	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.		4	Nos.			0.00	INR Zero Only
747	Design, Engineering, supply of ER Probe yoke/field mounted transmitters with mounting bracket having provision to interfacing with ER probe receivers along with all accessories & consumables for ER Probe transmitter as per scope of work of Corrosion Monitoring System.		4	Nos.			0.00	INR Zero Only
748	Design, Engineering, supply of ER Probe Receiver (i.e. online corrosion meter, as per specification) for Monitoring of Corrosion rates.		4	Nos.			0.00	INR Zero Only
749	Design, engineering supply of disc coupon of 1.25"dia & 0.125" thickness as per scope of work of Corrosion Monitoring System. The coupons shall be same as of pipeline material grade & its material of construction.		20	Nos.			0.00	INR Zero Only
750	Design, engineering supply of retrievable flush disc coupon holders of SS 316 for flush disc coupons as per Scope of work of Corrosion Monitoring System.		4	Nos.			0.00	INR Zero Only
751	Design, engineering supply of flare weld Access fitting assembly (non-tee) body carbon steel, acme thread outlet with solid plug assembly of SS 316 along with 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.		4	Nos.			0.00	INR Zero Only

752	Supply of all connecting cables (Signal cables as per specification/scope of work) from ER Probe location to Receiver (online corrosion meter) installed in control room to interface with station PLC/DCS/SCADA system.		1000	Meter			0.00	INR Zero Only
753	Supply of retrieval 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.		1	Nos			0.00	INR Zero Only
754	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.		1	Nos.			0.00	INR Zero Only
755	Supply of spares for 02 years O&M operation of CMS system as mentioned in Scope of work Annexure-II of CMS system.		2	Lot			0.00	INR Zero Only
756	PART-2: INSTALLATION, TESTING & COMMISSIONING OF CMS SYSTEM							
757	Installation including insertion of Coupon & Probe in access fitting assembly testing & Commissioning of ICMS system using ER Probe & Coupons for Dulajjan feeder pipeline project in accordance with scope of work enclosed with Tender & Approved design document, data sheets, drawings, codes and standards for as per attached specification statutory requirement as applicable. Scope shall include, all the work required for completion of CMS work in all respect, but, not limited to supply of following items							
758	Installation, welding, testing & commissioning of access fitting for ER probes on pipeline at locations as specified in the tender documents/scope of work for CMS system.		4	Nos.			0.00	INR Zero Only
759	Installation, insertion, testing & commissioning of ER probes in access fittings assemblies, ER Probe transmitter in yoke/field, probe holder, connectors, cable from probe to transmitter, cable termination & ferruling etc with required consumables, testing & commissioning as mentioned in scope of work.		4	Nos.			0.00	INR Zero Only
760	Installation, testing & commissioning of wall mounted ER Probe online corrosion meter, cable termination & ferruling etc with required consumables, testing & commissioning as mentioned in scope of work.		4	Nos.			0.00	INR Zero Only
761	Installation/laying of all connecting cables (Signal cables) from ER Probe transmitter (field mounted) to Corrosion meter (wall mounted, in control room) to interface with station PLC/DCS/SCADA system.		1000	Meter			0.00	INR Zero Only
762	Installation, welding, testing & commissioning of access fitting for Corrosion coupon on pipeline at locations as specified in the tender documents/scope of work for CMS system.		4	Nos.			0.00	INR Zero Only
763	Installation, insertion, testing & commissioning of coupon in access fitting assemblies, coupon holder with the pipeline including all required consumables, testing & commissioning as mentioned in scope of work.		20	Nos.			0.00	INR Zero Only
764	Training - Imparting Classroom as well as field training at one location of IGL for ICMS system, as per scope of work training will broadly consist of operation of ICMS system, its working, retrieval & insertion of coupons & probes, Collection of corrosion related data, data analysis & assessment, learning & operation of all software's and hardware's provided. Note-The trainer shall have vast experience in corrosion monitoring field and corrosion data analysis and preferable supplier of the ICMS system & shall be NACE certified corrosion specialist. Location of classroom training for each shall be decided mutually during detailed engineering.		1	LS			0.00	INR Zero Only
765	Sub-Total Section E							
766	SECTION-F: ELECTRICAL WORKS							
767	POWER DISTRIBUTION BOARDS							
768	Design, Manufacturing, testing at shop (during FAT), Packing, Insurance, transportation, supply, storage at Bidder's store (covered) of power distribution board (PDB)							
769	415 V, 30 KA for 1 Sec, Cu bus bar, single front type indoor PDB-1 with type-1+2 SPD (Type 1 SPD, 10/350us waveform, Up to 2.5KV) to receive input power at DT, Busbar consisting of bus bar chamber, cable alley, 250 Amp incoming 4P MCCB (with LSIG & Shunt trip), 250 A, 4P Contactor (AC3) with interlocking with DG set, timers, Auto & Manual mode of operation of panel with DG set, PT & CT as per SLD & 5 nos. 125 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, capacitor bank (3x10KVAR) complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) with RS 485 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, datasheet & SLD no. MEC/05/E9/E/E-		1	Nos.			0.00	INR Zero Only
770	415 V, 30 KA for 1 Sec, Cu bus bar, single front type indoor PDB-2 with type-1+2 SPD (Type 1 SPD, 10/350us waveform, Up to 2.5KV) to receive input power at DT, BCPL & IP station consisting of bus bar chamber, cable alley, 250 Amp incoming 4P MCCB (with LSIG & Shunt trip), 250A, 4P Contactor (AC3) with interlocking with DG set, timers, Auto & Manual mode of operation of panel with DG set, PT & CT as per SLD & 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, capacitor bank (3x5KVAR) complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) with RS 485 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, datasheet & SLD no. MEC/05/E9/E/E-		2	Nos.			0.00	INR Zero Only

771	415 V, 30 KA for 1 Sec, Cu bus bar, single fronttype indoorPDB-3 with type-1+2SPD (Type 1 SPD, 10/350us waveform,Up 2.5KV) to receive input power at SV stations consisting of bus bar chamber, cable alley, 160 Amp incoming 4P MCCB (with LSIG & Shunttrip), 160A, 4P contactor(AC3) with interlocking with DG set, timers, Auto & Manual mode of operation of panel with DG set, PT & CT as per SLD & 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, capacitor bank (3x3KVAR) complete with PT & CT as per SLD, wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) with port 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 & SLD		9	Nos.				0.00	INR Zero Only
772	Transportation from Bidder's store to site & proper storage at site (during installation), Installation, testing and commissioning of power distribution board (PDB)								
773	415 V, 30 KA for 1 Sec, Cu bus bar, single fronttype indoorPDB-1 with type-1+2SPD (Type 1 SPD, 10/350us waveform, Up 2.5KV) to receive input power at DT, Madhubar consisting of bus bar chamber, cable alley, 250 Amp incoming 4P MCCB (with LSIG & Shunttrip), 250 A, 4P Contactor(AC3) with interlocking with DG set, timers, Auto & Manual mode of operation of panel with DG set, PT & CT as per SLD & 5 nos. 125 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, capacitor bank (3x10KVAR) complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) with RS 485 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 & SLD no. MEC/05/E9/E/E-		1	Nos.				0.00	INR Zero Only
774	415 V, 30 KA for 1 Sec, Cu bus bar, single fronttype indoorPDB-2 with type-1+2SPD (Type 1 SPD, 10/350us waveform, Up 2.5KV) to receive input power at DT, BCPL & IP station consisting of bus bar chamber, cable alley, 250 Amp incoming 4P MCCB (with LSIG & Shunttrip), 250A, 4P Contactor(AC3) with interlocking with DG set, timers, Auto & Manual mode of operation of panel with DG set, PT & CT as per SLD & 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, capacitor bank (3x5KVAR) complete with wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) with RS 485 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 & SLD no. MEC/05/E9/E/E-		2	Nos.				0.00	INR Zero Only
775	415 V, 30 KA for 1 Sec, Cu bus bar, single fronttype indoorPDB-3 with type-1+2SPD (Type 1 SPD, 10/350us waveform, Up 2.5KV) to receive input power at SV stations consisting of bus bar chamber, cable alley, 160 Amp incoming 4P MCCB (with LSIG & Shunttrip), 160A, 4P contactor(AC3) with interlocking with DG set, timers, Auto & Manual mode of operation of panel with DG set, PT & CT as per SLD & 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, capacitor bank (3x3KVAR) complete with PT & CT as per SLD, wiring, indication lamp, ammeter, voltmeter, MFM (Multi Function Meter) with port 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 & SLD		9	Nos.				0.00	INR Zero Only
776	Spares for LT Panel based on SLD no. MEC/05/E9/E/E-0085/500 for 2 years operation & maintenance as per the annexure in specification		3	Lot				0.00	INR Zero Only
777	LIGHTING DISTRIBUTION BOARDS								
778	Design, Manufacturing, testing at shop (during FAT), Packing, Insurance, transportation, supply, storage at Bidder's store (covered) of 415V/240V lighting/power panels, Surface/Recess mounting type in weather/flammeproof (with hinged cover) sheet steel enclosure of approved make having 4 Pole MCCB (LSIG)/RCBO as incoming and SP/DP/TPN 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								
779	Surface/Recess mounted Lighting Panel (I/E-LDB) for Building Lighting consisting of 2 nos. 32 Amp (100mA sensitivity) 4 Pole RCBO as incoming (Grid+Inverter 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 SLD no MEC/05/E9/E/E-0085		12	Nos.				0.00	INR Zero Only
780	Surface/Recess mounted Building Power Point Panel (PP-LDB) for Building Power Points, AC's etc for DT/BCPL station consisting of 100 Amp (100mA sensitivity) 4 Pole RCBO as incoming and 10 nos. 20A DP MCB & 8 nos. 16A DP MCBs as out goings complete with indication lamp etc. Refer SLD no MEC/05/E9/E/E-0085		3	Nos.				0.00	INR Zero Only
781	Surface/Recess mounted Building Power Point Panel (PP-LDB) for Building Power Points, AC's etc for SV stations consisting of 63 Amp (100mA sensitivity) 4 Pole RCBO as incoming and 10 nos. 20A DP MCB & 10 nos. 16A DP MCBs as out goings complete with indication lamp etc. Refer SLD no MEC/05/E9/E/E-0085		9	Nos.				0.00	INR Zero Only
782	Outdoor Lighting Panel (O-LDB) consisting of 80 Amp (100mA sensitivity) 4 Pole RCBO as incoming and 5 nos. 20/16A DP 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 SLD no MEC/05/E9/E/E-0085		12	Nos.				0.00	INR Zero Only
783	Installation, testing, and commissioning of 415V/240V lighting/power panels, Surface/Recess mounting type in weather/flammeproof (with hinged cover) sheet steel enclosure of approved make having 4 Pole MCCB (LSIG)/RCBO as incoming and SP/DP/TPN 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								

784	Surface/Recess mounted Lighting Panel (I/E-LDB) for Building Lighting consisting of 2 nos. 32 Amp (100mA sensitivity) 4 Pole RCBO as incomer(Grid+Inverter supply) along with two isolated Cu busbar and 10 Nos. 10A DP MCBs & 16A DP MCBs as out goings complete with ammeter indication lamp etc. Refer SLD no MEC/05/E9/E-008	12	Nos.			0.00	INR Zero Only
785	Surface/Recess mounted Building Power Point Panel (PP-LDB) for Building Power Points, AC's etc for DT/BP station 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 SLD no MEC/05/E9/E-0085	3	Nos.			0.00	INR Zero Only
786	Surface/Recess mounted Building Power Point Panel (PP-LDB) for Building Power Points, AC's etc for SV stations 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 SLD no MEC/05/E9/E-0085	9	Nos.			0.00	INR Zero Only
787	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 5/20/16 Amp DP MCB. 5 Nos. 20A TPN MCB without timer etc indication lamp. Refer SLD no MEC/05/E9/E-0085	12	Nos.			0.00	INR Zero Only
788	1600VA Inverter System for indoor and outdoor EM Lighting						
789	Design, Manufacturing, Packing, Insurance, transportation, supply, storage at Bidder's store (covered) of 1600VA sine wave Inverter system with 2x150Ah Battery backup tubular type battery for critical lighting in control room building & outdoor area (Make Inverter: Su-Kam, Genius, Luminus, Microtek, Battery: Exide, Ar	12	Nos.			0.00	INR Zero Only
790	Installation, testing & commissioning of 1600VA sine wave Inverter system with 2x150Ah Battery backup tubular type battery for critical lighting in control room building & outdoor area (Make Inverter: Su-Kam, Genius, Luminus, Microtek, Battery: Exide, Amaraja	12	Nos.			0.00	INR Zero Only
791	Earthing & Lightning Protection						
792	Design, Manufacturing, testing, Packing, Insurance, transportation, supply, storage at Bidder's store (covered) of the complete earthing and lightning protection system as per IEC/IS 62305 with mesh of 10x10 m & down conductor at every 10 mtr on perimeter, 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 Owner/Consultant						
793	Earth Pits- GI PIPE Electrode with 6 mm thick chequered plate cover	100	Nos.			0.00	INR Zero Only
794	Earth Pits- Copper plate Electrode with 6 mm thick chequered plate cover	24	Nos.			0.00	INR Zero Only
795	GI Strip (50X6) mm	2400	Meter			0.00	INR Zero Only
796	GI Strip (25X3) mm for earthing & lighting protection (down conductor with holding clips at every 1 mtr for lighting protection)	4500	Meter			0.00	INR Zero Only
797	Copper Strip (25X3) mm	700	Meter			0.00	INR Zero Only
798	GI Wire (8mm- solid), Cu- wire rope (Min 8 mm dia solid) and all balance earthing material including copper strip (6 mm thick) jumper for flanges etc. as per the specification for all stations.	1	Lot			0.00	INR Zero Only
799	GI lightning rod 16 mm dia. 3000mm long air termination rod including supply of all mounting hardware (IEC 62305 approved) etc. complete as per approved drawings, specifications and directions of Engineer-In-Charge.	24	Set			0.00	INR Zero Only
800	Advance maintenance free earthing system with 3mtr earth electrode of low carbon steel with 250 micron copper coating with carbon based backfill compound (Resistivity of compound shall be less than 1 ohm-m) as per IS 3043/IEEE-80	80	Nos.			0.00	INR Zero Only
801	Installation, testing, commissioning of the complete earthing and lightning protection system as per IEC/IS 62305 with mesh of 10x10m & down conductor at every 10 mtr on perimeter at 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 Owner/Consultant						
802	Earth Pits- GI PIPE Electrode with 6 mm thick chequered plate cover	100	Nos.			0.00	INR Zero Only
803	Earth Pits- Copper plate Electrode with 6 mm thick chequered plate cover	24	Nos.			0.00	INR Zero Only
804	GI Strip (50X6) mm	2400	Meter			0.00	INR Zero Only
805	GI Strip (25X3) mm for earthing & lighting protection (down conductor with holding clips at every 1 mtr)	4500	Meter			0.00	INR Zero Only
806	Copper Strip (25X3) mm	700	Meter			0.00	INR Zero Only
807	GI Wire (8mm- solid), Cu- wire rope (Min 8 mm dia solid) and all balance earthing material including copper strip (6 mm thick) jumper for flanges etc. as per the specification for all stations.	1	Lot			0.00	INR Zero Only
808	GI lightning rod 16 mm dia. 3000mm long air termination rod including supply of all mounting hardware (IEC 62305 compliant) etc. complete as per approved drawings, specifications and directions of Engineer-In-Charge.	24	Set			0.00	INR Zero Only
809	Advance maintenance free earthing system with 3mtr earth electrode of low carbon steel with 250 micron copper coating with carbon based backfill compound (Resistivity of compound shall be less than 1 ohm-m) as per IS 3043/IEEE-80	80	Nos.			0.00	INR Zero Only
810	FRLS power, control cables & Building wire						
811	Design, Manufacturing, Testing, Packing, Insurance, transportation, supply, storage at Bidder's store (covered) of 1.1KV grade XLPE insulated, PVC sheathed, FRLS power and control cables (conforming to IS:7098 and specification) of following sizes in trenches excavated under ground trench/trays, pulling through pipes and its prepose sealing, cutting of paved area, roads etc						
812	3.5x 120 mm ² A2XFY	1000	Meter			0.00	INR Zero Only
813	3.5x 95 mm ² A2XFY	1500	Meter			0.00	INR Zero Only
814	3.5x 70 mm ² A2XFY	1500	Meter			0.00	INR Zero Only
815	3.5x 35 mm ² A2XFY	1350	Meter			0.00	INR Zero Only
816	3.5x 25 mm ² 2XFY	800	Meter			0.00	INR Zero Only

