॥ अंतरी पेटवू ज्ञानज्योत ॥

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव

उमविनगर, जळगाव-425 001, ☎: 0257-2257256, 259

ई निविदा सूचना क्र.कबचौउमवि/१०/बी-१/०३/ई-०३ सन २०२५-२६

कुलसचिव, कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव खालील कामाची ब-1 निविदा महाराष्ट्र शासनाकडील महाराष्ट्र फायर सर्व्हिसेस खात्याकडे नोंदणीकृत कंत्राटदारांकडून मागविण्यात येत आहेत. सदरची ई-निविदा सूचना https://mahatenders.gov.in, या पोर्टलवर असून सदरची ई-निविदा सूचना ऑनलाईन पध्दतीने सादर करावयाची आहे.सदरची ई-निविदा सूचना विद्यापीठाच्या www.nmu.ac.in या संकेतस्थळावर विद्यापीठाचे कार्यकारी अभियंता बांधकाम विभाग यांच्या कार्यालयात फक्त माहितीस्तव उपलब्ध करून देण्यात आलेली आहे.

अ. क्र.	कामाचे नाव	अंदाजपत्रकीय रक्कम	बयाणा रक्कम	निविदा शुल्क	काम पूर्ण करण्याकरितांची मूदत
1)	सप्लाईंग ,इरेक्टींग अँड टेस्टींग ऑफ फायर हायड्रंट अँड फायर अलार्म सिस्टीम ॲट सेमिनार हॉल, होस्टेल व प्रशासकीय विभाग ऑफ डॉ.ए.पी.जे.अब्दुल कलाम विद्यार्थी भवन बिल्डींग इन दि प्रिमायसेस ऑफ केबीसीएनएमयु, जळगाव	रु. 70,38,576/-	रु.70,400/-	रु.5,000/-+ @GST18% = रु.5,900/-	6 (सहा)महिने (पावसाळ्यासह)

परिपूर्णरित्या संपुर्ण भरलेली ऑनलाईन ई- निविदा दि.8/9/2025 रोजी साय. 17.30 वाजेपर्यत किंवा तत्पूर्वी जमा करावी. सदरची ई-निविदा सादर करण्यासाठी मुदतवाढ दिल्यास अथवा शुध्दीपत्रक निर्गमित केल्यास त्यासंबंधीची सूचना वरील संकेतस्थळावर प्रसिध्द करण्यात येईल.

दिनांक : 14/08/2025

ठिकाण : जळगाव

(डॉ. विनोद प्र. पाटील)
कुलसचिव

॥ अंतरी पेटवू ज्ञानज्योत ॥

'A' Grade
NAAC Re-accredited
(4th Cycle)

The Registrar
Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

Tender Notice No.KBCNMU/10/B1/03/e-03 for Year 2025-2026
E-TENDER DOCUMENT

For the work of		**Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.**
Estimated Cost Put to Tender	:-	**Rs.70,38,576/-**
Security Deposit for Contract	:-	5% of tendered cost
Earnest Money for Tender	:-	Rs. 70,400/-
Accepted Tender	:-	At the rate of ___% Above / Below or At Estimated Rate Rs._____
Cost of Blank Tender Form	:-	5000+ GST @18%= 5,900/-
Time Limit	:-	06 Months (Including monsoon)
Date of Uploading of E-Tender	:-	**03/09/2025 to 08/09/2025 upto 17.30 HRS**.
CONSULTING ARCHITECT	:-	**VINTEX FIRE PROTECTION PVT.LTD.,** 1701,Oriana Business Park , Road No.22,Wagle Estate , Thane -400 604.

No. of correction

Contractor Executive Engineer Registrar

|| अंतरी पेटवू ज्ञा ज्योत ||

KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY, JALGAON

Tender Notice No.KBCNMU/10/B1/03/e-03 for Year 2025-2026

Sealed E-tenders in B-1 form for the following works, invited by the Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon Phone No.0257-2257256, from the Company/Dealer as specified in Below Column No.7 of Detailed E-Tender Notice. The Name of work, estimated cost ,earnest money, cost of E tender,time limit for completion etc. are as under

Tender Notice is available on https://mahatenders.gov.in. and on University Web site www.nmu.ac.in also on the notice board at Executive Engineer's Office in KBCNMU, Jalgaon

E-Tender Sr. No.	Name of work	Estimated cost put to tender (Rs)	Earnest Money (Rs)	Cost of Tender Form (Rs)	Time Limit of completion of work	Class of Contractor
1	2	3	4	5	6	7
01.	Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon	**70,38,576/-**	70,400/-	Rs.5,000 +GST @18%= 5,900/-	06 months (including monsoon)	The principal Bidder should have valid License of (a)Fire fighting system installation such as hydrants, sprinklers, pumping etc. (b)Detection & Fire Suppression System (c)Passive protection such as cable protection ,fire doors etc. issued by Director ,Maharashtra Fire Services Mumbai ,Government of Maharashtra .2)The principal Bidder should have MOU with the Govt. Electrical Contractor with valid License issued by the Industries, Energy & Labor Department, Govt. of Maharashtra

No. of correction

Contractor Executive Engineer Registrar

TENDER SCHEDULE

Sr. No	KBC North Maharashtra University Stage	Vendor Stage	Start Date & Time	Expiry Date & Time
1	Main Tender Release	-	14/08/2025 from 11.00 am	14/08/2025 up to 17.30 pm
2	-	Main Tender Document Downloading	14/08/2025 from 17.31 pm	08/09/2025 up to 17.30 pm
3	-	Uploading of Tender Document	03/09/2025 from 11.00 am	08/09/2025 up to 17.30 pm
4	Envelop 1 Opening (Technical)(Tender opening & Short listing -T1)	-	11/09/2025 from 11.00 am	12/09/2025 up to 17.30pm
5	Envelop 2 Opening (Commercial) (Tender opening & Short listing -C1)	--	22/09/2025 from 11.00 am (if possible)	23/09/2025 up to 17.30pm (if possible)
Special Note : Tenderer or His representative should remain present at the time of Opening of Envelope No.2 as per date and time declared on University's website / e-tender portal. Objection/Complaints in this regard will not be entertained after opening of the Envelope No.2				

Note :

1. All eligible/interested tenderer are required to be enrolled on portal https://mahatenders.gov.in before downloading tender documents and participate in e - tendering.

2. Tenderer is requested to contact on following telephone number for any doubts / information/difficulty regarding online process. [Contact on Cell No.7745827385]

3. The amount for Earnest Money Deposit and Tender Cost should be deposited online only.
   Earnest Money Exemption Certificate is not applicable/consider for the University Works.

4. Tenderer should submit the documents, related to tender, online only & **Copy of required documents [submitted in Envelope No. 01] as per tender volume should be submitted to the University through e-mail on executiveengineer@nmu.ac.in.**

5. Other instructions can be seen in the Tender Form.

6. The Electronic tendering system for Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon will be available on separate sub portal with URLhttps://mahatenders.gov.in as part of the Electronic Tendering System of Government of Maharashtra which is available on the website www.mahatender.gov.in

7. Pre-tender conference for the above work will be held on 00/00/0000 at 00.00 hours in the office of the Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.

OR

No. of correction

Contractor Executive Engineer Registrar

If tenderer requires any clarifications regarding work to be executed / rates in BOQ / terms and conditions of the tender, he has to submit in written a letter in this regard through **e-mail** executiveengineer@nmu.ac.in**. or** submit physically in the office of The Executive Engineer, Construction Department, KBCNMU, Jalgaon, on or before **31/08/2025.** Clarification regarding query raised by the tenderer will be given through the corrigendum, on e-tender portal before uploading of the tender document i.e. up to **03/09/2025.**

This corrigendum will be the part of tender document and should be submitted by the tenderer in Envelope No.2

8. Directions received from Government about application of GST will be applicable as and when Received.

9. All Tenderers are requested to note the important instructions issued by the Government of Maharashtra regarding revision in the Contract terms and conditions of the E-tendering system.

10. Right to reject any or all tenders without assigning reason thereof is reserved by the Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

Registrar
Kavayitri Bahinabai Chaudhari
North Maharashtra University,Jalgaon

No. of correction

Contractor Executive Engineer Registrar

|| अंतरी पेटवू ज्ञानज्योत ||

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव

ई- निविदा सूचना क्र./कबचौउमवि/१०/बी-१/०३/ई-०३ सन २०२५-२०२६

कुलसचिव, कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव (दुरध्वनी क्र-0257-2257256) हे खालील कामांच्या ई निविदा प्रणालीव्दारे (ऑन लाईन) ब-1 निविदा महाराष्ट्र शासनाकडिल खालील तक्ता क्र.7 मधील नोंदणीकृत कंत्राटदाराकडून मागवित आहेत. सदरची निविदा सूचना https://mahatenders.gov.in या पोर्टल वर आणि विद्यापीठाच्या www.nmu.ac.in या संकेतस्थळावर तसेच विद्यापीठाच्या बांधकाम विभाग कार्यालयाच्या सूचना फलकावर प्रसिध्द करण्यात आलेली आहे.

ई-निविदा अ. क्र.	कामाचे नाव	कामाची अंदाजित किंमत (रुपये)	इसारा/बयाणा रक्कम (रुपये)	ई-निविदा संचाची किंमत (रुपये)	काम पूर्ण करण्याचा कालावधी	
१	२	३	४	५	६	७
सिव्हील वर्क						
01.	सप्लाईंग ईरेक्टिंग अॅंड टेस्टिंग ऑफ फायर हायड्रंट अॅंड फायर अलार्म सिस्टीम अॅट सेमिनार हॉल, होस्टेल अॅंड अॅडमिनीस्ट्रेशन सेक्शन ऑफ डॉ.ए. पी.जे.अब्दुल कलाम बिल्डींग इन द प्रिमायसेस ऑफ केबीसी एनएमयु जळगाव.	70,38,576/-	70,400/-	Rs.5,000 + GST @18%= 5,900/-	06 महिने (पावसाळ्या सह)	The principal Bidder shou have valid License of (a)Fi fighting system installatic such as hydrants, sprinkler pumping etc. (b)Detection Fire Suppression Syste (c)Passive protection suc as cable protection ,fi doors etc. issued by Direct ,Maharashtra Fire Service Mumbai ,Government Maharashtra .2)Th principal Bidder should hav MOU with the Gov Electrical Contractor wi valid License issued by th Industries, Energy & Labo Department, Govt. Maharashtra

ई- निविदेचे वेळापत्रक

अ. क्र.	विद्यापीठ स्टेज	कंत्राटदार स्टेज	दिनांक व वेळ (पासून)	दिनांक व वेळ (पर्यत)
१.	निविदा प्रकाशित करणे	--	१४/०८/२०२५ सकाळी ११.०० पासून	१४/०८/२०२५ १७.३० पर्यत
२.		निविदा डाऊनलोड करणे	१४/०८/२०२५ १७.३१ पासून	०८/०९/२०२५ १७.३० पर्यत
३.		निविदा अपलोड करणे	०३/०९/२०२५ सकाळी ११.०० पासून	०८/०९/२०२५ १७.३० पर्यत
४.	तांत्रिक लिफाफा उघडणे	--	११/०९/२०२५ सकाळी ११.०० पासून	१२/०९/२०२५ १७.३० पर्यत
५.	व्यापारी लिफाफा उघडणे	--	२२/०९/२०२५ सकाळी ११.०० पासून (शक्य झाल्यास)	२३/०९/२०२५ १७.३० पर्यत (शक्य झाल्यास)

विशेष सुचना : निविदाधारक अथवा त्यांचे प्रतीनिधी यांनी पाकीट क्र.२ उघडते वेळेस हजर राहणे आवश्यक आहे. पाकीट क्र.२ उघडणे दि लेल्या तारखेस शक्य न झाल्यास पाकीट क्र.२ उघडण्याची तारीख व वेळ विद्यापीठाच्या संकेतस्थळावर अथवा ई-निविदा पोर्टलवर प्रसिध्द करण्यात येईल. यासंदर्भातील कोणतीही तक्रार /हरकत पाकीट क्र.२ उघडल्यानंतर विचारात घेतली जाणार नाही.

टिप :-

No. of correction

Contractor Executive Engineer Registrar

1. सर्व पात्र /इच्छुक निविदा कारांनी निविदापत्रक डाऊनलोड करण्यासाठी व निविदा प्रक्रियेत भाग घेण्यासाठी ई निविदा प्रणालीच्या https/mahatenders.gov.in या Portal वर enrolled करणे आवश्यक आहे.

2. निविदाकारांना वर नमूद केलेल्या संकेतस्थळावर ऑनलाईन संदर्भात व डिजिटल प्रमाणपत्र वितरीत करण्यासंदर्भात काही शंका /अडचणी असल्यास भ्रमणध्वनी क्र.७७४५८२७३८५ यावर संपर्क साधावा.

३. बयाणा रक्कम व निविदा संचाची किंमत online प्रणालीव्दारेच भरणे बंधनकारक आहे. **विद्यापीठातील बांधकाम / विद्युत कामांकरिता बयाणा रक्कमेत कोणतीही सूट लागू नाही.**

४. निविदाकारांनी निविदा संदर्भात सर्व दस्ताऐवज ऑनलाईन सादर करणे अनिवार्य राहील. तसेच पाकीट क्र.०१ मध्ये सादर केलेली सर्व दस्तऐवज सांक्षकिंत करुन कार्यकारी अभियंता, बांधकाम विभाग, कबचौउमवि., जळगाव यांच्याकडे executiveengineer@nmu.ac.in या मेलवर सादर करावे.

५. इतर अटी व शर्ती ई-निविदा नमून्या मध्ये पहावयास मिळतील.

6. The Electronic tendering system for Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon will be available on separate subportal with URLhttps://mahatenders.gov.in as part of the Electronic Tendering System of Government of Maharashtra which is available on the website www.mahatender.gov.in

७. उपरोक्त कामांची निविदा पूर्व बैठक दि.००/००/०००० रोजी दुपारी ००.०० वाजता कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव यांच्या कार्यालयात आयोजित केलेली आहे.

किंवा

जर निविदाकारास करावयाच्या कामांबाबत/दरांबाबत / निविदा अर्टी व शर्तींबाबत काही शंका /प्रश्न असल्यास त्यांनी लीखीत स्वरुपात सदर बाब कार्यकारी अभियंता यांच्याकडे पत्राव्दारे executiveengineer@nmu.ac.in **या मेलवर अथवा कार्यकारी अभियंता, कबचौउमवि, यांच्या कार्यालयात प्रत्यक्ष दि.३१/०८/२०२४ पर्यत सादर करावे.** निविदाकाराने उपस्थितीत केलेल्या शंकाचा/प्रश्नांचा खुलासा ई-निविदा पोर्टलवर निविदा सादरीकरण सुरु होण्यापूर्वी म्हणजेच **दि.०३/०९/२०२४** पूर्वी सादर करण्यात येईल.

सदर खुलासा पत्र हे निविदेचा भाग /दस्त म्हणून राहील व निविदाकारास सदरचे खुलासा पत्र स्वांक्षाकित करुन निविदेसोबत पाकिट क्र.२ मध्ये सादर करणे बंधनकारक राहील.

८. शासनाकडून GST आकारणी संदर्भात वेळोवेळी निर्गमित होणारे निर्णय/निर्देश लागू राहतील.

९. सर्व निविदा सादर करणाऱ्या ठेकेदारांना विनंती की, निविदेतील अटी व शर्तीमध्ये महाराष्ट्र शासनाकडून वेळोवेळी करण्यात आलेल्या बदलांची नोंद घ्यावी.

१०. एक किंवा सर्व निविदा कोणतेही कारण न देता रद्द करण्याचे अधिकार विद्यापीठाने राखून ठेवलेले आहे.

कुलसचिव,
कवयित्री बहिणाबाई चौधरी
उत्तर महाराष्ट्र विद्यापीठ, जळगाव

No. of correction

Contractor Executive Engineer Registrar

|| अंतरी पेटवू ज्ञानज्योत ||

KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY, JALGAON

Tender Notice No.KBCNMU/10/B1/03/e-03for Year 2025-2026

Name of Work : - Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon

Recapitulation Sheet

SUMMARY OF COST OF FIRE PROTECTION WORKS BASED ON C.S.R. 2022-2023

Sr.No.	Description	Estimated cost
1.	COST OF FIRE PROTECTION WORKS	**59,05,835.94**
Rs. 59,05,835.94 (Rupees Fifty Nine lakhs Five Thousand Eight Hundred Thirty Five Point Ninety Four only)		
2.	Reimbursement of Testing Charges	00,000.00
3.	Reimbursement of Insurance Amount (At 0.5% for works upto Rs.25 Lakhs) (At 1.0% for works Above Rs.25 Lakhs)	59,058.35
4.	Reimbursement of GST @18%	10,73,681.97
	NET TOTAL	70,38,576.26
	SAY Rs.	**70,38,576.00**
Rs. 70**,38,576.00** (Rupees One Seventy Lakh Thirty Eight Thousand Five Hundred Seventy Six only)		

VIP Note :

1. The above estimated cost of **Rs. 59,05,835.94** (is exclusive of reimbursable charges stated under & further as described below.
   - 1.1 The amount of Testing Charges as per CSR note shall be of **Rs. NIL** and will be reimbursed only on documentary evidence of receipt of payment and Test Result in Original.
   - 1.2 The amount of Insurance Charges as per CSR note shall be of **Rs. 59,058.35** and will be reimbursed only on documentary evidence of receipt of payment in Original.
   - 1.3 GST on estimated cost is taken in Recapitulation Sheet as provision which will be payable on receipt of documentary evidence only.

2. The ± premium will not be admissible on above reimbursable charges and shall be admissible only on amount **Rs. 59,05,835.94**put to tender.

No. of correction

Contractor Executive Engineer Registrar

|| अंतरी पेटवू ज्ञानज्योत ||

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव

ई निविदा सूचना क्र.कबचौउमवि/१०/बी-१/०३/इ-०३ सन २०२५-२०२६

कुलसचिव, कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव (दुरध्वनी क्र-०२५७-२२५७२५६, फॅक्स क्र.०२५७-२२५८४०६) हे ई- निविदा प्रणालीव्दारे (ऑन लाईन) ब-१ निविदा महाराष्ट्र शासनाकडील खालील तक्ता मधील नोंदणीकृत कंत्राटदाराकडून मागवित आहेत.

The principal Bidder should have valid License of (a)Fire fighting system installation such as hydrants, sprinklers, pumping etc. (b)Detection & Fire Suppression System (c)Passive protection such as cable protection ,fire doors etc. issued by Director ,Maharashtra Fire Services Mumbai ,Government of Maharashtra .2)The principal Bidder should have MOU with the Govt. Electrical Contractor with valid License issued by the Industries, Energy & Labor Department, Govt. of Maharashtra

वरील निविदा सूचनेत विविध बांधकामे/विद्युतकामे समाविष्ट असून सदर निविदा सूचना व डाऊन लोडिंग कालावधी संदर्भातील विस्तृत माहिती https://mahatenders.gov.in या पोर्टल वर उपलब्ध करुन देण्यात आलेली आहे.

सदरची विस्तृत निविदा सूचना विद्यापीठाच्या www.nmu.ac.in या संकेतस्थळावर उपलब्ध आहे. तसेच विद्यापीठाच्या बांधकाम विभाग कार्यालयाच्या सूचना फलकावर प्रसिध्द करण्यात आलेली आहे.

कुलसचिव,
कवयित्री बहिणाबाई चौधरी
उत्तर महाराष्ट्र विद्यापीठ, जळगाव

No. of correction

Contractor Executive Engineer Registrar

|| अंतरी पेटवू ज्ञानज्योत ||

KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY, JALGAON

Tender Notice No.KBCNMU/10/B1/03/e-03 for Year 2025-2026

Online Tenders (e-tender) in B-1 form for the Civil/Electrical works are invited by the Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon. Phone No. 0257-2257256 e-mail registrar@nmu.ac.in On Government of Maharashtra Electronic Tender Management System https://mahatenders.gov.in

The details can be viewed and downloaded online directly from the Government of Maharashtra e-Tendering Portal https://mahatenders.gov.in This detailed tender notice is available on www.nmu.ac.in and on Notice Board at the office of Executive Engineer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.

NOTE :

1. All eligible/interested contractors are mandated to get enrolled on e-Tendering portal (https://mahatenders.gov.in)
2. To process the tenders online bidders are required to obtain digital certificate.
3. Contractors can contact on cell No. 7745827385 for any clarification of their doubts regarding the process of Electronic Tendering System.
4. Submission of documents pertaining to tender (Document in Envelope No.1) Form Fee and EMD of tender **through e-mail on executiveengineer@nmu.ac.in**

Registrar
Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon

No. of correction

Contractor Executive Engineer Registrar

॥ अंतरी पेटवू ज्ञानज्योत ॥

'A' Grade
NAAC Re-accredited
(4th Cycle)

The Registrar
Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon – 425 001

NAME OF WORK – **Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon**

Tender Notice No.KBCNMU/10/B1/03/e-03 for Year 2025-2026

e-TENDER DOCUMENTS

Volume I : General Rules and directions for the guidance of contractors

Volume II : Conditions of Contract, Administrative, Financial & Technical Specifications

Volume III : Schedule 'B'

Volume IV : Drawings

No. of correction

Contractor Executive Engineer Registrar

Volume I

General Rules and directions for the guidance of contractors

No. of correction

Contractor Executive Engineer Registrar

DETAILS OF WORK

NAME OF WORK	:	**Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.**
Estimated cost put to tender	:	**Rs.70,38,576/-**
Earnest money	:	**Rs.70,400/-** **In words (Rupees Seventy Thousand Four Hundred Only)**

The Earnest Money should be deposited only through Net Banking by linking **https://mahatenders.gov.in.** . [In case of any difficulty contact on **Cell No. 7745827385**] **The Proof /Receipt and duly attested copies shall be uploaded at the time of submission.**

Total Security Deposit 5 **% (FIVE)** percent for **Rs.3,52,000/-** (50 % in cash at the time of agreement and 50 % will be deducted from R.A. bills). Time stipulated for completion is upto 06 months, which will include the monsoon period.

TO BE FILLED BY THE CONTRACTOR.

I / WE have quoted my/our offer in percentage rate in words as well as in figures. I / We further undertake to enter into contract in regular “B-1” form in Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.

Name & Signature of Contractor / Power of Attorney holder with complete address.

No. of correction

Contractor Executive Engineer Registrar

KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY, JALGAON

INVITATION FOR TENDERS

DETAILED TENDER NOTICE

NAME OF WORK — **Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.**

Online percentage rate tenders in **'B-1'** Forms are invited by the **Registrar, Kavayitri Bahinabai Chaudhari Maharashtra University, Jalgaon** for the following works from Company/Dealer as specified in Below Column No.7 of Detailed E-Tender Notice. The name of work, estimated cost, earnest money, security deposit, time limit for completion etc. are as under:

E-Tender Sr. No.	Name of work	Estimated cost put to tender (Rs)	Earnest Money (Rs)	Cost of Tender Form (Rs)	Time Limit of completion	Class of Contrator
1	2	3	4	5	6	7
01	Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.	**70,38,576/-**	**70,400/-**	Rs.5,000+ GST @18%= 5,900/-	06 months (including monsoon)	The principal Bidder should have valid License of (a)Fire fighting system installation such as hydrants, sprinklers, pumping etc. (b)Detection & Fire Suppression System (c)Passive protection such as cable protection ,fire doors etc. issued by Director ,Maharashtra Fire Services Mumbai ,Government of Maharashtra .2)The principal Bidder should have MOU with the Govt. Electrical Contractor with valid License issued by the Industries, Energy & Labor Department, Govt. of Maharashtra

No. of correction

Contractor Executive Engineer Registrar

Tender form, conditions of contract, specifications and contract drawings can be **downloaded** from the e-tendering portal of **https://mahatenders.gov.in.** after entering the details of online payment deposited, as per the Tender schedule. Further information regarding the work can be obtained from the Executive Engineer, Construction Division, K.B.C.N.M.U., Jalgaon.

The details of EMD & Tender Fee Deposited **should be submitted to the Executive Engineer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon on email executiveengineer@nmu.ac.in as per the Tender Schedule.** Bids will be opened as per the Tender Schedule, in the presence of such intending Tenderers or his/ their authorized representatives who may be present at that time.

FOR OFFLINE TENDERS ONLY

The tenderer shall have to deposits the Tender Fee and EMD through the
Link : https://edu.easebuzz.in/register/NorthkG6e3/Tender_Fees_EMD

OR

Through QR Code

1. TENDERING PROCEDURE: -

1.1 A. Blank Tender Forms

Tender Forms can be **downloaded** from the e-tendering Portal of Government of Maharashtra i.e. **https://mahatenders.gov.in.** after entering the details of payment towards Tender Fees as per the **Tender Schedule,**

1.2. 1.2.1 Tenderers should have valid Class II / III Digital Signature Certificate (DSC) obtained from any Certifying Authorities.

1.2.2 The Tenderers have to make a payment of **Rs. Nil** online as service charges for the use of Electronic Tendering during Online Bid Data Decryption and Re-encryption stage of the Tender.

1.2.3 For any assistance on the use of Electronic Tendering System, the Users may call: cell No. 7745827385.

1.2.4 Tenderers should install the Mandatory Components available on the Home Page of **https://mahatenders.gov.in.** under the section '**Mandatory Components**' and make the necessary Browser Settings provided under section '**Internet**

No. of correction

Explorer Settings'

1.3 Guidelines to Bidders on the operations of Electronic Tendering System of Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon https://mahatenders.gov.in.

A. Pre-requisites to participate in the Tenders processed by the University.

1. Enrolment and Empanelment of Contractors on Electronic Tendering System:

The Contractors interested in participating in the Tenders of University processed using the Electronic Tendering System shall be required to enroll on the Electronic Tendering System to obtain User ID.

After submission of application for enrolment on the System, the application information shall be verified by the Authorized Representative of the Service Provider. If the information is found to be complete, the enrolment submitted by the Vendor shall be approved.

The Contractors may obtain the necessary information on the process of enrolment and empanelment may visit the information published under the link Enroll under the section E- Tendering Toolkit for Bidders on the Home Page of the Electronic Tendering System.

2. Obtaining a Digital Certificate:

The Bid Data that is prepared online is required to be encrypted and the hash value of the Bid Data is required to be signed electronically using a Digital Certificate (Class – II or Class – III). This is required to maintain the security of the Bid Data and also to establish the identity of the Contractor transacting on the System.

The Digital Certificates are issued by an approved Certifying Authority authorized by the Controller of Certifying Authorities of Government of India through their Authorized Representatives upon receipt of documents required to obtain a Digital Certificate.

Bid data / information for a particular Tender may be submitted only using the Digital Certificate which is used to encrypt the data / information and sign the hash value during the Bid Preparation and Hash Submission stage. In case during the process of preparing and submitting a Bid for a particular tender, the Contractor losses his / her Digital Signature Certificate (i.e. due to virus attack, hardware problem, operating system problem); he / she may not be able to submit the Bid online. Hence, the Users are advised to store his / her Digital Certificate securely and if possible, keep a backup at safe place under adequate security to be used in case of need.

In case of online tendering, if the Digital Certificate issued to an Authorized User of a Partnership Firm is used for signing and submitting a bid, it will be considered equivalent to a no objection certificate / power of attorney to that User to submit the bid on behalf of the Partnership Firm. The Partnership Firm has to authorize a specific individual via an

authorization certificate signed by a partner of the firm (and in case the applicant is a partner, another partner in the same form is required to authorize) to use the digital certificate as per Indian Information Technology Act, 2000.

Unless the Digital Certificate is revoked, it will be assumed to represent adequate authority of the Authority User to bid on behalf of the Firm for the Tenders processed on the Electronic Tender Management System of Government of Maharashtra as per Indian Information Technology Act, 2000. The Digital Signature of this Authorized User will be binding on the Firm. It shall be the responsibility of Partners of the Firm to inform the Certifying Authority or Sub Certifying Authority, if the Authorized User changes, and apply for a fresh Digital Signature Certificate. The procedure for application of a Digital Signature Certificate will remain the same for the new Authorized User.

The same procedure holds true for the Authorized Users in a Private / Public Limited Company. In this case, the Authorization Certificate will have to be signed by the Director of the Company or the Reporting Authority of the Applicant.

For information on the process of application for obtaining Digital Certificate, the Contractors may visit any Certifying Authority.

3. Recommended Hardware and Internet Connectivity:

To operate on the Electronic Tendering System, the Contractors are recommended to use Computer System with at least 1 GB of RAM and broadband connectivity with minimum 512 kbps bandwidth.

4. Set up of Computer System for executing the operations on the Electronic Tendering System:

To operate on the Electronic Tendering System of Government of Maharashtra, the Computer System of the Contractors is required be set up. The Contractors are required to install Utilities available under the section Mandatory Installation Components on the Home Page of the System.

The Utilities are available for download freely from the above mentioned section. The Contractors are requested to refer to the E-Tendering Toolkit for Bidders available online on the Home Page to understand the process of setting up the System.

5. Payment for Service Provider Fees:

In addition to the Tender Document Fees payable to ***Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon*** the Contractors will have to pay Service Providers Fees *of* ***Rs. N I L L*** through **online payments** gateway service available on Electronic Tendering System. For the list of options for making online payments, the Contractors are advised to visit the link E-Payment Options under the section E-Tendering Toolkit for Bidders on the Home Page of the Electronic Tendering System

No. of correction

Contractor Executive Engineer Registrar

B. Steps to be followed by Contractors to participate in the e-Tenders processed by the university.

1. Preparation of online Briefcase:

All Contractors enrolled on the Electronic Tendering System of Government of Maharashtra are provided with dedicated briefcase facility to store documents / files in digital format. The Contractors can use the **online briefcase** to store their scanned copies of frequently used documents / files to be submitted as a part of their bid response. The Contractors are advised to store the relevant documents in the briefcase before starting the Bid Preparation and Hash Submission stage.

In case, the Contractors have multiple documents under the same type (e.g. multiple Work Completion Certificates) as mentioned above, the Contractors advised to either create a single pdf file of all the documents of same type or compress the documents in a single compressed file in zip or rar formats and upload the same.

It is mandatory to upload the documents using the briefcase facility. Therefore, the Contractors are advised to keep the documents ready in the briefcase to ensure timely bid preparation.

Note: Uploading of documents in the briefcase does not mean that the documents are available to **Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon** at the time of Tender Opening stage unless the documents are specifically attached to the bid during the online Bid Preparation and Hash Submission stage as well as during Decryption and Re-encryption stage.

2. Online viewing of Detailed Notice Inviting Tenders:

The Contractors can view the Detailed Tender Notice along with the Time Schedule (Key Dates) for all the Live Tenders released **by Kavayitri Bahinabai Chaudhari North Maharashtra University** on the home page of North Maharashtra University's Web site & e-Tendering Portal on **https://mahatenders. gov.in.** under the section Organization Tenders.

3. Download of Tender Documents:

The Pre-qualification / Main Bidding Documents are available for free downloading. However to participate in the online tender, the bidder must purchase the bidding documents online by filling up details of the payment towards the cost of Tender Form Fee.

4. Online Bid Preparation and Submission of Bid Hash (Seal) of Bids:

Submission of Bids will be preceded by online bid preparation and submission of the

digitally signed Bid Hashes (Seals) within the Tender Time Schedule (Key Dates) published in the Detailed Notice Inviting Tender. The Bid Data is to be prepared in the templates provided by the university. The templates may be either form based, extensible tables and / or up loadable documents. In the form based type of templates and extensible table type of templates, the Contractors are required to enter the data and encrypt the data using the Digital Certificate. In the upload able document type of templates, the Contractors are required to select the relevant document / compressed file (containing multiple documents) already uploaded in the briefcase.

Notes:

a. The Contractors upload a single document or a compressed file containing multiple documents against each unloadable option.
b. The Hashes are the thumbprint of electronic data and are based on one – way algorithm. The Hashes establish the unique identity of Bid Data.
c. The bid hash values are digitally signed using valid Class – II or Class – III Digital Certificate issued by any Certifying Authority. The Contractors are required to obtain Digital Certificate in advance.
d. After the hash value of bid data is generated, the Contractors cannot make any change / addition in its bid data. The bidder may modify bids before the deadline for Bid Preparation and Hash Submission as per Time Schedule mentioned in the Tender documents.
e. This stage will be applicable during both, Pre-bid / Pre-qualification and Financial Bidding Processes.

5. Close for Bidding (Generation of Super Hash Values):

After the expiry of the cut–off time of Bid Preparation and Hash Submission stage to be completed by the Contractors has lapsed, the Tender will be closed by the Tender Authority.

The Tender Authority from Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon generate and digitally sign the Super Hash values (Seals).

6. Decryption and Re-encryption of Bids (submitting the Bids online):

After the time for generation of Super Hash values by the Tender Authority from Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon has lapsed; the Contractors have to make the online payment of **Rs. Nil** towards the fees of the Service Provider.
After making online payment towards Fees of Service Provider, the Contractors are required to decrypt their bid data using their Digital Certificate and immediately re-encrypt their bid data using the Public Key of the Tendering Authority. The Public Key of the Tendering Authority is attached to the Tender during the Close for bidding stage.

No. of correction

Note: The details of the Processing Fees shall be verified and matched during the Technical Opening stage.

At this time, the Contractors are also required to upload the files for which they generated the Hash values during the Bid Preparation and Hash Submission stage.

The Bid Data and Documents of only those Contractors who have submitted their Bid Hashes (Seals) within the stipulated time (as per the Tender Time Schedule), will be available for decryption and re-encryption and to upload the relevant documents from Briefcase. A Contractor who has not submitted his Bid Preparation and Hash Submission stage within the stipulated time will not be allowed to decrypt / re-encrypt the Bid data / submit documents during the stage of Decryption and Re-encryption of Bids (submitting the Bids online).

7. Short listing of Contractors for Financial Bidding Process:

The Tendering Authority will first open the Technical Bid documents of all Contractors and after scrutinizing these documents will shortlist the Contractors who are eligible for Financial Bidding Process. The shortlisted Contractors will be intimated by email.

8. Opening of the Financial Bids:

The Contractors may remain present in the Office of the Tender Opening Authority at the time of opening of Financial Bids. However, the results of the Financial Bids of all Contractors shall be available on the e-Tendering Portal of Government of Maharashtra i.e. **https://mahatenders.gov.in.** Immediately after the completion of opening process.

9. Tender Schedule (Key Dates):

The Contractors are strictly advised to follow the Dates and Times allocated to each stage under the column "Contractor Stage" as indicated in the Time Schedule in the Detailed Tender Notice for the Tender. All the online activities are time tracked and the Electronic Tendering System enforces time-locks that ensure that no activity or transaction can take place outside the Start and End Dates and Time of the stage as defined in the Tender Schedule.

At the sole discretion of the Tender Authority, the time schedule of the Tender stages may be extended.

9.1 Joint venture is not allowed.

2. EARNEST MONEY AND SECURITY DEPOSIT.

Scanned copy of Earnest Money Deposit (E.M.D.) which should be paid online, separately for each work. (To be submitted as per the tender schedule)

2.1 Earnest money exemption certificate will not be accepted.

2.2 The amount of earnest money will be forfeited, in case a successful contractor does not

pay the amount of initial security deposit within the time specified as stipulated by the Registrar and complete the contract documents. In all other cases, earnest money will be refunded back to other contractors after deposition of Initial Security Deposit by successful contractor.

2.3 SECURITY DEPOSIT

The total Security Deposit to be paid shall be **5% (Five percent) for Rs. 3,52,000/-** of amount put to tender. The successful tenderer shall have to deposits half of the Security Deposit by cash or by Demand Draft, through the

Link:– https://edu.easebuzz.in/register/NorthkG6e3/Security_Deposit

OR

Through QR Code

in favour of **Finance & Account Officer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon. F**ailing which his earnest money will be forfeited to the Registrar. The balance 50% security deposit will be recovered from running account bills at 5% as percentage shown in item (d) of the memorandum in printed B-1 form or as may be decided by the Registrar during course of execution of the work looking to the position and circumstances that may prevail, whose orders will be final and binding on the contractor.

The Security deposit for the due performance of the contract shall be as detailed in the tender documents elsewhere. Fifty percent of the Security deposit will have to deposited within ten days of the acceptance of the tender and the remaining fifty percent will be recovered from the running bills as the rate as specified in the tender form on the cost of work as per CSR prevailing at the time of acceptance of tender.

Initial Security Deposit should be deposited by cash or by Demand Draft in favour of **Finance & Account Officer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.**

No. of correction

Contractor Executive Engineer Registrar

2.4 PERFORMANCE SECURITY DEPOSIT: (as per Government Resolution Public Works Department No.BDG2016/Pra.Kra-2/Bldg.2/dated 12/2/2016, Revised Government Resolution No.CAT/2017/Pra.Kra.08/Bldg.2/dated 26/11/2018) and Revised Government Resolution No.Tender0417/(Pra.Kra.247/17)Mo.Pra-1,dated 23/06/2020)

if the quoted offer by the tenderer is below the estimated rates.

In case the Contractor's bid is below more than 1% of estimated cost put to tender, the tenderer will have to pay additional performance security deposit **according to revised Government Resolution dated 26/11/2018 in the form of Demand Draft drawn from Nationalized/Scheduled bank in favour of Finance & Account Officer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon**.

The validity of Demand Draft shall be for 3 months from the submission of tender. The MICR and IFSC code of the issuing bank shall be printed on the Demand Draft.

Non submission of the additional performance security deposit in the form of DD as stated in the Government Resolution dated 26/11/2018 within 08 days in the office of The Executive Engineer, Construction Division, KBCNMU, Jalgaon. (in case of Contractor's offer is below more than 1% of estimated cost put to tender) the contractor's offer shall not be considered and shall out rightly be rejected.

Details of amount of performance security shall be as below.

1] for bids, if the tender offer quoted as 1 to 10% below than the estimated cost put to tender, performance security shall be 1% of estimated cost put to tender.

2] for bids, if the tender offer quoted more than 10% below to 15% below the estimated cost put to tender then performance security shall be 1% + (15% - 10%)=1%+5% i.e.=6%

3] for bids, if the tender offer quoted more than 15% below the estimated cost put to tender then performance security shall be 1% + (15% -10%) +(Y%- 15%)x2= 1%+5%+(Y%- 15%) x2

(Eg : If the quoted percent is 19% below then the performance security shall be 1%+(15%-10%)+(19%-15%)x2 = 1%+5%+4%x2 =1%+5%+8% = Total 14% of estimated cost put to tender)

(Refer GR No. **CAT/2017/Pra.Kra.08/Bldg.2/dated 26/11/2018)**

The original Demand Draft, shall be submitted to the Executive Engineer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon within 02 working day's from the date of Envelope No.2 opening.(For the L-1 bidder only.)

In case of submission of false documents/Demand Draft, action shall be taken against the contractor as stipulated in the above mentioned G.R.

