



भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

NOTICE INVITING TENDER (NIT)

Name of the work: Supplying and erection of 50m and 40m Ground based angular towers including RCC foundation, Ring Earth etc., at IDOC premises, Khammam and Ramakrishna Puram (village) of Chinthakani Mandal in Khammam District for the implementation of pilot project “development of indigenous 5G gNB solution for FWA connectivity in India” by IIT Hyderabad.


17/03/2026
Executive Engineer (Civil)
IIT Hyderabad

INDIAN INSTITUTE OF TECHNOLOGY HYDERABAD

NOTICE INVITING TENDER

NIT Reference No. IITH/CMD/CIV/2025-26/NIT-33

Indian Institute of Technology Hyderabad invites on behalf of President of India online bids **(e-tender)** Item rate/~~percentage rate~~ tenders from approved *Civil contractors of CPWD and those of appropriate list of M.E.S., BSNL, Railway and State P.W.D. (R&B)* for the below mentioned work.

Copy of valid registration certificate of the firm/agency, PAN card, The enlistment of the contractors should be valid on the last date of submission of bid.

Copy of valid contractor's registration certificate (ROF in case of specialized agency), PAN card, GST Registration certificate & GSTIN should accompany the Technical Bid.

1.1	NIT No.:	IITH/CMD/CIV/2025-26/NIT-33
1.2	Name of Work:	<i>Supplying and erection of 50m and 40m Ground based angular towers including RCC foundation, Ring Earth etc., at IDOC premises, Khammam and Ramakrishna Puram (village) of Chinthakani Mandal in Khammam District for the implementation of pilot project "development of indigenous 5G gNB solution for FWA connectivity in India" by IIT Hyderabad.</i>
1.3	Estimated Cost: (given merely as a rough guide)	Rs. 67,00,000/-
1.4	Earnest Money Deposit (EMD):	Rs. 1,34,000/-
1.5	Period of Completion:	75 days
1.6	Date of Online Publication of Tender	18/03/2026 @1500hrs
1.7	Date of Downloading of Tender	18/03/2026 @1530hrs
1.8	Last Date for Submission of Bids	25/03/2026 @1500hrs
1.9	Date and time of Opening of Technical Bids	26/03/2026 @1530hrs
1.10	Date and time of Opening of Financial Bids	27/03/2026 @1530hrs
1.11	Cost of Bid Document:	NIL

Instructions to the Bidders for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrollment**” on the CPP Portal which is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g., Sify / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC’s to others which may lead to misuse.
- 6) Bidder 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.

SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e- mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, 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 / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) 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, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” 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.

Note: *My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.*

SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e., on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.
- 4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date and time of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise, the uploaded bid will be rejected.
- 5) ***Tenders without valid EMD will be summarily rejected. No exemption of EMD's or process fee for MSME/NSIC registered contractors.***

- 6) Bidders 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 bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
- 7) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 8) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 9) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 10) Upon the successful and timely submission of bids (i.e., after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 11) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

- 1) 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.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

NOTICE INVITING TENDER

NIT Reference No. IITH/CMD/CIV/2025-26/NIT-33

1. Bidders shall produce definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-

Criteria of eligibility for submission of tender documents apart from basic eligibility:

**Three similar works each of value not less than 40% of estimated cost
(OR)**

**Two similar works each of value not less than 60% of estimated cost
(OR)**

One similar work of value not less than 80% of estimated cost (rounded to nearest Rs. 10 lac) in last 7 (Seven) years ending last day of the month previous to the one in which the tenders are invited.

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of tender.

“Similar Work” shall mean “Supplying and Erection of 40mts and above height Ground Based Structural Steel Framed Towers including RCC foundation and finishings.”.

The intending bidders has to submit the Similar work experience certificate furnishing with all details of the format provided at Annexure – B.

2. **The bidder should have had average annual financial turn over (gross) of Rs. 54.00 Lakh on similar works during the last three Consecutive years ending March 2025, Balance sheets should be duly audited by Chartered Accountant. Year in which no turnover is shown would also be considered for working out the average. (Scanned copy of Audited Balance Sheet to be uploaded).**
3. **Bidder has to submit tax returns filed for the firm during last three years ending 31st March 2025 (Scanned copy of returns filed to be uploaded).**
4. **Should not have incurred any loss (profit after tax should be positive) in more than two years during the last five consecutive years ending 31st March 2025, duly audited and certified by the Chartered Accountant.**
5. **Should have a Net worth certificate of Rs. 7.00 Lakh (Net worth certificate of Rs. 7.00 Lakh. issued by certified Chartered Accountant with UDIN as per Format prescribed in Form B-1 of CPWD SOP 2024 at page No.214).**
6. To become eligible, the tenderer shall have to furnish an affidavit as per Form ‘J’ of the NIT.
7. Agreement shall be drawn with the successful tenderer on prescribed Form which is available in the website: https://drive.google.com/file/d/19_LkFZ1IeQb_3BznXQtinslcLISYVdbo/view (with up-to-date correction slips if any and additional conditions are enclosed as

annexure – I) Tenderer shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.

8. The time allowed for carrying out the work will be as stated at para 1 from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
9. The site for the work is available.
10. Tender documents consisting of plans, specifications, the schedule of quantities of the various classes of work to be done and the set of terms & conditions of contract to be complied with by the contractor whose tender may be accepted and other necessary documents can be seen for information at the above-mentioned website:
11. Applicants are advised to keep visiting the above-mentioned website from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the applications complete in all respects including updates thereof, if any. An incomplete application may be liable for rejection.
12. *The contractor whose tender is accepted, will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in Schedule F. This guarantee shall be in the form of Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F'. including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.*
13. The description of the work is as follows:

Supplying and erection of 50m and 40m Ground based angular towers including RCC foundation, Ring Earth etc., at IDOC premises, Khammam and Ramakrishna Puram (village) of Chinthakani Mandal in Khammam District for the implementation of pilot project "development of indigenous 5G gNB solution for FWA connectivity in India" by IIT Hyderabad.

Copies of other drawing and documents pertaining to the works will be open for inspection by the tenderers at the office of above-mentioned officer.

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access

to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

14. Tenders with any condition including that of conditional rebates shall be rejected forthwith.

15. Cost of Bid document and EMD may also be remitted to Institute's account number as per bank particulars given below:

Name of the Account Holder	: Indian Institute of Technology Hyderabad
Account Number	: 30412797764 (Current Account)
Name of the Bank	: State Bank of India
Address of the Bank	: IIT Kandi, IIT Hyderabad Campus, Kandi, Sangareddy, Telangana - 502284
Branch code	: 14182
IFSC code	: SBIN0014182
MICR code	: 502002528
SHIFT code	: SBININBB762

16. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.

17. Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

18. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.

19. The contractor shall not be permitted to tender for works if his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). Any breach of this condition by the contractor would render him liable to be removed from the approved

list of contractors of this Institute.

- 20.** No Engineer of gazette rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.
- 21.** The tender for the works shall remain open for acceptance for a period of Ninety (90) days from the date of opening of Technical Bids.
- (i) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- 22. (A) All taxes, Labour Cess etc., as applicable shall be borne by the contractor himself. The contractor shall quote his rates considering all such taxes including GST on works. Any recovery towards GST is notified by the competent authority, the same shall be effected and no claim what so ever shall be entertained by IITH. The contractor shall quote his rates accordingly.**
- (B) 2% as TDS amount of GST amount payable on the bills will be deducted as per the Govt. of India, Ministry of Finance, Department of Revenue notification vide No.65/39/2018-DOR, dtd: 14-09-2018 and subsequent amendment thereon.**
- 23. GST registration certificate of the state in which the work is to be taken up, if already obtained by the bidder.**

If the bidder has not obtained GST registration in the state in which the work is to be taken up or as required by GST authorities, then in such a case the bidder shall scan and upload following under taking along with other bid documents.

“If the work awarded to me, I/We shall obtain GST registration certificate of the state, in which work is to be taken up, within one month from the date of receipt of award letter or before release of any payment by IIT Hyderabad, whichever earlier, failing which I/We shall responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action

taken by IIT Hyderabad or GST department in this regard.”

24. Bidder has to submit Undertaking on their letter head pursuant to the Section 206AB (as applicable) of the Income Tax Act,1961 in prescribed format as enclosed at Annexure-A along with each and every bill submitted for payment.

25. This notice inviting Tender shall form a part of the contract document. The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-

- a) The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- b) Standard Contract form (General Conditions of Contract) as posted in the website of the Institute. The bidder is deemed to have gone through and understood the Standard Contract Form and the General Conditions of Contract.

26. Public Procurement (Preference to Make in India), Order 2017:

IIT Hyderabad shall compare all substantially responsive bids to determine the lowest valuated bid. This Institute is following and abiding with the **Public Procurement (Preference to Make in India), Order 2017, DIPP, MoCI Order No. P-45021/2/2017-B.E. II dated 15th June 2017** and its subsequent amendments. Accordingly, preference will be given to the Make in India products while evaluating the bids, however, it is the sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India product along with respective documentary evidence as stipulated in the aforesaid order in the technical bid itself.

As per the above order and its subsequent amendments “Local Content” means the amount of value added in India which shall be value of the item procured (excluding net domestic indirect taxes) minus the value of the imported content in the item (including all the custom duties) as a proportion of the total value, in percent. Accordingly, the suppliers will be classified in following categories.

Class I local Supplier – has local content minimum 50%

Class II local Supplier – has local content minimum 20%

Verification of Local Content: The Class I Local Supplier /Class II Local Supplier at the time of bidding shall be required to indicate the percentage of local content and provide **self- certification as per Annexure-C** that the items offered meet the local content requirement. The details of the location(s) at which the local value addition is made also needs to be specified.

In case of procurement in excess of Rs.10 crores, the suppliers shall be required to provide

the certificate from the Statutory auditor or cost auditor of the company giving the percentage of local content.

The bidders can be debarred for a period up to two years as per Rule 151(iii) of GFR 2017, in case of false declaration.


17/03/2026
Executive Engineer (Civil)
IIT Hyderabad

(Signature of bidder)

FORM 'J'

AFFIDAVIT

I/we undertake and confirm that our firm/partnership firm has not been blacklisted by any state/Central Departments/PSUs/Autonomous bodies during the last 7 years of its operations. Further that, if such information comes to the notice of the department, then I/we shall be debarred for bidding in IIT Hyderabad in future forever. Also, if such information comes to the notice of IIT Hyderabad on any day before date of start of work, the Engineer-in-charge shall be free to cancel the agreement and to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee (Scanned copy of this notarized affidavit to be uploaded at the time of submission of bid)

NOTE: Affidavit to be furnished on a 'Non-Judicial' stamp paper worth Rs.100/-

Signature of Bidder(s) or an authorized Officer of the firm with stamp

Signature of Notary with seal

Checklist of documents to be submitted along with Technical Bid

Sl. No.	Doc Ref	Description of the Document	Enclosed Yes/No	Remarks
1	As per GCC, Applicant shall submit the documents for Technical scrutiny	Copy of valid contractor's registration certificate, PAN card, GST Registration certificate & GSTIN should accompany the Technical Bid		
2	As per NIT: Registration of Contractors	<i>Civil contractors of CPWD and those of appropriate list of M.E.S., BSNL, Railway, State P.W.D. (R&B)</i>		
3	As per NIT: Eligible Contractors	Date of Validity of Enlistment		
4	Details of Works completed during last 7 years <i>(Detailed statements to be enclosed)</i> <i>The intending bidders has to submit the Similar work experience certificate furnishing with all details of the format provided at Annexure - B</i>	Not less than 40% of estimated cost (Three similar works)		
		Not less than 60% of estimated cost (Two similar works)		
		Not less than 80% of estimated cost (One Similar work)		
5	As per the NIT (Affidavit)	The tenderer shall have to furnish an affidavit in prescribed format. (Form J)		
6	As per Para No. 1.4 of NIT	Cost of EMD		
7	As per Sl. No.23 of NIT	Undertaking for GST registration in the state in which the work is to be taken up		
8	As per Sl. No. 24 of NIT	Undertaking pursuant to Section 206AB (as applicable) of the Income Tax Act, 1961 (Proforma enclosed as Annexure-A)		
9	As per Sl. No. 26 of NIT	Self-certification for Declaration of Local Content (Proforma enclosed as Annexure-C)		
10	Eligibility criteria for financial eligibility and submission of Annual Turnover related documents	Average annual financial turn over (gross) of Rs. 54.00 Lakh on similar works (Scanned copy of Audited Balance Sheet to be uploaded)		
11	Eligibility criteria for financial eligibility and submission of Profit and	Should not have incurred any loss (profit after tax should be positive) in more than two years during the last		

	Loss Statements	five consecutive years ending 31st March 2025, duly audited and certified by the Chartered Accountant to be uploaded. (Scanned copy of returns filed to be uploaded)		
12	Eligibility criteria for financial eligibility and submission of Net Worth Certificate	Should have a Net worth certificate of Rs. 7.00 Lakh. (Net worth certificate of Rs. 7.00 Lakh issued by certified Chartered Accountant with UDIN as per Format prescribed in Form B-1 of CPWD SOP 2024 at page No.214)		

SCOPE OF THE WORK

Name of the work: Supplying and erection of 50m and 40m Ground based angular towers including RCC foundation, Ring Earth etc., at IDOC premises, Khammam and Ramakrishna Puram (Village) of Chinthakani Mandal in Khammam District for the implementation of pilot project “development of indigenous 5G gNB solution for FWA connectivity in India” by IIT Hyderabad.

The broad details of the scope and specifications are as mentioned below:

- (i) Supplying and Erection of Ground based tower (50m & 40m) at site with Hot dip Galvanized steel tower materials with mass of zinc coating of 610 gms/Sqm (85 micron thickness) consisting of angles, flats, bars, gusset plates including climbing ladders, cable carrying trays, working platforms with railings, web guides, racks, Antenna Mounts & fixtures, tower base plates, base angle frames, connecting plates, bolts & nuts, spring washers etc.*
- (ii) Tower shall be painted with two or more coats with high gloss synthetic enamel paint of approved brand, manufacture and colour (International white and orange) over a coat of ETCH primer & one coat of Zinc Chromate yellow primer of approved brand and manufacture as per recommendation of the International Civil Aviation Rule including all components i.e. ladders, platforms with railings, web guides, racks, cable trays, Antenna mounts & fixtures etc.*
- (iii) Providing and fixing ring earth consisting of specified and required ring size at site and laying of G.I. Flats of size 50 x 6 mm laid at the bottom of the tower foundation pit.*
- (iv) Providing and fixing lightning Arrestor at the top of the tower with a spike on one end and threading on the other shall be provided on the top of the tower.*
- (v) Providing and fixing LED aviation obstruction lamp on the top of the tower with dependent resistance sensor (day and night automatic timer) switch with necessary fixtures.*
- (vi) Providing and Laying required RCC foundation including Earth work in excavation, refilling, providing required levelling course with 1:4:8, Reinforced Cement Concrete including centering and shuttering with 1:1.5:3 with Steel reinforcement of Thermo-Mechanically Treated bars of grade 500 D or above, fixing of ANCHOR BOLTS in proper position, RCC stem height shall be 450 mm above ground level.*
- (vii) Any other miscellaneous work as required to complete the work as per the directions of the Engineer-in-Charge.*

On Contractor/ Agency's Letter Head

Undertaking pursuant to Section 206AB (as applicable) of the Income Tax Act, 1961

To,
The Registrar
IIT Hyderabad
Kandi, Sangareddy- 502284.

Dear Sir/Madam,

Subject: Declaration confirming filing of Income Tax Return for immediate two preceding years.

I, Ms./Mrs./Mr. _____ in capacity of Authorized Signatory of _____ having PAN _____ and registered office at _____ do hereby declare that _____ has filed Income Tax Returns for immediately last 2 preceding Financial Years as mentioned below per due dates under Section 139 (1) of the Income Tax Act, 1961 ('the Act') and details of which are as given under:

Financial Year for which Income Tax Return was due as per Section 139(1)	Acknowledgement no. of ITR filed under Section 139(1)	Date of Filing
2024-25 <i>(if applicable on date of this declaration)</i>		
2023-24		
2022-23		

Further, I confirm that _____ has lined the above PAN with Aadhaar number as on this date.

I also undertake that _____ hereby indemnify **Indian Institute of Technology Hyderabad** for any loss/liability (including any Tax, interest, penalty, etc.) that may arise due to incorrect reporting of above information.

For _____

Signature: _____

Name of person:

Designation:

Place:

Date:

PROFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities (Enclosed): As enclosed at Page No to.....

SCHEDULE 'B'

Schedule of materials to be issued to the contractor

Sl. No.	Description of item	Quantity	Rates in figure & words at which the material will be charged to the Contractor	Place of issue
..... NIL				

SCHEDULE 'C'

Tools and plants to be hired to the contractor

Sl. No.	Description	Hire Charges per day	Place of issue
..... NIL			

SCHEDULE 'D'

Extra schedule for specific requirements/documents for the work, if any.

--- NIL ---

SCHEDULE 'E'

Reference to General Condition of Contract.: Posted in the website of the Institute.