817	2x35 mm ² 2XFY		400	Meter			0.00	INR Zero Only
818	3.5x10 mm ² 2XWY		300	Meter			0.00	INR Zero Only
819	4x 6 mm ² 2XWY		600	Meter			0.00	INR Zero Only
820	4x 4 mm ² 2XWY		2000	Meter			0.00	INR Zero Only
821	4x 2.5 mm ² 2XWY		10500	Meter			0.00	INR Zero Only
822	2x 4 mm ² 2XWY		1100	Meter			0.00	INR Zero Only
823	2.5 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire (90mtr roll), except point wiring.		7	Nos.			0.00	INR Zero Only
824	4 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire (90mtr roll), except point wiring.		7	Nos.			0.00	INR Zero Only
825	6 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire (90mtr roll), except point wiring.		7	Nos.			0.00	INR Zero Only
826	Laying, termination, testing and commissioning of 1.1kV grade XLPE insulated, PVC sheathed, FRLS power and control cables (conforming to IS:7098 and specification) of following sizes in trenches/excavated underground trench/trays pulling through pipes and its proper sealing, cutting of paved area, roads etc.							
827	3.5x 120 mm ² A2XFY		1000	Meter			0.00	INR Zero Only
828	3.5x 95 mm ² A2XFY		1500	Meter			0.00	INR Zero Only
829	3.5x 70 mm ² A2XFY		1500	Meter			0.00	INR Zero Only
830	3.5x 35 mm ² A2XFY		1350	Meter			0.00	INR Zero Only
831	3.5x 25 mm ² 2XFY		800	Meter			0.00	INR Zero Only
832	2x35 mm ² 2XFY		400	Meter			0.00	INR Zero Only
833	3.5x10 mm ² 2XWY		300	Meter			0.00	INR Zero Only
834	4x 6 mm ² 2XWY		600	Meter			0.00	INR Zero Only
835	4x 4 mm ² 2XWY		2000	Meter			0.00	INR Zero Only
836	4x 2.5 mm ² 2XWY		10500	Meter			0.00	INR Zero Only
837	2x 4 mm ² 2XWY		1100	Meter			0.00	INR Zero Only
838	2.5 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire (90mtr roll), except point wiring.		7	Nos.			0.00	INR Zero Only
839	4 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire (90mtr roll), except point wiring.		7	Nos.			0.00	INR Zero Only
840	6 Sqmm Flame Retardant Low smoke(FRLSH) PVC Insulated Building wire (90mtr roll), except point wiring.		7	Nos.			0.00	INR Zero Only
841	Lighting Fixtures (Outdoor Lighting) / GI Octagonal poles							
842	Design, Manufacturing, testing, Packing, Insurance, transportation, supply, storage at Bidder's store (covered) of lighting fixtures complete with mounting bracket, flame proof / non flame proof, control gearbox 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.							
843	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		140	Nos.			0.00	INR Zero Only
844	Street lighting Non flame proof luminaire (lighting fixture: Type LSTP-45-CDL of M/s CG make or equivalent, with 45W LED).		120	Nos.			0.00	INR Zero Only
845	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		12	Nos.			0.00	INR Zero Only
846	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		32	Nos.			0.00	INR Zero Only
847	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		24	Nos.			0.00	INR Zero Only
848	Electric Illuminated Station detail board (6ft x 3ft) along with mounting structure (Station detail will be decided in detail engineering).		12	Nos.			0.00	INR Zero Only
849	Street lighting pole 6mtr high GI octagonal pole (Type BOP-6030 of Bajaj make or equivalent) complete with bracket, GI clamps, FLP Cable glands, flame proof & weather proof (IP-55) junction boxes (4 way) as per standard drawing (MEC/SD/05/E9/77/04) & specification (MEC/TS/05/E9/077B).		292	Nos.			0.00	INR Zero Only
850	High Mast Lighting system on 20m high pole consisting for 8 nos. of lighting fixtures (200W LED Lamp Type LFLN-120-CDL/60 of CG make or equivalent) as per standard datasheet No. MEC/DS/05/E9/077A with feeder pillar (FLP Type).		2	Nos.			0.00	INR Zero Only
851	Installation, testing, commissioning of lighting fixtures complete with mounting bracket, flame proof / non flame proof, control gearbox 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.							
852	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		140	Nos.			0.00	INR Zero Only
853	Street lighting Non flame proof luminaire (lighting fixture: Type LSTP-45-CDL of M/s CG make or equivalent, with 45W LED).		120	Nos.			0.00	INR Zero Only
854	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		12	Nos.			0.00	INR Zero Only

855	Flameproof integral flood lighting fixture (for 150W LED) on building/structure/pole lighting fixture type: FLPW-25950 of M/s Baliga make or equivalent		32	Nos.			0.00	INR Zero Only
856	Non flameproof bracket mounted integral LED lighting fixture on building/structure lighting fixture type: LSTP-45-CDL of M/s CG make or equivalent		24	Nos.			0.00	INR Zero Only
857	Electric Illuminated Station detail board (6ftx3ft) along with mounting structure (Station detail will be decided in detail engineering).		12	Nos.			0.00	INR Zero Only
858	Street lighting pole 6mtr high GI octagonal pole (Type BOP-6030 of Bajaj make or equivalent) complete with bracket, GI clamps, FLP Cable glands, flame proof & weather proof (IP-55) junction boxes (4 way) as per standard drawing (MEC/SD/05/E9/77/04) & specification (MEC/TS/05/E9/077B).		292	Nos.			0.00	INR Zero Only
859	High Mast Lighting system on 20m high pole consisting for 8 nos. of lighting fixtures (200W LED Lamp Type FLN-120 CDL/60 of CG make or equivalent) as per standard data sheet No. MEC/DS/05/E9/077A with feeder pillar (FLP Type).		2	Nos.			0.00	INR Zero Only
860	Incoming Power supply misc. Item							
861	Design, Manufacturing, testing, Packing, Insurance, transportation supply, storage at Bidder's store (covered by following materials-							
862	Outdoor type dust & weather proof sheet steel (2 mm thick) enclosed MCCB of following rating for mounting on wall or pedestal 250A, 415V, 3 Pole & Neutral AC-23 duty and suitable for termination of 3.5 x 120/95 sq.mm A2XFY cable on incomer terminals and outgoing terminals.		12	Nos.			0.00	INR Zero Only
863	Chain link fencing of (height 2.5m) 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.		260	Meter			0.00	INR Zero Only
864	40 mm blue granite metal for spreading in the fenced area.		180	M3			0.00	INR Zero Only
865	3Cx 150 Sqmm, 11 KV (UE) HT Cable, XLPE insulated and PVC sheathed, Screened, Armoured as per MEC/ONS specification.		500	Meter			0.00	INR Zero Only
866	Installation, Testing & commissioning of following materials-							
867	Outdoor type dust & weather proof sheet steel (2 mm thick) enclosed MCCB of following rating for mounting on wall or pedestal 250A, 415V, 3 Pole & Neutral AC-23 duty and suitable for termination of 3.5 x 120/95 sq.mm A2XFY cable on incomer terminals and outgoing terminals.		12	Nos.			0.00	INR Zero Only
868	Chain link fencing of (height 2.5m) 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.		260	Meter			0.00	INR Zero Only
869	40 mm blue granite metal for spreading in the fenced area.		180	M3			0.00	INR Zero Only
870	3Cx 150 Sqmm, 11 KV (UE) HT Cable, XLPE insulated and PVC sheathed, Screened, Armoured as per MEC/ONS specification.		500	Meter			0.00	INR Zero Only
871	Light Point (Indoor)							
872	Supply, manufacturing, testing supply and storage at site of point wiring material (including lighting fixtures mentioned below and wires) as per details in construction drawing & specification includes PVC conduits in ceiling, complete 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 shall also be included in the point wiring)							
873	Surface/ recess mounted LED light fixture with LED lamp (type LCTL-18 -CDL of CG make or equivalent).		800	Nos.			0.00	INR Zero Only
874	Industrial Flame proof fluorescent lamp fitting with LED lamp (type EXT N2LT8-20 of CG make or equivalent).		48	Nos.			0.00	INR Zero Only
875	Integral LED Post top lantern Non flame proof luminaire (lighting fixture : Type LP TO-40/CDL of M/s CG make or equivalent on post top at Main Entrance gate of station with all mounting arrangements).		24	Nos.			0.00	INR Zero Only
876	Exhaust fan (Industrial type 300/450 mm) with louvers, 950 rpm, 55 watt.		60	Nos.			0.00	INR Zero Only
877	Flame Proof (CMIFR approved) 12" Exhaust Fan 0.25HP motor, 1440 rpm. (Preferred Make: Baliga, FCG, CGL, Prompt)		24	Nos.			0.00	INR Zero Only
878	Socket outlet (5/15 Amp combination) of ANCHOR ROMA make or equivalent		150	Nos.			0.00	INR Zero Only
879	20 Amp sheet steel enclosed industrial type socket with 20 Amp DP MCB for AC.		55	Nos.			0.00	INR Zero Only
880	Ceiling fan with electronic regulator (Energy efficient, 50W, 1200 mm sweep)		18	Nos.			0.00	INR Zero Only
881	Wall mounted fan with electronic regulator (Energy efficient, 50W, 400 mm sweep, 1300 rpm) etc complete in all wall mounting		36	Nos.			0.00	INR Zero Only
882	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 shall be included in the point wiring)							
883	Surface/ recess mounted LED light fixture with LED lamp (type LCTL-18 -CDL of CG make or equivalent).		800	Nos.			0.00	INR Zero Only
884	Industrial Flame proof fluorescent lamp fitting with LED lamp (type EXT N2LT8-20 of CG make or equivalent).		48	Nos.			0.00	INR Zero Only
885	Integral LED Post top lantern Non flame proof luminaire (lighting fixture : Type LP TO-40/CDL of M/s CG make or equivalent on post top at Main Entrance gate of station with all mounting arrangements).		24	Nos.			0.00	INR Zero Only
886	Exhaust fan (Industrial type 300/450 mm) with louvers, 950 rpm, 55 watt.		60	Nos.			0.00	INR Zero Only
887	Flame Proof (CMIFR approved) 12" Exhaust Fan 0.25HP motor, 1440 rpm. (Preferred Make: Baliga, FCG, CGL, Prompt)		24	Nos.			0.00	INR Zero Only
888	Socket outlet (5/15 Amp combination) of ANCHOR ROMA make or equivalent		150	Nos.			0.00	INR Zero Only
889	20 Amp sheet steel enclosed industrial type socket with 20 Amp DP MCB for AC.		55	Nos.			0.00	INR Zero Only
890	Ceiling fan with electronic regulator (Energy efficient, 50W, 1200 mm sweep)		18	Nos.			0.00	INR Zero Only

891	Wall mounted fan with electronic regulator (Energy efficient, 50W, 400 mm sweep, 1300 rpm) etc complete in all wall mounting		36	Nos.			0.00	INR Zero Only
892	Junction Boxes							
893	Supply, manufacturing, testing, supply and storage at site of Junction box-							
894	IP-55 weatherproof, structure/surface mounted junction box with canopy with 4 Sqmm terminals, cable glands & all other accessories required for termination of cables (4W)		60	Nos.			0.00	INR Zero Only
895	FLP, IP-55 weatherproof, structure/surface mounted junction box with 4 Sqmm terminals with cable glands & all other accessories required for termination of cables (2W)		12	Nos.			0.00	INR Zero Only
896	Installation of Junction box-							
897	IP-55 weatherproof, structure/surface mounted junction box with canopy with 4 Sqmm terminals, cable glands & all other accessories required for termination of cables (4W)		60	Nos.			0.00	INR Zero Only
898	FLP, IP-55 weatherproof, structure/surface mounted junction box with 4 Sqmm terminals with cable glands & all other accessories required for termination of cables (2W)		12	Nos.			0.00	INR Zero Only
899	Air Conditioners							
900	Supply, manufacturing, testing, supply and storage at site of latest model (5 stars BEE certified inverter AC) min 1.8 T industrial split AC complete with remote, 5 KVA stabilizer, 12 Hr timer, MS Stand for outdoor unit etc.		35	Nos.			0.00	INR Zero Only
901	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 stabilizer, 12 Hr timer, MS Stand for outdoor unit etc.		35	Nos.			0.00	INR Zero Only
902	Flame Proof Welding Socket							
903	Supply, manufacturing, testing, supply and storage at site of Flame proof type 63 Amp. Welding socket		12	Nos.			0.00	INR Zero Only
904	Installation, Testing & commissioning of Flame proof type 63 Amp. Welding socket		12	Nos.			0.00	INR Zero Only
905	Flameproof type Portable type Emergency light							
906	Supply, manufacturing, testing, supply and storage at site of flame proof type portable type emergency light fed by a self contained SMF battery and charger operating on input supply 240 V AC. (Preferred make: Sudhir or equivalent)		12	Nos.			0.00	INR Zero Only
907	Supply and laying of following sizes of class 'B' G.I. Pipe in required length fixed on steel, concrete or similar structure 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, bushing etc. small civil works, including all labour and materials complete as per approved drawings and directions of Engineer-In-Charge							
908	50 mm NB		120	Meter			0.00	INR Zero Only
909	80 mm NB		120	Meter			0.00	INR Zero Only
910	100 mm NB		350	Meter			0.00	INR Zero Only
911	Supply and laying of following sizes of class 'B' G.I. Pipe in required length fixed on steel, concrete or similar structure 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, bushing etc. small civil works, including all labour and materials complete as per approved drawings and directions of Engineer-In-Charge							
912	50 mm NB		120	Meter			0.00	INR Zero Only
913	80 mm NB		120	Meter			0.00	INR Zero Only
914	100 mm NB		350	Meter			0.00	INR Zero Only
915	Cable Tray (Ladder type/Perforated type)							
916	Supply, manufacturing, testing, supply and storage at site of following Hot Dip Galvanized Ladder/Perforated type cable trays (as per IS 2629) including bends, tees, crosses, horizontal and vertical splices etc. as required including supply of all G.I. hardware, all labour and materials as required as per standard drawings, specification and direction of Engineer-In-Charge							
917	Ladder type, made from 50mm height and 2.5 mm thick sheet steel & galvanized (86 microns) of following sizes.							
918	150 mm wide		600	Meter			0.00	INR Zero Only
919	300 mm wide		1200	Meter			0.00	INR Zero Only
920	Perforated type, made from 50mm height and 2.5 mm thick sheet steel & galvanized (86 microns) of following sizes.							
921	150mm wide		600	Meter			0.00	INR Zero Only
922	300mm wide		1200	Meter			0.00	INR Zero Only
923	Installation of following Hot Dip Galvanized Ladder/Perforated type cable trays (as per IS 2629) including bends, tees, crosses, horizontal and vertical splices etc. as required including supply of all G.I. hardware, all labour and materials as required as per standard drawings, specification and direction of Engineer-In-Charge							
924	Ladder type, made from 50mm height and 2.5 mm thick sheet steel & galvanized (86 microns) of following sizes.							
925	150 mm wide		600	Meter			0.00	INR Zero Only
926	300 mm wide		1200	Meter			0.00	INR Zero Only
927	Perforated type, made from 50mm height and 2.5 mm thick sheet steel & galvanized (86 microns) of following sizes.							
928	150mm wide		600	Meter			0.00	INR Zero Only
929	300mm wide		1200	Meter			0.00	INR Zero Only
930	Erection Material							