No. of correction

Contractor Executive Engineer Registrar

2.5 In the event of failure of the tenderer to pay initial security deposit within 10 days (unless extended in writing by the Registrar) from the date of receipt of notice of acceptance of his tender, the amount of earnest money shall be forfeited to University and the acceptance of his tender, shall be considered withdrawn. Except that in the event of the notice of acceptance of the tender not being issued within 120 days of the date of opening of **Envelope No.2 (financial bid)**. The tenderer shall have the option (to be intimated in writing in good time before the expiry of 120 days period) of withdrawing his tender, in which case the earnest money should be refunded in full. All the tenders shall remain open for acceptance for 120 days from the date fixed for opening of envelope No.2. (Financial bid) and thereafter until it is withdrawn by the tenderer by notice in writing as per condition No. 2 of the Memorandum on **Page No. 40 to 41.**

2.6 Earnest money of the unsuccessful Tenderers will be refunded online after the work order issued to the successful tenderer or on the expiry of the validity period whichever is **earlier automatically through e-Tender portal.**

2.7 The acceptance of the tender may be intimated to the contractor telegraphically or otherwise and either by the officer competent to accept the tender or any authority in the department including Government and such intimation shall be deemed to be an intimation of acceptance of the tender given by the authority competent to accept the tender.

2.8 In case there is difference between amount written in figures and words, the **Lower offer** will be taken as **final**.

3. Income Tax

The Income Tax and surcharge thereon will be deducted from bill amount at the rates amended from time to time or as intimated by the competent Income Tax authority, whether measured bill, advance payment or secured advance.

3. **Good and Service Taxes**

As per Government Circulars/Resolutions issued by the Government time to time, the Contractor /Bidder are requested to consider the GST w.e.f. 01-07-2017 during the quoting the rate of bid, otherwise University will not be responsible for any loss to the Contractor/Bidder.

4. Insurance

As per the Govt. Resolution No. FD/Insurance-1098/Case No. 28/98, dated 19-08-1998 and Director of Insurance Maharashtra, Mumbai letter dated 26-04-2005 Contractor has to submit Govt. Insurance policy for the work. The actual amount incurred by Contractor for insurance of work shall be reimbursed on production of documentary evidence only.

No. of correction

6. Royalty Charges

The royalty charges shall be applicable as per directions received from the Revenue Department. The contractor has to pay Royalty Charges directly to Revenue Department and original challans, permission documents shall be produced to Executive Engineer. If contractor fails to produce these original documents, the royalty charges shall be recovered from Contractor's bill.

7. Building and other construction workers cess

Building and other construction workers cess @ 1% or at the rate amended from time to time as intimated by the competent authority of building and other construction workers Welfare vide Govt. Resolution of Industries and Power Dept. No.BCA-2009/CR-1008/ Labour 7A, Dated 17/06/2010, will be deducted from bill amount whether measured bill, advance payment or secured advance.

8. TENDERING PROCEDURE

8.1 The tender shall be unconditional, conditional tender shall be summarily rejected.

8.2 **EXAMINATION OF DRAWING AND SITE CONDITIONS:**

The tenderers shall in his own interest carefully examine the drawings, conditions of contract and specifications etc. He shall also inspect the site and acquaint himself about the climate, physical and all weather conditions prevailing at site, the nature magnitude, special features, and practicability of the works. All existing and required means of communications and access to site, availability of housing and other facilities, the availability of labour and materials, labour camp site, stores, godown etc. He shall obtain all necessary information as to the risk, contingencies and other circumstances which may affect and influence the tender. No claims on any of the above or any other factors will be entertained by the Government. Should there be any discrepancy or doubt or obscurity to be observed by him, he shall set forth in writing such discrepancies, doubts, obscurity and submit the same to the **Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon** for elucidation as soon as possible.

9. TENDERING PROCEDURE

9.1 Pre- Tender Conference

Pre-tender conference open to all prospective tenderers who have downloaded tender form before the date of pre-tender conference, wherein prospective tenderers will have an opportunity to obtain clarifications regarding the work and the tender conditions.

OR

If tenderer requires any clarifications regarding work to be executed / rates in BOQ / terms and conditions of the tender, he has to submit in written a letter in this regard on the **e-mail** executiveengineer@nmu.ac.in**. or** submit physically in the office of The

Executive Engineer, Construction Department, KBCNMU, Jalgaon, **before the date mentioned in the Tender Notice.** Clarification regarding query raised by the tenderer will be given through corrigendum on e-tender portal before uploading of the tender document .This corrigendum will be the part of tender document and should be submitted by the tenderer in Envelope No.2

The prospective tenderers are free to ask for any additional information or clarifications either in writing or orally and reply to the same will be given by the Executive Engineer, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon in writing and this clarifications referred to as common set of deviations, shall form part of the tender documents and which will also be common and applicable to all tenderers.

The tender submitted by tenderer shall be based on the clarification/additional facility issued (if any) by the Department and his tender shall be unconditional. Conditional tenders will be summarily rejected.

All tenderers are cautioned that the tenders containing any deviation from the contractual terms and conditions, specifications or other requirements, and conditional tenders will be rejected.

9.2 Manner of Submission of Tender and its Accompaniments:

9.2 (A) ENVELOPE NO. 1 : (DOCUMENTS)

The first envelope **"Envelope No.1"** shall contain the following documents of civil contractor.

I. **Copy** of forwarding letter.

II. **Copy** of EMD and Tender Cost amount shall be deposited (Copy thereof to be submitted as per the tender Schedule.

II. **Copy** of Certificate in Original or an attested copy thereof duly Self Attested as a registered contractor with The principal Bidder should have valid License of (a)Fire fighting System installation such as hydrants, Sprinklers, Pumping etc. (b)Detection & Fire Suppression System (c)Passive protection such as cable protection ,fire doors etc. issued by Director , Maharashtra Fire Services Mumbai ,Government of Maharashtra .

III. **Copy** of Details of other works tendered for and in hand with the value of work unfinished on the last date of submission of tender (In the proforma of **Statement No. I .** The Statement from the Heads of the Offices under whom the works are in progress should be enclosed of civil and electrical contractor.

IV. **Copy** of the List of owned Machinery immediately available with the tenderer for use on this work and list of machinery proposed to be utilized on this work, but not immediately available and the manner in which it is proposed. (In the proforma of **Statement No. II.)**

V. **Copy** of details of one work of similar type and magnitude carried out by the contractor during last Five years (In the proforma of **Statement No. III)**

Direction given for similar type and magnitude of work vide Govt. Resolution No.Sankirna/2019/Pra.Kra.47/Building-2/dtd.25/10/2019)are applicable

VI. Copy of details of Technical person on the rolls of the tenderers.
(In the proforma of **Statement No. IV)**

VII.Copy of partnership deed and Power of Attorney, in case of a Firm, tendering for work. (True copy duly Self Attested).

IX. Copy of Valid Professional Tax Registration Certificate in the form of PTR and PTE under section (1) of section 5 of Maharashtra State Tax on Profession, Trade callings and Employment Act 1975, Rule 3 (2) for employees including technical personnel from the Professional Tax office of the concerned District of Maharashtra with its latest valid clearance certificate. *"No dues Clearance certificate"* from competent authority should be submitted.

X. Copy of Valid GST registration certificate from Maharashtra State Sale Tax Department.

XI. [If applicable] Copy of the contractor or his identified sub-contractor should possess a required valid *electrical license* and certificate **registered in appropriate class** with Public Works Electrical Division, for executing the building electrification works should be produced by the contractor in Envelope No.1 with the attested copy of valid electrical license. In absence of these two documents in Envelope No.1, the Envelope No.2 of the contractor will not be opened. Also an agreement between civil and electrical contractor executed before Executive Magistrate should be submitted. **[If applicable]**

XII. Copy of affidavit by Notary or Before Executive Magistrate on **Rs.500 stamp** for regarding completeness, correctness and truthfulness of document as per prescribed Performa given by Public Works Department of Maharashtra. Tendered /Contractor is wholly and solely responsible for completeness, correctness and truthfulness of document and no officer/employee of the university will be held responsible for the same. **(Refer Government Resolution No.CAT/2018/Pra.Kra.127/Bldg.-2, dated 28 November 2018)**

9.3 (B) ENVELOPE NO. 2: TENDER: (Financial Bid)
Refer to Section Schedule of online tendering procedure ***at Sr. No. 1.3.***

9.4 I SUBMISSION OF TENDER:
Refer to Section '**Guidelines to Bidders on the operations of Civil Tendering System of Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon**' for details.

9.5 (D) OPENING OF TENDERS:
On the date specified in the Tender Schedule, following procedure will be adopted for opening of the tender:

1) ENVELOPE NO.1: (Documents)

First of all **Envelope No. 1** of the tender will be opened **online** to verify its contents as per requirements. If the various documents contained in this envelope do not meet the requirements of the Department, a note will be recorded accordingly by the tender opening authority and the said tenderer's **Envelope No.2 (Financial Bid)** will not be considered for further action, but the same will be recorded. The decision of the Tender opening authority in this regard will be final and binding on the contractor.

No. of correction

2) ENVELOPE NO .2 : (FINANCIAL BID)

This Envelope shall be open **online** if contents of Envelope No. 1 are found to be acceptable to the Department and / or fulfill the Qualifying Criteria. The tendered rates, Percentage above or below the estimated rates quoted shall sealed and visible on e-tendering portal, after opening of **Envelope No.2 (Financial Bid)**

9.6 TIME LIMIT:

The work is to be completed within time limit as specified in the N.I.T which shall be reckoned from the date of written order of commencing the work and shall be inclusive of monsoon period.

9.7 TENDER RATE:

No alteration in the form of tender and the schedule of tender and no addition in the scope of special stipulation will be permitted. Rates quoted for the tender shall be taken as applicable to all leads and lifts.

9.8 TENDER UNITS:

The tenderers should particularly note that the unit mentioned in the Schedule "B" on which the rates are based. No change in the units shall be allowed. In the case of difference between the rates written in figures and in words the correct rate will be one, which is lower of the two.

9.9 TENDER ACCEPTANCE:

Acceptance of tender will rest with the **University Buildings & Works Committee of Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon** who reserve the right to reject any or all tenders without assigning any reasons therefore. The tenderer whose tender is accepted will have to enter in to a regular B-1 agreement within 10 days of being notified to do so. In case failure on the part of Tenderer to sign the agreement within the stipulated time, the earnest money paid by him shall stand forfeited and the offer of the tenderer shall be considered as withdrawn by him.

9.10 POWER OF ATTORNEY:

If the tenderers are a firm or company, they should in their forwarding letter mentioning the names of all the partners together with the name of person who holds the power of attorney authorizing him to conduct all transactions on behalf of the body, along with the tender.

9.11 The tenderer may in the forwarding letter mention any points he may wish to make clear but right is reserved to reject the same or the whole of the tenders if the same become conditional tender thereby.

9.12 The contractor or the firms tendering for the work shall inform the Department if they appoint their authorized Agent on the work.

No. of correction

9.13 Any dues arising out of contract will be recovered from the contractor as arrears of land revenue if not paid amicable, moreover, recovery of Government dues from the contractors will be effected from the payment due to the contractor from any other Government works under execution with them.

9.14 All pages of tender documents, specifications corrections slips etc. shall be initialed by the tenderer. The tenderer should bear full signature of the tenderer or his authorized power of attorney holder in the case of firm.

9.15 VALIDITY PERIOD:

The offer shall remain open for acceptance for minimum period of **120 days** from the date of opening of Envelope No.2 (financial bid) and thereafter until it is withdrawn by the contractor by notice in writing duly addressed to the authority. (Refer to memorandum of B-1 form chapter).

10. The contractor will have to sign the original copy of the tender papers and the drawings according to which the work is to be carried out. The contractor shall also have to give a declaration to the effect that, he has fully studied the plans, specifications, local conditions and availability of labor and materials and that he has quoted his rates with the consideration to all these factors.

11. The right is reserved to revise or amend the contract documents prior to the due notified for the receipt of tenders or extended date. Such deviations, amendments or extensions, if any, shall be communicated in the form of corrigendum by letter or / and by notice in News Papers or as may be considered suitable.

12. The tender submitted by the tenderer remain valid for a period of **120 days** from the date of opening of envelope No.2 (financial bid). Tenderer also see para 2 of General Rules etc. of contract form.

13. The contractor(s) whose tender is accepted is required to note that no foreign exchange will be released by the university.

14. The Tenderers, which do not fulfill all or any of the conditions or are incomplete in any respect are liable to summarily rejection.

15. Right to reject any or all tenders without assigning reason there for is reserved. The acceptance of the tender lies with the **University Buildings & Works Committee, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.**

16. The e-tender Notice shall form part of the tender agreement.

No. of correction

Contractor Executive Engineer Registrar

Important Instructions to the Contractor

Regarding revision in the contract terms and conditions, according to the Govt. Resolution and Directions

1. In case the tenderer whose offer is found lowest is requested to negotiate and reduce the offer, if the contractor does not respond within a period of 10 days the tender accepting authority without issuing any reminder reserves the right to reject such tender.

2. In case the contractor, who is informed of acceptance of his tender, does not remit the initial Security Deposit within a period of 10 days, the tender accepting authority reserves the right to forfeit the Earnest Money Deposit without issuing any reminder to take further action according to the tender provision.

3 As per Government instruction it is proposed to make payment of Contractor's bill through ECS/NEFT system. For this purpose contractor should open his Bank Account in a Bank having Core-Banking facility only.

4 Contractor shall submit a certificate to the effect that "All the payments to the Labour /Staff are made in Bank Accounts of Staff linked to Unique Identification Number (AADHAR CARD)." The certificate shall be submitted by the Contractor within 60 days from the commencement of contract. If the time period of Contract is less than 60 days then such certificates shall be submitted within 15 days from the date of commencement of contract [Govt. Resolution No.Tender-2016/ Pr.Kr.20/Shikana/ Ema-2, Dated 9/12/2016]

5 For variation of Quantities Directions given through Govt. Resolution No.Sankirna2017/C.R.-121(Part-II)Bldg-2, dated 19/9/2017, are applicable

6. Price variation clause is applicable to the works having time limit of more than 01 year (12 months). As per the MORTH guidelines, price escalation is not applicable / payable where the time limit is up to 01 year (12 Calendar Months)

Hence, for works having time limit of more than 01 year the Price variation clause is applicable, as per details given in the Appendix 'A' along with the Govt. Resolution No. San Kirna 2017/C.R.121/(Part-II)/Bldg-2, dated 23/10/2017.

No. of correction

Contractor Executive Engineer Registrar

Government Circular No.: Sankirn-2017/C.R.121/Part II/Bldg.2 dated 23/10/2017

Appendix "A"

Price Adjustment

Contract price shall be adjusted for increase or decrease in rates and price of labor, materials, fuels and lubricants excluding bitumen, cement and steel in accordance with the following principles and

procedures and as per formula given in the contract data. The price variation clause to be included shall be read as follows: (a) The price adjustment shall apply for the work done from the start date given in the

contract data upto end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor. (b) The price adjustment shall be determined during each month from the formula given in the contract data. (c) Following expressions and meanings are assigned to the work done during each month:

R = Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month, less the amount of secured advance recovered, if any during the month. It will exclude value for works executed under variations for which price adjustment will be worked separately based on the terms mutually agreed.

To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

The formula (e) for adjustment of prices are: R = Value of work

Adjustment for labor component

5. Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:

(ii) VL= 0.85 x P1/lOO x R x (LI- Lo)/Lo

(iii) VL= increase or decrease in the cost of work during the month under consideration due to changes in rates for local labor.

No. of correction

(iv) Lo= the consumer price index for industrial workers for the State on 28 days preceding the date of opening of Bids as published by Labor Bureau, Ministry of Labor, Government of India.

(v) LI= The consumer price index for industrial workers for the State for the under consideration as published by Labor Bureau, Ministry of Labor, Government of India.

(vi) PI= Percentage of labor component of the work.

Adjustment of POL (fuel and lubricant) component

(v) Price adjustment for increase or decrease in cost of POL (fuel and lubricant) shall be paid in accordance with the following formula:

Vf = 0.85 x P/100 x R x (F, - F)/Fo

Vf = Increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel and lubricants. Fo = The official retail price of High Speed Diesel (HSD) at the existing consumer pumps of lac at nearest center on the day 28 days prior to the date of

opening of Bids. F, = The official retail price of HSD at the existing consumer pumps of IOC at nearest center for the 15th day of month of the under consideration.

P, = Percentage of fuel and lubricants component of the work. Note:For the application of this clause, the price of High Speed Diesel oil I chosen to represent fuel and lubricants group.

Adjustment of Other materials Component (Excluding bitumen, steel and cement)

(vii) Price adjustment for increase or decrease in cost of local materials other than cement, steel, bitumen and POL procured by the contractor shall be paid in accordance with the following formula:

Vm = 0.85 x Pm /100 x R x (MI – M0)/M0

Vm= Increase or decrease in the cost of work during the month under consideration due to changes in rates for local materials other than cement, steel, bitumen and POL.

M,= The all India wholesale price index (all commodities) on 28 days preceding the date of opening of Bids, as published by the Ministry of Industrial Development, Government of India, New Delhi.

M, = The all India wholesale price index (all commodities) for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi.

Pm= Percentage of local material component (other than cement, steel, bitumen and POL of the work.

7. Royalty charges for the work are applicable as per the Directions received from Collectorate office, Jalgaon and Directions given in the Current SSR

8. Vide Govt. Resolution NO.CAT/2017/Pra.Kra.08/Bldg-2, dated 27/9/2018
i) Architects/Consultants fee for this project will be paid only for the Tender Cost put to the tender and no extra fee will be paid for any extra/additional cost of the Project.

9. Directions given vide Govt. Resolution No.CAT/2018/Pra.Kra-127/Bldg-2, dated 28/11/2018 regarding correctness, truthfulness and completeness of the documents submitted by the Bidder are applicable.

No. of correction

10. **<u>Defect Liability Period</u>** – Defect Liability Period for this project is applicable as per the Directions received in this regard, vide Govt. Resolution No.Sankirn-2018/Pra.Kra151/Bldg-2, dated 14/01/2019.

11. Vide Resolution No.CAT-2017/Pra.Kra.8/Bldg-2, dated 29/01/2019.

11.1 Complete Amount of Security Deposit will be refunded back after successful completion of the Defect Liability Period

11.2 If Defect Liability period is more than 2 years, 90% amount of the Security Deposit will be refunded back after successful completion of 02 years period from completion of the work and remaining 10% amount of Security Deposit will be refunded back after successful completion of the total Defect Liability Period.

11.3 Security Deposit will be refunded only after Quality Inspection Certificate received from the concern Architect and Executive Engineer of the University.

11.4 All other Directions given in the Govt. Resolution are applicable.

12. **Vide Govt. Resolution No. PLN-2020/Pra.Kra.32/Jal-S (Dhoron), dated 11/08/2020** use of Artificial sand (crushed stone sand) is mandatory. Terms & Specifications given in this resolution are applicable.

13. Vide Govt. Resolution No.CAT-2022/Pra.Kra.50/Bldg-2, dated 11/05/2022.

For Works having Estimated Cost above Rs.3,00,000/-, the bid capacity will be calculated as **(A X N X 2.0) – B,** where

A = Maximum Turnover in last 05 years

N = Time limit of the work in years

B = Value of Works in Hand within time period of the tendered works.

14. All directions received from the Maharashtra Govt. with respect to e-tendering system, terms and conditions of contract are applicable as when received.

15. Directions received from the Government of Maharashtra regarding 18% GST are applicable to this work. [G.R.No.Sankirn 2017/Pra.Kra.121(Part-27)/Building-2, dated 27/09/2022]

16. Directions received from the Government of Maharashtra regarding Administrative Approval, Technical Sanctioned and Tender BOQ is applicable to this work. [G.R.No.BGM/2023/Pra.Kra.87/Arth-1, dated 16/02/2024]

No. of correction

Contractor Executive Engineer Registrar

STATEMENT -1

STATEMENT OF LIST OF WORKS IN HAND AND WORKS TENDERED FOR AS ON LAST DATE OF SUBMISSION OF THIS TENDER

NAME OF CONTRACTOR:

(i) WORKS IN HAND

Sr. No.	Name of work	Agreement No.	Tendered Amount	Date of commencement	Stipulated Date of completion.	Value of work already Done.	Value of Balance work to be executed in next18 months	Probable date Of completion.	Remarks
1	2	3	4	5	6	7	8	9	10
SAMPLE FORM									

(ii) WORKS TENDERED FOR

Sr. No.	Name of Work	Name and Address of client	Tendered Amount	Time limit	Probable date when decision is expected	Other relevant details, if any.
	2	3	4	5	6	7
SAMPLE FORM						

Note:

1. This is only a standard form. Details are to be furnished in this format in the form of type written statements which shall be scanned enclosed in envelope No. 1 duly singed
2. The documentary proof of wok in hand/ works tendered for should be submitted also be Scanned with this statement duly attested by Gazette Officer.

Signature of Contractor

No. of correction

Contractor Executive Engineer Registrar

STATEMENT – II

STATEMENT SHOWING THE DETAILS OF PLANT AND MACHINERY IMMEDIATELY AVAILABLE WITH TENDERER FOR THIS WORK

NAME OF CONTRACTOR:

Sr. No.	Name of Equipment	No. of Units	Kind and make	Capacity	Age and Condition.	Present Location	Remarks
	2	3	4	5	6	7	8
SAMPLE FORM							

Note: Use separate sheet for Civil and Electrical Works.

Note: 1. This is only a standard form. Details are to be furnished in this format in the form of type written statements which shall be

Scanned enclosed in envelope No. 1 duly singed

6. The documentary proof of having own machinery should also be scanned and submitted with this statement duly attested by Gazetted Officer.

STATEMENT - III

STATEMENT SHOWING THE DETAILS OF WORK OF SIMILAR TYPE AND MAGNITUDE CARRIED OUT BY THE CONTRACTOR DURING LAST FIVE YEARS

NAME OF CONTRACTOR:

Sr. No.	Name of work	Name and address of the organization for whom the work was done	Place And country	Agreement No. and Date.	Date of Comm-ence-ment	Tendered cost.	Total cost of work done.	Actual date of completion	Remarks
1	2	3	4	5	6	7	8	9	10
SAMPLE FORM									

Note: Use Separate sheet for Civil and Electrical works.

Note: This is only a standard form. Details are to be furnished in this format in the form of type written statements which shall be scanned enclosed in envelope No.1 duly signed. The documentary proof of <u>similar type of work done and magnitude</u> should also be scanned and submitted with statement.

No. of correction

Contractor Executive Engineer Registrar

STATEMENT –IV

STATEMENT SHOWING THE DETAILS OF TECHNICAL PERSONNEL AVAILABLE WITH CONTRACTOR WHICH CAN BE SPARED EXCLUSIVELY FOR THIS WORK

NAME OF CONTRACTOR:

Sr. No.	Name of person	Designation.	Qualification	Whether working in field or in office.	Professional Experience of execution of similar works.	Period for which the person is working with the tenderer.	Remarks
1	2	3	4	5	6	7	8
SAMPLE FORM							

Note: This is only a standard form. Details are to be furnished in this format in the form of type written statements, which shall be scanned enclosed in envelope No.1 duly signed. The documentary proof of his Technical persons should also be scanned and submitted with statement.

Signature of Contractor

STATEMENT – V

STATEMENT SHOWING WORK DONE IN ALL CLASSES OF CIVIL / ELECTRICAL ENGINEERING [CONTRACTOR WORKS DURING LAST FIVE YEARS]

NAME OF CONTRACTOR:

Sr. No.	Name of work	Amount put totender / tendered cost	Agreement No.	Date of Commencement	Amount of work done during each of last five years					Amount of work Still remaining to be executed	Remarks
					2020-21	2021-22	2022-23	2023-24	2024-25		
1	2	3	4	5	6	7	8	9	10	11	12
SAMPLE FORM											

Out ward No. and date of certificate issuing authority:

Note: This is only a standard form. Details are to be furnished in this format in the form of type written statements, which shall be scanned enclosed in envelope No.1 duly signed. The documentary proof of work done with whom contractor executed should also be scanned and submitted with this statement.

Signature of Contractor

No. of correction

Contractor Executive Engineer Registrar

GENERAL DESCRIPTION OF WORK

NAME OF WORK:- **Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.**

The site is located in University Campus of Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.

Period for completion of work is **06 Months** including monsoon. The following items are considered in the work.

SCOPE OF WORK

Scope of Works is detailed below in brief: --

1)Line out work, Fire Hydrant System work ,

2)Erection ,Connection work , Erection of Fire Alarm System .

3)Cable wiring and switchgear work .Testing of Installations .

Refer further Details See as per detail on abstract sheet (Estimate and specifications and as per site conditions) and material list on Separate Annexure

No. of correction

Contractor Executive Engineer Registrar

DECLARATION OF THE CONTRACTOR

I / We hereby declare that I / We have made myself / ourselves thoroughly conversant with the local conditions regarding all materials and labor on which I / We have based my / our rates for this tender. The specifications, conditions and leads on this work have been carefully studied and understood by me / us before submitting this e- tender. I / we undertake to use only the best materials and of manufacturers listed and attached with this tender and as approved by the Executive Engineer and the Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon or his duly authorized assistant during execution of the work and abide by his decisions.

SIGNATURE OF THE CONTRACTOR

No. of correction

Contractor Executive Engineer Registrar

AGREEMENT FORM B-1

PERCENTAGE RATE TENDER & CONTRACT FOR WORK

KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY, JALGAON.

NAME OF WORK: Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.

GENERAL RULES & DIRECTIONS FOR THE GUIDANCE OF CONTRACOTRS –

1. All works proposed to be executed by contract shall be notified in a form of invitation to tender Online e-Tendering System also pasted on a board hung up in the office of Executive Engineer and signed by the Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon.

This form will state the work to be carried out as well as the date for submitting and opening tenders and time allowed for carrying out the work as per e-tendering schedule, also the amount of earnest money to be deposited with the tender, and the amount of the security deposit to be deposited by the successful tenderer and the percentage, if any, to be deducted from bills. Copies of the specifications, designs and drawings, estimated rates, schedule rates and any other documents required in connection with the work shall be signed by the Executive Engineer for the purpose of identification and shall also be open for inspection by contractors at the office of the Executive Engineer, during office hours.

.

Where the works are proposed to be executed according to specifications recommended by a **Architect** and approved by a competent authority on behalf of the **Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon payable at Jalgaon** such specifications with designs and drawings shall form part of the accepted tender.

2. In the event of the tender being submitted by a firm.

2.(a) The contractor shall pay as per e- tendering schedule sum of **Rs.70,400/-** (Rupees Seventy Thousand Four Hundred only) as and by way of earnest money online.

2.(b) In the event of his tender accepted, subject to the provisions of Sub- clauses (iii) below, the said amount of earnest money shall be appropriated towards the amount of security deposit payable by him under conditions of General conditions of contract.

No. of correction

Contractor Executive Engineer Registrar

2.(c) If after submitting the tender, the contractor withdraws his offer, or modifies the same or if after the acceptance of his tenders the contractor fails or neglect to furnish the balance of security deposit without prejudice to any other rights and powers of the university, hereunder or in law university shall be entitled to forfeit the full amount of the earnest money deposited by him.

2.(d) In the event of his tender not being accepted, the amount of earnest money deposited by the contractor, shall unless it is prior thereto forfeited under the provisions of sub clause (c) above, refunded to him on his passing receipt therefore.

3. Receipt for payments made on account of any work, when executed by a firm, shall also be signed by all the partners, except where the contractors are described in their tender as firm, in which case the receipts shall be signed in the name of firm by one of the partners, or by some other person having authority to give effectual receipts for the firm.

4. Any person who submits a tender shall fill up the usual printed form stating at what percentage above or below the rates specified in Schedule 'B' (Memorandum showing item of work to be carried out) he is willing to undertake the work. Only one rate or such percentage on all estimated rates/scheduled rates shall be named tenders which purpose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions, of any sort will be liable to rejections. No printed form of tender shall include a tender for more than one works but if contractors who wish to tender two or more works, they shall submit separate tender for each work. Tender shall have the name and number of the work to which they refer, written outside the envelope.

5. **The Registrar, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon** shall open tenders as per the e-tender schedule and intimated results through e-mail. In the event of a tender being accepted, the contractor shall, for the purpose of identification, sign copies of the specifications and other documents mentioned in Rule. 1.

In the event of tender being rejected, the Executed Engineer shall refund the amount of the earnest money deposited, to the contractor making the tender, on his giving a receipt for the return of the money.

6. The officer competent to dispose of the tender shall have the right of rejecting all or any of the tenders without assigning any reason.

7. No receipt for any payment alleged to have been made by a contractor in regard to any matter relating to this tender or the contract shall be valid and binding on Government unless it is signed by Registrar.

8. The memorandum of work to be tendered for and the schedule of material to be supplied by university and there rates shall be filled in and completed by the office of the Executive Engineer, before the tender form is issued. If a form issued to an intending tenderer has not been so filled in and completed he shall request the said office to have this done before he completes and delivers his tender.

9. All works shall be measured net by standard measure and according to the rules and customs adopted by the Public Works Department and without reference to any local custom.

10. Under no circumstances shall any contractor be entitled to claim enhanced rates for any items in this contract.

No. of correction

Contractor Executive Engineer Registrar

11. Every registered contractor should produce along with his e-tender certificate of Registration as approved contractor in the appropriate class and renewal of such registration with date of expiry. (Copies to be attested by a Gazette Officer)

12. All corrections and additions or pasted slips should be initialed.

13. The measurement of work will be taken according to the usual methods in use in the Public Works Department and no proposals to adopt alternative methods will be accepted. The Executive Engineer's decision as to what is the usual method in use in the department will be final.

14. The tendering contractor shall furnish a declaration along with the tender showing all works for which he has already entered into contract and the value of work that remains to be executed in each case on the date of submitting the tender.

15. Every tenderer shall scan along with electronic tendering system, information regarding the income tax circle or ward of a district in which he is assessed to income tax, the reference to the number of assessment year.

16. No foreign exchange would be released by the University for the Purchase of plant and machinery required for the execution of the work contracted.

17. The contractor will have to construct shed for storing controlled and valuable materials brought by him at the work site at contractor's cost. The material will be taken for use in the presence of the departmental person. No material will be allowed to be removed from the site of work.

18. The contractors shall also give a list of machinery in their possession and which they propose to use on the work in the form of statement No. II

19. Every registered contractor should furnish along with tender a statement showing previous experience and technical staff employed by him in the form of specimen given.

20. Successful tendered will have to produce to the satisfaction of the accepting authority a valid and current license issued in his favors under the provision of Contract Labors (Regulation and Abolition Act 1970) before starting work, failing which acceptance of the tender will be liable for withdrawal and earnest money will be forfeited by the university.

21. The contractor shall comply with the provision of the Apprentices Act 1961 and Rules and Order issued there under from time to time. If he fails to do so, his failure will be a breach of contract and Registrar may in his discretion cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the Act.

No. of correction

Contractor Executive Engineer Registrar

TENDER FOR WORKS

1. I / we hereby tender for the execution, for the university (herein before and herein after referred to as owner) of the work specified in the underwritten memorandum within the time specified in such memorandum at_____ percent below / above the estimated rates entered in **Schedule 'B'** (memorandum showing items of work to be carried out) and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule No.1 hereof and in clause-13 of the annexed conditions of the contract and agree that when materials for the work are provided by the university, such materials and the rate to be paid for them shall be as provided in **Schedule 'A'** hereto.

MEMORANDUM

a) If several sub works are included they should be detailed in a separate list	a) Name of work	**Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon.**
	b) Estimated cost	**Rs.70,38,576.00**
b) The amount of earnest money to be deposited shall be in accordance with the provisions of pares 204 And 205 of the M.P.W. manual	c) Earnest money	**Rs. 70,400.00**
c) This deposit shall be in accordance with paras 211 and 212 of the M.P.W. manual.	d) Security deposit i) Cash (not less than the amount of earnest money) ii) To be deducted from current bills. Total	**Rs.1,76,000/-** **Rs.1,76,000/-** **----------** **Rs.3,52,000/-**
d) This percentage where no security deposit is taken will vary from 5% to 10% according to requirement of case where, security deposit is taken, see note 1 to clause 1 of conditions of contract	e) Percentage if any to be deducted from bills so as to make up the total amount required as security deposit by the time, half the work, as measured by the cost is done.	5% (as per provision made in university common account code-2012)
e) give scheduled where necessary showing dates by which the various items are to be completed	f) Time allowed for the work from the date of work order to commence	**06 Months including monsoon**

No. of correction

Contractor Executive Engineer Registrar

2. I / we agree that the offer shall remain open for acceptance for a minimum period of 120 days from the date fixed for opening the “same” means envelope No. 2 and thereafter until it is withdrawn by me / us by notice in writing duly addressed to the authority opening the tenders and sent by registered post AD or otherwise delivered at the office of such authority university receipt no. **_____** and date **_____in respect** to the sum of **Rs. _____ (In words _____ only)** representing the earnest money is herewith forwarded. The amount of earnest money shall not bear interest and shall be liable to be forfeited by the university, should I / we fail to (i) abide by the stipulation to keep the offer open for the period mentioned above or (ii) sign and complete the contract documents as required by the engineer and furnish the security deposit as specified in item (d) of the memorandum contained in paragraph 1 above within the time limit laid down in clause (1) of the annexed general conditions of contract. The amount of earnest money may be adjusted towards the security deposit or refunded to me / us if so desire by me / us in writing, unless the same or any part thereof has been forfeited as aforesaid.

3. Should this tender be accepted I / we hereby agree to abide by and fulfill all the terms and provisions of the conditions of contract annexed hereto so far as applicable and default thereof to forfeit and pay to university the sum of money mentioned in the said conditions.

Amount to be specified in words and figures

*strike out (a) if no cash security deposit is to be taken.

Receipt No. ---------- dtd. --- from the scheduled bank at ---------- in respect of the sum of Rs. ---------- is herewith forwarded representing the earnest money (a) the full value of which is to be absolutely forfeited to University should I / We not deposit the full amount of security deposit specified in the above memorandum, in the accordance with clause I (A) of the said conditions of the contract, otherwise the said amount of Rs.---------- shall be refunded.

Signature of contractor before submission of tender

Contractor#
_____
Address:

Dated: ---------- The ---------- Day of ---------- 20 ----------

$ Signature of witness to contractor signature

(Witness) $ ----------
Address:

Occupation:
---

*signature of the officer by whom accepted

The above tender is hereby accepted by me & on behalf of North Maharashtra University, Jalgaon.

No. of correction

Contractor Executive Engineer Registrar

7CONDITIONS OF CONTRACT

Security Deposit

PWD Resolution No. CAT/1087/ CR-94/Bldg.2 Dt. 14.6.89

CLAUSE 1:- The person/ persons whose tender may be accepted (*hereinafter called the contractor, which expression shall unless excluded by or repugnant to the Context include his heirs, executors, administrators, and assigns*) shall (**A**) within 10days *(which may be extended up to 15 days if the Authority thinks fit to do so according to the* ***Common Account Code*** *of the University)* of the receipt by him of the notification of the acceptance of his tender deposit with **the Registrar** in cash or D.D. (*from Nationalized or Scheduled Bank only*) in favor of North Maharashtra University, Jalgaon **payable at Jalgaon** of sum sufficient which will made up the full Security Deposit Specified in the Tender. (**B**) (Permit the University at the time of making any payment to him for work done under the contract to deduct such as will amount to **FIVE percent** of all moneys so payable such deductions to be held by University by way of Security Deposit.). Provided always that in the event of contractor depositing a lump sum by way of Security Deposit as contemplated at (A) above, then and in such case, if the sum so deposited shall not amount to FIVE percent of total estimated cost of the work, it shall be lawful for University at the time of making any payment to the contractor for work done under the contract to makeup the full amount to FIVE percent by deducting a sufficient sum from every such payment at last aforesaid until the full amount of the Security Deposit is made up. All compensation or other sums of money payable by the contractor to the Registrar under the terms of his contract may be deducted from or paid by the sale of sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due or may become due by Registrar to the contractor under any other contract or transaction of any nature on any account whatsoever and in the event of his security deposit being reduced by reason of any of such deduction or sale as aforesaid, the contractor shall, within ten days thereafter make good in cash or aforesaid and sum or sums which may have been deducted from or raised by sell of his security deposit or any part thereof.

The security deposit will not be accepted in forms of insurance co. bonds as per Govt. orders contained in No.CCM/PWD/CAT/4250, dtd.27/02/1956. If the amount the security deposit to be paid in a lump sump within the period specified at (A) above is not paid, the tender / contract already accepted shall be considered as cancelled and legal steps taken against the contractor for recovery of the amounts. The amount of security deposit lodged by a contractor shall be refunded along with the payment of the final bill, if the date upto which the contractor has agreed to maintain the work in good order is over. If such date is not over only 50% amount of security deposit shall be refunded along with the payment of the final bill. In the event of the contractor failing or neglecting to complete rectification work within the period upto which the contractor has agreed to maintain the work in good order, then, subject to provisions of clauses 17 & 20 hereof the amount of security deposit retained by the Registrar shall be adjusted towards the excess cost incurred by the Department on rectification work.

No. of corrections

* Note – This will be the same percentage as that in the Tender at (e).

The amount of Earnest Money Deposit paid by the tenderer along with the tender, will be forfeited in case, after his tender is accepted and the contractor does not complete the contract document and pay the security deposit of 2.5% of the estimated cost put to tender amount within 10 days after the acceptance of the tender, otherwise it will be adjusted against the sum of security deposit required to be paid for completion of the contract documents.

Compensation for delay

Clause 2 :- The time allowed for carrying out the work (including Monsoon Period) as entered in the tender shall be strictly observed by the contractor and shall be reckoned from the date on which a written order to commence the work is given to the contractor. The work shall through the stipulated period of the contract be proceeded with, with all due diligence (time being deemed to be the essence of the contract on the part of the contractor) and the contractor shall pay as compensation an amount equal to one percent or such smaller amount as the Registrar (whose decision in writing shall be final) may decide, of the amount of the estimated cost of the whole work as shown by the tender for every day that the work remains uncommonness, or unfinished after the proper dates. And further to ensure good progress during execution of the work, the contractor shall be bound, in all cases in which the time allowed for any work exceeds one month of complete. The Executive Engineer shall forward his observations in this matter to the contractor shall be bound to adhere to the following scale of minimum requirement of progress based on time frame.

1/8 of the work in = 1/4 of the time
3/8 of the work in = 1/2 of the time
3/4 of the work in = 3/4 of the time
100% of the work in = Two months

Note – The quantity of the work to be done with a particular time to be specified above shall be fixed and inserted in the blank space kept for the purpose of the officer competent to accept the contractors after taking into consideration the circumstances of each case and above by the program of detailed process laid down by the Executive Engineer.

The following proportion will usually be found suitable –
In ¼, ½, ¾ of the time

Reasonable progress of earthwork 1/6, ½, ¾ of the total value of work to be done.

Reasonable progress of masonry work 1/10, 4/10, 8/10 of the total value of work to be done.

The contractor shall submit for approval of the Executive ***Engineer tentative Bar Chart and corresponding Financial out-put chart*** along with the tender showing the programmed which will be followed by the contractor for procurement of materials, employment of skilled and unskilled labour,

No. of corrections

machinery and equipment and execution of work item by item area-wise so as to complete the work as per the above scale of minimum requirement based on time frame. The review of actual progress of work shall be taken at any time and at any stage as deemed fit.

