



MAZAGON DOCK SHIPBUILDERS LIMITED

(Formerly known as Mazagon Dock Ltd.)

CIN : U35100MH1934GOI002079

(A Government of India Undertaking)

Shipbuilders to the Nation

Dockyard Road, Mazagon,

Mumbai 400 010.

INDIA

**Replacement of Existing Compressed
Air & Salt water Pipeline in MDL yards,
Mumbai.**

VOLUME-III

**Scope of Work
List of Tender Drawings
Price Bid (Part-II)**

Table of Contents		
Clause No.	PERTICULARS	PAGE No.
1.	SCOPE OF WORK	02
2.	LIST OF TENDER DRAWINGS	07
3.	DATA SHEETS	08
4.	BILL OF QUANTITIES PRICE BID (PART II) (Enclosure-1)	10

1. निविदा हेतु सामान्य कार्य का ब्योरा / GENERAL SCOPE OF WORK FOR TENDER

The Contractor has to execute the work in respect of replacement of existing Compressed Air and Salt Water pipelines inside MDL premises at Dockyard Road, Mumbai, as per consultant's Project Planning, Design and work Execution Methodology.

The work to be performed by the Contractor under the scope of this bid shall include, **BUT IS NOT LIMITED TO** the following:

1. Site visit and understanding the site conditions and working feasibility in the site in all aspects. Assess the Scope/quantum of work in presence of MDL Project Team & Consultant, before submission of their offer. Consultant shall facilitate site visit with the MDL Project Team and explain scope of work, job evolved etc. To the prospective Bidders.
2. The Tenderer is advised to visit and examine the Site of the Works and its surroundings and obtain for himself on his own responsibility, all information that may be necessary for preparing the Tender and entering into a contract for construction of the Works. The cost of visiting the Site shall be at the Tenderer's expense.
3. Submission and taking approval of Shutdown plan for dismantling and other front availability for execution works with prior written permission from MDL concern department i.e. for dismantling power lines from SB-MTC, for fresh water from CMS, for DA/BMCG gas line from SB-welding, etc.
4. Temporary Dismantling of existing Equipment creating hindrances for old pipeline removal / new pipelines erection and reshifting to the same place inside MDL premises, as instructed by client/consultant.
5. Temporary Dismantling of existing Chequered Plates over and around Trench creating hindrances for old pipeline removal / new pipelines erection and reshifting of same at place in MDL premises, as instructed by client/consultant.
6. Temporary Dismantling & Shifting of existing Components for the sake of front availability shall be done in a meticulous manner in presence of client/consultant and with proper written permissions from MDL Project team/Concerned Department.
7. Segregation of Pipelines and parallel entangled and interfering Electric Cables for ease of execution works with prior permission from MDL concerned authorities.
8. Fixing of segregated electrical cables inside / outside the Trench in a meticulous manner for the sake of a clear front and required space edifice for pipelines. Making

the trenches clear of water logging /mud, if any in case it is hindering dismantling old piping or erection of new pipelines.

9. Availability of space-oriented customized Support fabrication and erection inside and outside the trench for supporting the pipelines.
10. Contractor shall be solely responsible for civil construction of foundation / pedestal support for pipelines.
11. Re-erection of temporarily shifted equipments / components and the connection of same with respective utility / as instructed by the client/consultant.
12. Excavation & Civil construction of RCC Trench as per layout/ as required.
13. Trench Covers and Repair of Road, after successful construction of RCC Trench.
14. Supply, Shifting, Installation and commissioning of New Air Receiver / Moisture Separator / Instruments and other equipments as per Layout/ Tender specs.
15. Supply, Fabrication, Erection, Alignment, Supporting, testing, commissioning & Painting of New Compressed Air & saltwater Pipelines as per layout / Specification and as instructed by client/consultant.
16. Bare Pipes for fire-fighting works should be procured according to BOQ item specified in the Technical Tender. After procuring these bare pipes, it should be internally coated in the corrocoat workshop and should be delivered to MDL premises after coating. For all these works, the expenses should be borne by contractor solely.
17. Contractor under the scope of this bid is not only limited to the above works but is also bound to execute any other work required for the completion of the project.
18. The drawings attached in the Tender are for concept/reference only; Detail drawings/shop drawings shall be prepared by contractor after he takes the approval on shop drawing from Client/ Consultant before starting work.
19. The whole construction shall be as per design and layout drawing provided by Client/Consultant. Contractor is not required to do any designing but is free to check the design and suggest any betterment at his own cost and inform his Client /Consultant for corrective action before start of work, if any (if it happens in the views of the contractor). The attached drawing with Tender may undergo some changes during course of construction and the same will be advised as and when required. No extra payment on part of such checking by contractor shall be admissible at any time.
20. The Consultants reserve the right to adjust arithmetical or other errors in the Tender in accordance with the general rules. In the event of an error in the amount column arising as a result of wrong extension, the unit or item rates shall be regarded as firm and the extensions amended accordingly.
21. The quantities of the Tender items are indicative. These quantities may vary during execution. In such a case the contractor will not be entitled for any damages & compensation, whatever the change in quantity. The Contractors are bound to execute any additional work of similar nature at the rates approved by the client/ Consultants.

22. General directions and description of work and materials given in the specification are not necessarily repeated in the Bill of Quantities. The Specification shall therefore be referred to for the true intent of the Bill of Quantities.
23. All work shall be measured in net as it is finished and / or fixed in the works and no allowance shall be made for wastage notwithstanding any general or local custom. Any items of work not covered in the Preamble shall be measured as per specifications for work methods laid down in IS-1200 and / or other Indian standards as decided by the Engineer.
24. The quantities set down against the items in this Bill of Quantities are an approximate estimate of the quantity of each kind of work included in the Contract and are given priority for the convenience of forming a common basis for Tendering. They are not to be taken as a guarantee that the quantities scheduled will be carried out or required or even that they will not be exceeded. The employer / Engineer reserves the right to delete any item indicated in the bill of quantities at any time.
25. The quantities shall therefore not be considered as representing the final measurements, it being the intention of the Contract (except where otherwise specifically stated) that the actual quantities of work ordered and carried out shall be jointly measured on completion by the Engineer or his authorized representative and the Contractor, valued and paid for at such prices, thereby rates entered by the Contractor in the Bill of Quantities.
26. The rates and prices set down against the items are to be rated as the full inclusive value of the finished work shown on the drawing and / or described in the Specifications, which can reasonably be inferred there from, to cover the cost of every description of Temporary Works executed or used in connection therewith (except of those items in respect of which specific provision has been separately been made in the Bill of Quantities) and all the Contractor's obligations under the contract including testing, giving samples and all materials and things necessary for the proper execution for the completion and maintenance of the Works. No claim for additional payment shall be allowed for any error or misunderstanding by the Contractor of the work involved
27. All equipments, manpower and material required for completing the Tendered job are to be arranged and supplied by the Contractor without any extra cost and are set to be completed as per the instructions of the client/ Consultants.
28. In general, only specified material, Make & Model is to be brought to site and used in the project. The equivalent material shall be used only against the consent and approval of the client/ Consultants.
29. Material specifications and preferred list of vendors, given in this Tender are based on available information. In case other reputed suppliers/ manufacturers can supply material as per the laid down specifications, their name may be considered after evaluation and written for clearance from client/ Consultants.
30. Clearing job sites of all surplus material, debris, scrap, construction equipment, water logging in trenches etc. Are in scope of work and are to be done as per directions of client/ Consultants.
31. The scope of work is defined in general and not limited to the above Bidder who also has to carry out his job, not listed here but is required for completion and commissioning of facilities.

32. The Tenderer shall note that the whole work shall be completed under supervision of our authorized representative. However, Tenderer is supposed to depute his representative at site at his own cost for proper site supervision, recording of deviations, asking any decision from MDL, quality test of ongoing works and recording thereof, getting work done as per QAP within time schedule, recording of measurements, and liaising with other Contractors/Agencies for proper quality completion of whole work and any other works etc.
33. Tenderer is required to depute his representative at site for proper site supervision, his Representative will submit Weekly progress report without any failure and he will be solely responsible for submission of the same (Every Monday after post commencement of work.)
34. MDL shall allocate the space to contractor within the plant area only for storing their material. All utilities/ facilities required for the work shall be arranged by contractor as per contract. Also contractor shall be responsible for safety & security of their material from any damage or theft or any other non-acceptable event of any kind.
35. It is the contractor's responsibility to liaison with statutory bodies/ government department /approved agency for applying & obtaining necessary approvals & certificate as may be applicable which includes all related activity / works & complete documentation at his Own Cost only.
36. All works shall be as per enclosed "Schedule of Rates".
37. Any item/job, which is not included in the enclosed Schedule of rates but is required for successful completion of any other item/job included in the schedule of rates, is also in the scope of the Contractor.
38. The Contractor shall make his own arrangement for Crane/Hydra/Tools & tackles/ any other necessary machinery & equipment facility as required during the execution of the work at his own cost.
39. Contractor shall provide all accessories /structure/equipments for, testing and commissioning of the full piping network.
40. Contractor shall be providing Pipe supports – RCC pedestals, wherever required or described in the drawing / specifications.
41. Contractor is solely responsible for all other miscellaneous works required for commissioning & completion of the project.
42. Carrying out hydro testing, Pneumatic tests and other tests including supply of water, Compressed Air / Nitrogen, required materials / items as specified in codes / specifications by using contractor's own equipment.
43. Contractor shall be responsible for installation of new / shifted existing equipments on foundation / predefined space with alignment, piping hook ups, and electrical cable connections and commissioning of the equipments.
44. Contractor shall follow all safety rules and regulations of MDL premises and as per client's/consultant's instructions.
45. All height works shall be done under close supervision of contractor's safety engineer/Responsible engineer with prior information to client/consultant.

