 PDIL	PROJECTS & DEVELOPMENT INDIA LIMITED (A GOVT. OF INDIA UNDERTAKING)	SHEET 1 of 1
PDIL BHAWAN, SAMTA, SUBHANPURA, VADODARA-390 023, INDIA. PHONE: EPBAX-2388418, 19, 20, 21, TELEFAX : 91(0265) 2388398, 99 E-MAIL: pdilwro@wro.pdilin.com		

INVITATION TO BID (ITB) **(OPEN DOMESTIC TENDER)**

Published in CPP e-Publishing Portal (E-Tender ID 2017_MCF_200045_1) & Hosted at PDIL Website	ITB NO. : PVMM/SERVICE/CIVIL/16-17/E-22	
	TYPE OF BID (For submission of bids please refer ITB Clause No.2.0 of Annexure-II)	TWO BID SYSTEM
	TYPE OF OPENING	PUBLIC
	BID ISSUE DATE	16.03.2017
	BID CLOSING DATE & TIME	28.03.2017 (15.00 Hrs.)
	UNPRICED TECHNO-COMMERCIAL BID OPENING DATE & TIME	29.03.2017 (16.00 Hrs.)
	PRICE BID OPENING DATE & TIME	To be intimated later.
	VENUE OF BID OPENING	PDIL, Vadodara
	EARNEST MONEY DEPOSIT (EMD)	Not Applicable
	DELIVERY/COMPLETION PERIOD	Refer Clause no. 2 of Scope of Work doc. no. EM00227-SOW-0201 of Annexure-IV

- 1.0 **PROJECTS & DEVELOPMENT INDIA LTD.**, a company registered under the Companies Act, 1956 having its registered offices at PDIL Bhavan, A-14, Sector-1, Noida-201 301, India (hereinafter referred to as **PDIL or OWNER**), a Govt. of India Undertaking under the administrative control of the Dept. Of Fertilizers, Ministry of Chemicals & Fertilizers. We, **PDIL, Vadodara, Gujarat, invites Bids** from the qualified & experienced bidders for the following under **National Competitive Bidding**.

SL.	DESCRIPTION OF JOBS/SERVICES	QUANTITY
1	Pipeline Route Survey for the project jumper pipeline between IOCL, KDPL and OPAL pipeline at Dahej, Gujarat as per attached technical specifications doc. no. EM00227-PVCV-0200 Rev.0 Dt. 16.03.2017 and Commercial terms and conditions of ITB.	As per Schedule of Rates Doc. No. EM00227-9511-0940 Rev.0 Dt. 16.03.2017 attached with Technical Specifications

SPECIAL CONDITIONS :


- Bidder shall quote itemwise prices for all the items in Schedule of Rates attached with Technical Specifications. The rates quoted by the bidders shall be inclusive of all Labour, Materials, Tools necessary for executing the work at any height/depth & including all types of taxes etc. *Except SERVICE TAX* which shall be extra at actual.
- Bidders are advised to visit the site and get themselves apprised about the site conditions before quoting for the job as indicated under "Note" in SOR attached with technical specifications. For this purpose, Intended bidders may contact **Shri D K Karamata, Addl. GM (Civil) PDIL, Vadodara, (Email: dkkaramata@wro.pdilin.com) well in advance.**

- 2.0 The following enclosed documents are the part of ITB.

1.0	Pre Qualification Criteria (PQC)	ANNEXURE-I, Rev 0	Sheets-1
2.0	Instructions to Bidder- e Publish	ANNEXURE-II, Rev 0	Sheets-1 to 4
3.0	General Conditions of Contract (GCC)	ANNEXURE-III, Rev 0	Sheets-1 to 4
4.0	Special Conditions of Contract (SCC)	ANNEXURE-IIIC, Rev 0	Sheets-1 to 4
5.0	Technical Enquiry Specifications Doc. No. EM00227-PVCV-0200 Rev.0 Dt. 16.03.2017 alongwith its enclosures and drawings	ANNEXURE-IV, Rev.0	42 Sheets including drawings as per Content
6.0	Price Schedule-Schedule Of Rates (Submit Separately- in PRICE BID ENVELOPE)	ANNEXURE-V, Rev.0	Sheets-1 to 7
7.0	Information About Bidder & Checklist For PQC	ANNEXURE-VI, Rev.0	Sheet-1
8.0	Format of BG for Performance Security - Not Applicable	ANNEXURE-VII, Rev.0	Sheet-1 to 2
9.0	Agreed Commercial Terms & Conditions (ACTC)	ANNEXURE-VIII, Rev.0	Sheet-1
10.0	Details Of Contractor / Company	ANNEXURE-IX, Rev.0	Sheet-1
11.0	RTGS/NEFT Format For E-Payment	ANNEXURE-X, Rev.0	Sheet-1
12.0	No Claim Certificate	ANNEXURE-XI, Rev.0	Sheet-1
13.0	Declaration by Bidder	ANNEXURE-XII, Rev.0	Sheet-1

for and on behalf of
PROJECTS & DEVELOPMENT INDIA LIMITED

Ban 16/03/17
Bishwanath Banerjee
Manager (MM)

	Pre Qualification Criteria (PQC) ANNEXURE – I	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-I	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

PREQUALIFICATION CRITERIA (PQC): Please refer the [Pre Qualification Criteria \(PQC\)](#) which are given hereunder:

- A PREQUALIFICATION CRITERIA (TECHNICAL)** : Bidder must have **experience of having successfully completed similar works during last 07 (seven) years** ending last day of the month previous to the one in which tenders are invited, should be either of the following:
- Three (03) similar** completed work / order, each of value not less **Rs.140000/-** OR
 - Two (02) similar** completed work / order, each of value not less **Rs.175000/-** OR
 - One (01) similar** completed work / order, each of value not less **Rs.280000/-**

SIMILAR WORKS DEFINITION:


- Detail route survey of cross-country pipeline
- Geo Technical Investigation at Station

NOTE: To meet the above criteria, the bidders are required to submit copy of purchase order / completion certificate / performance certificate documents towards proof of value of order executed.

B PREQUALIFICATION CRITERIA (FINANCIAL):

- Average Annual Financial Turnover during last 3 years ending 31st March 2016 should be atleast **Rs. 105000/-**.
- Net worth shall be positive as on 31st March 2016

NOTE: To meet the above criteria, the bidders are required to submit copy of Audited Annual Report (Balance Sheets and Profit & Loss Account) for the last 03 (three) financial years. Partnership firm/Proprietary firm may submit Chartered Accountant's Certificate.

	INSTRUCTION TO BIDDERS (for e-published tenders) ANNEXURE – II	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-II	0
		DOCUMENT NO	REV
		SHEET 1 OF 4	

1.0 A bidder who meets the Pre-Qualification Criteria as per ITB and intends to quote against this ITB may download the bidding document from PDIL website <http://pdilin.com> OR Central Public Procurement Portal <https://eprocure.gov.in/cppp> and submit the Bid complete in all respects as per terms & conditions of contract on or before the bid closing date and time.

2.0 Submission of Bids:

Bidders are required to submit their bids under three (03) envelopes as below:

Envelope (A)

i. ~~Earnest Money Deposit (EMD) as per Cl. 6.0 below.~~

OR

A copy of valid Registration Certificate, in case of NSIC/MSE registered Companies.

ii. Format of Bank Details (RTGS) for on line payment, all the details duly filled in [Annexure-X](#).


Envelope (B): Un-priced Technical and Commercial Bid along with the following documents (photocopies) shall be in this envelope:

- Documents in support of 'Pre-Qualification Criteria for Bidders' indicated in Annexure-I of ITB as per the requirement.
- Complete ITB documents duly signed & stamped in each page with "Deviations"/"Exception" sheet (if any) and all Annexures duly filled in.
- Price Confirmation Copy** - A copy of Priced offer **keeping price blank** (hiding the price) and **in place indicating "Quoted" or "√"**, as a confirmation of price quoted against the enquired item and all applicable Taxes & Duties, shall be submitted
- Copy of Check List & [ACTC](#) enclosed duly filled by the bidder making all the points clear and not leaving any voids.
- Photo copy of PAN card.
- A Copy of valid Service Tax registration certificate
- Any other document as per the requirement specified in the ITB.

Envelope C: Price Bid

Price Schedule as per [Annexure-V](#) with quoted rates in Rs. and Taxes & Duties, as applicable, signed and stamped.

All the above envelopes should be super scribed with respective **Envelope no., ITB No. and closing date of the bid**. All three (03) envelopes should be sealed and placed in a fourth envelop which should also be super scribed with our **ITB No. and closing date of the bid** and addressed to the under mentioned :

	INSTRUCTION TO BIDDERS (for e-published tenders) ANNEXURE – II	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-II	0
		DOCUMENT NO	REV
		SHEET 2 OF 4	

HOD(MM),
Projects & Development India Limited,
PDIL Bhawan, Samta, Subhanpura,
Vadodara-390023, Gujarat, India,
Email : bnbanerjee@wro.pdilin.com; ansisodiya@wro.pdilin.com

3.0 Opening of Bids

Bid opening will be Public. Envelope A and B only will be opened on Technical Bid Opening Date. Price Bids (Envelope C) of only those bidders will be opened which will be considered technically and commercially acceptable.

4.0 Evaluation of Bids

Bids shall be evaluated for Pre-Qualification Criteria (PQC) first and Techno-Commercial Bid Evaluation shall be carried out, only for those Bids which shall meet the Pre-Qualification Criteria (PQC).

Bids shall be scrutinized on Techno-Commercial parameters. Bids having unacceptable deviation may be rejected at this stage. However, clarifications shall be sought from bidder for any shortcoming found in their Bid at this stage.

The PRICE BID shall be opened only of those bidders who will be technically and commercially suitable.

5.0 Price Evaluation Criteria

Price Evaluation of Bids shall be done considering the quoted prices, by the bidder in the Price Schedule, alongwith taxes and duties, on overall lowest bidder considering the CENVAT benefit to PDIL.

In case of any discrepancy, unit rate shall prevail for calculation to arrive at the total price.

In case a bidder does not fill up any amount and leaves it blank or writing 'N/A' or put '-' against any item of Price Schedule, it shall be deemed that cost of such item (s) is included in other item by the bidder elsewhere in the quoted price.

Incomplete Price Schedule may result into rejection of bid.


6.0 Earnest Money Deposit (EMD) (Not Applicable for this tender)

~~Earnest money deposit (Rs. _____ / Rupees _____ Only) shall be submitted by way of Demand Draft/ Banker's Cheque only drawn on any Scheduled/ Nationalized Bank in favour of 'Projects & Development India Ltd', Vadodara. **Quotation/Bid without EMD may not be considered.** However, NSIC/MSEs registered Companies are exempted from submission of EMD provided a valid Certificate in this regard is submitted.~~

~~6.1 EMD shall be refunded:~~

- ~~• To the unsuccessful bidders after acceptance of order by the successful bidder(s).~~
- ~~• To the successful bidder(s) after deposition of Security money/ confirmation by the Bank for the Security cum Performance Guarantee submitted by bidder~~

~~No interest shall be payable on EMD.~~

	INSTRUCTION TO BIDDERS (for e-published tenders) ANNEXURE – II	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-II	0
		DOCUMENT NO	REV
		SHEET 3 OF 4	

~~6.2 EMD may be forfeited without prejudice to any other right or remedy of PDIL including but not limited to following circumstances:~~


- ~~a) If a bidder withdraws his bid during the period of bid validity specified by the bidder~~
~~OR~~
- ~~b) In the case of successful bidder, if the bidder fails to accept the order~~
~~OR~~
- ~~c) If a bidder is found to have furnished Mis-representation or wrongful declaration/ presentation of qualifying data and other facts in their Bid~~

7.0 Validity of Bids

Prices quoted should remain valid for our acceptance for a minimum **period of 90 days from the date of opening of technical bids**. PDIL will not allow any revision in prices within validity period after sealed tender are opened.


- 8.0 If at any later date, it is found that documents, information and data submitted by the Bidder in the Bid, and based on which the Bidder has been considered eligible or successful or has been awarded the Contract is incorrect or false to the extent that had the correct or true information been made available to the OWNER at the time of Bid evaluation, the bid would have been declared ineligible or unsuccessful, the Bidder shall be forthwith disqualified or, as the case may be, the contract awarded based on such incorrect or false information shall be cancelled and the EMD/PBG/Security Deposit shall be liable to be forfeited.
- 9.0 Bidders are required to carefully go through the entire scope of ENQUIRY, terms and conditions, and other requirements before quoting. They should feel free to contact PDIL before submission of bid if they have any query on it. Once the bid is submitted, PDIL will presume that the bidder has understood thoroughly the Scope of Supply along with terms & conditions and all these are acceptable to them.
- 10.0 Bids shall be typed or written in indelible ink and must be free from corrections / erasing / overwriting etc. Any changes made must be authenticated with initial by the Bidder.
- 11.0 Bid shall be ideally in conformity to the Scope of supply/work along with all Terms & conditions, stipulated in the ENQUIRY. PDIL shall appreciate to receive a Bid having no deviation. However, under unavoidable circumstance, a Bidder may submit Deviations in a separate sheet, which PDIL at its own liberty may accept or reject. Deviations found elsewhere inside the Bid document shall not be considered. Deviations including condition(s), if any, found in the Price bid shall liable for rejection of a Bid in totality.
- 12.0 PDIL reserves the right to reject any or all the bids without assigning any reason whatsoever and does not bind itself to accept the lowest or any other bid. All bids in which any of the prescribed conditions are to be fulfilled or are incomplete in any respect are liable to be rejected. PDIL is at liberty to take any of the following actions in case of this ITB:
 - a) to cancel the tender without reference to the bidders.
 - b) to postpone the due date and time.
- 13.0 Bidders shall not be entitled to claim any costs, charges, expenses or incidentals for or in connection with the preparation and submission of their bids even though Project & development of India Limited may withdraw the enquiry/tender or reject all bids.
- 14.0 **SITE VISIT:** If needed, Bidder may visit the site before quoting their rates. For site visit and any clarifications please contact to:

Shri D K Karamata

	INSTRUCTION TO BIDDERS (for e-published tenders) ANNEXURE – II		PVMM/SERVICE/CIVIL/16-17/E-22/ANX-II	0
			DOCUMENT NO	REV
	SHEET 4 OF 4			

Addl. GM (Civil)
 Projects & Development India Limited
 Vadodara
 Phone:0265-2388403,2388418-21, Extn-109, FAX: 0265-2388398/99
 Email: dkkarmata@wro.pdilin.com

- 15.0 Bids submitted thro' FAX and e-mail will not be accepted. No request from any bidder to PDIL to collect the bid from airlines, cargo agents etc. shall be entertained by PDIL.
- 16.0 PDIL reserve the rights to assess bidder's capability and capacity to perform the contract.
- 17.0 Bids must be submitted on or before the closing date and time physically in the bid box at the office of **HOD(MM), Projects & Development India Limited, PDIL Bhawan, Samta, Subhanpura, Vadodara-390023, Gujarat, India**, or by registered post/courier on the above address so as to reach well in advance of the closing date and time. Offers received late are liable for rejection & no complaint shall be entertained in this regard for any reason whatsoever including postal/courier delay.
- 18.0 To know more about PDIL, please visit our website <http://www.pdilin.com>

	GENERAL CONDITIONS OF CONTRACT (GCC) ANNEXURE - IIIB		PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIB	0
			DOCUMENT NO	REV
	SHEET 1 OF 4			

1.0 Scope of Contract

The Scope of Contract/ Purchase Order (P.O), shall be as per 'Technical Specification' and/or 'Price Schedule', attached to the ITB, unless & otherwise it is modified, at subsequent stage of bidding.