In the event of the contractor failing to comply with these conditions, he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the Registrar (whose decision in writing shall be final) may decide of the said estimated cost of the whole work for every day that due quantity or work remains incomplete. Provided always that the total amount of compensation to be paid under the provisions of this clause shall not exceed 10 percent of the estimated cost of the work as shown in the tender. The Registrar should be the final authority in this respect. Shall issue time-to-time notices to the contractor under this clause and also time to time recommended action against the contractor to the Executive Engineer for his consideration.

Action when whole of Security deposit is forfeited

Clause 3 :- In any case in which under any clause of this contract the contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit whether paid in one sum or deducted by installment or in the case of abandonment of the work owing to serious illness or death of the contractor or any other cause the Registrar on behalf of the University, shall have power to adopt any of the following courses, as he may deem suited to the interest of the North Maharashtra University:

(a) To rescind the contract (for which rescission notice in writing to the contractor under the hand of the Registrar shall be conclusive evidence) and in that case the Security Deposit of the contractor shall stand forfeited and be absolutely at the disposal of North Maharashtra University, Jalgaon.

(b) To carry out the work or any part of the work departmentally debiting the contractor with the cost of the work, expenditure incurred on tools and plant and charges on additional supervisory staff including the cost of work-charged establishment employed for getting unexecuted part of the work completed and crediting him with the value of the work done departmentally in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Executive Engineer as to the costs and other allied expenses so incurred and as to the value of the work so done departmentally shall be final and conclusive against the contractor.

(c) To order that the work of the contractor be measured upto and take such part thereof as shall be unexecuted, out of his hands and to give it to another contractor to complete, in which case as all expenses incurred on advertisement for fixing a new contracting agency, additional supervisory staff including the cost of work-charged establishment and the cost of the work executed by the new contract agency will be debited to the contractor and at the value of the work done or executed through the new contractor shall be credited to the contractor in all respects and in the same manner and at the same rates as it has been carried out by the contractor under the terms of his contract. The certificate of the Executive Engineer and the Architect as to all the cost of the work and other expenses incurred as aforesaid for or in getting the unexecuted work done by the new contractor and as to the value of the work so done shall be final and conclusive against the contractor.

No. of corrections

In case the contract shall be rescinded under clause (a) above the contractor shall not be entitled to recover or be paid, any sum for any work therefore actually performed by him under this contract unless and until the Executive Engineer and the Architect, shall have recommended in writing the performance of such work and the amount payable to him in respect thereof and he shall and he shall only be entitled to be the amount so certified. In the event of either of the courses referred to in clause (b) or (c) being adopted and the cost of the work executed departmentally or through a new contractor and other allied expenses exceeding the value of such work credited to the contractors, the amount of excess shall be deducted from any money due to the contractor by the Registrar under the contract or otherwise howsoever or from his security deposit or the sale proceeds thereof provided, however that the contractor shall have no claim against the Registrar even if the certified value of the work done departmentally or through a new contractor exceeds the certified cost of such work and allied expenses, provided always that whichever of the three courses mentioned in above **sub-clauses (a), (b) or (c)** is adopted by the Registrar, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchases, or procured any materials, or entered into any engagements, or made any advances on account of, or with a view of the execution of the work or the performance of the contract.

Action when the progress of any particular portion of the work is unsatisfactory

Clause 4 :- If the progress of any particular portion of the work is unsatisfactory, the Executive Engineer on behalf of the Registrar, shall notwithstanding, that the general progress of the work is satisfactory in accordance with the conditions mentioned in clause 2, be entitled to take action under clause 3(b) after giving the contractor 10 days' notice in writing. The contractor will have no claim for compensation, for any loss sustained by him owing to such action.

Contractor remains liable to *any compensation* if action not taken under clause 3 & 4

Clause 5 :- If any case in which any of **the powers conferred upon the Registrar by clauses 3 & 4** hereof shall have become exercisable and the same shall not have been exercised, the non-exercise thereof shall not constitute a waiving of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor for which under any clauses hereof he is declared liable to pay compensation amounting to **the whole of his security deposit** and the liability of the contractor for past and future compensation shall remain unaffected. In the event of **the Registrar** taking action under sub-clause (a) or (c) of clause 3, he may, if he so desires, take possession of all or any tools, plant, materials and stores, in or upon the work on the site thereof or belonging to the contractor, or procured by him and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of contract rates not being applicable, at current market rates, recommended by the Executive Engineer and certified by the Executive

Power to take possession of or required removal of or sell contractor's plant.

Engineer and the Architect whose certificate thereof shall be final. In the alternative, **the Registrar** may, after giving notice in writing to the contractor or his Engineer, foreman or other authorized agent require him to remove such tools, plant, materials, or stores from the premises within a time to be specified in such notice; and in the event of the contractor failing to comply with any such requisition, the Registrar may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his own risk in all respects and the certificate of the Executive Engineer on obtaining the details from Executive Engineer as to the expenses of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

Extension of time

Clause 6 :- If the contractor shall desire an extension of the time for completion of work on the ground of his having been unavoidably hindered in its execution or on any other ground, he shall apply in writing to the Executive Engineer before the expiry of the period stipulated in the tender or **before the expiration of 30 days** from the date on which he was hindered as aforesaid or on which the cause for asking for extension occurred, whichever is earlier and the Executive Engineer, North Maharashtra University, Jalgaon if in their opinion, there was reasonable grounds for granting such extension, recommend such extension as he think necessary and proper to **the vice-chancellor**. The decision of the **Building and Works Committee** of NMU in this matter shall be final.

Final certificate

Clause 7:- On the completion of the work the contractor shall be furnished with certificate by the Executive Engineer. In case of issue of certificate by Architect, the Architect may issue the certificate only on recommendation of the Executive Engineer that the work is done and executed as per the specifications and all defects notified to the contractor from time to time are rectified. That no such certificate shall be given nor shall the work be considered to be completed until the contractor shall have removed from the premises on which the work shall have been executed, all scaffolding, surplus materials and rubbish, and shall have cleaned off, the dirt from all woodwork, doors, windows, walls, floors or other parts or any building in or upon which the work has been executed, or of which he may have had possession for the purpose of executing the work, nor until the work shall have been **measured by** the Executive Engineer or where the **measurements have been taken by** his subordinates until they have received approval of the Executive Engineer, the said measurements being binding and conclusive against the contractor.

If the contractor shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials and rubbish and cleaning of dirt on or before the date fixed for the completion of the work **the Registrar** may at the expense of the contractor, remove such scaffolding, surplus materials and rubbish, and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred, but shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof

No. of corrections

Payment intermediate certificate to be regarded as advances

Clause 8:- No payment shall be made for any work, estimated to cost less than rupees one thousand till after the whole of work shall have been completed and a certificate of completion given. But in the case of works estimated to cost more than rupees one thousand, the contractor shall, on submitting **a monthly bill** therefore, be entitled to receive payment proportionate to the part of the work then approved and passed by the Registrar, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. All intermediate payments shall be regarded as payments by way of advance against the final payments only and not as payments for work actually done and completed, and shall not preclude the Engineer-in-charge, from requiring any bad, unsound, imperfect or unskillful work to be removed or taken away and reconstructed, or re-erected nor shall any such payment be considered as an admission of the due performance of the contract or any part thereof in any respect or the accruing of any claim, nor shall it conclude, determine, or affect in any other way the powers or the Engineer-in-charge, as to the final settlement and adjustment of the accounts or otherwise, or in any other way or affect the contract. **The final bill shall be submitted by the contractor within one month of the date fixed for the completion of the work,** otherwise the Architects Certificate and/or Executive Engineer (*in case of Departmental works only*) certificate of the measurements and of the total amount payable for the work shall be final and binding on all the parties.

Payment at reduced rate on account of items of work not accepted as completed to be at the discretion of the Executive engineer, NMU

Clause 9:- The rates for several items of works estimated to cost more than Rs.1,000/- agreed to within, shall be valid only when the item concerned is accepted as having been completed fully in accordance with the sanctioned specifications. In cases where the items of work are not accepted as so completed the Executive Engineer may recommend payment on account of such items at such **reduced rates** as he may consider reasonable in the preparation of final or on account bills to the Architect / Consultant for his scrutiny and issued of certificate.

Bill to be submitted monthly

Clause 10 :- The bill shall be submitted by the contractor each month on or before the date fixed by the Executive Engineer for all work executed in the previous month, and the Executive Engineer shall take or cause to be taken the requisite measurement for the purpose of having the same verified; and the claim, so far as it is admissible, shall forward it to the Architect / Consultant for technical checking and the Executive Engineer shall recommend, if possible, **within fifteen working days** from the receipt of the bill by the Executive Engineer. If the contractor does not submit the bill within the time fixed as aforesaid, the Executive Engineer may depute a subordinate to measure up the said work in the presence of the contractor or his duly authorized agent whose counter signature to the measurement list shall be sufficient warrant, and the Executive Engineer, may prepare bill from such list which shall be binding on the contractor in all respects.

No. of corrections

Bill to be on printed form

Clause 11:- The contractor shall submit all bills on **the printed forms** to be had on application at the office of the Executive Engineer. The charges to be made in the bills shall always be entered at the rates specified in the tender or in the case of **any extra work** ordered in pursuance of these conditions, and not mentioned or provided for in the tender, at the rates hereinafter provided for such work.

Stored supplied by

Clause 12 :- If the specification or estimate of the work provides for the use of any special description of materials to be supplied from the **stores of** Registrar or if it is required that the contractor shall use certain stores to be provided by the Registrar (such material and stores and the prices to be charged therefore as hereinafter mentioned being so far practicable for convenience of the contractor but not so as in any way to control the meaning or effect of this contract specified in the schedule of memorandum hereto annexed) the contractor shall be supplied with such materials and stores as may be required from time to time to be used by him for the purposes of the contract only and the value of the full quantity of the materials and stores so supplied shall be set off or deducted from any sums then due, or thereafter to become due to the contractor under the contract, or otherwise, or from the security deposit. All materials supplied to the contractor shall remain the absolute property of the North Maharashtra University and shall on no account be removed from the site of the work, and shall at all times be open to inspection by the Executive Engineer so requires by a notice in writing given under his hands but the contractor shall be entitled to return any such materials except with consent of the Executive Engineer and he shall have no claim for compensation on account of any such materials supplied to him as aforesaid but remaining unused by him or for any wastage or damage to any such materials.

Clause 12 (a) :- The contractor under lock should keep all stores of materials such as cement, steel etc., and key will be accessible for inspection to the Executive Engineer and the Registrar or their authorized representatives at all times.

Work to be executed in accordance with specificatio ns drawing, orders etc.

Clause 13:- The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner, and both as regards materials and every other respect in strict accordance with specification. The contractor shall also confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Executive Engineer and lodged in his office and to which the contractor shall be entitled to have access for the purpose of inspection at such office or on the site of the work during office hours. The contractors will be entitled to receive three sets of contract drawing and working drawings as well as one certified copy of the accepted tender along with the work order free of cost. Further copies of the contract drawings and working drawing if required by him, shall be supplied at the rate of Rs.500/- per set of contract drawings and Rs.100/- per working drawings except where otherwise specified.

No. of corrections

Alteration in specification and designs not to invalidate contracts works

Clause 14 :- The Executive Engineer, on behalf of the Registrar, shall have power to make any alterations in, or additions to the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and the contractor shall be bound to carry out the work in accordance with any instructions in this connection which may be given to him in writing signed by the Executive Engineer and such alteration shall not invalidate the contract, and any additional work which may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work, and at the same rates as are specified in the tender for the main work.

Rate for works not entered in estimate or schedule of rates of the contracts

And if the additional and altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out at the rates entered in the District **Schedule of Rates** of the Public Works Division prevailing at the time when the extra items crop up, or at the rates mutually agreed upon between the Registrar and the contractor, whichever are lower, if the additional or altered work, for which no rate is entered in the Schedule of Rates of the Public Works Division, is ordered to be carried out before the rates are agreed upon then the contractor shall, within **seven days** of the date of receipt by him of the order to carry out the work, inform the Executive Engineer of the rate based on detailed analysis of the Executive Engineer in consultation with the Architect, as the case may be, as per contract conditions laid down in this document including in clause 8, which is his intention to charge for such class of work, and if the University does not agree to this rate he shall by notice in writing be at liberty to cancel his order to carry out such class of work and arrange to carry out in such manner as he may consider advisable, provided always that the contractor shall commence work or incur and expenditure in regard thereto before that rates shall have been determined at lastly here in before mentioned, then in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination the rate as aforesaid according to such rate or rates as shall be fixed by the University on recommendation of Executive Engineer. In the event of a dispute, the decision of the Building and Works Commitee will be final and binding on the contractor.

Where, however, the work is to be executed according to the designs, drawings and specifications recommended by the contractor and accepted by the competent authority the alterations above referred to shall be within the scope of designs, drawings and specifications appended to the tender.

Extension of time in consequence of additions or alterations.

The time limit for the completion of the work shall be extended in the proportion that the increase in its cost occasioned by alterations or additions bears to the cost of the original contract work, and the certificate of the Executive Engineer as to such proportion shall be conclusive.

No. of corrections

No Claim to any payment or compensation for alteration in or restriction of work.

Clause 15. (1) If at any time after the execution of the contract documents the Executive Engineer shall for any reason what-so-ever (*other than default on the part of the contractor for which the Registrar is entitled to rescind the contract*) desires that the whole or any part of the work specified in the tender should be suspended for any period or that the whole or part of the work should not be carried out at all he shall give to the contractor a notice in writing of such desires and upon the receipt of such notice the contractor shall forthwith suspend or stop the work wholly or in part required, after having due regard to the appropriate stage at which the work should be stopped or suspended so as not to cause any damage or injury to the work already done or endanger the safety thereof provided that the decision of the Executive Engineer with the approval of the Registrar, as to the stage at which the work or any part of it could be or could have been safety stopped or suspended shall be final and conclusive against the contractor. The contractor shall have no claim to any payment or compensation whatsoever by reason of or in pursuance of any notice as aforesaid, on account of any suspension, stoppage or curtailment except to the extent specified hereinafter.

(2) Where the total suspension of work ordered as aforesaid continued for a continuous period exceeding 90 days the contractor shall be at liberty to withdraw from the contractual obligations under the contract so far as it pertains to the unexecuted part of the work by giving a 10 days' prior notice in writing to the Executive Engineer within 30 days of the expiry of the said period of **90 days**, of such intention and requiring the Executive Engineer to record the final measurements of the work already done and to process the final bill for the Architect / Consultant's Payment Certificate. Upon giving such notice the contractor shall be deemed to have been discharged from his obligation to complete the remaining unexecuted work under his contract. On receipt of such notice, the Executive Engineer with the approval of the **Chairman of the Building and Works Committee**, shall proceed to complete the measurement and forward the bill to the Architect / Consultant for issue of payment certificate for such payment as may be finally due to the contractor within a period of 90 days from the receipt of such notice in respect of the work already done by the contractor. Such payment shall not in any manner prejudice the right of the contractor to any further compensation under the remaining provisions of this clause.

(3) Where the Executive Engineer required the contractor to suspend the work for a period in excess of 30 days at any time or 60 days in the aggregate, the contractor shall be entitled to apply to **the Registrar** within 30 days of the resumption of work after such suspension for payment of compensation to the extent of precautionary loss suffered by him in respect of working machinery rendered idle on the site or on the account of his having and to pay the salary or wages of labour engaged by him during the said period of suspension, provided always that the contractor shall not be entitled to any claim in respect of any such working machinery, salary or wages for the first 30 days whether consecutive or in the aggregate of such suspension or in respect of any suspension whatsoever occasioned by

unsatisfactory work or any other default on his part. The decision of the Registrar in this regard shall be final and conclusive against the contractor.

(4) In the event of --

No claim compensation on account of loss due to delay in supply of material by the owner

i) Any **total stoppage** of work on notice from the Executive Engineer under sub-clause (1) in that behalf.

ii) Withdrawal by the Contractor from the contractual obligation to complete the remaining unexecuted work under sub-clause (2) on account of **continued suspension** of work for a period of exceeding 90 days.

iii) **Curtailment** in the quantity of item or items originally tendered on account of any alteration, omission or substitutions in the specifications, drawings, designs or instructions under clause 15. (1) and clause 38 where such **curtailment** exceeds 25% in quantity and the value of the quantity curtailed beyond 25% at the rates for the items specified in the tender is more than Rs.5000/-.

It shall be open to the contractor, within 90 days from the service of (i) the notice of **stoppage** of work or (ii) the notice of **withdrawal from the contractual obligations** under the contract on account of the continued suspension of the work or (iii) notice under clause 15(1) resulting in such **curtailment**, to produce to the Executive Engineer satisfactory documentary evidence that he had purchased or agreed to purchase material for use in the contract work, before receipt by him of the notice of **stoppage**, **suspension** or **curtailment** and require the Registrar to take over on payment such material at the rates determined by the Executive Engineer with consultation of the Architect, provided, however, such rates shall in no case exceed the rates at which the same was acquired by the contractor. The Registrar shall thereafter take over the material so offered, provided, the quantities offered, are not in excess of the requirements of the unexecuted work as specified in the accepted tender and are of quality and specifications approved by the Executive Engineer /The Architect.

No claim to compensation on account of loss due to delay in supply of material by the owner

Clause 15 A) The contractor shall not be entitled to claim any compensation from the Registrar for the loss suffered by him on account of delay by the Registrar in the supply of materials entered in Schedule A where such delay is caused by –

(i) Difficulties relating to the supply of railway wagons.
(ii) Force major.
(iii) Act of God.
(iv) Act of the enemies of the State of any other reasonable cause beyond the control of the Registrar.

In the case of such delay in the supply of materials, the Building and Works Committee shall grant such **extension of time** for the completion of the works as shall appear to the Executive Engineer/ the Architect, to be reasonable in accordance with the circumstances of the case. The decision of the **Chairman Building and Works Committee**, as to the extension of **time** shall be accepted as final by the contractor.

Time limit for unforeseen claims.

Clause 16:- Under no circumstances whatever shall the contractor be entitled to any **compensation** from the Registrar on any account unless the contractor shall submitted a claim in writing to the Executive Engineer within one month of the case of such claim occurring.

No. of corrections

Action and compensation payable in case of bad work.

PWD Resolution No. CAT-1087/CR-94/BLDG-2Dt 14.6.89

Clause 17:- If any time before the security deposit or any part thereof is refunded to the contractor, if shall appear to the Executive Engineer or his subordinate in charge of the work, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of inferior quality, or that any materials or articles provided by him for the execution of the work are unsound, or of quality inferior to that contracted for, or are otherwise not in accordance with contract it shall be lawful for the Executive Engineer to intimate this fact in writing to the contractor and then notwithstanding the fact that the work, materials or articles complained of may have been inadvertently passed, certified and paid for the contractor shall be bound forthwith to rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require, or if so required shall remove the materials or articles so specified and provided & other proper and suitable materials or articles at his own charge and cost, and in the event of his failing to do so within a period to be specified by the Executive Engineer in the written intimation aforesaid, the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day not exceeding ten days during which the failure so continues and in the case of any such failure, the Registrar may rectify or remove, re-execute the work or remove and replace the materials or articles complained of as the case may be at the risk and expense in all respects of the contractor. Should the Registrar on the advice of the Executive Engineer, consider that any such inferior work or materials as described above may be accepted or made use of it shall be within his discretion to accept the same at such reduced rates as he may fix therefore. However, such inferior works or materials may be accepted on obtaining report / observation from the Executive Engineer only.

Work's to be open to inspection. Contractor or responsible agent to be present.

Clause 18:- All works under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Executive Engineer/ the Architect and their subordinates, and the contractor shall at all other times at which reasonable notice of the intention of the Executive Engineer and their subordinates to visit the work shall have been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing presents of that purpose. Orders given to the contractors duly authorized agent shall be considered to have the same force and effect as if they had been given to the contractor himself.

Notice to be given before work is covered up.

Clause 19 :- The contractor shall give not less than **five working days** clear notice in writing to the Executive Engineer/ the Architect, or their subordinates in charge of the work **before** covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof taken before the same is so covered up or placed beyond the reach or measurement and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Executive Engineer / the Architect or their subordinates in charge of the work, if any work shall be covered up or

place beyond the reach of measurement, without such notice having been given consent obtained the same shall be uncovered at the contractor's expense, and in default thereof no payment or allowance shall be made for such work or for the materials with which the same was executed.

Contractor liable for damage done, and for imperfections.

PWD Resolution No. CAT-1087/CR-94/Bldg-2 Dt.14-6-89

Clause 20 :- If during the period of 24 (Twenty four) months from the date of completion as certified by the Executive Engineer pursuant to Clause 7 of the contract or 24 (Twenty-four) months after commissioning the work, whichever is later in the opinion of the Executive Engineer / the Architect, the said work is defective in any manner whatsoever, the contractor shall forthwith on receipt of notice in that behalf from the Executive Engineer duly commence execution and completely carry out at his cost in every respect all the work that may necessary for rectifying and setting right the defects specified therein including dismantling and reconstruction of unsafe portions strictly in accordance with and in the manner prescribed and under the supervision of the Executive Engineer. In the event of the contractor failing or neglecting to commence execution of the said rectification work within the period prescribed therefore in the said notice and / or to complete the same as aforesaid as required by the said notice, the Registrar get the same executed and carried out departmentally or by any other agency or contractor at the risk on account and cost of the contractor. The contractor shall forthwith on demand pay to the University, the amount of such costs, charges and expense sustained or incurred by the Registrar of which the certificate of the Executive Engineer shall be final & binding on the contractor. Such cost, charges and expenses shall be deemed to be arrears of land revenue and in the event of the contractor failing or neglecting to pay the same on demand as aforesaid without prejudice to any other rights and remedies of the Registrar; the same may be recovered from the contractor as arrears of land revenue. The Registrar shall also be entitled to deduct the same from any amount which may then be payable or which may thereafter become payable by the Registrar to the contractor either in respect of the said work or any other work whatsoever or **from** the amount the security deposit retained by the Registrar.

The defect liabilities period in particular for waterproofing treatment (Building works) shall be 07 (Seven) years. In this connection please see also additional general specifications at S. R. No.10 (*for liabilities of water proofing treatment work meant for seven years & Amount of equivalent of 10 % of whole security deposit will be held up for seven years from the same*).

Contractor to supply plant, ladder's scaffolding etc.

Clause 21 :- The contractor shall supply at his own cost all material (*except such special materials, if any as may, in accordance with the contract, be supplied from the Registrar's stores*), plant, tool, appliances implements ladders, cordage, tackle scaffolding, shuttering profiles, all transport of labour, and temporary works requisite or proper for the proper execution of the work, whether, in original, altered or substituted form, and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not and which may be necessary for the purpose of

satisfying or complying with requirements of the Executive Engineer as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with the carriage therefore to and from the work. The contractor shall also supply without extra charge the requisite number of persons with the means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work or failing which the same may be provided by the Registrar at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof, or of sufficient portion thereof.

And is liable for damages arising from non-provisions of lights, fencing ect.

The contractor shall provide all necessary fencing and lights required to protect the public from accident, and shall also be bound to bear the expenses of defense of every suit, action or other legal proceeding, that may be brought by any person for injury sustained owing to neglect of the above precautions, and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person, or which may with the consent of the contractor be paid for compromising any claim any such person.

List of machinery in contractor's possession and which they propose to use on works should be submitted along with the tender.

Clause 21 A :- The contractor shall provided suitable scaffolds and working platforms, gangways and stairways and shall comply with the following regulations in connection therewith –

(a) Suitable scaffolds shall be provided for workmen for all works that cannot be safety done from a ladder or by other means.

(b) A scaffolding shall not be constructed, taken down or substantially altered except –

(i) Under the supervision of a competent and responsible person.

(ii) As far as possible by the competent workers possessing adequate experience in this kind of work.

(c) All scaffolds and appliances connected therewith and ladders shall –

(i) Be of sound material.

(ii) Be of adequate strength having regard to the load and strains to which they will be subjected, and

(iii) Be maintained in proper condition.

(d) Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.

(e) Scaffolds shall not be over-loaded and so far as practicable the load shall be evenly distributed.

(f) Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.

(g) A competent person shall periodically inspect scaffolds.

(h) Before allowing a scaffold to be used by his workmen the contractor shall, whether the scaffold has been erected by his workmen or not, take steps to ensure that it complies fully with the regulations herein specified.

(i) Working platform, gangway, stairways shall –

(j) Be so constructed that no part thereof can sag unduly or unequally.

(ii) Be so constructed and maintained, having regard to the prevailing conditions as to reduce, as for as practicable risks of persons tripping or slipping, and

(iii) Be kept free from any unnecessary obstruction.

No. of corrections

(j) In the case of working platform, gangways, working places and stairways at a height exceeding 2 meters (to be specified).

(i) Every working platform and every gangway shall be closely boarded unless otherwise adequate measures are taken to ensure safely.

(ii) Every working platform and gangway shall have adequate width and

(iii) Every working platform, gangway working place and stairway shall be suitable fenced.

(k) Every opening in the floor of building or in a working platform shall, except for the time and to the extent required to allow the excess of persons or the transport of shifting of material be provided with suitable fencing of railing whose minimum height shall be one meter means to prevent the fall of persons or materials.

(l) When persons are employed on a roof where is a danger of failing from a height exceeding 3 meters suitable precautions shall be taken to prevent the fall of persons or material (to be prescribed).

(m) Suitable precautions shall be taken to prevent person being struck by articles, which might fall from scaffolds or other working places.

(n) Safe means of access shall be provided to all working platforms & other working places.

(o) The contractor(s) will have to make payments to the laboures as per Minimum Wages Act.

Clause 21 B :- The contractor shall comply with the following regulations as regards the Hoisting Appliances to be used by him –

(a) Hoisting machines and tackle including their attachments, anchorage and supports shall –

(i) Be of good mechanical construction, sound material and adequate strength and free from patent defect; and

(ii) Be kept in good repair and in good working order.

(b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free from patent defect.

(c) Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in position at intervals to be prescribed by the Registrar.

(d) Every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

(e) Every crane driver of hoisting appliance operator shall be properly qualified.

(f) No person who is below the age of 21 (Twenty One) years shall be in control of any hoisting machine, including any scaffold which, or give signals to the operator.

(g) In the case of every hoisting machine and of every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.

(h) Every hoisting machine and all gear referred to in preceding regulation shall be plainly marked with the safe working load.

No. of corrections

(i) In the case of hoisting machine having a variable safe working load each safe working load and the conditions under which it is applicable shall be clearly indicated.

(j) No part of any hoisting machine or of any gear referred to in regulation **(g)** above shall be loaded beyond the safe working load except for the purpose of testing.

(k) Motors, gearing transmissions, electric wiring and other dangerous parts of hoisting appliance shall be provided with efficient safe guards.

(l) Hoisting appliances shall be provided with such means as will reduce to a minimum the risk of the accidental descent of the load.

(m) Adequate precaution shall be taken to reduce to a minimum the risk of any part of a suspended load becoming accidentally displaced.

(n) *When workers employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and hats as may be necessary should be provided. The workers should not wear rings, watches and carry keys or other materials, which are good conductors or electricity.*

Measures for prevention of fire

Clause 22:- The contractor shall not set fire to any standing jungle, trees, brushwood or grass without a written permit from the Registrar / Executive Engineer. When such permit is given, and also in all cases when destroying cut or drag trees, brushwood, grass etc. by fire, the contractor shall take necessary measures to prevent such fire spreading to or otherwise damaging surrounding property. The contractor shall make his own arrangements for drinking water for the labour employed by him and provide sanitary and other arrangements.

Liability of contractor for any damage done in or outside work areas.

Clause 23:- Compensation for all damages done intentionally or unintentionally by contractor's labour whether in or beyond the limits of the University property including any damages caused by the spreading of fire mentioned in clause 22 shall be estimated by the Executive Engineer or such other officer as may be appointed by the Registrar and the estimates prepared by Executive Engineer / or such officer subject to the decision of the Registrar on appeal shall be final and the contractor shall be bound to pay the amount of the assessed compensation on demand, failing which, the same will be recovered from the contractor as damages in the manner prescribed in clause-1, or deducted by the Executive Engineer from any sums that may be due or become due from Registrar to contractor under this contract of otherwise. The contractor shall bear the expenses of defending any action or other legal proceedings that may be brought by any persons for injury sustained by him owing to neglect to precautions to prevent the spread of fire and he shall pay any damages and cost that may be awarded by the court in consequence.

Employment of female labor.

Clause 24 :- The employment of female labors on work in neighborhood of soldier's barracks should be avoided as far as possible. The contractor shall employ the laborers registered with nearest employment exchange.

No. of corrections

Work on Sunday.

Clause 25 :- No work shall be done on Sunday without the sanction in writing of the Executive Engineer.

Work not to be sublet contract may be rescinded and security deposit forfeited for subletting it without approval or for bribing a public officer or if contactor becomes.

Clause 26 :- The contract shall not be assigned or sublet without the written approval of the Executive Engineer and if the contractor shall assign or sublet his contract, or attempt so to do, or become insolvent or commence any proceedings to get himself adjudicated and insolvent or make any composition with his creditors, or attempt so to do or if bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given, promised, or offered by the contractor or any of his servants or agents to any public officer or person in the employ of the Registrar in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Registrar on recommendation of Executive Engineer may thereupon by notice in writing rescind the contract, and the security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of the Registrar, and the same consequences shall ensure as if the contract had been rescinded under clause 3 hereof and in addition the contractor shall not be entitled to recover or be paid for any work there actually performed under the contract.

Sum payable by ways of compensation to be compensation without reference to actual loss.

Clause 27 :- All sums payable by a contractor by way of compensation under any of these conditions shall be considered as a reasonable compensation to be applied to the use of the Registrar without reference to the actual loss of damages sustained, and whether any damage has or has not been sustained.

Change in the constitution of firm to be notified.

Clause28 :- In the case of tender by partners, any change in the constitution of firm shall be forthwith notified by the contractor to the Executive Engineer for their information.

Direction and control of the Vice Chancellor

Clause 29 :- All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of **the Vice Chancellor** for the time being, who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

Direction and control of the Vice Chancellor

Clause 30 :- Direction and control of the Vice-Chancellor

30.1 Except where otherwise specified in the contract and subject to the powers delegated to **the Registrar** by the Vice Chancellor of the University under the Common Account Code, rules then in force, **the decision of the Vice Chancellor** for the time being shall be final, conclusive, and binding on all parties of the contract upon all questions relating to the meaning of the specifications, designs, drawings and instructions herein above mentioned and as to the quality of workmanship, or materials used on the work or relating to the contract, designs, drawings, specifications, estimates, instructions, orders, or these conditions or otherwise concerning the works, or the execution, or failure to execute in same, whether arising, during the progress of the work, or after the completion or abandonment thereof.

No. of corrections

30.2. The contractor may within thirty days of receipt by him of any order passed by **the Registrar** as aforesaid **appeal** against it to **the Vice Chancellor** concerned with the contract work or project provided that--

a. The accepted value of the contract exceeds Rs.10 Lacs (Rupees Ten Lacs only)
b. Amount of claim is not less than Rs.1 Lac (Rupees One Lac only)

30.3 If the contractor is not satisfied with the order passed by **the Vice Chancellor** as aforesaid, the contractor may, within 30 days of receipt by him of any such order, appeal against it to the **Buildings and Works Committee** of North Maharashtra University, who if convinced that prima facie the contractor's claim rejected by Registrar is not frivolous and that there is some substance in the claim of the contractor as would merit a detailed examination and the decision of the Building and Works Committee shall put up to the **Management Council** of North Maharashtra University for final decision. The decision shall be final and without appeal and binding to the contractor.

Clause 31 :- Delete

Clause 32 :- Deleted

Action where no specifications

Clause 33:- In the case of any class of work for which there is no such specification as is mentioned in Rule-1 of form B-1, such work shall be carried out in accordance with P.W. Department Specifications, and in the event of there being no P.W. Department Specification, then in such case the work shall be carried out in all respects in accordance with all instructions and requirements of the Executive Engineer/the Architect duly approved by the Competent Authority of the University.

Definition of work

Clause 34:- The expression "Works" or "work" where used in these conditions, shall unless there be something in the subject or context repugnant to such construction, be **constructed to** mean the work or works contracted to be executed under or in virtue of the contract, where temporary or permanent and whether original, altered, substituted or additional.

Contractor's percentage whether applied to net or gross amount of bill

Clause 35:- The percentage referred to in the tender shall be deducted from / added to the gross amount of the bill before deducting the value of any stock issued.

Quarry fees and royalties.

Clause 36:- All quarry fees, royalties, octroi dues and ground rent for stacking materials if any shall be paid by contractor.

Compensation under workmen's compensation act.

Clause 37:- The contractor shall be responsible for and shall pay any compensation to his workmen payable under the workmen's compensation Act, 1923 (VII of 1923), (hereinafter called the said Act) for injuries caused to the workmen. If such compensation is payable and paid by the Registrar as principal under sub- section (1) of section 12 of the said Act on behalf of the contractor, it shall be recoverable by Registrar from the contractor under sub-section (2) of the said section. Such compensation shall be recovered in the manner laid down in clause 1 above.

No. of corrections

Clause 37 A):- The contractor shall be responsible for and shall pay the expenses or providing medical aid to any workman who may suffer a bodily injury as a result of an accident. If such expenses are incurred by the Registrar the same shall be recoverable from the contractor forthwith and be deducted without prejudice to any other remedy of the Registrar from any amount due or that may become due to the contractor.

Clause 37 B) :- The contractor shall provide all necessary personal safety equipment's and first aid apparatus available for the use of the persons employed on the site and shall maintain the same in condition suitable for immediate use at any time and shall comply with the following regulations in connection therewith.

(a) The workers shall be required to use the equipment so provided by the contractor and the contractor shall take adequate steps to ensure proper use of the equipment by those concerned.
(b) When the work is carried on in proximity to any place where there is a risk of drowning all necessary equipment shall be provided and kept ready for use and all necessary steps shall be taken for the prompt rescue of any person in danger.
(c) Adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during course of the work.

(Govt. Circular No. PWD. HO. CAT.6076/3336/ (400)/Bldg.-2 dated16-8-85).

Clause 37 C) :- The contractor shall duly comply with the provisions of the "The Apprentice Act 1961" (**III of 1961**) the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subject to all the liabilities and penalties provided by the said Act and said Rules"

Claim for Quantities entered in the tender or estimate.

Clause 38) :- 1) Quantities shown in the tender are approximate and no revision in the tender rates shall be permitted in respect of any of the item so long as, subject of any special provision contained in the specifications prescribing a different percentage of permissible variation in the quantity of the items does not exceed the tender quantity by **more than 25%** and so long as the value of the excess quantity beyond this limit at the rate of the item specified in the tender is not more than Rs.5000/-.

38(2) "The contractor shall, **if ordered in writing** by the Executive Engineer, or by the Registrar to do so, also carry out any quantities in excess of the limit mentioned above in sub-Clause (1) hereof on the same conditions as and in accordance with the specifications in the tender and at the rates (i) derived from the rates entered in the current schedule of rates and in the absence of such rates, (ii) at the rate prevailing in the market, the said rates **increased or decreased** as the case may be, by the percentage which the **total tendered amount** bears to the estimated cost of the works as based upon **the current schedule of rates** applicable for the year 2013-14 at the time of finalized of Agency .

38(3) Claims arising out of reduction in the tendered quantity of any item beyond 25 percent will be governed by the provision of clause 15 only when the amount of such reduction is beyond 25 percent at the rate of the item specified in the tender is more than Rs.5000/- (This clause in not applicable to **extra items**).

No. of corrections

38(4) This clause is not applicable to extra items.

38 (5) There is no change in the rate if the excess is less than or equal to 25 percent of the tendered quantity but the value of the excess work at the tender rates does not exceed Rs.5000/-.

38(6) The quantity to be paid at tendered rate shall include --

a) Tendered quantity plus

b) 25% excess of tendered quantity or the excess quantity of the value of Rs. 5000/- at the tendered rates whichever is more.

38(7) Limit for variation as stipulated in sub-clause 38(1), 38(2), 38(3) and 38(4) above, does not apply to the items relating to foundations. For the purpose of operation of the above clause, the following work shall be treated as work relating to **foundations** which the contractor is bound to carry out at the tendered item rates for any additional quantities over and above stipulated in the Bills of Quantities without any limit whatsoever;

a(i) For executing all items of Civil works including plain and reinforced cement concrete works, base concrete etc. upto various plinth levels.

a(ii) For abutment piers, retaining walls of culverts and bridges, walls of water reservoirs, the bed or floor level.

a(iii) For relating wall upto various floor levels or where floor levels are not determinate 2.0 meters above the average ground level or bed level.

a(iv) For roads all items of excavations and filling including treatment of sub-base and soiling work.

a(v) For water supply lines, sewer lines, underground storm water drains and similar works, all items of work below the ground level.

a(vi) For open storm water drains, all items of work.

Employment of famine labor etc.

Clause 39) :- The contractor shall employ any famine, convict or other labor of a particular kind or class ordered in writing to do so by the Executive Engineer.

Claim for compensation for delay in starting the work

Clause 40) :- No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or, in the case of clearance works, on account of any delay in according sanction to estimates.

Claim for compensation for delay in execution of work

Clause 41):- No compensation shall be allowed for any delay in the execution of the work on account of water, standing in borrow pits or compartments. The rates are inclusive for hard or cracked soil, excavation in mud, sub-soil, water standing in borrow pits and no claim for an extra rate shall be entertained unless otherwise expressly specified.

Entering upon or commencing any portion of work

Clause 42):- The contractor shall not enter upon or commence any portion of work except with the written authority and instructions of the Executive Engineer or of their subordinate in charge of the work. Failing such authority the contractor shall have no claim to ask for measurement of or payment for work.

No. of corrections

Clause 43):-

Minimum age of persons employed, the employment of donkey and / or other animals and the payment of fair wages.

(i) No contractor shall employ any person who is under the age of 18 years.

(ii) No contractor shall employ donkeys or other animals with breeching of **string or** thin ropes. The breeching must be at least three inches wide and should be of tape (Newer).

(iii) No animal suffering from sores, lameness or emaciation or which is immature shall be employed on the work.

(iv) The Executive Engineer or his Agent is authorized to remove from the work, any person or animal found working which does not satisfy these conditions and no responsibility shall be accepted by Registrar for any delay caused in the completion of the work by such removal.

(v) The contractor shall pay fair and reasonable wages to the workmen employed by him, in the contract undertaken by him. In the event of any dispute arising between the contractor and his workmen on the grounds that the wages paid are not fair and reasonable, the dispute shall refereed without delay to the Executive Engineer who shall decide the same. The decision of the Executive Engineer shall be conclusive and binding on the contractor but such decision shall not in any way affect the conditions in the contract regarding the payment to be made by Registrar at the sanctioned tender rates.

(vi) Contractor shall provide drinking water facilities to the workers. Similar amenities shall be provided to the workers engaged on large work in urban areas.

(vii) Contractor to take precaution against accidents which takes place on account of labour using loose garments while working near machinery.

(viii) All facilities provided in the contract labour should be provided (Regulation and Abolition Act.1971). The Maharashtra Contract Labour regulation and abolition rule 1971 should be provided.

Method of payment

Clause 44) :- Payment to contractor shall be made by cheque drawn on any bank, provided the amount exceeds Rs.100/-. Amounts not exceeding Rs.100/- will be paid in cash.