46. Contractor shall follow all special safety norms, required for any critical job without any extra cost to MDL.
47. Contractor shall be responsible for safety & security of all material and equipments provided by contractor for project works till handing over of the facility /system/works to MDL.
48. The work of excavation in all types of soil including back filling with excavated earth is in the scope of excavation items.
49. The Contractor shall prepare a detailed work methodology/inspection methodology (QAP) and submit to client/consultant before starting of work.
50. The Contractor shall take approval from Client/consultant on their work methodology before actual work begins and incorporate instructions given by Client/consultant, if any, as brought out during the pre-construction/construction stage.
51. The Contractor has to arrange the inspection with required front / accessibility, as and when required / instructed as per work inspection and testing methodology.
52. Client reserves the right to inspect material, workmanship & any aspect related to project work at any point in the time of execution.
53. Contractor is required to submit site organization & orgonogram chart, QAP, Planning Bar chart of complete work within 15 days from award of contract.
54. The Tenderer's attention is directed specially to the fact that Ship building work, submarine work & allied activities shall continue on the slipways, dry docks & wet basins in the Employer's Yard and other allied work in the vicinity of the Site during the tenure of the Contract. Also during the contract period, other contractors will be undertaking works as assigned by MDL. The bidders operations and activities should not pose any hindrance or hazard to these activities.
55. Special Note for Contractor: The Richey Dry Dock area Pipeline works are Hold due to non confirmation from MDL higher management. Further that this area may be remove from Tender scope of work so that contractor to take this note for their Techno-commercial Bids.
56. The successful Tenderer within 10 days of receipt of acceptance of Tender, name any graduate engineer responsible for the job at site on behalf of the contractor Tendered shall given in writing to Client / Consultants, the name of his authorized and qualified engineer who will supervise the work and shall remain at site during execution of the job. Required qualification for the engineer shall be as tabulated below:

Contractor Manpower Table:

	Project Manager	Site Engineer	QC / QA Engineer	HSE Manager
Qualification	1 Mech / Engineer with 8-10 years of experience	1 Mech Engineer with 2-5 years of experience	Minimum 01 no Mech Engineer with 3-5 years of experience	1 Engineer with 3 year of experience

In general, following shall be the duties of Project Manager of Contractor:

- i. Inspect & approve the materials brought at site.
- ii. To be a part of monitoring system by way of Bar-chart so as to anticipate the critical activity and take remedial action in advance, for timely completion of work.
- iii. To ensure & certify the quality of work as per Standard norms, in concurrence with Consultant.
- iv. To take joint measurements with the representatives of the consultant and MDL Engineer, as per relevant Standards/IS codes for measurement of works.
- v. MDL / Consultant reserves the right to ask for change of Project Manager, if found incompetent.
- vi. Senior Manager / Engineer/ Partner / Proprietor of the Contractor's firm shall visit the site periodically to monitor the progress.
- vii. The project Manager is solely responsible for Submission of Weekly Project Progress report (On every Monday after post commencement of work.)
- viii. Contractor is required to submit monthly progress report & also the schedule of execution within 15 days of award of the contract.
- ix. Contractor is required to strictly follow all safety & security regulations of employer including procedure related to obtaining entry passes for Man, vehicle & materials.

2. निविदा हेतु चित्रकारी की सूची / LIST OF TENDER DRAWINGS

Sr. No	Drawing number	Drawing Detail
1	MEP-FF-TD-001	FF PIPING LAYOUT
2	MEP-FF-TD-002	FF ISOLATION PIPING LAYOUT
3	MEP-FF-TD-003	FF KASARA WET BASIN SHEET 1OF2
4	MEP-FF-TD-003	FF KASARA WET BASIN SHEET 2OF2
5	MEP-FF-TD-004	FF RICHEY DRY DOCK SHEET 1OF2
6	MEP-FF-TD-004	FF RICHEY DRY DOCK SHEET 2OF2
7	MEP-FF-TD-005	FF MOGUL DRAY DOCK
8	MEP-FF-TD-006	FF SLIP WAY 1
9	MEP-FF-TD-007	FF SLIP WAY 2
10	MEP-FF-TD-008	FF SLIP WAY 3
11	MEP-FF-TD-009	FF AROUND SERVICE BLOCK
12	MEP-FF-TD-010	FF OUT SIDE FOB
13	MEP-FF-TD-011	FF PUMP HOUSE AT KASARA 1OF5
14	MEP-FF-TD-011	FF PUMP HOUSE AT KASARA 2OF5
15	MEP-FF-TD-011	FF PUMP HOUSE AT KASARA 3OF5
16	MEP-FF-TD-011	FF PUMP HOUSE AT KASARA 4OF5
17	MEP-FF-TD-011	FF PUMP HOUSE AT KASARA 5OF5
18	MEP-PI-TD-001	PIPING LAYOUT COMPRESSED AIR
19	MEP-PI-TD-002	CA PIPING ISOLATION STRATAGY
20	MEP-PI-TD-003	CA KASARA WET BASIN
21	MEP-PI-TD-004	CA RICHI DRAY DOCK
22	MEP-PI-TD-005	CA MOGUL DOCK
23	MEP-PI-TD-006	CA SLIPWAY 1 (1OF2)
24	MEP-PI-TD-006	CA SLIPWAY 1 (2OF2)

25	MEP-PI-TD-007	CA SLIPWAY 2
26	MEP-PI-TD-008	CA SLIPWAY 3
27	MEP-PI-TD-009	CA HDR FOR SLIP WAY 1 &SLIPWAY 2
28	MEP-PI-TD-010	TURNING & FITTING SHOP
29	MEP-PI-TD-011	TITANIUM SHOP 1 OF 2
30	MEP-PI-TD-011	TITANIUM SHOP 2 OF 2
31	MEP-PI-TD-012	SHEET METAL SHOP
32	MEP-PI-TD-013	SB PIPE SHOP
33	MEP-PI-TD-014	SB MAINTENANCE SHOP
34	MEP-PI-TD-015	SB ENGINEERING WORK SHOP
35	MEP-PI-TD-016	PRODUCTION ,PLATERS & ASSEMBLY 1OF3
36	MEP-PI-TD-016	PRODUCTION ,PLATERS & ASSEMBLY 2OF3
37	MEP-PI-TD-016	PRODUCTION ,PLATERS & ASSEMBLY 3OF3
38	MEP-PI-TD-017	PICKLING SHOP
39	MEP-PI-TD-018	PAINT SHOP
40	MEP-PI-TD-019	P&A F2 SHOP
41	MEP-PI-TD-020	P&A F1 SHOP
42	MEP-PI-TD-021	NY ASSBLY
43	MEP-PI-TD-022	MAIN HDR 1OF2
44	MEP-PI-TD-022	MAIN HDR 2OF2
45	MEP-PI-TD-023	JOINER SHOP
46	MEP-PI-TD-024	HEADER OUT SIDE FOB
47	MEP-PI-TD-025	FOB WORKSHOP
48	MEP-PI-TD-026	ELECTRICAL WORKSHOP
49	MEP-PI-TD-027	DIESEL SHOP & RIGGING SHOP
50	MEP-PI-TD-028	COMP. HOUSE 2 OF 2 (RICHIE DOCK)
51	MEP-PI-TD-028	COMP. HOUSE 1 OF 2 (RICHIE DOCK)
52	MEP-PI-TD-029	COMP. HOUSE NERA RICHIE DOCK 1OF3
53	MEP-PI-TD-029	COMP. HOUSE NERA RICHIE DOCK 2OF3
54	MEP-PI-TD-029	COMP. HOUSE NERA RICHIE DOCK 3OF3
55	MEP-PI-TD-030	COMP. HOUSE AT MOGUL 1OF2
56	MEP-PI-TD-030	COMP. HOUSE AT MOGUL 2OF2
57	MEP-PI-TD-031	COMP. HOUSE AT SERVICE BLOCK 1OF3
58	MEP-PI-TD-031	COMP. HOUSE AT SERVICE BLOCK 2OF3
59	MEP-PI-TD-031	COMP. HOUSE AT SERVICE BLOCK 3OF3
60	MEP-PI-TD-032	MANIFOLD
61	MEP-PI-TD-033	- 5KL AIR RECIVER
62	MEP-PI-TD-034	TRENCH LAYOUT SHEET-1OF2
63	MEP-PI-TD-034	TRENCH SECTIONS SHEET-2OF2

3. DATA SHEETS

Sr. No	Description
1.	PIPING MATERIAL SPECIFICATION/Annexure-2/ Galvanised Carbon Steel / R0

2.	PIPING MATERIAL SPECIFICATION/Annexure-2/Carbon Steel Glass Flake polymeric resin coated Internal/ R0
3.	VALVE DATA SHEET/ BALL VALVE/R0
4.	VALVE DATA SHEET/ BUTTERFLY VALVE /R0
5.	VALVE DATA SHEET/ CHECK VALVE/R0
6.	VALVE DATA SHEET/ GATE VALVE/R0
7.	TECHNICAL NOTES FOR VALVES
8.	FLOW METER DATA SHEET/ Annexure-3 ("B")/R0

Note: Tenderer(s) shall carefully referred above data sheets included in the tender and successful bidder shall submit duly filled in, signed & stamped with company seal after award of Purchase Order.