931	Supply of MS base frame support for switch gear and bracket for misc. electrical equipment cable and cable tray support out of role MS section, pipes, plate etc including welding, bolting, re-venting, 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 structures 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 s	1	Lot			0.00	INR Zero Only
932	Fabrication and erection of MS base frame support for switch gear and bracket for misc. electrical equipment cable and cable tray support out of role MS section, pipes, plate etc including welding, bolting, re-venting, 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 structures 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	1	Lot			0.00	INR Zero Only
933	Supply and installation of the following including the supply of necessary clamp, bolts, rawl plug etc. breaking and making good of walls, if required, and including all labour and materials complete as per directions of Engineer-In-Charge, applicable standards and Indian Electricity rules.						
934	Shock hazard charts complete with frame and glass	24	Nos.			0.00	INR Zero Only
935	First Aid Boxes	24	Nos.			0.00	INR Zero Only
936	Carbon-di-oxide (CO2) type fire extinguisher, 5 Kg capacity Complete with gun metal valve conforming to IS : 3224 With ISI mark, Discharge horn with bend & wall fixing Bracket With Mfg. Test certificate	36	Nos.			0.00	INR Zero Only
937	Caution boards (Danger, High Voltage) including supply of necessary clamps, bolts and other hardware.	36	Nos.			0.00	INR Zero Only
938	Single Line Diagram complete in glass frame.	12	Nos.			0.00	INR Zero Only
939	Supply of Tools and Instrument as per Annexure -A of scope of work.	2	Lot			0.00	INR Zero Only
940	Insulating Mats						
941	Supply & Laying of Insulating Mats 11KV grade (as per IS:15652- 2006) of 1000mm width, required for maintenance of electrical equipment in substations as required including cutting to required shape in running length and including all labour and material etc. complete and as per directions of Engineer-In-Charge as per applicable Indian or International standards and Indian Electricity Rules.	450	Meter			0.00	INR Zero Only
942	Electrical Misc. accessories						
943	Supply & Installation of electrical accessories including cable tags, cable marker, nickle plated lugs, double compressed brass cable glands, brass adaptor/reducers/nipple, fixing of metallic anchor fasteners for supporting of cable trays and misc. electrical switch gear including all labour and materials complete as required and as per directions of Engineer-In-Charge for all station	1	Lot			0.00	INR Zero Only
944	Telephone & LAN :						
945	Supply Item-						
946	Supply of Telephone sockets (Piano reed Type) in recess PVC conduit including PVC conduit, telephone socket, cable, accessories etc as required.	85	Nos.			0.00	INR Zero Only
947	Supply of LAN sockets (Piano reed Type) in recess PVC conduit including PVC conduit, telephone socket, cable, accessories etc as required.	85	Nos.			0.00	INR Zero Only
948	supply of 10 pairs, 0.61mm jelly filled/aerial self supporting armoured Telephone Cable, including accessories etc as required.	1800	Meter			0.00	INR Zero Only
949	supply of 2 pairs, 0.5mm, self supporting unarmoured Telephone Cable, including accessories etc as required.	12	Meter			0.00	INR Zero Only
950	Supply of UTP cable (CAT 6), Make : D Link/Amp/Lucent	1800	Meter			0.00	INR Zero Only
951	supply of Main Distribution Frame - 20 pair	12	Nos.			0.00	INR Zero Only
952	Supply of Managed LAN switch with single incoming and 8 nos out going port complete in all respect.	9	Nos.			0.00	INR Zero Only
953	Supply of Managed LAN switch with single incoming and 16 nos out going port complete in all respect.	3	Nos.			0.00	INR Zero Only
954	Installation, Testing & commissioning of following Item-						
955	Installation, testing and commissioning of telephone sockets (Piano reed Type) in recess PVC conduit including PVC conduit, telephone socket, cable, accessories etc as required.	85	Nos.			0.00	INR Zero Only
956	Installation, testing and commissioning of LAN sockets (Piano reed Type) in recess PVC conduit including PVC conduit, telephone socket, cable, accessories etc as required.	85	Nos.			0.00	INR Zero Only
957	Installation of 10 pairs, 0.61mm jelly filled/aerial self supporting armoured Telephone Cable, including accessories etc as required.	1800	Meter			0.00	INR Zero Only
958	Installation of 2 pairs, 0.5mm, self supporting unarmoured Telephone Cable, including accessories etc as required.	12	Meter			0.00	INR Zero Only
959	Installation of UTP cable (CAT 6), Make : D Link/Amp/Lucent	1800	Meter			0.00	INR Zero Only
960	Installation of Main Distribution Frame - 20 pair	12	Nos.			0.00	INR Zero Only
961	Installation of Managed LAN switch with single incoming and 8 nos out going port complete in all respect.	9	Nos.			0.00	INR Zero Only
962	Installation of Managed LAN switch with single incoming and 16 nos out going port complete in all respect.	3	Nos.			0.00	INR Zero Only
963	Buried Trench						
964	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 150mm sand above and below cables and good quality approved bricks (75 mm thick) covering the cables throughout the trench, back filling (after cable laying), and finally compacting as per tender specification and approved drawings, including one run of warning						
965	300mm wide x 1000mm depth	3000	Meter			0.00	INR Zero Only

966	600mm wide x 1000mm depth		1100	Meter			0.00	INR Zero Only
967	1000mm wide x 1000mm depth		600	Meter			0.00	INR Zero Only
968	Automatic Voltage Regulator							
969	Supply of AVR							
970	Supply, manufacturing, testing supply and storage at D1 Madhuban of 125KVA Automatic Voltage Regulator (AVR) Outdoor duty (IP-55 & IP-66 control gear) along with suitable rating of Incoming Voltage Range 320V to 490V with outgoing Voltage 433V $\pm$ 3% with metallic enclosure (IP-55) & MCCB, including two nos ChangeOver switch (COS) of rating 250A, AC23 duty complete in all respect. AVR shall be installed outside in structural covered shed over the plinth to protect the AVR from rain & dust. Successful Bidder shall submit all the drawing for AVR mounting along with shed. All cable terminations including supply on glands shall be in the scope of the B		1	Set			0.00	INR Zero Only
971	Supply, manufacturing, testing supply and storage at D1 Lapetkheta, I & II Stations of 60KVA Automatic Voltage Regulator (AVR) , Outdoor duty (IP-55 & IP-66 control gear) along with suitable rating of Incoming Voltage Range 320V to 490V with MCCB and outgoing Voltage 433V $\pm$ 3% with metallic enclosure (IP-55) & MCCB, including two nos ChangeOver switch (COS) of rating 250A, AC23 duty complete in all respect. AVR shall be installed outside in structural covered shed over the plinth to protect the AVR from rain & dust. Successful Bidder shall submit all the drawing for AVR mounting along with shed. All cable terminations including supply on glands shall be in the scope of the		11	Set			0.00	INR Zero Only
972	Installation, Testing, Commissioning of AVR							
973	Supply, manufacturing, testing supply and storage at D1 Madhuban of 125KVA Automatic Voltage Regulator (AVR) Outdoor duty (IP-55 & IP-66 control gear) along with suitable rating of Incoming Voltage Range 320V to 490V with outgoing Voltage 433V $\pm$ 3% with metallic enclosure (IP-55) & MCCB, including two nos ChangeOver switch (COS) of rating 250A, AC23 duty complete in all respect. AVR shall be installed outside in structural covered shed over the plinth to protect the AVR from rain & dust. Successful Bidder shall submit all the drawing for AVR mounting along with shed. All cable terminations including supply on glands shall be in the scope of the B		1	Set			0.00	INR Zero Only
974	Supply, manufacturing, testing supply and storage at D1 Lapetkheta, I & II Stations of 60KVA Automatic Voltage Regulator (AVR) , Outdoor duty (IP-55 & IP-66 control gear) along with suitable rating of Incoming Voltage Range 320V to 490V with MCCB and outgoing Voltage 433V $\pm$ 3% with metallic enclosure (IP-55) & MCCB, including two nos ChangeOver switch (COS) of rating 250A, AC23 duty complete in all respect. AVR shall be installed outside in structural covered shed over the plinth to protect the AVR from rain & dust. Successful Bidder shall submit all the drawing for AVR mounting along with shed. All cable terminations including supply on glands shall be in the scope of the		11	Set			0.00	INR Zero Only
975	10 KVA DUAL REDUNDANT INDUSTRIAL UPS SYSTEM FOR D/T MADHUBAN WITH NI-CD BATTERY							
976	SUPPLY OF UPS SYSTEM (REFER SCOPE OF WORK/MR FOR LOCATION OF THE SYSTEM)							
977	Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at warehouse/store in covered area (hired by bidder) of complete UPS system along with battery set mentioned below & as per tender specification, data sheet enclosed including commissioning spares as required at termination							
978	10KVA, 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 230V $\pm$ 1%, AC with solid state voltage stabilizer for Bypass supply, ACDB and 12.0hrs. Battery backup (Ni-Cd, 1.2V) and battery capacity shall not be less than 186 KVAh (where KVAh = battery AH x 1.2 V x No. of cells). Charging rate shall not be less than 62 KW. Supply & Handover of 2 years		1	Nos.			0.00	INR Zero Only
979	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (2000 W) (ii) 24 V DCDB (1500 W)		1	Nos.			0.00	INR Zero Only
980	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50 mtr shall be considered between battery bank and UPS panel. 50 mtr each cable shall be considered between ACDB & DCDB to UPS panel)		1	LS			0.00	INR Zero Only
981	INSTALLATION, TESTING & COMMISSIONING OF UPS SYSTEM WITH NI-CD BATTERY							
982	Loading/unloading/transportation from warehouse/store (hired by bidder) to site, fabrication/assembly, all mechanical works for installation, erection, commissioning and performance test at site of complete UPS system along with battery sets as mentioned below & as per tender specification, data sheet, PJS enclosed including commissioning spares as required at terminals. The scope also includes submission of first trial/commissioning reports of each location, submission of engineering drawings & documents for approval from GGL/MECON for UPS System Installation, all other work not indicated here but required for completion of installation & commissioning as per the scope of work in the scope of bidder. Work shall be carried out as per relevant international & national standard, scope of work & specifications approved							
983	10KVA, 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 230V $\pm$ 1%, AC with solid state voltage stabilizer for Bypass supply, ACDB and 12 hrs. Battery backup (Ni-Cd, 1.2V) and battery capacity shall not be less than 186 KVAh (where KVAh = battery AH x 1.2 V x No. of cells). Charging rate shall not be less than 62 KW		1	Nos.			0.00	INR Zero Only
984	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (2000 W) (ii) 24 V DCDB (1500 W)		1	Nos.			0.00	INR Zero Only

985	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50mtr shall be considered between battery bank and UPS panel, 50 mtr each cable shall be considered between ACDB & DCDB to UPS panel)		1	LS			0.00	INR Zero Only
986	5KVA DUAL REDUNDANT INDUSTRIAL UPS SYSTEM FOR IP STATION WITH NI-CD BATTERY							
987	SUPPLY OF UPS SYSTEM (REFER SCOPE OF WORK/MR FOR LOCATION OF THE SYSTEM)							
988	Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at warehouse/store in covered area (hired by bidder) of complete UPS system along with battery set mentioned below & as per tender specification, data sheet enclosed including commissioning spares as required at terminals :							
989	5KVA, 230 V Single phase, 50 Hz, parallel redundant Industrial type, UPS systems suitable for input Power supply voltage of 320 V-460V- TPN (184-265V/Ph), output 230V +/-1%, AC with solid state voltage stabilizer for Bypass supply, ACDB and 6.0 hrs. Battery backup (Ni-Cd, 1.2V) and battery capacity shall not be less than 47 KVAh (where KVAh = battery AH x 1.2V x No. of cells). Charger rating shall not be less than 16KW. Supply & Handover of 2 year O&M spares as required at terminals.		1	Nos.			0.00	INR Zero Only
990	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (2000 W) (ii) 24 V DCDB (1000 W)		1	Nos.			0.00	INR Zero Only
991	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50mtr shall be considered between battery bank and UPS panel, 50 mtr each cable shall be considered between ACDB & DCDB to UPS panel)		1	LS			0.00	INR Zero Only
992	INSTALLATION, TESTING & COMMISSIONING OF UPS SYSTEM WITH NI-CD BATTERY							
993	Loading/unloading/transportation from warehouse/store (hired by bidder) to site, fabrication/assembly, all mechanical works for installation, erection, commissioning and performance test at site of complete UPS system along with battery sets as mentioned below & as per tender specification, data sheet, PJS enclosed including commissioning spares as required at terminals. The scope also includes submission of first trial/commissioning reports of each location, submission of engineering drawings & documents for approval from IGGI/MECON for UPS System Installation, all other work not indicated here but required for completion of installation & commissioning as per the scope of work in the scope of bidder. Work shall be carried out as per relevant international & national standard, scope of work & specifications approved.							
994	5KVA, 230 V Single phase, 50 Hz, parallel redundant Industrial type, UPS systems suitable for input Power supply voltage of 320 V-460V- TPN (184-265V/Ph), output 230V +/-1%, AC with solid state voltage stabilizer for Bypass supply, ACDB and 6.0 hrs. Battery backup (Ni-Cd, 1.2V) and battery capacity shall not be less than 47 KVAh (where KVAh = battery AH x 1.2V x No. of cells). Charger rating shall not be less than 16KW. Supply & Handover of 2 year O&M spares as required at terminals.		1	Nos.			0.00	INR Zero Only
995	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (2000 W) (ii) 24 V DCDB (1000 W)		1	Nos.			0.00	INR Zero Only
996	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50mtr shall be considered between battery bank and UPS panel, 50 mtr each cable shall be considered between ACDB & DCDB to UPS panel)		1	LS			0.00	INR Zero Only
997	5KVA SINGLE UPS SYSTEM FOR DT LAPETKHETA (POTA CABIN) WITH SMF BATTERY							
998	SUPPLY OF UPS SYSTEM (REFER SCOPE OF WORK/MR FOR LOCATION OF THE SYSTEM)							
999	Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at warehouse/store in covered area (hired by bidder) of complete UPS system along with battery set mentioned below & as per tender specification, data sheet enclosed including commissioning spares as required at terminals :							
1000	5KVA, 230V Single phase, 50Hz, single Industrial type, UPS systems suitable for input Power supply voltage of 320V-460V- TPN with healthy single phase selection, output 230V +/-1%, AC with Bypass supply, ACDB and 3.0hrs. Battery backup (SMF-VRLA battery, 12V) and battery capacity shall not be less than 30 KVAh (where KVAh = battery AH x 12 V x No. of cells). Charger rating shall not be less than 16 KW. Supply & Handover of 2 year O&M spares list attached in scope of work, is also in the scope of supplier.		1	Nos.			0.00	INR Zero Only
1001	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (2000 W) (ii) 24 V DCDB (1000 W)		1	Nos.			0.00	INR Zero Only
1002	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50mtr shall be considered between battery bank and UPS panel, 50 mtr each cable shall be considered between ACDB & DCDB to UPS panel)		1	LS			0.00	INR Zero Only
1003	INSTALLATION, TESTING & COMMISSIONING OF UPS SYSTEM WITH SMF BATTERY							

