



inspection chambers etc. as per specification & satisfaction of the EIC.

Laying pipelines by any methodology including trenchless technology methods with or without casing pipes (HDPE pipes) as per specifications and as directed by EIC.

Fabrication, supply and inspection of approved quality GI sleeve and half concrete sleeves and other materials, fittings to be supplied by the contractors as per the provisions of tender.

Back filling and compaction by jumping jack compactor wherever required, using approved 'good' soil or using excavated earth or borrow earth as per requirement and specifications and replacement of the tiles, slabs removed during the excavation. Cleaning all unserviceable materials, debris, excess earth trenches etc. to designated disposal area.

Carrying out pneumatic testing and purging as per specifications and approved procedures, providing all tools & tackles, instruments, manpower and other related accessories for carrying out the testing of pipes.

Supply, fabrication & installation of Stone route marker, Pole marker with foundations, Plate markers, valve chamber etc. as per the directions of the EIC/Owner's representative.

Commissioning of gas in the tested PE line shall be done as per the approved procedure.

Restoration of existing ground features such as grass/turfing, paving, roads, drains, concrete, floral beds, fencing, tiles, marbles, flooring masonry etc. to original condition and to match with adjoining conditions, functionally and aesthetically up to the entire satisfaction of Owner / Owner's representative /any other third party agency designated by owner and local authorities, failing which, it will be done at the risk and cost of the contractor. Obtaining No Objection Certificates for the restoration work done from the concerned authorities.

Returning surplus material to Owner stores after obtaining clearance from TPIA/Consultant/ Owner, reconciliation of free issue material/consumables.

Handing over the completed works to owner for their operation/use purposes.

Rectification of defects arising due to poor workmanship during defect liability period of pipelines/installations handed over to Owner.

Preparation and submission of all documents like Pit wise as graph, As-built drawings, details of crossings, utility graphs, PE cards for service line and deviation statements on completion/commissioning of work by way of drawing,



sketches and tables in soft & hard copy.

Providing adequate manpower, minimum 2 no's each such as data entry operator, customer care executive etc. for data logging like new connection request, NG conversion request & GI tracking, attending complaints, day to day interaction with customers and residents so that work can be executed within defined time period (TAT) Turnaround Time. At present TAT period is 90 days which may vary time to time as per guidelines of PNGRB and IGL policy. Data entry operator & customer care executive should be minimum 12th pass (intermediate) with minimum experience of 2 years in relevant field.

Providing adequate manpower for carrying out laying for PNG installation for emergency cases as and when required. Providing adequate manpower for material for carrying out laying for PNG installation for emergency cases as and when required, as per instruction of EIC.

Following activities are also in contractor's scope:

- Receive Customer's request and complaints logged on IGL's CRM/Offline.
- Carry out joint technical feasibility survey for requests received.
- Attend and resolve customer complaints.
- Maintain and update the request and complaint status in IGL's CRM.
- Maintain new connection tracking on IGL's CRM.
- Meter sticker and safety pamphlet Shall be provided by contractor as attached with the tender document. Pamphlet shall be of 130 GSM Imported Art Paper, A-4 size, both sides printed in colored.

Any other activities not mentioned/covered explicitly above, but otherwise required for satisfactory completion/operation/ safety/ statutory/ maintenance of the works shall also be covered under the Scope of work and has to be completed by the Contractor within specified schedule at no extra cost to Owner.

Carrying out GPR and GIS survey from recognized agencies in NCT of Delhi, UP, Haryana & Rajasthan GA

Providing asked manpower & material on daily wages as per instruction received from IGL

Construction of trenches in builder segment as per approved drawings.

4.0 MATERIAL, MANPOWER, EQUIPMENT AND MACHINERY

Material to be supplied by Owner as Free Issue.

Unless otherwise specified, owner will supply following material such as MDPE - pipes, fittings, valves, transition fittings, HDPE pipe as casing material to contractor (of all sizes) and all materials other than mentioned above shall be supplied by contractor as per technical specification to complete the laying of gas main pipelines and service pipelines.



The free issue material shall not be procured from any other source by contractor. Material reconciliation statement of free issue material duly certified by Owner and PMC shall be submitted to IGL on monthly basis.

Material to be supplied by the contractor:

The supply of items as indicated in SOR but not limited to shall be strictly as per relevant technical specifications enclosed with the Tender and as per guidelines of various clauses of SCC and SOR.