Enclosure-1

PRICE BID (PART-II)
BILL OF QUANTITIES
(To be submitted online)

Sub: Replacement of existing Compressed Air and Salt Water Pipelines in MDL Yards, Mumbai.

Ref: MDL Tender No. 1800000042.

INSTRUCTION TO THE BIDDER:

1. Bidder shall **NOT INCLUDE** The Goods & Service Tax in the rates for this section. Bidder is required to quote Goods & Service Tax **SEPERATELY** in Percentage which will be added to the rate quoted for this section.
2. Bidder to note Clause No. 2 (Defect Liability Period), Clause No 3 (Performance bank Guarantee), Clause No 5 (Safety and Training), Clause No 6 (Terms of Payment), Clause No 8 (Prices and Taxes), Clause No 15 (Insurance), Clause No 11.10 (Availability of sand/ other construction material) of Volume II before quoting.
3. MDL reserves the right to increase the quantity of any item in the BOQ to any extent provided the increase in the total Estimated Amount due to this change in the quantity over BOQ quantity multiplied by specified rate for all the items put together do not exceed 25% of the Accepted Contract Value. Bidder to note Clause No 13.1 of Volume II before quoting.
4. Bidder should also note Clause No 27 (Integrity Pact Bank Guarantee) in Volume I before quoting.

Sr No.	Service Accounting Code (SAC)	Item Description	Unit	Qty	Rate	Amount
A		EARTH WORK				
1		Earth work in Excavation (including for foundation) by mechanical means/ manual means in all types of soils, such as Earth, Marine Clay, Marshy Land, Running Sand, Garbage, Slush, Murum, Rock Boulders, RCC boulders, any type of road layer etc. as directed by Engineer in-charge. The rate includes pumping out water if required, removing the rank vegetation and refilling the excavated materials wherever required within lead of 150 mtr as directed including leveling, ramming etc and removing the surplus excavated materials to municipal dumping ground at any distance as directed. The rate also includes supporting public utilities such as cables, drains services pipes water mains, but shall not include the cost of shoring. Where unshored trenches are allowed slope as specified shall be	Cum	450.00		

		given. (cutting of MS plates & old RCC foundation coming during excavation shall be paid separately.) Depth up to 1.5 m				
2		Close timbering in trenches including strutting, shoring and packing cavities (wherever required) complete. (Measurements to be taken of the face area timbered). Depth exceeding 1.5 m but not exceeding 3 m	Sqm	425.00		
3		Providing and laying dry rubble stone packing of specified thickness, hand set in regular lines, interstices being filled in with small pieces of stones/murram, thoroughly rammed, consolidated and watered complete as directed and specified. above 230 mm thk	Cum	75.00		
4		Pumping out water from trenches, pits etc upto 4 mtrs. Depth from ground level and discharging of the water through hose to the nearest water gully/manhole/drain complete as directed (Pumping capacity should not be less than 3 litres per second) Note: This item may be operated in areas other than excavation areas where puddles of water is noticed during execution of work is in progress solely at the discretion to the engineer-in-charge.	Pump working hour	5.00		
B		DEMOLISHION WORKS				
5		The work of demolishing, cutting down, dismantling, etc. includes propping wherever required as directed, stacking the removable material as detailed in individual items and carting away all unserviceable materials and debris from site. The amount should include cost for carrying out any other unforeseen items required for the proper execution of the work. The contractor will have to put up a proper and sufficient hoarding, screen and fence	Cum	10.00		

		<p>during the time as may be necessary for the safety and convenience of the inmates of the existing buildings and maintain the same in the good condition during demolition and wherever necessary cause such hoarding or fence to be well lit during the night to prevent accidents. Contractor will have to make good without any extra payment any damage done during construction. Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in-charge. Disposal shall be paid separately.</p>				
6		<p>The work of demolishing, cutting down, dismantling, etc. includes propping wherever required as directed, stacking the removable material as detailed in individual items and carting away all unserviceable materials and debris from site. The amount should include cost for carrying out any other unforeseen items required for the proper execution of the work. The contractor will have to put up a proper and sufficient hoarding, screen and fence during the time as may be necessary for the safety and convenience of the inmates of the existing buildings and maintain the same in the good condition during demolition and wherever necessary cause such hoarding or fence to be well lit during the night to prevent accidents. Contractor will have to make good without any extra payment any damage done during construction. Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer -in -charge.</p>	Sqm	10.00		

7		<p>The work of demolishing, cutting down, dismantling, etc. includes propping wherever required as directed, stacking the removable material as detailed in individual items and carting away all unserviceable materials and debris from site. The amount should include cost for carrying out any other unforeseen items required for the proper execution of the work. The contractor will have to put up a proper and sufficient hoarding, screen and fence during the time as may be necessary for the safety and convenience of the inmates of the existing buildings and maintain the same in the good condition during demolition and wherever necessary cause such hoarding or fence to be well lit during the night to prevent accidents. Contractor will have to make good without any extra payment any damage done during construction. Dismantling and removing lime or plain cement concrete with all leads & lifts including carting away debris etc. complete as directed. Disposal shall be paid separately.</p>	Cum	10.00		
8		<p>The work of demolishing, cutting down, dismantling, etc. includes propping wherever required as directed, stacking the removable material as detailed in individual items and carting away all unserviceable materials and debris from site. The amount should include cost for carrying out any other unforeseen items required for the proper execution of the work. The contractor will have to put up a proper and sufficient hoarding, screen and fence during the time as may be necessary for the safety and convenience of the inmates of the existing buildings and maintain the same in the good condition during demolition and wherever necessary cause such</p>	Cum	10.00		

		hoarding or fence to be well lit during the night to prevent accidents. Contractor will have to make good without any extra payment any damage done during construction. Cutting down masonry work of any size and shape in lime or cement mortar including plaster etc. complete as directed. Rate shall include the carting away of the material within 50 metres lead as per direction of Engineer - in- charge. Disposal shall be paid separately.				
9		The work of demolishing, cutting down, dismantling, etc. includes propping wherever required as directed, stacking the removable material as detailed in individual items and carting away all unserviceable materials and debris from site. The amount should include cost for carrying out any other unforeseen items required for the proper execution of the work. The contractor will have to put up a proper and sufficient hoarding, screen and fence during the time as may be necessary for the safety and convenience of the inmates of the existing buildings and maintain the same in the good condition during demolition and wherever necessary cause such hoarding or fence to be well lit during the night to prevent accidents. Contractor will have to make good without any extra payment any damage done during construction. Dismantling steel work in trusses, rafters, purlins, girders, rails etc and stacking within the premises as directed. Carriage of material by mechanical transport including loading, unloading and stacking. Disposal shall be paid separately. Taking material to south yard for weighing and stacking in designated steel scrap bin in MDL premises	Kg	500.00		
10		The work of demolishing, cutting down, dismantling, etc. includes	Cum	30.00		

		propping wherever required as directed, stacking the removable material as detailed in individual items and carting away all unserviceable materials and debris from site. The amount should include cost for carrying out any other unforeseen items required for the proper execution of the work. The contractor will have to put up a proper and sufficient hoarding, screen and fence during the time as may be necessary for the safety and convenience of the inmates of the existing buildings and maintain the same in the good condition during demolition and wherever necessary cause such hoarding or fence to be well lit during the night to prevent accidents. Contractor will have to make good without any extra payment any damage done during construction. Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.				
C		CONCRETE WORKS				
11		Providing and Laying in foundation bedding, backing or steps upto plinth level etc. with cement concrete in M-15 grade including formwork, curing, vibrating etc. complete as directed.	Cum	35.00		
12		Proving and casting in situ M-30 grade RCC including formwork, curing, vibrating excluding reinforcement etc. complete as directed. Notes : 1) The rates shall include the cost of complete work including mix design, site laboratory equipment, centring, form work, placing, vibrating, tamping, curing, roughening the	Cum	55.00		