2.0 Firm Price

Price to be quoted shall be firm and subject to no escalation whatsoever during the contractual completion period including extended period, if any, except for any statutory variations i.e. change in the rate of tax & duty and/or inclusion of any new tax & duty.

Bid with variable price will not be accepted.

3.0 Price Basis

Duly executed at location specified elsewhere in this ITB.

4.0 Taxes and duties (To be read in conjunction with SCC)

4.1 All applicable taxes & duties shall be paid at actual at the prevailing rate only. However, Rate of Sales tax / VAT, Service tax, any other tax as applicable should be indicated in the 'Price Schedule'.

4.2 Statutory variation in taxes and duties including imposition of any new tax & duty, within the scheduled Completion period, as per P.O, shall be paid at actual on production of documentary evidence.

4.2.1 In case of delay in execution, if there is any increase in the rate of tax & duty and/or there is imposition of any new tax/ duty by statutory authorities, PDIL shall restrict the payment of taxes & duties, as prevalent on the scheduled delivery/ completion period only, as mentioned in the P.O and amendment(s) there to.

4.2.2 If there is any decrease in applicable rate of taxes & duties &/or there is any withdrawal of any tax & duty by statutory authorities, during the completion period including extended/amended period of P.O, shall accrue to PDIL's a/c.

4.3 The Contractor has to submit / furnish all necessary documents / information to enable PDIL claim CENVAT in respect of Service tax/ Excise Duty / Countervailing Duties, if any.


4.4 ~~PDIL shall not issue any form other than Form-38 i.e. Road Permit, if required, on written request by the Contractor.~~

5.0 Effective date of Contract/ P.O: Shall be the date of issuance of LOI/ P.O.

6.0 Completion Period/ Time Schedule

6.1 Mobilization Period: ~~....days from the date of intimation by PDIL.~~

Completion Period: ~~_____days/ weeks/ month from the date of handing over site~~ **PO/LOI whichever is earlier. Refer STAGE-1, STAGE-2 and STAGE-3 of Clause no. 2 "Scope of Work" of doc. no. EM00227-SOW-0201, Rev.0 dt. 16.03.2017 attached with Annexure-IV of ITB.**

	GENERAL CONDITIONS OF CONTRACT (GCC) ANNEXURE - IIIB		PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIB	0
			DOCUMENT NO	REV
	SHEET 2 OF 4			

6.2 ~~For Annual Maintenance Contract (AMC)/ Annual Rate Contract (ARC)~~

~~The Contract shall be valid for a period of..... (0..) Years from the Effective date. This period can be further extended on mutual agreement.~~

7.0 Payment Terms

100% Payment shall be released, within 30 days after completion of job/work ~~as per milestone defined, elsewhere in the ITB~~, on the invoice, duly certified by Engineer In Charge of PDIL.

~~7.1 Payment For AMC/ ARC:~~

~~100% quarterly payment shall be released within 30 days of submission of invoice duly certified by Engineer In Charge of PDIL. The quarterly bills shall be submitted by the contractor with all necessary documents to the Operator of the Contract.~~

The above payments shall be released subject to submission of Security cum Performance Guarantee/ Security Deposit, **if applicable**, as mentioned herein below, failing which the same amount shall be deducted from the Contractor's Bill(s)

All payments will be made by account payee cheque or direct transfer in bank account through RTGS.

7.1 Tax deduction at source

Income tax, as applicable as per income tax act, shall be deducted at source from the Contractor's bills and a certificate towards this deduction shall be issued to the Contractor.

8.0 Security Deposit

Security Deposit shall be applicable for P.O value more than Rs. 2.00 lac.

8.1 Security cum Performance Guarantee/ Security Deposit for an amount equivalent to 10% of P.O value shall be submitted within 15 days of issuance of P.O, in the form of Demand Draft (DD)/Banker's Cheque. The same shall be valid to cover completion period.

Bank Guarantee (BG) for Security Deposit shall be entertained for value \geq Rs 1.00 lac. PBG shall be valid to cover completion period plus three (03) months claim period thereafter. PBG shall be issued by any Scheduled Commercial Bank. Format of PBG is enclosed herewith at [Annexure-VII](#).


In the absence of submission of Security Deposit, the equivalent amount after adjustment of EMD amt., if any, shall be adjusted from the bills.

~~9.2 In case of ARC, Earnest Money deposit (EMD) shall be retained as Security Deposit for faithful performance of contract.~~

9.3 No interest shall be payable on Security Deposit.

9.4 [PDIL Vadodara](#), however, reserves the right to encash/ forfeit the Security Deposit, if the Contractor fails to execute the Contract and/or abide by all the terms and conditions of the P.O.

9.5 Security deposit shall be refunded after 30 days of completion of Contract on the certification of Engineer In Charge for due fulfilment of the contractual obligations and after adjusting the expenditure incurred by the Owner, if any, on account of any failure on the part of the contractor.

	GENERAL CONDITIONS OF CONTRACT (GCC) ANNEXURE - IIIB		PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIB	0
			DOCUMENT NO	REV
	SHEET 3 OF 4			

10.0 **Price reduction clause**

In the event of delay in completion beyond contractual completion period, price reduction @0.5% per week or part thereof subject to maximum 5% of total P.O value shall be recovered from Contractor's bill(s).

11.0 **Insurance**

Necessary insurance(s) to cover accident risk for his employees loss of life, material etc. to crew or the third party to be arranged by Contractor at his cost.

12.0 **Statutory obligation and Safety Rules (For AMC/ ARC)**

The Contractor will have to follow all safety rules and measures during contract period and will be fully responsible for implementing rules, obligations and statutory provisions of government and all the consequences in the event of any eventuality.

The Contractor shall be responsible to observe and comply with all statutory requirement including contract labour act 1970, minimum wage act – 1948 and EPF act 1952 etc. including all amendments thereof in vague both of central and state government. PDIL shall be kept indemnified against any action brought against it or any violation / non –compliance of any act /acts, all expenses for compliance of above acts and regulations shall be borne by the contractor.

The Contractor shall comply with at his cost all safety norms such as Fire and Safety regulation act as applicable at site.

The Contractor shall be responsible for all risk involved in respect of their personnel and material at site and arrange proper insurance coverage at his cost.

Personnel deployed should be medically fit to work should posses good conduct and should have no past criminal record and shall maintain high standard discipline, decency and decorum. PDIL reserves the right at its sole discretion to ask for replacement of any person employed by the contractor.

12.0 **Termination**

In the event of unsatisfactory performance, PDIL reserves right to cancel part or whole of the order / contract and make alternate arrangement at any time during currency of contract on risk & costs of contractor and / or forfeit security deposit


13.0 **Force Majeure**

The act of God, epidemic, wars, revolution, and official strike shall be treated as force majeure condition. In event of occurrence of such condition neither party shall be responsible for delay in performance provided that it is notified within 07 days of its occurrence. The Contractor shall provide justification by documentation countersigned by the local chamber of commerce.

14.0 **Arbitration**

All cases of dispute arising during execution of contract shall be resolved by mutual discussion of parties operating the Contract. In the event of failure to do so, matter will be settled as per Arbitration and Conciliation Act, 1996, as amended from time to time.

However, wherever applicable, in case of settlement of commercial disputes between PSEs inter SE and PSE(s) and Government Department(s), the same shall be settled through Permanent Machinery of Arbitrators (PMA) setup in the Department of Public Enterprises(DPEs) as per the following Clause:


	GENERAL CONDITIONS OF CONTRACT (GCC) ANNEXURE - IIIB	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIB	0
		DOCUMENT NO	REV
		SHEET 4 OF 4	

“In the event of any dispute or difference relating to the Interpretation and application of the provisions of the contracts, such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary/Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator”.


The performance under this contract, shall not stop for any reason, whatsoever, during the said dispute / proceedings, unless the service provider is specifically directed by PDIL to desist from working in this behalf.

15.0 Jurisdiction

The P.O shall be deemed to have been entered into at Noida/Vadodara/Sindri, for PDIL's different Unit, as the case may be and all cases of action in relation to the P.O shall, therefore, be deemed to have been assigned within its jurisdiction for respective Unit/location.

	SPECIAL CONDITIONS OF CONTRACT (SCC) ANNEXURE - IIIC	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIC	0
		DOCUMENT NO	REV
		SHEET 1 OF 4	

- 1.0 **SCOPE OF JOB** : As per Technical Specifications Doc. No. **EM00227-PVCV-0200 Rev.0 Dt. 16.03.2017** enclosed with this ITB.
- 1.2 The quoted rates **in the attached Schedule of Rates(SOR-Attachment-V)** shall be applicable for all floors, heights, depths etc. except otherwise stated clearly in the description of items and nothing extra shall be paid to the contractor on this account.
- 1.3 Transport of all materials shall be the contractor's responsibility and it shall be at their own risk and cost.
- 1.4 The schedule of Rates shall be read in conjunction with Commercial Terms & Technical Specifications.
- 1.5 The rates of SOR are inclusive of all Labour, Materials, Tools necessary for executing the work with all necessary scaffolding etc. for work at any height/depth & including all types of taxes etc. **except SERVICE TAX.**
- 1.6 Quantity indicated in SOR may vary at site and Payment shall be made as per actual quantity of work executed **as per note sl no. 5 of SOR doc. no. EM00227-9511-0940 Rev.0 Dt. 16.03.2017.**
- 2.0 **Bids will be evaluated on the basis of Pre Qualification Criteria(PQC)** mentioned in Annexure-I. The Offer, not meeting the **Pre Qualification Criteria(PQC)**, shall not be considered for further evaluation.
- 3.0 **PART ORDER/SPLIT ORDER:** Part Order / Split Order is **NOT APPLICABLE** for this tender, hence, evaluation shall be carried out on overall basis.
- 4.0 **DISCREPANCIES IN QUOTED PRICES:** **The prices must be written both in figures and words. Unit prices shall be considered correct in the event of any discrepancy with regard to total price. In the event of difference, prices written in words shall be valid & binding. If the bidder has submitted prices in the price schedule & also on their own letter head/format, the prices written in the Price Schedule shall be considered valid & binding, in case of any discrepancy.**
- 5.0 **TAXES, DUTIES, SALES TAX ON WORKS CONTRACT ETC. EXCEPT SERVICE TAX:** The prices shall be inclusive of all taxes, duties, including sales tax on work contract etc. **except service tax** and the contractor shall be responsible for payment of the same.
- 5.1 **SERVICE TAX:** Service Tax shall be paid **EXTRA as applicable as per service tax rule/notification** against **Service Tax Registration Number** Only. **Bidder shall clearly indicate the present applicable rate and % of quoted amount on which service tax shall be applicable in their bid.**
- 5.2 **PDIL shall avail CENVAT benefit** against payment of Service Tax hence, the **CENVAT** benefit on these accounts to be passed on by the bidder to PDIL. **The amount of benefit under CENVAT, if any, to PDIL will be considered while evaluating the price** for which necessary documents shall be provided by the bidder to enable PDIL to avail the benefit, failing which the amount shall not be payable
- 6.0 **COMPLETION PERIOD:** **As mentioned against STAGE-1, STAGE-2 and STAGE-3 of Clause no. 2 "Scope of Work" of doc. no. EM00227-SOW-0201, Rev.0 dt. 16.03.2017 attached with Annexure-IV of ITB.**
- 7.0 **PAYMENT TERMS:** **100% Within 30 days of submission of bill after completion of entire job** against certification of Contact Person or his authorized representative. **Contractor shall submit No claim certificate as per proforma attached at Annexure-XI alongwith final bill.**
- 7.1 Payment shall be made as per actual quantity of work executed as indicated under note **sl no.5 of SOR** attached with technical specifications.
- 7.2 The mode of Payment to Supplier/Contractor in PDIL is generally E-Payment through RTGS/NEFT. To facilitate the same, **Successful Bidder to fill up the required details in the format for E-Payment through RTGS/NEFT (Refer Annexure-X) and submit the same alongwith EMD in Envelope-A.**
- 7.3 **If you are eligible/entitled for any privilege/benefit under any statutory body/act/law like MSMED Act 2006 for MICRO/MEDIUM/SMALL Scale Company etc, please submit the valid documentary evidence and clearly indicate in your offer.**

	SPECIAL CONDITIONS OF CONTRACT (SCC) ANNEXURE - IIIC		PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIC	0
			DOCUMENT NO	REV
	SHEET 2 OF 4			

8.0 CONTACT PERSON for OPERATION OF ORDER/CONTRACT: This order/contract shall be operated by contact person of PDIL **Shri D K Karamata Addl. GM (Civil) PDIL, Vadodara, (Email: dkkarmata@wro.pdilin.com or his authorized representative. Invoice for payment shall be submitted to him who shall forward after certification, to Finance for payment.**

9.0 EMPLOYMENT OF LABOUR :

9.1 The Contractor will be expected to employ on the work only his regular skilled employees with experience of this particular work. The permission of the PDIL must be obtained before tradesmen are recruited locally for the work. This rule does not apply to un-skilled labour. No person below the age of eighteen years shall be employed. The Contractor shall pay, to his employees/workers the minimum wages as per State Government notification issued time to time.

9.2 The hours of work on the Site shall be decided by PDIL and Contractor shall adhere to it. Monday to Saturday minimum working hours will be 8 (eight) hours per day excluding lunch break etc.

9.3 All Contractor's employees shall wear identification badges while on work site.

9.4 All notice displayed on the Site and any instruction issued by the PDIL/OWNER must be strictly adhered to by the Contractor's and/or his sub-contractor's employees.

9.5 **The contractor shall take** required LABOUR LICENCE as per labour regulation act **and submit the documentary proof of the same to PDIL** before commencement of the contract.

9.6 The Contractor shall be responsible for **payment of Minimum Wages including all other applicable statutory benefits to the personnel deployed for the job under contract as per directives of State Govt. as well as any revision from time to time through Govt. notification.** The contractor shall also be responsible for maintenance of relevant registers and compliance of all statutory requirements as per various Acts/Ordinances related to the services or that may be promulgated later on, including submission of the same to Govt. Officials as and when required.


The contractor shall **comply all statutory labour regulations with the Central, State, Factory & Municipal Laws, Acts and Rules** and shall be solely responsible for complying with the provisions of the Contract Labour (Regulations & Abolition) Act, 1970 and rules there under including the ESI Act (wherever applicable), The Payment of Wages Act, 1935, Provident Fund Act, the Minimum Wages Act, 1948, Factories Act, 1948, Workmen's Compensation Act, 1923 (wherever applicable), Payment of Bonus Act or any other applicable legislation whatsoever in force, in so far as these are applicable. The contractor shall indemnify **PDIL** from any actions arising out of non-compliance by contractor with such statutory obligations and ignorance of same shall be no ground for the failure to carry out these obligations. **PDIL** shall further be entitled to make all such recoveries/take all such actions as shall be required to take under the law. In case PDIL has to pay any charges for non-compliance of any act, enactment laws, rules and legislation in force from time to time, same shall be recovered from the Contractor. The Contractor shall submit all relevant documents showing compliance of all acts, laws, rules and legislation as and when called by PDIL.

9.7 Contractor to ensure **disbursement of wages to the deployed Persons** strictly as per applicable rates as per Govt. Notifications under Minimum Wages Act, 1948 and to deposit all dues towards PF on time to time and also keep PDIL indemnify against any dispute for wages and any injury/casualty taken place within the plant, Contractor shall be fully responsible for all legal compliance for arranging such labour/worker.