Acceptance of conditions compulsory before tendering for work

Clause 45):- Any contractor who does not accept these conditions shall not be allowed to tender for works.

Employment of scarcity labor

Clause 46) :- If Government declares a state of scarcity or famine to exist in any village situated within 10 miles of the work, the contractor shall employ upon such parts of the work, as are suitable for unskilled labour, any person certified to him by the Executive Engineer, or be any person certified to him by the Executive Engineer, or be any person to whom the Executive Engineer may have delegated this duty in writing, to be in need of relief and shall be bound to pay to such person wages not below the minimum which Government may have fixed in this behalf. Any dispute, which may arise in connection with the implementation of this clause, shall be decided by the Executive Engineer whose decision shall be final and binding on the Contractor.

Maharashtra act XIX of 1985, clause regarding turn over TAX void

Clause 47):- The price quoted by the contractor shall not in any case exceed the control price, if any, fixed by Government or reasonable price which it is permissible for him to charge a private purchaser for the same class and description, the controlled price or the price permissible under the provision of Hoarding and Profiteering prevention Ordinance, 1948 as amended from time to time. If the price quoted exceeds the controlled price or the price permissible under Hoarding and profiteering Prevention

No. of corrections

P.W.D. Circular No. CAT-1086/cr/330 -Bldg-2 Dt. 10June 1987

Ordinance, the contractor will specially mention this fact in his tender alongwith the reasons for quoting such higher prices. The purchaser at his discretion will in such case exercise the right of revising the price at any stage so as to confirm the controlled price on the permissible under the Hoarding and Profiteering Prevention Ordinance. This discretion will be exercised without prejudice to any other action that may be taken against the contractor.

Clause 48) :- The tender rates are inclusive of all taxes – Sales Tax, Cesses and are also inclusive of the livable tax in respect of sale by transfer of property in goods involeved in the execution of a work contract under the provision of Rule 58 of Maharashtra Value added tax act 2005, for the purpose of levy of tax.

Clause 49):- In case of materials that may remain surplus with the contractor from those issued for the work contracted for, the date of ascertainment of the materials being surplus will be taken as the date of sale for the purpose of sales tax and Sales Tax (Govt. Circular CAT/1086/CR-330/Bldg.2 dtd.16/06/87 including amendments) will be recovered on such sale.

Clause 50):- The contractor shall employ at least 80 percent of the total number of unskilled labour to the employed by him on the said work only from locally available labours and shall give preference enrolled under Maharashtra Govt. and Self Employment Departments Scheme.

Provided, however, that if the required number of unskilled labour are not available locally, the contractor shall in the first instance employ such number of persons as is available and thereafter may with the previous permission in writing of the Executive Engineer of the said work, obtain the rest of the requirement of unskilled labour from outside the above scheme.

Wages to be paid to the skilled and unskilled labor engaged by the contractor.

Clause 51):- The contractor shall comply with the provision of the apprentices Act 1981 and the rules and orders issued there under from time to time if he fails to do so his failure will be a breach of the contract, and the Registrar, may in his discretions cancel the contract. The Contractor shall also be liable for precautionary liability, arising on account of any violation by him of the provision of Act.

(1) The contractor shall comply with the provisions of the Apprentices Act 1981 and the rules and order issued there under from time to time. If he fails to do so, his failure will be breach of the contract and the Registrar may in his discretion may cancelled the contract. The contractor shall also be liable for any pecuniary liabilities arising out on account of any violation by him of the provision of the Act.

(2) The contractor shall pay the labours skilled and unskilled according to the wages prescribed by the minimum wages Act of the 1948 applicable to the area in which the work is in progress.

No. of corrections

Clause 52):- All accounts whatsoever which the contractor is liable to pay to the Registrar in connection with the execution of the work including the amount payable in respect of (i) materials and/ or stores supplied / issued here under by the Registrar to the contractor (ii) hire charges in respect of heavy plant, machinery and equipment given or hire by the Registrar to the contractor for execution by him of the work and / or which advances have been given by the Registrar to the contractor shall be deemed to be arrears of Land Revenue and the Registrar without prejudice to any other rights and remedies of the Registrar recover the same from the contractor as arrears of land revenue.

Government Circular No. CA 1284(120) Building-2 Mantralaya Bombay 400032 Dt. 14.8.85

Clause 53):- "The contractor shall duly comply with all the provisions of the Contract Labour (Regulation and Abolition) Act.1970 (37 of 1970) and the Maharashtra Contract Labor (Regulation and Abolition) Rules, 1971 as amended from time to time and all other relevant statutes and statutory provisions concerning payments of wages particularly to workmen employed by the contractor and working on the site of work. In particular the contractor shall pay wages to each worker employed by him on the site of the work at the rates prescribed under the Maharashtra Contract Labor (Regulation and Abolition) Rules, 1971. If the contractor fails or neglects to pay wages at the said rates or makes short payment and the Registrar makes such payment of wages in full or part thereof less paid by the Registrar to such payment of wages in full or part thereof less paid by the contractor, as the case may be, the amount so paid by the Registrar to such workers shall be deemed to arrears of land revenue and the Registrar shall be entitled to recover the same as such from the contractor or deduct the same from the amount payable by the Registrar to the contractor hereunder or from any other amount/s payable to him by the Registrar.

Clause 54):- The contractor shall engaged apprentices such as brick layer carpenter, wiremen, plumber, as well as black smith recommended by the state apprenticeship Advisor Director of Technical Education, Dhobi Talao, Mumbai- 400001 in the construction work (as per Govt. of Maharashtra, Education Dept. No.TSA/5170/T/56689, dtd.07/07/1972).

Clause 55):- Conditions for Malaria Eradication: Anti-Malaria and Other Health Measures
(Government of Maharashtra P.W.D. Resolution No. CAT/1086/CR- 243/K/BLdg.32 Dt. 11.8.1987)

Conditions for Malaria eradication anti malaria and other health measures.

a. The anti malaria and other health measures shall be as directed by the joint Director (Malaria and Filarial) of Health Service, Pune.

b. Contractor shall see that mosquito genic conditions are not created so as to keep vector population to minimum level.

c. Contractor shall carry out anti-malaria measures in the area as per guidelines prescribed under National Malaria Eradication Programme and as directed by the Joint Director (M & F) of Health Services, Pune.

d. In case of default in, carrying out prescribed anti-malaria measures resulting in increase in malaria incidence, contractor shall be liable to pay to Registrar the amount spent by Registrar on anti malaria measures to control the situation in addition to fine.

No. of corrections

a. **Relations with Public Authorities –**

The contractor shall make sufficient arrangements for draining away the sewerage water as well as water coming from the bathing and washing places and shall dispose of this water in such a way as not to cause any nuisance. He shall also keep the premises clean by employing sufficient number of sweepers.

The contractor shall comply with all rules, regulations, bye-laws and directions given from time to time by local or public authority in connection with this work and shall pay fees or charges which are livable on him without any extra cost of Registrar. (Govt. Circular No.CAT/1086/CR-243/Desk Building 32, dtd.11/08/1987 including amendments).

(कंत्राटदाराने शासकिय विमा निधीपाशी कंत्राट कामाचा विमा उतरावा म्हणून करारनाम्यात समाविष्ट करावयाच्या अटी)

कंत्राटदारावर सोपविलेल्या कंत्राट कामांचा विमा कंत्राटदारांनी विमा संचालनालय, महाराष्ट्र राज्य, गृहनिर्माण भवन, २६४, पहिला मजला, कलानगर समोर, वांद्रे (पूर्व), मुंबई - ४०००५१ (दूरध्वनी क्र.२६५९०४०३/२६५९०६९० व फॅक्स क्र.२६५९२४६१/२६५९०४०३) या कार्यालयापाशी कंत्राटाच्या संपूर्ण रकमेस व कंत्राटाच्या पूर्ण कालावधिसाठी विमा संचालनालयाने निश्चित केलेल्या (उदा.कंत्राटदाराच्या

संपूर्ण जोखीमीचे विमा पत्र उभारणी जोखीम विमा पत्र इ.) विमा पत्राखाली उतरविणे सक्तीचे आहे. तसेच कंत्राटी काम पूर्ण करण्यासाठी नियुक्त करण्यात येत असलेल्या सर्व कामगारांचा विमा कामगार नुकसान भरपाई विमा पत्राखाली उतरविणे अनिवार्य आहे. विमा संचालनालयाच्या व्यतिरिक्त अन्य विमा कंपन्यांकडून घेतलेली विमा पत्रे स्विकारली जाणार नाहीत. जर कोणत्याही कंत्राटदाराने उपरोक्त पध्दतीने विमा पत्र न घेता परस्पर विमा कंपनीकडून विमा पत्र घेतल्यास शासकिय विमा निधीने कळविलेली विमा हप्त्याची रक्कम कंत्राटदारास कंत्राट कामापोटी देय असलेल्या रकमेतून वसूल करुन विमा संचालनालयाकडे पाठविण्यात येईल. विमा जोखीम इतर विमा कंपन्यांबरोबर विभाग याचे विमा संचालक यांचे अधिकार अंतिम राहतील.

Clause 56:-(Condition relating to Insurance of Contract works)

Contractor shall take out necessary Insurance Policy / Policies (viz. Contractor's All Risks Insurance Policy, Erection All Risks Insurance Policy etc. as decided by the Directorate of Insurance) so as to provide adequate insurance cover for execution of the awarded contract work for total contract value and complete contract period compulsorily from the "Director of Insurance, Maharashtra State, Mumbai" only. Its postal address for correspondence is "264, MHADA, First Floor, Opp. Kalanagar, Bandra (E), Mumbai – 400 051" (Telephone No.26590403 / 26590690 and FAX No.26592461 / 26590403). Similarly all workmen's appointed to complete the contract work are required to insure under workmen's compensation insurance policy. Insurance policy/policies taken out from any other company will not be accepted.

If any contractor has effected insurance with any insurance company, the same will not be accepted and the amount of premium calculated by the

Govt. Insurance fund will be recovered directly from the amount payable to the contractor for the executed contract work and paid to the Directorate of Insurance fund, Maharashtra State, Mumbai. The Director of Insurance reserves the right to distribute the risks of insurance among the other insurers.

Clause 57):- Price variation clause

---Not Applicable---

No. of corrections

Contractor Executive Engineer Registrar

7. GENRAL CONDITIONS OF CONTRACT

7.1 **DEFINITIONS:-** In the "Contract" (as herein after defined the following works and expressions shall have the meanings herein assigned except where otherwise specified.

a. **Contract :** The contract document consists of the Invitation to tender, Opening of Tender, The Agreement, The General Instructions to Contractors, General Conditions of contract, Special Conditions of Contract, Specifications, the drawings, and Bills of Quantities, including all modifications thereof incorporated in the documents before their execution.

The contract document is complementary, what is called for in one shall be as binding as if called for by all.

The **Registrar** :
The Contractor :
The Executive Engineer :
The University Deputy Engineer :
The Junior Engineer / Site Engineer :
The Architect :
Are those mentioned as such in the Agreement and shall include their legal representatives, assigns or successors. They are treated throughout the Contract Document as if each were of the singular number and masculine gender.

b. The "**Registrar**" means, The Registrar, NORTH MAHARASHTRA UNIVERISTY, JALGAON.

c. The "Contractor" shall mean _____ _____or Company.

d. **THE SENATE :-** It is the Senate of the North Maharashtra University, Jalgaon.

e. **THE MANAGEMENT COUNSIL :-** It is The Management Council of North Maharashtra University, Jalgaon. The decisions taken by the University Building and Works Committee shall be placed to the Management Council for 'final' decision and their decision shall be final and without appeal and binding to the contractor.

f. **UNIVERSITY BUILDINGS AND WORKS COMMITTEE :-** It is the University Building and Works Committee constituted as per Building and works committee ordinances framed under the Maharashtra University Act 1994, Ordinance No.29 to 32 amended vide *letter No. CS/ NMU/ ORD/ 42/ 11/ (7468)/ 2117, dtd.06th June, 2012 and Managemet Council Res.No.M.C.-184/2012, dtd.27th June, 2012 and The Maharashtra Non-Agriculture Universities Common Account Code made applicable by the Govt. of Maharashtra w.e.f. 01st April, 2012* to have the procedure consistent with PWD manual. It works under direct and overall Superintendence of the Management Council, have overall control for the Execution of Works and it shall exercise general supervision over the work of Engineering staff of the University. The Committee shall be competent to accord administrative approval, Technical Sanction and financial sanction. The selection of Contractor and acceptance of tender shall be as per the decision of the committee or of the Vice-chancellor. Prior sanction of the Building and Work Committee and Management Council or the Vice-chancellor need to be obtained for excess amount over the estimated cost of the project.

No. of corrections

g. **THE CHANCELLOR & GOVERNOR :- The Governor of Maharashtra**, for the time being, shall be **the Chancellor** of every University and the Chancellor, by virtue of his office, shall be the Head of the University

h. **THE VICE-CHANCELLOR :-** The Vice-chancellor means The Vice-chancellor of North Maharashtra University, Jalgaon. He is the Chairman of the Building and Works Committee and of The Management Council.

i. **THE REGISTRAR :-** The Registrar means the Registrar of North Maharashtra University, Jalgaon. He is the member and Secretary of the Building and Works Committee.

j. **THE FINANCE AND ACCOUNTS OFFICER :-** The Finance & Account Officer means the Finance & Account Officer of North Maharashtra University, Jalgaon. He is the member of the Building and works committee.

k. **THE EXECUTIVE ENGINEER :-** "EXECUTIVE ENGINEER" means Executive Engineer or his representative of North Maharashtra University, Jalgaon. He is the Joint Secretary of the Building and works committee. He is overall incharge for day today execution of the project. The Executive Engineer shall have under his control various engineers, site engineers, supervisors, clerks, accountant and other supporting staff and through them, he shall maintain & obtain progress report from the contractor & monitor day today progress of work at site as per bar-chart and take necessary steps time to time for timely completion of the building, and shall keep the Executive Engineer informed for all such activities for his guidance, advice and necessary actions as per contract conditions and shall obtain completion programme from the contractor and modify, if necessary site datas, time to time recommendations to various contractual actions. He shall provide complete necessary datas as competitive market rates, leads, materials and labour contents, sundries, etc. for analyzing non-schedule items etc..

He shall also issue site instructions / clarifications necessary actions under various contract conditions as a representative of the University, if required in the interest of the project with the intimation to University.

The Executive Engineer shall check upto 10% of measurement and 100% hidden measurement.

l. **THE UNIVERSITY DEPUTY ENGINEER :-** The University Deputy Engineer means the University Deputy Engineer of North Maharashtra University, Jalgaon. He is the member of the Building and works committee and shall be responsible to the Executive Engineer in assisting him for day today execution of the project and for all matter related to the project. The University Deputy Engineer shall be responsible to check at least 50% measurements on site with 100% hidden measurement. The University Deputy Engineer shall have under his control various Junior Engineers, supervisors etc. as directed by the Executive Engineer.

m. **THE JUNIOR ENGINEER / SITE ENGINEER :-** Junior Engineer means the Junior Engineer of North Maharashtra University, Jalgaon and shall be wholly responsible for day today execution of the project. He shall check 100% measurements on site with all hidden measurement. He shall work under the direct control of the University Deputy Engineer and the Executive Engineer and shall be responsible for

them and report every days progress to them. He shall be totally responsible for getting the work done from the contractor as per the drawings and the specifications. He shall study all the drawings well in advance before execution of the work and if any discrepancy observed must be immediately brought to the notice of the University Deputy Engineer and The Executive Engineer who there inform to the University, so that the clarification from the Executive Engineer be obtained will in advance before starting the said work. He shall obtain programme of work and completion programme from the contractor and forward to University Deputy Engineer & The Executive Engineer. He shall monitor day-to-day progress of work at site as per bar chart. He shall provide complete necessary data as competitive market rates, leads of materials, labour contents, sundries and whatever information data's required etc. to the University Deputy Engineer and the Executive Engineer for analyzing non-schedule items, etc.

The term referred in this agreement at places as "Site Engineer" shall be referred as "Junior Engineer" who shall carry on his duties for the best admission / execution of this contract.

n. The "Architects" shall means the Architects **Ar. Sanjay M. Patil Nasik.**

o. The term "Sub-Contractor" as employed herein, includes those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the plans or specifications of this work but does not include one who merely furnishes material not so worked. Anyone doing working on a piece rate basis shall be deemed a Sub-Contractor.

p. "**Nominated Sub-Contractor"** shall mean all specialist merchants, tradesmen, and other executing any works or supplying and fixing any goods, who may be nominated or selected by the Executive Engineer shall be deemed to be Sub-Contractors employed by the Contractors and are to be refereed as nominated Sub-Contractors.

q. "**Nominated Supplier**" shall mean all specialists, merchants, suppliers and others executing any special order for supplying of materials or equipment, who may have been or be nominated or selected by the Executive Engineer. They shall be employed by the contractor.

r. **The "Works"** shall mean the works to be executed in accordance with the contract or part(s) thereof as the case may be and shall include all extra or additional, altered or substituted works as required for performance of the contract.

s. **"Temporary works**" shall mean all temporary works of every kind required for or in connection with the execution, of the work tendered, but which will not form part of the letter.

t. **"Urgent Works**" shall mean any measures which, in the opinion of the Executive Engineer, become necessary during the progress of works to obviate any risk or accident or failure which become necessary for security of the work or the persons working, thereon.

u. **Written Notice** :- Written Notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to and officer of the

corporation for whom it is intended, or if delivery receipt obtained or sent by registered mail to the last business address known to him who gives the notice.

v. The law of the place Jalgaon of work shall govern the construction place Jalgaon under this contract.

w. **Virtual Completion** :- "Virtual Completion" shall mean that the "Works" are completed in every respect in conformity with the Contract Documents and to the full satisfaction of the Executive Engineer.

x. **Working Day :-** "Working Day" shall mean any day from Monday to Saturday (both days inclusive) excluding all Public Holidays as notified by the State Government.

y. **A "Week"** shall mean seven consecutive days without regard to the number of hours worked in any day in that week.

z. The "Contract Sum" shall mean the sum for which the tender is accepted.

aa. **Approved Equal** :- "Approved Equal" shall mean equivalent approved by the Executive Engineer.

Where the context so requires, words written singular only also include the plural and vice-versa.

7.2 **THE REGISTRAR, CONTRACTOR AND EXECUTIVE ENGINEER :-** The **Registrar**, the Contractor and the Executive Engineer are those mentioned as such in the Agreement and shall include their legal representative/s assignee/s or successor/s. They are treated throughout the contract Documents as if each were the singular number and masculine gender.

7.3 **SCOPE AND INTENT :-**

a. **Scope :** The general character and the scope of the work is illustrated and definely by the Specifications and the Bills of Quantities herewith attached and by the signed Drawings. If the Contractor shall find any discrepancy in or divergence between the Contract Drawings and or the Contract Bills he shall immediately inform the Executive Engineer / Architect specifying the discrepancy or divergence and the Executive Engineer shall issue instruction in regard thereto.

b. **Extent :-** The Contractor shall carry out and complete the work in every respect in accordance with this Contract and with the directions of and to the reasonable satisfaction of the Executive Engineer and Architect. The Executive Engineer / Architect may in his absolute discretion and from time to time issue further drawings, details and / or written instructions, written directions and written explanations all of which are collectively referred to as the Executive Engineer / Architect. All such drawings and instructions shall be consistent with Contract Document, true developments thereof and reasonably inferable there from. In addition, the Executive Engineer any also issue time-to-time instructions / clarification / directions / explanations to the contractor consistent with the contract document with intimation to the Executive Engineer.

c. **Intent :-** The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the Document is to include all labour and materials, equipment and transportation necessary for the proper

execution of the work. All such drawings and instructions shall be consistent with the Contract Document, true developments thereof and reasonably inferable there from. Materials of work described in words, which so applied, have a well-known technical or trade meaning shall be held to refer to such recognized standard.

7.4 **Architects' Instructions :-** The Architects may from time to time issue further supplementary drawings and / or written instruction, details and directions and explanations which are collectively referred to as the Architects Instructions. The Contractor shall forthwith comply with the duly execute works comprised in such the Architects instructions provided always that verbal instruction, directions and explanations given to the Contractor, or his work's representative by the Architects shall if involving a variation, be confirmed in writing.

7.5 If within seven days after receipt of a written notice from the Executive Engineer / Architects, requiring compliance with an instruction the Contractor does not comply herewith, then the **Registrar** may employ and pay other persons to execute any work whatsoever which may be necessary to give effect to such instructions and all cost incurred with such employment shall be recoverable from the contractor by the **Registrar** as a debt or may be deducted by him from any monies due to become due to the Contractor under this Contract.

7.6 The contractor shall provide the Executive Engineer and the Architect and their representative every facility and assistance for inspecting the work and materials and for checking and measuring work, time and materials.

7.7 The representative of the Executive Engineer and the Architect shall have power to give notice to the contractor or to his representative of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Executive Engineer or the Architects is obtained. The works will from time to time be examined by the Executive Engineer and the Architects, but such examination shall not in any way exonerate the contractor from the obligation to remedy any defects which may be found to exist at any stage of the works or after the same is completed. Subject to the limitation of this clause the contractor shall take instructions only from the Executive Engineer and the Architects.

7.8 **ARCHITECTS STATUS AND DECISION :-** The Architects shall be the **Registrar**'s representative during the construction period. The Architects shall periodically visit the site and shall have only the general supervision and direction of work and familiarize himself generally with the progress and quality of the work and to determine in general if the work is proceeding in accordance with the Contract Document. He has authority to stop the work whenever such stoppage may be necessary to ensure the proper execution of the work.

a. The Architects shall be in the first instance the interpreter of the conditions of this contract and the judge of its performance. In case of any disputes arising due to the interpretation of any technical terms and conditions of the contract executed between **Registrar** and the Contractor, Specifications and drawings, quality and finish of work acceptance of work and all matters related to this contract document. The Architects decision shall be final who shall give their decision in reasonable time.

b. The Architects may in his absolute desecration and from time to time issue further drawings. Details and /or written instruction, written directions and written explanations.

No. of corrections

c. For further disputes of non-technical nature on the administrative, legal and financial aspects of the contract, the Executive Engineer shall advise the **Registrar** to arrive at reasonable settlement keeping in view contract condition. Decision of the **Registrar** shall be final and binding on to this contract.

d. Work Order book will be maintained on site in custody of the Jr. Engineer / Site Engineer in which the site instructions and orders given by the Architects / Executive Engineer or their authorised representative shall be recorded.

e. Access for the Executive Engineer / the Architect to the Works: The Architect and Executive Engineer and their representative shall at all reasonable times have access to the Works and to the Workshops or other places of the Contractor where work is being prepared for the contract and when work is to be so prepared in workshops or other places of sub-contractor, the contractor shall by a term in the sub-contract so far as possible secure a similar right of access to those workshops or places for the Architect / Executive Engineer and their representatives and shall do all things reasonably to make such right effective.

7.9 **Sub-Contractors: -** No work of the contract shall be allputted or awarded by the contractor with out the sanction of the Registrar. As soon as practicable and before awarding any sub-contract, the Contractor shall obtain approved of the Registrar in writing the names of the Sub-Contractor proposed for the principal parts of the work and for such other parts as the Executive Engineer may direct, and shall not employ any to whom the **Registrar** may have as reasonable objection.

The **Registrar** however, shall have power to obtain estimate and select other agencies to carry out any of the works for which contractor is in default.

7.10 **Nominated Sub-Contractor: -** As soon as practicable and before awarding work to the nominated sub-contractor, the contractor shall notify the **Registrar** writing the names of the nominated sub-contractor proposed for such parts of the work as the **Registrar** in consultation with the Executive Engineer NMU may direct for his approval.

a. The nominated Sub-Contractor shall carry out and complete the sub-contract work in every respect to the satisfaction of the Contractor and the Executive Engineer and in conformity with all the reasonable direction and requirements of the contractor.

b. The nominated Sub-Contractor shall observe, perform and comply with all the provisions of this Contract on the part of the Contractor to be observed, performed and complied with so far as they relate and apply to the Sub-Contract works or to any portion of the same.

c. The nominated Sub-Contractor shall indemnify the Contractor against the same liabilities in respect of the Sub-Contract work as those for which the Contractor is liable to indemnify the **Registrar** under this Contract.

d. The nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence, omission or default of such Sub-Contractor, his servants or agents or any misuse by him or them of any scaffolding or other plant, and shall insure himself against any such claims and produce the policy, or policies and premium and premium receipts as and when required by the Contractor or the Architect or the Executive Engineer.

e. The payment in respect of any work, materials or goods comprised in the Sub Contract shall be made within fourteen days after receipt by the Contractor of the Executive Engineer Certificate under clause under separate contract (Condition No.) of these conditions which states as due an amount calculated by including the total value of such work, materials or goods, and shall when due be subject to the retention by the Contractor of the sums mentioned in sub-item.

f. The Architects and Executive Engineer and their representative shall have right of access to the workshops and other places of the nominated Sub-Contractor.

g. The Sub-Contract work shall be completed within the period or (where they are to be completed in sections) periods therein specified, that the Contractor shall not without the written consent of the Executive Engineer grant any extension of time for the completion of the Sub-Contract work or any section thereof, and that the Contractor shall inform the Executive Engineer of any representative made by the nominated Sub-Contractor as to the cause of any delay in the progress of completion of the Sub-Contract work or of any section thereof.

h. If the nominated Sub-Contractor shall fail to complete the Sub-Contract work or (where the Sub-Contract works are to be completed in sections) any section thereof within the period therein specified or within any extended time granted by the Contractor with the written consent of the Executive Engineer certifies in writing to the Contractor that the same ought reasonably so to have been completed the nominated Sub-Contractor shall pay or allow to the contractor either a sub calculated at the rate therein agreed as Liquidated and Ascertained Damages for the period during which the said work or any section thereof, as the case may be, shall so remain or have remained incomplete or (where no such rate is therein agreed) a sum equivalent to any loss or damage suffered or incurred by the Contractor and caused by the failure of the nominated Sub-Contractor as aforesaid.

i. The Contractor shall retain from the sum directed by the Executive Engineer having been included in the calculation of the amount stated as due in any payment certificate in respect of the total value of work, materials or goods executed or supplied by the nominated Sub-Contractor the percentage of such value retained upto a total amount not exceeding a sum which bears the same ratio to the Sub-Contract price as the unreduced sum named in the appendix to these conditions as limited or Retention Fund bears to the Contract sum; and that the Contractor's interest in any sums so retained (by whomsoever held) shall be fiduciary as trustee for the nominated Sub-Contractor(but without obligation to invest); and that the nominated Sub-Contractor's beneficial interest in such sums shall be subject only to the right of the Contractor, and that if and when such sums or any part thereof are released to the nominated Sub-Contractor they shall be paid in full if paid within 14 days of the date fixed for their release in the Sub-Contract.

j. Before using any Payment Certificate, the Executive Engineer may request the Contractor to furnish to him reasonable proof that all amounts included in the calculation of the amount stated as due on previous certificates in respect of the total value of work materials or goods executed or supplied by any nominated Sub-Contractor have been duly discharged and if the Contractor fails to comply with any such request the Executive Engineer shall issue a certificate to that effect and

thereupon the **Registrar** may himself pay such amounts to any nominated Sub-Contractor concerned and deduct the same from any sums due or to become due to the Contractor.

k. The Contractor shall not grant to any nominated Sub-Contractor any extension of the period within which the Sub-Contract work or (where the Sub-Contract works are to be completed in sections) any section thereof is to be completed without the written consent of the Executive Engineer of any representation made by the nominated Sub-Contractor as to the cause of any delay in the progress or completion of the Sub-Contract work or any section thereof and that the consent of the Executive Engineer shall not be unreasonably with held.

l. If any nominated Sub-Contractor fails to complete the Sub-Contract work or (where the Sub-Contract works are to be completed in sections) any section thereof within the period specified in the Sub-Contract or within the extended time granted by the Contractor with the written consent of the Executive Engineer then if the same ought reasonably so to have been completed the Executive Engineer shall certify in writing accordingly. Any such certificates shall be issued to the Contractor and immediately upon issue the Executive Engineer shall sent a duplicate copy thereof to the nominated Sub-Contractor.

m. If the Executive Engineer desires to secured final payment to any nominated Sub-Contractor before final payments is due to the Contractor, and if such Sub-Contractor has satisfactorily indemnified the Contractor against any latent defects then the Executive Engineer may in an interim Certificate include an amount to cover the said final payment and thereupon the Contractor shall pay such nominated Sub-Contractor the amount so certified. Upon such final payment the amount of retention fund shall be reduced by the sum which bears the same ratio to the said amount as does such Sub-Contractor's Sub-Contract price to the Contract Sum, and save for latent defects the Contractor shall be discharged from at liability for the work materials or goods executed or supplied by such Sub-Contractor under the Sub-Contract to which the payment relates.

n. Neither the existence no the exercise of the foregoing powers not anything else contained in these conditions shall render the **Registrar** in any way liable to any nominated Sub-Contractor.

o. Where the Contractor in the ordinary course of his business directly carried out works for which Prime Cost or Provisional Sums are included in the Contract Bills and the Executive Engineer is prepared to receive tenders from the Contractors for such items, then the Contractor shall be permitted to tender for the same or any of them but without prejudice to the **Registrar**'s right to reject the lowest or any tender. If the Contractor's tender is accepted he shall not sub-let the work without the consent in writing of the Executive Engineer.

p. The Contractor shall allow for general attendance upon Sub-Contractors including free use of plant scaffolding and is to allow them the use of sanitary convenience, storage facilities for storing materials, other amenities and affording them all reasonable facilities for carrying out their Contracts.

No. of corrections

q. The liability for workmanship, guarantee, defects liability and completion of work in time shall rest with the contractor who shall be held fully responsible in respect of the work carried out through the Sub-Contractors as well as the Nominated Sub-Contractors.

7.11 **PRIME COST**

a. The following provisions of these conditions shall apply where Prime Cost sums are included in the Contract Bills or arises as a result of the Executive Engineer instructions given in regard to the expenditure of provisional sums in respect of any materials or goods to be fixed by the Contractor.

b. Such sums shall be understood to mean the net cost to be defrayed as a Prime Cost after deducting any trade or other discount and shall include sales-tax (where applicable) and other taxes and duties and the cost of packing carriage and delivery. Provided that where in the opinion of the Executive Engineer the Contractor has incurred expense for special packing or special carriage such special expense shall be allowed as pert of the sums actually paid by the Contractor.

c. Such sums shall be expended in favour of such persons as the Executive Engineers shall instruct, and all specialist, merchants, tradesman or others who are nominated by the Executive Engineer to supply materials or goods are hereby declared to be the suppliers to the Contractor and are referred to in these conditions as "Nominated Suppliers" provided that the Executive Engineer shall not (save where the Executive Engineer and Contractor shall otherwise agree) nominate as a supplier a person who will not enter into a Contract of sale which provides (inter alia).

a) That the materials or goods to be supplied shall be to the reasonable satisfaction of the Executive Engineer.

b) That the nominated supplier shall make good by replacement or otherwise any defects in the materials or goods supplied which appear within such period as is therein mentioned and shall bear any expenses reasonably incurred by the Contractor as a direct consequence of such defects, provided that where the materials or goods have been used or fixed such defects are not such that examination by the Contractor ought to have revealed them before using or fixing.

d. The delivery of the materials of goods supplied shall be commenced and completed at such times as the Contractor may reasonably direct.

e. All payments by the Contractor for materials or goods supplied by a Nominated Supplier shall be in full, and shall be paid within 30 days of end of the month during which delivery is made.

7.12 **TIME OF COMPLETION :-** All time limits stated in the contract document shall be of the essence of the contract. The contractor obligates himself to complete the works including completion of different stages of work as stipulated in all respects within the time schedule stipulated in the Agreement subject to any adjustment granted by the Executive Engineer in writing under the conditions of contract. He shall submit to the Architect periodic progress reports duly verified by the Executive Engineer on the first and fifteenth of each and every month.

7.13 **CONTRACTOR'S RESPONSIBILITY REGARDING DAMAGE TO PROPERTY AND INJURY TO PERSONS**

a. The **Registrar** shall not be liable or responsible for any accident, loss, death, injury or damage of any kind whatsoever happening in the course of the performance of the works herein referred to and in connection there with to persons and / or property, materials and equipment and the Contractor shall fully indemnify and protect the **Registrar** from and against the same. In addition to the liability imposed by law upon the Contractor for injury (including death) to persons or damage to property by reason of the negligence of the Contractor or his agents, which liability is not impaired or otherwise affected hereby, the Contractor hereby assumes liability for and agrees to save the **Registrar** harmless and indemnify him from every expense, liability or payment by reason of any injury (including death) to person or damage to property, neighbor's property suffered by any act or omission of the Contractor or any of his Sub-Contractors, or any person directly or indirectly employed by any of them or from the control of the Contractor of any part of the premises which is in the control of the Contractor or any of his Sub-Contractors, or any one directly or indirectly employed by either of them, or arising in any way from the works under this contract.

Further, the contractor hereby agrees and undertakes to indemnify the **Registrar** from any loss or damage or death arising out of the Architect and Executive Engineer's instruction, without limiting this obligations and responsibilities under this condition, the Contractor shall ensure and obtain at his cost insurance / insurance's against all the foregoing risks or eventualities. The insurance or insurances shall be obtained in joint names of the **Registrar** and the Contractor.

b. The Contractor shall submit Certificates of Insurance so obtained by him in proof of compliance with the above condition, to the Architect and Executive Engineer and the Contractor shall not proceed with the work until he has received in writing from the Architect / Executive Engineer approval of the Certificates of insurance required by the proceeding paragraph.

c. The Contractor shall ensure that his Sub-Contractors shall obtain insurances in the same manner and to the same extent, as he is liable to do under this condition and shall produce to the Architects / Executive Engineer+ Certificates Insurance, so obtained by his Sub-Contractors. The Contractor shall indemnify and keep indemnified the **Registrar** for any claims or demands that may be made against the **Registrar** for loss or damage arising from the performance of contracts by the Sub-Contractors.

d. These Certificates shall be fully executed and shall state that the policies cannot be cancelled until ten (10) days after written notification of such intent of cancellation has been given to the **Registrar**. All policies shall be with insurance companies acceptable to the **Registrar**.

e. The contractor shall owe absolute and unqualified liability for anything done or omitted to be done by him and impairing the validity or value of the insurance policy obtained by him. He shall also indemnify the **Registrar** in respect of any costs, charges or expenses arising out of any claims arising there from. The **Registrar** shall be at liberty to and is hereby empowered to deduct cost, charges and expenses arising or accruing from or in respect of any such claim or damage from any sum or sums due to or become due to the Contractor.

f. The Contractor shall continuously maintain adequate protection of all his work, materials, and equipment from damage, destruction or loss and shall protect the works

from weather conditions which, in the Architect / Executive Engineer, North Maharashtra University, Jalgaon's opinion will be detrimental to the works. In default, the Contractor shall make good at his cost, any such damage, destruction, loss or injury.

g. When so ordered by the Architect / Executive Engineer the Contractor shall suspend any work that may be subjected to damage by climatic conditions.

7.14 **LABOUR REGULATIONS**

a. The Contractor shall be wholly and solely responsible for full compliance with the provision under all labour laws and / or regulations such as payments of Wages Act, 1936; Minimum Wages Act, 1948; Employees Liability Act, 1938, Workmen Compensation Act, 1923, Industrial Dispute Act, 1947 and the Maternity Benefit Act, 1961 and any modifications thereof or any law relating thereto and rules made thereunder from time to time.

b. The Contractor shall his own expense comply with or cause to be complied with Model Rules for labour welfare framed by Government or other local bodies from time to time for the protection of health and for making sanitary arrangements for workers hutments area. In case the Contractor fails to make arrangements as aforesaid, the **Registrar** shall be entitled to do so and recover the cost thereof from the Contractor.

c. If female labour is employed, the Contractor shall make necessary provision at his own expense, for safeguarding and care of small children and keeping them clear of the site of operations. No labour shall reside within the site except authorised guards.

d. In case the Contractor fails to make arrangements and provide necessary facilities as aforesaid, the **Registrar** shall be entitles to do so and recover the cost there of from the Contractor.

7.15 **Co-Ordination by the Contractor: -** Co-ordination of work and at the commencement of work, and from time to time, the Contractor shall confirm with other contractors Sub-Contractors, persons engaged on separate contracts in connection with the work, and with the Executive Engineer for the purpose of the co-ordination and execution of the various phases of work. The Contractor shall ascertain from the other contractors, Sub-Contractors and persons engaged on separate contracts, in connection with the works, the extent of all chasing, cutting and forming of all opening, holes, grooves etc. as may be required to accommodate the various services. The Contractor shall ascertain the routes of all services and the positions of all floors and wall outlets, traps etc. in connection with the installation of plant, services and arrange for the construction of work accordingly. The breaking and cutting of completed work must not be done unless specifically authorized in writing by the Executive Engineer. All breaking shall be done by the Contractor for Civil work and no work shall be done over broken or patched work without first ascertaining that the broken surface is adequately prepared and reinforced to receive and hold the further work.

7.16 **Co-Ordination of Drawings: -** Before commencement of every section of work, the contractor shall correlate all relevant structural, architectural and services drawings satisfy himself that the information available there from is complete and unambiguous. The contractor shall be responsible for any error / difficulty in execution / damage incurred owing to any discrepancy in the drawings which has been overlooked by him

and has been brought to the notice of the Architect / Executive Engineer or their representatives.

7.17 **Entering upon or commencing any portion of work: -** The contractor shall enter upon or commence any portion of work with prior concurrence in writing of the Executive Engineer of his sub-ordinate-in-charge of work. Failing such and authority, the contractor shall have no claim to ask for measurements of or payment for work done.

7.18 **Co-ordination with other agencies work: -** It should be carefully noted that numerous agencies will be working in this project simultaneously and the contractor shall have to work at every stage in close co-ordination with each of these agencies. He shall have to programme his work accordingly in consultation with other agencies and par sequential requirements as may be decided upon by the Executive Engineer. Simultaneous execution of other components of the work by other agencies may necessitate execution of the work in a particular sequence and this will not be accepted as a ground for delay or excuse of any nature whatsoever and nothing extra will be paid for compliance in accordance with the requirements of this clause.

7.19 **DEDUCTION FOR RECORRECTED WORK ;-** If the Architect / Executive Engineer deems it inexpedient to correct work damaged or not done in accordance with the contract, an equitable deduction from the contract price shall be made therefore and the Executive Engineer decision in this respect shall be final.

7.20 **CORRECTION OF WORK :** - The Executive Engineer shall conduct a final inspection just before the virtual completion of the work and prepare a list of materials, equipment and items of work which fail to confirm to the Contract Specifications. The contractor shall promptly replace and re-execute such items in accordance with the contract and shall bear all expenses of making good all work and the cost of all work of other contractors destroyed or damaged by such replacement or removal. If the contractor fails to remove and replace above rejected materials, equipment and /or workmanship within a reasonable time, fixed by written notice, the **Registrar** may employ and pay other persons to amend and make good such defects at the expense of the contractor. All expenses incurred by the **Registrar** in rectifying the defects including all the damages, loss and expense consequent on the defects shall be recoverable from any amount due or may become due to the Contractor.