1004	Loading/unloading/transportation from warehouse/store (hired by bidder) to site, fabrication/assembly, all mechanical works for installation, erection, commissioning and performance test at site of complete UPS system along with better sets as mentioned below & as per tender specification, datasheet, PJS enclosed including commissioning spares as required at terminals. This scope also includes submission of first trial/commissioning reports of each location, submission of engineering drawings & documents for approval from IGGJ/MECON for UPS System Installation, all other work not indicated here but required for completion of installation & commissioning as per the scope of work in the scope of bidder. Work shall be carried out as per relevant international & national standard, scope of work & specifications approved.							
1005	5KVA, 230V Single phase, 50Hz, single industrial type, UPS system suitable for input Power supply voltage of 320V-460V. TPN with healthy single phase selection, output 230V +/-1%, AC with Bypass supply, ACDB and 3.0hrs Battery backup (SMF-VRLA battery, 12V) and battery capacity shall not be less than 30KVAH (where KVAH = battery AH x 12 V x No. of cells). Charger rating Shall not be Less than 16 KW. Supply & Handover of 2 year O&M spares for the duration of warranty period as per the scope of work.		1	Nos.			0.00	INR Zero Only
1006	Dual redundant Rectifier system (AC to DC) and DCDB as per specification and following rating : (i) 48 V DCDB (2000 W) (ii) 24 V DCDB (1000 W)		1	Nos.			0.00	INR Zero Only
1007	All interconnecting cables among UPS, Rectifier, battery stand, ACDB/DCDB etc (50mtr shall be considered between battery bank and UPS panel. 50 mtr each cable shall be considered between ACDB & DCDB to UPS panel).		1	LS			0.00	INR Zero Only
1008	DIESEL GENERATOR SETS AT IP & SV station.							
1009	SUPPLY OF DIESEL GENERATOR SETS							
1010	Design, Engineering, Manufacturing, Assembly, Testing at shop, Packing, Supply, Delivery at site of 5KVA, 0.415KV, 0.8 pf, 50HZ, 3P+N, Radiator Cooled, Continuous rated and continuous duty Sets (CPCB IV+) with common base frame, plates & supporting structure including Exciter, AVR, Engine Panel, Generator Control & Monitoring Panel, PLC based AMF Panel with MCCB (LSIF with shunt) & Contactor, Annunciator, Batteries, Battery Charger (FCBC), loose cables required for connecting Engine and Engine Control Panel & battery & battery charger & for any other connections as required for DG set, Relays, Meters, inbuilt fuel tank, DG set auxiliaries, Complete primer painted Exhaust pipe with cowl and bird screen considering building height of 4Mtr, tapping point for PCB exhaust sample point, Rockwool insulation and aluminum cladding for complete exhaust piping, Anti Vibration Mounting Pads & consumables for testing at works, at site, and all other items as per Tender Specification, commissioning spares, tools, auxiliaries and accessories as required for smooth running of the DG Set. Refer Scope of work, SLD, datasheet, Standard drawings etc enclosed with Tender. Note: 1) The above ratings are at 50-degree ambient temperature. Derating to be considered by the vendor. 2) First fill of lubricants, fuel, coolant & oils required for commissioning & smooth running of DG set would be provided.							
1011	DG set -58.5KVA, 415 V, 50Hz. (CPCB IV+) Approx. Dimensions (LxBxH) : As per OEM Approx. Weight : As per OEM Approx. Height of chimney : 6 Mtr		10	EACH			0.00	INR Zero Only
1012	PLC based indoor AMF panel & Battery charger panel with DG set. Approx. Dimensions (LxBxH) : As per OEM Approx. Weight : As per OEM		10	EACH			0.00	INR Zero Only
1013	INSTALLATION, TESTING AND COMMISSIONING OF DIESEL GENERATOR SETS							

1014	Receiving, handling, unloading, loading, storage in good condition, transporting equipment / accessories to site. 58.5KVA Diesel Generator with acoustic enclosure with exhaust piping, Emission control device and associated piping; Fuel Level gauge, level transmitter interfacing with AMF panel; battery charger, batteries, PLC based AMF Panel storage point or any other location within the project site to Installation Location. Unpacking and Installation of DG Set and AMF Panel along with all auxiliaries under the supervision of equipment supplier; Fabrication and erection of exhaust pipe with rockwool insulation and cladding along with cowl and bird mesh. Supply and fabrication of MS exhaust structural support; Final painting with heat resistant paint & tapping for PCB sample point; Insulation of exhaust pipe with rock-wool, aluminum cladding of exhaust pipe as required on site etc. Supply and installation of earth electrode, earth strips, making of earth pits and connection to DG Set; Cable laying and termination between DG and AMF Panel at site under the supervision of equipment supplier; Installation and termination of external cabling to DG and AMF Panel; Pre-commissioning checks of to/from cables to DG and AMF Panel (cold loop and checking) under the supervision of equipment supplier; Testing and Commissioning Assistance to Vendor; Obtaining Statutory Clearances. Construction of the structural shed with all Civil and structural works is in the scope of Bidder including supply of all the materials including preparation & approval of drawings of DG foundation (+600 from FGL), cable trenches/ conduits shed etc. Rate shall include assembling and installation of components / devices supplied separately - as recommended by Manufacturer etc.; all hardware for installation and foundation bolts; paint/tagging for relevant identification like Tag / Description of equipment. Storage, record-keeping and handing over of mandatory spares to IGGL after completion of works/commissioning. Minor modifications as required in the control schematic including preparing final as built documentations, radiator stickers / stenciling with epoxy paint of approved paint shade inclusive of touch up of paint (if required), as per directions of the Engineer-in-Charge. Contractor shall be responsible for installation, testing, commissioning of Emission Control							
1015	DG set -58.5KVA, 415 V, 50Hz. (CPCB IV+) Approx. Dimensions (LxBxH) : As per OEM Approx. Weight : As per OEM Approx. Height of chimney : 6 Mtr	10	EACH				0.00	INR Zero Only
1016	PLC based indoor AMF panel & Battery charger panel with DG set. Approx. Dimensions (LxBxH) : As per OEM Approx. Weight : As per OEM	10	EACH				0.00	INR Zero Only
1017	1400 WATT HYBRID SPV SYSTEM FOR SV STATION FOR DFL PIPELINE PROJECT							
1018	SUPPLY, TRANSPORTATION & STORAGE							
1019	SPV POWER SOURCE FOR CATHODIC PROTECTION (PCP), INSTRUMENTATION, SCADA & TELECOM 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) of complete Solar PV based Power source with three days autonomy (72 Hrs Backup) for 1400W DC load for twenty four hours 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) Erection materials & Other miscellaneous work 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-							
1020	Solar PV Modules- Mono crystalline (Min 500Wp) BIS certified for SPV array Min 20KWp (2X10000 Wp) for system-I along with junction boxes as per specification and scope of work	1	Set				0.00	INR Zero Only
1021	Anodized AL/ Hot dipped Galvanized M-Steel structure as per specification and scope of work for SPV array Min (2X10000 Wp) for system-I along with all required hardware, material & anchoring mate	1	Set				0.00	INR Zero Only

1022	MPPT Solar Charger - 1. (Dual-Min-2x250A) @ 96V as per specification and scope of work with following DC_DC Converter (Dual redundant)- 2. (85-130V DC IP to 24V +/- 1%, 550W) 3. (85-130V DC IP to (-)48-0-(+)48V +/-1% DC V, 1000W (250W+850W) SMPS Modular converter with +/- 1% ac and DCDB [24V & 48V] as per specification and scope of work. 4. DC-AC INVERTER- Pure sine wave output inverter (dual redundant) for fire system having DC Input range (75-135V DC) and AC Output (230V AC +/-1%, 50 Hz +/- 1%), 500VA with over load, short circuit and over temp protection and with galvanic isolation as per	1	Set			0.00	INR Zero Only
1023	Ni-Cd Battery bank (Pocket Plate type) in (2x50%) arrangement, Min 253 KVAH @ 96V, (where KVAH = battery capacity x 1.2 V x No. of cells) as per specification and scope of work for system-I.	1	Set			0.00	INR Zero Only
1024	Balance of System materials & equipments for system-I- 1) Interconnecting cables among arrays (solar grade), charge controller, battery bank, Grid charger, DCDBs, junction boxes etc including erection 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) Required material for Erection work, Civil & Other miscellaneous work	1	Set			0.00	INR Zero Only
1025	GRID CHARGER FOR BATTERY BANK FOR SYSTEM-I (FOR 1400 WATT SYSTEM) SYSTEM-IB- GRID CHARGER FOR BATTERY BANK Design, Detailed Engineering, Manufacturing, Inspection/FAT (Factory acceptance test), Supply, Transportation, loading/unloading, insurance, Storage at warehouse/store (hired by bidder) of DSP based FCBC CHARGER (2x1000W) 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 bank size calculated for the solar system, shall be calculated such that it can charge fully discharged complete battery bank at C20 rating.	1	Set			0.00	INR Zero Only
1026	INSTALLATION, TESTING AND COMMISSIONING						
1027	SPV POWER SOURCE FOR CATHODIC PROTECTION (PCP), INSTRUMENTATION, SCADA & TELECOM Loading/unloading, transportation from warehouse/store (hired by bidder) to site, Installation, testing, commissioning and performance test at site of complete Solar PV based Power source with three days autonomy for 1400W DC load for twenty four hours operation 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 installation 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) Erection materials & Other miscellaneous work Rating of SPV array, charge controller and battery bank shall be selected to meet the load requirement as specified above.						
1028	Solar PV Modules- Mono crystalline (Min 500Wp) BIS certified for SPV array Min 20KWp (2X10000 Wp) for system-I along with junction boxes as per specification and scope of work	1	Set			0.00	INR Zero Only
1029	Anodized AL/ Hot dipped Galvanized M-Steel structure as per specification and scope of work for SPV array Min 20KWp (2X10000 Wp) for system-I	1	Set			0.00	INR Zero Only
1030	MPPT Solar Charger - 1. (Dual-Min-2x250A) @ 96V as per specification and scope of work with following DC_DC Converter (Dual redundant)- 2. (85-130V DC IP to 24V +/- 1%, 550W) 3. (85-130V DC IP to (-)48-0-(+)48V +/-1% DC V, 1000W (250W+850W) SMPS Modular converter with +/- 1% ac and DCDB [24V & 48V] as per specification and scope of work. 4. DC-AC INVERTER- Pure sine wave output inverter (dual redundant) for fire system having DC Input range (75-135V DC) and AC Output (230V AC +/-1%, 50 Hz +/- 1%), 500VA with over load, short circuit and over temp protection and with galvanic isolation as per	1	Set			0.00	INR Zero Only
1031	Ni-Cd Battery bank (Pocket Plate type) in (2x50%) arrangement, Min 253 KVAH @ 96V, (where KVAH = battery capacity x 1.2 V x No. of cells) as per specification and scope of work for system-I.	1	Set			0.00	INR Zero Only

1032	Balance of System materials & equipments for system-I- 1) Interconnecting cables among arrays (solar grade), charge controller, battery bank, Grid charger, DCDBs, junction boxes etc including erection 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.		1	Lot			0.00	INR Zero Only
1033	GRID CHARGER FOR BATTERY BANK FOR SYSTEM-I (FOR 1400 WATT SYSTEM) SYSTEM-IB- GRID CHARGER FOR BATTERY BANK Loading/unloading, transportation from warehouse/store (hired by bidder) to site, Installation, testing, commissioning and performance test at site of DSP based FCBC CHARGER (2x100%) to charge the battery bank from grid supply, in commissioning spares as required, as per specifications, data sheet and instruction of Engineer-in-charge required. 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 bank size calculated for the solar system, calculated such that it can charge fully discharged complete battery bank at C20 rating.		1	Set			0.00	INR Zero Only
1034	SPV BASED OUTDOOR EMERGENCY LIGHTING Design, Detailed Engineering, procurement of material, 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 Solar Street lighting system complete with GI pole and GI mounting bracket, control gear box, internal cable from fitting to junction box, and min 1x20W LED fixture (Bajaj Make/MNRE Approved or equivalent), three days battery backup with low maintenance flooded battery with box (2x75 AH), solar PV Module (2x100Wp), earthing, electronics, charger, dusk-dawn operation, GI -pole (6 Mtr, with 80 Micron Galvanization) etc including pipe inserts for cables and connecting work, civil work and commissioning spares as required, with all material and labour as per specifications, drawings and instruction of Engineer-in-charge. Work to be		36	Set			0.00	INR Zero Only
1035	TRANSPORTATION OF SOLAR SYSTEM (1400W/2000W) FROM DIFFERENT STORES OF IGGL TO DFL PIPELINE SV STATIONS							
1036	Insurance, Loading, Transportation of material to DFL pipeline at respective SVs/ IGGL's store, Receiving, handling, unloading, loading, storage in good condition at site of already supplied solar system materials stored at Jalpaiguri Shillong/ CWC- Agartala/ DISPUR (Transportation of this materials shall be carried out after completion of the civil buildings, quantities of lots stored at various storage are mentioned in the scope of							
1037	Transportation of Complete materials of Solar system for SV stations- Solar Modules with structures, Chargers (FCBC & MPPT), Solar Charger controller, Battery, Battery Electrolytes, earthing, cables and other Miscellaneous materials for SV station. (Note- 1 lot consist of complete materials of solar system one SV stations, Each station materials required min 3 truck of 20 mtr length for trasportation of material).		9	Lot			0.00	INR Zero Only
1038	Supply of rust, fire & dust proof light-weighted step ladder of Aluminium (telescoping type) suitable for 6 Mtr street lighting poles.		12	Nos.			0.00	INR Zero Only
1039	All works relating to statutory approvals, liaisoning from competent authority like Electrical Inspectorate, Renewal energy authority, signing of Power Purchase Agreement for Solar PV system, CEA, DGMS, SEB etc including carrying out of all required modifications in design / Manufacturer/ Installation to meet the requirements 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. However the official fees towards the approvals shall be reimbursed by the client. See all details.		1	LS			0.00	INR Zero Only
1040	Sub-Total Section F							
1041	SECTION-G: ARCHITECTURAL WORKS							
1042	FLOORING							
1043	Providing and laying kota stone slab flooring 20 mm (average) thick base laid over and jointed with grey cement 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)							
1044	25 mm thick		1674	sqm			0.00	INR Zero Only
1045	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 cor		244	sqm			0.00	INR Zero Only
1046	Extra for mosing treads of steps of:							
1047	Kota stone slab		558	Meter			0.00	INR Zero Only
1048	Providing and fixing 20mm thick polished granite kota stone of 250mm 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 o							
1049	Granite		275	Meter			0.00	INR Zero Only
1050	Kota		209	Meter			0.00	INR Zero Only

1051	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, shape and pattern using cementitious modified quick set tile adhesive, water based conforming to IS:15477 using 5kg adhesive per m ² 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 rate 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								
1052	Size of Tile 600x600 minimum and minimum thickness 9 mm.		350	sqm				0.00	INR Zero Only
1053	Providing and laying vitrified floor tiles 1st quality of approved make (thickness as per approved manufacturer's detail less than 7 mm) matching/ same as the size and colour of flooring skirting, riser, dado sand wall facing (lining) and pillars using cementitious modified quick set tile adhesive, water based conforming to IS:15477 using 5kg adhesive per m ² 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 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 rate 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		58	sqm				0.00	INR Zero Only
1054	Providing & laying approved make and colour heavy duty vitrified tiles floors and skirting over 20 mm cement mortar 1:4 including cutting of tiles where ever required pointing the joints in neat white cement with matching pigment, cleaning, washing, curing, etc., complete as per specification and direction of the Engineer-in-charge.								
1055	Size of Tile 300x300 mm and minimum thickness 12 mm		680	sqm				0.00	INR Zero Only
1056	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 tile 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-in-charge. Grout to be filled with the same of approved make.								
1057	Size of tile 300 mm X 600 mm (approx.)		373	sqm				0.00	INR Zero Only
1058	Providing and laying anti-slip 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) jointed 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-in-charge. Grout to be filled with the same of approved make.								
1059	Size of tile 30 cm X 30 cm (approx.)		88	sqm				0.00	INR Zero Only
1060	Providing and laying Crazy ceramic tile flooring with underlayer 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 up to 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.		2735	sqm				0.00	INR Zero Only
1061	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.								
1062	40 mm thick with 20 mm nominal size stone aggregate		153	sqm				0.00	INR Zero Only
1063	Providing and fixing 10 mm thick acid and/or alkali resistant tiles 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.								
1064	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)		197	sqm				0.00	INR Zero Only
1065	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)		326	sqm				0.00	INR Zero Only
1066	FINISHING								
1067	Providing 12 mm thick cement plaster 1:4 (1 cement : 4 sand) smooth finish with water proofing compound (to be included in relevant items) 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 junction of columns, beams etc. complete at all heights as per specification and drawings.		6712	sqm				0.00	INR Zero Only
1068	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 (to be paid under relevant items).		7191	sqm				0.00	INR Zero Only
1069	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 where ever required with all byeworks dabbing, curing, scaffolding, including providing chicken mesh at junction of columns, beams etc., complete at all heights and levels as per specification and drawings.		22210	sqm				0.00	INR Zero Only
1070	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections								