9.8 In case PDIL/OWNER becomes liable to pay any Wages or dues to the labour of the Contractor or his Sub-Contractor or to any Government Agency under any of the provision of the Minimum Wages Act, Workmen Compensation Act or any other law due to act of omission of the Contractor, **PDIL shall promptly make such payment and shall recover the same from the Contractor's bills.**

9.9 The Contractor shall be required to produce documentary evidence to the effect that he has discharged his obligations under the Employees Provident Fund Act, 1952, for his/sub-contractor's employees working at site.

9.10 **On acceptance of the contract by contractor, it shall be deemed that PDIL is indemnified towards any liabilities, if any, arising out of this contract.** PDIL shall in no way have any liabilities for contractor's personnel and also against all legal, financial or other suits, if any, occurring because of lapses or acts on the part of the contractor, or his employees and against any claim whatsoever, in respect of person engaged by the contractor.

	SPECIAL CONDITIONS OF CONTRACT (SCC) ANNEXURE - IIIC		PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIC	0
			DOCUMENT NO	REV
	SHEET 3 OF 4			

10.0 WORKING AND SAFETY REGULATION.

- 10.1 **The Contractor will observe all SAFETY RULES of applicable at site** and also observe all statutory and legal requirements by Central and State Governments applying to the work as well as any local regulations applying to the site issued by PDIL/OWNER or any other authority.
- 10.2 The Contractor shall make his own arrangement for firefighting extinguishers and equipment.
- 10.3 The Contractor shall be responsible for the provision of all safety notices and safety equipment required by both the relevant legislation and such as PDIL/OWNER may deem necessary.
- 10.4 The Contractor shall be responsible for the safe storage of the radiography sources or those of his sub-contractors, if any.
- 10.5 The Contractor will notify PDIL/OWNER of his intention to bring on the site any equipment, such as space heating or welding apparatus or any container holding liquid or gaseous fuel or other substance which might create a hazard. The Owner/Consultant will have a right to prohibit the use of such equipment or to prescribe the conditions under which such equipment may be used. PDIL will have the right to inspect any construction plant, and to forbid its use if in his opinion it is unsuitable or unsafe. No claim arising there from shall be made by the Contractor. The Contractor or any one acting on his instructions will not bring on to the site any radio-active substance or any apparatus using such substances or any X-ray apparatus until written permission and direction regarding the use of such equipment has been received from the PDIL/OWNER.
- 10.6 The Contractor shall clear away immediately any rubbish, scrap materials, etc. and dump the same in the area indicated by PDIL/OWNER. All construction material shall be neatly stacked in an orderly manner as directed by PDIL/OWNER and care shall be taken to allow proper access to workmen and easy movement of men, vehicles, cranes and materials.
- 10.7 Where it is necessary to provide any/or store petroleum products or petroleum mixtures and explosive, the Contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act, 1934, Explosive Act, 1948 and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approvals of the Consultant. In case any approvals are necessary from the Chief Inspector of Explosives or any statutory authorities, the Contractor shall be responsible for obtaining the same.
- 10.8 The Contractor will meet all requirements and act on the instructions of the PDIL/OWNER where it is necessary to operate a 'permit to work' system.
- 10.9 Any damage to the existing facilities while carrying out the work shall be made good by the contractor to entire satisfaction of PDIL/OWNER at their own risk and cost.
- 10.10 The contractor shall observe al the safety Rules & Regulation applicable at the owner's plant.

11.0 ELECTRICAL SAFETY REGULATIONS :

- 11.1 In no circumstances will the Contractor interfere with fuses and electrical equipment belonging to the Owner or other Contractors.
- 11.2 Before the Contractor connects any electrical appliances to any plug or socket belonging to the other Contractor or Owner, he will -
Satisfy the OWNER/PDIL that the appliance is in good working conditions;
Inform the OWNER/PDIL of the maximum current rating, voltage and phase of the appliance;
Obtain permission of the OWNER/PDIL dealing the sockets to which the appliances may be connected.
The OWNER/PDIL will not grant permission to plug in until he is satisfied that The appliance is in good condition and is fitted with a suitable plug;
The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.
- 11.3 The voltage for all portable equipment e.g. drilling machines, temporary lighting etc. will not exceed 240 volts.
- 11.4 No work must be carried out on any live equipment. The equipment must be made safe and a 'permit-to-work' issued before any work is carried out.
- 11.5 Contractor shall employ authorised electrician to maintain his temporary electrical installation.

	SPECIAL CONDITIONS OF CONTRACT (SCC) ANNEXURE - IIIC	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IIIC	0
		DOCUMENT NO	REV
		SHEET 4 OF 4	

- 12.0 STATUTORY REQUIREMENTS:** The contractor shall confirm to the provisions of Acts of Parliament or State Legislatures and to any bye-laws, rules, orders or notifications of any Government, Municipal or local authority for the time being in force affecting the work undertaken by him and will give all necessary notices to and obtain requisite sanction and permits of and from the Municipal and any other authority in respect of the said work of the materials to be used and generally will comply with building and other regulations of such authorities and will keep PDIL/OWNER indemnified against all claims, penalties and losses that may be incurred by it by reason of any breach by the contractor of any statutes bye-laws, rules regulations, notifications etc.
- 13.0 PENALTY CLAUSE :** The subject job shall be carried out in running Plant, therefore all safety and security rules/ norms imposed by OWNER shall be binding on the part of contractor and on any other sub-agency engaged by them for related job.
- 13.1 The Contractor shall abide to the rules, regulations, bye-laws imposed by the Govt./semi Govt. and other local authorities for execution of this job.
- i) Violation of applicable safety, health and environment related norms, a penalty of Rs. 5000/- per occasion shall be charged.
- 13.2 Violation as above resulting in
- i) Any physical injury, a penalty of 0.5% of the contract value (maximum of Rs.2.0 Lakhs) per injury in addition to Rs. 5000/- [as per clause 13.1 \(i\) shall be charged](#).
- ii) Fatal accident, a penalty of 1% of the contract value (maximum of Rs. 10.0 Lakhs) per fatality in addition to Rs. 5000/- [as per clause 13.1 \(i\)](#).
- 14.0 In case of an irreconcilable conflict between General Conditions of Contract, Special Conditions of Contract, terms specified in Special Conditions of Contract shall prevail.

	Technical Specification / Scope of Job ANNEXURE - IV	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IV	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

ANNEXURE - IV




Technical Specification/Scope of Job for

Pipeline Route Survey for the project jumper pipeline between IOCL, KDPL and OPAL pipeline at Dahej, Gujarat attached Document No.EM002227-PVCV-0200, Rev.0 dated 16.03.17

	PROJECTS & DEVELOPMENT INDIA LTD	EM00227-PVCV-0200	0
		DOCUMENT NO	REV
		SHEET 1 OF 2	

ANNEXURE-IV
ITB No. PVMM/SERVICE/CIVIL/16-17/E-22

PIPELINE ROUTE SURVEY FOR THE PROJECT JUMPER PIPELINE BETWEEN IOCL KDPL AND OPAL PIPELINE AT DAHEJ, GUJRAT

0	16.03.17	ISSUED FOR INQUIRY	 SS	 BK	 BK
REV.	DATE	PURPOSE	PREPD	REVWD	APPD

	PIPELINE ROUTE SURVEY FOR NEW JUMPER PIPELINE AT DAHEJ, GUJRAT		EM00227-PVCV-0200	0
			DOCUMENT NO	REV
			SHEET 2 OF 2	

CONTENTS

SL. NO.	DOCUMENT DESCRIPTION	DOCUMENT/ DRAWING NO.	REV NO.	NO. OF SHEETS
1	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	9
2	SPECIFICATION FOR TOPOGRAPHICAL SURVEY FOR PIPELINE ROUTE	EM00227-TS-0201	0	6
3	TECHNICAL SPECIFICATION FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/ RECEIVER STATION	EM00227-TS-0202	0	17
4	KEY ROUTE MAP	EM00227-9511-0001	0	1
5	SCHEDULE OF RATES FOR PIPELINE ROUTE SURVEY	EM00227-9511-0940	0	7




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		DOCUMENT NO.	REV	
		Sheet 1 of 9		

TITLE
SCOPE OF WORK
FOR
PIPELINE ROUTE SURVEY

PROJECT
PMC SERVICES FOR JUMPER PIPELINE
BETWEEN IOCL KDPL AND OPAL PIPELINE
AT
DAHEJ, GUJRAT

OWNER
ONGC PETRO ADDITIONS LTD
VADODARA

ENGINEERING CONSULTANT
PROJECTS & DEVELOPMENT INDIA LIMITED
VADODARA

0	16-03-2017	16-03-2017	ISSUED FOR INQUIRY	 KMP	 SS	 BK
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD

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 पी डी आई एल PDIL	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	 ओ पी एल OPAL
		DOCUMENT NO.	REV	
		Sheet 2 of 9		

CONTENTS

1. Introduction	3
2. Scope of work	3

 पी डी आई एल PDIL	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	 ओपीएल opal
		DOCUMENT NO.	REV	
		Sheet 3 of 9		

1. INTRODUCTION

OPaL is planning to take approximately 300-500 KTPA naphtha from IOCL through Koyali Dahej pipeline (KDPL) by providing a jumper pipeline connection between IOCL KDPL and OPaL Pipeline (GCPTCL – OPaL Dahej) outside periphery of GCPTCL premises.

2. SCOPE OF WORK:

To perform site/location selection for Hook Point (Minimum 02 locations) from GCPTCL-OPaL Dahej naphtha pipeline to IOCL KDPL pipeline for transferring 300-500 KTPA Naphtha to OPaL.

Pipeline route including locating the centre-line of pipeline alignment on the ground, constructing survey monuments, field measurements for planimetry and profiles and preparation of drawings and documents

S.NO	EXISTING PIPELINE DESCRIPTION	Length (KM)
1	Existing 10"Ø Naphtha Pipe line Route from (GCPTCL - OPaL)	12.52
2	Existing 12"Ø Naptha Pipe line Route from (IOCL - KDPL - GCPTCL)	100
	PROPOSED JUMPER PIPELINE DESCRIPTION	
3	Existing GCPTCL-OPaL Dahej naphtha pipeline to IOCL KDPL pipeline	

Bidder to note that the whole survey work shall be carried out in stage wise as listed below:

STAGE 1: Preliminary Route Survey

Contractor shall carry out Preliminary route survey & submit min. 2 options for proposed pipeline route for selection of optimum pipeline route. Contractor shall finish this activity within 15 days from the award of workorder.

STAGE 2: Detailed Route Survey

After finalization of pipeline route from Owner, Contractor shall proceed for the detailed route survey & submit the detailed route drawings like alignment drawings, crossing drawings, U/G survey report etc as per specification. Contractor shall finish this activity within 20 days after finalization of pipeline route.

 पी डी आई एल PDIL	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	 ओपीएल opal
		DOCUMENT NO.	REV	
		Sheet 4 of 9		

STAGE 3: Station Survey work, if required

Contractor shall also carry detailed geotechnical survey of the land at One location (One Bore Hole), if required. Contractor shall finish this activity within 15 days after finalization of pipeline route along with detailed route survey as it is a parallel activity.

2.1 OBJECTIVE:

The objectives of the detailed route survey as minimum but not limited to are as follows:

- Carrying out Reconnaissance (Recci) Survey.
- Obtaining topographical details along the pipeline route after physical verification of most optimized route and collecting information about the existing facilities, development plans, restricted areas etc. located along and in the vicinity of the proposed pipeline route.
- Detailed Engineering Survey along the route of the pipeline.
- Computation of population density index along the proposed pipeline routes.
- Obtaining soil stratification, soil resistivity data along the route.
- FMB (Field Measurement Book) preparation of cadastral maps along the pipeline route in hard copies as well as in soft copies as required.
- Identification of Govt. land along pipeline route (if any).
- Obtaining details of crossings en-route pipeline with name and complete address of concerned State / Central Govt. authorities under whom the crossing locations fall.
- Obtaining details of Forest land including road side forests en-route of Pipeline and its Classification (Social/Protected/Reserved/ Wild Life Sanctuary / National Park), with name and complete address of concerned state / central govt. authorities under whom the forest locations falls.
- Locating the center line of pipeline on the ground, constructing survey monuments, field measurements for planimetry, profiles, preparation of drawings and documentation.
- Soil Investigation for the purpose of visual engineering classification of soil along the pipeline route and of receipt/ intermediate/ dispatch terminal stations
- Topographical Survey of receipt/ intermediate/ dispatch terminal stations.
- Preparation of all drawings for the Crossing which requires permission from statutory Authorities (Railway/ NH/SH/ Water Bodies (rivers/canal/lake etc), foreign body crossings (pipeline etc) in line with the requirement of the statutory bodies/ authorities.

2.2 SCOPE OF WORK FOR DETAILED ROUTE SURVEY WORK

2.2.1 Scope of work for detailed pipeline route survey for each pipeline shall include, but not limited to the following:

The work described herein shall be carried out as per applicable technical specifications of the bid documents.

<div> पी डी आई एल PDIL</div>	<div>SCOPE OF WORK FOR PIPELINE ROUTE SURVEY</div>	EM00227-SOW-0201	0	<div> ओपीएल opal</div>
		DOCUMENT NO.	REV	
		Sheet 5 of 9		

Carrying out table top study based on the latest Satellite Images of the area/latest Survey of India Maps/Development plan as received from concerned Authority, reconnaissance survey of routes wherever possible and critical evaluation of route considering survey efficiency & Load Centre* (as close as possible). Techno-commercial feasible route* shall be properly mentioned in the reconnaissance survey report for approval of Owner/Consultant. The Reconnaissance survey report must contain following data in detail.

S. No.	Description	Remarks
1	Total distance of the pipeline route from start point to end point.	
2	Distance of Major Cities/Industrial Towns from proposed route	
3	Rocky Terrain	
4	Details of Wild Life Sanctuary / National Park and distance of nearest such area from proposed route	
5	Details of Protected forest / Reserved Forest/Social Forest	
6	Areas reserved for planned development including strategic/defense establishment.	
7	Major crossing of rivers, roads, railways, canals.	
8	Approachability for transportation of material and equipment for construction & future maintenance of the pipeline. Record, if any problems envisaged.	
9	Habituated areas, public utilities etc	
10	Feasibility of pipe line route considering limitations of topography & terrain. Record, if any problems envisaged.	
11	Tidal wave region/ LNG Terminal/CRZ Area/Mining Area if any	
12	Unstable ground features	
13	Any other problems envisaged with regard to construction of P/L like Terrain / Topography of the route.	
14	Any other problems envisaged with regards to obtaining of ROU.	

2.2.2 Detailed Engineering Survey:

- Contractor has to deploy minimum number of survey teams for the Scope of Work as specified elsewhere in the tender. In case progress of work is not as per schedule, number of teams may have to be increased by the contractor as directed by OWNER/CONSULTANT.
- Carrying out detailed route survey work for the entire route of the proposed pipelines as established by Owner/ Consultant.
- Survey shall also cover an area of 50m on either side of the ROU width, if required.
- Detailed route survey works shall be carried out in accordance with technical specifications including detailed study of crossings like Railways, Roads, Rivers, Canals, Forest Areas and Hilly Terrains etc.
- The survey shall also include locating all existing underground pipeline(s), utilities such as cables, water line sewer line etc. using cable / pipeline locators etc. and plotting the same on alignment sheets etc. Underground scans will be taken with appropriate scanning technique to positively identify position of possible pipelines at pinch point . These scans are also to be used to locate other problem front areas. At specific areas trial excavations will be needed to confirm location/details of pipelines, cables etc

2.2.3 All Other Surveys:

- Carrying out soil investigation / soil stratification along the proposed pipeline route including road & water crossing as per specification enclosed with Tender Document.