7.21 **VIRTUAL COMPLETION AND DEFECT LIABILITY PERIOD**

a. The work shall be considered as virtually completed by the Contractor, subject to the Executive Engineer / Architect granting to the Contractor a Certificate to the effect of such virtual completion as per clause 7 of Section 6 of this document. The Defect Liability Period provided herein should be reckoned and be effective from the date of the final certificate so granted by the Executive Engineer / Architects to the Contractor.

b. The Contractor shall make good at his own cost and to the satisfaction of the Executive Engineer, all defects shrinkages, settlement or other faults, arising in the opinion of the Executive Engineer from work or materials not being in accordance with the Drawings or specifications or Schedules of Quantities or the instructions of the Executive Engineer, which may appear within one year after completion of work, excepting specialist items such as water proofing and anti-termite treatment etc. which call for longer guarantee periods.

No. of corrections

c. Such defects, shrinkage, settlement and other faults shall, upon directions in writing of the Executive Engineer and within such reasonable time as shall be specified therein, be amended and made good by the Contractor, at his own cost, and in case of default the **Registrar** may employ and pay other persons to amend and make good such defects, shrinkages, settlements or other faults, and all damages, loss and expense consequent there on or incidental thereto shall be made good and borne by the Contractor and such damage, loss or expenses shall be recoverable from him by the **Registrar** or may be deducted by the **Registrar** up to the Executive Engineer / Architects Certificate in writing from any amount due to the Contractor, or the **Registrar** may in lieu of such amending and making good by the Contractor, a sum to be determined by the Architects on recommendation from Executive Engineer, equivalent to the cost of amending such work and in the event of the retention amount being insufficient to recover the balance from the Contractor as arrears of land revenue together with any expense the **Registrar** may have incurred therewith.

d. Maintenance during defects liability period: The Contractor shall provide and maintain adequate staff and labour at his own expense to attend to defects arising in the works during the defects liability period of Twenty Four months commencing from the date of Virtual Completion certified by the Executive Engineer. He shall attend to the defects pointed out to him expeditiously.

7.22 **GUARANTEE**

a. Beside guarantees required elsewhere, the Contractor shall guarantee the work in general for one year as noted under above clause of Virtual Completion and Defects Liability Period.

b. The Contractor shall submit all required guarantees to the Executive Engineer/Architects when requesting certification of accounts for payment by the **Registrar**.

c. All required guarantee shall be submitted to the Executive Engineer/Architect in the forms acceptable as a pre-requisite to acceptance and payment.

7.23 **CONTRACT DRAWINGS, SPECIFICATION, SCHEDULE OF QUANTITIES**

a. In general, the drawings shall indicate dimensions, positions and type of construction; the specifications shall indicate the quantities and the methods; and the Schedule of Quantities shall indicate the quantities and rate for each item of work. However, the above documents being complementary, what is called for by any one shall be as binding as if called for by all. In case of any discrepancies they shall be immediately brought to the notice of the Architect / Executive Engineer well in advance before execution.

b. Any work indicated on the Drawings and not mentioned in the Schedule of Quantities or Specifications or vice versa, shall be deemed as though fully set forth in each. Work not specifically detailed, called for, marked or specified.

c. No deviation from the Drawings, Specifications and Schedule of Quantities shall be made. The Architect / Executive Engineer interpretation of these documents shall be final.

d. Errors or inconsistencies discovered in the Plans and Specifications shall be promptly called to the attention of the Architect and Executive Engineer for perpetration or correction. Local conditions which may affect the work shall likewise be brought to

the Architect / Executive Engineer's attention at once. If, at any time, it is discovered that work is being done which is not in accordance with the approved plans and specifications, the contractor of defective work shall not be a basis for any claim for extension of time. The contractor shall not carry on with the work except with the knowledge of the Executive Engineer or his representative.

e. Figured dimensions on the scale drawings and large-scale details shall govern. Large-scale details shall take precedence over scale drawings. Any work done before receipt of such details if not in accordance with the same shall be removed and replaced or adjusted as directed without expense to the **Registrar**. All dimensions shall be checked at site prior to execution.

f. The dimensions where stated do not allow for waste, laps, joints etc. but the contractor shall provide at his own cost sufficient labour and materials to cover such waste, laps, joints etc.

7.24 **METHOD OF MEASUREMENT ;-** Where work done is to be measured, the standard method of measurement in accordance with the standard laid down by the Indian Standard Institute and standard specification of public works and housing department of Govt. of Maharashtra shall be adopted unless otherwise specified. When several components of item work are specifically incorporated together in the wording of an item in the Bills of Quantities, such item will be measured as a composite item comprising of all the components will not quality for measurement individually, which the standard method of measurement would have otherwise required them to be measured separately. In the event of any dispute with regard to the mode of measurement of the work executed the decision of the Executive Engineer/Architect shall be final and binding.

7.25 **TOLERANCE ;-** The Contractor shall exercise every care to ensure that all structural members are in plumb and true to dimensions called for on the drawings, to receive finishing elements such as doors, windows, fittings, fixtures, equipment and similar items. The details of the above finishing items are based upon allowing tolerance of plus / minus 3 mm. from the given location. Any variations beyond this may require rectification in the structural members or may involve remaking or replacing the finishing elements, fabricated to fit in the openings or spaces, as called for on the drawings. Such rectification shall be carried out by the Contractor as directed by the Architect / Executive Engineer at no extra cost to the **Registrar**. In case of Separate contracts, the contractor whose work does not confirm to dimensions called for, shall be liable for all the expenses which may have to be incurred for rectification or replacements as may be required by the Architect / Executive Engineer for the proper installation of the finishing elements. The Architects decision in this respect shall be final and binding on the Contractor.

7.26 **INDIAN STANDARDS :-** A reference made to any Indian Standard Specifications in these documents, shall imply reference to the latest revision of the standard, including such revisions/ amendments as may be issued by the Indian Standards Institution during the currency of the contract and the corresponding clause/s therein shall hold valid in place of those refereed to.

7.27 **PROTECTION AND CLEANING**

(A) The Contractor shall protect and preserve the works from all damage for accident by providing temporary roofs, windows, and door covering, boxing or other contraction as required by **the Executive Engineer, North Maharashtra University, Jalgaon**. This protection shall be provided for all property adjacent to the site as well as on the site.

(B) The Contractor shall property clean the work as it progresses and shall remove all rubbish and debris from the site from time to time as is necessary and as directed. On completion, the contractor shall ensure that the premises and / or site are cleaned, surplus materials, debris, shades etc., removed areas under floors cleared or rubbish, gutters and drains cleared, doors and sashes eased, locks and fastenings oiled, keys clearly labeled and handed to the Jr. Engineer / Site Engineer so that the whole is left fit for immediate occupation or use and to the satisfaction of the **Executive Engineer**.

7.28 **SUSPENSION OF WORK :-** The Contractor shall, on receipt of the order in writing of the Executive Engineer suspend the progress of the work or any part thereof for such time and in such manner as the Executive Engineer may consider necessary for any of the following reasons: -

a. On account of continued non-compliance of the instructions of the Executive Engineer / Architect or any other default on the part of the contractor, in such case the Executive Engineer shall have powers to suspend the payment under the contract. Such suspension of payment may be continued until default shall have been rectified.

b. For proper execution of the works or part thereof for reasons other than the default of the contractor, or

c. For safety of the works or part thereof.

7.29 **ENTRY AT SITE :-** It is hereby expressly declared that the entry of the Contractor(s) on the site will be merely as a licensee for carrying out the construction of works under this Agreement, and they shall not, by his/her being allowed such entry on the premises, acquire any right, lien or interest either in the works carried out by them under the Agreement or anything appurtenant or attached thereto and their claim will only be in the nature of money claim found due and payable to them in accordance with the certificates issued by the Executive Engineer/Architect under the provisions contained hereafter.

7.30 **JURISDICTION :-** All matters arising out of or in any way connected with this agreement shall be deemed to have arisen in MAHARASHTRA STATE and only the Courts in JALGAON shall have jurisdiction to determine the same.

7.31 **POWER OF THE REGISTRAR TO RECOVER ARREARS FROM THE CONTRACTOR :-** All amounts whatsoever which the contractor is liable to pay to the **Registrar**s in connection with the execution of the work including the amount payable in respect of (i) materials and / or stores supplied / issued here under by the **Registrar** to the contractor (ii) hire charges in respect of heavy plant, machinery and equipment given or hire, by the **Registrar** to the contractor for execution by him of the work and / or on which advances have been given by the **Registrar** to the Contractor (iii) and any payment due from the contractor on any account to the **Registrar**, shall be deemed to be arrears of Land Revenue and the **Registrar** may without prejudice to any other

rights and remedies of the **Registrar**, recover the same from the contractor as arrears or revenue.

7.32 **PROCUREMENT OF STEEL AND CEMENT**

a. The Contractor shall procure and arrange for all the tested quality cement and reinforcement / structural steel from time to time in adequate quantities as required for the progress of work.

b. It will be the responsibility of the Contractor to maintain adequate stocks of cement and steel at site.

c. The Contractor shall plan and prepare schedule for bulk procurement of specified quality of cement and tested quality reinforcement steel / structural steel well ahead of the time of requirement on site and furnish schedules covering at least three month's requirements to the **Registrar**'s Site Engineer from time to time till completion of work.

d. The quality of cement and reinforcement steel / structural steel shall be ISI quality and also confirming to the tender specifications.

e. The Contractor shall notify the source of manufacture and supply of cement and reinforcement steel / structural steel which shall be of described / specified make and the quality for approval of the **Registrar** prior to procurement of every consignment.

f. The Contractor shall obtain test certificates from the manufacturer and supplier for the quality of cement and reinforcement steel / structural steel from time to time with every consignment of supply of these materials and furnish them for record and approval of the Executive Engineer. The Contractor is also required to obtain at his own cost further test reports from approval laboratories and submit them to the Executive Engineer and the Architect for approval for every consignment.

g. Storage of steel and cement at site : Cement delivered in bags by the Contractor shall be stored off the ground in dry, well-ventilated closed weatherproof sheds. The storage of consignments as received from the manufacturer shall be arranged so that consumption of cement is ensured in the order of receipt i.e. "First-in, First-Out" rule. The stacks of cement shall be such that there is easy access for proper inspection and identification. The bags shall be piled not more than 10 bags high and placed close together in the pile to reduce circulation of air. The Contractor has to provide at his own cost temporary storage godown at site so as to store at least **1500** cement bags at time, and maintain the shed in waterproof condition till completion as directed. Steel shall be stored in clean open areas on site and steel bars / bundles shall be stored on top of hardwood sleepers spaced at every 1.50 m. across the length such that the steel does not come in contact with earth / ground during the storage.

7.33 **Records and Account of Steel and Cement :-**

(i) After the completion of the day's work the theoretical quantity of cement to be used in the work shall be calculated on the basis of standard formula. Over this theoretical quantity of cement shall be allowed a variation upto 2% (two per cent) plus, minus for stock taking. For plain Cement Concrete and Reinforced Cement Concrete work, cement to be used shall be not less than the minimum cement content specified in Kg. per Cubic Meter of concrete in respect of each grade of concrete, even if the required strength is obtainable with quantity of cement less than the minimum cement content specified for the corresponding grade of concrete. In the event of it being discovered

that the quantity of cement used is less than the quantity, ascertained as herein before provided (allowing variations on the as stipulated above) the cost of the quantity of cement not so used shall be recovered from the Contractor on the basis of market rate plus cartage to site, without prejudice to the right of the **Registrar** to reject the work not confirming to the specifications laid down.

(ii) The provisions of the foregoing sub-clause shall also apply in the case of steel reinforcement or structural steel sections except that the theoretical quantity of steel shall be taken as the quantity required as per design including lappages plus 5% wastages due to cutting into pieces. The standard nominal weight of mild and medium tensile steel bars shall be as stated below diameter wise :

Diameter	Weight in Kg./M.
6 mm. dia.	0.22
8 mm. dia.	0.39
10 mm. dia.	0.62
12 mm. dia.	0.89
14 mm. dia.	1.21
16 mm. dia.	1.58
18 mm. dia.	2.00
20 mm. dia.	2.47
22 mm. dia.	2.98
25 mm. dia.	3.85
28 mm. dia.	4.83
30 mm. dia.	5.55
32 mm. dia.	6.31

It is to be understood that the nominal diameters of the high yield strength deformed bars (ribbed steel bars) specified are the corresponding equivalent diameters of plain round mild steel bars and that the weight per meter length of deformed bars is same as that of MS bar of equivalent diameter. No claim will be entertained from the Contractor for reimbursement of cost due to additional weight per meter length of deformed bars for reasons of physical weight being more than the standard weight for each category of diameter specified.

The tolerance on weight per meter length of plain round bars as well as deformed twisted grip bars shall be in accordance with relevant ISI specification. Tolerance on weight of deformed steel bars shall also be considered similarly as for plain round bars of corresponding diameters.

(iii) The Contractor shall bear all incidental charges for handling, storage and safe custody of materials and for joint accounting of stock from time to time.

(iv) Cement bags shall be stored in separate godown as directed by the Executive Engineer, with pucca floor and weather proof roofs and walls. Each godown shall be provided with a single door with two locks system. The keys of one lock shall remain with the authorised agent of the Contractor at the site of work and the keys of the other lock shall remain with the Executive Engineer. The cement should be removed from the godown according to the daily requirement with the knowledge of both the parties, that is the Contractor's agent and the **Registrar**'s Engineer on site. Register showing receipts of cement bags from time to time, daily consumption of cement bags indicating

the quantity, grade and R.C.C. members of concrete work and P.C.C. work done, number of cement bags remaining in balance at site shall be maintained, updated from day to day and signed by both the parties mentioned above.

(v) The Contractor will not be allowed to use the loose cement swept from godown floors and / or delivery trucks for any work. It can be allowed to use only for temporary nature of work only with specific permission of the Executive Engineer or can be allowed to remove the same away from site as directed as wastage at the cost of the Contractor.

7.34 The percentage rate below and above to the tender cost shall be quoted in figures and words. In case of any discrepancy between the quoted figure and that written in words, the lower of the two shall be taken as the applicable percentage.

7.35 The cost shall be quoted in figures and words. In case of any discrepancy between the quoted figure and that written in workds, the lower of the two shall be taken as the applicable percentage.

7.36 **SETTLEMENT OF DISPUTE ;-** If the contractor is not satisfied with the decision given by the Executive Engineer for any disputes, claims and difference arising due to interpretation of any technical terms and conditions of contract executed between the **Registrar** and the contractor, specification, drawings, quality and finish of work and acceptable work and all matter related to this contract document, then the contractor may, within full details and justification to the vice-chancellor, North Maharashtra University, Jalgaon who if convinced that prima-fascia, the contractors claim, of the contractor as would merit a detailed examination and place such claim to the Building & Works Committee for suitable decision. The decision taken by the Building & Works Committee of the North Maharashtra University, Jalgaon shall be final, and without appeal and binding to the Contractor and the **Registrar**. The Contractor and the **Registrar** hereby agree that this clause shall be a condition precedent to any right of action under the contract. The Arbitration is not allowed.

7.37 **SECURED ADVANCE ON MATERIALS DURING CONSTRUCTION STAGE**

a. The Contractor may be considered for payment as secured advance on certain unfixed imperishable material that have been brought to the site in appropriate and reasonable time for incorporation in the work and stored as per prescribed specification to the extent of 75% of cost of materials. All relevant vouchers, measurement books and receipts shall support such advance payment. Such payment shall be based on the basic rates given on D.S.R.**2012-2013**. However the rate whichever is lower will be taken for such advance payment and as recommended by the Architect and Executive Engineer.

b. The Contractor is required to furnish Indenture Bond prescribed by the **Registrar** duly executed by the Contractor as directed for such advance payment. The payment of such advances shall be made only on the Certificate of the Architect / Executive Engineer.

c. Such advance will be made only on such imperishable materials which will be solely on the discretion of the Executive Engineer / Architect and lying unfixed in safe custody and storage at site on stock taking basis every month and the sum thus advanced in one bill shall be fully recovered from the next bill, may be after allowing fresh advance in the next bill on similar basis on the unfixed materials then in the stock at site.

No. of corrections

d. No such advance will be granted in the pre-final bill. The Advance payments on unfixed materials will be treated as on account payment, such materials when paid for, become the exclusive property of the **Registrar** and shall not be hypothecated to any party or removed from the site regardless of whether accepted or not.

e. The said materials shall remain in the custody of the Contractor until the work is completed and delivered to the **Registrar** and any loss or damage shall be the sole responsibility of the Contractor. An insurance policy against theft, loss or damage by fire, accident and all other caused including acts of God to cover the value of all materials at site for which the Contractor at his cost in the name of the **Registrar**. The policy shall be kept in force till the materials are incorporated in the work. The policy and receipts for premium shall be submitted to the Executive Engineer.

f. Such payments shall be restricted to the approved imperishable materials as reinforcement steel and structural steel, bricks, polished tandur stones, white glazed tiles, machine polished granite slabs, steel frames for doors, PVC doors, anodized extruded aluminium section for windows, polished Agra / Dholpur Stone, mosaic tiles, chequered tiles, ceramic tiles. Secured Advance on cement in addition to the above materials will also be storage is as per conditions of the contract and to the satisfaction of Executive Engineer.

g. The payment in lieu of secured advance shall not exceed to 10% of the estimated balance work as per Schedule ‘B’ rate without premium.

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Contractor Executive Engineer Registrar

8. ADDITIONAL CONDITIONS OF CONTRACT

8.1 **ADMITTANCE TO THE SITE :-** The Contractor shall be allowed admittance to the site on the date of commencement and he shall thereupon and forthwith begin the work and shall regularly proceed with and complete the same on or before the date of completion.

8.2 **PROGRAMME CHART**

a. The Contractor shall prepare Time and Progress Schedules in the form of BAR CHARTS based on PERT / CPM analysis including resources Scheduling and procurement for materials and all other factors for the whole of the contract within fifteen days of the award of contract for completing the whole work within the completion time stated in the contract, and submit them for approval of the Executive Engineer. It is the Contractor's responsibility to submit to the Executive Engineer the works progress report precisely in terms of work done for every week and to see that the Progress of work is maintained and conformity with the Time and Progress Schedules. The North Maharashtra University, Jalgaon will not be responsible for any claim on the part of the Contractors and Sub-Contractors on account of delay in delivery of materials by merchants or nominated sub-Contractors not having completed their works in accordance with the Time and Progress Schedules.

b. The chart shall also indicate the scheduling of samples, shop drawings and approvals. Thereafter on the first day of each month, for purposes of comparison, the Contractor shall submit on identical chart showing the actual rate of progress to date.

c. In the event the actual rate of progress falls behind the scheduled progress as indicated in the charts, the Contractor shall accelerate the works to the satisfaction of the Executive Engineer.

8.3 **DAILY PROGRESS REPORT :-** The Contractor shall submit, in duplicate, on a form to be approved by the Executive Engineer a daily report giving an accurate record of the progress of the works and shall submit a detailed report of the following: These reports should be submitted to the Executive Engineer.

a. Materials procured, consumed and balance at site for previous week as well as expected deliveries during next week.

b. List of equipment's and machinery working at site, standby as well as those under repair on daily basis and equipments scheduled to arrive during next week.

c. Skilled / unskilled men employed in each trade including Engineers working at site from day to day and expected increase in next week.

d. Steps proposed for speeding up the progress of work in the next week.

e. Necessary information on all the above items shall be displayed on the black board to be provided in the site office of the Executive Engineer by the Contractor at his cost to indicate these items for that particular day throughout the construction period.

No. of corrections

f. The Contractor shall also submit daily record of weather, temperature, visitors to the site and any other event influencing the progress of the works of the previous day.

g. The Contractor shall impose a similar requirement on all his sub-Contractors and shall incorporate such information in his own report.

h. The Contractors shall arrange adequate resources in time to adhere to the time schedule at each stage and this adherence will be a part of the Contractor's performance under the contract.

8.4 **SAMPLES AND SHOP DRAWINGS**

a. After the award of the contract, the Contractor shall furnish for the approval of the Executive Engineer, samples and shop drawings required as per the specifications and as required by the Executive Engineer. The contractor will not get any extra payment for preparation of any samples and shop drawings, etc. A schedule giving dates for the submission of samples shall be included in the time schedule described under clause of progress chart. Unless specifically authorised all samples must be submitted for approval within 60 days of signing the contract or not less than 120 days before the date the particular work involved is scheduled to begin, however for contract less than period of three months, the samples should be submitted with one week.

b. The Contractor shall prepare the detailed shop / fabrication drawings of all structural steel works to be executed as per I.S.800 – 1962 and as I. S. codes amended time to time at his cost. The shop / fabrication drawings shall also include plan, sections, elevations of members, connection details, details of welding material, take off and bills of material; memberwise with all details like section sizes, lengths, area, weight, nos., etc., splicing and camber details where ever necessary and all such details required for fabrication of each members, truss, etc. The Contractor shall submit the drawings in five sets to the Executive Engineer for his approval. No fabrication shall be taken in hand until the relevant shop drawings have been approved by the Executive Engineer. The contractor shall remain wholly responsible for their correct information to design and for accurate fabrication to meet the requirements of design and I. S. I. Standards. On approval of shop / fabrication drawings, the Contractor shall submit five sets of shop / fabrication drawings to the Executive Engineer / Architect. All the above works shall be the cost of Contractor. Fabrication shall be as per IS 800-1984.

c. **SHOP DRAWINGS FOR DOORS AND WINDOWS**

The Contractor shall prepare detailed fabrication drawings of all aluminium doors and windows without any additional cost & well get it approved from the Architect and Executive Engineer before procuring the sections.

The fabrication drawings should show the proper alignment and assembly of all sections, with weight of each section and total weight calculation. Only the aluminium section of prescribed make as Jindal and Indal should be used. When the sections of particular weight as given in Schedule 'B' are not available or discontinue in manufacture, then the new series will be allowed, while deducting or considering the amount of decrease of increase of weight of section @ rate of Rs.240/- per Kg. however the Contractor need to submit all the details of fabrication with old & new section with total calculation of weight above work need to be done. Contractor shall

provide the sample free of cost for approval. In case, the aluminium sections are anodized, the anodizing shall be not less than 15 micron and shall be of any colour as directed by the Architect / Executive Engineer without any additional cost.

d. The Contractor shall prepare the shop drawings in respect of all-plumbing works and get it approved from the Executive Engineer before starting the work.

8.5 The Contractor shall set out and level the work and shall be responsible for the accuracy of the same. He must not commence the work until the outline of the buildings have been pegged out and have been approved by the Executive Engineer. He shall provide all the instruments and attendance required by the Executive Engineer for checking the work. He shall entirely at his own cost amend to the satisfaction of the Executive Engineer any errors found at any stage which may arise through inaccurate settings.

8.6 The Contractor must clear the site and make detailed plane table survey drawings showing all physical features of site with adjoining roads, trees, all existing services lines, culverts etc. and then take spot levels at interval of 3.00 meters c/c and also submit drawing of spot levels and contour survey without any extra cost. The contractor then mark the layout of buildings, development work with proper pegging and shall then mark each columns and walls on the site and submit the levels of each columns, walls before commencing the excavation. All the above work shall be done without any extra cost. The contractor shall get the above checked from the Executive Engineer from time to time.

8.7 Through checking will be done by the supervisory staff at site from time to time during execution of work the Contractor will be responsible to rectify at his own cost any errors detected at any later stage.

8.8 The Contractor should obtain approval from North Maharashtra University, Jalgaon and from the Executive Engineer for the temporary construction of office, storage, godown and labour hutment's if allowed etc. proposed to be erected, on the site of work and pay taxes, rent etc. if any.

8.9 The Contractor shall provide, erect and maintain at his own cost where directed, office accommodation for Executive Engineer / his supervisory staffs at site with drawing table, stool, desk with drawers, writing table, six chairs, direct telephone, electric lights, fans, drinking water arrangement and also a room for site meetings with required furniture, separate adequate toilet facilities, etc. and clear away at completion and make good all work disturbed as directly by Executive Engineer. The Contractor shall pay all deposits, bills, charges etc. of the telephone upto the completion of works. The total office area required to be provide at Contractors cost shall be minimum of 40 Sq.M. This office and the Contractors site office shall be handed over to the **Registrar** without any cost if **Registrar** decides to retain the structure.

8.10 The Contractor shall provide, erect and maintain at approved position proper office for his staff and his office shall be open at all reasonable hours to receive instructions, notices or communications and clear away at completion and make good all works distributed as directed by the Executive Engineer.

No. of corrections

8.11 The Contractor shall ensure continued effective supervision with the help of a qualified, experienced and competent Engineer assisted by adequate technical supervisory and other staff as ascertained by the Executive Engineer for the entire duration of the works. The Contractor will be responsible for carrying out the work to the true meaning of the Drawings, Conditions of Contract, specifications, Schedule of Quantities and the Executive Engineer's instruction and directions to the satisfaction of the Executive Engineer. Any directions or instructions given to him in writing shall be held to have been given to the Contractor officially. Attention is called to the importance of requesting written instruction from the Executive Engineer before undertaking any work where the Executive Engineer's directions or instructions are required. Any such work done in advance of such instructions will be liable to be removed at the Contractor's cost. No staff including the Engineer and Technical Supervisory staff shall be transferred from the work without the written prior permission from the Executive Engineer.

8.12 The Civil Contractor should allow any other Contractor to work simultaneously wherever necessary in case of any dispute between the sub-Contractor / the agencies and the Civil Contractor arises, the decision of the Executive Engineers shall be final and binding on the agencies and Civil Contractor.

8.13 **WATER**

a. All water charges, Sewerage Charges / Taxes as levied by **LOCAL AUTHORITY** for water required during construction shall be paid by the Contractor and / or the Contractor shall make his own arrangement of water required during construction and the whole of the water must be clean and fresh water. It also includes for providing water required by sub-Contractors. The Contractor must execute any temporary plumbing and pay all fees and charges including transportation charges etc.

b. Clean fresh water only shall be used for the works. The water shall be free from any deleterious matter in solution or in suspension and be obtained from an approved source. The quality of water shall confirm to IS 456.

c. The Contractor shall make his own arrangements for storing water, if necessary, in drums or tanks or cistems, to the approval of the Executive Engineer. Care shall be exercised to see that water is not contaminated in any way.

d. If the water from the University is used, the deduction at the rate 1% (One Percent) as prescribed by P.W.D. shall be done from each running bill. **Registrar** shall not accept any commitment for supply of water.

8.14 The whole of the work including all extra and additional items if and when ordered are to be completed in the time stated in the contract and the Contractor will be required if necessary to work overtime within the framework of regulations to stick to the Executive Engineer's instructions to complete all the works by the stipulated date. No extra claim will be allowed on the contracted amount on account of this factor.

8.15 The Contractor will be responsible for the complete co-ordination of all the works including that of sub-contractors and nominated sub-contractors, for arranging

runs of all services and working to the requirements and layouts of the specialist traders, execution of the works.

8.16 All drawings, tracings, Bills of Quantities, Photoprints, Writings (except letters) and specifications and copies thereof furnished by the Architect are his property. They shall not be used on any other work and shall be returned to the Architect on completion or termination of the Contract.

8.17 The drawings maintained on the site are to be carefully mounted on canvas of appropriate size. They are to be protected from the ravages of termites, ants, silver fish and other insects.

8.18 The whole of the work must be proceeded with such sections and at such times as directed by the Executive Engineer.

8.19 Reinforcing steel bar bending schedules shall be furnished by the Executive Engineer atleast fifteen days prior to the fabrication of the reinforcement.

8.20 The whole of the materials (except where otherwise described), stores and equipment required for the faithful performance of the contract must be provided through normal trade channels and strictly in accordance with specification and be the best of their kind available at the time and the Contractor must be responsible for the proper and efficient carrying out of the work. The work must be done in best and most workman like manner. Samples of all materials to be used must be submitted to the Executive Engineer for approval prior to procurement.

8.21 The Contractor shall provide and do everything necessary for the proper execution of the works according to the true intent and meaning of the drawings and specifications taken together, whether the same may or may not be particularly shown on the drawings or described in the Schedule of Quantities, provided that the same can be reasonably inferred therein from.

8.22 It must be clearly understood that the whole of the conditions and specifications are intended to be strictly enforced, and that no extra charges in respect of extra work will be allowed unless they are clear outside the spirit and meaning of the conditions or unless such works shall have been ordered in writing by the Executive Engineer.

8.23 Any instruction given verbally shall be deemed instructions for the proper execution of the works not involving extra charges.

8.24 The Contractor shall confirm to the provisions of any regulation and bye-laws of any water or lighting companies with whose system the structures are proposed to be connected, and shall before making any variations from the drawings that may be necessitated by so confirming give the Executive Engineer written notice specifying the variations proposed to be made and the reason for making it any apply for instructions thereon. In case the Contractor shall not in due course receive instruction he shall proceed with the work, confirming to the provision of regulation or bye-laws to the supply companies and shall provide for and pay all fees and charges.

8.25 The Contractor shall on the request of the Executive Engineer immediately dismiss from the works any person employed thereon by him who may in the opinion of the Executive Engineer be incompetent or misconduct's himself and such person

shall not be again employed on the work without the permission of the Executive Engineer.

8.26 The Contractor shall make his own security arrangements to guard the site and premises at all times, by day, by night, on Sundays, and other holidays at his own expense. The security arrangements shall be adequate to maintain strict control on the movement of materials and labour. The Contractor shall extend the security arrangements to guard the material stored and / or fixed on the premises by the sub-contractors the Contractor will provide at his own cost suitable temporary huts for the watchman and clear away when no longer required and provide all necessary attendance, light etc. required. The Contractor must prevent his men from entering any adjoining land or property other than that in which he is actually employed, and the Contractor will be held responsible for any loss or damages which can be ascertained and proved to have occasioned by his workmen.

8.27 The Contractor shall provide all artificial light required for the works and to enable the Contractors and sub-contractors to complete the works in the specified time including that for the workmen of any sub-contractors or special tradesmen which must be provided by the Contractor at his own cost.

8.28 The Contractor shall provide any necessary temporary enclosures, gate entrances, etc. for the protection of the works and materials and for altering and adapting same as may be required and removing at completion of the works and making good all works disturbed.

8.29 The Contractor shall provide and erect adequate latrine accommodation for the site staff and the workmen and keep the same in a clean and sanitary condition to the satisfaction of the Public Health Authorities and clean and deodorize the ground after removal and make good all works disturbed by these conveniences.

8.30 During inclement weather the Contractor shall suspend concreting and plastering for such time as the Executive Engineer may direct and shall make protect from injury all works then in course of erection.

8.31 Should the work be suspended by reason of rain, strike, lockouts, or other cause the Contractor shall take all precautions necessary for the protection of the work and at his own expenses shall make good any damages arising from any of these causes.

8.32 The Contractor shall keep accurate records of weather, temperature, visitors and any other occurrences affecting the progress or quality of the work as per the sample charts supplied by the Executive Engineer / Architect.

8.33 The terms “Approved”, “Directed” or “Selected” mean the approval, direction or selection of the Architect and wherever the word “Allow” occurs the cost of the item or items is at the risk of the Contractors.

8.34 The Contractor shall provide, erect and maintain at his expense proper water proof stores for the storage and protection of construction materials and equipments both of his own as well as those supplied by the **Registrar** from time to time and also for the tools and materials of sub-contractors.

No. of corrections

8.35 The Contractor will be responsible for storage of cement in good and water tight condition. Cost of any items supplied by the **Registrar** will be recovered at market rate if the item is spoiled or wasted due to negligence and / or carelessness of the Contractor during storage and / or handling operations.

8.36 The Contractors shall at all times give access to workmen employed by the local or other authorities or any other parties employed on the buildings and to provide such parties with proper, sufficient and if required, special scaffolding, hoists and ladders and provide them with water and lighting and leave or make any holes, grooves etc., in any work where directed by the Executive Engineer as may be required to enable such workmen to lay on fix pipes, electric wiring, special fittings etc..

8.37 The Contractor shall cover up and protect from injury from any cause all new work, also for supplying all temporary doors, protection to windows, and any other requisite protection for the whole of the works executed, whether by himself or special tradesman or sub-contractors, and any damage caused must be made good by the Contractor at his own expense.

8.38 The whole of the fences, paths, trees, shrubs, green and other surfaces about the buildings or approaches thereto, which are required to be maintained are to be kept free from damage due to the operations in connection with the works.

8.39 The Contractor shall at his own cost provide and maintain such temporary road on the site as may be necessary for the proper performance of the contract and for his own convenience but not otherwise. Upon completion such roads shall be broken up and leveled where so required by the drawings unless the Executive Engineer shall otherwise direct.

8.40 **TREASURES :-** Any Treasures Coins or objects of Antiquity, which may be found at site shall be handed over to the **Registrar**.

8.41 The Contractor at his cost clean, clear and cart away all shavings, cutting and other rubbish as it accumulates from time to time during the progress of work and at completion, including that sub-contractors, special tradesman.

8.42 Should suitable sand or gravel or rock be found in the excavations and the Contractor is allowed to use the same in the work, he will be required to pay the **Registrar** the full market value of the same. Any sand or gravel taken from the excavation will remain the property of the **Registrar** and in the event, of it not being allowed to be used in the work the subject of this contract, the Contractor at his cost cart away the same at the place directed by the Executive Engineer.

8.43 The Contractor shall protect all projecting cills and mouldings and all concrete steps from injury during the progress of the work by rough timber casings securely fixed.

8.44 The Contractor shall at his own cost protect joinery and make good all damage to same from any cause whatsoever during the performance of the contract and leave perfect to the satisfaction of the Executive Engineer at completion. Before giving up possession the Contractor must see that all doors, sashes, etc. work easily and shall make all necessary adjustments.

No. of corrections

8.45 The Contractor shall provide all necessary templates, moulds for circular or shaped work, carpenters or joiners work or any other trade.

8.46 The Contractor shall provide and erect on the site in the position as directed by the Executive Engineer, North Maharashtra University, Jalgaon, the name board with bird's eye view or perspective as per the design provided with the name plate of size of about 1.80 X 3.25 meter of 18 mm. thick marine kit ply with T.W. beading all around and to be fixed at height of 2.40 meter from the finished ground. The frame for name board shall be of 3" X 3" X ¼" thick M.S. angle with cross members of M. S. angle with 3" X 3" X ¼" at every 900 mm. distance. The frame shall be braced with 3" X 3" X ¼" M. S. bracings with cross members of same size. The bracing and the frame shall be fixed in the ground with atleast in 450 X 450 X 1000 mm. in deep in 1:2:4 concrete. The board to be painted in three coats of approved oil colour and lined out in darket lines into panels to received the name and address of **Registrar**, the Architect, Contractors etc. to provide for all necessary writing on board. The name board and lettering shall be got approved by the Executive Engineer.

8.47 The Contractor shall not affix or place any placards or advertisement of any description or permit the same to be affixed or placed in or upon any hoarding, gantry, building or structure other than the above name board.

8.48 The rates quoted by the Contractor cover for necessary transport of materials from place of availability to the site of works.

8.49 Theodolite, levels, prismatic compass, chain, leveling staffs, steel and metallic taps and all other surveying instruments found necessary on the works shall be provided by the Contractors for the due performance of their contract as instructed by the Executive Engineer.

8.50 Every brick layer or plaster on the works shall be provided with suitable level battens, trowels, wooden floats, and breaking hammers for cutting bricks and templates to enable him to carry out the works in a neat and workmanlike manner, and each gang of brick layers or plasters not exceeding six in number shall be provided with a two foot rule, a plumb bob, a spirit level and a square in addition to the above mentioned all to be the approval of the Executive Engineer.

8.51 The mistries and the supervisors on the works shall carry with them always a two foot rule, a measuring tape (50 feet) a spirit level, a plumb bob and a square and shall check the work of the brick-layers, plasters and carpenters and joiners to see that the work is being done according to the drawings and specifications. The Executive Engineer and his Engineer will use any and all measuring instruments or tools belonging to the Contractors as he chooses, checking the works executed or being executed on the works.

8.52 The Contractors or their representatives shall accompany the Executive Engineer and their representatives when required to do so, and assist in taking the measurements recorded on the spot.

8.53 All measuring tapes shall be of steel and scaffolding and ladders that may be required for taking measurements shall be supplied by the contractor.

No. of corrections

8.54 If the Contractor fails to accompany the Engineer of the University or any other person that has been duly authorised by the Executive Engineer to take measurements they shall be bound by the measurements recorded by the Executive Engineers or his representative.

8.55 The Contractor or Contractors shall place at the disposal of the Executive Engineer, the services and the advice of himself and his firm, and their staff of Engineers skilled person employed by him or them for the conduct of the works comprised in this contract.

8.56 The Contractor is to construct and maintain proper bench marks with levels at the intersection of the all main walls in order that the lines and levels may be accurately checked at all times. The contractor shall installed main reference bench mark with marking level related to bench mark level to be taken from main reference point as directed by the Executive Engineer.

8.57 The Contractors shall provide suitable stone with flat tops and build the same in concrete for temporary bench marks. All the pegs for setting out the work and fixing the necessary levels required for the execution thereof shall if desired by the Executive Engineer, likewise by built in masonry at such places and in such manner as the Executive Engineers may determine.

8.58 Particular care must be taken to see that the floor are not over loaded by stacks of materials during construction it is important that no load comes on reinforced concrete floors until they are at least 3 weeks old and at no time must the load placed upon them exceed the load for which they are designed.

8.59 The charges for testing of concrete test cubes and or any other materials will be borne by the Contractor from time to time including transport and handling charges. All such tests shall be carried out, at the laboratories specified by Executive Engineer -in-Charge periodically.

8.60 Income Tax at 2% plus surcharge as applicable on income tax or percentage of tax and surcharge that will be in force from time to time shall be recovered from the Gross amount of every bill, whether for measured work or advance payment and / or secured advance.

8.61 The contractor shall pay to the Govt. authority all royalties or other sums payable in respect of the supply and use in carrying out the work as desired by or referred to in the Contract Bills of any patented articles, process or inventions Contractor shall indemnify the **Registrar** from and against all claims, proceedings, damages, costs and expenses which may be brought or made against the **Registrar** to which he may be put by reason of the Contractor infringing or being held to have infringed any patent rights in relation to any such articles, processes and inventions.

8.62 Licenses and Permits for all materials under Government control shall be obtained by the contractor directly. The Contractor shall include in his tender all taxes, all transport charges and any other expenses and other expenses likely to be incurred to bring the materials to the site.

No. of corrections

8.63 The rates are taken from D.S.R. published by P.W.D., Nashik (P.W.) Region for (Special Project) circle, Jalgaon **2012-2013**. Hence if any discrepancies in rates observed in Bills of Quantities, D.S.R. Rates of **2012-2013** will be followed.

8.64 **PARTIAL POSSESSION :-** The Contractor at any time or times before practical completion of the works shall allow the **Registrar** to take possession of any parts of the building without any condition and without any extra cost. The Contractor shall work out completion programme including partial completion as required by the **Registrar** from time to time without any extra cost, keeping all the conditions of contract as these are. Nothing shall be paid extra for such partial completions. Partial completions taken by the **Registrar** from time to time shall have no effect whatsoever on virtual completion and defect liability period which shall be taken as per clause 7 of section 6 and as per 7.21 of conditions of contract.