All materials shall be handled safely and stored in a permanent, covered, lockable store/ware house preferably near site in such a manner as to prevent any damage to the materials from scratching, gouging, indentation, excessive heat or by contact with any sharp objects or chemicals. The MDPE pipes and fittings shall be stored properly to protect material from sunshine, rain etc.

Contractor's store/ware-house should be located on main road/commercial locations with access to heavy vehicle.

Independent store-keeper with computer, printer & stationaries has to be provided on full time basis in order to maintain ledgers as per IGL approved formats.

Contractor will be responsible for getting the regular audits done with IGL/PMC/Internal/External

4.1 Backfilling Material

The contractor shall be responsible to arrange the supply of approved coarse sand (size 0.6 - 2 mm as per IS 383) free from any impurities like clay, mica, and soft flaky pieces, as per the instructions of EIC /Owner's representative. For supply of sand in trench for rocky terrain, no separate charges are payable and is included in rates. Also supply of sand in valve chambers, Normal surface & built up surface, if required, as per the instructions of EIC is not separately payable.

In case specified trench, depths are not achieved or if directed by Engineer-In Charge Contractor has to provide concrete casing pipes/ slabs, extra rate of PCC may be payable with prior approval of EIC/PMC.

Other materials: The contractor shall supply the following items wherever required:

- All materials required for framework, trench support and temporary trench Crossings.
- All sign boards, barricades, tin sheets, lighting arrangement and protective equipment.
- All minor items not mentioned in the specification but necessary for the satisfactory completion and performance of the work.
- Material required for installation of valve chambers.
- GI, Half Round Concrete Sleeves. (Refer enclosed drawing no 15792-10-03-33)



- Permanent markers (Refer enclosed drawing no 15792-10-03-28, 29, 30, 31)
- Warning Mat

4.2 Manpower

The contractor shall provide the skilled labour, tools, material and equipment necessary for the proper execution of the work.

Manpower with required tools/tackles and material shall be provided by contractors within scheduled time frame.

4.3 Equipment, Machinery & Tools

This will include but is not limited to the list of specialized items included in Annexure# I

All vehicular type machinery shall be in good working order and shall not cause spillage of oil or grease. To avoid damage to paved surfaces, the Contractor will provide pads of timber or thick rubber under the hydraulic feet or outriggers of machinery.

Contractor must also have to arrange his own equipment for restoration work like water tanker and jumping jack compactor for compaction of backfilled trenches and roller and other required equipment/ machinery for asphaltting/ road works.

In case there is non-availability of approved equipment's, tools and tackles during the work at site, suitable penalties, as per special terms and conditions of the contract, will be levied and deducted from the running bills.

4.4 Acquisition, Receipt & Storage of Materials

The Contractor shall collect all materials from IGL during stores working hours following all documentation procedures laid down and as directed by the EIC. The Contractor shall carry pipe in such a manner as to preclude damage during transportation and handling. PE pipes supplied in straight lengths may be carried in straight pipe racks.

The contractor shall at the time of receipt of material physically examine all materials and notify the EIC immediately of any damage or defect noticed by the contractor. Any damage not so recorded will be deemed not to have existed at the time of receipt of material by the contractor and the cost of repair or replacement or rectification shall be borne by the contractor. Any material once issued from IGL store, if found in non-working condition at site shall be brought to the notice of EIC with PO reference in written within 15 days and after subsequent approval shall return defective material in IGL stores within 30 days.

If delay is more than 30 days and material is under warranty, the material will be accepted with a penalty, else the material will not be reconciled and amount of the same will be deducted from bills. Penalty shall be levied as per SCC. The contractor shall ensure that no defective material shall be returned to store at the time of closure of contract. The format for defective materials returning to stores will be made available by EIC.



The contractor shall maintain locked store preferably near at site so that all the materials are stored in such a manner so as to prevent any damage to the materials from scratching, gouging, indentation, excessive heat or by contact with any sharp objects or chemicals. The PE pipes and fittings shall be stored properly to protect material from sunshine, rain, water logging etc. The contractor shall make adequate security arrangements for the stacked material & any loss to the material on account of theft on improper storage is attributable to the contractor.