	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	
		DOCUMENT NO.	REV	
		Sheet 6 of 9		

- b) Collection of disturbed soil samples from bore holes for visual classification of soil as per specifications in the tender and submission of reports.
- c) Carrying out corrosion survey including measurement of soil resistivity, chemical analysis of soil/water as per specification in the bid for Corrosion Survey. The test to be carried out through govt. authorized labs and collection of related data along the pipelines route and submission of lab reports
- d) Topography survey as per specification for receipt / intermediate and dispatch Terminal stations.
- e) Land schedules giving the survey numbers, area and details of owners as per the latest official revenue records. The Detail shall be provided as follows.

The information / details as above are required to be provided in all respect for ROU acquisition purpose. Width of ROU proposed to be acquired shall generally be 30/20/15m as specified in the site information table above. No change in the ROU width shall be done by contractor, unless otherwise specific instruction is given regarding change in ROU width during the survey by Owner/Owner's representative. In restricted area, the width of ROU shall be decided in consultation with Owner/Owner's representative and as per Municipal/ Local Government Laws. Entire database shall be developed into a unified GIS (Geo-Spatial Information System) and LIS (Land Information System) compatible format.

Note:

- 1) Contractor shall be fully responsible for collection of correct and Up-to-date records/ data.
- 2) Any defects noticed in above information shall be rectified at the risk and cost of the Contractor.

- f) Supply and installation of the survey markers as per requirements of the specifications and instructions of Owner/Owner's representative.
- g) Contractor shall also identify the earthquake prone area along the pipeline route and shall define the seismic zone and its category with proper marking on the route map. A separate list of elevation difference to be submitted, wherever major differences have occurred.
- h) Preparation of survey reports/drawings/documents and submission of the same by the Contractor to Owner/Consultant for review & approval.
- i) Locating all buried/ above ground pipelines, cables and other utilities within the ROU width, with the help of pipelines/ cables locator or other suitable instruments (Wherever necessary as directed by Owner/Consultant).
- j) The scope of work shall also include any other item/activity required to complete the work in all respects as per specifications, drawings, implementation schedule, and instructions of Owner/Consultant whether specifically mentioned herein or not, but is required to fulfill the intended purpose of this tender document.

2.2.4 CHECK-LIST

Check list points as detailed below to be covered in Detailed route survey reports:

S. No.	Activities	Status/Remarks
1	Re-confirmation and Fixing of start and end locations of survey.	
2	Transfer of nearby benchmarks. Fixing of Co-ordinates of start / end locations.	

 पी डी आई एल PDIL	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	 ओपीएल opal
		DOCUMENT NO.	REV	
		Sheet 7 of 9		

3	Check for calibration/accuracy / performance of Total station & other instruments used for Survey. Indicate details of instruments used	
4	Check for the Surveyor experience and their operating skills of survey instruments.	
5	Certification for route not passing through CRZ / National park / Sanctuary / Coral reef / Ecologically sensitive areas including LNG terminals	Certificate to be Provided in the survey report itself
6	Certification for route not passing through Critically Polluted areas as per MoEF Notification dated 15-03-2015	
	Check for any other existing underground cables / pipeline, using cable/pipeline locators and determination of cover (depth).	
9	Major Highlights of the Pipeline Route-	
a	Major Highlights of the Pipeline Route	
b	Co-ordinates of starting point	
c	Co-ordinates of Terminating point	
d	Total Chainage	
e	Total IP points	
f	Total TP Points	
g	Major crossings Rlys/NH/SH/River/Canal/Forest	
h	Water logging area to be mark in the survey drg. along the pipeline route	

2.2.5 SCOPE OF SUPPLY:

Owner/Consultant shall not supply any materials, manpower or equipment for the work including transportation to site and other places as required and this shall be the responsibility of the Contractor.

2.2.6 CONTRACTOR'S RESPONSIBILITIES:

- Contractor to arrange all manpower and equipment etc. required to complete the work as per bid and as directed by Owner/Consultant.
- Contractor to arrange work permissions from concerned authorities and other support facilities etc to complete work.
- Any dispute arising out of any damages caused by Contractor or Contractor's workmen during the execution of the work has to be settled by the contractor.
- Ground profile shall be prepared based on MSL.
- Collection of all information and proposed development plans in nearby vicinity of proposed pipeline
- Arranging of SOI maps in scale of 1:50,000 / 1:25000 as per the requirement.

 पी डी आई एल PDIL	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	 ओपीएल  OPAL
		DOCUMENT NO.	REV	
		Sheet 8 of 9		

- g) Contractor shall carryout all works in strict compliance with applicable specifications as per the bid and as directed by Owner/Consultant.
- h) All maps procured by the Contractor under this contract shall be property of the Owner/Consultant and shall be handed over to Owner/Consultant after completion of work.
- i) Procurement of all required Survey of India maps / Satellite imageries / any other map necessary to undertake detail route survey of proposed pipeline shall be in contractor's Scope of Work, without any additional cost to Owner/Consultant. However, assistance in procurement of maps, if required, shall be provided by Owner/Consultant.

2.2.8 DOCUMENTS / DATA SUBMISSION

- a) Contractor has to submit survey data, drawings etc. which shall be reviewed / approved by OWNER/CONSULTANT in the initial stage.
- b) Two sets of hard copy of sample drawings/ data/ documents covering at least 10km. Stretch, shall be submitted by the Contractor for Owner/Consultant's review in the form of draft report for entire activities. Suggestions/ Comments of Owner/Consultant (if any) shall be incorporated by the Contractor. This report can be demanded in parts and in different phases as per discretion of Owner/Consultant.
- c) All drawings, reports, formats etc. forming the part of submission to Owner/Consultant shall be prepared on approved computer package. All drawings, including, but not limited to alignment sheets, crossing drawings, soil profiles, crossings drawings etc. shall be prepared using latest version suitable package All reports, formats, write-ups, charts shall be prepared on computer using software package compatible with MS Office latest version.
- d) The reports, data and drawings submitted shall be in approved GIS package and shall be submitted per details below:

S. No.	Drawings/Documents	No. of Copies	Remark
A	Alignment Sheets(In the scale of 1:2,500/4,000)	03(In Colour)	
B	Crossing Drawings	03 (In Colour)	Drawing should contain Key Map with Details for Locating the Crossings at Site
C	Route Map		
C1	In the Scale of 1:50,000 or 1:25,000	06 (In Colour)	
C2	Overall Route Map In the Scale of 1:500,000 or 1:10,00,000	06 (In Colour)	
C3	Route map as required for CCOE application including all details of village, tehsil, police station & TP Point Ch. wise in the scale of 1:50,000	06(In Colour)	
D	Soil Resistivity	03	
E	Detailed Engineering Survey Report	03	Report should cover all engineering details, details of length in each Village, Crossings with Authority

 पी डी आई एल PDIL	SCOPE OF WORK FOR PIPELINE ROUTE SURVEY	EM00227-SOW-0201	0	 ओपीएल opal
		DOCUMENT NO.	REV	
		Sheet 9 of 9		

			List, Details of Social/ Reserved/ Protected Forest, National Park and Sanctuaries, Area under Coastal Regulatory Zone, Ecologically Sensitive Area, and Critically/ Severely Polluted Area etc. en-route proposed route, water logging area along the Pipeline route.
F	Topo Survey of terminals	03	
G	All Crossing drawing requiring permission from statutory Authorities (Railway/ NH/SH/ Water Bodies (rivers/canal/lake etc), foreign body crossings (pipeline etc)	6 sets each	Drawings shall be prepared in line with the requirement of obtaining the permissions from Statutory bodies / other Authorities
The Editable soft copies of all Drawings and Reports as mentioned above shall be submitted in one set of CD and one in Pen drive.			

2.2.9 LIST OF ENCLOSURE

Following specifications shall be a part of bid document.

- Specification for Topographical Route Survey.
- Specification for Cadastral Survey.
- Pipeline route survey data sheet.
- Specification for Topo Survey Terminal

2.2.10 DEPLOYMENT OF MANPOWER

Simultaneously, a separate team with suitable no of persons for collection of revenue records from respective offices and soil investigation, stone fixing team shall be deployed by the contractor. In order to complete the work in schedule time, contractor has to deploy sufficient survey and other equipment at site.




 <div>પી ડી આઈ એલ PDIL</div>	PROJECTS & DEVELOPMENT INDIA LTD.	EM00227-TS-0201	0	 <div>ઓપી એલ OPAL</div>
		DOCUMENT NO.	REV	
		Sheet 1 of 6		

TITLE
SPECIFICATION FOR TOPOGRAPHICAL SURVEY
FOR
PIPELINE ROUTE


PROJECT
PMC SERVICES FOR JUMPER PIPELINE
BETWEEN IOCL KDPL AND OPAL PIPELINE
AT
DAHEJ, GUJRAT

OWNER
ONGC PETRO ADDITIONS LTD
VADODARA

ENGINEERING CONSULTANT
PROJECTS & DEVELOPMENT INDIA LIMITED
VADODARA

0	16-03-2017	16-03-2017	ISSUED FOR INQUIRY			
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD

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 પી ડી આઈ એલ PDIL	SPECIFICATION FOR TOPOGRAPHICAL SURVEY FOR PIPELINE ROUTE	EM00227-TS-0201	0	 ઓ પી ઇલ OPAL
		DOCUMENT NO.	REV	
		Sheet 2 of 6		

CONTENTS

1. General	3
2. Scope of Work	3
3. Technical Specification	4

 पी डी आई एल PDIL	SPECIFICATION FOR TOPOGRAPHICAL SURVEY FOR PIPELINE ROUTE	EM00227-TS-0201	0	 ओ पी एल OPAL
		DOCUMENT NO.	REV	
		Sheet 3 of 6		

1. GENERAL

The intent of the survey program for the proposed sites is to obtain sufficient topographical data for finalizing all engineering works and establishment of permanent bench marks and grid pillars for reference during construction of the project.

2. SCOPE OF WORK

The Pipeline routes along with approaches to the route which are to be surveyed have been identified in the enclosed Tender Document and shall also be clarified by the Engineer in charge during execution of work.

- a) A desk study of all matters pertaining to the satisfactory performance of the work.
- b) Obtaining all relevant licenses, permits, clearances, certifications, insurances etc.
- c) Calibration of instruments.
- d) Preliminary examinations to identify all existing survey control points in the vicinity and, by local enquiry, establish their reliability.
- e) Transfer of level datum (Chart Datum) from the designated location.
- f) Setting up of traverse control points and local level datum.
- g) Preparation and submission of preliminary topographical Survey drawings and maps. All measurements shall be in metric units.
- h) Topographical survey complete as required. Preparation of contour survey maps, with spot levels. Establishment of base line and grid system for defining the co-ordinates of the various sites. Preparation of survey maps.
- i) Keeping of field records.
- j) Preparation of Survey Report.
- k) Submission of endorsed final Survey drawings and Survey Report
- l) The Surveyor shall ascertain from the relevant irrigation authorities the high flood levels and indicate these on the Survey Plans

2.1 The Contractor shall carry out detail survey of the area showing:-

- a) Physical features, spot levels, invert levels of existing drains and culverts with their cross sections, transmission/ telephone/ service (Under/ above ground) lines etc. land survey by triangulation or other suitable method.

 पी डी आई एल PDIL	SPECIFICATION FOR TOPOGRAPHICAL SURVEY FOR PIPELINE ROUTE	EM00227-TS-0201	0	 ओ पी एल OPAL
		DOCUMENT NO.	REV	
		Sheet 4 of 6		

- b) Topographical survey shall indicate existing, permanent, and temporary structures including levels & limits.
- c) Drawing of terrain.
- d) Detailed levels and coordinates of existing roads and other units.
- e) Preparation of survey drawings with descriptive note on terrain.
- f) Setting of grid lines and bench marks and construction of reference pillars.

3. TECHNICAL SPECIFICATION

The details to be covered in the contract work shall include the following;

3.1 Leveling work:

The leveling work shall be based on the bench marks available in the vicinity or any permanent existing features. Vertical control based on existing bench marks shall be established based on closed level network. Suitable instruments shall be used for establishing the bench marks and for doing the general leveling work.

All survey points, reference pillars, shall be protected in such a way so that they are not disturbed during the construction period. The size of pillars shall be (traverse stations) shall not be further than 250m apart. They shall be well formed concrete pillars 150mm x 150mm or 150mm diameter and 1000mm deep in dimension, protruding between 150mm to 200mm above ground level. Each pillar shall have a brass or stainless steel bolt marked with a central depression or cross cut into its top which shall be the point of reference. All pillars shall be indelibly marked with their reference number. Working plate shall be embedded true to level on the top of the pillar and a stud shall be provided. The plate shall have full contact with the concrete. Reference point for the grid system shall be nearest to the existing permanent features.

3.2 Survey Details:

It is the general survey work, carried out for engineering purposes. The survey shall be oriented towards furnishing information for project planning and detailed engineering work. The survey shall show all the existing features along with levels and important dimensions. Existing features such as roads, railway tracks, buildings, drains, man-holes, overhead & underground service lines, communication and supply lines, and similar permanent and temporary structures shall be shown. Each survey drawing shall show sets of perpendicular grid lines parallel to actual North, South, East, and West with respect to reference point. These are needed for the purpose of orienting and matching the survey drawings with layout of the unit.

Ground levels shall be shown on rectangular grid pattern at intervals of 10m. Additional levels shall show sudden change of levels if any shall also be indicated. Contours are to be drawn at 0.50 m intervals. Inverts levels of existing drains at regular intervals shall be taken.

 पी डी आई एल PDIL	SPECIFICATION FOR TOPOGRAPHICAL SURVEY FOR PIPELINE ROUTE	EM00227-TS-0201	0	 ओ पी एल OPAL
		DOCUMENT NO.	REV	
		Sheet 5 of 6		

Top levels of Man-holes shall also be taken. Existing levels at regular intervals and at all junctions for roads, top levels, width, curvature at turning points shall be shown. Any other important detail shall also be covered.

Co-ordinates of all existing buildings/ structures, hutments and other dwellings including power transmission lines, towers etc. Within the area shall also be indicated. Bench marks, reference points, triangulation stations, any existing bore-holes, oil wells trial pits etc. shall be clearly identified in the drawing indicating their values/co-ordinates. Co-ordinates mentioned above shall be surveyed with respect to the reference axes N-S and E-W.

All survey data collected during the day shall be plotted on the drawing sheet on the same day. These drawings shall be used for following day-to-day progress of work and for any quick reference.

3.3 Survey Drawing, Scale and Field Report:

All survey drawings shall be made in metric units.

Survey drawings which shall be submitted to Owner/Consultant shall be in color on white paper. The Tracing of the drawings shall be on plastic reproducible paper. Four copies each of drawings and one tracing for each drawing shall be submitted to the Owner/Consultant along with an editable soft copy.

A descriptive note regarding the site conditions and special features shall also be submitted in field reports in two copies. These notes will complement the drawing and will contain information which could not be covered in the survey drawings. The entire survey report shall also be submitted in editable soft copy.

The scale of the drawings shall be 1:100, A-1 size sheets shall be used for drawings.

3.4 Instruments, Tools and Tackles:

The use of proper instruments is paramount important factor in survey work. The Contractor shall arrange his own instruments, accessories, tools and tackles, necessary for conducting the survey as per precision required.

Experienced and qualified engineers, surveyors and draughtsman shall be engaged to carry out the work. All the final drawing and reports shall be duly signed and certified by surveyor.