Name of the work : ***Supplying and erection of 50m and 40m Ground based angular towers including RCC foundation, Ring Earth etc., at IDOC premises, Khammam and Ramakrishna Puram (village) of Chinthakani Mandal in Khammam District for the implementation of pilot project “development of indigenous 5G gNB solution for FWA connectivity in India” by IIT Hyderabad.***

Estimated cost of work : **Rs. 67,00,000/-**

Earnest money : **Rs. 1,34,000/-**

Performance Guarantee : 5.00% of the accepted tendered value

Security Deposit : 2.50% of the tendered value

SCHEDULE 'F'

GENERAL RULES AND DIRECTIONS:

Officer inviting tender: : *Executive Engineer (Civil), IITH*

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3 : *See below*

Definitions:

2(v) Engineer -in- Charge : *Executive Engineer (Civil), Indian Institute of Technology, Hyderabad.*

2(viii) Accepting Authority : *Superintending Engineer (Civil), Indian Institute of Technology, Hyderabad*

2(x) Percentage on cost materials and Labour to cover all overheads and profit : *15% (Fifteen) per cent.*

2(xi) Standard Schedule of Rate : *CPWD, Delhi Schedule of Rates (DSR) 2023 Civil / Electrical (2025), with up-to-date correction slips.*

Standard Contract Form : *CPWD General Conditions of Contract and subsequent amendments thereon.*

Clause 1

i) Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance, in days : *3 (Three) Days*

ii) Maximum allowable extension beyond the period provided in (i) above : *Nil*

Clause 1A

Whether Clause 1A is applicable : *Yes*

Clause 2 : *Superintending Engineer, Indian Institute of Technology, Hyderabad*
 Authority for fixing Compensation under Clause 2

Clause 3(VII): If the contractor had secured the contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement-will be made ineligible.

Clause 5:

Number of days from the date of issue of letter of acceptance for reckoning date of start : *3 Days or date of issue of LOC whichever is later*

Milestones : Not Applicable

Table of Milestones if Applicable (Not Applicable)			
Sl. No.	Description of Milestone	Time Allowed (From Date of Start)	Amount to be withheld in case of non-achievement of Milestone
1	25% agreement value	One fourth of time allowed for completion.	In the event of non-achieving the necessary progress as assessed from the running payments, 2.5% of tendered value of work will be withheld for failure of each milestone.
2	50 % agreement value	One half of time allowed for completion.	
3	75% agreement value	Three fourth of time allowed for completion.	
4	100% agreement value	Full period of time allowed for completion.	

Time allowed for execution of work : **75 Days**

Authority to give fair and reasonable Extension of time for completion of work (Web based hindrance register) : *Final EoT: Superintending Engineer, IITH*
Provisional EoT: Executive Engineer (C), IITH

Rescheduling of mile stones : *Superintending Engineer, IITH*

Clause 6:- Measurement Book : (i) *For works having estimated cost more than Rs 15 Lakh – Clause 6*
 Clause applicable, 6

(ii) For works having estimated cost Rs. 15 Lakh or less – Contractor's option of Clause 6 or to be exercised at the time of Tender Submission

Clause 7:

Gross work to be done together with net payment /adjustment of advances : Rs. 15 Lakhs/-
for material collected, if any, since the last such payment for being eligible to interim payment

Clause 7A:

Whether Clause 7A is applicable : Yes.
No running account bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-charge.

Clause 10A:

List of testing equipment to be : As given in additional specifications
provided by the contractor at site lab

Clause 10B (ii)- Mobilization advance:

Whether Clause 10 B (ii) shall be : Applicable
applicable

Clause 10C:

Component of labour expressed as : 25%
percent of value of work

Clause 10CA : *Not Applicable*

Sl. No.	Material covered under this clause	Nearest Materials (other than cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Base Price of all Materials covered under clause 10 CA* (INR)
	Reinforcement steel (TMT)		(63,000/-)/MT
	Cement		(6,800/-) /MT
	Structural steel		(69,000/-/MT

Clause 10CC

: *Not Applicable*

Clause 11:

Specification to be followed for execution of work :

CIVIL WORKS

CPWD DSR Items:

CPWD Specifications 2019 Vol. I & II, with up-to-date correction slips,

For MORTH Items

MORTH Specifications 2013, with up-to-date correction slips.

For ELECTRICAL WORKS

i) CPWD DSR Items:

CPWD General Specifications
Part I Internal 2023
Part II External 2023
Part III Lifts & Escalators 2003
Part IV Substations 2013
Part V Wet Riser
Sprinkler System 2020
Part VI Fire Detection and Alarm System 2018
Part VII DG Sets 2013
Part VIII: Gas based fire extinguisher systems 2013
all with up-to-date Corrections Slips.

For all Market Rate Items:

Particular Specifications

Clause 12:

12.2 & 12.3: Deviation limit beyond which Clause 12.2 & 12.3 shall apply for building work :

100% (as per CPWD circular No. DG/SOP/16 Dt: 15.02.2021)

12.5 : Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work :

100% (One hundred per cent)

Clause 14:

Whether Clause 14 is applicable :

Yes.

Clause 16

Competent Authority for deciding reduced rates. : *Superintending Engineer, IIT Hyderabad up to 5% of tendered amount, beyond which, Director, IITH.*

Clause 18:

List of mandatory machinery, tools & plants to be deployed by the contractor at site : *As required for the work.*

Clause 25:

(i) Settlement of disputes by Conciliation and Arbitration:

- Conciliator : Dean (Planning)
- Authority to appoint arbitrator : Director, IIT Hyderabad
- Place of Arbitration : Hyderabad
- Venue of Arbitration : IIT Hyderabad
- Type of Arbitration Tribunal : Sole Arbitrator

Note: Provisions of Arbitration and Conciliation Act 1996 with latest amendments in force shall be applicable.

Clause 32:

Requirement of Technical Representative(s) and Recovery Rate

Sl. No	Minimum Qualification of Technical Representative	Discipline	Designation (Technical Representative)	Minimum Experience (years)	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 36(i) (INR) / Month / Each	
						Figures	Words
1	Engineering Graduate	Civil/ Mechanical	Sr. Technical Representative	10	NIL	50,000/-	Rupees Fifty Thousand Only
2	Diploma Engineer	Civil/ Mechanical	Technical Representative (Construction Manager)	5	1	30,000/-	Rupees Thirty Thousand Only
3	Diploma Engineer	Electrical/ Mechanical	Technical Representative (Construction Manager)	5	NIL	30,000/-	Rupees Thirty Thousand Only

Note: Assistant Engineers retired from government services that are holding diploma will be treated at par with graduate engineers.

Clause 38

(i): Schedule/statement for determining

theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates

: DSR – 2023 for Civil and 2025 for Electrical published by CPWD

(ii): Variations permissible on theoretical quantities:

- (a) Cement : 2% plus/minus
- (b) Bitumen All Works : 2.5% plus only & nil on minus side.
- (c) Steel Reinforcement and structural steel sections for each diameter, section and category : 2% plus/minus
- (d) All other materials Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond permissible variation
1.	Cement	Nil	6,800+10% per MT
2.	Steel Reinforcement	Nil	63,000+10% per MT
3.	Structural Steel Sections	Nil	69,000+10% per MT

Special Conditions of Contract

SPECIAL CONDITIONS:

1. Before tendering, the contractor shall inspect the site of work and shall fully acquaint himself about the conditions prevailing at site, availability of materials, availability of land and suitable location for construction of godowns, stores and camp, transport facilities, the extent of lead and lifts involved in the work (over the entire duration of contract) including local conditions, as required for satisfactory execution of the work and nothing extra whatsoever shall be paid on this account.
2. The contractor shall at his own expense and risk arrange land for accommodation of labour, setting up of office, the storage of materials, erection of temporary work-shops, and construction of approach roads to the site of the work including land required for carrying out of all jobs connected with the completion of the work. In any case. IIT Hyderabad (Institute) shall not permit setting up of labour camps within its premises. If during construction it becomes necessary to remove or shift the stored materials shed workshop, access roads, etc. to facilitate execution of any other work by any other agency, the contractor shall do as directed by the Engineer-in-charge and no claim whatsoever, shall be entertained on this account.
3. It shall be deemed that the contractor shall have satisfied himself as to the nature and location of the work, transport facilities, availability of land for setting up of camp etc. The department will bear no responsibility for lack of such knowledge and the consequences thereof.
4. The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer-in-charge. Nothing extra shall be paid on this account.
5. The contractor shall be responsible for the true and proper setting out of the work in coordination with the Engineer-in-charge or his authorized representatives and for the correctness of the positions, levels, dimensions and alignments of all parts of the structure and for the provisions of all necessary instruments appliances and labour in connection therewith. If at any time, during the progress of work, any error appears or arises in the position, levels, dimensions or alignment of any part of the work, the contractor on being asked to do so by the Engineer-in-charge, shall rectify such error to the entire satisfaction of Engineer-in-charge. The checking by the Engineer-in-charge or his authorized representative shall not relieve the contractor of his responsibility for the correctness of any setting out of any line or level. The contractor shall carefully protect and preserve all bench marks pegs and pillars provided for the setting out of works.
6. All setting out activities concerning establishment of benchmarks, theodolite stations centre line pillars etc. including all materials, tools, plants, equipment, theodolite and all other instruments, labour etc. required for performing all the functions necessary and ancillary thereto at the commencement of the work, during the progress of the work and till the completion of the work shall be carried out by the contractor and nothing

extra shall be paid on this account.

7. The contractor shall at his own cost submit samples of all materials sufficiently in advance and obtain approval of the Engineer-in-charge. Subsequently, the materials to be used in the actual execution of the work shall strictly conform to the quality of samples approved by the Engineer-in-charge and nothing extra shall be paid on this account. The acceptance of any sample or material on inspection shall not be a bar to its subsequent rejection, if found defective.
8. The contractor shall at his cost, make all arrangements and shall provide necessary facilities as the Engineer-in-charge may require for collecting, preparing, packing forwarding and transportation of the required number of samples for tests for analysis at such time and to such places as directed by the Engineer-in-charge, and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The cost of tests shall be borne by the contractor/Institute in the manner indicated below (except for water):
 - a) By the contractor, if the results show that the material does not conform to relevant specifications and BIS codes or any other relevant code for which conformity test is carried out.
 - b) By the Institute, if the results show that the material conforms to relevant specifications and BIS codes or any other relevant code for which conformity test is carried out.
9. The necessary tests shall be conducted in the laboratory approved by the Engineer-in-charge. The samples for carrying out all or any of the tests shall be collected by the Engineer-in-charge or on his behalf by any other officer of the Institute. The contractor or his authorized representative shall associate himself in collection, preparation, packing and forwarding of such samples for the prescribed tests and analysis. In case he or his authorized representative is not present or does not associate him, the results of such tests and consequences thereon shall be binding on the contractor.
10. Materials used on work without prior inspection and testing (where testing is necessary) and without approval of Engineer-in-charge are liable to be considered unauthorized, defective and not acceptable. The Engineer-in-charge shall have full powers to require removal of any or all of the materials brought to site by contractor which are not in accordance with the contract, Specifications or do not conform in character or quality to the samples approved by the Engineer-in-charge. In case of default on the part of the contractor in removing rejected materials, the Engineer-in-charge shall be at liberty to have them removed at the risk and cost of the contractor.
11. The contractor shall make his own arrangement for the water required for execution of work and get the water tested at his own cost with regard to its suitability for use in the works and get written approval from the Engineer-in-charge before he proceeds with the use of same for execution of work. Nothing extra shall be paid to the contractor on this account.

12. The work shall be carried out in such a manner so as not to interfere/or effect or disturb other works being executed by other agencies, if any.
13. Any damages done by the contractor to any existing work or work being executed by other agencies shall be made good by him at his own cost.
14. The work shall be carried out in the manner complying in all respects with the requirement of relevant rules and regulations of the local bodies under the jurisdiction of which the work is to be executed and nothing extra shall be paid on this account.
15. For completing the work in time, the contractor might be required to work in two or more shifts and no claims whatsoever shall be entertained on this account, notwithstanding the Fact that the contractor will have to pay to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour regulations and the agreement entered upon and/or extra amount for any other reasons,
16. The contractor will have to make his own 'arrangement for obtaining electric connection from the state electricity board and make necessary payments directly to the department concerned and/or install generators at the site of work, if required and nothing extra whatsoever will be payable on this account.
17. The drawings for the work attached in the document relating to this contract and all other drawings that will be issued by the Engineer-in-charge during the execution of work shall at all times be properly correlated before executing any work and no claim whatsoever shall be entertained on this account.
18. The contractor shall maintain in good condition all work executed till the completion of the entire work entrusted to the contractor under this contract and nothing extra shall be paid on this account.
19. No payment will be made to the contractor for damage caused by rain, floods and other natural calamities whatsoever during the execution of the works and any damage to the work on this account shall have to be made good by the contractor at his own cost and nothing whatsoever' shall be paid on this account.
20. The item rates or percentage rates for all items of work, unless clearly specified otherwise, shall include the cost of all labour materials, de-watering and other inputs involved in the execution of the items.
21. Unless otherwise provided in the schedule of quantities or CPWD Specifications the percentage rates tendered by the contractor shall be all-inclusive and shall apply to all heights, depths, leads and lifts.
22. No claim whatsoever for idle labour, additional establishments, costs of hire and labour charges for tools and plants etc. would be entertained under any circumstances.
23. For the safety of all labour directly or indirectly employed in the work for the

performance of the contractor's part of this agreement, the contractors shall, in addition to the provisions of Safety code and directions of the Engineer-in-charge make all arrangements to provide facility as per the provisions of Indian Standard Specifications (Codes) listed below and nothing extra shall be paid on this account.

(a) IS 3696 Part I Safety Code for scaffolds and ladders

(b) IS 3696 Part II Safety Code for scaffolds and ladders Part II ladders

(c) IS 764 Safety Code for excavation work

(d) IS 4081 Safety Code for Blasting and Drilling operations,

(e) IS 4138 Safety Code for working in compressed air.

(f) IS 7293 Safety Code for working with construction machinery

(g) IS 7969 Safety Code for storage and handling of building materials

(h) IS 5216:1982 code of safety procedures and practices in electrical works

24. The contractor shall take all precautions to avoid all accidents by exhibiting necessary caution boards and by providing red flags, red lights and barriers. The contractor shall be responsible for any accident at the site of work and consequences thereof.

25. In case of Specifications the following hierarchy will be followed:

(1) Nomenclature of the item.

(2) Additional Specifications, particular Specifications, special / additional conditions if any as defined in the contract documents.

(3) Drawings

(4) CPWD Specifications,

(5) BIS Specifications (Latest version) if CPWD Specifications not available.

(6) Manufacturers Specifications if BIS Specifications not available.

(7) Sound Engineering Practices Standard Textbooks.

(8) If none of the above is available decision of Engineer-in-Charge will be final.

26. All Stone aggregates, sand, stone dust, etc shall be obtained only from the quarry or other source approved by the Engineer in charge before they are actually procured and used in the work. The percentage rate for the items mentioned in the schedule of quantities includes all charges and nothing-extra payable on any account.

- 27.** Labour Welfare Cess @ 1% shall be deducted at source from the bills of Gross value (which includes the cost of stipulated materials) of the work done and Government shall not entertain any claim whatsoever in this respect in this contract.
- 28.** The ESI and EPF Contribution on the part of the employer in respect of the contract shall be paid by the contractor. This contribution on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in- Charge to the contractor on actual basis. The applicable and eligible amount of EPF and ESI shall be reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment provided same are in order.
- 29.** No Running Account Bill shall be paid for the work till the applicable labour license, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-charge.
- 30.** The contractor shall obtain a valid licence under the contract labour (R A) Act, 1970 and the contract labour (Regulation and Abolition) Central Rules, 1971 before the commencement of the work, and continue to have a valid licence until the completion of the work. The contractor shall also comply with provision of the Inter-state Migrant Women (Regulation of Employment and conditions of service) Act 1979.
- 31.** The contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.
- 32.** The contractor shall be responsible for the watch and ward / guard of the work, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the work is physically handed over to the department. No extra payment shall be made on this account.
- 33.** The work is to be carried out in the client's premises, where free movement of contractor's vehicle and labour may be restricted. The contractor has to follow the security requirement of client for the campus area viz. entry passes for the labour and vehicle, security checks at entry / exit gates, restriction on movement of vehicles, restricted timings of working etc. IITH however shall assist the contractor in obtaining such passes for movement of vehicle and labour. No claim whatsoever shall be entertained on account of delay in entry of vehicles and labour in the campus area including restrictions in working hours, if there is any.
- 34.** The work in general should be carried out following the necessary guide lines/ norms of CPCB (Central Pollution Control Board) and rules of local administration /municipalities / Police authorities. No extra payment shall be made on this account.
- 35.** Unless otherwise specified in the schedule of quantities the rates for all items of the work below ground level shall be considered as inclusive of cost of pumping out or bailing out of water if required. For which no extra payment will be made. This will include water encountered from any source, such as rains, floods, sub-soil water or

due to any other cause whatsoever.

