

LAKSHMIBAI NATIONAL INSTITUTE OF PHYSICAL EDUCATION, GWALIOR
(DEEMED TO BE UNIVERSITY)

TENDER DOCUMENT-CUM-FORM FOR

“Construction of 30.5 Meter High National Flag Mast at LNIPE , Gwalior as per technical specifications, details, drawing and design prescribed in the tender”

(A) ELIGIBILITY CRITERIA:

The bidding agencies are required to submit the technical bid in the format given at **Annexure ‘A’**, along with copies of following documents, duly signed/self-attested, for being declared to be eligible:-

1. EMD of Rs. 51,000/- in the form of Demand Draft in favour of “Registrar, LNIPE” payable at Gwalior.
2. Certificate of incorporation of the bidder (copy of certificate to be enclosed).
3. CGST/SGST Registration (Certificate along with GST Returns of the preceding one month to be enclosed).
4. Income Tax Permanent Account Number (PAN) (copy of PAN Card to be enclosed).
5. Income Tax Return of last 3 financial years up to 31.3.2018 (Assessment Year 2018-19). The average Annual financial turnover during the last 3 years, ending 31st March 2018, should be at least 30% of the estimated cost (“Certificate of Turnover” issued by a Chartered Accountant in the format prescribed in the tender at **Annexure - B**, along with audited Annual Statement of Accounts and Income Tax Returns of these three years to be enclosed).
6. Experience of having successfully/satisfactorily completed the similar nature of work i.e. constructions / installations of at least three (3) Nos. High National Flags of at least 30.5 Mtrs. in height in Government Department/ Organizations/ PSUs/Educational Institutions/Private Organizations during last seven years (up to October 2019) works each costing not less than the amount equal to 40% of the present estimated cost.
(Copies of work orders as above with their respective contract completion certificates to be enclosed) .
7. A declaration to the following effect is required to be submitted on affidavit on non-judicial stamp of Rs. 100/- that
 - (a) There is no pending criminal case before any Court of law against the Proprietor / firm / Partner or the bidder company;
 - (b) The bidder has not defaulted from the payment of statutory dues like EPF, ESI, GST, Income Tax etc. during the last three years;
 - (c) The bidder is not blacklisted by any Government Organization/PSU/Autonomous Body/ Govt. Educational Institute/Private Organizations during the last three years;
 - (d) No contract of the bidder has been terminated before expiry of term during the last three years.



(B) FINANCIAL BID:

Financial bid will be submitted in the format at **Annexure 'C'**.

(C) PROCEDURE OF TENDER SUBMISSION:

1. Tenders are required to be submitted in a main sealed envelope super scribed as **"Construction of 30.5 Meter High National Flag Mast at LNIPE , Gwalior as per technical specifications, details, drawing and design prescribed in the tender"** and it has to be dropped in the tender box kept in the office of Deputy Registrar (Estate) by 3:00 PM on **19.12.2019**. The same can also be sent by speed post / registered post to the **Registrar, LNIPE, Mela Road, Gwalior 474 002 (MP)**, by clearly mentioning the above subject on the envelope, and in such cases, it would be responsibility of the bidder that the same is reached to the Institute by 3:00 PM on **19.12.2019**.
2. The main tender envelope should contain two sealed envelopes as under:-
 - Envelope No. 1** - Containing **"Technical Bid"** in format as per **Annexure 'A' & 'B'** along with required documents and Demand Draft of EMD;
 - Envelope No. 2** - **"Financial Bid"** in format as per **Annexure 'C'** rate/amount to be given in numerals as well as in words in the space provided for the purpose.
3. All pages of technical bid and financial bid shall be duly page-numbered and signed by the bidder at bottom.
4. Photo copies of all the documents shall be self-attested.
5. Conditional bids will not be accepted.
6. At any time prior to the opening of technical bids, the Institute may, for any reason, modify the tender document by suitable amendments/corrigendum through website of Institute. No separate communication shall be required to be sent to the prospective bidders.
7. The bidders will comply with the conditions mentioned in the tender document and accordingly clearly fill all the columns in both the formats (technical and financial), failing which, the Institute reserves the right to reject the same.
8. Incomplete tenders shall be summarily rejected.
9. The bids shall be opened as scheduled in the Notice Inviting Tender, in the presence of bidders or their authorized representatives, if any.
10. The financial bids of only technically qualified bidders shall be opened, who shall be informed about date & time of opening and may remain present at the time of opening.
11. In case there is public holiday on the scheduled date of opening of technical/financial bids, the same shall be opened on the next working day at the same time.
12. No correspondence shall be made with these bidders, whose bids are rejected on the basis of technical or financial.
13. The bidders are expected to see / inspect proposed site of the work in question, which is required to be declared in the tender form.
14. The contractors should also read the General condition of contract for CPWD works 2014, which will be a part of the agreement with amendments up to the date of receipt of tenders including the special conditions and particular specifications etc.