		<p>exposed surfaces for receiving plaster/ finishing, reinforcement will be paid for separately, unless otherwise specified. The centring shall be only in steel scaffolding & adjustable steel props.</p> <p>2) The concrete shall be machine mixed. Use of mechanical vibrator shall be made for all R.C.C. work wherever directed. All joints and gaps in the form work shall be covered with water proof papers as directed and full water proofing paper shall be used for casting the terrace/floor slabs and sanitary blocks at every floor. Precast cement mortar (1:2) cover blocks or approved plastic cover blocks shall be used for all beams, slabs, columns and footing as directed. R.C.C. slabs in sanitary blocks, washing places, bath rooms and nahani slab portions must be sunk as per drawings for which nothing extra will be paid.</p> <p>3) The rates of R.C.C. items are for floor height upto 3 mt. in single stage centring including form work.</p> <p>--for raft Slab/ Pedestals</p>				
13		<p>Proving and casting in situ M-30 grade RCC including formwork, curing, vibrating excluding reinforcement etc. complete as directed.</p> <p>Notes : 1) The rates shall include the cost of complete work including mix design, site laboratory equipment, centring, form work, placing, vibrating, tamping, curing, roughening the exposed surfaces for receiving plaster/ finishing, reinforcement will be paid for separately, unless otherwise specified. The centring shall be only in steel scaffolding & adjustable steel props.</p> <p>2) The concrete shall be machine mixed. Use of mechanical vibrator shall be made for all R.C.C. work</p>	Cum	65.00		

		<p>wherever directed. All joints and gaps in the form work shall be covered with water proof papers as directed and full water proofing paper shall be used for casting the terrace/floor slabs and sanitary blocks at every floor. Precast cement mortar (1:2) cover blocks or approved plastic cover blocks shall be used for all beams, slabs, columns and footing as directed. R.C.C. slabs in sanitary blocks, washing places, bath rooms and nahani slab portions must be sunk as per drawings for which nothing extra will be paid.</p> <p>3) The rates of R.C.C. items are for floor height upto 3 mt. in single stage centring including form work..</p> <p>--for shear wall</p>				
14		<p>Proving and casting in situ M-30 grade RCC including formwork, curing, vibrating excluding reinforcement etc. complete as directed.</p> <p>Notes : 1) The rates shall include the cost of complete work including mix design, site laboratory equipment, centring, form work, placing, vibrating, tamping, curing, roughening the exposed surfaces for receiving plaster/ finishing, reinforcement will be paid for separately, unless otherwise specified. The centring shall be only in steel scaffolding & adjustable steel props.</p> <p>2) The concrete shall be machine mixed. Use of mechanical vibrator shall be made for all R.C.C. work wherever directed. All joints and gaps in the form work shall be covered with water proof papers as directed and full water proofing paper shall be used for casting the terrace/floor slabs and sanitary blocks at every floor. Precast cement mortar (1:2) cover blocks or approved plastic cover blocks shall be used for all beams, slabs,</p>	Cum	40.00		

		columns and footing as directed. R.C.C. slabs in sanitary blocks, washing places, bath rooms and nahani slab portions must be sunk as per drawings for which nothing extra will be paid. 3) The rates of R.C.C. items are for floor height upto 3 mt. in single stage centring including form work. --In floor slabs				
15		Proving and casting in situ M-30 grade RCC including formwork, curing, vibrating excluding reinforcement etc. complete as directed. Notes : 1) The rates shall include the cost of complete work including mix design, site laboratory equipment, centring, form work, placing, vibrating, tamping, curing, roughening the exposed surfaces for receiving plaster/ finishing, reinforcement will be paid for separately, unless otherwise specified. The centring shall be only in steel scaffolding & adjustable steel props. 2) The concrete shall be machine mixed. Use of mechanical vibrator shall be made for all R.C.C. work wherever directed. All joints and gaps in the form work shall be covered with water proof papers as directed and full water proofing paper shall be used for casting the terrace/floor slabs and sanitary blocks at every floor. Precast cement mortar (1:2) cover blocks or approved plastic cover blocks shall be used for all beams, slabs, columns and footing as directed. R.C.C. slabs in sanitary blocks, washing places, bath rooms and nahani slab portions must be sunk as per drawings for which nothing extra will be paid. 3) The rates of R.C.C. items are for floor height upto 3 mt. in single stage centring including form work.	Cum	12.00		

		..In beams, lintels, runner beams.				
16		<p>Proving and casting in situ M-30 grade RCC including formwork, curing, vibrating excluding reinforcement etc. complete as directed.</p> <p>Notes : 1) The rates shall include the cost of complete work including mix design, site laboratory equipment, centring, form work, placing, vibrating, tamping, curing, roughening the exposed surfaces for receiving plaster/ finishing, reinforcement will be paid for separately, unless otherwise specified. The centring shall be only in steel scaffolding & adjustable steel props.</p> <p>2) The concrete shall be machine mixed. Use of mechanical vibrator shall be made for all R.C.C. work wherever directed. All joints and gaps in the form work shall be covered with water proof papers as directed and full water proofing paper shall be used for casting the terrace/floor slabs and sanitary blocks at every floor. Precast cement mortar (1:2) cover blocks or approved plastic cover blocks shall be used for all beams, slabs, columns and footing as directed. R.C.C. slabs in sanitary blocks, washing places, bath rooms and nahani slab portions must be sunk as per drawings for which nothing extra will be paid.</p> <p>3) The rates of R.C.C. items are for floor height upto 3 mt. in single stage centring including form work.</p> <p>--In Pre-Cast Slabs/ Covers. Providing, hoisting and fixing up of precast reinforced cement concrete including setting in cement mortar 1:3 (1 cement : 3 coarse sand), cost of required centering, shuttering and finishing with neat cement punning on exposed surfaces but excluding the cost of</p>	Cum	5.00		

		reinforcement.				
17		<p>Proving and casting in situ M-30 grade RCC including formwork, curing, vibrating excluding reinforcement etc. complete as directed.</p> <p>Notes : 1) The rates shall include the cost of complete work including mix design, site laboratory equipment, centring, form work, placing, vibrating, tamping, curing, roughening the exposed surfaces for receiving plaster/ finishing, reinforcement will be paid for separately, unless otherwise specified. The centring shall be only in steel scaffolding & adjustable steel props.</p> <p>2) The concrete shall be machine mixed. Use of mechanical vibrator shall be made for all R.C.C. work wherever directed. All joints and gaps in the form work shall be covered with water proof papers as directed and full water proofing paper shall be used for casting the terrace/floor slabs and sanitary blocks at every floor. Precast cement mortar (1:2) cover blocks or approved plastic cover blocks shall be used for all beams, slabs, columns and footing as directed. R.C.C. slabs in sanitary blocks, washing places, bath rooms and nahani slab portions must be sunk as per drawings for which nothing extra will be paid.</p> <p>3) The rates of R.C.C. items are for floor height upto 3 mt. in single stage centring including form work.</p> <p>- For controlled concrete All works upto plinth level</p>	Cum	40.00		
18		<p>Providing and fixing in position reinforcement of all dia for RCC piles, pile caps, footings, foundations, slabs, columns, beams, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches etc. as per detailed designs, drawings and</p>	MT	0.50		

		<p>schedules including cutting, bending, hooking the bars, binding with wires or welding and supporting as required at all locations and height all labour and materials etc. complete. Wastage in cutting will not be paid for. only steel actually fixed in position will be paid by linear measurement including hooks and bends. No payment will be made for binding wires, pins, spacers and laps other than standard laps. Authorised/ Standard laps and Chairs as per BIS and as directed by engineer in-charge shall be payable.</p> <p>i) HYSD (Fe 500) - MS round bars</p>				
19		<p>Providing and fixing in position reinforcement of all dia for RCC piles, pile caps, footings, foundations, slabs, columns, beams, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches etc. as per detailed designs, drawings and schedules including cutting, bending, hooking the bars, binding with wires or welding and supporting as required at all locations and height all labour and materials etc. complete. Wastage in cutting will not be paid for. only steel actually fixed in position will be paid by linear measurement including hooks and bends. No payment will be made for binding wires, pins, spacers and laps other than standard laps. Authorised/ Standard laps and Chairs as per BIS and as directed by engineer in-charge shall be payable.</p> <p>i) HYSD (Fe 500) -HYSD bars</p>	MT	25.00		
20		<p>Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, 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</p>	Cum	5.00		

		work, including pumping of R.M.C. from transit mixer to site of laying , including the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Minimum Cement content considered in this item is @ 330 kg/cum). All works upto plinth level - This item will be operated only whenever contractor execute RCC works with Ready Mixed concrete. --for raft Slab/ Pedestals				
21		Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, 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 R.M.C. from transit mixer to site of laying , including the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Minimum Cement content considered in this item is @ 330 kg/cum). All works upto plinth level - This item will be operated only whenever contractor execute RCC works with Ready Mixed concrete. --for shear wall	Cum	5.00		
22		Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using cement content as	Cum	5.00		