8.65 **POWER FOR CONSTRUCTION :-** Contractor shall make all necessary arrangements at his cost for adequate supply of electric power required by other agencies employed at site.

8.66 **OVER TIME :**- As and when necessary for the Contractor or any sub-contractor to work from time to time on other than week days or outside normal working hours in order to keep up to the time schedule, the Contractor shall give due notice of his intention to do so and obtain prior approval of the Executive Engineer / Site Engineer. The additional cost of wages and any other costs caused by overtime or shift work payable by him to his employees shall be borne in full by the Contractor and nothing extra will be paid by the **Registrar** to the Contractor for compliance with requirements of this clause.

8.67 **WORK SHEDS:**- The Contractor shall, at his expense provide, erect and maintain proper weather-proof work sheds for carpentry and joinery work and such other trades which require protection against weather.

8.68 The Executive Engineer shall have the power to direct the omission of carrying out of any part or parts of the works but not amounting to the omission of the whole, the Contractor shall not be entitled to claim any compensation of this ground.

8.69 PAYMENT WITHHELD :- The Executive Engineer may withhold or on account of a subsequently discovered evidence nullify the whole or a part of any certificate to such extent as may be necessary in his reasonable opinion to protect the **Registrar** from loss on account of:

i. Defective work not remedied.

ii. Failure of the Contractor to make payments properly to sub-contractor or for materials or labour.

iii. A reasonable doubt that the Contract can be completed for the balance then unpaid.

iv. Damage to another Contractor or sub-contractor.

v. A reasonable doubts that the Contractor intends to leave work item incomplete.

8.70 **MATERIALS AND WORKMANSHIP**

a. All materials and workmanship shall be as per the prescribed specification and as per relevant code of I.S.I. specification and of only specified make in this tender. All

materials and equipment to be incorporated in the work shall be new and are to be entire satisfaction of the Executive Engineer. The Contractor shall immediately remove from the works any material and / or workmanship which in the opinion of the Executive Engineer are defective or unsuitable and shall substitute proper materials and / or workmanship at his own cost. The term approval used in connection with his Contract shall mean the approval of the Executive Engineer.

b. The Contractor shall if required submit satisfactory evidence as to the kind and quality of material.

c. Where special makes or brands are called for they are mentioned as a standard. Others of equal quality may be used provided approval is first obtained in writing from the Executive Engineer. Unless substitution are requested no deviation from the specification will be permitted. Failure to propose the substitution of any article within 30 days after signing of the Contract will be deemed sufficient cause for denial of the request for substitution. No extra cost shall be paid to the Contractor on account of such approved substitutions.

d. The Contractor shall indicate and submit evidence in writing of those materials of articles called for in the specifications that are not obtainable for installation in the work within the Time Limits of the Contract. Failure to indicate the above, within 30 days after the signing of the contract, will be deemed sufficient cause for the denial of request for the extension of the Contract time.

e. All materials and equipment shall be delivered so as to ensure a speedy and uninterrupted progress of the work. Same shall be stored so as to cause not obstruction and so as to prevent overloading of any portion of the structure, and the Contractor shall be entirely responsible for damage or loss to the materials, by weather or other causes.

f. Within one month after signing the contract, the Contractor shall submit for approval of the Executive Engineer a complete list of all materials and equipment he and his sub-contractor propose to use in the work, of definite brand or make, which differs in any respect from those specified; also the particular brand of any article where more than one is specified as standard. He shall also list items not specifically mentioned in the specifications but which are reasonably inferred and necessary for the completion of the work.

g. The Contractor shall employ the right kind of workmen, jigs, tools and equipment to fabricate and install all materials and equipment, whether locally purchase or imported and whether provided by the **Registrar** or Contractor himself. They shall be fabricated and installed without any damage and in accordance with the manufacturer instructions and manuals. Unless specifically shown otherwise, all items such as doors / window frames, suspended and other ceilings, equipments etc. shall be securely fixed to their supports through wooden plugs shall not be permitted.

h. **Inspection:-** All materials, equipment and workmanship shall be subject to inspection, examination and test by the Executive Engineer at any and all times during manufacturer and / or construction. The Executive Engineer shall have the right to reject defective material, equipment and workmanship or require its correction. Rejected workmanship shall be satisfactorily corrected and rejected materials and equipment shall be satisfactorily replaced with proper material and

equipment without charge thereof, and the Contractor shall promptly segregate and remove the rejected materials and equipment from the premises. If the Contractor fails to proceed at once with the replacement of rejected materials and / or the correction of defective workmanship the **Registrar** may by contract or otherwise, replace such materials and equipment and / or correct such workmanship and charge the cost thereof to the Contractor or may terminate the right of the Contractor to proceed further with the work. The Contractor shall furnish promptly, materials and equipment necessary for the safe and convenient inspection and test that may be required by the Executive Engineer.

i. **Testing:-** All tests shall be conducted in a manner and only through an organization selected by the Executive Engineer. The Contractor shall arrange for such tests and shall bear all expenses.

8.71 **Sample panels of finishes for approvals :-** For all finishing item such as flooring, wall veneering, plastering, painting, external finishes and exposed work, the Contractor shall have to make sample panels for approval of the Executive Engineer as directed by the Executive Engineer. No extra amount of rates shall be paid or making such samples for approval, irrespective of number of such samples.

8.72 The **Registrar** reserves the right to let other Contracts in connection with his work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and co-ordinate his work and theirs. If any part of Contractor's work depends for proper execution or results upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Executive Engineer any defects in such work that render it unsuitable for such proper execution and results. His failure to so inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to the defects which may develop in the other Contractor's work after the execution of the work.

8.73 The Contractor shall comply with all Government Acts including any bye-laws or regulations of local authorities relating to the works, and shall give all notices and pay all fees and charges demandable by law thereunder and indemnify the **Registrar** against the same.

8.74 **LOADING TESTS :-** The Executive Engineer shall during the progress of the works or the period of maintenance, instruct the Contractor that a loading test or tests be made on the works or any part thereof if, in his opinion, such a test or tests be deemed necessary for one or more of the reasons herein below specified :-

a. The site made concrete test cubes failing to attain the specified strength.
b. The shuttering for concrete works being prematurely removed;
c. Overloading during construction of the works or part thereof;
d. Concrete improperly cured;
e. If any portion of the work is carried out without prior approval in writing of the Executive Engineer or his representative to proceed with such work;
f. If concrete is honeycombed or damaged or in the opinion of the Executive Engineer particularly weak in important or critical areas of the structure where weakened concrete will affect the stability of the structure to carry design loads;

g. Any other circumstances attributed to alleged negligence on the part of the Contractor which, in the opinion of the Executive Engineer results in the works or any part thereof being of less than the excepted strength;
h. Any reason other than the foregoing.

8.75 If the Contractor desires, to use any design materials and process covered by letters “Patented” or “Copy right” it shall be the full responsibility of the Contractor to observe all legal formalities for use of such materials.

8.76 The Contractor shall indemnify the **Registrar** against all actions, suits, claims and demands brought or made against in respect of anything done or omitted to be done by the Contractor in execution of or in connection with the work of this contract and against any loss or damage to the **Registrar** on consequence of any action or suit being brought against the Contractor for anything done or committed to be done in the execution of the work of this contract.

8.77 **SITE PHOTOGRAPHS:-** The contractor shall arrange the private photographer, who shall prepare three sets of atleast 24 photographs on progress of construction works considered in that particular R.A. bill in first week of every month and Rs.35/- per photograph shall be deducted from the R.A. bill of the Contractor. These three sets shall be for the Vice-chancellor, the Executive Engineer and Architect. No R.A. bill shall be forward to the Architect without these progress photographs.

8.78 **SITE MEETING :-** The Executive Engineer/ the Architect may invite regular meetings on site and in Architect’s office in Jalgaon and in Registrar’s office in Umavinagar for discussions on project. The Contractor or his Engineer shall visit Architect’s office in Jalgaon at least once in a month of more and as when if required in respect of the work without any extra cost.

8.79 **THE DEFINATION OF FLOORS**

GROUND FLOOR	: Means Ground Floor including Lower Ground Floors
FIRST FLOOR	: Means First Floor as indicated on drawing
SECOND FLOOR	: Means Second Floor as indicated on drawing
THIRD FLOOR	: Means Third Floor as indicated on drawing

8.80 The unsuccessful tenders will have to return all the copies of drawings collected alongwith the tender without any refund thereof before release of the earnest money.

8.81 Receipts for payments made on account of any work, when executed by a firm, should also be signed by all the partners except where the Contractors are described in their tender as a firm, in which case the receipt shall be signed in the name of the firm by one of the partners, or by some other person having authority to give official receipts for the firm.

8.82 The Executive Engineer / Architect may change the layout of building in accordance with site conditions.

8.83 The materials and labour components and their constants shall be as per Maharashtra P.W.D., where-ever such components and their constants are not available in P.W.D., these will be followed as given by All India Schedule of Rates (N.B.O.).

No. of corrections

8.84 Theoretical Consumption of all materials of the items based on D.S.R. shall be as Maharashtra P.W.D..

8.85 All the terms and provisions of all conditions of Contract stipulated in the tender documents shall be applicable. In the absence of any provisions in the tender document for all other matters, the matter shall be dealt in light of Maharashtra P.W.D. provisions.

8.86 No extra payment shall be made for shuttering, scaffold, etc. for concreting, plastering, stone facing, painting, and for all other works for all clear storey heights and for any height whatsoever. The scaffolding at any storey heights shall be done strictly in stages with platforms in between and shall be strong and other of proper design without any extra cost. The contractor shall be wholly responsible for its safety.

8.87 **BASIC RATES FOR MATERIAL AND LABOURERS, ETC.. :-** The basic rates for all materials, labour, etc. shall be as per provision made in D.S.R. published by P.W.D., Nashik (P.W.) of year **2012-2013.** These rates shall be applicable for administration of this Contract including analysis of non-schedule items.

8.88 The analysis of rates of the extra items shall be done / derived from the basic rates given in D.S.R.. The analysis will be done as per item No.8.83, 8.84, 8.85, 8.86 8.87 and all the related conditions of Volume I of tender document. Wherever basic rates are not available, the prevailing market rate will be taken and the rates shall be derived from the basic consumption of materials and labor components.

The Contractor has to accept the rates of such non-schedule items worked out by the Executive Engineer based on the above references. The Contractor shall not withhold the work on account of this or any other reasons.

8.89 **CONCRETE MIX :-** As specific spaces, if the Executive Engineer desires, he may recommend higher grade concrete mix and in such case, the rate shall be derived from D.S.R. or as given D.S.R.

8.90 **ELECTRICITY :-** The Contractor shall arrange temporary electric connection for construction at his own cost only on obtaining necessary permission from the University and from any other receptive authorities. The required Deposits, the other charges, monthly electricity charges of consumption of electricity for the Contractor shall pay such temporary connection immediately. In case, it is not paid within the time limit, all such charges shall be deducted from the Contractors running bill.

8.91 The tenderer is requested to visit and examine the site before submitting the tender.

8.92 Nothing shall be paid extra for making mural / different patterns and artistic designs made in assorted colour of ceramic tiles granite, vitrified tiles of any size and colour and any different tiles at exterior and internal surfaces for all heights clear storey heights etc. and including scaffolding and safety precautions.

8.93 All the finishing items such as Dholpur, Agra Stone, Ceramic, marble, granite etc. fixed into the various patterns, shape, size shall be measured only as per actual size carried out on site and paid as per their individual item.

No. of corrections

8.94 The Contractor shall take utmost care and all precautions in doing foundation work without any extra cost, so that, damage shall not occur to the adjoining structures and for which the Contractor shall be responsible. The utmost care has to be taken as directed while breaking the walls for openings for beams under the floor and also while making foundation with adjoining walls, the Contractor will not be paid anything extra for such precautions including the shuttering, strutting for the foundation.

8.95 The insurance policy shall be submitted immediately on award of contract. No payment of any interim certificate shall be made to the Contractor without submission of insurance policy as per condition of contract. The insurance policy shall be CAR policy – contractors comprehensive All Risk Insurance policy and shall be infavour of / on name North Maharashtra University, Jalgaon.

8.96 The labour license shall be submitted before starting of work on site, no payment of any interim certificate shall be made to the Contractor without submission of labour license.

8.97 The external brick walls may be substituted by 200 mm. thick hollow concrete block work as per D.S.R. items published by P.W.D., Nashik (P.W.) Region for Jalgaon circle of year **2013-2014.**

8.98 No damaged or even de-shaped M.S. shuttering plates or shuttering plywood will be allowed to use. The plywood or steel shuttering plate shall be properly cleaned, smooth, absolutely plain and laid without any gap. The joints of the form works must be sufficiently tight to prevent loss of liquid from the concrete. Plywood and M.S. shuttering plates shall be oiled with good quality oil before concreting.

8.99 **WAFFLE SLAB :-** The Contractor shall use atleast 16 gauge M.S. sheet moulds made to shape and size as per design and drawings for casting the waffle slabs. No damaged mould or even a little de-shaped mould will be allowed. The moulds shall be property cleaned at every casting and special shuttering oil of approved quality applied for obtaining good finished surface. Alternately the Contractor can use good quality of plywood for shuttering instead of M.S. sheet mould for waffle slab to cast it in situ.

OR

The Contractor shall pre-cast the waffle units as per design and drawings supplied by the Executive Engineer / Architect. The 16 gauge M.S. sheet moulds made to shape and size shall be used for precasting process. The moulds shall be properly cleaned at every casting and approved quality shuttering oil applied for obtaining good finished surface.

The Contractor shall finish soffts and all surfaces, etc. of waffle slab in both the cases above in 1:3 cement mortar to the satisfaction of the Executive Engineer.

8.100 The Contractor shall have to pay all the deposit and payments to all the concerned authorities wherever applicable for execution of all the items of work under this contract and the payment shall not be recoverable from the **Registrar**. If required appropriate certificates shall be issued by the **Registrar**, so as to facilitate the refund of such deposits or payments by the authorities concerned.

8.101 All sanitary and water fittings and pipes etc. shall be tested, and their size and pattern shall confirm to the latest Municipal Bye-laws. This part of work shall be carried out through a Licensed Plumber according to latest standard practice upto the satisfaction of the Architect as per specifications Nos.182 to 189, Page 904 to 926 and 946 to 947 of P.W.D. Hand Book Vol. I and II and to the entire satisfaction of the Executive Engineer/ Architect and in confirming with Municipal Bye-laws applicable in the area.

8.102 The Contractor shall inform the dates of casting any R.C.C. work atleast five (5) working days in advance in writing to the Executive Engineer, and shall fix the programme for the same with the approval of Executive Engineer, or his authorised representative. Any change in programme shall also be intimated, in writing, in time, to the Executive Engineer. The contractor shall be see that the reinforcement is laid absolutely as per structural drawing before concreting and shall get checked from Executive Engineer.

8.103 The Contractor shall give hydraulic ponding test and smoke tests for the work of all A.C. / G.I. / P.V.C. pipes and fittings and glazed stone – ware pipes as directed without any extra cost, to **Registrar**.

8.104 The Contractor shall obtain necessary certificates from Municipal Sanitation and anti-malaria authorities and from all related authorities as required during construction and on completion of work, and for securing water supply connection from concern department without any extra cost. He shall also have to obtain necessary certificates from other departments without any extra cost.

8.105 Wherever water or drainage pipe lines are found to be passing under the proposed buildings or by roadside such pipe lines shall have to be removed and realigned and relaid as directed, without extra cost. In such cases, if extra materials are required, the cost of the same will be borne by the **Registrar**, whereas the cost labour will have to be borne by the Contractor. This work will have to be done during non-peak load in case of drainages lines and non-supply hours in case of water pipe lines.

8.106 Water proofing of W.C.'s, baths and Nahani, terrace will be carried over through specialized agency approved by the Executive Engineer so that there should not be any leakage with 7 years guarantee on stamp paper, for all water proofing work carried out. The Contractor shall carry out repairs or replace the entire ineffective water-proofing work, during guarantee period of 7 years without any extra cost, if any, wherever necessary.

8.107 The roof slab must be thoroughly water proof. The incidence of leakage will be checked in the next monsoon after construction is completed.

Inspection will be carried out in the next monsoon of issued of final certificate and if leakages are not observed, the part rate will be released. However, if leakages are observed even in small quantity, the contractor shall rectify the leakages and also repair the damaged area as plastering, painting etc. due to leakages before releasing the payment.

However, the water proofing work will have to be re-done by the Contractor as specified and to the satisfaction of the Executive Engineer without any extra cost.

No. of corrections

8.108 The Contractor shall provide his Site Engineer having Bachelor's degree in Civil Engineering with minimum 8 to 10 years building construction and experience with supporting staff such as licensed plumber, Technical Supervisors etc.

8.109 The Contractor shall workout a completions programme with shall include the partial completions without any financial implication and as required by the **Registrar**.

8.110 The Contractor shall comply with and give all notices required under any Government Authority, instrument, rule or order made under any act of parliament, state laws or any regulation on Bye-laws of any local authority or public utility concern relating to works.

8.111 The Contractor shall provide vertical barrier, protection with proper and stable framing, supports, etc. with tarpaulin, G.I. sheets paneling, barricades, fences, guards, etc. as directed by the Executive Engineer without any extra cost to ensure public safety and health during construction and to avoid and disturbance in the working and functioning of the first half of the building as required by the university.

8.112 The Contractor will not be allowed to disconnect or remove the pipe laid down by him for taking water required for execution of the work without the permission of the Executive Engineer.

8.113 If any honey combing is observed in concrete work, it will be dismantled. However, if the Executive Engineer feel, he may allow the same only on obtaining satisfactory test results of hammer test and altra sonic test and injecting and on grouting under pressure in 1:3 cement mortar mixed with suitable adhesive / compound or with epoxy cement mortar to fill up all honey combing at no extra cost. Such item shall not be included in the bill for payment till the rectification works is done and approved. If test results are not satisfactory as honey combing is extensive to the opinion of the Executive Engineer, then the contractor shall dismental such member and recast.

8.114 The defective work shall not be allowed and will be dismantled. If at all at some places, it is allowed, the bonding materials manufactured by ROFFE / SIKA / Pidilite or of any approved company it to be applied as directed by the Executive Engineer at no extra cost. Such item shall not be included in the bill for payment till the rectification work is done and approved.

8.115 In case of executing the items pertaining to Parks and Gardens, the Contractor shall be paid in accordance with C.S.R. of Superintendent, Parks and Garden, Mumbai. The contractor shall plant the trees of required height and grith as required by Superintendent of Garden on obtaining there approval without any cost, however they will be paid for trees with plantation and maintaining the same for atleast one year as per the schedule of rates of Garden.

8.116 The rates in Schedule 'B' are inclusive of all leads ir-respective of the distance of the source of different materials. No additional payment whatsoever will be admissible on this account.

8.117 The Executive Engineer and Architect may change the layout of buildings, layout of Development works, infrastructural services in accordance with the site condition. No extra cost on any account whatsoever shall be admissible.

No. of corrections

8.118 The percentage mentioned in regard of cement and steel reinforcement as 2% and 5% respectively are to be added to theoretical quantity for stock taking only and not for additional payment.

8.119 **COMPLETION DRAWINGS / AS BUILT DRAWINGS :-** Upon completion of the whole work, the Contractor shall submit four sets of atleast 24 photographs of complete works and building and four sets of drawings with original drawings on tracing of all as built / completion drawings comprising all plans, elevations, sections, before payment of final bill. The Contractor shall also submit four sets with original of site plan showing actual position of building in relation to grids, adjoining buildings, roads, all services, and all physical features around. The above all details and drawings shall be submitted along with the final bill without any extra cost to the Executive Engineer and the Architect.

8.120 The contractor shall take concrete cubes of each batch of all building materials concreting and these concrete cubes and steel, cement, sand aggregates and all building materials of every batch must be sent for testing at approved laboratories by Maharashtra Govt. or approved by University Engineer and result shall be submitted to the Executive Engineer. Running bill also must accompany with these test results. R.A. bills will not be entertained, processed and paid without the submission and satisfactory result of these tests.

8.121 If curing is not done properly, the work shall not be accepted however, if consider, it shall be only on obtaining ultrasonic test result and hammer test result taken only from recognized institution as directed by the Executive Engineer and which shall be at cost of the Contractor. However accepting such work on ultrasonic test and hammer test result shall be only on discretion of the Executive Engineer. The contractor must do proper curing and covering all concrete work with hessian cloth and gunny bags and keeping them continuously wet without any extra cost.

8.122 Being the continuous supervision of execution of work is with the **Registrar**, the Executive Engineer shall send the information as and when and whatever required in respect of work on local market rates, of labour and of different materials, components, the analysis of N.S. items, etc. to Architect.

8.123 Where the concrete surfaces as of columns, beams, chajjas, slab soffits, staircases soffits, sides and all concrete surfaces external concrete surfaces at any height, require plastering or other finish later, such concrete surfaces shall be immediately hacked lightly all over area and where possible shall be roughened with a brush hammer or with chisel and hammer as directed by the Executive Engineer to make the surfaces sufficiently course and rough to provide key to the plaster, without any extra cost. Further the contractor shall apply bounding agent manufactured by Pidilite / ROFFEE / Choksey Chemicals / all such surfaces to form a key to plaster. No extra payment will be made to the Contractor for such work. On concrete surfaces even after removal of form works at any height, clear storied height including at any height at external and internal surfaces.

8.124 The Contractor shall erect a masonry pillar with concrete sill to serve as bench mark at suitable point in the area. This bench mark shall be considered as per drawing and related to the levels marked on grid stone at his own cost.

No. of corrections

8.125 All water supply fitting and sanitary fittings shall be brass of heavy type of approved make with sufficient thickness of chromium plating over nickel plating. The Contractor shall submit the samples with weight and specification details of each fitting from manufacturer, for approval of the Executive Engineer before ordering the materials.

8.126 Steel of diameter 8 mm and below of other make than what is prescribed, can be allowed by the Executive Engineer in case of genuine difficulties of the contractor. Such make shall be absolutely at discretion of the Executive Engineer of the University.

8.127 The contractor shall provide without any extra cost, for all heights above 4.5 meters net sling fabricated out of polypropylene rope of size of mesh maximum to 150mm x 150mm, of tested quality as per ISI 5175, fixed with tieing rope at minimum at 1.20 mtr. distance to all available sides, and covering complete area of work as to avoid any falling of worker from the height. The contractor shall provide safety belts to all workers without any extra cost while working at height above 4.50 meters.

8.128 The contractor shall provide without any extra cost, helmet to each worker on site.

8.129 The contractor shall prepare fabrication / workshop drawings and seek approved from Executive Engineer before starting the work, without any additional cost.

8.130 The contractor shall provide cuttings, openings to required shape and size for light fittings and carryout electric cables, wires for casing caping and provding holes in the slab and beams with encasing G.I. or strong PVC pipe of any diameter as directed by the Executive Engineer etc. without any extra cost.

8.131 The contractor shall provide required assistance to Electrical contractor for carryout Electrical services in required manner and shall co-ordinance the work of Electrical contractor at no extra cost to the satisfaction of the Executive Engineer.

8.132 The work of civil contractor, electrical contractor, furniture, A.C. contractor and all various agencies etc. will go on together and civil contractor has to work in co-ordination with all other these agencies and civil contractor can not stop the work of any of these contractor. Any delay occurred due to any agency has to be accommodated without any financial implications. No claim whatsoever will be entertained due to any reason because of any agency.

8.133 Temporary sanitary accommodation on full flushing system with necessary arrangement should be provided on site for workers and all rules, regulations, laws of Municipal Corporation, Government and of any concerned statutory bodies shall be observed by contractor for the welfare of the workers.

8.134 **PROJECT INFORMATION STONE :-** The Contractor shall make all necessary arrangements for Project Information stone providing and fixing as directed by the Executive Engineer / Architect. This shall include broadly such as supply, installation, Zinc Black / Telephone Black granite slab, engraving subject matter, construction of wall / structure to shape and size as per the design and specification required by the Architect / Executive Engineer, at his cost .

No. of corrections

8.135 Cement of 53 grade instead of 43 grade of the make specified need to be used without any cost implications. The cement content for any concrete design mix shall not be less than the volume of cement as prescribed in Schedule 'B' and PWD D.S.R..

8.136 The following notes shall be applicable for all drawings, Schedule 'B' and for this contract.

a. The contractor must study all the drawings and if any discrepancies observed, it must be brought to the notice of the Executive Engineer and the Architect well in time before execution to avoid delay.

b. All the dimensions to be checked before the commencement of work on site. If any discrepancy observed, it should be reported to the Executive Engineer / the Architect and his decision obtained.

c. The architectural drawings shall be read strictly in conjunction with structural drawings if any discrepancy is observed, if shall be referred to the Architect and Executive Engineer.

d. All architectural drawings are inter-related and if any discrepancy observed it shall be referred to the Executive Engineer.

a) Plinth levels and finished ground levels are subject to adjustment at site as per site conditions.

b) Hole in slab with encasing pipe shall be left for passing cables in every electrical room and distribution board without any extra cost.

e. **Notes on Joinery**

a) The detailed fabrication drawings of all doors and windows must be submitted to the Executive Engineer and the Architect well in time before execution. The fabrication drawing must show the type of section, weight factor, calculation of total weight and calculation of difference in weight of section if specified sections are discontinue of manufacturing.

b) The actual size of openings on site shall be checked before fabrication of doors, windows and ventilators.

c) The size, shape of doors, windows and ventilators are subject to change due to site conditions or revision in design.

d) The sample of each type shall be submitted for approval before fabrication.

e) The aluminium sections shall be of INDAL or JINDAL of weight as described in Schedule 'B'. The weight factor of JINDAL section are taken as minimum weight factor of various sections. All the sections should have anodizing of minimum 15 micron & the certificate from the competent authority specifying anodizing must be submitted to Architect / Executive Engineer.

f) Where there is a combination of two and three track windows, the payment shall be separated considered from centre line of such windows.

g) Wherever there is a combination of fixed / openable / louvered / casement etc. the payment shall be separated / considered from centre line of such windows.

No. of corrections

h) All glass to windows, ventilators shall be of 5mm. thick bronze tinted glass of Ashahi or Modi make and as specified in list of materials to be used.

8.137 This contractor shall comply with all laws of the land, the rules, regulations and bye-laws of local authority and of all organization as of storm water, waste and sewerage disposal, electrical companies, gas authorities, telephones, to whose system the structure is to be connected where such laws and regulations conflict with the contract documents the more stringent requirements as interpreted by the Executive Engineer shall govern. The contractor shall pay all fees, charges in connection with all notices required by the acts, regulations or bye-laws and for the work etc. The contractor shall protect and indemnify the owner against all claims or liabilities arising out of his actions in violation of applicable rules and regulations of local authorities and law of the land applicable to the contract and the work therein and against all fees, penalties and liabilities of every kind for the breach of any statute, ordinance or law, rules, regulations or bye-laws etc.

8.138 The layout of development works and their details are subject to change due to the site conditions and can also be changed as per requirements of the University and the contractor shall not have any claim whatsoever due to such change.

8.139 In case of concealed wiring, the civil contractor shall provide any assistance to the electrical contractor laying conduits, in RCC work & brick & concrete block walls and finish it after the conduits are laid without any extra cost for such work.

8.140 All operations necessary for the execution of the works shall, so far as compliance with the requirements of the contract permits, be carried on so as not to interfere unnecessarily or improperly with the convenience of the public, or the access to use and occupation of public or private roads and footpaths to or of properties whether in the possession of the owner or of any other person or of public authorities. The contractor shall save harmeless and indemnify the Registrar in respect of all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of, or in relation to, any such matters in so far as the contractor is responsible therefore.

8.141 **RETENTION MONEY :-** The amount of retention money shall be calculated at the rate 2.5% (Two Point Five percent) of the value of work carried out as per the Final Bill PLUS 10% (Ten percent) of the total Security Deposit which is 5% of the estimated cost put to tender. The Retention Money covers the period upto two months after the expiry of Defects Liability Period of Twenty Four (24) months.

8.142 Should it be found necessary for the contractor to move on or more loads of constructional plant, machinery or pre-constructed units or parts of units of work over part of a highway or bridges, the moving whereof is likely to damages any highway or bridge unless special protection or strengthening is carried out, the contractor shall carry out all such protection work / strengthening works and take necessary approvals if required from the appropriate authority for movement of such special loads. No extra / claims shall be payable to the contractor on such accounts.

8.143 **SITE CLEARING ON COMPLETION :-** On completion of the works, the contractor shall clear away and remove from the site all his constructional plant, surplus materials, rubbish and temporary works of every kind, shades, hutment and

other worker's amenities constructed and leave the whole of the site and works clean and in a workmanlike / usable condition to the satisfaction of the Executive Engineer. The final bill will be scrutinized / done only after clearing the site.

8.144 **REDUCTION / ABANDONMENT OF THE WORKS :-** In continuation to clause 38, the owner reserve the right to curtail the works at any time after commencement of the works as per clause 38 without any financial implications then in such case, the Registrar shall give notice to the contractor, who shall then complete any such of the works as it is required to be done by the Registrar as intimated in the notice and the contractor shall have no claim for any payment of damages, compensation whatsoever on any from the execution of the works in full, but which he did not derive in consequence of the full amount of the work not having been carried out, neither shall he have any claim for compensation by reason of any change having been made in the original specifications, drawings, designs and instructions which shall involve any claim for compensation, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.

8.145 The contractor shall submit shuttering / scaffolding system to be followed and also submit his proposed shuttering design for approval.

8.146 All water which may accumulate on the on the site during progress of the work or in trenches, and excavation, shall be removed from site to the satisfaction of Executive Engineer. The contractor shall take all precautions that no breeding of mosquitoes, files etc. take place at site and shall undertake spraying of DDT and all other appropriate precautions continuously and shall obtain NOC from insecticide office / PCO.

8.147 The site shall be maintained free from rubbish stacking of scaffolding and all other materials shall be done in a organized manner / in a proper stacks. Heaps in unplanned manner and disorderly way shall not be permitted.

8.148 The contractor shall provide on the site, safe drinking water and other water for the use for the workers and shall arrange for disposal of waste water arising there from. The contractor shall comply with rules framed by Government authorities for labour welfare, protection of health, sanitation etc.

8.149 The contractor shall in all dealings with labour in his employment have due regard to all recognized festivals, days of rest and religions and other customs.

8.150 **EPIDEMICS :** In the event of any outbreak of illness of an epidemic nature, the contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or municipal authorities for the purpose of dealing with and overcoming the same.

8.151 The contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his employees and shall take all necessary action for the preservation of peace and protection of persons and property in the neighborhood of the works against the same.

8.152 **FIRST AID :** The contractor shall, at his cost, provide, equip and maintain throughout the construction period and so far as may be necessary during the Defects Liability Period, in a position on site approved by the Executive Engineer,

suitable and sufficient first aid facilities for the general use of laboures, his staff and employees and sub-contractor's staff and employees.

8.153 The Executive Engineer shall be entitled to require the contractor to dismiss or remove from the site of the works any person or persons in the contractor's employment on the work who may be incompetent or / and who may have misconduct himself and the contractor shall forthwith comply with such requirements.

8.154 **ENVIRONMENT and PRECAUTIONS :-**The contractor shall carry the work as per rules & regulations of local authority.

The contractor need to take all the following precautions to make sure that no complaints are received from the residents of neighboring buildings, users, local authorities etc.

a) Plying of trucks
b) Plants and equipment deployed in carrying out the work shall not create any problems to others.
c) Noise level of plants, equipment and manner of working shall be within standard specified by local authorities.
d) Spreading of dust storm and polluting the air atmosphere.
e) Falling of debris, aggregate, sand, bricks, cement etc. on roads being used to transport these materials.
f) Parking of vehicles, plants, equipment shall not cause any hindrances to movement of traffic.

The contractor shall be wholly responsible, if any problem arised due to above.

8.155 The payment of only steel embedded in the concrete shall be measured and paid but the exposed reinforcement not embedded in the concrete shall not be measure and paid.

8.156 The materials required only for this work shall be kept in the godown at site. No material shall be shifted outside of the godown except for the work for which this agreement is entered, without prior approval of the Executive Engineer.

8.157 **SETTING OUT THE WORKS :-** The contractor firstly clean the site with removing and clearing bushes, grass, all vegetation, roots and plants etc. as directed by the Executive Engineer without any extra cost. The contractor shall take spot levels at every 3.00 c/c meters both side then shall make layout. The layout and drawings are subject to change as per the site conditions. On finalizing the layout the contractor shall submit spot levels of columns, the levels of excavated footings.

The contractor shall provide all facilities, instruments and manpower, attendance to the Executive Engineer to check his work. The contractor shall install permanent Bench Mark and mark the levels at various spots in relation to the Bench Mark. The contractor shall be responsible for true and proper setting out the work, if any discrepancy observed in the drawings, he should bring to the notice of the Executive Engineer. It at any time during the progress of works any error shall appear or arise in the position, levels, dimensions, heights, alignments of any part of the works the contractor shall rectify the same at his cost. The contractor shall carefully preserve all bench marks, site rails, pegs and all other devises used in setting out of the works.

No. of corrections

The contractor shall establish and maintain baselines and benchmarks adjacent to the various section of work. All such marks and stakes must be carefully preserved by the contractor and in case of their destruction by him or by anyone, they will be replaced at the contractor's expense.

8.158 The contractor shall produce sufficient documentary evidence i.e. bill for the purchase octroi receipts etc. for the purchase of material brought on the work site at once if so requested by the department.

8.159 All these material i.e. cement, steel etc. shall be protected from any damages rains etc. by the contractor at his own cost.

8.160 If required, the weightment of cement bags / steel / bulk asphalt boozers etc. brought by the contractor shall be carried out by the contractor at his own cost.

8.161 The contractor shall not use cement and other material for the item to be executed outside the scope of this contract except for such ancillary small item as are connected and absolutely necessary for execution of this work as may be decided by the Executive Engineer.

8.162 The University shall not be responsible for the loss in cement, steel, bulk asphalt etc. during transit to work site. The cement brought by the contractor at the work site store shall mean 50 Kg. equivalent to 0.0347 cubic meter per bag by weight. The rate quoted should correspond to this method of reckoning. In case of ordinary / controlled concrete, if cement is found short, the shortage / shortages will be made good by the contractor at his cost.

8.163 **INDEMNITY :-** The condition regarding indemnity as defined will apply mutails mutandis in case of material brought by contractor at site for the execution of the work being executed under this contract.

8.164 In case the materials brought by the contractor become surplus owning to the change in the design of the work, the materials should be taken back by the contractor at his own cost after prior permission of Executive Engineer.

8.165 All empty bags or empty asphalt drums shall be property of contractor and the same shall be removed immediately after completion of work.

9. ADDITIONAL SAFETY CONDITIONS

9.1 Excavation and Trenching : All trenches, four feet or more in depth, shall at all times be supplied with atleast one ladder for each 30 meters in length or fraction thereof. Ladder shall be extended from bottom of the trench to atleast one meter above the surface of the ground. The side of the trenches which are 1.50 meters or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapse. The excavated materials shall not be placed within 1.50 meters of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

9.2 Demolition – Before any demolition work is commenced and also during the process of the work.

a. All roads and open areas adjacent to the work site shall either be closed or suitably protected.

b. No electric cable or apparatus, which is liable to be a source of danger over a cable or apparatus, which is liable to be used by the operator, shall remain electrically charged.

c. All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

9.3 All necessary personal safety equipment as considered adequate by the Executive Engineer should be kept available for the use of the person employed on the site and maintained in condition suitable for immediate use and the Contractor should take adequate steps to ensure proper use of equipment by those concerned.

a. Workers employed on mixing asphaltic material, cement and lime mortar shall be provided with protective footwear and protective goggles.

b. Those engaged in welding work should be provided with welder's protective eyesight lids.

c. Those engaged in white washing and mixing or stacking or cement bags or any material, which is injurious to the eyes, shall be provided with welder's protective goggles.

d. Stone breakers shall be provided with goggles and protective clothing and seated at sufficiently safe intervals.

e. When workers are employed in sewers and manholes which are in use, the Contractor shall ensure that the manhole covers are opened and are ventilated least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accidents to the public.

f. The Contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Whenever men

above the age of 18 years are employed on the work of lead painting, the following precautions should be taken.

i. No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.

ii. Suitable face masks should be supplied for use by the worker. As paint is applied in the form of spray on a surface or when paint dry-rubbed and scrapped.

iii. Overalls shall be supplied by the Contractors to the workmen and adequate facilities shall be provided to enable the working painter to wash during the cessation of work.

9.4 When the work is done near any place where there is a risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of work.

9.5 The safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the Contractor.

9.6 To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the Contractor shall be open to inspection by the Labor Officer, **Registrar**, Executive Engineer.

9.7 Notwithstanding all the clauses on safety codes, there is nothing in these to exempt the Contractor from the operation of any other Act or Rule in force in the Republic of India.

No. of corrections

10 SPECIFICATIONS FOR ELECTRICAL WORK

E.1. SPECIFICATIONS FOR ELECTRICAL INSTALLATION WORK CODES AND STANDARDS

E.1.1 The following codes and standards shall be applicable for the continuous performance of all electrical equipments to be supplied, delivered at site, erected, tested and commissioned.

E.1.2 The Electrical equipments offered shall comply to the relevant Acts or Regulations.

Indian Standard Specifications

Fire Insurance Regulations.

Tariff Advisory Committees Regulations.

And, in particular to Indian Electricity Rules in all respects with other IS Code as applicable at the time of execution over and above the following codes and with all its latest amendments up-to-date.

E.1.3 Some of the Indian Standards are indicated below for general reference :-

IS- 5216 : Guide for safety procedures and practices in electricity works.
IS- 5908 : Method of measurement of electrical installation in building.
IS-732 : Electrical wiring installation (Up to 650 volts)
IS-694 : PVC insulated cable and cords for Power/Lighting
IS-1554 : Part-I PVC insulated cables for working voltages up to 1.1 KV
IS-162 : Electric Power Switch gear for indoor & outdoor Installations.
IS-3427 : Metal enclosed switch gear and control gear.
IS-3043 : Code of practice for earthing
IS-15167 : Metal clad switches up to 100 Amps.
IS-1293 : 3 pin plugs and socket outlets.
IS-1087 : Single pole tumbler switch 5 Amps.
IS-375 : Marking and arrangement for switch gear Boards Main Connections and auxiliary wiring.
IS-374 : Ceiling fans
IEC Pub 26:Circuit Breakers.
IS-3070 : (Part I) Lighting arrestors.
IS-2675 : Enclosed distribution fuse boards and cutouts for voltage up to 1000 volts.
IS-2509 : PVC Electrical Conduits.
IS-2309 : Code of Practice for Lighting Protection.
IS-2312 : Exhaust fans.
IS-3854 : Switches for domestic and similar purpose.
IS-8884 : Installation of electric bells & Call system code of practice.
IS-2268 : Call Bells/Buzzers.
IS-2208 : HRC cartridge Fuse units up to 650 volts.
IS-2147 : Degree of Protection provided for enclosure of switch gear.
IS-6381 : Specifications for Construction & testing of electrical apparatus.
IS-5578 : Guide for marking of insulated conductors.
IS-4613 : Switch sockets outlets.