(D) TECHNICAL SPECIFICATIONS:

(i) Scope of work:

The scope of this specification covers the Supplying, transport, installation, testing and commissioning of the complete Flag system, using Raising and Lowering type of Flag mast towers, including the civil foundation works, as per details given in the **Appendix – 1** of technical bid.

(ii) Applicable standards:

The applicable codes followed for high mast designs are as follows:

1. TR. No. - 7: High Masts for Lighting of ILE, UK
2. IS 875 Part – 3 : Wind Loading
3. BS EN 10025:1993 : High Tensile Steel Sheets
4. BS EN ISO 1461 : Galvanization
5. SABS 0225:1991 : High Mast natural frequency calculation
6. IS 2062 Mild Steel
7. IS 3459 /2256 : Stainless Steel Wire Rope
8. IS 325 : Motor

(iii) Flag Mast:

POLE:


Structure details:

The Flag Mast shall be continuously tapered, polygonal cross sections (twenty sided) with the pulley box arrangement at the top. The structure gives good visual appearance and is based on proven design confirming to TR-7, to give assured performance, reliability and service.

The Masts are constructed from steel conforming to IS 2062 or BSEN 10025 and cut and folded to form twenty sided section and is telescopically jointed and fillet welded. Mast section delivered to site shall not have any intermediate joint. The Mast is provided with full-penetrated flange, which is free from any lamination or incursion. The welded connection of the base flange is fully developed to the strength of the entire section. The base flange is provided with supplementary gussets between the bolts to ensure elimination of helical stress concentration. For metal protection of the Mast, the entire fabricated Mast is hot dip galvanized internally and externally in single dip. The external surface of the mast is also applied with suitable Poly Urethane paint. A vandal resistant, weather proof, lockable door of suitable size is provided at the base of high mast to access comfortably the components at the base compartment for normal operation & for maintenance.

Dynamic Loading of Mast:

The mast structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 (3 second gust), and are measured at a height of 10 metres above ground level. The designed life of the mast should be 25 years.



RAISING & LOWERING MECHANISM:

Winch:

The winch shall be high speed completely self-sustaining without the need for brake shoe, springs or clutches. There is a permanent oil bath for self-lubrication. The drums are to be properly grooved to provide a perfect seat for wire ropes. The raising time of the flag shall not be more than 3 minutes. The winch is normally be operated by an electrical power tool however there should be provision for manual operation also by means of manual handle. The winches are type tested through reputed institutions and the type test reports are submitted along with offer. A test certificate is to be submitted along with supplies.

Head Frame:

The hot dip galvanized head frame is to be designed as a capping unit of the mast is of welded steel construction and provided with guides and separators between the ropes and cable. The LM6 Aluminium pulleys with bush bearing mounted through stainless steel shaft shall be suitable to accommodate wire ropes and multi core trailing cable. The head frame is provided with guides and stops with PVC buffer for the docking of luminaires carriage. The pulley assembly is covered by a hot dip galvanized canopy.

Stainless Steel Wire Ropes:

The stainless steel wire ropes are generally be of 6 mm dia, 7/19 construction with central core being stainless steel only. The grade of wire ropes are in accordance to AISI 316. The breaking load of each rope is not less than 2350 Kg giving a factor of safety of more than 5 for the system at full load as per the Technical Report No -7. The end construction of rope for the winch drum is fitted with copper telluric and for two continuous ropes, the end termination in luminaries carriage 3 are with stainless steel thimble and copper splicing and for others with stainless steel thimble and bull dog grips.

Power Tool for Winch:

Three phase, single speed, 6 pole high-powered motor of suitable rating are provided at the base of mast to facilitate raising & lowering operation of luminaries carriage. The motors are to be coupled with the winch shaft through chain & sprocket. A mechanical torque limiter is to be mounted on motor shaft to stop transmission of motion from motor to winch in case of excess load and thus prevent the damage to winch and breakage of rope.


OTHER ACCESSORIES:

Lightening Finial:

One number of FRP ornamental finial (DOME) shall be provided for each FLAG mast on the head arrangement is to be provided.