		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 R.M.C. from transit mixer to site of laying , including the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Minimum Cement content considered in this item is @ 330 kg/cum.). All works upto plinth level - This item will be operated only whenever contractor execute RCC works with Ready Mixed concrete. --In floor slabs				
23		Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, 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 R.M.C. from transit mixer to site of laying , including the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Minimum Cement content considered in this item is @ 330 kg/cum.). All works upto plinth level - This item will	Cum	5.00		

		be operated only whenever contractor execute RCC works with Ready Mixed concrete. --In beams, lintels, runner beams.				
24		Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, 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 R.M.C. from transit mixer to site of laying , including the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Minimum Cement content considered in this item is @ 330 kg/cum.). All works upto plinth level - This item will be operated only whenever contractor execute RCC works with Ready Mixed concrete. -- For controlled concrete All works upto plinth level	Cum	5.00		
25		Providing and fixing Structural Steel in position (MS angles, rolled steel beams, joists and stanchions, square/ rectangle sections, MS plates, Lugs etc.) including all labour and material in hoisting, fixing bolts and nuts or by welding etc. complete, including finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete --For heavy works like column, beam etc for any height which may require lifting arrangements like crane,	MT	5.00		

		hydra etc.				
26		Providing and fixing Structural Steel in position (MS angles, rolled steel beams, joists and stanchions, square/ rectangle sections, MS plates, Lugs etc.) including all labour and material in hoisting, fixing bolts and nuts or by welding etc. complete, including finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. ---For inserts including Hold fasts (angles, plates etc)	Kg	1000.00		
27		Providing and fixing Structural Steel in position (MS angles, rolled steel beams, joists and stanchions, square/ rectangle sections, MS plates, Lugs etc.) including all labour and material in hoisting, fixing bolts and nuts or by welding etc. complete, including finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. --For gratings	MT	3.00		
D		REPAIR WORKS				
		Approved make for all repair items shall be - Fosroc, Sunanda, BSF, Krishna ConChem or equivalent as approved by Engg-in-charge.				
28		Providing and Laying grouting with ACC shrincomp compound or Conbextra GP-II (Fosroc Make or equivalent) or high strength nonshrink grout etc. all as per manufacturers specification and approved by engineer in charge/Client.	Kg	1000.00		
29		Providing and applying of Epoxy bonding of new concrete to old concrete surface using EPI BOND Polymer. Approved make - sunanda or fosrock or BASF or Krishna Conchem or equivalent - as	Sqm	250.00		

		approved by engineer in charge.				
30		Sealing of crack/porous concrete with Epoxy Grout by injection through nipples complete as per clause 2803.1. Approved make - sunanda or fosroc or BASF or Krishna Conchem or equivalent - as approved by engineer in charge.	Kg	500.00		
31		Providing and inserting nipples with approved fixing compound after drilling holes for grouting as per Technical specifications including subsequent cutting/removal and sealing of the hole as necessary of nipples after completion of grouting with Cement/Epoxy	Each	250.00		
32		Sealing of cracks/porous concrete by injection process through nipples/Grouting complete as per Technical specification.--Cement grout	Kg	500.00		
33		Providing Micro Concrete jacketing to walls of thickness upto 75 mm using Polymer modified cement premixed quartz sand aggregate packed in bags of standard manufacture, for high early strength of 40 N /mm sq.cm of approved brand. The dry product is to be mixed with 12.5% water by weight, along with washed and poured into rigid form work moulds & tamped properly, & cured for 3 days. [Payment is to be made by weight premixed of micro concrete product consumed as per site register records. No extra payment shall be made for shuttering or any other material. Approved make - sunanda or fosroc or BASF or Krishna Conchem or equivalent - as approved by engineer in charge.	Kg	100.00		
34		Chipping /removing loose concrete upto reinforcement bars, without damaging the reinforcement, removing all the loose materials and to make all the exposed surfaces free from oil, dust and all impurities etc complete. Disposal shall be paid separately.	sqm	110.00		

35		Removing corrosion of steel reinforcement by mechanical means like wire brushing, chipping to remove loose rust and then applying rust removal solution by using brush application, leaving the surface for at least 15 to 30 minutes, then removing loose materials by scrubbing or with brush and applying polymer bond to the old concrete surface before applying Polymer mortar.	sqm	110.00		
36		Providing and applying Polymer modified cement mortar of average thickness 15mm using Polymer in one or more layers in proportion 1:5:15 of Polymer Cement Quartz Sand as manufacturer's specifications in specific layers, curing the surface after 72 hours of application with wet gunny bags etc and by finishing the surface with 12mm thick (1:3) Cement sand plaster.	sqm	90.00		
37		Providing and applying Polymer modified cement mortar of average thickness 30mm using Polymer in two layers in proportion 1:5:15 of Polymer Cement Quartz Sand as manufacturer's specifications in specific layers, curing the surface after 72 hours of application with wet gunny bags etc and by finishing the surface with 12mm thick (1:3) Cement sand plaster.	sqm	25.00		
E		MISCELENEOUS WORKS				
38		Constructing of chambers of required internal dimensions of 900x900mm upto 1000mm depth as detailed in drawings with provision to place precast cover and frame fixed over 100mm thick RCC coping in M-15 cement concrete provided with MS reinforcement of 10mm dia rods at 100mm centre both ways and including painting the frame, cover and steps with three coats of anti corrossive bitumanstic paint all complete as per specifications.--with brick works - for height up to 1000 mm	No	34.00		

39		Providing and applying protective paint consisting of two coats of coat tar epoxy paint over one coat of primer of approved quality and make to the external surfaces of concrete structures to be buried under the soil etc. complete as specified and directed.	Sqm	450.00		
40		Providing at the site of work and lowering, laying and jointing RCC NP2 class pipes conforming to IS:458-1988 in prepared trenches in grade and level, bedding cement mortar in 1:4, including hoisting , making rubber ring/coller joints in cement mortar 1:1, including cost of collar/rubber rinf, jointing material like cement, sand etc and hydraulic testing of the pipes at factory as well as on site as per the stipulation in relevant IS code etc. complete.--150 mm dia	metre	35.00		
41		Providing at the site of work and lowering, laying and jointing RCC NP2 class pipes conforming to IS:458-1988 in prepared trenches in grade and level, bedding cement mortar in 1:4, including hoisting , making rubber ring/coller joints in cement mortar 1:1, including cost of collar/rubber rinf, jointing material like cement, sand etc and hydraulic testing of the pipes at factory as well as on site as per the stipulation in relevant IS code etc. complete.--250 mm dia	metre	160.00		
42		Providing at the site of work and lowering, laying and jointing RCC NP2 class pipes conforming to IS:458-1988 in prepared trenches in grade and level, bedding cement mortar in 1:4, including hoisting , making rubber ring/coller joints in cement mortar 1:1, including cost of collar/rubber rinf, jointing material like cement, sand etc and hydraulic testing of the pipes at factory as well as on site as per the stipulation in relevant IS code etc. complete.--300 mm dia	metre	50.00		
43		Providing at the site of work and lowering, laying and jointing RCC NP2 class pipes conforming to	metre	20.00		

		IS:458-1988 in prepared trenches in grade and level, bedding cement mortar in 1:4, including hoisting , making rubber ring/collar joints in cement mortar 1:1, including cost of collar/rubber rinf, jointing material like cement, sand etc and hydraulic testing of the pipes at factory as well as on site as per the stipulation in relevant IS code etc. complete.--450 mm dia				
44		Providing and Fixing water tight Extra Heavy Duty FRP Manhole cover having 40 MT load carrying capacity (ractangular or circular) with rubber garsket including frame confirming to IS : 1726-1974 (Part I - VII) with locking arrangement complete.	Sqm	100.00		
45		Providing and fixing 100 mm diameter and 60cm long rain water spout including cement mortar 1:4 (1 cement: 4 fine sand) PVC spout	each	50.00		
46		Providing and fixing chlorinated Polyvinyl chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling, fixing the pipe with clamps at 1.0 m spacing if required as per site condition and testing of joints completes as per direction of Engineer in Charge. External work--75 mm nominal inner dia Pipes	RM	40.00		
47		Providing and fixing chlorinated Polyvinyl chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling, fixing the pipe with clamps at 1.0 m spacing if required as per site condition and testing of joints completes as per direction of Engineer in Charge. External work.--100 mm nominal inner dia Pipes	RM	40.00		

48		Providing and fixing chlorinated Polyvinyl chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling, fixing the pipe with clamps at 1.0 m spacing if required as per site condition and testing of joints completes as per direction of Engineer in Charge. External work.---150 mm nominal inner dia Pipes	RM	40.00		
49		Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete. --150 mm diameter	RM	20.00		
50		Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete. --200 mm diameter	RM	10.00		
51		Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete. --300 mm diameter	RM	10.00		
F		PROVISIONAL ITEM				
52		Earth work in Excavation (including for foundation) by mechanical means/ manual means in all types of soils, such as Earth, Marine Clay, Marshy Land, Running Sand, Garbage, Slush, Murum, Rock Boulders, RCC boulders etc. as directed by Engineer in-charge. The rate includes pumping out water if required, removing the rank vegetation and refilling the excavated materials wherever required within lead of 150 mtr as directed including leveling, ramming etc and removing the surplus excavated materials to municipal dumping ground at	Cum	90.00		