3.5 Accuracy of Work for General Survey:

- Angular accuracy: Least count x Number of station in the closed traverse.
- Linear measurement : 1 in 10,000
- Equipment setting : ± 1.0 mm general accuracy
- Leveling : ± 5 mm x Km

 पी डी आई एल PDIL	SPECIFICATION FOR TOPOGRAPHICAL SURVEY FOR PIPELINE ROUTE	EM00227-TS-0201	0	 ओपीएल OPAL
		DOCUMENT NO.	REV	
		Sheet 6 of 6		

- e) True North.
- f) Grids at 5m interval shall be established parallel to true north. Working reference point "A" to be fixed at site with reference to some permanent bench mark.
- g) Any Angle between grid North & true North.
- h) Check the co-ordinations of existing roads and other units.
- i) Survey of 5M length beyond the periphery of the proposed boundary all around the proposed site.



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EM00227-TS-0202

0

DOCUMENT NO.

REV

Sheet 1 of 17

TITLE

**TECHNICAL SPECIFICATION FOR
GEOTECHNICAL INVESTIGATION WORK
AT LAUNCHER/RECEIVER STATION**

PROJECT

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	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 2 of 17	

CONTENTS

Sl. No.	Description	Sheet Number
1.00	SCOPE	3
2.00	CODES	3
3.00	SOIL INVESTIGATION	4
3.01	BORING	4
3.02	IN-SITU TESTING	6
3.03	SAMPLING	11
4.00	LABORATORY TESTING ON SOILS	12
5.00	REPORT	15
ANNEXURE	LABORATORY TEST RESULTS	17

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 3 of 17	

1.00 SCOPE

- 1.01 These specifications cover the procedure for soil investigations for foundations.
- 1.02 The work shall be carried out in accordance with the specification set out below and as directed by the Engineer-in-Charge, where necessary.

2.00 CODES

- 2.01 These specifications conform to the Indian Standards on soils and Foundations as given below :

IS: 1498 Classification and Identification of Soil for General Engineering Purposes.

IS: 1888 Method of Load Tests on Soil.

IS: 1892 Code of practice for Site Investigations for Foundations.

IS: 2131 Method for Standard Penetration Test.

IS: 2132 Code of Practice for Thin Walled Tube sampling of soils.

IS: 2720 Method of Test for Soils (Relevant Parts).

IS: 2911 Code of practice for design and construction of pile foundations.
(Part-I)

Section-1: Driven cast-in-situ concrete piles.

Section-2: Bored cast-in-situ piles.

Section-3: Driven precast concrete piles.

IS: 2911 Code of practice for design and construction of pile foundations.
(Part-II) Under Reamed Piles.

IS: 4434 Code of Practice for In-Situ-Vane-Shear Test for Soils.

IS: 4968 Method for sub-surface sounding for Soil:
(Part-I) Dynamic Method Using Cone without Bentonite Slurry.

IS: 4968 Method for sub-surface sounding for Soil:
(Part-II) Dynamic Method Using Cone and Bentonite Slurry.

IS: 4968 Method for sub-surface sounding for Soil:
(Part-III) Static Cone Penetration Test.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 4 of 17	

IS: 5249 Method of Tests for Determination of In-situ Dynamic Properties of Soils.

IS: 5529 Code of Practice for in-situ permeability tests :
(Part-I) Test in overburden.

IS: 6403 Code of Practice for determination of allowable bearing pressure on shallow foundations.

IS: 6935 Determination of water level in borehole.

IS: 8009 Code of practice for calculation of settlement of foundations : Shallow foundations subject to symmetrical static vertical loads.

IS: 9118 Method for measurement of pressure by means of manometer.

2.02 Reference to any code in these specifications shall mean the Latest revision of the code unless otherwise mentioned. In the event of any conflict between the requirements in these specifications and the referred codes, the former shall govern.

3.00 SOIL INVESTIGATIONS

3.01 BORING

Boring shall be carried out in accordance with the provisions of IS: 1892 and as per the specifications given below:

3.01.1.0 AUGER BORING

3.01.1.1 Augers shall be of helical or post hole type and may be manually or power operated. The Augers shall be used only up to ground water level and no water shall be added during auger boring. The diameter of the hole shall be minimum 100 mm and preferably 150 mm.

3.01.1.2 Uncased holes shall be permitted only up to a depth where the sides of the hole can stand unsupported. In case side fall is noticed, steps shall be taken immediately to stabilize the holes by using bentonite slurry or by casing pipes as directed by the Engineer.

3.01.1.3 No water shall be added while boring through cohesive soils and cohesion less soils above water table. While boring through cohesion less soil below water table, water in the casing shall always be maintained at or above the water table.

3.01.1.4 The cuttings brought up by the auger shall be carefully examined and soil descriptions duly recorded. Representative samples shall be preserved for laboratory testing.

3.01.1.5 Wherever in-situ tests are conducted and undisturbed samples are obtained at specified depths from the borehole, care shall be taken to ensure that the

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 5 of 17	

borehole is properly cleaned and free from foreign matters at the time of conducting these operations.

3.01.1.6 Water table in the borehole shall be carefully recorded and reported.

3.01.2.0 SHELL AND AUGER BORING

3.01.2.1 Augers shall be of helical or post hole type and may be manually operated. The diameter of the hole shall be minimum 100 mm and preferably 150 mm.

3.01.2.2 Specifications set forth in clauses 3.01.1.2 to 3.01.1.7 for Auger Borings shall apply to shell and Auger borings also.

3.01.2.3 Auger shall be used for soft to firm clay and for silt deposits at upper depths of 10 meters or up to the water table whichever is deeper. For deeper depths in such deposits and for very stiff to hard clays and dense sands located at any depth, use of shell may be made.

3.01.2.4 While boring in soft clays and in sandy deposits below water table, it shall be ensured that the shell diameter shall be at least 25 to 50 mm less than the casing diameter. This is to ensure that suction is not created in the borehole during withdrawal of the shell with consequent "Caving in and blowing" in the boreholes.

3.01.3.0 ROTARY MUD CIRCULATION DRILLING

3.01.3.1 The drilling shall be carried out manually conforming to IS: 1892 or by use of a suitable mechanical rig.

3.01.3.2 Drilling up to water table shall be done by auger and provisions of clauses 3.01.1.1 to 3.01.1.7 shall apply. Below the water table drilling by rotary and circulation shall be adopted.

3.01.3.3 Use of percussion tools may be permitted in very stiff to hard clays and dense sandy deposits.

3.01.3.4 Use of chisel/ percussion shall be permitted exclusively in strata having SPT below count greater than 100/30 cm penetration or less. If the rate of advancement of boring by chiseling is little or slow (i.e. less than 20cm in 4 hrs). The contractor may adopt core drilling with Nx size Tc bit. Where the core recovery exceeds 25%, the Tc bits shall be used for coring in soft/weathered rock and diamond bits for hard rock having core recovery 50% or more. Double tube core barrel shall be used for coring. The drill core and cutting shall be preserved carefully in core boxes and core recovery & RQD of each of the core taken shall be recorded. The selected core samples shall be transported to the laboratory for testing at no additional cost. The cost of core boxes shall be deemed to have included in the quoted rates. The contractor shall at his own cost transport the core boxes to the place of storage as directed by the Engineer-In-Charge.

3.01.4.0 TERMINATION CRITERIA

The boreholes shall be terminated as per the following criteria:

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION		EM00227-TS-0202	0
			DOCUMENT NO.	REV
	Sheet 6 of 17			

- a) When the specified depth of borehole is reached and drilling in soft/weak/weathered rock reaches 5.0m depth
or
- b) Drilling in hard rock reaches 1m depth.

If very hard soil is met within the borehole at depths shallower than specified in tender documents, the bore-hole shall be advanced by chiseling. If in the opinion of the Engineer-in-Charge, the rate of advancement of borehole is still low, coring may be resorted to subsequently.

3.01.5.0 BORE-LOG

Immediately on completion of a borehole, bore-log shall be prepared and submitted to the Engineer-in-Charge in triplicate. Detailed bore logs indicating co-ordinates, Reduced level, ground water table etc., sub soil section along various profiles indicating boreholes nos., depth wise in-situ tests like SPT

3.01.6.0 BACK-FILLING OF BOREHOLES

Backfilling of Bore holes to be done with 1:1Cement: Bentonite or Mud grout.

3.02 **IN-SITU TESTING**

3.02.1.0 STANDARD PENETRATION TEST

3.02.1.1 The test shall be conducted at regular intervals or at a depth where the strata changes, whichever occurs earlier. Up to a depth of 10 m, interval shall be 1.5 m. Thereafter SPT tests shall be conducted at an interval of 2 m up to 20 m depth, followed by an interval of 3 m beyond 20 m depth.

3.02.1.2 The test shall be carried out by driving a standard split spoon by means of 63.5 kg hammer with a 75 cm free fall. Detailed procedure of testing, as specified in IS: 2131 - "Method of Standard Penetration Test in Soils" shall be followed. The samples obtained in the split spoon shall be labeled and preserved for identification tests in the laboratory.

3.02.1.3 The standard penetration test shall be discontinued when N is greater than 75 blows for 30 cms of penetration.

3.02.2.0 VANE SHEAR TEST

3.02.2.1 These tests shall be conducted in soft to firm clays and sensitive clays. These tests shall also be conducted in case of stiff fissured clays where samples cannot be taken.

3.02.2.2 Test may be conducted from the bottom of bore-hole or by direct penetration from ground surface as per IS: 4434. The results of vane shear test shall be maintained and submitted to the Engineer-in-Charge in triplicate.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 7 of 17	

3.02.2.3 The apparatus used for Vane Shear Tests shall satisfy the requirements conforming to IS: 4434.

3.02.2.4 The following points shall be carefully supervised in the field :

- a. The vane selected shall be the largest size suitable for the general soil conditions at site.
- b. The vane shall be frequently checked for straightness.
- c. If torque versus rotation curve is to be determined, It is essential that the torque rods shall be calibrated prior to the use in the field. The amount of rod twist, if any, shall be established in degree per meter per unit torque. This correction becomes progressively more important as the depth of test increases. The calibration shall be made at least to the maximum depth of testing anticipated.
- d. During the test, it is essential that the rods and Vane are placed centrally in the bore-hole. For this purpose guides shall be used at an interval in depth of not more than 5.0 m.
- e. The apparatus shall be checked and calibrated as and when required.
- f. Straightness of vane shall be checked while the entire assembly of vane connected with rod is lowered to the bottom of bore-holes. Vane shall be pushed with a moderate steady force up to a depth of five times the bore-hole diameter below the bottom of bore-holes. Precaution shall be taken to ensure that no torque is applied to the torque rods during the application of thrust. No hammering shall be done.
- g. 5-minute's time shall be allowed to lapse after insertion of vane.
- h. Torque indicator readings shall be recorded at intervals of 30 seconds until the vane readings drop appreciably from the maximum.
- i. Samples shall be collected from the levels at which the tests have been conducted.
- j. In case of tests by Direct Penetration from Ground Surface, rods shall remain tight when vane is lowered. Guides shall be placed at every 3.0 m. to centralize and reduce friction between rods and extension pipe.

3.02.3.0 DYNAMIC CONE PENETRATION TEST

3.02.3.1 The method of conducting the tests and the details of the equipment shall conform to one of the two alternatives given below. The particular method to be followed is indicated under specific requirements:

- a. The test shall be conducted in accordance with IS: 4968 (Part- I). The cone size shall be 50 mm.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 8 of 17	

- b. The test shall be conducted in accordance with IS: 4968 (Part- II). A continuous flow of bentonite slurry shall be maintained through the rods and the cone so as to avoid friction between the rods and the soil. The cone size shall be 65 mm. and provided with vents for flow of bentonite slurry.

3.02.3.2 Dynamic cone penetration tests shall be terminated when blow counts (Ne) exceed 150 for two successive penetrations of 30 cms. each.

3.02.3.3 The results shall be recorded in a suitable tabular form enclosed, giving blow counts for every 30 cm. penetration, supplemented by a graphical plot of blow counts versus depth.

3.02.4.0 STATIC CONE PENETRATION TEST

3.02.4.1 The method of conducting tests and the details of the equipment used for this test shall conform to the requirements of IS: 4968 (Part- III).

3.02.4.2 The capacity of the equipment to be used for test shall not be less than 3.0 tonnes but preferably 10.0 tonnes.

3.02.4.3 The test shall not be carried out on gravelly soils and for soils with Standard Penetration Value "N" greater than 50.

3.02.5.0 PLATE LOAD TEST

3.02.5.1 Plate Size and Thickness:

- For Clayey and silty soils and for loose to medium compact sandy soils ($N < 15$), chequered plate of 60 x 60 cm shall be used. Alternatively, circular plate of equivalent area also may be used.
- For dense sandy or gravelly soils ($15 < N < 30$) the smallest size shall be 30 cm. square and largest 75 cm. square. Circular plates of equivalent areas may also be used.
- The minimum thickness of the chequered plate shall be 25 mm.

3.02.5.2 Test Pit:

- Test pit shall be at least five times as wide as the test plate and the depth of the pit shall be the same as the depth of actual foundations.
- If the test is to be done on strata below water table, the water level shall be maintained at the plate level, throughout the test by dewatering, especially in sandy soils.
- The test shall be conducted immediately after excavation of soil.

3.02.5.3 Placing of Test Plate:

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 9 of 17	

Plate shall be placed on the soil by spreading fine sand in a layer not exceeding 5 mm carefully leveled and set horizontally at the bottom of the pit. A minimum seating pressure of 70 g/cm² shall be applied and removed before starting of the load test.

3.02.5.4 The method of conducting Plate Load Tests shall conform to IS: 1888.

3.02.5.5 Settlement and Observation:

- a. Settlement shall be recorded with at least two dial gauges, resting at diametrically opposite ends of the plate.
- b. Settlement shall be observed for each increment of load after an interval of 1, 2.25, 4, 6.25, 9, 16, 25, 36 and 64 minutes and thereafter every one hour.
- c. The next load increment shall be applied when the rate of settlement is less than 0.02 mm/hr with a minimum period of two hours. For computing the rate of settlement its extrapolation for periods less than one hour shall not be permitted.

3.02.5.6 Record:

- a. Record shall consist of the following:
 1. Load-settlement reading in tabular form.
 2. Time-settlement curve for each load stage.
 3. Load-settlement curve in natural and log-log scale.
 4. Modulus of sub-grade reaction evaluated from test.
- b. In addition to above, the record shall also contain the followings :
 1. Date
 2. List of personnel
 3. Weather conditions
 4. Irregularity in routine procedure, if any.

3.02.5.7 Post Test Requirements:

- a. Back-filling of the pit shall be carried out in an approved manner and as per the directions of Engineer-in-Charge on completion of test.
- b. An auger bore-hole shall be made from the depth of test extending to a depth of 6.0 m below test depth so as to ascertain the nature of sub-soil test depth. If required, undisturbed samples shall be obtained at suitable depths from bore-hole.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 10 of 17	

3.02.6.0 FIELD CBR TEST

This test shall be conducted as per IS: 2720 (Part-XXXI) at specified depth after removing top soil, vegetation and organic matter.

3.02.7.0 DYNAMIC SOIL TESTS

3.02.7.1 General

The following tests shall be conducted for the determination of dynamic properties of soil for use in the design of foundations subject to vibratory loads:

3.02.7.2 Wave Velocity Measurements

The test set up and method of conducting the tests shall conform to IS: 5249. The concrete block shall be cast at the expected foundation level. After completion of the test, back filling of the pit shall be carried out in an approved manner and as per the directions of the Engineer-in-Charge after removing the concrete block.

3.02.7.3 Resonance Tests

The equipment set up and method of conducting the tests shall conform to IS: 5249.