Aviation Obstruction Lights:

LED aviation lights are mounted on the lantern carriage to comply to the aviation norms where applicable. The connection for these aviation obstruction lights shall be made using 3C X 2.5 sq mm copper un armoured cables.



Earthing Terminals:

Earth terminal using 12 mm diameter hot dip galvanized bolts are provided on the door stiffener of the mast for lightning and electrical earthing of the mast.

Feeder Pillar / Control Box:

Each Mast shall be provided with a panel box , housing 32A TPN MCB incomer along with 2 no. 9A contactors & switches for forward/ reverse operation of motor & to provide supply to the poles The box is constructed of 14 SWG CRCA sheet finished with two Coates of red oxide primer & grey enamel paint of shade 631 of IS 5.

POLES WITH FLOOD LIGHT FITTINGS:

Two numbers of 6M or 7M Octagonal poles with suitable cable termination box and flood light fittings shall be provided to illuminate the national flag.

HARDWARES:

Hardwares play a very important role on the overall performance of high flag mast systems. Hardware materials are to be chosen carefully so that there is no compromise on safety or risk to the human lives. Appropriate grade & size of materials are absolutely necessary to ensure full safety. Single & double grooves clamps & W.G clamps are mandatory to ensure the proper operation of raising & lowering systems.

ELECTRICAL SYSTEM, CABLE AND CABLE CONNECTIONS:

The power cable from base compartment to junction box at the top shall be 1.1 KV grade PVC insulated, PVC sheathed copper conductor of size minimum core X2.5 sqmm wiring from junction box to aviation light is to be done using 3 core 2.5 sqmm PVC insulated, PVC sheathed, copper conductor flexible cable.

INCOMING POWER CABLE:

The power cable of 3.5CX35 Sqmm XLPE Aluminum Armored Cable upto the main panel from supply point shall be provided and from Main panel to the Flood Light Cable termination Box is 3CX6 Sqmm Aluminium XLPE Armored Cable and from Main Panel to the Flag Mast Termination Box is 4CX16 Sqmm Aluminium XLPE Armored cable.

LUMINARIES:

The flood light luminaries shall be of LED Type with 250W rating based on IP65 Protection and output Led Colour is of Cool White. This flood light shall be installed on suitable pole on plinth with supply & laying of 3Cx2.5 sqmm copper cable for the individual wiring of the luminaire.

PU PAINTING:

Flag mast shall be finished with polyurethane (PU) paint over galvanized surface after application of primer coat.

FLAG:

The National Flag of the size 20 feet x 30 feet in 100% knitted polyester (140 GSM) as per OS code, with reinforced super strong nylon webbing on all 3 sides & rope / toggle sleeve.

(E) TECHNICAL DETAILS OF 30.5 MTR. FLAG MAST :**High Mast system**

Make	:	Bajaj/Philips/Syska or equivalent
Height of Mast	:	30.5Mt
No. of sections	:	Three
Material construction	:	BS- EN10025 S 355 grade as per
Base dia. And top diameter (A/F)	:	Top: 150 mm, Bottom- 600 mm,
Plate thickness:	:	Top- 4mm, Middle-4 Bottom 5mm
Cross section of Mast standard	:	20 side polygon for of galvanization size of
Opening and door at base	:	As per BS EN ISO 1461(1500 X 400mm)
Diameter of base plate	:	730mm
Thickness of base plate	:	30mm
Max. Wind speed	:	As per IS: 875 (Part-III)
Number of foundation bolts	:	12 nos.
Type/diameter/length of foundation bolts	:	650mm TS 600/30mm dia./850mm long
Power cable cable for Aviation	:	Copper, 3 core, 2.5Sqmm Armored cable

Winch/Power tool

Type/SWL of winch Method of operation	:	Double Drum, SWL 70 Kg (SGDD 30/6 PB): Integral motor
Motor capacity	:	2HP
No of speeds	:	6/4 Pole single speed
Torque limiter	:	With mechanical tripping facility

Wire rope for flag

Grade/construction	:	Galvanized
No of ropes	:	100mm long x 1No.
Diameter (mm)	:	6 mm

Wire rope for balance weights

Grade/construction Number of ropes:	:	Galvanised
Diameter(mm)	:	6mm
Number of ropes	:	100 mm long x 1 nos

Wire rope for balance weights

Grade/ construction number of ropes :	:	Galvanised , 32mm long x 3nos.
Diameter(mm)	:	6 mm
Control panel	:	Custom built panel

(F) LIST OF APPROVED MATERIAL:

(Subject to satisfying parameters specified in CPWD specification and ISI Code)