		any distance as directed. The rate also includes supporting public utilities such as cables, drains services pipes water mains, but shall not include the cost of shoring. Where unshored trenches are allowed slope as specified shall be given. (cutting of MS plates & old RCC foundation coming during excavation shall be paid separately) --Above 1.5 m up to 3.0 m depth				
53		Excavation (including for foundation) by mechanical means/ manual means in all types of rocks as directed by Engineer in-charge. The rate includes pumping out water if required, removing the rank vegetation and refilling the excavated materials wherever required within lead of 150 mtr as directed including leveling, ramming etc and removing the surplus excavated materials to municipal dumping ground at any distance as directed. The rate also includes supporting public utilities such as cables, drains services pipes water mains, but shall not include the cost of shoring. (Cutting of MS plates & old RCC foundation coming during excavation shall be paid separately) --Up to 1.5 m depth	Cum	25.00		
54		Excavation (including for foundation) by mechanical means/ manual means in all types of rocks as directed by Engineer in-charge. The rate includes pumping out water if required, removing the rank vegetation and refilling the excavated materials wherever required within lead of 150 mtr as directed including leveling, ramming etc and removing the surplus excavated materials to municipal dumping ground at any distance as directed. The rate also includes supporting public utilities such as cables, drains services pipes water mains, but shall not include the cost of	Cum	15.00		

		shoring. (Cutting of MS plates & old RCC foundation coming during excavation shall be paid separately) --Above 1.5 m up to 3.0 m depth				
55		Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	Cum	100.00		
56		Providing and applying TACK COAT with CATIONIC BITUMEN EMULSION (RS) @ 0.2 to 0.25 Kg. of Sq.mt. over prepared surface to receive bituminous mix by applying TACK COAT with mechanical spray bitumen, including cleaning of road surface etc. completed, as directed For NORMAL BITUMINOUS SURFACES & the tack coat shall be left to cure until all the volatiles have evaporated before any subsequent construction is started, which is indicated by change in colour from brown to black(As per New Road Specifications Clause No. 314, curing as per 314.3.4)	Sqm	100.00		
57		Providing and Laying Asphalt Road with following layers 1. 250 mm thick GSB 2. 250 mm thick Granular base - WMM 3. 100 mm thick DBM - VG - 30 (will be executed in two layers) 4. 50 mm thick BC - PMB - 40 All layers shall be constructed conforming to IRC Note - Tack coats required in Asphalt layers shall be part of this item. as per above item specifications, three layers of tack coat will be required to complete the layers as per IRC procedure.	Sqm	25.00		
58		Providing & fixing in position anchor fasteners in concrete of HILTI make & quality, & fixing them in position at correct location, lines & levels as per specification and as directed & instructed by Engineer-in-charge/ Client including making good the concrete/masonry surface after inserting fastner.	No	20.00		

		(All materials & accessories required shall be provided by contractor)--12 mm dia - 150-200 mm long				
59		Providing & fixing in position anchor fasteners in concrete of HILTI make & quality, & fixing them in position at correct location, lines & levels as per specification and as directed & instructed by Engineer-in-charge/ Client including making good the concrete/masonry surface after inserting fastner. (All materials & accessories required shall be provided by contractor)--16 mm dia - 150-200 mm long	No	20.00		
60		Providing & fixing in position anchor fasteners in concrete of HILTI make & quality, & fixing them in position at correct location, lines & levels as per specification and as directed & instructed by Engineer-in-charge/ Client including making good the concrete/masonry surface after inserting fastner. (All materials & accessories required shall be provided by contractor)--20 mm dia - 150-200 mm long	No	20.00		
61		Making core drills (cutting) with cylindrical cutting tools in concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner. --50 mm dia - depth upto 450 mm	No	2.00		
62		Making core drills (cutting) with cylindrical cutting tools in concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner. --75 mm dia - depth upto 450 mm	No	5.00		
63		Making core drills (cutting) with cylindrical cutting tools in concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner --100 mm dia - depth upto 450 mm	No	3.00		
64		Making core drills (cutting) with cylindrical cutting tools in	No	5.00		

		concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner. --125 mm dia - depth upto 450 mm				
65		Making core drills (cutting) with cylindrical cutting tools in concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner. --150 mm dia - depth upto 450 mm	No	5.00		
66		Making core drills (cutting) with cylindrical cutting tools in concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner. --200 mm dia - depth upto 450 mm	No	5.00		
67		Making core drills (cutting) with cylindrical cutting tools in concrete viz slab, beam, column, pardi etc as directed by Engineer-in-charge/ Owner. --300 mm dia - depth upto 450 mm	No	5.00		
68		Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :Two or more coats on new work Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content. With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	Sqm	80.00		
69		Painting with aluminium paint of approved brand and manufacture to give an even shade .Two or more coats on new work With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	Sqm	10.00		
70		Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :Two or more coats on new work With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	Sqm	10.00		
71		Finishing with Epoxy paint (two	Sqm	5.00		

		or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.--On steel work				
72		Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.--On concrete work	Sqm	5.00		
73		Finishing walls with Acrylic Smooth exterior paint of required shade New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	Sqm	10.00		
74		Dressing of electrical cabel of all sizes inside trench and out side trench manually or by mechanical means	RM	500.00		
75		Providing & erecting Hot deeped Galvanised Ladder type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 150mm width & 100 mm height comprisig all erquired standard accessories.	RM	800.00		
76		Providing & erecting Hot deeped Galvanised Ladder type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 300mm width & 100 mm height comprisig all erquired standard accessories.	RM	800.00		
77		Cleaning of existing trench including removal of debries, soil etc. Disposal shall be paid separately.	metre	100.00		
78		Providing and fixing in position expansion joints with plain premoulded bituminuous filler 25mm thick including fixing10 gauge moulded galvanised iron sheet 38 cm wide etc.complete as specified and directed.	sqm	200.00		
G		DISMANTLE EXISTING PIPELINE				
		Note: for Item Nos -79 to 91: The scope of work for contractor shall be Remove/Dismantle existing Pipeline Including				

		<p>hydrant Valves/ Isolation Valves, Other fittings etc. contractor shall dismantle existing compressed Air & Firefighting pipeline in MDL yards as per Technical specs/ Tender drawings, Work Instruction , under the supervision of concern engineer. After dismantling contractor shall be carried out following steps for sagarication/storage.</p> <ol style="list-style-type: none"> 1) Remove/ dismantle existing pipeline of Compressed Air & Firefighting along with Hydrant/Valves, other fittings etc. 2) measure the diameter & length of pipes and mark details on pipe with date of dismantled. 3) check the pipe for reusability , if its reusable then mark the pipe with white paint strip ring. If it is Not reusable then mark the pipe with black paint strip ring. 4) after bifurcation of pipes contractor shall transport the pipe up to the bins , Bins marked as USEFUL bin & NOT USEFUL bin. Contractor shall check the condition of Bins as well as once they filled then inform to concerned MDL executive. for more reference see attached Algorithm chart. 5) The dismantle rate of Pipes including fittings, Tee, Reducer, elbows, Isolation valves, Hydrant valve,flanges,gasket, existing support whenever required, instruments etc. <p>Special Note: for Dismantling of Existing Piping :-Dismantling of existing piping system (all sizes, all materials & thickness) and providing all necessary consumables, manpower, tools &stackles, lifting equipments, scaffolding at all elevations, salvaging of usable piping items for re using or returning to owner's storage point, returning of the no usable material to owner's storage point, cleaning the work site from all unserviceable materials for disposal to spoil heaps anywhere</p>				
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		inside plant boundary as specified/instructed by Engineer in charge.				
79		for Pipe 15 NB - Please refer Note given above	RM	469.00		
80		For Pipe 20NB - Please refer Note given above	RM	193.00		
81		For Pipe 25NB - Please refer Note given above	RM	816.00		
82		For Pipe 40NB - Please refer Note given above	RM	972.00		
83		For Pipe 50NB - Please refer Note given above	RM	947.00		
84		For Pipe 65NB - Please refer Note given above	RM	35.00		
85		For Pipe 80NB - Please refer Note given above	RM	2169.00		
86		For Pipe 100NB - Please refer Note given above	RM	3556.00		
87		For Pipe 125NB - Please refer Note given above	RM	833.00		
88		For Pipe 150NB - Please refer Note given above	RM	693.00		
89		For Pipe 200NB - Please refer Note given above	RM	334.00		
90		For Pipe 250NB - Please refer Note given above	RM	10.00		
91		For Pipe 300NB - Please refer Note given above	RM	12.00		
H		UTILITY PIPING WORK (Compressed Air)				
		Note: Detailed Description for Item Nos -92 to 156: Supply / Fabrication / Installation / Testing & Commissioning (SFITC) work for complete execution shall be carried out by Contractor as per Technical specifications & work instructions / Tender clause and under the supervision of Concern Engineer. The rates for various items under this head shall include bends, Reducers, tees, flanges at every branch tapping, gasket, bolting, nipples, branch connection fittings, & other fittings, support, steel member, civil foundation/padestral as per drawing / standard practice. Work shall be including Painting works as per specifications {For GI only -[One Coat of ETCH Primer (DFT -6.0 micron) + One Coat of Zinc PhosphatEpoxy				