3.02.7.4 Cyclic Plate Load Test

The test set up and plate size shall conform to that for plate load tests. After stabilization of settlements for each load increment, load shall be removed and elastic rebound and residual settlement recorded.

3.02.7.5 Repeated Triaxial Shear Test

This test shall be carried out for confining pressure ranging from 0.5 Kg/cm² 4.0 Kg/cm².

The triaxial sample shall first be subjected to an initial load equal to the anticipated static working load, which shall be indicated at the time of testing. Positive and negative values of a small increment of load shall then be applied to the sample in cycles and graph plotted of stress against strain. E-Value shall be obtained from this plot after obtaining a stable state.

Results of all the above tests shall be incorporated in the form of a plot of shear modulus Vs. confining pressure for a range of pressure up to 4.0 Kg/cm². All the stress-strain diagrams as well as Mohr's circle envelopes is to be included in the report.

3.02.7.6 Electrical Resistivity Test

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 11 of 17	

This test shall be conducted as per Appendix B, Clause 3.2 of IS1892 - 1979. The test shall be done by using 4 points. The locations where ERT IS to be performed shall be finalized in consultation with EIC.

3.03 **SAMPLING**

3.03.1.0 Sampling Record:

All samples (disturbed and undisturbed) collected from the pit/bore-hole shall be labeled and attached to the top of sampler, in case of undisturbed samples. In case of samples collected in Jar or other containers, the label should be properly pasted to the Jar/container.

3.03.2.0 Undisturbed Soil Samples from Borehole:

3.03.2.1 Samplers for recovering undisturbed samples from cohesive soils at the specified depth shall conform to IS: 2132. However, use of samples less than 70 mm diameter shall not be permitted.

3.03.2.2 The sampling procedure shall conform to IS: 2132. Both the area ratio of the cutting edge, as well as recovery ratio of the sample shall be measured and reported. For normal soils, area ratio of the sampling tubes, shall conform to IS: 2132, that is it may vary from 10.9 percent to 12.4 percent but for sampling in very hard and dense soils, use of thick walled sampling tubes with area ratio not exceeding 20% may be permitted subject to the approval of the Engineer-in-Charge.

3.03.2.3 In order to reduce the wall friction, suitable precautions such as oiling inside and outside the sampling tubes shall be observed. The sampling tube shall have smooth finish.

3.03.2.4 In soft to firm clays, undisturbed samples shall be collected by pushing the tube continuously without impact or twisting. Driving of sampling tubes shall be permitted only if stiff to very stiff and hard deposits exists.

3.03.2.5 For highly sensitive soils, piston samples shall be employed.

3.03.2.6 For soft clays exceeding more than 15 m depth from the ground level, collection of undisturbed samples shall be supplemented by the In-situ Vane shear test.

3.03.2.7 The top and bottom of the sample shall be clearly marked on the sampling tube.

3.03.2.8 Undisturbed samples shall be tested within a period of two weeks of taking them from the bore holes of Trial pit.

3.03.2.9 If any space is left between the end of the tube and top of wax, the same shall be tightly packed with raw dust or any other suitable material. A close fitting lid or screwed cap shall then be placed on each end of the tube and held in position by adhesive tape.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 12 of 17	

3.03.3.0 Undisturbed Soil Samples from Trial Pits

3.03.3.1 Samples shall be obtained at specified depths from Trial Pits in a timber or steel box as under:

A benching shall be made at the level where it is proposed to take the sample. A cube of 30 cm size shall be formed by careful trimming with knife or any other suitable sharp instrument. A timber box having dimensions slightly larger than the soil cube shall be slipped on it so as to act as a container and the sample removed from the pit without causing any disturbance.

3.03.3.2 After recovery of the sample, all exposed faces shall be sealed with wax to prevent moisture loss and the sample shall be properly labeled and transferred to the laboratory immediately.

3.03.4.0 Disturbed Soil Samples

Disturbed soil samples shall be collected at every half a meter and at every change of strata from boreholes as well as from trial pits. Identification labels indicating depth. Borehole number and visual soil classification shall be affixed on the containers.

3.03.5.0 Water Samples

3.03.5.1 Samples of ground water shall be obtained from the specified boreholes at the depths specified by Engineer-in-Charge.

3.03.5.2 At the specified depth water shall be bailed or pumped out so that fresh ground water flows into the borehole. Care shall be taken in avoiding any contamination with surface water at any time. Water sample shall be collected in a five liter polythene or glass container and labeled properly.

4.00 LABORATORY TESTING OF SOILS

4.01 STORING OF SOIL SAMPLES IN LABORATORY

4.01.1.0 Soil samples shall be inspected and tested shortly after their arrival at the laboratory. Proper arrangement for storing shall be made in cases where testing of samples is not possible immediately after they are brought to the laboratory.

4.01.2.0 Bags of canvas, cans and bins can be used for storing large quantities of soil. The containers should have a label or tag which gives such data as soil type, project location, sampling date, boring number, sample depth, etc.

4.01.3.0 If the undisturbed clay samples are taken from pit, they should be covered with a protective coating. The coating shall preferably be with wax having melting point between 120° to 160°F. The wax coating can be applied by either dipping the soil sample in the melted wax or using a soft brush to spread the melted wax. Wax should not be heated to more than a few degrees above its melting temperature, since heating to higher temperatures tend to drive off more volatile hydro-carbons, thus making the wax more permeable and more brittle upon coating.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 13 of 17	

4.01.4.0 If the soil sample is to be stored for more than 15 days, a protective coating of wax, in more than one layer, is recommended with a total thickness of 12 mm to 18 mm.

4.01.5.0 A few selected soil samples shall be stored in the laboratory till the soil investigation report is finalized and approved by the Engineer.

4.02 HANDLING OF UNDISTURBED SAMPLES IN LABORATORY

4.02.1.0 The undisturbed samples shall be handled in the laboratory with due precaution to avoid disturbances and loss of moisture content which may adversely affect the test results.

4.02.2.0 Unprotected samples shall never be handled with bare hands because the hands foster disturbance and loss of moisture. The sample shall be protected by using Aluminium cellophane or wax paper before handling it.

4.02.3.0 When transporting a specimen, it should be supported over its entire length by using a mould, plate or paper sling.

4.02.4.0 A chunk from an undisturbed sample collected from pit shall be cut with a wire saw which consists of a frame with a piano wire stung tightly across it. Any wax or other covering used to protect the sample shall be cut with a knife or hacksaw. Care shall be taken when trimming the finished specimen. The wire in the wire saw used for final trimming shall be smaller in diameter than that used for preliminary cutting and the wire shall be cleaned prior to each cut.

4.02.5.0 In case of samples taken in sample tubes, the samples shall be extrude from their tubes by a steady pushing process and not by a jerky or driving one. Prior to extrusion, the plug which protects the end of the soil shall be removed by scrapping it with a knife or sawing off that portion of the tube which contains plug. The extrusion shall employ the same direction of motion or motion of the soil with respect to the tube as existed during sampling, because a reversal of stress tends to cause disturbance.

4.03 PROCEDURES OF TESTING

4.03.1.0 All apparatus used for laboratory testing shall conform to the specifications laid down in the relevant Indian Standards.

4.03.2.0 All testing procedures shall conform to those laid down in relevant Indian Standards.

4.03.3.0 For proper interpretation, results of each laboratory test shall be presented either as given in relevant Indian Standard or as specified in specific requirements.

4.03.4.0 Attenberg Limits

The tests result should include liquid limit and plastic limit of the soil samples tested. These tests should be conducted as per IS: 2720 Part V.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 14 of 17	

4.03.5.0 Natural Moisture Content

In case of organic soils, the oven temperature shall be 60 deg. C and not 105 deg.C.

4.03.6.0 Specific Gravity

This test should be conducted as per IS: 2720, Part 3.

4.03.7.0 Grain Size Distribution

Wherever applicable both the sieve and hydrometer analysis shall be conducted to indicate complete range of grain size in the soil sample tested. Generally, Hydrometer analysis will be carried out, wherever percentage passing No.200 sieve is greater than 30%.

4.03.8.0 Unconfined Compression Test

This test shall be conducted as per IS: 2720, Part X.

4.03.9.0 Free Swelling Index

This test shall be conducted as per IS: 2720, Part 40.

4.03.10.0 Swelling Pressure Test

This test shall be conducted as per IS: 2720, Part 41.

4.03.11.0 Consolidation Tests

The following loading stage shall be employed: 0, 0.1, 0.25, 1.0, 2.0, 4.0 and 8.0 kg / sq.cm. From e Vs $\log p$ curves, pre consolidation pressure shall be determined to establish whether the soil is normally consolidated or over consolidated. The point (e , p) showing initial condition of the soil under test must be specifically marked on the consolidation curves. Settlement predictions based on the field virgin compression curve shall only be acceptable. The procedure adopted in respect of obtaining compression indices from the field curve and that for computing settlements for the type of clay under consideration shall be clearly illustrated in the report. It is to be noted that deviations from the standard procedure of performing consolidation tests given in IS:2720 are permissible in order to enable computation of settlements based on the above procedure i.e. cycles (s) of loading, unloading and reloading shall be employed wherever required. The following curves shall be included in the report:

- e vs. : $\log p$
- e vs. : p
- Compression vs.: $\log t$ or compression vs t .

The choice of relationship depends upon the shape of the plot, which enables a clear determination of C_v , the coefficient of consolidation.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 15 of 17	

The time period required for 50% and 90% primary consolidation should be given in the report.

Computation of secondary settlements, if significant, shall also be made and included in the report.

4.03.12.0 Chemical Tests on Water & Soil

Chemical tests shall be conducted on soil and water samples to report the following:

- a) pH
- b) Chloride
- c) Sulphate
- d) Sulphite
- e) Organic contents
- f) Total hardness

4.03.13.0 Proctor Density Tests


These tests shall be conducted as per IS: 2720 Part VII samples collected randomly in consultation with Engineer-in-Charge.

5.0 R E P O R T

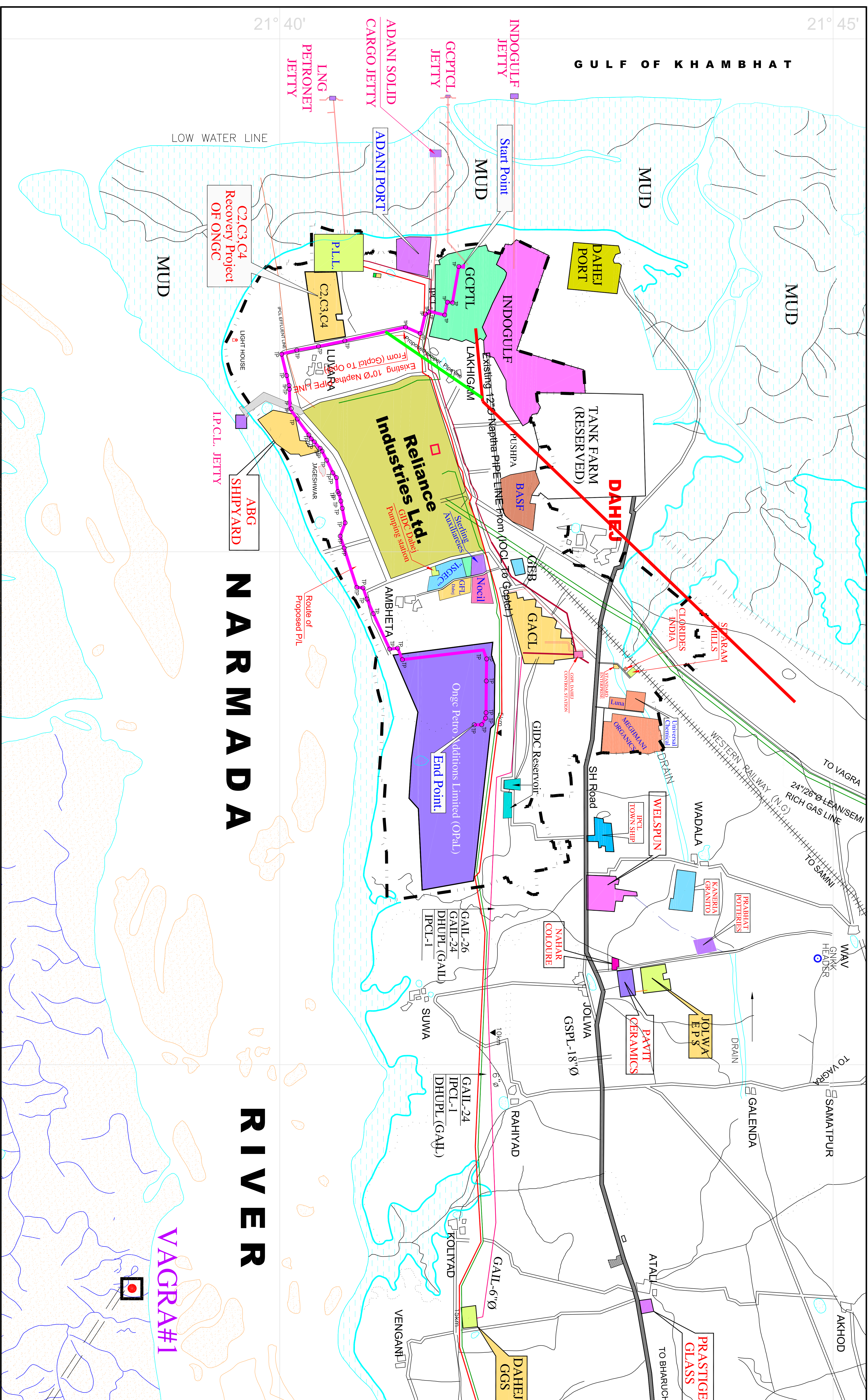
- 5.01 The report shall state in brief the description of the test procedures employed. It shall contain all field and laboratory test results.
- 5.02 The report shall also include wherever required a sample calculation with reference to formula used to evaluate the various parameters.
- 5.03 Report shall also contain the summary of various soil parameters evaluated, in a Performa as given in ANNEXURE- A enclosed.
- 5.04 Report shall contain character and genesis of soil.
- 5.05 Detailed bore-logs, subsoil sections, laboratory and field test results both in tabular as well as in graphical form and a plot plan showing locations and reduced levels of bore holes and other tests.
- 5.06 Results obtained and their interpretation.
- 5.07 Recommendation for type, depth, ultimate and safe bearing pressure and settlement of foundations for the following structures:
 - i. Process units, power plants etc., which carry a heavy unit load.
 - ii. Non plant structures such as, substation, control room etc., which are lightly loaded.
 - iii. Other structures like base and retaining wall for mound, pipe rack, Pipe Bridge, pump foundations founded at or near ground surface.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION	EM00227-TS-0202	0
		DOCUMENT NO.	REV
		Sheet 16 of 17	

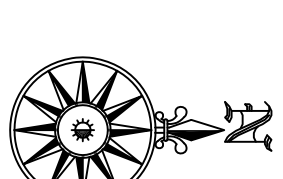
- 5.08 Recommendations shall also be given for allowable bearing pressure and settlements for foundations of sizes ranging from 1 to 10 metres placed at different depths ranging from surface to 3 metres below the ground surface.
- 5.09 Aggressiveness of soil and soil water to reinforced concrete and steel and other building materials.
- 5.10 Suitability of soil and degree of compaction of fill for the pavement and tank farms and recommendation for thickness of pavement for class AA and Class A loadings.
- 5.11 Modulus of subgrade reaction for pressure ranging up to 3 Kg/cm². The recommended values shall include the effect of size, shape and depth of foundation.
- 5.12 In case of poor soil conditions recommendations are to be made for the following:
- Ground improvement techniques, stabilizing slopes, etc. adopting internationally accepted norms and practices considering economy of foundation system. In case of ground improvement, type(s) of improvement method(s) recommended, depth of treatment and settlements and bearing capacity estimates after treatment shall be indicated.
 - Pile foundations, if considered necessary. If so, type(s) of pile recommended (bored/driven), depth of pile, depth of fixity, negative skin friction, and safe load capacity for different sizes of piles. Sample calculations showing load carrying capacity of both driven & bored pile to be included in the soil report.
- All recommendations shall be supported by back up calculations.
- 5.13 Any other information of special significance encountered during investigation and likely to have a bearing on design and construction.
- 5.14 Interim reports based on the data available shall be supplied to the Engineer-in-Charge at various stages of investigation for review/comments. Comments, if any, on these reports shall be duly incorporated in the final report. 6 copies of final report along with soft copy to be submitted.
- 5.15 A set of longitudinal and transverse soil profile connecting various boreholes shall be presented in order to show the variation of soil stratum.