- 36.** The Contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards such as day and night boards, speed limit boards and flags, red lights and providing barriers, etc. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of work. Nothing extra shall be payable on this account.
- 37.** All material shall only be brought at site as per programme finalized with the respective Engineer-In-Charge. Any pre-delivery of the material, not required for immediate consumption shall not be accepted and thus not paid for.
- 38.** Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting /shifting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.
- 39.** No walls or terraces shall be cut for making any opening after water proofing has been done without written approval of Engineer-in-Charge. When permitted cutting of water proofing work shall be done very carefully so that other portion of water proofing is not damaged. On completion of work at such place the water proofing work shall be made good and ensured that the opening / cutting is made fully water proof as per contract specifications/ directions of Engineer-in-Charge. Nothing extra shall be payable on this account.
- 40.** No structural member shall be chased or cut without the written permission of the Engineer- in-Charge.
- 41.** The contractor, his agents / representative, workman etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.
- 42.** The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc are to be constructed.
- 43.** The contractor shall provide at his own cost suitable weighing, surveying and levelling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.
- 44.** For construction works which are likely to generate malba / rubbish to the tune of more than a tempo / truck load, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at his own cost to the notified /specified dumping ground and under no circumstances these shall be stacked / dumped even temporarily, outside the construction premises.
- 45.** Surplus excavated earth which is beyond the requirement of the IITH shall have to be

disposed of the contractor at his own cost beyond the municipal limits or at places identified by the local bodies or as directed by the Engineer-in-Charge after obtaining written permission of the Engineer-in-Charge and no payment will be made by the Department for such disposal of this surplus excavated earth.

46. In accordance with requirements of the pollution control board:
- a. The contractor shall ensure that, the vehicles for bringing construction material to the site shall be in good condition and should conform to applicable air and noise emission standards and should be operated only during non-peak hours / at such hours as are permitted by the local authorities. Nothing extra shall be payable on this account.
 - b. The contractor shall ensure that, ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Nothing extra shall be payable on this account.
 - c. The contractor shall ensure that, adequate measures to reduce air and noise pollution during construction have been adopted as per CPCB norms on noise limits. Nothing extra shall be payable on this account
 - d. The contractor shall ensure the safety equipments like boots, helmets, safety belts, gloves etc. must be provided for the workers and best and safe engineering practices must be adopted. Nothing extra shall be payable on this account.
 - e. The contractor shall ensure, the stipulations under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006 shall be ensured. Nothing extra shall be payable on this account
47. The contractor shall give a performance test of the entire installations as per standard specifications before the work is finally accepted and nothing extra what so ever shall be payable to the contractor for the tests.
48. The architectural and structural drawings shall be made available in phased manner as per requirement of the same as per approved programme of completion submitted by the contractor after award of work.
49. ***The 40mts GBT tower product Specifications & drawings shall be conformed in accordance to the Telecom Engineering Centre (TEC) specifications vide TEC standard No. TEC 45070:2004, TEC GR.No.GR/TWR-11/01 DEC 2004.***
50. 50 mts height tower bottom 10 mts segment have to design i/c RCC foundation syncing to the available 40 mts tower designs and have to execute 50 mts high tower accordingly after vetting of those designs/ structural drawings by the licensed approved GHMC structural designer/ any Govt Engg Colleges.
51. Land already allocated at proposed tower locations viz. ***IDOC premises Khammam Collectorate and Ramakrishna Puram village of Chinthakani Mandal*** by

concerned departments of state Govt of Telangana and Prof. Kiran Kuchi, Principal Investigator (PI) and Engineer-in-Charge will coordinate with the concerned departments/ state Govt and arrange land/ site free from disputes as required for construction of proposed towers.

- 52.** *Intending bidders shall be ensured that 40mts light weight towers (6.5 MT) materials are readily available with them or their suppliers by the time of quoting of bid and while quoting of the bids the bidders have to keep in mind that and have to participate in tendering, as this is a prestigious project of Meity, Govt of India and have to complete by us as per the targeted timelines fixed by them i.e. on or before 75days from the commencement of work. However, the successful bidder has to take initiation for obtaining 50 mts high tower foundation & 10 mts tower bottom segment structural designs as stated in above sl. No(50) on time and shall complete both towers of 40mts height and 50mts height at two locations in parallel.*
- 53.** *The successful bidder shall have to arrange logistics and stay of IITH officials for their visit and inspection of tower execution for the required days at two locations.*
- 54.** *The tower RCC foundation drawings are attached herewith for the soil SBC of 10t/sqm. If the soil SBC found less than 10t/sqm then contractor have to submit vetted structural designs and execute the same accordingly.*

PARTICULAR CONDITIONS FOR TOWER WORKS

- 1.0 The work of erection of tower also includes fabrication, supply and erection / assembly of box type cable feeder rack, platforms, wave guide rack, wave guide rack support (Optional) and painting of all steel members and fixtures. It also includes handing over of tower to the concerned DOT Administrator (User) after acceptance testing.
- 2.0 The contractor shall procure all structural steel members i.e. Angles, tees, Plates, nuts & bolts etc. conforming to relevant I.S. Codes from main producers as approved by the Ministry of Steel namely SAIL, TISCO, ISCO and RINL. All MS angles, Tees and Plates shall be of grade 'A' as per IS: 2062-1999 and IS: 8500-1991. Structural steel section not available from main producers can be procured from secondary producers approved by Engineer in charge subject to production of proof of manufacture of structural steel members from virgin billets produced from main steel producers before starting fabrication work. Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in the relevant I.S. Codes. In case the test results indicate that the steel arranged by the contractor does not conform to I.S. Codes, the same shall stand rejected and shall be removed from the site of work within three days from date of receipt of written order of the Engineer-in-charge to do so. The proof of manufacturer of structural steel members from virgin billets purchased from main steel producers is to be furnished by him before tower member / templates are cut.
- 2.1 Nuts and bolts of grade 5.6 as per IS:6639-1972, IS:12427-2001, IS:1363 (Part I)-1992 IS:1364-2002, IS: 1367-2002 (Part 8) and plain washers as per IS: 6610-1972 & spring washers of type 'B' as per IS: 3063-1994 shall be used.

Manufacturer's identity marking and item marking shall be provided on each section by punching and painting for enabling easy assembling and traceability. A plate indicating the name of the tower, specification's no., tower serial no., manufacturer's identity, year of manufacture and the maximum load capacity of the tower shall be supplied by the manufacturer for display at the bottom of the tower.

The steel structural members shall be stored by the contractor at site of work in such a way so as to prevent distortion and corrosion and nothing extra shall be paid on this account. Members of different sections and sizes shall be stored separately to facilitate easy checking.

For testing of steel members in accordance with IS 2062, specimen of sufficient length shall be cut from sectional member of steel as per requirement of relevant IS Codes and the contractor shall supply the steel members required for testing, free of charge.

The cost of tests shall be borne by the contractor/IITH in the manner indicated below:-

- (i) By the contractor, if the results show that the steel does not conform to the relevant I.S. Codes.

(ii) By IITH, if the results show that the steel conforms to the relevant I.S. Codes.

3.0 All structural steel members including nuts, bolts, gusset plates etc. shall be hot dip galvanized (Minimum 90 microns thick) as per IS: 4759-1996 (Reaffirmed 2001) and IS:1367-2002. The standard zinc used for galvanizing shall conform to IS: 13229-1991 or IS:209-1992.

The communication towers should conform to the latest revisions of all the relevant standards of BIS including:-

- (a) IS 2062 – 1999 - Specifications for structural grade steel.
- (b) IS 4759 – 1996 & - Specifications for hot dip galvanization.
IS 1367-2002
- (c) IS 800 – 1984 - Code of practice for general construction in steel.
- (d) IS 802 - Code of practice for use of structural steel in overhead transmission lines.
- (e) IS 6639, IS : 1363, IS 12427, IS 1364 -For nuts and bolts.& IS : 1367 Part 8
- (f) IS 13229 - 1991 - Standard for Zinc for galvanizing.
- (g) IS 6610 – 1972 - For plain washers and spring washers
IS 3063 - 1994 respectively.
- (h) IS 12843 - 1989 - For tolerance in Erection of steel structures.
- (i) IS 7205 -1974 - Safety code for Erection of structural steel work.
- (j) IS 875 -1987 (Part-III) - Code of practice for design loads (Wind load)

5.0 The contractor shall arrange at his own expense all tools, plants and equipments for execution of the works. No tents, tools, pumps for dewatering or any type of machinery / equipment will be supplied by the department for carrying out any portion of work. The contract shall be in position to deploy all required machinery / tools / equipments within the time schedule specified in the individual work orders. No accommodation shall be provided by the department either for storage of materials or for his staff. He shall make his own arrangement.

6.0 The intending bidders should inspect the site of work fully before tendering and acquaint / satisfy themselves as to the conditions in regard to accessibility of site, nature and extent of ground, working conditions including stacking of materials, installation of T&P, conditions effecting accommodation and movement of labour etc. required for the satisfactory execution of work. No claim of whatsoever will be entertained.

7.0 Erection of the tower and painting shall be done through specialized agencies only and all safety precautions shall be taken in accordance with safety code for erection of structural steel work (IS: 7205)

8.0 Agency executing the supply and erection of towers should take all precautions to see that no damage occurs to the adjoining structures while executing the work. Also, all the workers on the execution site should be adequately insured along with third party insurance for any unforeseen injury to passerby or occupants of adjoining buildings. Agency shall be solely responsible for any mishap on these accounts.

Foundation bolts shall be embedded and cast monolithic with concrete as per approved drawings and in consultation with the civil contractor, doing the foundation work which means that supplier will have to depute his representative to site at the time of concreting of stems to verify correctness of fixing of anchor bolts.

Templates & anchor bolts are to be supplied by manufacturer to individual site within 07 (seven) days from the date of receipt of intimation. Nothing extra shall be paid in this account.

Manufacturer shall also initiate action for fabrication of tower after receipt of intimation to supply anchor bolts so that erection work commences after completion of tower foundation.

10.0 Wherever no mention has been made in the specifications, the work shall be carried out as per relevant BIS standards or as per the directions of the Engineer-in-charge given in writing based on sound engineering practice and local usage & that shall be final and binding on the contractor.

11.0 The agency has to confirm after erection of tower that the tilt, twist and rotation of the tower are within specified limits. The agency also has to check the verticality of the tower after erection. The verticality of tower shall be within the limit of (+ / -) 25mm as given in IS:12843 : 1989, Table iii(b) (i.e. the bottom of the line joining to the center of the top of the tower and the center of the base of the tower shall be within this limit. This may be checked in the field after the erection of tower at site.

The site of work may be changed by the Engineer-in-charge due to exigencies of the service within / adjoining revenue districts for which nothing extra shall be payable except the approved contract rates. Tower fabrication is to be done strictly as per written orders of Engineer-in- Charge. Supply and tower erection will be as per time schedule given by Engineer-in-Charge and strictly adhered by the intending tenderers.

Connection between verticals legs and bracings shall be done to each other at site by Gusset / splices plates with nuts, bolts and washers as per design.

Rack for running feeder cables from the rear of Antenna to the base of the Tower shall be provided. Suitable support to be provided for all the feeder cable runner at 600 mm each, width of each rack shall be 300 mm.

A ladder shall be provided externally right through from the ground level up to 40M. Hoops and runners shall be provided to ensure the safety of the person climbing on the Tower. Antenna mounting pipe conforming to IS:1161-1998 of 2500 mm long, 1141.30 mm outer dia. And 3.65 mm wall thickness shall be used.

The ground-based tower shall take required GSM service delivery antenna, 3 sets of microwave back haul antenna of 1.2M dia. to cater for 3 USPs and additional antenna to be provided for proposed broad band service in future.

The mounting structure for antenna shall be of steel work and shall be such as to allow a nominal azimuth adjustment of (+ / -) 5 degree and an elevation

adjustment of (+ / -) 5 degree. The design of antenna supporting cage and platform shall be in accordance with the specification given in Annexure -III.

13.0 STRAIGHTENING

All materials shall be straightened and or flattened by pressure unless required for a shape of curvilinear form before fabrication and shall be free from twists. Straightening shall not damage the material. The parts when assembled adjacent surfaces shall be in close contact. Hammering shall not be permitted for straightening. Sharp kinks or bends shall be rejected.

14.0 CUTTING

Cutting may be affected by shearing, flame cutting or sawing. The surface so cut shall be clean, smooth, square and free from any distortion.

15.0 BENDING AND WELDING

- (i) Mild steel angle sections up to 75x75mm (up to 6mm thick) may be bent cold up to and including bend angle of 10 degree, angles above 75x75mm (thickness up to 6mm) and up to and including 100x100mm (thickness up to 8mm) may also be bent cold up to the bend angle of 5 degree. All other angle sections not covered above shall be bent hot.
- (ii) Butt-welding, if used, in members shall be carried out either by submerged arc or shielded arc welding.
- (iii) Welding shall be free from cracks, discontinuity in welding, under- size, over-size or under cutting. It should be cleaned off slag and other deposit.
- (iv) Welds shall be adequately tested using radiography or other well-known methods of non- destructive testing. Welding shall be carried out as per IS: 9595-1996. Welding connection of base plate are as per IS 800 : 1984.

16.0 HOLES

- (i) Holes for bolts shall be drilled using jigs provided with hardened steel bushes and shall not be punched or formed by flame cuttings process. All drill burns shall be completely removed. Drilling of holes shall be done before galvanizing.
- (ii) Holes on both sides of the bend line in a bent member shall be drilled after bending. The relative position of these holes shall be checked using proper templates.
- (iii) Holes shall be circular and of a diameter 1.5 mm more than the dia. of the bolt.
- (iv) Holes shall be drilled at right angles to the surface of the plates or angles, unless otherwise specified.
- (v) The accuracy of location of hole shall be such that for any group when assembled they shall admit the bolt at right angles to the plane of the connection.
- (vi) Spacing of bolts and edge distances shall be in accordance with IS 800-1984.

- (vii) Butting ends of main leg members shall be cut with saw. Flame cutting or shearing shall not be permitted.

17.0 MARKING

Identification marks allotted to each member shall be distinctly stamped with marking dyes of 16mm size before galvanizing.

18.0 TOLERANCES

Fabrication tolerance shall not exceed those specified in IS 7215-1974 as applicable to group "B" structure.

GALVANIZING

Hot dip galvanizing protects steel from corrosion by providing a thick, tough metallic zinc coating, which completely covers the steel surface and seals it from the corrosive action of its environment. The galvanized coating provides outstanding abrasion resistance. Where there is damage or minor discontinuity in the coating of zinc, protection of the steel is maintained by the cathodic action of the surrounding galvanized coating. Metallic zinc is strongly resistant to the corrosive action of normal environments and hot dip galvanized coatings therefore provide long-term protection for steel.

Zinc for galvanizing should conform to IS 13229-1991.

All members and fasteners of Tower structures are to be hot dip galvanized. Galvanizing of members of the tower shall conform to IS 4759 and 2629. Bolts and other fasteners shall be galvanized in accordance with IS 1367 (part 13). The total mass of galvanizing coating shall not be less than 610gm/sqm (i.e. 85 micron) thickness.

PAINTING

Painting of galvanized steel towers is required to give additional protection and to give 'Daywarning' as per additional protection and civil aviation specifications. Painting shall be done by specialized agencies only and all safety precautions shall be taken in accordance with the safety code for erection of steel tower.

COASTAL AREA

All steel galvanized sections like L angles, flats, tubular sections, bolts and nuts etc. shall be given a coat of ETCH primer. Zinc Chromate primer shall be applied over ETCH primer. Synthetic enamel paint of two or more coat thickness shall be applied over the above.

NON-COASTAL AREA:

In the non-coastal area Zinc Chromate may be applied instead of zinc phosphate painting shall be done in accordance with IS 1477 Part I & II. Priming coat of zinc Chromate/phosphate shall conform to IS 104.

CLEANING

Dust, grease and rust on galvanized tower members namely angles, tees, plates railing, ladders, racks etc. shall be removed by wire brushing and cleaned with a piece of cloth.

APPLICATION OF ETCH PRIMER

After cleaning the tower members, a first coat of an etch primer has to be applied to the tower structure members. The etch primer consists of polyvinyl butyl phosphoric acid catalyst and zinc chromate base and are supplied separately. They should be mixed before use in specified ratio of four parts base to one part catalyst or as specified by the manufacturer. The primer is to be applied uniformly to get a very thin and almost invisible coat and every part of the tower structure should be treated with this primer. Subsequent painting of the zinc chromate primer should be commenced within two hours of application of the primer. The etch primer once mixed should be used up immediately.

APPLICATION OF PAINT

After 48 hours of application of primer, the first coat of the paint should be applied carefully, well brushed into the surface, corners, crevices etc. should be uniform and even. The second coat of paint should be applied 48 hours after the application of the first coat. Care should be taken to see that the painting is not carried out at the hottest time of the day and air pockets should be avoided.

SPECIAL REMARKS

- (i) The painting shall be done carefully so that all corners and crevices of the mast receive the paint and no base surface is left exposed anywhere. Special care is to be taken in applying paint at the place where galvanized coating has got removed.
- (ii) No driers such as Litharge or Turpentine are to be used. The practice of mixing kerosene oil with paint is strictly forbidden.
- (iii) The primer and the paints used should be got approved prior to their use.
- (iv) The painting shall conform to civil aviation guideline.