Material	Brand/Manufacturer
Steel	Tata , SAIL
Cement	Ambuja, Birla, J.K.,J.P., Ultratech
LED AOL	Binay /Bajaj/Philips/Syska
LED Flood light	Bajaj/Philips/Syska
Wire & Cable	Polycab/Havells/KEI
MCB	Legrand/Havells/L&T

(G) GENERAL CONDITIONS OF CONTRACT:

1. The estimated measurement of quantity in units is given merely as a rough guide. The quantity and items mentioned hereinabove may, therefore, vary, which will have to be accepted by the contractor in the offered rates. The payments shall be made to the contractor as per actual measurement of work executed at site. The payment shall be made to the contractor on satisfactory completion of the work.
2. The entire work is required to be carried-out as per the technical specifications and details provided hereinabove, in the tender document, including use of approved material.
3. Before using the material, the contractor shall get approval from the Engineer-in-charge / Institute and any change will require approval from the Institute.
4. After communication regarding award of work, the successful bidder shall, within 7 days, submit a non-judicial stamp of Rs. 100/- and sign an agreement with the Institute for the work, on the terms & conditions of the present tender.
5. The successful bidder shall also deposit requisite Performance Security @10% of contract value by online or Demand Draft or Fixed Deposit in the name of Registrar, LNIPE, Gwalior, which shall be valid at least for a period of 27 months.
6. EMD of unsuccessful bidders will be returned after finalization of tender. No interest shall be payable on such refund.
7. The bidders shall quote their rates as per various terms and conditions given in the tender document under financial bid, inclusive of all taxes, appropriate materials, labour, machinery, machines tools and plants and all appliances whatsoever are necessary for the complete execution of the work. Nothing extra shall be paid by Institute other than those quoted in the financial bid.
8. All the required labour will be provided by the contractor and no minor shall be engaged at site. For all intents and purposes, the unskilled labour and such-like personnel provided by the contractor shall be the employees of the contractor, who shall be responsible to provide all admissible and/or fringe benefits to such personnel in the same manner as the contractor does to its other employees. The LNIPE shall not own any responsibility in any manner whatsoever for the same.

9. The competent authority of the Institute reserves right to accept the whole or any part of the tender and the contractor shall be bound to perform the same at the quoted rates.
10. The tender for the works shall remain open for acceptance for a period of 180 days from the date of opening of tenders.
11. The work shall be completed within 45 days from the date of agreement and intimation regarding commencement of work will be made by the contractor to the Institute.
12. A penalty @ Rs. 500/- per day will be imposed for delay and shall be deducted from the bill of the contractor, which shall not exceed 5% of the total cost. If any hurdle arises, the same may be intimated to the Registrar and extension of time-period shall be made accordingly, if required.
13. The work shall be carried out as per CPWD specifications and up to the entire satisfaction of the Institute.
14. No waste/malva of any sort, including dismantled material, will be left at the work site or anywhere in the Institute campus and the contractor shall be responsible to remove and dispose it outside the campus at their own cost.
15. The contractor will be fully responsible for any type of loss to the Institute property during execution of work. If any damage is caused at the site or surroundings, the same shall be made good without any additional payment on this account.
16. The contractor shall raise the Bill as per actual work carried-out at site. Any item of work exceeding the quantity specified in this tender document shall require prior written permission of the Institute. The payment shall be made to the contractor on receipt of bills in duplicate and upon satisfaction of the Institute with respect to the entire work.
17. Necessary statutory deductions at source (TDS) will be made from the Bill, as applicable from time to time.
18. Debarred/blacklisted agency/firm/ individual shall not be permitted to participate in the tendering process.
19. The sub-contracting shall not be allowed.
20. If the contractor fails to execute the awarded work or leaves half-way or fails to complete it to the entire satisfaction of the Institute, or commits breach of any of the terms and conditions of contract, then the Institute shall have right to forfeit bid security and/or performance security, as the case may be. The Institute shall also have the right to blacklist the contractor.
21. The contractor will not be entitled for any compensation due to enactment of any law / regulation etc. during the currency of the contract.
22. All Taxes on materials or any element of this contract shall be payable by the contractor and the Institute will not entertain any such claim whatsoever in this respect. The contractor's rates shall cater to all such taxes.