1071	Providingdrip mouldof size 20mmx 8mmover cementplasteringof chajjas, roofprojections 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 in Charge.		298	Meter			0.00	INR Zero Only
1072	Forminggrooved uniformsize from10x10mm plasteredsurfaces 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 as per specifications and direction of the Engineer in Charge.		6371	Meter			0.00	INR Zero Only
1073	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 250g/L, at all heights and levels, including surface preparation, scaffolding at all locations and heights with all byeworks complete.		7662	sqm			0.00	INR Zero Only
1074	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 ceiling, of approved shade & make over one coat of approved cement primer consisting of volatile organic compounds less than 250g/L as per specifications and as directed by Engineer in Charge etc. complete.		9397	sqm			0.00	INR Zero Only
1075	Providing and applying wall care 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 top and 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 at least 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 2mm.		9397	sqm			0.00	INR Zero Only
1076	Painting with synthetic enamel paint - Eco friendly paint with low volatile organic compounds (limit not exceeding 250g/L) over a coat of primer consisting of volatile organic compounds less than 250g/L of approved brand as per approved manufacturer's spec. to give an even shade.		381	sqm			0.00	INR Zero Only
1077	Providing and applying wall painting on external walls, two (2) coats of Weatherproof paint one primer on undecorated wall surfaces to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth as required for making the surface, complete as per manufacturer's specification and direction of the Engineer in Charge.		18500	sqm			0.00	INR Zero Only
1078	Providing and making 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 600mm. The logo shall be painted with external acrylic emulsion paint in Chief's logo concrete color.		49	no.			0.00	INR Zero Only
1079	STONE WORK							
1080	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished machine cut for kitchen platforms, vanity counters, 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 touchups, including rubbing and polishing to give high gloss finish.							
1081	Granite of any colour and shade							
1082	Area of slab over 0.50 sqm		11	sqm.			0.00	INR Zero Only
1083	Extra for providing edge moulding to granite stone counters including machine polishing to edge to give high gloss finish etc. Complete in all respects.		20	Meter			0.00	INR Zero Only
1084	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.		11	each			0.00	INR Zero Only
1085	Providing and fixing 18mm thick granite stone slab of approved shade, table rubbed, edges rounded and polished of size 75x50cm deep and 1.8cm 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 coarse aggregate 6 mm nominal size) as per direction of Engineer in Charge and finished.		3	no.			0.00	INR Zero Only
1086	Supplying and fixing min. 18mm thick smooth finish black granite inauguration stone of superior quality with overall size of 1000X750mm or 2000X1000 (as per requirement of client), with ornament and demoulded granite/ marble/ cement plaster band of approved shape. The prepared block shall be fixed with cement mortar 1:3 (1 Cement: 3 Coarse sand) in brick wall/block work with tiles/stone after chased, including finishing and painting all round the stone and making aesthetically beautiful. The inauguration stone should contain engraved letters with chemically printing /stainless steel of approved matter in Hindi & English of required colour and size etc. and provision of curtain raising/sliding, light and landscape.		5	no.			0.00	INR Zero Only
1087	STEEL WORK							

1088	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 10mm dia M.S. bar bent to shape as per standard draw.	18	each			0.00	INR Zero Only
1089	Steel work welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a prime coat of approved steel primer using structural steel etc as per spec.					0.00	Zero Only
1090	In stringers, treads, landings, balustrades etc. of staircases including use of chequered plate wherever required, all complete including all live-work.	2169	kg			0.00	INR Zero Only
1091	In gratings, frames, guard bar, ladders, brackets, gates, grill door and similar works.	693	kg			0.00	INR Zero Only
1092	Providing and fixing handrail 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.					0.00	Zero Only
1093	66x36x3.6 m.s. hollow section approximately.	1699	kg			0.00	INR Zero Only
1094	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 arrangement 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.						
1095	Mechanically operated rolling shutters	95	sqm			0.00	INR Zero Only
1096	ALUMINIUM WORK						
1097	Providing And Fixing Doors, Windows, Ventilators, Fixed Glazing/Partitions With Extruded Built-Up Standard Tubular / Appropriate Z Sections Or Any Other Sections Of JINDAL/ HINDALCO, Conforming To IS: 733 And IS: 1285, Fixed With Approved Quality Rawl Plugs And Screws Or With Fixing Clips Or With Expansion Hold Fasteners, Including Application Of Appropriate Silicon Based Sealant Between The Aluminum Frame And Masonry/Concrete From Both Outside And Inside To Make The Frame Water Tight. Aluminium Sections Shall Be Smooth, Rust Free, Straight, Mitered And Jointed Mechanically, Wherever Required Including Cleat Angle And Shall Be Anodized With Minimum 20 Micron Thickness Or Powder Coating With Minimum Thickness Of 50microns As Per Approved Colour (As Per IS:1868). (Minimum Anodic Coating Shall Be Of Grade AC15). Aluminium Snap Beading For Glazing / Paneling, Stainless Steel Screws And All Standard Accessories, Hinges / Pivots For Shutter Portion, Fixing Of Standard Shutters To Frames And Also Including Fixing Of Frames To Masonry Openings With Lugs/Screws Mastic Etc. EPDM / Neoprene Gaskets Between Frames / Beadings And Glass To Make The Glazing Water Tight Etc. Complete With All Byeworks Including Fitting Of Stays, Push-Plates, Bolts, Handles, Lock (For Ticket Windows), 6 Lever Lock, 2mm Thick Rubber Gaskets Around, Etc. As Per Manufacturer's Specifications, Drawings, Direction And To The Satisfaction Of The Architect / Site In Charge. All Doors Shall Be Provided With High Strength & High Quality Frame, Hinges, Aldrops, Grip Handles, Door Stoppers, Mortice Deadlock, Tower Bolts Etc To Complete The Job In All Respect. Scope Includes Supply & Providing Door With Frame, Suitable Locking Assembly And All Other Accessories Except	1535	kg			0.00	INR Zero Only
1098	Providing and fixing 12mm thick pre-laminated particle board with decorative lamination on both sides flat pressed three layer or graded wood particle board conforming to IS:12823 Grade I Type II, in paneling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.	608	sqm.			0.00	INR Zero Only
1099	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge (Cost of aluminium snap beading shall be paid in basic item). With float glass panes of 6 mm thick.	462	sqm.			0.00	INR Zero Only
1100	Providing and fixing double action hydraulic floor spring of approved brand and manufacture 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 of 6mm thick with slide plate etc. complete as per the direction of Engineer-in-charge.						
1101	With stainless steel cover plate	44	each			0.00	INR Zero Only
1102	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 adjustable necessary accessories and screws etc. complete.	37	each			0.00	INR Zero Only
1103	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	354	sqm.			0.00	INR Zero Only
1104	PVC WORK						

1105	Providing and fixing factory made door frame (single rebate) made out of single piece extruded solid PVC foam profile having homogenous fine cellular structure having smooth outer integral skin having 62 mm width & 32 mm thickness, frame mitered & 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.	113	Meter			0.00	INR Zero Only
1106	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 biding (push fit type) will be set inside the styles and the rails with a cavity, to receive single piece extruded 5 mm PVC sheets as panel. The styles and rails will be mitred cut and jointed 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 specification.	39	Sqm			0.00	INR Zero Only
1107	FALSE CEILING						
1108	Providing and fixing false ceiling : all heights with integral densified calcium silicate reinforced with fibre and natural 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 (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 0.40 mm thick on Silhouette profile, rotary stitched double webbed white with 6 mm 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 8mm 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.	592	sqm.			0.00	INR Zero Only
1109	Providing and fixing in position 12.5mm thick gypsum board false ceiling confirming to IS 2095-1982 with approved G.I. Framework 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 shall be as per specification and drawing and to be approved by Engineer-in-charge.	143	sqm.			0.00	INR Zero Only
1110	MISCELLANEOUS						
1111	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). 110mm diameter.	263	metre			0.00	INR Zero Only
1112	Providing and applying Acrylic base flexible liquid applied Membrane system of approved make (THERMOSHIELD or CHRYSO or equivalent) for roof insulation and waterproofing. The method of application shall include surface preparation and rectifying depression/ honey-comb (if any) in the surface using CHRYSO ARMOURCRETE mortar or equivalent. 1 part CHRYSO ARMOURCRETE, 2 part cement, 4 part medium washed sand and leaving it for at least 24 hours. Then all open cracks are to be filled CHRYSO PROOF ACRYLIC PRIMER or equivalent followed by a coat of CHRYSO PROOF ACRYLIC or equivalent along the crack line and leave it to dry for overnight. This shall be followed by application of CHRYSO PROOF ACRYLIC PRIMER or equivalent over the entire surface. After the application, primer coat it is allowed to reach touch dry for 2-3 hours. Then CHRYSO THERMOSHIELD (or equivalent) shall be applied in 2 coats with a gap of approx. 4-5 hours. All works shall be carried out as per specifications and manufacturer's instructions.	2735	sqm.			0.00	INR Zero Only

1113	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 fill material (M/S Unifite or equivalent) with edge beading and faced with 2 mm thick antistatic high pressure laminates. The panels shall conform to Class O & 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. 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. The panels shall be placed on GI snap lock grid system stringers channel supported over MS galvanized pedestals supports at 600mm c/c approximate both ways. 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 notch 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. 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 & corrosion. The pedestals supports shall be rigidly fixed on to the floor with glue and mechanical fasteners and shall be made of 150x150 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. The work includes necessary opening for cables and panel mounting and cutting of tiles to required size and strengthening of pedestals with 300x300mm 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	275	sqm.			0.00	INR Zero Only
1114	LANDSCAPING						
1115	SHRUB PLANTATION 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 parts 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 & watering regular as the minimum guarantee period, all complete including supplying & mixing of good earth & manure. Healthy properly grown shrubs (at least 3 months old after planting at site) should be provided during handover on	110	nos.			0.00	INR Zero Only
1116	HEDGE PLANTATION Digging of trenches of size 60 cms x 45 cms x running mts length in all type of soil. Rest all the items are same as that of Shrub plantation except that the minimum 07 number of hedges sapling be planted per running metre (Varieties : Approved local equivalent species)	550	Meter			0.00	INR Zero Only
1117	SANITARY INSTALLATIONS						
1118	Providing and fixing vitreous chinaware white/ colour extended wall European water closet complete with C.P. bolts & nuts with C.P. hinges, rubber buffers etc. complete in all respects. Cat No. CNS-WHT-353S with PP soft close seat cover, Hinges, Accessories Set of Jaquar or equivalent + Cistern with fittings - Cat No. CNS-WHT-203 of Jaquar or equivalent	6	no.			0.00	INR Zero Only
1119	Providing & fixing C.P. brass health faucet Jaquar cat no. ALD-CHR-583 or equivalent	4	no.			0.00	INR Zero Only
1120	Providing and fixing white vitreous china water closet (Orissa Pan) with all fittings and fixtures complete including cutting and making good the walls and floors wherever required. Cat no. CNS-WHT-OP01 of Jaquar or equivalent+ Wall Hung Cistern Cat No. WHT-184T or equivalent	5	no.			0.00	INR Zero Only
1121	Providing & fixing vitreous china ware white/ colour under counter wash basin with Cp brass waste, Cat No. CNS-WHT-705 of Jaquar or equivalent and pillar cock Cat No. KUP-CHR-35001PM of Jaquar or equivalent, complete in all	8	no.			0.00	INR Zero Only
1122	Providing and fixing white vitreous china semi-pedestal type wash basin Cat. no. CNS-WHT-801 and pillar cock Cat No. KUP-CHR-35001PM of Jaquar or equivalent, complete in all respect completely recessed at the back for the reception of pipes and fittings all complete	11	no.			0.00	INR Zero Only
1123	Providing and fixing white vitreous china flat back half stall urinal with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass including painting of fittings and cutting and good the walls and floors wherever required - Jaquar cat no. UPS-WHT-13250 or equivalent						
1124	Range of two half stall urinals with 10 litre P.V.C. automatic flushing cistern.	7	no.			0.00	INR Zero Only
1125	5.5 mm thick float glass frameless mirror fixed with stainless steel studs, all complete	11	sqm.			0.00	INR Zero Only
1126	Providing and fixing glass shelf of Jaquar cat. no. ACN-CHR-1171N or equivalent, complete with all respect.	4	no.			0.00	INR Zero Only
1127	Providing and fixing toilet paper holder : Jaquar cat. no. ACN-CHR-1151N or equivalent	4	no.			0.00	INR Zero Only
1128	Providing and fixing soap dish (brass) of Jaquar cat no. ACN-CHR-1131N or equivalent	7	no.			0.00	INR Zero Only
1129	Providing and fixing liquid soap dispenser with glass body of Jaquar Cat No. ACN-CHR-1135 N or equivalent complete with all respect.	13	no.			0.00	INR Zero Only

1130	Providing and fixing C.P. brass bib cock conforming to IS : 8931 15mm nominal bore							
1131	Jaquar cat. no. KUP-CHR-35037PM or equivalent	12	no.				0.00	INR Zero Only
1132	Two in one bib cock, Jaquar cat. no. KUP-CHR-35041PM or equivalent	4	no.				0.00	INR Zero Only
1133	Providing and fixing C.P. brass concealed stop cock Jaquar cat. no. CQT-CHR-23083 or equivalent	26	no.				0.00	INR Zero Only
1134	Providing and fixing CP brass twin coat hook/ robe hook in position - Jaquar cat. no. AQN-CHR-7761 or equivalent	4	no.				0.00	INR Zero Only
1135	Providing and fixing CP Brass Waste Coupling for wash basin and sink, of JAQUAR Cat No. ALD-CHR-705 or equivalent	15	no.				0.00	INR Zero Only
1136	Providing and fixing CP brass Bottle Trap for Wash basin and sink of Jaquar Cat No. ALD-CHR-769L300x190 or equivalent	15	no.				0.00	INR Zero Only
1137	Providing and fixing CP brass towel rail 450mm long of Jaquar cat. no. ACN-CHR-1111BNM or equivalent	3	no.				0.00	INR Zero Only
1138	Providing and fixing towel ring of Jaquar cat. no. AQN-CHR-7721 or equivalent	4	no.				0.00	INR Zero Only
1139	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 mm x 510 mm	2	no.				0.00	INR Zero Only
1140	Providing and fixing C.P. brass long body sink cock with Regular Swinging Spout (Wall Mounted Model) With Wall Flange of Jaquar cat. no. ARL-CHR-39347 or equivalent	2	no.				0.00	INR Zero Only
1141	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)	4	no.				0.00	INR Zero Only
1142	Supplying, installing and fixing Porta Cabin of size 13m (L) x 5m (W) x 3m (H) as per enclosed drawing.	1	no.				0.00	INR Zero Only
1143	Providing and fixing 9 mm thick pre-laminated MDF board (fully supported by structural steel members) for partition and inner walls	200	sq.m.				0.00	INR Zero Only
1144	FURNITURE							
1145	Office Table Providing & Supplying workstation Table having Size -1200mmx 600mm (1 Seater), with Table Top made of 25mm thick Prelaminated particle board supported by CRCA Steel/Aluminium understructure comprise of Eleiptical Legs & Cable Beams. Access Flap & Cable Beams shall be provided for wire management facilities. complete in all as	3	no.				0.00	INR Zero Only
1146	Officer Table Providing & Supplying officer corner WORKSTATION (MODULAR) L-SHAPE having size 1500mmx 1500mm (1 Seater) , with Table Top made of 25mm thick Prelaminated particle board supported by CRCA Steel/Aluminium understructure comprise of Eleiptical Legs & Cable Beams. Access Flap & Cable Beams shall be provided for wire management facilities. complete in all as per	1	no.				0.00	INR Zero Only
1147	Officer Chair Providing and Placing in Position Leatherette Mid Back Chair, Revolving Type. Make : Godrej, Model : Marvelor equivalent from herman miller/EQ, steel case, deform, vitra and bene. Theseat is cushioned seat made of injection molded plastic outer & inner Plastic inner is upholstered with leatherette and molded high resilience polyurethane foam of density 45±2kg/m³ & hardness load of 16±2kgf as per IS:7888 for 25% compression. Seat Size is 47.0W cm x 48.0D cm. The back is cushioned made of PU foam with insitu molded M.S. ERW round tube of size 1.9±0.03cm x 0.16±0.0128cm upholstered with leatherette. The back size is 47.7 W cm x 60.1 D cm. The armrest is top molded from polyurethane and mounted on a droplift adjustable type tubular armrest support made of Ø3.81±0.03cm x 0.2±0.01cm thick M.S. ERW tube having chrome plated finish. The armrests height adjustable up to 6.5±0.5cm in 5 steps. The adjustable tilting mechanisms designed with following features: 360° revolving type, front-pivot tilt with feet resting on ground and continuous lumbar support ensuring more comfort. Tilt tension adjustment can be operated in seating position, 5-position tilt limiter giving option of variable tilt angle to the chair. Seat/back tilt ratio 1:2. The mechanism housing is made up of HPDC aluminium black powder coated. Seat depth adjustment is integrated in the seat through a sliding mechanism. Seat depth adjustment range is of 6.0±0.5cm. Back frame is connected to the up/down mechanism in plastic T split be adjusted in the range of 7.42±0.5cm for the comfortable back support to suit individual need. The pneumatic height adjustment has an adjustment stroke of 10.0±0.3cm. The pedestals: high pressure die cast polished aluminium & fitted with 5 nos. of twin wheel castors. The pedestal is 65.0±0.5cm pitch centre dia. (75.0±1.0cm with castors). 5 nos. of twin wheel castors are injection molded in plastic having 6.0±0.1cm wheel diameter and assembled to pedestal. Product Certifications: BIFMA Level2, Greenguard Gold, Indoor Advantage, GRIHA & SVAGRIHA, Company Certifications:	1	no.				0.00	INR Zero Only