PAINTS

Paints shall be synthetic enamel of the best quality and anticorrosive and withstand exposures to outside conditions. They should be of standard quality equivalent to synthetic enamel paint of Shalimar or Berger paints or Asian paints.

ORANGE AND WHITE BANDS (DAY MARKINGS)

To conform to Civil Aviation regulations the towers shall be painted in alternate bands of international orange and international white, terminating with orange at top and the bottom, Height of each band should be not exceeding 6 meters and should not be less than 0.5 mt. The correct shade for the international orange

corresponds to ISI shade 592 as given in the Indian Standard Institution Publication-colours for ready mixed paint, IS: 1755, IS: 2732- 1964.

RECTIFICATION / REPAIRS TO DAMAGED PARTS WHILE LOADING, UNLOADING AND TRANSPORTATION OF MATERIALS TO SITE.

Damaged components of the steel work should be rectified as per directions of the Engineer-in-charge. Minor damages to the galvanizing shall be made good by cleaning the damaged portion free of all rust and applying a zinc rich paste to the same thickness as the original coat of galvanizing.

Members of components, which are dented, bent or twisted in transit or by handling during erection shall not be used on work but shall be replaced as directed by the Engineer-in-Charge.

ERECTION

- (i) It shall be ensured that structural components with correct markings as indicated in drawings are used in correct position.
- (ii) At the base connections the foundation bolts shall be located correctly using templates and grouted ensuring that all templates are in one horizontal plane. After erection of the first panel, its verticality shall be checked and corrected if necessary.
- (iii) Further erection work shall proceed panel by panel, bolts and nuts shall be finally tightened up to the torque specified using torque wrenches. Verticality of the tower shall be checked after complete erection of each panel. Each panel shall be completed in all respects and shall have the approval of the Engineer-in-charge before proceeding to the next panel.
- (iv) If a panel is to be left incomplete, it shall be ensured if necessary, by erection of temporary bracings that all the members erected form a stable configuration, sufficient to withstand dead and wind loads.
- (v) The joint shall be made by drawing the light members into position with barrel drifts. Drifts may be used on the heavier members only to secure them in correct position. No member shall be force fitted. Any error in steel work, which prevents the assembly and fitting up to the parts by the proper use of drifts, shall be investigated immediately. If any defect or deficiency in the member comes to notice, the same shall be rectified as per directions of the Engineer-in-Charge.
- (vi) Packing plates shall be provided at the joints as shown on approved drawings in order to make up the change in the thickness of the parts jointed. No other packing plates shall be used.
- (vii) Hot dip galvanized bolts and nuts and washers of grade 5.6 shall be provided in all connections involving leg members main diagonals as well as horizontal through inter section of the main diagonals in k brace, panels and plain bracings.

- (viii) Hot dip galvanized contact surfaces of joints providing with hot dip galvanized bolts nuts and washers shall be free of oil, paint and lacquer or other coatings and shall be scored by wire brushing or light blasting after galvanization and prior to assembly.
- (ix) Bolts used for connections shall not be less than 12mm dia. and the length shall be such that not more than half of the pitch of the thread lies inside the grip length. The threaded portion of the bolt shall protrude by not less than 3mm beyond the lock nut after it has been fully tightened.
- (x) Bolts and nuts shall be tightened by using the part turn method. The nut shall be brought to the snug, tight position after which it will be given a further half to one turn depending upon the length of the bolt. In joints with several fasteners all the nuts bolts shall be brought to the snug tight position, before tightening further systematically. The nut rotation from snug tight condition is given in the table below:

NUT ROTATION FROM SNUG TIGHT CONDITION

Bolt length (as measured from underside of head to extreme end of point)	Bolts faces Normal to bolt axis.	One face normal To bolt axis & other face sloped not more than 1:20 (bevel washer not used)	Bolt faces slope not more than 1:20 from normal to bolt axis (bevel washers not used).
Upto including 4 dia.	1/3turn	1/2 turn	2/3 turn
Over 4 dia. But not exceeding 8 dia.	1/2 turn	2/3 turn	5/6 turn
Over 8 dia. But not exceeding 12 dia.	2/3 turn	5/6 turn	1 turn.

- (xi) Alternatively, nuts may be tightened using a calibrated wrench so that the proof load of the bolt specified in IS 1367 is achieved “snug tight is defined as the tightness attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench. Following this initial operation, bolts shall be placed in remaining holes in the connection and brought to snug tight position”.

VERTICALITY TOLERANCES

The verticality of towers of different heights shall be within the provisions of Table-1(III)(b) of IS:12843 : 1989, viz. + H / 1000 or +/- 20 mm (whichever is less) and H/1500 or +/- 25 mm (whichever is less) for towers up to and including 30M height and over 30M height respectively. (H refers to the height of tower).

WORKING PLATFORM AND LADDER

A set of 3 (three) platform with railing as per the as per the approved drawings shall be provided at height of 34M, 36.4M and 38.8M respectively. A resting platform shall also be provided at a height of 20M from the ground level as per

the details provided in the specifications. A ladder up to the top most platform inside the tower and cable tray assembly shall also be provided as per the specifications and approved drawings.

A working platform with railings is provided at a height from where erection and maintenance of Antenna, Aviation lamps, Lightning arrester etc. can be done easily. A ladder from rooftop up to top of platform at tower is provided with safety rings. Width of ladder shall be minimum 300 mm and safety ring of 750 mm shall be provided. Entry from ladder up to top of platform shall be such that no extra efforts will require to reach at the platform. Width of platform should be minimum 600mm.

WAVE GUIDE

A tray of galvanized M.S. angle and flats of 600 mm width shall be provided as waveguide to carry the feeder cables from Antenna fixed at top of tower up to the BTS. This shall not bend sharply at right angles at turning point to avoid damage to running feeder cables.

Waveguide is provided in towers to carry the feeder cables from Antenna fixed at top of tower up to Transmission room. It is a tray of galvanized M.S. angles and Flats of 600mm width.

- (a) Wave guide should enter straight into the termination at last length.
- (b) Precaution should be taken to avoid twisting of the wave-guide while tightening the nut of the termination flange.
- (c) Twisting can be permissible by an amount of 1 over 5 meters of wave guide length.
- (d) Bend in the wave-guide should be less than 2M diameter.
- (e) Wave-guide should be clamped suitably at all the stages on wave-guide rack and at proper places at approx. every 2 meters length in bend portion.

MEASUREMENTS

Unless otherwise specified, for item of erection, the payment shall be made on weight basis. The weight shall be calculated as under.

The weight of all the structural members including tees, angles, channels, flats, rods, bars, tubes, gusset plates, splice plates, chequered plates, cleats, brackets, antenna, holding pipes, lightning arrester pipe etc. shall be measured as given below.

The actual dimensions (length & width) of the members shall be measured in running meters correct to a centimeter and the thickness shall be measured correct to a millimeter.

or calculation of weight, the coefficients as given in the standard tables of BIS

codes shall be followed.

In case the coefficients are not available in BIS Codes, than the coefficient available in other standard tables shall be followed.

In case the coefficients are neither available in BIS Codes nor in other standards, than the coefficients shall be derived based on actual weight taken at site.

In case none of the above is possible, the actual weight shall be measured at site before erection.

No deductions shall be made for rivet or bolt holes made as per drawings and no additions shall be made in weight due to galvanizing of the members.

If actual weight measured at site, is less than the weight as per BIS codes / other standards, then the actual weight shall be measured.

RATES

Unless otherwise specified, the rates quoted for the items shall include all labour, material, taxes, insurance, watch & ward, necessary T&P required for the work, tests, all weighing / measuring equipments etc. all complete. Nothing extra shall be paid over and above the quoted rates for the items.

PROTECTION OF LIFE, PROPERTY AND EXISTING FACILITIES

1. The contractor is fully responsible for taking all possible safety precaution during preparation for and actual performance of the works, and for keeping the construction site in reasonable safe condition. The contractor shall protect all life and property from damage or losses resulting from his construction operations and shall minimize the disturbance and inconvenience to the public
2. Copy of Insurance policy for workers, from any of the Nationalized Insurance companies, covering all the workers and Supervisory staff employed/ to be employed, during the course of execution, is to be submitted before commencement of work.
3. In these connections, the attention of the contractors are drawn to the safety measures and precautions including code of conduct while safety carrying out the work and also detailed Engineering Instructions enumerated in this tender document.
4. Necessary safety belts, helmets, harnesses and other necessary safety equipments are to be adequately provided to all the labourers.
5. The contractor shall be solely liable for all expenses for and in respect of repairs and / or damage occasioned by injury of or damage to such underground and over ground structures or other properties and undertake to indemnify and keep indemnified the IITH from and against all actions, cause of actions, damages, claims and demands whatsoever either in law or in equity and all losses and damages and costs (inclusive between attorney and clients), charges and expenses in condition therewith and / or incidental thereto.
6. The current market value of any commodities lost as a result of any damage to the aforesaid existing facilities shall be paid by the contractor together with such

additional sums necessary to liquidate the personal or property damages resulting there from.

ANNEXURE – B

CLIENT's CERTIFICATE REG. PERFORMANCE OF CONTRACTOR

Name & address of the Client.....

Details of works executed by Shri/ M/s.

1. Name of work with brief particulars	
2. Agreement No. and date	
3. Estimated Cost	
4. Agreement amount	
5. Date of commencement of work	
6. Stipulated date of completion	
7. Actual date of completion	
8. Details of compensation levied for delayed completion, if any	
(a) Whether case of levy of compensation for delay has been decided or not	Yes/No
(b) If decided, amount of compensation levied for delayed completion, if any	
9. Amount of reduced rate items, if any	
10. Performance Report	
a) Quality of Work	Outstanding / Very Good / Good / Poor
b) Financial Soundness	Outstanding / Very Good / Good / Poor
c) Technical Proficiency	Outstanding / Very Good / Good / Poor
d) Resourcefulness	Outstanding / Very Good / Good / Poor
e) General behavior	Outstanding / Very Good / Good / Poor

Dated:

Executive Engineer or Equivalent

Declaration for Local Content

(To be given on Company Letter Head - For tender value below Rs.10 Crores)

(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above Rs.10 Crores)

Date: _____

**To,
The Director,
Indian Institute of Technology Hyderabad,
Kandi, Sangareddy 502284.**

Sub: Declaration of Local content

Tender Reference No: _____

Name of Tender / Work: _____

1. Country of Origin of Goods being offered: _____
2. We hereby declare that items offered has _____% local content.
3. Details of location at which local value addition will be made / made: (Complete address to be mentioned) _____

“Local Content” means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

*“*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.”*

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

Additional Conditions of Contract

Additional Conditions:

1. The contractor shall make his own arrangements for obtaining electric connections if required and make necessary payments directly to the department concerned.
2. Other agencies doing works related with this project will also simultaneously execute the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work of pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for other agencies. Conduits for electrical wiring/cables will be laid in a way that they leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rates shall be paid for the same.
3. Some restrictions may be imposed by the Institutes security staff etc., on the working and for movement of labour, materials etc. The contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on this account.
4. The building work will be carried out in the manner complying in all respects with the requirements of relevant byelaws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra will be paid on this account.
5. The work of water supply, Internal Sanitary Installations and drainage work etc., shall be carried out as per local Municipal Corporation or such local body bye-laws and the contractor shall produce necessary completion certificate from such authorities after completion of the work.
6. Water tanks, taps sanitary, water supply and drainage pipes, fittings and accessories should conform to byelaws and specifications of the Municipal Body/Corporation where CPWD specifications are not available. The contractor should engage licenced plumbers for the work and get the materials (fixtures/fittings) tested by the Municipal Body/Corporation authorities wherever required at his own cost.
7. The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charge, which he may be liable.
8. The contractor shall give a performance test of the entire installation(s) as per standard Specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
9. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been in built in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account.
10. **Applicable for Works Costing more than Rs 25 Lakh**

The Contractor shall furnish his proposed methodology and programme of construction in comprehensive manner of executing and completing the work within the stipulated period and also for achieving the milestones simultaneously within the specified periods in schedule F within 7 days of award of tender. The programme shall consist of the various components for each part of the work stipulated to be completed and a bar chart may be appended in this connection.

11. The contractor shall take instructions from the Engineer-in-Charge for stacking of materials in any place. No excavated earth or building material shall be stacked on areas where other buildings, roads, services compound walls are to be constructed.
12. As a policy of the Institute, huts for labour are not permitted at the site of work by the contractors. The contractors are required to provide such accommodation outside the premises of the Institute and nothing extra shall be paid on this account.
13. Royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand and bajri etc., collected by him for the execution of the work direct to the Revenue authority or authorized agent of the State Government concerned or Central Government.
14. The Percentage Rate for Centering shuttering includes cost of centering the rate of RCC works include cost of concreting in sloped roof/ chajjas / beams and no extra rate shall be payable on any account. Single stone slab only should be used in treads and risers of staircase steps etc. Payment shall be made in respect of items. No extra rate shall be payable on this account.
15. The Contractor should construct proper mortar bands of lean mix with adequate depth smaller size over the curved roof for flooding with water proper curing. In case of Arches, wet gunny bags shall be used for a period of two weeks.
16. Samples of all materials like UPVC Pipes, fittings, tiles etc., shall be got approved in advance before placing order for them. Similarly, samples of all works shall be prepared in advance and got approved from the Engineer-in-Charge before taking up the work
17. The contractor shall procure all the materials in advance so that there is sufficient time for testing and approving the material and clearance of the same before use in work.
18. The Percentage rate for skirting, dados includes cost of chasing of Brick walls to the required thickness wherever required in order to accommodate required thickness of base cement mortar and nothing extra is payable.
19. The Percentage rate for the different flooring items under flooring sub head, includes the cost of extra cement mortar required to be laid for making the finished floor level at par with the kota stone flooring at all floors and at all levels, and nothing extra shall be payable on any account.
20. No payment shall be made for preparing the existing surface like flooring, masonry etc.

for hacking, cleaning to receive new work.

21. No payment shall be made for extra for scaffolding required for external works at all levels.

22. Applicable for Works costing more than Rs 50 Lakh

23. **Reports to be submitted by Contractor**

- (i) The contractor shall submit monthly progress report of the work in a computerized form. The progress report shall contain the following, apart from whatever else may be required as specified: i) Project information, giving the broad features of the contract.
- (ii) Introduction, giving a brief scope of the work under the contract, and the broad structural or other details.
- (iii) Construction schedule of the various components of the work through a bar chart for the next 2 quarters (or as may be specified), showing the milestones, targeted tasks and up to date progress.
- (iv) Progress chart of the various components of that are planned and achieved, for the month as well as cumulative up to the month, with reasons for deviations, if any, in a tabular format.
- (v) Plant and machinery statement, indicating those deployed in the work, and their working along with their designations.
- (vi) Manpower statement, indicating individually the names of all the staff deployed in the work, along with their designations.
- (vii) Financial statement, indicating the broad details of all the running account payments received up to date, such as gross value of work done, advances taken, recoveries effected, amounts withheld, net payments, details of cheque payments received, etc.
- (viii) A statement showing the extra and substituted items submitted by the contractor, and the payment received against them, items pending for sanction/decision by the Department, broad details of the bank guarantees, indicating clearly their validity periods, broad details of the insurance policies taken by the contractor, if any, the advances received and adjusted from the department, etc.
- (ix) Progress photographs, in colour, of the various items/components of the work done up to date, to indicate visually the actual progress of the work.
- (x) Quality assurance and quality control tests conducted during the month, with the results thereof.

24. **PROGRESS REPORT**

The progress report submitted by the contractor has to be checked and certified by the Junior Engineer or Assistant Engineer, and has to be reviewed by the Executive Engineer and the Superintending Engineer, over their dated signatures.

A. Physical.

Name of Item	Quantity as per Agreement	Quantity extended during the month	Total up to date quantity executed	Anticipated balance quantity

B. Financial

Total Tendered amount	Work done during the month	Total amount of work done up to Date	Anticipated amount of balance work

25. The contractor has to submit the progress report to the Sub division office in quadruplicate by 10th day of every month as per the above proforma along with photographs of the work done during that month. The contractor shall be charged at Rs. 2500/- (Rupees Two thousand five hundred only) in the event of non-receipt of monthly progress report on due date (i.e., on 10th day of every month) to the sub division office in the manner prescribed above. In case 10th day happens to be a closed holiday then the progress report will be submitted on the next working day.