The Contractor shall maintain log book at their respective stores stating issue and availability of free issue material at a given day. Further, it is mandatory that the contractor is required to undertake and submit inventory details of free issue and purchased materials on monthly basis to Owner/ Owner's representative as per the approved format of the owner. The inventory details shall be in correlation with the Daily progress chart and material reconciliation sheet.

In case of non-submission of material reconciliation on first week of every month, applicable penalties shall be levied as per SCC from the running bills. In case if shortage in free issue material is observed at the time of quarterly physical verification by IGL, equivalent value of material found short shall be withheld from running bills, same shall be released after settlement of free issue material.

5.0 PROGRESS OF WORK

The contractor shall proceed with the work under the contract with due expedition and without delay. The EIC may direct in what order and at what time, the various stages or parts of the work under the contract shall be performed. Contractor has to regularly submit daily progress reports, weekly progress reports, graphs with utilities, testing reports, material consumption and inventory reports, deviation statements, completion schedule etc.

6.0 APPROVALS & PERMISSIONS FOR PIPELINE LAYING

Contractor has to obtain permissions from statutory bodies for laying of pipelines. Statutory bodies in this case are MCD, NDMC, PWD, NHAI, CPWD, AAI, Indian railways, DDA, GNN, GDA, Noida, G. Noida and any other government agencies who maintain the public lands and accord permissions for laying of the utilities. The contractor shall obtain demand note (road restoration charges) from these statutory bodies. Contractor shall ensure that the road restoration charges are to the minimum against the work to be carried out. IGL may return back the demand note, if the charges are not found reasonable and contractor shall not be liable for any liaison charges against the same.

However, IGL will pay the road restoration / Departmental charges / security deposit / Bank guarantees for getting the clearances from statutory bodies. It is the contractor's responsibility to inform and co-ordinate the concerned local authorities and also other utility agencies before and after the commencement of work at site. To ensure smooth execution of the work on a day-do-day basis, the contractor has to liaison with respective



authorities. The contractor shall plan and ensure that work taken up under a single permission shall be completed within the stipulated time period and revalidation process is avoided. No separate liaison charges are liable to IGL for revalidation cases.

It is the responsibility of the contractor to obtain "No Objection Certificate" (NOC) from land owning agencies/Statutory bodies after completion of the restoration to their satisfaction and getting released the security deposit / bank guarantees submitted by IGL for obtaining permissions on production of documentary evidence. Separate payment in running meters will be made on account of approvals/permissions as per the SOR item No. 9 based on total applied length except for GENERAL SOR item No. 4, where the rates are inclusive of liaison rates. In case of any deviation/change in the route/additional laying, IGL shall pay the additional Road Restoration Charges only after receiving of revised estimate and further to written confirmation from the concerned Owner site in-charge.

On behalf of the Owner, contractor shall prepare in advance and submit the proposed route plan complete in all respect and well ahead of time so that the actual construction work is not delayed because of approval/inspection/permission by concerned authorities. Further, the contractor shall also coordinate with the relevant authorities for necessary approvals of these proposed pipeline route drawings/certificates. The inspection of work by statutory authorities shall be the responsibility of the contractor without any extra cost to IGL.

In case contractor delays laying of pipeline work under a single permission, the work or part of work may be offloaded to some other contractor on his risk and cost. Any change / addition required to made to meet the requirements of the statutory authorities shall be carried out by the contractor without any extra cost to IGL. The inspection and acceptance of the work by statutory authorities shall however, not absolve the contractor from any of his responsibilities under this contract.

7.0 REFERENCE SPECIFICATION, CODES AND STANDARD

The contractor shall carry out the work in accordance with the requirement of latest relevant applicable standards, this specification, Owner's Engineering Standards; relevant Oil Indian Safety Directorate (OISD) norms, PNGRB Regulations, ASME B31.8-Gas Transmission and Distribution Piping Systems; Australian Standard 3723-Installation and Maintenance of Plastics Pipe Systems for Gas; and the American Gas Association Document - Purging Principles and Practice. ISO-4437/JS: 14885 for underground polyethylene pipes and OWNER's approved procedures.

Should the contractor find any discrepancy, ambiguity or conflict in or between any of the standards and the contract documents, then this should be promptly referred to the Engineer-In-Charge (EIC) for his decision, which shall be considered binding on the contractor.