		Primer or Equivalent (DFT 40-50 micron). Zinc Rich Primer on Weld Joint Surface in place of ETCH Primer (DFT 75-100 micron) + Top coat of PU (DFT 100 -150 micron)]} &/or color as per codes of MDL along with the clamps required at suitable distances as directed for fixing the pipes to walls and Structure. The rate shall include cost of jointing, welding, scaffolding & all temporary supporting for access work/ inspection/safety/ tools/tackles/ equipments/ machinery & any other required accessories for completion the works etc. NOTE: Piping quantity is tentative it may vary at the time of execution.				
92		Pipe--SFITC of GI Pipes, for size 15 NB (Seamless A106 Gr.B Sch 80) Please refer Note given above	RM	151.00		
93		Pipe--SFITC of GI Pipes, for size 20 NB (Seamless A106 Gr.B Sch 80)- Please refer Note given above	RM	23.00		
94		Pipe--SFITC of GI Pipes, for size 25 NB (Seamless A106 Gr.B Sch 80)- Please refer Note given above	RM	1070.00		
95		Pipe--SFITC of GI Pipes, for size 40 NB (Seamless A106 Gr.B Sch 80)- Please refer Note given above	RM	454.00		
96		Pipe--SFITC of GI Pipes, for size 50 NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	686.00		
97		Pipe--SFITC of GI Pipes, for size 65 NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	1814.00		
98		Pipe--SFITC of GI Pipes, for size 80 NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	1178.00		
99		Pipe--SFITC of GI Pipes, for size 100 NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	1263.00		
100		Pipe--SFITC of GI Pipes, for size 125 NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	260.00		
101		Pipe--SFITC of GI Pipes, for size 150 NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	678.00		
102		Pipe--SFITC of GI Pipes, for size 200 NB (Seamless A106 Gr.B Sch 20)- Please refer Note given above	RM	312.00		
103		Pipe--SFITC of GI Pipes, for size	RM	266.00		

		250 NB (Seamless A106 Gr.B Sch 20)- Please refer Note given above				
104		Pipe--SFITC of GI Pipes, for size 300 NB (Seamless A106 Gr.B Sch 20)- Please refer Note given above	RM	58.00		
105		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 15 NB, as per tender specification- Please refer Note given above	RM	14.00		
106		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 25 NB, as per tender specification- Please refer Note given above	RM	9.00		
107		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 65 NB, as per tender specification - Please refer Note given above	RM	70.00		
108		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 80 NB, as per tender specification - Please refer Note given above	RM	9.00		
109		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 100 NB, as per tender specification - Please refer Note given above	RM	130.00		
110		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 125 NB, as per tender specification - Please refer Note given above	RM	17.00		
111		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 150 NB, as per tender specification - Please refer Note given above	RM	147.00		
112		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 200 NB, as per tender specification - Please refer Note given above	RM	52.00		
113		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 250 NB, as per tender specification - Please refer Note given above	RM	12.00		
114		Tape-SITC of Anti corrosion Tape for Underground GI Pipes for size 300 NB, as per tender specification - Please refer Note given above	RM	10.00		
115		Ball Valve-SITC of Socket weld end CS Ball Valves , for size 15	Nos	48.00		

		NB. [Valve Make: Leader / L&T] - Please refer Note given above				
116		Ball Valve-SITC of flanged end CS Ball Valves , for size 20 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	4.00		
117		Ball Valve-SITC of flanged end CS Ball Valves , for size 25 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	150.00		
118		Ball Valve-SITC of flanged end CS Ball Valves , for size 40 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	180.00		
119		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 50 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	25.00		
120		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 65 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	43.00		
121		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 80 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	46.00		
122		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 100 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	36.00		
123		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 125 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	12.00		
124		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 150 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	30.00		
125		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 200 NB. [Valve Make: Leader / L&T / Nutech] - Please refer	Nos	10.10		

		Note given above				
126		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 250 NB. [Valve Make: Leader / L&T / Nutech] - Please refer Note given above	Nos	8.00		
127		Gate Valve-SITC of Flanged CS Gate Valves including both side Flange / Gasket & Stud Bolts, for size 300 NB. [Valve Make: Leader / L&T / Nutech] - Please refer Note given above	Nos	5.00		
128		NRV-SITC of Casting A 216 Gr.WCB, Wafer End of 150#, Swing type BS1868, 150NB - Please refer Note given above	Nos	1.00		
129		Butterfly valve-SITC of Wafer type Butterfly Valves , for size 250 NB. [Valve Make: Leader / L&T / Nutech] - Please refer Note given above	Nos	1.00		
130		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 300 NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	2.00		
131		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 150 NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	5.00		
132		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 125 NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	2.00		
133		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 100 NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	1.00		
134		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 80 NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	3.00		
135		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 65 NB,	Nos	3.00		

		Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above				
136		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 25NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	1.00		
137		MS-SITC of Flanged End MS Moisture separator including drain assembly, for size 15NB, Cartridge: imported SS, Working pressure: 16 bar - Please refer Note given above	Nos	1.00		
138		FM-SITC of Flow meter including all assembly as required to connect piping system, for size 65 NB.(As per Specification in Tender) - Please refer Note given above	Nos	5.00		
139		FM-SITC of Flow meter including all assembly as required to connect piping system, for size 100 NB.(As per Specification in Tender) - Please refer Note given above	Nos	1.00		
140		FM-SITC of Flow meter including all assembly as required to connect piping system, for size 200 NB.(As per Specification in Tender) - Please refer Note given above	Nos	1.00		
141		FM-SITC of Flow meter including all assembly as required to connect piping system, for size 300 NB etc.(As per Specification in Tender) - Please refer Note given above	Nos	1.00		
142		AF-SITC of Air Filter including all Accessories as required to connect the piping system, for size of 15 NB etc.- Please refer Note given above	Nos	2.00		
143		AF-SITC of Air Filter including all Accessories as required to connect the piping system, for size of 65 NB etc.- Please refer Note given above	Nos	5.00		
144		PG-SITC Pressure Gauge of Range 0-15 kg/cm ² Glysrene filled white screen 3" dial, 1/4"-18 NPT Male connection centered on bottom with suitable reducer to fit with 15 NB Male nipple,	Nos	25.00		

		Including Isolation valve of 15NB [Pressure Gauge Make: H-Guru or General Instruments] (As per Tender Drawings) - Please refer Note given above				
145		STEEL SUPPORT-Supply, Fabrication, Painting of Steel Support to be Including. - ISA , ISMC - ISMB, Steel Plate IS 2062, Others Steel material as required by Site condition (steel support shall be 2 coat epoxy painting.) Scope is including Supply & fitting Nickle coated U clamps with 02 nuts As per Pipe size - Please refer Note given above	Kg	8000.00		
146		MANIFOLD-SITC of GI Manifold with all accessories as per attached drawing in tender specification. (MEP/PI/TD/034) [Valve Make: Leader / L&T / Nutech] [ADV Make: Hydint or Atlas Capco] [Pressure Gauge Make: H-Guru or General Instruments] Manifold With 6 tapings and 1 auto drain tapping including manifold header pipe, branch tapping, ball valve,auto drain valve assembly with Auto Drain pipe. - Please refer Note given above	Nos	78.00		
147		MANIFOLD-SITC of GI Manifold with all accessories as per attached drawing in tender specification. (MEP/PI/TD/034) [Valve Make: Leader / L&T / Nutech][ADV Make: Hydint or Atlas Capco] [Pressure Gauge Make: H-Guru or General Instruments] Manifold With 5 tapings and 1 auto drain tapping including manifold header pipe, branch tapping, ball valve,auto drain valve assembly with auto Drain pipe. - Please refer Note given above	Nos	75.00		
148		MANIFOLD-SITC of GI Manifold with all accessories as per attached drawing in tender specification. (MEP/PI/TD/034) [Valve Make: Leader / L&T / Nutech] [ADV Make: Hydint or Atlas Capco] [Pressure Gauge	Nos	26.00		

		Make: H-Guru or General Instruments] Manifold With 4 tapplings and 1 auto drain tapping including manifold header pipe, branch tapping, ball valve,auto drain valve assembly with auto Drain pipe. - Please refer Note given above				
149		MANIFOLD-SITC of GI Manifold with all accessories as per attached drawing in tender specification. [Valve Make: Leader / L&T / Nutech] [ADV Make: Hydint or Atlus Capco] [Pressure Gauge Make: H-Guru or General Instruments] Manifold With 3 tapplings and 1 auto drain tapping including manifold header pipe, branch tapping, ball valve,auto drain valve assembly with auto Drain pipe. - Please refer Note given above	Nos	98.00		
150		MANIFOLD-SITC of GI Manifold with all accessories as per attached drawing in tender specification. (MEP/PI/TD/034) [Valve Make: Leader / L&T / Nutech] [ADV Make: Hydint or Atlus Capco] [Pressure Gauge Make: H-Guru or General Instruments] Manifold With 2 tapplings and 1 auto drain tapping including manifold header pipe, branch tapping, ball valve,auto drain valve assembly with auto Drain pipe. - Please refer Note given above	Nos	40.00		
151		AIR RECEIVER-SITC of Air Receiver as per specification / Data Sheet - Dish End - Skirt mounted Vertical MS Pressure Vessel - 5 M3 capacity - with all accessories - Pressure Gauge, Moisture Separator cum Auto Mechanical Drain Valve, Vent Valve, Pressure Safety Valve etc as per ASME Sec-8. Note: Drawing shall be proposed by Vendor for approval. [Valve Make: Leader / L&T /	Nos	5.00		