APPROVED MAKE LIST

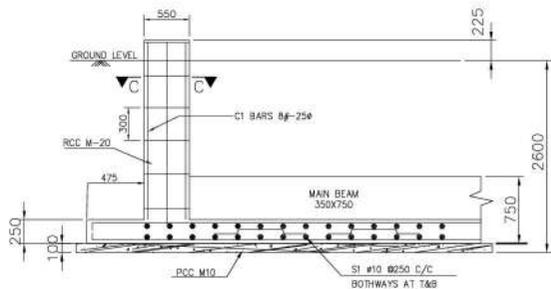
Material / Item	Approved Make
Cement OPC/ PPC	Ultratech, ACC, Lafarge, Bharathi, Zuari.
Reinforcement Steel	SAIL, TATA (TISCO), RINL, JINDAL
Ready Mix Concrete	Ultratech, ACC, RDC Concrete
AAC Blocks	Xtralite from Ultratech, Aerocon from HIL, ECOREX, BILTECH
AAC block joining mortar	Fixoblock xtralite from Ultratech, Smartfix from Aerocon, MYK Laticrete, Ardex Endura
Adhesive For Wood Work	Ardex Endura, Laticrete, Pidilite,
Air transfer grills	Trox, Ruskin Titus, Systemair India
Aluminium Accessories	Classic/ Argen/ Oxford/ Nulite/ Crown/ EBCO
Aluminium Sections	Hindalco, Jindal, Bhoruka, Indalco
Aluminium System Windows	Kaluco, Technal, Domal, ALCOI, Eternia from Hindalco, Alumak,
Aluminium Systems Glazing/ Curtain wall (Façade system)	Schuco, Reyners, Kawneer, Bhoruka
Aluminium D/W hardware	Alualpha, Lavaal, Giesse, Cotswold, Securistyle,
Aluminium Louvers	Hunter Douglas, Armstrong, Luxalon
Anchor Fastner, Rebar, Chemical/ Mechanical fastner, Core - cutting, Dry stone cladding clamp, Expandable fastners	Hilti, Fischer
Anti-Termite Pesticides - (Chloropyriphos)	DE - Nocil, Bayer, Biflex-TC from FMC, Hilban from HIL
Acoustical Ceiling / Wall Panelling	Anutone, Ecophon - Saint Gobain, USG Boral, Armstrong, Knauf Denoline
Acoustic Wall Panel	Armstrong, Ecophon, Anutone
Access panel in False ceiling	Saint Gobain, USG Boral, Knauf Denoline,
Adhesive For Wood Work	Ardex Endura, Laticrete, Pidilite,
Aluminium Sections	Hindalco, Jindal, Bhoruka, Indalco, Global
Aluminium System Windows	Kaluco, Technal, Domal, ALCOI, Eternia from Hindalco, Alumak,
Aluminium Systems Glazing/ Curtain wall (Façade system)	Schuco, Reyners, Bhoruka or approved equivalent
Backer Road	Supreme, Fosroc
Calcium Silicate Board	Hilux, Aerolite, Pamtech, Promatech,
Cement - White	Birla, JK
Cement Fiber Board	Everest, NCL Industries (Bison Panel), Shera Board, Visaka Industries (V- Next), Century
Chemical Admixtures & Additives	BASF, Pidilite, Sika, Fosroc, Ecmas, Sunanda Chemicals, Mapei, Hycrete, Bal-Endura, MC Bauchemie, MYK Schomburg,
Commercial ply & Board	Greenply, Archidply, Century, Duroply, Uniply, Kitply, National
Crystalline Integral Waterproofing	Kryton, Penetron, Pidilite, BASF, Fosroc, Sika,
Ceramic Fritting on Glass	Art & Glass, GSC Glass, Ashai

Material / Item	Approved Make
Concrete Cover Blocks	Astra, Ramtec or approved equivalent. For exposed concrete only pointed type shall be
Vitrified/Ceramic Tiles	Kajaria, RAK, Restile, Somany, Jhonson, Asian
Compact laminated sheet	Greenlam, Marino
Ceiling Wall Panel	Armstrong, Ecophon, Anutone
Colour Coated Galvalume Standing Seam Roofing	Agrima Roof & Façade systems, Maxroof , Optima India
Door Closer	Dorma (XLC), Hafele, Yale, Geze
Door Locks, Access Control Lock	Dorma (XLC), Geze, Kich, Hafele, Assa Abloy (Yale)
Door Hardware (other than Floor spring, Closer, Locks)	Dorma (XLC), Kich, Hafele, Assa Abloy (Yale),
Door Seal – Wool pile Weather Strip	Reddiplex, Osaka rubber, Enviro Sealz, Anand
Double Side Tape, Decorative Tape	3M
Door Hardware (other than Floor spring, Closer, Locks)	Dorma (XLC), Kich, Hafele, Assa Abloy (Yale), Dorset,
EPDM Gaskets	Anand, Osaka Rubber, Roop, Bohra, Hanu, Maharashtra polymer
Epoxy Grout/ Cementitious Grout for Flooring	Ardexl Endura, MYK Latricrete, Kerakoll, Pidilite
External Paving Tiles (Cement based)	Pavit, Basant baton, Vyara, Ultra, Eurocon, Super
Expansion Joint System	3R, Kantaflex, sandfield, Deevin, Vexcolt
Expansion Filler board - Premoulded compressible	Supreme (Capcell HD100), Shalitex -STP
Fabric (Acoustic and fire rated)	Atmosphere, Palette, D'décor Fabric, Response
Fire Doors	Shakti Horman, Pacific, Navier, iCLEAN - IHMS,
Fire Rated Hardware	Dorma, Hafele, Geze, Horman, Assa Abloy (Yale)
Fire Seal, Fire smoke Seal	3M, Hilti, Dorma, Sealz, Lorient, Kelargo, Raven
Fire rated Glass	Vetrotech Saint-Gobain, Pyroguard, Glaverbel, Schott - Pyran, Pyroswiss
Fire rated Glass fixing gasket, tape	Karfani, 3M
Floor hardening compound	JBA, Ardex endura, Fosroc, Basf, Sika, Sunanda chemicals
Flush Door Shutter (Factory pressed laminated)	Century, Greenply, Duroply, Kitply, Uniply, Anchor
Fabric (Acoustic and fire rated)	Atmosphere, Palette, D'décor Fabric, Response
Floor Drain	Neer, ACO, GMGR
Glass, Tinted Glass, High Performance Glass, Reflective	Saint Gobain, Asahi, Pilkington
Glass Processing	FG, Fuso, Asahi,
Glass, Tinted Glass, High Performance Glass, Reflective Glass	Saint Gobain, Modiguard (Gujarat Guardian), Pilkington, Asahi
Glass Processing	FG, Fuso, Asahi, Saint Gobain

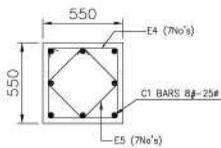
Material / Item	Approved Make
Glass Fibre Acoustical Tiles	ECOPHON, Armstrong, Anutone, AMF
Grab Bars and Disabled Hardware	Cera, Jaquar, Hindware, Dorma
Gypsum plaster	Stain Gobain, Perma board or approved
Grab Bars and Disabled	Cera, Jaquar, Hindware, Dorma
Gypsum ceiling board	Saint Gobain, Knauf, USG Boral
Gypsum plaster	Stain Gobain, Perma board approved equivalent
Glass	Saint Gobain, Modifloat, Pilkington
GI channels	Gypsteel, Anutone, Hillpoint Diamond Frames.
Heavy duty Vitrified Tile 16mm	Somany , Johnson , Nitco
Laminates	Marino, Century, Greenlam, Formica, Sunmica,
Laminated Shuttering Ply	Green Ply , Century Ply, Archidply
Laminated wooden slats	Hillpoint, Anutone, Topakustik Tranquil
Masking Tapes	3M, Sun Control, Wonder Polymer. Essentra
Metal Ceilings	Luxalon, Armstrong, Hunter Douglas, Saint
Metal Doors (Non Fire rated)	Shakti Horman, Naviar, Ahlada, Metaflex, Pacific
Mirrors	Saint Gobain, Modi Guard (Gujarat Guardian), Asahi, HNG, Pilkington
Non shrink cementious precision (anchoring) grout	Fosroc, Sika, Ardex Endura, BASF
PAINT - Cement Based	ICI Dulux, Berger Paints, Asian, Nerolac, Nippon
Paint - Acrylic, Synthetic Enamel, Acrylic emulsion- interior and exterior	Asian Paints, Akzo Nobel (Dulux), Berger, Nerolac, Jotun, Nippon
Paint - Texture Paints (Interior, Exterior)	Asian, Jotun, ICI Dulux, Berger, Nippon
Paint - Oil Bound Distemper & Dry Distemper	Asian Paints, AkzoNobel (ICI Dulux), Berger, Nippon
Paint - PU paint, epoxy paint and	Asian, Nippon, ICI, Berger, Jotun, Nippon
Polish for wooden work	MRF, Asian
Polysulphide Sealant	Fosroc, Dow corning, Sika, MC-bauchemie
Polyurethane Concrete Flooring, Epoxy flooring, Self Levelling compound	BASF, Fosroc, Ardex Endura, MYK Schomburg, Sika,
Polyurethane overdeck insulation foam	BASF, Pidilite, Ecmass, Lloyd Insulations
Polyster Powder coating/ PVDF	Jotun, Akzo nobel (Interpon), Valspar, Asian PPG
Precast concrete tiles, Interlocking Paving, Brick paver,	Vyara, Basant betons, Super Decorative floorings, Ultra Tiles, Unistone, Nimco, Raise Stone.
Pre cast Concrete Landscape elements, gratings, kerb, Drain	Vyara, Basant betons, Super decorative floorings, KK Manholes & Gratings, Nimco, Raise Stone
Precoated Galvanised Sheets	Tata-Blue scope, Jindal, Everest, Interarch
Plain gypsum plaster board	Gyproc, USG Boral, Knauf Gypsum.
Silicon Gaskets	Sree Gaurav, Roop
Silicone Sealant	Wacker, Dow Corning, GE momentive, MC-bauchemie, Pidilite
Stainless Steel	SAIL, Jindal

Material / Item	Approved Make
Stainless Steel Bolts, Washers and Nuts, Pressure plates, screws	Kundan, Puja, Atu, GKW, knettlefoldl
Stainless Steel Friction Stay	Giesse, Securistyle, Cotswold, Hefele
Structural Silicon sealant, Weather Silicone	Dow Corning, Momentive (GE)
Structure Steel & Hallow Section Producers only	SAIL, TATA (TISCO), RINL, Jindal steel & Power (JSPL) or approved equivalent for non-structural
Suspended ceiling system	Armstrong, Saint Gobain, USG Boral, Knauf,
Tensile Fabric Roofing	Ferrari, Saint Gobain, Melher
Water Stops - Hydrophilic Swellable rubber strip	Sika, BASF, Fosroc, Hydrotile, Penetron

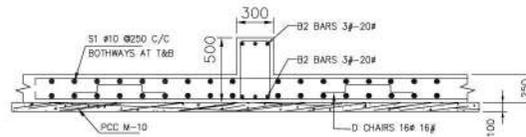
RCC RAFT FOUNDATION FOR 40M HIGH GROUND BASED MW TOWER



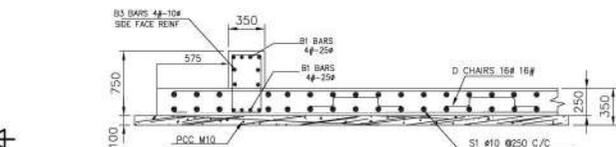
SECTION B-B



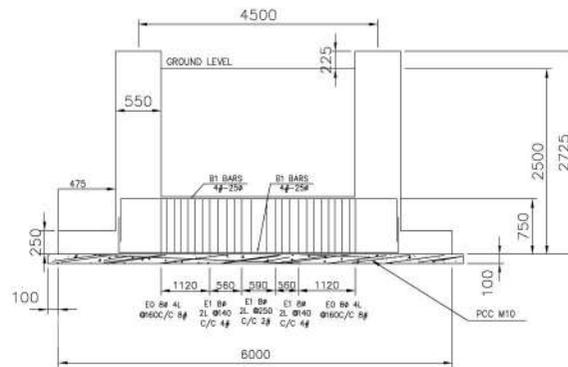
SECTION C-C
(ALL RINGS B#)



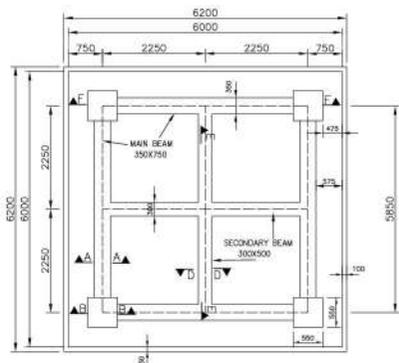
SECTION D-D



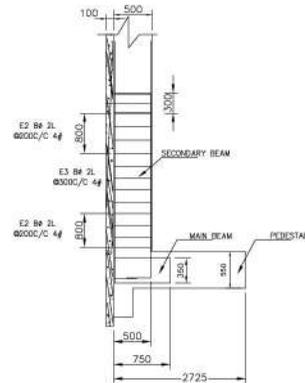
SECTION A-A



SECTION F-F



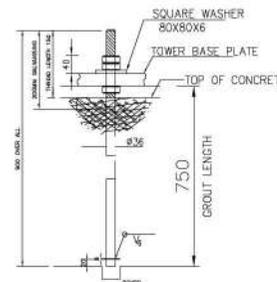
PLAN OF RAFT SLAB



SECTION E-E



BASE PLATE



ELEVATION
(#36X900 LONG)

BILL OF MATERIAL

S.NO	ITEMS	UNIT	TOTAL QUANTITY
1	R.C.C	CUM	17.39
2	P.C.C	CUM	3.844
3	STEEL	KG	2027.16
4	EXCAVATION	CUM	114.08

NOTES

- ALL DIMENSIONS ARE IN mm UNLESS STATED OTHERWISE
- ALL BARS ARE OF HIGH YIELD DEFORMED BARS CONFORMING TO IS:1786.
- CEMENT CONCRETE MIX FOR R.C.C WORK SHALL BE OF GRADE M-20.
- CONCRETE SHOULD BE MECHANICALLY MIXED AND VIBRATED.
- SPLICING OF BARS SHOULD NOT BE MORE THAN 50 PERCENT AT ANY LOCATION.
- CLEAR COVER FOR REINFORCEMENT SHOULD BE
 - COLUMN/PEDASTAL 40MM
 - BASE SLAB/BEAM 50MM
 - AT END 25MM OR TWICE BAR DIA WHICHEVER IS MORE.
- SAFE BEARING CAPACITY OF SOIL CONSIDERED 10.0 T/M²
- PROPER CURING OF CONCRETE SHOULD BE DONE.
- 100mm THICK CONCRETE OF GRADE M-10 TO BE PROVIDED UNDER EACH FOUNDATION.
- BENDING OF BARS SHALL BE ACCORDING TO IS:2502-1963
- MINOR MODIFICATIONS MAY BE DONE AT SITE IN CONSTRUCTION WITH SITE ENGINEER.
- DIMENSIONS OF BARS ARE ALONG THE CENTRE LINES.

BAR BENDING SCHEDULE

TYPE OF BAR	SHAPE OF BAR
A	
B	
C	
D	
E	

MARK	TYPE	DIA mm	a	b	c	LENGTH	NO'S	WT KG
S1	A	10	5900			5900	100	364.20
B1	B	25	4950	250		5450	32	672.84
B2	B	20	4750	200		5150	12	152.59
B3	A	10	4950			4950	16	48.89
C1	C	25	2615	300		2915	38.86	437.03
E0	E	8	650	250	80	1960	128	99.11
E1	E	8	650	250	80	1960	32	24.78
E1	E	8	650	250	80	1960	8	6.19
E2	E	8	400	200	80	1360	32	17.19
E3	E	8	400	200	80	1360	16	8.60
E4	E	8	470	470	80	2040	36	29.28
E5	E	8	332	332	80	1489	36	21.38
D	D	16	800	110	450	1920	16	48.55
TOTAL								1930.62
5% EXTRA DUE TO SPLICES								96.53
GRAND TOTAL								2027.16

CLIENT:



4G SATURATION PROJECT
TYPICAL SITE DIAGRAM

ENGINEERED BY:-



BONDADA ENGINEERING PRIVATE LIMITED
PLOT.NO.37,ASHOK MANOJ NAGAR,KAPRA,
HYDERABAD - 500056
www.bondada.net

DRAWING TITLE: 6 SBC FOUNDATION DRAWING

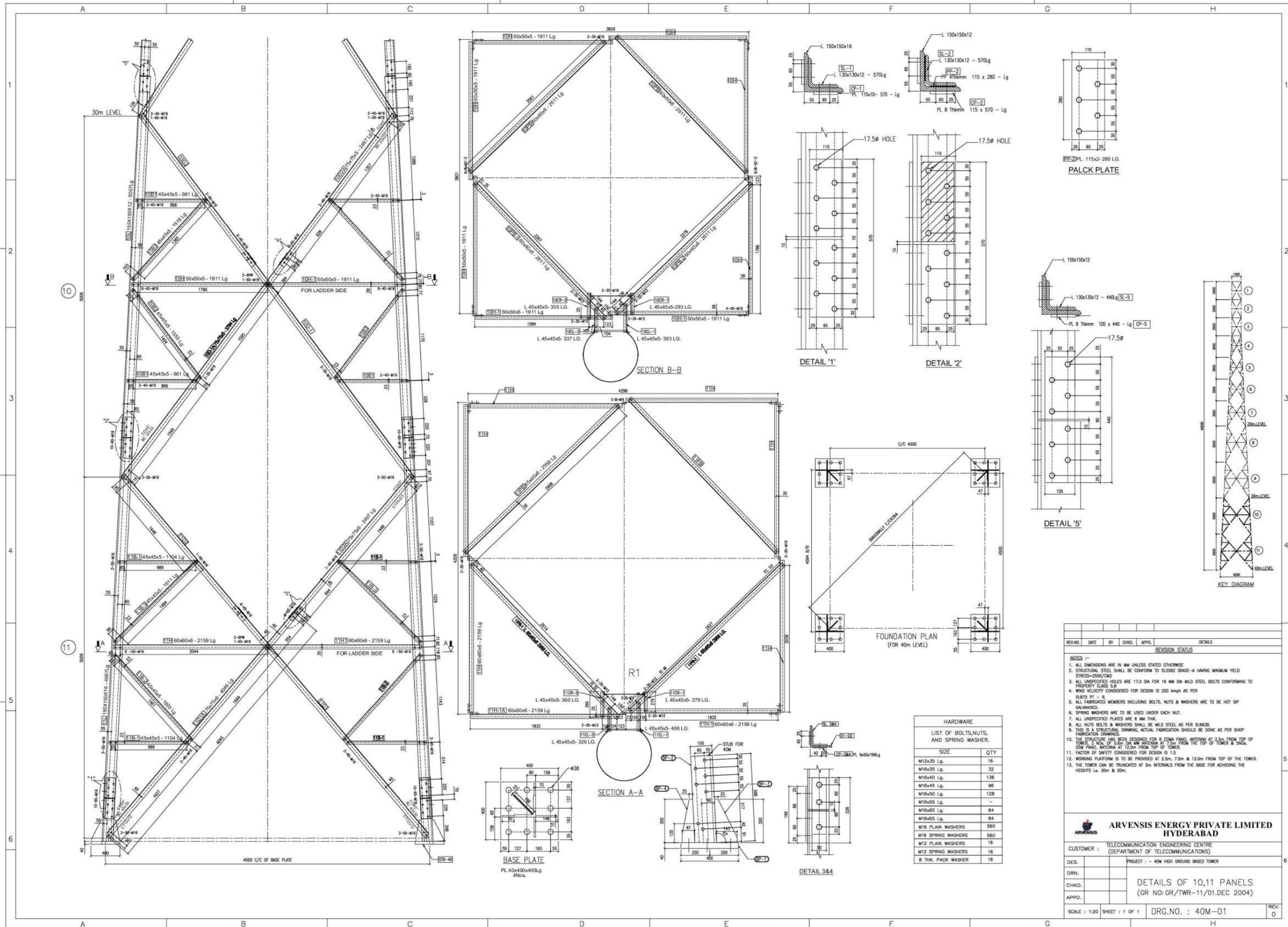
SHEET: 1

TOWER:

40M-4L-ANGULAR TOWER

SIZE: REV NO:

A4 R0



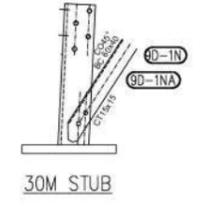
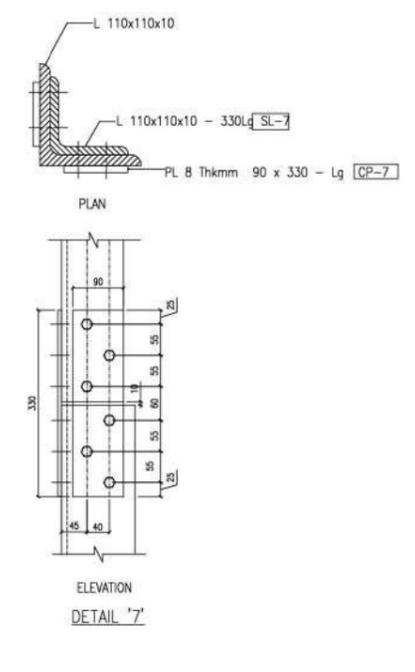
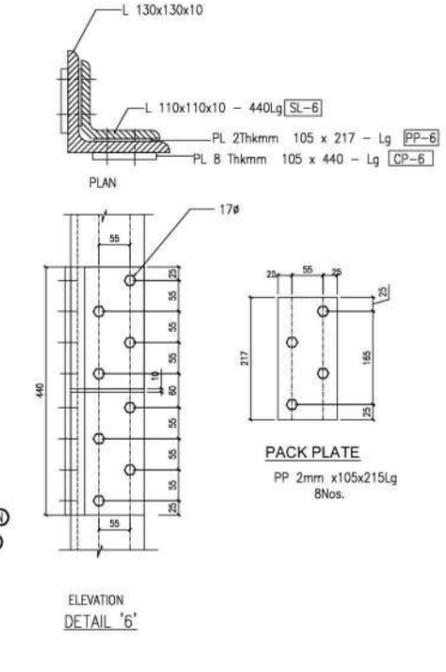
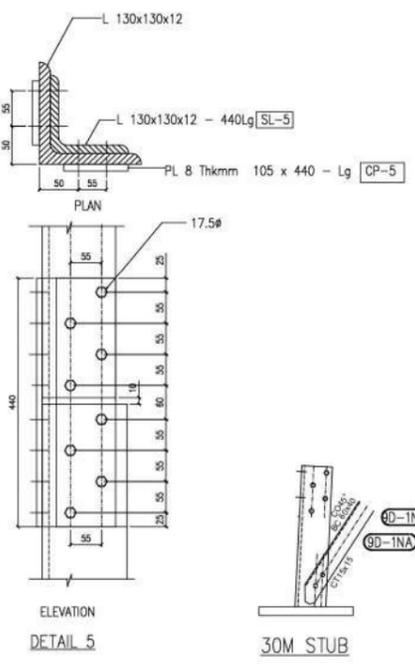
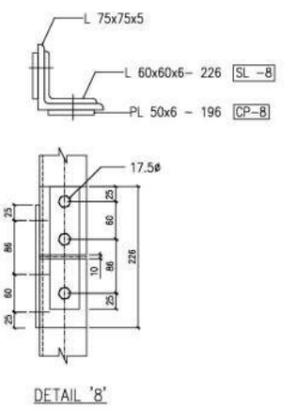
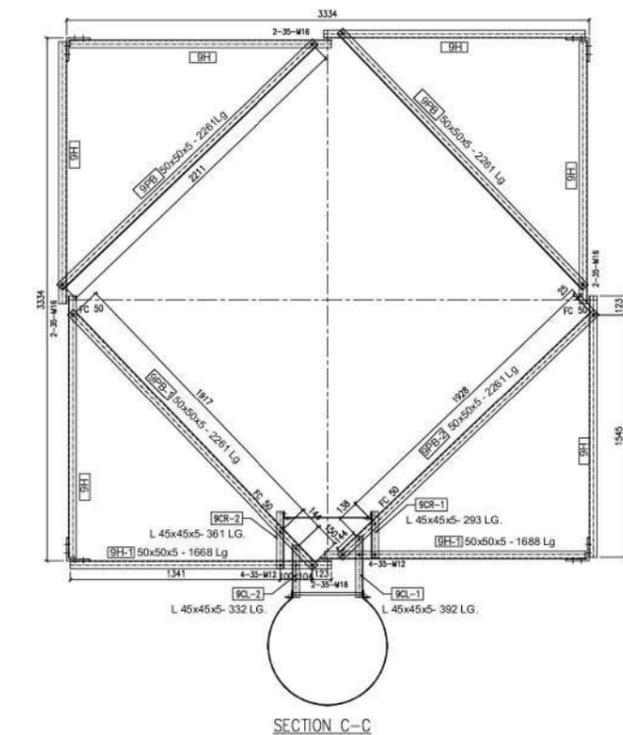
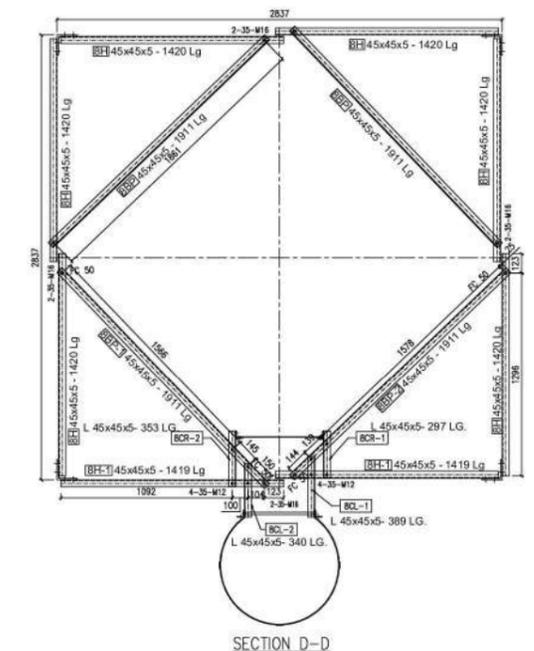
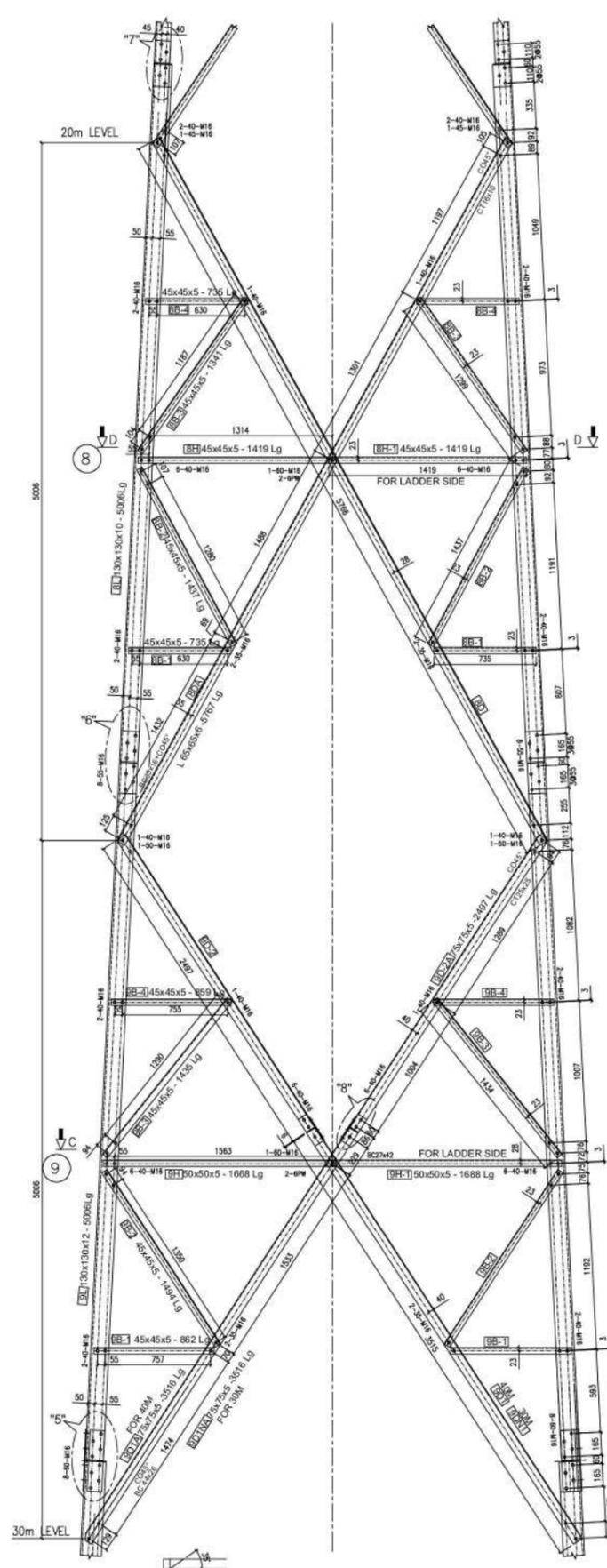
REVNO.	DATE	BY	CHKD.	APPD.	DETAILS
REVISION STATUS					

- NOTES :-**
1. ALL DIMENSIONS ARE IN MM UNLESS STATED OTHERWISE
 2. STRUCTURAL STEEL SHALL BE CONFORM TO IS2062 GRADE-A HAVING MINIMUM YIELD STRESS=250N/CM²
 3. ALL UNSPECIFIED HOLES ARE 17.5 DIA FOR 16 MM DIA MILD STEEL BOLTS CONFORMING TO PROPERTY CLASS 5.8
 4. WIND VELOCITY CONSIDERED FOR DESIGN IS 200 kmph AS PER IS:875 PT - R.
 5. ALL FABRICATED MEMBERS INCLUDING BOLTS, NUTS & WASHERS ARE TO BE HOT DIP GALVANIZED.
 6. SPRING WASHERS ARE TO BE USED UNDER EACH NUT.
 7. ALL UNSPECIFIED PLATES ARE 6 MM THK.
 8. ALL NUTS BOLTS & WASHERS SHALL BE MILD STEEL AS PER IS:6639.
 9. THIS IS A STRUCTURAL DRAWING, ACTUAL FABRICATION SHOULD BE DONE AS PER SHIP FABRICATION DRAWINGS.
 10. THE STRUCTURE HAS BEEN DESIGNED FOR 6 GSM PANEL ANTENNA AT 2.5m FROM TOP OF TOWER, 3 Nos. OF 1.0m DIA MM ANTENNA AT 7.5m FROM THE TOP OF TOWER & SMS. GSM PANEL ANTENNA AT 12.0m FROM TOP OF TOWER.
 11. FACTOR OF SAFETY CONSIDERED FOR DESIGN IS 1.5
 12. WORKING PLATFORM IS TO BE PROVIDED AT 2.5m, 7.5m & 12.0m FROM TOP OF THE TOWER.
 13. THE TOWER CAN BE TRUNCATED AT 5m INTERVALS FROM THE BASE FOR ACHIEVING THE HEIGHTS i.e. 30m & 20m.

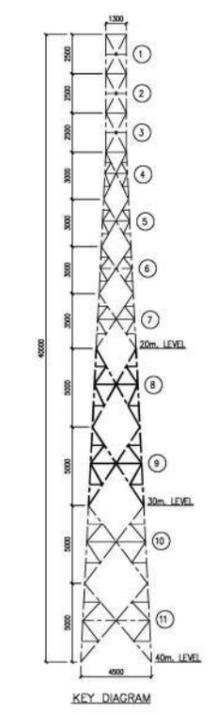
HARDWARE	
LIST OF BOLTS,NUTS, AND SPRING WASHER.	
SIZE	QTY
M12x35 Lg.	16
M16x35 Lg.	32
M16x40 Lg.	136
M16x45 Lg.	96
M16x50 Lg.	128
M16x55 Lg.	-
M16x60 Lg.	84
M16x65 Lg.	84
M16 PLAIN WASHERS	560
M16 SPRING WASHERS	560
M12 PLAIN WASHERS	16
M12 SPRING WASHERS	16
8 THK. PACK WASHER	16

ARVENIS ENERGY PRIVATE LIMITED HYDERABAD
 CUSTOMER : TELECOMMUNICATION ENGINEERING CENTRE (DEPARTMENT OF TELECOMMUNICATIONS)
 PROJECT : - 40M HIGH GROUND BASED TOWER

DES. _____
 DRN. _____
 CHKD. _____
 APPD. _____
DETAILS OF 10,11 PANELS
 (GR NO:GR/TWR-11/01.DEC 2004)
 SCALE : 1:20 SHEET : 1 OF 1 DRG.NO. : 40M-01 REV: 0



HARDWARE	
LIST OF BOLTS, NUTS, AND SPRING WASHER.	
SIZE	QTY
M12x35 Lg.	16
M16x35 Lg.	48
M16x40 Lg.	248
M16x45 Lg.	8
M16x50 Lg.	8
M16x55 Lg.	64
M16x60 Lg.	72
M16x65 Lg.	-
M16 PLAIN WASHERS	448
M16 SPRING WASHERS	448
M12 PLAIN WASHERS	16
M12 SPRING WASHERS	16
6 THK. PACK WASHER	16



REVNO.	DATE	BY	CHKD.	APPD.	DETAILS
REVISION STATUS					

NOTES :-

- ALL DIMENSIONS ARE IN MM UNLESS STATED OTHERWISE
- STRUCTURAL STEEL SHALL BE CONFORM TO IS2062 GRADE-A HAVING MINIMUM YIELD STRESS=250/CM2
- ALL UNSPECIFIED HOLES ARE 17.5 DIA FOR 16 MM DIA MILD STEEL BOLTS CONFORMING TO PROPERTY CLASS 5.8
- WIND VELOCITY CONSIDERED FOR DESIGN IS 200 kmph AS PER IS:875 PT - R.
- ALL FABRICATED MEMBERS INCLUDING BOLTS, NUTS & WASHERS ARE TO BE HOT DIP GALVANIZED.
- SPRING WASHERS ARE TO BE USED UNDER EACH NUT.
- ALL UNSPECIFIED PLATES ARE 6 MM THK.
- ALL NUTS BOLTS & WASHERS SHALL BE MILD STEEL AS PER IS:6639.
- THIS IS A STRUCTURAL DRAWING. ACTUAL FABRICATION SHOULD BE DONE AS PER SHIP FABRICATION DRAWINGS.
- THE STRUCTURE HAS BEEN DESIGNED FOR 6 CSMA PANEL ANTENNA AT 2.5m FROM TOP OF TOWER. 3 Nos. OF 1.0m DIA MM ANTENNA AT 7.5m FROM THE TOP OF TOWER & SHMS. CSMA PANEL ANTENNA AT 12.0m FROM TOP OF TOWER.
- FACTOR OF SAFETY CONSIDERED FOR DESIGN IS 1.5
- WORKING PLATFORM IS TO BE PROVIDED AT 2.5m, 7.5m & 12.0m FROM TOP OF THE TOWER.
- THE TOWER CAN BE TRUNCATED AT 5m INTERVALS FROM THE BASE FOR ACHIEVING THE HEIGHTS i.e. 30m & 20m.