	TECHNICAL SPECIFICATIONS FOR GEOTECHNICAL INVESTIGATION WORK AT LAUNCHER/RECEIVER STATION		EM00227-TS-0202	0
			DOCUMENT NO.	REV
			Sheet 17 of 17	




Consolidation Test	mv		
	Pr. Range (Kg/Cm ²)	(Kg/Cm ²)	
Shear Test	Ø	(Deg.)	
	C	(Kg/Cm ²)	
Atterberg Limit	PL	(%)	
	LL	(%)	
Grain Size Distribution	Clay	(%)	
	Silt	(%)	
	Sand	(%)	
	Gravel	(%)	
Sp. Gravity			
Dry Density (g/cc)			
Bulk Density (g/cc)			
NMC (%)			
Brief Description			
Depth in Metre			
Borehole / Pit No.			



KEY ROUTE MAP



TOTAL LENGTH STATEMENT

SR No.	SYMBOL	DESCRIPTION	Length (km)
1		Existing 10"Ø Naphtha Pipe line Route From (Gcpd1 To Opai)	12.520
2		Existing 12"Ø Naphtha Pipe lineRoute From (IOCL To Gcpd1)	100.00
3		Proposed 10"Ø (hold)Jumper Pipe line From (SR No.1 To SR No.2)	08.000 (Appro

3					
2					
1					
10.01.2017	FOR REVIEW	DABHI RAMESH	DRN	CKD	APR
REV	DATE	DESCRIPTION	DRN	CKD	APR
CLIENT :			REV	0	

ONGC Petro Additions Limited
4th Floor, VCCI Commercial Complex,
73-GIDC Makarpura, Vadodara 390 010

PMC SERVICES FOR JUMPER PIPELINE

PROJECT :	DRG. NO:
PMC SERVICES FOR JUMPER PIPELINE	EM00227-9511-0000
TITLE :	AREA:

AREA.	TITLE :

TITLE :	AREA:
---------	-------



KEY ROUTE MAP

TITLE :	AREA:
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EM002270001

**प्रादेशिक
PDL**

PROJECTS & DEVELOPMENT INDIA LIMITED
WESTERN REGIONAL OFFICE, BARODA

	PROJECTS & DEVELOPMENT INDIA LTD.	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 1 of 7		

UNPRICED SCHEDULE

TITLE
SCHEDULE OF RATES
FOR
PIPELINE ROUTE SURVEY

PROJECT
PMC SERVICES FOR JUMPER PIPELINE
BETWEEN IOCL KDPL AND OPAL PIPELINE
AT
DAHEJ, GUJRAT



OWNER
ONGC PETRO ADDITIONS LTD
VADODARA

ENGINEERING CONSULTANT
PROJECTS & DEVELOPMENT INDIA LIMITED
VADODARA

0	16-03-2017	16-03-2017	ISSUED FOR INQUIRY	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD



FORM NO:

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	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 2 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	

Note:	1. The Contractor shall note that the supply of Manpower, arranging precise instruments, cutting of wild bushes, etc. required for proper execution of the work, shall be their responsibility.		-			
	2. The Contractor shall note that the supply / procurement of all the materials, required for the job, shall be their responsibility of the Contractor.		-			
	3. The Contractor shall inspect and examine the site and its surrounding and shall satisfy himself before submitting his bid as to the form and nature of the site, the quantum and the nature of work and material necessary for successful completion of the works and the means of access to site and in general shall himself obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his Tender. Under no circumstances, extra payment consequent on any misunderstanding or otherwise on the part of the Contractor shall be allowed.		-			
	4. The Contractor may required to collect UCS for pile design when encounter with rock. No extra payment shall be made against this work.		-			
	5. Quantities indicated in SOR may vary at site; payment shall be made on actual quantity of work executed.		-			

	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 3 of 7		



Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	

A. PIPELINE ROUTE SURVEY

PIPELINE						
1	Survey for Pipeline Route & ROU					
a	<p>Carrying out site/ location selection for Hook Point & Pipeline route survey including identification/ locating the centre-line of pipeline, alignment, cross section, Route Map, survey reports and ROU data based on the field data / documents by providing all man power, tools, tackles, materials, equipment and other support facilities necessary for the work.</p> <p>The work shall also include: Collection & submission of latest ownership details, Submission of updated Route map, alignment sheets, cross sectional drawings of crossings, digitized village maps; en-Route for entire length as per revised Chainages, Submission of Survey report, other drawings / Documents / Details etc. In hard as well as soft copies in 04 sets.</p> <p>The work shall be carried out in stage wise (refer cl. 2 of tender document no. EM00227-SOW-0201) as per Technical specifications, Scope of work and as per directions of Engineer-In-Charge. (Note:-Entire Data in Hard/Soft copy will be provided.)</p>	KM	8.0			
b	<p>Providing & fixing pre-cast RCC pillars of size 200x150x800mm for IPs, TPs & at either side of major crossings. Pillars (RCC) are to be fixed at interval so 500mts approx. along the centre line of pipe line Route. The work shall be carried out as per Technical specifications, Scope of work and as per direction so Engineer-In-Charge.</p>	No.	16			
2	Soil Investigation Survey					
a	<p>Carrying out soil investigation work along the pipe line Route as per specification by providing all manpower, tools, tackles, materials, equipment and other support/facilities necessary for the work. The work shall include boring of minimum 150mm dia bore hole from Natural Ground Level up to 3m depth @ 500mts centre to centre and up to 5mts depth at major crossings for visual classifications. Soil Samples so collected to be tested in Lab and reports to be submitted to</p>	KM	8.0			

FORM NO. :

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	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 4 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	OWNER/CONSULTANT along with complete report.					
3	UG pipelines, utilities detection SURVEY					
a	Locating existing underground pipeline(s) (product / utilities) using pipeline locator along proposed pipeline route. In case of presence of any other cables, water line, sewer line, etc. is encountered, the same may also be located using cable / pipeline locators etc. Plotting of the same on alignment sheets, cross section etc. At specific areas, trial excavations will be needed to confirm actual physical location/details of pipelines, cables etc	KM	8.0	UNPRICED		

B. GEOTECHNICAL SURVEY AT STATION, IF REQUIRED

REFER CL. 2 OF TENDER DOCUMENT NO. EM00227-SOW-02011

4	Mobilisation of necessary plant / equipment, personnel and materials at site, shifting the same from place to place complete in all respect for carrying out GEOTECHNICAL investigation work for the specified area as shown in the drawings and as per enclosed scope of work, specifications and direction of Engineer-in-Charge within the stipulated time schedule and demobilisation after completion of field work.	Lump sum	1	UNPRICED		
5	Making 150 mm. nominal diameter boreholes at various locations in all types of soil including disintegrated / weathered rocks using suitable approved method of boring including chiseling, cleaning, providing casing pipe as required or as directed by the Engineer-in-Charge including collection of water samples and disturbed soil samples, observation of ground water table etc., transportation of all the collected samples to the laboratory and back filling of bore holes on completion of the same, complete in all respect as per scope of work, specifications and	Meter	10			



SOR FOR PIPELINE ROUTE SURVEY FOR
JUMPER PIPELINE

EM00227-9511-0940

0

DOCUMENT NO.

REV



Sheet 5 of 7



Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	direction of Engineer-in-Charge for depth from natural ground level to 10.0 M depth					
6	Collecting 100 mm nominal dia. undisturbed soil samples at every 1.0M interval up to 3.0M and at every 2.0M interval beyond 3.0M and at the change of strata from the bore holes at various locations and transporting all the collected samples to the laboratory for specified tests, complete in all respect as per scope of work and specifications and direction of Engineer-in-Charge.	Each	6			
7	Performing Standard Penetration tests in the bore holes at specified interval and at the change of strata complete in respect as per specifications and direction of the Engineer-in-Charge.	Each	6			
8	Collecting ground water samples from bore holes and transporting the same to the laboratory as per the scope of work, specification and direction of Engineer- in-Charge.	Each	1			
9	Conducting Various laboratory tests on soil samples at an approved laboratory including preparation of soil samples to determine the following properties of soil, complete in all respect as per scope of work and specifications:					
	A) Natural Water Content	Each	6			
	B) Bulk and Dry Density	Each	6			
	C) Specific Gravity and Void Ratio	Each	1			
	D) Liquid Limit and Plastic Limit	Each	6			

FORM NO: :



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	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 6 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	E) Grain Size Analysis :					
	i) Sieve Analysis	Each	6			
	ii) Hydrometer Analysis	Each	1			
	F) Unconfined Compression Test	Each	1			
	G) Direct Shear Test	Each	1			
	H) Triaxial Shear Tests Unconsolidated Undrained Test	Each	1			
	I) Consolidation Test	Each	1			
	J) Swelling Pressure Test	Each	1			
	K) Shrinkage Limit Test	Each	1			
	L) Proctor Density Test	Each	1			
	M) Differential free swell index test	Each	1			
10	Conducting Chemical Test on soil samples to determine pH Value, Sulphate Content and Chloride Content.	Each	1			
11	Conducting Chemical Test on ground water samples to determine pH value, Sulphate content and chloride content.	Each	1			
12	Conducting Electrical Resistivity test at locations within plot area, complete in all respects as per scope of work and specifications and direction of Engineer-in-charge.	Each	1			
13	Submitting Draft / Interim Report in 3	Lump	1			

FORM NO. :


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	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 7 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	(three) copies and Final Report in 3 (three) copies after the approval of Draft / Interim Report including all field records and laboratory test results, graphs, recommendations etc. for area wise / depth wise, complete in all respect as per scope of work and specifications. If pile is required, Then Type of pile, diameter and depth of pile. Depth of fixity, Pile capacity (in Compression, Tension & lateral Shear) & Structural details.	sum				
	Grand Total :- Total Amount (inclusive of all taxes, duties, octroi, fees etc. imposed by State/ Central government, local body but excluding Service Tax as applicable) Rs.					

Signature of Contractor

Signature of Owner

	Price Schedule / Schedule of Rates(SOR) ANNEXURE - V	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-V	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

ANNEXURE - V

Price Schedule / Schedule of Rates(SOR) **for**

Pipeline Route Survey for the project jumper pipeline between IOCL, KDPL and OPAL pipeline at Dahej, Gujarat attached Document No. EM00227-9511-0940, Rev.0 dated 16.03.17

Note: Bidders are requested to please submit the prices STRICTLY in the attached Format as per instruction given in Annexure-II (Instruction to Bidder).

	PROJECTS & DEVELOPMENT INDIA LTD.	EM00227-9511-0940	0	
		DOCUMENT NO.	REV	
		Sheet 1 of 7		

ANNEXURE-V (PRICE SCHEDULE/SOR)

TITLE
SCHEDULE OF RATES
FOR
PIPELINE ROUTE SURVEY

PROJECT
PMC SERVICES FOR JUMPER PIPELINE
BETWEEN IOCL KDPL AND OPAL PIPELINE
AT
DAHEJ, GUJRAT



OWNER
ONGC PETRO ADDITIONS LTD
VADODARA

ENGINEERING CONSULTANT
PROJECTS & DEVELOPMENT INDIA LIMITED
VADODARA

0	16-03-2017	16-03-2017	ISSUED FOR INQUIRY	KMP	SS	OBK
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD



FORM NO:

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<div> पी डी आई एल PDIL</div>	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	<div> ओपीएल OPAL</div>
		DOCUMENT NO.	REV	
		Sheet 2 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	



Note:	<p>1. The Contractor shall note that the supply of Manpower, arranging precise instruments, cutting of wild bushes, etc. required for proper execution of the work, shall be their responsibility.</p> <p>2. The Contractor shall note that the supply / procurement of all the materials, required for the job, shall be their responsibility of the Contractor.</p> <p>3. The Contractor shall inspect and examine the site and its surrounding and shall satisfy himself before submitting his bid as to the form and nature of the site, the quantum and the nature of work and material necessary for successful completion of the works and the means of access to site and in general shall himself obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his Tender. Under no circumstances, extra payment consequent on any misunderstanding or otherwise on the part of the Contractor shall be allowed.</p> <p>4. The Contractor may required to collect UCS for pile design when encounter with rock. No extra payment shall be made against this work.</p> <p>5. Quantities indicated in SOR may vary at site; payment shall be made on actual quantity of work executed.</p>		-			
			-			
			-			
			-			

<div> पी डी आई एल PDIL</div>	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	<div> ओपीएल OPAL</div>
		DOCUMENT NO.	REV	
		Sheet 3 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	

A. PIPELINE ROUTE SURVEY

PIPELINE						
1	Survey for Pipeline Route & ROU					
a	<p>Carrying out site/ location selection for Hook Point & Pipeline route survey including identification/ locating the centre-line of pipeline, alignment, cross section, Route Map, survey reports and ROU data based on the field data / documents by providing all man power, tools, tackles, materials, equipment and other support facilities necessary for the work.</p> <p>The work shall also include: Collection & submission of latest ownership details, Submission of updated Route map, alignment sheets, cross sectional drawings of crossings, digitized village maps; en-Route for entire length as per revised Chainages, Submission of Survey report, other drawings / Documents / Details etc. In hard as well as soft copies in 04 sets.</p> <p>The work shall be carried out in stage wise (refer cl. 2 of tender document no. EM00227-SOW-0201) as per Technical specifications, Scope of work and as per directions of Engineer-In-Charge. (Note:-Entire Data in Hard/Soft copy will be provided.)</p>	KM	8.0			
b	<p>Providing & fixing pre-cast RCC pillars of size 200x150x800mm for IPs, TPs & at either side of major crossings. Pillars (RCC) are to be fixed at interval so 500Mts approx. along the centre line of pipe line Route. The work shall be carried out as per Technical specifications, Scope of work and as per direction so Engineer-In-Charge.</p>	No.	16			
2	Soil Investigation Survey					
a	<p>Carrying out soil investigation work along the pipe line Route as per specification by providing all manpower, tools, tackles, materials, equipment and other support/facilities necessary for the work. The work shall include boring of minimum 150mm dia bore hole from Natural Ground Level up to 3m depth @ 500mts centre to centre and up to 5mts depth at major crossings for visual classifications. Soil Samples so collected to be tested in Lab and reports to be submitted to</p>	KM	8.0			



 पी डी आई एल PDIL	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	 ओपीएल OPAL
		DOCUMENT NO.	REV	
		Sheet 4 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	OWNER/CONSULTANT along with complete report.					
3	UG pipelines, utilities detection SURVEY					
a	Locating existing underground pipeline(s) (product / utilities) using pipeline locator along proposed pipeline route. In case of presence of any other cables, water line, sewer line, etc. is encountered, the same may also be located using cable / pipeline locators etc. Plotting of the same on alignment sheets, cross section etc. At specific areas, trial excavations will be needed to confirm actual physical location/details of pipelines, cables etc	KM	8.0			