1148	Chairs Supplying, fixing and placing Motion High Back Chair with Adj arms or equivalent from herman miller/EQ, steel case, deliform, vitra and bene. Company should green guard, bifma, and Alota certified. The product should be AICTA certified. The cushioned seat assembly consists of seat base moulded in glass-filled Poly-amide, moulded Polyurethane foam & upholstered with high stretch knitted polyester fabric. The cushioned back assembly consists of back inner moulded in Polypropylene in-situ moulded with Polyurethane foam & upholstered with high stretch knitted polyester fabric. * Full Back Size : 45.5 cm. (W) x 53.0 cm. (H) Seat Size :48.5 cm. (W) x 47.0 cm. (D) : The HR polyurethane foam used in seat and back cushion is moulded in Density 45±2 kg/m3, and hardness load 16 ± 2 kgf as per 15:7888 for 25% compression. The seat and back are firmly connected to the base frame and are cantilevered in such a way that it gives a multidimensional movement possibility just with a simple lean on the sides or back, without need for complex manual adjustment. The cantilevered seat offers impact cushioning while sitting and synchronises with the back movement during posture changes.	5	no.			0.00	INR Zero Only
1149	Sub-Total Section G						
1150	SECTION-H: WATER SUPPLY WORKS						
1151	BORE WELL						
1152	Supply, laying, drilling and commissioning of G.I. Borewell of 150mm diameter and up to 50 m depth including submersible pump with all accessories, panel, wiring and all other works required to make it operational and complete in all respects as per scope of work and directions of the Engineer-in-Charge.	12	Nos.			0.00	INR Zero Only
1153	Extra over and above for more than 50 M depth.	120	RM			0.00	INR Zero Only
1154	Note:						
1155	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.						
1156	HAND PUMP						
1157	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 50.0m.	12	Nos			0.00	INR Zero Only
1158	Note:						
1159	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.						
1160	Extra over and above 50 m Depth.	120	RM			0.00	INR Zero Only
1161	Note:						
1162	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.						
1163	Supply, installation, testing and commissioning of 6 litre capacity RO water purifier along with iron guard of reputed make such as KENT, Eureka Forbes/Aquaguard, or equivalent approved make, complete with all accessories, fittings and connections, as specified and directed by Engineer-in-Charge.	9	Nos			0.00	INR Zero Only
1164	Supply, installation, testing and commissioning of 10 litre capacity RO water purifier along with iron guard of reputed make such as KENT, Eureka Forbes/Aquaguard, or equivalent approved make, complete with all accessories, fittings and connections, as specified and directed by Engineer-in-Charge.	4	Nos			0.00	INR Zero Only
1165	Sub-Total Section H						
1166	SECTION-I: STRUCTURAL WORKS						
1167	Supply, fabrication & erection of Steel structure	72500	KG			0.00	INR Zero Only
1168	Supply, fabrication and erection of monorail beam, pipe supports, platforms, crossover structure, or any other structures required for 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 splices, paints, tools, plants, testing of materials, etc and all other consumables as required for the work shall be included.						
1169	Providing and fixing of chain link fencing	625	RM			0.00	INR Zero Only

1170	Supply, fabrication and erection of structures such as angle iron post, Channel post, Straine 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 50x50x3.15mm dia, with 0.6 m height barbed wire (type-A) as per IS:278-1978 shall be made from two strands of galvanized steel wire of nominal dia 2.5mm twisted together fixed on angle iron posts with GI staples, turnbuckles, 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 direction of the Engineer-In-Charge. (excluding foundation, Refer Tender drawing)							
1171	Providing and fixing of chain link fencing gates							
1172	Supply, fabrication and erection of structures such as angle iron post, Channel post, Straine 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 50x50x3.15mm dia, with 0.6 m height barbed wire (type-A) as per IS:278-1978 shall be made from two strands of galvanized steel wire of nominal dia 2.5mm twisted together fixed on angle iron posts with GI staples, turnbuckles, 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 direction of the Engineer-In-Charge. (excluding foundation, Refer Tender drawing)							
1173	2.0 M Wide gate		12	Nos.			0.00	INR Zero Only
1174	Supply, fabrication & erection of MS Gate							
1175	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. gate shall be fabricated out of channel and Sq Bar with all fixtures like MS Pivot, M.S sheet piling, 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 accordance with the specifications and directions of the Engineer-In-Charge.							
1176	5.5 M Wide gate in two panels with wicket gate 1.2m wide		1	Nos.			0.00	INR Zero Only
1177	4.0 M Wide gate in two panels		11	Nos.			0.00	INR Zero Only
1178	1.2 M Wide emergency gate		12	Nos.			0.00	INR Zero Only
1179	Providing and fixing of chequered plate covers		12000	KG			0.00	INR Zero Only
1180	Providing and fixing chequered plate in approved panel 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 and technical specifications and directions of the Engineer-In-Charge.							
1181	Supply, fabrication & erection of Display / Information / Warning Sign Boards		3600	KG			0.00	INR Zero Only
1182	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 prime and painting of approved colour as per specification including Alphabets of approved size and font and Logo to be painted on Display, informatory, warning sign board with day glow paint shall be completed as per standard detail of IGGL/as per direction of E/C including appropriate location, true 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).							
1183	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.							
1184	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 quote.							
1185	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 quote.							
1186	Sub-Total Section I							
1187	SECTION-J: FIREFIGHTING WORKS							

1188	DESIGN, ENGINEERING, SUPPLY, ERECTION, TESTING & COMMISSIONING OF FIRE DETECTION & ALARM SYSTEM Intelligent addressable Fire Detection and Alarm System with fire alarm panels which will also have provision to receive signals from LHS Cable system in cable trenches, detectors, response indicators, cabling, cable trays, hooter with flasher, manual call points, fault isolators, monitor modules, control modules etc. all complete as per approved scheme & enclosed drawings. Work shall be carried out as per MECON TS No. MEC/TS/05/28/08/1/11 & enclosed drawing. Manual call points shall be installed at strategic operating locations. Intrinsically safe/Explosion proof heat detectors shall be installed in battery room. The Fire Alarm Panel shall have provision for receiving signal from Field Manual Call Points & Detectors also along with annunciation of Field MCPs and Detectors. 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							
1189	Complete Control Room building of Size 20m x 6m, At SV's 01, 02, 03, 04, 05, 06, 07, 08 and 09 Electrical Room (7m x 6m), Battery Room (6m x 6m), Instrumentation, Scada/Telecom/ Room (7m x 6m)		9	L.S.			0.00	INR Zero Only
1190	Complete Control Room building of Size 25m x 14.35m, At DT MADHUBAN Control Room, Telecom and Scada Room (14m x 6m), Electrical Room (6m x 6m), Battery Room (5m x 6m), UPS Room (4m x 6m), Firefighting Room (4m x 6m), Engineer's Room (3.225m x 6m), Store room (5m x 6m), Pantry Room (3m x 3m).		1	L.S.			0.00	INR Zero Only
1191	Complete Control Room building of Size 13m x 5m, At DT Lapetkata Fire Protection Room (3m x 6m), Battery Room (2m x 6m), Electrical Room (4m x 5m), Control Room (4m x 6m)		1	L.S.			0.00	INR Zero Only
1192	Complete Control Room building of Size 21m x 14.35m, At IP Control Room, Telecom and Scada Room (6.725m x 6m), Electrical Room (6m x 6m), Battery Room (5m x 6m), UPS Room (4m x 6m), I/C (4m x 6m), Engineer's Room (5m x 6m), DOC Room (2.5m x 6m), Pantry Room (2m x 3m), Store Room (Area 03.5 m ²)		1	L.S.			0.00	INR Zero Only
1193	ARMOURED FRLS CABLES FOR A/C TRIPPING Supply, inspection, laying, termination for cabling from Fire alarm panel to AHU/ventilation fan Panel of 2 core, 1.5 sqmm FRLS cables in control room for AC tripping, all required 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		550	Meter			0.00	INR Zero Only
1194	DESIGN, ENGINEERING, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF LINEAR HEAT SENSING CABLE Design, Engineering, Supply, Erection, transportation at respective sites including transit insurances, inspection, testing & Commissioning at site of Linear Heat Sensing Cables for cable trenches, Cable cellar & below false flooring comprising of linear type heat sensor cable for integration with fire alarm panel all complete per approved Scheme, Design, Datasheet, Drawings and Tender requirements is in the scope of bidder. Complete work of supply & Erection includes transportation to store and inspection charges but not limited to, the following items 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. LHS shall be used for detecting heat from a fire over its entire length. The sensor cable shall consist of a twisted pair of copper coated steel conductors covered by a temperature sensitive insulation. The LHS shall be UL/FM/LPCB/VDS approved and shall be designed for open area as well as proximity detection. LHS shall be compatible with any fire control panel that is capable of accepting contact closure type initiating devices. Linear Heat Detection System shall be used for effective activation of a warning or alarm signal indicating a condition of excessive heat or fire. In this system, each discrete addressable LHS							
1195	Control Room buildings including SV's 01, 02, 03, 04, 05, 06, 07, 08, 09, DT MADHUBAN, IP and DT Lapetkata.		575	Meter			0.00	INR Zero Only

1196	DESIGN, ENGINEERING, SUPPLY, ERECTION, TRANSPORTATION, INSPECTION, TESTING, COMMISSIONING OF EXPLOSION PROOF & WEATHERPROOF CONVENTIONAL MANUAL CALL POINTS FOR FIELD AREA AND INTEGRATION OF THE SAME WITH FIRE ALARM PANEL/PLC/RTU IN CONTROL ROOM: Design, Engineering, Supply, erection, transportation at respective site including transit insurances, inspection, testing, Commissioning of Ex. Proof.MCP (IP67 Min) which shall be hard wired to PLC Panel /or connected to Fire Alarm loop through Monitor module along with integration of the same with Fire Alarm panel/PLC/RTU. The scope of work shall be inclusive of supports for mounting arrangement & necessary hardware, canopies, supply of mandatory spares, startup and commissioning spares, consumables, special tools & tackle, documentation or any other accessories required to enhance the functionality, operation of the complete system in all respect as per approved Scheme/Design, Datasheet and Tender requirements. MCP shall be placed at min. 1.2 m height from FGL/FPL and supply of necessary supports, clamps, fixtures, canopies required for installation of the detector shall be in scope of the bidder. The Scope shall also include supply, erection, testing, commissioning of required armoured FRLS cables, cable trays, Ex. Proof and IP rated Junction boxes, glands, modules, etc required for integration of MCP with fire alarm Panel/PLC/RTU and consumables like ferrules, clamps, lugs, sleeves, aluminium/SS tag plates etc., clamping, ferruling, glanding of the cables, Excavation of trenches for burying the cables, preparation of same for laying of cable, filling with river sand before and after cable laying, laying of brick, back filling and compacting of the excavated earth, etc. as per specifications including supply of sand and bricks and removal of surplus earth as per instructions of Engineer-in-Charge, termination at both ends, including shield/drain, providing/fixing of identifying tags and megger testing and loop testing, any other item/equipment required for integration of MCP with Fire Alarm Panel/PLC/RTU.							
1197	Ex. Proof Manual Call Point at DT MADHUBAN, RT JORHAT and DT Lapetkata along with integration with Fire Alarm Panel/PLC/RTU		6	Nos.			0.00	INR Zero Only
1198	DESIGN, ENGINEERING, SUPPLY, HANDLING, TRANSPORTATION, INSTALLATION, TESTING & COMMISSIONING OF HIGH PRESSURE CLEAN AGENT (INERT GAS-IG-541) FIRE SUPPRESSION SYSTEM Clean Gas Fire Suppression Centralised System (Inert Gas High Pressure System IIG 541) complete with required accessories with main and standby bank of cylinders & each cylinder filled with Inert Gas Based Clean agent Fire extinguishing Agent as Main Bank and Standby Bank (As per NFPA 2001 & 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), Sch. 80 ASTM A106 Gr. B Piping, fittings & supports, etc. Manifold fabricated from seamless pipe sch. 80 A106 Gr. B 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/05/28/081/06) and instructions of Engineer-in-charge. Inert gas shall be used as Clean Gas Agent, IG-541, @ 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 &							
1199	Control Room building, At DT MADHUBAN Control, Telecom and Scada Room (14m(l) x 6m(b) x 4m(h)), Electrical Room (6m(l) x 6m(b) x 4m(h)) Battery Room (5m(l) x 6m(b) x 4m(h)), UPS Room (4m(l) x 6m(b) x 4m(h))		1	LS			0.00	INR Zero Only
1200	Complete Control Room building of Size 13m x 5m, At DT Lapetkata Battery Room (2m x 5m x 4m(h)), Electrical Room (4m x 6m x 4m(h)), Control Room (4m x 5m)		1	LS			0.00	INR Zero Only
1201	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, NO. of smallest room shall not be more than the criteria as per NFPA 2001. 2. All cabling work pertaining to Clean Agent system including supply of signal, power cables shall be considered in this scope. 3. The bidder must include in the quoted price for the mandatory spares list as per PJS to be supplied with the Clean Agent system at each location. The Price for the same shall be included in the Lump sum price of Clean agent system above.							
1202	DUMP TEST FOR SMALLEST ROOM & REPLACEMENT/REFILLING OF CYLINDERS AFTER DUMP TEST. Carrying out Dump Test for smallest room by discharging Inert gas (IG-541) as per gas calculation from requisite number of cylinders for the smallest room as per design and performing dump test for demonstrating the effectiveness of system till the satisfaction of EIC. Dump test shall be carried out through cross zoning of detectors and suppressing the gas as per instructions of Engineer-in-Charge.		2	LS			0.00	INR Zero Only