ARVENSIS ENERGY PRIVATE LIMITED
HYDERABAD

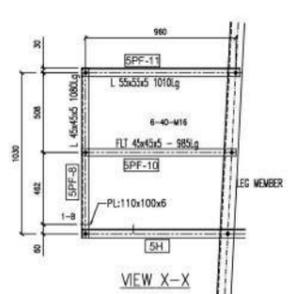
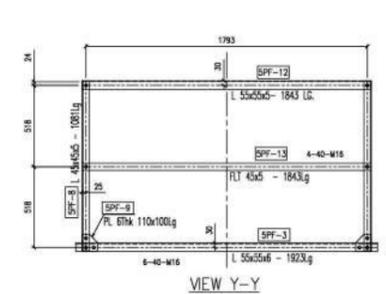
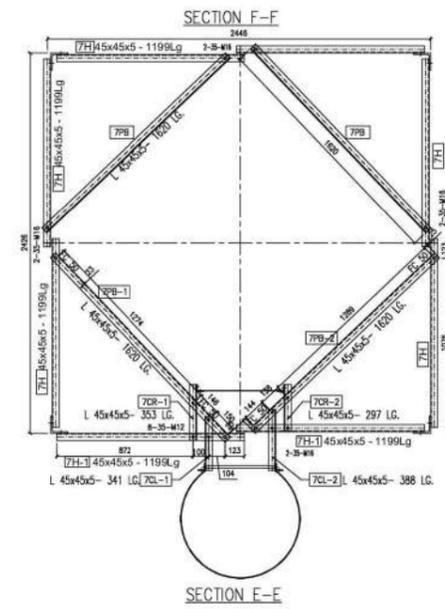
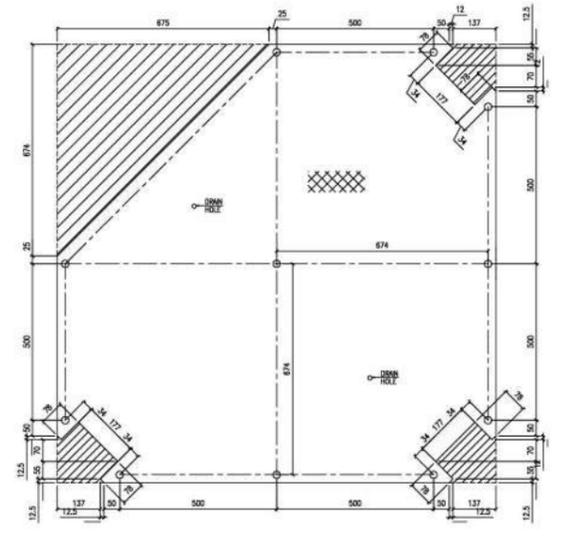
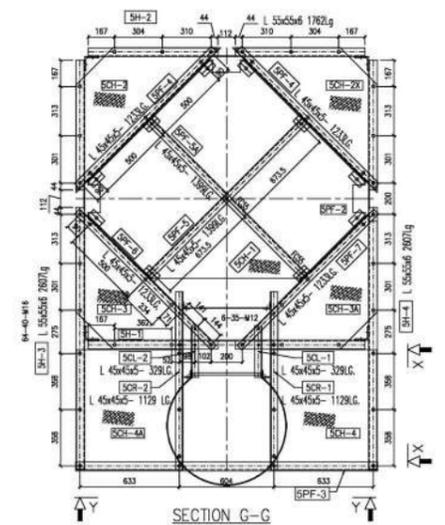
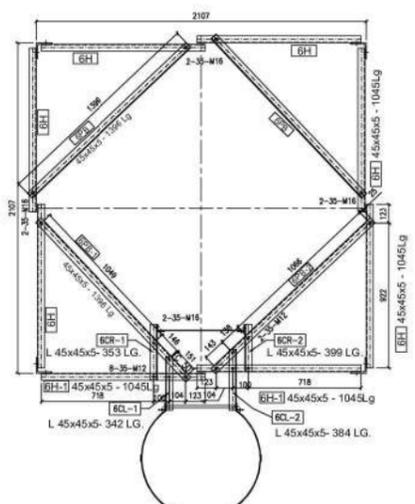
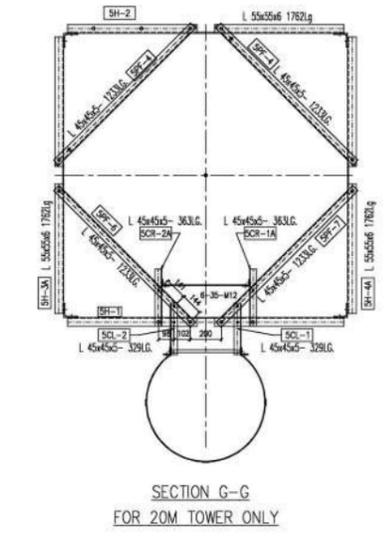
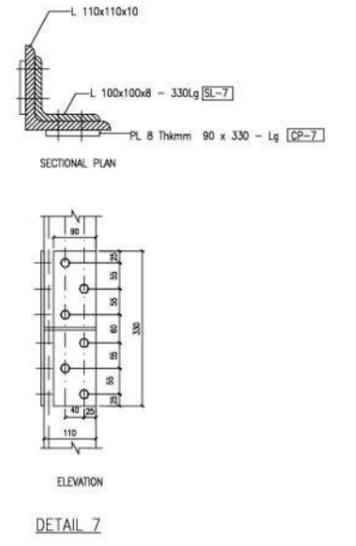
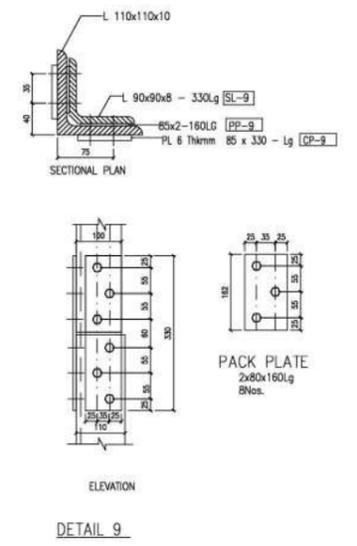
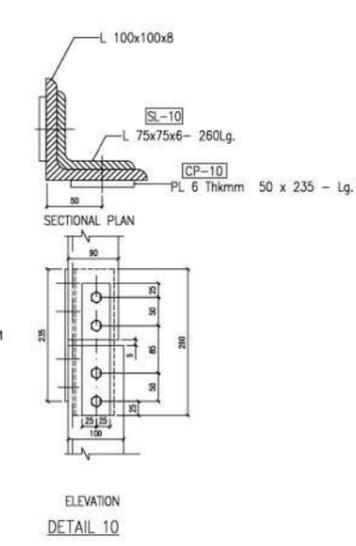
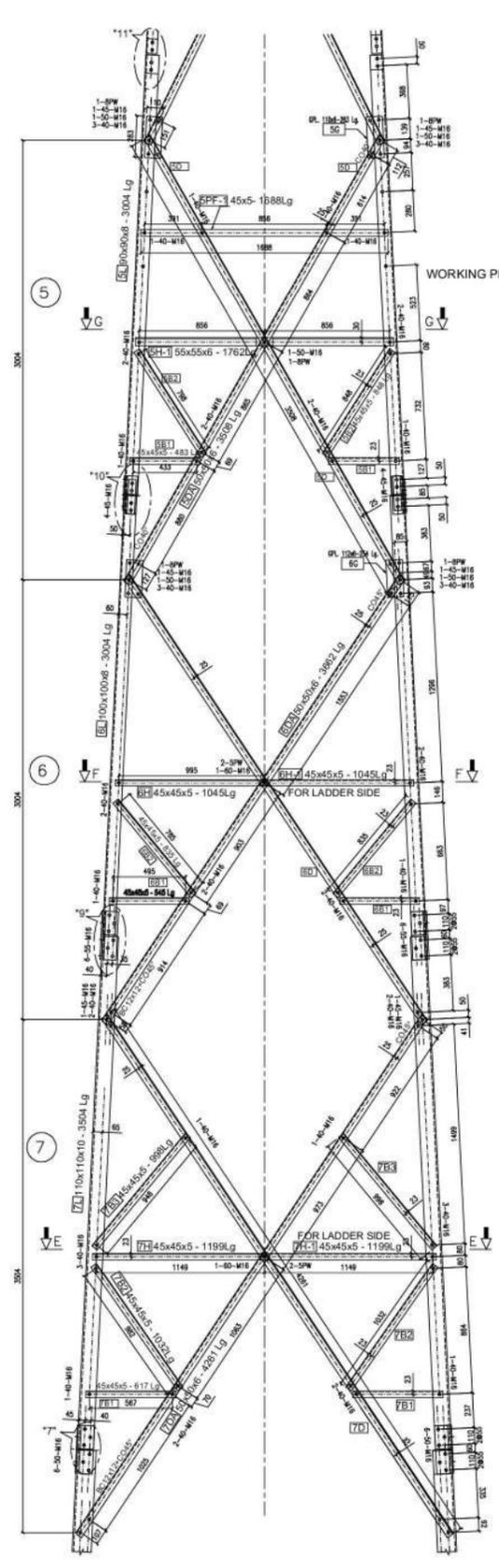
CUSTOMER : TELECOMMUNICATION ENGINEERING CENTRE
 (DEPARTMENT OF TELECOMMUNICATIONS)

PROJECT : - 40M HIGH GROUND BASED TOWER

DES. _____
 DRN. _____
 CHKD. _____
 APPD. _____

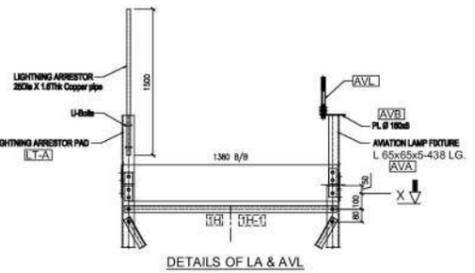
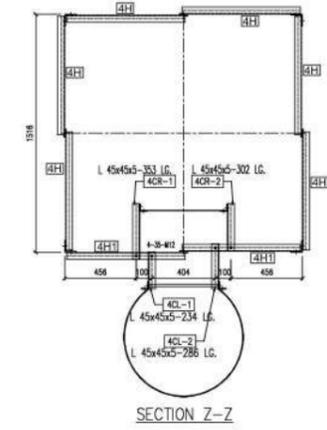
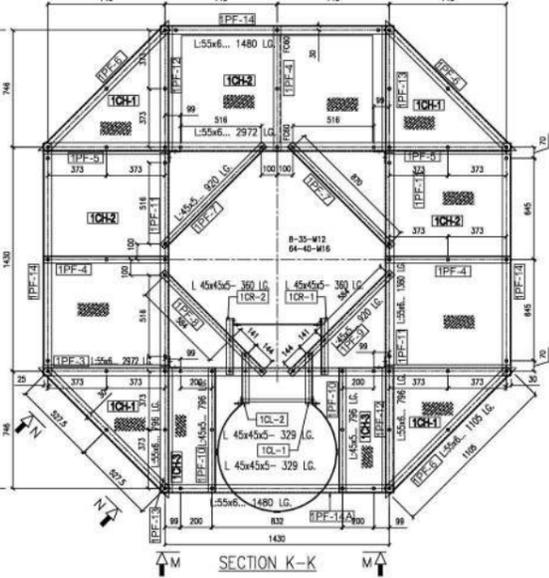
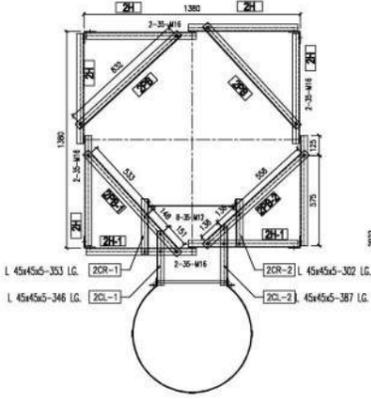
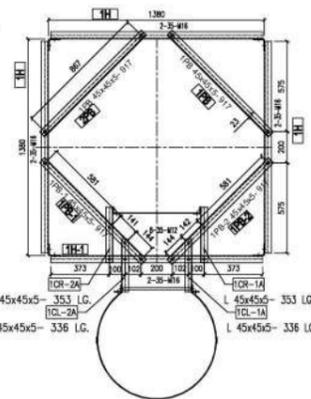
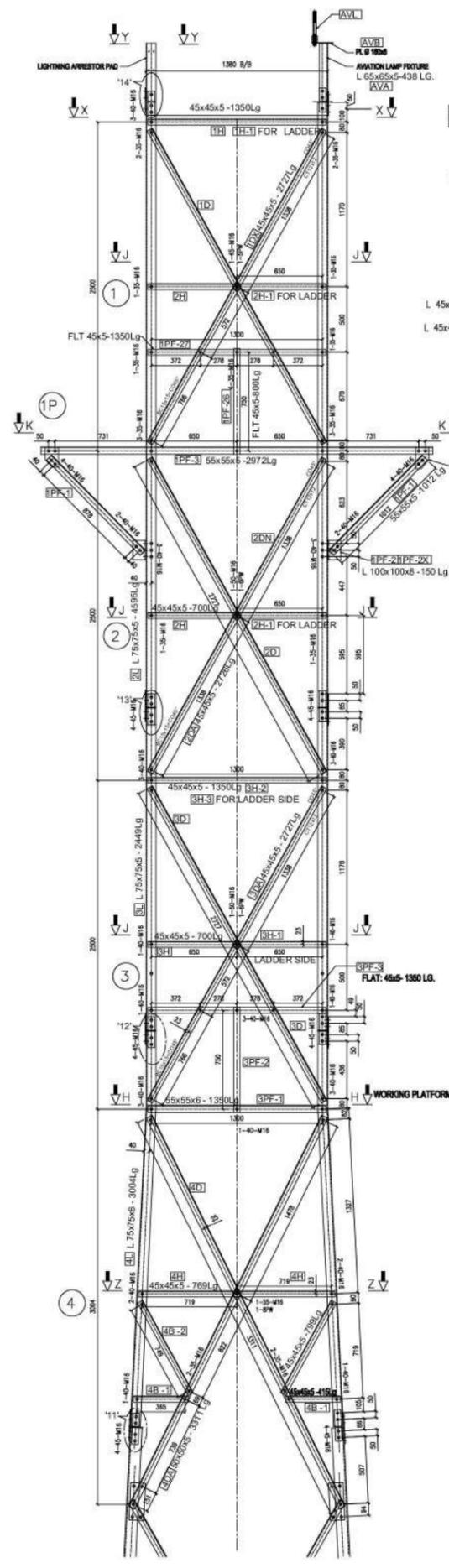
DETAILS OF 8,9 PANELS
 (GR NO:GR/TWR-11/01.DEC 2004)

SCALE : 1:20 SHEET : 1 OF 1 DRG.NO. : 40M-02 REV. 0



HARDWARE	
LIST OF BOLTS, NUTS, AND SPRING WASHER.	
SIZE	QTY
M12x35 Lg.	24
M16x35 Lg.	16
M16x40 Lg.	332
M16x45 Lg.	56
M16x50 Lg.	68
M16x55 Lg.	48
M16x60 Lg.	8
M16x65 Lg.	-
M16 PLAIN WASHERS	528
M16 SPRING WASHERS	528
M12 PLAIN WASHERS	24
M12 SPRING WASHERS	24
8 THK. PACK WASHER	4
5 THK. PACK WASHER	16

REVNO.	DATE	BY	CHKD.	APPD.	DETAILS
REVISION STATUS					
NOTES :-					
1. ALL DIMENSIONS ARE IN MM UNLESS STATED OTHERWISE					
2. STRUCTURAL STEEL SHALL BE CONFORM TO IS2062 GRADE-A HAVING MINIMUM YIELD STRESS=250/CM2					
3. ALL UNSPECIFIED HOLES ARE 17.5 DIA FOR 16 MM DIA MILD STEEL BOLTS CONFORMING TO PROPERTY CLASS 5.8					
4. WIND VELOCITY CONSIDERED FOR DESIGN IS 200 kmph AS PER IS:875 PT - R.					
5. ALL FABRICATED MEMBERS INCLUDING BOLTS, NUTS & WASHERS ARE TO BE HOT DIP GALVANIZED.					
6. SPRING WASHERS ARE TO BE USED UNDER EACH NUT.					
7. ALL UNSPECIFIED PLATES ARE 6 MM THK.					
8. ALL NUTS BOLTS & WASHERS SHALL BE MILD STEEL AS PER IS:6639.					
9. THIS IS A STRUCTURAL DRAWING. ACTUAL FABRICATION SHOULD BE DONE AS PER SHIP FABRICATION DRAWINGS.					
10. THE STRUCTURE HAS BEEN DESIGNED FOR 6 GSM PANEL ANTENNA AT 2.5m FROM TOP OF TOWER. 3 Nos. of 1.0m DIA MM ANTENNA AT 7.5m FROM THE TOP OF TOWER & 5MS. GSM PANEL ANTENNA AT 12.0m FROM TOP OF TOWER.					
11. FACTOR OF SAFETY CONSIDERED FOR DESIGN IS 1.5					
12. WORKING PLATFORM IS TO BE PROVIDED AT 2.5m, 7.5m & 12.0m FROM TOP OF THE TOWER.					
13. THE TOWER CAN BE TRUNCATED AT 5m INTERVALS FROM THE BASE FOR ACHIEVING THE HEIGHTS Ls. 30m & 20m.					
ARVENIS ENERGY PRIVATE LIMITED HYDERABAD					
CUSTOMER : TELECOMMUNICATION ENGINEERING CENTRE (DEPARTMENT OF TELECOMMUNICATIONS)					
PROJECT : - 40M HIGH GROUND BASED TOWER					
DETAILS OF 5,6,7 PANELS (GR NO:GR/TWR-11/01.DEC 2004)					
SCALE : 1:20 SHEET : 1 OF 1 DRG.NO. : 40M-03					



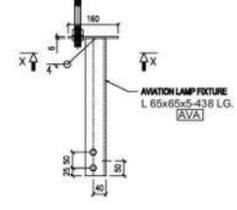
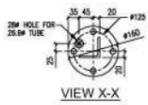
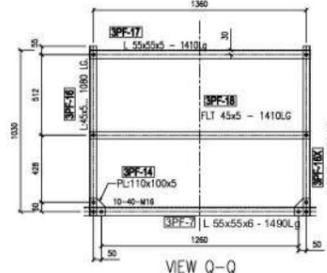
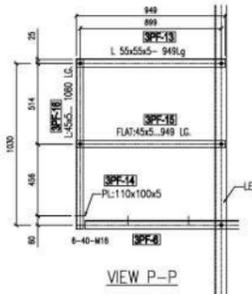
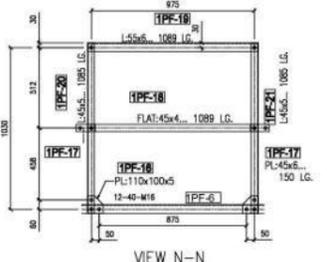
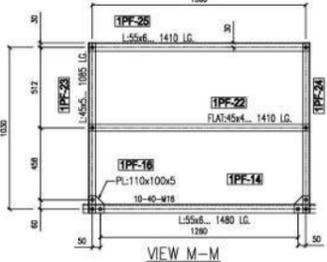
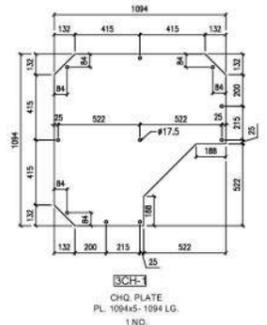
SECTION X-X

SECTION J-J

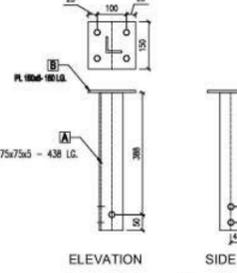
SECTION K-K

SECTION Z-Z

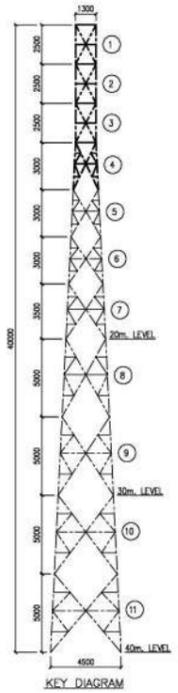
DETAILS OF LA & AVL



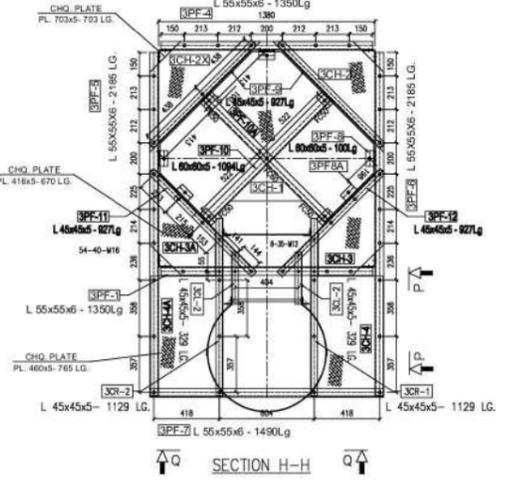
DETAIL OF AVIATION LAMP PAD
(Aviation Lamp arrangement for Twin Aviation Lamps on Diagonally opposite sides.)



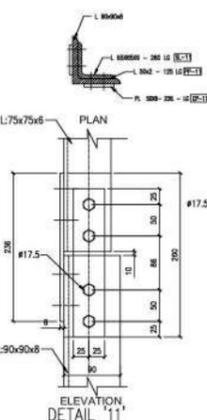
DETAIL OF LIGHTING ARRESTER PAD



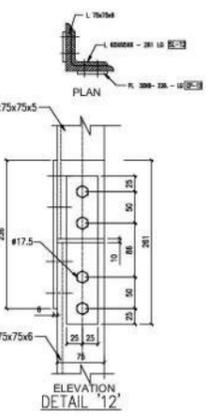
KEY DIAGRAM



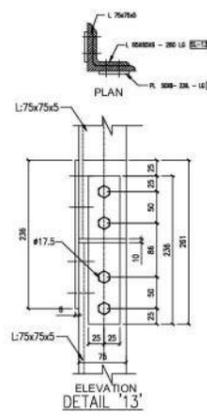
SECTION H-H



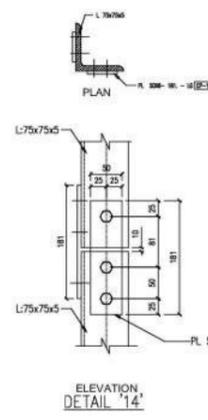
PACK PLATE
(PL 50x2-100 LG.)



ELEVATION DETAIL 12



ELEVATION DETAIL 13



ELEVATION DETAIL 14

HARDWARE	
LIST OF BOLTS, NUTS, AND SPRING WASHER.	
SIZE	QTY
M12x35 Lg.	36
M16x35 Lg.	112
M16x40 Lg.	446
M16x45 Lg.	100
M16x50 Lg.	8
M16x55 Lg.	4
M16x60 Lg.	-
M16x65 Lg.	-
M16x65 Lg.	-
M16 PLAIN WASHERS	670
M16 SPRING WASHERS	670
M12 PLAIN WASHERS	36
M12 SPRING WASHERS	36
8 THK. PACK WASHER	4
6 THK. PACK WASHER	8
5 THK. PACK WASHER	4

- REVISION STATUS
- | REVNO. | DATE | BY | CHKD. | APPD. | DETAILS |
|--------|------|----|-------|-------|---------|
| | | | | | |
- NOTES :-
- ALL DIMENSIONS ARE IN MM UNLESS STATED OTHERWISE.
 - STRUCTURAL STEEL SHALL BE CONFORM TO IS2062 GRADE-A HAVING MINIMUM YIELD STRESS=250/CM2
 - ALL UNSPECIFIED HOLES ARE 17.5 DIA FOR 16 MM DIA MILD STEEL BOLTS CONFORMING TO PROPERTY CLASS 5.8
 - WIND VELOCITY CONSIDERED FOR DESIGN IS 200 kmph AS PER IS:875 PT - R.
 - ALL FABRICATED MEMBERS INCLUDING BOLTS, NUTS & WASHERS ARE TO BE HOT DIP GALVANIZED.
 - SPRING WASHERS ARE TO BE USED UNDER EACH NUT.
 - ALL UNSPECIFIED PLATES ARE 6 MM THK.
 - ALL NUTS BOLTS & WASHERS SHALL BE MILD STEEL AS PER IS:6639.
 - THIS IS A STRUCTURAL DRAWING. ACTUAL FABRICATION SHOULD BE DONE AS PER SHIP FABRICATION DRAWINGS.
 - THE STRUCTURE HAS BEEN DESIGNED FOR 6 GSM PANEL ANTENNA AT 2.5m FROM TOP OF TOWER, 3 Nos. OF 0.1m DIA MM ANTENNA AT 7.5m FROM THE TOP OF TOWER & SHMS. GSM PANEL ANTENNA AT 12.0m FROM TOP OF TOWER.
 - FACTOR OF SAFETY CONSIDERED FOR DESIGN IS 1.5
 - WORKING PLATFORM IS TO BE PROVIDED AT 2.5m, 7.5m & 12.0m FROM TOP OF THE TOWER.
 - THE TOWER CAN BE TRUNCATED AT 5m INTERVALS FROM THE BASE FOR ACHIEVING THE HEIGHTS i.e. 30m & 20m.

ARVENSIS ENERGY PRIVATE LIMITED HYDERABAD

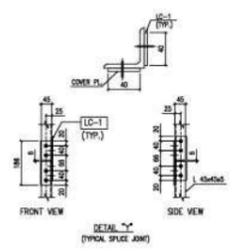
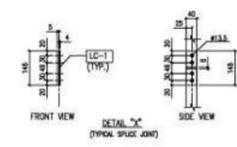
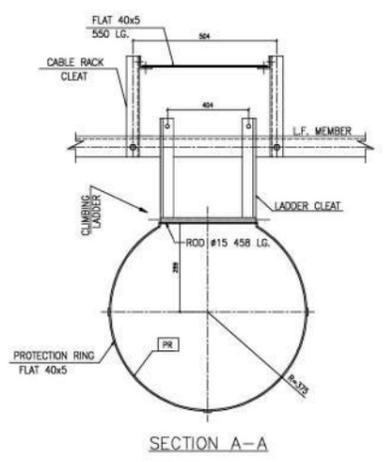
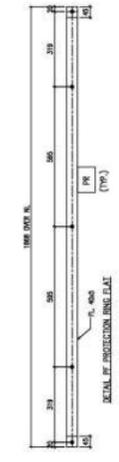
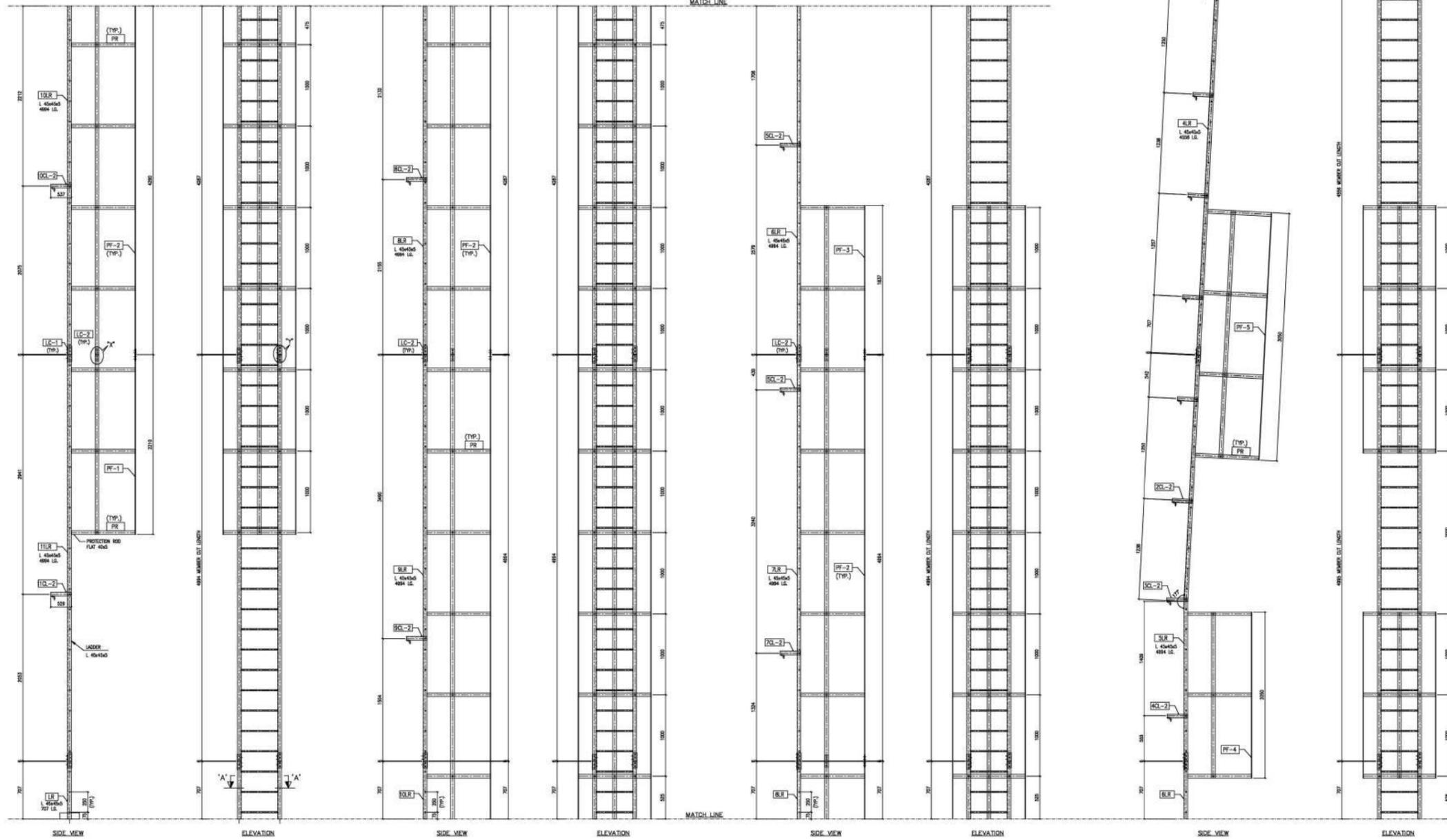
CUSTOMER : TELECOMMUNICATION ENGINEERING CENTRE (DEPARTMENT OF TELECOMMUNICATIONS)

PROJECT : - 40M HIGH GROUND BASED TOWER

DES. DRN. CHKD. APPD.

DETAILS OF 1,2,3,4 PANELS (GR NO:GR/TWR-11/01.DEC 2004)

SCALE : 1:20 SHEET : 1 OF 1 DRG.NO. : 40M-04 REV. 0



Notes:
 All Dimensions are in MM
 ALL HOLES ARE $\phi 13.5$ UNLESS OTHERWISE SPECIFIED.
 FOR RUNGS $\phi 17.5$ UNLESS OTHERWISE SPECIFIED.
 FINISH: HOTDIP GALVANIZING AS PER IS:4759 (1996)

REVNO.	DATE	BY	CHKD.	APPD.	DETAILS
REVISION STATUS					
NOTES :-					
1. ALL DIMENSIONS ARE IN MM UNLESS STATED OTHERWISE					
2. STRUCTURAL STEEL SHALL BE CONFORM TO IS:2062 GRADE-A HAVING MINIMUM YIELD STRESS=2500/CM2					
3. ALL UNSPECIFIED HOLES ARE 17.5 DIA FOR 16 MM DIA MILD STEEL BOLTS CONFORMING TO PROPERTY CLASS 5.8					
4. WIND VELOCITY CONSIDERED FOR DESIGN IS 200 kmph AS PER IS:875 PT - R.					
5. ALL FABRICATED MEMBERS INCLUDING BOLTS, NUTS & WASHERS ARE TO BE HOT DIP GALVANISED.					
6. SPRING WASHERS ARE TO BE USED UNDER EACH NUT.					
7. ALL UNSPECIFIED PLATES ARE 6 MM THK.					
8. ALL NUTS BOLTS & WASHERS SHALL BE MILD STEEL AS PER IS:6639.					
9. THIS IS A STRUCTURAL DRAWING, ACTUAL FABRICATION SHOULD BE DONE AS PER SHIP FABRICATION DRAWINGS.					
10. THE STRUCTURE HAS BEEN DESIGNED FOR 6 GSM PANEL ANTENNA AT 2.5m FROM TOP OF TOWER, 3 NOS. OF 0.8m DIA MM ANTENNA AT 7.5m FROM THE TOP OF TOWER & 5NOS. GSM PANEL ANTENNA AT 12.0m FROM TOP OF TOWER.					
11. FACTOR OF SAFETY CONSIDERED FOR DESIGN IS 1.5					
12. WORKING PLATFORM IS TO BE PROVIDED AT 2.5m, 7.5m & 12.0m FROM TOP OF THE TOWER.					
13. THE TOWER CAN BE TRUNCATED AT 5m INTERVALS FROM THE BASE FOR ACHIEVING THE HEIGHTS i.e. 30m & 20m.					
ARVENSIS ENERGY PRIVATE LIMITED HYDERABAD					
CUSTOMER : TELECOMMUNICATION ENGINEERING CENTRE (DEPARTMENT OF TELECOMMUNICATIONS)					
DES.		PROJECT : - 40M HIGH GROUND BASED TOWER			
DRN.					
CHKD.		DETAILS OF ACCESS LADDER (GR NO: GR/TWR-11/01.DEC 2004)			
APPD.					
SCALE : 1:20 SHEET : 1 OF 1 DRG.NO. : 40M-05					REV. 0