8.0 QUALITY OF WORK

All works carried out under this contract shall confirm to applicable standards, codes of practice, construction procedures and other technical requirements as defined in the technical specifications.

The manpower deployed on the respective activities shall be adequately trained & shall have necessary skills to execute / supervise the work. However, the assessment on the qualification of the personnel shall be at the discretion of EIC.

Fusion operators and other skilled personnel shall be approved by Owner/ Owner's representative based on the test conducted at site and identification cards duly signed by IGL Sit In-charge shall be issued to them. Only those personnel who are approved by shall be allowed to execute the critical activities like electro fusion jointing of MDPE pipes & fittings. IGL may provide training and certification on chargeable basis where the cost shall be borne by Contractor.

9.0 SAFETY

The Contractor shall conform to the safety requirements outlined elsewhere in the tender document. In addition, the Contractor shall observe safe working practices in the storage and handling of cleaning fluids, flammable fluids, etc., and ensure smoking or naked flames are not permitted in the vicinity when these materials are being used.

Trench walls shall be battered with sufficient slope in order to minimize a trench collapse. Where there is a danger of an earth slide or collapse, the trench shall remain open for the minimum time possible with proper barricading. The Contractor is to ensure that no person enters a trench, which is of a depth of 1.5 meters or greater, unless the trench has adequate shoring or the sides are battered to such an extent as to prevent a trench collapse.

The Contractor shall also protect all work sites with warning signs, barricades and night lighting. The Contractor shall inspect all fenced excavations daily, and maintain them in good order.

The trenches/ pits shall not be kept open in night times. However, in case the same is essential the same shall be properly barricaded with proper lighting arrangements & manned.

The Contractor shall provide PPE's like helmets, safety shoes, etc. to the labour which are necessary for safe working practice.

Any accident causing injury to any person or damage to property or equipment shall be reported to the EIC and the cost of repair / replacement of the damage equipment shall be borne by the contractor. Where the EIC determines that the work is being performed by the Contractor in an unsafe manner, he may suspend the Work until corrective action



is taken by the Contractor.

PPE, Continuous Barricades and caution tapes along the trenches as per approved drawing in tender, Use of Safety Boots, Hand gloves, Reflective jackets, Hard hats(helmets), Safety shoes, eye and ear safety equipment, Fire extinguishers and as per the detailed scope of work in tender specifications. Contractor shall be paid as per SOR item No. 10.1; measurement sheet of laying should also include length of barricading. Refer drawing number 15792-10-03-26, 32. For further details Refer "Special Terms and conditions of Contract" & SOR.

10.0 ROUTE SURVEY

Planning, detailing the size, route survey drawings, identification of underground utilities, foreign pipelines, crossings, and location of valve chamber, FRS, DRS, MRS as well as service line location is in scope of contractor.

10.1 Mainlines

The final alignment of mainlines will be worked out at site in consultations with the Owner/Owner's representatives after route survey and trial pits, at contractor cost. Any change in routing from the issued drawings due to site constraint will be notified to EIC & his specific written approval shall be obtained before carrying out the job.

10.2 Service lines

Consultant/Third Party Inspection Agency and the contractor will conduct a joint survey at each probable premise/ housing colony/pockets/area to be supplied with gas. The survey record will note customer's detailed potential gas supply points, proposed regulator positions and estimates of material quantities. The contractor's representatives will make sketch of the agreed pipe routes.

The contractor will be responsible for contacting the customer and making the necessary arrangements for access and appointments to carry out the work. Contractor shall maintain job card at site. Owner will not be responsible for time lost due to failed appointments or disputes with customers.

11.0 ORGANISATION STRUCTURE

Contractor shall designate Project Manager/ Coordinator who will be responsible to interact with EIC/Consultant/TPIA and authorized to attend review meetings, receive material, authorized to sign documents, claims and receive payments etc. Contractor shall employ a Project Manager Coordinator on company roll. Project manager / coordinator & Site Engineers on company roll. The Project Manager/ Coordinator must have qualification of BE Mech. /Diploma in Mech. Engg. With min. 2-5 years & Site Engineer must have minimum Diploma in Mechanical Engineering with 3 years of work experience in gas pipe line job. He shall be single point of contact for all the works and must represent company in the review meetings.