1203	PORTABLE EXTINGUISHERS							
1204	CO2 TYPE FIRE EXTINGUISHERS Supply of CO2 type fire extinguishers with steel cylinder with discharge valve as per MECON TS 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							
1205	Capacity 4.5 kg.		69	Nos.			0.00	INR Zero Only
1206	DRY CHEMICAL POWDER TYPE FIRE EXTINGUISHER Supply of Dry Chemical Powder type fire extinguisher 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. Siliconised Potassium bicarbonate DCP powder (IS: 4308:2003) / Mono-ammonium phosphate based DCP powder (IS: 14609) can also be used for recharging DCP fire extinguishers							
1207	DCP – 9Kg (IS:15683)		69	Nos.			0.00	INR Zero Only
1208	DCP – 75Kg -TM (IS:16018)		11	Nos.			0.00	INR Zero Only
1209	FIRE AND SAFETY EQUIPMENT							
1210	Foam Making Branch pipes IS: 2097-1983 RA-2000.		6	Nos.			0.00	INR Zero Only
1211	Safety Helmet- IS-2925-1984 RA2000		50	Nos.			0.00	INR Zero Only
1212	Stretcher with blanket- IS-4037-1967 RA-2001.		6	Nos.			0.00	INR Zero Only
1213	Safety Torch		16	No.			0.00	INR Zero Only
1214	Special Purpose Nozzles		6	No.			0.00	INR Zero Only
1215	Spare Fire Hoses		6	No.			0.00	INR Zero Only
1216	Portable Oxygen and LEL Meter		6	No.			0.00	INR Zero Only
1217	First Aid Box		16	No.			0.00	INR Zero Only
1218	Rubber Hand Gloves for Electrical Purpose		10	Pair			0.00	INR Zero Only
1219	Low Temperature Rubber Hand Gloves		12	Pair			0.00	INR Zero Only
1220	Cotton Hand gloves		150	Pair			0.00	INR Zero Only
1221	Rubber Hand Gloves IS-4770 –1991 RA-2001		6	Pair			0.00	INR Zero Only
1222	Fireman Suit (3-Layer)		6	No.			0.00	INR Zero Only
1223	Fire proximity Suit		3	No.			0.00	INR Zero Only
1224	BA Set		6	Set			0.00	INR Zero Only
1225	Spare Cylinder		6	No.			0.00	INR Zero Only
1226	Resuscitator-IS-6194-1971 RA- 2006		16	No.			0.00	INR Zero Only
1227	Mega Phone		30	No.			0.00	INR Zero Only
1228	Hand operated siren IS-6194-1971 RA- 2006		30	Nos.			0.00	INR Zero Only
1229	Water gel blanket		6	No.			0.00	INR Zero Only
1230	Ear Muff		20	No.			0.00	INR Zero Only
1231	Ear Plug		100	No.			0.00	INR Zero Only
1232	PVC Suit		10	No.			0.00	INR Zero Only
1233	High intensity intrinsically safe search lights		12	No.			0.00	INR Zero Only
1234	Red & Green flags at RT and DT		6	Pair			0.00	INR Zero Only
1235	EYE WASH & SHOWER SYSTEM Design, engineering, Manufacturing, shop testing, supply, packing & forwarding, transportation, delivery at storage and from storage to site of Eye wash system complete with SS piping & fittings, SS ball valves with push plate, HDPE Tank (200 ltr capacity), SS bowl (wash basin), Pull road, for shower, push plate for eyewash, supports & accessories, complete in all respect and as per technical specification		4	No.			0.00	INR Zero Only
1236	WIND SOCK Supply & installation of Wind Sock with complete mounting arrangement & accessories.		12	No.			0.00	INR Zero Only
1237	Sub-Total Section J							
1238	SECTION-K: INSTRUMENTATION WORKS							
1239	FIELD INSTRUMENTS							
1240	Supply of Pressure Gauges as per tender document (inclusive of supply of necessary piping materials/tubings, dampeners (if required) along with all necessary valves & fittings, impulse lines/manifolds as per installation standard)		87	Nos.			0.00	INR Zero Only
1241	Installation, testing, calibration and commissioning of Pressure Gauges as per tender document (inclusive of necessary piping materials/tubings, dampeners (if required) along with all necessary valves & fittings, impulse lines/manifolds as per installation standard)		87	Nos.			0.00	INR Zero Only

1242	Supply of Pressure Gauges alongwith Gauge Saver as per tender document (inclusive of necessary piping materials/tubings,dampeners(if required)alongwith all necessary valves & fittings, impulse lines/manifolds as per installation standard		17	Nos.			0.00	INR Zero Only
1243	Installation,testing,calibrationandcommissioningof Pressure GaugesalongwithGaugeSaver as per tender document (inclusive of necessary piping materials/tubings, dampeners (if required) alongwith all necessary valves & fittings, lines/manifolds as per installation stand		17	Nos.			0.00	INR Zero Only
1244	Supply of Pressure Transmitters as per tender document (inclusive of supply of yoke, supportfor impulselines (whereverrequired)SS manifolds/SS impulselines & SS valves & fittingswith supports,as per installation std. no. MEC/OS/ES/SD/PT/001		50	Nos.			0.00	INR Zero Only
1245	Installation,testing,calibrationandcommissioningof Pressure Transmitters as per tender document (inclusive of yoke, supportsfor impulselines (whereverrequired)SS manifolds/SS impulselines & SS valves & fittingswith supports,as per installation std. no. MEC/OS/ES/SD/PT/001		50	Nos.			0.00	INR Zero Only
1246	Supply of Temperature Transmitters as per tender document (inclusive of supply of yoke, supports, etc)		19	Nos.			0.00	INR Zero Only
1247	Installation,testing,calibrationand commissioningof Temperature Transmitters as per tender document (inclusive of yoke, supports, etc		19	Nos.			0.00	INR Zero Only
1248	Supply of Temperature Gauges with flanged thermowells inclusive of thermowell and other necessary items as per installation standard		4	Nos.			0.00	INR Zero Only
1249	Installation, Calibration, Testing & Commissioning of Temperature Gauges with flanged thermowells inclusive of installation of thermowell on the nozzle and installation of instruments as per installation st		4	Nos.			0.00	INR Zero Only
1250	Supply of RTD with flanged thermowells inclusive of thermowell and other necessary items as per installation standard		5	Nos.			0.00	INR Zero Only
1251	Installation, Calibration, Testing & Commissioning of RTD with flanged thermowells inclusive of installation of thermowell on the nozzle and installation of instruments as per installation st		5	Nos.			0.00	INR Zero Only
1252	Supply of RTD (Skin Type) as per tender document (inclusive of supply of mounting pad, yoke, supports, etc as per installation standard		14	Nos.			0.00	INR Zero Only
1253	Installation,testing,calibrationandcommissioningof RTD (Skin Type) as per tender document (inclusive of mounting pad, yoke, supports, etc as per installation stand		14	Nos.			0.00	INR Zero Only
1254	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). Cost for controller racks shall be included in the cost of LEL Sensor with controller card							
1255	Supply of LEL Sensor (point type) with controller cards alongwith accessories		28	Sets			0.00	INR Zero Only
1256	Installation, testing and commissioning LEL Sensor (point type) with controller cards alongwith accessories		28	Sets			0.00	INR Zero Only
1257	Supply of LEL Controller Rack alongwith accessories		5	Nos.			0.00	INR Zero Only
1258	Installation, testing and commissioning LEL Controller Rack alongwith accessories		5	Nos.			0.00	INR Zero Only
1259	FULLY WIRED PANELS ALONGWITH ACCESSORIES							
1260	Design, Engineering and Supply of Fully wired Control Panel cum TIC Panel (Freestanding type, 2115 (mm) H (including 00 mm base + 15 mm anti-vibration pad) x 1200 (mm) W x 800 (mm) D) alongwith all accessories including clock for time, valve auto-closure and environment temperature monitoring and Panel Mounted Instruments as indicated below, including supply of commissioning spares with special tools and tackles as required as per tender Document but exclusive of supply of below indicated panel mounted items. All the signals of electrical instrumentation RTU/SCADA, CP, metering skid, etc. are to be interfaced through TIC Panel and necessary TBs alongwith accessories		13	Nos.			0.00	INR Zero Only
1261	Installation, testing and commissioning of Fully wired Control Panel cum TIC Panel (Freestanding type, 2115 (mm) H (including 00 mm base + 15 mm anti-vibration pad) x 1200 (mm) W x 800 (mm) D) alongwith all accessories including clock for time, valve auto-closure and environment temperature monitoring and Panel Mounted Instruments as indicated below, including commissioning spares with special tools and tackles as required as per tender Document but exclusive of below indicated panel mounted items. All the signals of electrical instrumentation RTU/SCADA, CP, metering skid, etc. are to be interfaced through TIC Panel and necessary TBs alongwith accessories shall be provided for		13	Nos.			0.00	INR Zero Only
1262	Panel Mounted Items (rest of the items are to be included in above panels supply)							
1263	Supply of Barriers cum Signal Distribution Card		92	Nos.			0.00	INR Zero Only
1264	Installation, testing and commissioning of Barriers cum Signal Distribution Card		92	Nos.			0.00	INR Zero Only
1265	Supply of Digital Indicators		86	Nos.			0.00	INR Zero Only
1266	Installation, testing and commissioning of Digital Indicators		86	Nos.			0.00	INR Zero Only
1267	MISCELLANEOUS ITEMS							
1268	Supply of SS tubes and fittings, manifold/isolation valves, socolets etc along with support for impulse lines (wherever required), hydraulic oil (if required) for each Gas Actuated Ball Valves (GOV) as per the direction of Engineer-in-Charge. Supply of Valves with actuator is not included in the spec		25	Nos.			0.00	INR Zero Only
1269	SS Tube Connection, Testing and Commissioning of Gas Actuated Ball Valves (GOV) including the Supply and installation of SS tubes and fittings along with supports for impulse lines (wherever required), hydraulic testing, hydraulic oil (if required), painting of supports as per std, manifold/ isolation valves, socolets etc as required for tubing of each Valve as per the direction of Engineer-In-Charge. Supply of Valves with actuator is not included in the		25	Nos.			0.00	INR Zero Only

1270	Testing , Commissioning , Electrical termination, calibration of Non Intrusive Pig Signallers including all manpower, tools & tackles, equipments, consumables, etc. required as per direction of Engineer-in-charge.	21	Nos.			0.00	INR Zero Only
1271	Testing & Commissioning of Metering Skids (alongwith 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 metering panel & laying, glanding, termination of free issued cables at both ends of the cable, supply and installation of all required hardware and accessories such as cable gland, adapter etc. at both ends as required as per direction of Engineer-in-charge.	2	Nos.			0.00	INR Zero Only
1272	Calibration of Pressure Safety Valves installed on Scrappier trap, vessels, etc. alongwith all equipment, man-power, tools & tackles, equipments, consumables, etc. as required to the satisfaction of company and as per instructions of Engineer-in-charge.	6	Nos.			0.00	INR Zero Only
1273	Installation of Junction Boxes including Supply of Junction Boxes with plugs for unused entries, supply, fabrication and installation of supports, plugging of unused entries and paint.						
1274	Supply of Explosionproof electrical junction boxes for 6 pair/ 6 Triad/ 12 Core cable entry	52	Nos.			0.00	INR Zero Only
1275	Installation, testing and commissioning of Explosionproof electrical junction boxes for 6 pair/ 6 Triad/ 12 core cable entry	52	Nos.			0.00	INR Zero Only
1276	Supply of Canopies fabricated out of powder coated MS for electronic transmitter including supply, fabrication of support and reflective painting.	97	Nos.			0.00	INR Zero Only
1277	Installation, testing and commissioning of Canopies fabricated out of powder coated MS for electronic transmitter including installation of canopy with support and reflective paint.	97	Nos.			0.00	INR Zero Only
1278	Supply, laying, testing of FRLS cables (control, signal, power, triad cables) including supply of all required cable glands, (Explosionproof 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/ Humepipes (in road crossings, buildings, etc.) and PVC pipes (for crossing of electrical cables) is included in the scope of cable laying.						
1279	Supply of 1 P x 1.5 mm ² (Type I), Signal Cable	2100	Meter			0.00	INR Zero Only
1280	Installation, testing and commissioning of 1 P x 1.5 mm ² (Type I), Signal Cable	2100	Meter			0.00	INR Zero Only
1281	Supply of 6 P x 1.5 mm ² (Type IV) Signal Cable	5800	Meter			0.00	INR Zero Only
1282	Installation, testing and commissioning of 6 P x 1.5 mm ² (Type IV) Signal Cable	5800	Meter			0.00	INR Zero Only
1283	Supply of 4C x 1.5 mm ² - Quad Cable (Type-I) , RTD Cables	700	Meter			0.00	INR Zero Only
1284	Installation, testing and commissioning of 4C x 1.5 mm ² - Quad Cable (Type-I) , RTD Cables	700	Meter			0.00	INR Zero Only
1285	Supply of 12C x 1.5 mm ² (Type - I) , Control Cable	6600	Meter			0.00	INR Zero Only
1286	Installation, testing and commissioning of 12C x 1.5 mm ² (Type - I) , Control Cable	6600	Meter			0.00	INR Zero Only
1287	Supply of 3C x 1.5 mm ² , (Type - I) Control Cable	2200	Meter			0.00	INR Zero Only
1288	Installation, testing and commissioning of 3C x 1.5 mm ² , (Type - I) Control Cable	2200	Meter			0.00	INR Zero Only
1289	Supply of 3C x 4 mm ² Power Cable (Copper conductor)	1400	Meter			0.00	INR Zero Only
1290	Installation, testing and commissioning of 3C x 4 mm ² Power Cable (Copper conductor)	1400	Meter			0.00	INR Zero Only
1291	Supply of RS-485 serial communication Cable (2P x 1.0 mm ² , Type-II)	400	Meter			0.00	INR Zero Only
1292	Installation, testing and commissioning of RS-485 serial communication Cable (2P x 1.0 mm ² , Type-II)	400	Meter			0.00	INR Zero Only
1293	Supply of 1 TRIAD x 1.5 mm ² (Type I) , Signal Cables	1600	Meter			0.00	INR Zero Only
1294	Installation, testing and commissioning of 1 TRIAD x 1.5 mm ² (Type I) , Signal Cables	1600	Meter			0.00	INR Zero Only
1295	Supply of 6 TRIAD x 1.5 mm ² (Type IV) , Signal Cables	800	Meter			0.00	INR Zero Only
1296	Installation, testing and commissioning of 6 TRIAD x 1.5 mm ² (Type IV) , Signal Cables	800	Meter			0.00	INR Zero Only
1297	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.						
1298	Supply of 50 mm wide X 30 mm high	600	Meter			0.00	INR Zero Only
1299	Installation, testing and commissioning of 50 mm wide X 30 mm high	600	Meter			0.00	INR Zero Only
1300	Supply of 100 mm wide X 30 mm high	720	Meter			0.00	INR Zero Only
1301	Installation, testing and commissioning of 100 mm wide X 30 mm high	720	Meter			0.00	INR Zero Only
1302	Supply of 200 mm wide X 30 mm high	980	Meter			0.00	INR Zero Only
1303	Installation, testing and commissioning of 200 mm wide X 30 mm high	980	Meter			0.00	INR Zero Only
1304	Supply of 300 mm wide X 30 mm high	1000	Meter			0.00	INR Zero Only
1305	Installation, testing and commissioning of 300 mm wide X 30 mm high	1000	Meter			0.00	INR Zero Only
1306	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	1600	Meter			0.00	INR Zero Only
1307	EARTHING						