Nothing in this specification shall be construed to relieve the contractor of his responsibility to make the installation comply with the requirements of the above.

No. of corrections

E.2. DISTRIBUTION BOARDS

E.2.1. The distribution board should comply with B.S.214 in all respects. It should comprise of all-welded fabricated sheet steel case and door of robust and rigid construction, designed to exclude dust. The doors should be secured by robust fastener, enabling disk-protecting gasket to be compressed quickly and easily. The distribution boards should be provided with under laid detachable and plates at the top and bottom and should be complete with suitable wall fixing arrangement.

E.2.2. The fuse fittings should be of high grade finlike moldings and must be non-hydroscopic and non-inflammable. They should be suitable to receive high rupturing capacity cartridge fuse links complying with B.S. 88 or I.S. 2208 and having a certified rupturing capacity of not less than 35 MVA at 440 volts. There must be a viewing aperture on the fuse fittings to facilitate location of `blown' cartridge fuse-links. The fuse fittings should be mounted on a high grade rigid insulating support and connected by bus bars made put of hard drawn high conductivity tinned copper. The cable socket of each fuse bank should be situated centrally and must be covered by an insulating shroud for safety. The interior of the fuse board should be as far as possible chassis-mounted and should be removable as a complete unit to facilitate the drawing in of cables. In addition, the interior should be reversible to give adequate cabling space for either top or bottom entry of the incoming supply to the bus bars. It should be possible to detach individual fuse banks when desired.

E.2.3.Phase separation barriers made out of resistant material should be provided between the fuse links. There should be racks for supporting spare fuse links inside the distribution board as per drawing and a label for indicating the designation of each circuit. All earthing socket should be fitted to the casing of the distribution board.

E.2.4. It should be possible to convert a Triple Pole distribution board to a Triple Pole and Neutral Board by the simple addition of a neutral bar. For distribution boards up to 30 Amps.rating, the neutral bar should have sufficient terminals for full number of single phase outgoing circuits so that these can be used for lighting circuit.

E.2.5. The distribution boards shall have one of the following standard rating :

a. 16 Amps.	4,8,12,14 ways	S.P AND N.
b. 32 Amps.	4,8,12,14 ways	
c. 63 Amps.	4,8,12,14 ways	T.P. OR
d. 100 Amps.	4,6, or 8 ways	T.P. & N.

16 amps. S.P. & N. Boards may have 2,6, or 10 ways in addition to those detailed above and should be fitted with circuit switches were specified.

E.2.6. DISTRIBUTION BOARDS FOR POWER AND LIGHTING

This specifications are applicable to all the Power & Lighting distribution boards for medium voltage system. The scope includes design, fabrication and supply, as per the specification and schedules indicated herein.

E.2.7. MINIATURE CIRCUIT BREAKERS BOARD : M.C.B.D.B.

The MCBs shall be of molded design and housed in a totally enclosed, hinged door distribution boards. The housing shall be such that they shall be totally heat resistant; dust-tight and shall withstand all mechanical stressed operation. Earthing link and neutral bars shall be provided having sufficient ways to enable each cable to be connected to a separate terminal. Neutral connections shall correspond in position to phase connections. The fault level of MCB shall be 12 KA but in no case less than 9

KA at 230V A.C. supply. The contracts of the MCB on both the sides shall be made up of either cadmium Silver Alloy and/or Graphite Silver Alloy. All the MCBs shall be tested and certified as per the relevant section of Indian Standard Specifications. They shall mainly comply to DS 3871 (Part -I) and shall be of quick make and break type.

E.3. SWITCH FUSE UNITS

E3.1. The switch fuse unit should comply with I.S. 1567,B.S. 861/1939, B.S. 861/1955 and B.S. 2510/1954 where-ever applicable. It should be suitable to accommodate High Rupturing capacity cartridge Fuse-links complying with B.S. 8801 and having a certified Rupturing capacity of not less than 35 MVA at 440 Volts.

E.3.2 The unit shall be of robust construction, designed to withstand the arduous working conditions. It should have double break per phase to ensure complete isolation of the fuse-links when the unit is in the `OFF' Position. The `ON' and `OFF' positions of the handle SHALL be clearly indicated and the action of the switch should be positive. Interlocks must be provided to ensure that the enclosure cannot be opened until the switch is in the `OFF' position.

E.3.3. The interior arrangement of the switch must be such that all `live' metal is shrouded and the contacts of the switch should be silver-plated. The moving contacts should be mounted on their own operating shaft so that they can be removed as a complete sub-assembly to facilitate inspection and maintenance. The operating mechanism should be crisp and positive in action and the speed of operation should be independent of the operator.

E.3.4. The switch should have an external earthing terminal to enable the enclosure to be earthed. The arrangement and disposition of the parts in the unit should provide for straight, through connections thereby avoiding looping in of cables. The unit should be fitted with top and bottom detachable end covers and provisions should be made for fixing cable boxes to the flanges of the unit in the place of end covers.

E.3.5. The unit should be capable of breaking the stalled current of the largest induction motor with which it is likely to be associated. If necessary, the supplier should be prepared to produce type test certificates set out in the appropriate British or Indian Standards with which the unit
complies.

E.3.6. The switches should have the following standard ampere ratings : 30,60,100,200,300,400,600, and 750 either S.P. & N, D.P., T.P. or T.P. & N.

E.4.1. CIRCUIT BREAKERS

E.4.1.1. Circuit breakers shall be air break horizontal draw out type fully interlocked and meeting the requirements of IS:2516 or IS: 3659. Breakers shall be rated for a medium voltage of 600 V and rated full loaded amperes as indicated on drawings. Breaker shall be capable of making and breaking system short circuits specified.

E.4.1.2. Breakers shall be unless specified otherwise manually operated, complete with front of the panel operating handle, isolating plug with safety shutters, mechanical ON/OFF indicator, silver plated arching and main contacts, arc chutes, trip free operation. Breakers shall be capable of being racked out into `Testing' `Isolator' and `Maintenance' positions and kept locked in any position. Breakers for remote operation shall be motor operated spring charged.

E.4.2. CUBICLE BOARDS

E.4.2.1. All boards shall be combination of 14 & 16 SWG sheet steel, free standing, extensible, totally enclosed, dust tight, vermin proof cubicle, flush dead front and modular construction suitable for 3 phase 415V 4 wire 50 Hertz system. All boards shall be accessible from the front for the maintenance of switch fuses, bus bars, cable terminations, meters etc. Cables shall be capable of entering the board both from top as well as bottom, as detailed in the drawing, procurement shall be done after the final approval of the Architect. All panels shall be machine pressed with punched openings for meters etc. All sheet steel shall be rust inhabited through a process of digressing, acid pick-ling, phosphating etc. The panels shall be finished with two coats of synthetic enamel of approved colour applied over one coat of red oxide primer. Engraved plastic labels shall be provided indicating the feeder details, and capacity and danger signs.

E4.2.2. The boards shall accommodate air insulated bus bars, air circuit breakers, switch fuse units with HRC fuses, starters, necessary meters, relays contractors etc., arranged in suitable tiers as detailed in the drawings.

E.4.2.3. The switchboard shall be fully compartmentalized in vertical tiers housing the feeder switches in totally enclosed independent. Each compartment shall be self sufficient with switch unit, fuses, contractors, relays, indicating lamps and an interlocked door with facility for padlocking. Each feeder must terminate in an independent labeled terminal block. Strip type terminal block accommodating several feeders together is not acceptable. Pressure clamp type terminals suitable for aluminum wires way be used up to switches of 25A and cable lugs for higher ratings. All terminations shall be shrouded in an approved manner. The entire enclosure shall meet with IS : 2147/1962. Feeder connections shall be out of solid insulated copper/aluminum wires or strips with bimetallic clamps wherever required. Internal wiring, bus bar markings etc. shall conform to IS: 375/1963. Internal wiring shall have terminal ferrules. Main switch should be at an easily accessible height and the higher switch-operating handle should not be over 1.75M from floor level. Cable glands need not form part of the switchboard, as the cost of glands will from part of the cable termination.

E.4.3. BUS BARS

E.4.3.1. Bus bars shall be three phase and neutral and of high conductivity aluminum or aluminum alloy rated for a temperature rise of 30 deg. C over the ambient temperature specified, based on insulated conductor rating (IS: 8084-1976). Neutral bars may be of one half the size of the phase bars.

E.4.3.2. The main horizontal bus bars shall be of uniform cross section and rated in accordance with the incoming switch. The vertical bus bars for the feeder columns may be rated at 75% of aggregate feeder capacity and shall be uniform in size. Bus bars and interconnections shall be taped with PVC color coded tape to prevent bar-to-bar accidental shorts. Each bus bar shall be directly and easily accessible on removal of the front cover. Bus bars shall be totally enclosed, shrouded and supported on non-hydroscopic insulator blocks to withstand thermal and dynamic overloads during system short circuits. An earth bus of size 50%of the phase subject to the following maximum and minimum shall be provided. Individual switch components shall be

connected with the earth but through aluminum strip size of connecting wire being as above. All wire connections to bars shall be through lugs, bolts and nuts and spring washers.

E.4.3.3. All main and Auxiliary bus bars shall be insulated with tapes. The tapes shall be of high dielectric strength, non -corrosive and of phase and neutral colors.

E.4.3.4. The bus bars shall be supported on cast epoxy resin insulators and the spacing of the support shall be such as to withstand the stressed of the short-circuit currents. The bus bar spacing shall be adequate for 3 phase voltages up to 600V.

E.4.3.5. The bus bars shall be as chosen for specific current ratings with a minimum current density for 1Amp. for Sq.mm. area.

E.4.4. ISOLATORS

E.4.4.1. Isolators shall be fixed on wall on self-supported angle iron framework as required and mounted as near to the motor as possible. Where several motors are installed, isolators if required shall be provided at a central location on a common frame work.

E.4.4.2. Painting, earthing and labels shall be provided as generally indicating for MV Switch gear and shown on drawings.

E.5.1. INDICATING INSTRUMENT

E.5.1.1. All indicating instruments shall be of type and sizes as specified under subsequent sections and shall confirm to IS 722 and with all the latest amendments and additions up to date. They shall be capable of carrying their full load current continuously without heating. They shall have long clearly divided and indelibly marked scales of engraved or enameled metal and the pointer shall be of clean outlined. The marking on the dials shall be restricted to the scale marking. All indicating instruments shall be provided with non-reflecting glass type fronts.

E.5.1.2. Indicating instruments shall be of minimum 96 mm Square size, suitable for flush mounting. The zero adjustment shall be done from outside the cover. The dials to be parallax free with black numerals on a white dial.

E.5.2. INSTRUMENT TRANSFORMERS, METERS & RELAYS

E.5.2.1. Ammeters and Voltmeters shall have moving iron spring controlled dead-beat elements in square bezel flush type cases 144 mm in size and suitable for switch board mounting. Meters shall conform to IS: 89 and /or equivalent Indian Standard and have grade `A' accuracy. Scale ranges shall meet with the requirements. It shall also be as shown on the drawing and shall follow Schedule of quantities.

E.5.2.2. Energy meters shall be two element switchboard mounting type suitable for unbalanced loads. Meters should incorporate a KVA demand meter with an integration time of OR minutes. In case of two incoming feeders, a sum mating C.T. shall be provided with the meter. Meters shall conform to IS: 37 and/or equivalent Indian Standard.

E.5.2.3.The energy meters for DG Set & Transformers shall be calibrated and got certified by the Maharashtra State Electricity Board or with Electricity Board/Authority of the related state.

E.5.2.4. All tripping may be through combination thermal and magnetic releases or IDMT releases as specified.

E.5.3. CURRENT TRANSFORMERS : CTS

The CTs shall be of dry type and shall have a short time withstand rating of the associated switch gear for one second. It shall be of 15 VA with minimum accuracy of class 1.0 and instrument safety factor of 5

E.5.4. INDICATING LAMPS

Indicating lamps shall be of the filament type and of low watt consumption, provided with series resisters and a HRC fuse link for protection. The lens shall be translucent and colored as required. The Bulbs shall easily replaceable from the front.

E.5.5. CONTROL AND SELECTOR SWITCHES

The control and selector switches shall be of the rotary type, adequately rated for the application but with a minimum rating of 10 Amp. at 240 AC and 1 amp. at 220V DC. The escutcheon on plates shall have a clear position marking. The control switches shall have pistol grip handles with spring return to normal. The selector switches shall have oval knobs and shall be contact stay-put type.

E.6. RISING MAIN

E.6.1. SCOPE

The scope of work shall cover supply, installation & testing of Aluminum/copper Mains and Tap-off boxes.

E.6.2. STANDARDS

The following standards shall be followed :

(a) IS 8623

(b) Rising Mains

E.6.3. RISING MAINS

E.6.3.1. The rising mains shall be rated for 415V, 3Ph,50Hz and amperage as specified and housed in a 1.6 mm rust inhibited sheet steel trucking and shall be of dust and vermin proof enclosure not less than IP.44. Wall straps shall be provided at every 500 mm for fixing the trucking to the wall. The rising mains shall be supplied in suitable sections, joints shall be rendered electrically continuous.

E.6.3.2. Fire resistant inter floor barrier boxes shall be 150 mm in length packed with 64 Kg/cum (4 lbs/cft) white glass wool between two 12 mm thick asbestos sheets. The fire barrier shall comply with fire insurance regulations and fire officers requirements.

E.6.3.3. The bus bars shall be three phase and neutral and of electrolytic grade aluminum/copper alloy of E 9IE grade as specified having uniform section and shall be individually insulated. Bus bars shall be rated for a temperature rise of 30 deg. C over the specified ambient temperature. The neutral bus bars may be of one half the size of the phase bars but not less than 25 sq.mm. Joints between bus bars should be with ample overlaps with multiple bolts to ensure long term low resistance connections. Fasteners are high tensile steel cadmium plated and passivated.

E.6.3.4. A continuous earth bar shall be laid connecting to one set of earth terminals while the other terminals are interconnected with same size earth jumper. Similar jumpers shall be provided across the fire barriers also.

E.6.3.5. The rising main and the supporting frames shall be painted with two coats of glossy oil paint over two coats of red oxide to the following color code:

(a) Supporting frame : Black

(b) Rising Mains : Red

E.6.3.6. Rating of the rising main, Voltage and danger sign shall be stenciled in bright yellow at every floor.

E.6.4 TESTING

Rising mains shall be tested upon installation with a 500 V beggar and the following readings established ;

(i) Continuity on all phases

(ii) Insulation resistance

(a) between conductors
&
(b) all conductors & ground All test readings shall be recorded.

E.6.5 MODE OF MEASUREMENT

E6.5.1. Rising mains shall be measured on the basis of unit length and the cost shall include end box for the isolator switch, all supporting system, jointing, end supports, fire barriers, earth jumpers, continuous earth bus testing and commissioning.

E.6.5.2. Tap-off boxes shall be measured per unit and the cost shall include the box, fuses, erection, testing and commissioning.

E.6.5.3. The isolating switch shall be paid for separately per unit.

E.6.5.4 Expansion joint should be of flexible Copper/Aluminum conductor bolted to the bus bars and enclosed in a Book-let tube.

E.6.5.5. The bus bars shall be supported with non-hydroscopic insulators and shall withstand the dynamic & thermal overloads during system short circuits and also take into amount the linear expansion due to temperature variations, without inducing stresses in the bars. Bus bars shall be provided with thrust block insulator at the bottom to give extra support to the bus bars. Self-adjusting spring loaded supports shall be provided at the top in addition to expansion joints and cater for the expansion or contraction of the bus bar.

E.6.5.6. Tap off boxes shall be provided as required. The tap off boxes shall be provided with make before and break after earthing arrangements to ensure safety.

E.6.5.7. An earth bus bar having a size not less than 50% of the phase bus bar subject to a minimum 6.5 Sq.mm copper or 10 mm aluminum and maximum 120 Sq.mm aluminum or 70 Sq.mm copper shall be provided throughout the length of the rising main. In addition two earth connections shall be made for each section of the enclosure.

E.6.6 INSTALLATION

E.6.6.1 Rising Mains shall be installed in the positions shown. The contractor should survey the route of bus bar and ensure that there are no obstructions for fixing the rising mains.

E.6.6.2 Supporting brackets shall be grouted into the wall or fixed with shear fasteners. A minimum gap of 150 mm (6 inch) shall be left between the wall and rising main. Where tap-off occur, necessary additional supports shall be provided./ A rain hood

shall be provided on top of the rising main. Floor barriers shall be fixed at every floor and the space around shall be filled up and sealed to achieve the original fire rating.

E.6.6.3 The isolating switch shall be mounted at the start of the rising main and connections into the trucking shall be double sealed, with one 12 mm helium sheet and one 4 mm galvanized steel sheet.

E.7. SUB - DISTRIBUTION SWITCH BOARDS

E.7.1. The shall be of industrial type, air break metal clad, floor or wall mounting as required and shall comprise of a suitable length of bus bar chamber fitted with copper bus bar of appropriate current rating with the required number of switch-fuse units mounted above and below in double tier formation.

E.7.2. The units shall be arranged so as to permit change in position or assembly without difficulty of structural alteration. The risers connections from the unit to the bus bars shall be in solid copper which shall be suitably insulated at the point of entry into the bus bar chamber. As far as possible, the riser convections shall be connected to the bus bars by means of clamps, in order to obviate the need of drilling the bus bars. An insulating barrier should be interposed between the unit and the bus bar chamber and where the risers connections pass through this barrier rubber bushes should be provided. The bus bars have riser connections and should sufficient mechanical strength to withstand the effects of a 35 MVA short circuit until it can be cleared by the appropriate protecting device. All the risers and the bus bars should be clearly marked with an appropriate color code to enable immediate identification of the phase and neutral.

E.7.3. The switch board should be complete with all necessary self contained interconnections, small wiring for instruments and suitably engraved designation labels made out of white plastic with black inscriptions. The boards should also be extensible on both sides to allow for additional units to be added at a later date.

E.7.4. The bus bar chamber should be fabricated sheet steel construction. It should provided with detachable front cover fitted with dust excluding gaskets secured by sufficient number of screws to ensure that these covers are dust tight. The maximum unsupported length of bus bar chamber between floor stands should not exceed 6 ft.

E.7.5. The bus bars should be of hard drawn high conductivity aluminum of sufficient and uniform cross section so that a current density of 1000 amps. per square inch is not exceeded at nominal current rating. Any neutral bus bar fitted must be rated at not less than 50% of the phase bus bars. The bus bars shall be carried on supports constructed from a suitable insulating material such as `Per Mali' or `helium'. The supports should be sufficiently close and robust to effectively with stand electron-mechanical stresses in the event of a short circuit.

E.7.6. Where-ever required, instruments should be fitted on special housing interposed between the fuse switch units and bus bar chamber. These instruments should normally be mounted on the hinged door of the housing to allow easy access to C.T.'s and small wiring. All potential circuits should be protected by HRC fuse links. Small wiring should be color coded for easy identification of circuit.

E.7.7. All the steel materials used in the construction of the board should have undergone rigorous rust-proving process, which must comprise alkaline decreasing in dilute sulfuric acid and a recognized phosphating process. The steel work shall then receive two coats of filler oxidized primer before final painting.

E.8. MEDIUM VOLTAGE (MV) AND LOW VOLTAGE (LV) CABLES

E.8.1. GENERAL

E.8.1.1. MV Cables shall be inspected prior to laying, laid tested and commissioned in accordance with drawings, specifications, sizes, relevant Indian Standards Specifications and cable Manufacturers' name clearly written on the drum.

E.8.1.2. The recommendations of the cable manufacturer with regard to joining and sealing shall be strictly followed.

E.8.1.3. All cables shall be inspected upon receipt at site and checked for any damage during transit.

E.8.1.4. While selecting cable routes, corrosive soils, ground surrounding sewage effluent etc. shall be avoided: where this is not feasible, special precautions as decided by the Architect, shall be taken. Street lighting and Service line to each area have separate route where layout drawings are furnished for cable routing these must be followed.

E.8.2. PROXIMITY TO COMMUNICATION CABLES

Power and communication cables shall as far as possible cross at right angles. Where power cable are laid in proximity to communication cables the horizontal and vertical clearances shall not be less than 100 cms.

E.8.3. LAYING METHODS

(a) Cables shall be laid direct in ground, in pipes/closed ducts, in open ducts or on surface depending on environmental and site conditions.

(b) During the preliminary stage of laying the cables, consideration should be given to proper location of the joint position so that when the cables are actually laid the joints are made in the most suitable places. As far as possible water logged locations, carriage ways, pavements, proximity to telephone cables, gas of water mains, inaccessible places, ducts pipes racks etc. shall be avoided for joint position.

E.8.4. ROUTE MARKER

E.8.4.1. Route marker shall be provided along straight runs of the cables at locations approved by the Architect and generally at intervals not exceeding 100 m. Markers shall also be provided to identity change in the direction of the
cable route and also for location of every underground joint.

E.8.4.2. Route markers shall be made out of 100 mm x 100 mm x 5 mm GI/Cast Iron plate, welded or bolted on to 35 mm x 35 mm x 6 mm angle iron 60 cm. long. Such plate markers shall be mounted parallel to and 0.5 m or so away from the edge of the trench.

E.8.4.3. The word cable and other details such as voltage grading size etc. as furnished by the Architect shall be inscribed on the marker.

E.8.5. SINGLE CORE CABLES

Three single core cables forming one three phase circuit shall normally be laid in close trefoil formation and shall be clamped together at intervals of approximately 1 m., using non magnetic material. The relative position of the three cables shall be changed at each point, complete transposition being effected in every three consecutive cable lengths. The joints shall be clearly marked in an approved manner to indicate the

circuit and phases, the arrangement for laying a number of parallel cables shall be as detailed of IS: 1255/1967.

E.8.6. LAYING IN PIPES/CLOSED DUCTS

E.8.6.1. In locations such as road crossing, entry to building on walls, in paved area etc. cables shall be laid in pipes or closed duct.

E.8.6.2.Hume pipes, GI pipes shall be provided for such purposes. In case of new constructions, pipes as required shall be laid along with the Civil Works, and jointed as per the instructions of the Architect and shall not be less than 10 cm in diameter for a single cable and not less than 15 cm for more than one cable. These pipes shall be laid directly in ground without any special bed except for SW pipe which shall be laid over 10 cm. thick cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate of 40 mm nominal size) bed. No sand cushioning or tiles need be used in such situations. Unless otherwise specified, the top surface of pipes shall be at a minimum depth of 1 m. from the ground level when laid under roads, pavements etc.

E.8.6.3. Where steel pipes are employed for protection of single core cables feeding AC load, the pipe should be large enough to contain both cables in the case of single-phase system and all cable in the case of polyphase system.

E.8.6.4. Pipes from cable entries to the building shall slop downwards from the building and suitably sealed to prevent entry of water inside the building. Further, the mouth of the pipes at the building end shall be suitable sealed to avoid entry of water.

E.8.6.5. All chases and passage necessary for the laying of service cable convections to buildings shall be cut as required and made good to the original finish and to the satisfaction of the Architect /Executive Engineer. For new construction contractor shall provide a duct/pipe for route length of cable feeding power to the building Cable grips/draw wires and winches etc. may be employed for drawing cables through pipes/closed ducts etc.

E.8.7. LAYING IN OPEN DUCTS

E.8.7.1. Open ducts with suitable removable covers shall be preferred in sub-stations, switch rooms, plant rooms, work ships etc.

E.8.7.2. The cable ducts should be of suitable dimensions or as per layouts drawings so that the cables can be conveniently laid. It necessary, cables may be fixed with clamps on the walls of the duct or taken in troughs in duct. The duct should be covered with removable slabs or checkered plates of suitable thickness considering the width of duct or as specified on drawing or B.O.Q.

E.8.7.3. Ducts may be filled with dry sand after the cable is laid covered as above of finished with cement plaster specially in high voltage applications to prevent rodent entry.

E.8.7.4. Splices or joints of any type shall not be permitted inside the ducts.

E.8.8. LOW VOLTAGE CABLES

E.8.8.1. CONSTRUCTION

E.8.8.1.1. All power and lighting cables shall be of aluminum conductors, PVC insulated, armored and PVC sheathed. The insulation grade shall be 1100 V. The

control cables shall be of Copper conductors, PVC insulated, armored and PVC sheathed of 1.1 KV. grade.

(a) Wiring cables for lighting shall be single core, Copper conductor PVC insulated of 1.1. KV grade.

(b) The H.V. cables shall be of aluminum conductors, PVC insulated and armored. The current conductor shall be aluminum or copper as specified in bill or quantities.

E.8.8.2. INSTALLATION, TESTING AND COMMISSIONING

(a) The cables routes shall be established before commissioning the installation work.

(b) All cables to be buried underground & shall be done after digging uniform section trenches. The cable shall be laid with proper spacings between adjacent cables. The cables shall then be covered with tiles or bricks and finally back-fillings with sand and earth.

(c) Cables buried under ground and crossing, crossing, pathways, roads etc, shall be laid in GI pipes/Hum pipes.

(d) Cables run along prepared trenches or structures and wall shall be suitably clamped and cleared. The spacings of the clamps shall be dependent on the size of the cables, but not be exceed 500 mm. horizontal. The cables shall be protected from mechanical damage using G.I. pipes sleeves while crossing floors etc. The spacers and saddles shall be of G.I.

(e) The use of cables trays, racks or direct clamping shall be determined before commencing work and the same shall be approved.

(f) Cables shall be supplied in non-returnable wooden drums as per IS 10418. Both ends of the cables shall be properly sealed with PVC/rubber caps so as to eliminate ingress of water during transportation, storage and erection.

E.8.8.3. TERMINATION

E.8.8.3.1. All HV cable terminations shall be carried out with conical heavy-duty brass glands. The armor shall be bend and securely clamped. The terminations shall be cried out with sockets, sealing components etc. There should not be any strain on the cable.

E.8.8.3.2. The LV cable terminations shall be soldered or crimped on to cable sockets. In case of soldering, the solder and flux shall be of quality. The terminations to the equipments shall be carried out with brass compression glands.

E.8.8.3.3. After terminations, the individual phase conductors shall be taped with colored tapes for identifications.

E.8.8.3.4. The H.V. cable termination shall be pressure tested in the presence of the Architect prior to commissioning in Service.

E.8.9. TESTS

Cables shall be subjected to type test, acceptance tests and routine tests as per IS : 1554 and IS : 10810. The owner reserves the right to witness any or all the tests for which at least 20 days advance notice shall be given by the contractor. Six (6) copies of all test reports shall be submitted for approval by owner reports shall be submitted for approval by owner before dispatch of the materials for works.

E.8.10 CODES AND STANDARDS

The design, manufacture, testing and supply of the cables under this specification shall comply with the latest revisions including amendments of the following standards.

IS : 1554 - I : - PVC insulated heavy duty cables for working voltages up to 1100 Volts.

IS : 3961 - II : - Recommended current ratings for cables.
IS : 8130 : - Conductors for insulated cables.

IS : 5831 : - PVC insulation and sheath of electric cables.
IS : 10810 : - Test Procedures for cables.
IS : 10418 : - Specification for drums for electric cables.
IS : 3975 : - Mile steel wire, strips, and tapes for armoring of cables.

E.9. CONDUIT RUNS

E.9.1. RIGID P.V.C. CONDUITS

E.9.1.1. Conduit shall be Rigid PVC Conduit as per IS-2509, including latest amendments and in accordance with the requirements set out in the schedule. The diameter of the conduit shall be 19 mm minimum and increase in the size of Conduit shall be as per size and numbers wires and the tubing must be perfectly circular and capable of clean and tight fitting joints.

E.9.1.2. ACCESSORIES

PVC conduit accessories shall be of PVC material and shall comply with IS- 2509 with all its latest amendments uptodate, writhe clean tight fixings. The cover of accessories for outdoor use shall be made water tight in an approved manner. Normal bends, elbows, couplings, adaptors can be used only after obtaining specific approval. Junction boxes used for suspension of fixings shall be secured to the ceiling, clamps or spacers as the case may be. High dome junction boxes shall be used where a SP tumble switch is to be mounted.

E.9.2. M.S. CONDUIT

E.9.2.1. Conduit shall be heavy gauge (HGBE) M.S. Conduit, electric threaded type as per 1653 of 1960 including latest amendments and in accordance with the requirements set out in the schedule. The gauge of the conduit shall be 16 BG (minimum) and the tubing must be perfectly circular and capable of clean and tight fitting joints. The Galvanized conduit shall also be used whenever the conduits are exposed to weather i.e. run outside and structure.

E.9.2.2. ACCESSORIES

M.S. Conduit accessories shall be of G.I. iron and shall comply with IS 2667 of 1964and be of threaded type with clean tight fitting threads. The cover of accessories for outdoor use shall be made water tight in an aproned manner. Normal bends elbows can be used only after obtaining specific approval. Junction boxes used for suspension of fixings shall be secured to the ceiling, clamps or spacers as the case may be. High dome junction boxes shall be used where a a SP tumble switch is to be mounted or a 15 Amps. porcelain connector is to be housed for looping wires.

E.9.3. FIXING OF CONDUIT

E.9.3.1. The conduit shall be fixed to the structures by means of adequate number and appropriate size as directed by the Architect or as per the drawing of G.I. saddles of minimum 18 gauge fixed on MS clamps of on MS spacers as specified and shall run throughout adjacent to either steel work, wall or ceiling. Where the conduits or PVC cables pass through the flooring the same shall be passed through a galvanized pipe of suitable size fixed in the flooring so that conduits, cables or wires can be renewed at any time without breaking the floor. The galvanized pipe shall extend 75 mm above the flooring and shall be flush with ceiling surface on other side. In case the same are passing through the wall M.S. Conduit (H.G.B.E.pipes), flush with walls on both sides shall be used.

E.9.3.2. All conduit wiring in the building, workshops, substations, sheds, pump houses, shall be fixed on MS clamps or on MS spacers as specified and shall be of appropriate size. The conduit wiring in officers and quarters running at ceiling height

shall be fixed on MS spacers, the raising main being fixed on clamps unless otherwise specified in the notes. The minimum size of MS spacers shall be 15 mm wide and 4 mm thick.

E.9.3.3. M.S. clamps for fixing conduits shall normally be prepared for M.S. flats of size 25 x 3 mm. In case more than 5 conduits are running side by side the M.S. flats of size 30 x 5 mm (minimum) shall be used for this purpose. For suspension of conduits from ceiling of structural member at a distance of more than 100 mm clamps made of flats of size 37 x 5 mm shall be used with additional supports in the run as required to keep the conduits held firm in position.

E.9.3.4. M.S. clamps for conduit run shall be grouted on brick walls and shall be. screwed on R.C.C. walls as per instructions. Phillips or teakwood plugs of size as directed shall be used in drilled holes to secure the screws to the walls or to required surfaces

E.9.3.5. The spacing of clamps or spacers in the straight runs shall not exceed 800 mm and additional clamps or spacers shall be provided near bends, curves and under/near junction boxes for fittings so as to make the whole fixture quite rigid.

E.9.3.6. The run of the conduit shall be arranged in good way to the finished work and with that end in view all the conduits entering or leaving a D.B. or switch should be neatly arranged. Any crossing of conduit should be avoided as far as possible, but if required to cross, the conduits shall be neatly bent and fixed.

E.9.3.7. Termination of the conduit runs must have PVC adaptors on either side of the entry to the boards, switches and fittings. The continuity of whole conduit system shall conform with the requirements of the. Regulations prescribed by Indiana Electricity rules and also Regulations issued by the Institute of Electrical Engineers.

E.9.3.8. While connecting the PVC conduit to the trucking & trunk links or at the point of termination or all joints, the joints shall be sealed properly to make it waterproof. Due care should be taken while laying the cable below the sinks or laying it directly in ground, especially for the cable to be provided in areas like laboratories.

E.9.3.9. The entire conduit work shall be given two coats of aproned brand and color of enamel paint on completion of the work. All the threads, running couplers, lock nuts, joints of entry into boxes and abrasions resulting in exposure of the metal shall be given two coats of approved brand of black enamel paint of any other color shade as approved immediately after erection.

E.9.3.10. At every six meters straight run the conduits shall be provided with sufficient extra threads and a check nut for easy running of the coupling back on the conduit for the purpose of renewal of wires etc. Sufficient number of inspection bends and junction boxes shall be provided for easy drawing in of new and repair works in future. Normal bends shall only be used only on approval from the Architect.

SECTION : E.10

E.10.1. POINT WIRING

The wiring shall be of the looping in system as different from the tree system. Connectors should not be used without specific prior approval. Looping in on the phase side shall be at the switches and that on the neutral side at the ceiling roses. Every light point, fan point and plug point shall have individual control switch unless stated otherwise. Earthing shall be provided for all the points according to the statutory

requirements where ever necessary. The number of points per circuit shall not exceed 8 in any case.

E.10.1.1. The point wiring in conduit consists of wiring from the branch distribution board in conduit with its ancillary work, such as inspection bends, junction boxes and PVC wires up to the fixed terminals of ceiling roses, connectors, batten holders, etc. depending upon the type of point.

E.10.1.2. For easy identification, wires with different colors shall be used for phase and neutral as far as practicable.

E.10.1.3. The control switches for lights, fans, wall sockets and fan regulators shall suitably be grouped on sheet steel cases of all welded design fabricated out of 1.2 mm (approx.). Generally, the booklet sheet shall be 3 mm thick where SP Piano type flush mounting switches are to be accommodated and in all other cases it shall be 5 mm thick. The booklet sheet cover shall be fitted above the sheet steel case and shall be leveled on the outer edges. Control accessories for one circuit only shall be grouped on a sheet steel case. Suitable earthing terminal shall be provided on the sheet steel case. All the conduits entering and leaving D.B. shall be bonded together with 4 Sq.mm. bare aluminum/copper wire and earth clips.

E.10.1.4. FOR SURFACE WIRING AND FOR CASING-CAPPING

The switchboard shall be made of polished 12 mm thick well finished T.W. plank preferably in one piece with 1 mm. thick laminates to all sides with 20 mm. thick well polished T.W. back and 6 mm. thick Anchor or Gina plywood smooth finished cover with 1 mm. thick laminates, fixed with piano hinges to the frame. All the inside surfaces and backboard shall be treated with anti-termite treatment and polished.

E.10.1.5. POINT WIRING BY USING PVC-A-PVC CABLE

This shall be similar to point wiring in conduit system. The fixing of cables shall, however, be according to the specifications. The PVC wires shall have a grade 440/660 Volts for single-phase lighting and power wiring, 1.1 KV grade for TPN four wire system.

E.10.2. MAINS AND SUB-MAINS WIRING

This shall include the cost of all PVC-A-PVC cables, conduit accessories, clamps spacers, PVC wires, PVC/PVC wires on battens depending upon the type of wiring, all masonry work, such as cutting, neat finishing of walls, floor openings etc. Only approximate lengths are included in the Schedule of Quantities and Rates, but the actual lengths of the mains and sub-mains executed will be measured between termination points and will be paid for. Where the mains and sub-mains pass through the flooring, or through the wall, the same shall pass as specified in the above specifications. Mains and Sub-mains risers in conduit shall be bonded together with 4.0 Sq.mm. bare aluminum/copper as specifically mentioned in Schedule and earth clips on each floor landing/mid landing. The PVC heavy-duty cables are provided as mains and sub-mains.

The same shall be fixed as per specifications.

E.10.3. CONDUIT CAPACITY

E.10.3.1. The maximum capacity of a conduit for drawing in PVC insulated wires shall be in accordance with IS 732 of 11963. The minimum size of conduit to be used shall not be less than 19 mm (approx.) and not more than two circuits
connected to same phase b e bunches in on conduit. Two different phases are not allowed in one conduit. E.10.3.2. Commonly used sizes of 250/440 Volts PVC wires and conduit capacities are as tabulated below :-

No. of corrections

Size of Wire	Voltage Grade	Capacity of the conduit	
		19 mm/20 mm	25 mm
1.5 Sq.mm.	230/440	4 Nos.	8 Nos.
2.5 Sq.mm.	230/440	4 Nos.	6 Nos.
4.0 Sq.mm.	230/440	2 Nos.	4 Nos.
6.0 Sq.mm.	650/1100	2 Nos.	3 Nos.
10.0 Sq.mm.	650/1100	-	3 Nos.

E.11. SWITCHES, PLUG SOCKETS AND CEILING ROSES

E.11.1. PIANO TYPE SWITCHES

These shall be of single pole type, shock proof manufactured as per relevant I.S. The switches shall be surface mounting and minimum continuous ratings shall be of 5A & 250 V AC. Higher ratings shall be provided as specifically stated in Schedules. The switches shall be of A.C. micro Break Silent type with silver contacts.

E.11.2. PLATTE TYPE, MOLDED DESIGN-SWITCHES

These shall be of single pole, double pole, two ways, one ways or otherwise as indicated in the Schedule. These shall be manufactured; as per relevant IS Codes approved by the Architect and Indian Electricity Rules. The minimum rating shall be 5A at 250 V AC. For group control of lights flush mounted S.P. load master switches housed in 16 gauge sheet steel enclosures shall be provided.

E.11.3. SOCKET OUTLETS WITH PLUGS

These shall be with porcelain base, in 2 pin and earth design of best quality, suitable for single phase, 250 Volts supply. The earth pin shall be effectively connected to the earth connections in distribution board with not less than 3 mm2 (No.14 SWG) copper wire. The socket outlet shall be complete unit shall be with ratings of 5 Amps. 230 Volts of 15 Amps 250 Volts to suit individual requirement as stated in Schedule of Quantities and Rates. The socket outlets shall be shutter type designs, flush mounting or on plate designs as Caleb for in the schedule.

E.11.4. CEILING ROSES

These shall be of booklet and of aproned make and color and shall not contain fuse terminals. These shall be provided with brass ceiling plate and M.T. Brass Screws and Washers with cord grip for termination of wires.

E.11.5. POINT WIRING : WITH CASING-CAPPING

E.11.5.1. CASING-CAPPING

The casing carping shall be as per IS-4607 made of PVC material. The size of the casing-capping will vary as per the total number of circuits in the casing-coping. The maximum number of wires which can be easily fitted in the casing capping shall not at all exceed 45% of its total capacity.

The casing capping shall be fireproof, termite resistant, acid proof, alkali proof and safe in construction. The casing-capping shall be fixed to the wall/column/ceiling with M.S. screws of proper size , with a distance of one meter in between two screws without any extra cost. There shall not be any projection of screws in the casing.

E.11.5.2. The casing-capping accessories shall be of PVC material, having color exactly same as that of the casing-coping & rigidly fixed with casing-capping with

Original resin or adhesive without any extra cost. The casing -capping and accessories shall be of the same make.