All construction work will be carried out as per direction of EIC, and this will be the primary point of contact between the contractor and Owner on site. All work will be issued and sanctioned through the EIC and site control exercised by Site Engineers. The contractor shall ensure that technical quality standards are maintained, that construction is carried out cost effectively and that a good customer and public image is maintained for Owner.

The contractor will deploy his own supervisors as directed by site engineers/EIC. These personnel will be reporting to the Site Engineer for monitoring construction standards and for ensuring that all technical requirements are met for the job being carried out. The contractor's supervisor(s) will have day-to-day liaison with the Site Engineer, and will provide the Site Engineer with technical reports and audits, and other management information as is required on work progress and construction quality standards.

The contractor's supervisor shall have mobile telephones to ensure that they can be contacted at all times. The contractor will also nominate one person who can be contacted if necessary in odd hours, for the duration of the works. The contractor's supervisor will have access to transport at all times to allow them to visit sites and attend meetings with Owner. Supervisor shall attend to normal day-to-day issue of work instructions, communication between Owner / Owner's representative and the contractor's supervisor.

Contractor shall maintain a Customer Care Centre, Project Site Office, and Material Store in their allotted site with following facilities:

- Telephone, Mobile Phones, Fax machines, Printers/Scanning/Xerox machines, Computers with internet facility.
- One Nos. -Four-wheeler with driver, he shall be well equipped with tools and tackles for attending any emergency complaints and ongoing execution work.
- On award of the contract, the contractor shall establish and submit documentary evidence for above, which will be verified by the owner before award of the work order.

12.0 STRUCTURES, SERVICES AND OTHER PROPERTY

12.1 Location of Underground Utilities

The contractor shall locate all buried utility pipes, underground cables, water mains and other obstructions intersecting or adjacent to the Works, and shall make available the necessary labour to expose and record the depth of cover over all obstructions in advance of excavation. This shall be done far enough in advance of excavation to facilitate gradual change in grade or position found necessary to clear any obstructions.

In addition, the contractor shall excavate trial pits as necessary to determine the pipe route. The number of trial pits will be agreed with the Site Engineer in advance of any excavation. In any event, trial pits shall be made at intervals of a maximum of 30 meters. Restoration of the abandoned trial pits and trenches shall be the contractor's



responsibility and contractor shall ensure all open pit/ trench shall be back filled/ levelled/ restoration of pits at the time of day closing (end of day). No payments shall be made for such type of jobs. The trial pits shall be excavated to minimum depth of 1.5 meters so as to locate any utilities present in the trench.

It is contractor's responsibility to interact with other utility agencies regarding their existing utilities and finalize the route along with these agencies and Owner/ Owner's representative.

There will be no additional payments in respect of abandoned trenches incurred because of insufficient or inadequate trial pits, or any associated loss of time or delays.

Contractor must ensure that before starting the execution of lying of pipeline, the intimation/information must cascade to all utilities agencies seeking the information about the existing utility in the proposed route.

12.2 Protection of Structures and Utilities

The Contractor shall at his own cost support and protect all buildings, walls, fences or other structures and all utilities e.g. Electrical cables, Telephone Cables, Water pipelines, Sewer pipelines etc., and property which may be damaged as a result of the execution of the works. He shall also comply with the requirements in the specification relating to protective measures applicable to particular operations or kind of work. Special care shall be taken while laying of pipelines near the trees.

12.3 Interference with Traffic, Street Drainage and General Public

The Work shall be executed in such a manner so as to cause a minimum inconvenience to persons using public or private roads, lanes, thoroughfares, walkways, rights-of use or passages through which the Works are to be executed. The trench shall be back filled; compacted, leveled and extra soil shall be removed immediately after laying of pipeline to avoid public inconvenience. Closure of roads, etc., shall not be permitted without the approval of the EIC.

The Contractor shall comply with all local Authorities requirements to traffic and keep roads open to traffic and maintain access to and within any private property.

Wherever the pipe route crosses driveways, access tracks or entrances to private properties the Contractor shall give the owner, occupier or relevant authority at least 24 hours prior notice of intended commencement of excavation and shall be restricted to pass through.

The Contractor shall not use a private driveway, access track or entrance without the prior approval of the EIC in any circumstance.

The Contractor shall provide suitable access wherever necessary in the form of temporary bridges, culverts, flumes, etc., of a size and type approved by the EIC.