		Nutech] [ADV Make: Hydint or Atlas Capco] [PSV Make: Darling Muesco or Flowage] [Pressure Gauge Make: H-Guru or General Instruments] - Please refer Note given above				
152		QUICK RELEASE COUPLING-Supply and Installation of 15 NB, Quick release coupling as per MDL approved (Ref.Drwg No-MEP/PI/TD/032) - Please refer Note given above	Nos	150.00		
153		ADAPTOR/END CONNECTOR-Supply and Installation of 15 NB, End connector/Adapter as per MDL approved (Ref.Drwg No-MEP/PI/TD/032) - Please refer Note given above	Nos	1311.00		
154		AIR RELEASE VALVE-SITC of Screwed type GM Air Release valve, G.I. coupling with isolation valve of 25/20 NB dia (As per Tender Drawings) - Please refer Note given above	Nos	3.00		
155		MISSLINOUS WORK-Dismantling of existing piping system (any Oxygen or Acetylene or water etc), reinstallation of existing piping, testing & commissioning, painting etc. (if required for installation of new piping system works) - Please refer Note given above	LS	4.00		
156		MISSLINOUS WORK-Dismantle of Existing Equipment system i.e. Air receiver /Pumps etc. Unloading, shifting, Loading, again installed on existing place under the Supervision/ as directed by Engineer In charge - Please refer Note given above	LS	4.00		
I		UTILITY PIPING WORK (Fire Fighting)				
		Note: Detailed Description for Item Nos -157 to 187: Supply / Fabrication / Installation / Testing & Comissioning (SFITC) work for complete execution shall be carried out by Contractor as per technical specifications & work instructions / Tender clause and under the supervision of Concern Engineer. The rates for various items under this head shall include bends, Reducers,				

		<p>tees, flanges at every branch tapping, gasket, bolting, nipples, branch connection fittings & other fittings, support, steel member, civil foundation/padestral as per drawing / standard practice including pipe internally Polymer resin coating & externally Blasting & Painting as per Tender Technical specs. The rate shall include cost of jointing, welding, scaffolding & all temporary supporting for access work/ inspection/safety/ tools/tackels/ equipments/ machinery & any other required accessories for completion the works etc.</p> <p>Note 1: Its Contractor responsibility to purchase bare pipes and deliver it at coater workshop .The pipes should be as per tender specification & as per instructions of engineer incharge. The contractor has to receive the coated pipes from coater workshop and deliver it at MDL,Mumbai.The cost is inclusive of all transporation ,loading,unloading,coating. No extra charge will be paid seperatly.</p> <p>Note 2: small length pipe (spool)/ fitting shall be internally Polymeric coated & externally blasted, painted at site.</p> <p>Note 3: Outside Piping system Painting shall be done as per following procedure: a) Surface preparation and sand blasting (40 - 60 micron) + b) Apply one Primer Coat of Inorganic zinc silicate coating (DFT 50 - 70 micron) + c) Two Intermediate coat of High Build Epoxy (DFT 100-150 micron per coat) + d) Final coat of alphatic acrylic PU paint(DFT 60 - 80 micron). & / or color as per codes of MDL along with the clamps required at suitable distances as directed for fixing the pipes to walls and Structure The rate shall include cost of jointing, welding,</p>				
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		scaffolding & all temporary supporting for access / work / inspection & safety.etc Fire fighting Piping system shall be Internally Polymeric coated & Externally Blasted , Painted Only. (Refer Technical specs In Tender Document) NOTE 4: Piping quantity is tentative it may vary at the time of execution.				
157		PIPE-SFITC of Polymeric coated Pipes 250NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	6.00		
158		PIPE-SFITC of Polymeric coated Pipes 200NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	6.00		
159		PIPE-SFITC of Polymeric coated Pipes 150NB (Seamless A106 Gr.B Sch 40)- Please refer Note of Item No:157	RM	4072.00		
160		PIPE-SFITC of Polymeric coated Pipes 125NB (Seamless A106 Gr.B Sch 40)- Please refer Note given above	RM	10.00		
161		PIPE-SFITC of Polymeric coated Pipes 100NB (Seamless A106 Gr.B Sch 40) - Please refer Note given above	RM	10.00		
162		PIPE-SFITC of Polymeric coated Pipes 80NB (Seamless A106 Gr.B Sch 40) - Please refer Note given above	RM	390.00		
163		PIPE-SFITC of Polymeric coated Pipes 50NB (Seamless A106 Gr.B Sch 40) - Please refer Note given above	RM	12.00		
164		PIPE-SFITC of Polymeric coated Pipes 25NB (Seamless A106 Gr.B Sch 80) - Please refer Note given above	RM	10.00		
165		PIPE-SFITC of Polymeric coated Pipes 20NB (Seamless A106 Gr.B Sch 80) - Please refer Note given above	RM	30.00		
166		TAPE-SITC of Anti corrosion Tape for Underground Polymeric coated Pipes for size 150 NB, as per tender specification. - Please refer Note given above	RM	139.00		
167		TAPE-SITC of Anti corrosion Tape for Underground Polymeric coated Pipes for size 80 NB, as	RM	50.00		

		per tender specification. - Please refer Note given above				
168		BUTTE FLY VALVE-SITC of Wafer type Butterfly Valves , for size 250 NB. [Valve Make: Leader / L&T / Nutech] - Please refer Note given above	Nos	1.00		
169		BUTTE FLY VALVE-SITC of Wafer type Butterfly Valves , for size 200 NB. [Valve Make: Leader / L&T / Nutech] - Please refer Note given above	Nos	2.00		
170		BUTTE FLY VALVE-SITC of Wafer type Butterfly Valves , for size 150 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	53.00		
171		BUTTE FLY VALVE-SITC of Wafer type Butterfly Valves , for size 100 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	5.00		
172		BUTTE FLY VALVE-SITC of Wafer type Butterfly Valves , for size 80 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	4.00		
173		BUTTE FLY VALVE-SITC of Wafer type Butterfly Valves , for size 50 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	2.00		
174		BALL VALVE-SITC of Socket weld end CS Ball Valves , for size 25 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	4.00		
175		BALL VALVE-SITC of Socket weld end CS Ball Valves , for size 20 NB. [Valve Make: Leader / L&T] - Please refer Note given above	Nos	1.00		
176		NRV-SITC of Casting A 216 Gr.WCB, Wafer End of 150#, Swing type BS1868, 100NB - Please refer Note given above	Nos	4.00		
177		HYDRANT VALVE-Supplying and installing gun metal 80/63 NB dia.Single Outlet GM Hydrant Valve fitted with all accessories complete as per specification no. FF-VL/HV - Please refer Note given above	Nos	293.00		
178		VENT VALVE-SITC of Screwed type GM Air Release valve, G.I. coupling with isolation valve of 25/20 NB dia (As per Tender Drawings) - Please refer Note given above	Nos	18.00		

179		DRAIN VALVE-SITC of Screwed type GM Air Release valve, G.I. coupling with isolation valve of 25/20 NB dia (As per Tender Drawings) - Please refer Note given above	Nos	18.00		
180		PG-SITC Pressure Gauge of Range 0-15 kg/cm ² Glysrene filled white screen 3" dail, 1/4"-18 NPT Male connection centered on bottom with suitable reducer to fit with 15 NB Male nipple, Including Isolation valve of 15NB [Pressure Gauge Make: H-Guru or General Instruments] (As per Tender Drawings) - Please refer Note given above	Nos	4.00		
181		PG-SITC Pressure Gauge of Range 0-15 kg/cm ² Glysrene filled white screen 6" dail, 1/4"-18 NPT Male connection centered on bottom with suitable reducer to fit with 15 NB Male nipple, Including Isolation valve of 15NB [Pressure Gauge Make: H-Guru or General Instruments] (As per Tender Drawings) - for Detail Item Description, Please refer Note given above	Nos	15.00		
182		STRAINER-Y type strainer (mfg std) 80 mesh SS304 Screen of 200 NB or 150 NB - Please refer Note given above	Nos	1.00		
183		STRAINER-Y type strainer (mfg std) 80 mesh SS304 Screen of 25NB - Please refer Note given above	Nos	2.00		
184		STEEL SUPPORT-Supply, Fabrication, Painting of Steel Support to be Including. - ISA , ISMC - ISMB - Others as required by Site condition (steel support shall be 2 coat epoxy painting.) Scope is including Supply & fitting Nickle coated U clamps with 02 nuts As per Pipe size - Please refer Note given above	Kg	7300.00		
185		AUTOMATION SYSTEM-Inside Pump house near Kasara wet basin if required in automation system then contractor shall be responsible for complete this all work with all tools, tackles, necessary machinery for automation system etc. - for	LS	1.00		

		Detail Item Description, Please refer Note given above				
186		NAME PLATE FOR HYDRANT POST-Supply and Installation of Steel Name Plate with embossing for Each Hydrant post as directed by Engineer Incharge. - steel plate shows Hydrant No and locking with 2 bolt/nuts - Please refer Note given above	Nos	300.00		
187		STAND POST-Supply and installtion stand post sign board near by underground / Undertrench Pipeline for indetification of service under the Supervision/ as directed By Engineer Incharge. - Please refer Note given above	Nos	15.00		
		TOTAL				
		Goods & Service Tax (in Percentage)				
		GRAND TOTAL				