23. The contractor shall be responsible for any damage to the equipment, machinery or system of the contractor's staff and the same will have to be made good at his risk and cost.
24. The contractor shall be fully responsible to observe the labour safety provisions.
25. The complete work will have guarantee period of 2 years from the date of its completion in all respect. Accordingly, the performance guarantee / security deposit will be refunded after completion of the defect liability period of 2 years
26. Electricity will be provided free of cost by the Institute.
27. In case of non availability of material of the brands specified in the list of approved materials, an equivalent brand may be used after getting written approval of Institute giving details to indicate that the brand proposed to be used is equivalent to the brands mentioned in the agreement.
28. Action in case of sub standard work - If it is found that any work has been executed with unsound, imperfect or unskilful workmanship or with materials of any inferior description, the Engineer-in-Charge may rectify and re-execute the work or remove and replace with others, the material or articles complained of as the case maybe at the risk and expense in all respects of the contractor.
29. The work in general shall be executed as per the description of the item, specification attached, CPWD specifications 2009 Vol-I & II with up to date correction slips.
30. Criteria for work award will ordinarily be the aggregated lowest rates quoted for all the items.
31. The Institute reserves the right to ask the justification of quoted rates before finalization of contract.
32. The contractor has to follow all electricity rules as amended from time to time and contractor shall be responsible for any mishap due to negligence on his part.
33. In the event of any dispute between the Institute and contractor, it shall be resolved through mutual discussions between the parties. If it cannot be resolved through discussions, then an Arbitrator shall be appointed by the Vice Chancellor, LNIPE, Gwalior and the matter shall be referred to so appointed Arbitrator, whose decision shall be binding and final.
34. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the bidders, who resort to canvassing will be liable to rejection.
35. Any dispute arising out of the contract between the Institute and contractor shall be subject to the territorial jurisdiction of Gwalior.



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TECHNICAL BID

Sl. No.	Description	Whether enclosures are required.	Furnish information here	Copy enclosed at Page No.
1	Name of the bidder firm/ Company/Agency/Contractor.			
2	Complete address, Telephone/Mobile No., E-mail address, Website etc.			
3	Status of the bidder i.e. company registered under Indian Companies Act or a corporate body legally constituted or partnership firm or Proprietary concern. (copies of supporting documents to be enclosed).	YES		
4	EMD of Rs. 51,000/- in the form of Demand Draft in favour of “Registrar, LNIPE” payable at Gwalior.	YES	DD No. _____ Dated _____ Amount 51,000/- Bank _____ Branch _____	
5	Certificate of incorporation of the bidder (copy of certificate to be enclosed).	YES		
6	CGST/SGST Registration Certificate (along with GST Returns of the preceding one month to be enclosed).	YES		
7	Income Tax Permanent Account Number (PAN) (copy to be enclosed).	YES		
8	Income Tax Return of last 3 financial years up to 31.3.2018 (Assessment Year 2018-19). The average Annual financial turnover during the last 3 years, ending 31 st March 2018, should be at least 30% of the estimated cost. (“Certificate of Turnover” issued by a Chartered Accountant in the format prescribed at Annexure – ‘B’, along with	YES	F.Y. Turnover (Rs.) 2015-16 2016-17 2017-18	

	audited Annual Statement of Accounts and Income Tax Returns of these three years to be enclosed).			
9	Experience of having successfully/satisfactorily completed the similar nature of work i.e. constructions / installations of at least three (3) Nos. High National Flags of at least 30.5 Mtrs. in height in Government Department / Organizations / PSUs/Educational Institutions/Private Organizations during last seven years (up to October 2019) works each costing not less than the amount equal to 40% of the present estimated cost. (copies of work orders as above with their respective contract completion certificates to be enclosed).	YES		
10	A declaration to the following effect is required to be submitted on affidavit on non-judicial stamp of Rs. 100/- that (a) There is no pending criminal case before any Court of law against the Proprietor / firm / Partner or the bidder company; (b) The bidder has not defaulted from the payment of statutory dues like EPF, ESI, GST, Income Tax etc. during the last three years; (c) The bidder is not blacklisted by any Government Organization/PSU/Autonomous Body/ Govt. Educational Institute/Private Organizations during the last three years; (d) No contract of the bidder has been terminated before expiry of term during the last three years.	YES		

UNDERTAKING

1. I/We have carefully gone through and have understood the tender document including the General Terms & Conditions, Work scope and specifications stipulated in the tender. I/We undertake to abide by them.
2. I/We hereby confirm that all the information furnished in this tender, is true and correct to the best of my knowledge and nothing material has been concealed therefrom.
3. I/We have seen the site and inspected proposed site for construction of the work in question, for which the present bid is being submitted.

4. I/We give consent that the decision of the tender committee and/or competent authority of the Institute shall be final and acceptable to us.
5. I/We have submitted Financial Bid in a separate sealed inner envelope.