B. GEOTECHNICAL SURVEY AT STATION, IF REQUIRED

REFER CL. 2 OF TENDER DOCUMENT NO. EM00227-SOW-02011



4	Mobilisation of necessary plant / equipment, personnel and materials at site, shifting the same from place to place complete in all respect for carrying out GEOTECHNICAL investigation work for the specified area as shown in the drawings and as per enclosed scope of work, specifications and direction of Engineer-in-Charge within the stipulated time schedule and demobilisation after completion of field work.	Lump sum	1			
5	Making 150 mm. nominal diameter boreholes at various locations in all types of soil including disintegrated / weathered rocks using suitable approved method of boring including chiseling, cleaning, providing casing pipe as required or as directed by the Engineer-in-Charge including collection of water samples and disturbed soil samples, observation of ground water table etc., transportation of all the collected samples to the laboratory and back filling of bore holes on completion of the same, complete in all respect as per scope of work, specifications and	Meter	10			

<div> पी डी आई एल PDIL</div>	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	<div> ओपीएल OPAL</div>
		DOCUMENT NO.	REV	
		Sheet 5 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	direction of Engineer-in-Charge for depth from natural ground level to 10.0 M depth					
6	Collecting 100 mm nominal dia. undisturbed soil samples at every 1.0M interval up to 3.0M and at every 2.0M interval beyond 3.0M and at the change of strata from the bore holes at various locations and transporting all the collected samples to the laboratory for specified tests, complete in all respect as per scope of work and specifications and direction of Engineer-in-Charge.	Each	6			
7	Performing Standard Penetration tests in the bore holes at specified interval and at the change of strata complete in respect as per specifications and direction of the Engineer-in-Charge.	Each	6			
8	Collecting ground water samples from bore holes and transporting the same to the laboratory as per the scope of work, specification and direction of Engineer- in-Charge.	Each	1			
9	Conducting Various laboratory tests on soil samples at an approved laboratory including preparation of soil samples to determine the following properties of soil, complete in all respect as per scope of work and specifications:					
	A) Natural Water Content	Each	6			
	B) Bulk and Dry Density	Each	6			
	C) Specific Gravity and Void Ratio	Each	1			
	D) Liquid Limit and Plastic Limit	Each	6			

 पी डी आई एल PDIL	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	 ओपीएल OPAL
		DOCUMENT NO.	REV	
		Sheet 6 of 7		


Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	E) Grain Size Analysis :					
	i) Sieve Analysis	Each	6			
	ii) Hydrometer Analysis	Each	1			
	F) Unconfined Compression Test	Each	1			
	G) Direct Shear Test	Each	1			
	H) Triaxial Shear Tests Unconsolidated Undrained Test	Each	1			
	I) Consolidation Test	Each	1			
	J) Swelling Pressure Test	Each	1			
	K) Shrinkage Limit Test	Each	1			
	L) Proctor Density Test	Each	1			
	M) Differential free swell index test	Each	1			
10	Conducting Chemical Test on soil samples to determine pH Value, Sulphate Content and Chloride Content.	Each	1			
11	Conducting Chemical Test on ground water samples to determine pH value, Sulphate content and chloride content.	Each	1			
12	Conducting Electrical Resistivity test at locations within plot area, complete in all respects as per scope of work and specifications and direction of Engineer-in-charge.	Each	1			
13	Submitting Draft / Interim Report in 3	Lump	1			

<div> पी डी आई एल PDIL</div>	SOR FOR PIPELINE ROUTE SURVEY FOR JUMPER PIPELINE	EM00227-9511-0940	0	<div> ओपीएल OPAL</div>
		DOCUMENT NO.	REV	
		Sheet 7 of 7		

Sr. No.	Description of Items	Unit	Qty.	Unit Rate		Amount (Rs.)
				In Figures	In Words	
	(three) copies and Final Report in 3 (three) copies after the approval of Draft / Interim Report including all field records and laboratory test results, graphs, recommendations etc. for area wise / depth wise, complete in all respect as per scope of work and specifications. If pile is required, Then Type of pile, diameter and depth of pile. Depth of fixity, Pile capacity (in Compression, Tension & lateral Shear) & Structural details.	sum				
	Grand Total :- Total Amount (inclusive of all taxes, duties, octroi, fees etc. imposed by State/ Central government, local body but excluding Service Tax as applicable) Rs.					

Signature of Contractor


Signature of Owner

	INFORMATION ABOUT BIDDER & CHECK LIST FOR PQC (ANNEXURE-VI)	PVMM/SERVICE/CIVIL/16-17/E-22/ANNX-VI	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

The below information should be duly filled and to be submitted/uploaded as applicable in the following format:

SI	PARTICULARS	BIDDER'S COMMENTS
1.0	BIDDER'S NAME & ADDRESS with Telephone & FAX no., Name of Contact Person, Email ID	
2.0	BIDDER'S OFFER NO. & DATE	
3.0	IN CASE OF INDIVIDUAL (If not applicable, pl. Indicate NA)	
3.1	Name of Business	
3.2	Whether business is registered	
3.3	Date of commencement of business	
3.4	Whether he pays Income Tax over Rs. 1,00,000/- per year	
4.0	IN CASE OF PARTNERSHIP (If not applicable, pl. Indicate NA)	
4.1	Name of Partners	
4.2	Whether the partnership is registered	
4.3	Date of establishment of firm	
4.4	If each of the partners of the firm pays Income Tax over Rs.1,00,000/- a year and if not, which of them pays the same	
5.0	IN CASE OF LIMITED LIABILITY COMPANY OR COMPANY LIMITED BY GUARANTEES (If not applicable, pl. Indicate NA)	
5.1	Amount of paid up capital	
5.2	Name of Directors	
5.3	Date of Registration of company	
6.0	In response to the above confirmation at Sl.3.0 or 4.0 or 5.0, please submit/attached Audited ANNUAL REPORT (Balance sheet and P&L Account sheet) of last 3 Years duly signed & stamped, alongwith your unpriced offer.	
7.0	With reference to GOI Gazette Notification No.503 dt.26.03.12, Please confirm whether you are MICRO & SMALL Enterprises (MSEs) registered under MSMED Act 2006 and submit documentary evidence in this respect.	
7.1	Further to Above, If you are MICRO & SMALL Enterprises (MSEs) registered under MSMED Act 2006 and OWNED BY SC/ST ENTREPRENEURS , please confirm and submit documentary evidence issued by government authority in this respect.	
8.0	Confirm submitted all the relevant documents as per requirement of sl no. A & B of Annexure-I, respect of PQC.	
9.0	CONFIRMATION FOR OTHER SUBMITTED DOCUMENTS:	
9.1	Confirm Submission of Earnest Money Deposit as per Clause 6.0 of Annexure-II of ITB.	Not Applicable
10.0	We hereby Confirm that we are neither put on holiday nor Black-Listed by any Government/PSU/Private Firm or Financial Institution and a self declaration on our letterhead (as per Annexure-XII) regarding the above has been submitted with unpriced bid.	

SIGNATURE OF BIDDER WITH COMPANY SEAL


	AGREED COMMERCIAL TERMS & CONDITIONS (ACTC) ANNEXURE-VIII	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-VIII	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

This ACTC should be duly filled and to be **Submitted/uploaded, as applicable** alongwith unpriced offer:

SL. NO.	DESCRIPTION	BIDDER'S CONFIRMATION / ACCEPTANCE
1.0	BIDDER'S NAME & ADDRESS with Telephone & FAX no., Name of Contact Person, Email ID	
1.1	BIDDER'S OFFER NO. & DATE	
2.0	Confirm acceptance of TECHNICAL ENQUIRY SPECIFICATIONS & Terms & Conditions as per Annexure-IV, Doc. No. EM00227-PVCV-0200 Rev.0 Dt. 16.03.2017 of ITB.	
3.0	Confirm acceptance of Commercial Terms & Conditions of ITB as per GCC (ANNEXURE-IIIB) and SCC (Annexure-IIIC) .	
4.0	CONFIRM QUOTED PRICES for all the items strictly as per SCHEDULE OF RATES attached with technical specifications and Submitted PRICE BID accordingly.	
5.0	We confirm that we have submitted Unpriced copy of SOR identical to submitted price bid, indicating the word "Quoted" in place of prices in our Unpriced Bid.	
5.0	COFIRMATION OF FOLLOWING TERMS AND CONDITIONS:	=====
5.1	Confirm PRICE BASIS – FIRM and EXECUTED SERVICE as per scope of Job.	
5.2	We confirm that quoted prices in Price bid are inclusive of all Labour, Materials, Tools necessary for executing the work at any height/depth & including all types of taxes etc. except SERVICE TAX.	
5.3	SERVICE TAX - shall be Extra as Applicable as per service tax rule/notification. Indicate Present applicable rate and percentage of quoted amount on which it shall be applicable. (if not applicable indicate "NA").	Extra @ _____%, applicable on _____% of Quoted total amount.
5.3.1	PDIL shall avail SET OFF against payment of Service Tax, hence, the benefit on these accounts to be passed on by the bidder to PDIL. The amount of benefit under SET OFF , if any, to PDIL will be considered while evaluating the price for which necessary documents shall be provided by the bidder to enable PDIL to avail the benefit, failing which the amount shall not be payable. Please Confirm.	
5.3.2	Indicate SERVICE TAX REGISTRATION NUMBER (<i>Enclose copy</i>)	
5.3.3	In Case Service Tax is not applicable, Confirm that you are not coming under the purview of Service Tax Registration.	
5.4	DELIVERY / COMPLETION PERIOD : As per ITB	
5.5	ACCEPTANCE OF PRICE REDUCTION CLAUSE: As per ITB	
5.6	Confirm acceptance of PAYMENT TERMS AS PER ITB.	
5.6.1	Indicate PAN Card No. (<i>Enclose copy</i>)	
5.6.2	In Case submitted PAN card is in Individual name, Please Confirm that the person whose name is indicated on PAN card is "SOLE PROPRIETOR" of the company and note that income from the subject contract shall be under the indicated PAN No.	
5.7	Confirm PERFORMANCE SECURITY AS PER ITB	
5.8	Confirm acceptance of VALIDITY of Offer (90 Days from technical Bid opening date)	
5.9	CONFIRM THAT The invitation to Bid together with all its attachments thereto shall be considered to be read, understood and accepted by the Bidder while submitted their offer.	
5.10	It is confirmed that in case any of the TERMS & CONDITIONS mentioned in this Summary are at variance with those indicated anywhere else in our offer, the conditions indicated in this summary shall prevail.	

DATE :

AUTHORISED SIGNATORY OF THE BIDDER with Official Seal

	DETAILS OF CONTRACTOR / COMPANY (for updating Award of Contract at CPP Portal (e-publishing)) ANNEXURE – IX	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-IX	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

In Case of Order, the contractor shall provide the below information [for updating Award of Contract at CPP Portal \(e-publishing\)](#), without fail.

SI	PARTICULARS	BIDDER'S COMMENTS
1.0	CONTRACTOR'S/COMPANY NAME	
2.0	CONTACT PERSON	
3.0	CONTACT PERSON'S DATE OF BIRTH	
4.0	COMPANY's REGISTRATION NO.	
5.0	COMPANY's REGISTERED ADDRESS	
6.0	COMPANY'S ESTABLISHMENT YEAR	
7.0	COMPANY'S NATURE OF BUSINESS	
8.0	COMPANY'S LEGAL STATUS (TICK √ appropriate option)	<input type="checkbox"/> LIMITED
		<input type="checkbox"/> UNDERTAKING
		<input type="checkbox"/> JOINT VENTURE
		<input type="checkbox"/> PARTNERSHIP
		<input type="checkbox"/> OTHERS
9.0	COMPANY CATEGORY (TICK √ appropriate option)	<input type="checkbox"/> MICRO
		<input type="checkbox"/> SMALL
		<input type="checkbox"/> MEDIUM
		<input type="checkbox"/> ANCILLARY UNIT
		<input type="checkbox"/> PROJECT AFFECTED PERSON OF THIS COMPANY
		<input type="checkbox"/> SSI
		<input type="checkbox"/> OTHERS
10.0	As confirmed above, in case you are under MSMED Act 2006 for MICRO & SMALL Enterprises (MSEs) Sector OR MSEs owned by SC/ST Entrepreneurs , please submit documentary evidence in this respect with reference to GOI Gazette Notification No.503 dt.26.03.12.	

DATE :

AUTHORISED SIGNATORY OF THE BIDDER with Official Seal

	RTGS/NEFT FORMAT FOR E-PAYMENT ANNEXURE – X	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-X	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

Date:

To,

Projects & Development India Ltd.
PDIL, Bhawan, Samta, Subhanpura,
Vadodara-390 023.
Gujarat.

Dear Sir,

With reference to your letter/E-mail, we hereby agree to accept the payment of our bills through "EFT/RTGS/Internet". The bank account details are as given below:

1	Beneficiary's Name	
2	Name of the Bank (to which payment should be sent)	
3	Branch name	
4	Address of the Branch	
5	STD Code No. and Telephone no. of Branch	
6	Branch Code	
7	9 digit code no. of Bank & Branch as appearing on the MICR cheque (copy of cancelled cheque must be enclosed.)	
8	Bank account number (As appearing on the cheque book)	
9	Account type (SB/CA/CC)	
10	Branch IFSC Code (Applicable only for RTGS payments)	
11	Copy of blank cancelled cheque or photocopy of a cheque for verifying the accuracy of the 9digit code number to be enclosed.	

A blank cancelled cheque leaf relating to the above bank account is enclosed for verifying the accuracy of the bank account details.

I hereby declare that the particulars given above are correct and complete.

(Signature of Account Holder)
Seal of the Vendor

Encl : Cancelled Cheque No.

**** We hereby confirm that the above bank account details of beneficiary are correct in all respects and the account of Beneficiary (PDIL vendor) is maintained at our bank branch .

(Name of Bank & Branch)
Authorized Signatory

**** Verification required only in case vendors name is not printed/appearing on the cancelled cheque leaf being submitted to PDIL office.

	PROFORMA FOR NO CLAIM CERTIFICATE ANNEXURE – XI	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-XI	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

**TO BE FURNISHED ON
NON-JUDICIAL STAMP PAPER OF REQUISITE AMOUNT**

Ref. No. _____

Dated _____

To,
Projects & Development India Ltd.,
PDIL BHAWAN, Samta
Subhanpura,
Vadodara-390 023

Ref: **"No Claim Certificate"** in respect of concluded Work Order No. **PVMM/**_____ **dated** _____

Dear Sir,

Certified that after fully considering, undertaking and settling all the matters relating to the contract, under reference, we have no claim, except stated below, of any kind against your Unit / Company and undertake not to challenge the finality, as aforesaid, in future or at any stage.

The final net payment of Rs. _____ (Rupees _____) only as worked out is the full and final settlement against the said contract.

Thanking you,

Your faithfully,
For and on behalf of

Name _____
Designation _____

	DECLARATION BY BIDDER ANNEXURE – XII	PVMM/SERVICE/CIVIL/16-17/E-22/ANX-XII	0
		DOCUMENT NO	REV
		SHEET 1 OF 1	

(To be submitted on Bidder's Letterhead as per below performa)

DECLARATION

To,
Projects & Development India Ltd.,
Vadodara-390023

Subject : ITB No. _____ Dt. _____

Sir,

We hereby declare that M/s _____ is neither put on holiday nor Black-Listed by any Government/PSU/Private Firm or Financial Institution.

Signature:

Name:

Designation:

Seal of the Bidder: