

EXPRESSION OF INTEREST

FOR

SELECTION OF SYSTEM INTEGRATOR FOR DESIGN, SUPPLY,
INSTALLATION, TESTING AND COMMISSIONING OF IP BASED
CCTV SURVEILLANCE SYSTEM ALONG WITH ASSOCIATED
WORKS AT OUR OPERATING LOCATIONS, AFS AND LPG PLANTS
UNDER TAMILNADU STATE OFFICE

Ref No. BECIL/PROJ./GM/VPS/CCTV/TAMILNADU/2023

Dated: 22nd September, 2023

Issued By

V.P Singh GM (BECIL)

Broadcast Engineering Consultants India Limited (A Government of India Enterprise)



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DISCLAIMER

The information contained in this Request for Proposal document (the "EOI") or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of BECIL or any of its employees or advisors, is provided to Bidder(s) on the terms and conditions set out in this EOI and such other terms and conditions subject to which such information is provided. This EOI is not an agreement and is neither an offer nor invitation by BECIL to the prospective Bidders or any other person. The purpose of this EOI is to provide interested parties with information that may be useful to them in making their offers (Bids) pursuant to this EOI. This EOI includes statements, which reflect various assumptions and assessments arrived at by BECIL in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This EOI may not be appropriate for all persons, and it is not possible for BECIL, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this EOI. Each Bidder should, therefore, conduct its own investigations, actual site/ facilities/location inspections and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this EOI and obtain independent advice from appropriate sources. Information provided in this EOI to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. BECIL accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein. BECIL, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this EOI or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the EOI and any assessment, assumption, statement or information contained therein or deemed to form part of this EOI or arising in any way for participation in this Bid Stage. BECIL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this EOI. BECIL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this EOI. The issue of this EOI does not imply that BECIL is bound to select a Bidder or to appoint the Selected Bidder for the Project and BECIL reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever. The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by BECIL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and BECIL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the Bidding Process.



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SECTION -I

1. NOTICE INVITING EXPRESSION OF INTEREST

BECIL is interested to submit a competitive bid in response to **Tender No. SRCC/PT/074/TNSO/2023-24 dated 10.07.2023 having Last date of submission as 07.08.2023** floated by IOCL. BECIL has received a request from System Integrator showing interest to associate as an Executing Partner/Technology Partner. BECIL would like to invite proposal from any System Integrator who wish to collaborate for jointly bidding said tender/bid. The proposal should reach BECIL within three days i.e. on or before 26th September, 2023 by 15:00 Hrs.

2. INTRODUCTION

Indian Oil Corporation Limited invites electronic bids through its website https://iocletenders.nic.in under two bid systems (Part A - Technical / Commercial Bid and Part B - Price Bid) with Reverse Auction from reputed technically competent, quality conscious, experienced and financially sound contractors having experience of similar works and fulfilling the qualifying requirements. BECIL invites Expression of Interest (EOI) for Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at the Operating Locations, AFS and LPG Plants under Tamilnadu State Office.

Bidders are advised to inspect the site and ascertain the conditions including leads/ lifts involved/approach to vehicles, power, water geo-political scenario etc. prior to quoting the amount.

The grouping of locations has been done in four LOTS as under:-

LOT I	LOT II	LOT III	LOT IV
1.SANKARI	1. MADURAI BP	1. COIMBATORE	1. TRICHY AFS
TERMINAL	2. ERODE BP	BP	2.ARAKONAM AFS
2.TRICHY	3. TIRUNELVELI BP	2. ENNORE BP	3.MEENAMBAKKAM
TERMINAL	4. MANARGUDI BP	3.CHENGLEPET	AFS
3.MADURAI	5.MAYILADTHURAI	BP	4.PADUCHERRY BP
TARMINAL	BP	4.COIMBATORE	
4. COIMBATORE	6.ILAYARGUDI BP	AFS	
TERMINAL	7. MADURAI AFS		
5. FST, CHENNAI			
6. TONDIARPET			
TERMINAL			
7. TRICHY BP			
8.TUTICRIN			
TERMINAL			



3. INTENT OF EXPRESSION OF INTEREST

A Tender for "Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at the Operating Locations, AFS and LPG Plants under Tamilnadu State Office" has been floated by INDIAN OIL CORPORATION LIMITED (MD).

BECIL has participated in the tender floated by INDIAN OIL CORPORATION LIMITED (MD) as System Integrator for Implementation of Design, Supply, Installation, Testing and Commissioning of IP Based CCTV Surveillance System along with Associated Works at the Operating Locations, AFS and LPG Plants under Tamilnadu State Office.

The Intent of this Expression of Interest is (EOI) to select the Implementation Agency/ System Integrator for Implementation of Design, Supply, Installation, Testing and Commissioning of IP Based CCTV Surveillance System along with Associated Works at Our Operating Locations, AFS and LPG Plants under Tamilnadu State Office.

Broadcast Engineering Consultants India Limited (BECIL) an ISO 9001:2008 certified, a Mini Ratna public sector enterprise of Government of India under Ministry of Information & Broadcasting, was established on 24th March, 1995 for providing consultancy services of international standards for broadcasting in transmission and production technology including turnkey solutions in the specialized fields of Terrestrial & Satellite Broadcasting, Cable, Media and various Information Technology (IT) related fields, including security & surveillance, acoustics & audio-video systems and smart cities. BECIL provides tailor-made solution for unique requirement ranging from Concept to Commissioning.

Broadcast Engineering Consultants India Limited (BECIL) having its Head office at 14-B, Ring road, Indraprastha Estate, New Delhi 110002 has vast experience for successfully completing the SITC of IP Based CCTV Surveillance System along with associated works in various Government Departments as in Ministry of Defence, Food Corporation of India (FCI), UP CM House, Airport Authority of India etc.

Submission of Online Bids is mandatory for this EOI. Prospective bidder/OEM/Implementation Agency s need to submit their bids with the most competitive offer for the aforementioned work. EOI document is available on BECIL website (http://becil.com) & Ewizard (http://becil.euniwizard.com). The important dates are as given below:-



4. <u>IMPORTANT DATES</u>

EOI SCHEDULE AND CRITICAL DATES

S.N.	ACTIVITY	SCHEDULED DATE & TIME
1.	EOI Issue to Prospective bidder/Implementation Agency(s)	BECIL/PROJ./GM/VPS/CCTV/TAMILNADU/2023 Dated: 22nd September 2023
2.	Date and Time for Submission of bids	Upto 15:00 Hrs. on 26th September, 2023
3.	Date and Time for Opening of Bids	Online on 16:00 Hrs. on 26th September, 2023
4.	Availability of Document	https://www.becil.com, https://becil.euniwizarde.com
5.	E-tender Portal Registration Fee (Non-refundable)	INR 2360/- (inclusive of taxes) (non-transferrable & non-refundable) payable through online e-Portal.
6.	E-tender Portal Fee (Non-refundable)	INR 3,540/- E-tender Portal Fee (non-transferrable & non-refundable) payable through online e-Portal
7	EOI document Fee (Form Fee) (Non-Refundable)	INR 1,180/- Form Fees (non-transferrable & non-refundable) payable through online e-Portal.
8.	Earnest Money Deposit (EMD Refundable)	Exempted
9.	Address for Communication of bids	BECIL Bhawan, C-56 / A -17, Sector - 62, Noida - 201 307.
10.	Contact details of BECIL	Mr. V.P. Singh (General Manager, BECIL) Email: vpsingh@becil.com Preeti Chaudhary (Manager, BECIL) Email: preeti.chaudhary@becil.com
11.	Contact details of ITI	Mr. Anshuman : +91-9355030616 Mr. Awesh Tyagi: 9205898224 Mr. Bhuneshwar: 9205898226 Mr. Nehal: 8800991855
12.	Help Desk of ITI	011-49606060 (From 10:00Hrs to 18:00 Hrs)

Broadcast Engineering Consultants India Ltd. reserves the right to amend the EOI tentative schedule and critical dates. Bidders are advised to inspect the site and ascertain the conditions including leads/ lifts involved/approach to vehicles, power, water geo-political scenario etc. prior to quoting the amount.



The grouping of locations has been done in four LOTS as under:-

SN	Location	Supplies, Installation and Commissioning (Inclusive of all taxes and Duties)(Rs)	CAMC works for 6 Yrs after warranty (Inclusive of all taxes and Duties) (Rs)	Total (Inclusive of alltaxes and Duties) (Rs)
1	SANKARI TERMINAL	41024882.40	10256223.70	51281106.10
2	TRICHY TERMINAL	36815660.76	9203917.40	46019578.16
3	MADURAI TERMINAL	33861222.50	8465309.38	42326531.88
4	COIMBATORE TERMINAL	56231713.43	14057930.00	70289643.43
5	FST ,CHENNAI	30701919.03	7675484.64	38377403.67
6	TONDIARPET TERMINAL	38634599.94	9658654.00	48293253.94
7	TRICHY BP	48275322.24	12068837.04	60344159.28
8	TUTICORIN TERMINAL	24561159.74	6140292.84	30701452.58
	Lot-I Total (42.70%):	310106480.03	77526649.00	387633129. 03
1	MADURAI BP	39728965.52	9932248.80	49661214.3 2
2	ERODE BP	41225657.45	10306420.90	51532078.3 5
3	TIRUNELVELI BP	29078265.44	7269572.90	36347838.34
4	Manargudi BP	29588043.95	7397018.8	36985062.75
5	Mayiladthurai BP	24526575.26	6131648.16	30658223.42
6	Ilayargudi BP	27816452.18	6954119.96	34770572.14
7	MADURAI AFS	12368986.01	3092249.00	15461235.01
Lot-II Total (28.13%):		204332945.81	51083278.52	255416224. 33
1	Coimbatore BP	42471471.29	10617873.64	53089344.93
2	Ennore BP	48984386.35	12246102.54	61230488.89
3	CHENGLEPET BP	34181134.01	8545293.32	42726427.33
4	COIMBATORE AFS	13522579.52	3380648.08	16903227.6
	Lot-III Total (19.16%):	139159571.16	34789917.58	173949488. 74
1	TRICHY AFS	12549986.21	3137499.64	15687485.85
2	ARAKONAM AFS	14335359.25	3583844.08	17919203.33
3	MEENAMBAKKAM AFS	14743147.19	3685789.00	18428936.19
4	Puducherry BP	31067757.37	7766945.26	38834702.63
	Lot-IV Total (10.01%):	72696250.01	18174077.98	90870327.9
	TOTAL FOR ALL 4 LOTS	726295247.01	181573923.08	907869170. 09

The quantum of works given in Tender Document is only indicative based on Page 8 of 153



tentative estimates and is not the right of contractor. Indian Oil does not guarantee any minimum or maximum quantum of works, during the currency of contract

CONTACT DETAILS OF THE LOCATION

S.No		
4		number
1	Coimbatore Terminal	Ms. R. SUJATHA / 9442639990
2	Sankari Terminal	Mr. V. SANTHOSH / 9448289966
3	Trichy Terminal	Mr. T. CHIRANJEEVI / 9246776256
4	FST,Chennai	Mr. CHITTEM RAJU / 9188667492
5	Tondiarpet Terminal	Mr. PUNIT PRAVEEN MINZ / 9264430117
6	Madurai Terminal	Mr. PRAKASH TIRU / 9071500953
7	Tuticorin Terminal	Ms. AARTHI SAVARIMALAI / 9444910932
8	Arakonam AFS	Mr. VIJAYA KUMAR S / 8089890145
9	Meenambakkam AFS	Mr. G. RAJESH / 9003752777
10	Trichy AFS	Mr. K. SATHISH KUMAR / 8019772171
11	Coimbatore AFS	Mr. C. PRAJOTH / 7710919745
12	Madurai AFS	Mr. N. PARTHASARATHY / 9444081841
13	Ennore LPG BP	Mr. S. SIVAKUMAR / 9444065837
14	Pondicherry LPG BP	Mr. SUBRAT KUMAR SAHOO / 7675880841
15	Madurai LPG BP	Mr. R. BALASUBRAMANIAN / 9444401218
16	Mayiladuthurai LPG BP	Mr. KRISHNA KUMAR M / 8903949183
17	Trichy LPG BP	Mr. D. MURALI / 9443389136
18	Erode LPG BP	Mr. G. S. VARADARAJU / 9611437376
19	Coimbatore LPG BP	Mr. V. M. SUNDAR / 9443389134
20	Chengelpet LPG BP	Mr. C. VIJAY KUMAR / 9449596924
21	Mannargudi LPG BP	Ms. KANNIGA PARAMESWARI P /
		8220007124
22	Ilayangudi LPG BP	Mr. GOWTHAM K. N / 9444381160
23	Tirunelveli LPG BP	Mr. ADARSH S. S. / 9095328202

Bids shall be submitted on E-wizard Portal (http://becil.euniwizard.com). Bidder/OEM/Implementation Agency are advised to visit E-wizard Portal (https://becil.euniwizarde.com) and/or BECIL website regularly for updates / amendments/ corrigendum, if any. Bidder/OEM/Implementation Agency(s) can contact on the details given in this EOI's datasheet for requisite queries regarding registration, training, demonstration, etc. of e-uniwizard.

5. <u>GENERAL INFORMATION</u>

- a) Complete EOI document can be download from e-Tender portal of BECIL https://becil.euniwizard.com and www.becil.com. The Submission mode of the bid is Online.
- b) It is mandatory for all the applicants to have Class-III Digital Signature Certificate (in the name of person who will sign the bid document) from any of the licensed certifying Agency.



c) INSTRUCTIONS FOR E-TENDERING PORTAL OF BECIL

i. E-TENDER PORTAL FEE:

The bidder/OEM/Implementation Agency has to pay a non-refundable **e-tender portal fee amounting to ₹ 3540/-** (Non-refundable) by way of on-line payment on e-tender portal before submission of the proposal.

ii. SUBMISSION OF THE PROPOSAL

The Bidder/OEM/Implementation Agency are advised to study the EOI document carefully. Submission of proposals shall be deemed to have been done after careful study and examination of the EOI document with full understanding of its implications. Bidder/OEM/Implementation Agency(s) shall have to submit their proposal (Technical and Financial) online through the e-tendering website https://becil.euniwizarde.com.

iii. E-TENDERING PROCEDURE

- a) E-Procurement is the complete process of e-tendering from publishing of tenders online, inviting online bids, evaluation and award of contract using the system. You may keep a watch of the tenders floated under https://becil.euniwizarde.com. These will be invited for online Bids. Bidder/OEM/Implementation Agency Enrolment can be done using "bidder/OEM/Implementation Agency Enrolment".
- b) The instructions given below are meant to assist the bidder/OEM/Implementation Agency in registering on the e-tender Portal, and submitting their bid online on https://becil.euniwizarde.com the e-tendering portal as per uploaded bid.
- c) More information useful for submitting online bids on may be obtained at: https://becil.euniwizarde.com

iv. GUIDELINES FOR REGISTRATION ON PORTAL

- a) Bidder/OEM/Implementation Agency are required to enroll on the e-Procurement Portal by clicking on the link "Online bidder/OEM/Implementation Agency Enrolment" on the e-tender Portal by paying the Registration fee of Rs. 2360/-(inclusive of taxes).
- b) As part of the enrolment process, the bidder/OEM/Implementation Agency will be required to choose a unique username and assign a password for their accounts.
- c) Bidder/OEM/Implementation Agency(s) are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication with the bidder/OEM/Implementation Agency.



- d) Upon enrolment, the bidder/OEM/Implementation Agency will be required to register their valid Digital Signature Certificate (Only Class III Certificates with signing + encryption key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify/TCS/nCode/eMudhra etc.), with their profile Or bidder/OEM/Implementation Agency can contact the help desk for getting the DSC.
- e) Only valid DSC should be registered by a bidder/OEM/Implementation Agency. Please note that the bidder/OEM/Implementation Agency (s) are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- f) Bidder/OEM/Implementation Agency then logs in to the site through the secured log-in by entering their user ID /password and the password of the DSC / e-Token.
- g) The scanned copies of all original documents should be uploaded in pdf format on portal https://becil.euniwizarde.com.
- h) After completion of registration payment, the bidder/OEM/Implementation Agency is need to send their acknowledgement copy on the help desk mail ID: helpdeskeuniwizarde@gmail.com for activation of your account.

Helpdesk Number: Tel 011-4960606, 9355030616, 9560364871

v. SEARCHING FOR TENDER DOCUMENTS ON PORTAL

- a) There are various search options built in the e-tender Portal, to facilitate bidder/OEM/Implementation Agency(s) to search active tenders by several parameters.
- b) Once the bidder/OEM/Implementation Agency s have selected the tenders they are interested in, bidder should pay the EOI document Fee (Form Fee) (Non-Refundable) and processing fee (NOT REFUNDABLE) by net-banking / Debit / Credit card then bidder may download the required documents / tender schedules, Bid documents etc. Once bidder pay both fee tenders will be moved to the respective 'requested' Tab. This would enable the e- tender Portal to intimate the bidder/OEM/Implementation Agency(s) through e-mail in case there is any corrigendum issued to the tender document.

vi. PREPARATION FOR SUBMISSION OF EOI

The EOI must contain:

- a) Company profile relevant to EOI. It should also include details of past experience relevant to the "Scope of work"
- b) Declaration regarding acceptance of Terms and conditions of EOI and declaration of not been blacklisted by any of the Government agency.



- c) Essential information as given below:
 - i. Name & address of the agency
 - ii. Business name
 - iii. E-mail id
 - iv. Fax No. /Telephone No.
 - v. Authorized Signatory name, e_mail id and contact no.
- d) The agency/ bidder/OEM/Implementation Agency shall ensure that it fulfills the eligibility criteria as desired in EOI and other essential conditions. Compliance statement of Eligibility criteria with the documents submitted as a proof is to be prepared and submitted. The supporting documents may be list of existing and past clients with details of services offered, details of similar projects executed.
- e) The EOI should be duly signed on each page by authorized person. Each page should be properly numbered. Documents authorizing such person must accompany the EOI. BECIL reserves the right to reject out rightly any EOI unsupported by proof of the signatory's authority.
- f) The validity period of EOI should be 6 months from the date of opening of EOI.
- g) The EOI complete in all respects must be submitted with requisite information and annexure(s). The EOI should be free from ambiguity, change or interlineations. Incomplete EOI will not be considered and is liable to be rejected without making any further reference to agency/bidder/OEM/Implementation Agency(s).
- h) The EOI should be addressed to:-

THE CHAIRMAN & MANAGING DIRECTOR BECIL Bhawan, C-56, A/17, Sector – 62, Noida - 201301, UP

- i) EOI must be submitted through https://becil.euniwizarde.com portal only. EOI received by post or any other mode after or before the closing date and time mentioned above shall not be considered. EOI(s) sent through TELEX/FAX/Email will not be entertained.
- j) Any amendment in the EOI document, if required, will be posted on website www.becil.com and https://becil.euniwizarde.com. All the applicants are therefore advised to regularly visit these websites before submitting the EOI.



vii. PREPARATION OF BIDS ON PORTAL

- a) The bidder/OEM/Implementation Agency should take into account any corrigendum published on the tender document before submitting their bids.
- b) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid.
- c) Bidder/OEM/Implementation Agency, in advance, should get ready the bid documents to be submitted as indicated in the tender document /schedule and generally, they can be in PDF formats. Bid Original documents may be scanned with 100 dpi with Color option which helps in reducing size of the scanned document.
- d) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GST, Annual reports, auditor certificates etc.) has been provided to the bidder/OEM/Implementation Agency. The bidder/OEM/Implementation Agency can use "My Documents" available to them to upload such documents.
- e) These documents may be directly submitted from the "My Documents" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

viii. SUBMISSION OF BIDS ON PORTAL

- a) The Bidder/OEM/Implementation Agency should login to the website well in advance for the submission of the bid so that it gets uploaded well in time i.e. on or before the bid submission time. Bidder/OEM/Implementation Agency will be responsible for any delay due to other issues.
- b) The Bidder/OEM/Implementation Agency has to digitally sign and upload the required bid documents one by one as indicated in the tender document as a token of acceptance of the terms and conditions laid down by BECIL.
- c) The bidder/OEM/Implementation Agency has to select the payment option as "e-payment" to pay the tender fee / EMD as applicable and enter details of the instrument.
- d) The bidder/OEM/Implementation Agency s are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidder/OEM/Implementation Agency s. bidder/OEM/Implementation Agency s are required to download the BOQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder/OEM/Implementation Agency). No other cells should be



changed. Once the details have been completed, the bidder/OEM/Implementation Agency should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder/OEM/Implementation Agency, the bid will be rejected.

- e) The server time (which is displayed on the bidder/OEM/Implementation Agency's dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidder/OEM/Implementation Agency, opening of bids etc. The bidder/OEM/Implementation Agency should follow this time during bid submission.
- f) The uploaded tender documents become readable only after the tender opening by the authorized bid openers. Upon the successful and timely submission of bid click "Complete" (i.e. after Clicking "Submit" in the portal), the portal will give a successful Tender submission acknowledgement & a bid summary will be displayed with the unique id and date & time of submission of the bid with all other relevant details. The tender summary has to be printed and kept as an acknowledgement of the submission of the tender. This acknowledgement may be used as an entry pass for any bid opening meetings.

ix. CLARIFICATION

For any clarification related to using the portal, you may visit the below link:

https://becil.euniwizarde.com

- a) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- b) Any queries relating to the process of online bid submission or queries relating to etender Portal in general may be directed to the Helpdesk Support.
- c) Please feel free to contact euniwizard helpdesk (as given below) for any query related to

E-tendering Phone No. 011-49606060

Mail id: - helpdeskeuniwizarde@gmail.com

6. ELIGIBILTY CRITERIA

- (i) The Bidder should be registered under the Companies Act 1956/2013 and should be in existence in India for the last Seven (07) years as on date of EOI publish. No Joint Venture or Consortium is allowed.
- (ii) The Bidder should have average annual turnover of at least Rs. 6,20,21,296/- in last three years (FY 2020-21, 2021-22, 2022-23) in the field of IT/ITES



/Telecom/Surveillance/System. Bidder should have positive net worth in last three years. A copy of Audited financial statements and Chartered Accountant (CA) Certificate should be submitted.

- (iii) The bidder should have a valid PAN and GST Registration certificate. Copy of PAN card and GST Registration certificate should be submitted in the bid.
- (iv) Proof of PF & ESIC registration to be submitted by the bidder.
- (v) The Authorized Signatory for signing the Contract/Agreement with BECIL should be duly authorized by Competent Authority/Board to sign the Contract/Agreement on their behalf.
- (vi) The bidder should submit Manufacturers Authorization Certificate (MAF) and from Original Equipment Manufacturers (OEMs) specific to the bid for items mentioned in this EOI.
- (vii) The Bidder should have the experience of successfully completed similar works during the last five years upto the last day of month previous to the one in which EOI are being invited should be either of the following:-

One similar completed works for Supply, Installation and Commissioning of CCTV System with allied works, each costing not less than the amount equal to **Rs. 3,10,10,648** including taxes and duties in last 05 years.

OR

Two similar completed works for Supply, Installation and Commissioning of CCTV System with allied works each costing not less than the amount equal to **Rs.1,55,05,324/-** including taxes and duties in last 05 years.

OR

Three similar completed works for Supply, Installation and Commissioning of CCTV System with allied works costing not less than the amount equal to Rs. 77,52,662/including taxes and duties in last 05 years.

- (viii) The Bidder should have minimum 50 employees on its pay role. An undertaking by the bidder should be submitted in this respect.
- (ix) Bidder should have 2 of the 3 certifications mentioned below: (attach Copy of valid certificates)
 - a. ISO 9001:2015 / 2018
 - b. CMMi Level 3
 - c. ISO 14001:2015
- (x)The bidder should not be insolvent, in receivership, bankrupt or being wound up, not have had their business activities suspended and not be the subject of legal



- proceedings for any of the foregoing. An undertaking by the bidder should be submitted.
- (xi) The Bidder should not be blacklisted/debarred/banned/restricted by any Union Govt./State Govt. / PSU as on date of submission of the Bid. "No-Conviction Certificate" duly signed by authorized signatory signing the bid, should be submitted in the prescribed format.
- (xii) The bidder should give an undertaking on the company's letter head that all the documents/- certificates/ information submitted by them against this EOI are Genuine & True.
- (xiii) Copy of the EOI document duly signed and stamped by the bidder in support of having read, understood and complied with the requirements of the tender document.
- (xiv) BECIL reserves the right to accept or reject any or all EOIs or annul this process without assigning any reason and liability whatsoever and to re-invite EOI at its sole discretion. The details of EOI may be viewed on www.becil.com & http://becil.euniwizard.com. The corrigendum to this EOI, if any, shall be displayed on the website.

(xv)	The Client's	Tender No		_ dated	for (works
	name	_) and its subseq	uent addendum/	corrigendum	forms an ir	ıtegral part
	of this EOI.					

7. EVALUATION / SCRUTINY OF EOI

- I. EOI Proposals received within prescribed date and time shall be considered and evaluated. EOI proposal received after the due date and time will be rejected.
- II. BECIL will not be responsible for delay in submission due to any connectivity issue/Technical issue.
- III. Evaluation/Scrutiny of EOI shall be based on:
 - a. Information contained in the bid, the documents annexed thereto and clarifications provided. If any.
 - b. Assessment of the capability of the bidder/SI/OEM/Implementation Agency based on past record.
 - c. Offered solution Document should meet the core requirement of work.
 - d. BECIL shall communicate qualified bidder/SI/OEM/Implementation Agency by Post/Fax/E-mail. However, it would not constitute a contract between the parties.



8. PRELIMINARY EVALUATION

- (i) BECIL shall evaluate the proposals to determine that they are complete, technically complying, no computational errors have been made, required documents as mentioned in the EOI have been furnished, the documents have been properly signed and the response is generally in order.
- (ii) BECIL may waive off any minor infirmity or non-conformity or irregularity in the proposal which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any bidder/OEM/Implementation Agency.
- (iii) In case only one bid is received or during the Technical Evaluation only one bidder/OEM/Implementation Agency qualifies for the next stage of the bidding process BECIL reserves the right to accept/reject the bid.

9. <u>EVALUATION PROCESS</u>

- a. No enquiry shall be made by the bidder/OEM/Implementation Agency (s) during the course of evaluation of the EOI, after opening of bid, till final decision is conveyed to the successful bidder/OEM/Implementation Agency (s). However, the Committee/its authorized representative and office of BECIL can make any enquiry/ seek clarification from the bidder/OEM/Implementation Agency s must furnish within the stipulated time else the bids of such defaulting bidder/OEM/Implementation Agency s will be rejected. The proposal will be evaluated on the basis of its content, not its length.
- b. The bidder/OEM/Implementation Agency s' proposals will be evaluated as per the requirements specified in the EOI and adopting the evaluation criteria spelt out in subsequent paras of this EOI document. The bidder/OEM/Implementation Agency are required to submit all required documentation as per evaluation criteria specified in EOI.
- c. Upon verification, evaluation/ assessment, if in case any information furnished by the bidder/OEM/Implementation Agency is found to be Incomplete/incorrect, their bid will be summarily rejected and no correspondence on the same shall be entertained. Submission of false/forged documents will lead to forfeiture of security deposit/EMD and blacklisting of agency for a minimum period of 3 years from participating in BECIL tenders.
- d. BECIL will review the proposal to determine whether the proposals are as per the requirements laid down. Proposals that are not in accordance with these requirements are liable to be disqualified at BECIL discretion.
- e. Evaluation of proposals shall be based on:



- i. Information contained in the proposal, the documents submitted there to and clarifications provided, if any.
- ii. Experience and Assessment of the capability of the bidder/ OEM/ Implementation Agency based on past record.
- f. BECIL reserves the right to seek any clarifications on the already submitted bid documents; however, no fresh documents shall be accepted in support of proposals.
- g. Conditional proposals shall NOT be accepted on any ground and shall be rejected straightway. If any clarification is required, the same should be obtained before submission of the proposals.
 - i. Even though bidder/OEM/Implementation Agency satisfy the necessary requirements they are subject to disqualification if they have:
 - ii. Made untrue or false representation in the form, statements required in the EOI document.
 - iii. Records of poor performance such as abandoning work, not properly completing contract, financial failures or delayed completion.

10. AWARD OF WORK/AGREEMENT TERMS & CONDITIONS

- a) All the financial terms & conditions will be on back to back basis.
- b) Bidder offering the highest net revenue share shall be declared the successful L1 bidder. Bidder offering the next lower net revenue share shall be declared successful L2 bidder. In case of a tie the competent committee adopt draw of lots or any other suitable method to break the tie without giving any reason/ justification. This shall be done in the presence of tied bidders. The decision of competent committee of BECIL shall be final in this regard and cannot be challenged in any manner and also be abide by all the bidders.
- c) L1 bidder may be called for negotiation.
- **d)** An agreement shall be signed by BECIL with the successful declared L1 bidder.
- **e)** After signing the agreement, L1 bidder shall submit detailed priced BoQ. Subsequently BECIL will quote the same price in the end customer's financial bid as per the finally negotiated price agreed by the L1 bidder.
- **f)** BECIL will place PO on successful L1 bidder only if the BECIL receives its PO/work order from its Customer as mentioned in this tender.



- **g)** Currency of work Order: BECIL will place work order on bidder in INR only.
- **h)** Relevant Taxes in line with GST i.e. SGST/CGST or IGST to be considered by the bidder. Taxes rate and nature will be on back to back basis. GST and other applicable taxes will be as per actual.



SECTION -II

GENERAL TERMS & CONDITIONS OF THE CONTRACT

- 1. The proposal is to be submitted in SINGLE BID SYSTEM.
- **2.** All bids are to remain valid for minimum of six months from the date of submission. BECIL reserve the right to seek the extension of bid validity
- **3.** BECIL reserves the right to solicit additional information from bidder/OEM/Implementation Agency to evaluate which bid best meets the need of the Project. Additional information may include, but is not limited to, past performance records, lists of available items of work will be done simultaneously with the project, on-site visit and evaluations by BECIL personnel, or any other pertinent information. It will be vender's responsibility to check for updated information on website https://becil.euniwizarde.com & <a href="https://becil.euniwizarde.co
- **4.** BECIL will make its decision based on the ability of the bidder/OEM/Implementation Agency (s) to meet the specific needs, technical expertise of the bidder/OEM/Implementation Agency (s), delivery capabilities, customer references, past satisfactory performance experience, is must besides cost.
- **5.** BECIL reserves the right to waive off any deviations, accept the whole or part thereof or reject any or all bids and to select the bidder/OEM/Implementation Agency (s) which, in the sole opinion of the Project in charge, best meets the project's interest. BECIL also reserves the right to negotiate with potential bidder/OEM/Implementation Agency s so that its best interest to fulfill the need of project is served.
- **6.** BECIL reserves the right to reject any and all proposals, to negotiate all terms of any agreement resulting from this request for proposal, and to request additional information from vendors.
- **7.** All information contained in this EOI, or provided in subsequent discussions or disclosures, is proprietary and confidential. No information may be shared with any other organization, including potential sub-contractors, without prior written consent of the EOI Coordinator.
- 8. In case Company goes into liquidation or change in business/management, it will be intimated to BECIL & company will fulfill its commitment in case order is awarded to them.



9. INDEMNIFICATION:

The bidder/OEM/Implementation Agency agrees to indemnify BECIL from any and all claims, demands, losses, cause of action, damage, lawsuits, judgments, including attorneys' fees and costs, arising out of or relating to the execution of contract.

10. ARBITRATION:

Any dispute or difference or claim arising out of or in relation to this contract, including the construction, validity, performance or breach thereof, shall be settled or decided by arbitration to be conducted by CMD, BECIL or by any other person to be nominated by CMD, BECIL. Arbitration shall be conducted as per Arbitration & Conciliation Act, 1996. The seat of the arbitration shall be at New Delhi.

11. JURISDICTION:

This Agreement shall be construed, interpreted and applied in accordance with, and shall be governed by, the laws applicable in India. The courts at Delhi shall have the exclusive jurisdiction to entertain any matter arising out of or in relation to this Agreement.

12.TERMINATION:

Both the parties reserve the right to terminate the agreement by giving a **minimum two months (60 days) notice period** to each other for the termination of the agreement.

13. CONFIDENTIALITY

Both the Parties for self and on behalf of their employees, agree to keep. all such matters confidential and not to disclose them to anyone, either during or after the expiration/termination of this agreement, except with the written consent of the other party, excepting any information as may be required either under law or any regulatory authority for the parties to perform their obligations under this contract and [or such other information that may come into the public domain.

Both the Parties further agree that upon expiration of this MoU, unless extended mutually for further period, both parties shall promptly deliver to each other all material belonging to the other party whatever and wherever it is lying either in their own possession or in the possession of any employee's contract containing such confidential information etc. Including submission of Accounts.

14. FORCE MAJEURE:

Either party shall be excused from performance of this Agreement during and to the extent that performance is prevented by the occurrence of unforeseen causes beyond



the control of and without the negligence of the party claiming excuse and not brought about at the instance of the party claiming to be affected by such event or which, if foreseeable, could not be avoided or provided for and which has caused the non-performance or delay in performance. Such cause includes, without limitation, strike, go slow, other concerned acts of workmen, lockout (not indulged by its own employees), acts of god, war, fire, explosion, act (s) of terrorism, flood, epidemic, riot, sabotage, embargo, blockade, civil disturbance and governmental restrictions or limitations. The party claiming excuse shall give immediate written notice thereof to the other, in any case not later than 15 (fifteen) days following the occurrence of such event. If performance is held up for a continuous period of more than 2 (two) months from the date of first notice, then the two parties shall review the situation and agree upon a course of action so as to protect the interests of both.

15. INTEGRITY PACT:

The bidder should submit an undertaking that he will sign and integrity Pact with BECIL on award of work.

16. All Terms and conditions provided in IOCL tender reference no. SRCC/PT/074/TNSO/2023-24 dated 10.07.2023 shall be applicable on successful bidder on back to back basis.

17. BANK GUARANTEE/ PERFORMANCE BANK GUARANTEE

In the event of the award of the contract, BG/PBG will be submitted by BECIL to the customer and BG/PBG of equivalent amount will be submitted to BECIL on back to back basis by the bidders.

18. GUARANTEE/WARRANTY PERIOD

Guarantee/ Warranty period will be on Back to Back as per the Term and Condition of the Client's RFP. Warranty period of the supplied products shall be 3 years from the date of final acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period.



SECTION -III

1. SCOPE OF WORK

- 1. BECIL shall provide the following details (if available) to the successful vendor:
 - a. Drawings and documents.
 - (i) Plan Layout
 - (ii) Control room and any other room layout where CCTV work is to be performed.
 - (iii) Cable trench, pedestal, bridge layout drawing
 - (iv)
 - b. Indicative cable route diagram, positioning of CCTV camera.
 - c. Feeder for raw power 415 V +10% AC in Emergency panel at PMCC room for taking supply to UPS. Subsequent power distribution to CCTV equipments along with power distribution board shall be in the scope of the successful bidder.
 - d. Feeder for Supply of LED light for CCTV system is to be provided by BECIL however PDB for the same is in scope of vendor.
 - e. Air-conditioning system for Control room equipments with proper lighting arrangement.

2. VENDOR'S SCOPE OF WORK

1.0 GENERAL

The scope of work to be read in conjunction with BOQ, special terms and conditions, specifications, statutory norms and relevant clauses of the tender document.

- 1.1 All the offered equipments and systems must have proven track record (PTR) of operating satisfactory in India and needs to be submitted if sought by BECIL.
- 1.2 The vendor shall be fully responsible for proper selection of equipments, design engineering, performance and successful operation of the complete system meeting the Functional & Technical requirements of the tender document.
- 1.3 Data sheets indicate the minimum requirements of camera, video encoders, video management system, video recorders etc., however, this does not absolve the vendor of the responsibility for proper selection with respect to the following:
- 1.3.1 Selection of lens focal length, camera, encoding techniques, selection of hardware and appropriate software for video management, selection of video recorder and its sizing to meet the storage requirements mentioned in the datasheets, accessories etc. for proper monitoring and control.
- 1.3.2 Selection of equipment suitable for the environmental conditions
- 1.3.3 All the devices and equipments provided by vendor shall be suitable for 24x7 operations.



- 1.4 It is presumed that the Vendor being the domain expert in the field of CCTV Systems is capable enough to select the best equipments & can provide best of detailed Engineering in all respect in line with the contractual scope & specification. Hence, there is no need to submit datasheets/designs for approval. However, all the documents (viz datasheets /detail engg/SW logic/System configuration etc.) in compliance with the Work Order need to be submitted to BECIL for information only unless BECIL comes out with specific recommendations /requirements under the purview of the contractual scope. A copy of submitted drawings can be acknowledged by the BECIL site representative. For finalization of drawings, detailed 3D models indicating proper coordinates to be submitted.
- 1.5 The operational requirements as specified in the tender might undergo revisions during detailed Design Engineering. The vendor must ensure that the offered system software has the capability and flexibility to take care of these.
- 1.6 Vendor will submit the deliverables requirement to BECIL well in advance during kick off meeting. BECIL will in turn ensure assigning desired responsibility matrix for facilitating the genuine requirements and execution of the project.
- 1.7 Vendor to carry out the detailed survey and submit the detailed mounting drawings, cable schedule, earthpits and indicative BOM well in advanced within one month from the date of placement of LOA, so that advance action (if required) with respect to deviation / re-Engineering can be taken.
- 1.8 Vendor to propose and submit the complete cable route diagram along with structural support, interspacing of the pedestals, earthing of cable trays and other details prior to physical execution of the cabling works at site.
- 1.9 Vendor has to necessary buy back existing CCTV cameras along with accessories at reseve price as fixed by BECIL. The cost of decommissioning, dismantling and shifting of old CCTV equipments shall be borne by the vendor and no separate payment for the same shall be made.
- 1.10 Structural Steel (Mild Steel) required for mounting of equipments, JBs etc. are included in the item rate of individual equipment and no separate payment for the same shall be made.
 - 1.11 All Steel structure needs to be painted after surface preparation including shot blasting, primer etc as per BECIL Standard i.e:

Surface Preparation - Blast clean to SA 21/2,

Painting: One coat of P1 (70-80 Micron) + One coat of U1 (120 Micron) + Two coats of F1 (40-45 micron each)

Total thickness of Paint: 275 micro metre

- 1.12 The cost of painting is included in the structure cost and no separate payment for the same shall be made
- 1.13 All special tools & test equipments, spares, consumables required for installation,



testing, calibration and commissioning of the system is to be arranged by the vendor.

- 1.14 All materials including DG Sets, switchgears, cables, lighting towers and fixtures, structural steel, consumables, testing appliances, tools and tackles necessary for completing the work shall be procured/ arranged & supplied by the Contractor at his own cost unless otherwise specified in the tender document. No claim/ delay on this account will be entertained by the Corporation.
- 1.15 All commissioning and start-up spares required up to commissioning, system acceptance and handing over of the system to the owner shall be in the vendor's scope.
- 1.16 Packing, forwarding, transportation, custom clearance, insurance, storage etc. of the CCTV system/equipments.
- 1.17 Completion of As-built drawings/documents as per the execution of work at site and submission to BECIL before handing over of the complete system to BECIL.
- 1.18 Maintenance of all the CCTV equipments, hardware & software as supplied by the vendor shall be in the scope of the vendor throughout the commissioning including warranty and CAMC period.

2 CCTV SURVEILLANCE SYSTEM

- 2.1 Supply, installation, testing and commissioning of CCTV System comprising of cameras, redundant servers, client workstations, storage devices (NAS/SAN), networking components, Display monitors, poles, LED flood lights, VMS and analytic software etc as detailed in tender document and BOQ.
- 2.2 The CCTV system shall be interfaced with TAS for critical inputs from TAS like ESD, product Tank HiHi and HiHiHi alarms etc. On receipt of such alarms from TAS, CCTV system shall position the respective PTZ cameras to pre-defined positions.
- 2.3 CCTV software shall have the capability to read the TT number using Automatic number-plate recognition (ANPR) technology that uses optical character recognition on images to read vehicle registration plate's and share the TT number with TAS system.
- 2.4 Integration of CCTV system shall be possible over TCP IP/ MODBUS/open protocol with existing Terminal Automation System (TAS).CCTV system integration with TAS system feasibility to be demonstrated by CCTV vendor thru any third party tool.
- 2.5 Ladders if required for installation, maintenance, testing and commissioning of the system are to be arranged by the vendor.
- 2.6 The operator in the control room shall be able to get an indication of the faults occurring in any of the devices connected over the network. This includes faults occurring in the cameras, video encoders, computers, and video recorders. Faults occurring in each of these devices shall generate an alarm in the operator console.
- 2.7 The operator shall be able to view the chronology of events by device, date, time and description. The system shall support logging of events for reviewing and analysis



in the future.

- 2.8 Supply, laying, glanding, ferruling and termination of power, OFC and CAT 6 cables, OFC components, media converters, LIUs, patch cords, pigtails, connectors etc. along with accessories like FLP JBs, Explosion proof housing for mounting of field components, glands, plugs, cable trays, HDPE pipes, mounting structure, civil and mechanical work etc for complete CCTV system.
- 2.9 The offered VMS software should be able to integrate all the make and models of the cameras as listed in Annexure if applicable as per BOQ.

3 CONTROL ROOM EQUIPMENTS

- 3.1 Supply, installation, configuration, integration, testing and commissioning of control room equipments like CCTV Servers, CCTV client workstations, CCTV Display screens mounting panels, consoles, stands, structural supports, associated hardware and software complete as per Design Engineering, System Architecture, FDR, BOQ and tender document.
- 3.2 Supply, installation, integration, testing and commissioning of redundant UPS of suitable capacity for powering the entire CCTV System and its equipments. The offered UPS must have additional 30% spare capacity for future load connection. The scope also includes supply of Semi- Maintenance free Ni-Cd battery bank (2x50%) for ½ hour back up time at rated load along with structural supports for mounting of the UPS and batteries complete as per specification and tender document. New redundant UPS of suitable capacity for powering the entire CCTV System and its equipments to be provided only if the existing UPS already installed at the location is not able to cater the upcoming IP Based CCTV Surveillance System. Detailed engineering on already installed UPS should have been carried out for integration of upcoming IP Based CCTV Surveillance System prior to floating of tender.
- 3.3 Supply and laying of power cable for UPS from MCC/PMCC room to Control Room. Individual Power cable shall be laid to each of the parallel redundant UPS through separate feeder provided by BECIL in MCC/PMCC room thru EPMCC.
- 3.4 Supply and installation of System cabinet/Panel (42 U) with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with locking arrangement, earthing arrangements, limit switches, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors, keyboards, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch etc.
- 3.5 The rack enclosure can be opened only by authorized person and the details of the person who has opened the panel to be logged in the system. Biometric reader to be provided on front and rear side of door seperately. Reader should have provision of connectivity over Modbus serial or TCP/IP. Magnetic locks should have the capaibility to provide door feedback thru software.



- 3.6 Supply, installation, integration, testing and commissioning of CCTV client PC with LED Display along with networking components, Furntiure for client work station, networking rack, software, OS, antivirus etc complete as per specification and tender document at Terminal Manager's Room and security room.
- 3.7 Supply and installation of Multi Cable Transit (MCT) Blocks at the CCTV cable Entry point to control room, security room and Terminal manager room for proper sealing of the cable entry point. All works relating to the sizing, designing and installation of MCT Blocks is within the scope of the vendor.
- 3.8 Supply, installation, testing and commissioning of external / inbuilt lightening and surge protection devices as detailed in BOQ and tender document.
- 3.9 Arranging UPS power supply for CCTV equipment in TM room and security room is in scope of vendor.
- 3.10Complete CCTV system time should be in synchronization with TAS system all the time.

4 Cabling and Earthing

- 4.1 Supply, laying, glanding, ferruling, termination of all types of FRLS cables (Signal, Power, Control, CAT 6, communication, OFC, UTP, earthing cables, GI Strips etc.) along with associated hardwares like FLP Junction Boxes, certified Exd. double compression cable glands, PVC shrouds, Exd plugs for unused cable entries of JBs & instruments, FLP isolator switch, cable trays with covers, OFC components (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), splicing, jointing, testing optical fiber cables, SS 316 engraved tag plate, mounting clamps & SS 316 fasteners, conduits, hume pipes, making trenches, pedestal for mounting cable tray, cable route makers, structure steel for making supports for mounting of cable trays, JBs etc, anchor fasteners, nuts, bolts, screws, foundation, Earthing bus bar, Al clamp for clamping of cables inside cable tray, connectors etc required complete as per specification and tender document for complete installation and commissioning of CCTV Surviellance System. The job also include supply, laying, glanding, ferruling and termination of power cable from nearest power JB to respective LED lights supplied and installed against current tender.
- 4.2 Complete CCTV system along with powercabling, JBs, Power Distribution panel, miscellaneous instrumentation comprising of suitable MCCBs, MCB, isolators, indication lamps, control wiring, voltmeters, ammeters, Terminal blocks, structural support etc with 20% spare power points to be made available for future use.
- 4.3 All the CCTV equipments, JBs etc supplied by the vendor are to be properly earthed as per OEM's recommendations and tender specification.
- 4.4 All earthing cables shall be of minimum 1C x 6 sqmm FRLS unarmoured copper cable (Green Colour).
- 4.5 Supply, fabrication & erection of all the structural & other materials for installation of CCTV equipments.



- 4.6 Cable tray pedestal with structural support for cable tray, RCC trenches with structural support for cable tray, hume pipes, TLF Gantry & overhead pipeline/cable bridge without structural support for cable tray as shown in the cable layout drawing shall be provided by BECIL. Subsequent/ any additional requirement of cable pedestals, RCC trenches, hume pipes, etc as per site requirement shall be in the scope of the successful bidder and no separate payment for the same shall be made except for overhead cable bridge (if required to be constructed at road crossing or on driveway) shall be paid extra as per SOR line item.
- 4.7 Vendor to consider the supply and laying of entire cable trays with cover, structural support, trenches, HDPE pipe, required civil & mechanical work etc in the quoted price. No separate payment for the same shall be made.
- 4.8 The cable trench, pedestal, bridge layout drawing attached herewith are only indicative and may undergo some change during execution of the job.
- 4.9 Vendor to propose and submit the complete cable route diagram along with structural support, interspacing of the pedestals, earthing of cable trays and other details prior to physical execution of the cabling works at site.
- 4.10 Supply, installation, testing and commissioning of complete Earthing system for CCTV system as detailed in tender document.
- 4.11 All the earthpits are to be interconnected to existing earthing grid or separate earthing grid using GI Strips. Lightening and Surge protectors of required rating as per tender are to be provided wherever CCTV earthing grid are connected to existing earthing grid.
- 4.12 GI strip wherever laid must be atleast 500mm below ground level. The cost of excavation and back filling is included in the GI Strip laying and no separate payment for the same shall be made. At road crossing or wherever RCC/PCC has been encountered while laying of GI Strip / Cable, the cost of dismantling of RCC/PCC including making of RCC/PCC after laying of GI Strip / Cable is included in the SOR line item in RM. Vendor to ensure required depth is maintained.
- 4.13 Jointing of two GI Strips should be done by welding and not by bolting and the welded portion should be painted with zinc rich paint (EPILUX-4) or black butimen paint to avoid rusting.
- 4.14 Vendor to measure the resistance of all earthpits installed and submit the test certificate. Resitance value and date to be painted on the earthpit cover plate.
- 4.15 Minor civil works like chipping / grouting of pavement for the instrument panels/supports stand, and chipping and refilling of the pavement for conduits.
- 4.16 Supply & installation of CCTV poles incuding required foundations for mounting of CCTV cameras. All the cameras are to be mounted on poles / wall using structural support as detailed in the tender document.
- 4.17 Vendor to note, for perimeter cameras, LED light of minimum 350 watts is to be provided along with CCTV camera on the same pole wherever required lux level of 7 lux is not available atleast 20m on either side of the boundary wall.
- 4.18 Wherever existing yard light poles / tower are available, vendor to use the same (if Page 28 of 153



- suitable) for mounting of CCTV cameras using proper structural support. The cost of structural support upto arm length of 0.5m is included in the cost of respective camera. For higher arm length, separate payment for the same shall be made as per SOR line item.
- 4.19 Telescopic / Safety Ladders required for installation, maintenance, testing and commissioning of the CCTV cameras installed/ to be installed on poles/ heights is to be arranged by the vendor throughout the execution and CAMC period and no separate payment for the same shall be made by BECIL.
- 4.20 Civil works associated grouting and fixing of equipment and entry/ exit of cables at the control equipment room, all masonry work associated with entry and ingress of equipment or cable inside the control room including making goods, painting and finishing, all masonry work associated with erection of cabinets, junction boxes, within the control rooms, security room & Terminal Manager's room etc.
- 4.21 Painting of all structural supports for trays, panels, junction boxes, instruments, ducts, supporting structural etc.

5.0 FACTORY ACCEPTANCE TEST: -

- 5.1 Factory acceptance test shall be carried out at Vendor's premises and the required setup for demonstration of the functional and technical requirements has to be arranged by the vendor at no cost to BECIL.
- 5.2 Vendor shall initially perform tests at his works to ensure that all components are in accordance with tender specification and functional requirements.
- 5.3 All equipments and sub-systems shall undergo minimum of 72 hours burn in period prior to start of the test.
- 5.4 During testing period, if there is a malfunction, the test shall terminate and Vendor shall replace the failed component/ module.
- 5.5 Thereafter the test shall commence all over again. If even after this replacement, the any equipment fails to meet the requirements, vendor shall replace the same to meeting the requirements and the system shall get tested again.
- 5.6 If equipment fail during the test and is not made successfully operational within two hours of active repair time after the failure, the test shall be suspended and restarted all over again only after the Vendor has replaced the device into the acceptable operation.
- 5.7 A test report shall be submitted to the purchaser for review within two weeks of completion of tests by the vendor.
- 5.8 Once all the tests are successfully carried out by the vendor upto their satisfaction level and in line with tender requirement, vendor shall give FAT call to BECIL along with FAT procedure and test result against each of the parameters of the FAT procedure.
- 5.9 On receipt of call and test result, BECIL representatives shall attend the FAT.
- 5.10 During Factory Acceptance Test, vendor shall test and demonstrate the functional Page **29** of **153**



- integrity of the offered system hardware and software to BECIL. No FAT material or equipment shall be transported until all required tests are successfully completed and certified ready for Shipment by BECIL.
- 5.11 BECIL reserves the right to be involved and satisfy himself at each and every stage of inspection. BECIL shall be free to request any specific test on any equipment considered necessary by him although not listed in this specification. The cost of performing all tests shall be borne by the Vendor.
- 5.12 Vendor shall note that acceptance of any equipment or the exemption of inspection or testing shall in no way absolve the Vendor of the responsibility for delivering the equipment meeting all the requirements specified in the Tender.
- 5.13 It shall be Vendor's responsibility to modify and/or replace any hardware and modify the software, if the specified functions are not completely achieved satisfactorily during testing and factory acceptance or in field during actual operation / functioning.
- 5.14 Vendor shall submit the following test certificate and test reports for purchaser's review:
 - a) Performance test certificate
 - b) Minimum light intensity testing
 - c) Certificate from Statutory Body for flame proof and weather proof enclosure
 - d) Witness Inspection

6.0 FAT SETUP & TEST GUIDELINES:

6.1 The FAT setup shall consist of following hardware as minimum to demonstrate the complete functionality of the offered system as per tender requirements:

S1 No	Hardware/ Equipment's Description	Min. Qty (As applicabl e)
1	HD IP FIXED DOME CAMERA	1
2	IP FIXED BULLET CAMERAS-4K	1
3	EXPLOSION PROOF HD IP FIXED CAM	1
4	IP FIXED BOX CAMERAS (4K) 1	
5	BOX CAMERA (2 MP) 1	
6	HD IP PTZ CAMERA (2MP) 1	
7	Layer 3 LAN Switches	2
8	Layer 2 LAN Switches	2
9	CCTV Client work station	1
10	Redundant Server	1



S1 No	Hardware/ Equipment's Description	Min. Qty (As applicabl e)
11	Storage	1
12	LED TV	One each size

- 6.2 Factory acceptance tests shall be carried out as per FAT procedure submitted by the vendor. However BECIL shall have rights to ask the vendor to demonstrate any other tests not mentioned in the FAT procedure but are covered in tendered scope of work.
- 6.3 The FAT procedure shall cover following tests as minimum.

SL no	Area	Tests
1	Hardware checks	Check the complete setup of the FAT, including offered hardware and software are as per tender specification and requirements.
2	Visual Check	Physical checking
3	Power ON/ Systemlogin checks	Verification of power up and login procedure (including differentlevel password and user ID verification).
4	Camera function checks	PTZ function, sensitivity, image setting, Video recording, etc.
5	Video Management Software and analytics	Multiple camera display,Intrusion detection, Analytics,Alarm recording etc.
6	Strorage capacity	To be physically verified against requirement as per calculation
7	RAID configuration	RAID functionality to be demonstrated
8	Redundancy checks	Redundancy checks L-3 switches & server etc.
11	System Restart afterpower failure	Simulation of power failure and system restart self- booting up ofsystem configuration and program after power restoration
12	Alarms and Event Logs	Check for generation of alarms and event log report

6.4 Any deficiency / problem identified during testing or any changes required in data/ configuration etc shall be clearly brought out during FAT and the same have to be incorporated/ corrected by the vendor.

7 Training & Documentation:

7.1 The vendor shall undertake to train officers / staff nominated by the Corporation



as per clause of Refer to SPECIAL TERMS AND CONDITIONS OF CONTRACT

7.2 Documentation to be submitted shall include but not be limited to:-

Sr. No.	Description
1.0	GENERAL
1.1	Project & Service team along with escalation matrix
2.0	ENGINEERING DOCUMENTS
2.1	Functional Design Specification
2.2	System Architecture ,GAD and other drawings
2.3	Detailed list of components
2.4	Datasheet and catalogues of equipment offered
2.5	Bandwidth and storage calculation vis-à-vis supply vs requirement
2.6	Bill of Material
2.7	FAT Procedure
3.0	As Built Drawings
3.1	Electrical power supply distribution Diagram, Distribution diagram for UPS power supply System
3.2	System drawings
3.3	Loop diagram for CCTV
3.4	Wiring diagram
3.5	Cable route, cable schedule, cable termination schedules for power, signal, LAN, FO cable, Junction box details & cable trays
3.6	Interconnection diagram
3.7	Earthing System & scheme
3.8	General installation of all the equipment's along with dimensions to be provided.
4.0	SPARE PARTS
4.1	Commissioning spares
4.2	Comprehensive AMC spares
5.0	INSPECTION AND TEST CERTIFICATES
5.1	Quality Assurance Plan
5.2	Material test reports and certificates along with weatherproof and explosive license of equipments wherever applicable
5.3	Vendor's guarantee / warranty
5.5	Software Licensee
5.6	FAT and SAT report
5.7	Training on system operation and maintenance for BECIL's staff at the site to be provided
6.0	MANUALS (BOTH FOR VENDOR'S & SUB -VENDORS SUPPLY)
6.1	Installation, Operation & Maintenance manual for hardware & Software
6.2	All the Software along with OS and driver to be submitted with license
6.3	All configurations back up, integration/mapping details if any to be submitted
6.4	Software installation along with configuration manual to be provided to site specific.



Sr.	Description	
No.	Description	
6.5	Password details if any	
6.6	CCTV vendor shall provide two sets of Hard copy of documents along with soft	
	copy in a hard Disk/Pen drive	

8.0 SITE ACCEPTANCE TEST: TEST RUN / TRIAL RUN: Refer to SPECIAL TERMS AND CONDITIONS OF CONTRACT

9 OTHERS

Any other work not specifically mentioned above but is included in the BOQ/ Tender document and facility for the same is available at site, the same also need to be covered in the scope of work of the vendor.



SECTION - IV

1. FUNCTION SPECIFICATION AND SOFTWARE TESTING

This specification defines the minimum requirements of CCTV System designed for reliable, effective and optimum control & monitoring of a Petroleum Marketing Terminal / Terminal Operations.

1.0 GENERAL

- 1.1 The CCTV system software shall be governed by the operating system running in a real time mode and shall be able to meet all functional requirements as specified minimum.
- 1.2 The system shall have an extensive set of self-diagnostic routines, which shall locate and identify the system failure at least up to module level including redundant components. Failure of a module in a sub-system shall appear on the Operator Consoles irrespective of the display selected.

2.0 SYSTEM EXPANDABILITY

2.1 The system design shall permit the on-line addition of new devices with no disruption to either the operation of existing devices or system communications for future expansion. The offered software should have in-built capability / provision to take care for future expansion.

3.0 UPGRADABILITY

3.1 The system architecture shall provide a logical planned implementation of evolving technologies and provision for up-gradation of existing equipment.

4.0 NETWORK REQUIREMENTS

- 4.1 The system communication shall be on the high-speed modern local area network (LAN) confirming to IEEE 802.3, token ring topology IEEE 802.5/ FDDI (Fiber distributed data interface), ANSI & ISO standards and the same is also conforming to OSI functional layer and utilize industry standard protocols with 100 MBPS speed and physical connection utilizing 100 base2, 100 base 5, 100 base FO design. FO design preferred as the speed is high upto gigabits, bandwidth is high, and resistant to electromagnetic noise is high.
- 4.2 To ensure maximum reliability, communications shall be dual redundant. The communications system shall be capable of sustaining loss of one media channel without loss of data or performancedegradation.
- 4.3 Managed Ethernet Switches 100 MBPS port should be used for establishing LAN inter-connectivity in dual redundant configuration. All the cabling within Ethernet network should have 100% redundancy or better.
- 4.4 30 % spare ports are to be provided on each of the Ethernet Switches.



- 4.5 Type of communication cable to be used for dual LAN system
 - (a) Inside control room/security room/terminal manager room: STP / UTP
 - (b) Between Control room and security room: Fiber optic
 - (c) Between Control room and Terminal Manager Room: Fiber optic

Loss of communications shall not cause loss of control at the local subsystem.

- 4.6 The communication software should employ a peer-to-peer / Master-Slave communications protocol between all sub-systems wherever applicable.
- 4.7 Loss of a subsystem or module shall not disrupt communications to other subsystems or result in performance de gradation. Loss of a subsystem or module or module channel shall generate a diagnostic message to be displayed at the operator stations and logged; identifying location / type of fault.

5.0 SYSTEM ACCESS SECURITY:

- 5.1 The Operating system of client work station must be password protected. Minimum two different levels of user ids should exist One of monitoring purpose (User) and other for configuration purpose (Administrator). The user id to be used for monitoring must not have administrative/configuration rights.
- 5.2 For accessing to VMS software, there should not be any mandatory requirement to login into the Windows/ operating System through administrative user id and password.
- 5.3 For individual user, separate VMS login to be created with administrative / configuration rights.
- 5.4 For VMS software login following level of security to be provided (Administrative level, Supervisorylevel and Operator level).
- 5.5 Validity checks shall be automatically performed by the system to ensure that control parameters entered by the operator are within the defined limits.
- 5.6 Access to all system functions shall be protected by a multi-level password system.

6.0 NETWORK SECURITY TOWARDS CYBER THREATS:

- 6.1 Following cyber –security measures to be implemented in CCTV network for securing to cyber threatfrom the external world.
 - a. Restriction of access to CCTV network from any network (IOC or outside).
 - b. Blocking of internet access directly from CCTV network through internet dongles.
 - c. Availability of logs to determine the access of the CCTV network from outside network if any.
 - d. All CCTV machine's USB port access to be blocked.
- 6.2 Switches and routers connecting to CCTV network need to follow the following
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security guidelines:

- 6.2.1 Any configuration change in switches must be done with the permission from Location in-charge/competent authority.
- 6.2.2 Disable the unnecessary services like finger, http, identd, tcp-small-servers, udp-small-servers orany other service not required.
- 6.2.3 Unused interfaces must also be disabled.
- 6.2.4 Only the required services for required IP addresses should be permitted, rest of the traffic should be blocked through Access Control Lists (ACLs) during firewall configuration.
- 6.2.5 Password must not be visible in configuration and must always be encrypted.
- 6.2.6 Configure banners for the switches
- 6.2.7 Network Time Protocol (NTP) configuration must be done in switches/routers.
- 6.2.8 Backup of configuration of router and switches needs to be taken by the location on regular basis (six monthly) and also whenever any configuration is changed.
- 6.2.9 A designated machine with controlled internet access through BECIL internet gateway identified at each location which would act as the interface between outside world and CCTV servers. Access allowed only to pre-defined users and only through Teamviewer/ Remote access software application. Autoinvoicing desktop PC at each location is to be used for this purpose.

7.0 CCTV SERVERS SECURITY:

In order to ensure the uptime of Servers following guidelines need to be followed:

- 7.1 Security features provided with CCTV systems should be enabled. This should be done with caution to ensure minimum downtime.
- 7.2 Any network services / daemons / ports not required should be stopped and disabled.
- 7.3 Remote access for vendors to CCTV systems to be strictly prohibited. Also any kind of pen drive / external disk should not be allowed to be used by vendor on CCTV systems. If any patch upgrade needs to be done, then the same can be downloaded from Corporate LAN from the OEM website, the software checked for viruses and then deployed on CCTV servers.
- 7.4 Any software upgrade / patch deployment should first be done on one server or preferably test server (in the OEM lab). After the successful deployment of patch/upgrade, the system should be under observation for few days; If no



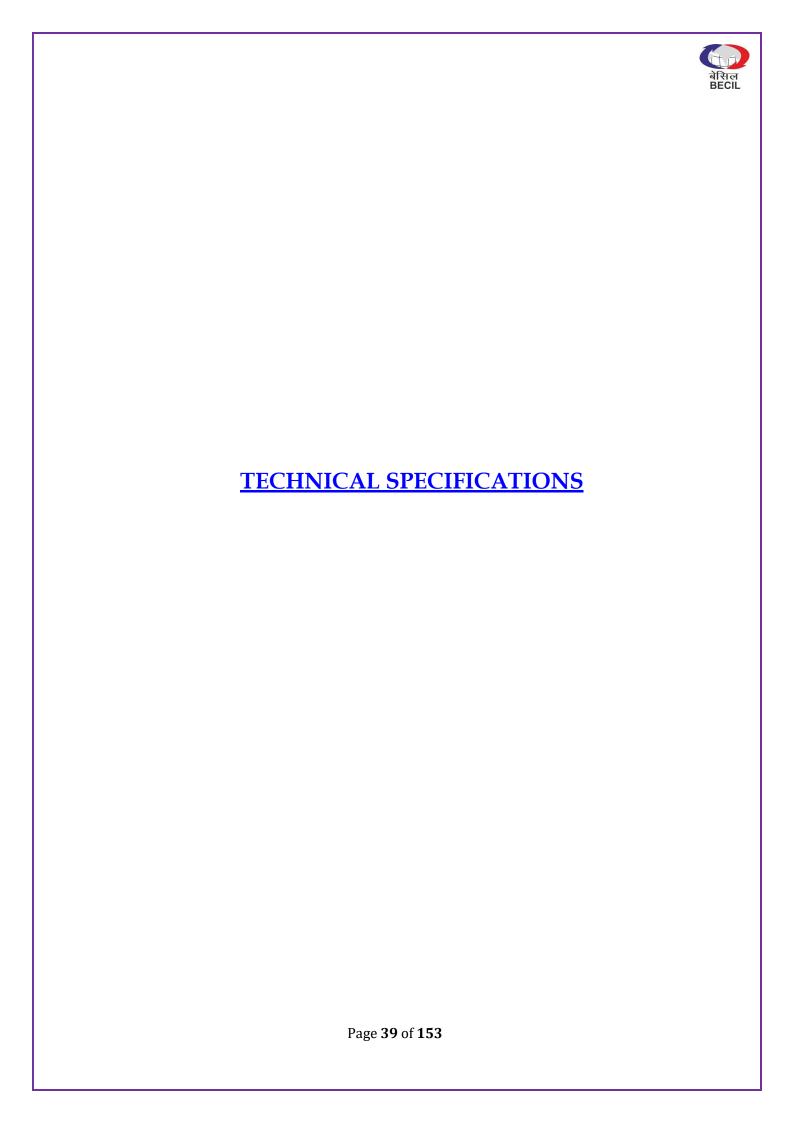
- issues are observed, then only the patch should be deployed on all CCTV servers.
- 7.5 Detailed and comprehensive documentation must exist for installation of CCTV servers along with the original OS / Application software Images and installation keys.
- 7.6 Disaster Recovery Kit should exist containing all the necessary documents, software, configuration backups, keys, passwords for installation of CCTV server.
- 7.7 Minimum two different levels of user ids should exist One of monitoring purpose and other for configuration purpose. The user ID used for monitoring purpose must not have administrative/configuration rights.
- 7.8 User ID and the password should never be same. The passwords should be complex consisting of minimum six alphanumeric characters in length and also allow use of special characters. The password shall be encrypted.
- 7.9 Audit trails must be enabled for the configuration changes and logging and the same should be reviewed on regular basis.
- 7.10 Approval must be taken from the required authority before making any configuration changes in CCTV servers.
- 7.11 No internet access to be allowed in CCTV servers.
- 7.12 The logs and audit trails of the servers must be configured and stored for at least 2 years as per theGovernment Guidelines.
- 8.0 The vendor shall be fully responsible for maintaining updated antivirus throughout warranty and CAMC period at no extra cost to Indian Oil Corporation Ltd.

9.0 User ID & Password Authentication

- 9.1 The operator can login to the system by entering correct user ID and password. The User ID and password must be of minimum six (6) alpha-numeric characters in length and also allow use of special characters. The password shall be encrypted.
- 9.2 After a series of three (3) unsuccessful attempts to login, the operator shall be locked for a configurable period. The time-out period shall be set via system configuration displays. During operator station lockout, the other windows functions of the computer running the operator station software shall not be affected.
- 9.3 Each operator shall be assigned a password and a set of authorized areas / group.
- 9.4 The system shall provide a facility to allow all operators to change their password at any time.
- 9.5 All passwords stored in the system shall be encrypted. Administrator can define



- the user account validity. Provision for automatic timed out/ sign off from the operator station should be available.
- 9.6 System shall not allow to copy or paste passwords. The same has to be mandatorily typed.
- **10.0** Capability of the system for remote view of CCTV display from any system beyond CCTV network (viz, different network in Location or any other remote location with or without installation of client software over secured network). Successful bidder is required to demonstrate the said feature.





1. REDUNDANT UPS SPECIFICATIONS

1.0 Scope

1.1 The scope of this specification is to define technical requirements of design, manufacture, testing, packing and dispatch of static Uninterrupted Power Supply (UPS) System, which shall be installed in the Petroleum Storage Terminal Project of Indian Oil Corporation Ltd. (BECIL),

2.0 Codes and standards

2.1 The equipment shall comply with the requirements of latest revision of following standards issued by BIS (Bureau of Indian Standards) unless otherwise specified

Codes	Description
IS 5	Colors for ready mixed paints & enamels
IS 1248	Direct acting indication analogue electrical measuring
	(Part 1, 2, 4 and 9) instruments and their accessories
IS 2147	Degree of protection provided by enclosures for low
	voltage switchgearand control gear
IS 3700	Essential rating and characteristics of semi-conductor
	devices Part (1 to 11)
IS 3715	Letter symbols for semi-conducting devices (Part 1 to 4)
IS 4411	Code of designation of semi-conductor devices
IS 5001	Guide for preparation of drawings of semi-conductor
	devices Part (1 & 2) and integrated circuits
IS 5469	Code of practice for the use of semi-conductor junction
	devices Part (1 to 3)
IS 7204	Stabilised power supplies D.C. output Part (1 to 4)
IS 12021	Control transformers for switchgear and control gear
	for voltages notexceeding 1000V dc
IS 13314	Solid state inverters run from storage batteries
IS 13703	Low voltage fuses for voltage not exceeding Part (1 to
	4) 1000V AC or1500V DC
IS 13947	Specification for low voltage switchgear and control
	gear(Part-4 / Sec-1)
IS-1652	Lead Acid type Batteries with Plante positive plates
IS- 11171	Dry type transformers
IEEE-485	Battery Sizing
IEC 62040	Uninterruptible power system (All Parts)

2.2 In case of imported equipments, standards of the country of the origin shall be applicable if these standards are equivalent or stringent than the applicable Indian Standards.



- 2.3 The equipments shall conform to the provisions of the Indian Electricity Rules and other regulations in force in the country.
- 2.4 In case Indian Standards are not available, standards issued by IEC/BS/VDE/IEEE / NEMA or equivalent agency shall be applicable.

3 Operating Conditions

- 3.0 Design temperature for Electrical Equipments/Devices :Refer Site Data
- 3.1 Relative Humidity: max 95 % (non -condensing)

4.0 Design and Operational Requirements

- 4.1 General
- 4.1.1 The UPS system shall be an integrated system comprising several components of equipment with major Items as listed below (Refer attached SLD)
 - Static rectifiers (SCR based)
 - Static Inverters (IGBT based)
 - Storage battery (1.2 V NiCd Battery) with MS racks, (PVC lining stool or wooden stool)
 - Battery bank (2x50% for $\frac{1}{2}$ hour back up time at rated load)
 - Static Switches (at Inverter Output & Static Bypass line)
 - Manual Bypass Switch 2 Nos, 1 for each UPS to avoid single point failure
 - AC Distribution Board
 - Servo Controlled voltage stabilizer in bypass
 - Isolation Transformer: 3 nos: At input, built-in inverter at output & Bypass line before SCVS.
 - Protection devices
 - Lightening and Surge protection devices as input ends as per IEC 61643-11
 - Interconnecting cabling between various units of UPS

Any other equipment/accessories required for completeness of the system whether specifically mentioned herein or not, but necessary for completeness and satisfactory performance of the system.

- 4.1.2 The UPS system shall be suitable to feed all loads connected to the output which are primarily instruments, PLC, DCS, computers, disc drives and other SMPS equipment leading to high crest factor of the load.
- 4.1.3 The inverter shall be transistorized (IGBT) type or with the latest proven technology. All components shall be a high quality and reliability that satisfy with the requirements of a secure AC power to vital equipment with respect to performance, controlling, monitoring and safeguarding function in continuously operating CCTV System. Components shall be capable of withstanding the thermal and dynamic stresses resulting from internal and external short circuits and switching surges etc.



- 4.1.4 The design of UPS shall be such as to minimize the risk of short circuits and shall ensure human and operational safety.
- 4.1.5 The UPS unit and its associated equipments shall be suitable for operating at the specified rating continuously with the specified voltage and frequency variations under the ambient conditions without exceeding the temperature more than 15 deg. C above ambient around PCBs inside the cubicle and without any detrimental effect on any part.
- 4.1.6 The UPS system shall be based on latest generation of S-pulse width modulated (PWM) design with proven performance. IGBT based design is required.

4.2 Input power Supply

4.2.1 The UPS shall be suitable for input power supply as defined in data sheet. If not specified therein the UPS shall be suitable for the following input power supply.

Voltage 415V ±10% 3 Phase Frequency 50Hz ±5%

- 4.2.2 In addition to above variations, input voltage may be subject to transient variations comprising voltage dip to 80% of normal voltage during motor start-up and voltage interruption during short circuit as well as frequency variation due to large motor startup. UPS system shall be designed to operate satisfactorily while deriving the input power from an emergency diesel generator set.
- 4.2.3 UPS system shall also operate satisfactorily on input power supply having
 - The ratio of negative to the positive sequence components not exceeding 5% and totalharmonic disorder of not more than 5%.
- 4.2.4 The incoming power supply to the UPS will be provided by 3 nos. feeders as per SLD. Two feeders shall feed the rectifiers while one feeder shall supply power to stabilized bypass supply.
- 4.2.5 The manufacturer shall specify the current rating of the input feeder to UPS from client switchboard based on 150% overload at minimum battery voltage and including the UPS efficiency.
- 4.3 Configuration and operation requirements Parallel Redundant UPS scheme with bypass (with 2x50% batteries)
- 4.3.1 In UPS system having this configuration, two sets of rectifiers and inverters shall be provided. Under normal operating conditions, When AC mains power is available both the rectifiers shall operate in parallel and supply DC power for



float/rapid charging of the batteries and simultaneously to inverters. In case failure of one rectifier, the other rectifier shall feed the complete load and the battery without any interruption.

In case of incoming supply failure or failure of both the rectifiers the batteries shall feed the inverters without any interruption. Each rectifier shall be designed for simultaneously feeding complete inverter load and float/rapid charging of the batteries to its rated capacity. Each rectifier shall be equipped with "On Line" automatic as well as manual charging facility.

Normally both inverters will be synchronised with each other and with bypass supply. Both inverters shall operate in parallel and share the load equally.

The load sharing controls shall not be subject to common mode failure and any failure of the loadsharing controls shall not result in the loss of vital power.

When a disturbance/fault occurs in any one of the inverter, the faulty unit should get automatically disconnected and entire load shall be fed from the other inverter. In case both the inverters develop fault, the complete load shall be transferred to stabilized bypass supply through static switches and retransfer of load from the stabilized bypass supply to the inverter shall be possible in auto as well as in manual mode.

4.4 UPS Design and Performance Requirements

- 4.4.1 Incoming AC supply shall be converted to DC through 3 phase full wave controlled rectifiers. The rectifiers shall operate according to the constant voltage current limiting principle and shall incorporate a "Soft Start" feature to gradually accept load on initial energizing.
- 4.4.2 The rectifier section of the UPS shall be capable of precise regulation to prevent damage to the battery. The output voltage of the rectifier's DC bus without the battery shall be stabilized to within
 - +/- 1% of the set value during load variation between 0 to 100% of the rectifiers and specified mains input voltage variation.
- 4.4.3 Suitable protection shall be provided in the control circuits to guard against instability of phase controlled rectifiers due to electrical oscillations which may be present in the input supply as caused by emergency DG set.
- 4.4.4 The UPS system including the stabilized by-pass shall be galvanically isolated from the input power supply system by providing double wound transformers. All transformers shall be natural air cooled, dry type suitable for location inside the panel. All rectifiers shall also have a double woundtransformer at its input.
- 4.4.5 An RFI filter shall be provided. The production of radio frequency interference voltage shall not exceed the value of suppression grade"N" as defined in VDE-



0875. The performance of the UPS system shall not be affected or in any way degraded by use of portable radio transmitter receiver in the vicinity of the UPS system and or UPS room.

4.4.6 Surge & Lightening Protection:

- The UPS needs to be protected against lightning impulse current (10/ 350 μ s) and switching surges (8/20 μ s) as well. Device should have separate plug having Spark Gap & separate plug having MOV on a common base to get protection against lightning and switching surge. The device shall be able to handle continuous over voltage 350 V.
- The Incomers (3φ, 4 wires 3 nos.) of the UPS in Main Control Room need to be installed with spark gap based Type1 + Type 2 or T1+T2 with separate N and PE (L1, L2, L3, PE, N) as per IEC 61643-11
- The device shall be capable to discharge lightening current of 100 KA (10/350 μ s, lightning current) (25 KA L-N and 100 KA N-E) and transient surges of 12 KA (10/350 μ s, lightning current) between N-PE and 40 KA (8/20 μ s switching surges).
- 4.4.7 The UPS unit shall be suitable for 0.7 lagging to unity power factor. The overall power factor may be taken as 0.8 lagging unless indicated otherwise. The overall efficiency of the UPS system shall not be less than 80% at rated load and 0.8 pf.
- 4.4.8 The UPS shall be provided with automatic sequence and power walk circuit(s) with time delay of up to 15 sec. such that the rectifiers and inverters can start operating automatically when incoming AC power is restored allowing the UPS to be loaded automatically.
- 4.4.9 Facility for initial charging of batteries shall also be provided at a voltage level recommended by the battery manufacturer. The inverter may be disconnected during initial charging of the battery.
- 4.4.10 Battery bank shall be 1.2 V NiCd Battery. Battery capacity shall be decided considering load power factor as 0.8 and as per IEEE 485, 1.25 ageing factor, 10% design margin and temperature compensation at 5°C. Each UPS shall be provided with dedicated Battery. Each Battery bank capacity in AH shall be adequate for ½hour backup, specified load and site conditions. The end cell voltage after discharge shall be limited to 1.1 volt per cell
- 4.4.11 On failure of the main supply, inverter unit shall continue to supply rated load from the battery bank for ½ hour duration.
- 4.4.12 The rectifiers/chargers shall be designed to completely charge the Lead acid



and Nickel cadmium batteries in a maximum time of 10 hours after complete discharge and at the same time meeting the inverter requirements when the inverter is delivering its rated output at 0.8 pf. Facilities shall be provided to initiate battery rapid charge operation by manual & automatic means. An auto charging sequence should be provided for the rapid and float charging based on current sensing. Battery charger for NiCd battery shall be sized to provide boost charging of the battery up to 90% of rated Ampere hours within duration of 24 hours and up to 100% within 4 days.

- 4.4.13 In addition to above, the charging shall be transferred from rapid to float mode after a preset time adjustable through 0-24 hours timer as back up protection against overcharging. Necessary alarms to indicate battery deep discharged and D.C. over-voltage conditions shall be provided. Selector switch shall be provided for selecting the float charge or boost charge mode. Facility shall be provided for boost charging of batteries either in auto or manual mode.
- 4.4.14 The rectifiers shall be sized based on the maximum inverter input load when inverter is delivering its rated output at 0.8 rated pf and recharge the battery to nominal rated capacity of the battery. The DC load imposed by the inverters shall be considered under the most severe operating conditions where only one rectifier is operating but the UPS load is equally shared by all the inverters. Each Rectifier should be 12-pulse (fully controlled)
- 4.4.15 The DC rectifiers shall sense the battery charging current and adjust the DC bus voltage to maintain the charging current to preset level. A separate current limit circuit shall also be provided for adjustment of battery current. The rectifiers shall be protected against reverse battery connection at DC link voltage bus. Subsequent to a discharge cycle when battery is connected to rectifier, the battery current shall be monitored, controlled and limited to set value automatically irrespective of the inverter input current.
- 4.4.16 The battery maybe taken out of service for maintenance, during which period it shall be possible for the inverter to continue operation by drawing power from the rectifier. Ripple content at the DC link shall not exceed 2% even with battery disconnected.
- 4.4.17 Battery/DC link shall be provided with sensitive earth leak detection.
- 4.4.18 Bidder shall provide the battery sizing (AH) calculation along with the bid for purchaser's review. The C10 capacity test certificate shall be submitted to the purchaser before dispatch to site.
- 4.4.19 The UPS output voltage shall be sinusoidal with a relative harmonic content not exceeding 5% for both linear and non linear loads.
- 4.4.20 The inverter shall control the output voltage of the UPS such as to maintain



- synchronism with the mains bypass voltage during variations in mains frequency up to the limit specified. During variation in mains frequency exceeding these limits, the inverter shall revert to internal frequency control.
- 4.4.21 It shall be possible to vary the output voltage steplessly within + 5% of the specified output voltage. This adjustment shall be possible to be made when UPS is in operation
- 4.4.22 The inverter steady state output voltage and frequency (free running) variation shall not exceed ±1% for specified input power supply condition and no-load to full load condition.
- 4.4.23 UPS shall be designed for overload of 125% for 10 min. and 150% for 1 min. after which drooping characteristic shall come into operation. UPS shall be provided with current limiting circuit to avoid excessive loading beyond its permissible overload withstand capability.
- 4.4.24 Output frequency of the inverters must remain synchronized to one another which in turn shall be synchronized to the standby power supply frequency provided the latter does not vary by more than 50Hz ±5% in asymmetrical steps of ±1.0%. It should be possible to change the setting of frequency range of synchronism between above limits by frequency selector switch. Outside these limits inverter should be desynchronize with the bypass and run at its own frequency. When running at its own frequency, frequency variation shall be maintained less than ±1.0%.
- 4.4.25 Re synchronization with bypass power supply must take place automatically with some time delay when frequency comes back to +/- 5% ranges. Changeover from inverter to bypass shall be possible in desynchronized mode of operation. Change over time in both synchronized and desynchronized mode operation shall be indicated.
- 4.4.26 UPS system shall be suitable for both floating output and earthing of one leg in case of single-phasesystem / star-point in case of three-phase system
- 4.4.27 Output voltage shall be single phase 230VAC. The maximum waveform distortion of the output voltage shall not exceed 3% RMS for linear loads and 5% RMS for non-linear loads. The UPS unit shall be suitable for operation for non-linear loads having crest factor of 3.
- 4.4.28 Voltage dip / rise on sudden application / throw of 100% load or on changeover from inverter to bypass or vice versa shall not exceed 15% and shall be recovered within 20 msec. to 98% of the rated voltage
- 4.4.29 The stabilized bypass supply shall be designed to regulate the output voltage within +/- 2% of the rated voltage over complete range of load from no load to Page 46 of 153



- full load and for specified input supply voltage variation. Voltage stabilizer shall be Servo Controlled type (SCVS).
- 4.4.30 The stabilized bypass supply shall have a continuous current rating equivalent to the rated output of the UPS unit and be capable of conducting a current ten times the rated output for the duration more than the fault clearing time of the type of fuse provided. The load transfer devices shall comprise of continuously rated static elements in both inverter and stabilized bypass supply.
- 4.4.31 Adequately rated static switches in required number & configuration shall be provided in the inverter(s) output and stabilized bypass supply to ensure positive isolation of faulty inverter section such that the other inverter and bypass circuits do not feed into the fault leading to under voltage/ trip. The short time rating of all the static switches shall be at least 10 times the rated output for the duration more than the fault clearing time of the type of fuse provided.
- 4.4.32 Facility shall be provided to manually and automatically initiate transfer of the load from inverters to the stabilized bypass supply and from stabilized bypass supply to the inverters. Under voltage and overvoltage sensing levels to initiate transfer shall be adjustable. The maximum transfer time between inverters and bypass supply shall not exceed 4 msec and 20 msec in synchronous and asynchronous mode respectively.
- 4.4.33 All breakers shall be adequately rated for continuous rating as well as breaking capacity as applicable. Paralleling of breaker/switch/contractor poles to achieve the required current rating is not acceptable. All output isolating device shall be double pole type.
- 4.4.34 All electronic power devices including thyristors, transistors (IGBTs), diodes etc shall be rated under operating conditions for approximately200% of the maximum current carried by the device. All other electrical components such as transformers, reactors, breakers, contractors, switches, bus bar etc shall be rated at least 125% of the maximum required rating. No electronic device shall be subjected to PIV greater than 50% of its rated value.
- 4.4.35 All the thyristors, power transitors, diodes and other electronic devices of the UPS shall be protected with high speed semiconductor fuses, which shall also take care of protecting these devices from excess heat.
- 4.4.36 The outgoing circuits of ACDB shall be protected by semiconductor fuses. Each inverter shall be designed to clear a fault in any of the branch circuits upto maximum rating of 25% of the system capacity without the assistance of the stabilized bypass supply. In case of any fault clearing time shall be less than 4 msec.



- 4.4.37 All PCBs shall be provided with a transparent epoxy coating for environmental protection and tropicalisation. They shall be suitably away from heat sources.
- 4.4.38 All electronic control and monitoring printed circuit cards shall be installed in standardized electronic equipment frames and shall be fitted with suitable means for easy removal. The frames shall incorporate guides for PCB's to facilitate correct insertion of PCB's and shall allow access to the wiring side of the connectors. All PCBs shall be placed in a manner to avoid replacement of a PCB by a wrong spare PCB. Monitoring points shall be provided on each of the PCB's and the PCB shall be firmly clamped in position so that vibration or long usage do not result in loose contacts. Failure of each PCB shall be indicated by visual alarms. Visual fault diagnostics shall preferably identify faults up to various sections in the card.
- 4.4.39 Forced ventilation of panel, if provided, shall be supplemented by 100% redundant fan. In normal operation, normal & redundant fans shall run together. The power supply for the fans shall be tapped from the inverter output. However, the rating of the UPS as specified in the data sheet shall be net of the output of UPS after deducting power consumption for fans etc. However in case of non operation of 50% of running fans, UPS output shall not be affected. The fans shall be arranged to facilitate removal of fan for maintenance without requiring system shutdown. All fans shall be equipped with monitoring facilities to provide an alarm in the event of fan failure.
- 4.4.40 Maximum noise level from the UPS system at 1 metre distance, under rated load with all normal cooling fans shall not exceed 75dBA.
- 4.4.41 Potential free contact, min 5 Nos. to be provided in addition to Ethernet port for remote monitoring.
- 4.4.42 The UPS shall be provided with fault diagnostic feeders. Each UPS systems shall be provided with input and output isolation transformer (Refer attached SLD) of adequate capacity having CMMR of 100db minimum with coupling capacitance of 0.01pf. All UPS systems shall be provided with a facility for online discharge of battery bank on load, without any risk to load

5 Constructional Details

- 5.1 The equipment shall preferably be supplied in enclosed, dust & vermin proof, floor mounted, sheet steel enclosure. In case, it is necessary to provide opening for ventilation, this should be closed by fine mesh. Minimum degree of protection for enclosure shall be IP-31 as per IS13997.
- 5.2 Enclosures shall be fabricated with cold rolled sheet annealed steel of minimum thickness 1.6 mm.
- 5.3 The door hinges shall be as per OEM standard.
- 5.4 All external hardware shall be cadmium / Zinc plated steel. Hardware for fixing Page **48** of **153**



- the removable parts shall be provided with retaining devices.
- 5.5 UPS unit shall have panel for accommodating rectifier/charger, inverter and static switch shall be housed in single cabinet, static stabilizer, isolation transformer, bypass supply, and distribution boards shall be individually housed separately.
- 5.6 Power Distribution boards shall be of fixed type, floor mounted, single front execution in fully compartmentalized design and divided into distinct panels each comprising of bus-bar chambers, individual feeder modules and vertical cable alley. Bus bar shall be color coded and live parts shall be shrouded to ensure complete safety to personnel intending routine inspection by opening panel doors. It shall be possible to operate the switches without opening the doors. Vertical cable alley of minimum 200mm width with suitable supports shall be provided for the termination of outgoing cables. Suitable supports shall be provided for supporting incoming and outgoing cables. All outgoing switches shall be air insulated load break type. Fuses on outgoing feeders shall be fast acting semiconductor type and cable entry shall be from bottom. The gland plate of the distribution board shall be non-magnetic type where single core cables are used. Cable glands shall be of brass and single compression type and cable lugs shall be of tinned copper.
- 5.7 Biometric fingerprint cum smart card reader along with accessories (electromagnetic door locks for front & Rear doors etc) to be provided on the Power Distribution panel for restricting un-authorised opening of the panel.
- 5.8 Mounting height of components requiring operation and observations shall not be lower than 300 mm and higher than 1800 mm.
- 5.9 Power cables shall have Aluminium conductor, XLPE insulation and FRLS PVC outer sheath and Control cables shall have copper conductor, XLPE insulation and FRLS PVC outer sheath. Control cables shall have minimum cross section of 1.5 sqmm.
- 5.10 All control wiring shall preferably be enclosed in plastic channels or otherwise neatly bunched together. Each wire shall be identified at both ends by PVC ferrules.
- 5.11 All solid state power devices shall be protected through current limiting fuses having micro switches for operation indication. All power and control switches shall be mounted on the door operable externally and shall be of rotary type. Space heaters with adjustable setting thermostat and 100W incandescent lamps with Edison screw shall be provided in each panel. Test plugs shall be provided for electronic circuits. All control circuits shall be protected by miniature circuit breakers.
- 5.12 A 25mm x 8 mm copper earth bus shall be provided at the bottom of the panels with provision for earth connection at both ends to the main earth grid. Suitable earthing of non-current carrying metallic parts of various equipment shall be done to ensure safety.
- 5.13 All metal parts shall be treated (Seven tank process) so as to ensure efficient Page **49** of **153**



anticorrosive protection. Hardware shall be zinc passivated or electro galvanized. Panel enclosure and structure supports shall be thoroughly cleaned and degreased to remove mill scale and rust etc.

5.14 Bidder shall provide indicating lamps for Normal and bypass supply, ON, OFF, TRIP. Acknowledge and reset buttons

6.0 Transformers and Chokes

All transformers and chokes shall be of dry type and air-cooled. This shall be class 'F' insulated, vacuum impregnated.

7.0 Electrolytic Capacitors

These may be polarized aluminum type 1, suitable for long life and category 1, as per IS-4317 or equivalent IEC. The capacitor shall preferably be self-healing type. These shall be so located in inverter panels that the operating temperature does not exceed 65 degree C maximum.

8.0 Instruments

Digital Multi function meter shall be provided for voltage, current, frequency, Power etc. These shall be flush mounting type.

Separate Digital Multi function meter shall be provided for UPS and Auxilliary power supply.

9.0 Static Switches

Static switches shall be naturally commutated type with parallel inverse connected thyristors. These shall be rated for continuous duty for 100% load. Short time rated static switches are notacceptable.

10.0 **Battery**

Battery along with accessories shall conform to Engineering Standard ES-8142.

11.0 Indication Lamps

All indication lamps (if applicable) shall be of LED type suitable for the specified control voltage, having minimum illumination of 40 milli candela.

12.0 Moulded case Circuit Breakers

For isolated devices of various equipment, moulded case circuit breakers shall be used. These shall be provided with overload and short circuit protective devices and shall conform to IS-2516.

13.0 **Painting**

The enclosures after suitable pre-treatment shall be painted with two coats of anti-corrosion paintfollowed by two coats of anticorrosive paint.



All paints shall be carefully selected to withstand tropical heat and extremes of weather. The paint shall not scale off, crinkle or be removed by abrasion due to normal handling.

Electrostatic power paint shall be preferred.

14.0 INSTRUMENTS, INDICATION AND ANNUNCIATION

- 14.1 An illuminated one line diagram indicating operational status shall be provided at front of the panel.
- 14.2 Following measuring instruments shall be provided on the system

Charger Panel

- AC Line Voltage (with a selector switch).
- AC Line current (with a selector switch)
- Charger output voltage (each).
- Battery Charging current.
- Battery current (charging/discharging current).

Inverter panel

- Bypass Voltage.
- UPS Output voltage
- UPS AC Output Current.
- Frequency Meter at each invertor output.
- 14.3 Following indications lamps shall be provided

All indicating lamp shall be LED type. LEDs provided for indication shall be cluster type withadequate brightness and minimum 2 nos. LED chips per light

Charger Panel

- AC mains ON (3 lamps).
- Battery On float.
- Battery on boost.

Inverter Panel

- Battery Output on.
- Inverter I feeding.
- Inverter II feeding.
- Bypass Supply ON.
- Load on bypass.
- Mains Synchronized/ frequency out of limit.
- 14.4 Audio Visual alarm shall be provided for the following complete with "ACCEPT", "RESET" and "TEST" facilities.

Charger Panel

- Mains failure
- Battery Charger failure / SCR fuse failure
- Battery Low
- Inverter temperature high



- Low voltage from inverter
- Load on Bypass
- All power fuse failures
- DC earth fault/ DC over Voltage
- Main under voltage
- Cooling fan tripped (Common for all fans

Inverter Panel

- Inverter temperature high
- Low voltage from inverter
- Load on Bypass
- Inverter overloaded
- DC input failure/ under voltage.
- Inverter I : Over voltage/ Under voltage.
- Inverter II: Over voltage/ Under voltage

15.0 Remote communication with host system:

- 15.1 UPS shall have facility to remotely display below mentioned data:
 - a. Running Status / Load on inverter
 - b. Load on bypass
 - c. Incomer Fail alarm / Load on battery
 - d. Over Load
 - e. Battery Low
 - f. Spike / Surge Voltage beyond range (if available)
 - g. Output Frequency beyond range (if available)

16.0 Documents

- 16.1 Data/drawings after the order (3 copy each)
 - a. Specification Sheet
 - b. Technical Particulars/datasheet
 - c. Block Diagram
 - d. General Arrangement drawings and Foundation plan
 - e. Calculation for Battery capacity Sizing
 - f. C10 capacity test certificate
 - g. Feeder details for distribution boards
 - h. Quality assurance plan (QAP) for purchaser's approval prior to dispatch at supplier's works and during commissioning at site
 - i. Descriptive literature and catalogues
 - i. Bill of Materials
 - k. Schematic & Wiring Diagram
 - I. Installation, operation and maintenance manual
 - m. Spare parts list with identification
 - n. Test Certificates and Test reports (not older than 5 years)
 - o. Guarantee Certificates

17.0 Testing and Inspection(As per IEC 62040-3)



17.1 In addition to the standard tests carried out by the Vendor in accordance with IEEE and IS standards, the following operational tests shall be performed to indicate compliance with the specifications. The entire functional test as required in this specification shall be carried out. All the routine tests shall be carried out as per relevant Standards. Type test reports not more than five years old from date of purchaser shall be reviewed for acceptance. Otherwise tests shall be carried out by bidder without any implication to purchaser.

The UPS units shall be subjected to test as per relevant standards. The test shall include, but notlimited to the following.

- a. Insulation tests
- b. Interconnection cable check
- c. AC input failure test.
- d. AC input return test.
- e. Simulation of parallel redundant UPS fault
- f. Transfer Test
- g. Regulation test
- h. UPS efficiency
- i. Current division in parallel UPS
- j. Light load test
- k. Continuous full load test at 0.8 pf with temperature rise measurement
- I. Auxiliary equipment and control circuit tests
- m. Synchronization test
- n. Over load capability test
- o. Short circuit fuse test
- p. Restart
- q. Output over voltage
- r. Dynamic response test
- s. Harmonic components
- t. Earth fault test
- u. Audible noise test

18.0 Brief Specification of Isolation transformer

- a. Power rating 230V AC
- b. Input voltage range ±10%
- c. Voltage transformation ratio 11
- d. Load regulation 4% or less from no load to full load
- e. Frequency 50 Hz ±5%
- f. Insulation resistance $100 \, \mathrm{M}\Omega$ from winding to core measured at $500 \mathrm{V}$ dc
- g. Common mode rejection ratio Min 100 db
- h. Coupling capacitance 0.01 Pf
- i. Class of insulation Class F
- j. Construction as per IS 2026

Stage Inspection of the isolation transformer will be carried out at different phases of assembly and fabrication.



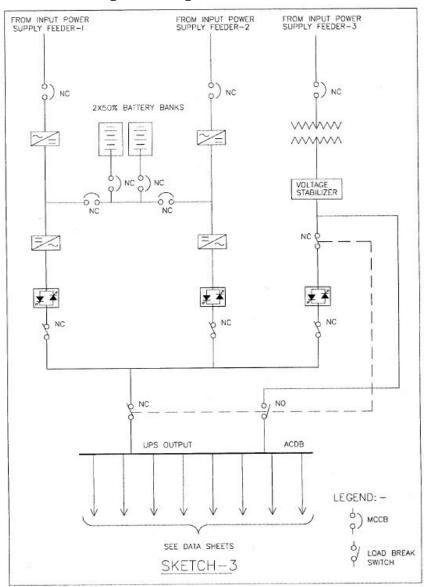
19.0 Conflict

- 19.1 In the event of conflict between this specification and other documents listed herein, the following order of priority shall govern-
 - Design criteria, drawings and data sheet (whichever applicable)
 - This specification
 - General specifications
 - Codes & Standards

20 Packing and Transportation

20.1 The offered UPS systems along with their accessories shall ship to site packed in wooden crates. They shall be wrapped with polythene sheets, before being placed in the crates to prevent damage to finish. Crates shall have skid bottom for handling. Crates shall be clearly indicating the top position of transportation and symbol of fragile, if applicable. Insurance amount for the entire system shall be included in the quotation by the bidder. Electrolyte is not allowed for transportation with battery.

Single Line Diagram of Redundant UPS



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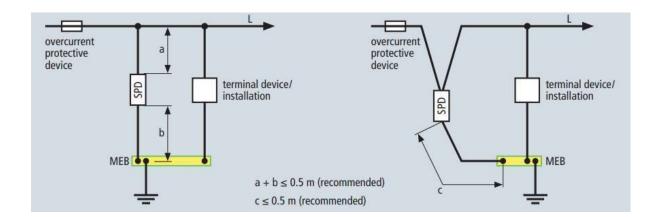
2. URGE PROTECTION DEVICES

SPD to be provided in CCTV system as per guidelines. The following standards & publications as referred in the various parts of this specification shall apply:

- IEC 61643-11:2011/EN61643-11 (2012)
- IEC 61643-12
- IEC 60364-5-53
- IEC 62305-4

The SPDs shall have to be tested as per IEC 61643-11:2011.

Installation of SPD is very important aspect and due care to be taken in installation. Recommend maximumcable length of surge protective devices in the cable branch should be as per IEC 60364-5-53 standard.



To achieve the high system availability of SPD system provided by vendor, CCTV vendor has to carry out regularly inspection and maintain surge protection device system intact in accordance **IEC 62305-3 table**

1. Every year visual check is to be done and Comprehensive testing is to be done once in two years. Electrical testing is to be carried out on SPD during comprehensive testing and stimulate a real surge voltage to have an idea of functional efficiency of SPD. If efficiency is <=50% SPD needs to be replaced by vendor at no cost to BECIL. Test voltage is selected such that the SPD works, that is, becomes conductive. The measurement results are then compared to reference values. The test record with test results are needs be maintained.

Minimum technical specification for SPD system is as under:-

Type 1+2 SPD for UPS



The SPD should be installed close to the input of the UPS system

Sr. NO.	Description	Minimum Specification
1	Mounting	Wall / Panel / Backboard Mount
2	Outlets / Connectors	Electrical Outlets
3	Type Designation	Type 1+2 SPD; Metal encapsulated, spark gap based technology
4	Mode of Protection	SPD can be used in ten modes of protection: three L- N, three L-G, three L-L, and one N-G as per NEMA LS-1 section 2.13
5	Nominal Discharge Current (IN)	(8/20) μs between each L-N 25 KA & N-E 100 k
6	Short circuit withstand capability	Shall be more than 50 KA rms
7	Follow current extinguishing capability	L-N:-25 KArms; N-E:-100 KArms
8	Maximum Continuous over voltage(Uc)	N-E :- 255 V & L-N :- 264 V
9	Temporary Overvoltage (Ut)	Should withstand > 442 V for 120 min as per Test requirement of IEC 61643-11
10	Maximum Surge Current	The device shall be capable to discharge 100 KA (10/350 µs, lightning current) (25 KA between each L-N and 100 KA between N-E)
11	Voltage Protection Rating (VPR)	Voltage protection level of device shall be ≤ 1.5 KV
12	Operating Temperature	As per site Data
13	Applicable Standards	IEC 61643-2011/ EN 61643-11
14	Features	Visual Indicator Remote Alarm ContactsPluggable
15	Certification	KEMA or VDE (independent lab) as per IEC 61643-11-2011 or latest.
16	Ingress Protection	IP20

Type 1+2 SPD for L-2 Switch

Sr. NO.	Description	Minimum Specification
1	TVSS Signal Protection	Single phase with operating parameters of 230 V ACbetween L-N ;TT system
2	Mounting	Inside FLP JB
3	Outlets / Connectors	Electrical Outlets
4	Type Designation	Type 1+2 SPD; Metal encapsulated, spark gap based technology
5	Nominal Discharge Current (IN) (8/20µs)	Each L-N 25 KA and N-E 50 KA
6	Max. Discharge current (Imax)(8/20μs)	50 KA



Sr. NO.	Description	Minimum Specification
7	Impulse current (Iimp) (10/350 μs)	50 KA, by pole(25 KA between each L-N and 50 KAbetween N-E)
8	Admissible short-circuit current	50 KA
9	Voltage Protection Rating (VPR)	≤ 1.5 KV
10	Maximum Continuous overvoltage (Uc)	N-E :- 255 V & L-N :- 264 V
11	Temporary Overvoltage (Ut)	Should withstand > 442 V for 120 min as per Test requirement of IEC 61643-11
12	Operating Temperature	As per site Data
13	Applicable Standards	IEC 61643-11, EN 61643-11
14	Features	Visual Indicators Remote Alarm ContactsPluggable
15	Certification	KEMA or VDE (independent lab) as per IEC 61643-11-2011 or latest.
16	Ingress Protection	IP20

Type 1 SPD (Isolation Spark Gap for indirect equipotential/bonding)

Sr. NO.	Description	Minimum Specification
1	Rated power frequency withstandvoltage	250 V
2	Mounting	Between Two separate earth Pits.
3	Outlets / Connectors	Electrical Outlets
4	Type Designation	Type 1 SPD; Metal encapsulated, spark gap-basedtechnology
5	Nominal Discharge Current (IN)(8/20) µs	100 kA
6	Impulse current (limp) (10/350) μs	100 kA
8	Voltage Protection Rating (VPR)	Voltage protection level of device shall be ≤ 1.5 KV
9	Operating Temperature	As per site Data
10	Applicable Standards	IEC 62561-3 2012; EN 62561-3 2012.
11	Features	Visual Indicators / LEDsRemote Alarm Contacts Suitable for class H lightning current
12	Certification	KEMA or VDE (independent lab) as per IEC 61643-11-2011 or latest.
13	Ingress Protection	IP67

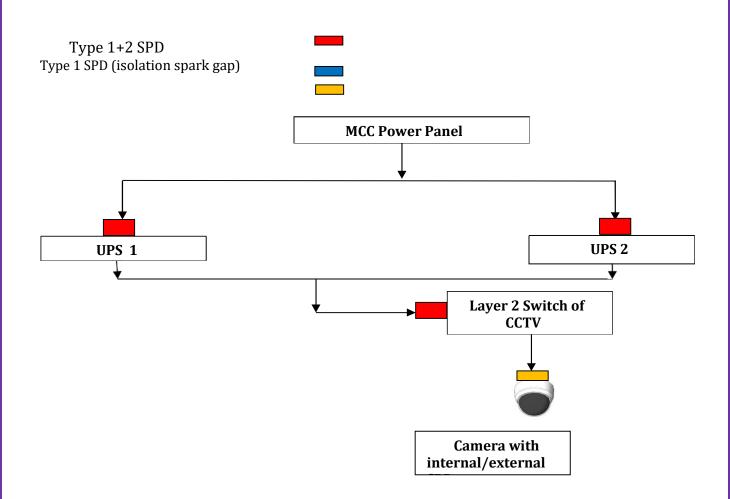


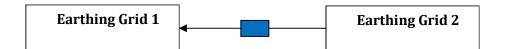
Ethernet SPD for POE Camera Protection

Sr. NO.	Description	Minimum Specification
		B2
		C1
1	IEC test Classification	C2
		C3
		D1
2	Standards/Specification	IEC 61643-21//EN 61643-21
		The device shall be able to Total discharge
3	Discharge Current	current10kA (8/20 μs) switching current.
	_	Lightning Discharge Current 0.5 KA (10/350 μs)
4	Compatibility	The Device Should be CAT 6 compatible.
5	Data Transmission Speed	The Device shall have transmission speed of 10
		Gbps
		The device shall have voltage protection level
6	Voltage Protection Level	core to core must be less than 9 V and core to
		earth must beless than 900 V
7	Nominal Voltage	For CAT 6 POE+ application nominal voltage
		should be
	-	greater than 48 V.
8	Response Time	The desired response time is less than 1 nS.
		The device shall be suitable for
9	Insertion loss	communication upto 10 Gbps and the
		insertion loss should not be more than 3dB.
10	Approvals	EAC, UL Listed.



Schematic drawing for positioning of different types of Lightening and Surge protection devices for CCTV System







3. CCTV SURVEILLANCE SYSTEM

1.0 GENERAL

- a. Bidder shall engineer, supply, install, test and commission the Closed circuit television (CCTV) Surveillance System at the Terminal/ Depot. The purpose of the CCTV System is to monitor the facility operations & security surveillance from control room, security room & Terminal Manager's room to keep eye on facility covering gantry loading operation area of importance to the daily running of the terminal by installing cameras to monitor resulting to enhancement in the Operational & Safety needs.
- b. It is intended to install CCTV system to track the Material movement, Recognition of persons and objects including vehicles through high quality images in and outside the BECIL campus by Security. The recording of the scene can be used in investigation, recreating the scene and establishing the truth.

2.0 CCTV Requirements

- a. The requirement calls for a complete working system and not components thereof. Bids must be completed with all equipment and required accessories along with necessary power systems including standard Un-interrupted Power Supply units for the entire system & equipments, video connectors, patch connectors, patch leads, mounting and fitting hardware, plugs, sockets, and any hardware/software, supply of cables, network components, etc. as required for complete installation of the Systemunder this contract.
- b. The proposed IP CCTV surveillance system must be of open architecture type and should be OPCDA compliant (Object Linking and Embedding for Process Control Data Access) protocol version 2.05 (or latest). Seam less interoperabilityfor integration with TAS (Terminal Automation System) is mandatory. The above compliance is under the scope of Design, Supply, Installation, Testing and Commissioning of the current Tender and no additional payment whatsoever shall be made by BECIL for the same. Bidders may consider and include the cost of the same as all inclusive while bidding the tender. However the integration is in scope of TAS vendor but it is mandatory on part of CCTV vendor to provide necessary protocols, technical support & also positioning of technical experts during actual time of integration at no additional cost to BECIL.
- c. The CCTV system shall consist of outdoor weatherproof high speed day night dome cameras with integrated pan-tilt-zoom, fixed cameras, client workstation with colour LED monitors and control keyboard located in control room (CR), Terminal Manager's Office and Security Room. It shall be possible to prioritize the keyboards to allow the CR Operator to override Terminal Manager & the Security operator. The cameras shall have Day/Night operation facility and automatic switching from color to black & whitemode during night.



- d. The CCTV Surveillance System shall include CCTV Cabinet with Network Recording Servers, External array of hard disks, Workstations with Displays Monitors, control keyboard, Fiber Optic cables, OFC components, CAT6 cable, patch cords, Networking components, FLP JBs, Software for operation, control, utility software for infrastructure management, like network & security management, Video Analytics Application Software, Remote Monitoring software with necessary accessories and fitting hardware, poles with mounting brackets etc complete as per design requirement.
- e. The system shall also support analogue cameras incorporating video encoders, industrial grade Ethernet switches for outdoor use.
- f. The CCTV System shall be based on a digital network solution that enables video, data and/or audio streaming over an IP network. The proposed system should capture, store and analyze Video images.
- g. The cameras shall be provided with ID date/time stamp generators & create a tamperproof records for post event analysis. System should facilitate multiple viewing of live and recorded images and controlling of all cameras by the authorized users present in the CCTV LAN.
- h. The selection weather proof or flameproof /Exd cameras shall be as per the hazardous area classification. The cameras shall be designed to withstand all weather conditions, including storm. The IP 66 or better rating and mounting details shall therefore take into consideration. Other details shall be as per data sheets.
- i. Cameras locations shall be finalized based on site conditions like line of sight, maximum area coverage & no blind spot/area etc. BECIL shall confirm areas of terminal to be monitored during detail engineering. However tentative area of surveillance and type of cameras/light/poles to be considered shall be as follows.

SN	Activity Area(POL/ AFS)	Type of IP Cameras/light/poles
1	TLF	 ✓ 1 no. of non-FLP PTZ Camera in front of each sheds to have a surveillance of the loading operations. Camera to be mounted on pole of suitable height to have a view of the front of the sheds. ✓ 2 nos. of Fixed FLP camera (with motorized zoom) inside each TLF shed at the top to have over view of activities on the loading platforms. It should be positioned such that all the bays are covered.
2	Tank Farm	 ✓ 1-2 nos. of PTZ cameras per tank dyke depending upon the size &orientation of tank nozzles in the dyke, for effective surveillance. ✓ Cameras to be positioned so as to cover manifolds of all tanks in thedyke. ✓ Positioning of cameras to be such that adjacent dykes may also becovered with the same camera, if feasible.



SN	Activity Area(POL/ AFS)	Type of IP Cameras/light/poles
3	Railway Siding - Unloading	 ✓ For locations with 2 spur unloading gantry with headers in between thespurs • 2 nos. of varifocal box cameras at each end of the gantry/ siding. ✓ For locations with single spur unloading gantry • To be covered with 2 nos. of PTZ cameras through presets. Camera tobe positioned on the side of the gantry.
4	Railway Siding - Loading	 ✓ In case of single spur siding • 2 nos. of PTZ in order to cover full length of the gantry through presets. ✓ In case of two spur siding • 1 no. of PTZ camera on the side of each spur.
5	Product Pum pHouse & Manifold	For each Pump House (Including TW) ✓ 1 no. of Fixed FLP bullet camera (with motorized zoom) inside Pumphouse shed - to be fixed at a place such that all the pumps are covered ✓ In case of large pump house or layered Pump House, more than 1camera may be used as per design requirement. ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K to be positioned such that complete manifold is covered.
6	Licensed Are aEntry / Exit Gate	 ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K to cover bothgates OR ✓ 2 nos. of fixed bullet cameras (with motorized zoom)- 4K, one for eachgate where both gates cannot be covered by single camera. ✓ Cameras to be fitted outside the Hazardous area. ✓ Camera should be fitted such that Number plate of the vehicle entering Plant is clearly captured.
7	Exchange Manifold - OMC / PLR	✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K
8	OWS	✓ To be covered by other cameras.
9	Oil Jetty	✓ 1 - 2 nos. of varifocal box cameras depending upon the jetty length to cover the complete Jetty and its manifold. In case 2 cameras are required to be provided, second can be a PTZ.
10	Control Room	 ✓ 1 no. fixed dome camera (with motorized zoom) in the operating area. ✓ 1 no. of fixed dome camera (with motorized zoom) in the Panel room.
11	Fire Engine Pump House	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
12	PMCC	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) in panel area.
13	TT Parking Area	✓ 1-2 nos. of PTZ to cover the complete parking area.



SN	Activity Area(Type of IP
	POL/	Cameras/light/poles
14	AFS) TT crew rest	1 no of fixed dome/ bullet comerc (with meterized zeem)
14	room	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) inside TT crew rest room to keep vigil on crew activities.
15	MainEntry/Exit gate	 ✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles before the main entry gate for effective surveillance of movement of vehicles outside on the public road parallelto main entry gate. ✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles after/facing the main entry gate for effective surveillance of the movement of vehicles inside while entry/exit. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be provided at checking and frisking path. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be positioned at exit gate, in case the exit gate is far away from main gate.
17	Security Cabin	✓ 1 no. fixed dome/ bullet type camera (with motorized zoom)
18	Perimeter	 ✓ Full perimeter of the location should be under CCTV surveillance. ✓ CCTV surveillance system using latest fixed 8MP (4k) or better box bullet type varifocal network cameras with provision for video analytics in weather proof housing to be provided. ✓ Inter distance between the cameras should be 65 meters positioned uni- directionally so as to meet the requirements of intrusion detection and intrusion alarms even in the event of malfunctioning of one camera in a row. ✓ In case the perimeter is not in straight line, having curves, turns, zigzag profile the distance may be decided based on the desired coverage of entireperimeter on either side. ✓ Orientation of the fixed camera on perimeter should be uni directional andnot facing each other. ✓ Coverage of Cameras to be 20 m on each side of the Boundary wall. Cameras to be installed on specially designed poles of 8 meters height with cantilever of 3 meter for mounting of CCTV camera for erecting at a distance of 3 meter from inside the perimeter with proper CC/RCC platform for maintenance space and use of hydraulic telescopic ladder. ✓ In case the CCTV pole is falling in the vicinity of the hazardous area then the height of the pole should be fixed as per OISD distance norms for non FLP fittings/fixtures i.e. the zone 2 area shall extend 16 m horizontally from the source of hazard and 8m vertically from the ground. ✓ Illumination of minimum 7.0 Lux must be maintained on either side of the perimeter up to a distance of 20m all along; the pole



SN	Activity Area(POL/ AFS)	Type of IP Cameras/light/poles
		design for mounting of CCTV camera shall also be used for mounting of LED lights of appropriate wattage capacity to ascertain the desired lux level throughout along the perimeter. ✓ Perimeter security system should have intrusion detection and automatic warning system through video analytics. ✓ In addition to fixed cameras, adequate sets of PTZ cameras in combination of one on auto and other in manual mode on the same pole for coverage of the same perimeter area to be provided to cover the entire perimeter for tracking the intruders movements on triggered by fixed camera on intrusion automatically as well as operating the manual one by security control supervisor 24x7. ✓ Audio alarm in Security Room, Control Room and location – incharge room to be provided for intrusion detection, and the audio alarm shall continue till the same has been acknowledged in the system.



SN	Activity Area(Type of IP
	LPG)	Cameras/light/poles
1	TLF/TLD	✓ 2 Nos. Non FLP 4K / FLP 2 MP Fixed Cameras (each covering
		4 no. TLD bays) in front of each TLD sheds to have a
		surveillance of the loading / unloading operations. Camera to
		be mounted on pole of suitable height (preferably above 1.2 M)
		to have a view of the front side of the sheds.
2	Bulk Storage	✓ 1-2 nos. of non FLP Full HD PTZ cameras depending
	Area	upon the BulkStorage Area, for effective surveillance.
		✓ Cameras to be positioned so as to cover manifolds of all tanks.
		✓ Positioning of cameras to be such that adjacent group of vesels
	D 11 011	may alsobe covered with the same camera, if feasible.
3	Railway Siding	For locations with 2 spur unloading gantry with headers in between
	- TT 1 1:	the spurs
	Unloading	✓ 2 nos. Non- FLP 4K / FLP 2 MP varifocal box cameras at each
		end of thegantry.
		For locations with single spur unloading gantry ✓ 2 nos. Non- FLP 4K / FLP 2 MP varifocal box cameras at each
		end of thegantry.
4	Railway Siding	✓ In case of single spur siding
4	Ranway Siding	 2 nos. of non FLP PTZ in order to cover full length of the
	Loading	gantry throughpresets.
	Loading	✓ In case of two spur siding
		• 1 no. non FLP full HD PTZ camera on the side of each spur.
5	Product	For each Pump House (Including TW)
	Pum	✓ 1 -2 no. Fixed FLP bullet camera (with motorized zoom)/
	pHouse &	Single FLP Panasonic camera inside Pump house shed - to be
	Manifold	fixed at a place such that all the pumps are covered
		✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K / FLP
		2 MP Fixed camera to be positioned such that complete
		manifold is covered.
6	Licensed	✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K to
	Are	cover bothgates OR
	aEntry / Exit	✓ 2 nos. of fixed bullet cameras (with motorized zoom)- 4K, one
	Gate	for eachgate where both gates cannot be covered by single
		camera.
		✓ Cameras to be fitted outside the Hazardous area.
		✓ Camera should be fitted such that Number plate of the vehicle
	F 1	enteringPlant is clearly captured.
7	Exchange	✓ 1 no. of Non FLP fixed bullet camera (with motorized zoom)-
	Manifold	4K / FLP 2MP Camera with provision to provide parallel
	Pipeline Receipt	viewing signal to supplier, if required by supplier in future
9	Totty	thru separate cabling.
"	Jetty	 ✓ 1 - 2 nos. of non FLP varifocal box cameras depending upon the jetty length to cover the complete Jetty and its manifold. In
		case 2 cameras are required to be provided, second can be a
		non FLP PTZ camera.
	S&D	✓ Not Required
\Box		Trochequited



SN	Activity Area(LPG)	Type of IP Cameras/light/poles
10	Control Room	 ✓ 1 no. fixed dome camera (with motorized zoom) in the operating area. ✓ 1 no. of fixed dome camera (with motorized zoom) in the Panel room.
	Complete Location	✓ 1-2 nos. of non FLP PTZ cameras depending upon area of the locations, to be installed at height of 15-30 m to cover the complete location and adjoining area thru preset on continuous basis.
11	Fire Engine Pump House	3 Requirement shall be frozen based on the design. ✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
	DG Room	✓ Not Required
12	PMCC	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) in panel area.
	Air Compresso r Room	✓ Not Required
	Admin Office	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) at the entrance
	Canteen	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
	CarParking	✓ Not required
13	TT Parking Area	✓ 1-2 nos. 4k 360 Degree Panoromic camera, positioned at suitable height to cover the entire TT parking area.
14	TT crew rest room	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) inside TT crew rest room to keep vigil on crew activities.
	Store	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
	Scrap Yard	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) near De- shaping unit
15	Main Entry/Exit gate	✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles before the main entry gate for effective surveillance of movement of vehicles outside on the public road parallel to main entry gate.
		✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles after/facing the main entry gate for effective surveillance of the movement of vehicles inside while entry/exit.
		 ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be provided at checking and frisking path. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to



SN	Activity Area(Type of IP
	LPG)	Cameras/light/poles
		be positioned at exit gate, in case the exit gate is far away from
		main gate.
17	Security Cabin	✓ 1 no. fixed dome camera
	Location In-	✓ 1 no. fixed dome camera
	charge's room	
	Training Hall	✓ 1 no. fixed dome camera
	Truck Checking Platform at Gate 1/2	✓ 1 fixed FLP/ Non FLP dome camera suitable to view number of cylinders in stack trucks (empty/ locaded) and SRV / Top mounted appurtenances of bullet/ bulk trucks. Security shall view the dedicated monitor sitting inside the security cabin. Number of cameras will depend on number of Gates/ ramps where the TT/ST checking is done at Plant based on the layout.
18	Perimeter	✓ Full perimeter of the location should be under CCTV surveillance.
		✓ CCTV surveillance system using latest fixed 8MP (4k) or
		better box bullet type varifocal network cameras with
		provision for video analytics in weather proof housing to be provided.
		✓ Inter distance between the cameras should be 65 meters
		positioned uni- directionally so as to meet the requirements of
		intrusion detection and intrusion alarms even in the event of
		malfunctioning of one camera in a row.
		✓ In case the perimeter is not in straight line, having curves, turns, zigzag profile the distance may be decided based on the
		desired coverage of entire perimeter on either side.
		✓ Orientation of the fixed camera on perimeter should be uni directional and not facing each other.
		✓ Coverage of Cameras to be 20 m on each side of the Boundary wall. Cameras to be installed on specially designed poles of 8 meters height with
		✓ Cantilever of 3 meter for mounting of CCTV camera for erecting at a distance of 3 meter from inside the perimeter with proper CC/RCC platformfor maintenance space and use of hydraulic telescopic ladder.
		✓ In case the CCTV pole is falling in the vicinity of the hazardous area then the height of the pole should be fixed as per OISD
		distance norms for non FLP fittings/fixtures i.e. the zone 2 area shall extend 16 m horizontally from the source of hazard and 8m vertically from the ground.
		✓ Illumination of minimum 7.0 Lux must be maintained on either side of the perimeter up to a distance of 20m all along; the pole design for mounting of CCTV camera shall also be used for



SN	Activity Area(LPG)	Type of IP Cameras/light/poles
		mounting of LED lights of appropriate wattage capacity to
		ascertain the desired lux level throughout along the perimeter.
		✓ Perimeter security system should have intrusion detection and
		automatic warning system through video analytics.
		✓ In addition to fixed cameras, adequate sets of PTZ cameras in
		combination of one on auto and other in manual mode on the
		same pole for coverage of the same perimeter area to be provided
		to cover the entire perimeter for tracking the intruders
		movements on triggered by fixed camera on intrusion
		automatically as well as operating the manual one by security
		control supervisor 24x7.
		✓ Audio alarm in Security Room, Control Room and location –
		incharge room to be provided for intrusion detection, and the
		audio alarm shall continue till the same has been acknowledged
		in the system.

- a. Tentative location of the cameras at various areas within the Depot/ Terminal/LPG/AFS is listed above. Positioning of layer 2 Network switches is to be made such that maximum nos. of cameras at nearby locations depending upon port availability is connected to the switches in hybrid model.
- b. Zone identification of the perimeter cameras has to be done sequential for easy monitoring. Automatic intrusion warning shall be integrated with audio alert at all work stations i.e. Control Room, Security room and location in-charge room.
- c. All Security Surveillance cameras & operational area cameras shall be connected with CCTV system on two separate OFC / CAT 6 backbones i.e. there shall be two separate Loop one for security surveillance and other for operational area cameras. Based on the bandwidth requirement per camera, the no. of cameras per loop shall be finalized including consideration of 20% bandwidth for future addition of cameras by the vendor.
- d. Bandwidth calculation to be provided by the vendor for Network designed (available vs. required) for following Network during engineering from OEM:-
- a) Input sub-network –

which includes cameras and servers.

b) Storage sub-network -

which includes servers and storage device(s).

c) Output sub-network – workstations.

which includes servers and client

- e. The overall Video system shall be connected via a dedicated and secured LAN network and shall be built using fiber optic & CAT6 communication cables utilizing standard TCP/IP protocols.
- f. CCTV Server shall be installed at Control Room. System shall allow the storage of time-lapse and time stamped digital video images from all connected



- cameras. Video images shall be stored on a RAID-6 or better hard-drive array unit with full watermarking and guarantees against tampered images.
- g. A further RAID hard-drive unit shall be installed on the CCTV LAN network at Control Room so that a regular backup can be accomplished at pre-determined times. Provision shall be there to take backup of data, event etc over external portable storage device.
- h. The system storage should support continuous recording for all cameras at least for a period of 90 days at a resolution of 1080p @ 15 fps (for 2MP cameras), 2160p @ 15 fps (for 4k cameras) with H.265+/H.265/H.264/MPEG-4 compression format or better with video quality **High**. The system should automatically overwrite the previously recorded video when it exceeds 90 days without any human intervention. The system shall always have recorded video of last 90 days atany given point of time.
- i. The cameras should support dual streaming with two simultaneous programmable streams used one for viewing and other for recording. Viewing shall be at 25 fps (min) and recording at 15 fps at maximum resolution or as per direction of Engineer in-charge.
- j. The video output from the NVR/Server shall be viewed through a dedicated LED Monitor provided for the CCTV System. There should be DVD-R/W for memory back -up. A DVD library has to be maintained for taking the back up of recorded video. The recorded DVD can be played back in any location with the supported media player.
- k. All interfaces within CCTV shall be based on TCP/IP network protocol connectivity over the Intranet/LAN/WAN. The software shall facilitate viewing of live and recorded images and controlling all cameras for 24 hours a day and 7 days per week local and/or remote monitoring.
- I. The system shall be able to select any cameras to any monitors. However, the system administrator shall be able to control the viewing rights of individual users.
- m. CCTV Monitor Size (LED) to be provided as per below:-
- a) In control room:-Windows for all cameras should be available of single screen of 300-400cm2.
- b) In location inchargeroom:-viewing window size should be prefreabley be between 250-300 cm2.
- c) In security cabibnm:-viewing window size should be prefreabley be between 150-200 cm2.
- n. System should provide inter-operability of hardware, OS, software, networking, printing, database connectivity, reporting, and communication protocols. System expansion should be possible through off-the-shelf available hardware. The system shall include a scalable architecture with hardware expansion capability to support the selection, monitoring and control of system devices possibly using simple user friendly GUI based maps, menus and



- left/right mouse click commands.
- o. The System's server and its operating system shall be from the off the shelf available servers and shall not be Propriety Hardware.
- p. The System shall ensure that the video once recorded, can't be altered, ensuring the audit trail is intact for evidential purposes.
- q. The System shall have facility of camera recording in real-time mode (25 FPS)/15/12.5/10 or lower FPS as well as in any desired combination and system shall allow recording resolution and frame rate for each camera be user programmable.
- r. All cameras are to be connected in hybrid of ring and star topology. For the perimeter boundary, all devices deemed necessary for implementing the Ring topology should be considered. The ring should start from control room and should return back to control room so that single point cable cut will not affect the system. Overall BECIL intends to have a hybrid network topology for its CCTV system.
- s. The System shall be designed such that any failure in the system shall not affect the normal operation of the entire integrated system, the remaining system components shall continue to operate with full functionality that is, no single – point of failure (SPOF).
- t. The System shall have facility to send auto e-mail / SMS facility on predefined address/ number in case of specific user defined Alarms generated in alarm Audit file/Events file.
- u. The System shall have original License copy of Operating System (OS), VMS and analytic softwares and shall have lifetime license in favour of BECIL.
- v. All software and firmware upgrades shall be free of charge. Vendor should upgrade the software, free of cost in case new versions are released during the warranty and CAMC period including Antivirus updation. Vendor should ensure backward compatibility with all the hardware and other software at least for one generation, even if new versions of software are released.
- w. Offer CCTV system should have the capability of reading the number plate of Vehicle entering in to the terminal without any alternation in number plate. These vehicle number needs to be shared with TAS system for future requirement.CCTV vendor have to supply the software without any additional cost if same is not part of VMS/Analytic software.
- x. MAF from CCTV OEM TYCO/Sparsh, Software OEM I2V/Milestone is mandatory for the respective BOQ items.

3.0 CCTV System Description

a. CCTV Equipment

a) The CCTV central control equipment and video LAN server shall be installed in a standard cabinet located in the Control/Panel Room. This cabinet shall also



house all the termination equipment required for the CCTV monitor and the interface equipment.

- b) At each location, video signals and camera control signals from each camera shall be routed directly onto a local Ethernet to a video unit via OFC/ CAT 6 backbone for video signals & data. All cameras on each location shall utilize this Ethernet. This video unit shall also control the zoom and alarm functions for each local camera. It shall also control the video compression rates for recording and for transmission of the video data onto the LAN network back to the central server at the Panel Room.
- c) All equipments in field and with in office building shall be powered through UPS. Complete cabling & cabling accessories are in the scope of bidder
- d) All the equipment offered shall be suitable for operation on (230V +/- 10%), 50 Hz +/- 5% single phase power supply. Power for all the equipment will be made available through UPS. If any equipment operates on any voltage other than the supply voltage and supply frequency, necessary conversion/correction device for supply shall be included in the respective item rates.
- e) UPS power distribution system shall be provided with suitable isolators for isolation of each equipment. The power distribution JB's shall be supplied and installed by the Bidder. Cabinets shall have one point connection for incoming UPS supply, with isolation in cabinet. Further distribution inside the cabinet, other power supply units like 24 VDC and to the field instruments related to the individual system shall be in Bidder's scope.
- f) UPS power distribution network shall be designed such that a single power fault in any sub distribution system shall not cause a trip of the entire system. The power distribution system shall contain the necessary isolation and auto switching and other measures to maintain the system integrity if one feeder fails or develops a ground fault.
- g) Surge protection devices shall be provided in input power distribution of UPS system. The system shall be internally protected against system errors and hardware damage resulting from electrical transient on power wiring, signal wiring.
- h) CCTV cabling/JBs should not be laid/fixed on the boundary and should be laid above ground for ease of maintenance, wherever there is a road crossover the cabling be done either through culvert or above ground crossover structure.
- i) All cables entries into the control room and Terminal manager room after laying and testing of all boxes of cables etc. to be sealed by installing Multi Cable Transit (MCT) Blocks. All works relating to the sizing, designing and installation of MCT Blocks is within the scope of the vendor.



- j) The scope is deemed to include all components, accessories and equipment required to implement a fully functional CCTV system regardless of whether they are explicitly mentioned or not.
- k) All the equipment of CCTV should be of reputed make & on open platform and the software shouldconform to ONVIF Profile S (Open Network Video Interface Forum) specification guaranteeing interoperability between network video products regardless of manufacturer which ensures exchange of live video, audio, metadata and control information and that they are automatically discovered and connected to network applications such as video management systems.
- Bidder shall provide a CCTV cabinet of standard size to house the control room equipment, Network Switches, Servers with Monitors, plug points etc. Bidder shall provide all the interfacing hardware and software necessary with this equipment to enable control room operators and maintenance personnel to monitor and control all cameras of the facility.
- m) The CCTV cameras with video analytics installed at perimeter, PTZ cameras installed at strategic locations, gate and access control and other installed at bay operating areas must be done with suitable hardware/software compatibility duly integrated to pass online information to the common command and control centre of the location.

b) Mounting

- a) For fixed cameras for perimeter surveillance, poles of 10 m with cantilever arrangement of 3 m shall be provided. The LED lights to be provided at 8 m height at the end of cantilever. The fixed cameras to be installed at height of 6m of the same pole with cantilever of 3m.
- b) Fixed cameras in balance open areas to be mounted on 8 m pole.
- c) PTZ cameras to be installed on 10-15 m pole as per BOQ.
- d) The civil works shall also be part of the works involved and as per the descriptions under respective items of work. The scope includes supply and installation of required mounting arrangement / brackets/ stands, poles with required foundation & accessories etc complete in all respective.
- e) Design, Supply, installation of poles as per site requirement to cover the entire area of surveillance as envisaged / required from that particular camera. Actual height shall vary as per the site-specific requirement as proposed by BECIL. The pole and foundation should be designed for the wind and soil bearing capacity of site (self supporting type only). The design of pole must be through Govt. Engineering College / NIT / IIT Approved. The successful tenderer will submit



the design for the super structure/ foundation, design calculation duly certified by structural consultant.

f) CCTV Camera shall be mounted on pole with stand/wall mounted/ceiling mounted with suitable brackets including sun-shroud/canopy etc as per site requirement and direction of BECIL.

b. Earthing

- **a)** Each cabinet shall be provided with segregated earthing systems. Segregation shall be as follows:-
 - ➤ Electronic or Instrument earth The instrument signal cable shields shall be connected to the instrument signal ground earth bar.
 - Electrical safety and cabinet steelwork earth The safety-grounding from all doors, racks, gland plates, poles and other metallic devices shall be connected to safety earth bar.

c. Documentation

- a. Documentation to be submitted shall include but not be limited to schematic drawings of the CCTV system with all the components shown, data sheets and catalogues of equipment offered, and operation and maintenance manuals.
- b. Submission of following Drawings, data and Manuals
 - a) Detailed literature/ catalogues giving full particulars. Principle of operation, range and setting whether settings adjusting at site, colour, materials of equipment enclosures, degree of protection and mounting details for all types of equipment offered.
 - b) Detailed internal schematics and wiring diagram for
 - Control and viewing room setup
 - > IP camera network
 - > Cable layouts
 - Server set up
 - c) Functional design specification explaining principle and operations of the complete CCTV surveillance system.
 - d) Material test and inspection reports and certificates.
 - e) Approved certificates obtained from competent authorities for use in hazardousatmospheres (wherever applicable).
 - f) Certificate of weatherproof and explosive license of equipments wherever applicable.



g) Training on system operation and maintenance for BECIL's staff at the site to be provided.

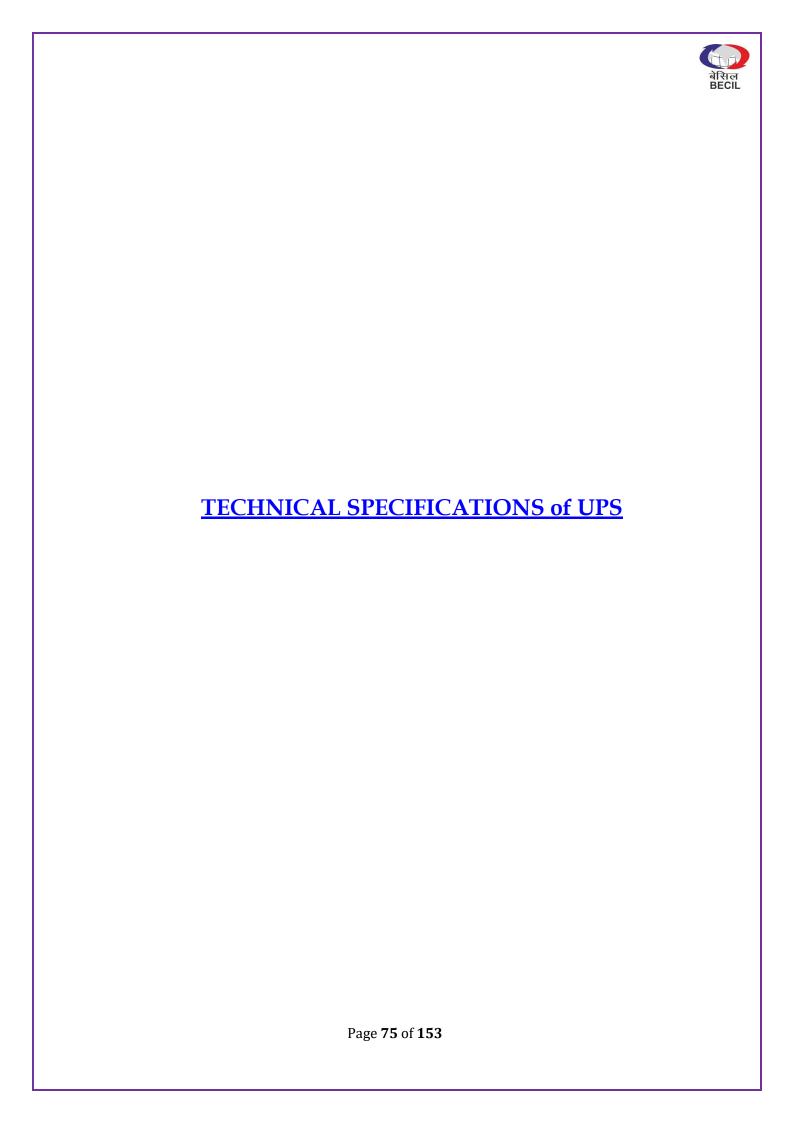
c. Testing and commissioning

- a. Successful bidder shall submit the testing & commissioning format to BECIL for approval. Any amendment made by BECIL at any point of the contract shall be binding on the vendor.
- b. The testing and commissioning document has to cover the following minimum points.
 - i. Format for Verification of QTY measurement as per BOQ.
 - ii. Format for checking Installation of Equipment location wise as per approved layout, cabling scheme etc.
 - iii. Format for Functional checking of System performance & software functional checks as per Tender document.
 - iv. Format for verification of
 - ➤ Video Frame @ 25 FPS/25 IPS.
 - ➤ Picture resolution during day and night for single camera individually and allcameras simultaneously.
 - Various camera settings
 - Video Loss alarm, Motion detection etc as per WO
 - On line and Off Line Video Storage
 - ➤ In case of VMS/Recording server fails, client will be able to see live, playback of the videos.
 - ➤ Camera shall support minimum 128GB SD memory card with AutomaticNetwork replenishment feature

Note:

Prior to giving testing call to BECIL, Vendor needs to test the system in totality and satisfy itself of its functionality to meet BECIL requirement. System will be accepted to have been commissioned by BECIL on its satisfactory performance as brought out in special terms and conditions of the tender.

Till the system is commissioned & handover to BECIL, vendor shall be the custodian of all the materials at site, and in case of any theft or damages of any equipment / system before the handing over for any reason whatsoever, vendor shall be solely responsible to replenish/repair/reconfigure the same in good condition to the entire satisfaction of the Corporation.





TECHNICAL SPECIFICATIONS

Specification for Server, NAS/SAN, OIC, Network components are minimum. Bidder to get the same vetted from the CCTV OEM for proper functionality prior to dispatch. In case any up gradation required to make it compatible with the offered system, bidder needs to provide the upgraded hardware at no additional cost to BECIL.

1. HD IP PTZ CAMERA (2MP) - OUTDOOR APPLICATION

S. NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixel	1,920 x 1,080, ie Min. 2 MP (megapixel)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Minimum Illumination (Black and White)	Normal mode – 0.3 LuxNight mode – 0.01 Lux
6	White Balance	Automatic/ Manual
7	Image setting	Brightness, Contrast, Saturation, Sharpness, A nti-flicker, Exposure, White Balance, WDR ,BLC, Mirror, Flip, 3D NR
8	Shutter Speed	1/30, 1/100, 1/500, 1/1000, 1/10000, Auto
9	AGC	On(Low / Mid / High)/ Off
10	Day & Night	True Day & Night (Auto ICR / Color / B/W)
11	Signal to Noise ratio	More than 50dB
12	Noise Reduction	High / Low
13	Video Motion Detection	Minimum 3 areas
14	Privacy Zone	Up to 5 zones
15	Focal Length	4.3 mm ~129.0 mm or better, Motorized Zoom lens
16	Zoom Ratio	Min Optical zoom 30 X , Min 10X Digital
17	Automatic Lens Control	Auto focus, Auto Iris



S. NO.	PARAMETER	MINIMUM REQUIREMENT
18	Auto Image Stabilization	Required (ON/OFF), selectable
19	Panning Range	Complete 360 degrees endless
20	Tilting Range	-90° to 90° with auto flip
21	Pan Speed	1 to 80 Deg/Sec
22	Tilting Speed	1 to 45 Deg/sec
23	No of presets	Min. 250 nos.
24	Television System	PAL
25	Wide Dynamic Range	Min 120 dB
26	Frame Rate	Minimum 25 FPS or better
27	ONVIF S profile compliance	Required
28	Bit Rate	Up to 8Mbps or better continuously adjustmentCBR/VBR
29	SD Memory Card Feature	64 GB SDXC/SDHC/SD memory recording
30	Alarm Terminals	Minimum 1 input, 1 output
31	Image compression	H.265/ H.264 high profile, M-JPEG or better
32a	Video profile	2 Streams of H.265/H.264 and1 Stream of M-JPEG
32 b	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M- JPEG
33	Network IF	10Base-T / 100Base-TX, RJ-45 connector
34	Supported Protocol	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP,RTSP, SNMP, IGMP, HTTPS protocols
35	No. of Simultaneous Users	Up to 3 users
36	Weather protection, Outdoor Use	IP66 or better, Camera and housing should be of same make and integrated at factory.
37	View Material	Vandalproof (IK-10)



S. NO.	PARAMETER	MINIMUM REQUIREMENT
38	Design & Operating Temperature	Refer Site Data
39	Operating Humidity	Up to 95%
40	Power Source	POE based (with or without POE injector)
41	Surge/Lightening Protection	Required (Internal/External) as per Note
42	Certifications	CE/FCC/UL or equivalent BIS
43	Security	Password Protected access, IP address filtering & useraccess log facility.

Tentative Locations- In front of TLF/ TW shed, Tank farm area, Covering entire locations and adjoining areas, Jetty etc, TT parking, Oil Jetty, Around perimeter for tracking of intruders.

Note: All PTZ cameras shall have inbuilt / Server based Video Analytics for Auto tracking feature for intruder based on alarm inputs.

Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available than same to be supplied externally without additional cost to BECIL.

2. HD IP FIXED DOME CAMERA WITH IR AND MFZ LENS (2MP)

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Lens	MFZ Lens 3.5-8 mm/3-9 mm/ 4.6-12 mm (Motorized Focus & zoom) or better, Min 10X Digital Zoom and 3 X Optical Zoom
6	Day & Night	T (Auto ICR / Color / B/W)

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		Day - 0.3lux
7	Min. Illumination	Night – 0.05
		lux
		0 lux when IR LED ON
8	White Balance	Automatic/ Manual
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti- flicker, Exposure, White Balance, WDR,BLC, Mirror, Flip, 3D NR
10	AGC	On / Off
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection with included or excluded options
13	Wide Dynamic Range	Min 120 dB
14	Television System	PAL
15	Frame Rate	Minimum 25 FPS or better
16	ONVIF S profile compliance	Required
17	Bit Rate	Up to 8Mbps or better continuously adjustmentCBR/VBR
18	On-board storage	64 GB SDXC/SDHC/SD Memory recording
19	Alarm Terminals	Minimum 1 input, 1 output
20	Alarm Trigger	Motion detection, masking, external alarm, VideoTampering
21	Alarm Events	Upload to FTP, send email, local recording, snapshot, relay activation, upload to SD card
22	Video Compression	H.265/H.264 (Main Profile /High Profile) and M-JPEG or better
23a	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG



SL NO.	PARAMETER	MINIMUM REQUIREMENT
23b	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M- JPEG
24	Ethernet	10 Base-T / 100 Base-TX, RJ-45 connector
26	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP,RTP, RTSP, SNMP, IGMP,HTTPS protocols
27	Users	Atleast 5 users
28	Weather protection	IP66 or better
29	View Material	Vandalproof (IK-10)
30	Design & Operating Temperature	Refer Site Data
31	Operating Humidity	Up to 95%
32	Power supply	POE based
35	Surge/Lightening Protection	Required (Internal/External) Industrial Grade asper Note
36	Regulatory	CE/FCC/UL or equivalent BIS
37	Security	Authentication, IP Filter, User access log
38	IR Range	Min-25 Meter

Tentative locations- Control Room, FE pump house, PMCC, Security cabin, TT crew rest room.

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available than same to be supplied externally without additional cost to BECIL.



3. INTEGRAL HD IP FIXED OUTDOOR BOX CAMERA (2MP)

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Min Illumination	Day – 0.3 lux Night – 0.05 lux
6	White Balance	Automatic/ Manual
7	Backlight Compensation	ON/OFF
8	Colour, Brightness, Contrast	Functionality Required
9	High Light Compensation	Required
10	Electronic Shutter	1/30 to 1 / 8000 s or better
11	Automatic Gain Control	Auto / Manual
12	Day and Night functionality	Automatic, Color, Mono
13	Signal-to-Noise Ratio	More than 50dB
14	IRIS Control	DC or Automatic
15	Focus	Automatic / Manual
16	Varifocal Lens	9-42/9-50mm IR Corrected or better, Min 10XDigital Zoom and 10X Optical Zoom
17	Wide Dynamic Range	Min 120 dB
18	Television System	PAL
19	Frame Rate	25 FPS/ IPS for 1920 x 1080 at H.265/H.264 Compression or better
20	ONVIF S profile compliance	Required



SL NO.	PARAMETER	MINIMUM REQUIREMENT
21	Bit Rate	Up to 8Mbps or better continuously adjustmentCBR/VBR
22	On-board storage	64 GB SDXC/SDHC/SD Memory recording
23	Alarm Terminals	Minimum 1 input, 1 output
24	Alarm Event	Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering.
25	Video profile	2 Streams of H.265/H.264 and1 Stream of M-JPEG
26	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
27	Intelligent Video	Motion detection, Tampering Alert
28	Interface	10Base-T / 100Base-TX, RJ-45 connector
29	Network Protocols support	IPv6, TCP/IP, HTTP, , DHCP, UDP, S, SMTP, RTP, RTSP, SNMP protocols/Should meet allfunctional requirement of the project
30	Upgrade	Through web browser, online, firmware upgrade
31	Weather protection, Outdoor Use	IP66 or better; Camera and housing should be ofsame make and integrated at factory
32	Housing	Weather and dust resistance with an aesthetic appeal (Metallic). Camera and housing should be of same make and integrated at factory.
33	View Material/Housing	Vandalproof (IK-10)
34	Operating Humidity	Up to 95%
35	Power Source	POE based



SL NO.	PARAMETER	MINIMUM REQUIREMENT
36	Power Consumption	As per POE Standard
37	Surge/Lightening Protection	Required (Internal/External) Industrial grade as per Note
38	Certifications	CE/FCC/UL or equivalent BIS
39	Security	Password Protection, HTTPS encryption, IEEE802.1X
40	Sabotage detection	Required

Tentative locations: Railway Siding (Unloading), Oil Jetty

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the speicification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available than same to be supplied externally without additional cost to BECIL.

4. IP FIXED BULLET CAMERAS (8MP – 4K RESOLUTION) WITH MOTORISED ZOOM

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Image Sensor	1/1.7" or better type CCD/CMOS/MOS Sensor
2	Image Resolution	3,840 x 2,160 at 25/30 fps (8MP at 25/30 FPS orbetter)
3	Scanning System	Progressive scan
4	WDR	Min 120 dB
5	Lens	MFZ Lens 3.5-8 mm/ 4.6-12 mm/2.8-8.5 mm/ (Motorized Focus & zoom) or better, Min 10X Digital Zoom and minimum 2.2X Optical Zoom
6	Day & Night	True Day & Night with IR Cut Filter
7	Min. Illumination	Day -1.4 lux
		Night-0.3 lux



SL NO.	PARAMETER	MINIMUM REQUIREMENT
8A	White Balance	Automatic/ Manual
8B	Shutter Speed	1/3-1/30000sec, Auto
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure, BLC, 3D NR
10	AGC	ON/OFF
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection
13	Television System	PAL
14	Frame Rate	25 Fps or better
15	ONVIF S profile compliance	Required
16	Bit Rate	Up to 12 Mbps or better continuously adjustmentCBR/VBR
17	On-board storage	128 GB SDXC/SDHC/SD Memory recording
18	Alarm Terminals	Minimum 1 input, 1 output
20	Alarm Events	Alarm image transmission, FTP Periodictransmission
21	Video Compression	H.265/H.264 and M-JPEG or better
22	Video profile	2 Streams of H.265/H.264 and1 Stream of M-JPEG
23	Streaming	Primary Stream at resolution (3840x2160) @ 25/30fps Secondary Stream at resolution 1080P @
		25/30fpsThird stream shall be MJPEG.
		However the VMS Software should have the Capability to Record at the resolution of 4K UHD (16:9) @ 15 fps as well as Live Streaming at the resolution of 4K UHD (16:9) @ 25 fps simultaneously.
24	Ethernet	10Base-T / 100Base-TX, RJ45



SL NO.	PARAMETER	MINIMUM REQUIREMENT
		connector
25	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP,RTSP, SNMP, IGMP,NTP,HTTPS protocols
26	Users	Min 10 users
27	Weather protection	IP 66 or better
28	View Material	Vandalproof (IK-10)
30	Operating Humidity	Up to 95%
31	Power supply	POE based
32	Surge/Lightening Protection	Required (Internal/External) Industrial Grade as perNote
33	Regulatory	CE/FCC/UL or equivalent BIS
34	Security	Authentication, IP Filter, User access log

Tentative locations Product PH manifold, Entry/Exit Gates, Exchange pit Manifold

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available than same to be supplied externally without additional cost to BECIL.

5. IP FIXED BOX CAMERAS (8MP - 4K RESOLUTION)

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Image Sensor	1/1.7" or better type CCD/CMOS/MOS Sensor
2	Image Resolution	3,840 x 2,160 at 25/30 fps (8MP at 25/30 FPS orbetter)
3	Scanning System	Progressive scan
4	WDR	Min 120 dB



SL NO.	PARAMETER	MINIMUM REQUIREMENT
5	Lens	Varifocal Lens 3.5-8 mm/ 4.6-12mm/ 2.8-8.5 mm or better, Min 10X Digital Zoom and minimum 2.2XOptical Zoom
6	Day & Night	True Day & Night with IR Cut Filter
		Day -1.4 lux
7	Min. Illumination	Night-0.3 lux
8	White Balance	Automatic/ Manual
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure, BLC, 3D NR
10	AGC	ON/OFF
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection
13	Television System	PAL
14	Frame Rate	25 Fps or better
15	ONVIF S profile compliance	Required
16	Bit Rate	Up to 16 Mbps or better continuously adjustmentCBR/VBR
17	On-board storage	128 GB SDXC/SDHC/SD Memory recording
18	Alarm Terminals	Minimum 1 input, 1 output
20	Alarm Events	Alarm image transmission, FTP Periodictransmission
21	Video Compression	H.265/H.264 and M-JPEG or better
22	Video profile	2 Streams of H.265/H.264 and1 Stream of M-JPEG



SL NO.	PARAMETER	MINIMUM REQUIREMENT
		Primary Stream at resolution (3840x2160) @ 25/30fps Secondary Stream at resolution 1080P @
		25/30fpsThird stream shall be MJPEG.
23	Streaming	However the VMS Software should have the Capability to Record at the resolution of 4K UHD (16:9) @ 15 fps as well as Live Streaming at the resolution of 4K UHD (16:9) @ 25 fps simultaneously.
24	Ethernet	10Base-T / 100Base-TX, RJ45 connector
25	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP,RTSP, SNMP, IGMP,NTP,HTTPS protocols
26	Users	Min 15 users
27	Weather protection	IP 66or better
28	View Material	Vandalproof (IK-10)
31	Power supply	POE based
34	Surge/Lightening Protection	Required (Internal/External) Industrial Grade as perNote
35	Regulatory	CE/FCC/UL or equivalent BIS
36	Security	Authentication, IP Filter, User access log

Tentative locations - Perimeter

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the speicification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available than same to be supplied externally without additional cost to BECIL.



6. INTEGRAL EXPLOSION PROOF HD IP FIXED CAMERAS (2MP) WITH MOTORIZED ZOOM

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Min Illumination	Day – 0.3lux Night – 0.01 lux
6	Lens	MFZ Lens 3-9 mm/ 4.6-12 mm/4.3- 129 mm/6.36-138 (Motorized Focus & zoom) or better, Min 10X Digital Zoom & 20X Optical Zoom
7	White Balance	Automatic/ Manual
8	Backlight Compensation	ON/OFF
9	Colour, Brightness, Contrast	Functionality Required
10	Electronic Shutter	1/25 to 1 / 8000 s or better
11	Automatic Gain Control	Auto / Manual
12	Day and Night functionality	Automatic, Color, Mono
13	Signal-to-Noise Ratio	More than 50dB
14	Digital Noise Reduction	ON/OFF
15	Automatic Lens Control	DC or Automatic Iris
16	Focus	Automatic / Manual
17	Wide Dynamic Range	Required
18	Television System	PAL
19	Frame Rate	25 FPS for 1920 x 1080 at H.265/H.264 Compression



SL NO.	PARAMETER	MINIMUM REQUIREMENT
20	ONVIF S profile compliance	Required
21	Bit Rate	Up to 8Mbps or better continuously adjustment CBR/VBR
22	Alarm Trigger	Intelligent video motion detection and externalinput
23	Motion Detection	4 zones
24	Alarm Event	Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering.
25	Video profile	2 Streams of H.265/H.264 and1 Stream of M-JPEG
26	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
27	Interface	10Base-T / 100Base-TX, RJ-45 connector
28	Network Protocols support	IPv6, TCP/IP, HTTP, , DHCP, UDP, S, SMTP,RTP, RTSP, SNMP protocols/Should meet allfunctional requirement of the project
29	Weather protection, Outdoor Use	IP66 or better
30	Construction	Stainless steel 316
32	Operating Humidity	Up to 95%
34	Power Source	POE based or through external power supply
36	Mounting	Shall be on TLF structure/ stand/wall mounted/ceiling mounted with suitable brackets
37	Surge/Lightening Protection	Required (Internal/External) Industrial grade asper Note



SL NO.	PARAMETER	MINIMUM REQUIREMENT
38	Certifications	Exd IIC T4 and IP66, by IEC Ex/ATEX and PESO(CCOE) or equivalent BIS
39	Security	Password protection, IP address filtering, Useraccess log
40	User	2 simultaneous users

Tentative locations: Inside TLF shed, Inside PH shed

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the speicifcaiton of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available than same to be supplied externally without additional cost to BECIL.

7. LAYER 3 GIGABIT MANAGED ETHERNET SWITCH

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Port Density	24 x100/1000 BASE-X SFP ports
		Gigabit SFP ports will support any combination of 10/100/1000 BASE-T, 100BASE-X or 1000BASE-X SFPs, 100BASE-FX, 1000BASE-BX, 1000BASE-LX, 1000BASE-ZX or 1000BASE-ZX CWDM SFPs
		Forwarding Rate-35.7 Mbps or as per design engg. Switching Fabric- 48 Gbps
2	Performance	or as per design engg.
		Supports 9 KB Jumbo frame size UP to 4K IPv4 routes, UP to 16K MAC addresses, UP to 2K layer 2 multicast groups, 4K VLAN ID, 256 MB DDR SDRAM, Separate packet buffer memory, 32MB Flash Memory, IPv6 routing option



SL NO.	PARAMETER	MINIMUM REQUIREMENT
		Link Aggregation (802.3ad LACP) Dynamic
		Link Failover,
3	Resiliency	<50 msec ring convergence incase the link failure, optimized for voice & video traffic. Loop Protection- Loop Detection
		Loop Protection-Thrash Limiting STP Root Guard, IEEE 802.1D Spanning Tree, Protocol (STP)-MAC Bridges, IEEE 802.1s Multiple Spanning, Tree Protocol (MSTP), IEEE 802.1t -2001 802.1D maintenance, IEEE 802.1w -2001 Rapid, spanning Tree protocol (RSTP), RFC 3768 virtual Router Redundancy Protocol (VRRP)
4	VLAN support	Support 1K VLANs, IEEE 802.1ad VLAN double tagging (Q-in-Q) IEEE 802.1QVirtual LANs IEEE 802.1v VLAN classification by protocol & port. IEEE 802.3ac VLAN tagging
5	Security	Private VLANs, providing security and port isolation of multiple customers using the same VLAN. Dynamic VLAN assignment NAC 802.1 x support ACLs Access Control Lists BPDU Protection Guest VLAN support (IEEE 802.1x) IEEE 802.1x port Based Network Access Control IEEE8021x Authentication protocols (TLS, TTLS, PEAP & MD5) IEEE 802.1x Multi Supplicant authentication MAC-based authentication port Security SSH Remote Login SSLv3 Web-based Authentication RFC 2246 TLS Protocol V1.0 RFC 2865 RADIUS, RFC2866 RADIUS Accounting RFC 3546 Transport Layer Security (TLS) Extensions RFC 3748 PPP Extensible Authentication Protocol (EAP)
6	Quality of Service	TCP-IPband with limiting performance and band with resolution down to 1Kbps IEEE 802.1p Priority Tagging



SL NO.	PARAMETER	MINIMUM REQUIREMENT
7	IPv6 Features	IPv4 and IPv6 Dual Stack IPv6 Management via Ping, Trace Route, Telnet and SSH Static Unicast Routes for IPv6 RFC 1886 DNS Extensions to support IPv6 RFC 1887 An Architecture for IPv6 Unicast Address Allocation RFC 2461 Neighbour Discovery for IPv6 RFC 2463 ICCMPv6 RFC 2464 Transmission of IPv6 packets over Ethernet Networks RFC 2711 IPv6 Router Alert Option RFC 3056 Connection of IPv6 Domains via IPv4 Clouds RFC 2513 IPv6 Addressing Architecture RFC 4443 Internet Control Message protocol (ICMPv6)
8	General Routing	Broadcast Forwarding ECMP Equal Cost Multi Path routing RFC 768 User Datagram Protocol (UDP) RFC 791 Internet Protocol (IP) RFC 792 Internet Protocol Message Protocol (ICMP) RFC 793 Transmission control Protocol (TCP) Route Maps Route Redistribution (OSPF, RIP) RFC 1058 Routing Information Protocol (RIP) RFC 2080 RIPng for IPv6 RFC 2081 RIPng Protocol Applicability Statement RFC 2082 RIP-2 MD5 Authentication RFC 2453 RIPv2
9	Multicast Support	Bootstrap Router for PIM-SM IGMP Proxy IGMP Snooping MLD Snooping (v1 and v2) RFC 1112 Host extensions for IP multicasting RFC 2236 Internet Group management Protocol v2 (IGMPv2) RFC 2362 PIM-SM RFC 2715 Interoperability Rules for Multicast Routing Protocols RFC 3376 IGMPv3 RFC 3973 PIM-DM RFC 14541 IGMP & MLD snooping switches
10	Management	10/100/1000 console management port, port mirroring SSH and SNMPv3 for secure management RADIUS Authentication RMON (4 groups) SNMP Traps RFC 1157 Simple Network Management Protocol (SNMP) RFC 1212 Concise MIB definitions RFC 2574 User-based Security ioModel (USM) for SNMPv3 RFC 2575 View-based Access Control Model (VACM) for SNMP RFC 2741 Agent Extensibility (Agent X) Protocol Diagnostic Tools 10.1.1 BIST (Built-in Self-Test) 10.1.2 Ping Polling User Interface & administrator Features should support multiple firmware on switch flash & so that backup firmware can be



SL NO.	PARAMETER	MINIMUM REQUIREMENT
		used incase main firmware fails Graphical User Interface (GUI) / Web GUI Industry- standard CLI with built-in Help
11	Electrical Approvals and Compliances	EMC EN55022 class A, FCC class A, VCCI class A Immunity EN55024, EN61000-3-levels 2 (Harmonics), and 3 (Flicker)
12	Safety Standards	UL60950-1 CAN/CSA-C22.2 No. 60950-1-03, EN60950-1,EN60825-1, AS/NZS 60950-1
13	Certification	UL / TUV or Equivalent BIS
14	RoHS compliant	Required
15	Power Characteristics	AC Voltage 100 to 240V (+/- 10% auto ranging) Frequency 47 to 63Hz
16	Power Consumption	VTS
17	Operating & Design Temperature	Refer Site Data
18	Relative Humidity	Up to 95%

No. of Optical/ Copper ports required for CCTV application to be worked out by vendor as per designEngineering with minimum 20% spare ports of each type.

8. LAYER 2 MANAGED ETHERNET SWITCH

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1.	Туре	Industrial grade layer 2 POE Ethernet switch
2.	Operation	Store & forward, wire speed switching, non-blocking
3.	Modes	Full or half duplex operation with flow control supported on all ports



SL NO.	PARAMETER	MINIMUM REQUIREMENT
4.	MAC address	2000
5.	Memory bandwidth	3.2 Gbps
6.	RJ45 ports	
a.	Ports	Minimum 4 nos. 10/100 BASE-TX POE Ethernet, fully IEEE 802.3compliant.
b.	Speed & direction	Configurable or 10/100 auto detecting for speed and duplex. (full or half)
c.	MDI/MDIX	Auto-MDI/MDIX crossover.
d.	Polarity	Auto-polarity for crossed TxD&RxD pairs
7.	Fibre optic ports	
a.	Ports	2 nos. 1000 Mbps fibre optic ports for distances up to10km. Single mode links
b.	Single mode	Upto 10km typical
8.	Networking features	
a.	Device support	All IEEE 802.3 compliant devices
b.	Protocols & features	All IEEE 803.2
		Management Features SNMPv1, v2c and v3, IEEE 802.1AB Link Layer Discovery Protocol (LLDP), Web GUI, sFlow a method for monitoring traffic in switched and Routed networks
		Multicast Support IGMP query solicitation, IGMP snooping v1, v2 and v3 VLAN GVRP, VLAN creation based on protocol, Port and Subnet based, IEEE 802.1Q Virtual LAN (VLAN) bridges, IEEE 802.3acVLAN tagging.
		Quality of service IEEE 802.1p, DSCP Prioritization, Strict priority, weighted round robin or mixed scheduling IPv6 Features Path MTU discovery for IPv6, IPv6 specification, Transmission of IPv6 packets over Ethernet networks, Default address selection for IPv6, IPv6 addressing architecture



SL NO.	PARAMETER	MINIMUM REQUIREMENT
C.	Resiliency protocol support	Rapid Ring protection / Resiliency technology providing the convergence of Sub 50ms, Loop Detection and Loop protection, RSTP & MSTP, Shall support high-speed ring recovery fibre access and uplink ports and should seamlessly integrate with the core / Aggregation chassis proposed
d.	Standards compliance	IEEE802. 3 IEEE 802.3u IEEE 802.3x IEEE 802.1p
9.	Power input	Dual redundant power input
10.	Input voltage range	VTS
11.	Power consumption	VTS
12.	Surge & spike protection	Should support EN 61000-4-5 std for surge.
13.	Diagnostics	Self Test and alarm output
14.	Design & Operating Temperature	Refer Site Data
15.	Humidity	Up to 95%
16.	Electrical safety	UL/IEC/EN 60950-1
17.	EMC	EN550222010, EN550242010EN61000- 6-4 EN61000-4-2 (ESD) EN61000-4-3 (RS) EN61000-4-4 (EFT) EN61000-4-5 Class 3 for DC power, Class 2 for I/O
18.	MTBF	Better than 2,00,000 hours



SL NO.	PARAMETER	MINIMUM REQUIREMENT
19.	Ingress protection	IP30 protection minimum
20.	Mounting	DIN rail or direct panel

Note: Power adaptors wherever used for Layer 2 Switches shall be of Industrial Grade.

9. NETWORK ATTACHED STORAGE (NAS) / STORAGE AREA NETWORK (SAN)

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Controller	Dual Controller in High Availability. In case of one controller failure, the takeover must be seamless and instant without any additional reconfiguration. The controller shall support RAID 0/1/10/5/6.Each processor should have at least dual Core Ivy Bridge Intel Xeon Processor or equivalent
2	Cache	The system should have minimum 16GB usable cache (Read & Write) across the two controllers with an ability to protect data on cache if the system fails and it results into controller failure. The cache on the storage should have battery backup. Cache shall be dynamically managed for both Read and Write operations.
3	Storage Operating System	The Storage should have embedded Operating Systems and there should be only one OS to provide the required Protocols. (It should not be a general purpose OS such as Windows, Linux etc.) The OS should be of the same make as that of storage or as per OEM standard.
4	Protocol	Storage OS should Support iSCSI and/or FC protocol
5	Storage to Host Connectivit y	The storage system should have sufficient number of suitable ports to connect the servers, storage network etc. Minimum 1GbE x 4 ports are to be provided. If requirement is more than 4 port than vendor has to provide



	additional without additional cost.
Storage Capacity	As per design calculation for recording and storing of CCTV data for all integrated cameras at full resolutions and 15 FPS at least for a period of 90 days.
	For minimum storage requirement per camera per day kindly refer to the general requirement of the CCTV specified in the tender document.
	20% spare slot for installation of additional disc and disc array for future use to be kept in the system.
Form Factor	2U rack-mount system
Redundancy	There should not be any single point of failure and shouldhave following Redundant and hot swappable modules > Disk Drive
	Power Supply
	> FANS
RAID Support	The solution to be configured with RAID 6 or equivalent protection and for every 30 disks, 1 disk should be configured as Global hot spare. Each RAID group should have 10 or less number of disks.
	Form Factor Redundancy

SL NO.	PARAMETER	MINIMUM REQUIREMENT
10	Storage Feature	Storage system (disk shelves) should support 12Gbps SSD/ 12Gbps NL-SAS/ 12Gbps SAS 10K and 15K disks simultaneously with different rpm. Storage back end connectivity should be at least 12Gbps SAS Ports 2 No.
11	Disk Connectivity	The Storage Should be configured with Dual ported Disks and dual IO Module for no single point of failure



12	Usable Storage Capacity	Storage shall be provided with 12 Gbps NL-SAS disks (7.2k RPM, 1/2/3/4/6/8/10/12 TB) on RAID 6. Each RAID group should have 10 or less number of disks.
13		The Proposed storage disk should ensure a minimum total aggregate storage bandwidth of 800Mbps of better on a 90% write & 10% read application environment. OEM of storage should confirm the above required aggregate bandwidth on the offered storage by the System Integrator on the VMS application. A certificate or output of a sizing tool should be submitted to support this.
14		Should have Single Graphic Use Interface (GUI) for both File and Block as well as command line interfacing. Must include real time performance monitoring tools giving information on CPU utilization, volume throughput, I/O rate and latency etc.
15	Host / Server OS Support	Linux, MS Windows etc.
16	Testreport	Storage OEM should have a test & validation document supporting the bandwidth mentioned with the VMS application supplied by the bidder. Alternately, results of internal sizing tool from OEM supporting the bandwidth mentioned should be submitted.
17	Accessories	Ready Rails Sliding Rails With Cable Management Arm
18	Data protection features	Replication (DFS-R), Snapshots (VSS)

CCTV SERVER

S.N O	PARAMETERS	MINIMUM REQUIREMENTS
1	Processor	2 x Intel® Xeon® processor(10 Cores, 2.40 GHz) or better
2	Cache	25 MB



3	Memory	32 GB (4 x 8GB ECC DDR4 DIMM slots, 2133 MHz) or better
4	RAID & Hard Disk Drive	 Server should have 8x2.5" disk bays 2 Nos 300 GB 15K RPM SAS/NL-SAS for OS - RAID1 Configuration 4 Nos 600 GB 15K RPM SAS/NL-SAS-Live database-RAID 10 configuration Should support SSD for future expansion
5	Hard Disk Controller	Controller with RAID 0,1 & 10 support
6	CD-R/W Drive	SATA-DVD RW Drive
7	Network controller	4*1 Gbit/S
8	Connectivity	1 no. DP port, 1 no. VGA
9	Operating system	Microsoft Windows Latest Version / Edition Including 10 Client Access License. In case OEM's offered software has not been proven tested over the latest operating system, then vendor to provide latest tested operating system. However, vendor needs to upgrade the operating system immediately once the proven CCTV software has been developed on latest operating System at no additional cost to BECIL during entire execution till CAMC period.
10	Power Supply	1100 W redundant power supply
11	Antivirus program	Required
12	Form Factor	Rack
	RACK MOUNTED LE OPTICAL MOUSE AN	D/LCD MONITOR KEYBOARD DRAWER WITH ID KVMSWITCH
A	Monitor specification	
1	Size	Min 18.5" widescreen LCD/LED Monitor (Rack mounted

S.N O	PARAMETERS	MINIMUM REQUIREMENTS
		Type)
2	Height	1 U (Rack unit)
3	Contrast	1000:1



	Ratio	
4	Color Support	16.7 million colors,
5	Video Input	USB - 2 Nos. MinVGA - 1 no. Min
6	Brightness	250 cd/m2 (typical)
7	Adjustability	Tilt, Swivel and height adjustment
8	Power Supply	100V to 240V~ (+/- 10%) AC, 50/60 MHz
10	Design & Operating Temperature	Refer Site Data
В	Mouse	Optical type
С	Keyboard	Minimum 104 Key Standard Keyboard with 19" rackmounted drawer
D	KVM switch	4 port combo industrial grade KVM switch

Note:

- 1. In case multiple servers are required to meeting the tender requirement, vendor to provide the same with above minimum configuration at no additional cost to BECIL. This also includes the required software and operating system.
- 2. Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution. The cost of failover server required hardware & software shall be included in the cost of CCTV server.



10. WORK STATION

(At Terminal Manager Room, Control Room and Security Room)

S.N	PARAMETER	MINIMUM REQUIREMENTS
О		
1	Processor	Intel Xeon Intel® Xeon® processor (8 Cores, 2.10 GHz, 20MB) or better
2	Memory	16 GB DDR4
3	Hard Drives	500 GB SATA @ 7200 RPM or better
4	Hard Disk Controller	Integrated SATA CONTROLLER
5	Optical Drive	16x DVD+ RW
6	Keyboards	Minimum 104 keys Standard with Palm Rest (USB)
7	Mouse	USB Laser Scroll Mouse with Mouse Pad
8	Graphic Card	NVIDIA® GEFORCE GTX Series with 4k output or better with Minimum 8-GB Graphic card or as per design requirement whichever is higher. It shall have minimum 2 nos. of onboard 4K display port and 1no. of HDMI port.
9	Built In I/O Ports	USB - 4 nos.
10	Ethernet	Dual integrated 10/100/1000 Mbps Ethernet
11	Operating system	Microsoft Windows Latest Version/ Edition
12	Antivirus program	Required
	MONITOR	LED monitor Suitable for 24 x 7 operations with inbuilt/monitor mounted speaker
1	Size	Min 23" widescreen Full HD LED
2	Resolution	QHD 2560 x 1440 at 60 Hz
3	Aspect Ration	16:9
4	Contrast Ratio	1000:1
5	Color Support	16.7 million colors,
6	Connectivity	Display Port 1.4, HDCP 1.4, HDMI (HDCP) VGA – 1 no. with audio in and audio out
7	Brightness	350 cd/m2 (typical)

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8	Adjustability	Tilt, Swivel and height adjustment
9	Power Supply	100V to 240V~ (+/- 10%) AC, 50/60 MHz
10	USB	2 x USB 3.0 downstream with Battery Charging 1.2

Note:

- 1.0 Work station is to be connected to two number of LED monitors. Required hardware & software is to be provided for the same.
- 2.0 In case OEM's offered software has not been proven tested in latest Windows operating system, then vendor to provide latest operating system which has been tested with the offered software. However vendor needs to upgrade the operating system immediately once the proven CCTV software has been developed on latest/ upgraded version of the operating System at no additional cost to BECIL during entire execution till CAMC period.
- 3.0 Work station for Control room should be rack type (2U) however for security and terminal manager room should be tower type.

11.LED DISPLAY SCREEN

S.NO	PARAMETER	MINIMUM REQUIREMENT FOR ULTRA HIGH DEFINITION LEDMONITOR
1		Minimum 42"/55"/75" , Ultra High Definition LED Monitor(4K)
2	Display Resolution	Ultra HD 3840x2160 pixels
3	Backlight Module	Edge LED
4	Ü	HDMI :4096x2160p (24, 50, 60Hz), 3840x2160p (24, 25, 30, 50, 60Hz), 1080p (30, 50, 60Hz), 1080/24p, 1080i (50, 60Hz)
5	MPEG noise reduction	Yes
6	Computer Input	HDMI 2.0 , USB 2.0, Ethernet connection, HD15 PC input (4K input), Wi-Fi Certified 802.11a/b/g/n/ac
7	Video Colour System	NTSC (3.58 MHz, 4.43 MHz), PAL, PAL60, SECAM



8	Power Supply	100V to 240 V AC, 50Hz +/- 5%
9	Remote Control	Infra-Red Remote with Control Function
10	High Dynamic Range Compatibility	Yes
11	O	Shall be suitable for rigid support mounting from Wall, Ceiling,column &Table Top

12.CCTV RACK

SR NO	FEATU RES	PARAME TERS
1	Rack Height	42 U Rack
2	Ingress Protection	IP 42
3	Cable Entry	Bottom
4	Thickness	Side:2 mm Thick CRCA Sheet (Removable)Front Door:1.5 mm Thick CRCA Sheet Rear Door:1.5 mm Thick CRCA Sheet Top:2 mm Thick CRCA Sheet
5	Front Door	Toughened Glass
6	Anti Vibration Pad	15 mm Thick
7	Painting	Epoxy based powder coating, Min Thick 65-75 micron
8	Lifting Hook	4 number
9	Earthing Bus Bar	Copper
10	Earthing Bolt	M8X25 Earth Bolt;1 No. Each Side
11	Utility Socket	One number to be provided
12	PVC Filter	04 Number Minimum with 4 inch FAN
13	Biometric Reader	2 no. of Biometric fingerprint cum smart card reader to be provided along with accessories (Controller, Electromagnetic door locks for front & Rear doors) for restricting un-authorised opening.

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14	Illumination	LED light with Motion Sensor
	Cable management accessories	To be provided for proper dressing of cables
16		Mounting angles and mounting frames for interiorinstallation for 19"
	Locking	

13.BIOMETRIC CUM CONTACTLESS SMART CARD READER ALONG WITH DIGITAL CAMERA

S.No	Descriptions	Minimum Requirements
1	Microcontroller	Onboard
2	Memory	4MB
3	I/O Interface	LAN Interface (10/100 Base T Ethernet)
4	LCD Display	8X 1 char. LCD Display with backlight, alphanumeric
5	LED Indication	LED Indication for Accept & Reject indications
6	Relay for Door lock	Door Lock output relay – 12VDC
7	Alarm Indication	Audible Alarm Indication
8	Cabinet	Plastic / Metal casing
9	Finger print scanner Resolution	Greater than 500DPI
10	Scanner	Optical sensor, Scratch Resistant
11	System Verification Speed	<1 Sec
12	FRR (False Recognition Rate)	0.1%
13	FAR (False Acceptance Rate)	Under 0.0001%
14	Enrollment	5 sec typical
15	Smart Card Reader	Contact less Mifare
16	User Capacity	9000 templates
17	Transaction capacity	12,000
18	Verification Mode /	1:1 or 1:N

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	Identificationmode	
19	Camera	Embedded
20	Communication	TCP/IP/RS232/RS485
21	Operating Temperature	Refer Site Data
22	Operating Humidity	5% - 95%
23	Power Requirement	9 - 12V DC
24	Approval	Conformity to CE or equivalent BIS approval
25	Operation	Standalone or networked
26	Mounting	Flat Surface double gang compatible
27	Ingress protection	IP66

14.LIGHT INTERCONNECT UNIT (LIU)

S.N.	Material Description	MINIMUM REQUIREMENT
1	Вох	19" rack mountable for indoor application and for outdoorapplication inside JB with suitable mounting arrangement.
		Complete powder coating and aluminum Housing
2	Splice Trays	Complete Aluminum Body
		Provision for 12/24 Fiber splices
		Cushioned splice holder
3	Cable Spools	Flame retardant plastic
		Two halves spool design
4	Ports	12 /24/ 36 Ports



15. VIDEO MANAGEMENT SYSTEM SOFTWARE

S.N O	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
1	The video management system shall be client/server based IP video security solution that shall provide seamless management of digital video, audio and data across an IP network. The video management system shall provide full virtual matrix switching and control capability. Video from sites shall be possible to view from single or numerous workstations simultaneously at any time. Cameras, recorders, and viewing stations may be placed across the terminal in the IP network. It shall be ONVIF Compliant and Open Architect.
2	VOCMRPS shall be a highly scalable, enterprise level software solution. It shall offer a complete Video Surveillance solution that shall be scalable. API/SDK support to be provided for seamless integration of third party security infrastructure where possible. The system shall be capable of working on Windows OS and Windows Server platforms.
3	The Software shall supports ONVIF TM compliant cameras and devices
4	The VMS shall provide up to 10 different and independent programmable recording schedules. The schedules may be programmed to provide different record frames rates for day, night, and weekend periods as well as special days. Advanced task schedules may also be programmed that could specify allowed logon times for user groups, when events may trigger alarms, and when data backups should occur
5	The VMS workstations may be connected to up to 4 monitors where each monitor may beconfigured to display live streaming video, playback video, site maps, or alarms.
6	The VMS shall auto-discover IP devices with their default IP addresses
7	The VMS shall provide a user-dependent bookmark Tree. The bookmark tree shall allow saving a time period or a single point in time for later investigation and export. Bookmarks shall be available both for live mode and for playback mode.
8	The VMS shall be designed in such a way the Central Server downtimes do not affect the functionality of the recording services. Normal recording and Motion recording shall continue during the Central Server downtimes, only Alarm Recording cannot be activated as the Central Server is responsible for evaluating the alarm conditions.
9	The software shall come preferably as one unit and not as multiple loadable units. If it comes as multiple loaded units requiring multiple servers, they shall be as per NVR specification of this tender and the cost shall be included in the quoted price of each software unit.



S.N O	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
10	The software shall not have seat-licensing, allowing for any number of user seats/installations on the IP video network to be added for future scalability at no management software cost. If seat licensed software is to be quoted then it shall have licenses for at least 20 PCs/ work station.
11	The manufacturer supplied management software pack shall have a separate file player to authenticate and play exported files.
12	The VOCMRPS shall allow for video to be streamed on a video mosaic wall.
13	The Software shall provide user licenses for at least 5 users (to be included in software costitself).
14	The system shall allow operation with/without a PC keyboard, Joy stick or mouse. Once system isconfigured, virtual matrix functions can be carried out using CCTV keyboards
15	Wide compression technology support The Software shall supports a variety of compressionmethods M-JPEG, H.263, MPEG-4 Part 2, Simple Profile and Advanced Simple Profile, H.265/H.264/MPEG-4 AVC, and MxPEG.
16	Dual streaming Hardware use is optimized with two independent, configurable video streams, one for live viewing and one for recording.
17	Privacy masking Enables administrators to define privacy masks for individual cameras, to hide areas in the camera view that must not be visible or recorded in order to comply with local legislation
18	The VOCMRPS shall provide the following
	Automatic search and registration of components of proposed system on the network. They can be Cameras, Monitors, Alarm panels, NVRs.
	The system shall allow for live view, playback and system configuration of the
	IP video system. The system shall allow for creation of multiple users and user
	groups and assign tasks to each.
	Drag & Drop functions for most functions on the system and also for set up of connection between cameras and monitors
	Several simultaneous live picture connections of camera in network. It shall be capable of showing video pane layouts including 2x2, 3x3, 4x4, various Hot Spots (1+5, 1+7, 1+9, 1+12, 1+16) and custom layouts.
	It shall be possible to listen to audio from individual encoder/ cameras or
	decoders/Receivers. Audio shall be simultaneously transmitted from



S.N	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE
О	(VOCMRPS)
	camera end to Server end.
	System setup for pre-defined surveillance tasks to be invoked at pre-defined times in the day.
	Programming of automatic recording events on NVR, maybe based on events such as alarms and video analysis
	Remote maintenance of IP Video components
	It shall be possible to show text on screen display (OSD) when video is displayed on a Receiver. The OSD shall detail the camera name, number, date and time. It shall support remote viewing of cameras on
	Internet / Intranet It shall provide digital zooming
	facility.
	It shall support multiple Video Resolutions – CIF, 2 CIF, 4 CIF, HD, UHD
	It shall have feature of recording at 1920x1080 @ 15,25 FPS (for full HD camera), 3840 x 2160 at 15,25 FPS (for 4K cameras) or better and retrieval of video and Audio.
	Supports a variety of compression methods M-JPEG, H.263, MPEG-4, H.265/H.264 or better etc
	The video management system shall support the use of secure Hypertext Transfer ProtocolSecure (HTTPS) using Secure Sockets Layer (SSL) to establish a secure connection between supported hardware devices and the software solution.
19	The VOCMRPS shall allow the
	followingLive display of
	cameras
	Live display of camera sequences &
	salvos. Control of PTZ cameras & MFZ
	Fixed cameras Playback of archived
	Video at speeds of $x1/4 - x8$
	Retrieval of archived Video using normal playback, thumbnails
	(event or time based)Instant Replay of Live Video
	Use of site maps



S.N O	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)		
	Configuration of system settings		
	Execution of Salvos, Guard Tour & sequences using tasks or manually		
	The software solution shall include an email and SMS notifications feature that can inform users about system errors such as archiving failures or camera failures.		
20	For each camera set up bit rate, frame rate, and resolution shall be set independent of othercameras in the system. Altering the setting of one shall not affect the settings of other cameras.		
21	Video Search Video smart search on the basis of date, time, event, camera, locations and alarm.		
22	The video management system shall support digital zoom of any image pane. A dedicated graphical control shall be provided in the user interface for this purpose. In addition, the mouse wheel shall control digital zoom when the mouse cursor is hovering over a selected image pane.		
23	PTZ Operations		
	VOCMRPS shall be able to operate with PTZ protocols of the offered cameras.		
	Named presets (up to 64) and custom commands (up to 64) shall be supported per camera, invoked from VOCMRPS. User priority between 1 and 5 shall be allocated for PTZ enabled transmitters.		
	VOCMRPS shall have the ability to slue PTZ cameras to alarm generated areas.		
24	Recording technology Continuous recording, motion based recording, event based recording and combination of event and motion based recording		
25	Export Formats The VMS shall export video and audio data optionally in ASF/AVI format to a CD/DVD drive, a network drive, or a USB drive. The exported data in ASF format may be played back using standard software such as Windows Media Player.		
26	The software shall allow for using .BMP format area maps.		
27	The software system shall be capable of handling camera and alarm icons on area maps. The area map shall be configurable to pop up / highlighted with colour upon the receipt of an alarm received from a camera/ VIDEO Encoder on the map. This can be on the same or other monitors on the PC.		
28	The Software system shall allow direct connection of control keyboard to the PC workstationrunning the VOCMRPS for virtual matrix operations.		
29	The software shall be capable of monitoring the status of camera in the network and shallindicate when a device goes offline by suitable red cross		



S.N O	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)	
	across the camera.	
30	The system shall be able to carry out a motion search on recorded video and highlight motion in the playback bar and also as motion event based thumbnails to navigate straight to that event in recording.	
31	The system shall support automatic failover for recording servers. This functionality must be accomplished by a failover server that shall work as a standby unit, which takes over in the event that one of a group of designated recording servers fails. Recordings shall be synchronized back to the original recording server once it is back online.	
32	The system shall support multiple failover servers for a group of recording servers.	
33	The system shall provide monitoring of all failover servers from the graphical alarm management module.	
34	The system shall provide seamless access to recordings on the failover Server for all clients through the same client views once the services are fully started.	
35	The system shall support multicasting of video feeds to client workstations in order to conserve network resources. The system shall automatically switch to unicast, if the client fails to connect to the multicast stream	
36	The system shall be able to restore the data stored on the camera's internal storage to mediadatabase once the communication from the cameras is restored.	
37	The alarm and map window shall have docking facility on the main screen.	
38	The alarm support shall allow for continuous monitoring of the operational status and event-triggered alarms from servers, cameras and other devices.	
39	The alarm support shall provide a real-time overview of alarm status, or technical problems, while allowing for immediate visual verification and troubleshooting.	
40	The VOCMRPS shall have the following facilities	
	Retrieve data with 'alarm on' with key on live video screen	
	Search of recorded images based on motion, congestions, counter flow,	
	time, date, alarm etc. Shall support 32 Video streams concurrently on a	
	work station	
	Shall allow 3 levels of user and Alarm prioritization	



S.N O	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)		
	Shall allow 64 cameras to be replayed simultaneously		
	from one NVRAuto-protecting of video recording on		
	post and pre 'alarm' images.		
	The hashing function and a bit key shall describe a digital signature of the video images and bewatermarked into files of exported images.		
	Shall have facilities for play, forward, rewind, pause along with fast forward and rewind forreviewing the recorded videos.		
	Shall be capable of 4 X 4(max) viewing panes at 16 frames.		
41	Recording Manager System Software		
i	The video management system shall be capable of managing multiple recording managersystems.		
ii	It shall be possible to assign encoders and IP cameras to recording manager		
iii	The recording parameters shall be configured in the recording tables of the VMS configuration program. These settings shall be replicated into the devices from the Central Server.		
iv	The recording manager shall manage encoders and IP-Cameras, and the Network attached storage systems. It shall offer system wide recording monitoring and management of Network Attached storage, video servers and cameras		
v	The recording manager shall support the encoders and cameras to directly stream the data to the Network attached storage.		
vi	The transfer rate of the data from the encoder or IP-Camera is limited by network speed and the Network Attached Storage data throughput rate.		
vii	The Recording Manager shall be able to restore a lost recording database from data on the Network attached storages / VMS server.		
viii	The Recording Manager shall provide flexible retrieval of recordings. It shall be able to determine on which network attached disk array data from each camera or encoder has been stored		
ix	It shall be possible to secure the access to the Recording Manager software with a password. This shall be done in the Configuration Client		
х	The video management system shall allow configuring if playback of recordings is streamed through the Recording Manager or is streamed directly from the Network attached storage.		
xi	The video management system shall support to retrieve the playback information, i.e. from which iSCSI storages to retrieve the video, audio and		



S.N O	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)	
	meta-data, either from the Video Recording Manager or directly from the IP encoder or camera. Playback information directly from the IP encoder or camera is limited in time and should be used while the Recording Manager is	
	not available to increase the reliability of the video management system.	

16.**ADVANCED ANALYTICS SOFTWARE**

S.N O	MINIMUM REQUIREMENT FOR ADVANCED ANALYTICS SOFTWARE
1	The analytics software shall be server based. Dedicated Analytics Server to be provided in addition to VMS server. The cost of dedicated server shall be part of cost of Analytic software atno extra cost to BECIL.
2	The Software shall be seamlessly integrated with central software.
3	The analytics software shall support all advanced analytics features like Virtual Trip Wire, abandoned object detection, museum mode as "object removal", video loss alarm, scene change detection and motion based detection.
	The definable and available triggers should be for
	Vehicle Moving – Should activate alarm if it detects vehicles moving in the scene and passing through the alarm mask. Object Direction may be used to further filter alarms, as well as object speed, object size.
	Vehicle Parking – Should activate alarm if vehicles are parked in Alarm mask. The length of time field in seconds or minutes may be used to specify how long vehicles are able to park before the alarm.
Vehicles Starting to Move – Should activate alarm if it detects a starting to move, an alarm will sound. Object Direction, Object Sp Object Size may be used to further filter alarms.	
	People Moving - Similar to the vehicles Moving trigger, but should apply to people.
	Anything Moving – Similar to the vehicles moving trigger, but should apply to any objects which are moving (people, Vehicles, Unknown)
	Intrusion detection for perimeter fixed cameras.
	Tracking of intruder through PTZ camera based on intruder alarm.
	Camera obstructed/ out of focus – should activate alarm if the field of view is obstructed or goesout of focus.



Cord cut - Will sound alarm if the video signal is lost

Hardware alarm input – Should be able to receive signals from external devices through alarm I/O and act accordingly.

Object left Behind - Should sound alarm if objects are discarded, such as

bag on a side walk Object removed - Similar to object left behind trigger,

but should apply to objects removed.

If alarm during intruder detection is not acknowledged within configurable time, then an auto SMS/Mail to be triggered. The Configurable time to be finalized before detailed design engineering. Auto SMS/Mail to be triggered to designated manpower of IP Based CCTV Survelillance System and Loaction-in-charge.

Note: All PTZ cameras to have inbuilt video analytics for Auto tracking of objects based on alarm inputs. In case PTZ cameras do not have in built video analytics, the same to be provided in server based advanced analytic software.

Note:

- Advanced Analytics software licences as stated above are to be taken for the entire fixed camera. For PTZ cameras analytic software licence are to be taken for Auto tracking of objects based on alarm inputs, cord cut, camera obstructed / out of focus, hardware alarm input and any other if required as per design Engineering.
- 2. The offered Analytic Software shall have provision for future scalability and expandability and shall be compatible with the offered VMS software.
- 3. All the above mentioned analytics must run simultaneously and not one after another based on configuration done in the system.

17.MODULAR COMPRESSION TRANSIT (MCT) BLOCK

1.0 General

- 1.1 MCT shall be used for cable entry to control rooms, Admin Block, and Security room.
- 1.2 MCT shall be sized, supplied and installed at site by the vendor. Multiple MCT blocks of Multidiameter type shall be provided for cable entry, suitable cut out and structural supports for installation of MCT frames on the walls / floor of control rooms shall be in scope of vendor.
- 1.3 The MCT Block system should have only few components for facilitating simple, easy and quick assembly. The Multidiameter based cable transits shall be repeatedly re-openable and re-usable without the need of special tools and discarding the modules in normal operation.
- 1.4 The MCT frame shall be standard type of stainless steel construction. The



- supply shall be complete with multi diameter blocks with center core in all / stay-plates / single piece compression wedge with stainless steel bolts. Solid blocks and insert blocks should not be used.
- 1.5 Contractor shall size the MCT considering approximate 50% spare for each cable size /O.D. All these spares blocks shall be available on the frame as usable Multidiameter blocks / add blocks with center plug, so that these spares blocks in future can be used for wide range of cables also, solid blocks should not be used at all on frame. Apart from spare if there is any additional uncovered space left on frame then this uncovered space should also be filled only with usable Multidiameter blocks with center plug only.
- 1.6 The Multi Cable & Pipe Transits should have been tested for water tightness-4 Bar pressure, gas tightness-2.5 Bar pressure, Blast Load-3 Psi minimum as per OISD 163, 3 Hrs fire tests as per UL 1479, EI-120 as per BS476 & ASTM E814, IP68 as per IEC60529, and rodents.
- 1.7 Wherever MCT Blocks are to be provided in Hazardous area, necessary ATEX certification should be provided.

2.0 Frames

2.1 The frames shall be GH Type with 100/60 mm Flange with holes suitable for bolting installation and sized according to the construction and cables passing through each penetration. Frame material shall be of stainless steel.

3.0 Blocks

- 3.1 Multidiameter type Cable Transits are to be installed wherever the power or control or any other cables are to be routed through concrete floor/roof or the walls or to the kiosks / panels. The Cable Transit needs to be installed in the roof or wall using Multidiameter modules with centre core so as to provide the flexibility using same module for a wider range of cables with different diameters as given below for any future reconfigurations while retaining fire stop, water tight and gas tight requirements. The Multidiameter modules with peelable/tearable layers and central core should be made of super resistant Roxylon/Lycron Halogen free EPDM with low smoke index-F1 Classification as per NF16-101 & NF16-102, Heat Radiation test in compliance with M2/M1 classification, UV Ageing Test as per ISO- 4892-2:2006 & ISO-815-1:2008, Oxygen Index Test as per ASTM D 2863-00, Shock & Vibration Test as per NES 510.
- 3.2 Spare blocks or the blocks used for filling space on frame shall be Multidiameter modules and central core, so that in case of any possible expansion these Multidiameter modules and central core can be used, insert blocks and solid blocks are not required to be provided.



- 3.2.1 20: Range (Start From 4.0 mm Min 10 mm range or higher)
- 3.2.2 30: Range (Start From 11.0 mm Min 10 mm range or higher)
- 3.2.3 40: Range (Start From 21 mm Min 10 mm range or higher)
- 3.2.4 60: Range (Start From 32 mm Min 10 mm range or higher)
- 3.2.5 90: Range (Start From 49.5 mm Min 10 mm range or higher)
- 3.2.6 120: Range (Start From 71.5 mm Min 10 mm range or higher)

4 Single Piece Compression Wedge

4.1 The Wedge should be in single piece to be made of super resistant Roxylon/Lycron – halogen free EPDM with low smoke index having stainless steel bolts. It will be used to compress the modules in the frame. The wedge should be such that it should not require any special tool to install / uninstall. The wedge should be such that it can be used at any position within the frame openings.

5 Stayplates

5.1 Stayplates for separating the module layers. Material of the stay plate should be stainless steel.

18. VIDEO WALL

S. No.	Parameters	Description
1.	System/Solution Requirements	 - Large overview display - The ability to display any source either on the largeoverview display or to any other auxiliary displays
2.	Content	In control room:-Windows for all cameras should be available of single screen of 300-400 cm2 for CCTV camera. Additional Two Number (55" each) for Alarm LED displayand Firefighting display. In location in charge room:-viewing window size should be preferably be between 250-300 cm2.(in two pages) for CCTV camera In security cabin:-viewing window size should be preferably be between 150-200 cm2.(in two pages) for CCTV camera
3.	Overview Display	



S. No.	Parameters	Description
A.		The display wall shall be composed of an array of 55"
11.		with configuration of XxY (column x rows)
В.		The display wall size shall be as per site requirement.
C.		This dimension cannot vary by more than 2%. The displays shall utilize direct LED lit LCD panel
С.		technology
		All panels shall of 55" diagonal size and optimized to
		work in a multi-screen arrangement with no more
		than 1.3 mm separation between adjacent screens (gap
D.		to be measure between the closest active pixel of two
		screens ideally placed one next to each other when a
		pattern able to illuminate each closets pixel to the
		border applies).
		Mechanical Gap b/w bezelless screen should be <0.4mm
		Each LCD Panel must have Built-in light and colour
		sensors with feedback loops to keep display
E.		performance, such as luminance and colour, uniform
		in time across the entire display wall. The sensors
		must measure both brightness and
		colour. Human intervention should not be involved.
T-		Each LCD panel shall have signal "cropping"
F.		capabilities allowing a single image to be displayed
		across the entire video wall array
_		Mount should be provided by OEM only with
G.		auto-
		alignment feature
		In order to achieve acceptable image quality for both
4.	Resolution	video and graphics, and to avoid pixel loss, the LCD
		panel must be of native resolution of 1920 x 1080
		with typical Brightness of be 700 Cd/m2 (nits) or higher and uniformity >98%
		Each "LCD Display" or "Panel" shall be of
_	Canalana Can	"industrial" grade quality with metallic-constructed
5.	Construction	fully enclosed light tight housing. The housing shall
		be of all-metallic construction with clear and easy
		access to the source and power connections. The
		LCD panel should utilise VA technology.
		Each display shall utilize a high contrast screen (anti-
_	Wide viewing	glare) with sizes of 55" diagonal. The screen shall
6.		have a H 178°/V 178° viewing angle or greater with a
		screen "haze" value of
		44% or greater for wide viewing angles for operators.



S. No.	Parameters	Description
7.	Brightness.	The " Typical " Luminance specification must be 700 Cd/m2(nits) or higher with a "Typical" Contrast Ratio of 4000:1 or greater in normal operation.
8.	Illumination	Each LCD Panel shall be equipped with Direct LED illumination. The LEDs should have a "Typical" lifetime rating of ≥100K hours in normal operation for cost-effective operation.
9.	Automatic colour and brightness adjustment.	Each LCD panel shall be equipped with two (2) built- in sensors, permitting the brightness level of each LED Backlight to be controlled and adjusted automatically. Light intensity from each panel will be monitored and adjusted automatically during calibration. The brightness target can be changed for the entire display wall via control management software without having to physically interact with each panel separately.
10.	Panel uniformity	When measured at least 25 pixels placed at 99% of the diagonal length the resulting uniformity level shall be equal or above 92%
11.	Remote Power Supply	The LCD panels shall have the option to utilize an external remote AC-DC power supply. The remote power supply must be hot swappable and offer a Redundancy option with Auto-failover capability. The remote power supplies shall support up to 100 metres distances without any image degradation or brightness loss from the LCD panel.
12.	Integrated Power Supply	The LCD panels shall have the option to utilize an internal AC-DC power supply. The resulting system shall support Auto-failover capability in case one of the internal AC-DC fail

S. No.	Parameters	Description
13.	Input signal flexibility	The LCD panels shall have digital input connectivity options, including, but not limited to, HDMI, full Display Port and IP inputs supporting up to Quad HD resolutions at 30fps or higher. Each LCD panel shall have the ability to "loop-through" any selected digital input signal via a HDMI connection



14.	Central controller	A dedicated control appliance with a network interface shall constantly monitor and communicate with each LCD panel to adjust its individual colours and brightness to a common value via a network switch and Cat 5/6 cables pulled to the RJ45 connector on each panel.
15.	Remote control	The control of the wall shall be possible via a
10.	Remote control	network. All LCD panels shall have their own IP address, and the control software can access all of them at the same time. The available features shall be: On/Off, Brightness and Colour,
		Input control
16.	Display Module Certification	The vendor shall provide the following certifications: EMC-EMI, ISO huppeldepup, CE,CB, UL,CCC, BIS
17.	Service & maintainability	
		Manufacturer design for long-term support in terms
a		ofspare parts (manufacturer must guarantee
		availability of
		parts for 10 years)
b		Depth of video wall if mounted on
· ·		concrete/wooden wall should not be more than 18cm
18.	SW	The Software Should be able to
		Switch On & off each Displays on site and remotely
		Switch On & off the entire wall on site and remotely
		Select the input interface on site and remotely
		Automatically switch the to another input if the
		currently
		used input is failing
		The SW shall configured with separate IP server
19.	OEM Certification	Display wall and controller should be from same OEM for better warranty support and upgrade

2. Layout Software

- i. The software shall be able pre configure various display layouts and access them at any time with a simple mouse click or based on the timer.
- ii. The software shall enable the users to see the desktop of the graphics display wall remotely on the any Windows PC connected with the Display Controller over the Ethernet and change the size and position of the various windows being shown.
- iii. The software shall enable various operators to access the display wall from the local keyboard and mouse of their workstation



- iv. The software shall copy the screen content of the workstation/PC connected to the Ethernet, on the large screen display wall in scalable and moveable windows in real time environment.
- v. The software can be operated wirelessly over iPad/Tab for launch pre-defined of layouts
- vi. All features, functionality, installation and commissioning should be certified by the OEM.

19. Video Wall

S.	Parameters	Description
No.	arameters	Description
1.	Native Resolution per Panel	1920x1080
2.	Aspect Ratio	16:9
3.	Screen Gap	Mechanical Gap Less Than 0.3 mm & Active to active < 1.3mm
4.	Backlight	Direct LED
5.	Brightness	should be 700cd/m2
6.	Contrast ratio	4000:1
7.	Bezel	0.8 mm
8.	Viewing angle	The screen shall have a H 178°/V 178° viewing angle or greater with a screen "haze" value of 44% or greater for wide viewingangles for operators.
9.	Continuous Automaticcolour and brightness calibration	Yes
10.	Connectivity	2 DP, 2 HDMI, 2 USB, 2 LAN(10/100/1000 Mbps)
11.	HDCP	Yes
12.	Ethernet ports	2
13.	Redundant Power supply	Yes
14.	Illumination	Each LCD Panel shall be equipped with Direct LED illumination. The LEDs should have a "Typical" lifetime rating of ≥100K hours in normal operation for cost-effective operation.
15.	Redundant wall	Complete wall should be redundant and no downtime to bethere in case of power supply failure.
16.	Power control	1 AC power ON/OFF switch



17.	input signal nexibility	The LCD panels shall have digital input connectivity options, including, but not limited to, HDMI, full Display Port and IP inputs supporting up to Quad HD resolutions at 30fps or higher.
18.	Component Life- LCD	>=100,000 Hours
19.	Power consumption	Less than 190 watt in Normal/Typical Mode
20.	Operating Temperature	As per site requirement

S. No.	Parameters	Description	
21.	Brightness Uniformity	>98%	
22.	Heat Dissipation	Less than 680 BTU/Hr	
23	OEM Certification	All features and functionality should be certified by the OEM. The Display Modules, Display Controller & Software should befrom a single OEM.	
24.	Signal cropping	Each LCD panel shall have signal "cropping" capabilities allowing a single image to be displayed across the entire videowall array	
25.	Remote Management	The control of the wall shall be possible via a network. All LCD panels shall have their own IP address, and the control software can access all of them at the same time. The available features shall be: On/Off, Brightness and Colour, Input control	
26.	Automatic calibration	Each LCD panel shall be equipped with two (2) built-in sensors, permitting the brightness level of each LED Backlight to be controlled and adjusted automatically.	

20. Display Controller Specification

S. No.	Parameters	Description
1.	1 1 2	Controller to be able to control mentioned video wall panels
2.		The controller should be based on the latest architecture.



3.	Platform	Vendor to specify
4.	Processor	Minimum Xeon processor Quad core with 3.04 GHz or higher end processor
5.	Hard Disk/CD ROM	RAID1 1000GB HDD/To be provided
6.	Output	4 port each of 4k resolution
7.	Input	2
8.	RAM	Minimum DDR4 ECC 32 GB & expandable up to 64GB
9.	Chassis Type	19" Rack mount industrial chassis
10.	Network	2 Network Ports
11.	Resolution Support For Outputs	Minimum 1920 x 1080 or higher
13.	Streaming video standards	H.264, MPEG2/4, V2D, H.263, H.265
14.	Ticker	There should be a possibility in the controller to create userdefined multiple tickers. It should also be possible to place these tickers anywhere on the wall
15.	Scalability	The system should be able to add additional inputs as required in the future
16.	Control	The system should have the capabilities of interacting (Monitoring & Control) with various applications on different network through the single Operator Workstation. It shall be possible to launch layouts, change layouts in real time
17.	Keyboard & Mouse Extension	Keyboard and Mouse along with mechanism to extend themto 20 Mtrs. operator desk from display controller to be provided
18.	24 x 7 operation	The controller shall be designed for 24 x 7 operation
19.	Others	The Video Wall and the Controller should be of the same maketo ensure better performance and compatibility
20.	OEM Certification	All certificate to be submitted for information. The Display Modules, Display Controller & Software should befrom a single OEM.
21.	Regulation Compliance	BIS



21. CABLING, EARTHING, AND OTHER ACCESSORIES SPECIFICATIONS 21.1 FRLS POWER CABLE

SL NO	DESCRIPTION		ICATION, REMENT	/MINIMU	J M
1	Type of Cable	3 core, 4	3 core, 4 core Copper cable		
2	Voltage Class		1100 VAC grade		
3	Size of Cable		n, 4 sqmm,	6 sqmm, 1	0 sqmm
4	Applicable standard	IS 1554 l	Part-1/1988	3	
	CONDUCTOR				
5	Material				nnealed bare 2 of IS 8130
6	No of Strand	7			
7	Size (sq mm)	2.5	4	6	10
8	Diameter of Strand (mm)	0.67	0.85	1.02	1.35
	INSULATION		1		
9	Material	PVC typ	e C as per	IS 5831/19	84
10	Туре	Extrude	d		
11	Thickness	As per T	Table 2 of IS	5 1554 (Par	t-1)
12	Color Scheme	As per I	S 1554 (Par	t-1)	
		3 core R	Red, Yellow	& Blue	
		4 core R	Red, Yellow	, Blue & Bl	ack
	INNER SHEATH				
13	Material	PVC compound type ST2 as per IS 5831/1984			
16	Туре	Extruded			
17	Thickness	As per T	Table 4 of IS	5 1554 (Par	t-1)
	ARMOUR				
18	Material	sheath v armouri strips ov diamete IS1554 I	ng < 13 mm ver inner sh r below arr Part 1	alculated on OR Galv neath wher nouring >	liameter below anised steel e the calculated 13 mm as per
19	Size	As per T	As per Table 5 of IS 1554 (Part-1)		
20	Armour Resistance	•	As per Table 6 of IS 1554 (Part-1)		,
21	Galvanisation	Shall be	as per IS 39	975 and IS	10810 (Part 41)
	OUTER SHEATH				
22	Material	FRLS PV 5831/19	-	nd type S	Γ2 as per IS
23	Type	Extrude	Extruded		
24	Thickness	As per T	Table 7 of IS	5 1554 (Par	t-1)



25 Marking or	n outer sheath	By embossing/printing Make, Year of Manufacture, Voltage grade and Size of cable
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SL NO	DESCRIPTION	SPECIFICATION/MINIMUM REQUIREMENT
26	Sequential length marking	At every interval of 1 meter
27	Colour	Black
28	Rodent and Termite attack protection	Yes
29	Oxygen Index	Min 29 at 27 Deg C to ASTM D 2863
30	Temperature Index	Min 250 Deg C to ASTM D 2863
31	HCL Emission	Max 20% by weight to IEC 754-1
32	Smoke Density	Max Smoke Density Rating shall be 60%, tested as per ASTM D 2843.
	ELECTRICAL PARAMENTERS	
33	Maximum resistance of the conductor of complete cable at 20 deg.C	As per Table 2 of IS 8130
34	Minimum volume resistivity (forinsulation)	1 x 10 e13 @ 27 deg.C 1 x 10 e10 @ 85 deg.C As per IS 5831 - 1984
35	High voltage test	3 KV rms for 5 min between core to core 3 KV rms for 5 min between core to armour

Note:

Cable weight and Conductor weight per

meter shall be provided. Rip cord to be

provided below the inner sheath.



21.2 FIBER OPTIC CABLE

SL NO	DESCRIPTION	SPECIFICATION/MINIMUM REQUIREMENT
1	Type of Fiber	Single Mode
2	Specification	IEC 60793-2-50, ITU G.652
3	Construction	Multi-Fiber loose tube jelly filled
4	No. of fibers	6/ 12
5	No. of loose tube	1
5	Laying	Direct Burial (Underground)/ Inside HDPE conduit/cable tray(Above Ground)
6	Strength member	2 Nos. of steel wires
7	Armour	G.I./ Electrolytic chrome coated steel
8	Overall sheath	Tough weather resistant made High Density Polyethylenecompound (HDPE) with antitermite and anti-rodent properties.
9	Attenuation at 1310 nm	0.38 dB/Km
10	Attenuation at 1550 nm	0.25 dB/Km
11	Fibercutoff wavelength	> 1150 < = 1320 nm
12	Polarization Mode Dispersal (PMD)	≤0.5 /√km
13	Microbending loss at 1550 nm	≤0.05
14	Proof stress level	≥ 0.7 Gpa

Note:

- Optical fibers shall be with buffer loose tube filled with Thixotropic Gel. Cable shall be rodent and termite resistant and designed to protect the fibers from environmental hazards in direct burial use.
- Internal test certificate for attenuation and length shall be available



21.3 EARTH CABLE

S.NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Voltage Grade	1.1 KV
2	Standard Applicable	IS:1554 part-1 with latest Ammendments
3	Conductor	
A	Material	Annealed bare copper of EC Grade as per Class-2 of IS:8130
В	Effective Cross Section Area	4/6/10/16/25/35 Sq. MM
4	Max. DC resistance @ 20 Degree C	As per IS:8130 Table-2
5	Max, Conductor Temperature	
A	Rated	70 Degree C
В	During Short Circuit	160 Degree C
6	Insulation	
A	Material	Extruded PVC Type C as per IS:5831
В	Thickness (Nominal)	As per Table 2 of IS 1554 (Part-1)
С	Rodent and Termite attack protection	Yes
7	Outer Sheath	
A	Material	Extruded FRLS PVC Type ST-2 as per IS:5831
В	Thickness of Outer Sheath	The average thickness of PVC outer sheath shall be not less than the nominal value specified under col 3 of Table7 and the smallest of the measured values shall not be less than the minimum value specified in col 4 of Table 7.
С	Outer Sheath Colour	Green
8	FRLS Properties	
A	Oxygen Index	Min 29 at 27 Deg C to ASTM D 2863
В	Temperature Index	Min 250 Deg C to ASTM D 2863



С	HCL Emission	Max 20% by weight to IEC 754-1
D	Smoke Density	Max Smoke Density Rating shall be 60%, tested as per ASTM D 2843.
E	Flamability Test	As per IEC:332-1

Note: All the instruments, Junction Boxes, cable trays etc. are to be earthed using minimum 1C \times 6 Sq. mmFRLS Copper un-armoured cable (green colour).

21.4 CAT 6 ETHERNET CABLES (ARMOUR)

S.N O	DESCRIPTION	MINIMUM REQUIREMENT
1	Type of Cable	UTP (unshielded twisted pairs)
2	Conductor	4 unshielded twisted pair , 23 AWG Annealed bare stranded copper
3	Transmission frequencies	Up to 250 MHz
4	Characteristic Impendence	100(+/-3) Ohms 250 MHz
5	Primary insulation	Polyethylene insulation
6	Inner Sheath	HDPE
7	Armour over inner sheath	Required (Galvanized steel wire or Corrugated ECCS Tape)
8	Outer Sheath	HDPE
9	Application standard	ISO/IEC 11801 2nd Ed., EN 50173-1 May 2007 (DIN EN 50173-1), DIN 44332-5, IEC 61156-5 2nd Ed., EN 50288 x-1, 10GBase T in acc. with IEEE 802.3, tested and certified by independent laboratory.
10	Application	TIA/EIA 568.B Indoor / outdoor installation Maximum permissible – 70 mtrs for one point to another.



21.5 CAT 6 ETHERNET CABLES (NON-ARMOUR)

S.N O	DESCRIPTION	MINIMUM REQUIREMENT
1	Type of Cable	Shielded twisted pairs
2	Conductor	4 unshielded twisted pair , 23 AWG Annealed bare stranded copper
3	Transmission frequencies	Up to 250 MHz
4	Characteristic Impendence	100(+/-3) Ohms 250 MHz
5	Primary insulation	Polyethylene insulation
6	Inner Sheath	Extruded FRLS PVC Type ST-2 as per IS:5831
8	Outer Sheath	Extruded FRLS PVC Type ST-2 as per IS:5831
9	Application standard	ISO/IEC 11801 2nd Ed., EN 50173-1 May 2007 (DIN EN 50173-1), DIN 44332-5, IEC 61156-5 2nd Ed., EN 50288 x- 1, 10GBase T in acc. with IEEE 802.3, tested
		and certified by independent laboratory. TIA/EIA 568.B
10	Application	Indoor / outdoor installation Maximum permissible – 70 mtrs for one point to another.

21.6 HDPE PIPE

S.N O	DESCRIPTION	MINIMUM REQUIREMENT
1	Base Density (at 27°C)	940 to 958 Kg/m3
2	Tensile strength at yield. Speed of testing 50 mm/ minute	Min. 20 N/mm2
3	Outside Diameter	As per BOQ
4	Wall thickness	Min. 2.90 to Max. 3.10
5	Lubricated layerthickness	Should be min. 10% of wallthickness
6	Inner Layer	The inner layer of solid permanent lubricant shall be continuous all throughand shall not come outduring storage, usage andthrough

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		out the life of duct.	
8	Visual Apperance	Smooth inside &out side surface, free of blisters, shrink, hole, flaking, scratches& roughness. Duct shall be smooth, clean and round. The end shall be clearly cut and shall be square with axis of duct.	

22.LED LIGHT FITTINGS

- 1.0 The scope of work includes design, development, manufacturing, testing, supply, installation and commissioning of energy efficient luminaries complete with all accessories, LED lamps with suitable current control driver circuit including mounting arrangement for recessed type fittings, power distribution panel etc. The luminaries shall be suitable for rugged service under the operational and environmental conditions encountered during service. All the luminaries shall be supplied with associated driver circuit compatible with LEDs in all respect as required.
- 2.0 Illumination of minimum 7.0 Lux must be maintained on either side of the perimeter up to a distance of 20m all along; the pole design for mounting of CCTV camera shall also be used for mounting of LED lights of appropriate wattage capacity to ascertain the desired lux level throughout along the perimeter. The LED lights to be provided at 8m height at the end of cantilever.
- 3.0 Technical requirements of LED light fittings:
- 3.1 Technical requirements for LED
- 3.1.1 LED efficacy shall be greater than 110/180 Lumens/Watt @ 350mA drive current. In respect of LEDs of higher power ratings, drive current greater than 350mA can be accepted if the LED's LM 80 / IS: 16105 test reports support the same.
- 3.1.2 LED used should be of SMD type only.
- 3.1.3 LM-80/ IS: 16105 Test Reports of specific LED at the soldering point temperature of 85°C for the driving current at which the LEDs shall be driven, shall be obtained during procurement.
- 3.1.4 Reported life Span of LEDs used in the Luminare shall be greater than 50,000 Hrs at the soldering point temperature of 85°C and at the luminare driving current.



- 3.1.5 The LEDs shall comply to Photo biological Safety norms as per IEC 62471 / EN 62471 / IS: 16108.
- 3.1.6 View angle: Typical 60 deg /120 deg meeting the illumination requirements on either side of the perimeter.
- 3.1.7 Color temperature of the proposed white color LED shall be 5700K (i.e. 5665K±355K, as per ANSI standard C78.377A), Color point should fall within the 7 Step McAdam as per ANSI standard C78.377A.
- 3.1.8 Color Rendering Index (CRI) of minimum 80 (+5%) with cool white light output.
- 3.2 Technical requirements for LED driver
- 3.2.1 The driver shall be of constant voltage and constant current type with internal surge protection device.
- 3.2.2 Min. efficiency of driver: 90%.
- 3.2.3 Power factor of complete fitting: Greater than 0.90
- 3.2.4 The luminare should be operable with auto adjustable 140-270V input supply voltage using the same driver.
- 3.2.5 In built high and low voltage cut offs: 140V (Low) and 270V (High)
- 3.2.6 Short circuit protection / Over load protection
- 3.2.7 Driver Surge Protection standard: Min 4kV. If a site/ location is prone to lightning and surges, 10 kV surge protection (external to the driver circuit) to be provided with the luminaire. The Surge Protection Device (SPD) should fail safe (i.e. without leading to fire hazard) and its failed status should be clearly visible through a flag/ indication.
- 3.2.8 Total Harmonic Distortion (THD): Less than 20 % at full load
- 3.2.9 Tc (Maximum Driver case temperature) must be declared for the luminaire.
- 3.2.10 Isolated driver should be used.
- 3.2.11 Potting of LED Driver: For driver power output rating < 50W, potted driver shall be preferable (but not mandatory). But for driver power output rating > 50W, potted driver shall be a mandatory requirement.
- 3.2.12 The power supply shall be connected to the LED PCBs through proper connectors.



- 3.2.13 EMI/ EMC compliance: Compliance to the following EMI/ EMC standards:
 - i. CISPR15/IS:6573
 - ii. IEC: 61547 (reference standards are listed as follows)
 - IEC 61000 4 2/ IS:14700 P art 3: Sec 2
 - IEC 61000 4 3
 - IEC 61000 4 4/ IS: 14700 Part 3: Sec 4
 - IEC 61000 4 53 kV (or 4 kV if so offered by the contractor)
 - IEC 61000 4 6
 - IEC 61000 4 -11/ IS: 14700 Part 3: Sec 11
 - iii. IEC: 61000 3 2 (Class C)/ IS: 1534 Part 1 (d) IEC: 61 000 3 3 / IS 14700: Part 3: Sec 2
- 3.2.14 Driver shall comply with the safely requirements laid down in IEC: 61347 2 13/ EN: 61347-2-13/IS: 15885-2-13.
- 3.2.15 Driver shall also comply with the performance requirements as per IEC: 62384/IS: 16104.
- 3.3 Technical requirements of electronic components used:
- 3.3.1 The circuit boards and electronic components to be used in the luminaries should be of suitable rating/ type so as to provide reliable functioning. Following document needs to be furnished:
 - ✓ Junction temperature rating of I. C. shall be obtained for the luminare.
 - ✓ Capacitor type and temperature rating shall be obtained for the luminare.
 - ✓ Material of resister shall be furnished
 - ✓ Junction / channel temperature rating of switching device s like MOSFET and transistor shall be obtained.
 - ✓ MCPCB is to be used for mounting of LBDs.
 - ✓ FR4 grade PCBs of min. thickness of 1.6 mm shall be used in driver circuits.
- 3.4 Technical requirements of Luminaries:
- 3.4.1 The luminare should throw the perfect amount of uniform light with exactly the desired intensity at a given spacing as mentioned in the tender document along with better light control. The bidder should submit the certified photometric report as per IESNA LM-79/ IS: 16106, from a NABL accredited laboratory to validate the photometric claims.



- 3.4.2 Minimum 40 nos. of LED lamps shall be used in each luminare.
- 3.4.3 The min. system lumen efficacy of the Luminare shall be 110/180 lumens/Watt.
- 3.4.4 The Luminare must have secondary lens/ optics. Though the secondary lens/ optics do result in minor loss of lumens, it is nevertheless a must to distribute the light output of the LEDs so as to achieve the desired polar curve characteristics for the Luminare no exemption shall be permitted on this account. The material of lens should preferably be PMMA.
- 3.4.5 Housing of luminaire: Pressure die cast LM6/ADC12/LM24 housing
- 3.4.6 Cover type: Heat Resistant Toughened glass of minimum 4 mm thick or UV stabilized polycarbonate cover.
- 3.4.7 Adequate heat sink with proper thermal management shall be provided.
- 3.4.8 The fixture should be able to work properly with humidity range of 10%-95% RH.
- 3.4.9 The fixture should have corrosion resistance polyester powder coating.
- 3.4.10 Housing protection: Minimum IP 65. If the LEDs and LED Driver are in different compartments, then the two compartments must be individually IP 65 or better.
- 3.4.11 Impact Resistance: IK 08
- 3.4.12 Temperature rise test: When the luminare has stabilized thermally, soldering point temperature of the LEDs must be equal to or less than 85°C. Temperature rise (above ambient) of heat sink should generally remain within 20°C -relaxation on this account can be granted as long as the soldering point temperature limit of 85°C is not violated and there is no unacceptable outcome.
- 3.4.13 During procurement, the photometric data report in respect of the luminare offered (through DTA Lux, CALCULUX or other simulation software) should be obtained. IES Photometric File is also to be supplied and firms to be warned of serious consequences against submission of a tampered/doctored report.

23. CABLE TRAYS WITH COVER

All the power, signal & Control cables laid above ground or under cable trench must be on laid on anodized Aluminium perforated cable trays of



minimum thickness of 2.5mm and edge height of minimum 25mm. The cable within cable tray shall be clamped with Al clamp. GI wire or nylon tie are not to be used. All cable trays to be covered with Anodised Aluminium Cable tray cover of minimum thickness of 1.5 mm and edge height of 10 mm and the same to be clamped at an interval of 1m.

Minimum Specifications:

SR NO	FEATU RES	PARAME TERS	
1	Туре	Anodized Aluminium Perforated cable tray with cover	
2	Width	50 mm/ 100 mm/ 150 mm/ 300 mm/ 600 mm	
3	Edge height	25 mm for 50 mm	
		25 mm for 100 mm	
		25 mm for 150 mm	
		50 mm for 300 mm	
		50 mm for 600 mm	
4	Thickness	2.5 mm	
5	Clamps (for cable tray cover withcable tray)	Aluminium C Clamp with SS 304 hardware	
6	Tray Material	Aluminium sheet as per IS-737 GR.'40800'	
7	Tray cover height	10 mm	
8	Tray cover thickness	1.5 mm	
9	Single tray unit length	Minimum 2.44 metre	
10	Surface Coating	Anodized: 8 to 10 microns as per IS1868	
11	Hardware & Fasteners	Coupler plate & SS Nut, Bolt	



24.EXPLOSION PROOF JUNCTION BOX

SR N O	DESCRIPTIO N	MINIMUM REQUIREMENT
1	Body & Cover	Cast Al. Alloy (LM-6) minimum 5 mm thick.
2	Gasket	Neoprene rubber
3	Terminals	Clip on type, block locked at both ends suitable for up to 2.5 mm 2 conductor.
4	Tag nameplate	to be provided
5	Paint	Anti corrosive epoxy paint, shade light gray
6	Protection class	Suitable for area classified as zone-I, IIA & IIB, T6 as per IS2148 IP – 65 or betteras per IS – 2147
7	Other	Explosion proof junction boxes shall have detachable cover, which is fixed, to the box by means of cadmium plated hexagonal head screws. Terminal shall be spring loaded, vibration proof, clip-on type, mounted on nickel plated steel rails complete with end cover and clamps for each row. Sizing shall be done with due consideration for accessibility and maintenance in accordance with the following guidelines 50 to 60 mm between terminals and sides of box parallel to terminals strip for up to 50 terminals and additional 25 mm for each additional 25 terminals. 100 to 120 mm between terminals for up to 50 terminals and additional 25 mm for each additional 25 terminals. All junction boxes shall be provided with external earthing lugs All junction boxes shall be provided with 20% spare cable entries and terminals. Each junction boxes shall have a minimum of 10% or 2 Nos. whichever is higher, spare entries. All spare entries shall be with EXD plugs. All cable glands and plugs shall be of nickel-plated brass material. All the cable glands shall be preferably NPT with PVC hoods unless otherwise specified. Double compression type cable glands shall be used for armoured cable.



25.WEATHERPROOF PROOF JUNCTION BOX

SR NO	DESCRIPTION	MINIMUM REQUIREMENT	
1	Body & Cover	Housing :Carbon steel Door: Carbon steel, all-round foamed-in PU seal	
2	Surface finish	Housing and door: Dipcoat primed, powder-coated on the outside, textured paint Mounting plate: Zinc-plated	
3	Material thickness	Housing: 1.38 mm (0.05 ″) Door: 1.5 mm (0.06 ″) Mounting plate: 2.5 mm (0.1 ″)	
4	Gland Plate	Bottom	
5	Terminals	Clip on type; block locked at both ends suitable for up to 2.5/4/6/10 etc.mm 2 conductors as per requirement.	
6	Tag name plate	To be provided	
7	Color	RAL 7035	
8	Protection class	IP 66/Nema 4 or Better	
9	IK Code	IK08	
10	Other	Terminal shall be spring loaded, vibration proof, clip-on type, mounted on nickel plated steel rails complete with end cover and clamps for each row. Sizing shall be done with due consideration for accessibility and maintenance in accordance with the following guidelines: > 50 to 60 mm between terminals and sides of box parallel to terminals strip for up to 50 terminals and additional 25 mm for each additional 25 terminals. > 100 to 120 mm between terminals for up to 50 terminals and additional 25 mm for each additional 25 terminals. > All junction boxes shall be provided with one number internal and two number external earthing lugs. > All junction boxes shall be provided with 20% spare cable entries and terminals. Each junction boxes shall have a minimum of 10% or 2 Nos. whichever is higher, spare entries. All spare entries shall be plugs. > All cable glands and plugs shall be of nickel-plated brass material. All the cable glands shall be preferably NPT with PVC hoods unless otherwise specified. > Double compression type cable glands shall be used for cables.	



11 Mounting Wall/Strcuture

26.**OCTAGONAL HOT DIP GALVANIZED POLES**

S. No	Description	Parameter	
1	Octagonal Pole		
a	Over all height of Pole (mtrs)	6, 8, 10,12, 15 Mtrs	
b	Sizes	As per BOQ	
С	Size of Base Plate & Thickness	As per design	
d	Foundation Bolts	As per design	
2	Metal Protection Treatment of Pole Sections.	Hot Dip Galvanized as per BSEN ISO 1461	
3	Thickness of Galvanization (mm)	Average 70 Microns as per IS 2629	
4	Welding	As per AWS D1.1,(Equivalent to BS 5135)-Singlelongitudinal welding	
5	Size of Door opening the BaseSection	100x400mm	
6	Type of Door construction andlocking arrangement	Close fitting door with suitable reinforcement to avoid buckling	
7	Material of construction of shaft	As per BSEN 10025/For Shaft, IS 2062 For Base Plate	
8	Cross Section of Pole	Octagonal	
9	Dynamic Loading		
a	Max. design with speed	50m/sec as per IS 875 (Part-III)	
b	Gust Speed time considered	3 Sec	
С	Height above ground level at which wind velocity is measured	As per pole Sizes	
d	Factor of safety for wind load	1.25	
E	Factor of safety for other loads	1.15	



	Applicable Standard for poledesign	BSEN-40-3-3
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S. No	Description	Parameter
10	Foundation Details	
a	Type of Foundation	RCC
b	Design safety factor	1.25
С	Considered wind speed (km/hr)	50mm/sec as per IS875 (Part-III)
d	Depth of Foundation (mm)	As per Design
12	Brackets& Accessories	As per requirement

27. CABLE LAYING & CABLE SIZING CONSIDERATIONS

1 General

- a. Optical fibre cable along with OFC components shall be considered for
 - ➤ Inter building network cabling for CCTV if the distance is greater than 50 Meter i.e. from Control room (CR) to Security room, CR to TM room & etc.
 - CCTV communication network
 - ➤ Any other interface as per design Engineering.
- b. Power cable shall be designed properly with proper voltage calculation and same shall besubmitted to BECIL for review.

2.0 Cable Laying:

- a. All cables are to be laid above ground to the extent possible over cable trays with cover. At road crossing or over driveway, cables are to be laid on overhead MS structure (Bridge). In case overhead cable bridge are required to be constructed at road crossing or on driveway, the drawing of the same to be vetted by structural Engineer or from Govt Engineering College/ IIT/NIT prior to start of fabrication work.
- b. Bending radius of armoured cables shall not be less than 12 times O.D. of cable. Necessary loops to be provided at both ends. There shall be no joints in the cables.
- c. HDPE pipes if used, it shall have dia of minimum 25 mm for single cable and 50 mm for two cables. For more number of cables, suitable size of the pipe is to be considered.
- d. Anodized Aluminium perforated type cable trays along with cable tray cover to be provided as per tender scope, fixing at site on steel structure, laying of cable Page 136 of 153



trays over the pedestals, RCC trenches, overhead structures, making pedestal, RCC trenches, overhead structure etc as per site requirement are included in the scope of work.

- e. The perforated trays shall be properly supported at a regular interval of maximum 1000 mm from insert plates or steel structures. Wherever insert plates are not available, supports on concrete structures on ceiling shall be fixed with minimum 10 mm diameter expansion bolts. Angle supports for perforated trays shall be fabricated from 50mm x 50mm x 5mm MS angles minimum size. The cable within cable tray shall be clamped with Al clamp. GI wire or nylon tie are not to be used. All cable trays shall be covered along with clamp at every 1 m.
- f. All cores of cable shall be identified at both ends by means of PVC ferrule. Ferrules shall be of single sleeve type. Ferrule numbering shall be source destination type (cross ferruling). Cable leads shall be terminated at both ends by crimped type soldering.
- g. Cable routing shall be planned to be away from heat sources, Hydrocarbon Vapour, water, oil, drains piping air conditioning duct etc. Cables are identified close to their termination point (Cable tagging are to be punched on aluminium straps of minimum 2 mm thick and securely fastened to the cable, wrapped around it), bends and every 90 Meter intervals, by cable number tags.
- h. As far as possible, each cable tray shall contain only one layer of cables and minimum required vertical clearance between racks is maintained. All wall openings/pipe sleeves are effectively sealed after installation of cables to avoid seepage of water inside building/lined trench. MCT blocks to be provided at cable entry points in every building.
- i. Where cables rise from trenches to Instruments, junction boxes, control station, panels etc, these are to be taken through HDPE/ GI protection pipe sleeves, ends of which should be sealed after cabling. Conduit ends are to be plugged with weather proof sealing plastic compound. Metallic pipe ends if used should be bell mouthed. Equipment earthing is taken from the earth grid and not from the cable rack earthing. Cables are clamped on trays using aluminium clamps at intervals not exceeding 1 meter.

3.0 Cable Termination

- a. Identification number tags of the cable for the equipment are to be provided correctly at both ends of the cable. The tag size is not less than 2 mm thick and 20 mm wide and of enough length to contain all required details. Cable termination is done with proper crimpling lug and use of antioxidant paste. Wherever lugs are used for termination, size of lug matches with cable core and material of lug is suitable for application. Proper mechanical protection shall be provided for the cables.
- b. The scope shall include:-
- i. Supply laying and termination of 1C \times 6 Sq. mm FRLS Copper unarmoured cable (green colour) for earthing instruments and junction boxes to earth bus bar. Earthing to be done as per OEM's recommendation and



- preferably double earthing to be provided.
- ii. Supply, laying, jointing 50 x 6 mm GI flat.
- iii. Earth work, excavation for all kinds of soil as per cable trench cross section drawing including shorting, shuttering, dewatering etc as per instruction of engineer in charge (750 mm depth).
- iv. WBM Road, Dyke cutting, concrete breaking for cable trenches including shoring, strutting etc, if required and repairing of the road, dyke to original condition and disposing off excess materials within the work site as per direction of site engineer. Breaking the existing RCC work and disposing off the malba to an unobjectionable place as per the instruction of the site engineer. Job shall be complete in all respect including the cost of all labour, tools, materials, load lift hire charges of equipments if any.
- v. Supply, erection and installation of cable trays alongwith structural support in trenches already made, on walls, concrete structures etc including supply and installation of all necessary pipe fittings such as bends, sockets, elbows, tees etc. bending threading, binding etc as required for laying of cables in road, station piping crossing and cable rising up to instruments as per direction of site engineer including the cost of all materials, labour, tools etc complete in all respects.

28. EARTHING

1.0 General

- a. All junction boxes, local cabinets, field mounted instruments shall be connected to the nearby earth bus bar/earth pit through minimum 6 mm² Insulated FRLS unarmoured flexible copper conductor.
- b. Cable trays are eartherd at regular interval not beyond 30 Meters.
- c. Earthing network shall be realized with earth electrodes and/or buried bare conductors.
- d. Two types of earthing system shall be envisaged -
- vi. Main earthing system (ME)
- vii. Electronic earthing system (EE)
 - e. In general the following rules shall apply for earthing
- viii. The metallic housing of electronic equipment/junction box/panel shall be connected to the main earthing system (ME).
 - ix. All armours of armoured cables shall be connected to the earth (ME) at both ends.
 - x. The shield of the shielded cable shall be earthed with electronic earth at one end only i.e. at control room end.
 - f. The main Earthing System (ME) and Electronic Earthing system shall be in separate loop and shall form separate grid.
 - g. Respective earthpit forming earthing grid shall be done using minimum 50x6



mm2 GI strip. All branch earth conductors from each field unit shall be connected to respective earthing grid.

h. Minimum Permissible Sizes of the Earthing Conductors:

Size of the conductor shall be selected based on the fault current that is required to be dissipated during emergencies.

Equipment	Minimum Size of the conductor
Main Earthing Grid	50 mm x 6 mm GI strip
CCTV Pole Structure	50 mm x 6 mm GI strip
UPS Neutral	50 mm x 6 mm GI strip
UPS Body, panels, console etc	50 mm x 6 mm GI strip
Junction Box	1C x 6 sq mm unarmoured FRLS Copper cable

2.0 EARTH PITS

Separate earth pits shall be provided for system earth, IS earth, power earth, and general body earth for instruments, equipments, junction box body etc. These earth pits shall be separate and isolated from electrical earth pits. Individual Earth pits resistance and grid resistance shall be as per standard codes and accordingly nos. of earth pits/electrodes shall be considered. For system earth, redundant earth pits shall be provided and to be connected to form ring loop. Earth pit (ME), earth electrodes, Earthing connection etc shall be as per IS – 3043 standards with electrode.

- a. Earth-pit head must be covered properly, and clearly visible identification tags indicating earth pit no., Earthpit resistance and date of testing etc. as per direction of site in-charge.
- b. Redundant earth pits & bus shall be provided for the system earth. Both earth pits shall be connected to form a ring. Suitable distance shall be maintained between various earth pits (minimum 3 meters) as per guidelines of API RP550.
- c. All circuit grounds of electronic instruments, shields and drain wires of signal cables shall be connected to instrument ground bus which is electrically isolated from the AC mains earthing bus. This bus shall be typically 25mm wide and 6 mm thick of copper or 50 x 6 GI strip.

3. Earth pit Resistance Value:

- a. The resistance value of an earthing system to general mass of the earth should not exceed.
 - ➤ 4 Ohms for electrical systems and metallic structures.
 - ➤ 1 Ohm for earth grid, bonding connections between joints in pipelines and associated facilities.
 - ➤ 2 Ohms for each electrode to the general mass of the earth.



4 Earthing of CCTV instruments:

- a. **Grounding of CCTV poles:** CCTV poles are to be grounded to the nearest Earthpit if available within a distance of 20-30m using GI strip. The strip has to be connected to earthpit directly. In case earthpit is not available, separate earthpit to be provided for respective poles. Earthpit to be buried min. 500 mm below the ground.
- b. **Grounding of Control room equipment:** Panels installed in control room buildings are to be grounded to the nearest earthpit if available, or separate earthpit to be provided in case of non-availability.
- c. Surge Protection device between earthpit grids: All the earthing grid of CCTV system and all other earthing grids which have return path to the earthing system of CCTV system, are to be interconnected using lightening and surge protection devices (SPD Type 1) as per specification mentioned in relevant section.



Section-V

Bill of Quantity And Drawings & Layouts



A. THE BILL OF QUANTITY IS PLACED AT ANNEXURE-I

B. Drawings & site Layouts is place in Annexure-II

C. Preferred Make/OEMs

S1 No	Hardware/ Equipment's Description	OEM to be Quoted
1	HD IP FIXED DOME CAMERA	TYCO/Sparsh
2	IP FIXED BULLET CAMERAS-4K	TYCO/Sparsh
3	EXPLOSION PROOF HD IP FIXED CAM	TYCO/Sparsh
4	IP FIXED BOX CAMERAS (4K)	TYCO/Sparsh
5	BOX CAMERA (2 MP)	TYCO/Sparsh
6	HD IP PTZ CAMERA (2MP)	TYCO/Sparsh
7	Intelligent video operation, control, management, recording & processing software(VMS)	I2V/Milestone
8	Advanced Analytics Software	I2V/Milestone
9	CCTV Client work station	HP/Dell
10	Redundant Server	HP/Dell
11	Storage	HP/Dell

Note: MAF & Compliance for Cameras, VMS & Advanced analytics Software is mandatory as per mentioned in OEM to be quoted column.



D. CHECK LIST

Please ensure that following documents should been enclosed along with the bid proposal

- 1. Go through the EOI documents very carefully and thoroughly.
- 2. Ensure submission of required documents and details alongwith proposal. The documents to be enclosed are:-
 - (i) Proof of submission of Non Refundable **Tender fee (Form Fee)**
 - (ii) Submission of EMD for EOI quoted by bidder/OEM/Implementation Agency
 - (iii) Copy of the registration certificate under Indian Company Act.
 - (iv) Duly filled forms as enclosed in EOI document.
 - (v) Copy of the EOI document duly signed and stamped by the bidder/OEM/Implementation Agency in support of having read, understood and complied with the requirements of the tender document.
 - (vi) Financial Strength of the bidder/OEM/Implementation Agency.
 - (vii) PAN, GST, ISO Certificates, Last 3 Years Audited Balance Sheet, Last 3 Years Turnover Certificate, ITR Return other relevant documents.
 - (viii) Self-Declaration for Non- Blacklisting Undertaking
 - (ix) Undertaking regarding payment of GST/ Filling of GST Return.
 - (x) Authorization Certificate to Sign the Bid.
 - (xi) An Authorization Letter from OEM (MAF)
 - (xii) Compliance from bidder/OEM/Implementation Agency on their letter head for all items.
- 3. No cost details are to be included in the technical bid under any circumstances.



E. PROPOSAL SUBMISSION LETTER

(Authorized Signatory)

Signature: Name:

Designation: Address: Seal: Date:

[ON BIDDER/OEM/IMPLEMENTATION AGENCY 'S LETTER HEAD]

bidder/OEM/Implementation Agency Ref. No
To, The Chairman and Managing Director, Broadcast Engineering Consultants India Limited, 56-A/17, Block-C, Sector-62, Noida-201307 (U.P.)
Subject: Submission of the Proposal for <insert name="" tender=""><tender no.=""></tender></insert>
Dear Sir,
We, the undersigned, offer to provide services to BECIL with reference to your Tender <insert name="" tender=""> dated <insert date="" tender=""> and the Proposal. We are hereby submitting the proposal under the following sections on e-Tender:</insert></insert>
i. Section 1: Technical Bid
We hereby declare that all the information and statements made in this proposal are true and accept that any misinterpretation contained in it may lead to the disqualification.
We declare that we confirm to each and every clause of the tender document and shall abide by all the terms and conditions of all the volumes of this tender document. We would hold the terms of the proposal valid for the number of days as stipulated in the tender document.
Yours sincerely,



F. PARTICULARS OF THE BIDDER/OEM/IMPLEMENTATION AGENCY

1.	Name of company	
2.	Office Address / Telephone No / Fax No / email id / website	
3.	Year of establishment	
4.	Status of the Company	
5.	Name of Directors	i) ii)
6.	Names of principle person concerned with this work with title and Telephone No / Fax/ Email Id, Etc.	
7.	Whether registered with the registrar of companies /registrar of firms. If so, mention number and date.	i) ii) iii)
8.	In case of change of Name of the Firm, former Name / Names and year/ years of establishment:	
9.	Whether registered for sales tax purposes. If so, mention number and date. Furnish also copies of sales tax clearance certificate.	
10.	Whether an assessed of income tax. If so, mention permanent account number. Furnish copies of income tax clearance certificate.	
11	State Annual turnover of the company Furnish copies of audited balance sheet and profit & loss account (audited) for the last three years.	
12	Particulars and place of similar type of works done in a single order. (Furnish details in a separate sheet and enclose copy of the employers certificate)	
13	Specify the maximum value of single work executed in the past three years.	
14	Status and details of disputes/litigation/arbitration, if any.	

Signature of Authorized Signatory

Place:	
Date:	
Address:	
Mobile:	
Fmail ID:	



G. FINANCIAL STRENGHTH OF THE BIDDER/OEM/IMPLEMENTATION AGENCY

S. No.	Last 3 Financial	Net -Worth	Whether	Annual Profit	Overall
	Year	Status (Positive /	Profitable	After Tax.	Annual
		Negative)	(yes / No.)	(In INR)	Turnover
					(In INR)
1					
2					
3					

(Note: Statutory Auditor's / Chartered Accountant Certificate should be submitted alongwith proposal)

Signature of Authorized Signatory	
Place:	
Date:	
Address:	
Mobile:	
Email ID:	



H. <u>SELF-DECLARATION FOR NON BLACK LISTING</u>

[ON BIDDER/OEM/IMPLEMENTATION AGENCY 'S LETTER HEAD]



I. UNDERTAKING REGARDING PAYMENT OF GST/FILING OF GST RETURN

Ref	Date
Kind attn.: Shri Awadesh Pandit, GM (F&A)	
Subject: Undertaking regarding Payment of GST/ I	Filing of GST Return
Dear Sir,	
This is in connection to the works awarded by M, India Limited (BECIL), we hereby undertake that we Tax 2017 and Various Rules Relating to GST Act, 20 and Rules) wherever we are obliged to comply with	e will comply with Goods and Services 017(herein after referred to as GST Act
We further hereby undertake that we will issue proceed Relevant Document as required under GST Act and GST return and pay GST as required under GST Act provide GST credit on timely basis through GST provided by GST Act and Rules).	nd Rules. We will furnish appropriate ct and Rules on timely basis and will
We hereby certify & undertake that we will not all other details uploaded at GST Portal unless approve	ž –
We also hereby certify & undertake that we indem GST input credit as well as any interest, penalty, den by BECIL because of any failure on the part to file a Tax to Government/Appropriate Authority.	nands or other costs, expenses suffered
In case we do not make payment the tax/interest/p raised by Government/Tax Authorities due to defa authorize BECIL to forfeit/deduct from security h interest/penalty/tax etc. for the amount so withheld	nult/delay on the part/action, we also neld by BECIL, equivalent amount of
Yours faithfully For, Signature of Authorized Signatory on behalf of Ager Place: Address: Mobile: Email ID:	ncy



Ref No.:	
Date:	

TO WHOM SO EVER IT MAY CONCERN

It is to certify that the Rs	/- paid for the GST for
	. The detail of invoice with payment of GST as below :

Sr. No.	BECIL Bill No. /Date	Basic Value of Invoice (Excluding Tax)	GST Amount	Total - including Tax (Rs.)	Total Tax Paid	Challan No. /Date
I	II	III	IV	V (III+IV)		
1			-	-	-	
2			-	-	-	
3			-	-	-	
4			-	-	-	
5			-	-	-	
	Total (Rs.)	-	-	_	-	

	Director / Proprietor
Place:	, 1
Address:	
Mobile:	<u> </u>
Email ID:	



J. Power of Attorney for signing the Bid on Rs. 100 Stamp Paper

KNOW ALL MEN BY THESE PRESENTS,
We "Name of bidder/OEM/Implementation Agency " do hereby irrevocably constitute, nominate, appoint and authorize, who is presently employed with us and holding the position of "", as the true and lawful attorney (hereinafter referred to as the "Attorney") to do in the name and on the behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of the application for qualification and submission of the bid for the Project "Name of Project" of "" (the "client") including but not limited to signing and submission of all applications, bids and other documents and writings, participate in pre-applications and other conferences and providing information/ responses to the client, representing us in all matters before the client, signing and execution of all contracts including the Agreement and undertakings consequent to acceptance of the bid, and generally dealing with the client in all matters in connection with or relating to or arising out of the bid for the said Project and/ or upon award thereof to us and/or till the entering into of the Agreement with the client.
IN WITNESS WHEREOF WE, (Name of bidder/OEM/Implementation Agency), THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF Date
For Name of bidder/OEM/Implementation Agency,
Accepted
Witnesses:
1. (Notarized)
2.



K. Format of PBG

PERFORMANCE BANK GUARANTEE
No
The Chairman & Managing Director, Broadcast Engineering Consultants India Limited, 14-B, I.P.Estate, Ring Road, New Delhi
Against purchase order no
We do hereby undertake to pay the amount due and payable under this guarantee without any demur merely on a demand from the Purchaser stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Purchaser by reason of any breach by the said supplier (s) or any of the terms and conditions contained in the said contract or by reason of the supplier(s) failure or omission or negligence to perform the said contract till warranty period or any part thereof. Any such damage made on the bank shall be conclusive as regards the amount due and payable by the bank upon this guarantee, which shall not be considered as satisfied by any intermediate payment or satisfaction of any part of or obligation hereunder. However, the liability under this guarantee shall be restricted to an amount not exceeding
We undertake to pay to the Purchaser any amount so demanded by the Purchaser, notwithstanding:

Page **151** of **153**

Any dispute or difference between the Purchaser or the supplier or any other



person or between the supplier or any person or any suit or proceeding pending before any court or tribunal or arbitrator relating thereto, or

The invalidity, irregularity or unenforceability of the contract or

Any other circumstances which might otherwise constitute discharge of this guarantee including any act or omission or commission on the part of the Purchaser to enforce the obligation by the Purchaser or any other person for any reason whatsoever.

We further agree that the Guarantee herein contained shall be contained one and remain in full force and effect during the period that would be taken for the performance of the said agreement till warranty period and that it shall continue to be enforceable till all the dues of the Purchaser under or by virtue of the said agreement till warranty period have been fully paid and its claims satisfied or discharged or till BECIL certifies that the terms and conditions of the said agreement till warranty period have been fully and properly carried out by the said supplier and accordingly discharge this guarantee.
Mehereby agree and undertake that any claim which the bank may have against the supplier shall be subject and subordinate to the prior payment and performance in full of all the obligations of the bank hereunder and the Bank will not, without prior written consent of the Purchaser, exercise any legal rights or remedies of any kind in respect of any such payment or performance so long as the obligations of the Bank hereunder remaining owing and outstanding regardless of the insolvency liquidation or bankruptcy of the supplier or otherwise howsoever. We will not counter claim or set off against its liabilities to the Purchaser with it.
We

This guarantee will not be discharged due to the change in the constitution of the Bank or the supplier

extension being granted to the said suppliers or for any forbearance, act or omission on the part of the Purchaser or any indulgence by the Purchaser to the said suppliers or by any such matter or thing whatsoever which under the law relating

to sureties would but for this provision have effect of so relieving us.



we						· lastly u	ındertake
not to	revoke this g	uarantee du	ring its c	urrency except	with the p	revious c	onsent of
the Pu	rchaser in wr	iting.					
Notwi	thstanding ar	ything cont	ained he	rein above.			
Our	liability	under	this	guarantee)	shall	not	exceed
This g	uarantee shal	l be valid up	to and i	ncluding		; and	d
We ar	e liable to pa	y the guara	nteed an	nount or any pa	art there o	f under	this Bank
Guara	ntee only and	only if you	ı have sei	rved upon us a	written cla	aim of de	emand on
	ore expiry of t			•			
Dated	the		date	of			

S.No	Location	Supply & Installation (Rs)	GST @ 18%	Total Amt for Supply & Installation including 18% GST (Rs)	CAMC (Rs)	1	Total Amt for CAMC including 18% GST(Rs)		GST @ 18%	Total Amt for Supply & Installation including 18% GST (Rs)	CAMC (Rs)	GST @ 18%	Total Amt for CAMC including 18% GST(Rs)	Total Amt for Supply & Installation including 18% GST (Rs) (perimeter + operating area)	Total Amt for CAMC including 18% GST(Rs)(perime ter + operating area)	Total Amt for Supply & Installation including CAMC (Rs) including 18% GST for both perimeter and operating area
				Perimete	r Area					Opera	ting Area		•		•	
1	COIMBATORE TERMINAL	47653994.43	8577719.00	56231713.43	11913500.00	2144430.00	14057930.00	0.00	0.00	0.00	0.00	0.00	0.00	56231713.43	14057930.00	70289643.43
2	FST ,CHENNAI	26018575.45	4683343.58	30701919.03	6504648.00	1170836.64	7675484.64	0.00	0.00	0.00	0.00	0.00	0.00	30701919.03	7675484.64	38377403.67
3	MADURAI TERMINAL	28695951.27	5165271.23	33861222.50	7173991.00	1291318.38	8465309.38	0.00	0.00	0.00	0.00	0.00	0.00	33861222.50	8465309.38	42326531.88
4	SANKARI TERMINAL	34766849.49	6258032.91	41024882.40	8691715.00	1564508.70	10256223.70	0.00	0.00	0.00	0.00	0.00	0.00	41024882.40	10256223.70	51281106.10
5	TONDIARPET TERMINAL	32741186.39	5893413.55	38634599.94	8185300.00	1473354.00	9658654.00	0.00	0.00	0.00	0.00	0.00	0.00	38634599.94	9658654.00	48293253.94
6	TRICHY TERMINAL	31199712.51	5615948.25	36815660.76	7799930.00	1403987.40	9203917.40	0.00	0.00	0.00	0.00	0.00	0.00	36815660.76	9203917.40	46019578.16
7	TUTICORIN TERMINAL	20814542.15	3746617.59	24561159.74	5203638.00	936654.84	6140292.84	0.00	0.00	0.00	0.00	0.00	0.00	24561159.74	6140292.84	30701452.58
8	ARAKONAM AFS	12148609.53	2186749.72	14335359.25	3037156.00	546688.08	3583844.08	0.00	0.00	0.00	0.00	0.00	0.00	14335359.25	3583844.08	17919203.33
9	COIMBATORE AFS	11459813.15	2062766.37	13522579.52	2864956.00	515692.08	3380648.08	0.00	0.00	0.00	0.00	0.00	0.00	13522579.52	3380648.08	16903227.60
10	MADURAI AFS	10482191.53	1886794.48	12368986.01	2620550.00	471699.00	3092249.00	0.00	0.00	0.00	0.00	0.00	0.00	12368986.01	3092249.00	15461235.01
11	MEENAMBAKKAM AFS	12494192.53	2248954.66	14743147.19	3123550.00	562239.00	3685789.00	0.00	0.00	0.00	0.00	0.00	0.00	14743147.19	3685789.00	18428936.19
12	TRICHY AFS	10635581.53	1914404.68	12549986.21	2658898.00	478601.64	3137499.64	0.00	0.00	0.00	0.00	0.00	0.00	12549986.21	3137499.64	15687485.85
13	COIMBATORE BP	20032979.10	3605936.24	23638915.34	5008248.00	901484.64	5909732.64	15959793.18	2872762.77	18832555.95	3989950.00	718191.00	4708141.00	42471471.29	10617873.64	53089344.93
14	ENNORE BP	23458324.93	4222498.49	27680823.42	5864583.00	1055624.94	6920207.94	18053866.89	3249696.04	21303562.93	4513470.00	812424.60	5325894.60	48984386.35	12246102.54	61230488.89
15	TIRUNELVELI BP	22324547.83	4018418.61	26342966.44	5581140.00	1004605.20	6585745.20	2318050.00	417249.00	2735299.00	579515.00	104312.70	683827.70	29078265.44	7269572.90	36347838.34
16	ILAYARGUDI BP	12336527.18	2220574.89	14557102.07	3084134.00	555144.12	3639278.12	11236737.38	2022612.73	13259350.11	2809188.00	505653.84	3314841.84	27816452.18	6954119.96	34770572.14
17	MANARGUDI BP	11321281.08	2037830.59	13359111.67	2830324.00	509458.32	3339782.32	13753332.44	2475599.84	16228932.28	3438336.00	618900.48	4057236.48	29588043.95	7397018.80	36985062.75
18	CHENGLEPET BP	19764762.13	3557657.18	23322419.31	4941194.00	889414.92	5830608.92	9202300.59	1656414.11	10858714.70	2300580.00	414104.40	2714684.40	34181134.01	8545293.32	42726427.33
19	TRICHY BP	22673113.33	4081160.40	26754273.73	5668280.00	1020290.40	6688570.40	18238176.70	3282871.81	21521048.51	4559548.00	820718.64	5380266.64	48275322.24	12068837.04	60344159.28
20	ERODE BP	21745374.83	3914167.47	25659542.30	5436347.00	978542.46	6414889.46	13191623.01	2374492.14	15566115.15	3297908.00	593623.44	3891531.44	41225657.45	10306420.90	51532078.35
21	MAYILADTHURAI BP	11628838.18	2093190.87	13722029.05	2907212.00	523298.16	3430510.16	9156395.09	1648151.12	10804546.21	2289100.00	412038.00	2701138.00	24526575.26	6131648.16	30658223.42
22	MADURAI BP	24434745.03	4398254.11	28832999.14	6108690.00	1099564.20	7208254.20	9233869.82	1662096.57	10895966.39	2308470.00	415524.60	2723994.60	39728965.52	9932248.80	49661214.32
23	PUDUCHERRY BP	13971950.88	2514951.16	16486902.04	3492991.00	628738.38	4121729.38	12356657.06	2224198.27	14580855.33	3089166.00	556049.88	3645215.88	31067757.37	7766945.26	38834702.63
TOTAL				569708300.46			142427150.50			156586946.55			39146772.58	726295247.01	181573923.08	907869170.09

Details of ITC applicable location wise

			Total Amt			ITC		
			including 18%	Amt without GST		applicable	ITC applicable	Net delivered
S.No	Location	LOT	GST (Rs)	(Rs)	GST Amt (Rs)	(%)	(Rs)	Cost
1	SANKARI TERMINAL	I	51281106.10	43458564.49	7822541.61	41%	3207242.06	48073864.04
2	TRICHY TERMINAL	I	46019578.16	38999642.51	7019935.65	41%	2878173.62	43141404.54
3	MADURAI TERMINAL	I	42326531.88	35869942.27	6456589.61	41%	2647201.74	39679330.14
4	COIMBATORE TERMINAL	I	70289643.43	59567494.43	10722149.00	41%	4396081.09	65893562.34
5	FST TERMINAL	I	38377403.67	32523223.45	5854180.22	41%	2400213.89	35977189.78
6	TONDIARPET TERMINAL	I	48293253.94	40926486.39	7366767.55	41%	3020374.70	45272879.24
7	TRICHY LPG BP	I	60344159.28	51139118.03	9205041.25	100%	9205041.25	51139118.03
8	TUTICORIN TERMINAL	I	30701452.58	26018180.15	4683272.43	41%	1920141.70	28781310.88
9	MADURAI LPG BP	II	49661214.32	42085774.85	7575439.47	100%	7575439.47	42085774.85
10	ERODE LPG BP	II	51532078.35	43671252.84	7860825.51	100%	7860825.51	43671252.84
11	TIRUNELVELI LPG BP	Ш	36347838.34	30803252.83	5544585.51	100%	5544585.51	30803252.83
12	MANNARGUDI LPG BP	II	36985062.75	31343273.52	5641789.23	100%	5641789.23	31343273.52
13	MAYILADUTHURAI LPG BP	Ш	30658223.42	25981545.27	4676678.15	100%	4676678.15	25981545.27
14	ILAYANGUDI LPG BP	II	34770572.14	29466586.56	5303985.58	100%	5303985.58	29466586.56
15	MADURAI AFS	Ш	15461235.01	13102741.53	2358493.48	0%	0.00	15461235.01
16	COIMBATORE LPG BP	Ш	53089344.93	44990970.28	8098374.65	100%	8098374.65	44990970.28
17	ENNORE LPG BP	III	61230488.89	51890244.82	9340244.07	100%	9340244.07	51890244.82
18	CHENGELPET LPG BP	III	42726427.33	36208836.72	6517590.61	100%	6517590.61	36208836.72
19	COIMBATORE AFS	III	16903227.60	14324769.15	2578458.45	0%	0.00	16903227.60
20	TRICHY AFS	IV	15687485.85	13294479.53	2393006.32	0%	0.00	15687485.85
21	ARAKONAM AFS	IV	17919203.33	15185765.53	2733437.80	0%	0.00	17919203.33
22	MEENAMBAKKAM AFS	IV	18428936.19	15617742.53	2811193.66	0%	0.00	18428936.19
23	PONDICHERY LPG BP	IV	38834702.63	32910764.94	5923937.69	100%	5923937.69	32910764.94
			907869170.12	769380652.64	138488517.48		96157920.51	811711249.61

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE COIMBATORE TERMINAL - TNSO

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at COIMBATORE TERMINAL under TNSO STATE OFFICE

Ref Date TNSO/ENGG/COIMBATORE TERMINAL Tuesday, May 17, 2022

					Date	Tuesday, May 17, 2022
1000	SUPPLY COMPONENTS					
1	IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT	Remarks
2	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	2	EA	21025	42050	
3	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	34	EA	48813	1659642	
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	14	EA	30320	424480	
5	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	65	EA	45625	2965625	
6	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	329250	0	
7	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	42	EA	41177	1729434	
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	52471	2203782	
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	17	EA	68955.6	1172244.52	
11	12 M pole with cantilever arrangement	2	EA	36975	73950	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	48	EA	30450	1461600	
13	4/6 M pole with Accessories as per specification of Tender	14	EA	19575	274050	
14	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.		LS	607675	607675	
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.		ТВ	9412	7868432	
16	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room			0	0	
	shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost. Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security		EA	32500	97500	
17	Room - 1no., Marketing Incharge - 1no.,			32300	,, 500	

18	Design & Supply of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push		EA	281250	1687500	
	button & accessories. Design & Supply of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document.	2	EA	281250	562500	
	location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera. Design & Supply of video wall along with controller & complete accessories, cables etc. for	2	EA	281250	562500	
20	CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.					
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	2	EA	217791	435581.16	
22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 26 cameras recording, 26 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.		LS	544163	544163.25	
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.		LS	1764706	1764706	
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN , rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	64706	129412	
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's		EA	8874	17748	
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	294118	294118	
	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	65	EA	12353	802945	
28	Cabling, JB, Earthing, Surge Protection Device			0	0	
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0	
30	Type 1 SPD - Earth pit	5	Nos	5883	29415	
32	Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0	
33	CCTV system	12	EA	20000	240000	
34 35	Supply of FRLS Armoured Copper Power cable as per tender specifications. 3CX2.5	13060	RM	112	0 1462720	
36	3C x 4	2030	RM	135	274050	
37	4C x 6	0	RM RM	315 448	0 1326080	
38 39	4C x 10 4C x 16	2960 3620	RM RM	580	1326080 2099600	
40	4C x 25	0	RM	3750	0	
41	Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of		RM RM	56 50	330400	
42	Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0	
43	specifications and instructions of Engineer in charge. 10 m	10	EA	145	1450	

						1
45	15 m	10	EA	145	1450	
46	20 m	10	EA	145	1450	
47	25 m	10	EA	145	1450	
48	30 m	10	EA	145	1450	
	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable	4720	RM	58	273760	
49	tray at regular interval and junction boxes etc complete as per specification and tender	., 20		30	2.5.00	
٦,	document					
	document			0	0	
	Supply of anodized Aluminium perforated cable trays, tray covers along with structural steel			U	U	
50	for mounting of the cable tray. Complete as per specifications / tender documents.					
	io modificing of the caste day, complete as per specifications / tender ascuments.					
51	50 mm	0	RM	0	0	
52	100 mm	5200	RM	357.5	1859000	
53	150 mm	1600	RM	455	728000	
			RM	578.5		
54	200 mm	0			0	
55	300 mm	3900	RM	715	2788500	
56	450 mm	0	RM	0	0	
	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			0	0	
	1 1 1					
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.					
57	It shall be complete in all respect. Accessories like certified double compression cable glands					
	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS					
	316 fasteners. Complete as per specification / tender documents.					
58	12 ways JB	10	EA	5598.45	55984.5	
59	8 ways JB	20	EA	5598.45	111969	
60	6 ways JB	50	EA	3110.25	155512.5	
61	4 ways JB	50	EA	782.28	39114	
- "	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2		RM	89	315060	
62		3340	IVVI	07	313000	
	as per IS 4759) shall be done after all fabrication.	1000	B.:		77000	<u> </u>
63	Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM	77	77000	
	specifications and instructions of Engineer in charge.	<u> </u>	ļ			
	Supply of Structural steel (MS) for praction of cable bridge (if required) for lawing of the	10	MT	90625	906250	
1	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above	ĺ	Ī			
64	ground cables at road crossing or any other place within the Terminal including painting, Civil	ĺ	Ī			
ĺ	foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	ĺ	Ī			
1	Supply of MCT block for optics CCTV protess to Control D	1	1	_	^	
1	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security		ĺ	0	0	
65	Room with minimum 50% spare MCT blocks for future cable entry along with frame and					
	mounting accessories complete as per specification and tender document.					
66	MCT Block	3	EA	19125	57375	
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				40843677.93	
2000	SERVICE COMPONENTS				100 15077175	
1	IP BASED CCTV SURVEILLANCE SYSTEM					
	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome	2	EA	562.5	1125	
2	camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with					
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	34	EA	1875	63750	
		37	LA	1073	03730	
3	along with power supply unit (POE based) with POE injector (industrial grade), with					
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	14	EA	562.5	7875	
	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with					
4	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.			F(2 F	3/5/3 5	
	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras		EA	562.5	36562.5	
5	with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with					
_	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof	0	EA	0	0	
1 .	HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external	-	1		•	
6		l	1			
1	surge protection unit and mounting accessories etc complete as per specifications and Tender	l	1			
-	Document,	 	<u> </u>			
ĺ	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade	42	EA	812.5	34125	
7	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper	ĺ	Ī			
1 '	port and 2 Nos, optical fibre ports with inbuilt/external surge protector (Type 1+2) at the	ĺ	Ī			
	input power supply as per specifications and Tender Document,	L	<u>L</u>	<u> </u>		
		42	EA	1687.5	70875	
1	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof		1			
ĺ	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU		Ī			
ĺ	and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of	ĺ	Ī			
1 _	CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays,	ĺ	Ī			
8	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet	ĺ	Ī			
ĺ	cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The	ĺ	Ī			
1	· · · · · · · · · · · · · · · · · · ·	l	1			
1	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as	l	1			
1	per specifications and Tender Document,	l	1			
	Installation and the Completion of Harmon Bury 15 and 10 and 20 and 10 and 20 a		Ì	0	0	
1	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for	l	1		-	
ĺ	mounting of CCTV cameras along with civil foundation along with GI foundation bolt,	ĺ	Ī			
ĺ	mounting brackets, ladder arrangement (taking into account of safety during climbing) on the	ĺ	Ī			
ĺ	pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other	ĺ	Ī			
ĺ	accessories required for complete installation and commissioning of the pole, submission of	ĺ	Ī			
1			1			
9	structural stability certificate based on existing soil bearing capacity and wind speed from		1			
1	Govt. Engineering colleges etc complete as per specifications and Tender Document of below		1			
ĺ	mentioned height of the pole. (Foundation drawing and other details to be submitted prior to	ĺ	Ī			
ĺ	installation as per tender document)	ĺ	Ī			
ĺ	Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to	ĺ	Ī			
ĺ	arrange for ladder for installation & maintenance purpose throughout the contract period		Ī			
ĺ		ĺ	Ī			
	including CAMC period at no additional cost to IOCL.	L	L_			<u> </u>
-10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10	17	EA	9750	165750	
10	m and LED flood light at 8m of the pole across perimeter as per tender	l	1			
11	12 M pole with/without cantilever arrangement	2	EA	11600	23200	
	ווב זה סטוב אזנוו/ אזנווטעו במוונוביבו מוזמווצלווולוונ		LA	11000	Z3ZUU	1

12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at	48	EA	8450	405600	
13	8m of the pole across perimeter as per tender 4/6 M pole with Accessories as per specification of Tender	14	EA	4550	63700	
14	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	13000	13000	
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	836	ТВ	134	112024	
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors.			9750	0	
	Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.					
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3	EA	1875	5625	
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	6	EA	2500	15000	
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.	2	EA	2500	5000	
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.					
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 26 cameras recording, 26 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document. Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack	2	EA	3625 797.5	7250	
25	installation, testing and commissioning or wall mounted Network Nack-minimum IOU 19 Nack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	۷	LA	171.3	1373	

26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.		EA	6250	6250	
27	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	65	EA	2000	130000	
28	Cabling, JB, Earthing, Surge protection			0	0	
29	Installation, testing and commissioning of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender			0	0	
30	document at following places. Type 1 SPD - Earth pit	5	Nos	3625	18125	
31	Earth Pit			0	0	
32	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0	
22	· · · · · · · · · · · · · · · · · · ·	40		(25	7500	
33	CCTV system Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.	12	EA	625 0	7500 0	
35	3CX2.5	13060	RM	27	352620	<u> </u>
36	3C x 4	2030	RM	27	54810	
37	4C x 6	0	RM	45	0	
38 39	4C x 10 4C x 16	2960	RM	34	100640	
40	4C x 25	3620 0	RM RM	65 0	235300	
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.		RM	27	159300	
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	6500	RM	10	65000	
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.	10		0	0	
44 45	10 m 15 m	10 10	EA EA	7.5 10	75 100	
46	20 m	10	EA	12.5	125	
47	25 m	10	EA	17.5	175	
48	30 m	10	EA	25	250	
49	Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	4720	RM	21	99120	
50	Laying of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51	50 mm	0	RM	0	0	
52	100 mm	5200	RM	217.5	1131000	
53 54	150 mm 200 mm	1600	RM PM	240	384000 0	
55	300 mm	0 3900	RM RM	507.5 580	2262000	
56	450 mm	0	RM	1300	0	
57	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0	
58	12 ways JB	10	EA	875	8750	+
59	8 ways JB	20	EA	750	15000	
60	6 ways JB	50	EA	562.5	28125	
61	4 ways JB	50	EA	375	18750	
62	Fabrication, cutting, laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	3540	RM	47	166380	
63	Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM	45	45000	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10	МТ	33334	333340	
65	Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0	
66	MCT Block	3	EA	2175	6525	
67	Other Services		Marit	0	/E000	
68	Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations, As built drawings	1	Module	65000 65000	65000 65000	
69	submission of Final Detailed system design, Engineering, Documentations, As built drawings etc complete as per tender	'	LS	00000	UUUCO	

71	SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)				6810316.5	
3000	Comprehensive AMC - PART -III					
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV					
'	Surveillance System after successful completion of SAT as described in Technical Bid.					
2	First Year - Warranty					
3	Second Year @1.5% of the basic CAPEX cost	1	LS	714810	714810	
4	Third Year @2.5% of the basic CAPEX cost	1	LS	1191350	1191350	
5	Fourth Year @3% of the basic CAPEX cost	1	LS	1429620	1429620	
6	Fifth Year @7% of the basic CAPEX cost	1	LS	3335780	3335780	
7	Sixth Year @4% of the basic CAPEX cost	1	LS	1906160	1906160	
8	Seventh Year @7% of the basic CAPEX cost	1	LS	3335780	3335780	
9	SUB TOTAL (III) - CAMC (excluding GST)				11913500	
	Sub Total - Supply Component (excluding GST)				40843677.93	
	GST on Supply Component @ 18%				7351862.027	
A	Total - Supply Component (including GST)				48195539.96	
	Sub Total - Service Component (excluding GST)				6810316.5	
	GST on Service Component @ 18%				1225856.97	
В	Total - Service Components (including GST)				8036173.47	
	Total CAPEX - Supply + Service Component (excluding GST)				47653994.43	
	GST on Supply and Service Component @ 18%				8577718.997	
С	Total CAPEX - Supply + Service Component (including GST)				56231713.43	
	Sub Total - CAMC Component (excluding GST)				11913500	
	GST on CAMC Component @ 18%				2144430	
D	Total - CAMC Component (including GST)				14057930	
	Total - Supply + Service+CAMC Component (excluding GST)				59567494.43	
	GST on Supply, Service and CAMC Component @ 18%				10722149	
	Grand Total of Supply + Service + CAMC cost including GST				70289643.43	

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE CHENNAI FST - TNSO

Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at Ref TNSO/ENGG/CHENNAI FST Date Tuesday, May 17, 2022 SUB:

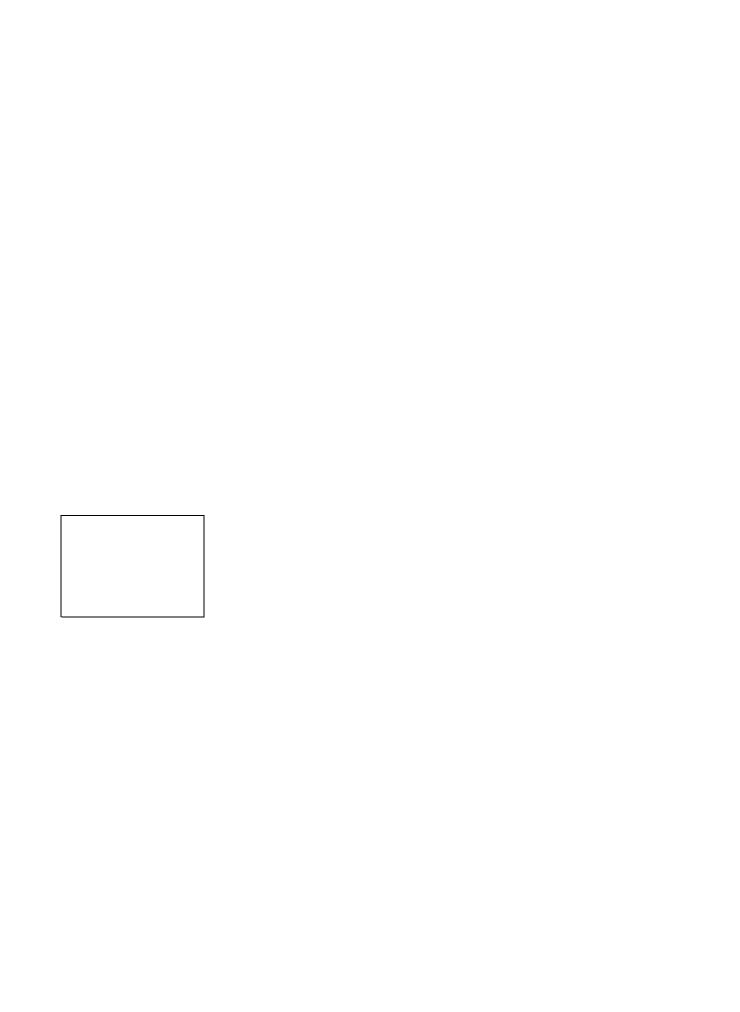
1000	SUPPLY COMPONENTS	FST A	FST B	TOTAL		D. 775	TOTAL AMOUNT	
1	IP BASED CCTV SURVEILLANCE SYSTEM Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit	QTY 1	QTY 1	QTY 2	UOM EA	21025	TOTAL AMOUNT 42050	Remarks
2	(POE based), with inbuilt/external surge protection unit and mounting accessories etc.	1	'		LA	21025	42000	
-	complete as per specifications and Tender Document,							
	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE	10	4	14	EA	48813	683382	
3	injector (industrial grade), with inbuilt/external surge protection unit and mounting							
	accessories etc complete as per specifications and Tender Document.	6	6	12	EA	30320	363840	
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting		0	12	EA	30320	303040	
•	accessories etc complete as per specifications and Tender Document.							
	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power	20	10	30	EA	45625	1368750	
5	supply unit (POE based), with inbuilt/external surge protection unit and mounting							
	accessories etc complete as per specifications and Tender Document.						_	
6	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power	0	0	0	EA	329250	0	
•	supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting	13	8	21	EA	41177	864717	
7	Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge							
,	protector (Type 1+2) at the input power supply as per specifications and Tender Document.							
		- 42	•			50.474	1101001	
	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for	13	8	21	EA	52471	1101891	
	installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge							
_	protectors and other accessories of CCTV cameras. Supply of required OFC components &							
8	accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch	ĺ				I		
	cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect							
	for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	ĺ			Ī			
	adable compression cable giands etc as per specifications and render bocument,	<u> </u>		<u> </u>				
	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for	ĺ		0		0	0	
	mounting of CCTV cameras along with civil foundation along with GI foundation bolt,							
	mounting brackets, ladder arrangement (taking into account of safety during climbing) on the	ĺ]	
	pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other							
	accessories required for complete installation and commissioning of the pole, submission of	ĺ						
9	structural stability certificate based on existing soil bearing capacity and wind speed from	l	l	l		1		
	Govt. Engineering colleges etc complete as per specifications and Tender Document of below							
	mentioned height of the pole. (Foundation drawing and other details to be submitted prior to							
	installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to							
	arrange for ladder for installation & maintenance purpose throughout the contract period							
	including CAMC period at no additional cost to IOCL.	ĺ						
	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera	6	3	9	EA	68955.6	620600.04	
10	at 10 m and LED flood light at 8m of the pole across perimeter as per tender	ľ		ĺ		00,33.0	323300.07	
11	12 M pole with cantilever arrangement	0	0	0	EA	36975	0	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood		7	21	EA	30450	639450	
	light at 8m of the pole across perimeter as per tender	,	,	40		10575	22.4000	
13	4/6 M pole with Accessories as per specification of Tender	6	6	12	EA LS	19575 607675	234900 607675	
	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and	1		'	L3	00/0/3	607673	
	combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender							
4.4	Document.							
14	Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide							
	failover server to have redundancy in CCTV server such that failure of one server should not							
	affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	l	l	l				
	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing	275	167	442	ТВ	9412	4160104	
	recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video	2/3	107	742	10	2412	7100104	
15	quality of all cameras (Continuous recording) complete as per specifications and Tender							
	Document.	l	l	l		1		
	Note: Storage Calculation to be submitted for information.							
	Supply of CCTV client work station along with client software & licenses, key board, mouse,	l		0		0	0	
	hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus,	l	l	l		1		
	etc complete as per specifications and Tender Document. (Location: Control Room - 2		l	l		1		
	no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline	l	l	l		1		
	TM Room - 1 no.)	ĺ						
16	Note: CCTV Work station shall have provision to connect to 2 nos, of UHD LED monitors .	l	l	l		1		
	Required hardware & software is to be provided for the same, Incase the offered work station	l	l	l		1		
	do not have such provision, then additional work station to be provided meeting the tender	ĺ						
	requirement at no additional cost to IOCL. Marketing CPU for control room & security room	l	l	l		1		
	shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be	l	l	l				
	Supplied at no additional cost Tower two with minimum 27" colored LED monitor Control Boom Marketing 1 no. Security	-		2	E*	22500	07500	
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3		3	EA	32500	97500	
		2		2	EA	281250	562500	
	Design & Supply of video wall along with required controller & complete accessories, cables	l -	l	l -				
	etc , mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document.	1	l	l				
	In control room:-Windows for all cameras should be available on single screen of 300-400	l	l	l		1		
18	cm2	ĺ						
.5		l	l	l		1		
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and	ĺ						
	Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push	l	l	l		1		
		ĺ			Ī			
	button & accessories.					1	!	
		2		2	EΑ	281250	562500	
46	button it accessories. Design & Supply of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document. In	2		2	EA	281250	562500	
19	Design & Supply of video wall along with controller & complete accessories , cables etc. for	2		2	EA	281250	562500	

20	Design & Supply of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document.	2		2	EA	281250	562500	
	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.							
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	2		2	EA	217791	435581.16	
	Note- The switches are required to be configured in dual redundant mode. Supply of Intelligent video operation, control, management, recording & processing software	1		1	LS	544163	544163.25	
22	(VMS) complete as per specifications and Tender Document with minimum 26 cameras recording, 26 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.				_			
	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed	1		1	LS	1764706	1764706	
23	cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.							
	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories,	2		2	EA	64706	129412	
	limit switches, earthing arrangements, breaker, fuses, required OFC components &							
24	accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera,							
24	terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack							
	mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs							
	etc as per specification and tender document.							
	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan,	2		2	EA	8874	17748	
25	mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's							
	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity	1		1	EA	294118	294118	
24	of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel							
26	battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries monitoring software etc							
	complete as per specification and tender document.							
	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including	20	10	30	EA	12353	370590	
27	supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting							
	structure as per site condition , painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.							
28	Cabling, JB, Earthing, Surge Protection Device			0		0	0	
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0		0	0	
30 31	Type 1 SPD - Earth pit Earth Pit	5	5	10 0	Nos	5883 0	58830 0	
	Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry			0		0	0	
32	earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical							
	earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also							
	includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.							
33	CCTV system	4	2	6	EA	20000	120000	
34 35	Supply of FRLS Armoured Copper Power cable as per tender specifications. 3CX2.5	2790	2950	0 5740	RM	0 112	0 642880	
36	3C x 4	470	0	470	RM	135	63450	
37 38	4C x 6 4C x 10	0 470	0	0 470	RM RM	315 448	0 210560	
39	4C x 16	0	0	0	RM	580	0	
40	$4C \times 25$ Supply of 6 core single mode armoured optical fibre cable as per tender specifications and	0 1600	1200	0 2800	RM RM	3750 56	0 156800	
41	instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of	2000	1100	3100	RM	50	155000	
43	Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0		0	0	
44	specifications and instructions of Engineer in charge. 10 m	10	10	20	EA	145	2900	
45	15 m	10	10	20	EΑ	145	2900 2900	
46 47	20 m 25 m	10	10	20	EA EA	145 145	2900	1
48	30 m	10	10	20	EA	145	2900	
49	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender	1280	960	2240	RM	58	129920	
	<u>document</u> Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel			0		0	0	
50	for mounting of the cable tray. Complete as per specifications / tender documents.							
51 52	50 mm 100 mm	0 1500	0 1100	0 2600	RM RM	0 357.5	929500	
53	150 mm	1600			RM	455	1274000	
54	200 mm	0	0	0	RM	578.5	0	
55 56	300 mm 450 mm	0	0	0	RM RM	715 0	0	
				J	INT	v	U	I

		1	1	۰ ا		۰ ا	0	
	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			0		U	0	
57	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands							
3,	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS							
	316 fasteners. Complete as per specification / tender documents.							
58	12 ways JB	10	10	20	EA	5598.45	111969	
59	8 ways JB	20	20	40	EA	5598.45	223938	
60	6 ways JB 4 ways JB	50 50	50 50	100	EA EA	3110.25 782.28	311025 78228	
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2	960	720	1680	RM	89	149520	
- 02	as per IS 4759) shall be done after all fabrication.	4000	4000	2000			45 4000	
63	Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	1000	2000	RM	77	154000	
	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above	10	10	20	MT	90625	1812500	
64	ground cables at road crossing or any other place within the Terminal including painting, Civil							
	foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc							
	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security			0		0	0	
65	Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.							
66	MCT Block	3		3	EA	19125	57375	
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)						22682672.45	
2000	SERVICE COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM							
	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome	1	1	2	EA	562.5	1125	
2	camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with							
1	inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	10	4	14	EA	1875	26250	
3	along with power supply unit (POE based) with POE injector (industrial grade), with							
	inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	6	6	12	EA	562.5	6750	
4	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with							
	inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras	20	10	30	EA	562.5	16875	
5	with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with							
	inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof	0	0	0	EA	0	0	
6	HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade	13	8	21	EA	812.5	17062.5	
7	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper							
	port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.							
	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof	13	8	21	EA	1687.5	35437.5	
	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU							
	and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays,							
8	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet							
	cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The							
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.							
				0		0	0	
	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt,							
	mounting brackets, ladder arrangement (taking into account of safety during climbing) on the							
	pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other							
_	accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from							
9	Govt. Engineering colleges etc complete as per specifications and Tender Document of below							
	mentioned height of the pole. (Foundation drawing and other details to be submitted prior to							
	installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to							
	arrange for ladder for installation & maintenance purpose throughout the contract period							
	including CAMC period at no additional cost to IOCL.							
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	6	3	9	EA	9750	87750	
11	12 M pole with/without cantilever arrangement	0	0	0	EA	11600	0	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light	14	7	21	EA	8450	177450	
13	at 8m of the pole across perimeter as per tender 4/6 M pole with Accessories as per specification of Tender	6	6	12	EA	4550	54600	
	Installation, configuration, integration, testing and commissioning of rack mounted CCTV	1	0	1	LS	13000	13000	
	Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS,							
14	Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to							
'-	provide the same at no additional cost to IOCL. In additional to above, Vendor to provide							
	failover server to have redundancy in CCTV server such that failure of one server should not							
	affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.		ļ					
	Installation, configuration, integration, testing and commissioning of Network Attached	275	167	442	ТВ	134	59228	
15	Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum							
	period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.							
L	=		<u> </u>	1		<u> </u>		

	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.)			0		9750	0	
16	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.							
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3	0	3	EA	1875	5625	
18	Installation,commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	2	0	2	EA	2500	5000	
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push							
19	hutton ft accessories Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room: viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	0	2	EA	2500	5000	
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	0	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	0	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 26 cameras recording, 26 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	0	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	0	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalls, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	0	2	EA	3625	7250	
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19 ⁻ Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	0	2	EA	797.5	1595	
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	0	1	EA	6250	6250	
27	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	20	10	30	EA	2000	60000	
28	Cabling, JB, Earthing, Surge protection			0		0	0	
29	Installation, testing and commissioning of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender			U		U	U	
30	document at following places. Type 1 SPD - Earth pit	5	5	10	Nos	3625	36250	
31	Earth Pit Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0 0		0	0	
33	CCTV system Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender	4	2	6	EA	625 0	3750 0	
34	specifications.					·	,	

	Inches :			T				
35	3CX2.5	2790	2950		RM	27	154980	
36	3C x 4	470	0	470	RM	27	12690	
37	4C x 6	0	0	0	RM	45	0	
38	4C x 10	470	0	470	RM	34	15980	
39	4C x 16	0	0	0	RM	65	0	
40	4C x 25	0	0	0	RM	0	0	
	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	1600	1200	2800	RM	27	75600	
41	per tender specifications and instructions of Engineer in charge.							
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	2000	1100	3100	RM	10	31000	
	specifications and instructions of Engineer in charge.							
	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0		0	0	
43						ŭ	ŭ	
	specifications and instructions of Engineer in charge,							
44	10 m	10	10	20	EA	7.5	150	
45	15 m	10	10	20	EA	10	200	
46	20 m	10	10	20	EA	12.5	250	
47	25 m	10	10	20	EA	17.5	350	
48								
40	30 m	10	10	20	EA	25	500	
	Laying, glanding, ferruling, termination of 1C $ ext{x}$ 6 Sq. mm Flexible copper insulated green	1280	960	2240	RM	21	47040	
49	wire for earthing instruments, cable tray at regular interval and junction boxes etc							
	complete as per specification and tender document							
				0		0	0	
50	Laying of anodized Aluminium perforated cable trays, tray covers along with structural steel					ŭ	ŭ	
50	for mounting of the cable tray. Complete as per specifications / tender documents.							
51	50 mm	0	0	0	RM	0	0	<u> </u>
52	100 mm	1500	1100	2600	RM	217.5	565500	
53	150 mm	1600	1200		RM	240	672000	
54	200 mm	0	0	0	RM	507.5	0	
55	300 mm	0	0	0	RM	580	0	
56	450 mm	0	0	0	RM	1300	0	
				0		0	0	
1	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification		l	"		U	J	
1	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.		l	1				
57	It shall be complete in all respect. Accessories like certified double compression cable glands	l	1	1				l
٠,		l	1	1				l
1	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS		l	1				
1	316 fasteners. Complete as per specification / tender documents.		l	1				
		<u> </u>	L	L.				
58	12 ways JB	10	10	20	EA	875	17500	
59	8 ways JB	20	20	40	EA	750	30000	
60	6 ways JB	50	50	100	EA	562.5	56250	
61	4 ways JB	50	50	100	EA	375	37500	
	Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth	960	720	1680	RM	47	78960	
62								
	station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.							
	Ludge of FO and UDDE along of minimum 2.5 and thick along with	4000	4000	2000	D14	45	00000	
63	Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	1000	2000	RM	45	90000	
	specifications and instructions of Engineer in charge.							
	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10	10	20	MT	33334	666680	
	(if required) for laying of above ground cables at road crossing or any other place within the							
64								
	Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners,							
	gussets, base plate etc							
	Installation, testing and commissioning of MCT block for entire CCTV system to Control			0		0	0	
	Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable							
65	entry along with frame and mounting accessories complete as per specification and tender							
	document,							
66	MCT Block	3	0	3	EA	2175	6525	
67	Other Services			0		0	0	
	Providing training to IOCL employee as per schedule/Module for one days as per tender	1		1	Module	65000	65000	
68	document			٠.	modute	03000	03000	
H		-	-	4	1.0	(E000	4E000	
69	Submission of Final Detailed system design, Engineering, Documentations , As built drawings	1	l	1	LS	65000	65000	
	etc complete as per tender	Щ_						
71	SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)						3335903	
3000	Comprehensive AMC - PART -III							
	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV							
1 .			l	1				
1	Surveillance System after successful completion of SAT as described in Technical Bid.	l	1	1				
1								
						Į.		
2								
	First Year - Warranty	1	1		Ic	390279	390270	
3	First Year - Warranty Second Year @1.5% of the basic CAPEX cost	1	1		LS	390279	390279	
3	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost	1	1		LS	650465	650465	
3	First Year - Warranty Second Year @1.5% of the basic CAPEX cost							
3 4 5	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost	1	1		LS LS	650465 780558	650465 780558	
3 4 5 6	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost	1 1 1	1 1 1		LS LS	650465 780558 1821301	650465 780558 1821301	
3 4 5 6 7	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744	
3 4 5 6	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost	1 1 1	1 1 1		LS LS	650465 780558 1821301	650465 780558 1821301	
3 4 5 6 7	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @ 18%	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @ 18% Total - Supply Component (including GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component @18% Total - Supply Component @18% Total - Supply Component (including GST) Sub Total - Service Component (excluding GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903	
3 4 5 6 7 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Sub TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @ 18% Total - Supply Component (including GST) Sub Total - Service Component (excluding GST) GST on Service Component @ 18%	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903 600462.54	
3 4 5 6 7 8	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @ 18% Total - Supply Component (including GST) Sub Total - Service Component (excluding GST) Sub Total - Service Component (excluding GST) GST on Service Component @ 18% Total - Service Component (including GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903	
3 4 5 6 7 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @ 18% Total - Supply Component (including GST) Sub Total - Service Component (excluding GST) Sub Total - Service Component (excluding GST) GST on Service Component @ 18% Total - Service Component (including GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 408281.041 26765553.49 3335903 600462.54 3936365.54	
3 4 5 6 7 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @18% Total - Service Component (excluding GST) GST on Service Components (including GST) Total - Service Components (including GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903 600462.54 3936365.54 26018575.45	
3 4 5 6 7 8 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) Sour Tour Supply Component (excluding GST) Sub Total - Service Component (excluding GST) GST on Service Component (excluding GST) Total CAPEX - Supply + Service Component (excluding GST) Total CAPEX - Supply + Service Component (excluding GST) GST on Supply and Service Component @ 18%	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903 600462.54 3936365.54 26018575.45	
3 4 5 6 7 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component @ 18% Total - Supply Component (including GST) Sub Total - Service Component (excluding GST) GST on Service Component @ 18% Total - Service Component @ 18% Total - Service Component (including GST) Total CAPEX - Supply + Service Component (excluding GST) GST on Supply and Service Component @ 18% Total CAPEX - Supply + Service Component @ 18% Total CAPEX - Supply + Service Component @ 18% Total CAPEX - Supply + Service Component @ 18%	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903 600462.54 3936365.54 26018575.45	
3 4 5 6 7 8 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) Sour Tour Supply Component (excluding GST) Sub Total - Service Component (excluding GST) GST on Service Component (excluding GST) Total CAPEX - Supply + Service Component (excluding GST) Total CAPEX - Supply + Service Component (excluding GST) GST on Supply and Service Component @ 18%	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 408281.041 26765553.49 3335903 600462.54 3936365.54 26018575.45 4683343.581 30701919.03	
3 4 5 6 7 8 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) Sub Total - Supply Component @ 18% Total - Supply Component (excluding GST) Sub Total - Service Component (excluding GST) Sub Total - Service Component (excluding GST) Total - Service Components (including GST) Total CAPEX - Supply + Service Component (excluding GST) GST on Supply and Service Component (excluding GST) Sub Total - CAMC Component (excluding GST) Sub Total - CAMC Component (excluding GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903 600462.54 3936365.54 26018575.45 4683343.581 30701919.03 6504648	
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3 4 5 6 7 8 9	First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3.5% of the basic CAPEX cost Fifth Year @3.5% of the basic CAPEX cost Fifth Year @3.5% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Seventh Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost SuB TOTAL (III) - CAMC (excluding GST) Sub TOTAL - Supply Component (excluding GST) GST on Supply Component @ 18% Total - Supply Component @ 18% Total - Supply Component (excluding GST) Sub Total - Service Component (excluding GST) Total - Service Component (excluding GST) Total - Service Component @ 18% Total - Service Component @ 18% Total - CAPEX - Supply + Service Component (excluding GST) Sub Total - CAMC Component (excluding GST) Sub Total - CAMC Component (excluding GST) Total - CAMC Component (including GST)	1 1 1	1 1 1		LS LS LS	650465 780558 1821301 1040744	650465 780558 1821301 1040744 1821301 6504648 22682672.45 4082881.041 26765553.49 3335903 600462.54 3936365.54 26018575.45 4683343.581 30701919.03 6504648 1170836.64 7675484.64	



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INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE MADURAI TERMINAL - TNSO

Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6

Ref TNSO/ENGG/MADURAI TERMINAL

Date Tuesday, May 17, 2022 SUB:

1000	SUPPLY COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT	Remarks
	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit	2	EA	21025	42050	Remarks
2	(POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.			21023	-12030	
3	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	14	EA	48813	683382	
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories	16	EA	30320	485120	
5	etc complete as per specifications and Tender Document. Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories	35	EA	45625	1596875	
6	etc complete as per specifications and Tender Document. Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbull/external surge protection unit and mounting accessories etc.	0	EA	329250	0	
7	complete as per specifications and Tender Document. Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	28	EA	41177	1152956	
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	28	EA	52471	1469188	
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	6	EA	68955.6	413733.36	
11	12 M pole with cantilever arrangement	2	EA	36975	73950	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	29	EA	30450	883050	
13	4/6 M pole with Accessories as per specification of Tender	16	EA	19575	313200	
14	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	607675	607675	
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.	531	ТВ	9412	4997772	
16	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station on the value for the same incase the offered work station and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station on thave such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room			0	0	
	shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be			22500	07500	
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3	EA	32500	97500	

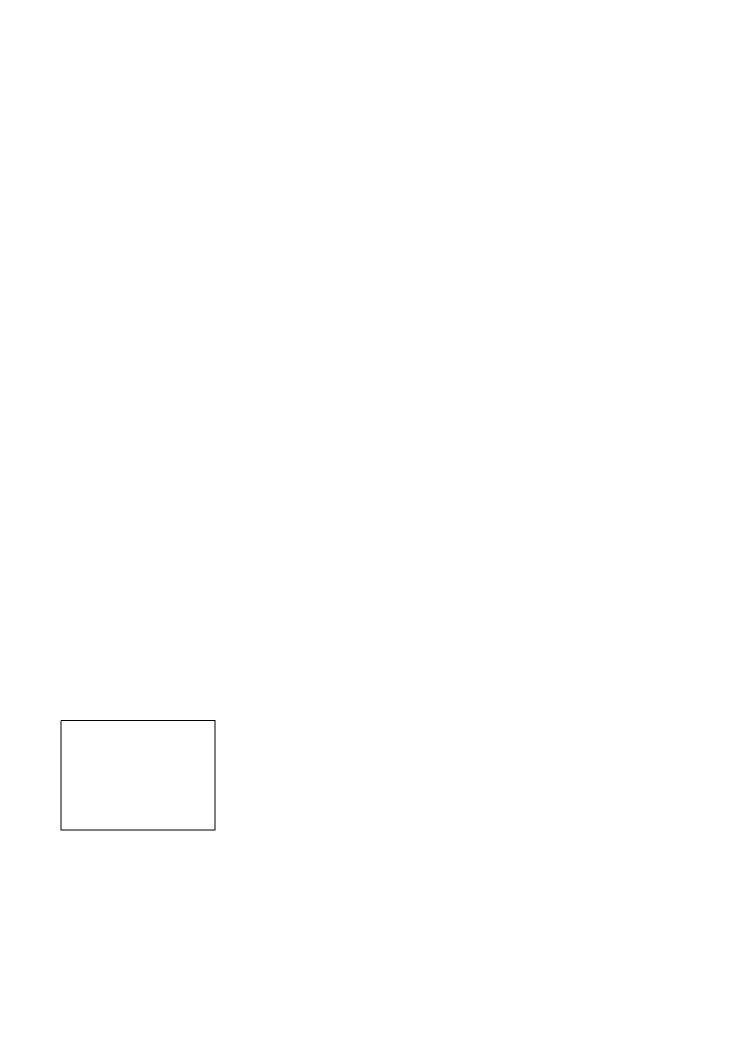
18	Design & Supply of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push		EA	281250	1125000	
	button & accessories. Design & Supply of video wall along with controller & complete accessories , cables etc. for	2	EA	281250	562500	
19	CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.		í	201230	302300	
20	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.		EA	281250	562500	
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	2	EA	217791	435581.16	
22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 81 cameras recording, 81 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos, of cameras installed + 20% extra which ever is higher.		LS	544163	544163.25	
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.		LS	1764706	1764706	
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.		EA	64706	129412	
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's		EA	8874	17748	
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.		EA	294118	294118	
27	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.		EA	12353	432355	
28	Cabling, JB, Earthing, Surge Protection Device			0	0	
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0	
	Type 1 SPD - Earth pit Earth Pit	5	Nos	5883 0	29415 0	
32	Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0	
33	CCTV system	6	EA	20000	120000	
	Supply of FRLS Armoured Copper Power cable as per tender specifications.	70.		0	0	
	3CX2.5 3C x 4	7910 990	RM RM	112 135	885920 133650	
	3C x 4 4C x 6	0	RM	315	0	<u>†</u>
38	4C x 10	1040	RM	448	465920	
	4C x 16	0	RM	580	0	
	4C x 25 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and	0 3900	RM RM	3750 56	0 218400	
41	instructions of Engineer in charge.			50	180000	
	Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of	3600	RM	30	.00000	
42	Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.		KM	0	0	

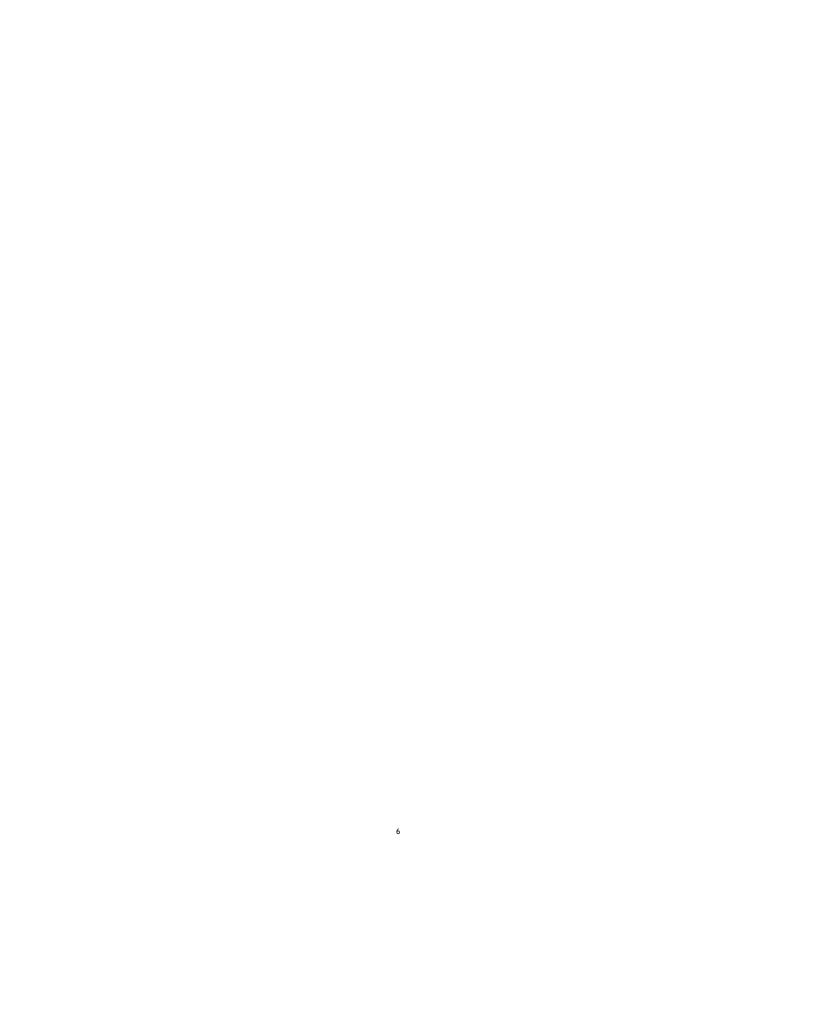
45	15 m	10	EA	145	1450	1
46	20 m	10	EA	145	1450	
47	25 m	10	EA	145	1450	
48	30 m	10	EA	145	1450	
49	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	3120	RM	58	180960	
50	Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51	50 mm	0	RM	0	0	
52	100 mm	2800	RM	357.5	1001000	
53 54	150 mm 200 mm	1600 1400	RM RM	455 578.5	728000 809900	
55	300 mm	0	RM	715	0	
56	450 mm	0	RM	0	0	
57	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0	
58	12 ways JB	10	EA	5598.45	55984.5	
59 60	8 ways JB 6 ways JB	20 50	EA EA	5598.45 3110.25	111969 155512.5	
61	4 ways JB	50	EA	782.28	39114	
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2	2340	RM	89	208260	
63	as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM	77	77000	
64	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc		MT	90625	906250	
65	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0	
66	MCT Block	3	EA	19125	57375	
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				25056414.77	
2000	SERVICE COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM					
2	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	1125	
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	1875	26250	
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	9000	
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	19687.5	
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	0	0	
7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	28	EA	812.5	22750	
8	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	1687.5	47250	
9	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender 12 M pole with/without cantilever arrangement	6	EA EA	9750 11600	23200	
<u> </u>				. 1000	23200	1

	9 M pole with captilover arrangement for mounting of 1 fixed camera at 4m and 150 first in-	20	E^	94E0	245050	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	29	EA	8450	245050	
13	4/6 M pole with Accessories as per specification of Tender Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	16	LS	13000	72800 13000	
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	531	ТВ	134	71154	
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.			9750	0	
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3	EA	1875	5625	
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	4	EA	2500	10000	
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.					
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 81 cameras recording, 81 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	3625	7250	
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595	
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250	_

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Ī	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light		EA	2000	70000	
	poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen					
27	if required, supports, nuts,bolts, earthing , required modification infixing arrangement ,					
	Supply and welding of mounting structure as per site condition, painting etc. all complete					
	with labour and materials asper drawings, specifications and directions of the Engineer-in-					
	Charge.					
28	Cabling, JB, Earthing, Surge protection			0	0	
	Installation, testing and commissioning of external surge & Lightening protect devices of			0	0	
29	suitable connector and type along with accessories complete as per specification and tender			ŭ	· ·	
30	document at following places.	5	Nos	2425	18125	
	Type 1 SPD - Earth pit	3	Nos	3625		
31	Earth Pit	-		0	0	
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80	d		0	0	
	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology	·				
	consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns),					
	filled with high conductive & corrosion resistance crystalline mixture and backfilling					
	compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600					
32	mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.					
	Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item					
	also includes provision of earth station flags with pit no's and date of inspection and the next					
	due date of inspection. Job also includes provision of test certificate of earthing station from					
	a class A licensed electrical contractor as per the format of the Corporation.					
33	CCTV system	6	EA	625	3750	
	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender			0	0	
34	specifications.	1		Ü	Ū	1
35	Specifications. 3CX2.5	7010	Dir	27	212570	†
		7910	RM	27	213570	
36	3C x 4	990	RM	27	26730	
37	4C x 6	0	RM	45	0	
38	4C x 10	1040	RM	34	35360	1
39	4C x 16	0	RM	65	0	ļ
40	4C x 25	0	RM	0		
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	3900	RM	27	105300	
41	per tender specifications and instructions of Engineer in charge.					
	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	3600	RM	10	36000	
42	specifications and instructions of Engineer in charge.					
	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0	
43	, , , , , , , , , , , , , , , , , , , ,			ŭ	· ·	
44	specifications and instructions of Engineer in charge.	40	Ε.	7.5	75	
	10 m	10	EA	7.5	75	
45	15 m	10	EA	10	100	
46	20 m	10	EA	12.5	125	
47	25 m	10	EA	17.5	175	
48	30 m	10	EA	25	250	
	Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire	3120	RM	21	65520	
49	for earthing instruments, cable tray at regular interval and junction boxes etc complete as					
	per specification and tender document					
				0	0	
50	Laying of anodized Aluminium perforated cable trays , tray covers along with structural steel	·		-		
	for mounting of the cable tray. Complete as per specifications / tender documents.					
51	50 mm	0	RM	0	0	
52	100 mm	2800	RM	217.5	609000	
53		1600	RM	240	384000	
	150 mm					
54	200 mm	1400	RM	507.5	710500	
55	300 mm	0	RM	580	0	
56	450 mm	0	RM	1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			0	0	
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.					
57	It shall be complete in all respect. Accessories like certified double compression cable glands					
				I		ĺ
i l						
	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS					
	with PVC shrouds α plugs for excess entries, 55 3 to engraved tag plate, mounting clamp α 55 316 fasteners. Complete as per specification / tender documents.					
58	316 fasteners. Complete as per specification / tender documents.		EΔ	875	8750	
58	316 fasteners. Complete as per specification / tender documents. 12 ways JB	10	EA EA	875 750	8750 15000	
58 59	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	10 20	EA	750	15000	
58 59 60	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	10 20 50	EA EA	750 562.5	15000 28125	
58 59	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	10 20 50 50	EA EA	750 562.5 375	15000 28125 18750	
58 59 60 61	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	10 20 50 50	EA EA	750 562.5	15000 28125	
58 59 60 61	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB	10 20 50 50	EA EA	750 562.5 375	15000 28125 18750	
58 59 60 61	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	10 20 50 50 2340	EA EA EA RM	750 562.5 375 47	15000 28125 18750 109980	
58 59 60 61	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 description of the strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	10 20 50 50 2340	EA EA	750 562.5 375	15000 28125 18750	
58 59 60 61 62	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	10 20 50 50 2340	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 109980 45000	
58 59 60 61 62	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47	15000 28125 18750 109980	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 109980 45000	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 109980 45000	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 4 ways JB 5 begin fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 abrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets,	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 109980 45000	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 4 ways JB 5 barication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 abrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	10 20 50 50 2340 1000	EA EA EA RM RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63 64	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 4 ways JB 5 barciation , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	10 20 50 50 2340 1000	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63 64 65 66 67	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 6 ways JB 7 ways JB 6 ways JB 7 ways JB 8 ways JB	10 20 50 50 2340 1000	EA EA EA RM RM MT	750 562.5 375 47 45 33334 0	15000 28125 18750 109980 45000 333340 0	
58 59 60 61 62 63 64	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 abrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (fir required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	10 20 50 50 2340 1000	EA EA EA RM RM	750 562.5 375 47 45 33334	15000 28125 18750 109980 45000 333340	
58 59 60 61 62 63 64 65 66 67	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 4 ways JB 5 barcation , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document	10 20 50 50 2340 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525	
58 59 60 61 62 63 64 65 66 67	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 6 ways JB 7 ways JB 7 ways JB 6 ways JB 7 ways JB 8 ways JB	10 20 50 50 2340 1000 10	EA EA EA RM RM MT	750 562.5 375 47 45 33334 0	15000 28125 18750 109980 45000 333340 0	
58 59 60 61 62 63 64 65 66 67 68	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 abrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	10 20 50 50 2340 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	
58 59 60 61 62 63 64 65 66 67 68 69	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc. Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)	10 20 50 50 2340 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525	
58 59 60 61 62 63 64 65 66 67 68	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 7 ways JB 7 ways JB 8 ways JB 6 ways JB 7 ways JB 8 ways JB 9 ways JB	10 20 50 50 2340 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 7 ways JB 8 ways JB 6 ways JB 7 ways JB 8 ways JB	10 20 50 50 2340 1000 10	EA EA EA RM RM AT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 7 ways JB 7 ways JB 8 ways JB 6 ways JB 7 ways JB 8 ways JB 9 ways JB	10 20 50 50 2340 1000 10	EA EA EA RM RM AT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 7 ways JB 8 ways JB 6 ways JB 7 ways JB 8 ways JB	10 20 50 50 2340 1000 10	EA EA EA RM RM AT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 ways JB 7 ways JB 8 ways JB 6 ways JB 7 ways JB 8 ways JB	10 20 50 50 2340 1000 10	EA EA EA RM RM AT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 5 abrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive AMnual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	10 20 50 50 2340 1000 10	EA EA EA RM RM AT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 109980 45000 333340 0 6525 65000	

4	Third Year @2.5% of the basic CAPEX cost	1	LS	717399	717399	
5	Fourth Year @3% of the basic CAPEX cost	1	LS	860879	860879	
6	Fifth Year @7% of the basic CAPEX cost	1	LS	2008717	2008717	
7	Sixth Year @4% of the basic CAPEX cost	1	LS	1147839	1147839	
8	Seventh Year @7% of the basic CAPEX cost	1	LS	2008717	2008717	
9	SUB TOTAL (III) - CAMC (excluding GST)				7173991	
	Sub Total - Supply Component (excluding GST)				25056414.77	
	GST on Supply Component @ 18%				4510154.659	
Α	Total - Supply Component (including GST)				29566569.43	
	Sub Total - Service Component (excluding GST)				3639536.5	
	GST on Service Component @ 18%				655116.57	
В	Total - Service Components (including GST)				4294653.07	
	Total CAPEX - Supply + Service Component (excluding GST)				28695951.27	
	GST on Supply and Service Component @ 18%				5165271.229	
С	Total CAPEX - Supply + Service Component (including GST)				33861222.5	
	Sub Total - CAMC Component (excluding GST)				7173991	
	GST on CAMC Component @ 18%				1291318.38	
D	Total - CAMC Component (including GST)				8465309.38	
	Total - Supply + Service+CAMC Component (excluding GST)				35869942.27	
	GST on Supply, Service and CAMC Component @ 18%				6456589.609	
	Grand Total of Supply + Service + CAMC cost including GST				42326531.88	





INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE SANKARI TERMINAL - TNSO

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at

Ref TNSO/ENGG/SANKARI TERMINAL

Date Tuesday, May 17, 2022

					Date	Tuesday, May 17, 2022
1000	SUPPLY COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT	Remarks
- '	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit	2	EA	21025	42050	Remarks
2	(POE based), with inbuilt/external surge protection unit and mounting accessories etc					
	complete as per specifications and Tender Document. Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector	36	EA	48813	1757268	
3	(industrial grade), with inbuilt/external surge protection unit and mounting accessories etc	30	LA	40013	1737200	
	complete as per specifications and Tender Document.					
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc	8	EA	30320	242560	
•	complete as per specifications and Tender Document.					
_	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power	48	EA	45625	2190000	
5	supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.					
	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power	0	EA	329250	0	
6	supply unit , with inbuilt/external surge protection unit and mounting accessories etc					
	complete as per specifications and Tender Document. Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting	31	EA	41177	1276487	
7	Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge					
•	protector (Type 1+2) at the input power supply as per specifications and Tender Document.					
	Completed and the Complete and the compl	31	EA	52471	1626601	
	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge					
	protectors and other accessories of CCTV cameras. Supply of required OFC components &					
8	accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords,					
	pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd.					
	double compression cable glands etc as per specifications and Tender Document.					
	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for			0	0	
	mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting					
	brackets, ladder arrangement (taking into account of safety during climbing) on the pole for					
	installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of					
•	structural stability certificate based on existing soil bearing capacity and wind speed from					
9	Govt. Engineering colleges etc complete as per specifications and Tender Document of below					
	mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)					
	Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to					
	arrange for ladder for installation & maintenance purpose throughout the contract period					
	including CAMC period at no additional cost to IOCL.					
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	18	EA	68955.56	1241200.08	
11	12 M pole with cantilever arrangement	2	EA	36975	73950	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	29	EA	30450	883050	
13	4/6 M pole with Accessories as per specification of Tender	8	EA	19575	156600	
	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and	1	LS	607675	607675	
	combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender					
14	Document. Note: In case multiple servers are required to meet the tender requirement, vendor to					
	provide the same at no additional cost to IOCL. In additional to above, Vendor to provide					
	failover server to have redundancy in CCTV server such that failure of one server should not					
	affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.					
	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video	609	TB	9412	5731908	
15	quality of all cameras (Continuous recording) complete as per specifications and Tender					
	Document.					
	Note: Storage Calculation to be submitted for information. Supply of CCTV client work station along with client software & licenses, key board, mouse,	-		0	0	
	hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc				J	
	complete as per specifications and Tender Document. (Location : Control Room - 2 no.(1No					
	for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.)					
16	1 110.)					
10	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors .					
	Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender					
	requirement at no additional cost to IOCL. Marketing CPU for control room & security room					
	shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be					
47	supplied at no additional cost Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security	4	EA	32500	130000	
17	Room - 1no., Marketing Incharge - 1no.,		F.	204256	4425000	
	Design & Supply of video wall along with required controller & complete accessories , cables	4	EA	281250	1125000	
	etc , mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display &					
	annunciation cum CCTV application complete as per specifications and tender document.					
18	In control room:-Windows for all cameras should be available on single screen of 300-400 cm2					
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and					
	Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.					
l	Dutton & decessories,					

19	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500	
20	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500	
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	2	EA	217790.6	435581.16	
22	Note- The switches are required to be configured in dual redundant mode. Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 113 cameras recording, 113 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	544163.3	544163.25	
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	1764706	1764706	
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalls, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	64706	129412	
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	8874	17748	
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	294118	294118	
27	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	47	EA	12353	580591	
28	Cabling, JB, Earthing, Surge Protection Device			0	0	
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0	
30 31	Type 1 SPD - Earth pit Earth Pit	5	Nos	5883 0	29415 0	
32	Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0	
33	CCTV system	0	EA	20000	0	
34 35	Supply of FRLS Armoured Copper Power cable as per tender specifications. 3CX2.5	7010	RM	0 112	785120	
36	3C x 4	1460	RM	135	197100	
37 38	4C x 6 4C x 10	0 1410	RM RM	315 448	0 631680	
38	4C x 16	1115	RM RM	580	664100	
40	4C x 25	0	RM	3750	0	
41	Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	4800	RM	56	268800	
42	Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Laying, Ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender	5300	RM	50	265000	
43	specifications and instructions of Engineer in charge.					
44 45	10 m 15 m	10 10	EA EA	145 145	1450 1450	
46	20 m	10	EA	145	1450	
47	25 m	10	EA	145	1450	
48	30 m Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	10 3840	EA RM	145 58	1450 222720	
50	Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51 52	50 mm	3900	RM RM	0 357.5	0 1394250	
	100 mm 150 mm	3900 2700	RM RM	455	1228500	
53						

54	200 mm	0	RM	578.5	0	
55	300 mm	1300	RM	715	929500	
56	450 mm	0	RM	0	0	
	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			0	0	
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.					
57	It shall be complete in all respect. Accessories like certified double compression cable glands					
	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS					
	316 fasteners. Complete as per specification / tender documents.					
58	12 ways JB	10	EA	5598.45	55984.5	
59	8 ways JB	20	EA	5598.45	111969	
60	6 ways JB	50	EA	3110.25	155512.5	
61	4 ways JB	50	EA	782.28	39114	
	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2	2880	RM	89	256320	
62	as per IS 4759) shall be done after all fabrication.					
43	Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM	77	77000	
63	specifications and instructions of Engineer in charge.					
	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above	10	MT	90625	906250	
64	ground cables at road crossing or any other place within the Terminal including painting, Civil					
٠.	foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc					
	<u> </u>					
	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security			0	0	
65	Room with minimum 50% spare MCT blocks for future cable entry along with frame and					
	mounting accessories complete as per specification and tender document. MCT Block	3		40425	F727F	
66		3	EA	19125	57375 30258628.49	
2000	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST) SERVICE COMPONENTS				30230028.49	
1	IP BASED CCTV SURVEILLANCE SYSTEM					
	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera	2	EA	562.5	1125	
	with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external		LA	302.3	1143	
2	surge protection unit and mounting accessories etc complete as per specifications and Tender					
	Document.					
	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	36	EA	1875	67500	
3	along with power supply unit (POE based) with POE injector (industrial grade), with					
3	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	8	EA	562.5	4500	
4	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with					
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras	48	EA	562.5	27000	
5	with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with					
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.	0	EA	0	0	
	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof	U	EA	U	U	
6	HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external					
	surge protection unit and mounting accessories etc complete as per specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade	31	EA	812.5	25187.5	
	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper	31	LA	012.3	23107.3	
7	port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the					
	input power supply as per specifications and Tender Document,					
	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof	31	EA	1687.5	52312.5	
	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU					
	and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of					
	CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays,					
8	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet					
	cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The					
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as					
	per specifications and Tender Document.					
	· · ·			0	0	
	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for			0	0	
	mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting					
	brackets, ladder arrangement (taking into account of safety during climbing) on the pole for					
	installation and maintenance of cameras, SS nut & bolts for fixing camera and other					
	accessories required for complete installation and commissioning of the pole, submission of					
9	structural stability certificate based on existing soil bearing capacity and wind speed from					
	Govt. Engineering colleges etc complete as per specifications and Tender Document of below					
	mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)					
	Installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to					
	Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period					
	including CAMC period at no additional cost to IOCL.					
		40	F.	0750	475500	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10	18	EA	9750	175500	
11	m and LED flood light at 8m of the pole across perimeter as per tender 12 M pole with/without cantilever arrangement	2	EA	11600	23200	
	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at	29	EA	8450	245050	
12	8m of the pole across perimeter as per tender	4.7	LA	0.750	Z-73030	
13	4/6 M pole with Accessories as per specification of Tender	8	EA	4550	36400	
		1	LS	13000	13000	
	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS,					
	Antivirus, LIU etc complete as per specifications and Tender Document.					
14	Note: In case multiple servers are required to meet the tender requirement, vendor to					
14	provide the same at no additional cost to IOCL. In additional to above, Vendor to provide					
	failover server to have redundancy in CCTV server such that failure of one server should not					
	affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.					
	Sorr operation and recording at its rate resolution at its additional cost to lock,				6.16.	
	Installation, configuration, integration, testing and commissioning of Network Attached	609	ТВ	134	81606	
15	Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum					
.,	period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous					
i	recording) complete as per specifications and Tender Document.					

16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be			9750	0	
17	supplied at no additional cost. Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room -	4	EA	1875	7500	
	1no., Marketing Incharge - 1no., Installation, commissioning & integration of video wall along with required controller &	4	EA	2500	10000	
18	complete accessories, cables etc, mounting arrangement from wall/celling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and					
	Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.					
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 113 cameras recording, 113 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	3625	7250	
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595	
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.		EA	6250	6250	
27	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	47	EA	2000	94000	
28	Cabling, JB, Earthing, Surge protection Installation, testing and commissioning of external surge & Lightening protect devices of			0	0	
29	suitable connector and type along with accessories complete as per specification and tender document at following places.	_				
30 31	Type 1 SPD - Earth pit Earth Pit	5	Nos	3625 0	18125 0	
	Euren i ie	l	L	U	ı	I

1				0	0	
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			_	-	
	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology					
	consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns),					
	filled with high conductive & corrosion resistance crystalline mixture and backfilling					
	compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600					
32						
ĺ	mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.	Ī	1			
	Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item					
	also includes provision of earth station flags with pit no's and date of inspection and the next					
	due date of inspection. Job also includes provision of test certificate of earthing station from a					
	class A licensed electrical contractor as per the format of the Corporation.					
33	CCTV system	0	EA	625	0	
34	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender			0	0	
34	specifications.					
35	3CX2.5	7010	RM	27	189270	
36	3C x 4	1460	RM	27	39420	
37	4C x 6	0	RM	45	0	
38	4C x 10	1410	RM	34	47940	
39	4C x 16	1145	RM	65	74425	
40	4C x 25	0	RM	0		
44	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	4800	RM	27	129600	
41	per tender specifications and instructions of Engineer in charge,					
	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	5300	RM	10	53000	
42	specifications and instructions of Engineer in charge.	3300	Idii	10	33000	
-				0	0	
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender	Ī	1	0	0	
	specifications and instructions of Engineer in charge.		 			
44	10 m	10	EA	7.5	75	
45	15 m	10	EA	10	100	
46	20 m	10	EA	12.5	125	
47	25 m	10	EA	17.5	175	
		10				
48	30 m		EA	25	250	
l	Laying, glanding, ferruling, termination of 1C \times 6 Sq. mm Flexible copper insulated green wire	3840	RM	21	80640	
49	for earthing instruments, cable tray at regular interval and junction boxes etc complete as		1			
L_	per specification and tender document	<u>L</u>	<u></u>		<u></u>	
				0	0	
50	Laying of anodized Aluminium perforated cable trays, tray covers along with structural steel	Ī	1			
30	for mounting of the cable tray. Complete as per specifications / tender documents.		1			
E 4		_	D1.	_	^	
51	50 mm	0	RM	0	0	
52	100 mm	3900	RM	217.5	848250	
53	150 mm	2700	RM	240	648000	
54	200 mm	0	RM	507.5	0	
55	300 mm	1300	RM	580	754000	
56						
36	450 mm	0	RM	1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			0	0	
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.					
57						
57	It shall be complete in all respect. Accessories like certified double compression cable glands					
	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS					
	316 fasteners. Complete as per specification / tender documents.					
58	12 ways JB	10	EA	875	8750	
59	8 ways JB	20	EA	750	15000	
60	6 ways JB	50	EA	562.5	28125	
61	4 ways JB	50	EA	375	18750	
		2880	RM	47	135360	
62	Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth					
	station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.					
	Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000		45	45000	
63	Laying of 50 min more pipe of minimum 2,5 min thick along with accessories as per tender					
	and affine the second instructions of France control of the second	1000	RM	43	43000	
<u> </u>	specifications and instructions of Engineer in charge.					
	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10	RM MT	33334	333340	
	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the	10				
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10				
	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the	10				
	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10				
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room,	10		33334	333340	
	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry	10		33334	333340	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender	10		33334	333340	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	10	MT	33334	333340	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	10		0 2175	333340	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services	10	MT	33334 0 2175 0	0 6525	
64 65 66 67	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	10	MT	0 2175	333340	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services	10	MT EA	33334 0 2175 0	0 6525	
64 65 66 67 68	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	3	MT EA	33334 0 2175 0	0 6525	
64 65 66 67	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations, As built drawings	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000	
64 65 66 67 68 69	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000 65000	
64 65 66 67 68 69	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000	
64 65 66 67 68 69	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000 65000	
64 65 66 67 68 69 71 3000	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000 65000	
64 65 66 67 68 69	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000 65000	
64 65 66 67 68 69 71 3000	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000 65000	
64 65 66 67 68 69 71 3000	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	3	MT EA Module	33334 0 2175 0 65000	333340 0 6525 65000 65000	
64 65 66 67 68 69 71 3000 1	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Amual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	3 1 1	MT EA Module LS	2175 0 65000	6525 65000 65000 4508221	
64 65 66 67 68 69 71 3000 1	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost	3 1 1	MT EA Module LS	33334 0 2175 0 65000 65000	6525 65000 65000 4508221	
64 65 66 67 68 69 71 3000 1 2 3 4	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost	10 3 1 1 1	MT EA Module LS LS	2175 0 65000 65000 521503 869172	333340 0 6525 65000 65000 4508221 521503 869172	
64 65 66 67 68 69 71 3000 1 2 3 4 5	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost	10 3 1 1 1 1 1 1	MT EA Module LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006	333340 0 6525 65000 65000 4508221 521503 869172 1043006	
64 65 66 67 68 69 71 3000 1 2 3 4	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost	10 3 1 1 1	MT EA Module LS LS	2175 0 65000 65000 521503 869172 1043006 2433680	333340 0 6525 65000 65000 4508221 521503 869172	
64 65 66 67 68 69 71 3000 1 2 3 4 5	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost	10 3 1 1 1 1 1 1	MT EA Module LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006	333340 0 6525 65000 65000 4508221 521503 869172 1043006	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Firth Year @3% of the basic CAPEX cost Firth Year @3% of the basic CAPEX cost Firth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 6 7 7 8	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @3% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Seventh Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost	10 3 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS	2175 0 65000 65000 521503 869172 1043006 2433680	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sub TOTAL (III) - CAMC (excluding GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	521503 869172 104306 2433680 1390674 2433680 8691715	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 6 7 7 8	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Swenth Year @3% of the basic CAPEX cost Swenth Year @7% of the Dasic CAPEX Cost	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 8691715 30258628.49	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 6 7 7 8	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sub TOTAL (III) - CAMC (excluding GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	521503 869172 104306 2433680 1390674 2433680 8691715	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 6 7 7 8	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Swenth Year @3% of the basic CAPEX cost Swenth Year @7% of the Dasic CAPEX Cost	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 8691715 30258628.49	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 7 8 9	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @3.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Seventh Year @4% of the basic CAPEX cost Seventh Year @7% of the basic CAPEX cost Sub TOTAL (III) - CAMC (excluding GST) Sub TOTAL (III) - CAMC (excluding GST) Sub TOTAL - Supply Component @ 18% Total - Supply Component (including GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 8691715 30258628.49 5446553.128	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 7 8 9	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sub TOTAL (III) - CAMC (excluding GST) Sub TOTAL Supply Component (excluding GST) Sub Total - Supply Component (including GST) Sub Total - Supply Component (including GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 8691715 30258628.49 5446553.128 3705181.62 4508221	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 7 8 9	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2,5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Swenth Year @7% of the basic CAPEX cost Sub Total - Supply Component @ 18% Total - Supply Component (excluding GST) Sub Total - Supply Component (excluding GST) Sub Total - Supply Component (excluding GST) Sub Total - Service Component (excluding GST) GST on Service Component (excluding GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 1390674 2433680 30258628.49 5446553.128 35705181.62 4508221 811479.78	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 7 8 9	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @3% of the basic CAPEX cost Fifth Year @3% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @7% of the basic CAPEX cost Sub TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component @18% Total - Supply Component (excluding GST) Sub Total - Service Component (excluding GST) Sub Total - Service Component (excluding GST) Total - Service Component (including GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 8691715 30258628.49 5446553.128 35705181.62 4508221 811479.78 5319700.78	
64 65 66 67 68 69 71 3000 1 2 3 4 5 6 7 8 9	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid. First Year - Warranty Second Year @1.5% of the basic CAPEX cost Third Year @2,5% of the basic CAPEX cost Fifth Year @7% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Sixth Year @4% of the basic CAPEX cost Swenth Year @7% of the basic CAPEX cost Sub Total - Supply Component @ 18% Total - Supply Component (excluding GST) Sub Total - Supply Component (excluding GST) Sub Total - Supply Component (excluding GST) Sub Total - Service Component (excluding GST) GST on Service Component (excluding GST)	10 3 1 1 1 1 1 1 1 1	MT EA Module LS LS LS LS LS LS LS	33334 0 2175 0 65000 65000 521503 869172 1043006 1390674	333340 0 6525 65000 65000 4508221 521503 869172 1043006 2433680 1390674 2433680 1390674 2433680 30258628.49 5446553.128 35705181.62 4508221 811479.78	

	GST on Supply and Service Component @ 18%		6258032.908	
С	Total CAPEX - Supply + Service Component (including GST)		41024882.4	
	Sub Total - CAMC Component (excluding GST)		8691715	
	GST on CAMC Component @ 18%		1564508.7	
D	Total - CAMC Component (including GST)		10256223.7	
	Total - Supply + Service+CAMC Component (excluding GST)		43458564.49	
	GST on Supply, Service and CAMC Component @ 18%		7822541.608	
	Grand Total of Supply + Service + CAMC cost including GST		51281106.1	

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE TONDIARPET TERMINAL - TNSO

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6

Ref TNSO/ENGG/TONDIARPET TERMINAL

Date

Tuesday, May 17, 2022

1000 IP BASED CCTV SURVEILLANCE SYSTEM TOTAL AMOUNT OTY UOM RATE Remarks Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit EA 21025 42050 (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector 18 EΑ 48813 878634 3 (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.

Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with powe 16 EΑ 30320 485120 supply unit (POE based), with inbuilt/external surge protection unit and mounting accessorie etc complete as per specifications and Tender Document, 45625 1870625 Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power FΔ supply unit (POE based), with inbuilt/external surge protection unit and mounting accessorie etc complete as per specifications and Tender Document.

Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with powe 329250 EΑ supply unit , with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting 41177 1276487 FΔ Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. EΑ 52471 1626601 Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components 8 accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs. Exd double compression cable glands etc as per specifications and Tender Document. 0 Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL 10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera a 68955.6 551644.48 10 m and LED flood light at 8m of the pole across perimeter as per tender 12 M pole with cantilever arrangement FΔ 36975 73950 8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood 33 EΑ 30450 1004850 light at 8m of the pole across perimeter as per tender 4/6 M pole with Accessories as per specification of Tender 19575 313200 16 EΑ Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender 14 Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should no affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing 596 ТВ 9412 5609552 recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tende Note: Storage Calculation to be submitted for information. Supply of CCTV client work station along with client software & licenses, key board, mouse 0 hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no.. Security EΑ 32500 97500 Room - 1no., Marketing Incharge - 1no

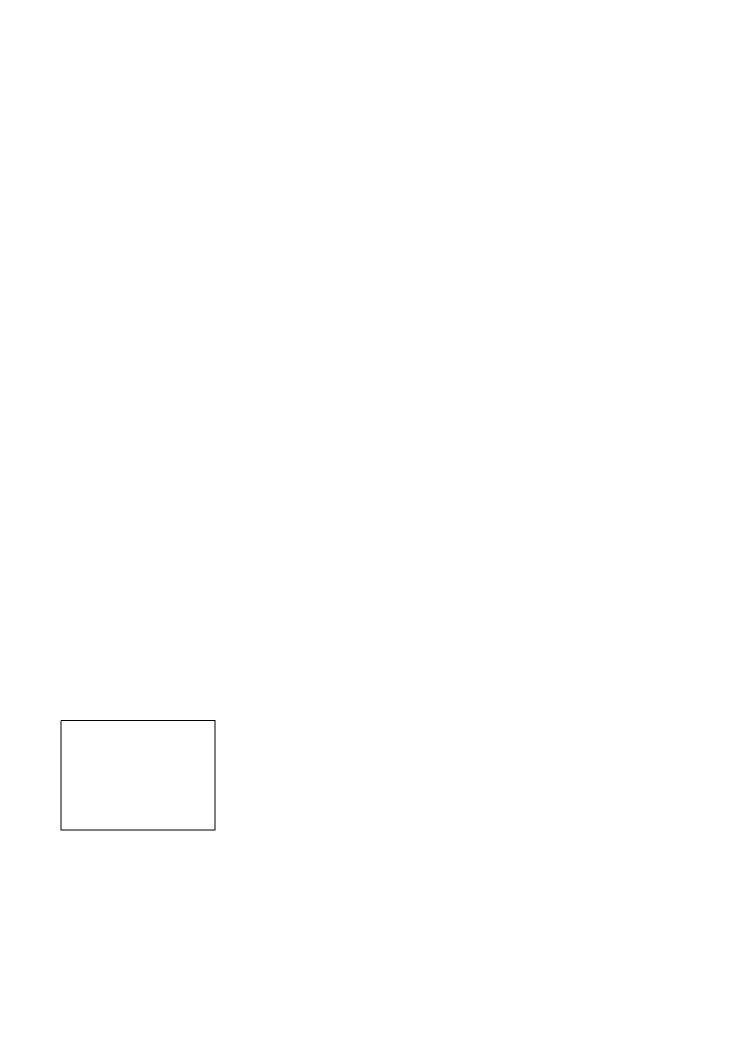
Design & Supply of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	
Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no, of hooter with provision of dual tone sound,ack push	
button & accessories.	
Design & Supply of video wall along with controller & complete accessories , cables etc. for 2 EA 281250 562500 CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	
Design & Supply of video wall along with controller & complete accessories , cables etc. for 2 EA 281250 562500 CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	
Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site 2 EA 217791 435581.16 requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note-The switches are required to be configured in dual redundant mode.	
Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 93 cameras recording, 93 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos, of cameras installed + 20% extra which ever is higher.	
Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	
Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN , rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	
Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet 2 EA 8874 17748 switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	
Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	
Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	
28 Cabling, JB, Earthing, Surge Protection Device 0 0	
Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.	
30 Type 1 SPD - Earth pit 5 Nos 5883 29415 31 Earth Pit 0 0	
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.	
33 CCTV system 8 EA 20000 160000	
34 Supply of FRLS Armoured Copper Power cable as per tender specifications. 0 0	
35 3CX2.5 6955 RM 112 778960	
36 3C x 4 1040 RM 135 140400 37 4C x 6 0 RM 315 0	
38 4C x 10 2010 RM 448 900480	
39 4C x 16 1150 RM 580 667000	
39 4C x 16 1150 RM 580 667000 40 4C x 25 0 RM 3750 0 0 RM 3750 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
39 4C x 16 1150 RM 580 667000 40 4C x 25 0 RM 3750 0 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and 4900 RM 56 274400 instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of 4200 RM 50 210000	
39 4C x 16 1150 RM 580 667000 40 4C x 25 0 RM 3750 0 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 4900 RM 56 274400	

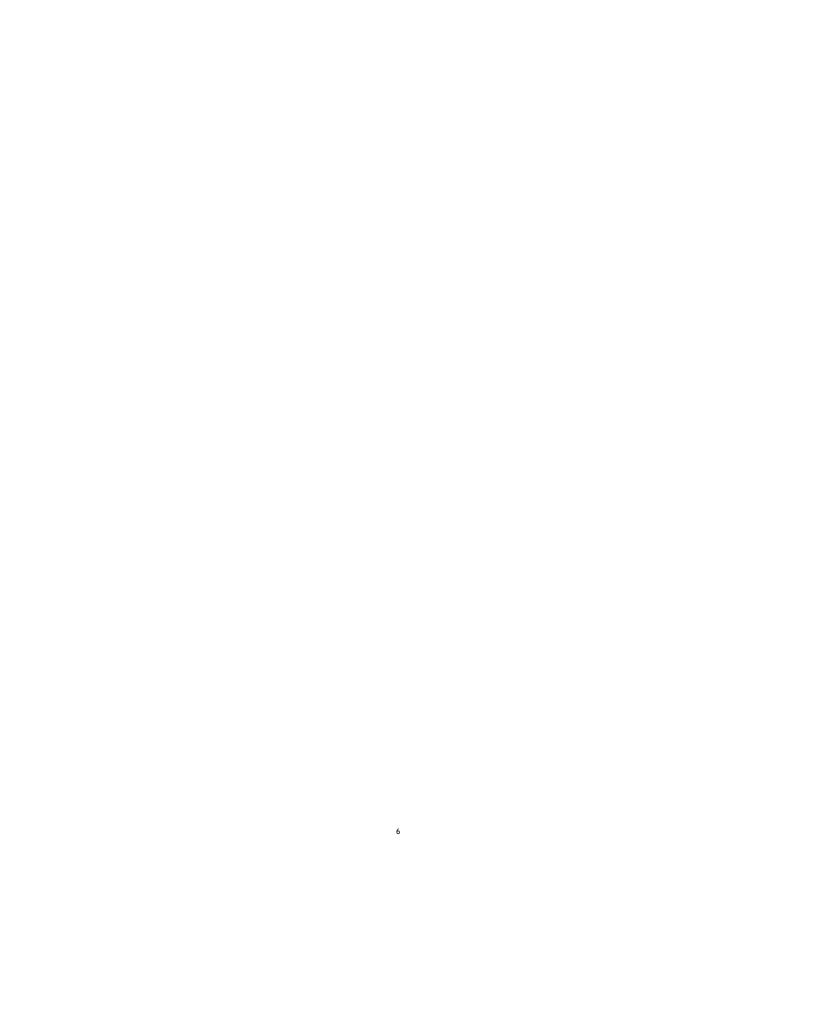
45	15 m	10	EA	145	1450	ı
46	20 m	10	EA	145	1450	
47	25 m	10	EA	145	1450	
48	30 m	10	EA	145	1450	
49	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	3920	RM	58	227360	
50	Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51	50 mm	0	RM	0	0	
52	100 mm	3300	RM	357.5	1179750	
53 54	150 mm 200 mm	2200	RM RM	455 578.5	1001000	
55	300 mm	1300	RM	715	929500	
56	450 mm	0	RM	0	0	
57	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0	
58	12 ways JB	10	EA	5598.45	55984.5	
59 60	8 ways JB 6 ways JB	20 50	EA EA	5598.45 3110.25	111969 155512.5	
61	4 ways JB	50	EA	782.28	39114	
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2		RM	89	261660	
63	as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM	77	77000	
64	Specifications and instructions of engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc		MT	90625	906250	
65	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0	
66	MCT Block	3	EA	19125	57375	
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				28550469.89	
2000	SERVICE COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM					
2	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	1125	
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	1875	33750	
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	9000	
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	23062.5	
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	0	0	
7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	31	EA	812.5	25187.5	
8	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	1687.5	52312.5	
9	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender 12 M pole with/without cantilever arrangement	8	EA EA	9750 11600	78000 23200	
	The state of the s					t.

40	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at	33	EA	8450	278850	
12	8m of the pole across perimeter as per tender	16	EA	4550	72800	
14	4/6 M pole with Accessories as per specification of Tender Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	16	LS	13000	72800 13000	
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	596	ТВ	134	79864	
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.			9750	0	
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room -	3	EA	1875	5625	
18	1no., Marketing Incharge - 1no., Installation,commissioning & integration of video wall along with required controller & complete accessories, cables etc, mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	4	EA	2500	10000	
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.					
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 93 cameras recording, 93 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalls, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	3625	7250	
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595	
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250	

27	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete		EA	2000	82000	
	with labour and materials asper drawings, specifications and directions of the Engineer-in- Charge.					
28	Cabling, JB, Earthing, Surge protection			0	0	
29	Installation, testing and commissioning of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender $\frac{1}{2}$			0	0	
30	document at following places. Type 1 SPD - Earth pit	5	Nos	3625	18125	
31	Earth Pit	<u> </u>	1405	0	0	
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			0	0	
32	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.l. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted, Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.					
33	CCTV system	8	EA	625	5000	
34	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.			0	0	
35	3CX2.5	6955	RM	27	187785	
36	3C x 4	1040	RM	27	28080	
37 38	4C x 6 4C x 10	2010	RM RM	45 34	0 68340	
39	4C x 16	1150	RM RM	65	74750	
40	4C x 25	0	RM	0	50	
	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	_	RM	27	132300	
41	per tender specifications and instructions of Engineer in charge. Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender		RM	10	42000	
43	specifications and instructions of Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0	
	specifications and instructions of Engineer in charge.			7.5	7-	
44 45	10 m	10 10	EA	7.5	75	
46	15 m 20 m	10	EA EA	10 12.5	100 125	
47	20 m	10	EA	17.5	175	
48	30 m	10	EA	25	250	
49	Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	3920	RM	21	82320	
50	Laying of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51	50 mm	0	RM	0	0	
52	100 mm	3300	RM	217.5	717750	
53	150 mm	2200	RM	240	528000	
54 55	200 mm 300 mm	1300	RM RM	507.5 580	754000	
56	450 mm	0	RM	1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0	
58	12 ways JB	10	EA	875	8750	
59	8 ways JB	20	EA	750	15000	
60	6 ways JB	50	EA	562.5	28125	
61	4 ways JB	50	EA	375	18750	
62	Fabrication, cutting, laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	2940	RM	47	138180	
63	Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM	45	45000	
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc		MT	33334	333340	
65	note place etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0	
66	MCT Block	3	EA	2175	6525	
67	Other Services			0		
68	Providing training to IOCL employee as per schedule/Module for one days as per tender document	1	Module	65000	65000	
69	Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc. complete as per tender	1	LS	65000	65000	
71 3000	SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III				4190716.5	
1	Comprehensive AMC - PAKT -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.					
2	First Year - Warranty Second Year @1.5% of the basic CAPEX cost	1	LS	491118	491118	
	Second real @1.3% of the pasic CALEA COSE		LS	471110	471110	

4	Third Year @2.5% of the basic CAPEX cost	1	LS	818530	818530	
5	Fourth Year @3% of the basic CAPEX cost	1	LS	982236	982236	
6	Fifth Year @7% of the basic CAPEX cost	1	LS	2291884	2291884	
7	Sixth Year @4% of the basic CAPEX cost	1	LS	1309648	1309648	
8	Seventh Year @7% of the basic CAPEX cost	1	LS	2291884	2291884	
9	SUB TOTAL (III) - CAMC (excluding GST)				8185300	
	Sub Total - Supply Component (excluding GST)				28550469.89	
	GST on Supply Component @ 18%				5139084.58	
Α	Total - Supply Component (including GST)				33689554.47	
	Sub Total - Service Component (excluding GST)				4190716.5	
	GST on Service Component @ 18%				754328.97	
В	Total - Service Components (including GST)				4945045.47	
	Total CAPEX - Supply + Service Component (excluding GST)				32741186.39	
	GST on Supply and Service Component @ 18%				5893413.55	
С	Total CAPEX - Supply + Service Component (including GST)				38634599.94	
	Sub Total - CAMC Component (excluding GST)				8185300	
	GST on CAMC Component @ 18%				1473354	
D	Total - CAMC Component (including GST)				9658654	
	Total - Supply + Service+CAMC Component (excluding GST)				40926486.39	
	GST on Supply, Service and CAMC Component @ 18%				7366767.55	
	Grand Total of Supply + Service + CAMC cost including GST				48293253.94	





INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE TRICHY TERMINAL - TNSO

Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6

Ref TNSO/ENGG/TRICHY TERMINAL

Date Tuesday, May 17, 2022 SUB:

1000	SUPPLY COMPONENTS	0=		D.==	TOTAL (
1	IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT	Remarks
_	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit	2	EA	21025	42050	
2	(POE based), with inbuilt/external surge protection unit and mounting accessories etc					
	complete as per specifications and Tender Document.	20	F.4	40043	07/2/0	
,	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector		EA	48813	976260	
3	(industrial grade), with inbuilt/external surge protection unit and mounting accessories etc					
	complete as per specifications and Tender Document.		F.4	20220	242570	
	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power	8	EA	30320	242560	
4	supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories					
	etc complete as per specifications and Tender Document.	- 44	F.4	45425	4070/25	
_	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power	41	EA	45625	1870625	
5	supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories					
	etc complete as per specifications and Tender Document.	_		200050		
	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power	0	EA	329250	0	
6	supply unit, with inbuilt/external surge protection unit and mounting accessories etc					
	complete as per specifications and Tender Document.			=	4450054	
	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting	28	EA	41177	1152956	
7	Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge					
	protector (Type 1+2) at the input power supply as per specifications and Tender Document.					
	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for	28	EA	52471	1469188	
	installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge					
	protectors and other accessories of CCTV cameras. Supply of required OFC components &					
8	accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords,					
	pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for					
	functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd.					
	double compression cable glands etc as per specifications and Tender Document.					
	double compression cable glands etc as per specifications and Tender Document,					
	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for			0	0	
	mounting of CCTV cameras along with civil foundation along with GI foundation bolt,					
	mounting brackets, ladder arrangement (taking into account of safety during climbing) on the					
	pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other					
	accessories required for complete installation and commissioning of the pole, submission of					
	structural stability certificate based on existing soil bearing capacity and wind speed from					
9	Govt. Engineering colleges etc complete as per specifications and Tender Document of below					
	mentioned height of the pole. (Foundation drawing and other details to be submitted prior to					
	installation as per tender document)					
	Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to					
	arrange for ladder for installation & maintenance purpose throughout the contract period					
	including CAMC period at no additional cost to IOCL.					
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at	10	EA	68955.6	689555.6	
	10 m and LED flood light at 8m of the pole across perimeter as per tender					
11	12 M pole with cantilever arrangement	2	EA	36975	73950	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood	31	EA	30450	943950	
	light at 8m of the pole across perimeter as per tender					
13	4/6 M pole with Accessories as per specification of Tender	8	EA	19575	156600	
	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and	1	LS	607675	607675	
	combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender	1				
	Document.	1				
14	Note: In case multiple servers are required to meet the tender requirement, vendor to	1				
'-	provide the same at no additional cost to IOCL. In additional to above, Vendor to provide					
1	failover server to have redundancy in CCTV server such that failure of one server should not					
		1				
	affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.					
	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing	519	TB	9412	4884828	
1	recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video	1				
15	quality of all cameras (Continuous recording) complete as per specifications and Tender	1				
	Document,	1				
	Note: Storage Calculation to be submitted for information.					
1	Supply of CCTV client work station along with client software & licenses, key board, mouse,			0	0	
	hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc	1				
	complete as per specifications and Tender Document. (Location : Control Room - 2 no.(1No					
1	for Pipeline, 1 No for Marketing), Security room- 1 no. ,Mkt. TM room - 1 no.,Pipeline TM Room					
	- 1 no.)	1				
٠	, , , , , , , , , , , , , , , , , , ,	1				
16	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors .	1				
1	Required hardware & software is to be provided for the same, Incase the offered work station	1				
1	· ·	1				
1	do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room	1				
			1	1		
	•					
	shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be					
17	•		EA	32500	97500	

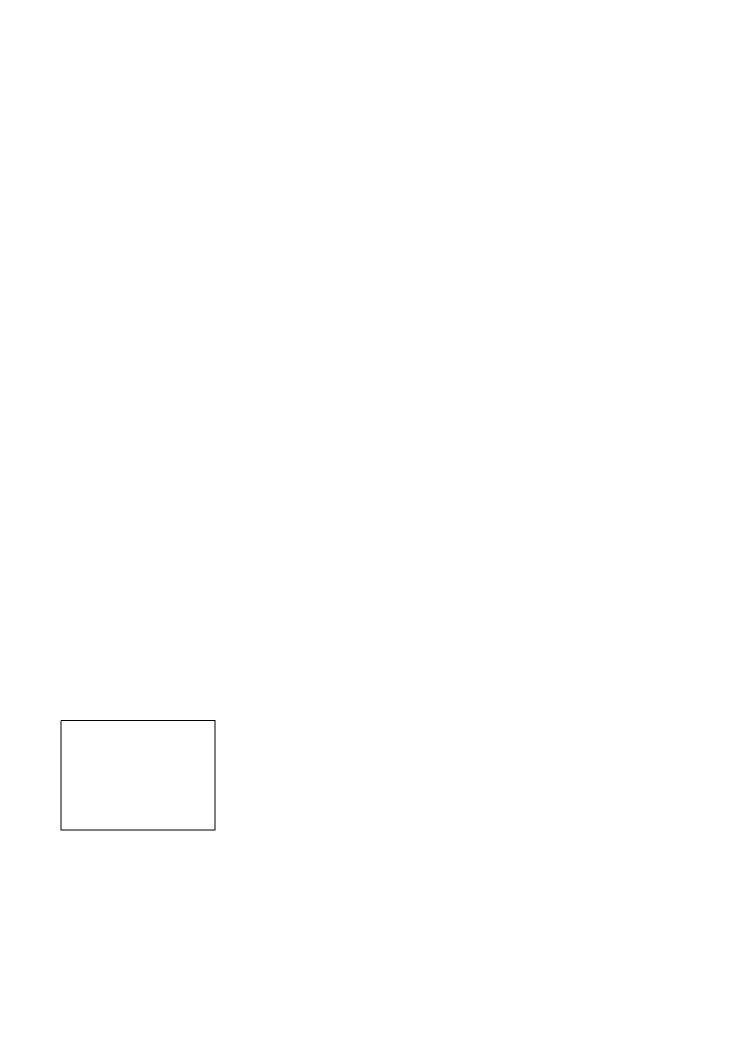
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19 CCTV completes as pare specifications and tender document. In bacterion for large proconspecified privation date should be preferably be between 255-100 cm2 Design 5 Supply of 1966 well allow with controller 6 complete accessories; calibre set. 67 CCTV complete approximation of the controller 6 complete accessories; calibre set. 67 CCTV complete approximation of the controller 6 complete accessories; calibre set. 67 CCTV complete approximation of the controller 6 complete accessories; calibre set. 67 CCTV complete approximation of the controller 6 complete accessories in a calibre set. 67 Supply of 1967 and		button & accessories.		<u> </u>	204250	5/2500	
being it Supply of victors wall along with controller it complete accessories , cables etc. Fig. 2 10 CTC complete a party participation and inclination of the profession of	19	CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2	2	EA	281250	562500	
accessories complete as per specifications and Tender Document. Make: The workflow are resoluted lock confidenced in display and the Complete and the Complete as per specifications and Tender Document. Make: The workflow are resoluted lock confidenced in display and the Complete as per specifications and Tender Document with minimum 8c camers. (NOS) complete as per specifications and Tender Document with minimum 8c camers. Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Software for all fixed camers (including varification). Supply of Advanced Analytics Software for all fixed camers (including varification). Supply of Advanced Analytics Software for analytic sof	20	CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (EA	281250	562500	
Supply of Intelligent video operation, control, management, recording & processing surflowers 2 (MS) complete as per specifications and Tender Document with minum 8c amoras 3 (Supply of Administrative Video analytics for all PTZ camera along with compatible Redendant Analytics Sare with 105, Anthrive set Including subject (components) 4 (Supply of Administrative Video analytics (and EPTZ camera along with compatible Redendant Analytics Sare with 105, Anthrive set Including subject (components) 5 (Supply of Ad II Red. Richards) 5 (Supply of Administrative Video analytics (and EPTZ camera along with compatible Redendant Analytics Sarewry Lth 3, Anthrive actinately supply and the CPTZ camera along with compatible redendant Analytics Sarewry, Analytics Sarewry, ModSAN ; rack mounted monitors, Rack mounted largebourd, monous, et al. or industrial get with With weather, proved and compatible video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents. 5 (Supply of Video Mill mounted Network Rack-minimum video video of the CPTZ camera and tender documents in the provided in an administrative video of the CPTZ camera and tender documents. 5 (Supply of Video Mill mounted Network Rack-minimum video of the CPTZ camera and tender documents and tender documents.) 5 (Supply of Video Mill mounted Network Rack-minimum video of the CPTZ camera and tender documents.) 5 (Supply of Video Mill mounted Network Rack-minimum video of the CPTZ camera and tender documents.) 5 (Supply of Mill mounted Network Rack-minimum video of the CPTZ camera and ten	21	requirement + 20 $\%$ spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	2	EA	217791	435581.16	
Supply of Advanced Analytics Software for all fixed cameras (including varificat, MTZ fixed) 2 cameras, Auto tracking video analytics for all TZC camera along with compatible Redunder or camera installed ~ 20% spare complete as per specifications and Tender Document. 2 supply of 42 U Rask Enclosure cabinet/system cabinet with 19° rack stae, along with accessorise like Blometric fingerprint cum contactless smart card reader with accessorie like Ui, splice revip, saded adaptor, blank plates, UTP called with a camera with a camer	22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 86 cameras recording, 86 cameras viewing license, 5 LISC licence for remote viewing or as per actual		LS	544163	544163.25	
Accessories like Biometric Imperpriat com commissions want card reader with accessories, limits switches, earthing arrangements, breader, fluxes, required OFC components is accessories like Lity, splice trays, loaded adaptor, blank plates, UTP cables, lither patch cords, pipalists, large, test complete as per specification and tender document. For mounting of CCTV Servers, Analytics Servers, MASSAN , rack mounted emoitors, Rack mounted keyboard, mouse, 4 port industrial grade RVM switches, power adapters, layer 3 themest witch, PDB panel if regeried separate to be provided at no additional cost, MEG, each part of the provided and an additional cost, MEG, and tender document. Supply of Wall mounted Network Rack-minimum 10U 19° Rack for mounting of Ethernet switch, PDB panel if regeried separate to be provided at no additional cost, MEG, fran, mounting accessories et complete in all respective a Security Room, Thi froom for CCTV specification and tender occument. Supply of Wall mounted Network Rack-minimum 10U 19° Rack for mounting of Ethernet synthesis and the specification and tender occuments along with accessories in the power sockets, MEG, fran, mounting accessories et complete in all respective a Security Room, Thi froom for CCTV specification and tender occument. Supply of waster capacity for future load connection. The scope also includes supply of parallel battery banks (2x509) for minimum back up this of the brust affull load critical capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document. Supply of 330 W LED fixed ONLY light juminaries on Light poles up to 10th height including supply and the specification and tender document. Supply of Rinting of clamps, scalefulling, temporary fix excere frequently, supports, nucleic, supports, nuclei	23	cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera		LS	1764706	1764706	
mounting accessories etc complete in all respective at 5 Scurity Room, TM room for CCTV equipment's Supply installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% space apacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document. Supply 6 fixing of clamps, scafolding, temporary fire screen if required, supports, nust, bolts, earthing , required modification infixing arrangement , Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. 28 Cabling, 8B, Earthing, Super Protection Devote: 29 Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 1590 - Earth pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip salvanized (80 - 100 microns), filled with high conductive & corrosion resistance crystalline mixture and bacifilling compound around electrode, brick masonry earth including plastering in CM 114, 600x600 mm CL. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Hem also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of text orthicate of earthing station from a class A licensed electrical contractor as per the format of	24	accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification		EA	64706	129412	
Supply of Story or as per load calculation (whichever is higher) for entire CCTV equipments with 305 spare capacity for future load connection. The scope also includes supply of parallel battery bank (230%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document. Supply of 350 W LED flood ORLY light furninaries on Light poles up to 10M height including supply in the property of the control of	25	switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV		EA	8874	17748	
supply 6 fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing , required modification infixing arrangement , Supply and welding of mounting structure as per site condition , painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. 28 Cabling, JB, Earthing, Surge Protection Device 29 Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 1 SPD - Earth pit 31 Earth Pit 32 Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and is Gode to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of earth station. Job also includes provision of earth sta	26	of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as		EA	294118	294118	
Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 1 SPD - Earth pit 31 Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection also so includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 31 CCTV system 32 Supply of FRLS Armoured Copper Power cable as per tender specifications. 33 CX-4 PATO RM 315 0 0 0 0 0 0 0 0 0 0 0 0 0	27	supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper		EA	12353	506473	
Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 1 SPD - Earth pit 31 Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection also sincludes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33 CCTV system	28	Cabling, JB, Earthing, Surge Protection Device			0	0	
Supply of FRLS Armoured Copper Power cable as per tender specifications. 31 Earth Pit Supply of FRLS Armoured Copper Power cable as per tender specifications. 32 CCTV system 33 CCTV system 34 Supply of FRLS Armoured Copper Power cable as per tender specifications and 4 Supply of FRLS Armoured Copper Power cable as per tender specifications and 40 C x 25 32 A C x 4	29				0	0	
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33			5	Nos			
34 Supply of FRLS Armoured Copper Power cable as per tender specifications. 0 0 0 355 3CX2.5 6980 RM 112 781760 36 3C × 4 2410 RM 135 325350 37 4C × 6 0 RM 315 0 0 38 4C × 10 2610 RM 448 1169280 39 4C × 16 0 RM 580 0 0 0 0 0 0 0 0 0		Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical					
35 3CX2.5 6980 RM 112 781760 36 3C x 4 2410 RM 135 325350 37 4C x 6 0 RM 315 0 38 4C x 10 2610 RM 448 1169280 39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 40 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and dinstructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.	33	CCTV system	8	EA	20000	160000	
36 3C x 4 2410 RM 135 325350 37 4C x 6 0 RM 315 0 38 4C x 10 2610 RM 448 1169280 39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.							
37 4C x 6 0 RM 315 0 38 4C x 10 2610 RM 448 1169280 39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 580 0 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. RM 56 268800 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 8M 50 200000 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 0 0							-
38 4C x 10 39 4C x 16 40 4C x 25 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.							
40 4C x 25 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of 4000 RM 50 200000 Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of 50 0 0	38	4C x 10	2610	RM	448	1169280	
Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of tender specifications and instructions o							
distructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of 4000 RM 50 200000							
Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.		instructions of Engineer in charge.					
specifications and instructions of Engineer in charge.		Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0		
			10	EA	145	1450	

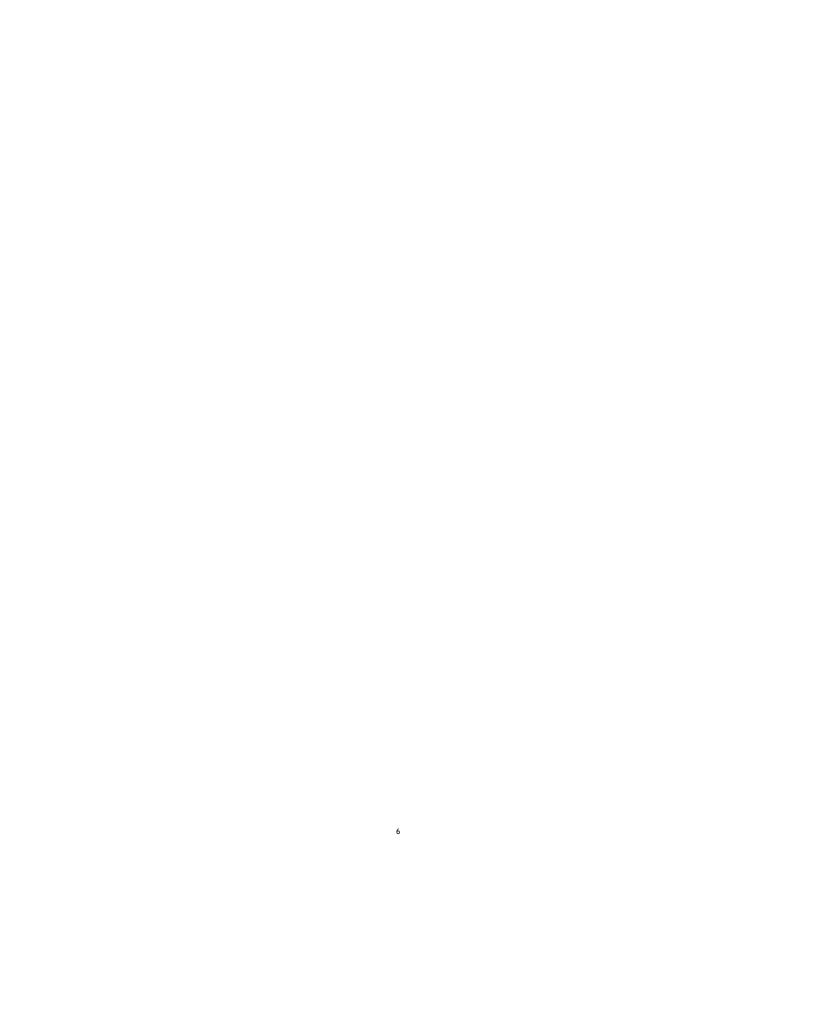
45	ler.	40		4.45	4.450	T
45	15 m	10	EA	145	1450	
46	20 m	10	EA	145	1450	
47	25 m	10	EA	145	1450	
48	30 m	10	EA	145	1450	
	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable	3840	RM	58	222720	
		3040	IVVI	30	222720	
49	tray at regular interval and junction boxes etc complete as per specification and tender					
	document					
				0	0	
50	Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel					
30	for mounting of the cable tray. Complete as per specifications / tender documents.					
51	50 mm	0	RM	0	0	
52	100 mm	3400	RM	357.5	1215500	
53	150 mm	2200	RM	455	1001000	
54	200 mm	1500	RM	578.5	867750	
55	300 mm	0	RM	715	0	
56	450 mm	0	RM	0	0	
				0	0	
	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			ŭ	·	
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.					
57	It shall be complete in all respect. Accessories like certified double compression cable glands					
37						
	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS					
1	316 fasteners. Complete as per specification / tender documents.	l				
					FF00 4 F	
58	12 ways JB	10	EA	5598.45	55984.5	1
59	8 ways JB	20	EA	5598.45	111969	<u> </u>
60	6 ways JB	50	EA	3110.25	155512.5	
		50				†
61	4 ways JB		EA	782.28	39114	
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2	2880	RM	89	256320	
	as per IS 4759) shall be done after all fabrication.	Щ_				
	Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM	77	77000	
63	specifications and instructions of Engineer in charge.		Ĭ.			
	specifications and moductions of Engineer in charge,	10	117	00425	004350	
1	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above	10	MT	90625	906250	
64	ground cables at road crossing or any other place within the Terminal including painting, Civil	l				
04		l				
	foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	l				
	Supply of MCT block for optics CCTV system to Control Proceed Admin Building C.C.			0	0	
	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security			U	U	
65	Room with minimum 50% spare MCT blocks for future cable entry along with frame and					
	mounting accessories complete as per specification and tender document,					
66	MCT Block	3	EA	19125	57375	
67				17123	27058249.01	
	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				27036249.01	
2000	SERVICE COMPONENTS					
1	IP BASED CCTV SURVEILLANCE SYSTEM					
	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome	2	EA	562.5	1125	
				302.3	25	
2	camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with					
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	20	EA	1875	37500	
	along with power supply unit (POE based) with POE injector (industrial grade), with					
3						
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	8	EA	562.5	4500	
	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with					
4						
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras	41	EA	562.5	23062.5	
	with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with					
5						
	inbuilt/external surge protection unit and mounting accessories etc complete as per					
	specifications and Tender Document.					
	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof	0	EA	0	0	
	HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external	l				
6		l				
1	surge protection unit and mounting accessories etc complete as per specifications and Tender	l				
	Document,					ļ
1	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade	28	EA	812.5	22750	
1 _	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper	l				
7	port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the	l				
1		l				
-	input power supply as per specifications and Tender Document.	2.5		4/0= -	.=0=-	
	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof	28	EA	1687.5	47250	
	, , , , , , , , , , , , , , , , , , , ,	l				
1	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU	l	ĺ			I
1	and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of	l	ĺ			I
1 _	CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays,	l				
8	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet	l				
	nonce acapto, biain places, oti cables, tible patell colus, pigtalls, tags, ties, tillelliet	l				
1	sphile with DIAE connector at complete in all account for functioning of CCTV		1			
	cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The					
ĺ	cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as					
	, , , , , , , , , , , , , , , , , , , ,					
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.			-		
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as			0	0	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for			0	0	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt,			0	0	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the			0	0	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt,			0	0	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other			0	0	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to			0	0	
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.					
9	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.		EA	9750	97500	
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.	10	EA			
	scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.		EA EA			

4.5	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at	31	EA	8450	261950	1
12	8m of the pole across perimeter as per tender					
13	4/6 M pole with Accessories as per specification of Tender Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	4550 13000	36400 13000	
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	519	ТВ	134	69546	
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.			9750	0	
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3	EA	1875	5625	
18	Into, marketing initialize: nito., Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	4	EA	2500	10000	
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.					
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 86 cameras recording, 86 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalls, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	3625	7250	
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595	
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250	

						T
	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light		EA	2000	82000	
	poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen					
27	if required, supports, nuts,bolts, earthing , required modification infixing arrangement ,					
	Supply and welding of mounting structure as per site condition, painting etc. all complete					
	with labour and materials asper drawings, specifications and directions of the Engineer-in-					
20	Charge.			_		
28	Cabling, JB, Earthing, Surge protection			0	0	
20	Installation, testing and commissioning of external surge & Lightening protect devices of			0	0	
29	suitable connector and type along with accessories complete as per specification and tender					
30	document at following places.	5	NI	2/25	18125	
	Type 1 SPD - Earth pit	3	Nos	3625		
31	Earth Pit			0	0	
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			U	U	
	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology					
	consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns),					
	filled with high conductive & corrosion resistance crystalline mixture and backfilling					
32	compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600					
	mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.					
	Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item					
	also includes provision of earth station flags with pit no's and date of inspection and the next					
	due date of inspection. Job also includes provision of test certificate of earthing station from					
	a class A licensed electrical contractor as per the format of the Corporation.					
33	CCTV system	8	EA	625	5000	
	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender			0	0	
34	specifications.	L				
35	3CX2.5	6980	RM	27	188460	
36	3C x 4	2410	RM	27	65070	
37	4C x 6	0	RM	45	0	
38	4C x 10	2610	RM	34	88740	
39	4C x 16	0	RM	65	0	
40	4C x 25	0	RM	0		
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	4800	RM	27	129600	
41	per tender specifications and instructions of Engineer in charge.					
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	4000	RM	10	40000	
42	specifications and instructions of Engineer in charge.					
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0	
43	specifications and instructions of Engineer in charge.					
44	10 m	10	EA	7.5	75	
45	15 m	10	EA	10	100	
46	20 m	10	EA	12.5	125	
47	25 m	10	EA	17.5	175	
48	30 m	10	EA	25	250	
	Laying, glanding, ferruling, termination of 1C \times 6 Sq. mm Flexible copper insulated green wire	3840	RM	21	80640	
49	for earthing instruments, cable tray at regular interval and junction boxes etc complete as					
	per specification and tender document					
				0	0	
50	Laying of anodized Aluminium perforated cable trays, tray covers along with structural steel					
	for mounting of the cable tray. Complete as per specifications / tender documents.					
51	50 mm	0	RM	0	0	
52	100 mm	3400	RM	217.5	739500	
53	150 mm	2200	RM	240	528000	
54	200 mm	1500	RM	507.5	761250	
55	300 mm				0	
		0	RM	580		
56	450 mm	0	RM RM	1300	0	
56		0				
56	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification	0		1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.	0		1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands	0		1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS	0		1300	0	
57	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	0	RM	1300	0	
57	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	10	RM EA	1300 0	0 0 8750	
57 58 59	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	10 20	RM EA EA	1300 0 875 750	0 0 8750 15000	
57 58 59 60	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	10 20 50	EA EA EA	875 750 562.5	8750 15000 28125	
57 58 59	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	10 20 50	EA EA EA EA	875 750 562.5 375	8750 15000 28125 18750	
57 58 59 60 61	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	10 20 50	EA EA EA	875 750 562.5	8750 15000 28125	
57 58 59 60	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB	10 20 50	EA EA EA EA	875 750 562.5 375	8750 15000 28125 18750	
57 58 59 60 61	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	10 20 50 50 2880	EA EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360	
57 58 59 60 61	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	10 20 50 50 2880	EA EA EA EA	875 750 562.5 375	8750 15000 28125 18750	
57 58 59 60 61 62	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	10 20 50 50 2880	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360	
57 58 59 60 61 62	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10 20 50 50 2880	EA EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360	
57 58 59 60 61 62	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m² as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the	10 20 50 50 2880	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360	
58 59 60 61 62	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m² as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets,	10 20 50 50 2880	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360	
58 59 60 61 62	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10 20 50 50 2880 1000	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control	10 20 50 50 2880	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360	
58 59 60 61 62	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc. Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cables.	10 20 50 50 2880 1000	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender	10 20 50 50 2880 1000	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	10 20 50 50 2880	EA EA EA EA RM RM MT	875 750 562.5 375 47 45 33334	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63 64 65	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	10 20 50 50 2880 1000	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63 64 65 66 67	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services	10 20 50 50 2880 1000	EA EA EA EA RM RM MT	875 750 562.5 375 47 45 33334	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63 64 65	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	10 20 50 50 2880 1000	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63 64 65 66 67 68	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 staeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 8 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	10 20 50 50 2880 1000	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334	8750 15000 28125 18750 135360 45000 333340	
57 58 59 60 61 62 63 64 65 66 67	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 15000 28125 18750 135360 45000 333340 0	
57 58 59 60 61 62 63 64 65 66 67 68	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 steeners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 15000 28125 18750 135360 45000 333340 0	
57 58 59 60 61 62 63 64 65 66 67 68 69	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc. Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 8750 15000 28125 18750 135360 45000 333340 0	
57 58 59 60 61 62 63 64 65 66 67 68 69 71	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 8750 15000 28125 18750 135360 45000 333340 0	
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57 58 59 60 61 62 63 64 65 66 67 68 69 71 3000	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 8750 15000 28125 18750 135360 45000 333340 0	
57 58 59 60 61 62 63 64 65 66 67 68 69 71 3000	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 8750 15000 28125 18750 135360 45000 333340 0	
57 58 59 60 61 62 63 64 65 66 67 68 69 71 3000	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive AMC - PART - III	10 20 50 50 2880 1000	EA EA EA RM MT	875 750 562.5 375 47 45 33334 0	0 0 8750 15000 28125 18750 135360 45000 333340 0	

4 Third Year @2,5% of the basic CAPEX cost 5 Fourth Year @3% of the basic CAPEX cost 1 LS 779993 779993 5 Fourth Year @3% of the basic CAPEX cost 1 LS 2183980 2183980 7 Sixth Year @4% of the basic CAPEX cost 1 LS 1247989 1247989 8 Seventh Year @7% of the basic CAPEX cost 1 LS 2183980 2183980 9 SUB TOTAL (III) - CAMC (excluding GST) Sub Total - Supply Component (excluding GST) GST on Supply Component (including GST) Total - Service Component (excluding GST) Total CAPEX - Supply + Service Component (excluding GST) Sub Total - Service Component (excluding GST) Total CAPEX - Supply + Service Component (including GST) Sub Total - CAMC Component @18% Total - Service Component @18% Total - CAPEX - Supply + Service Component (including GST) Sub Total - CAPEX - Supply + Service Component (including GST) Total CAPEX - Supply + Service Component (including GST) Sub Total - CAMC Component @18% Total - CAMC Component @18% D Total - CAMC Component (including GST) Sub Total - CAMC Component (including GST) Total - CAMC Component (including GST) Sub Total - CAMC Component (including GST) Sub Total - CAMC Component (including GST) Total - CAMC Component (including GST) Sub Total - CAMC Component (including GST) Sub Total - CAMC Component (including GST) Total - CAMC Component (including GST) Sub Total - CAMC Component (including GST)	
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D Total - CAMC Component (including GST) 9203917.4	
Total - Supply + Service+CAMC Component (excluding GST) 38999642.51	
GST on Supply, Service and CAMC Component @ 18% 7019935.652	
Grand Total of Supply + Service + CAMC cost including GST 46019578.16	





INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE TUTICORIN TERMINAL - TNSO

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at TUTICORIN TERMINAL under TNSO STATE OFFICE

TNSO/ENGG/TUTICORIN TERMINAL
Tuesday, May 17, 2022

					Date	Tuesday, May 17, 2022
1000	SUPPLY COMPONENTS					
1	IP BASED CCTV SURVEILLANCE SYSTEM Supply of HD ID Fixed Dame games with IB and ME7 long (2MD) along with never supply unit	QTY	UOM EA	21025	TOTAL AMOUNT 42050	Remarks
2	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	21025	42050	
3	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc		EA	48813	439317	
	complete as per specifications and Tender Document. Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power	8	EA	30320	242560	
4	supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc. complete as per specifications and Tender Document.	25		45/25	44.40(25	
5	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	45625	1140625	
6	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	329250	0	
7	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	19	EA	41177	782363	
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	52471	996949	
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	4	EA	68955.6	275822.24	
11	12 M pole with cantilever arrangement	1	EA	36975	36975	
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood	21	EA	30450	639450	
	light at 8m of the pole across perimeter as per tender				151100	
13	4/6 M pole with Accessories as per specification of Tender	8 1	EA LS	19575 607675	156600 607675	
14	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to			007073	00/0/3	
14	provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.					
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.		ТВ	9412	3247140	
16	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender			0	0	
	requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.					
17	Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room - 1no., Marketing Incharge - 1no.,	3	EA	32500	97500	

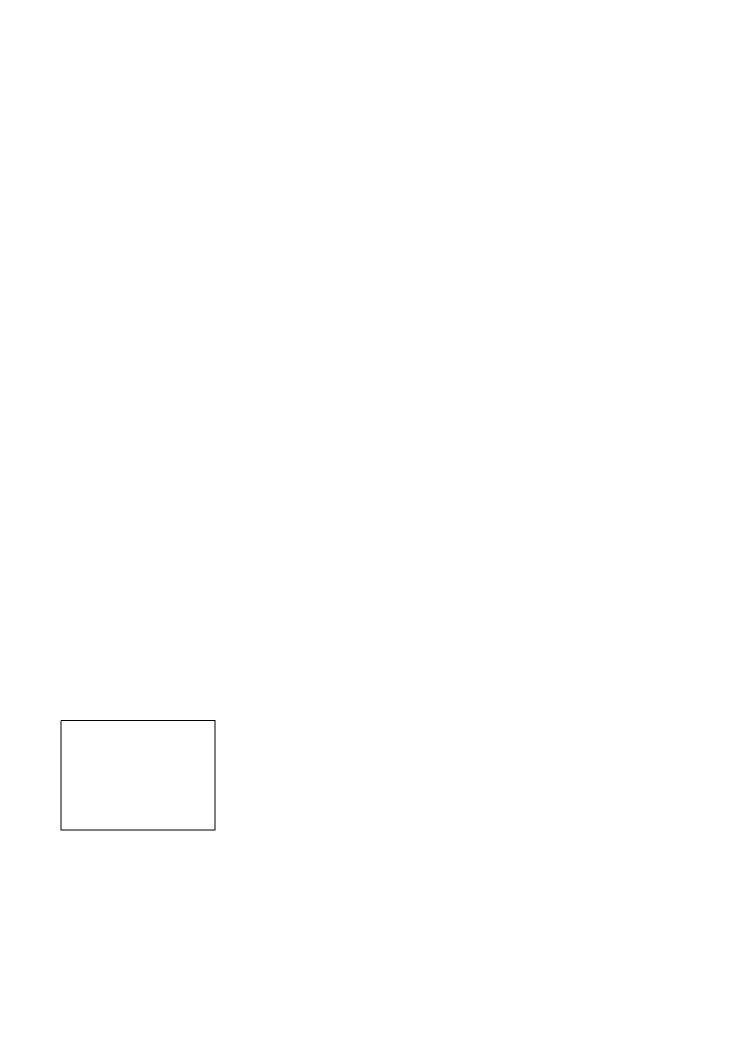
Design & Supply of video wall along with required controller & complete accessories , cables etc , mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push	
button & accessories.	
Design & Supply of video wall along with controller & complete accessories , cables etc. for 2 EA 281250 562500 CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	
Design & Supply of video wall along with controller & complete accessories , cables etc. for 2 CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	
Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site 2 EA 217791 435581.16 21 requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	
Supply of Intelligent video operation, control, management, recording & processing software 1 LS 544163 544163.25 (VMS) complete as per specifications and Tender Document with minimum 53 cameras recording, 53 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos, of cameras installed + 20% extra which ever is higher.	
Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	
Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN , rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	
Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet 2 EA 8874 17748 switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	
Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	
Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	
28 Cabling, JB, Earthing, Surge Protection Device 0 0	
Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.	
30 Type 1 SPD - Earth pit 5 Nos 5883 29415	
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.	
33 CCTV system 6 EA 20000 120000	
34 Supply of FRLS Armoured Copper Power cable as per tender specifications.	
35 3CX2.5 4320 RM 112 483840 36 3C x 4 520 RM 135 70200	
36 3C X 4 520 RM 135 70200 37 4C X 6 0 RM 315 0	
38 4C x 10 470 RM 448 210560	
39 4C x 16 0 RM 580 0	
39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and 260 RM 56 145600	
39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and 2600 RM 56 145600 instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of 2300 RM 50 115000	
39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 2600 RM 56 145600	

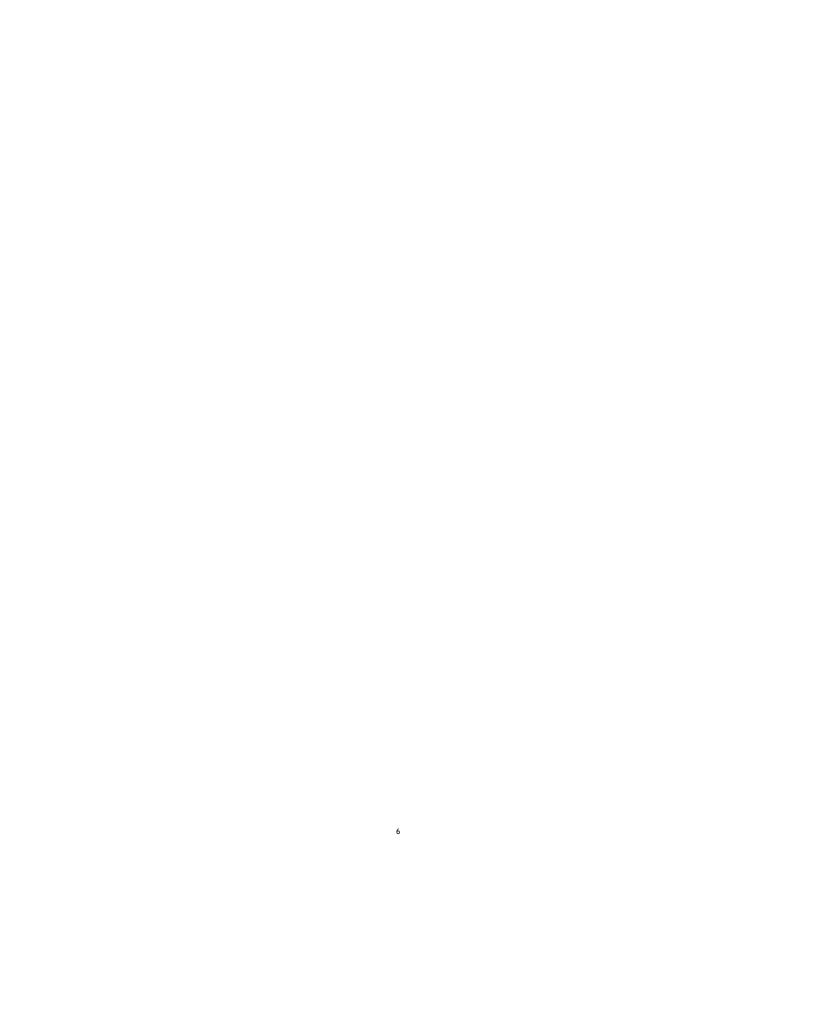
45	15 m	10	EA	145	1450	1
46	20 m	10	EA EA	145	1450	
	25 m	10	EA	145	1450	
48	30 m	10	EA	145	1450	
49	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document		RM	58	120640	
50	Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51	50 mm	0	RM	0	0	
52	100 mm	2000	RM	357.5	715000	
53 54	150 mm 200 mm	2100	RM RM	455 578.5	955500 0	
55	300 mm	0	RM	715	0	
56	450 mm	0	RM	0	0	
57	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0	
58	12 ways JB	10	EA	5598.45	55984.5	
59 60	8 ways JB 6 ways JB	20 50	EA EA	5598.45 3110.25	111969 155512.5	
61	4 ways JB	50	EA	782.28	39114	
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2		RM	89	138840	
63	as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM	77	77000	
64	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc		MT	90625	906250	
65	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0	
66	MCT Block	3	EA	19125	57375	
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				18402129.65	
2000	SERVICE COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM					
2	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	1125	
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	1875	16875	
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	4500	
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	562.5	14062.5	
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	0	0	
7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	19	EA	812.5	15437.5	
8	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	1687.5	32062.5	
9	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0	
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender		EA	9750	39000	
11	12 M pole with/without cantilever arrangement	1	EA	11600	11600	1

4.5	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at	21	EA	8450	177450	
12	8m of the pole across perimeter as per tender					
13	4/6 M pole with Accessories as per specification of Tender Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	EA LS	4550 13000	36400 13000	
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	345	ТВ	134	46230	
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station on thave such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be			9750	0	
17	supplied at no additional cost. Tower type with minimum 27" colored LED monitor-Control Room Marketing-1 no., Security Room -	3	EA	1875	5625	
18	Ino., Marketing Incharge - 1no., Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc, mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	2	EA	2500	5000	
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.					
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000	
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000	
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 53 cameras recording, 53 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000	
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000	
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalls, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	3625	7250	
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595	
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250	

27	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete		EA	2000	50000	
	with labour and materials asper drawings, specifications and directions of the Engineer-in- Charge.					
28	Cabling, JB, Earthing, Surge protection			0	0	
29	Installation, testing and commissioning of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender $\frac{1}{2}$			0	0	
30	document at following places. Type 1 SPD - Earth pit	5	Nos	3625	18125	
31	Earth Pit	<u> </u>	1405	0	0	
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			0	0	
32	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.l. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.					
33	CCTV system	6	EA	625	3750	
34	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender			0	0	
35	specifications. 3CX2.5	4320	RM	27	116640	
36	3C x 4	520	RM RM	27	14040	
37	4C x 6	0	RM	45	0	
38	4C x 10	470	RM	34	15980	
39	4C x 16	0	RM	65	0	
40	4C x 25	0	RM	0		
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	2600	RM	27	70200	
42	per tender specifications and instructions of Engineer in charge. Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	2300	RM	10	23000	
43	specifications and instructions of Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0	
44	specifications and instructions of Engineer in charge.	40		7.5	7.	
44 45	10 m 15 m	10 10	EA EA	7.5 10	75 100	
46	20 m	10	EA	12.5	125	
47	25 m	10	EA	17.5	175	
48	30 m	10	EA	25	250	
49	Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	2080	RM	21	43680	
50	Laying of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0	
51	50 mm	0	RM	0	0	
52	100 mm	2000	RM	217.5	435000	
53 54	150 mm	2100	RM	240	504000	
55	200 mm 300 mm	0	RM RM	507.5 580	0	
56	450 mm	0	RM	1300	0	
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0	
58	12 ways JB	10	EA	875	8750	
59	8 ways JB	20	EA	750	15000	
60	6 ways JB	50	EA	562.5	28125	
61	4 ways JB	50	EA	375	18750	
62	Fabrication, cutting, laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	1560	RM	47	73320	
63	Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM	45	45000	
64	specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets,		MT	33334	333340	
65	base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender			0	0	
66	document, MCT Block	3	EA	2175	6525	
67	Other Services	Ľ	L_,_	0	5525	
68	Providing training to IOCL employee as per schedule/Module for one days as per tender document	1	Module	65000	65000	
69	Submission of Final Detailed system design, Engineering, Documentations, As built drawings etc complete as per tender	1	LS	65000	65000	
71	SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)				2412412.5	
3000	Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.					
2	First Year - Warranty					
3	Second Year @1.5% of the basic CAPEX cost	1	LS	312219	312219	

4	Third Year @2.5% of the basic CAPEX cost	1	LS	520364	520364	
5	Fourth Year @3% of the basic CAPEX cost	1	LS	624437	624437	
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1457018	1457018	
7	Sixth Year @4% of the basic CAPEX cost	1	LS	832582	832582	
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1457018	1457018	
9	SUB TOTAL (III) - CAMC (excluding GST)				5203638	
	Sub Total - Supply Component (excluding GST)				18402129.65	
	GST on Supply Component @ 18%				3312383.337	
Α	Total - Supply Component (including GST)				21714512.99	
	Sub Total - Service Component (excluding GST)				2412412.5	
	GST on Service Component @ 18%				434234.25	
В	Total - Service Components (including GST)				2846646.75	
	Total CAPEX - Supply + Service Component (excluding GST)				20814542.15	
	GST on Supply and Service Component @ 18%				3746617.587	
С	Total CAPEX - Supply + Service Component (including GST)				24561159.74	
	Sub Total - CAMC Component (excluding GST)				5203638	
	GST on CAMC Component @ 18%				936654.84	
D	Total - CAMC Component (including GST)				6140292.84	
	Total - Supply + Service+CAMC Component (excluding GST)				26018180.15	
	GST on Supply, Service and CAMC Component @ 18%				4683272.427	
	Grand Total of Supply + Service + CAMC cost including GST				30701452.58	





INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE ARAKONAM - AFS

SUB: "Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at ARAKONAM - AFS

1000	SUPPLY COMPONENTS				
1	IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT
2	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit	0	EA	21025	0
2	(POE based), with inbuilt/external surge protection unit and mounting accessories etc				
	complete as per specifications and Tender Document. Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE	4	EA	48813	195252
3		4	LA	40013	193232
3	injector (industrial grade), with inbuilt/external surge protection unit and mounting				
	accessories etc complete as per specifications and Tender Document. Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power	6	EA	30320	181920
4	supply unit (POE based), with inbuilt/external surge protection unit and mounting	U	LA	30320	101720
7	accessories etc complete as per specifications and Tender Document.				
	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power	8	EA	45625	365000
5	supply unit (POE based), with inbuilt/external surge protection unit and mounting	O	LA	43023	303000
•	accessories etc complete as per specifications and Tender Document.				
	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power	0	EA	329250	0
6	supply unit, with inbuilt/external surge protection unit and mounting accessories etc	Ü		327230	· ·
Ū	complete as per specifications and Tender Document.				
	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting	6	EA	41177	247062
	Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge	U	LA	711//	247002
7	protector (Type 1+2) at the input power supply as per specifications and Tender Document.				
	protector (Type 1+2) at the input power supply as per specifications and render bocument.				
		6	EA	52471	314826
	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for	•		32471	5.1020
	installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge				
	protectors and other accessories of CCTV cameras. Supply of required OFC components &				
8	accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch				
	cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect				
	for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd.				
	double compression cable glands etc as per specifications and Tender Document.				
	Design fabrication and supply of Hazay Duty self supported Hot Dip Calvanized Deleg for			0	0
	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for				
	mounting of CCTV cameras along with civil foundation along with GI foundation bolt,				
	mounting brackets, ladder arrangement (taking into account of safety during climbing) on the				
	pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other				
	accessories required for complete installation and commissioning of the pole, submission of				
9	structural stability certificate based on existing soil bearing capacity and wind speed from				
	Govt. Engineering colleges etc complete as per specifications and Tender Document of				
	below mentioned height of the pole. (Foundation drawing and other details to be submitted				
	prior to installation as per tender document)				
	Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to				
	arrange for ladder for installation & maintenance purpose throughout the contract period				
	including CAMC period at no additional cost to IOCL.				
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera	2	EA	68955.56	137911.12
10	at 10 m and LED flood light at 8m of the pole across perimeter as per tender				
11	12 M pole with cantilever arrangement	0	EA	36975	0
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood	6	EA	30450	182700
	light at 8m of the pole across perimeter as per tender				
13	4/6 M pole with Accessories as per specification of Tender	6	EA	19575	117450
	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and	1	LS	607675	607675
	combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender				
	Document.				
14	Note: In case multiple servers are required to meet the tender requirement, vendor to				
-	provide the same at no additional cost to IOCL. In additional to above, Vendor to provide				
	failover server to have redundancy in CCTV server such that failure of one server should not				
	affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.				
	· · · · · · · · · · · · · · · · · · ·	4		0.00	427
	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing	146	ТВ	9412	1374152
4-	recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video				
15	quality of all cameras (Continuous recording) complete as per specifications and Tender				
	Document,				
	Note: Storage Calculation to be submitted for information.]	

	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.)			0	0
16	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	1	EA	32500	32500
18	Design & Supply of video wall along with required controller & complete accessories, cables etc, mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and	2	EA	281250	562500
	Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.				
19	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
20	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	2	EA	217790.6	435581.16
22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	544163.3	544163.25
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	1764706	1764706
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	64706	129412
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	8874	17748
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	294118	294118
27	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	8	EA	12353	98824

36 3C x 4 0 37 4C x 6 0 0 0 0 0 0 0 0 0				
with accessories complete as per specification and tender document at following places. 30 Type 1 SPD - Earth pit 31 Earth Pit 31 Earth Pit 32 Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mt length as face earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and 15 code to be finally adopted, Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. 31 CCTV system 32 Supply of FRIS Armoured Copper Power cable as per tender specifications. 33 CCTV system 34 Supply of FRIS Armoured Copper Power cable as per tender specifications. 35 SCX.5 36 SCX.5 37 ACx 6 40 ACx 25 40 ACx 25 41 Supply of CAT 6 Ethernet armoured optical fibre cable as per tender specifications and 700 minutuctions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 Loying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 Loying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 45 Supply of CAT 6 Ethernet armoured cable as per specification and tender document 46 20 m 10 47 25 m 10 59 Supply of ACT 6 Ethernet armoured cable as per specification and tender document 50 Supply of anotized Aluminium perforated cable trays, tray cov		ge Protection Device	0	0
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth but for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted, Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33		· · · · · · · · · · · · · · · · · · ·	0	0
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted, Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection, Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33	Nos	5	5883	29415
safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dig galavnized (80-100 microns), filled with hijs conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.1. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33 CCTV system 34 CSUP yield of FELS Armoured Copper Power cable as per tender specifications. 35 JCX.5 36 JCX.4 37 4CX.6 38 4CX.10 40 JCX.25 40 JCX.25 41 Supply of 6 Core single mode armoured optical fibre cable as per tender specifications and 70 mistructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 Loging, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 Loging, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 45 Loging, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 46 JD m 10 47 25 m 10 48 30 m 10 59 Supply of CAT 5 Sq., mm Flexble copper insulated green wire for earthing instruments, charge the presence of the presence o			0	0
34 Supply of FRLS Armoured Copper Power cable as per tender specifications. 35 3CX-5 36 3C x 4 37 4C x 6 38 4C x 10 39 4C x 16 40 6C x 25 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of 6 core single mode armoured able as per tender specifications and instructions of Engineer in charge. 43 Laying, ferrulination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 Laying, ferrulination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 45 Laying, ferrulination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 46 Laying, ferrulination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 47 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 48 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 49 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 40 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specification and tender document in the specification of the specification and tender document in the specification of the cable tray at regular interval and junction boxes etc complete as per specification and tender document in the specification of the cable tray at regular interval and junction boxes etc complete as per specifications of the decomplete in the cable tray. Complete as per specifications / tender documents. 50 mm 50 mm 50 mm 600 50 mm 600		ith Pipe-in-pipe technology consisting of two mild steel pipes one p galvanized (80-100 microns), filled with high conductive & alline mixture and backfilling compound around electrode, brick ling plastering in CM 1:4, 600x600 mm C.I. Manhole chamber le earth bus for interconnection etc. Procedure recommended by nd IS code to be finally adopted. Item also includes provision of t no's and date of inspection and the next due date of inspection. On of test certificate of earthing station from a class A licensed	0	0
35 3CX-5 36 3CX-4 37 4C x 6 37 4C x 6 38 4C x 10 39 4C x 16 40 4C x 25 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 10 m 54 10 m 10 10 54 15 m 10 10 54 20 m 10 10 54 20 m 10 10 55 30 m 56 450 mm 57 30 mm 58 30 m 59 400 mm 59 100 mm 50 1	EA	2	20000	40000
36 3C x 4 37 4C x 6 37 4C x 6 38 4C x 10 39 4C x 16 40 4C x 25 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 10 m 10 45 15 m 10 46 20 m 10 47 25 m 10 48 30 m 10 5upply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document 50 Supply of anodized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 51 50 mm 600 53 150 mm 6000 54 200 mm 6000 54 200 mm 6000 55 300 mm 6000 56 450 mm 6000 57 300 mm 6000 58 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CAMRI approval. TIS II shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 50 Supply of bot dip Gl earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.		Copper Power cable as per tender specifications.	0	0
37	0 RM	1020	112	114240
38 4C x 10 39 4C x 16 40 4C x 25 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 10 m 10 10 10 10 10 10 10 10 10 10 10 10 10	RM	0	135	0
39 4C x 16 4C x 25 0 4C x 25 1 1 1 1 1 1 1 1 1	RM	·	315	0
40 4C x 25 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 43 Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 10 m 10 m 10 45 15 m 10 46 20 m 10 47 25 m 10 50 Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document 50 Supply of anodized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 51 S0 mm 0 0 52 100 mm 600 53 150 mm 600 54 200 mm 0 0 55 300 mm 0 0 56 450 mm 0 0 57 450 mm 0 0 58 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 50 60 60 ways JB 50 61 4 ways JB 50 61 4 ways JB 50 62 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specification and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and	RM		448	0
Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42	RM		580	0
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Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge. 44 10 m 10 m 10 10 10 10 10 10 10 10 10 10 10 10 10		charge.	56	39200
specifications and instructions of Engineer in charge. 44 10 m 10 45 15 m 10 46 20 m 10 47 25 m 10 Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 50 Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 51 50 mm 0 600 52 100 mm 6000 53 150 mm 6000 54 200 mm 0 0 55 300 mm 0 0 56 450 mm 0 0 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 10 60 6 ways JB 50 61 40 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and 65 Room with minimum 50% spare MCT blocks for future cable entry along with frame and 65 Room with minimum 50% spare MCT blocks for future cable entry along with frame and 65 Room with minimum 50%) RM		50	40000
45 15 m 10 46 20 m 10 47 25 m 10 48 30 m 10 Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document 50 Supply of anodized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 51 50 mm 0 0 52 100 mm 6600 53 150 mm 6600 54 200 mm 600 55 300 mm 0 0 56 450 mm 0 0 57 56 450 mm 0 0 58 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 60 6 ways JB 20 61 4 ways JB 50 62 Supply of hot dip Gl earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc. Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and		·	0	0
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47 25 m 10 48 30 m 10 Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 50 mm 0 0 51 100 mm 6000 53 150 mm 6000 54 200 mm 6000 55 3000 mm 0 0 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, 73 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% space MCT blocks for future cable entry along with frame and			145	1450
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49 cable tray at regular interval and junction boxes etc complete as per specification and tender document 50 Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents. 51 50 mm			145	1450
for mounting of the cable tray. Complete as per specifications / tender documents. 51 50 mm 0 600 52 100 mm 600 53 150 mm 600 54 200 mm 0 0 55 300 mm 0 0 56 450 mm 0 0 58 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 60 6 ways JB 50 61 4 ways JB 50 61 4 ways JB 50 62 Supply of hot dip Gl earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and) RM		58	32480
52 100 mm 600 53 150 mm 600 54 200 mm 0 0 55 300 mm 0 0 56 450 mm 0 0 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. 64 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and			0	0
53 150 mm 600 54 200 mm 0 55 300 mm 0 56 450 mm 0 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and	RM	0	0	0
54 200 mm 0 0 55 300 mm 0 0 56 450 mm 0 0 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. 64 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and) RM	600	357.5	214500
55 300 mm 0 0 Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. 64 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and) RM	600	455	273000
Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58 12 ways JB 10 59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. 64 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and	RM	0	578.5	0
Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58	RM	0	715	0
suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 58	RM	0	0	0
59 8 ways JB 20 60 6 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and		a of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. respect. Accessories like certified double compression cable glands for excess entries, SS 316 engraved tag plate, mounting clamp & re as per specification / tender documents.	0	0
60 6 ways JB 50 61 4 ways JB 50 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 420 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and			5598.45	55984.5
61 4 ways JB 62 Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 420 as per IS 4759) shall be done after all fabrication. 63 Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. 64 Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and			5598.45	111969
Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and			3110.25	155512.5
as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and			782.28 89	39114 37380
Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and	0 RM		77	77000
Supply of Structural steel (MS) for effection of Cable Bridge (If required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and	MT	10	90625	906250
65 Room with minimum 50% spare MCT blocks for future cable entry along with frame and		ossing or any other place within the Terminal including painting,		
mounting accessories complete as per specification and tender document.		spare MCT blocks for future cable entry along with frame and	0	0
66 MCT Block 3	EA		19125	57375
67 SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				10959170.53
2000 SERVICE COMPONENTS				
1 IP BASED CCTV SURVEILLANCE SYSTEM		NCE SYSTEM		

2	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	562.5	0
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	1875	7500
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	6	EA	562.5	3375
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	8	EA	562.5	4500
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	0	0
7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	6	EA	812.5	4875
8	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	6	EA	1687.5	10125
9	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	9750	19500
11	12 M pole with/without cantilever arrangement 8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light	0 6	EA EA	11600 8450	0 50700
12	at 8m of the pole across perimeter as per tender				
13	4/6 M pole with Accessories as per specification of Tender	6	EA	4550	27300
14	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	13000	13000
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	146	ТВ	134	19564

	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.)			9750	0
16	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	1	EA	1875	1875
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc, mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	2	EA	2500	5000
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.				
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	3625	7250
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19° Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595

26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250
27	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	8	EA	2000	16000
28	Cabling, JB, Earthing, Surge protection			0	0
29	Installation, testing and commissioning of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0
30	Type 1 SPD - Earth pit	5	Nos	3625	18125
31	Earth Pit		1100	0	0
32	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0
33	CCTV system	2	EA	625	1250
34	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.			0	0
35	3CX2.5	1020	RM	27	27540
36	3C x 4	0	RM	27	0
37	4C x 6	0	RM	45	0
38	4C x 10	0	RM	34	0
39	4C x 16	0	RM	65	0
40	4C x 25	0	RM	0	
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	700	RM	27	18900
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	800	RM	10	8000
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.			0	0
44	10 m	10	EA	7.5	75
45	15 m	10	EA	10	100
46	20 m	10	EA	12.5	125
47 48	25 m 30 m	10 10	EA EA	17.5 25	175 250
49	Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	560	RM	21	11760
50	Laying of anodized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0
51	50 mm	0	RM	0	0
52	100 mm	600	RM	217.5	130500
53	150 mm	600	RM	240	144000
54	200 mm	0	RM	507.5	0
55	300 mm	0	RM	580	0
56	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	0	RM	1300 0	0
58	12 ways JB	10	EA	875	8750
59	8 ways JB	20	EA	750	15000
60	6 ways JB	50	EA	562.5	28125
61	4 ways JB	50	EA	375	18750

62	Fabrication, cutting, laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	420	RM	47	19740
63	Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM	45	45000
64	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10	MT	33334	333340
65	Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0
66	MCT Block	3	EA	2175	6525
67	Other Services			0	
68	Providing training to IOCL employee as per schedule/Module for one days as per tender document	1	Module	65000	65000
69	Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	1	LS	65000	65000
71	SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)				1189439
3000	Comprehensive AMC - PART -III				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty				
3	Second Year @1.5% of the basic CAPEX cost	1	LS	182230	182230
4	Third Year @2.5% of the basic CAPEX cost	1	LS	303716	303716
5	Fourth Year @3% of the basic CAPEX cost	1	LS	364459	364459
6	Fifth Year @7% of the basic CAPEX cost	1	LS	850403	850403
7	Sixth Year @4% of the basic CAPEX cost	1	LS	485945	485945
8	Seventh Year @7% of the basic CAPEX cost	1	LS	850403	850403
9	SUB TOTAL (III) - CAMC (excluding GST)				3037156
	Sub Total - Supply Component (excluding GST)				10959170.53
	GST on Supply Component @ 18%				1972650.695
Α	Total - Supply Component (including GST)				12931821.23
	Sub Total - Service Component (excluding GST)				1189439
	GST on Service Component @ 18%				214099.02
В	Total - Service Components (including GST)				1403538.02
	Total CAPEX - Supply + Service Component (excluding GST)				12148609.53
	GST on Supply and Service Component @ 18%				2186749.715
С	Total CAPEX - Supply + Service Component (including GST)				14335359.25
	Sub Total - CAMC Component (excluding GST)				3037156
	GST on CAMC Component @ 18%				546688.08
D	Total - CAMC Component (including GST)				3583844.08
	Total - Supply + Service+CAMC Component (excluding GST)				15185765.53
	GST on Supply, Service and CAMC Component @ 18%				2733437.795
	Grand Total of Supply + Service + CAMC cost including GST				17919203.33

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE AFS COIMBATORE

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at AFS COIMBATORE

1000	SUPPLY COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT
2	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	21025	0
3	Supply of HD IP PTZ Camera (ZMP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	8	EA	48813	390504
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	6	EA	30320	181920
5	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	5	EA	45625	228125
6	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	329250	0
7	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	5	EA	41177	205885
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	52471	262355
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	4	EA	68955.6	275822.24
11	12 M pole with cantilever arrangement	0	EA	36975	0
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	1	EA	30450	30450
13	4/6 M pole with Accessories as per specification of Tender Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.		EA LS	19575 607675	117450 607675
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.		ТВ	9412	1138852
16	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be			0	0
	supplied at no additional cost		i e		

Design & Supply of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall-kerling for fire fighting cum critical Alam display is mountainton cum (CTV application complete as per specifications and tender document.) No control convervibrollow's real cumera should be expecification and tender document. Note: Two Number (crim., 55" each or meeting size of video will provide the controller and contro						
Fire fighting display along with one no. of hooter with provision of dual tone sound ack push button to accessories. Design & Supply of Video wall along with controller is complete accessories, cables etc. for CTV Complete as per specifications and feeding document. Design & Supply of Video wall along with controller is complete accessories, cables etc. for I in two properties and the provision of the complete accessories, cables etc. for I in the passed fire CTV camera. Design & Supply of Video wall along with controller is complete accessories, cables etc. for I in the passed fire CTV camera. Design & Supply of Video wall along with controller is complete accessories, cables etc. for I in the passed fire CTV camera. Supply of Layer 3 Managed Gightis Ethernet Switch with minimum 24 ports or as per site. I requirement + 20 % spare whichever is higher along with SPP, copper, fither modules, accessories complete as per specifications and Trender Pocument. Supply of intelligent video operation, control, management, recording processing software in the passed of the passed o	18	etc , mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document.	2	EA	281250	562500
CCTV complete as per specifications and tender document. Contains in charge room-viewing window size should be preferably be between 250-300 cm 2		Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push				
Design & Supply of video wall along with controller & complete accessories, cables etc. for 2 CCTV complete as per specifications and tender document. In security cabin-releving window size should be preferably be between min. 150-200 cm. 2 (in hote pages per specifications and forefore document.) 21 requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and forefore Document. Note: The switches are resourced to be configured in dual redondant mode. Supply of Intelligent video operation, cortor, management, recording B processing software control of the configured in dual redondant mode. Supply of Intelligent video operation, cortor, management, recording B processing software control of the configured in dual redondant mode. Supply of Advanced Analytics Software for all fixed cameras (including varifical, MPZ fixed 2 cameras), Auto tracking video analytics for all YZ camera along with compatible Redundant Analytics Server with 05, Antivirus etc including analytic license for actual number of camera installed > 20 % spare complete as per specifications and Tender Document. Supply of 42 U Rexk Enclosure calitorios/system cabinet with 19° rack size, along with accessories like Illustrative rapy, loaded adaptor, blank plates, UTP cables, Pitre patch cords, pitalists, tags, itsee let complete in all respect for functioning of CCTV camera, terminal blocks and writing etc complete as per specifications and relende document For mounting of CCTV servers, 4 optics before the Recomplete in all respect for functioning of CCTV camera, terminal blocks and viring etc complete as per specification and tender document For mounting of CCTV servers, 4 optics and control of the Components along with accessories like power sockets, MCBs, fan, mounting accessories etc. complete as per specification of the CRY and the control of CCTV camera, terminal blocks and wing etc. complete as per specification of provider providing secsories etc. complete as per s	19	CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2	2	EA	281250	562500
supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site 2 requirement * 2.0 % spare withchever is higher allong with SPF, copper, fifter modules, accessories complete as per specifications and Tender Document. Note: The withches are treatingful obe Confidence in dual recludent mode. 1	20	Design & Supply of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (2	EA	281250	562500
Supply of Intelligent video operation, control, management, recording is processing software 2 (MMS) complete as per specifications and Tender Document with initimum 17 Cameras recording, 17 cameras visited problems, 5 LISC licence for remote viewing or as per actual nos. of cameras installed -700 extar which ever is habber. Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera langue with compatible Redundant Analytics Server with 05, Antivirus etc. including analytic license for actual number of camera installed -20% spars complete as per specifications and Tender Document. Supply of 4.2 U Rack Enclosure cabinet/System cabinet with 19° rack size, along with accessories like Blomerite fingerprint cum conscribes smart card reader with accessories like UII system fingerprint cum conscribes smart card reader with accessories like UII system fingerprint cum conscribes and vining etc complete as per specification and tender document. Supply of Wall mounted Network Rack-minimum 10U 19° Rack for mounting of CCTV Servers, Analytics Servers, MAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial gade KMM switches, power adapters, layer 3 Ethernet SMDs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipments. Supply of Wall mounted Network Rack-minimum 10U 19° Rack for mounting of Ethernet. Supply installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (22/50%) for minimum back up time of the board with accessories with accessories and complete with accessories wi	21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	2	EA	217791	435581.16
supply of Advanced Analytics Server with 05, Anthrivus etc including analytic license for actual number of camera installed *> 20 % spare complete as per specifications and Tender Document. Supply of 42 U Back Enclosure cabinet/System cabinet with 19" rack size, along with accessories, limit switches, earthing arrangements, required OFC components a accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, required OFC components a accessories like IUI, spilce trays, baded adaptor, blank plates, UTP cables, Fibre patch cords, pights, tags, ties etc complete in all respect for functioning of CCTV camera, reminal blocks and wiring etc complete as per specification and tender document for mounting of CCTV Servers, Analytics Servers, NASSAN , reak mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided an oaditional cost, MCS set as pre-specification and tender document. Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switch-PDB panel if required separate to be provided at no additional cost. MCS set as pre-specification and tender document. Supply installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% space capacity for future load connection. The scope also incudes supply of parallel battery bank (2x50%) for minimum back up time of 1% hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, montroing software et complete as per specification and tender document. Supply of 30% VLB flood ONLY light luminaries on Light poles up to 10M height including a parallel parall	22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual	1	LS	544163	544163.25
supply of 20 Malk Pitchest Lamineurs system caunite. With 7 Male Sule, along with accessories like Blommetric fingerprint cum contactless smart card reader with accessories, limit swriches, earthing arrangements, breaker, fuses, required OPC components described in the special state of the pitchest of	23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera	1	LS	1764706	1764706
switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipments with 30% of 6 KVM or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x.50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document. Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. 28 Cabling, JB, Earthing, Surge Protection Device 29 Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 15PD. Earth pit 31 Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galavarized (80-100 microns), filled with high conductive to corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 114, 600060 mm C.I. Mahole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted, Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of	24	accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification	2	EA		
Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% space capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding , temporary fire screen if required, supports, nuts,bolts, earlying , required modification infixing arrangement , Supply and welding of mounting structure as per site condition , painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. 28 Cabling, JB, Earthing, Surge Protection Device 29 Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 15PD - Earth pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalliem mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted, them also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the	25	switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV	2	EA	8874	17748
supply 6 fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing , required modification infixing arrangement , Supply and welding of mounting structure as per site condition , painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. 28 Cabling, JB, Earthing, Surge Protection Device	26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as	1	EA	294118	294118
Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 1 SPD - Earth pit	27	supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper	5	EA	12353	61765
Supply of external surge it Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places. 30 Type 1 SPD - Earth pit	28	Cabling, JB, Earthing, Surge Protection Device			0	0
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33 CCTV system 34 Supply of FRLS Armoured Copper Power cable as per tender specifications. 35 SCX2.5 36 SCX.4 37 QCX.6 38 ACX.6 39 ACX.6 30 RM 112 78400 30 RM 315 0 RM 315 0 RM 375 0 RM 448 0 RM 448 0 RM 4580 0 RM 3750 0 RM 3750 0 RM 580 0 RM 3750 0 RM 580 0 RM 580 0 RM 560 28000 10 RM 500 10 RM 500 11 RM 500 12 RM 500 12 RM 500 13 RM 500 14 RM 500 14 RM 500 15 RM 500 16 RM 500 17 RM 500 18 RM 50	29	11.7			0	0
Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation. 33 CCTV system 2 EA 20000 40000 34 Supply of FRLS Armoured Copper Power cable as per tender specifications. 5 OO RM 112 78400 36 3C x 4 5 OR RM 112 78400 37 4C x 6 5 OR RM 135 OO RM 13			5	Nos		
34 Supply of FRLS Armoured Copper Power cable as per tender specifications. 0 0 0 35 3CX2.5 700 RM 112 78400 36 3C × 4 0 RM 135 0 0 0 0 0 0 0 0 0		Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted, Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0
35 3CX2.5 700 RM 112 78400 36 3C x 4 0 RM 135 0 37 4C x 6 0 RM 315 0 38 4C x 10 0 RM 448 0 39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 5upply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 28000 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 30 RM 50 45000 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 30 30 30 30 30 30 30 3			2	EA		
36 3C x 4 0 RM 135 0 37 4C x 6 0 RM 315 0 38 4C x 10 0 RM 448 0 39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Pre fab CAT 6 Ethernet un-armoured cable as per tender 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 Ethernet armoured cable as per tender 0 0 0 1 Supply of CAT 6 0 0 0 0 0 0 1 Supply of CAT 6 0 0 0 0 0 0 0 0 0			700	RM		
38 4C x 10					135	
39 4C x 16 0 RM 580 0 40 4C x 25 0 RM 3750 0 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.						
41 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and 500 RM 56 28000 instructions of Engineer in charge. 42 Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of 900 RM 50 45000 Engineer in charge.			0	RM	580	0
instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of 900 RM 50 45000 Engineer in charge. Laying ferrylling termination of Pre fab CAT 6 Ethernet up-armoured cable as per tender 0 0	40					
Laying ferruling termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender		instructions of Engineer in charge.				
43 1	42	Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender				
specifications and instructions of Engineer in charge. 10 m 10 EA 145 1450			10	EA	145	1450

47 13 m	45	15 m	10	EA	145	1450
47 25 m						
Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable do D RM 59. 22200 9 troy at regular interval and junction boxes etc complete as per specification and tender the property of the cable tray. Complete as per specification of the cable tray of the cable tray of the cable tray. Complete as per specifications / tender documents. 9 m 6 m 7 m 6 m 7 m 7 m 7 m 7 m 7 m 7 m 7						
49 tray at regular Interval and junction boxes etc complete as per specification and tender decuments. 50 Supply of anotized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray, Complete as per specifications / tender decuments. 51 30 Sum		30 m				
supply of anotated Alumnium perforated acide trays, "Complete as per specifications" fremefor documents. 5 1 50 mm	49	tray at regular interval and junction boxes etc complete as per specification and tender	400	RM	58	23200
100 mm	50	for mounting of the cable tray. Complete as per specifications / tender documents.				-
33 150 mm						
300 mm			-			
So mm						
Somm						
Supply of EndfTIP -Junction BourPower distribution box with IP 65 as per specification suitable for bazardous area of zone 1, group ILMIR. To re better hange COE/CMB approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds 8 plays for excess entries, 53 15 engraved tag plate, mounting clamp 6 SS 13 feateners, Complete as per specification / tender documents. 8 8 12 vays 8 19						
59 8 varys 8 20 EA 5908.45 111999 50 6 varys 8 50 EA 3110.25 55512.5 51 51 51 51 51 51 51		Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	•			
60 6 ways 38 50 EA 311.025 155912.5 154 14 ways 38 51 4 ways 38 51 4 ways 38 51 4 ways 38 51 4 ways 48 51 51 51 51 51 51 51 5						
4 sways, IB 5 EA 72:28 39114 62 Supply of hot dip Gi earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m²) 20 RM 89 22:70 63 Supply of 50 mm HDPE pipe of minimum 27.5 mm thick along with accessories as per tender 64 Supply of 50 mm HDPE pipe of minimum 27.5 mm thick along with accessories as per tender 65 Supply of 50 mm HDPE pipe of minimum 27.5 mm thick along with accessories as per tender 66 Supply of Structural steel (R) for erection of cable bridge (if required) for laying of above 67 ground cables at road crossing or any other place within the Terminal Including painting, Civil foundations, nutls, bolts, washers, cleass, stiffeners, gussets, base plate etc. 68 Supply of MCT block for entire CCTV system to Control Room, Admin Building, 8 Security Room, 8 Set Roo		·				
Supply of hot dip GI earth strip (50 X 5) within earth station, lot dip galvanizing (800 gm/m² 200 RM 2570) as per GY-4759) shall be done after all fabrication. Supply of 30 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender 1000 RM 77 77000 secretications and instructions of Engineer in Charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above 10 MT 90625 906250 erg. Amount of the ground of						
supply of 30 mm HDPC pipe of minimum 2.5 mm thick along with accessories as per tender 1000 RM 77 77000 specifications and instructions of Engineer in charge. Supply of Structural steel (Kl) For erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal Including painting, Civil foundations, nutls, bolts, washers, cleas, stifferens, gussets, base plate etc. Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security, Room with minimum 30% spare MCT blocks for future cable entry ulong with frame and more specification and tender document. Sub TOTAL (in - SupPLY COMPONENTS (excluding GST) Sub TOTAL (in - SupPLY COMPONENTS (excluding GST) Sub TOTAL (in - SupPLY COMPONENTS (excluding GST) Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (ZMP) along with power supply unit (POE based), with inbull/devernal surge protection unit and mounting accessories etc complete as per secifications and Tender Document. Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (ZMP) along with power supply unit (POE based) with following the specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Buillet cameras with IR and IP ACC (Exclusions and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Buillet cameras with IR ACC (Exclusions and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Buillet cameras with ACC and and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras to the specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras to the specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fix						
Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Tormalian Including painting, Civil foundations, nutb, bolks, washers, cleats, stiffeners, gussets, base plate set. Supply of MCT block for entire CCTV system to Control Room, Admin Building, 8 security Room and the mounting accessories complete as per specification and tender document. Supply of MCT block for entire CCTV system to Control Room, Admin Building, 8 security Room and the mounting accessories complete as per specification and tender document. 3 EA 19125 57375 SUB TOTAL (I) SUPPLY COMPONENTS (excluding GST) 1 PRASED CCTY SINYPELLANCE SYSTEM Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome Installation, configuration, integration, testing and commissioning of HD IP PTIC Camera (2MP) along with power supply unit (POE based), with the build control of the property of the		as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender				
55 Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. 57 SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST) 18 PASED CCTV SURVEILLANCE SYSTEM Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome 0 camera with IR and MFZ Iens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome 0 along with power supply unit (POE based), with p	64	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil	10	MT	90625	906250
10412701.65		Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.				
PABSD CCTV SURVEILLANCE SYSTEM			3	EA	19125	
Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbulti/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Bullet camera via the MTZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifical lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box camera of the MTZ in t						10412701.65
Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome 2 camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) shoult/Lexternal surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of Integral Explosion Proof alwayer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbult/lexternal surge protector (Type 1-2) at the input power supply as a proper port and a Nos. optical fibre ports with inbult/lexternal surge protector (Type 1-1) at the input power supply as a proper port and a Nos. optical						
Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) and with power supply unit (POE based) with POE injector (industrial grade),with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (BMP) - 4K resolution along with power supply unit (POE based), with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (BMP) - 4K resolution along with power supply unit (POE based), with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbult/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade as present the pole of installation and maintenance of cameras, So nut & botts of frist, pole of the pole of		Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per	0	EA	562.5	0
Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbulit/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbulit/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of Integral Explosion Proof of HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbulit/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade laborated procument. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade laborated procument. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalis, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd, blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation both, mounting brackets, ladder arrangement (taking into accou	3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per	8	EA	1875	15000
Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras 5 kin to varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade Surger 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and commissioning of the pole,	4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per	6	EA	562.5	3375
Installation, configuration, integration, testing and commissioning of Integral Explosion Proof BD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation,errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bott, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to ins	5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per	5	EA	562.5	2812.5
Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalis, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole, (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL. 10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 4 EA 9750 39000	6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender		EA	0	0
Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalls, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd, blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation,errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL. 10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10	7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the	5	EA	812.5	4062.5
mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL. 10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 4 EA 9750 39000 m and LED flood light at 8m of the pole across perimeter as per tender	8	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as	5	EA	1687.5	8437.5
m and LED flood light at 8m of the pole across perimeter as per tender	9	mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.				
	10		4	EA	9750	39000
		im and led flood light at 8m of the pole across perimeter as per tender				

12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	1	EA	8450	8450
13	4/6 M pole with Accessories as per specification of Tender	6	EA	4550	27300
14	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	13000	13000
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	121	ТВ	134	16214
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station			9750	0
	do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	2	EA EA	1875 2500	1875 5000
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and		LA	2300	3000
	Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.			0500	5000
19	Installation, commissioning & integration of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalis, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.	2	EA	3625	7250
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250

	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light	5	EA	2000	10000
	poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen				
27	if required, supports, nuts,bolts, earthing , required modification infixing arrangement ,				
	Supply and welding of mounting structure as per site condition , painting etc. all complete				
	with labour and materials asper drawings, specifications and directions of the Engineer-in-				
28	Charge. Cabling, JB, Earthing, Surge protection			0	0
	Installation, testing and commissioning of external surge & Lightening protect devices of			0	0
29	suitable connector and type along with accessories complete as per specification and tender			0	· ·
	document at following places,				
30	Type 1 SPD - Earth pit	5	Nos	3625	18125
31	Earth Pit			0	0
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			0	0
	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology				
	consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns),				
	filled with high conductive & corrosion resistance crystalline mixture and backfilling				
	compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600				
32	mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.				
	Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item				
	also includes provision of earth station flags with pit no's and date of inspection and the next				
	due date of inspection. Job also includes provision of test certificate of earthing station from				
	a class A licensed electrical contractor as per the format of the Corporation.				
33	CCTV system	2	EA	625	1250
	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender			0	0
34	specifications.			_	-
35	3CX2.5	700	RM	27	18900
36	3C x 4	0	RM	27	0
37	4C x 6	0	RM	45	0
38	4C x 10	0	RM	34	0
39	4C x 16	0	RM	65	0
40	4C x 25	0	RM	0	
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	500	RM	27	13500
	per tender specifications and instructions of Engineer in charge,				
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	900	RM	10	9000
	specifications and instructions of Engineer in charge.			_	
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
- 44	specifications and instructions of Engineer in charge.	40		7.5	75
44 45	10 m	10	EA	7.5	75
46	15 m 20 m	10	EA EA	10 12.5	100 125
47	25 m	10	EA	17.5	175
48	30 m	10	EA	25	250
	Laying, glanding, ferruling, termination of 1C \times 6 Sq. mm Flexible copper insulated green wire	400	RM	21	8400
49	for earthing instruments, cable tray at regular interval and junction boxes etc complete as	.00			0.00
	per specification and tender document				
				0	0
50	Laying of anodized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.				
	for induffing of the cable tray, complete as per specifications / tender documents,				
51	50 mm	0	RM	0	0
52	100 mm	400	RM	217.5	87000
53	150 mm	400	RM	240	96000
54	200 mm	0	RM	507.5	0
55 56	300 mm				0
30	450 mm		RM BM	1300	0
		0	RM	1300	0
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification				
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.			1300	0
57	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands			1300	0
57	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS			1300	0
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands	0	RM	1300	0
58	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB	0		1300 0	0 0 8750
58 59	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	0 10 20	RM EA EA	1300 0 875 750	0 0 8750 15000
58 59 60	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	10 20 50	EA EA EA	875 750 562.5	8750 15000 28125
58 59	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	10 20 50 50	EA EA EA EA	875 750 562.5 375	8750 15000 28125 18750
58 59 60 61	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	10 20 50	EA EA EA	875 750 562.5	8750 15000 28125
58 59 60	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB	10 20 50 50	EA EA EA EA	875 750 562.5 375	8750 15000 28125 18750
58 59 60 61	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	10 20 50 50 300	EA EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100
58 59 60 61	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	10 20 50 50 300	EA EA EA EA	875 750 562.5 375	8750 15000 28125 18750
58 59 60 61	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100
58 59 60 61 62	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10 20 50 50 300	EA EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100
58 59 60 61	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100
58 59 60 61 62	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets,	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100
58 59 60 61 62	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100
58 59 60 61 62 63	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets,	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	10 20 50 300 1000	EA EA EA EA RM	875 750 562.5 375 47 45 33334	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63 64	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	10 20 50 50 300	EA EA EA EA RM	875 750 562.5 375 47 45 33334	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services	10 20 50 50 300 1000	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63 64	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	10 20 50 300 1000	EA EA EA EA EA RM MT	875 750 562.5 375 47 45 33334	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63 64 65 66 67	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63 64 65 66 67	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings	10 20 50 50 300 1000	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63 64 65 66 67 68	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document. Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340 0
58 59 60 61 62 63 64 65 66 67 68 69	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340
58 59 60 61 62 63 64 65 66 67 68	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340 0
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340 0
58 59 60 61 62 63 64 65 66 67 68 69	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340 0
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Sub Total (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340 0
58 59 60 61 62 63 64 65 66 67 68 69 71 3000	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	10 20 50 300 1000 10	EA EA EA RM MT	1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	8750 15000 28125 18750 14100 45000 333340 0

4	Third Year @2.5% of the basic CAPEX cost	1	LS	286496	286496
5	Fourth Year @3% of the basic CAPEX cost	1	LS	343795	343795
6	Fifth Year @7% of the basic CAPEX cost	1	LS	802187	802187
7	Sixth Year @4% of the basic CAPEX cost	1	LS	458393	458393
8	Seventh Year @7% of the basic CAPEX cost	1	LS	802187	802187
9	SUB TOTAL (III) - CAMC (excluding GST)				2864956
	Sub Total - Supply Component (excluding GST)				10412701.65
	GST on Supply Component @ 18%				1874286.297
Α	Total - Supply Component (including GST)				12286987.95
	Sub Total - Service Component (excluding GST)				1047111.5
	GST on Service Component @ 18%				188480.07
В	Total - Service Components (including GST)				1235591.57
	Total CAPEX - Supply + Service Component (excluding GST)				11459813.15
	GST on Supply and Service Component @ 18%				2062766.367
С	Total CAPEX - Supply + Service Component (including GST)				13522579.52
	Sub Total - CAMC Component (excluding GST)				2864956
	GST on CAMC Component @ 18%				515692.08
D	Total - CAMC Component (including GST)				3380648.08
	Total - Supply + Service+CAMC Component (excluding GST)				14324769.15
	GST on Supply, Service and CAMC Component @ 18%				2578458.447
	Grand Total of Supply + Service + CAMC cost including GST				16903227.6

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE MADURAI AFS

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at Madurai AFS

1000	SUPPLY COMPONENTS				
1	IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT
2	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	21025	0
3	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	48813	195252
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	6	EA	30320	181920
5	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	45625	182500
6	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit , with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	329250	0
7	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	4	EA	41177	164708
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	4	EA	52471	209884
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	68955.6	137911.12
11	12 M pole with cantilever arrangement	0	EA	36975	0
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	30450	60900
13	4/6 M pole with Accessories as per specification of Tender	6	EA	19575	117450
14	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	607675	607675
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.		ТВ	9412	997672
16	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors.			0	0
	Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be				

18	Design & Supply of video wall along with required controller & complete accessories , cables etc , mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	2	EA	281250	562500
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.				
19	Design & Supply of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
20	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	2	EA	217791	435581.16
22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	544163	544163.25
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	1764706	1764706
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	64706	129412
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	8874	17748
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	294118	294118
27	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	4	EA	12353	49412
28	Cabling, JB, Earthing, Surge Protection Device			0	0
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0
30	Type 1 SPD - Earth pit	5	Nos	5883	29415
31	Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0
33	CCTV system Supply of ERLS Armoured Copper Power cable as per tender specifications	2	EA	20000	40000 0
34 35	Supply of FRLS Armoured Copper Power cable as per tender specifications. 3CX2.5	420	RM	112	47040
36	3C x 4	0	RM	135	0
37 38	4C x 6 4C x 10	0	RM RM	315 448	0
39	4C x 16	0	RM	580	0
40	$4C \times 25$ Supply of 6 core single mode armoured optical fibre cable as per tender specifications and	0 300	RM RM	3750 56	0 16800
41	Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of	600	RM	50	30000
42	<u>Engineer in charge.</u> Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
44	specifications and instructions of Engineer in charge. 10 m	10	EA	145	1450

	15 m	10	EA	145	1450
46	20 m	10	EA	145	1450
47	25 m	10	EA	145	1450
48	30 m Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender	10 240	EA RM	145 58	1450 13920
50	document Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel			0	0
51	for mounting of the cable tray. Complete as per specifications / tender documents. 50 mm	0	RM	0	0
52	100 mm	200	RM	357.5	71500
53	150 mm	200	RM	455	91000
54	200 mm	0	RM	578.5	0
55	300 mm	0	RM	715	0
56	450 mm	0	RM	0	0
57	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0
58	12 ways JB	10	EA	5598.45	55984.5
59	8 ways JB	20	EA	5598.45	111969
60	6 ways JB	50	EA	3110.25	155512.5
61	4 ways JB	50	EA	782.28	39114
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	180	RM	89	16020
63	Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	1000	RM MT	77 90625	77000 906250
64	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10	MI		
65	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0
66	MCT Block	3	EA	19125	57375
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				9577162.53
2000	SERVICE COMPONENTS				
2	IP BASED CCTV SURVEILLANCE SYSTEM Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	562.5	0
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	1875	7500
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	6	EA	562.5	3375
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	562.5	2250
	ispecifications and render pocument.				
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	0	0
7	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	4	EA EA	0 812.5	3250
	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the				
7	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as	4	EA	812.5	3250
8	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation,errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to ins	4	EA	812.5	3250 6750
8	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document. Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation,errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to ins	4	EA	1687.5	3250 6750

12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	8450	16900
13	4/6 M pole with Accessories as per specification of Tender	6	EA	4550	27300
14	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.		LS	13000	13000
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.		ТВ	134	14204
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline, 1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.)			9750	0
	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	2	EA EA	1875 2500	1875 5000
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and		1	2500	3000
	Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.				
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode		EA	2500	5000
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.		LS	5000	5000
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.		LS	5000	5000
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost, MCBs etc as per specification and tender document.		EA	3625	7250
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's		EA	797.5	1595
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.		EA	6250	6250

	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scaffolding, temporary fire screen if required, supports, nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-	4	EA	2000	8000
20	Charge.			0	0
28	Cabling, JB, Earthing, Surge protection			0	0
29	Installation, testing and commissioning of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender			U	U
30	document at following places.	-	Nos	2425	10125
31	Type 1 SPD - Earth pit	5	Nos	3625	18125
31	Earth Pit			0	0
32	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0
33	CCTV system	2	EA	625	1250
34	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender		LA	0	0
35	specifications.	420	DM	27	11240
36	3CX2.5 3C x 4	420 0	RM RM	27 27	11340 0
37	4C x 6	0	RM	45	0
38	4C x 10	0	RM	34	0
39	4C x 16	0	RM	65	0
40	4C x 25	0	RM	0	-
	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	300	RM	27	8100
41	per tender specifications and instructions of Engineer in charge. Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	600	RM	10	6000
42	specifications and instructions of Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
43	specifications and instructions of Engineer in charge.				
44	10 m	10	EA	7.5	75
45	15 m	10	EA	10	100
46	20 m	10	EA	12.5	125
47	25 m	10	EA	17.5	175
48	30 m	10	EA	25	250
49	Laying, glanding, ferruling, termination of $1C \times 6$ Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	240	RM	21	5040
	Laying of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0
51	50 mm	0	RM	0	0
52	100 mm	200	RM	217.5	43500
53	150 mm	200	RM	240	48000
54	200 mm	0	RM	507.5	0
55	300 mm	0	RM	580	0
	450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.		RM	0	0
58	12 ways JB	10	EA	875	8750
59	8 ways JB	20	EA	750	15000
60	6 ways JB	50	EA	562.5	28125
61	4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth	50 180	EA RM	375 47	18750 8460
62	station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM	45	45000
63	Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	10	MT	33334	333340
64	(if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc		<i>,</i>		
65	Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0
66 67	MCT Block	3	EA	2175	6525
68	Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	1	Module	65000	65000
69	document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	1	LS	65000	65000
71	SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)				905029
3000	Comprehensive AMC - PART -III				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty Second Year @1.5% of the basic CAPEX cost	1	LS	157233	157233
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4	Third Year @2.5% of the basic CAPEX cost	1	LS	262055	262055
5	Fourth Year @3% of the basic CAPEX cost	1	LS	314466	314466
6	Fifth Year @7% of the basic CAPEX cost	1	LS	733754	733754
7	Sixth Year @4% of the basic CAPEX cost	1	LS	419288	419288
8	Seventh Year @7% of the basic CAPEX cost	1	LS	733754	733754
9	SUB TOTAL (III) - CAMC (excluding GST)				2620550
	Sub Total - Supply Component (excluding GST)				9577162.53
	GST on Supply Component @ 18%				1723889.255
Α	Total - Supply Component (including GST)				11301051.79
	Sub Total - Service Component (excluding GST)				905029
	GST on Service Component @ 18%				162905.22
В	Total - Service Components (including GST)				1067934.22
	Total CAPEX - Supply + Service Component (excluding GST)				10482191.53
	GST on Supply and Service Component @ 18%				1886794.475
С	Total CAPEX - Supply + Service Component (including GST)				12368986.01
	Sub Total - CAMC Component (excluding GST)				2620550
	GST on CAMC Component @ 18%				471699
D	Total - CAMC Component (including GST)				3092249
	Total - Supply + Service+CAMC Component (excluding GST)				13102741.53
	GST on Supply, Service and CAMC Component @ 18%				2358493.475
	Grand Total of Supply + Service + CAMC cost including GST				15461235.01

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE AFS MEENAMBKKAM

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at AFS Mennambakkam

1000	In the state of th				
1000	SUPPLY COMPONENTS IP BASED CCTV SURVEILLANCE SYSTEM	QTY	UOM	RATE	TOTAL AMOUNT
2	Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc	0	EA	21025	0
3	complete as per specifications and Tender Document. Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc.	4	EA	48813	195252
4	complete as per specifications and Tender Document. Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	30320	242560
5	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories letc complete as per specifications and Tender Document.	8	EA	45625	365000
6	Supply of Integral Explosion Proof HD IP Fixed Camera. Supply unit , with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.		EA	329250	0
7	Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	7	EA	41177	288239
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.		EA	52471	367297
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	68955.6	137911.12
11	12 M pole with cantilever arrangement	0	EA	36975	0
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	6	EA	30450	182700
13	4/6 M pole with Accessories as per specification of Tender	8	EA	19575	156600
14	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.		LS	607675	607675
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.		ТВ	9412	1562392
16	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room			0	0
17	shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be	1	EA	32500	32500
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,		LA	32300	3£300

	T				
18	Design & Supply of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	2	EA	281250	562500
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound, ack push button & accessories.				
19	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (fin two pages) for CCTV camera.	2	EA	281250	562500
20	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	2	EA	217791	435581.16
22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	544163	544163.25
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	1764706	1764706
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	64706	129412
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	8874	17748
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	294118	294118
27	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	8	EA	12353	98824
28	Cabling, JB, Earthing, Surge Protection Device			0	0
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0
30	Type 1 SPD - Earth pit	5	Nos	5883	29415
31	Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0
33	CCTV system	2	EA	20000	40000
34 35	Supply of FRLS Armoured Copper Power cable as per tender specifications. 3CX2.5	1020	RM	112	0 114240
36	3C x 4	0	RM	135	0
37 38	4C x 6 4C x 10	0	RM RM	315 448	0
39	4C x 16	0	RM	580	0
40	4C x 25 Supply of 6 core single mode armoured optical fibre cable as per tender specifications and	0 700	RM	3750 56	0 39200
41	supply or 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of	900	RM RM	56 50	45000
42	Engineer in charge. Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
44	specifications and instructions of Engineer in charge. 10 m	10	EA	145	1450

45	15 m	10	EA	145	1450
46	20 m	10	EA	145	1450
47	25 m	10	EA	145	1450
48	30 m Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender	10 560	EA RM	145 58	1450 32480
50	document Supply of anodized Aluminium perforated cable trays, tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0
51	50 mm	0	RM	0	0
52	100 mm	500	RM	357.5	178750
53	150 mm	600	RM	455	273000
54	200 mm	0	RM	578.5	0
55	300 mm	0	RM	715	0
56 57	450 mm Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	0	RM	0	0
58	12 ways JB	10	EA	5598.45	55984.5
59	8 ways JB	20	EA	5598.45	111969
60	6 ways JB	50	EA	3110.25	155512.5
61	4 ways JB	50	EA	782.28	39114
62	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM RM	89 77	37380 77000
63	specifications and instructions of Engineer in charge.				
64	Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10	MT	90625	906250
65	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0
66	MCT Block	3	EA	19125	57375
67	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST)				11310098.53
2000	SERVICE COMPONENTS				
2	IP BASED CCTV SURVEILLANCE SYSTEM Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	562.5	0
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	1875	7500
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	8	EA	562.5	4500
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	8	EA	562.5	4500
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	0	0
7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	7	EA	812.5	5687.5
	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of	7	EA	1687.5	11812.5
8	CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.				
9	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as			0	0
9	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation,errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.	2	EA		
	loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document. Installation,errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period	2	EA	9750	19500

12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	6	EA	8450	50700
13	4/6 M pole with Accessories as per specification of Tender	8	EA	4550	36400
14	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	13000	13000
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	166	ТВ	134	22244
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station			9750	0
	do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	1 2	EA EA	1875 2500	1875 5000
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and	2	EA	2500	3000
	Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.			0500	5000
19	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	3625	7250
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250

	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light	8	EA	2000	16000
	poles up to 10M height including supply & fixing of clamps, scaffolding , temporary fire screen				
27	if required, supports, nuts, bolts, earthing, required modification infixing arrangement,				
	Supply and welding of mounting structure as per site condition , painting etc. all complete				
	with labour and materials asper drawings, specifications and directions of the Engineer-in-				
	Charge.				
28	Cabling, JB, Earthing, Surge protection			0	0
	Installation, testing and commissioning of external surge & Lightening protect devices of			0	0
29	suitable connector and type along with accessories complete as per specification and tender			1	
	document at following places.				
30	Type 1 SPD - Earth pit	5	Nos	3625	18125
31	Earth Pit			0	0
				0	0
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			ľ	
	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology				
	consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns),				
	filled with high conductive & corrosion resistance crystalline mixture and backfilling				
32	compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600				
32	mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.				
	Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item				
	also includes provision of earth station flags with pit no's and date of inspection and the next				
	due date of inspection. Job also includes provision of test certificate of earthing station from				
	a class A licensed electrical contractor as per the format of the Corporation.				
22		1	F.4	/25	4250
33	CCTV system	2	EA	625	1250
34	Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender			0	0
	specifications.			<u> </u>	
35	3CX2.5	1020	RM	27	27540
36	3C x 4	0	RM	27	0
37	4C x 6	0	RM	45	0
38	4C x 10	0	RM	34	0
39	4C x 16	0	RM	65	0
40	4C x 25	0	RM	0	
41	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	700	RM	27	18900
41	per tender specifications and instructions of Engineer in charge.			<u> </u>	
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	900	RM	10	9000
42	specifications and instructions of Engineer in charge.				
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
43	specifications and instructions of Engineer in charge.				
44	10 m	10	EA	7.5	75
45	15 m	10	EA	10	100
46	20 m	10	EA	12.5	125
47	25 m	10	EA	17.5	175
48		10	EA	25	250
70	30 m Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire	560	RM	21	11760
49		300	IVW		11700
49	for earthing instruments, cable tray at regular interval and junction boxes etc complete as				
	per specification and tender document			_	0
E0	Laying of anodized Aluminium perforated cable trays, tray covers along with structural steel			0	0
50	for mounting of the cable tray. Complete as per specifications / tender documents.			l	
		_			_
51	50 mm	0	RM	0	0
	400				
52	100 mm	500	RM	217.5	108750
52 53	150 mm	500 600	RM RM	217.5 240	144000
52 53 54	150 mm 200 mm	500 600 0	RM RM RM	217.5 240 507.5	144000 0
52 53 54 55	150 mm 200 mm 300 mm	500 600 0	RM RM RM RM	217.5 240 507.5 580	144000 0 0
52 53 54	150 mm 200 mm	500 600 0	RM RM RM	217.5 240 507.5 580 1300	144000 0 0 0
52 53 54 55	150 mm 200 mm 300 mm 450 mm	500 600 0	RM RM RM RM	217.5 240 507.5 580	144000 0 0
52 53 54 55	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification	500 600 0	RM RM RM RM	217.5 240 507.5 580 1300	144000 0 0 0
52 53 54 55	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.	500 600 0	RM RM RM RM	217.5 240 507.5 580 1300	144000 0 0 0
52 53 54 55 56	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands	500 600 0	RM RM RM RM	217.5 240 507.5 580 1300	144000 0 0 0
52 53 54 55 56	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS	500 600 0	RM RM RM RM	217.5 240 507.5 580 1300	144000 0 0 0
52 53 54 55 56	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	500 600 0 0 0	RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0
52 53 54 55 56 57	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.	500 600 0 0 0	RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0
52 53 54 55 56 57 57	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	500 600 0 0 0	RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0
52 53 54 55 56 57	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB	500 600 0 0 0	RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0
52 53 54 55 56 57 57	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB	500 600 0 0 0	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0 0
52 53 54 55 56 57 58 59 60	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB	500 600 0 0 0	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0 0 0 15000 28125
52 53 54 55 56 57 58 59 60	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth	500 600 0 0 0 10 20 50	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0 0 8750 15000 28125 18750
52 53 54 55 56 57 58 59 60 61	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB	500 600 0 0 0 10 20 50	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0 0 8750 15000 28125 18750
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0	144000 0 0 0 0 0 0 8750 15000 28125 18750
52 53 54 55 56 57 58 59 60 61	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47	144000 0 0 0 0 0 0 8750 15000 28125 18750 19740
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47	144000 0 0 0 0 0 0 8750 15000 28125 18750 19740
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets,	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740
52 53 54 55 55 56 57 57 58 59 60 61 62 63	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45	144000 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 56 57 58 59 60 61 62	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45	144000 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 55 56 57 57 58 59 60 61 62 63	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45	144000 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 55 56 57 57 58 59 60 61 62 63	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	500 600 0 0 0 0 20 50 420	RM RM RM RM RM RM RM EA EA EA EA EA EA MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 55 56 57 57 58 59 60 61 62 63	200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	500 600 0 0 0 0 10 20 50 50 420	RM RM RM RM RM RM EA EA EA EA EA RM	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 55 56 57 58 59 60 61 62 63 64	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services	500 6000 0 0 0 10 20 50 420 1000 10	RM RM RM RM RM RM RM RM EA EA EA EA RM	217.5 240 5580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 55 56 57 58 59 60 61 62 63	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	500 600 0 0 0 0 20 50 420	RM RM RM RM RM RM RM EA EA EA EA EA EA MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45	144000 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 56 57 57 58 59 60 61 62 63 64	200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document	500 600 0 0 0 0 20 50 50 420 1000 10	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 55 56 57 58 59 60 61 62 63 64	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings	500 6000 0 0 0 10 20 50 420 1000 10	RM RM RM RM RM RM RM RM EA EA EA EA RM	217.5 240 5580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document as per tender document. MCT Block	500 600 0 0 0 0 20 50 50 420 1000 10	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 0
52 53 54 55 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	500 600 0 0 0 0 20 50 50 420 1000	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340
52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender Comprehensive AMC - PART -III Comprehensive AMC - PART -III	500 600 0 0 0 0 20 50 50 420 1000	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 0
52 53 54 55 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	500 600 0 0 0 0 20 50 50 420 1000	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 0
52 53 54 55 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender Comprehensive AMC - PART -III Comprehensive AMC - PART -III	500 600 0 0 0 0 20 50 50 420 1000	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 0
52 53 54 55 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 71 3000	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	500 600 0 0 0 0 20 50 50 420 1000	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 0
52 53 54 55 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 71 3000 1	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 6 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender Submission of Final Detailed system design, Engineering, Documentations , Pater III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Tec	500 600 0 0 0 0 0 50 50 420 1000 10	RM EA	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334 0 2175 0 65000	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 6525 65000 1184094
52 53 54 55 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 71 30000	150 mm 200 mm 300 mm 450 mm Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents. 12 ways JB 8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	500 600 0 0 0 0 20 50 50 420 1000	RM EA EA EA EA EA EA EA RM MT	217.5 240 507.5 580 1300 0 875 750 562.5 375 47 45 33334	144000 0 0 0 0 0 0 0 0 8750 15000 28125 18750 19740 45000 333340 0 6525 65000

4	Third Year @2.5% of the basic CAPEX cost	1	LS	312355	312355
5	Fourth Year @3% of the basic CAPEX cost	1	LS	374826	374826
6	Fifth Year @7% of the basic CAPEX cost	1	LS	874594	874594
7	Sixth Year @4% of the basic CAPEX cost	1	LS	499768	499768
8	Seventh Year @7% of the basic CAPEX cost	1	LS	874594	874594
9	SUB TOTAL (III) - CAMC (excluding GST)				3123550
	Sub Total - Supply Component (excluding GST)				11310098.53
	GST on Supply Component @ 18%				2035817.735
Α	Total - Supply Component (including GST)				13345916.27
	Sub Total - Service Component (excluding GST)				1184094
	GST on Service Component @ 18%				213136.92
В	Total - Service Components (including GST)				1397230.92
	Total CAPEX - Supply + Service Component (excluding GST)				12494192.53
	GST on Supply and Service Component @ 18%				2248954.655
С	Total CAPEX - Supply + Service Component (including GST)				14743147.19
	Sub Total - CAMC Component (excluding GST)				3123550
	GST on CAMC Component @ 18%				562239
D	Total - CAMC Component (including GST)				3685789
	Total - Supply + Service+CAMC Component (excluding GST)				15617742.53
	GST on Supply, Service and CAMC Component @ 18%				2811193.655
	Grand Total of Supply + Service + CAMC cost including GST				18428936.19

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION ENGINEERING DEPARTMENT TECHNICAL ESTIMATE AFS TRICHY

SUB: Design, Supply, Installation, Testing & Commissioning of IP based CCTV Surveillance System with associated works and Comprehensive Annual Maintenance Contract for a period of 6 Years at AFS Trichy

	<u>, </u>				
1000	SUPPLY COMPONENTS	OTV	1104	DATE	TOTAL AMOUNT
	IP BASED CCTV SURVEILLANCE SYSTEM Supply of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit	QTY 0	UOM EA	21025	TOTAL AMOUNT 0
2	(POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	Ü	LA	21025	Ů
3	Supply of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	48813	195252
4	Supply of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	6	EA	30320	181920
5	Supply of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuit/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	45625	182500
6	Supply of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc	0	EA	329250	0
7	complete as per specifications and Tender Document. Supply of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	4	EA	41177	164708
8	Supply of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	4	EA	52471	209884
9	Design, fabrication and supply of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10 m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	68955.6	137911.12
11	12 M pole with cantilever arrangement	0	EA	36975	0
12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	30450	60900
13	4/6 M pole with Accessories as per specification of Tender	6	EA	19575	117450
14	Supply of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	607675	607675
15	Supply of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Note: Storage Calculation to be submitted for information.		ТВ	9412	997672
16	Supply of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location: Control Room - 2 no.(1No for Pipeline, 1 No for Marketing), Security room- 1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.)			0	0
	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	1	EA	32500	32500

18	Design & Supply of video wall along with required controller & complete accessories , cables etc , mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2	2	EA	281250	562500
	Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.				
19	Design & Supply of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
20	Design & Supply of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	281250	562500
21	Supply of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	2	EA	217791	435581.16
22	Supply of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	544163	544163.25
23	Supply of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	1764706	1764706
24	Supply of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	64706	129412
25	Supply of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	8874	17748
26	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	294118	294118
27	Supply of 350 W LED flood ONLY light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen if required, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as per site condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	4	EA	12353	49412
28	Cabling, JB, Earthing, Surge Protection Device			0	0
29	Supply of external surge & Lightening protect devices of suitable connector and type along with accessories complete as per specification and tender document at following places.			0	0
30	Type 1 SPD - Earth pit	5	Nos	5883	29415
	Earth Pit Supply of Maintenance Free CPRI approved Earth pit with 80 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit no's and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a class A licensed electrical contractor as per the format of the Corporation.			0	0
33	CCTV system Supply of ERLS Armoured Copper Power cable as per tender specifications	6	EA	20000	120000
34 35	Supply of FRLS Armoured Copper Power cable as per tender specifications. 3CX2.5	430	RM	0 112	0 48160
36	3C x 4	0	RM	135	0
37 38	4C x 6 4C x 10	0	RM RM	315 448	0
39	4C x 16	0	RM	580	0
40	4C x 25	200	RM	3750 56	0
41	Supply of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply of CAT 6 Ethernet armoured cable as per tender specifications and instructions of	300	RM RM	56 50	16800 30000
42	<u>Engineer in charge.</u> Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
44	specifications and instructions of Engineer in charge. 10 m	10	EA	145	1450

45	15 m	10	EA	145	1450
46	20 m	10	EA	145	1450
47	25 m	10	EA	145	1450
48	30 m	10	EA	145	1450
49	Supply of 1C x 6 Sq. mm Flexible copper insulated green wire for earthing instruments, cable tray at regular interval and junction boxes etc complete as per specification and tender document	240	RM	58	13920
50	Supply of anodized Aluminium perforated cable trays , tray covers along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.			0	0
51	50 mm	0	RM	0	0
52	100 mm	200	RM	357.5	71500
53 54	150 mm 200 mm	300	RM RM	455 578.5	136500 0
55	300 mm	0	RM	715	0
56	450 mm	Ť	RM	0	0
	Supply of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.			0	0
58	12 ways JB	10	EA	5598.45	55984.5
59	8 ways JB	20	EA	5598.45	111969
60	6 ways JB 4 ways JB	50 50	EA EA	3110.25 782.28	155512.5 39114
	Supply of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2	180	RM	89	16020
62	as per IS 4759) shall be done after all fabrication. Supply of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	1000	RM	77	77000
64	specifications and instructions of Engineer in charge. Supply of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	10	MT	90625	906250
65	Supply of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.			0	0
66	MCT Block	3	EA	19125	57375
2000	SUB TOTAL (I) - SUPPLY COMPONENTS (excluding GST) SERVICE COMPONENTS				9703782.53
1	IP BASED CCTV SURVEILLANCE SYSTEM				
2	Installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	562.5	0
3	Installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	1875	7500
4	Installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	6	EA	562.5	3375
5	Installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	4	EA	562.5	2250
6	Installation, configuration, integration, testing and commissioning of Integral Explosion Proof HD IP Fixed Cameras and MFZ lens (2MP) along with power supply unit, with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	0	EA	0	0
7	Installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	4	EA	812.5	3250
8	Installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. Supply of required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes supply of Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	4	EA	1687.5	6750
9	Installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangement for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			0	0
10	10 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m, 2 PTZ camera at 10	2	EA	9750	19500
11	m and LED flood light at 8m of the pole across perimeter as per tender 12 M pole with/without cantilever arrangement	0	EA	11600	0
11	. = p	,			•

12	8 M pole with cantilever arrangement for mounting of 1 fixed camera at 6m and LED flood light at 8m of the pole across perimeter as per tender	2	EA	8450	16900
13	4/6 M pole with Accessories as per specification of Tender	6	EA	4550	27300
14	Installation, configuration, integration, testing and commissioning of rack mounted CCTV Server (s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	1	LS	13000	13000
15	Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	106	ТВ	134	14204
16	Installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. (Location : Control Room - 2 nos.(1No for Pipeline,1 No for Marketing), Security room-1 no., Mkt. TM room - 1 no., Pipeline TM Room - 1 no.) Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station			9750	0
	do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Marketing CPU for control room & security room shall be kept in Panel room in 42 U Rack. KVM extender & receiver for these CPU is to be supplied at no additional cost.				
17	Tower type with minimum 27" colored LED monitor- Marketing Incharge - 1no.,	2	EA EA	1875 2500	1875 5000
18	Installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for fire fighting cum critical Alarm display & annunciation cum CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 Note: Two Number (min. 55" each or meeting size of video wall) for Alarm LED display and		EA	2500	3000
	Fire fighting display along with one no. of hooter with provision of dual tone sound,ack push button & accessories.			2522	5000
19	Installation, commissioning & integration of video wall along with controller & complete accessories , cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
20	Installation, commissioning & integration of video wall along with controller & complete accessories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	2	EA	2500	5000
21	Installation, integration, configuration, testing and commissioning of Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode	2	EA	2500	5000
22	Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 17 cameras recording, 17 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	1	LS	5000	5000
23	Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	1	LS	5000	5000
24	Installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with accessories, limit switches, earthing arrangements, breaker, fuses, required OFC components & accessories like LIU, splice trays, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties etc complete in all respect for functioning of CCTV camera, terminal blocks and wiring etc complete as per specification and tender document For mounting of CCTV Servers, Analytics Servers, NAS/SAN, rack mounted monitors, Rack mounted keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, PDB panel if required separate to be provided at no additional cost ,MCBs etc as per specification and tender document.	2	EA	3625	7250
25	Installation, testing and commissioning of Wall mounted Network Rack-minimum 10U 19" Rack for mounting of Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room for CCTV equipment's	2	EA	797.5	1595
26	Installation, integration, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipment's with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	1	EA	6250	6250

	Installation, testing and commissioning of 350 W LED flood ONLY light luminaries on Light	4	EA	2000	8000
	poles up to 10M height including supply & fixing of clamps, scaffolding , temporary fire screen				
27	if required, supports, nuts,bolts, earthing , required modification infixing arrangement ,				
	Supply and welding of mounting structure as per site condition , painting etc. all complete				
	with labour and materials asper drawings, specifications and directions of the Engineer-in-				
28	Charge. Cabling, JB, Earthing, Surge protection			0	0
20	Installation, testing and commissioning of external surge & Lightening protect devices of			0	0
29	suitable connector and type along with accessories complete as per specification and tender			O	· ·
	document at following places.				
30	Type 1 SPD - Earth pit	5	Nos	3625	18125
31	Earth Pit			0	0
	Installation, testing and commissioning of Maintenance Free CPRI approved Earth pit with 80			0	0
	mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology				
	consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns),				
	filled with high conductive & corrosion resistance crystalline mixture and backfilling				
	compound around electrode, brick masonry earth pit including plastering in CM 1:4, 600x600				
32	mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.				
	Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item				
	also includes provision of earth station flags with pit no's and date of inspection and the next				
	due date of inspection. Job also includes provision of test certificate of earthing station from				
	a class A licensed electrical contractor as per the format of the Corporation.				
33		6	ΕA	625	2750
	CCTV system Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender	0	EA	625 0	3750 0
34				U	U
35	specifications. 3CX2.5	430	RM	27	11610
36	3C x 4	0	RM	27	0
37	4C x 6	0	RM	45	0
38	4C x 10	0	RM	34	0
39	4C x 16	0	RM	65	0
40	4C x 25	0	RM	0	
	Laying, glanding, ferruling, termination of 6 core single mode armoured optical fibre cable as	300	RM	27	8100
41	per tender specifications and instructions of Engineer in charge.				<u></u> _
42	Laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	600	RM	10	6000
42	specifications and instructions of Engineer in charge,				
43	Laying, ferruling, termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender			0	0
73	specifications and instructions of Engineer in charge.				
44	10 m	10	EA	7.5	75
45	15 m	10	EA	10	100
46	20 m	10	EA	12.5	125
47	25 m	10	EA	17.5	175
48	30 m	10	EA	25	250
40	Laying, glanding, ferruling, termination of 1C x 6 Sq. mm Flexible copper insulated green wire	240	RM	21	5040
49	for earthing instruments, cable tray at regular interval and junction boxes etc complete as				
	per specification and tender document			0	0
50	Laying of anodized Aluminium perforated cable trays , tray covers along with structural steel			U	U
30	for mounting of the cable tray. Complete as per specifications / tender documents.				
51	50 mm	0	RM	0	0
52	100 mm	200	RM	217.5	43500
53	150 mm	300	RM	240	72000
54	200 mm	0	RM	507.5	0
55	300 mm	0	RM	580	0
56	450 mm	0	RM	1300	0
	Installation of Exd/FLP -Junction Box/Power distribution box with IP 65 as per specification			0	0
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval.				
57	It shall be complete in all respect. Accessories like certified double compression cable glands				
	with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS				
	316 fasteners. Complete as per specification / tender documents.				
58	· · ·	i .			
58 59		10	EA	975	0750
	12 ways JB	10	EΑ	875 750	8750 15000
	8 ways JB	20	EA	750	15000
60	8 ways JB 6 ways JB	20 50	EA EA	750 562.5	15000 28125
	8 ways JB 6 ways JB 4 ways JB	20 50 50	EA EA	750 562.5 375	15000 28125 18750
60 61	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth	20 50	EA EA	750 562.5	15000 28125
60	8 ways JB 6 ways JB 4 ways JB	20 50 50	EA EA	750 562.5 375	15000 28125 18750
60 61 62	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication.	20 50 50 180	EA EA	750 562.5 375	15000 28125 18750
60 61	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth	20 50 50 180	EA EA EA RM	750 562.5 375 47	15000 28125 18750 8460
60 61 62	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	20 50 50 180	EA EA EA RM	750 562.5 375 47	15000 28125 18750 8460
60 61 62 63	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	20 50 50 180	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 8460
60 61 62	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge	20 50 50 180	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 8460
60 61 62 63	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc	20 50 50 180	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 8460 45000 333340
60 61 62 63	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control	20 50 50 180	EA EA EA RM	750 562.5 375 47 45	15000 28125 18750 8460
60 61 62 63	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable	20 50 50 180	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 8460 45000 333340
60 61 62 63	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender	20 50 50 180	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 8460 45000 333340
60 61 62 63 64	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	20 50 50 180 1000	EA EA EA RM RM	750 562.5 375 47 45 33334	15000 28125 18750 8460 45000 333340
60 61 62 63 64 65	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block	20 50 50 180	EA EA EA RM	750 562.5 375 47 45 33334	15000 28125 18750 8460 45000 333340
60 61 62 63 64	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services	20 50 50 180 1000 10	EA EA EA RM RM MT	750 562.5 375 47 45 33334 0	15000 28125 18750 8460 45000 333340
60 61 62 63 64 65	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender	20 50 50 180 1000	EA EA EA RM RM	750 562.5 375 47 45 33334	15000 28125 18750 8460 45000 333340
60 61 62 63 64 65 66 67 68	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0
60 61 62 63 64 65 66 67	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings	20 50 50 180 1000 10	EA EA EA RM RM MT	750 562.5 375 47 45 33334 0	15000 28125 18750 8460 45000 333340
60 61 62 63 64 65 66 67 68	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document. Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0 6525 65000
60 61 62 63 64 65 66 67 68	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST)	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0
60 61 62 63 64 65 66 67 68 69	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document. Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0 6525 65000
60 61 62 63 64 65 66 67 68 69	8 ways JB 6 ways JB 4 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender document Submission of Final Petailed System design, Engineering, Documentations , As built drawings etc complete as per tender.	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0 6525 65000
60 61 62 63 64 65 66 67 68 69 71 3000	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0 6525 65000
60 61 62 63 64 65 66 67 68 69 71 3000	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART -III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0 6525 65000
60 61 62 63 64 65 66 67 68 69 71 3000	8 ways JB 6 ways JB 4 ways JB Fabrication , cutting , laying & connection of hot dip GI earth strip (50 X 6) within earth station. Hot dip galvanizing (800 gm/m2 as per IS 4759) shall be done after all fabrication. Laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge. Design, fabrication, painting & errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffeners, gussets, base plate etc Installation, testing and commissioning of MCT block for entire CCTV system to Control Room, Admin Building, & Security Room with minimum 50% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. MCT Block Other Services Providing training to IOCL employee as per schedule/Module for one days as per tender document Submission of Final Detailed system design, Engineering, Documentations , As built drawings etc complete as per tender SUB TOTAL (II) - SERVICE COMPONENTS (excluding GST) Comprehensive AMC - PART - III Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	20 50 50 180 1000 10	EA EA EA RM RM AT MT EA Module	750 562.5 375 47 45 33334 0 2175 0 65000	15000 28125 18750 8460 45000 333340 0 6525 65000

4	Third Year @2.5% of the basic CAPEX cost	1	LS	265890	265890
5	Fourth Year @3% of the basic CAPEX cost	1	LS	319068	319068
6	Fifth Year @7% of the basic CAPEX cost	1	LS	744491	744491
7	Sixth Year @4% of the basic CAPEX cost	1	LS	425424	425424
8	Seventh Year @7% of the basic CAPEX cost	1	LS	744491	744491
9	SUB TOTAL (III) - CAMC (excluding GST)				2658898
	Sub Total - Supply Component (excluding GST)				9703782.53
	GST on Supply Component @ 18%				1746680.855
Α	Total - Supply Component (including GST)				11450463.39
	Sub Total - Service Component (excluding GST)				931799
	GST on Service Component @ 18%				167723.82
В	Total - Service Components (including GST)				1099522.82
	Total CAPEX - Supply + Service Component (excluding GST)				10635581.53
	GST on Supply and Service Component @ 18%				1914404.675
С	Total CAPEX - Supply + Service Component (including GST)				12549986.21
	Sub Total - CAMC Component (excluding GST)				2658898
	GST on CAMC Component @ 18%				478601.64
D	Total - CAMC Component (including GST)				3137499.64
	Total - Supply + Service+CAMC Component (excluding GST)				13294479.53
	GST on Supply, Service and CAMC Component @ 18%				2393006.315
	Grand Total of Supply + Service + CAMC cost including GST				15687485.85

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION CHENGALPET BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

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	ITEM	QTY	UNIT	SI	JPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
)	CCTV SYSTEM FOR PERIMETER WITH PIDS							
0.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	21025	0.42	562.5	0.01	0.43
).2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	12	48813	5.86	1875	0.23	6.08
).3	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	5	30320	1.52	562.5	0.03	1.54
).4	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	35	45625	15.97	562.5	0.20	16.17
0.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	EA	27	41177	11.12	812.5	0.22	11.34
0.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	27	52471	14.17	1687.5	0.46	14.62
).7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at							
).7.1	no additional cost to IOCL. 10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	12	68955.6	8.27	9750	1.17	9.44
0.7.2	LED flood light at 8M of the pole across perimeter as per tender 12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
0.7.2	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	23	30450	7.00	8450	1.94	8.95
.7.3	the pole across perimeter as per tender	LA	23	30430	7.00	0430	1.74	0.73
).7.4	4/6M pole with Accessories as per specification of Tender							
		EA	1	19575	0.20	4500	0.05	0.24
0.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	1 35	19575 12353	0.20 4.32	4500 2000	0.05 0.70	0.24 5.02
).9	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc							
).9	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever							
).9.1).9.1	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply,laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm	EA	35	12353	4.32	2000	0.70	5.02
i.9 i.9.1 i.9.1.1 i.9.1.2	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm	EA M M	35 1 3200	12353 40 112	0.00 3.58	2000 16 27	0.70 0.00 0.86	0.00 4.45
.9.1 .9.1.1 .9.1.2 .9.1.3	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm	M M M	35 1 3200 1	12353 40 112 135	0.00 3.58 0.00	2000 16 27 27	0.70 0.00 0.86 0.00	0.00 4.45 0.00
.9.1 .9.1.1 .9.1.2 .9.1.3 .9.1.4	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm	M M M	1 3200 1 2100	40 112 135 315	0.00 3.58 0.00 6.62	2000 16 27 27 45	0.70 0.00 0.86 0.00 0.95	0.00 4.45 0.00 7.56
1.9.1 1.9.1.1 1.9.1.2 1.9.1.3 1.9.1.4	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply,laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, Lugs, ferrules, etc Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	M M M M M	1 3200 1 2100 3200	40 112 135 315 56	0.00 3.58 0.00 6.62 1.79	2000 16 27 27 45 27	0.70 0.00 0.86 0.00 0.95 0.86	0.00 4.45 0.00 7.56 2.66
0.9.1 0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm 4C x 6 sqmm 5upply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	M M M	1 3200 1 2100	40 112 135 315	0.00 3.58 0.00 6.62	2000 16 27 27 45	0.70 0.00 0.86 0.00 0.95	0.00 4.45 0.00 7.56
0.9.1 0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply,laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, Lugs, ferrules, etc Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	M M M M M M M M M M	1 3200 1 2100 3200	40 112 135 315 56	0.00 3.58 0.00 6.62 1.79	2000 16 27 27 45 27	0.70 0.00 0.86 0.00 0.95 0.86	0.00 4.45 0.00 7.56 2.66
0.9.1 0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10 0.11	10M height including supply & fixing of clamps, scafolding , temporary fire screen ifrequired, supports, nuts, bolts, earthing , required modification infixing arrangement , Supply and welding of mounting structure as persite condition , painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply,laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners , OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document wire for earthing instruments and junction boxes etc complete as per specification and tender document supply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	M M M M M M M M M M	1 3200 1 2100 3200 2100	40 112 135 315 56 50	0.00 3.58 0.00 6.62 1.79	2000 16 27 27 45 27 10	0.70 0.00 0.86 0.00 0.95 0.86 0.21	0.00 4.45 0.00 7.56 2.66
0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10 0.11	10M height including supply & fixing of clamps, scafolding , temporary fire screen ifrequired, supports, nuts, bolts, earthing , required modification infixing arrangement , Supply and welding of mounting structure as persite condition , painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge. Supply,laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners , OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document SUpply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System	M M M M M M M M M M M M M M M M M M M	1 3200 1 2100 3200 2100 2100	40 112 135 315 56 50	0.00 3.58 0.00 6.62 1.79 1.05	2000 16 27 27 45 27 10 21	0.70 0.00 0.86 0.00 0.95 0.86 0.21	0.00 4.45 0.00 7.56 2.66 1.26

1 of 4 CHENGALPET BP

SN	ITEM	QTY	UNIT	SL	JPPLY	INST	ALLATION	TOTAL
		-		RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.14.2	15 m	EA	50	145	0.07	10	0.01	0.08
10.14.3	20 m	EA	50	145	0.07	12.5	0.01	0.08
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.							
10.15.1	50 mm	М	1	236	0.00	0	0.00	0.00
10.15.2	100 mm	М	50	357.5	0.18	217.5	0.11	0.29
10.15.2	150 mm	М	3200	455	14.56	240	7.68	22.24
0.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
	24 ways JB	EA	5	10295	0.51	4321	0.22	0.73
	18 ways JB	EA	5	8920	0.45	3547	0.18	0.62
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	21	5341	1.12	1499	0.31	1.44
	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	3200	77	2.46	45	1.44	3.90
	Supply, design , Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc Supply of Maintenance Free CPRI approved Earth pit (Ashlok / Equivalent make) as per IS: 3043 with	то	1	90625	0.91	33334	0.33	1.24
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
	Earth Pit	EA	18	20000	3.60	625	0.11	3.71
10.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	LS	1	607675	6.08	13000	0.13	6.21
	Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	ТВ	200	9412	18.82	134	0.27	19.09
	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional							
	cost to IOCL.							
10.24.1	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Tower type minimum 27" colored LED monitor :- Mrt. 1 M room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Tower type minimum 27 colored LED monitor :- Control room - 1 No. Tower type minimum 27" colored LED monitor :- Security room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
10.25	Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.02	2.84

10.26	ITEM	QTY	UNIT	S	UPPLY	INST	ALLATION	TOTAL
		Q.	OIIII	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	Design & Supply, installation, commissioning & integration of video wall along with controller &	EA	1	281250	2.81	2500	0.03	2.84
	complete accecories, cables etc. for CCTV complete as per specifications and tender document.	LA		201230	2.01	2300	0.03	2.04
ľ	complete accessions, castes etc. for our complete as per specifications and tender accument							
1	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two							
	Design & Supply, installation, commissioning & integration of video wall along with controller &	EA	1	281250	2.81	2500	0.03	2.84
	complete accecories , cables etc. for CCTV complete as per specifications and tender document.							
ļ	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two							
10.28	Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3	SET	1	217791	2.18	2500	0.03	2.20
1	Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare							
	whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications							
	and Tender Document.							
	Note- The switches are required to be configured in dual redundant mode.							
	Supply, Installation, integration, configuration, testing and commissioning of Intelligent video	LS	1	544163	5.44	5000	0.05	5.49
	operation, control, management, recording & processing software (VMS) complete as per specifications							
	and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC							
	licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.							
10.30	Cumply Installation integration configuration testing and commissioning of Advanced Applytics	LS	1	1764706	17.65	5000	0.05	17.70
	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics	L	'	1/04/00	17.03	3000	0.05	17.70
	Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics							
	for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including							
	analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.							
	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size,							
				1]			
	along with accessories like keypad cum contactless smart card reader for front & back door seperately			1]			
	with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc			1]			
	complete as per specification and tender document for mounting of below mentioned equipments.				[
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors	EA	2	64706	1.29	3625	0.07	1.37
	& keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch,	LA	_	04700	1.47	5023	0.07	1.3/
	MCBs etc as per specification and tender document.			1]			
	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19"	EA	2	8874	0.18	797.5	0.02	0.19
	Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories	LA	2	00/4	0.16	797.3	0.02	0.19
	like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room,							
	TM room, Invoice Room for TAS equipments							
	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet							
	Switches along with accessories for connecting CCTV as per system architecture and design							
	requirement complete as per specification and tender document.							
ľ	Note:							
10.33.1	1. The switches are to be configured in Dual Redundant mode. At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos.	EA	0	48495	0.00	1628	0.00	0.00
	- · · · · · · · · · · · · · · · · · · ·	LA	U	40493	0.00	1020	0.00	0.00
	copper ports and 2 nos. optical ports) At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and	EA	0	48495	0.00	1628	0.00	0.00
	2 nos. optical ports)	LA	U	40473	0.00	1020	0.00	0.00
	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room &	EA	0	6697	0.00		0.00	0.00
	security room	LA	U	0077	0.00		0.00	0.00
	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA	EA	1	294118			0.04	3.00
	supply installation, testing and commissioning or parallel redundant of 5 or minimum capacity of 6 ktra				2 94	6250	0.06	
10.35	or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for	LA		274110	2.94	6250	0.06	3.00
10.35	or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum.	LA		274110	2.94	6250	0.06	3.00
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum			274110	2.94	6250	0.06	3.00
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS	LA		274110	2.94	6250	0.06	3.00
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum		·	274110	2.94	6250	0.06	3.00
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.							
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.35 10.36 10.37	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document	EA LS	5 1	5883 65000	0.29 0.65		0.18 0.00	0.48 0.65
10.35 10.36 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in	EA	5	5883	0.29		0.18	0.48
10.35 10.36 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of	EA LS	5 1	5883 65000	0.29 0.65		0.18 0.00	0.48 0.65
10.35 10.36 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in	EA LS	5 1	5883 65000	0.29 0.65		0.18 0.00	0.48 0.65
10.35 10.36 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of	EA LS	5 1	5883 65000	0.29 0.65		0.18 0.00	0.48 0.65
10.35 10.35 10.36 10.37 10.38 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	EA LS	5 1	5883 65000	0.29 0.65 0.65		0.18 0.00 0.00	0.48 0.65 0.65
10.35 :	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63		0.18 0.00 0.00 2137658.50	0.48 0.65 0.65
10.35 :	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL. SUB TOTAL CONTEGENCY	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63 0.00		0.18 0.00 0.00 2137658.50 0.00	0.48 0.65 0.65 0.65
10.35 :	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63		0.18 0.00 0.00 2137658.50	0.48 0.65 0.65
10.35 : 10.36 : 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL. SUB TOTAL CONTEGENCY	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63 0.00		0.18 0.00 0.00 2137658.50 0.00	0.48 0.65 0.65 0.65
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL. SUB TOTAL CONTEGENCY CONSULTANCY	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63 0.00 0.00		0.18 0.00 0.00 2137658.50 0.00 0.00	0.48 0.65 0.65 19764762.13 0.00 0.00
10.35 : 10.36 : 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL. SUB TOTAL CONTEGENCY CONSULTANCY CAMC	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63 0.00 0.00 0.00 3172878.65		0.18 0.00 0.00 2137658.50 0.00 0.00 0.00 384778.53	0.48 0.65 0.65 19764762.13 0.00 0.00 4941194.00 4447072.10
10.35	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL. SUB TOTAL CONTEGENCY CONSULTANCY CAMC GST	EA LS LS	5 1	5883 65000	0.29 0.65 0.65 17627103.63 0.00 0.00		0.18 0.00 0.00 2137658.50 0.00 0.00	0.48 0.65 0.65 19764762.13 0.00 0.00 4941194.00
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10.35 10.35 10.36 10.37 10.38 10.37 10.38 10.37 10.38 10.37 10.38	future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document. Surge protection device (Type1 SPD-Earth pit) Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL. SUB TOTAL CONTEGENCY CONSULTANCY CAMC GST TOTAL Comprehensive AMC Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.	EA LS LS 0% 0% 18%	5 1 1	5883 65000 65000	0.29 0.65 0.65 0.65 17627103.63 0.00 0.00 0.00 3172878.65 20799982.28		0.18 0.00 0.00 2137658.50 0.00 0.00 0.00 384778.53	0.48 0.65 0.65 19764762.13 0.00 0.00 4941194.00 4447072.10
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INDIAN OIL CORPORATION LIMITED MARKETING DIVISION CHENGALPET BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT	Sl	SUPPLY		ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
9	CAMC (excluding GST)			4941194				

4 of 4 CHENGALPET BP

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION COIMBATORE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

N	ITEM	QTY	UNIT		SUPPLY		TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
0	CCTV SYSTEM FOR PERIMETER WITH PIDS							
0.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	21025	0.42	562.5	0.01	0.43
).2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	22	48813	10.74	1875	0.41	11.15
0.3	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	5	30320	1.52	562.5	0.03	1.54
).4	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	34	45625	15.51	562.5	0.19	15.70
0.5	Document. Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	EA	26	41177	10.71	812.5	0.21	10.92
0.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	26	52471	13.64	1687.5	0.44	14.08
).7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)							
	Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.							
).7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and LED flood light at 8M of the pole across perimeter as per tender	EA	11	68955.6	7.59	9750	1.07	8.66
).7.2).7.3	12M pole with cantilever arrangement 8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA EA	23	36975 30450	0.37 7.00	11600 8450	0.12 1.94	0.49 8.95
	the pole across perimeter as per tender							
.7.4	4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	34	12353	4.20	2000	0.68	4.88
).9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc							
.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender							
0.4.1	specifications.	ļ.,.		40	0.00	1.	0.00	0.00
	2C x 1.5 sqmm 3C x 2.5 sqmm	M	0 3500	40 112	0.00 3.92	16 27	0.00	0.00 4.87
	3C x 4 sqmm	M	3500	135	0.00	27	0.95	0.00
	4C x 6 sqmm	M	2500	315	7.88	45	1.13	9.00
10	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	М	3075	56	1.72	27	0.83	2.55
11	Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	М	1025	50	0.51	10	0.10	0.62
12	Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document	М	1025	58	0.59	21	0.22	0.81
.13	SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	М	2500	89	2.23	47	1.18	3.40
	15 control to don alondina formation 6 to maintain of Day foli CAT / Ethanist con amount of the control	i l		i l		1		
.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per							
.14	tender specifications and instructions of Engineer in charge.	FΔ	30	145	0 04	7.5	0.00	0.05
.14.1	1 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	EA EA	30 30	145 145	0.04 0.04	7.5	0.00	0.05

1 of 3 COIMBATORE BP

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION COIMBATORE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

N	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
ļ	TI DI	Q.	Om	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
0.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick			IVAIL	AMOON	IOATE	AMOUNT	AMOUNT
) along with structural steel for mounting of the cable tray. Complete as per specifications / tender							
	documents.							
0.15.1	50 mm	M	0	236	0.00	0	0.00	0.00
0.15.2	100 mm	M	50	357.5	0.18	217.5	0.11	0.29
0.15.2	150 mm	М	3075	455	13.99	240	7.38	21.37
0.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
0.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification							
ļ	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be							
ļ	complete in all respect. Accessories like certified double compression cable glands with PVC shrouds &							
ļ	plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as							
	per specification / tender documents.							
	24 ways JB	EA	0	10295	0.00	4321	0.00	0.00
	18 ways JB	EA	0	8920	0.00	3547	0.00	0.00
	12 ways JB	EA	10	5598.45	0.56	875	0.09	0.65
	8 ways JB	EA	20	5598.45	1.12	750	0.15	1.27
).16.5	6 ways JB	EA	50	3110.25	1.56	562.5	0.28	1.84
0.16.6	4 ways JB	EA	50	782.28	0.39	375	0.19	0.58
).17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression	EA	0	5341	0.00	1499	0.00	0.00
ļ	cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting							
	structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents							
	for switching ON/OFF of Flood lights at field.							
0.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	М	3075	77	2.37	45	1.38	3.75
	specifications and instructions of Engineer in charge.					1 1		
0.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if	TO	1	90625	0.91	33334	0.33	1.24
	required) for laying of above ground cables at road crossing or any other place within the Terminal							
	including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc							
. 20	C CH C C C C C C C C					-		
0.20	Supply of Maintenance Free CPRI approved Earth pit (Ashlok /Equivalent make) as per IS: 3043 with							
ļ	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high							
	conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25							
	mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4,							
	600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.							
	Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth							
	supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos							
	and date of inspection and the next due date of inspection. Job also includes provision of test							
	certificate of earthing station from a licensed electrician as per the format of the Corporation.							
	All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper							
	cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall							
	be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
0.20.1	Earth Pit	EA	20	20000	4.00	625	0.13	4.13
).21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to	LS	1	19125	0.19	2175	0.02	0.21
ļ	Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT							
ļ	blocks for future cable entry along with frame and mounting accessories complete as per specification							
	and tender document.							
	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV	LS	1	607675	6.08	13000	0.13	6.21
	Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU							
	etc complete as per specifications and Tender Document.							
	Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same							
	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have							
	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and							
	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.		200	9/12	19 07	124	0.27	10.00
	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage		200	9412	18.82	134	0.27	19.09
).23	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15		200	9412	18.82	134	0.27	19.09
0.23	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per		200	9412	18.82	134	0.27	19.09
).23	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution thighest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.		200	9412	18.82	134	0.27	19.09
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0.23 0.24 0.24.1 0.24.2 0.24.3	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat / Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: - Mkt. TM room - 1 No.	TB	1	32500 32500 32500 32500	0.33 0.33 0.33	1875 1875 1875 1875	0.02 0.02 0.02	0.34 0.34 0.34
0.24 0.24.1 0.24.2 0.24.3	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: Mkt. TM room - 1 No. Tower type minimum 27" colored LED monitor: Control room - 1 No.	TB EA EA	1 1	32500 32500	0.33	1875 1875	0.02	0.34
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0.24.1 0.24.2 0.24.3 0.24.3	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat / Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: Mkt. TM room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document.	TB EA EA EA	1 1 1	32500 32500 32500 32500	0.33 0.33 0.33	1875 1875 1875 1875	0.02 0.02 0.02	0.34 0.34 0.34
0.24.1 0.24.2 0.24.3 0.24.3	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: Mkt. TM room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, ables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room: Windows for all cameras should be available on single screen of 300-400 cm2 CCTV	TB EA EA EA	1 1 1	32500 32500 32500 32500	0.33 0.33 0.33	1875 1875 1875 1875	0.02 0.02 0.02	0.34 0.34 0.34
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.24.1 .24.2 .24.3 .25	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat / Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: Mkt. TM room - 1 No. Tower type minimum 27" colored LED monitor: Control room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Design & Supply, installation, commissioning & integration of video wall along with required controller & complete as per specifications and tender document. In control room: Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	TB EA EA EA EA	1 1 1	32500 32500 32500 32500 281250	0.33 0.33 0.33 2.81	1875 1875 1875 2500	0.02 0.02 0.02 0.02	0.34 0.34 0.34 2.84
0.24.1 0.24.2 0.24.3 0.25	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat / Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: Mkt. TM room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room: Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera. Design & Supply, installation, commissioning & integration of video wall along with controller & controller acceptable.	TB EA EA EA	1 1 1	32500 32500 32500 32500	0.33 0.33 0.33	1875 1875 1875 1875	0.02 0.02 0.02	0.34 0.34 0.34
	at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat / Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL. Tower type minimum 27" colored LED monitor: Mkt. TM room - 1 No. Tower type minimum 27" colored LED monitor: Control room - 1 No. Tower type minimum 27" colored LED monitor: Security room - 1 No. Design & Supply, installation, commissioning & integration of video wall along with required controller & complete as per specifications and tender document. In control room: Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	TB EA EA EA EA	1 1 1	32500 32500 32500 32500 281250	0.33 0.33 0.33 2.81	1875 1875 1875 2500	0.02 0.02 0.02 0.02	0.34 0.34 0.34 2.84

2 of 3 COIMBATORE BP

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION COIMBATORE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT		SUPPLY	INS	TALLATION	TOTAL
		-		RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.27	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
10.28	Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note: 1. The switches are to be configured in Dual Redundant mode.							
10.33.1	At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
10.38	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
	SUB TOTAL	\vdash			17972630.60	1	2060348.50	20032979.10
	CONTEGENCY	0%			0.00	<u> </u>	0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC				0.00		0.00	5008248.00
	GST	18%			3235073.51		370862.73	4507420.88
	TOTAL				21207704.11]	2431211.23	29548647.98

	Comprehensive AMC				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty				
3	Second Year @1.5% of the basic CAPEX cost	1	LS	300495	300495
4	Third Year @2.5% of the basic CAPEX cost	1	LS	500825	500825
5	Fourth Year @3% of the basic CAPEX cost	1	LS	600990	600990
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1402309	1402309
7	Sixth Year @4% of the basic CAPEX cost	1	LS	801320	801320
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1402309	1402309
9	CAMC (excluding GST)				5008248

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INDIAN OIL CORPORATION LIMITED MARKETING DIVISION ENNORE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT		SUPPLY	INST	TALLATION	TOTAL
		٠	0	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
10	CCTV SYSTEM FOR PERIMETER WITH PIDS							
10.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	21025	0.42	562.5	0.01	0.43
10.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	15	48813	7.32	1875	0.28	7.60
10.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	30320	1.52	562.5	0.03	1.54
10.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	45	45625	20.53	562.5	0.25	20.78
0.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as	EA	34	41177	14.00	812.5	0.28	14.28
10.6	per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	34	52471	17.84	1687.5	0.57	18.41
10.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.							
0.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	15	68955.6	10.34	9750	1.46	11.81
	LED flood light at 8M of the pole across perimeter as per tender							
10.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
10.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	30	30450	9.14	8450	2.54	11.67
10.7.4	the pole across perimeter as per tender 4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
10.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	45	12353	5.56	2000	0.90	6.46
10.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc.), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc.							
10.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender							
			1	40	0.00	16	0.00	0.00
0011	specifications.	4.4				10	0.00	0.00
	2C x 1.5 sqmm	M				27	1.10	5.67
10.9.1.2		M M	4080	112	4.57 0.00	27 27	1.10 0.00	5.67 0.00
10.9.1.2 10.9.1.3	2C x 1.5 sqmm 3C x 2.5 sqmm	М	4080	112	4.57			
10.9.1.2 10.9.1.3	2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm	M	4080 1	112 135	4.57 0.00	27	0.00	0.00
10.9.1.2 10.9.1.3 10.9.1.4 10.10	2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	M M	4080 1 2720	112 135 315	4.57 0.00 8.57 2.28 0.70	27 45	0.00 1.22 1.10 0.14	0.00 9.79
10.9.1.2 10.9.1.3 10.9.1.4 10.10	2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender	M M M	4080 1 2720 4080	112 135 315 56	4.57 0.00 8.57 2.28	27 45 27	0.00 1.22 1.10	0.00 9.79 3.39
10.9.1.2 10.9.1.3 10.9.1.4 10.10 10.11 10.12	2C x 1.5 sqmm 3C x 4 sqmm 3C x 4 sqmm 3C x 6 sqmm 3C x 6 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document SUpply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	M M M	4080 1 2720 4080 1400	112 135 315 56 50	4.57 0.00 8.57 2.28 0.70	27 45 27 10	0.00 1.22 1.10 0.14	0.00 9.79 3.39 0.84
10.9.1.2 10.9.1.3 10.9.1.4 10.10 10.11 10.12 10.13	2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm 5C xply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document SUpply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m² as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document. Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.	M M M M	4080 1 2720 4080 1400 1400	112 135 315 56 50 58	4.57 0.00 8.57 2.28 0.70 0.81	27 45 27 10 21	0.00 1.22 1.10 0.14 0.29	0.00 9.79 3.39 0.84 1.11
10.9.1.2 10.9.1.3 10.9.1.4 10.10 10.11 10.12	2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm 4C x 6 sqmm 5upply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. 5upply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. 5upply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document 5upply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document. 5upply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per	M M M M	4080 1 2720 4080 1400	112 135 315 56 50 58	4.57 0.00 8.57 2.28 0.70	27 45 27 10 21	0.00 1.22 1.10 0.14 0.29	0.00 9.79 3.39 0.84 1.11

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INDIAN OIL CORPORATION LIMITED MARKETING DIVISION ENNORE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

5N	ITEM	QTY	UNIT		SUPPLY	INICT	ALLATION	TOTAL
314	II LM	QII	UNIT	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
0.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick			IVATE	AMOUNT	IVATE	AMOUNT	AMOUNT
0.15) along with structural steel for mounting of the cable tray. Complete as per specifications / tender							
	documents.							
0.15.1	50 mm	М	1	236	0.00	0	0.00	0.00
0.15.2	100 mm	М	50	357.5	0.18	217.5	0.11	0.29
0.15.2	150 mm	М	4000	455	18.20	240	9.60	27.80
0.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
0.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification							
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be							
	complete in all respect. Accessories like certified double compression cable glands with PVC shrouds &							
	plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as							
	per specification / tender documents.			40005		1201		
0.16.1	24 ways JB	EA	7	10295	0.72	4321	0.30	1.02
		EA	7	8920	0.62	3547	0.25	0.87
0.16.3		EA	1	5598.45	0.06	875	0.01	0.06
	·	EA	1	5598.45	0.06	750	0.01	0.06
0.16.5	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
0.16.6	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
0.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	27	5341	1.44	1499	0.40	1.85
0.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	4000	77	3.08	45	1.80	4.88
0.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	то	1	90625	0.91	33334	0.33	1.24
0.20	Supply of Maintenance Free CPRI approved Earth pit (Ashlok /Equivalent make) as per 15: 3043 with 100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall							
	be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
0.20.1	Earth Pit	EA	23	20000	4.60	625	0.14	4.74
0.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
0.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and	LS	1	607675	6.08	13000	0.13	6.21
0.23	recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	ТВ	250	9412	23.53	134	0.34	23.87
0.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document.							
	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.							
0.24.1	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
0.24.2	Tower type minimum 27" colored LED monitor :- Mkt. 1M 100m - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
0.24.3	Tower type minimum 27" colored LED monitor :- Security room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
0.25	Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc, mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
0.26	Design & Supply, installation,commissioning & integration of video wall along with controller &	EA	1	281250	2.81	2500	0.03	2.84
	complete accecories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two pages) for CCTV camera.							

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INDIAN OIL CORPORATION LIMITED MARKETING DIVISION ENNORE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT		SUPPLY	INS	TALLATION	TOTAL
1				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.27	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two pages) for CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
10.28	Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note:							
10.33.1	The switches are to be configured in Dual Redundant mode. At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
10.38	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
	SUB TOTAL				20829941.43		2628383.50	23458324.93
	CONTEGENCY	0%			0.00		0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC				0.00		0.00	5864583.00
	GST TOTAL	18%			3749389.46 24579330.89		473109.03 3101492.53	5278123.43 34601031.36

	Comprehensive AMC				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty				
3	Second Year @1.5% of the basic CAPEX cost	1	LS	351875	351875
4	Third Year @2.5% of the basic CAPEX cost	1	LS	586459	586459
5	Fourth Year @3% of the basic CAPEX cost	1	LS	703750	703750
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1642083	1642083
7	Sixth Year @4% of the basic CAPEX cost	1	LS	938333	938333
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1642083	1642083
9	CAMC (excluding GST)				5864583

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10.06.2022

SN	ITEM	QTY	UNIT	Sl	JPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
10	CCTV SYSTEM FOR PERIMETER WITH PIDS							
10.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera	EA	2	21025	0.42	562.5	0.01	0.43
10.1	with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge	LA		21023	0.42	302.3	0.01	0.43
	protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	protection unit and mounting accessories etc complete as per specifications and render bocument.							
0.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	EA	14	48813	6.83	1875	0.26	7.10
0.2		EA	14	40013	0.03	10/3	0.26	7.10
	along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.	<u> </u>						
0.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	EA	5	30320	1.52	562.5	0.03	1.54
	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
0.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with	EA	42	45625	19.16	562.5	0.24	19.40
	varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
0.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade	EA	32	41177	13.18	812.5	0.26	13.44
	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2							
	Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as	1	1					
	per specifications and Tender Document.	1	1					
10.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof	EA	32	52471	16.79	1687.5	0.54	17.33
0.0	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor	LA	32	J44/ I	10.77	1007.3	0.54	17.33
		1	1					
	for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also	1	1					
	includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank							
	plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc							
	complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs,							
	Exd. double compression cable glands etc as per specifications and Tender Document.	1						
0.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot							
	Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI							
	foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing)							
	on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera							
	and other accessories required for complete installation and commissioning of the pole, submission of							
	structural stability certificate based on existing soil bearing capacity and wind speed from Govt.							
	Engineering colleges etc complete as per specifications and Tender Document of below mentioned							
	height of the pole. (Foundation drawing and other details to be submitted prior to installation as per							
	tender document)							
	Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for							
	ladder for installation & maintenance purpose throughout the contract period including CAMC period							
	at no additional cost to IOCL.							
0.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	14	68955.6	9.65	9750	1.37	11.02
	LED flood light at 8M of the pole across perimeter as per tender	<u> </u>						
0.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
0.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	28	30450	8.53	8450	2.37	10.89
	the pole across perimeter as per tender							
0.7.4	4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
0.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to	EA	1	12353	0.12	2000	0.02	0.14
	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports,		1	. 2000	J2		3.02	
	nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting	1	1					
	structure as persite condition, painting etc. all complete with labour and materials asper drawings,	1	1					
	specifications and directions of the Engineer-in-Charge.	1	1					
0.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified	1	1					
10.7	11 37 3 37 37	1	1					
	double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate,	1	1					
	mounting clamp, SS 316 fasteners , OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor	1	1					
	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates,	1	1					
	conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever	1	1					
	required, hume pipes, Aluminium tags, lugs, ferrules, etc							
0.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender		1					
	specifications.	L	<u></u>					
0.9.1.1	2C x 1.5 sqmm	М	1	40	0.00	16	0.00	0.00
0.9.1.2	3C x 2.5 sqmm	М	3750	112	4.20	27	1.01	5.21
	3C x 4 sqmm	М	1	135	0.00	27	0.00	0.00
	4C x 6 sqmm	M	2500	315	7.88	45	1.13	9.00
	'	M		56	2.10	27		3.11
10.10	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical	W	3750	90	2.10	2/	1.01	3.11
10.41	fibre cable as per tender specifications and instructions of Engineer in charge.		4050	F.	0.13	40	0.43	0.75
10.11	Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	М	1250	50	0.63	10	0.13	0.75
	specifications and instructions of Engineer in charge.	<u> </u>						
10.12	Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green	M	1250	58	0.73	21	0.26	0.99
	wire for earthing instruments and junction boxes etc complete as per specification and tender	1	1					
	document	<u></u>						
	Climber Schmissking Austrian Leving Composition of Climber (FOrms V. Comp.) with that dispersions	М	3750	89	3.34	47	1.76	5.10
10.13	SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing	741						
0.13	(800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System	///	3730					

10.06.2022

SN	ITEM	QTY	UNIT	SL	JPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
0.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per							
	tender specifications and instructions of Engineer in charge.							
0.14.1	5/10 m	EA	50	145	0.07	7.5	0.00	0.08
0.14.2	15 m	EA	50	145	0.07	10	0.01	0.08
0.14.3	20 m	EA	50	145	0.07	12.5	0.01	0.08
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.							
0.15.1	50 mm	М	1	236	0.00	0	0.00	0.00
0.15.2	100 mm	М	50	357.5	0.18	217.5	0.11	0.29
0.15.2	150 mm	М	3750	455	17.06	240	9.00	26.06
0.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
10.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
0.16.1	24 ways JB	EA	5	10295	0.51	4321	0.22	0.73
0.16.2	18 ways JB	EA	5	8920	0.45	3547	0.18	0.62
0.16.3	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
0.16.4	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
10.16.6	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
10.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	21	5341	1.12	1499	0.31	1.44
0.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	3750	77	2.89	45	1.69	4.58
0.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	ТО	1	90625	0.91	33334	0.33	1.24
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
0.20.1	Earth Pit	EA	21	20000	4.20	625	0.13	4.33
0.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
0.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	LS	1	607675	6.08	13000	0.13	6.21
0.23	Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	ТВ	250	9412	23.53	134	0.34	23.87
0.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such							
	provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.							
0.24.1		EA	1	32500	0.33	1875	0.02	0.34
0.24.1	cost to IOCL.	EA EA	1 1	32500 32500	0.33 0.33	1875 1875	0.02 0.02	0.34

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION ERODE BP

10.06.2022

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

Comprehensive AMC

SN	ITEM	QTY	UNIT	SI	JPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.25	Design & Supply, installation,commissioning & integration of video wall along with required controller & complete accecories, cables etc, mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
10.26	Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two	EA	1	281250	2.81	2500	0.03	2.84
10.27	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.28	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note: 1. The switches are to be configured in Dual Redundant mode.							
10.33.1	At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37	Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000 65000	0.65 0.65		0.00	0.65
	CUD TOTAL				40204252.52		22/4/24 62	24745274 22
	SUB TOTAL CONTEGENCY	0%			19381253.83 0.00		0.00	21745374.83 0.00
		0%	 		0.00		0.00	0.00
	CONSULTANCY	0/0			0.00		0.00	0.00
	CAMC GST	18%			0.00		0.00 425541.78	5436347.00 4892709.93

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION ERODE BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT	SU	JPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.							
2	First Year - Warranty							
3	Second Year @1.5% of the basic CAPEX cost	1	LS	326181	326181			
4	Third Year @2.5% of the basic CAPEX cost	1	LS	543635	543635			
5	Fourth Year @3% of the basic CAPEX cost	1	LS	652362	652362			
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1522177	1522177			
7	Sixth Year @4% of the basic CAPEX cost	1	LS	869815	869815			
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1522177	1522177			
9	CAMC (excluding GST)				5436347	1		

	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
0	CCTV SYSTEM FOR PERIMETER WITH PIDS							
0.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	1	21025	0.21	562.5	0.01	0.22
0.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	5	48813	2.44	1875	0.09	2.53
0.3	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	3	30320	0.91	562.5	0.02	0.93
0.4	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	16	45625	7.30	562.5	0.09	7.39
0.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	EA	13	41177	5.35	812.5	0.11	5.46
0.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	13	52471	6.82	1687.5	0.22	7.04
0.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.							
0.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and LED flood light at 8M of the pole across perimeter as per tender	EA	5	68955.6	3.45	9750	0.49	3.94
0.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
0.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	11	30450	3.35	8450	0.93	4.28
	the pole across perimeter as per tender	<u> </u>		10575	0.00	4500	2.25	0.04
0.7.4	4/6M pole with Accessories as per specification of Tender Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	16	19575 12353	0.20 1.98	4500 2000	0.05 0.32	0.24 2.30
0.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate,							
	mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc.), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc							
	and blank plates, UTP and optical patch cords, pigtails, media converters etc.), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.							
0.9.1.1	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm	м	1	40	0.00	16	0.00	0.00
).9.1.1).9.1.2	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm	М	1500	112	1.68	27	0.41	2.09
).9.1.1).9.1.2).9.1.3	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm	M	1500 1	112 135	1.68 0.00	27 27	0.41 0.00	2.09 0.00
).9.1.1).9.1.2).9.1.3).9.1.4	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre	М	1500	112	1.68	27	0.41	2.09
0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 2.5 sqmm 4C x 6 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	M M	1500 1 1000	112 135 315	1.68 0.00 3.15	27 27 45	0.41 0.00 0.45	2.09 0.00 3.60
0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	M M M M	1500 1 1000 1500	112 135 315 56	1.68 0.00 3.15 0.84	27 27 45 27	0.41 0.00 0.45 0.41	2.09 0.00 3.60 1.25
0.9.1.2 0.9.1.3 0.9.1.4 0.10 0.11 0.12	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document SUpply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	M M M M	1500 1 1000 1500 500	112 135 315 56 50	1.68 0.00 3.15 0.84	27 27 45 27 10	0.41 0.00 0.45 0.41	2.09 0.00 3.60 1.25 0.30
0.9.1.1 0.9.1.2 0.9.1.3 0.9.1.4 0.10 0.11	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications. 2C x 1.5 sqmm 3C x 2.5 sqmm 3C x 4 sqmm 4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document SUpply, fabrication , cutting , laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System	M M M M	1500 1 1000 1500 500	112 135 315 56 50 58	1.68 0.00 3.15 0.84 0.25	27 27 45 27 10	0.41 0.00 0.45 0.41 0.05	2.09 0.00 3.60 1.25 0.30

SN	ITEM	QTY	UNIT		SUPPLY	INCT	ALLATION	TOTAL
SIN	II EM	QII	UNIT	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.14.2	15 m	EA	30	145	0.04	10	0.00	0.05
10.14.3	20 m	EA	30	145	0.04	12.5	0.00	0.05
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.	LA	30	113	0.01	12.3	0.00	0.03
10.15.1	50 mm	М	1	236	0.00	0	0.00	0.00
10.15.2	100 mm	М	50	357.5	0.18	217.5	0.11	0.29
10.15.2	150 mm	М	1500	455	6.83	240	3.60	10.43
10.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
10.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
	24 ways JB	EA	3	10295	0.31	4321	0.13	0.44
	18 ways JB	EA	3	8920	0.27	3547	0.11	0.37
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
10.16.4	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
10.16.5	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
10.16.6	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
10.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	9	5341	0.48	1499	0.13	0.62
10.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	1500	77	1.16	45	0.68	1.83
10.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	то	0.75	90625	0.68	33334	0.25	0.93
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
10.20.1	Earth Pit	EA	8	20000	1.60	625	0.05	1.65
10.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
10.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	LS	1	607675	6.08	13000	0.13	6.21
10.23	Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	ТВ	150	9412	14.12	134	0.20	14.32
10.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document.							
	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors. Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.							
10.24.1	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
10.24.2	Tower type minimum 27" colored LED monitor :- Control room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
10.24.3	Tower type minimum 27" colored LED monitor :- Security room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
10.25	Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84

SN	ITEM	QTY	UNIT		SUPPLY	INST	TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.26	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.27	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two							
10.28	Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Note- The switches are required to be configured in dual redundant mode. Supply, Installation, integration, configuration, testing and commissioning of Intelligent video	LS	1	544163	5.44	5000	0.05	5.49
10.27	operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	В	'	344103	J. 44	3000	0.03	J.47
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note:							
10.33.1	The switches are to be configured in Dual Redundant mode. At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37 10.36	Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS LS	1	65000 65000	0.65 0.65		0.00	0.65 0.65
	SUB TOTAL	-			11277926.18	1	1058601.00	12336527.18
	CONTEGENCY	0%			0.00		0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC				0.00		0.00	3084134.00
	GST	18%			2030026.71		190548.18	2775719.01
	TOTAL				13307952.89		1249149.18	18196380.19
	Comprehensive AMC					1		
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.							
	First Year - Warranty					1		
2		1	LS	185048	185048	1		
3	Second Year @1.5% of the basic CAPEX cost							
3	Third Year @2.5% of the basic CAPEX cost	1	LS	308414	308414			
3 4 5	Third Year @2.5% of the basic CAPEX cost Fourth Year @3% of the basic CAPEX cost	1	LS LS	370096	370096			
3	Third Year @2.5% of the basic CAPEX cost	1	LS					

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION ILAYANGUDI BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

ſ	SN	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
					RATE	AMOUNT	RATE	AMOUNT	AMOUNT
ı	9	CAMC (excluding GST)				3084134			

4 of 4 ILAYANGUDI BP

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION MADURAI BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT	S	UPPLY	INST	TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
10	CCTV SYSTEM FOR PERIMETER WITH PIDS							
10.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	21025	0.42	562.5	0.01	0.43
10.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	16	48813	7.81	1875	0.30	8.11
10.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	30320	1.52	562.5	0.03	1.54
10.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	48	45625	21.90	562.5	0.27	22.17
10.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	EA	36	41177	14.82	812.5	0.29	15.12
10.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	36	52471	18.89	1687.5	0.61	19.50
	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gl foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.							
10.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	16	68955.6	11.03	9750	1.56	12.59
	LED flood light at 8M of the pole across perimeter as per tender							
10.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
10.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	32	30450	9.74	8450	2.70	12.45
10.7.4	the pole across perimeter as per tender 4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
10.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	48	12353	5.93	2000	0.96	6.89
10.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc.), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc							
	Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.							
	2C x 1.5 sqmm	М	1	40	0.00	16	0.00	0.00
	3C x 2.5 sqmm	M	4350	112	4.87	27	1.17	6.05
	3C x 4 sqmm	M	1	135	0.00	27	0.00	0.00
	4C x 6 sqmm Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	M	2900 4350	315 56	9.14 2.44	45 27	1.31	10.44 3.61
10.11	Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	М	1450	50	0.73	10	0.15	0.87
10.12	Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender document	М	1450	58	0.84	21	0.30	1.15
10.13	SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	М	4350	89	3.87	47	2.04	5.92

1 of 4 MADURAI BP

10.06.2022

SN	ITEM	QTY	UNIT	S	SUPPLY		TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per							
	tender specifications and instructions of Engineer in charge.							
	5/10 m	EA	50	145	0.07	7.5	0.00	0.08
	15 m	EA	50	145	0.07	10	0.01	0.08
	20 m	EA	50	145	0.07	12.5	0.01	0.08
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.							
0.15.1	50 mm	М	1	236	0.00	0	0.00	0.00
0.15.2	100 mm	М	50	357.5	0.18	217.5	0.11	0.29
0.15.2	150 mm	М	4350	455	19.79	240	10.44	30.23
0.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
0.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
0.16.1	24 ways JB	EA	5	10295	0.51	4321	0.22	0.73
0.16.2	18 ways JB	EA	5	8920	0.45	3547	0.18	0.62
0.16.3	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
0.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	21	5341	1.12	1499	0.31	1.44
0.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	4350	77	3.35	45	1.96	5.31
0.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	ТО	1	90625	0.91	33334	0.33	1.24
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
0.20.1	Earth Pit	EA	24	20000	4.80	625	0.15	4.95
0.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
0.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	LS	1	607675	6.08	13000	0.13	6.21
0.23	Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	ТВ	250	9412	23.53	134	0.34	23.87
0.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & ticenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.							
0 24 4	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
0.24.1								
0.24.1	Tower type minimum 27" colored LED monitor :- Control room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34

2 of 4 MADURAI BP

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION MADURAI BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO 10.06.2022

SN	ITEM	QTY	UNIT	5	SUPPLY	INS	TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.25	Design & Supply, installation,commissioning & integration of video wall along with required controller & complete accecories, cables etc, mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
10.26	Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.27	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.28	In security cabin: viewing window size should be preferably be between min. 150-200 cm2 (in two Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Note- The switches are required to be configured in dual redundant mode. Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note:							
10.33.1	The switches are to be configured in Dual Redundant mode. At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37	Providing training to IOCL employee as per schedule / module for one day as per tender document As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in	LS LS	1	65000 65000	0.65 0.65		0.00	0.65 0.65
	Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.		·	03000	0.03		0.00	0.00
	CUD TOTAL	<u> </u>	<u> </u>	1	24440=2 : 5=		270/02/ 27	244247 :- :-
	SUB TOTAL	00/			21648524.03		2786221.00	24434745.03
	CONTEGENCY CONSULTANCY	0% 0%			0.00		0.00	0.00
	CAMC	U%			0.00		0.00	6108690.00
	or and	1	L	-				
	GST	18%			3896734.33		501519.78	5497818.31
	GST TOTAL	18%			3896734.33 25545258.36		501519.78 3287740.78	5497818.31 36041253.34

MADURAI BP

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION MADURAI BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT	SUPPLY		INSTALLATION		TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.							
2	First Year - Warranty							
3	Second Year @1.5% of the basic CAPEX cost	1	LS	366522	366522			
4	Third Year @2.5% of the basic CAPEX cost	1	LS	610869	610869			
5	Fourth Year @3% of the basic CAPEX cost	1	LS	733043	733043			
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1710433	1710433			
7	Sixth Year @4% of the basic CAPEX cost	1	LS	977390	977390			
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1710433	1710433			
9	CAMC (excluding GST)				6108690			

4 of 4 MADURAI BP

SN	ITEM	QTY	UNIT		UPPLY	INS	STALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
0	CCTV SYSTEM FOR PERIMETER WITH PIDS							
0.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera	EA	1	21025	0.21	562.5	0.01	0.22
	with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge							
	protection unit and mounting accessories etc complete as per specifications and Tender Document.							
				10010		4075		2.02
0.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	EA	4	48813	1.95	1875	0.08	2.03
	along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
0.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	EA	3	30320	0.91	562.5	0.02	0.93
0.5	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external		,	30320	0.71	302.3	0.02	0.73
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
0.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with	EA	13	45625	5.93	562.5	0.07	6.00
	varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
0.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade	EA	11	41177	4.53	812.5	0.09	4.62
	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2							
	Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as							
0.7	per specifications and Tender Document.	F.4	44	F2.474	F 77	4/07 F	0.40	F 0/
0.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor	EA	11	52471	5.77	1687.5	0.19	5.96
	for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank							
	plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs,							
	Exd. double compression cable glands etc as per specifications and Tender Document.							
	Exa. Goodic compression capie giands etc as per specifications and render bocument.							
0.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot							
	Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation							
	bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the							
	pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and							
	other accessories required for complete installation and commissioning of the pole, submission of							
	structural stability certificate based on existing soil bearing capacity and wind speed from Govt.							
	Engineering colleges etc complete as per specifications and Tender Document of below mentioned							
	height of the pole. (Foundation drawing and other details to be submitted prior to installation as per							
	tender document)							
	Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for							
	ladder for installation & maintenance purpose throughout the contract period including CAMC period at							
	no additional cost to IOCL.							
0.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	4	68955.6	2.76	9750	0.39	3.15
	LED flood light at 8M of the pole across perimeter as per tender							
0.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
0.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	9	30450	2.74	8450	0.76	3.50
	the pole across perimeter as per tender							
0.7.4	4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
0.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to	EA	13	12353	1.61	2000	0.26	1.87
	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports,							
	nuts,bolts, earthing , required modification infixing arrangement , Supply and welding of mounting							
	structure as persite condition , painting etc. all complete with labour and materials asper drawings,							
	specifications and directions of the Engineer-in-Charge.							
0.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified							
	double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate,							
	mounting clamp, SS 316 fasteners , OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor							
	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates,							
	conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever							
0.04	required, hume pipes, Aluminium tags, lugs, ferrules, etc	<u> </u>	 			+		
0.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender							
1044	specifications.	14	4	40	0.00	14	0.00	0.00
	2C x 1.5 sqmm	M	1200	40		16 27		0.00
	3C x 2.5 sqmm	M	1200	112	1.34		0.32	1.67
	3C x 4 sqmm	M	1	135	0.00	27	0.00	0.00
	4C x 6 sqmm	M	800	315	2.52	45	0.36	2.88
0.10	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre	M	1200	56	0.67	27	0.32	1.00
	cable as per tender specifications and instructions of Engineer in charge.	L	45.			1		
0.11	Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	M	400	50	0.20	10	0.04	0.24
0.40	specifications and instructions of Engineer in charge.	l	400	F0	0.00	2.	0.00	
0.12	Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green	M	400	58	0.23	21	0.08	0.32
	wire for earthing instruments and junction boxes etc complete as per specification and tender							
0.42	document	 	4225	00	4 2=	-	0.51	
0.13	SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing	М	1200	89	1.07	47	0.56	1.63
	(800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System							
	as per Standard Design Engineering, specification and tender document.	<u> </u>				-		
0.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per							
2444	tender specifications and instructions of Engineer in charge.			4.45	0.02	1	2.22	0.00
11/11	5/10 m	EA	20	145	0.03	7.5 10	0.00	0.03
0.14.2	-	EA	20	145			0.00	0.03

SN	ITEM	QTY	UNIT	S	UPPLY	IN:	STALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.14.3	20 m	EA	20	145	0.03	12.5	0.00	0.03
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.							
10.15.1		М	1	236	0.00	0	0.00	0.00
	100 mm	M	30	357.5	0.11	217.5	0.07	0.17
10.15.2	150 mm	М	1200	455	5.46	240	2.88	8.34
	300 mm	М	1	715	0.01	580	0.01	0.01
10.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification							
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
	24 ways JB	EA	3	10295	0.31	4321	0.13	0.44
	18 ways JB	EA	3	8920	0.27	3547	0.11	0.37
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
10.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	15	5341	0.80	1499	0.22	1.03
10.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	1200	77	0.92	45	0.54	1.46
10.19	Supply, design, Fabrication, cutting, errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	ТО	0.75	90625	0.68	33334	0.25	0.93
10.20	Supply of Maintenance Free CPRI approved Earth pit (Ashlok / Equivalent make) as per IS: 3043 with 100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
10.20.1	Earth Pit	EA	7	20000	1.40	625	0.04	1.44
10.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
10.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.	LS	1	607675	6.08	13000	0.13	6.21
	Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.	ſВ	150	9412	14.12	134	0.20	14.32
10.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such							
	provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.							
	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
		EA	1	32500	0.33	1875	0.02	0.34
10.24.3	Tower type minimum 27" colored LED monitor :- Security room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
10.25	Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84

SN	ITEM	QTY	UNIT	S	UPPLY	IN:	STALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.26	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.27	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.28	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Note- The switches are required to be configured in dual redundant mode. Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note: 1. The switches are to be configured in Dual Redundant mode.							
10.33.1	At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
10.36	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
					40 400		00005	112015
	SUB TOTAL	00/			10428073.58		893207.50	11321281.08
	CONFERENCY	0%			0.00		0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC GST	18%			0.00 1877053.24		0.00 160777.35	2830324.00 2547288.91
	TOTAL	10/0			12305126.82		1053984.85	16698893.99
		1		<u> </u>	.2303120.02	1	.000,01.00	.00,00,0,,,
	Comprehensive AMC					1		
	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV					1		

	Comprehensive AMC				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty				
3	Second Year @1.5% of the basic CAPEX cost	1	LS	169820	169820
4	Third Year @2.5% of the basic CAPEX cost	1	LS	283033	283033
5	Fourth Year @3% of the basic CAPEX cost	1	LS	339639	339639
6	Fifth Year @7% of the basic CAPEX cost	1	LS	792490	792490
7	Sixth Year @4% of the basic CAPEX cost	1	LS	452852	452852
8	Seventh Year @7% of the basic CAPEX cost	1	LS	792490	792490
9	CAMC (excluding GST)				2830324

SN	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
10	CCTV SYSTEM FOR PERIMETER WITH PIDS							
10.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (ZMP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	1	21025	0.21	562.5	0.01	0.22
10.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	48813	2.44	1875	0.09	2.53
10.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	3	30320	0.91	562.5	0.02	0.93
10.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	14	45625	6.39	562.5	0.08	6.47
10.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	EA	12	41177	4.94	812.5	0.10	5.04
10.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	12	52471	6.30	1687.5	0.20	6.50
10.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document) Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period							
10.7.1	at no additional cost to IOCL. 10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and LED flood light at 8M of the pole across perimeter as per tender	EA	5	68955.6	3.45	9750	0.49	3.94
10.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
10.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of the pole across perimeter as per tender	EA	9	30450	2.74	8450	0.76	3.50
10.7.4	4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
10.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	14	12353	1.73	2000	0.28	2.01
10.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc							
10.9.1	Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.							
	2C x 1.5 sqmm	M	1	40	0.00	16	0.00	0.00
	3C x 2.5 sqmm 3C x 4 sqmm	M	1200	112 135	1.34 0.00	27 27	0.32	0.00
	3C x 4 sqmm 4C x 6 sqmm	M	1 850	315	2.68	45	0.00	3.06
0.9.1.4	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical	M	1200	56	0.67	27	0.38	1.00
10.11	fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	М	425	50	0.21	10	0.04	0.26
10.12	specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender	М	425	58	0.25	21	0.09	0.34
10.13	document SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	М	1200	89	1.07	47	0.56	1.63
10.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.							

10.06.2022

10.14.1	ITEM	ΩTV	UNIT		SUPPLY	INICT	ALLATION	TOTAL
	II EM	QII	UNIT	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	5/10 m	EA	20	145	0.03	7.5	0.00	0.03
10.14.2		EA	20	145	0.03	10	0.00	0.03
10.14.3		EA	20	145	0.03	12.5	0.00	0.03
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.				0.03	1213	0.00	0.03
10.15.1	50 mm	М	1	236	0.00	0	0.00	0.00
10.15.2	100 mm	М	30	357.5	0.11	217.5	0.07	0.17
10.15.2	150 mm	М	1200	455	5.46	240	2.88	8.34
10.15.3		М	1	715	0.01	580	0.01	0.01
	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
	24 ways JB	EA	3	10295	0.31	4321	0.13	0.44
	18 ways JB	EA	3	8920	0.27	3547	0.11	0.37
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	15	5341	0.80	1499	0.22	1.03
	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	1200	77	0.92	45	0.54	1.46
10.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	ТО	0.75	90625	0.68	33334	0.25	0.93
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and							
	Earth Pit	EA	7	20000	1.40	625	0.04	1.44
	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
10.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU	LS	1	607675	6.08	13000	0.13	6.21
	etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and							
10.23	etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have	ТВ	150	9412	14.12	134	0.20	14.32
10.23	etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & ticenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional	ТВ	150	9412	14.12	134	0.20	
10.23	etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & ticenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.							14.32
10.23	etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & ticenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional	TB EA EA	150	9412 32500 32500	0.33 0.33	134 1875 1875	0.20 0.02 0.02	

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION MAYILADUTHURAI BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT		SUPPLY	INST	TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.25	Design & Supply, installation,commissioning & integration of video wall along with required controller & complete accecories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
10.26	Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two							
10.27	Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
10.28	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document. Note- The switches are required to be configured in dual redundant mode.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note: 1. The switches are to be configured in Dual Redundant mode.							
10.33.1	At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos.	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	copper ports and 2 nos. optical ports) At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.37	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
10.38	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
	CLID TOTAL				10715010 10		042020.00	14/20020 40
	SUB TOTAL CONTEGENCY	0%		-	10715918.18 0.00		912920.00	0.00
	CONSULTANCY	0%	<u> </u>		0.00		0.00	0.00
	CAMC	070			0.00		0.00	2907212.00
	GST	18%			1928865.27		164325.60	2616489.03

Comprehensive AMC		
Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.		

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION MAYILADUTHURAI BP

MAYILADUTHURAI BP
SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
2	First Year - Warranty							
3	Second Year @1.5% of the basic CAPEX cost	1	LS	174433	174433			
4	Third Year @2.5% of the basic CAPEX cost	1	LS	290721	290721			
5	Fourth Year @3% of the basic CAPEX cost	1	LS	348866	348866			
6	Fifth Year @7% of the basic CAPEX cost	1	LS	814019	814019			
7	Sixth Year @4% of the basic CAPEX cost	1	LS	465154	465154			
8	Seventh Year @7% of the basic CAPEX cost	1	LS	814019	814019			
9	CAMC (excluding GST)				2907212			

4 of 4 MAYILADUTHURAI BP

SN	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
10	CCTV SYSTEM FOR PERIMETER WITH PIDS							
10.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera	EA	1	21025	0.21	562.5	0.01	0.22
	with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.							
	protection unit and mounting accessories etc complete as per specifications and render bocument.							
10.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	EA	7	48813	3.42	1875	0.13	3.55
	along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
10.3	Document.		_	20220	0.01	540.5	0.00	2.02
10.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external	EA	3	30320	0.91	562.5	0.02	0.93
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
10.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with	EA	21	45625	9.58	562.5	0.12	9.70
	varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
10.5	Document.	F.4	47	44477		042.5	0.43	(72
10.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2	EA	16	41177	6.59	812.5	0.13	6.72
	Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as							
	per specifications and Tender Document.							
10.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof	EA	16	52471	8.40	1687.5	0.27	8.67
	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor							
	for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also							
	includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank							
	plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs,							
	Exd. double compression cable glands etc as per specifications and Tender Document.							
	Exa. double compression cubic gaines etc as per specifications and render socialient.							
10.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot							
	Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI							
	foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing)							
	on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera							
	and other accessories required for complete installation and commissioning of the pole, submission of							
	structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned							
	height of the pole. (Foundation drawing and other details to be submitted prior to installation as per							
	tender document)							
	Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for							
	ladder for installation & maintenance purpose throughout the contract period including CAMC period							
	at no additional cost to IOCL.	L						
10.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	7	68955.6	4.83	9750	0.68	5.51
10.7.2	LED flood light at 8M of the pole across perimeter as per tender 12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
10.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	14	30450	4.26	8450	1.18	5.45
.0.7.15	the pole across perimeter as per tender			30.30	20	0.50		51.15
10.7.4	4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
10.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to	EA	21	12353	2.59	2000	0.42	3.01
	10M height including supply & fixing of clamps, scafolding , temporary fire screen ifrequired, supports,							
	nuts,bolts, earthing, required modification infixing arrangement, Supply and welding of mounting							
	structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.							
10.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified							
,	double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag							
	plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded							
	adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face							
	plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover							
10.0.1	wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc	<u> </u>	<u> </u>					
10.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender							
10 9 1 1	specifications. 2C x 1.5 sqmm	М	1	40	0.00	16	0.00	0.00
	3C x 2.5 sqmm	M	1900	112	2.13	27	0.51	2.64
	3C x 4 sqmm	M	1	135	0.00	27	0.00	0.00
	4C x 6 sqmm	M	1250	315	3.94	45	0.56	4.50
10.10	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical	М	1900	56	1.06	27	0.51	1.58
	fibre cable as per tender specifications and instructions of Engineer in charge.							
10.11	Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	W	625	50	0.31	10	0.06	0.38
	specifications and instructions of Engineer in charge.	L						
10.12	Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green	М	625	58	0.36	21	0.13	0.49
	wire for earthing instruments and junction boxes etc complete as per specification and tender document							
10.13	SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing	М	1900	89	1.69	47	0.89	2.58
.0.13	(800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System	, m	1,700	, , , , , , , , , , , , , , , , , , ,	1.07	"	0.07	2.30
	as per Standard Design Engineering, specification and tender document.		L					
		-					_	
10.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per							

10.06.2022

SN	ITEM	QTY	UNIT	9	SUPPLY	INST	ALLATION	TOTAL
		-		RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.14.1	5/10 m	EA	30	145	0.04	7.5	0.00	0.05
0.14.2		EA	30	145	0.04	10	0.00	0.05
0.14.3		EA	30	145	0.04	12.5	0.00	0.05
0.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender documents.							
0.15.1		М	1	236	0.00	0	0.00	0.00
0.15.2	100 mm	М	30	357.5	0.11	217.5	0.07	0.17
0.15.2	150 mm	М	1900	455	8.65	240	4.56	13.21
0.15.3	300 mm	М	1	715	0.01	580	0.01	0.01
10.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
	24 ways JB	EA	3	10295	0.31	4321	0.13	0.44
	18 ways JB	EA	3	8920	0.27	3547	0.11	0.37
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
0.16.4	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
0.16.5	6 ways JB	EA	1	3110.25	0.03	562.5	0.01	0.04
0.16.6	4 ways JB	EA	1	782.28	0.01	375	0.00	0.01
10.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	15	5341	0.80	1499	0.22	1.03
0.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	1900	77	1.46	45	0.86	2.32
0.19	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	ТО	0.75	90625	0.68	33334	0.25	0.93
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar							
	shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and							
	Earth Pit	EA	11	20000	2.20	625	0.07	2.27
		EA LS	11	20000	2.20 0.19	625 2175	0.07	2.27 0.21
10.21	Earth Pit Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification							
0.21	Earth Pit Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete	LS	1	19125	0.19	2175	0.02	0.21
0.21	Earth Pit Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional	LS	1	19125 607675	6.08	13000	0.02	6.21
0.21	Earth Pit Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.	LS	1 1 150	9412	6.08	13000	0.02	0.21 6.21 14.32
0.24	Earth Pit Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document. Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage (NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat / Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional cost to IOCL.	LS	1	19125 607675	6.08	13000	0.02	6.21

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT		SUPPLY	INS	TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
0.25	Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accessories, cables etc., mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84
).26	Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two							
0.27	Design & Supply, installation,commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
0.28	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	SET	1	217791	2.18	2500	0.03	2.20
0.29	Note: The switches are required to be configured in dual redundant mode. Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
0.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
0.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
0.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
0.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
0.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note: 1. The switches are to be configured in Dual Redundant mode.							
0.33.1	At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos.	EA	0	48495	0.00	1628	0.00	0.00
0.33.2	copper ports and 2 nos. optical ports) At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
0.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
0.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
0.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
0.37	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
0.36	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
	SUB TOTAL				12668393.38		1303557.50	13971950.8
	CONTEGENCY	0%			0.00		0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC	100/			0.00		0.00	3492991.0
	GST TOTAL	18%			2280310.81 14948704.19		234640.35 1538197.85	3143689.5 20608631.4
	Comprehensive AMC					1		
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.							

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION PUDUCHERRY BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT	9	SUPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
2	First Year - Warranty							
3	Second Year @1.5% of the basic CAPEX cost	1	LS	209580	209580			
4	Third Year @2.5% of the basic CAPEX cost	1	LS	349299	349299			
5	Fourth Year @3% of the basic CAPEX cost	1	LS	419159	419159			
6	Fifth Year @7% of the basic CAPEX cost	1	LS	978037	978037			
7	Sixth Year @4% of the basic CAPEX cost	1	LS	558879	558879			
8	Seventh Year @7% of the basic CAPEX cost	1	LS	978037	978037			
9	CAMC (excluding GST)				3492991			

4 of 4 PUDUCHERRY BP

CVI	TTEN .	OTV	Linux	CII	IDDL V	INICT	**************************************	TOTAL
SN	ITEM	QIY	UNIT	RATE	AMOUNT	RATE	ALLATION AMOUNT	TOTAL AMOUNT
	PART-A			NAIL	AMOUNT	KAIL	AMOUNT	AMOUNT
10	CCTV SYSTEM FOR PERIMETER WITH PIDS							
10.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge	EA	2	21025	0.42	562.5	0.01	0.43
10.2	protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	14	48813	6.83	1875	0.26	7.10
10.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	LA	14	40013	6.83	16/3	0.26	7.10
10.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender	EA	5	30320	1.52	562.5	0.03	1.54
10.4	Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	42	45625	19.16	562.5	0.24	19.40
10.5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as per specifications and Tender Document.	EA	32	41177	13.18	812.5	0.26	13.44
10.6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Tender Document.	EA	32	52471	16.79	1687.5	0.54	17.33
10.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)							
	Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for ladder for installation & maintenance purpose throughout the contract period including CAMC period at no additional cost to IOCL.			40055.4	0.45			44.00
10.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and LED flood light at 8M of the pole across perimeter as per tender	EA	14	68955.6	9.65	9750	1.37	11.02
10.7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
10.7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	28	30450	8.53	8450	2.37	10.89
10.7.4	the pole across perimeter as per tender	F.4		40575	0.20	4500	0.05	0.24
10.7.4	4/6M pole with Accessories as per specification of Tender	EA EA	1 42	19575 12353	0.20 5.19	4500 2000	0.05	0.24 6.03
	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to 10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports, nuts, bolts, earthing, required modification infixing arrangement, Supply and welding of mounting structure as persite condition, painting etc. all complete with labour and materials asper drawings, specifications and directions of the Engineer-in-Charge.	EA	42	12353	5.19	2000	0.84	6.03
10.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate, mounting clamp, SS 316 fasteners, OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates, conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever required, hume pipes, Aluminium tags, lugs, ferrules, etc							
10.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.							
	2C x 1.5 sqmm	М	1	40	0.00	16	0.00	0.00
	3C x 2.5 sqmm	М	3750	112	4.20	27	1.01	5.21
	3C x 4 sqmm	M	1	135	0.00	27	0.00	0.00
10.9.1.4	4C x 6 sqmm Supply Javing glanding formling splicing & termination of 6 core single mode armoured entical fibro	M	2500 3750	315 56	7.88 2.10	45 27	1.13	9.00 3.11
10.10	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	M	1250	50	0.63	10	0.13	0.75
10.12	specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green wire for earthing instruments and junction boxes etc complete as per specification and tender	М	1250	58	0.73	21	0.26	0.99
10.13	document SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System as per Standard Design Engineering, specification and tender document.	М	3750	89	3.34	47	1.76	5.10
10.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.							
10.14.1		EA	30	145	0.04	7.5	0.00	0.05
10.14.2	15 m	EA	30	145	0.04	10	0.00	0.05

SN	ITEM	OTY	UNIT	SUI	PPLY	INST	ALLATION	TOTAL
511	1121	Q	OIIII	RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.14.3	20 m	EA	30	145	0.04	12.5	0.00	0.05
10.15	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender							
10.45.4	documents.			227	0.00		0.00	0.00
10.15.1	50 mm	M	1 50	236 357.5	0.00	0 217.5	0.00	0.00
	150 mm	M	3750	455	17.06	240	9.00	26.06
	300 mm	M	1	715	0.01	580	0.01	0.01
10.16	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as per specification / tender documents.							
	24 ways JB	EA	5	10295	0.51	4321	0.22	0.73
	18 ways JB	EA	5	8920	0.45	3547	0.18	0.62
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB 4 ways JB	EA EA	1	3110.25 782.28	0.03	562.5 375	0.01	0.04
10.17	Supply & installation of FLP isolators/ switches along with accessories like certified double compression cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents for switching ON/OFF of Flood lights at field.	EA	21	5341	1.12	1499	0.31	1.44
10.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	М	3750	77	2.89	45	1.69	4.58
	Supply, design ,Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc	ТО	1	90625	0.91	33334	0.33	1.24
10.20	Supply of Maintenance Free CPRI approved Earth pit (Ashlok / Equivalent make) as per IS: 3043 with 100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation. All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
	Earth Pit	EA	21	20000	4.20	625	0.13	4.33
10.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT blocks for future cable entry along with frame and mounting accessories complete as per specification and tender document.	LS	1	19125	0.19	2175	0.02	0.21
10.22	Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU etc complete as per specifications and Tender Document. Note: In case multiple servers are required to meet the tender requirement, vendor to provide the same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL. Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage		250	9412	23.53	13000	0.13	23.87
	(NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15 FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per specifications and Tender Document.							
10.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document. Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required hardware & software is to be provided for the same. Incase the offered work station do not have such provision, then additional work station to be provided meeting the tender requirement at no additional							
L	cost to IOCL.							
	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Tower type minimum 27" colored LED monitor :- Control room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Tower type minimum 27" colored LED monitor :- Security room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
10.25	Design & Supply, installation, commissioning & integration of video wall along with required controller & complete accecories, cables etc, mounting arrangement from wall/ceiling for CCTV application complete as per specifications and tender document. In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV camera.	EA	1	281250	2.81	2500	0.03	2.84

2 of 4 TIRUNELVELI BP

SN	ITEM	OTY	UNIT	SU	IPPLY	INS	TALLATION	TOTAL
		~		RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.26	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document. In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two	EA	1	281250	2.81	2500	0.03	2.84
10.27	pages) for CCTV camera. Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document. In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two	EA	1	281250	2.81	2500	0.03	2.84
10.28	pages) for CCTV camera. Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	SET	1	217791	2.18	2500	0.03	2.20
10.29	Note: The switches are required to be configured in dual redundant mode. Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
10.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
10.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
10.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
10.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
10.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note:							
10.33.1	The switches are to be configured in Dual Redundant mode. At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.33.2	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
10.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
10.35	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
10.36	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
10.37	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of ½ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries, monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
10.38	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
	SUB TOTAL				19879026.83		2445521.00	22324547.83
	CONTEGENCY	0%			0.00		0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC		ШĪ		0.00		0.00	5581140.00
	GST	18%			3578224.83		440193.78	5023023.81
	TOTAL				23457251.66		2885714.78	32928711.64

	Comprehensive AMC				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty				
3	Second Year @1.5% of the basic CAPEX cost	1	LS	334869	334869
4	Third Year @2.5% of the basic CAPEX cost	1	LS	558114	558114
5	Fourth Year @3% of the basic CAPEX cost	1	LS	669737	669737
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1562719	1562719
7	Sixth Year @4% of the basic CAPEX cost	1	LS	892982	892982
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1562719	1562719

INDIAN OIL CORPORATION LIMITED MARKETING DIVISION TIRUNELVELI BP

SUB: PERIMETER CCTV SURVEILLANCE SYSTEM FOR LPG BOTTLING PLANTS UNDER TNSO

10.06.2022

SN	ITEM	QTY	UNIT	SUPPLY		INSTALLATION		TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
9	CAMC (excluding GST)				5581140			

4 of 4 TIRUNELVELI BP

SN .	ITEM	QTY	UNIT		SUPPLY	INST	ALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
	PART-A							
0	CCTV SYSTEM FOR PERIMETER WITH PIDS							
0.1	Supply, installation, configuration, integration, testing and commissioning of HD IP Fixed Dome camera	EA	2	21025	0.42	562.5	0.01	0.43
	with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge							
	protection unit and mounting accessories etc complete as per specifications and Tender Document.							
0.2	Supply, installation, configuration, integration, testing and commissioning of HD IP PTZ Camera (2MP)	EA	14	48813	6.83	1875	0.26	7.10
	along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
0.3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras	EA	5	30320	1.52	562.5	0.03	1.54
	with MFZ lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
0.4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Box cameras with	EA	43	45625	19.62	562.5	0.24	19.86
	varifocal lens (8MP) - 4K resolution along with power supply unit (POE based), with inbuilt/external							
	surge protection unit and mounting accessories etc complete as per specifications and Tender							
	Document.							
).5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade	EA	32	41177	13.18	812.5	0.26	13.44
	layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2							
	Nos. optical fibre ports with inbuilt/external surge protector (Type 1+2) at the input power supply as							
	per specifications and Tender Document.							
).6	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof	EA	32	52471	16.79	1687.5	0.54	17.33
	cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor							
	for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also							
	includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank							
	plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc							
	complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs,							
	Exd. double compression cable glands etc as per specifications and Tender Document.							
.7	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot							
	Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation							
	bolt, mounting brackets, ladder arrangement (taking into account of safety during climbing) on the pole							
	for installation and maintenance of cameras, junction box, SS nut & bolts for fixing camera and other							
	accessories required for complete installation and commissioning of the pole, submission of structural							
	stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering							
	colleges etc complete as per specifications and Tender Document of below mentioned height of the							
	pole. (Foundation drawing and other details to be submitted prior to installation as per tender							
	document)							
	Note: In case pole do not have ladder arrangment for maintenance purpose, then vendor to arrange for							
	ladder for installation & maintenance purpose throughout the contract period including CAMC period at							
	no additional cost to IOCL.							
.7.1	10M pole with cantilever arrangement for mounting of 1 fixed camera at 6M, 2 PTZ camera at 10M and	EA	14	68955.6	9.65	9750	1.37	11.02
7.2	LED flood light at 8M of the pole across perimeter as per tender			2/075	0.27	44400	0.42	0.40
).7.2	12M pole with cantilever arrangement	EA	1	36975	0.37	11600	0.12	0.49
).7.3	8M pole with cantilever arrangement for mounting of 1 fixed camera at 6M and LED flood light at 8M of	EA	29	30450	8.83	8450	2.45	11.28
	the pole across perimeter as per tender							
.7.4	4/6M pole with Accessories as per specification of Tender	EA	1	19575	0.20	4500	0.05	0.24
.80	Supply, Installation, testing and commissioning of 350 W LED flood light luminaries on Light poles up to	EA	43	12353	5.31	2000	0.86	6.17
	10M height including supply & fixing of clamps, scafolding, temporary fire screen ifrequired, supports,							
	nuts,bolts, earthing , required modification infixing arrangement , Supply and welding of mounting							
	structure as persite condition , painting etc. all complete with labour and materials asper drawings,							
	specifications and directions of the Engineer-in-Charge.							
.9	Supply, laying, glanding, ferruling, termination of cables shall be along with accessories like certified							
	double compression cable glands with PVC shrouds, plugs for excess entries, SS 316 engraved tag plate,							
	mounting clamp, SS 316 fasteners , OFC accessories (like 12/24 port LIU, splice trays, loaded adaptor							
	and blank plates, UTP and optical patch cords, pigtails, media converters etc), LAN face plates,							
	conduits, structural steel for mounting of equipments, making RCC trenches with cover wherever							
	required, hume pipes, Aluminium tags, lugs, ferrules, etc					1		
.9.1	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender							
	specifications.	.				1		
	2C x 1.5 sqmm	М	1	40	0.00	16	0.00	0.00
	3C x 2.5 sqmm	М	3900	112	4.37	27	1.05	5.42
	3C x 4 sqmm	М	1	135	0.00	27	0.00	0.00
.9.1.4	4C x 6 sqmm	М	2600	315	8.19	45	1.17	9.36
.10	Supply, laying, glanding, ferruling, splicing & termination of 6 core single mode armoured optical fibre	W	3900	56	2.18	27	1.05	3.24
	cable as per tender specifications and instructions of Engineer in charge.							
.11	Supply, laying, glanding, ferruling, termination of CAT 6 Ethernet armoured cable as per tender	W	1300	50	0.65	10	0.13	0.78
	specifications and instructions of Engineer in charge.							
.12	Supply, laying, glanding, ferruling, termination of 1C x 6 Sq. mm FRLS Flexible copper insulated green	W	1300	58	0.75	21	0.27	1.03
	wire for earthing instruments and junction boxes etc complete as per specification and tender document					1 1		
.13	SUpply, fabrication, cutting, laying & connection of GI strip (50mm X 6mm) with Hot dip galvanizing	М	3900	89	3.47	47	1.83	5.30
	(800 gm/m2 as per IS 4759) along with accessories required for complete Terminal Automation System					1 1		
	as per Standard Design Engineering, specification and tender document.					⊥_		
.14	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per							
.14								
	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per	EA	50	145	0.07	7.5	0.00	0.08
.14.1	Supply, laying, glanding, ferruling & termination of Pre fab CAT 6 Ethernet un-armoured cable as per tender specifications and instructions of Engineer in charge.	EA EA	50 50	145 145	0.07 0.07	7.5	0.00	0.08

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SN	ITEM	QTY	UNIT	RATE	SUPPLY AMOUNT	INST RATE	ALLATION AMOUNT	TOTAL AMOUNT
10.15	Supply & laying of anodized Aluminium perforated cable trave /2 5mm Thick), trav covers (4.5mm Thick)			KAIL	AMOUNT	KATE	AMOUNT	AMOUNT
10.13	Supply & laying of anodized Aluminium perforated cable trays (2.5mm Thick), tray covers (1.5mm Thick) along with structural steel for mounting of the cable tray. Complete as per specifications / tender							
	documents.							
10.15.1	50 mm	M	1	236	0.00	0	0.00	0.00
10.15.2	100 mm	М	50	357.5	0.18	217.5	0.11	0.29
	150 mm	М	3900	455	17.75	240	9.36	27.11
	300 mm	М	1	715	0.01	580	0.01	0.01
	Supply & Installation of Exd/FLP Junction Box (Power/Control/Signal JB) with IP 65 as per specification							
	suitable for hazardous area of zone 1, group IIA/IIB, T3 or better having CCOE/CMRI approval. It shall be complete in all respect. Accessories like certified double compression cable glands with PVC shrouds							
	& plugs for excess entries, SS 316 engraved tag plate, mounting clamp & SS 316 fasteners. Complete as							
	per specification / tender documents.							
	24 ways JB	EA	5	10295	0.51	4321	0.22	0.73
	18 ways JB	EA	5	8920	0.45	3547	0.18	0.62
	12 ways JB	EA	1	5598.45	0.06	875	0.01	0.06
	8 ways JB	EA	1	5598.45	0.06	750	0.01	0.06
	6 ways JB	EA EA	1	3110.25 782.28	0.03	562.5 375	0.01	0.04
	4 ways JB Supply & installation of FLP isolators/ switches along with accessories like certified double compression	EA	1 21	5341	0.01 1.12	1499	0.00	1.44
10.17	cable glands with PVC shrouds & plugs for excess entries, SS 316 engraved tag plate, mounting	LA	21	3341	1.12	1477	0.31	1.44
	structures, foundations, clamp, SS 316 fasteners etc complete as per specification & tender documents							
	for switching ON/OFF of Flood lights at field.							
10.18	Supply & laying of 50 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender	W	3900	77	3.00	45	1.76	4.76
10.10	specifications and instructions of Engineer in charge.	T0	4	00/35	0.04	22224	0.22	1.24
10.19	Supply, design , Fabrication , cutting , errection of Structural steel (MS) for erection of cable bridge (if required) for laying of above ground cables at road crossing or any other place within the Terminal	ТО	1	90625	0.91	33334	0.33	1.24
	including painting, Civil foundations, nuts, bolts, washers, cleats, stiffners, gussets, base plate etc							
	metading painting, or it roundations, had, botto, hadners, etcates, services, susceptible etc							
10.20	Supply of Maintenance Free CPRI approved Earth pit (Ashlok /Equivalent make) as per IS: 3043 with							
	100 mm dia of minimum 3mtr length safe earthing electrode with Pipe-in-pipe technology consisting of							
	two mild steel pipes one inside the other, hot dip galvanized (80-100 microns), filled with high							
	conductive & corrosion resistance crystalline mixture and backfilling compound around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4,							
	600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc.							
	Equivalent make shall be approved by client / consultants. Procedure recommended by chemical earth							
	supplier and IS code to be finally adopted. Item also includes provision of earth station flags with pit							
	nos and date of inspection and the next due date of inspection. Job also includes provision of test							
	certificate of earthing station from a licensed electrician as per the format of the Corporation.							
	All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall							
	be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power							
10.20.1	Earth Pit	EA	22	20000	4.40	625	0.14	4.54
10.21	Supply, Installation, testing and commissioning of MCT block for entire Automation cable entry to	LS	1	19125	0.19	2175	0.02	0.21
	Control Room, Admin Building, Security Room, Driver's Rest Room etc. with minimum 30% spare MCT							
	blocks for future cable entry along with frame and mounting accessories complete as per specification							
10.22	and tender document. Supply, installation, configuration, integration, testing and commissioning of rack mounted CCTV	LS	1	607675	6.08	13000	0.13	6.21
	Server(s) along with rack type monitor, optical mouse and combo 4 port KVM switch, OS, Antivirus, LIU		·	007075	0.00	15000	0.15	0.2.
	etc complete as per specifications and Tender Document.							
	Note: In case multiple servers are required to meet the tender requirement, vendor to provide the							
	same at no additional cost to IOCL. In additional to above, Vendor to provide failover server to have							
	redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution at no additional cost to IOCL.							
10.23	Supply, Installation, configuration, integration, testing and commissioning of Network Attached Storage	ТВ	250	9412	23.53	134	0.34	23.87
	(NAS) / Storage Attached Network (SAN) for storing recorded video for a minimum period 90 days @ 15	ااًا						
	FPS at full resolution & highest Video quality of all cameras (Continuous recording) complete as per							
10.2:	specifications and Tender Document.					1		
10.24	Supply, installation, configuration, integration, testing and commissioning of CCTV client work station							
	along with client software & licenses, key board, mouse, hardware & connector for repeat/ Dual display on wall mounted LED screen, OS, Antivirus, etc complete as per specifications and Tender Document.							
	on watermounted 220 servent, 05, Anternas, etc complete as per specifications and render obcument.							
	Note: CCTV Work station shall have provision to connect to 2 nos. of UHD LED monitors . Required							
	hardware & software is to be provided for the same. Incase the offered work station do not have such							
	provision, then additional work station to be provided meeting the tender requirement at no additional							
	cost to IOCL.							
10.24.1	Tower type minimum 27" colored LED monitor :- Mkt. TM room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Tower type minimum 27" colored LED monitor :- Control room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Tower type minimum 27" colored LED monitor :- Security room - 1 No.	EA	1	32500	0.33	1875	0.02	0.34
	Design & Supply, installation, commissioning & integration of video wall along with required controller &	EA	1	281250	2.81	2500	0.03	2.84
	complete accecories , cables etc , mounting arrangement from wall/ceiling for CCTV application							
	complete as per specifications and tender document.							
	In control room:-Windows for all cameras should be available on single screen of 300-400 cm2 CCTV							
	camera.							
10.26	Design & Supply, installation,commissioning & integration of video wall along with controller &	EA	1	281250	2.81	2500	0.03	2.84
	complete accecories , cables etc. for CCTV complete as per specifications and tender document.							
i		1		1		1		
	In location in charge room:-viewing window size should be preferably be between 250-300 cm2 (in two							

2 of 3 TRICHY BP

SN	ITEM	QTY	UNIT		SUPPLY	INST	TALLATION	TOTAL
				RATE	AMOUNT	RATE	AMOUNT	AMOUNT
10.27	Design & Supply, installation, commissioning & integration of video wall along with controller & complete accecories, cables etc. for CCTV complete as per specifications and tender document.	EA	1	281250	2.81	2500	0.03	2.84
0.28	In security cabin:-viewing window size should be preferably be between min. 150-200 cm2 (in two Supply, Installation, integration, configuration, testing and commissioning of Redundant Layer 3 Managed Gigabit Ethernet Switch with minimum 24 ports or as per site requirement + 20 % spare whichever is higher along with SFP, copper, fibre modules, accessories complete as per specifications and Tender Document.	SET	1	217791	2.18	2500	0.03	2.20
0.29	Note- The switches are required to be configured in dual redundant mode. Supply, Installation, integration, configuration, testing and commissioning of Intelligent video operation, control, management, recording & processing software (VMS) complete as per specifications and Tender Document with minimum 125 cameras recording, 125 cameras viewing license, 5 LISC licence for remote viewing or as per actual nos. of cameras installed + 20% extra which ever is higher.	LS	1	544163	5.44	5000	0.05	5.49
0.30	Supply, Installation, integration, configuration, testing and commissioning of Advanced Analytics Software for all fixed cameras (including varifocal, MFZ fixed cameras), Auto tracking video analytics for all PTZ camera along with compatible Redundant Analytics Server with OS, Antivirus etc including analytic license for actual number of camera installed + 20 % spare complete as per specifications and Tender Document.	LS	1	1764706	17.65	5000	0.05	17.70
0.31	Supply, installation & commissioning of 42 U Rack Enclosure cabinet/System cabinet with 19" rack size, along with accessories like keypad cum contactless smart card reader for front & back door seperately with accessories, limit switches, earthing arrangements, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of below mentioned equipments.							
0.31.1	For mounting of CCTV Servers, Analytics Servers, NAS/SAN along with associated rack mounted monitors & keyboard, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch, MCBs etc as per specification and tender document.	EA	2	64706	1.29	3625	0.07	1.37
0.32	Supply, installation & commissioning of Wall mounted/wheel mounted Network Rack-minimum 10U 19" Rack for mounting of Terminal Server/Ethernet switches/LIU/ OFC components along with accessories like power sockets, MCBs, fan, mounting accessories etc complete in all respective at Security Room, TM room, Invoice Room for TAS equipments	EA	2	8874	0.18	797.5	0.02	0.19
0.33	Supply, Installation, configuration, integration, testing and commissioning of Layer 2 Managed Ethernet Switches along with accessories for connecting CCTV as per system architecture and design requirement complete as per specification and tender document. Note:							
0.33.1	The switches are to be configured in Dual Redundant mode. At Admin Building for TM cabin - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
	At Security Room - copper ports of 10/100/1000 MBPS [CCTV - 2 no.] (Minimum 8 nos. copper ports and 2 nos. optical ports)	EA	0	48495	0.00	1628	0.00	0.00
0.34	Standard Computer Table of Godrej or equivalent make for installation of CCTV client TM Room & security room	EA	0	6697	0.00		0.00	0.00
0.35	Supply Installation, testing and commissioning of parallel redundant UPS of minimum capacity of 6 KVA or as per load calculation (whichever is higher) for entire CCTV equipments with 30% spare capacity for future load connection. The scope also includes supply of parallel battery bank (2x50%) for minimum back up time of $\frac{1}{2}$ hour at full load (rated capacity) along with stand, supports for mounting of the UPS and batteries ,monitoring software etc complete as per specification and tender document.	EA	1	294118	2.94	6250	0.06	3.00
0.36	Surge protection device (Type1 SPD-Earth pit)	EA	5	5883	0.29	3625	0.18	0.48
0.37	Providing training to IOCL employee as per schedule / module for one day as per tender document	LS	1	65000	0.65		0.00	0.65
0.38	As built documentation for entire CCTV System: 2 sets of Hardbound and 1 sets of Soft form in Pendrive, Complete as per specifications / tender documents. Completeness & correctness of documentation shall be certified by Consultant/IOCL.	LS	1	65000	0.65		0.00	0.65
	SUB TOTAL				20151404.83		2521708.50	22673113.33
	CONTEGENCY	0%			0.00		0.00	0.00
	CONSULTANCY	0%			0.00		0.00	0.00
	CAMC				0.00		0.00	5668280.00
	GST	18%			3627252.87		453907.53	5101450.80
	TOTAL				23778657.70		2975616.03	33442844.13
	Comprehensive AMC							
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.							
2	First Year - Warranty	1				1		
						4		

	Comprehensive AMC				
1	Comprehensive Annual Maintenance Contract for a period of Seven years for entire IP Based CCTV Surveillance System after successful completion of SAT as described in Technical Bid.				
2	First Year - Warranty				
3	Second Year @1.5% of the basic CAPEX cost	1	LS	340097	340097
4	Third Year @2.5% of the basic CAPEX cost	1	LS	566828	566828
5	Fourth Year @3% of the basic CAPEX cost	1	LS	680194	680194
6	Fifth Year @7% of the basic CAPEX cost	1	LS	1587118	1587118
7	Sixth Year @4% of the basic CAPEX cost	1	LS	906925	906925
8	Seventh Year @7% of the basic CAPEX cost	1	LS	1587118	1587118
9	CAMC (excluding GST)				5668280

3 of 3 TRICHY BP

SUB: CCTV Surveillance system Inside Operating areas - Chengelpet LPG BP

30-09-2022 14-32

		ı	ı	30-09-2022 14:32	1
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	PART-A				
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	9	1,95,000	1755000
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	0	7,55,000	0
3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	4	39,000	156000
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	0	18,500	0
6	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera — with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	1,85,000	370000
7	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	0	39,000	0
8	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	10	18,500	185000
9	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	22	1,15,000	2530000
10	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	0	1,35,000	0
11	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	0	4,25,000	0
12	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RJ copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	0	85,000	0
13	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays,PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalis, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot, 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	0	49,500	0
14	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy, Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack -1 no	EA	0	32,000	0
15	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)				
15.1	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA	2	75,000	150000
15.2 15.3	12M pole camera with lader facility , fixures arrangement and RCC concrete foundation 6M pole with lader facility , fixures arrangement and RCC concrete foundation	EA EA	4 13	45,000 37,500	180000 487500
15.4	bM pole with lader facility, fixures arrangement and RCC concrete foundation 1M / 2 M mounting angles or pole with Accessories as per specification of Tender	EA EA	13	7,500	487500 142500
16	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.			.,500	
16.1	3C x 2.5 sqmm	Meter	1250	245	306250
17	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	Meter	1250	90	112500
18	Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC, SM, pigtails	Meter	2500	75	187500
19		EA	3	24,000	72000
20	Supply, installation, configuration, integration, testing and commissioning of 12 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	19	19,000	361000
21	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m	EA	22	2,200	48400
22	Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	Meter	1000	185	185000
23	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	275000
24	Full HD 43inch LED monitor :- Security / In-charge Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in	EA	2	1,25,000	250000
25	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in charge.	Meter	200	450	90000

SUB: CCTV Surveillance system Inside Operating areas - Chengelpet LPG BP

20	 2	2	222	1.37	

30-09-2022 14:32					
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
26	Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation.	LS	1	500000	500000
	Part-C : Civil, Electrical and allied Works				
1	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	5	10311.30485	51556.52425
2	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/ Earth pit etc.	Meter	200	162.330984	32466.1968
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	200	8.84355	1768.71
4	Supply & filling imported earth, in plot, trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	M3	60	154.67064	9280.2384
5	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	M3	30	1860.07302	55802.1906
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	M3	8	4077.029025	32616.2322
7	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level : 1:2:4(1 Cement : 2 Coarse Sand :4 Graded stone aggregate of 20mm)	M3	4	6017.993082	24071.97233
8	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	5	5898.470979	29492.3549
9	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape, shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand,compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	200	839.429766	167885.9532
10	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				0
	i) All kinds of Soil	CUM	200	128.060703	25612.1406
10.2	ii) Ordinary rock CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm	CUM	30	248.192706 208.049088	7445.78118
11	below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to	Meter	1000	200.043000	208049.088
12	35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	No's	100	280.962633	28096.2633
13	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting,hoisting,fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	2000	92.253474	184506.948
	CURTOTAL				0202200 50
	SUB TOTAL GST	18%			9202300.59 1656414.11
	TOTAL	-5/0			10858714.70
	Total inclufing 5% contigency				11401650.44

2 of 2 2 Carousel Plants

SUB: Budgetary Estimate for CCTV Surveillance system Inside Operating areas at Coimbatore BP

Dof: TN	50/LPG/CBEBP/CCTV/2022-23	ing areas c			Date:28.06.2022
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	PART-A				
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	18	1,95,000	3510000
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	7,55,000	1510000
3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	6	39,000	234000
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	18,500	37000
5	Supply, installation, configuration, integration, testing and commissioning of IP Based IR PTZ CAMERA — with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	1,65,000	825000
6	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera — with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	1	1,85,000	185000
7	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	39,000	78000
8	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	12	18,500	222000
9	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	15	1,15,000	1725000
10	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	4	1,35,000	540000
11	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	2	4,25,000	850000
12	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RI copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	1	85,000	85000
13	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot , 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	7	49,500	346500
14	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy, Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack -1 no	EA	12	32,000	384000
15	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)				0
15.1	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA	3	75,000	225000
15.2	12M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA	2	45,000	90000
15.3	6M pole with lader facility ,fixures arrangement and RCC concrete foundation	EA	6	37,500	225000
15.4	1M / 2 M mounting angles or pole with Accessories as per specification of Tender	EA	18	7,500	135000
16	Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.				
16.1	3C x 2.5 sqmm	Meter	3000	245	735000
17	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	Meter	3000	90	270000
18	Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	Meter	2000	75	150000

SUB: Budgetary Estimate for CCTV Surveillance system Inside Operating areas at Coimbatore BP

	SO/LPG/CBEBP/CCTV/2022-23	T			Date:28.06.2022
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
19	Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	3	24,000	72000
20	Supply, installation, configuration, integration, testing and commissioning of 12 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	19	19,000	361000
21	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m	EA	47	2,200	103400
22	Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	Meter	3000	185	555000
23	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	275000
24	Full HD 46inch LED monitor :- Security / In-charge	EA	2	1,25,000	250000
25	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in charge.	Meter	400	450	180000
26	Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation.	LS	1	500000	500000
	Part-B: Civil, Electrical and allied Works Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and				
1	backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	12	13193.46	158322
2	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/ Earth pit etc.	Meter	500	207.7	103850
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	500	11.31	5655
4	Supply & filling imported earth, in plot,trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	M3	100	633.92	63392
5	Deposited Troviding, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	M3	30	2379.99	71400
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	М3	8	5216.62	41733
7	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level : 1:2:4(1 Cement : 2 Coarse Sand : 4 Graded stone aggregate of 20mm)	M3	4	6116.75	24467
8	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	5	7547.18	37736
9	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape ,shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand, compacting with machine vibrator to required line and level, etc. complete. (Payment for provision of edge restraints shall be made separately)	M2	200	1074.06	214812
10	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				
10.1	i) All kinds of Soil ii) Ordinary rock	CUM	200 30	163.85 317.57	32770 9527
11	CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock	Meter	1000	266.2	
12	Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	No's	100	359.5	35950

SUB: Budgetary Estimate for CCTV Surveillance system Inside Operating areas at Coimbatore BP

Ref:TN	SO/LPG/CBEBP/CCTV/2022-23				Date:28.06.2022
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting,hoisting,fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	2000	118.04	236080
					15959793.18
	SUB TOTAL				15959793.18
	GST @ 18%				2872762.77
TOTAL FINANCIAL IMPLICATION VALUE INCL. 18% GST					18832555.95
	CONTINGENCY @ 5%				941627.80
	NET TOTAL FINANCIAL IMPLICATION VALUE INCL. 18% GST & 5% CONTIGENCY				19774184
	Rupees One crores Ninety Seven lakh Seventy Four thousand One Hundred and Eig	hty Four only.			

SUB: CCTV Surveillance system Inside Operating areas - Ennore LPG BP

30-09-2022 14-34

S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT	
	PART-A					
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along					
1	with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	23	1,95,000	4485000	
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as	EA	3	7,55,000	2265000	
3	per specifications and Tender Document. Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K					
-	resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	8	39,000	312000	
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	3	18,500	55500	
6	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera — with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	1	1,85,000	185000	
7	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	3	39,000	117000	
8	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	15	18,500	277500	
13	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	19	1,15,000	2185000	
14	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	5	1,35,000	675000	
15	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	3	4,25,000	1275000	
16	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RI copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	1	85,000	85000	
17	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RI45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot , 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	9	49,500	445500	
18	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy, Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Wildth: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack -1 no	EA	15	32,000	480000	
	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)		0			
	20M pole camera with lader facility, fixures arrangement and RCC concrete foundation	EA	4	75,000	300000	
22 23	12M pole camera with lader facility, fixures arrangement and RCC concrete foundation 6M pole with lader facility, fixures arrangement and RCC concrete foundation	EA EA	3 8	45,000 37,500	135000 300000	
24	To My Jew Miniader ladinty indices a management and NCC controlled roundation. IM / 2 M mounting angles or pole with Accessories as per specification of Tender. Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.	EA	23	7,500	172500	
			0			
25	3C x 2.5 sqmm	Meter	1250	245	306250	
26	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge. Supply, Jaying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions	Meter	1250	90		
28	Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC, SM, pigtails	Meter	3125	75		
29	Supply, installation, configuration, integration, testing and commissioning of 12 Port LIU fully loaded with adaptor SC, SM, pigtails	EA EA	24	24,000 19,000	96000 456000	
30	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m	EA	59	2,200	129800	
31	Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	Meter	1250	185		
34	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	275000	
35	Full HD 43inch LED monitor:- Security / In-charge	EA	3	1,25,000	375000	
37	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in charge.	Meter	250	450	112500	

SUB: CCTV Surveillance system Inside Operating areas - Ennore LPG BP

30-09-2022 14:34

S.No	ITEM .	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
41	Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation.	LS	1	500000	500000
	Part-C : Civil, Electrical and allied Works		0	-	
1	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	6	14919.71	89518.26
2	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/ Earth pit etc.	Meter	250	234.88	58720
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	250	12.79	3197.5
4	Supply & filling imported earth, in plot,trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	M3	75	27.12	2034
5	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	M3	50	2691.39	134569.5
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	M3	10	5899.17	58991.7
7	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:2:4(1 Cement: 2 Coarse Sand: 4 Graded stone aggregate of 20mm)	М3	5	6917.07	34585.35
8	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	6	7676.42	46058.52
9	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape ,shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand,compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	250	1214.59	303647.5
10	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				0
10.1	i) All kinds of Soil	CUM	250	185.29	46322.5
10.2	ii) Ordinary rock CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm	CUM	38	359.12	13646.56
11	below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to	Meter	1250	301.03	376287.5
12	35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	Nos	100	406.53	40653
13	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting, hoisting, fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	2000	133.48	266960
<u> </u>	CUD TOTAL				10053055 22
	SUB TOTAL contingency	5%			18053866.89 902693.34
	GST	18%			3249696.04
	TOTAL	1	1		22206256.27

Sub: CCTV Surveillance system Inside Operating areas at Erode BP

S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
1	PART-A Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	12	1,95,000	2340000
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	7,55,000	1510000
3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	6	39,000	234000
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) — with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	18,500	37000
5	Supply, installation, configuration, integration, testing and commissioning of IP Based IR PTZ CAMERA – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	1,65,000	330000
6	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera – with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	1,85,000	370000
7	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	39,000	78000
8	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	12	18,500	222000
9	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB	EA	15	1,15,000	1725000
10	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand	EA	4	1,35,000	540000
11	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	2	4,25,000	850000
12	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RJ copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: The switches are to be configured in Dual Redundant mode.	EA	1	85,000	85000
13	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16	EA	7	49,500	346500

Sub: CCTV Surveillance system Inside Operating areas at Erode BP

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I EA	+	24.000	72000
	3	24,000	72000
EA	19	19,000	361000
SC	 		
EA	47	2,200	103400
	1000	105	195000
IVI	1000	103	185000
EA	1	2,75,000	275000
EA	2	1,25,000	250000
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Sub: CCTV Surveillance system Inside Operating areas at Erode BP

S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
5	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	М3	30	2379.99	71399.7
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	М3	8	5216.62	41732.96
7	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:2:4(1 Cement: 2 Coarse Sand: 4 Graded stone aggregate of 20mm)	М3	4	6116.75	24467
8	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be	М3	5	7547.18	37735.9
9	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape ,shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand,compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	200	1009.18	201836
10	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil				
10.1	i) All kinds of Soil	CUM	200	163.85	32770
10.2	ii) Ordinary rock	CUM	30	317.57	9527.1
11	CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock	М	1000	266.2	266200
12	Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	Nos	100	359.5	35950
13	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting, hoisting, fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	2000	118.4	236800
	SLIR TOTAL (in De)				12101622.01
	SUB TOTAL (in Rs.)	100/			13191623.01
	GST TOTAL (in Da.)	18%			2374492.14
	TOTAL (in Rs.)				15566115

CCTV Surveillance system Inside Operating areas - Ilayangudi BP

Date

S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	PART-A				
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	13	1,95,000	2535000
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	7,55,000	1510000
3	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera – with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	1,85,000	370000
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	39,000	78000
5	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	10	18,500	185000
6	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	6	1,15,000	690000
7	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RI copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	5	1,35,000	675000
8	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	2	4,25,000	850000
9	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RJ copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	1	85,000	85000
10	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing [IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot, 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	6	49,500	297000
11	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy , Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack -1 no	EA	6	32,000	192000
12	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)				
12.1	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA	4	75,000	
12.2	12M pole camera with lader facility, fixures arrangement and RCC concrete foundation	EA	5	45,000	90000
12.3 12.4	6M pole with lader facility ,fixures arrangement and RCC concrete foundation 1M / 2 M mounting angles or pole with Accessories as per specification of Tender	EA EA	17	37,500 7,500	187500 127500
13	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.	LA	17	7,300	127300
13.1	3C x 2.5 sqmm	Meter	1000	245	245000
14	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	Meter	850	90	76500
15	Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge. Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC, SM, pigtails	Meter	1200	75	
17	Supply, installation, configuration, integration, testing and commissioning of 2 Port LIU fully loaded with adaptor SC, SM, pigtails	EA EA	10	24,000 19,000	
18 19	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	EA Meter	40 850	2,200 185	
20	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	275000
21	Full HD 43inch LED monitor :- Security / In-charge	EA	2	1,25,000	
22	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in	Meter	170	450	
23	charge. Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to	LS	170	500000	
23	Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation. Part-B: Civil, Electrical and allied Works	LS	1	500000	

CCTV Surveillance system Inside Operating areas - Ilayangudi BP

Date

S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
1	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	12	13193.46	15832:
	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/ Earth pit etc.	Meter	250	207.7	51925
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	200	11.31	2262
3	Supply & filling imported earth, in plot,trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	М3	51	197.91	10093
4	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	M3	20	2379.99	47600
5	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	M3	7	5216.62	36516
	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:2:4(1 Cement: 2 Coarse Sand: 4 Graded stone aggregate of 20mm)	M3	3	6116.75	18350
7	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	4	7547.18	30189
8	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape, shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand, compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	170	1074.06	182590
9	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				
	i) All kinds of Soil ii) Ordinary rock	CUM	170 26	227.33 403.79	38646 10499
	CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and	Meter	850	266.2	226270
11	backfilling in all kind of soils as well as ordinary rock Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	Nos	85	359.5	30558
12	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting, hoisting, fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	1700	118.04	200668
	SUB TOTAL				11236737.38
	GST (NIC CCT)	18%			2022612.73
	TOTAL (INC GST) CONTINGENCIES	5%	 		13259350.11 662967.5054
	GRAND TOTAL (INC GST & CONTINGENCIES)	370			13922317.61
	RUPEES ONE CRORE THIRTY NINE LAKHS TWENTY TWO THOUSAND THREE HUNDRED SEVENTEE	N AND PAISE	SIXTY ONE ON	LY	10322317.01

2 of 2 Ilayangudi BP

	CCTV Surveillance system Inside Operating area	as - MADURA	AI BP		
			I	30-09-2022 14:37	
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	PART-A	ζ	0	0.11.11.12	TOTALFALINGOIN
1	Exercise Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	1,95,000	975000
	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (Industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	7,55,000	1510000
	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	39,000	195000
	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) — with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	18,500	37000
	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera — with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	1	1,85,000	185000
	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) — along with power supply unit (PDE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	3	39,000	117000
	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	3	18,500	55500
	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. 81 copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1-9) at the Input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	5	1,15,000	575000
	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RI copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	3	1,35,000	405000
	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	2	4,25,000	850000
12	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RJ copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	3	85,000	255000
	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigitalis, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot, 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	2	49,500	99000
	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy , Mild steel with Galvanization level of 100 micron thickness,Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack-1 no	EA	5	32,000	160000
	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with Gi foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)		0		
	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA	1	75,000	75000
	12M pole camera with lader facility ,fixures arrangement and RCC concrete foundation 6M pole with lader facility ,fixures arrangement and RCC concrete foundation	EA EA	5 10	45,000 37,500	225000 375000
	1M / 2 M mounting angles or pole with Accessories as per specification of Tender	EA EA	5	7,500	37500
	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.		0	,	
16.1	3C x 2.5 sqmm	Meter	1000	245	245000
	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender	Meter	1000	90	90000
18	specifications and instructions of Engineer in charge. Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions				
	of Engineer in charge.	Meter	1000	75	75000
19	Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	2	24,000	48000
L	Cumply installation, configuration integration testing and commissioning of 12 Bort III fully landed with adoptor CC CMA pigtails	EA	3	19,000	57000
	Supply, installation, configuration, integration, testing and commissioning of 12 Port LIU fully loaded with adaptor SC, SM, pigtalls	EA	,	19,000	
20	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m	EA	100	2,200	220000

1 of 3 1 Carousel Plants

	CCTV Surveillance system Inside Operating area	as - MADURA	AI BP		
	30-09-2022 14:37				
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
23	Full HD 75inch LED monitor :- LIC CABIN	EA	1	2,75,000	275000
24	Full HD 43inch LED monitor :- Security /Control room/	EA	2	1,25,000	250000
25	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in charge.	Meter	250	450	112500
26	Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation.	LS	1	500000	500000
	art-C : Civil, Electrical and allied Works				
1	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	2	13193.46	26386.92
2	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/ Earth pit etc.	Meter	200	207.7	41540
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	200	11.31	2262
3	Supply & filling imported earth, in plot,trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	lations etc. in layers not exceeding 20cm in depth, each M3 5		633.92	3169.6
4	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	M3	20	2379.99	47599.8
5	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	М3	5	5216.62	26083.1
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth	M3	5	6116.75	30583.75
7	level: 1:2:4(1 Cement: 2 Coarse Sand: 4 Graded stone aggregate of 20mm) Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	5	7547.18	37735.9
8	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape, shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of 4/2mm on length & width and 4/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand, compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	150	1009.18	151377
9	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				0
10 10.1	i) All kinds of Soil ii) Ordinary rock	CUM	50 25	163.85 317.57	8192.5 7939.25
	CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock	Meter	1000	266.2	266200
11	Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	Nos	1000	359.5	359500
12	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting,hoisting,fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	1000	91.68	91680
13	Supply of Steel reinforcement for R.C.C. including straightening, cutting, bending, placing in position and binding all complete at all levels				
	ii) Thermo Mechanically Treated Bars of Fe- 500D grade or more, conforming to IS1786	kg	500	75.24	37620

2 of 3 1 Carousel Plants

	CCTV Surveillance system Inside Operating areas - MADURAI BP					
				30-09-2022 14:37		
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT	
	SUB TOTAL				9233869.82	
	GST 18%				1662096.57	
	Total Amount Including GST 18%				10895966.39	
	Contingency 5%				544798.32	
	Total Amount Including GST18% and Contingency 5%				11440764.71	

3 of 3 1 Carousel Plants

30-09-2022 14:37

	T		30-09-2022 14:37			
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT	
	PART-A					
1	Supply, installation, configuration, integration, testing and	EA	15	1,95,000	2925000	
2	Supply, installation, configuration, integration, testing and	EA	2	7,55,000	1510000	
3	Supply, installation, configuration, integration, testing and	EA	5	39,000	195000	
4	Supply, installation, configuration, integration, testing and	EA	2	18,500	37000	
6	Supply, installation, configuration, integration, testing and	EA	5	1,85,000	925000	
7	Supply, installation, configuration, integration, testing and	EA	2	39,000	78000	
8	Supply, installation, configuration, integration, testing and	EA	10	18,500	185000	
9	Supply, installation, configuration, integration, testing and			•		
	commissioning of 4 port Industrial grade layer 2 Managed		45	4.45.000	4725000	
	POE based Ethernet Switch for connecting Cameras with 4	EA	15	1,15,000	1725000	
	Nos. RJ copper port and 2 Nos. optical fibre ports with power					
10	Supply, installation, configuration, integration, testing and					
	commissioning of 8 port Industrial grade layer 2 Managed	ΕΛ	_	1 25 000	675000	
	POE based Ethernet Switch for connecting Cameras with 4	EA	5	1,35,000	675000	
	Nos. RJ copper port and 4 Nos. optical fibre ports with					
11	Supply, installation, configuration, integration, testing and	EA	3	4,25,000	1275000	
12	Supply, installation, configuration, integration, testing and	EA	1	85,000	85000	
13	Supply, installation, configuration, integration, testing and					
	commissioning of outdoor Explosion proof cum weatherproof					
	housing (IP 65 or better) suitable for installing Layer 2 switch,					
	PSU, LIU and adaptor for Ethernet switch/media convertor,	EA	7	49,500	346500	
	surge protectors and other accessories of CCTV cameras. It					
	also includes required OFC components & accessories like					
	LIU, splice trays,PSU, loaded adaptor, blank plates, UTP					
14	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy , Mild	EA	10	32,000	320000	
15	Design, fabrication and supply, installation, errection &					
	foundation of Heavy Duty self supported Hot Dip Galvanized					
	Poles for mounting of CCTV cameras along with civil		0			
	foundation along with GI foundation bolt, mounting brackets,					
	junction box, SS nut & bolts for fixing camera and other					
	accessories required for complete installation and					
15.1	20M pole camera with lader facility ,fixures arrangement	EA	2	75,000	150000	
15.2	12M pole camera with lader facility ,fixures arrangement	EA	2	45,000	90000	
15.3	6M pole with lader facility ,fixures arrangement and RCC	EA	5	37,500	187500	
15.4	1M / 2 M mounting angles or pole with Accessories as per	EA	13	7,500	97500	
16	Supply,Laying, glanding, ferruling, termination of FRLS		0			
	Armoured Copper Power cable as per tender specifications.		U			
16.1	3C x 2.5 sqmm	Meter	1500	245	367500	
17	Supply, laying, glanding, ferruling, splicing & termination of	Meter	1500	90	135000	
18	Supply, laying, glanding, ferruling, termination of outdoor	Meter	1500	75	112500	
19	Supply, installation, configuration, integration, testing and	EA	3	24,000	72000	
20	Supply, installation, configuration, integration, testing and	EA	16	19,000	304000	
21	Supply, installation, configuration, integration, testing and	EA	40	2,200	88000	
22	Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm	Meter	400	185	74000	
23	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	275000	
24	Full HD 43inch LED monitor :- Security / In-charge	EA	2	1,25,000	250000	
25	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with	Meter	500	450	225000	
26	Integration of CCTV System with existing system at	LS	1	100000	100000	
	Part-C: Civil, Electrical and allied Works					
1	Construction, Testing & Commissioning of Earth pit as	Nos	4	12099.42	48397.68	
2	Laying, Testing & Commissioning of GI strip (50 X 6) with	Meter	270	215.47	58176.9	
3	Clearing jungle including uprooting of rank vegetation,	M2	250	11.74	2935	
3	Supply & filling imported earth, in plot, trenches, plinth,	M3	30	657.62	19728.6	
4	Providing, laying, spreading and compacting graded	M3	20	2468.96	49379.2	
5	Providing and laying in position cement concrete of	M3	7	5411.63	37881.41	
6	grade excluding cost of centering and shuttering - All work up	M3	3	6345.41	19036.23	
7	kerb stone of M-25 grade cement in position to the required	M3	4	7829.32	31317.28	
8	Grey/ Coloured Pre-cast cement concrete, interlocking paver	M2	170	1114.21	189415.7	
9	excavator) / manual means over areas (exceeding 30 cm in				0	
10	i) All kinds of Soil	CUM	170	169.98	28896.6	

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1 Carousel Plants

10.2	brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width	Meter	850	276.15	234727.5	
11	100mm x 100mm x5mm thick GI Plate with inscription	Nos	85	372.94	31699.9	
12	Supply / Laying Structural steel work in built up sections/	Kg	1500	122.45	183675	
	SUB TOTAL				13753332.44	
	GST	18%			2475599.84	
	TOTAL INCLUDING GST			16228932.28		
	CONTIGENCY @ 5%				811446.61	
<u> </u>	TOTAL INCLUDING GST AND CONTIGENCY				17040378.89	
RUPEES ONE CRORE SEVENTY LAKHS FORTY THOUSAND THREE HUNDRED AND SEVENTY NINE ONLY						

1 Carousel Plants

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CCTV Surveillance system Inside Operating areas - Mayiladuthurai BP

			Date:	29.06.2022	
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	PART-A				
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (ZMP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	7	1,95,000	1365000
2	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	7	39,000	273000
3	Supply, installation, configuration, integration, testing and commissioning of IP Based IR PTZ CAMERA – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	1	1,65,000	165000
4	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera — with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	1	1,85,000	185000
5	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	10	18,500	185000
6	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed PDE based Ethernet Switch for connecting Cameras with 4 Nos. RI copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	13	1,15,000	1495000
7	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RI copper port and 4 Nos. optical fibre ports with external data surge -each 2 numbers & external surge protector (Type 1-2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	2	1,35,000	270000
8	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1. The switches are to be configured in Dual Redundant mode.	EA	2	4,25,000	850000
9	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RI copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	1	85,000	85000
10	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays,PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtalis, tags, ties, Ethernet cable with RI45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FIP 2 way junction boxes -16 numbers lot , 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	6	49,500	297000
11	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy, Mild steel with Galvanization level of 100 micron thickness,Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack - 1 no	EA	10	32,000	320000
12	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)				
12.1	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA	1	75,000	75000
12.2	6M pole with lader facility , fixures arrangement and RCC concrete foundation 1M / 2 M mounting angles or pole with Accessories as per specification of Tender	EA EA	2 15	37,500 7,500	75000 112500
13	Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.		15	7,300	112300
13.1	3C x 2.5 sqmm	Meter	1000	245	245000
14	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	Meter	1000	90	90000
15	Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	Meter	2000	75	150000
16	Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	2	24,000	48000
17	Supply, installation, configuration, integration, testing and commissioning of 12 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	14	19,000	266000
18 19	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of	EA Meter	1000	2,200 185	88000 185000
20	Engineer in charge. Full HD 75inch LED monitor:- Control room	EA	1		275000
20 21	Full HD 75inch LED monitor :- Control room Full HD 43inch LED monitor :- Security / In-charge	EA EA	2	2,75,000 1,25,000	250000
22	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in charge.	Meter	170	450	76500
23	Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation.	LS	1	500000	500000

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CCTV Surveillance system Inside Operating areas - Mayiladuthurai BP

			Date:	29.06.2022	
S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
	Part-C : Civil, Electrical and allied Works				
1	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	4	16,398.08	65592.32
2	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/ Earth pit etc.	Meter	250	258.15	64537.5
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	500	14.06	7030
3	Supply & filling imported earth, in plot,trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	M3	51	787.89	40182.39
4	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications.	МЗ	20	2958.07	59161.4
5	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8/1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	M3	7	6483.71	45385.97
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:2:4[1 Cement: 2 Coarse Sand: 4 Graded stone aggregate of 20mm]	М3	3	7602.47	22807.41
7	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	М3	4	9380.35	37521.4
8	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape, shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per 1515658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per B 1881, maximum insoinal deviations of +/-2mm on length & width and +/-3mm on thickness. The job includes supplying & laying a layer of 50mm thick dean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand, compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	200	1334.94	266988
9	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per litem no. MPLCN00600.				
10	i) All kinds of Soil	CUM	200	203.65	40730
10.1	ii) Ordinary rock CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock	CUM Meter	30 850	394.7 330.86	11841 281231
11	Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 55mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	Nos	85	446.82	37979.7
12	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting,hoisting,fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	1700	146.71	249407
13	SUB TOTAL			1	9156395.09
	SUBTUTAL	18%	 	1	1648151.12
	Total	-5/0	t e	1	10804546.21
	Contigency				540227.31
	GRAND TOTAL				11344773.52
	GRAND TOTAL(Rupees One crore Thirteen Lakh Forty four Thousand Seven Hundred Seventy four Only)			1	

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1	PART-A	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
1					
1					
	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	15	1,95,000	29,25,000.00
	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	7,55,000	15,10,000.00
3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	5	39,000	1,95,000.00
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	18,500	37,000.00
6	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera – with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	1	1,85,000	1,85,000.00
7	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each camera) and mounting accessories etc complete as per specifications and Tender Document.	EA	2	39,000	78,000.00
8	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	10	18,500	1,85,000.00
	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. R1 copper port and 2 Nos. optical fibre ports with power, external lata surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	13	1,15,000	14,95,000.00
	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. R1 copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	3	1,35,000	4,05,000.00
	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of optical transceivers as per specifications and Tender Document. Note: 1 The switches are to be configured in Dual Redundant mode	EA	2	4,25,000	8,50,000.00
12	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RJ copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply as per specifications Note: . The switches are to be configured in Dual Redundant mode.	EA	1	85,000	85,000.00
13	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot , 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	6	49,500	2,97,000.00
	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy , Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack -1 no	EA	10	32,000	3,20,000.00
	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)		0		
	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation	EA EA	3	75,000	2,25,000.00
	12M pole camera with lader facility ,fixures arrangement and RCC concrete foundation 6M pole with lader facility ,fixures arrangement and RCC concrete foundation	EA EA	<u>2</u> 5	45,000 37,500	90,000.00 1,87,500.00
15 2		EA	15	7,500	1,12,500.00
15.4 16	1M / 2 M mounting angles or pole with Accessories as per specification of Tender Supply, Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.		0		

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S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
17	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	Meter	850	90	76,500.00
18	Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	Meter	2125	75	1,59,375.00
19	Supply, installation, configuration, integration, testing and commissioning of 24 Port LIU fully loaded with adaptor SC. SM. piotails	EA	3	24,000	72,000.00
20	Supply, installation, configuration, integration, testing and commissioning of 12 Port LTU fully loaded with adaptor SC, SM, piqtails	EA	16	19,000	3,04,000.00
21	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.: SC-LC. 3.0 m	EA	40	2,200	88,000.00
22	Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	Meter	850	185	1,57,250.00
23	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	2,75,000.00
24	Full HD 43inch LED monitor :- Security / In-charge	EA	2	1,25,000	2,50,000.00
25	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI) with fixing accessories as per tender specifications and instructions of Engineer in charge.	Meter	170	450	76,500.00
26	Integration of CCTV System with existing system at respective locations and the system shall also have provision for ISAP/ Safety PLC for critical inputs like ESD, LPG automation, product Tank HiHi alarms etc. Also Auto tracking of PTZ camera to defined Presets based on alarms triggered by LPG Automation.	LS	1	5,50,000.00	5,50,000.00
	Part-B : Civil, Electrical and allied Works				
	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and Power earth shall be separate as per specification	Nos	4	13686.68	54,746.72
2	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit. CCTV pole with Earthing grid/ Earth pit etc.	Meter	170	215.47	36,629.90
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobiectionable place	M2	200	11.74	2,348.00
3	Supply & filling imported earth, in plot,trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	М3	51	657.62	33,538.62
4	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineer-incharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications.	М3	20	2468.96	49,379.20
5	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement:4 Coarse Sand: 8 Graded stone aggregate of 40mm)	М3	7	5411.63	37,881.41
6	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level : 1:2:4(1 Cement : 2 Coarse Sand :4 Graded stone aggregate of 20mm)	М3	3	6345.41	19,036.23
7	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	МЗ	4	7829.32	31,317.28
	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape ,shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand, compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)	M2	170	1114.21	1,89,415.70

SUB:

30-09-2022 14:38

S.No	ITEM	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
9	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				-
9.1	i) All kinds of Soil	CUM	170	169.98	28,896.60
10	CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock	Meter	850	276.15	2,34,727.50
11	Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red loxide and finish paint.	Nos	85	372.94	31,699.90
12	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting,hoisting,fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	1700	122.45	2,08,165.00
				SUB TOTAL OF PART A&B	1,23,56,657.06 22,24,198.27
GST@18%					
SUB TOTAL					
CONTINGENCY@5%					
TOTAL AMOUNT INCL GST & CONTINGENCY					
L				ROUNDED OFF	1,53,09,900.00

	CCTV Surveillance system Inside Operating areas - Tirunelveli BP 30-09-2022 14							
S.No	ІТЕМ	QTY	UNIT	UNIT RATE	TOTAL AMOUNT			
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	4	1,85,000	740000			
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	1	7,25,000	725000			
3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) — with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	2	17,000	34000			
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	3	14,900	44700			
5	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 30 Numbers of optical transceiver, also shall be provided with legrand make MCB along with each switch as per specifications	EA	1	1,05,000	105000			
6	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RI copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input power supply & 8 number of optical transceivers as per specifications also shall be provided with legrand make MCB along with each switch	EA	1	1,20,000	120000			
7	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes Exd. blinding plugs, Exd. double compression cable glands etc as per specifications and Additional quantity should provide FLP 2 way junction boxes -16 numbers lot , 48V DC 240W Single Output Industrial DIN RAIL power supply & Power Surge protector each rack -1 no	EA	2	42,500	85000			
8	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy , Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single Output Industrial DIN RAIL & Power Surge protector each rack-1 no	EA	2	28,000	56000			
9	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per specifications and Tender Document of below mentioned height of the pole. (Foundation drawing and other details to be submitted prior to installation as per tender document)							
9.1	1M / 2 M mounting angles or pole with Accessories as per specification of Tender	EA	10	7,500	75000			
10	Supply,Laying, glanding, ferruling, termination of FRLS Armoured Copper Power cable as per tender specifications.							
10.1	3C x 2.5 sqmm	Meter	250	225	56250			
11	Supply, laying, glanding, ferruling, splicing & termination of 12 core single mode armoured optical fibre cable as per tender specifications and instructions of Engineer in charge.	Meter	500	90	45000			
12	Supply, laying, glanding, ferruling, termination of outdoor CAT 6 Ethernet armoured cable as per tender specifications and instructions of Engineer in charge.	Meter	1000	80	80000			
13	Supply, installation, configuration, integration, testing and commissioning of 12 Port LIU fully loaded with adaptor SC, SM, pigtails	EA	2	19,000	38000			
14	Supply, installation, configuration, integration, testing and commissioning of FO Patch Cord, Duplex, SM.; SC-LC, 3.0 m	EA	12	1,800	21600			
15	Supply & laying of 40 mm HDPE pipe of minimum 2.5 mm thick along with accessories as per tender specifications and instructions of Engineer in charge.	Meter	500	185				
	SUB TOTAL				2318050.00			
	GST	18%			417249.00			
	TOTAL				2735299.00			
	CONTIGENCY	5%		1	136764.95			
l	TOTAL		1	1	2872064			

1 of 1 2 Carousel Plants

CCTV Surveillance system Inside Operating areas - 2 Carousel Plants (TRICHY BP)

S.No	ITEM	UNIT	QTY	RATE	AMOUNT
	PART-A				
1	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP Fixed camera with IR and MFZ lens (2MP) along with power supply unit (POE based), with inbuilt / external surge protection unit and mounting accessories etc complete as per specifications and Tender Document.	EA	18	1,95,000	3510000
2	Supply, installation, configuration, integration, testing and commissioning of FLP HD IP PTZ Camera (2MP) along with power supply unit (POE based) with POE injector (industrial grade), with inbuilt/external surge	EA	2	7,55,000	1510000
3	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras with MFZ lens (8MP) – 4K resolution along with power supply unit (POE based), with inbuilt/external surge	EA	6	39,000	234000
4	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Bullet cameras (2MP) – with power supply unit (POE based), with inbuilt/external surge protection unit and mounting	EA	2	18,500	37000
6	Supply, installation, configuration, integration, testing and commissioning of IP Based 360 Degree Panoramic Camera – with power supply unit (POE based), with inbuilt/external surge protection unit (2 Nos each	EA	1	1,85,000	185000
7	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (8MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit (2)	EA	2	39,000	78000
8	Supply, installation, configuration, integration, testing and commissioning of IP Fixed Dome cameras with MFZ lens (2MP) – along with power supply unit (POE based), with inbuilt/external surge protection unit and	EA	12	18,500	222000
9	Supply, installation, configuration, integration, testing and commissioning of 4 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 2 Nos. optical fibre ports with power, external data surge - each 2 numbers & external surge protector (Type 1+2) at the	EA	15	1,15,000	1725000

10	Supply, installation, configuration, integration, testing and commissioning of 8 port Industrial grade layer 2 Managed POE based Ethernet Switch for connecting Cameras with 4 Nos. RJ copper port and 4 Nos. optical fibre ports with external data surge - each 2 numbers & external surge protector (Type 1+2) at the input	EA	4	1,35,000	540000
11	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed Ethernet Switch for connecting Cameras with 24 SFP+/SFP ports, 4 QSFP+ ports, 2 expansion slots, redundant fans, 2 AC power supplies, front to back airflow with inbuilt/ Data & external surge protector (Type 1+2) at the input power supply & 13 number of	EA	2	4,25,000	850000
12	Supply, installation, configuration, integration, testing and commissioning of 24 port layer 3 Managed POE based Ethernet Switch for connecting Cameras with 24 Nos. RJ copper port and 04 Nos. optical fibre ports with inbuilt/ Data & external surge protector (Type 1+2) at	EA	1	85,000	85000
13	Supply, installation, configuration, integration, testing and commissioning of outdoor Explosion proof cum weatherproof housing (IP 65 or better) suitable for installing Layer 2 switch, PSU, LIU and adaptor for Ethernet switch/media convertor, surge protectors and other accessories of CCTV cameras. It also includes required OFC components & accessories like LIU, splice trays, PSU, loaded adaptor, blank plates, UTP cables, Fibre patch cords, pigtails, tags, ties, Ethernet cable with RJ45 connector etc complete in all respect for functioning of CCTV camera. The scope also includes	EA	7	49,500	346500
14	IP 55 rated 6U Outdoor IP55 Rack with Rain Canopy, Mild steel with Galvanization level of 100 micron thickness, Height: 498mm(9U), Width: 600mm, Depth: 500mm Also should provide 48V DC 240W Single	EA	12	32,000	384000
15	Design, fabrication and supply, installation, errection & foundation of Heavy Duty self supported Hot Dip Galvanized Poles for mounting of CCTV cameras along with civil foundation along with GI foundation bolt, mounting brackets, junction box, SS nut & bolts for fixing camera and other accessories required for complete installation and commissioning of the pole, submission of structural stability certificate based on existing soil bearing capacity and wind speed from Govt. Engineering colleges etc complete as per				
15.1 15.2	20M pole camera with lader facility ,fixures arrangement and RCC concrete foundation 12M pole camera with lader facility ,fixures	EA	3	75,000	225000
13.2	arrangement and RCC concrete foundation	EA	2	45,000	90000

15.3	6M pole with lader facility ,fixures arrangement and	EA	6	37,500	225000
15.4	1M / 2 M mounting angles or pole with Accessories as	EA	18	7,500	135000
16	Supply, Laying, glanding, ferruling, termination of FRLS				
	Armoured Copper Power cable as per tender				
16.1	3C x 2.5 sqmm	Meter	1000	245	245000
17	Supply, laying, glanding, ferruling, splicing &				
	termination of 12 core single mode armoured optical	Meter	1000	90	90000
	fibre cable as per tender specifications and instructions				
18	Supply, laying, glanding, ferruling, termination of				
	outdoor CAT 6 Ethernet armoured cable as per tender	Meter	2500	75	187500
	specifications and instructions of Engineer in charge.				
19	Supply, installation, configuration, integration, testing	EA	3	24.000	72000
	and commissioning of 24 Port LIU fully loaded with	EA	5	24,000	72000
20	Supply, installation, configuration, integration, testing	EA	19	19,000	361000
	and commissioning of 12 Port LIU fully loaded with		19		
21	Supply, installation, configuration, integration, testing	EA	47	2,200	103400
	and commissioning of FO Patch Cord, Duplex, SM.; SC-	LA	47	2,200	103400
22	Supply & laying of 40 mm HDPE pipe of minimum 2.5	Meter	1000	185	185000
	mm thick along with accessories as per tender	IVICTO	1000	103	183000
23	Full HD 75inch LED monitor :- Control room	EA	1	2,75,000	275000
24	Full HD 43inch LED monitor :- Security / In-charge	EA	2	1,25,000	250000
25	Supply & Fixing of 40 mm Galvanized Iron Pipes(GI)	Meter	200	450	90000
23	with fixing accessories as per tender specifications and	Meter	200	430	90000
	Integration of CCTV System with existing system at				
	respective locations and the system shall also				
	have provision for ISAP/ Safety PLC for critical				
26	inputs like ESD, LPG automation, product Tank	LS	1	500000	500000
	HiHi alarms etc. Also Auto tracking of PTZ camera				
	to defined Presets based on alarms triggered by				
	LPG Automation.				
	LI O AGCOMACION.				

	Construction, Testing & Commissioning of Earth pit as per IS: 3043 with 100 mm dia of minimum 3.8 mtr length and backfilling a homogeneous				
27	mixture od Salt and Charcoal around electrode, 25 mm dia G.I. watering pipe with funnel, test link, brick masonry earth pit including plastering in CM 1:4, 600x600 mm C.I. Manhole chamber including providing suitable earth bus for interconnection etc. Equivalent make shall be approved by client / consultants. Item also includes provision of earth station flags with pit nos and date of inspection and the next due date of inspection. Job also includes provision of test certificate of earthing station from a licensed electrician as per the format of the Corporation All Instruments, JBs, Equipments in Field and CCR shall be earthed by 6 mm2 PVC insulated copper cable to nearest Insulated copper Earth Bus bar (minimum size 25 mm x 6 mm) and this earth bar shall be connected to earth pit by redundant Multi stranded copper cable (Min 25 mm2). Signal and	Nos	25	13686.7	342167
28	Laying, Testing & Commissioning of GI strip (50 X 6) with Hot dip galvanizing (800 gm/m2 as per IS 4759) along with accessories for interconnecting Earth pits, connecting UPS and other equipment / panel with earth pit, CCTV pole with Earthing grid/Earth pit etc.	Meter	4500	215.47	969615
29	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30cm measured at a height of 1m above ground level and removal of rubbish outside the site and to unobjectionable place	M2	500	11.74	5870
30	Supply & filling imported earth, in plot, trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, each deposited	M3	375	1419.08	532155

31	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to .075 mm) to wet mix macadam (WMM) specifications including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads and lifts, laying in uniform layers with mechanical paver finisher in sub-base/base course on well prepared surface and compacting with vibratory roller of 8 to 10 ton capacity to achieve the desired density, complete as per specifications of Engineerincharge (size range 53 mm to .075 mm) to wet mix macadam (WMM) as per specifications	М3	75	2468.96	185172
32	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:4:8(1 Cement: 4 Coarse Sand: 8 Graded stone aggregate of 40mm)	М3	20	5411.63	108232.6
33	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work up to plinth level: 1:2:4(1 Cement: 2 Coarse Sand: 4 Graded stone aggregate of 20mm)	М3	10	6345.41	63454.1
34	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement:3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-incharge (length of finished kerb edging shall be measured for payment) (Precast C.C. kerb stone shall be approved by Engineer-in-charge.	M3	30	7829.32	234879.6

35	Providing & laying 80mm thick factory made Lacquered finish Grey/ Coloured Pre-cast cement concrete, interlocking paver block of M 40 grade made by block making machine with strong vibratory compaction & of approved size and design/ shape ,shade and manufacturers and as per IOCL's specifications. The paver blocks shall have peripheral chamfer, with average crushing strength than 40 N/Sq.mm as per IS15658 maximum water absorption of 2% after 10 minutes and 5% after 24 hrs. as per BS 1881, maximum dimensional deviations of +/- 2mm on length & width and +/- 3mm on thickness. The job includes supplying & laying a layer of 50mm thick clean course sand on thoroughly compacted sub-base below the paver blocks, cutting the paver blocks wherever required with hydraulic splitter, filling in the joints at the edges of paver blocks with sand, compacting with machine vibrator to required line and level, etc. complete .(Payment for provision of edge restraints shall be made separately)		900	1114.21	1002789
36	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including taking out and disposal of excavated earth within or outside site to unobjectionable place and lift upto 1.5m, as directed by Engineer-in-charge. Disposed earth to be levelled and neatly dressed. Extra for levelling & neatly dressing of disposed soil completely to be paid separately as per item no. MPLCN00600				
37	i) All kinds of Soil	CUM	600	169.98	101988
38	ii) Ordinary rock	CUM	10	329.44	3294.4
39	CABLE BRICK DUCT Providing & constructing underground brick duct of 225 mm (16 Bricks & 0.0195 cum per Mtr) width and 650mm below GL for laying of 3 cables of max. diameter 70mm, complete with supply and laying of sand, bricks & including Excavation and backfilling in all kind of soils as well as ordinary rock	Meter	4500	276.15	1242675
40	Supplying and installing of GI cable route marker with 100mm x 100mm x5mm thick GI Plate with inscription thereon, bolted/welded to 35mm x 35mm x 6mm angle iron, 600mm long and fixing the same in ground as per drawing & direction of Indian Oil Job also include painting with one coat of red oxide and finish paint.	No's	250	372.94	93235

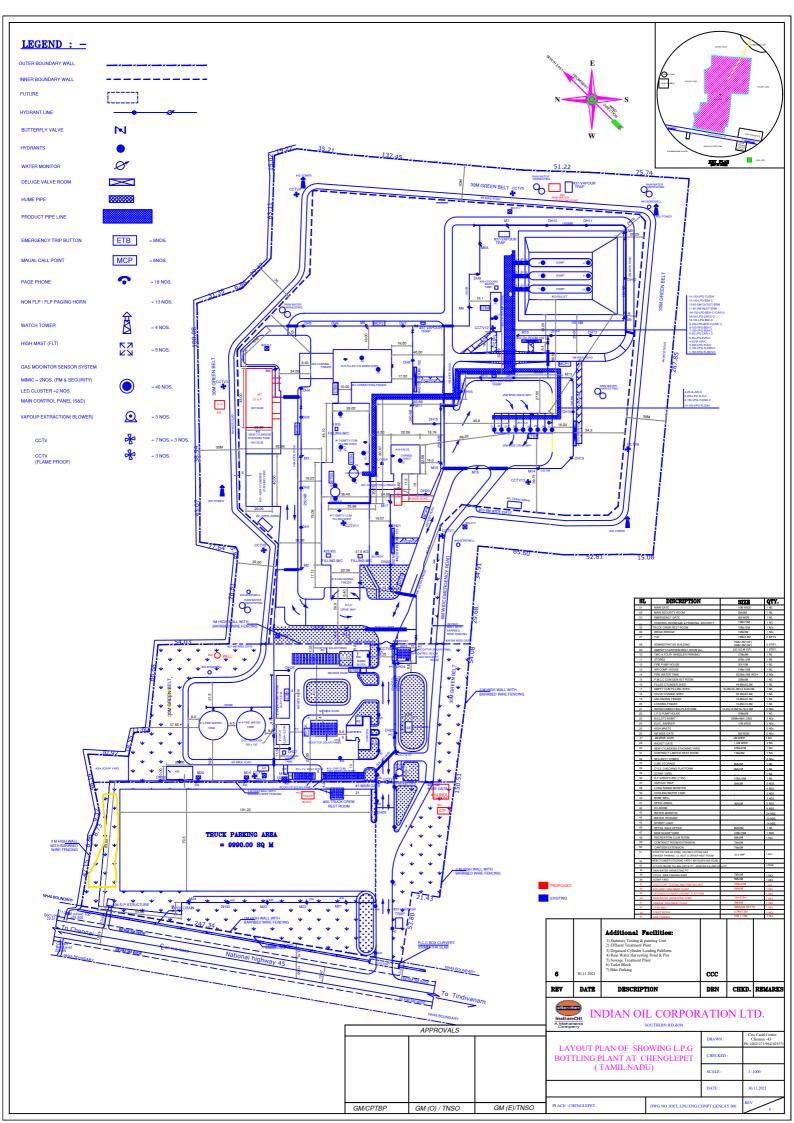
41	Supply / Laying Structural steel work in built up sections/ framed work in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cutting, hoisting, fixing in position & applying a priming coat of approved steel primer etc. as required.	Kg	5000	122.45	612250
	SUB TOTAL				18238176.70
	GST	18%			3282871.81
	TOTAL including GST				21521048.51
	Contingency @ 5%				1076052.43
	GRAND TOTAL				22597100.93

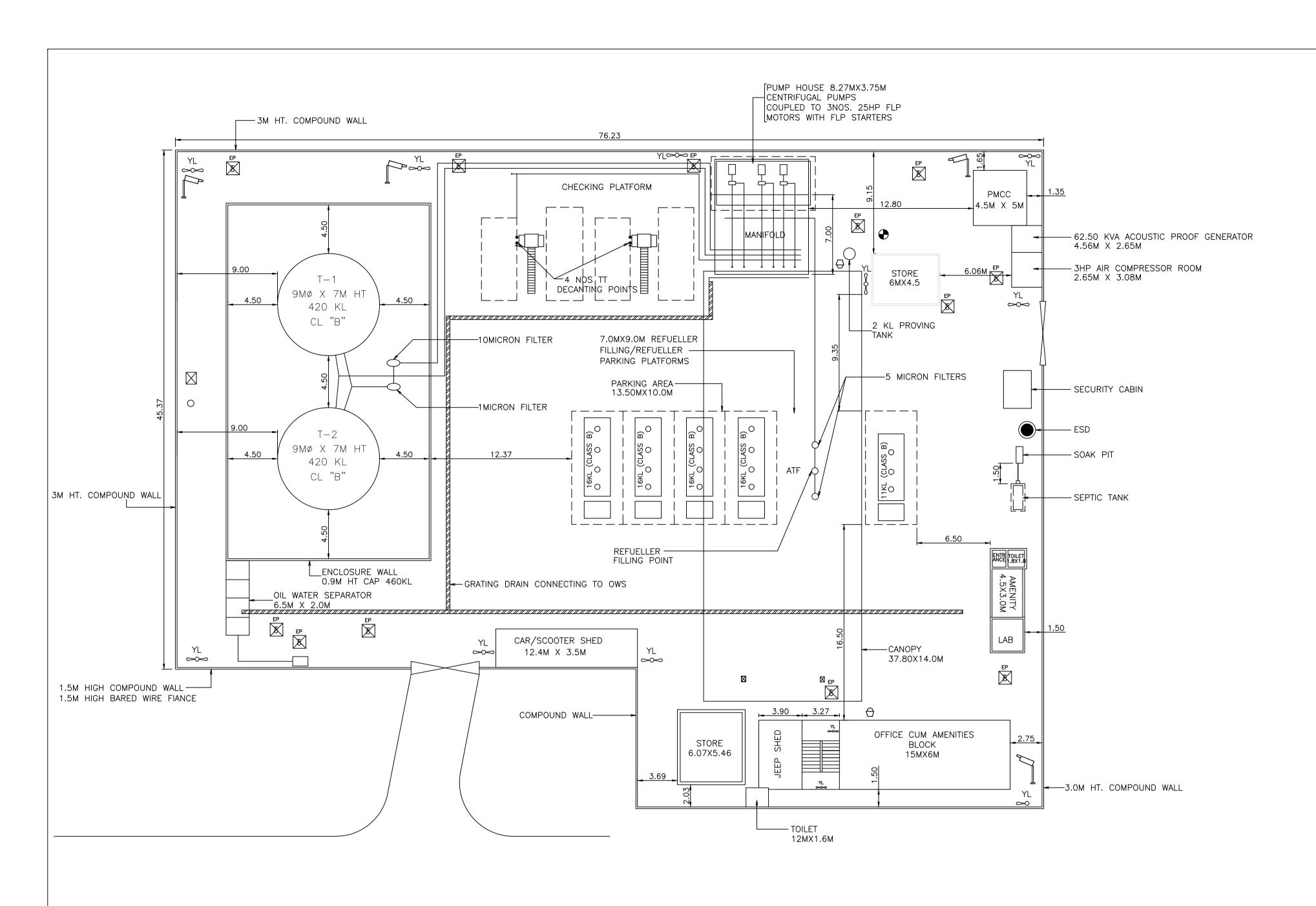
TOTAL in words (Two Crores Twenty Five Lakhs Ninety Seven Thousand One Hundred and One Only)- rounded off

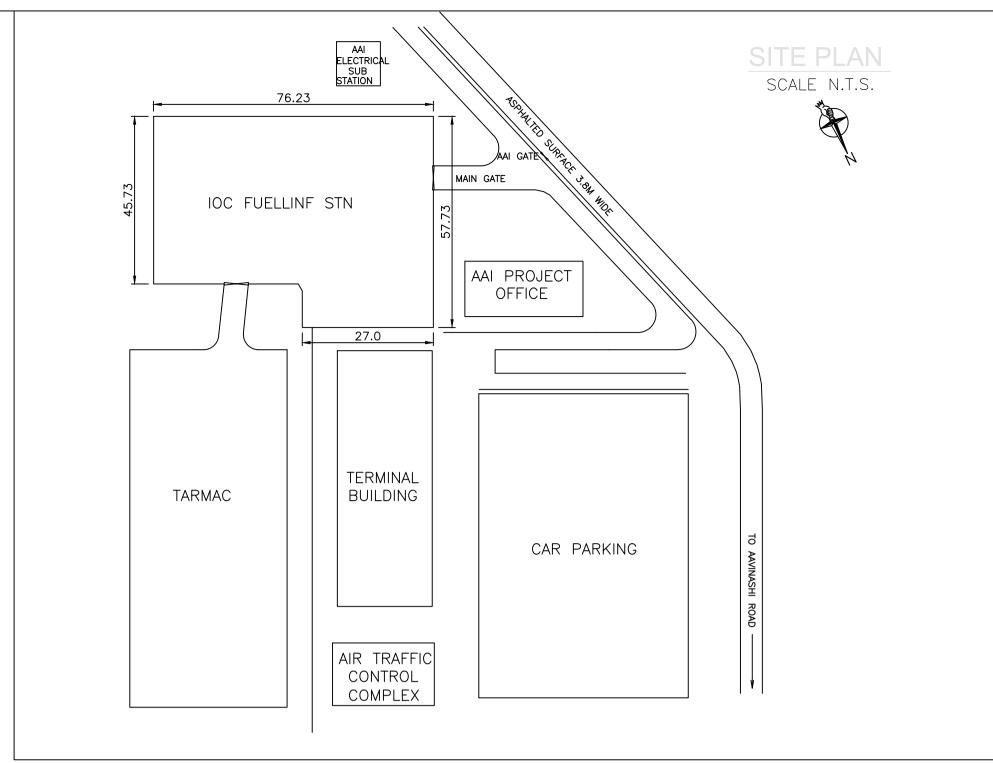
Calculation of CAMC Amt for Operating locations for LPG BP

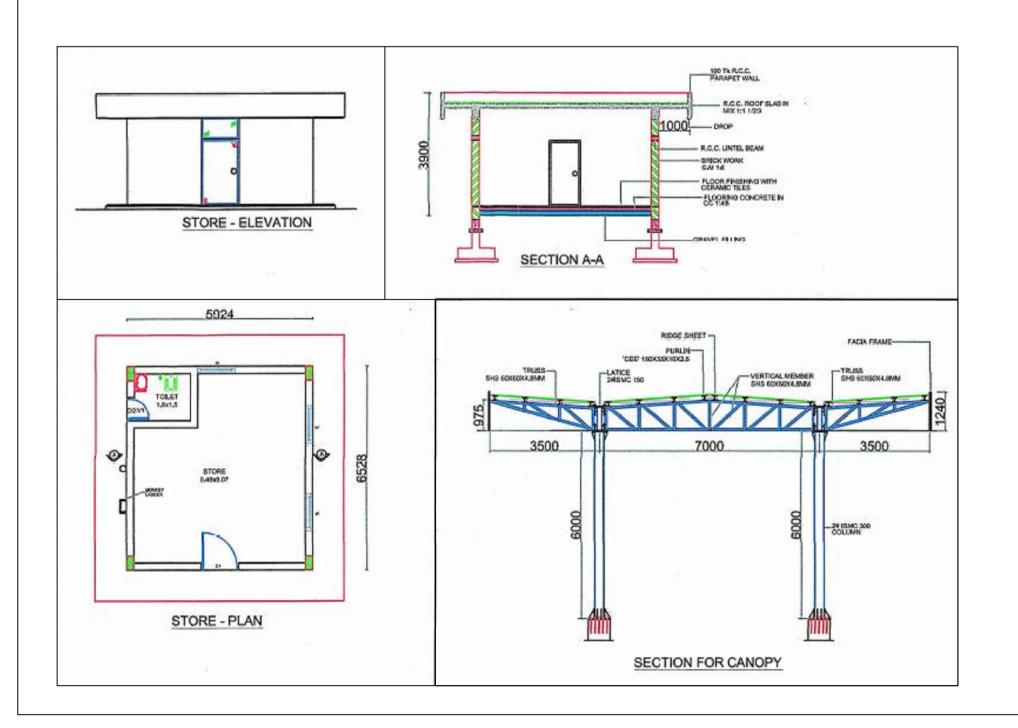
S.no	Location	Supply & Installation (Rs)
1	ENNORE	18053866.89
2	PONDICHERY	12356657.06
3	MADURAI	9233869.82
4	MAYILADUTHURAI	9156395.09
5	ERODE	13191623.01
6	COIMBATORE	15959793.18
7	TRICHY	18238176.70
8	CHENGELPET	9202300.59
9	MANNARGUDI	13753332.44
10	ILAYANGUDI	11236737.38
11	TIRUNELVELI	2318050.00

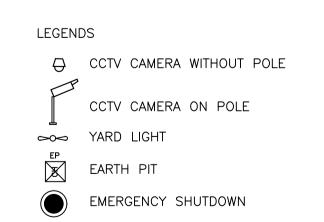
	Community Atto	Т		IENNOBE	DONIDIGUEDY	IAAA DUDA:	IN A ANVIL A DILITIONS	EDODE	COLADATOSE	TDICLIV	CHENICEIDET	INAANINIA DOLLOI	II AVANCUS!	TIDLINIELVEL!
	Comprehensive AMC			ENNORE	PONDICHERY	MADURAI	MAYILADUTHUF	ERODE	COIMBATORE	TRICHY	CHENGELPET	MANNARGUDI	ILAYANGUDI	TIRUNELVELI
	Comprehensive Annual													
	Maintenance Contract													
	for a period of Seven													
	years for entire IP													
	Based CCTV													
1	Surveillance System													
-	after successful													
	completion of SAT as													
	described in Technical													
	Bid.													
2	First Year - Warranty													
	Second Year @1.5% of	1	LS	270809	185350	138509	137346	197875	239397	273573	138035	206300	168552	34771
3	the basic CAPEX cost							.,,,,,,						
J														
4	Third Year @2.5% of	1	LS	451347	308917	230847	228910	329791	398995	455955	230058	343834	280919	57952
4	the basic CAPEX cost													
-	Fourth Year @3% of	1	LS	541617	370700	277017	274692	395749	478794	547146	276070	412600	337103	69542
5	the basic CAPEX cost													
,	Fifth Year @7% of the	1	LS	1263771	864966	646371	640948	923414	1117186	1276673	644162	962734	786572	162264
6	basic CAPEX cost													
7	Sixth Year @4% of the	1	LS	722155	494267	369355	366256	527665	638392	729528	368093	550134	449470	92722
7	basic CAPEX cost													
8	Seventh Year @7% of	1	LS	1263771	864966	646371	640948	923414	1117186	1276673	644162	962734	786572	162264
0	the basic CAPEX cost					<u> </u>								
9	CAMC (excluding GST)			4513470	3089166	2308470	2289100	3297908	3989950	4559548	2300580	3438336	2809188	579515











DETAILS OF THE LOCATION

VILLAGE NEAREST POLICE STATION NEAREST RAILWAY STATION NEAREST FIRE STATION PIN CODE STATE

: KALAPATTI : PEELAMEDU (4KM) : COIMBATORE JUNCTION (11KM) : AAI FAIRE STATION : 641014 : TAMILNADU

NOTES:-

- 1. PROPOSALS ARE SHOWN IN RED
- 2. DISMANTLING WORK SHOWN IN YELLOW 3. APPROVED BY CCE BUT NOT CONSTRUCTED / COMMISSIONED

CLASS 'B' ATF

4"ø PIPE

SEPTIC TANK, SOAK PIT

PEDESTAL FOR PIPE LINES

9 BOX TYPE STRAINER FOR 3"Ø &

10 FOUNDATION DETAILS FOR 10HP,

12 20'0" X 15'0" DP SHED

DETAILS OF PLATE RING FLANGE

STRUCTURE DETAILS OF DWG NO AV 143

- 4. THIS DWG. HAS BEEN TRACED FROM DRG. NO AV 642D DT 03.04.90
- 5. EXISTING YARD LIGHTS SHOWN AS YL A/B

9.00MØ X 7.00M HT

6. PROPOSED YARD LIGHT SHOWN AS YL 1 TO 10

Р	PRODUCT ALLOCATION OF TANKS						
SR. NO	TANK NO	SIZE	CAPACITY	PRODUCT			
4	Т1	0.00MØ × 7.00M HT	420 KI	CLASS IDLATE			

				Н		PLATFORM & 4NOS. TT DECANTING POINTS AS EXISTING ARE SHOWN. REFULLERS PARKING AREA SHOWN	
				G	25.6.09	CAR/SCOOTER SHED AND GATE ON THE WESTEN SIDE OF THE AFS SHOWN	1
				F	1.3.01	FACILITIES AS EXISTING AT AFS SHOWN	
				E	31.10.90	ADDITIONAL LAND WITH ADDL ADDITIONAL GENERATOR ROOM, OFFICE ROOM, AMENITIES BLOCK, CYCLE SHED & SWITCH ROOM & 2KL PROVING TANK SHOWN	
				D	21.6.89	AIR CRAFT FUELING SYSTEM SHOWN	
<u> </u>	REF	FERENCE:		С	5.11.81	T/T DECANTING POINTS AND MAINIFOLD ADDED	
	1	OFFICE BULD, STORE, TOILET ETC	AV 129D	В	13.7.74	POSITION OF REFUELLER FILLING TTD & GATE	
	2	PUMP HOUSE 15'0'X10'0"	AV 177A			INSTALLATION OF 70KL & 15KL TANKS	
	3	REFUELLING DECANTING & PARKING SHED 34'X35'	AV 168F	A	2.9.72	SHOWN IN EARTH PIT INSTEAD OF MASONRY PIT	
				REV.	DATE	DESCRIPTION	INITIAL
	4	20'0'' WIDE TUBULAR GATE	AV SB621	L	IC. NO. :	P/HQ/TN/15/2131(P16056)	
	5	CHAIN LINK FENCING	AV 142A		امطاء	an Oil Corporation I to	۸
							, wil

AV SB637

AV 183A

AV 234A

4163B

4368C

AV SB605

L 12.4.21

Indian Oil Corporation Ltd.

AMENDMENT OF MS STRUCTURE

CANOPY, STORE ROOM, PIPELINE

EXISTING MAIN GATE DISMANTLING NEW EMERGENCY TARMAC ENTRY

GATE PROPOSED, EXISTING COMP.