Date: _____ Signature of bidder: _____

Place: _____ Name of bidder: _____

Address & Phone _____

Rubber Stamp: _____

CERTIFICATE OF TURNOVER
(FOR THE PURPOSE OF SUBMISSION OF TENDER FOR
“Construction of 30.5 Meter High National Flag Mast at LNIPE , Gwalior as per technical
specifications, details, drawing and design prescribed in the tender”
 (To be submitted in original)

This is to certify that M/s
 has registered the following turnover and profit/loss during the last three financial years:-

Financial Year	Annual Turnover (in Rupees)	Net profit/loss

The above information/figures are true and authentic to the best of our knowledge and belief and derived from the Balance Sheet and / or Income Tax Return of the said firm.

Date:

Place:

Seal & signature of Chartered Accountant

Regn. No.

DECLARATION BY THE BIDDER

I/We hereby submit the aforesaid document in original and undertake its correctness / veracity on the basis of enclosed ITR as well as Balance Sheets of all these three financial years. I/we are aware that furnishing of any false information / fabricated document would lead to rejection of my/our tender at any stage, including during the contract award, besides liabilities towards prosecution under appropriate law.

Date:

Place:

Signature of bidder: _____

Name, Address, Phone No. of agency (with Seal): _____

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FINANCIAL BID

S No.	Description of Work	Quantity	Unit	Rate	Amount
1	Supply & Erection of 30.5M high mast in three sections, hot dip galvanized and suitable for wind velocity as per IS 875, and erection of the flag mast with the help of suitable equipments and assembly of operating system. Supply and erection of system for raising, lowering of flag. It shall have such as head frame double drum winch, stain less steel wire rope and integral power tool for the raising and lowering of flag. Suitable control panel shall be provided for reversing operation of power tool motor etc.	1.00	Job		
2	Material and labour for PU painting on flag mast shaft over a coating of each primer coat.				
3	Supply & Installation of Indian National Flag of size 20ft × 30ft in 100% knitted polyester with reinforced super strong nylon webbing on all three sides & rope/toggle sleeve complete as per relevant IS code.				
4	Supply and Fixing of foundation bolts manufactured from special steel along with nuts, washers, anchor plates and templates.				
5	Supply (only) of Indian National Flag of size 20ft × 30ft in 100% knitted polyester with reinforced super strong nylon webbing on all three sides & rope /toggle sleeve complete as per relevant IS code.	5.00	Nos.		

S No.	Description of Work	Quantity	Unit	Rate	Amount
6	Construction of suitable shallow Foundation with 1:2:4 concrete for the highmast considering the safe soil bearing capacity (SBC) at site as 10T/sqmtr at 1.5 metre depth/up to Hard starata with all materials and labour. Including Flag mast platform soil filling, compaction (filling material provided by institute)/ or as per direction of Engineer In-charge.(Attached working Drawing)	1.00	Job		
7	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in (9 inch) : Cement mortar 1:6 (1 cement : 6 coarse sand)	12.00	cum		
8	Random rubble masonry with hard stone in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with : Cement mortar 1:6 (1 cement : 6 coarse sand)	23.00	cum		
9	Random rubble masonry with hard stone in superstructure above plinth level and upto floor five level, including leveling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) at window sills, ceiling level and the like. Cement mortar 1:6 (1 cement : 6 coarse sand)	09.00	cum		
10	12 mm cement plaster: 1:6 (1 cement : 6 fine sand)	60.00	sqm		

11	<p>Providing and laying flamed finish granite Stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18mm thick stone slab over 20mm (average) thick base of cement mortar 1:4 (1 Cement : 4 Course Sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in - Charge.</p> <p>Flamed Finish Granite stone slab Jet Black, Cherry red ,Elite Brown, Cat Eye or equivalent.</p>	82.00	Sqm		
12	<p>Providing and fixing Sand stone Railing upto 1 metre heights with 30mm thick gang saw cut stone with (machine cut edges) of uniform colour and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (Red/White Sand Stone)</p>	48.00	Sqm		
13	<p>Supply and installation of flood light luminaries LED type 250 watt,with IP65 protection and also suitable to focus the high flag mast with control gear box. and Supply and installation of 6 mtrs high Octagonal Poles along with, its accessories including fittings & fitted on suitable plinth, supplying& laying of 3C X 2.5 sqmm copper cable for the wiring of luminaries etc.</p>	2.00	Nos.		
14	<p>Supply of system & Aviation obstruction light with 3C×2.5 sqmm copper cable for connection to each fitting.</p>	1.00	Nos.		
15	<p>Provision of GI pipe earthing for High mast with 2.5 M long 40mm dia GI pipe including connection to High mast earth terminal with 25 × 3 mm GI flats with all the materials including labour (02 Nos. per mast required).</p>	2.00	Nos.		
16	<p>Supplying & laying of 3.5C X 35 sqmm XLPE Aluminum Armored cable from supply point to the panel.</p>	60.00	M		

17	Supplying & Laying of 4C X 16 sqmm XLPE Aluminum Armored cable for the winch power tool to Main Panel.	15.00	M		
18	Supplying & Laying of 3C X 6 sqmm XLPE Aluminum Armored cable for the flag mast lighting cable termination box to main panel.	30.00	M		
19	Main panel for flag mast operating and LED floof light - Incomer - 63A TPN MCB Outgoing - 01 Nos. 32A TP MCB - 04 Nos. 10A SPN MCB Neutral may be connected through neutral terminal links. Panel must have IP65 protection Suitable Phase indicators etc. Complete in all respect.	1.00	Nos.		
TOTAL COST -					

Amount in Numerals: _____

Amount in Words: _____

All the rates quoted above are inclusive of all taxes, FOR at work-site and nothing is payable in addition to these quoted rates.

UNDERTAKING

1. I/We have carefully gone through and have understood the tender document including the General Terms & Conditions, Work scope and specifications stipulated in the tender. I/We undertake to abide by them.
2. I/We hereby confirm that all the information furnished in this tender, is true and correct to the best of my knowledge and nothing material has been concealed therefrom.
3. I/We have seen the site and inspected proposed site for construction of the work in question, for which the present bid is being submitted.
4. I/We give consent that the decision of the tender committee and/or competent authority of the Institute shall be final and acceptable to us.
5. I/We have submitted this Financial Bid in a separate sealed inner envelope.

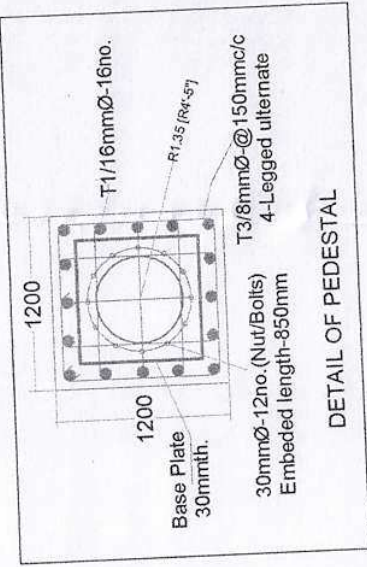
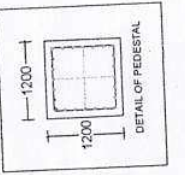
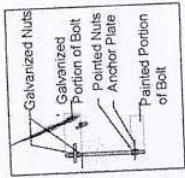
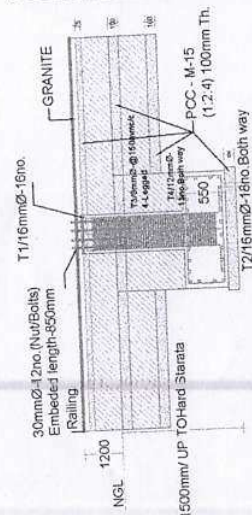
Date: _____

Place: _____

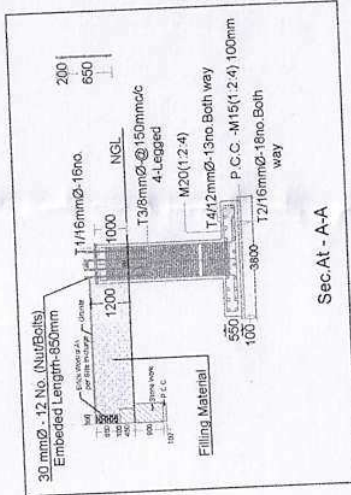
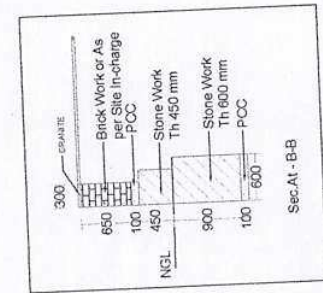
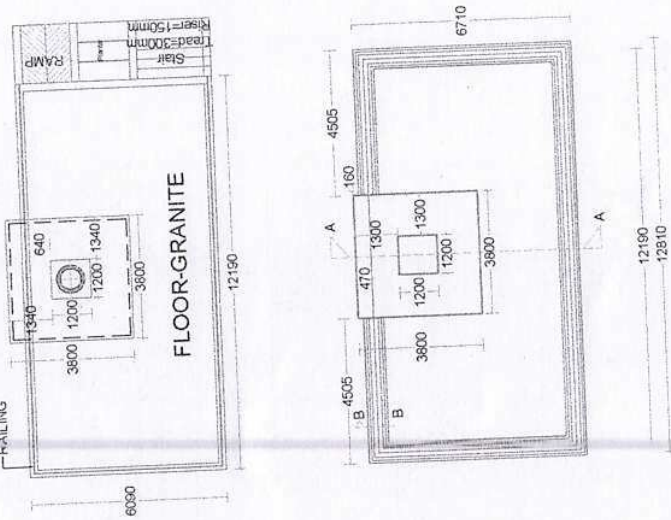
Signature of bidder: _____

Name & Address of bidder: _____

GENERAL ARRANGMENT FOUNDATION FLAG MAST (HEIGHT : 30.5 Mtr)



DETAIL OF PEDESTAL



FOUNDATION LOADING		
PARTICULARS	UNIT	VALUE
WIND SPEED	M/S	50
BENDING MOMENT	T.M	18.5
HORIZONTAL SHEAR	T	1.4
VERTICAL LOAD	T	1.85
MAX GR BEARING PRESSURE	TSQ/CM	11.4
SAFETY FACTOR AGAINST OVERTURNING		2.0
CONCRETE MIX VIBRATED	M-20	
MIN COVER (MM)	MM	50
STEEL	F-500	
NET SOIL BEARING CAPACITY	T/M ²	10
PROJECTED AREA	SQM	0.1

FOUNDATION LOADING		
RCC in Cum	RCC in Cum	STEEL in Kgp
8.9	1.46	550

BAR BENDING SCHEDULE			
NO	QTY	SIZE	LENGTH: MTR
T1	16	16 MM	50
T2	36	16 MM	150
T3	36	8 MM	216
T4	26	12 MM	105

- NOTES: 1. DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. 2. OTHER DIMENSIONS SHALL BE AS FOLLOWS: (a) MINIMUM CLEAR COVER: 50MM (b) SLAB: 40MM (c) FOUNDATION: 75MM (d) COLUMN: 50MM 3. CONCRETE SHALL BE OF GRADE M20. 4. CURING SHALL BE AS PER THE REQUIREMENTS OF THE SPECIFICATION. 5. THE COMPRESSION STRENGTH OF CONCRETE SHALL NOT BE LESS THAN 20MPA AFTER 28 DAYS. 6. ALL REINFORCEMENT SHALL BE STAGGERED AND SHALL NOT BE IN PROXIMITY OF THE REGION OF MAXIMUM BENDING MOMENT. 7. THE SPACING OF REINFORCEMENT SHALL NOT BE LESS THAN 16 TIMES THE DIAMETER OF THE BAR. 8. ALL REINFORCEMENT SHALL BE PROVIDED ON ALL WALLS AS PER THE STRUCTURAL DESIGN. 9. ALL REINFORCEMENT SHALL BE PROVIDED ON ALL WALLS AS PER THE STRUCTURAL DESIGN. 10. ALL REINFORCEMENT SHALL BE PROVIDED ON ALL WALLS AS PER THE STRUCTURAL DESIGN. 11. ALL REINFORCEMENT SHALL BE PROVIDED ON ALL WALLS AS PER THE STRUCTURAL DESIGN. 12. ALL REINFORCEMENT SHALL BE PROVIDED ON ALL WALLS AS PER THE STRUCTURAL DESIGN. 13. 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Prof. V. V. S. Srinivasulu
 DR. V. V. S. SRINIVASULU
 BE (CIVIL) ME (CIVIL)
 Asst. Prof. V. V. S. Srinivasulu (P) Govt.

CONSULTANTS:
SHARMA BUILDCON
 03, SHANTI ENCLAVE EXT. NEAR
 KALPI BRIDGE, MURAR, GWALIOR
 MOB. 9926001972, 7987518597
 email: buildconsharma@gmail.com

PREPARED BY: RAM/VR
CHECKED BY: VINOD SHARMA
DRAWING No.: S/761
DATE: 11.09.2019
SCALE: NOT TO SCALE

TITLE OF DRAWING:
 STRUCTURAL DRAWING OF
 FLAG MAST

TITLE OF WORK:
 FOUNDATION OF FLAG MAST