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).
	CIVIL WORKS SHEET 1			In INR	In INR
CIV-1	SITE CLEARANCE				
CIV-1A	DEMOLITION OF R.C.C				
	Dismantling of existing RCC / Rigid Pavement at all height and depths manually /by mechanical means, along with removing the debris and disposal of unserviceable material to any lead at unobjectionable place outside premises, staking of serviceable materials (reinforcements) inside the premises, handing over serviceable material to Client , all complete as per direction of Engineer-in-charge.	CUM	35	2,300	80,500
	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 will be paid in NET CUM after deductions for air voids as demolished.				
CIV-1B	DISMANTLING WORKS EXCEPT RCC				
	Dismantling of existing PCC / Masonry Work / Soling / Flexible Pavements at all heights and depths manually/ by mechanical means including stacking of serviceable materials inside the premises, handing over serviceable material to Client(if any) & disposal of unserviceable materials at an unobjectionable place outside the premises for all leads, all complete as per direction of Engineer-In-Charge.	CUM	40	1,900	76,000
	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 PCC / Masonry Work / Soling / Flexible Pavements will be paid in NET CUM as demolished.				
CIV-1C	CLEANING VEGETATION				
	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-n-charge. (payment will be made for actual site clearance area only).	SQM	60000	45	27,00,000
CIV-1D	TREE CUTTING				
	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.	Nos.	35	4,200	1,47,000
	Note:				
	1. Rate includes cost of all labour, tools, tackles, hire charges, royalties, levies, loading/unloading, transportation, electric power, illumination and cost of handingover to owner/or his representative etc. complete in all respects as per scope of work and direction of Engineer-in-charge.				
CIV-2	ANTI TERMITE TREATMENT				
CIV-2a	Material and labour for treating the top surface of filled earth using emulsion of Chlorpyrifos/Lindane E.C. 20% with 1% concentration at the rate of 05 litres of emulsion per square meter of surface .	SQM	2700	340	9,18,000
CIV-2b	All as per Item no. CIV-2a) above but treating the soil under plinth protection using chemical emulsion at the rate of 05 litres of emulsion per Sq M of the surface area.	SQM	1100	500	5,50,000
CIV-2c	All as per Item no. CIV-2a) above but treating the soil along with external perimeter of buildings using chemical emulsion at the rate of 2.25 litres of emulsion per RM of the perimeter wall.	RM	1100	90	99,000
CIV-2d	All as per Item no. CIV-2a) above but treating the backfill in contact with foundation using chemical emulsion at the rate of 7.50 litres of emulsion per Sq M of vertical surface (area of surface in contact with backfill to be measured).	SQM	300	550	1,65,000
	NOTE: For Items (2a) To (2d) Contractor shall give at least 10 years performance guarantee for anti termite treatment 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).
CIV-3	EARTH WORK IN EXCAVATION AND BACKFILLING				
a)	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.				
a)	For depth upto 1.5m.	CUM	12000	420	50,40,000
b)	For depth beyond 1.5 m	CUM	2000	470	9,40,000
	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.				
	2. Rate to include cost of all labour, tools, tackles, equipment, hire charges, bailing and pumping out water etc. with all bye works and sundry works complete in all respects..				
CIV-4	EARTH WORK IN EXCAVATION/ SITE GRADING IN HARD ROCK				
	Earth work in excavation in hard rock requiring blasting for all type and size of foundations in any plan dimension up to required depth including disposal of excavated material up to any lead in all conditions, and disposal of surplus and unserviceable material. Surface to be leveled and neatly dressed complete in all respect as per scope of work, detailed construction drawings and directions of the Engineer-in-charge. 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.	CUM	2000	1,600	32,00,000
	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.				
CIV-5	EARTH WORK IN FILLING				
	Supply of good quality imported earth (Plasticity index not more than 20 and liquid limit not more than 40 when tested according to IS:2720 (Part 5), maximum laboratory dry unit weight not less than 15.2 kN/cum, free from any deleterious material, organic materials, non expansive soil etc.) from approved source and controlled earth filling for site levelling, foundations, flooring and at other places in layers of 300 mm and compacted up to 95% to its Modified Proctor density or as per direction of Engineer in charge up to required height and any plan dimension for any lead including cost of all labour, tools, equipment, hire charges, cost of borrowed earth by way of royalties, right of way, taxes, transportation, testing, watering, rolling each layer with 8 tonne to 10 tonne roller in open area and by 1 tonne to 2 tonne roller or wooden or steel rammers in confined area, and dressing / filling up ground depressions etc. complete in all respect as per scope of work, detailed construction drawings, as per technical specifications and directions of the Engineer-in-charge.	CUM	85000	550	4,67,50,000

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).
	Note : 1. Soil Sample to be tested at NABL approved laboratory. 2. The contractor shall obtain prior permission from concerned statutory authorities as necessary for sourcing of earth required for filling as mentioned above and pay royalty etc., as applicable for the same. Copies of receipt of royalty paid by the contractor should be submitted to IGGL/MECON for their record before bringing the material to site. No separate payment will be made by IGGL/MECON towards reimbursement of royalty or any other levies which shall be included in the rates quoted by the party. The contractor shall bring the earth and stock the same as per the directions of EIC. 3. Rate to include cost of all labour, tools, tackles, equipment, hire charges, cost of earth, royalties, right of way, taxes etc. 4. The Contractor shall visit the site to acquaint themselves with the prevailing site conditions, availability of earth and the lead distance involved in transporting soil to the site, and shall accordingly quote their rates.				
CIV-6	EARTH WORK IN BOX CUTTING FOR ROADS				
	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	2700	425	11,47,500
CIV-7	SAND FILLING				
	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	1250	2,000	25,00,000
	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.				
CIV-8	PLAIN CEMENT CONCRETE				
CIV-8a	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	700	8,500	59,50,000
	Note:				
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, OPC/PPC cement, shuttering in all conditions etc. with all bye works and sundry works.				
	2. 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 for rebate using PPC shall be submitted by the Contractor.				
CIV-8b	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	1500	8,000	1,20,00,000
	Note:				
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, OPC/PPC cement, shuttering in all conditions etc. with all bye works and sundry works.				
	2. 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 for rebate using PPC shall be submitted by the Contractor.				
CIV-9	REINFORCED CEMENT CONCRETE				

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).
	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 Batchers shall also be permitted for use at site with the approval of Engineer-Incharge to produce Design Mix Concrete of specified grade.	CUM	7400	12,500	9,25,00,000
	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/PPC 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-10	REINFORCEMENT STEEL				
	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	840	97,000	8,14,80,000
	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-11	DAMP PROOF COURSE				
	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	450	930	4,18,500
CIV-12	BRICK WORK				
	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 ² 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	3500	8,400	2,94,00,000
	Note:				

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).
	Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade cement (OPC/PPC), 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.				
CIV-13	AUTOCLAVED AERATED CEMENT BLOCKS				
	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm 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 separately).	CUM	1600	9,000	1,44,00,000
CIV-14	INSERTS				
	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).	KG	7000	147	10,29,000
CIV-15	PLINTH PROTECTION				
	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	1100	1,600	17,60,000
CIV-16	G.I.PIPES				
	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.				
A)	100 mm nominal bore	RM	400	1,900	7,60,000
B)	150 mm nominal bore	RM	200	2,500	5,00,000
CIV-17	PRE CAST COVERS				
	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	20	16,000	3,20,000
	Note :-				
	1. The reinforcement shall be paid separately vide respective item.				
CIV-18	KHURRAS				
	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.	50	1,000	50,000
CIV-19	GOLA				
	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 :	RM	1000	360	3,60,000
	In 75x75mm deep chase				
CIV-20	CONCRETE PIPES (NP3 TYPE)				

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).
	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.				
a)	150 mm dia	RM	100	2,200	2,20,000
b)	300 mm dia	RM	100	3,500	3,50,000
c)	600 mm dia	RM	100	5,250	5,25,000
CIV-21	CONCERTINA COIL				
CIV-21a	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 43.478gm/metre(cost of MS angle, CC blocks shall be paid separately)	RM	2800	650	18,20,000
CIV-22b	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.	Nos	1000	1,200	12,00,000
	Note- Read this item along with tender drawing MEC/05/22/STD/009.				
CIV-23	RAIN WATER HARVESTING PIT				
	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.	15	3,20,000	48,00,000
	[Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, such as minimum 43 grade OPC cement, bricks of class designation M-7.5 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-24	BOULDER SOLING				
	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)				
a)	125mm thick of size 60-90mm	CUM	200	3,500	7,00,000
b)	150mm thick of size 90-120mm	CUM	200	4,400	8,80,000
CIV-25	STONE AGGREGATE				
	Supplying, stacking and spreading of stone aggregate of size 53 mm to 22.4 mm at desired locations inside the plot over well compacted earth complete as per construction drawing and as directed by Engineer-in-charge.	CUM	2000	3,300	66,00,000
CIV-26	PLASTERING IN DRAINS				
	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	6000	370	22,20,000
	Note:				

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).																				
	Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as minimum 43 grade cement (OPC), coarse sand and other minor construction materials as per requirement with all bye-works and sundry works complete as per drawings.																								
CIV-27	JOINT FILLER																								
a)	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	450	240	1,08,000																				
b)	Providing and filling 12mm deep groove on top and on both sides of vertical surface with bituminous sealant all complete.	RM	800	150	1,20,000																				
	Note- Read this item along with tender drawing no MEC/05/22/STD/009.																								
CIV-28	ROAD WORKS																								
CIV-28a	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	1300	3,400	44,20,000																				
	Note 1:																								
	<table><tr><td>IS Sieve Designation</td><td>% Passing</td></tr><tr><td>75.0 mm</td><td>100</td></tr><tr><td>53.0 mm</td><td>80-100</td></tr><tr><td>26.5 mm</td><td>55-90</td></tr><tr><td>9.50 mm</td><td>35-65</td></tr><tr><td>4.75 mm</td><td>25-55</td></tr><tr><td>2.36 mm</td><td>20-40</td></tr><tr><td>0.425 mm</td><td>10-25</td></tr><tr><td>0.075 mm</td><td>3-10</td></tr></table>	IS Sieve Designation	% Passing	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						
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CIV-28b	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	800	3,900	31,20,000																				
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	<table><tr><td>IS Sieve Designation</td><td>% Passing</td></tr><tr><td>53.0 mm</td><td>100</td></tr><tr><td>45.0 mm</td><td>95-100</td></tr><tr><td>26.5 mm</td><td>---</td></tr><tr><td>22.40 mm</td><td>60-80</td></tr><tr><td>11.20 mm</td><td>40-60</td></tr><tr><td>4.75 mm</td><td>25-40</td></tr><tr><td>2.36 mm</td><td>15-30</td></tr><tr><td>0.06 mm</td><td>8-22</td></tr><tr><td>0.075 mm</td><td>0-8</td></tr></table>	IS Sieve Designation	% Passing	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				
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CIV-28c	REINFORCED CEMENT CONCRETE IN PAVING/GRADE SLAB WITH VACUUM DEWATERED CONCRETING USING TREMIX OR EQUIVALENT METHOD																								

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).
	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 be permitted for use at site with the approval Of Engineer-in-Charge to produce Design Mix Concrete.	CUM	1300	13,250	1,72,25,000
	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.				
CIV-29	CONCRETE PAVEMENT				
	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 thk sand and 100 thk 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.	SQM	6500	3,300	2,14,50,000
	150mm thick in Pavements of Process Area (Type - I)				
	Note :-				
	1.Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, providing and fixing reinforcement steel, shuttering, earthwork in excavation and backfilling using serviceable earth in all conditions, preparation of base, etc. with all bye works and sundry works. Cost of works towards pipe supports & sleepers being raised from pavement is covered under respective RCC items.				
CIV-30	EXPANSION JOINTS				
CIV-30A	Providing 25mm wide 200 deep expansion joint with 25 thick PUF filler board, top filled with 15 mm x 25 mm polysulphide sealant, 32mm dia medium grade PVC sleeve with end cap at one end with 20mm dia plain MS bar @ 500mm c/c etc all complete as per drawing, specification and instruction of Engineer.	RM	400	640	2,56,000
CIV-30B	Providing and laying 40 mm thick 200 mm deep expansion/separation joint along the periphery of pedestals, flooring with approved bituminous impregnated fibre board conforming to IS 1838 including sealing the top 20mm depth with bituminous mastic sealant at all heights and locations with all bye-works complete as per drawing, standard practice as directed by Engineer.	RM	1850	1,200	22,20,000

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).
CIV-31	PAVER BLOCK FLOORING				
	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	1500	1,620	24,30,000
	Note :-				
	1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials such as 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 shall be paid separately vide respective item.				
CIV-32	KERB STONE FIXING				
	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	1500	1,200	18,00,000
	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.				
CIV-33	CPVC PIPES - EXPOSED WORK				
	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.				
A)	32 mm nominal bore	RM	200	740	1,48,000
B)	25 mm nominal bore	RM	30	620	18,600
C)	20 mm nominal bore	RM	30	560	16,800
D)	15 mm nominal bore	RM	30	500	15,000
CIV-34	CPVC PIPES - CONCEALED WORK				
	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.				
A)	25 mm nominal bore	RM	50	600	30,000
B)	20 mm nominal bore	RM	50	550	27,500
C)	15 mm nominal bore	RM	30	500	15,000
CIV-35	NON RETURN VALVE				
	Supplying, fitting and fixing superior quality Gun metal non return valve of approved quality				
A)	32mm dia	NOS.	30	3,600	1,08,000
B)	25mm dia	NOS.	20	3,000	60,000
CIV-36	SINTEX OR EQUIVALENT HDPE WATER TANK				
	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)	EACH	13	25,000	3,25,000

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).
CIV-37	SAND CAST IRON/ CAST SPUN SOIL,WASTE & VENT PIPE AND FITTINGS				
	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.				
A)	100 MM DIA	RM	150	2,500	3,75,000
B)	75 MM DIA	RM	100	2,000	2,00,000
CIV-38	GULLY TRAP				
	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.	25	4,500	1,12,500
CIV-39	BRICK MASONRY MANHOLES				
	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				
	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	EACH	20	21,000	4,20,000
	Extra for depth for manholes	RM	40	7,000	2,80,000
CIV-40	GLAZED STONEWARE PIPES				
	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).				
	100 mm dia	RM	100	1,500	1,50,000
	150 mm dia	RM	200	2,000	4,00,000
CIV-41	FLOOR TRAP				
CIV-41a	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	1,800	45,000
CIV-41b	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	2,700	27,000
CIV-42	SEPTIC TANK				
	Providing and construction of septic tank 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.				
CIV-42a	TYPE-I for 20 Users	NOS.	13	2,00,000	26,00,000

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).
	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	SOAK PIT				
	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.	13	1,70,000	22,10,000
CIV-44	PILING UNDER FOUNDATION				
a)	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 IGGL/ 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.	RM	7450	5,400	4,02,30,000
	Notes-1. Rate to include cost of all labour, tools, tackles, equipment, hire charges, supply of all materials, shuttering, providing and fixing reinforcement steel testing etc. with all bye works and sundry works and consumables.				
	2. Reinforcement will be paid seperately in respective SOR item.				
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				
	Initial test	Nos.	6	1,10,000	6,60,000
	Routine test	Nos.	12	1,10,000	13,20,000
c)	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				
	Initial test	Nos.	6	90,000	5,40,000
CIV-45	BANK & BED PROTECTION				
	Providing, laying and constructing gabions and mattresses for erosion control and scour bed protection works with mattress of size 4m (max.) x 1m (max.) x 0.25 m (LxBxH) and partitions at 1m each filled with boulders of size 90-150 mm in compacted layers. Gabions and Mattresses shall be mechanically woven, double twisted, min diameter of 2.7mm/3.7mm (ID/OD) 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 4 mm galvanised steel wire. The sides of end panels shall be protected from riprap type structure (soling) with 225mm or larger size boulders. The above work shall be completed in all respect as per scope of work, detailed construction drawings and directions of the Engineer-In-Charge.	SQM	1100	5,300	58,30,000
	Note: 1.Rate to include cost of all labour, tools, tackles,equipment, hire charges, supply of all materials, earth work in backfilling, etc. with all bye works and sundry works.				
	2.To be read in conjunction with Tender Drawing No. MEC/05/22/STD/003 & MEC/05/22/STD/004.				
CIV-46	SAND BAGS				

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).
	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	200	3,50,000
CIV-47	STONE PITCHING				
	Providing and laying dry stone pitching 225mm thick with CM 1:3, on slopes,embankments using approved hard, durable stones of specified size, hand placed to proper line, level, and grade over well compacted earth.	SQM	500	1,000	5,00,000
	Total Amount of quoted price (inclusive of all applicable taxes & duties except GST (CGST&SGST/UTGST or IGST).				43,47,17,900