ROOM, PRO, AS SECURITY ROOM

TRENCHES AND TT INSPECTION

LANDING PLATFORM

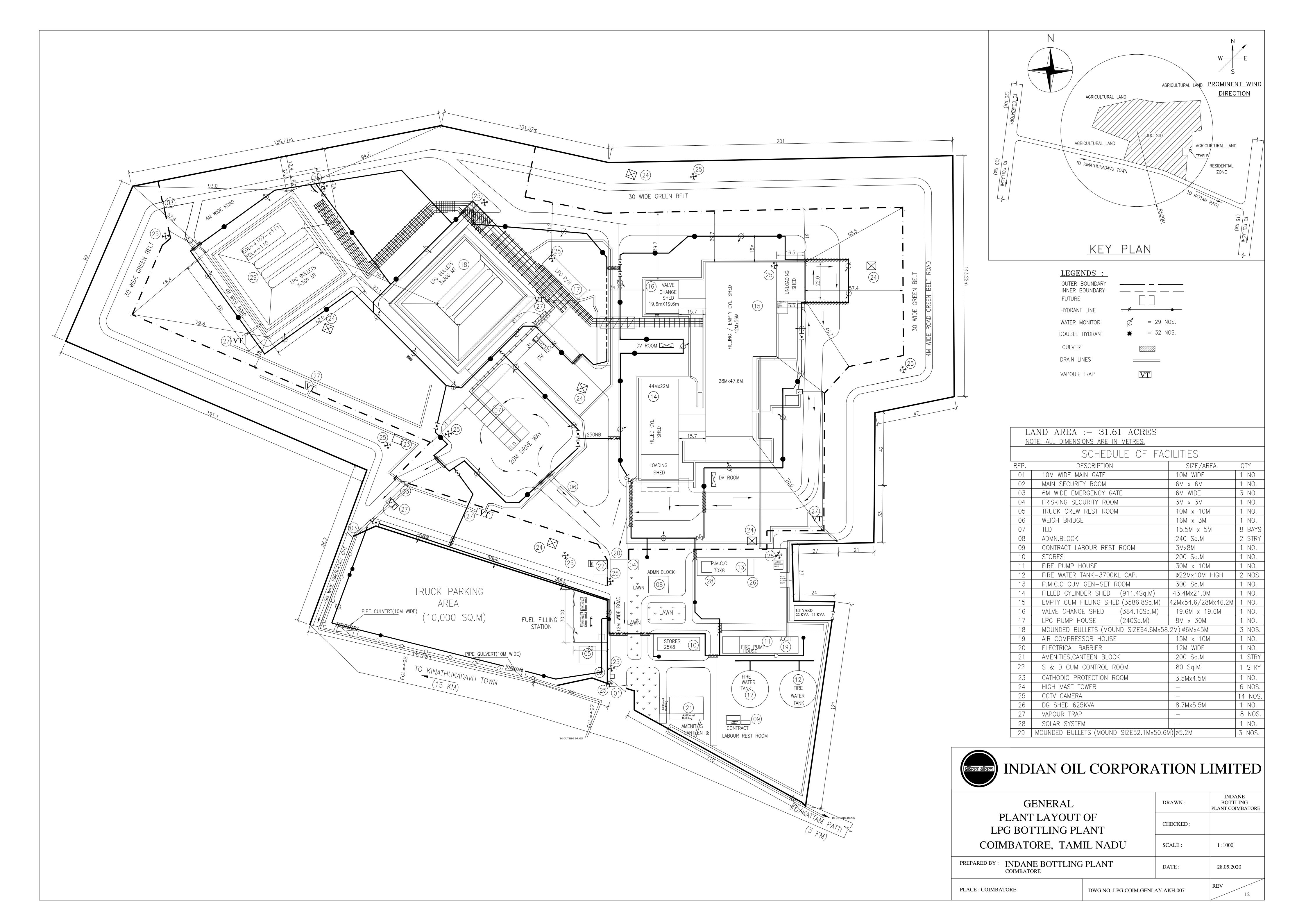
PRO CANOPY / STORE

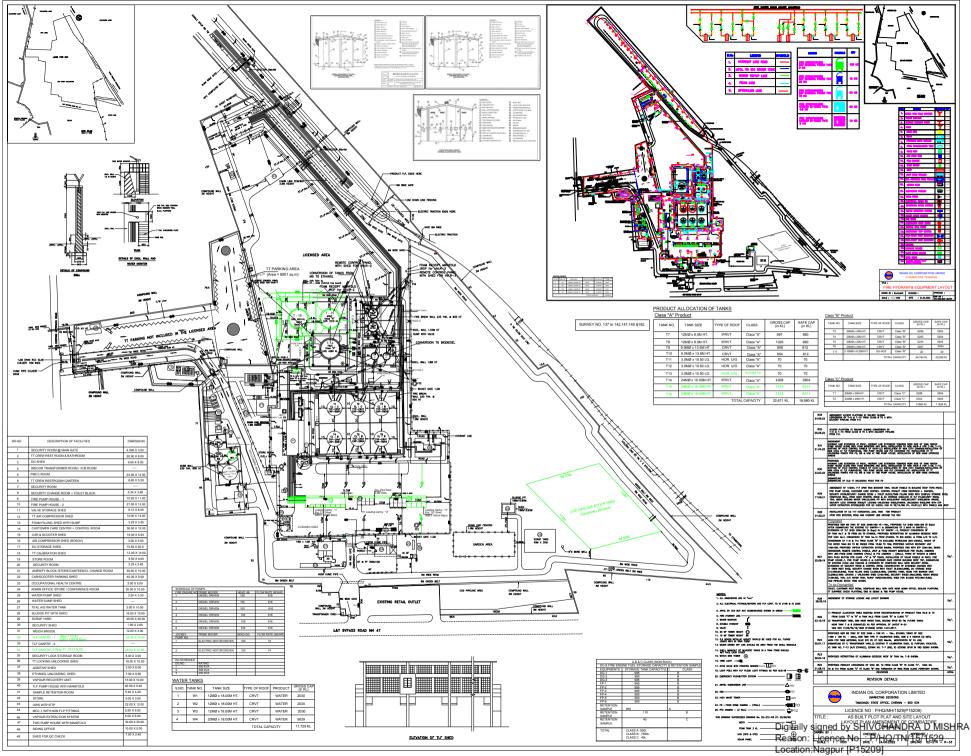
J 6.1.15 FACILITIES AS BUILT AT AFS

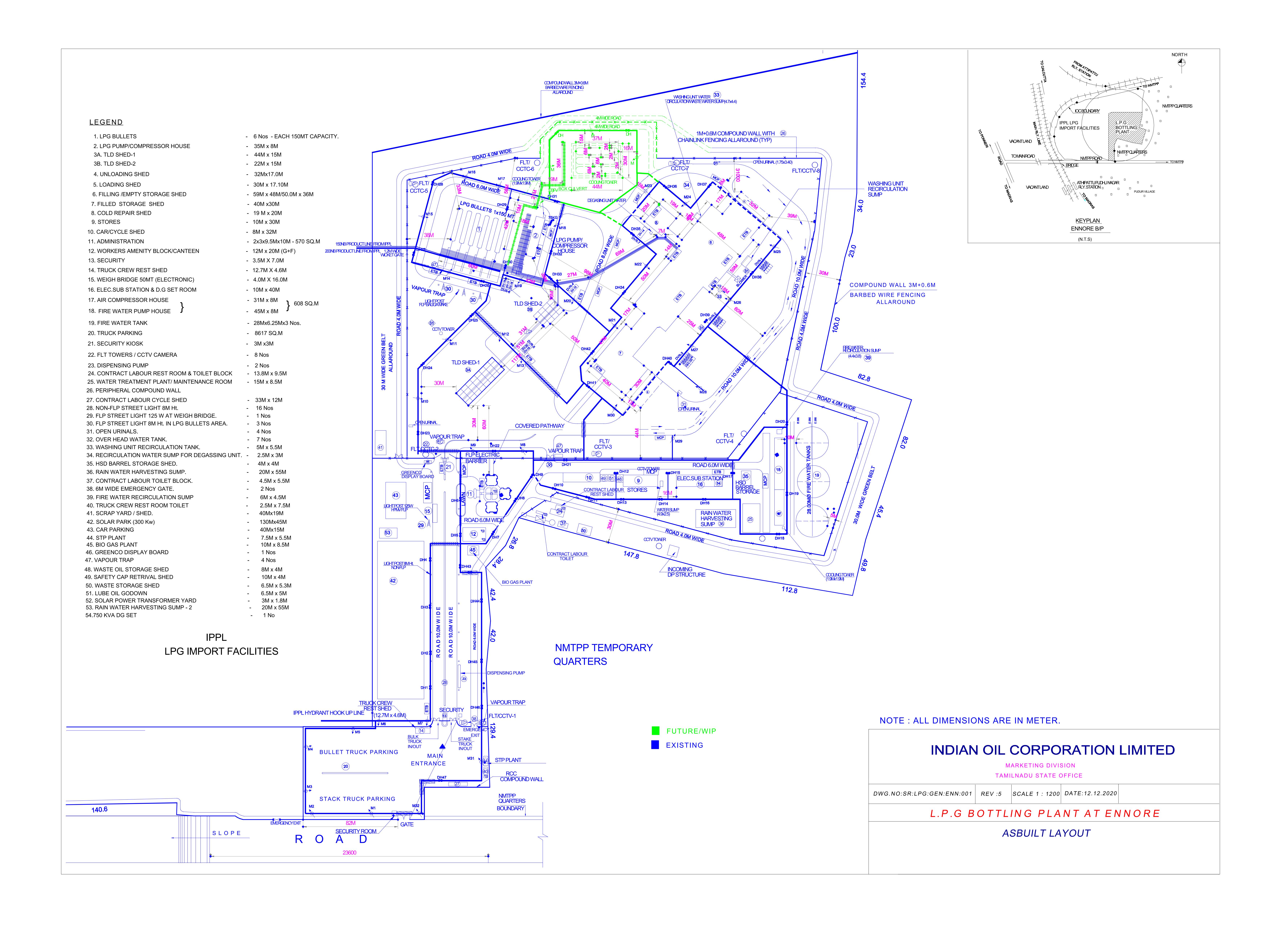
(MARKETING DIVISION) SOUTHERN REGION, MADRAS - 600 034

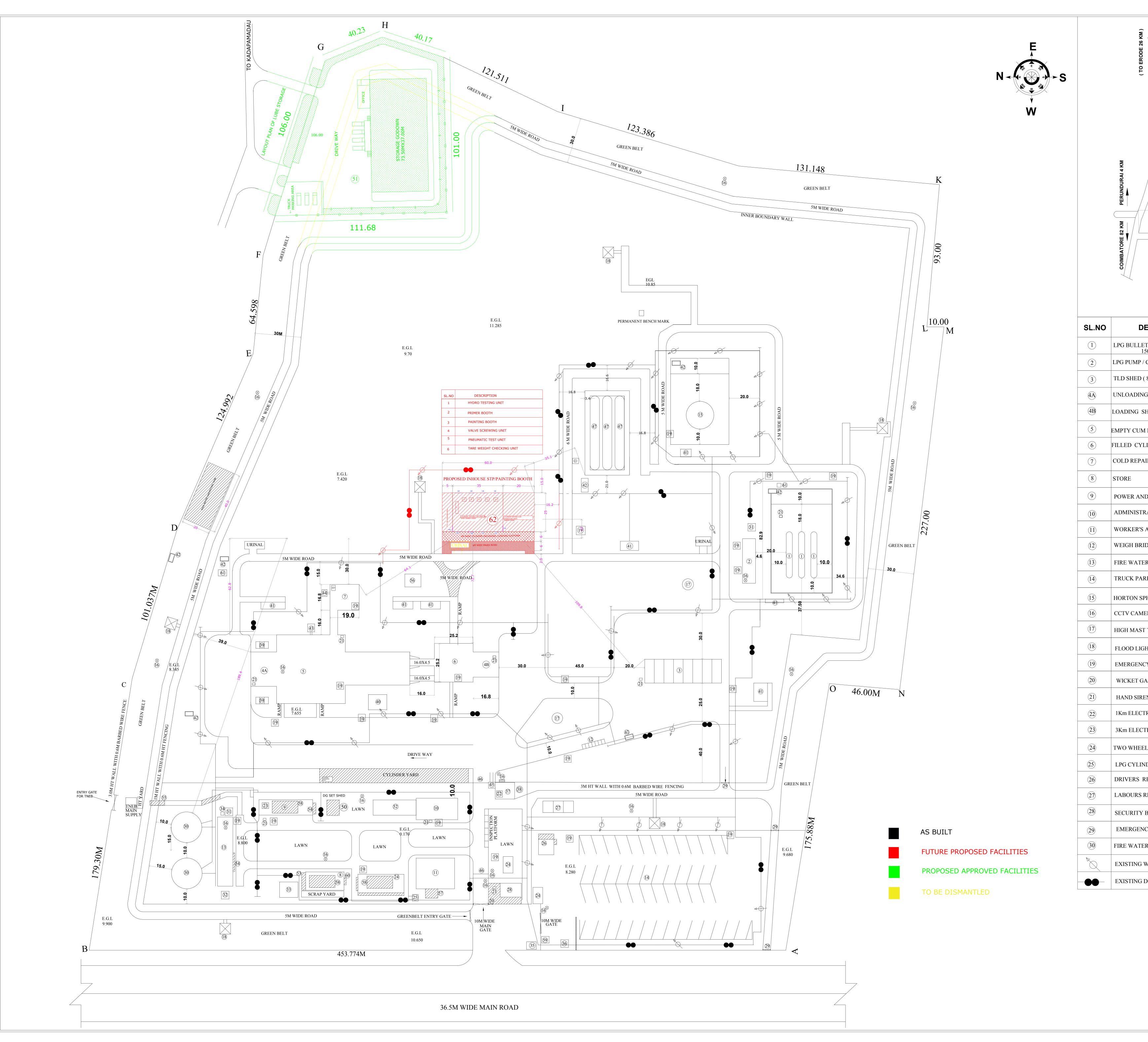
AS BUILT PLOT PLAN AND SITE PLAN NAME OF WORK FOR COIMBATORE A.F.S.

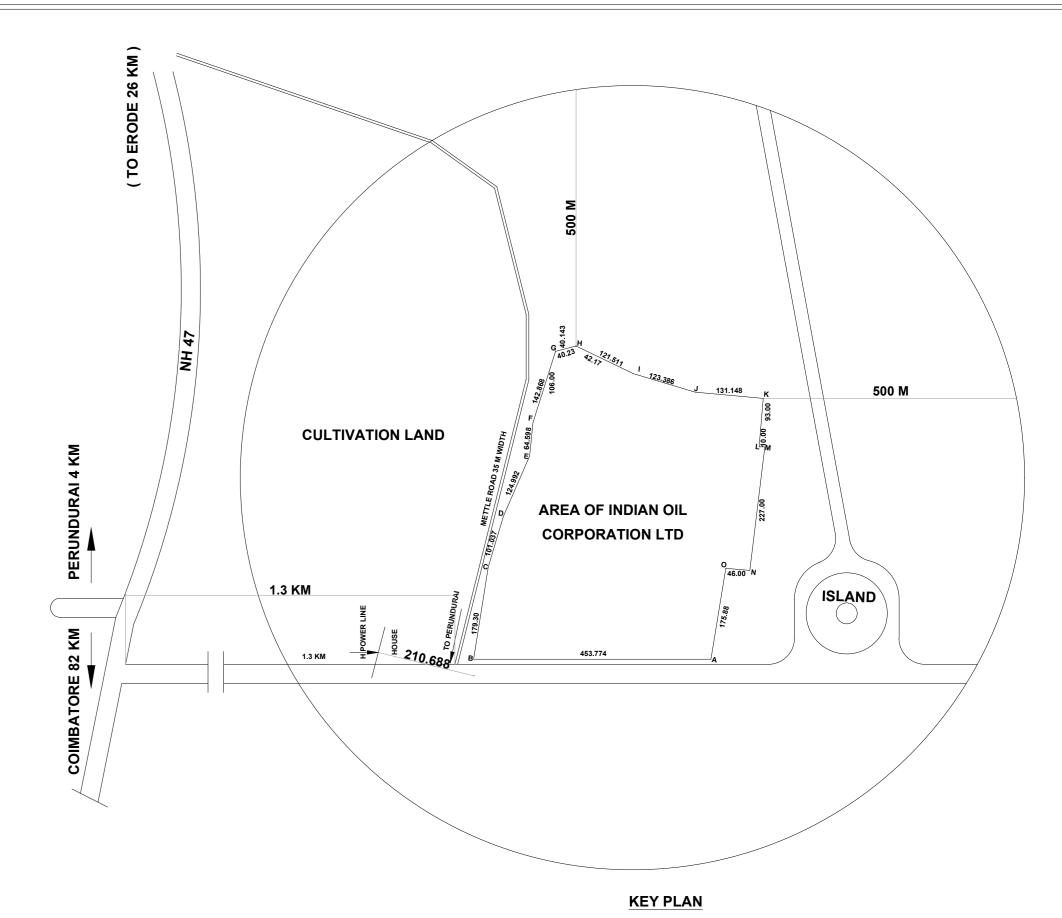
ACTIVITY	INITIAL		DESIGNATION	SIGN	DATE
DRN.					
CKD.			SR. MGR (E)		
APPD.			CH. MGR (RS)		
APPD.			DGM(RS)		
SCALE - 1	: 200				
DATE - 12/4	/2021	Drg	No AV 642 I		









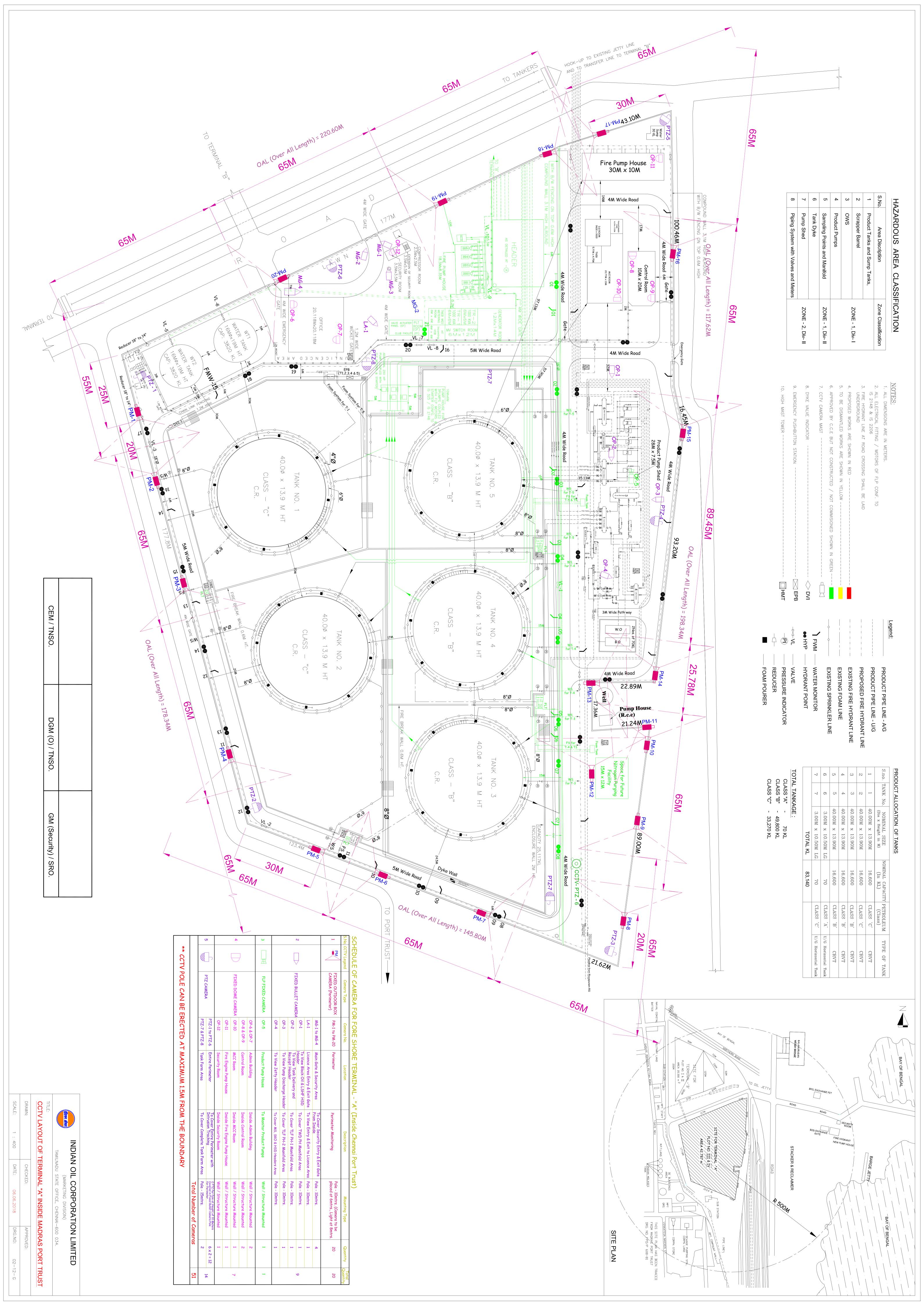


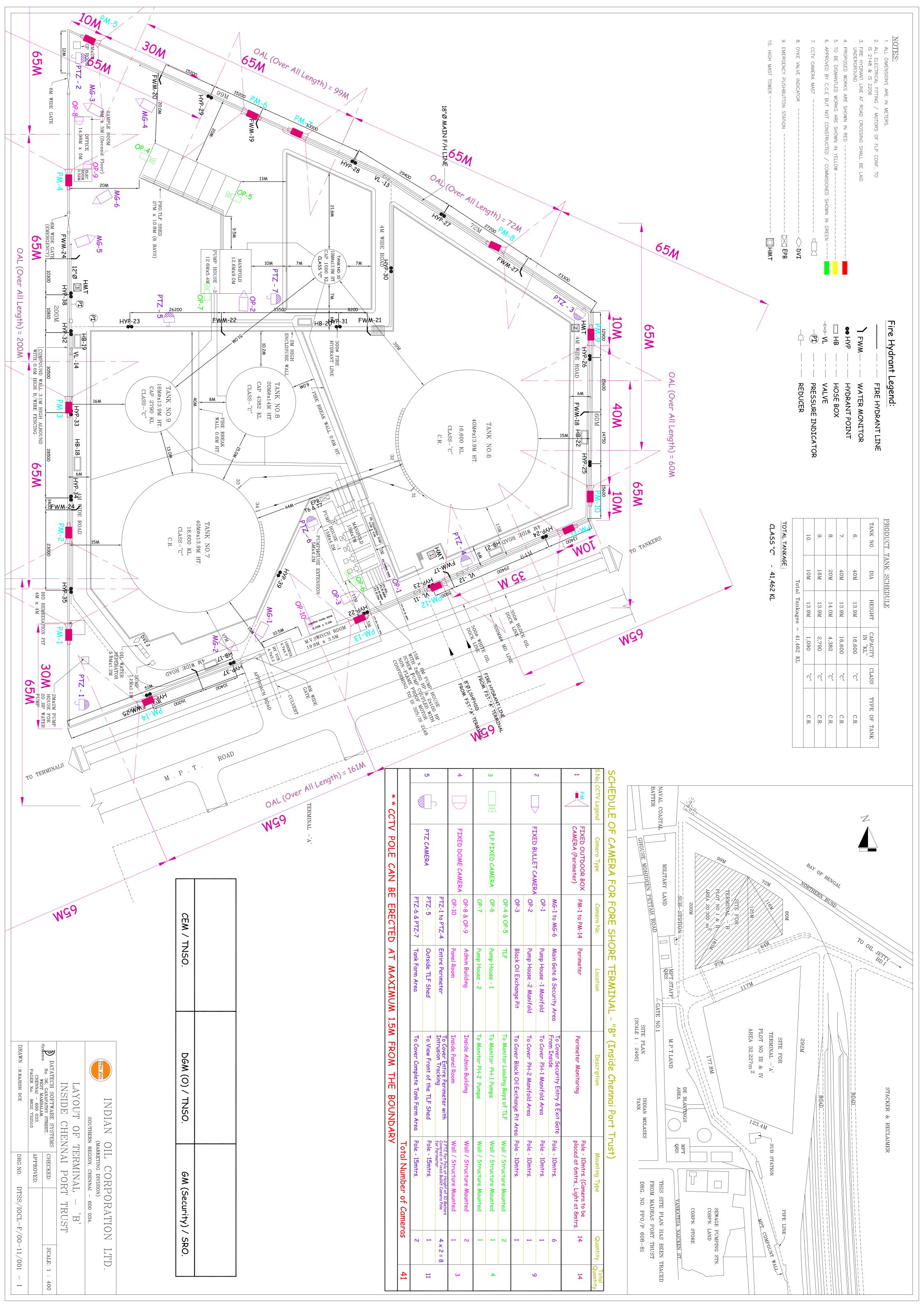
			KE	YPLAN	
SL.NO	DESCRIPTION	SIZE /Nos.	SL.NO	DESCRIPTION	SIZE /Nos
1	LPG BULLETS ABOVE GROUND	3 NOS.	<u>(31)</u>	TOWER FOR COOLING WATER PUMP	2Nos.
2	150MT EACH LPG PUMP / COMPRESSOR HOUSE	29.50 X 8	(32)	SERVICE WATER TANK FOR FIRE ENGINE	1No.
3	TLD SHED (8 BAYS)	50 X 15.5	(33)	SEMI BURIED TANK (110 KL)	1No.
(4A)	UNLOADING SHED	25.2x19.5	(34)	SHED FOR VALVE RETRIEVAL	1No.
4B	LOADING SHED	16.9x19.6	35)	AIR COMPRESSOR ROOM FOR DIESEL PUMP	1No.
(5)	EMPTY CUM FILLING SHED	44.8 X 36.5	36	HSD CONSUMER PUMP & DIESEL TANK CAPACITY	12 KL
6	FILLED CYLINDER STORAGE SHED	22.8X25.2	<u>(37)</u>	SUPPLY AND DISTRIBUTION ROOM	12.6X10.8 1No.
7	COLD REPAIR CUM DEGASSING SHED	16.8X16.8	<u></u>	AIRTEL TOWER	1No.
8	STORE	25 X 12	39)	WASHING UNIT TANK	2Nos
9)	POWER AND MOTOR CONTROL CENTRE(PMCC)	10 X 35	40	SEWAGE TANK FOR INLINE TEST BATH	1No.
(10)	ADMINISTRATIVE BLOCK	14 X 25	<u>(41)</u>	DELUGE VALVE ROOM	7 Nos.
(11)	WORKER'S AMINITY BLOCK / CANTEEN	20 X 25	<u>(42)</u>	SUMP FOR VAPOUR TRAP	7 Nos.
12)	WEIGH BRIDGE	50 MT	<u>43</u>	VAPOUR EXTRACTION SHED	5.2 X 4.6 2 Nos.
<u>(13)</u>	FIRE WATER PUMP HOUSE	45 X 10	44)	WATER EVAPORATION TANK FOR DEGASSING	1 No.
(14)	TRUCK PARKING AREA	112 X 68	<u>(45)</u>	FRISKING GATE	1 No.
<u>(15)</u>	HORTON SPHERE (1400 MT)	18 M Ø	<u>(46)</u>	ELECTRICAL BARRIER GATE	2 Nos
<u>(16)</u>	CCTV CAMERA	15 Nos.	<u>(47)</u>	MOUNDED STORAGE	3x600M
<u>(17)</u>	HIGH MAST TOWER	2 No.	(50)	DG SET SHED (FOR 625KVA)	7 X 3
<u>(18)</u>	FLOOD LIGHT TOWER	6 Nos.	(51)	PROPOSED & APPROVED LAYOUT FOR	73.5 X 37
<u>(19)</u>	EMERGENCY TRIP BUTTON	22 Nos.	(52)	CONFERENCE HALL	(900KL)
20	WICKET GATE	1 Nos.	(53)	LUBE OIL SHED	3m x 8m
<u>21</u>	HAND SIREN	9 Nos.	(54)	DIESEL TANK SHED (2 Nos)	2m x 10m
(22)	1Km ELECTRIC SIREN	1 No.	(55)	RAMP FOR HT YARD	1.5m x 5n
23	3Km ELECTRIC SIREN	1 No.	(56)	RAINWATER HARVESTING TANK	5m x 4M
		3 Nos.	(57)	SHED FOR ORGANIC WASTE CONVERTOR	5m x 8m
24)	TWO WHEELER/CYCLE PARKING SHED			& RO PURIFIER	105 kWp
25)	LPG CYLINDER BANK FOR CANTEEN DRIVERS REST ROOM	3.7 X 3.2 20 X 10M	(58)	ROOFTOP SOLAR PV PLANT	3m x 3m
<u>26</u>	LABOURS REST ROOM	7.5 X 20		ROOM FOR CONSUMER PUMP OPERATOR SHED FOR SOLAR PV PLANT INVERTERS	1.2m x 2m
(27)(28)		1No.	(60) (61)		2 Nos
	SECURITY BUILDING			WATER TANK FOR VAPOUR TRAP	
29	EMERGENCY GATE	3Nos. 20M Ø x	62)	PROPOSED INHOUSE STP/PAINTING BOOTH	25m x 60ı
30	FIRE WATER TANK (3700 KL)	12.0 M HT 2Nos.			
×	EXISTING WATER MONITOR	47 Nos.			
80	EXISTING DOUBLE HYDRANT	34 Nos.			

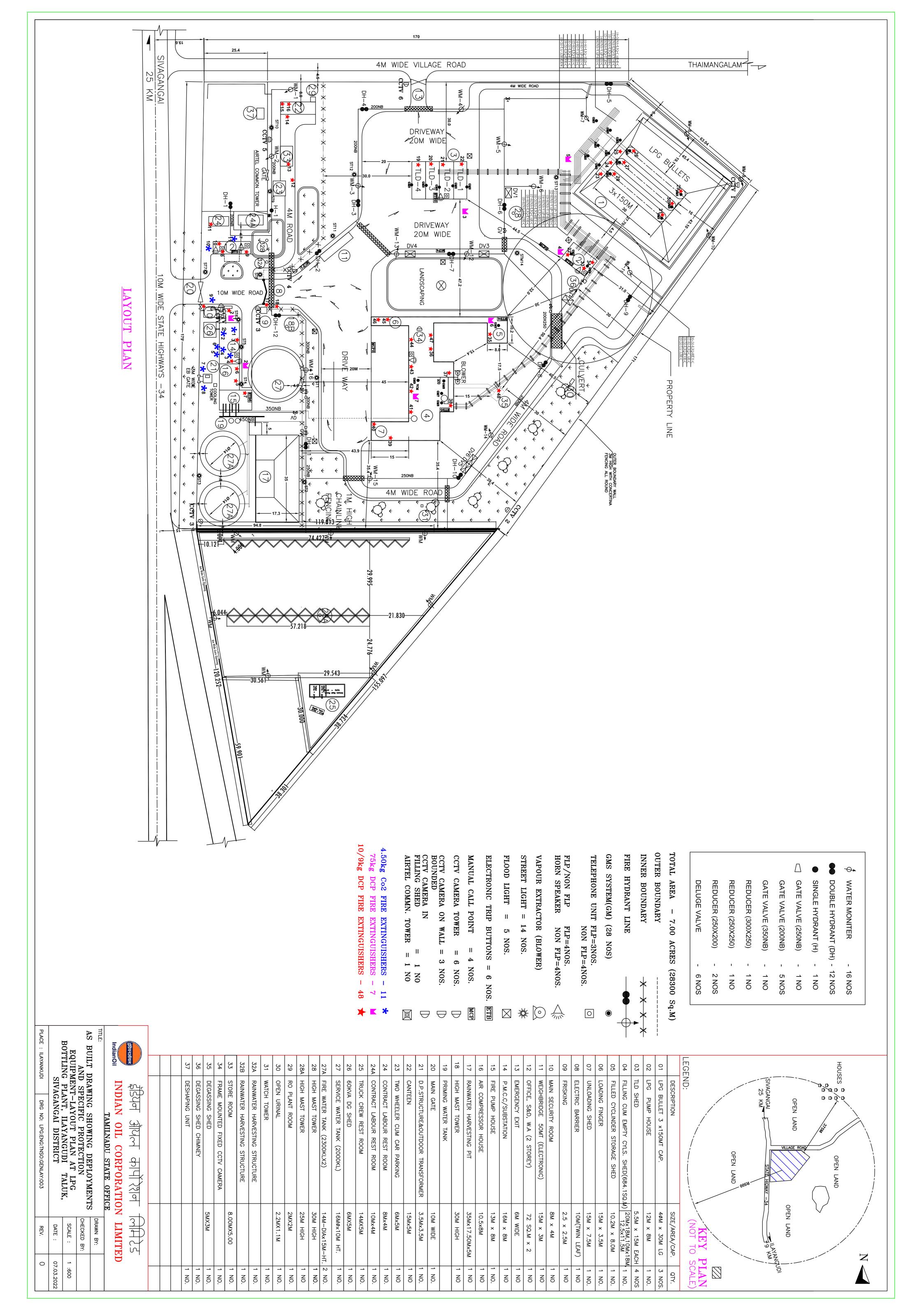


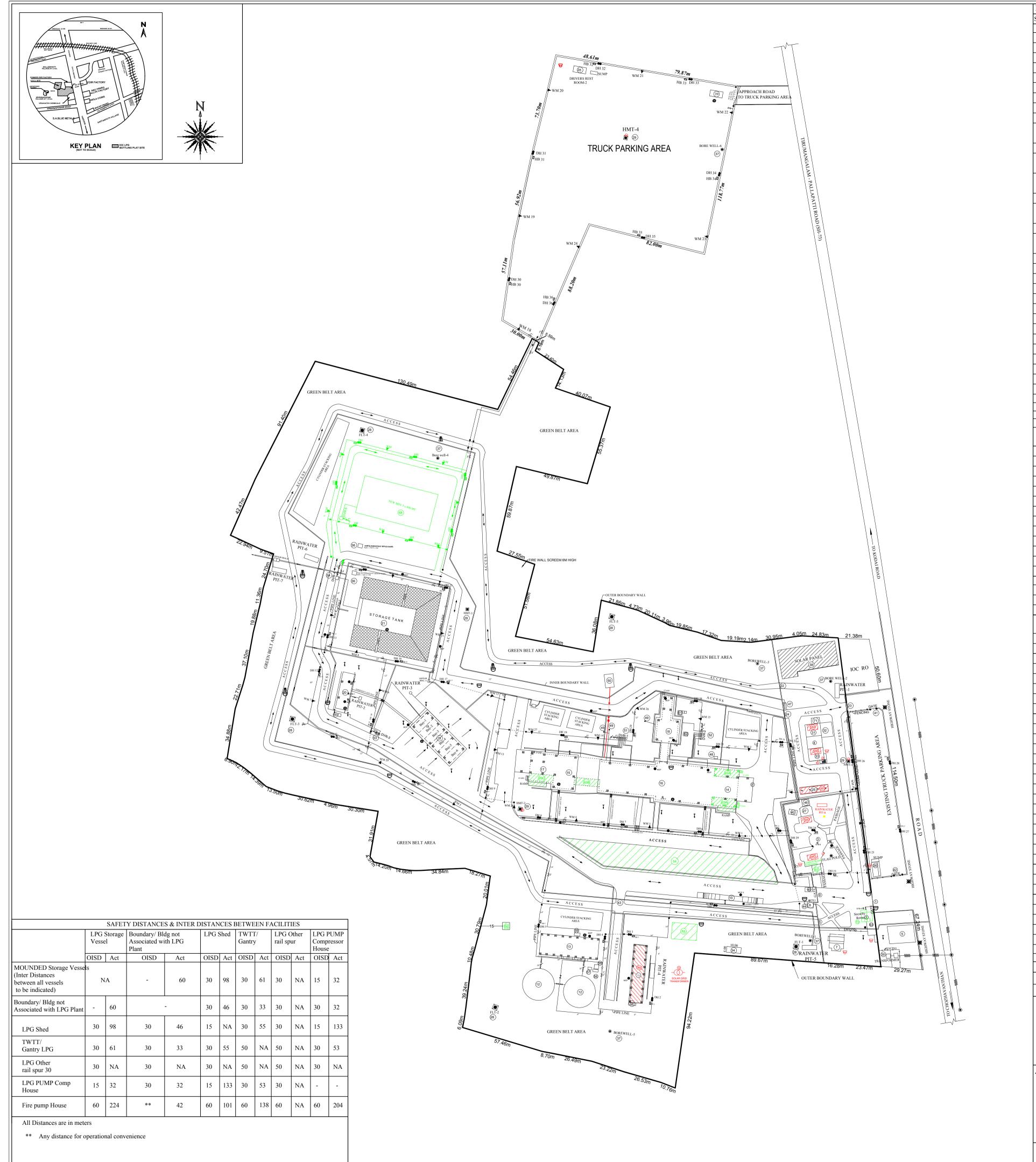
INDIAN OIL CORPORATION LTD. (MARKETING DIVISION)

GENERAL LAYOUT PLAN SHOV	WING AS BUILT &	DRAWN:	Sujan V A Sr. Operations Officer
PROPOSED FACILITIES AT LPG SIPCOT INDUSTRIAL GROV	CHECKED:	Girish SV Ch.Mgr(P)	
PERUNDURAI, ERODE, TA	AMILNADU	SCALE:	1 :1000
PREPARED BY : IOCL/ERODE BP	DATE :	12.04.2022	
ALL DIMENSIONS ARE IN METRE	DWG NO :IOCL:LPG:ENG:ER	ODE:GENLAY:001	REV-12









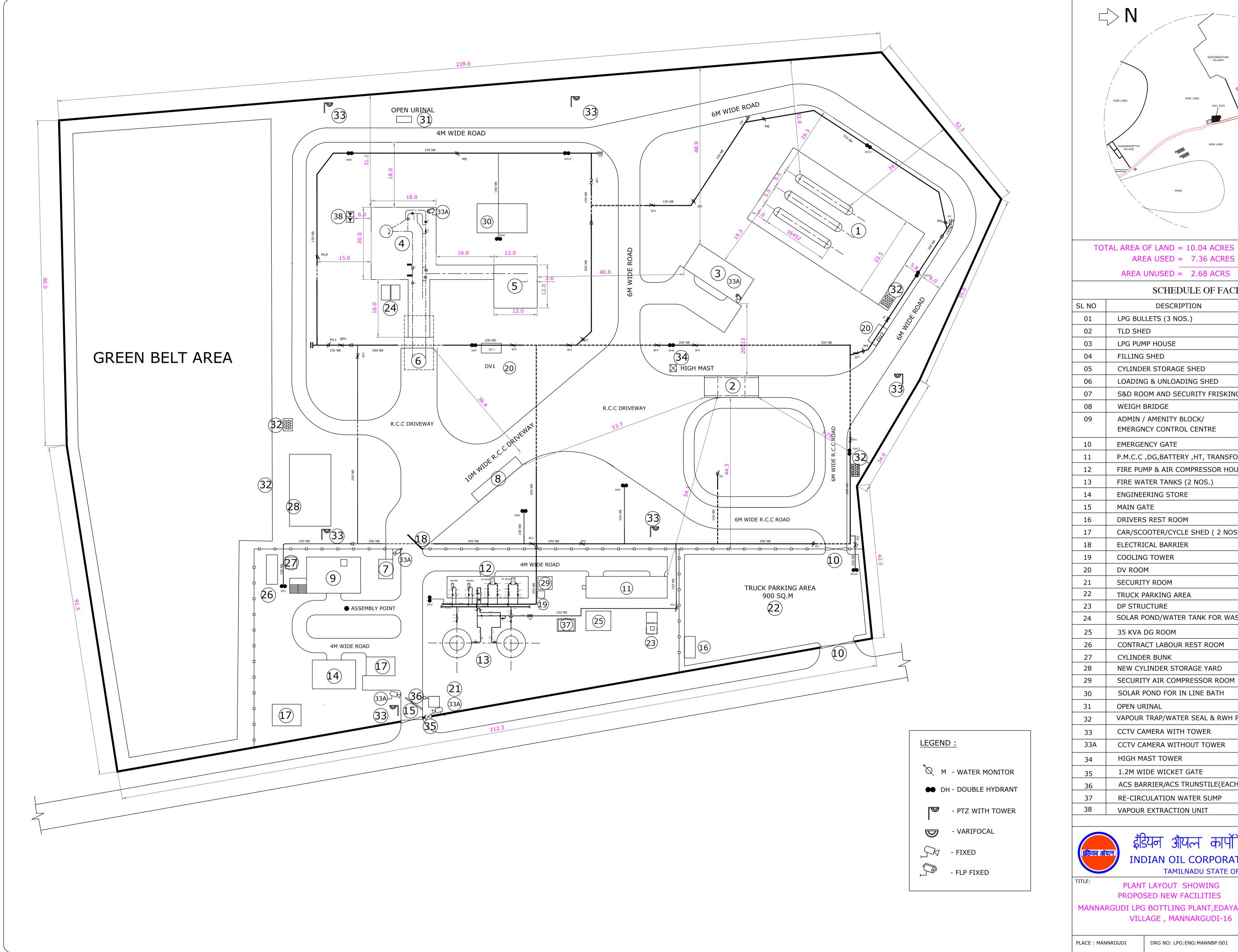
	ENCE:-	LENIGHI			DEMARK.
L.Nos	DESCRIPTION Main Gate-1	LENGTH -	WIDTH 10 M	HEIGHT/DE	PTH REMARK -
2.	Main Security Room	7.6 M	6.5 M	-	-
3. 1.	Admin Block Stores	46.75 M 10 M	27.50 M 25 M	-	2 Story Building
5.	Two Wheeler Shed	19 M	11.89 M	-	-
5. 7.	Green Belt Gate- South Contractor Workmen Rest Room	- 10 M	4.1 M 16 M	-	-
3.	Frisking Security Room	4.1 M	4.1 M	-	<u> </u>
).	Licence Area Entry Gate	-	9.8 M	-	-
0. 1.	Weigh Bridge PMCC Building	9.5 M	3.5 M 40M	-	Capacity 50 MT Transformer 630 KVA, Lighting Transformer 100KVA, 500 KVA DG,
	Three Banang	9.5 IVI	40101	-	125KVA DG, 12 KV VCB and PMCC Panels.
2.	Fire Water Tank (1 & 2)-5300 KL each	-	-	14 M	2 Nos of Tank 22 Diameter Each
3.	Fire Pump and Air Compressor House	14 M	40M	-	3 Nos Fire Engine 616 cum/Hr and 108 mHead, 2 Nos Jocky Pump 37cum/Hr, 3Nos Air compressor 170CFM, Air Dryer 1 No.
4.	Un Loading Shed	17 M	14.5 M	-	3 Unloading Booms including 1 reversible boom, 1 conveyor 47.5 KG Cylinder loadi
	Filled Cyl. Shed		44425		1 conveyor unloading 47.5 KG Cylinder
5. 6.	Towards Unloading Shed	22.4 M 40 M	14.4M 25 M	-	- HTPC Carousel -1 No, Cylinder Washing Unit, Purging Unit, Vision Reader,
	Filling Shed Towards loading Shed	37.5 M	20 M		Double Static Check Scale , IWCU , OLD, VLD, VCWE, ILB, 425KG Filling, 5KG Filling
7. 8.	Loading Shed CR Shed	14 M 14.5 M	9 M 5 M	-	3 Loading Booms 4 Gun Depressuring Unit, 1 Valve Removable Machine,
0.		14.5 M	3 IVI	-	Degassing Unit for 5 KG ,14.2KG,19 KG ,47.5 KG and 425 KG.
9.	Tank Lorry Decanation Shed	38.5 M	16.9 M	-	6 Bays
0.	LPG Pump House Mounted Storage- 3 Bullets- 300 MT each	8.8 M 38 M	25.59 M 5M	-	3 LPG Compressor, 1 Vertical LPG pump, 2 Horizontal LPGpump 3Bullets 300MT Capacity Each Total storage capacity 900MT
2	Green Belt Gate-North		4.1 M	-	-
3.	Main Gate-II	-	6 M	-	-
4. 5.	Emergency Gate-I Car and Two Wheeler Parking Shed	- 19.6 M	5 M 5 M	-	- Single Storey Parking Shed
6.	Driver's Rest Room-1	19.6 M 12.8 M	7 M	-	Single Storey Driver Rest Room
7.	Canteen Flood light toward FLT)	10 M	4 M	-	Total Nos 5 ELT ELT 1 Having Electrical Circu
28.	Flood light towers(FLT) High Mast Tower(HMT)	-	-	30 M 25 M	Total Nos 5 FLT , FLT 1 Having Electrical Siren Total Nos 4 HMT Towers
30.	HT Yard (11 KV)	13.81 M	12.5 M	-	-
31.	Record Room	10 M	8 M	-	Second Floor on Top of Strore Room
32. 33.	Soap Barrel Shed Club room	10 M 10 M	8 M 8 M	-	Second Floor on Top of Strore Room
34. 35.	Project Record Room Driver's Rest Room-2	10 M 20 M	4 M 5 M	-	-
36.	Permanent Bench Mark	1.5 M	1.5 M	-	2 Bench Marks, North BM Level 197.843 M, South BM 197.868 M
37.	Borewells	-	-	-	6 Nos- 1 Near Contract Rest Room, 2 Near Solar Panel, 3 Near Green Belt East Gate, 4 Near MSV, 5 Near PMCC, 6 New TTPA
38.	Solar Panels Area	40 M	20 M	-	40KW Capacity Open Ground and 64 KW Roof Top
88A. 88B.	Solar Panels Area Solar Panels Area	8.2 M	3.6 M	-	-
88C.	Solar Panels Area	8.2 M 10 M	3.6 M 3.6 M	-	<u> </u>
38D.	Solar Panels Area	19 M	7.2 M	-	-
38E.	Solar Panels Area	7.2 M	7.2M	-	-
88F. 9.	Solar Panels Area New TTPA Security Room	7.2 M 3 M	7.2M 3 M	-	Single Storey Security Room
10.	Waste Water Treatment Unit	1 M	1 M	-	2 KL/day Capacity
41. 42.	TruckParking Area Entry (Near RO)	-	5.7M	-	-
13.	TruckParking Area Exit PMCC Area Entry Gate	<u>-</u>	6.1M 6 M	-	_
4.	Sand Bags for Bomb Treat Contingency	2 M	2 M	-	100 Bags Capacity
15. 16.	FG Security Shed Canteen LPG Cylinder Storage Shed	5.65 M 2.5 M	2.1 M 2.4 M	- 1.96 M	- Storage Capacity of 5Nos 19KG Cylinders
17.	Bore Water Sump	4.8 M	2.2 M	0.86 M	Storage Capacity 9 KL
18.	Washing unit Water Sump	3.58 M	2.25 M	1 M	-
19.	Vapour Extractor (VE)	-	-	-	VE 1-Main Vapour Extractor, VE 2- Standby Vapour extractor, VE 3- CR Shed Vapour Extractor
50.	Solar Evaporation Pan	3 M	3 M	-	6 Nos
51.	Deluge Room 1 Deluge Room 2	10 M 10 M	3.3 M 4.5 M	-	Deluge Valve 1,2,3,4,5,6 Deluge Valve 7,8,9,10,11,12,13
53.	Deluge Room 3	3.4 M	3.2 M	-	TLD Deluge Valve14 and LPG Pump House Deluge Valve 15
54. 55.	Deluge Room 4	1.83 M	1.6 M	-	Mounded Storage Vessel Deluge Valve 16
66.	Borewell Water Sump PMCC Main Borewell Water Sump PMCC Standby	3 M 3.65 M	3 M 1.74 M	1.5 M 1.63 M	Storage Capacity 13.5 KL Storage Capacity 10.35 KL
7.	Cooling Water Sump	2.5 M	1.81 M	1.2M	Storage Capacity 5.4 KL
8. 9.	Diesel Tank Shed Fire Engine Diesel Tank Shed	5 M 4 M	2 M 2 M	-	-
50.	Cooling Water Tank LPH	2 M	2 M	1.2 M	<u> </u>
51.	Recirculation Water pit	3 M	2 M	0.36 M	-
52. 53.	Water Sump for Degassing Unit Change Room/Rest Room	1.5 M 11 M	1.5 M 5 M	1 M	-
4.	New Cylinder Yard	15 M	15 M	_	Irregular Shape With Approx. Area 2500 Square Meter
5.	Scrap Yard Deshaping Shed	15 M	15 M	-	-
6. 7.	Deshaping Shed Control Room Extension	5 M 6 M	5 M 6 M	-	-
8.	New MSV	52.20 M	26.30 M	-	Storage Capacity 3x600 MT
69.	Shed Extention	-	-	-	-
9A. 9B.	Unloading Shed Extention InterConnecting Platform Extention	18.2 M 15.6 M	5.6M 5 M	-	-
9C.	loading Platform Extention	18.5 M	5 M	-	
0.	Security Room Extension Luke Powel Storage Shed	- 5 5 M	- 4 M	-	-
'1. '2.	Lube Barrel Storage Shed 104 KVA Solar Grid Transformer	5.5 M	4 M	-	- -
	Tower	•		l all Point (MC	1 5
<u>/</u> 1	Camera Tower	₽	Camera	e Water Monit	Borewells or(HR WM) Sentia Took 6 Nos.
<u> </u>	Lighteining Arestor Building			ound Hydrant	C Sopre Same Same
A	Water Monitor(WM)		Under Gro	ound Hydrant	Line Solar Panel
••	Double headed Hydrant(DH) Hose Box(HB)	*	Emergenc Hand Sire	y Trip Button(n	ETB)
г.		<u> </u>			1 1
Site A	rea Details :-				

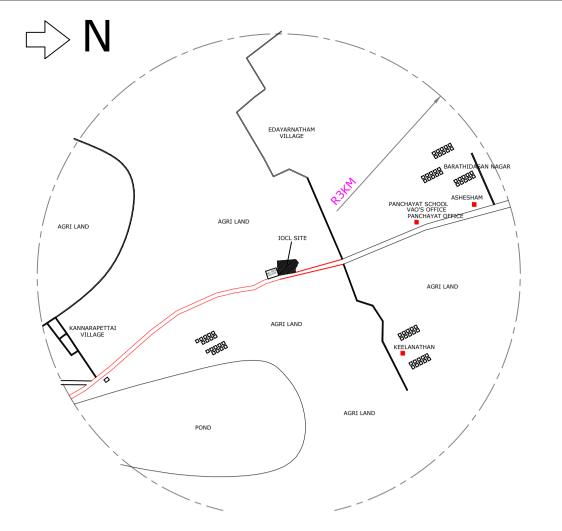
इंडियनऑयल IndianOil

INDIAN OIL CORPORATION LIMITED MADURAI BOTTLING PLANT MATTAPARAI

SIGN

TITLE:			NAME	"
FINAL APPROVAL OF AS BUILT PLA	ANT LAYOUT FOR SOLAR PANEL,NEW TTPA	PREP.	SREEVISHNU	
SECURITY ROOM, WASTE WATER T	,	CHEKD.	VELLAICHAMY	
MADURAI.	E REVAMPING AT LPG BOTTLING PLANT	APPD.	R. BALASUBRAMANIAM	
		SCALE-	1:800	
ALL DIMENSIONS ARE IN METERS	DRAWING NO. LPG:ENG:MDU:AMENDMENT:02	REV : 21.06.2	2021	





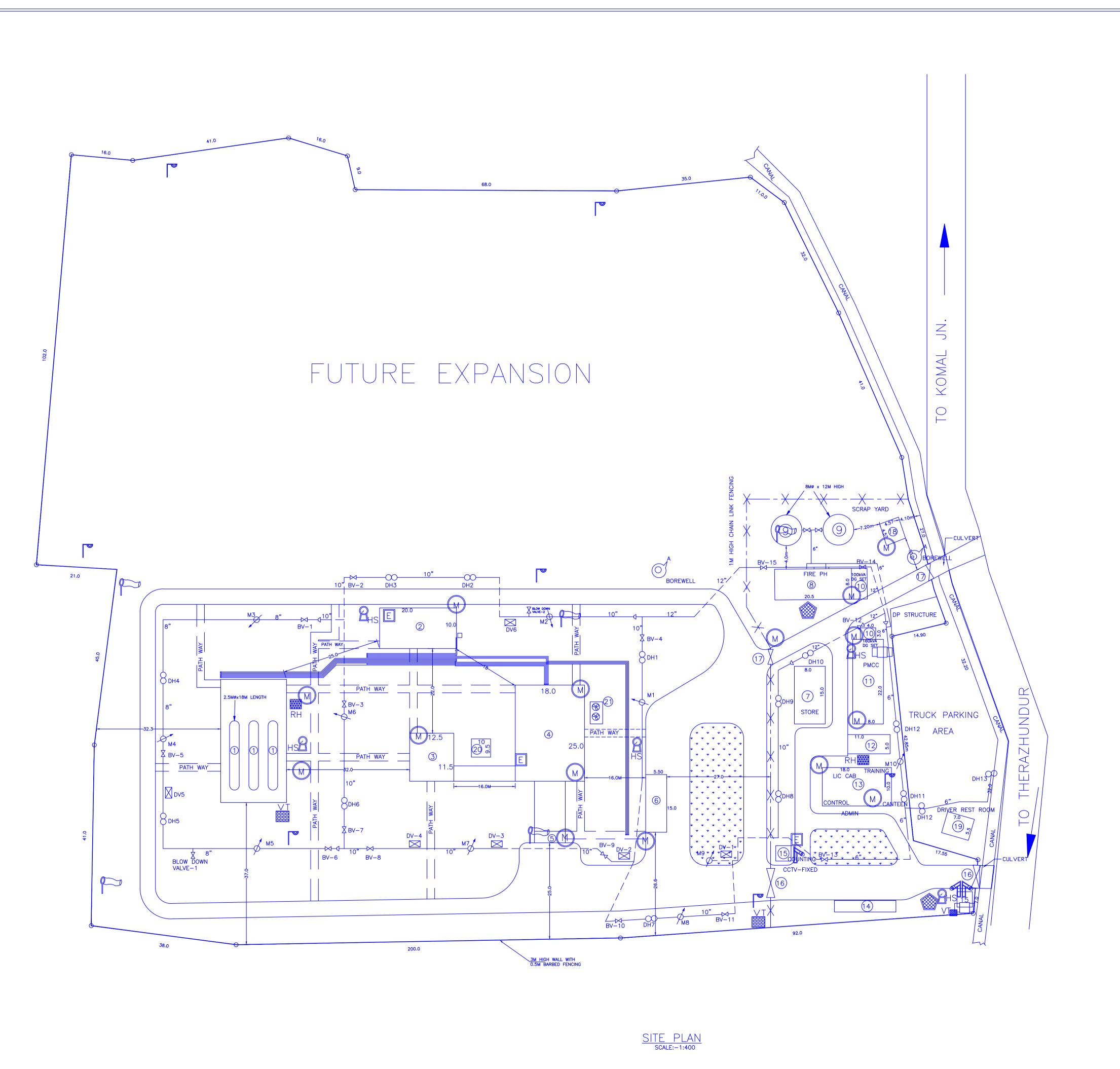
AREA USED = 7.36 ACRES

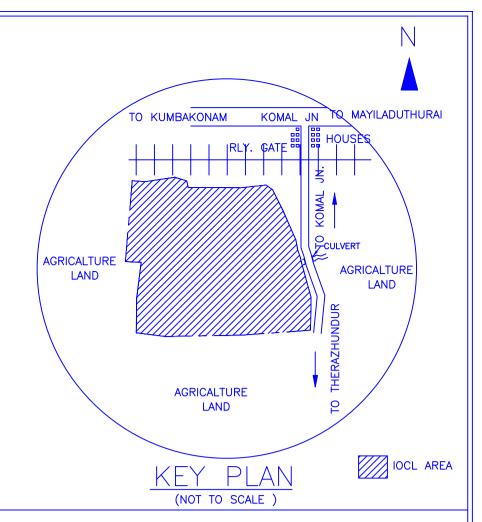
SCHEDULE OF FACILITIES

SL NO	DESCRIPTION	SIZE
01	LPG BULLETS (3 NOS.)	2.5MØx16M, LONG
02	TLD SHED	15Mx6.0M
03	LPG PUMP HOUSE	18Mx8M
04	FILLING SHED	24Mx18M
05	CYLINDER STORAGE SHED	12Mx12M
06	LOADING & UNLOADING SHED	8Mx12M
07	S&D ROOM AND SECURITY FRISKING	41 SQ.M
08	WEIGH BRIDGE	6M WIDE
09	ADMIN / AMENITY BLOCK/ EMERGNCY CONTROL CENTRE	150 SQ.M
10	EMERGENCY GATE	2 NOS.
11	P.M.C.C ,DG,BATTERY ,HT, TRANSFORMER	22.5Mx6M
12	FIRE PUMP & AIR COMPRESSOR HOUSE	22.5Mx6M
13	FIRE WATER TANKS (2 NOS.)	8MØx9M HIGH
14	ENGINEERING STORE	12Mx8M
15	MAIN GATE	6M WIDE
16	DRIVERS REST ROOM	3Mx3M
17	CAR/SCOOTER/CYCLE SHED (2 NOS)	8Mx5.2M
18	ELECTRICAL BARRIER	6M WIDE -1 NO.
19	COOLING TOWER	1 NO.
20	DV ROOM	2 NOS.
21	SECURITY ROOM	3Mx3M
22	TRUCK PARKING AREA	900 SQ.M
23	DP STRUCTURE	3Mx3M
24	SOLAR POND/WATER TANK FOR WASHING UNIT	3Mx3M/12KL
25	35 KVA DG ROOM	3.5Mx4.9M
26	CONTRACT LABOUR REST ROOM	31.Mx8.2M
27	CYLINDER BUNK	2.35Mx2.35M
28	NEW CYLINDER STORAGE YARD	25Mx15M
29	SECURITY AIR COMPRESSOR ROOM	4Mx3.5M
30	SOLAR POND FOR IN LINE BATH	20Mx10.4M
31	OPEN URINAL	1.6Mx3M
32	VAPOUR TRAP/WATER SEAL & RWH PIT	4NOS.
33	CCTV CAMERA WITH TOWER	6NOS.
33A	CCTV CAMERA WITHOUT TOWER	5NOS.
34	HIGH MAST TOWER	1 NO.
35	1.2M WIDE WICKET GATE	1 NO.
36	ACS BARRIER/ACS TRUNSTILE(EACH)	1 NO.
37	RE-CIRCULATION WATER SUMP	2.95x4.85x1.25M
38	VAPOUR EXTRACTION UNIT	1 NO.

INDIAN OIL CORPORATION LIMITED TAMILNADU STATE OFFICE

TITLE: PLANT	LAYOUT SHOWING	DRAWN BY:	P.PAVAN KUMA		
	SED NEW FACILITIES	CHECKED BY:	P.KANNIGA PARAMESWARI		
	MANNARGUDI LPG BOTTLING PLANT,EDAYARNATHAM VILLAGE , MANNARGUDI-16				
	, , , , , , , , , , , , , , , , , , , ,	DATE :	10.12.2021		
PLACE : MANNRGUDI	DRG NO: LPG:ENG:MANNBP:001		3		





LEGENDS		
WATER MONITOR (10NOS)	Ø _M	
DOUBLE HYDRANT (13NOS)	_	
FIRE HYDRANT LINE	-	- Ø
EMERGENCY TRIP BUTTON (3 NOS) E	·
MANUAL CALL POINT (15 NOS)	M	
CCTV CAMERA PTZ - 7 NOS, FIXED - 3 NOS.	CCTV-PTZ	CCTV-FIXED
BOREWELL	Ø _B	ORE WELL
WIND SOCK)
RAIN HARVESTING PIT	RH ₩	
VAPOUR TRAP	紐	
HAND / ELECTRIC SIREN	A Hs	ES
DELUGE VALVE	DV	
REDUCER	\rightarrow	_
EMERGENCY ASSEMBLY POINT	€ C	3

SL	DESCRIPTION	SIZE	QTY.
01	BULLETS 33MT	2.5Mø x 18M LNG.	3
02	LPG PUMP HOUSE	10M×20M	1
03	FILLED CYLS. STORAGE SHED.	12.5M×11.5M	1
04	EMPTY CUM FILLING SHED	25M×18M	1
05	ULOADING & LOADING SHED	8Mx3M	1
06	TLD	5.5M×15M	1
07	STORES	15M×8M	1
80	FIRE PUMP HOUSE	20M×8M	1
09	FIRE WATER TANK	8M Ø x 12M HIGH.	2
10	DIESEL TANK	3M×4M	2
11	P.M.C.C	22M×8M	1
12	CAR/CYLCLE SHED	11M×5M	1
13	ADMINSTRATIVE BLOCK	18M×10M	1
14	WEIGHING BRIDGE	50 MT	1
15	SECURITY ROOM	4M×4M	2
16	6M WIDE GATE	6M WIDE	2
17	4M WIDE GATE	4M WIDE	2
18	LABOUR REST ROOM	4.5M×4.5M	1
19	TRUCK CREW REST ROOM	7Mx5.5M	1
20	SOLAR EVAPORATION PAN	10MX9.5M	1
21	VAPOUR EXTRACTOR	_	1



INDIAN OIL CORPORATION LTD.

SOUTHERN REGION

GENERAL LAYOUT OF LPG
BOTTLING PLANT AT MAYILADUTHURAI
(AS BUILT)

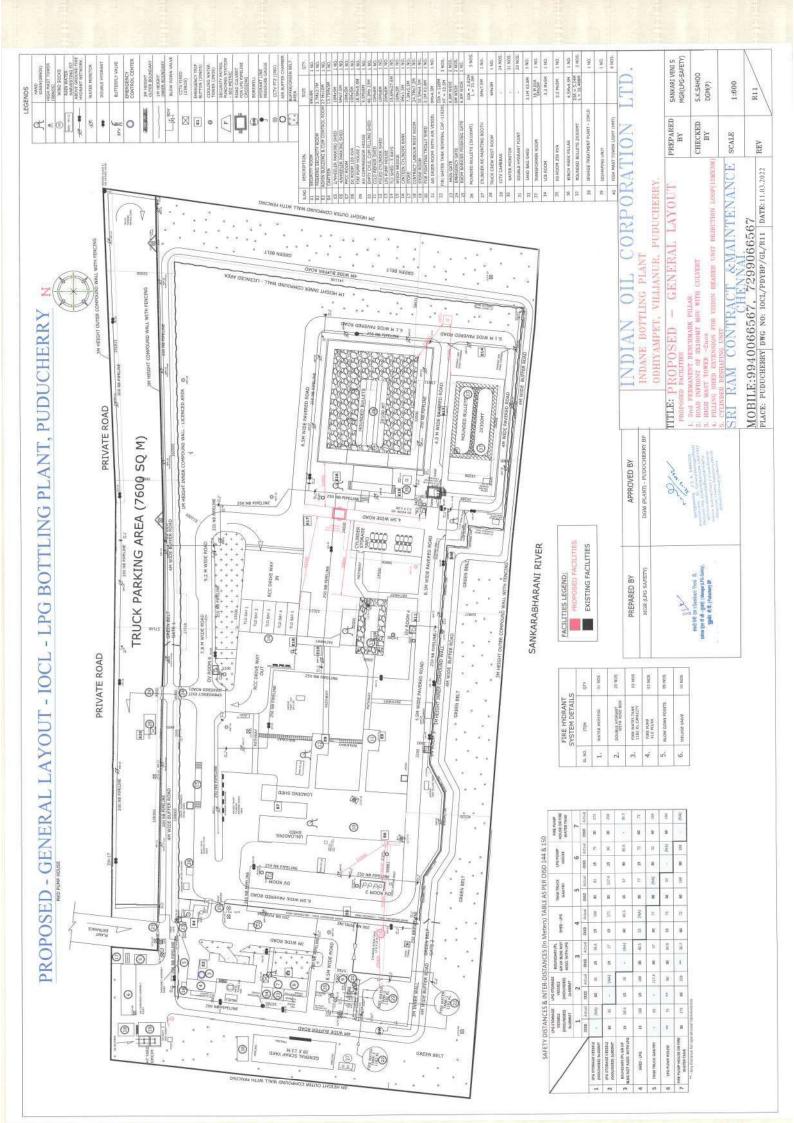
	DRAWN:	PRANAV.T.V AM (LPG SAFETY)
[CHECKED:	M.KRISHNAKUMAR PLANT MANAGER
	SCALE :	1 : 500

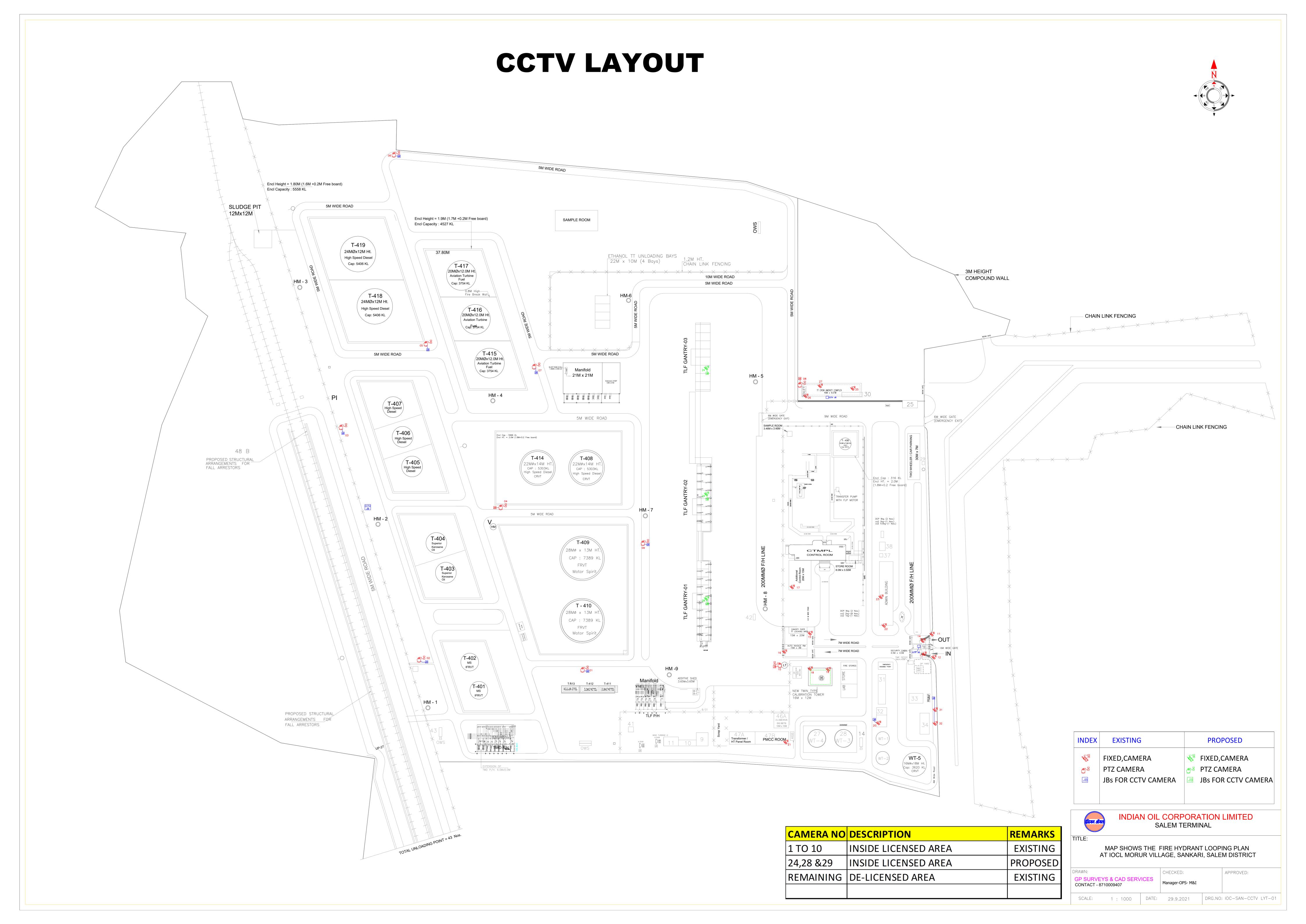
PLACE : MAYILADUTHURAI

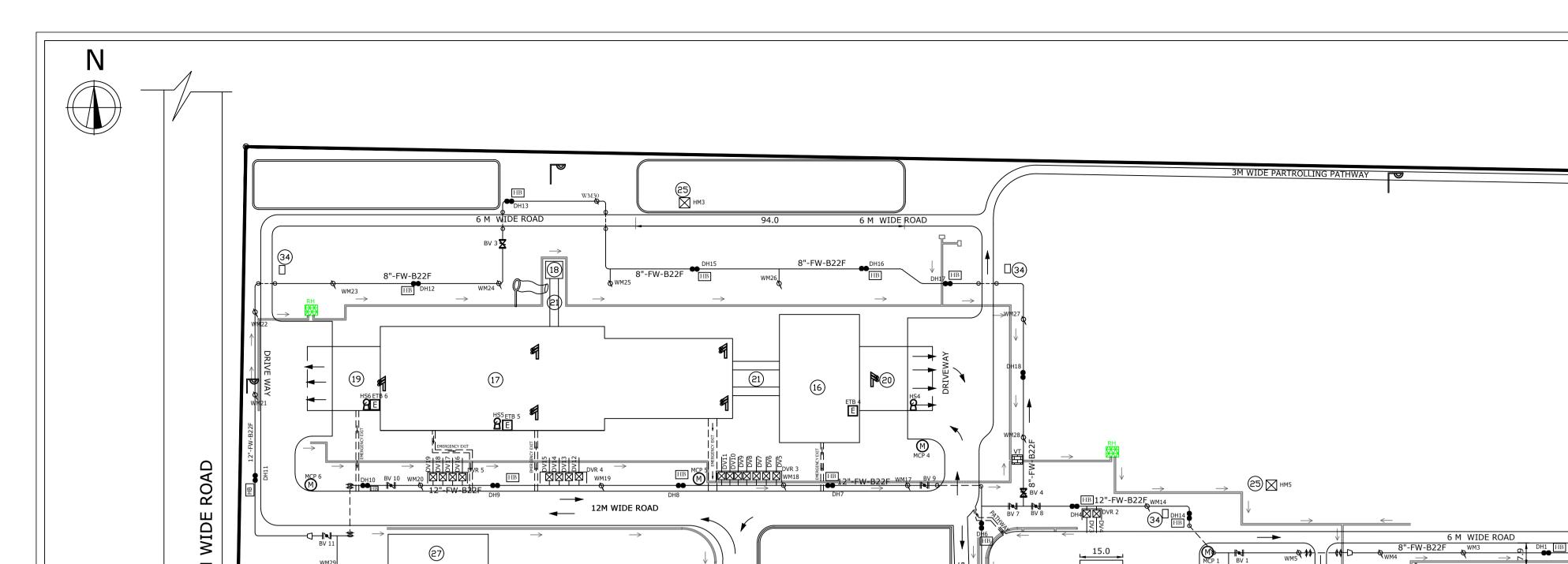
DWG NO :LPG:ENG:MAYI:LAY:REV:008

AFTER INSTALLATION OF VAPOUR
EXTRACTION SYSTEM

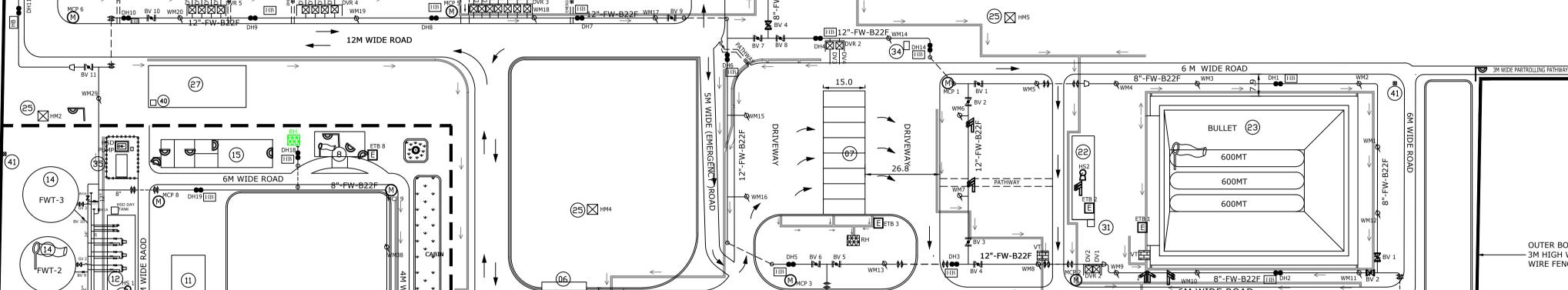
DATE 22/09/2021







30M WIDE ROAD



TOWNING CATE

OF WHITE CATE

OF WHIT

12M WIDE ROAD

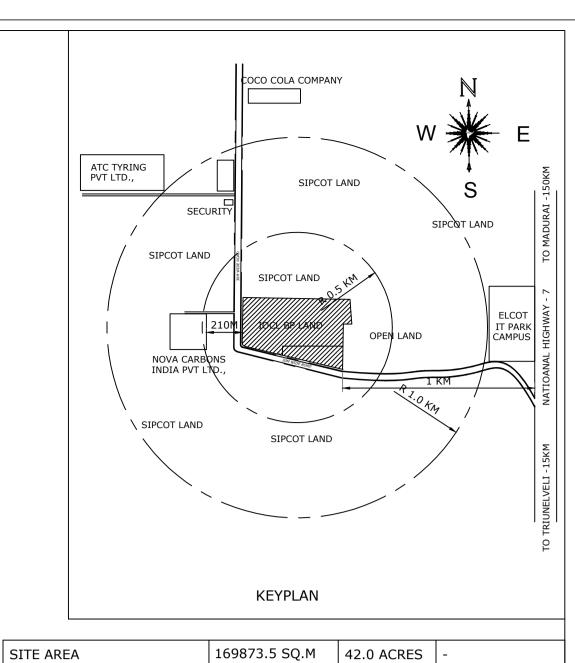
BULK TRUCKS -70 NOS.

TABLE - REQUIRED DISTANCE AS PER OISD 144/ 150 AND ACTUALS AS PER LAYOUT

NO		1	2	3	4	5	6
		LPG STORAGE VESSEL	BOUNDARY	LPG SHED	TLD SHED	LPG PUMP HOUSE	FIRE PUMP HOUSE OR FIRE WATER TANK
1	LPG STORAGE VESSEL	(-)	62.6 (15)	199.7 (15)	109.1 (15)	27.0 (-)	372.9 (60)
2	BOUNDARY	62.6 (15)	(-)	47.8 (30)	66.9 (30)	65.0 (30)	8 (-)
3	LPG SHED	199.7 (15)	47.8 (30)	16 (15)	79.9 (30)	164.5 (15)	89.9 (60)
4	TLD SHED	109.1 (15)	66.9 (30)	79.9 (30)	(-)	74.2 (30)	246.6 (60)
5	LPG PUMP HOUSE	27.0 (-)	65.0 (30)	164.5 (15)	74.2 (30)	(-)	335.8 (60)
6	FIRE PUMP HOUSE OR FIRE WATER TANK	372.9 (60)	8 (-)	89.9 (60)	246.6 (60)	335.8 (60)	(-)

LEGEND : ABOVE : DISTANCE AS PER LAYOUT

BELOW : REQUIRED DISTANCE AS PER OISD -144 / OISD -150



142717.9 SQ.M

PLANT AREA

OUTER BOUNDARY WALL — 3M HIGH WITH 0.6M HT. BARBBED WIRE FENCING 35.3 ACRES

TRUCK F					
	PARKING AREA	26958.2 SQ.M	6.7 ACRE	S -	
TOTAL FLOOR AREA PLANT /NON PLANT AREA 9109.66 SQ.M		-	- 98019.3		
LAWN & GREEN BELT AREA 48352.2 SQ.M			-	520269.6	SQ.FT
LEGE	ND:				
SL.NO	DISCRIPTI	ON	SIZE	AREA	QTY
1	MAIN GATE		10M WIDE		1 NO.
2	MAIN SECURITY ROOM		8.5x3.5M	29.8 SQ.M	1 NO.
3	EMERGENCY GATE	ERGENCY GATE			2 NO.
4	CONTROL ROOM,S&D		12Mx9.17M	110 SQ.M	1 NO.
5	TRUCK CREW REST ROOM		14Mx6M	84 SQ.M	1 NO.
6	WEIGH BRIDGE		16Mx3M 48 SQ.M		1 NO.
7	TLD		15Mx5.5M	82.5 SQ.M	1 x 8 BAYS (8 BAYS FUTURE
8	ADMINSTRATIVE BUILDING		G.F-18Mx9M F.F-(18x9)+(6X5)	162 SQ.M M 192 SQ.M	2 STRY.
9	AMENITY/CANTEEN/REST RO	OM/CLUB ROOM ete	14Mx8M	224 SQ.M	2 STRY.
10	CAR & TWO - WHEELER PARK TWO - WHEELER PARKING(NI TWO - WHEELER PARKING(NI TWO - WHEELER PARKING(NI	EAR TRUCK PARKING) EAR MAIN GATE)	20x8M 20x9M 12x4M 7x17M	160 SQ.M 180 SQ.M 48 SQ.M 119 SQ.M	4 NOs.
11	STORES		20Mx12M	240 SQ.M	1 NO.
12	FIRE PUMP HOUSE		25.46	350 60 **	4.1.0
13	AIR COMP. HOUSE		35x10M	350 SQ.M	1 NO.
14	FIRE WATER TANK		2500 KL CAP.		3 NOs.
15	P.M.C.C CUM GEN-SET ROOM		40M×10M	400 SQ.M	1 NO.
16	FILLED CYLINDER SHED		44.8Mx28.0M	1254.4 SQ.M	1 NO.
17	EMPTY CUM FILLING SHED		78.4Mx36.4M 44.8x28.0M	2853.76 SQ.M 1254.4 SQ.M	1 NO.
18	DEGASING SHED		6Mx6M	36 SQ.M	1 NO.
19	UNLOADING FINGER		22.4Mx25.5M	22.4Mx16.8M =376.3 SQ.M	1 NO.
20	LOADING FINGER		22.4Mx25.5M	22.4Mx16.8M =376.3 SQ.M	1 NO.
	INTERCONNECTING PLATFORM				
21	INTERCONNECTING PLATFOR	M	16.38×6M 16.8M×3M	98.3 SQ.M 50.4 SQ.M	2 NOs.
21	INTERCONNECTING PLATFOR	М			2 NOs.
	L.P.G PUMP HOUSE	М	16.8Mx3M	50.4 SQ.M 240 SQ.M	1 NO.
22	L.P.G PUMP HOUSE BULLETS 3x600MT		16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC	50.4 SQ.M 240 SQ.M	1 NO. 3 NOs.
22 23 24	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARR		16.8Mx3M 30Mx8M	50.4 SQ.M 240 SQ.M	1 NO. 3 NOs. 2 NOs.
22	L.P.G PUMP HOUSE BULLETS 3x600MT		16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC	50.4 SQ.M 240 SQ.M	1 NO. 3 NOs.
22 23 24 25	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARR! HIGH MASTS	IER	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE	50.4 SQ.M 240 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs.
22 23 24 25 26 27	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING	IER (ARD	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M	50.4 SQ.M 240 SQ.M DNG 525 SQ.M 96 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO.
22 23 24 25 26 27 28	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARR! HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO	IER (ARD	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M	50.4 SQ.M 240 SQ.M DNG 525 SQ.M 96 SQ.M 25 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs.
22 23 24 25 26 27 28 29	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO	IER (ARD	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M	50.4 SQ.M 240 SQ.M DNG 525 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs.
22 23 24 25 26 27 28 29 30	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM	TER TARD OM	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M	50.4 SQ.M 240 SQ.M DNG 525 SQ.M 96 SQ.M 25 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 1 NO. 1 NO.
22 23 24 25 26 27 28 29 30 31	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARR! HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL	TER TARD OM	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M	50.4 SQ.M 240 SQ.M DNG 525 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 2 NOs. 2 NOs. 2 NOs.
22 23 24 25 26 27 28 29 30 31 32	L.P.G PUMP HOUSE BULLETS 3×600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD	TER TARD OM	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M	50.4 SQ.M 240 SQ.M 240 SQ.M 25 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 1 NO. 1 NO. 1 NO. 1 NO. 2 NOs.
22 23 24 25 26 27 28 29 30 31 32 33	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD	TER TARD OM	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M	50.4 SQ.M 240 SQ.M 240 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 1 NO. 1 NO. 4 NOs.
22 23 24 25 26 27 28 29 30 31 32 33 34	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL	ZER ZARD OM LING TOWER	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M	50.4 SQ.M 240 SQ.M 240 SQ.M 25 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 1 NO. 1 NO. 4 NOs. 3 NO.
22 23 24 25 26 27 28 29 30 31 32 33 34 35	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL HSD A/G STORAGE TANK WIT	ZER ZARD OM LING TOWER	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M 20KL CAP.	50.4 SQ.M 240 SQ.M 240 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M 195 SQ.M 108 SQ.M 6 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 1 NO. 4 NOs. 3 NO. 1 NO.
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL HSD A/G STORAGE TANK WITH	ZER ZARD OM LING TOWER	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M 20KL CAP. 5Mx3.5M	50.4 SQ.M 240 SQ.M 240 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M 195 SQ.M 108 SQ.M 108 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 1 NO. 4 NOs. 3 NO. 1 NO. 1 NO.
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL HSD A/G STORAGE TANK WITH FRISKING SECURITY CABIN U/G WATER STORAGE TANK (ZER ZARD OM LING TOWER	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M 20KL CAP. 5Mx3.5M	50.4 SQ.M 240 SQ.M 240 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M 108 SQ.M 108 SQ.M 17.5 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 2 NOs. 1 NO. 4 NOs. 3 NO. 1 NO.
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38	L.P.G PUMP HOUSE BULLETS 3×600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL HSD A/G STORAGE TANK WITH FRISKING SECURITY CABIN U/G WATER STORAGE TANK (C)	IER (ARD OM LING TOWER TH PUMP (200 KL)	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M 20KL CAP. 5Mx3.5M 10Mx8Mx2.5M 5Mx3.5M	50.4 SQ.M 240 SQ.M 240 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M 108 SQ.M 108 SQ.M 17.5 SQ.M 80 SQM 17.5 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 1 NO. 2 NOs. 1 NO. 1 NO. 2 NOs. 1 NO.
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39	L.P.G PUMP HOUSE BULLETS 3x600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL HSD A/G STORAGE TANK WITH FRISKING SECURITY CABIN U/G WATER STORAGE TANK (COOL) T.R ROOM STP AND ORGANIC WASTE COOL STERMAN STORAGE TANK (COOL)	IER (ARD OM LING TOWER TH PUMP (200 KL)	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M 20KL CAP. 5Mx3.5M 10Mx8Mx2.5M 5Mx3.5M 3Mx3M	50.4 SQ.M 240 SQ.M 240 SQ.M 525 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M 108 SQ.M 108 SQ.M 6 SQ.M 17.5 SQ.M 80 SQM 17.5 SQ.M 9 SQ.M	1 NO. 3 NOS. 2 NOS. 7 NOS. 2 NOS. 1 NO. 2 NOS. 1 NO. 2 NOS. 1 NO. 1 NO. 4 NOS. 3 NO. 1 NO.
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38	L.P.G PUMP HOUSE BULLETS 3×600MT FRISKING GATE BOOM BARRI HIGH MASTS WICKET GATE NEW CYLINDERS STACKING Y CONTRACT LABOUR REST RO LUB YARD CYLS. CHECKING PLATFORM COOLING WATER TANK/COOL SCRAP YARD D/P STRUCTURE YARD OPEN URINAL HSD A/G STORAGE TANK WITH FRISKING SECURITY CABIN U/G WATER STORAGE TANK (C)	ZER ZARD OM LING TOWER TH PUMP (200 KL) ONVERTER	16.8Mx3M 30Mx8M Ø6.05Mx48.2M LC 6M WIDE - 1.2M WIDE 35MX15M 16Mx6M 5Mx5M 5Mx6M 15Mx1M - 13MX15M 12Mx9M 3Mx2M 20KL CAP. 5Mx3.5M 10Mx8Mx2.5M 5Mx3.5M	50.4 SQ.M 240 SQ.M 240 SQ.M 96 SQ.M 25 SQ.M 30 SQ.M 15 SQ.M 108 SQ.M 108 SQ.M 17.5 SQ.M 80 SQM 17.5 SQ.M	1 NO. 3 NOs. 2 NOs. 7 NOs. 2 NOs. 1 NO. 2 NOs. 1 NO. 1 NO. 2 NOs. 1 NO. 1 NO. 2 NOs. 1 NO.



SCALE = 1:1000

INDIAN OIL CORPORATION LTD. TAMILNADU STATE OFFICE

INDANE BOTTLING PLANT - TIRUNELVELI, TAMILNADU

LAYOUT PLAN SHOWING GENERAL LAYOUT OF LPG BOTTLING

TRIUNELVELI TALUK & DISTRICT, TAMILNADU STATE

(AFTER CONSTRUCTION OF SEWAGE TREATMENT PLANT AND RAINWATER HARVESTING PITS)

DATE:20.11.2021 INITIALS : ADARSH SS

DESIGNATION: PLANT MANAGER

AS BUILT