E.12. LIGHT FIXTURES & FANS

E.12.1. STANDARDS

E.12.1.1. The following standards and rules shall be applicable to lighting fixtures and fans.

a. IS 3646 - 1968 : Code of practice for interior illumination
b. IS 1913 - 1969 : General and Safety requirements for electric lighting fixings
c. IS 8030 - 1976 : Luminaries for Hospitals
d. IS 374 - 1966 : Electric chilling type fan & regulators.
e. Indian Electricity Act and Rules issued there under.
f. IS 2418- 1964 : Lamp holders
g. IS 3324 - 1965 : Light fittings.
h. IS 2149 - : General safety requirements of lighting fittings.
i. IS 418 - 1963 : GLS incandescent lamps.
j. IS 2183 - 1963 : HPMV Lamps.
k. IS 3324 - 1965 : Starter holder for light fittings.
l. IS 1534 - Part I : Ballasts for fluorescent fittings.
m. IS 1569 - 1963 : Condensers for light fittings.
n. IS 6616 : Ballasts for HPMV fittings.

E.12.1.2. All codes and standards mean the latest. Where not specified otherwise the installation shall generally follow the Indian Standard Codes of Practice or the relevant British Standard Codes of Practice in the absence of Indian Standard.

E.12.2. GENERAL REQUIREMENTS

E.12.2.1. All fixtures shall be complete with accessories with fixings materials necessary for installation whether so detailed under fixture description or not.

E.12.2.2. Fixture housing, frame or canopy shall provide a suitable cover for the fixture outlet box or fixture opening.

E.12.2.3. Fixtures and/or fixture outlet boxes shall be provided with hangers to support the complete weight of the fixture. Design of hangers and method of fastening other than shown on the drawings or herein specified shall be submitted to the Architect for approval before installation.

E.12.2.4. Fixtures shall be installed at mounting heights as detailed on the drawings or instructed on site by the Architects.

E.12.2.5. Pendant fixtures within the same room or area shall be installed plumb and at a uniform height from the finished floor. Adjustment of height shall be made during installation as per Architect's instructions.

E.12.2.6. Flush mounted and recessed fixtures shall be installed so as to completely eliminate light leakage within the fixture and between the fixture and adjacent finished surface.

E.12.2.7. Fixture mounted on outlet boxes shall be tightly secured to a fixture stud in the outlet box. Extension pieces shall be installed where required to facilitate proper installation.

E.12.2.8. Fixture shall be completely wired and constructed to comply with the regulations and standards for Electric Lighting Fixtures, unless otherwise specified. Fixtures shall bear manufacturer's name and the factory inspection label unless otherwise approved by the Architect.

E.12.2.9. Wiring within the fixture and for connection to the branch circuit wiring shall be not less than 1.5 Sq.mm. copper for 250 volt application. Wire insulation shall suit the temperature conditions inside the fixture and wires bypassing the choke shall be heat protected with a heat resistant sleeve.

E.12.2.10. Metal used in lighting fixtures shall be not less than 22 SWG or heavier if so required to comply with the specification or standards. Sheet steel reflectors shall have a thickness of not less than 20 SWG. The metal parts of the fixtures shall be completely free from burrs and tool marks. Solder shall not be used as mechanical fastening device on any part of the fixture.

E.12.2.11. Ferrous metal shall be bonderized and given a corrosion resistant phosphate treatment or other approved rust inhibiting prime coat to provide a rust proof base before application of finish.

E.12..2.12. Non-reflecting surfaces such as fixture frames and trim shall be finished in baked paint.

E.12.2.13. Light reflecting surface shall be finished in baked white enamel having a reflection factor of not less than 80% All parts of reflector shall be completely covered by finish and free from irregularities. After finish has been applied and cured, it shall be capable of withstanding a 6 mm radius bend without showing sign of cracking, peeling or loosening from the base metal. Finish shall be capable of withstanding 72 hours exposure to an ultraviolet sun lamp placed 10 cm from the surface without discoloration, harden-ing or warping and retain the same reflection factor after exposure. Test results shall be furnished for each lot of fixtures to the Architect.

E.12.2.14. Fixture with visible frames shall have concealed hinged and catches. Pendant fixtures and lamp holders shall be provided with ball type maligners or similar approved means. Recessed fixture shall be constructed so as to fit into an acoustic tile ceiling or plaster ceiling without distorting either the fixture or the ceiling plaster ringer/ flanges shall be provided for plaster ceiling. Fixtures with hinged diffuser doors shall be provided with spring clips or other retaining device to prevent the diffuser from moving.

E.12.2.15. Detailed catalog cuts for all fixtures, with sample wherever required by the Architect shall be submitted for approval to the Architect before placing orders of the fixtures for procurement. Shop drawings for non-standard fixture types shall be submitted for approval to the Architect.

E.12.2.16. Recessed fixtures shall be constructed so that all components are replaceable without removing housing from the ceiling.

(a) Lamps shall be supplied and installed in all lighting fixtures furnished under this contract. All lamps shall be rated for 250 volts.

(b) Lamps used for temporary lighting service shall not be used in the final lumping of fixtures units.

(c) Lamps shall be of wattage and type as shown on the drawings and schedule. Where not shown, the details shall be ascertained from the Architect before procurement.

(d) Lamps for permanent installation shall not be placed in the fixtures until so directed by the Architect, and this shall be accomplished directly before the building portions are ready for occupation.

No. of corrections

E.12.3. **FLUORESCENT FITTINGS**

E. 12.3.1. Only single and/or two-lamp ballast shall be used in any one fixture. Ballasts shall be completely enclosed inside sheet Steel casing and shall have a corrosion resistant finish. Ballasts shall contain a thermo setting type compound not subject to softening or liquefying under any operating conditions or upon ballast failure. Compound shall not support combustion. All ballasts shall be of high power factor compensated to above 0.9PF. Ballast temperature and sound rating shall be specified by the manufacturer and guaranteed. Ballasts shall be for operation at the voltages and frequencies indicated and under temperature conditions prevailing in the various locations of the premises. Tapped ballasts are preferred.

E.12.3.2. All fluorescent fixtures shall be provided with separate wiring channel with cover plate and an earth terminal. All screws shall be chromium brass screws. Lamp and starter holders shall be out of tough mounded plastic with spring loaded rotor type contractors rendered shock and vibration proof. Condensers shall be low loss paper impregnated hermetically sealed complying with IS 1569-1963. Internal wiring shall be neatly clipped and where by passing the ballast, a suitable heat resistant barrier or sleeve shall be provided.

E.12.3.3. Surface mounted fixtures longer than two feet shall have one additional point of support besides the outlet box fixture stud when installed individually. Pendant individually mounted fixtures four feet long and smaller shall be provided with twin stem/conduit hangers. Stems shall have ball malingers or similar devices and provided for a minimum of 25 mm vertical adjustment. Stems shall be of appropriate length to suspend fixtures at required mounting height.

E.12.3.4. Lamps shall have bi-pin bases and a minimum approximate rated and guaranteed life of 6000 hrs. Colour spectrum of light shall be equivalent to `Phillips White'. Lamp starter and ballast shall match the lamp.

E.12.3.5. The fluorescent fittings shall be decorative, commercial or industrial types stove enameled reflectors shall be provided wherever specified.

E.12.3.6. Lighting fixings in various areas as specified in the drawings shall be decorative type, reassessed mounting or industrial type. The luminaries shall have a bat-wing widespread distribution for high optical efficiency.

E.12.4. **INCANDESCENT FIXINGS**

E.12.4.1. Incandescent fittings shall be of the type generally specified on the drawings. The sample shall be got approved from the Architect before procurement of the materials.

E.12.4.2. Incandescent fixtures shall be equipped with porcelain, medium base, screw type sockets for lamps up to and including 200 watt and mogul screw type base for lamps 300 watt and over.

E.12.4.3. Re-lamping the fixture should be possible without removing the fixture from its place.

E.12.4.4. Incandescent lamps shall be inside frosted/or clear type as required by the Architect.

E. 12.5. CEILING FANS

E.12.5.1. The fan suspension stem canopies shall be minimum.30 cm. to 60 cm. long and shall be of heavy duty galvanized steel tubes complying to IS 1239-1958.

E.12.5.2. Fans shall be mounted on a pre-embedded hook with hard rubber isolator. Regulators shall be no-step type mounted in the switch box. The box in all such cases shall be large enough to accommodate the regulator and switches. One sample box with top cover shall be submitted to the Architect for approval before procurement.

E.12.6. EXHAUST FANS

E.12.6.1. Exhaust fans shall be complete with wire guard for protection against birds, with low noise as approved by the Architect.

E.12.6.2. Exhaust fan's motor should have double ball bearing for longer life and continuous smooth operation and power coated for protection against rust and corrosion.

E.12.6.3. The contractor will submit a sample for approval for the Architect/Executive Engineer.

E.12.6.4. Size and type of exhaust fan will be as specified in the schedule.

E. 13. EXTERNAL LIGHTING

E.13.1. SCOPE

The scope of covers the supply, installation and testing of lighting poles, weather proof light fixtures, wiring to the fixtures, cable laying, earthing as specified and shown on drawings.

E.13.2. STANDARDS

E.13.2. The following standards and rules shall be applicable:

(a) IS : 1913- 1969 : General and Safety requirements for lint fittings.
(b IS : 2944- 1981 : Code of Practice for lighting Public thoroughfares
(c) IS : 3528- 1966 : Water proof electric light fittings.
(d) IS : 3553- 1966 : Water tight electric light fittings.
(e) IS : 1239- 1958 : Mild steel tubular and other wrought steel pipe fittings.
(f) IS : 2149- 1970 : Luminaries for street lighting
(g) Indian Electricity Act and Rules

E.13.2.2. All codes and standards mean the latest. Where not specified otherwise the installation shall generally follow the Indian Standard Codes of Practice or the British Standard Codes of Practice in the absence of Indian Standards.

E.13.3. FIXTURES

E.13.3.1. The lighting fixture construction shall be of die cast aluminum with a separate compartment for integral ballast equipment. The reflector shall be anodized polished aluminum. The glass refractor shall be heat-resistant.

E.13.3.2. Lamp holder shall be of porcelain and shall comprise of a terminal block of non- hydroscopic material. The luminaries shall have integral ballasts housed in watertight and dust tight metal cashes. Ballasts shall be preread to the Lamp socket and terminal block, requiring only power supply leads to the ballast primary terminals.

E.13.3.3. The Lamp & Luminaire shall generally follow the specification under section "LIGHTING FIXTURES".All external lighting fixtures shall be installed only after obtaining the approval from the Architect.

E.13.4. **LIGHTING POLES**

E.13.4.1. The lighting poles shall be fabricated from heavy-duty cold-rolled steel tubes to IS: 1239 -1959 and hot dip galvanized or painted or specified. The pole shall have a base plate, a large access panel, and necessary fixture mounting bracket at top.

E.13.4.2. The access panel shall provide easy access to omelette porcelain connector and fuse board, to be mounted inside the pole. The access shall be specially fabricated with adequate reinforcement and weather gasket to prevent ingress of moisture and vandal proofed. Poles shall have large diameter entries for incoming and outgoing cable and two earth studs. The pole fabrication shall confirm to the drawings and where such drawing is not available, the contractor shall make such drawing and have it approved before fabricating by the Architect.

E.13.4.3. The pole shall house a multi way porcelain terminal block and rehirable fuse as shown on the drawings. Pole shall have a concrete coping.

E.13.5. **CABLE LAYING**

E.13.5.1. Cabling shall be generally as specified in the section "CABLING".

E.13.5.2. Cables shall be terminated in a 4-way terminal block inside the pole or attached therewith as shown on drawings.

E.13.5.3. Cable route shall be as shown on the drawings or the contractor shall mark out the route and lay the cables only upon approval of the route.

E.13.6. **EARTHING**

All street lighting fixtures and poles shall be earthed as specified under section `EARTHING'.

E. 13.7. **FLOOD LIGHT FITTINGS**

E. 13.7.1. The flood light fittings shall be of outdoors type, totally weather proof and water resistant. The fixtures shall be complete with fixing brackets, control gearbox, terminal connections, and reflector and front glass. The glass fitting shall be water proof with proper gasket -ring and clamping arrangement.

E.13.7.2. The floodlight shall be suitable for GLS type incandescent lamps up to 500 watt or halogen lamps up to 1000 watts, or as specified in the drawings.

E.13.7.3. Floodlights will not be fixed without the approval of the Architect/Executive Engineer. The Contractor has to submit a specimen for approval.

E.13.8. **GARDEN AND DRIVEWAY LIGHT FITTINGS**

E.13.8.1. The garden and driveway light fittings shall be suitable for mounting on GI poles of 2 M to 3 M height as specified. The fittings shall be weatherproof, robust and shall have components, which are not easily corroded.

E.13.8.2. The connectors shall be suitable for a minimum of 4 x 6 Sq.mm. PVC Aluminum conductor cables or as specified in the drawings.

No. of corrections

E.13.8.3. The fittings shall be suitable for mounting GLS lamps of MLL blended lamps with proper reflector/ shade with good appearance as approved by the Architect.

E.14. **TELEPHONE DISTRIBUTION**

E.14.1. SCOPE

The scope of work shall cover supply, installation, commissioning and testing of:
(a) Telephone cables
(b) Telephone Tag Blocks
(c) Telephone wiring in conduits

E.14.2. **CONDUITS**

E.14.2.1. Conduits for telephone distribution lines shall be Hot dipped Heavy gauge galvanized steel or Rigid PVC conduit, as specified in the drawing.

E.14.2.2. The conduit shall generally be as specified under section `CONDUIT RUNS'.

E.14.2.3. All the materials for telephone distribution and Installation shall be as approved by the Architect/Executive Engineer.

E.14.3. **CABLES AND WIRES**

E. 14.3.1. The type of cables and the services shall be as follows:

(a) Indoor : Multi pair, PVC insulated sheathed armored and sheathed.
(b) Inside conduit : Twin core PVC insulated with twisted cores.

E.14.3.2. All multi core cables and wires shall be of tinned copper conductor of not less than 0.5 mm dia and shall be of color-coded twisted pairs with ripcord.

E.14.3.3. The conductor resistance shall be less than 150 ohms per KM and the insulation resistance between the conductors shall be not less than 50 megohms and the nominal capacitance of about 0.1 micro fared per kilometer.

E.14.3.4. Cables laid under ground or locations subject to dampness and flooding shall be filled with polyethylene compound and shall have sufficient protection against moisture and water ingress.

E.14.3.5. All armoring shall be of galvanized steel wires and protected against corrosion by an outer sheath of PVC in the case of indoor cables and polyethylene in the case of outdoor cables. Outer sheathing must be fire retarding and anti-termite.

E.14.3.6. All unarmored single core cables and inner sheath of armored cables shall be provided with ripcord.

E.14.3.7. All single pair cables for final extension to the telephone outlet box shall be unarmored dinned copper conductors of not less than 0.6 mm dia and shall be drawn in conduits. All telephone outlets shall consist. All telephone outlets shall consist of 2A 2 pair polythene connector in G.I. box with 6 mm perspex cover with beveled edges and chromium plated brass hardware.

E.14.4. **TAG BLOCKS**

E.14.4.1. The telephone tag blocks shall be suitable for the multi core telephone cables and shall have two terminal blocks, cross connect type. All incoming and outgoing cables shall be terminated on separate terminal blocks and the terminations shall be silver soldered. The cross connecting jumpers shall be insulated wires of same diameter and screw connected.

E.14.4.2. The tag blocks shall be mounted inside the fabricated sheet steel boxes with removable hinged covers and shall be fully accessible. The enclosure shall be painted with 2 coats of red oxide primer and stove enameled.

E- 14.5 INSTALLATION

E.14.5.1. The installation of conduits shall generally be as specified under section `CONDUIT RUNS'.

E.14.5.2. The cables shall be on cable racks and neatly stitched together.

E.14.5.3. The connection at the tab blocks shall be silver soldered so as to achieve minimum contact resistance.

E.14.5.4. The final branch connections with single pair cables in conduits and the maximum number of cables in each conduit shall be as follows:

CONDUIT DIA INCH/MM	MAX. NO . OF CABLES
3/4 (20)	2 Nos single pair
1 (25)	6 Nos single pair
11/4(32)	12 Nos single pair
11/2(40)	18 Nos single pair

E.14.6. MODE OF MEASUREMENT

E. 14.6.1. The main telephone cables shall include supply and laying of multi pair cables on ceiling/wall/on cable trays/racks including all supports and shall be measured and paid on running length basis.

E.14.6.2. Cable trays/racks shall be paid for separately.

E.14.6.3. All outdoor jelly filled cables shall also be paid for per unit length excluding excavation and back filling which will be paid extra as specified under `CABLING'.

E.14.6.4. The multi pair tag blocks shall consist of two telephone connectors strips, KRONE or equivalent make and shall be measured and paid as one unit complete with m.s. Enclosure box.

E.14.6.5. The conduit wiring for telephone shall include single pair cables in HG galvanized steel conduits and shall include junction boxes, pull boxes and shall be paid per unit length.

E.14.6.6. Telephone outlets shall be paid per unit kind shall cover outlet terminal connectors, plate-type outlet box, wiring etc. complete.

E.15. **EARTHING AND LIGHTNING PROTECTION**

E.15.1. SCOPE

E.15.1.1. Earthing system to be provided shall comprise of earth electrode of copper plate in earth pits, earth bus/grid or copper flats and bare copper wires as earth continuity conductor.

E.15.1.2. Lighting Protection system shall comprise of earth electrode of Cu plate in earth pits, earth bus of down conductors of flats.

E.15.1.3. Earthing of Compound, flood Lighting and Road Lighting poles shall be done using Cu plates in earth pits near pole and 7/16 size galvanized strained wire for connection to the pole or as specified in the schedule or in drawings.

E.15.1.4. Entire earth system shall conform to the Code of Practice as per IS. 3043.
E. 15.1.5. Material shall be galvanized iron or copper as specified in bill of quantities.

E.15.2. GENERAL REQUIREMENT

Enclosures and frame work of all current carrying equipment and accessories, structural steel/columns shall be adequately earthed to a single earthing system, unless separate earthing systems are specifically stipulated. All electrical equipment shall be earthed at two distinct points. Earth Leads and risers shall follow as direct and shortest path as possible. Suitable risers shall be provided as directed if equipment is not available when earthing is installed.

E.15.3. EARTH ELECTRODES IN EARTH PITS

Plate electrodes of G.I. shall be 600 x 600 x 6.30 mm thick and of copper shall be 600 x 600 x 3.15 mm thick unless otherwise specified.

E.15.4. EARTH, BUS AND EARTH CONTINUITY CONDUCTOR (MATERIAL SHALL BE PER/G.I./ ALUMINUM AS SPECIFIED IN B.O.Q.)
E.15.4.1. Earth bus is a copper strips of flat of specified size interconnection all earth electrodes.

E.15.4.2. Switch gears and Power Distribution Boards shall be earthed by a copper flat strip.

E.15.4.3. Panels, fused DBs and motors up to 30 KW rating shall be earthed by a continuity conductor, as specified. Minimum size of continuity conductor shall be 14-gauge bare copper, soft drawn.

E.15.4.4. Road Lighting Poles shall be earthed with Cu standard wire conductor while for lighting and power wiring bare copper conductor shall be provided unless otherwise specified to use insulated conductor.

E.15.5. EARTH BUS STATION

Earth Bus station shall be provided to facilitate tapping of earth bus/grid very conveniently. It will comprise of a 400 mm long 38 x 6 mm bare copper strips/flat fixed with crawl plugs/bolts securely on wall/column above floor level. Spacers of 20 mm to 25 mm shall be provided to keep the flat away from wall and facilitate connections of earth conductor for which 6 mm dia holes 8 to 10 numbers are provided with proper size brass nuts, bolts and washers. Earth bus is connected to it.

E.15.6. **LIGHTNING PROTECTION SYSTEM**

E.15.6.1. Air termination shall be give prong type copper and securely clamped/installed to withstand severs weather conditions and protection against lightning Horizontal air termination conductors shall be provided where specified.

E.15.6.2. Earth Electrodes for lightning protection system shall be Cu plate installed in earth pits as per IS. (or G.I. as specified in B.O.Q.).

E.15.6.3. The down conductors from air terminals shall be done in tinned Cu Flat strip of size 50 mm c 6 mm as required. The down conductor shall follow a direct path to the earth electrode without any sharp bend, turn or kinks. These down conductors

shall not be connected to other earthing conductors above ground level but the metallic parts in the vicinity of lighting protection conductor such as ladders, pipes, etc. shall be effectively connected and bonded. (The material shall be as per B.O.Q.)

E.15.6.4. A test joint as per IS shall be provided for every down conductor within 1500 mm above ground level.

E.15.6.5. Hardware and clamps shall be similar as used for the earthing systems.

E.15.7. **ARTIFICIAL TREATMENT OF SOIL**

If the earth resistance is too high and the multiple electrode earthing does not give adequate low resistance to earth, then the soil resistively immediately surrounding the earth electrodes shall be reduced by adding sodium chloride, calcium chloride, sodium carbonate, copper sulfate, salt and soft coke or charcoal in suitable proportions.

E.15.8. **RESISTANCE TO EARTH**

The resistance to each earthing system shall not exceed 1.0 ohm.

E.15.9. **EARTHING STATION**

E.15.9.1. **PLATE ELECTRODE EARTHING**

Earthing electrode shall consist of a tinned copper plate not less than 600 x 600 x 3 mm thick, 600 x 60 x 3 mm. G.I. as called for in the drawings. The plate electrode shall be buried as far as practicable below permanent moisture level but in any case not less than 3 mts. Below ground level.

Where-ever possible earth electrode shall be located as near the water tap, water drain or a down take pipe as possible. Each electrodes shall not be installed in proximity to a metal fence.

E. 15.9.2. It shall be kept clear of the buildings foundations and in no case shall it be nearer than 2 meters from the outdoor face of the wall. The earth plate shall be set vertically and surrounded with 150 mm thick layer of charcoal dust and salt mixture. 20 mm G.I. pipe shall run from the top edge of the plate to the ground level. The top of the pipe shall be provided with a funnel and a mesh for watering the earth through the earth. The main earth conductors shall be connected to the electrode just below the funnel, with proper terminal lugs and checks nuts. The funnel over the G.I. pipe and earth connections houses 300 mm wide and 300 mm deep. The masonry chamber shall be provided with a cast iron cover resting cover a C.I. frame embedded in masonry.

Earthing electrode shall consist of a G.I. pipe (Class B) Indian Tube Company make or aproned equal, not less than 40 mm dia and 5 meters long. G.I. pipe electrode shall be cut tapered at the bottom and provided with holes of 12 mm dia drilled at 75 mm interval up to 2.5 meters length from bottom. The electrode shall buried vertically in the ground as far as practicable below permanent moisture level with its top not less than 200 mm below ground level. The electrode shall be in one piece and no joints shall be allowed in the electrode. Wherever possible earth electrodes shall be located as near water tap, water drain or a down take pipe. Earth electrode shall not be located in proximity to a metal fence. It shall be kept clear of the building foundations and in to case shall be nearer that 2 meters from the outer face of the wall.

E.15.9.3. The pipe earth electrode shall be kept vertically and surrounded with 150 mm thick layer of charcoal dust and splat mixture up to a height of 2.5 meters from the bottom. At the top of the electrode a funnel with a mesh shall be provided for watering.

E.16. **FIRE ALARM SYSTEM**

E.16.1. SCOPE

The scope of work shall cover supply of :

1. Main control panel and Repeater panel
2. Local control panels
3. Smoke and heat detectors
4. Remote indicators for detectors
5. Break glass units
6. Hooters
7. Public address system

Before procurement of the above, the contractor/supplier has to take the final approval from the Architect.

E.16.2. **CODES & STANDARDS**

The fire alarm equipment shall confirm to the requirements of standard NO. 72 of American National Board of Fire under-writers, BS 3116. BS 5839, BS5364, BS 5445, BS 5446 and Fire Insurance Association of Indian and local Fire Brigade, with all their latest amendments up to date.

E.16.3. **CONTROL PANELS**

E.16.3.1. The main control panel shall be multilane modular solid-state device suitable for non-coded, closed loop, self-supervising type using 24 volts DC circuitry. The panels shall have facility for local and remote fault signals. The fault indication shall cover "open circuit', "short circuit" and "Earth circuit" on both the detector as well as the alarm loop. The panel shall confirm to BS 5839. The panel shall have built in stand-by battery.

E.16.3.2. The main control panel shall have the following visual indication, alarm and test facilities:

(a) Fire, fault isolation indication of all local control panels'.
(b) Zone/Panel isolation and test and reset facility.
(c) Sounder release
(d) Power supply fault monitoring.
(e) Halos release indication wherever necessary.
(f) Automatic AHU cut -off facility for all the AHV's packaged units as shown on the drawing complete with necessary external and internal relays, contractors
(g) Flow switch opening with visual and audible alarm.

E.16.3.3. The local control panels shall be fixed zone type suitable for non-coded, closed loop, self-supervising type using 24 volts DC circuitry. The panels shall have auxiliary output terminals for remote indication of common fire, common fault. The fault indication shall cover open circuit, short circuit and earth fault of both the detectors as well as alarm loop. The panel shall confirm to BS 5839. These panels shall be complete with built in standby resistance free (dry) battery.

E. 16.3.4. The local control panels shall have the following visual indication and alarm facilities.

(a) Fire, Fault and test indication of all zones.
(b) Automatic fan shut off facility for all air handling units serving the floor as shown on drawings complete with necessary external and internal relays and contractors etc.
(c) Test/reset switches

(d) Power supply fault monitoring
(e) Sounder release

E.16.3.5. The power supply to each panel shall be 230 V single phase 50 Hz. The panel shall incorporate necessary silicon rectifier, battery charger, relays, pilot lamps signals, meters, cancellation switches and nickel cadmium stand battery. The battery shall have a capacity of not less than 48 hours of operation in the requescent conditions and after that for 30 minutes of operation in full alarm mode as stipulated in the 16.3.2.1 of BS 5939 (Part 1) or its equivalent Indian Standard, with all its latest amendments up to date.

E.16.3.6. The unit shall have its own main switch, input and output fuses, output voltmeter and Ammeter and function failure alarms and integral with the respective fire alarm panel.

E.16.3.7. The Central panel shall have a building diagram displaying the various local control panels. Similarly the local control panels have a mini diagram displaying the various zones, location of fire escapes and Air Handling Units. All such diagrams shall be screen printed and framed in an approved manner.

E.16.3.8. The main repeater panels shall be multilane modular type having indication and alarm of

(a) Fire, fault isolation, indication of all zones/local control panels. They shall also have a mini diagram displaying the various zones location of fire escape and air handling units. All such diagrams shall be screen printed and Framed in an approved manner.

E. 16.3.9. The local repeater panels shall be fixed zone type having indication only of fire and default for all zones. It shall also have a mini diagram displaying the various zones locations of fire escapes and location of Air handling units.

E.16.4. **SMOKE AND HEAT DETECTORS**

E.16.4.1. The smoke detectors shall be of double chamber, ionization type meeting the requirements of BS 5446 and BS 5839 or its equivalent Indiana Standard, with all its latest amendments up to date.

E.16.4.2. The detector shall respond to both visible and invisible smoke. The detector shall have built in L.E.D. indication and a facility for remote indication and shall be suitable for operation on 24 V DC supply. The detectors shall be complete with stove enameled round junction boxes, base plate, all inter-connections preread with multi core PVC insulated 1.0 Sq.mm. copper cables terminated in porcelain connector with 300 mm flexible and all connections being tightly screwed, and silver soldered. The smoke detectors in the rooms, industrial units, stores, air handling units, meter rooms, and all such areas as specified in the drawings, after obtaining the approval from the Architect, shall have facility for remote indicating lamps outside the rooms. Remote indicators shall be enclosed in an M.S. box and mounted as directed.

E. 16.4.3. The heat detectors shall be `rate of rise' type conforming to BS 3116 Part I-Grade I or its equivalent Indian Standards, with all its latest amendments up to date and shall respond for a temperature rise above 10 deg C minimum, with an upper temperature limit of 60 deg C. The detector shall be suitable for operation at 24 V DC supply.

The detectors shall be complete with stove enameled round junction boxes, baste plate, all interconnections preread with multi core PVC insulated 1.0 Sq.mm. copper

cables terminated in porcelain connection with 300 mm flexible and all connections being tightly screwed and silver soldered.

E.16.5. **BREAK GLASS UNIT**

E.16.5.1. The break glass units shall be meeting the requirements of BS 5364 Part I or its equivalent Indian Standard, with all its latest amendments up to date. The glass cover shall be designed to prevent glass splintering and shall have "FIRE ALARM" in English painted with indelible red enameled paint. The break glass unit shall be suitable for recessed/wall mounting of square/circular unit type with push button as approved by the Architect. The manual fire alarm shall be complete with red enameled MS junction box, stainless steel hammer with chain, all inter-connections preread with multi core PVC insulated 1.0 Sq.mm. copper cables terminated in porcelain connector with 300 mm flexible and all connections being tightly screwed and silver soldered.

E.16.5.2. Wherever shown, a telephone jack shall also be provided along with the break glass unit in an M.S. junction box. Alternatively, the Break Glass unit and telephone jack may be mounted together in one junction box.

E.16.6. **REMOTE INDICATORS**

The remote indicators shall be red L.E.D. type in duplicate and operated on 24 v.d.c. The remote indicator shall be complete with stove enameled M.S. junction box, all interconnections pre-wired with multi core PVC insulated 1.0 Sq.mm. Copper Cables and terminated in porcelain connector with 300 mm flexible and all connections being tightly screwed and silver soldered.

E.16.7. **HOOTERS/SOUNDERS**

The hooters shall be solid-state electronic type capable of delivering a sound pressure level of 100 dB at 3 mts. and operated on 24 v.d.c. Supply. The hooter shall be complete with stove enameled M.S. junction box all interconnections being pre-wired with multi core PVC insulated 1.0 Sq.mm. Copper Cables and terminated in a porcelain connector with 300 mm flexible and all inter-connections being tightly screwed and silver soldered.

E.16.8. **PUBLIC ADDRESS SYSTEM**

E.16.8.1. The public address system shall consist of an amplifier, floor selector, volume controllers, speakers etc. as shown on the drawings.

E.16.8.2. The amplifier shall be low-noise solid-state device with the rated output. The signal to noise ratio of at least 80 dB and a distortion factor of less than 0.6% maintained in the frequency range of 20-1500 Hz. The amplifier shall receive 230V 50 Hz mains supply.

E.16.8.3. Speakers shall be 200 mm diameter flush mounting type with a tapped matching transformer. Speaker minimum sound pressure levels at a distance of 1 meter shall be at least 15 dB over a frequency range of 30-15000 Hz. Speakers shall have suitable designed metal back covers. Speaker ratings shall be as detailed in the drawings and schedule of work but each speaker shall have a volume controller.

E.16.8.4. Floor selector shall be a rotary type 5A rated with smooth and clear cut-off from one position to the other. The volume control shall be solid-state rotary type with

off switch and continuous variation. Both floor selector and volume control shall be enclosed in a sheet steel box with a prespex cover and engraved write up.

E.16.8.5. All cabling from the power outlet (15A 3 pin 230V AC 50 Hz), to the amplifier, to floor selector/ volume control shall be provided by the supplier. A multi core cable from the floor selector to a wall mounted terminal box shall also form part of the equipment supplier. The cable length shall not exceed 4M. All connecting cables shall be not less than 1.0 SQ.mm. copper.

E.16.9. **CABLING, WIRING AND CONDUCTING**

E.16.9.1. Conduits shall generally conform to the specification under section `CONDUIT RUNS'. The type of conduit and the service shall be as shown below :

(i) Embedded in walls & slabs: Heavy gauge galvanized steel or as approved by the Architect.

(ii) Exposed/surface run: Heavy gauge galvanized steel or as approved by the Architect.

E.16.9.2. Wires shall be single core multi strand electrolytic copper 300/500V grade conforming to BS 6500 or any other I.S. with all its latest amendments up to date. Minimum size of wires shall be 1.0 Sq. mm.

E.16.9.3. Multi core cables shall be PVC insulated and armored with copper conductors to I.S. 1554 - I and I.S. :3975 with all its latest amendments.

E.16.10 **INSTALLATION, TESTING & COMMISSIONING**

E.16.10.1. Installation of all detectors, break glass units, control panels, repeater panels and remote indicators, sounders are included in the scope of this tender, where as supply and laying of main cabling and control cabling will be done by others.

E.16.10.2. The installation of conduits shall generally conform to the specification under section CONDUIT RUNS'.

E.16.10.3. All wires shall be drawn inside the conduit and terminated in junction boxes with connectors having sufficient number of ways suitable for the incoming/outgoing wires.

E.16.10.4. The maximum capacity of the conduits shall be as follows:

CONDUIT DIA INCH (MM)	No. OF WIRES (MAXIMUM)	
	1.0 Sq.mm.	1.5 Sq.mm.
3/4 (20)	8	6
1 (25)	12	10
1 1/4 (32)	20	18

E. 16.10.5. All cables shall be laid generally as specified under "CABLING". All cables shall be laid on cable trays or as specified in the drawings. The cable wire terminations shall be through terminal connectors.

E. 16.10.6. The entire installation shall be tested by operating the detector devices, creating line fault conditions. Two detectors/Break glass units shall be set of on each

floor 3 times at 5-minute intervals to establish the performance. The public address system shall be tested for its performance
and all tests shell be conducted in the presence of the engineer and recorded in the proform for acceptance test.
All cabling and wiring shall be tested as under section "INSPECTION AND TESTING".

E.17. **POWER FACTOR CORRECTION**

E.17.1. P.F. IMPROVEMENT CAPACITORS

E.17.1.1. Capacitor units shall be indoor type, air-cooled, 3 Ph 415 V., 50 Hz delta connected with manual & automatic power factor control painless. Capacitors shall conform to IS 2834-1964.

E.17.1.2. Capacitors shall be in multiples as specified and as shown on drawings. Units shall have polypropylene dielectric media and hermetically sealed in closed sheet steel containers, galvanized both internally and externally. Each unit shall have a discharge resister and fuse. Units shall be of low loss and be able to withstand 10% over voltage and also suitable for continuous operation at 135% of rated KVAR. Tenderer should indicate the loss factor of the capacitor offered.

E.17.1.3. The control panel shall be sheet steel enclosed, dust and vermin proof units, incorporating in addition, a PF meter suitable for auto or manual operation as specified, and indicating lamps. Capacitors shall be mounted above or under the same panel and covered with adequate ventilation Louvre rendered vermin proof. All interconnections shall be enclosed in sheet steel channel for neat appearance. The panel shall be double earthen.

E.17.1.4. Capacitors shall not be installed without the approval from the Architect.

E.17.2. **TESTING**

Capacitor units shall be tested to withstand 2500V AC for one minute the shall yield an IR value of 50 megohms after one minute charge with 500V DC. The sequence switching wherever specified shall be functionally tested.
All test readings shall be duly recorded and presented.

E.18. **MATV SYSTEM**

E.18.1. SCOPE

The scope of work shall cover supply, installation, commissioning and testing of :
(a) Music & MATV wiring
(b) Music & MATV distribution equipment
(c) Antenna outlets.

E.18.2. **CONDUITS**

The conduits shall generally be as specified under section "CONDUIT RUNS".
The type of conduit and the service shall be shown below:
Indoor
(a) Surface run: Heavy gauge MS black enameled or Rigid PVC conduit.
(b) Concealed: Heavy gauge MS black enameled or Rigid PVC conduit.

Outdoor
Medium duty Galvanized steel tube to IS : 1237 or Rigid PVC conduit.

E.18.3. **CABLES**

The co-axial cable shall be copper core of 0.8 mm diameter tinned, PE solidity insulated and shielded with tinned copper braid with necessary protective foil and white PVC Outer Sheath. The cable characteristic impedance shall be 75 ohms.

E.18.4. **INSTALLATION**

18.4.1. The installation of conduits shall generally be as specified under section "CONDUIT RUNS"

E.18.4.2. All cables shall be drawn inside the conduit and terminated into splitter/Tap-off in MS JB.

E. 18.5. **DISTRIBUTION EQUIPMENT**

E. 18.5.1. Splitters shall be suitable for the entire frequency range with an insertion loss not exceeding 4.5 dB at MHz. The isolation between the out-puts shall exceed 17 dB and the return loss at input and output shall be 14 dB and 12 dB respectively. Splitters shall have a characteristic impedance of 75 ohms at both input and output and the RF shielding factor shall be greater than 70 dB. The entire unit shall be housed in an M.S. box and shall be suitable for and ambient of 45 deg.

E.18.5.2. Tap-off units shall be multi tap and shall be suitable for the entire frequency range. The insertion loss shall not exceed 3 dB at 8 MHz. and the tap off ratio shall be around 26 dB. at 8 MHz. The isolation shall exceed 36 dB between tap and output and the return loss shall be around 20 dB at input, output and taps. The entire unit shall be housed in M.S. box and shall be suitable for an ambient of 45 deg C. The characteristic impedance shall be 75 ohms at input, output, and tap ports.

E.18.5.3. Antenna outlets shall be frequency flat and the insertion loss shall not exceed 0.5 dB. The outlet shall have a characteristic impedance of 75 ohms and the outlet shall be coaxial plate type cover compatible with all other switch and Socket outlets.

E.18.6. **AIRCRAFT WARNING SYSTEM**

E.18.6.1. The aircraft warning system shall consist of dualhead non-flickering aircraft warning lights located at the highest point of the building. The warning lights shall be of cast alum. body with twin lamp head, red prismatic glass dome with smooth exterior, weather-proof construction necessary gasket & cable entry arrangement.

E. 18.6.2. he lamp shall be wired with PVC insulated and sheathed cable and shall be earthed as specified under `EARTHING'.

E.18.7. **MODE OF MEASUREMENT**

E.18.7.1. Each aircraft warning light shall be measured as one unit for payment and shall include :

(a) Light fitting, lamp and accessories
(b) Internal wiring
(c) Installation with all fixing accessories

E. 18.7.2. The wiring for each aircraft warning lights will be measured as one point for payment and shall include :

(a) 3C 2.5 mm PVC insulated armored cable, clamp and fixing accessories.
(b) Junction box with cover, painting, control switch.
(c) Interconnections

No. of corrections

E.19. **SAFETY PRECAUTION**

E.19.1. The Graduate Electrical Engineer with minimum 6 to 8 years experience in electrical installation of buildings shall be appointed on site to supervise the work. He shall be supported with sufficient number technical and supervisory staff. The Electrical Engineer should ensure that all plant and machinery used on the site are rendered safe for working and meets with the Indian or International safety standards applicable for the use and operation of such machinery. The Engineer should also ensure that the workmen are supplied with and made to use safety appliances such as safety belts, lifelines, helmets etc.

E.19.2. Smoking altogether strictly prohibited in area where combustible and inflammable goods/materials are stored or laying about.

E.19.3. Any hot job such as welding, soldering, gas cutting shall not be carried out without the permission of the Architect. Such jobs shall not be cried out where inflammable materials are stored or lying about. All electric connections shall be through adequately sized mechanically protected cables without any joints and with proper and adequate terminals. All power supplies shall be through properly rated fuses with isolating devices. No such hot jobs shall be carried out on holidays and without the presence of the Contractor's Supervisor.

E.19.4. Those engaged in welding works shall be provided with welder's protective eye-shield and gloves.

E.19.5. The contractor should clear the site of all debris very day to avoid accidents. In case this is not done, the
owners may engage necessary labor to maintain the cleanliness of the premises and removal of debris, and debit all or part of the expenditure so inured from the contractor/s.

E.19.6. It is entirely the responsibility of the Contractor to practice the principles of `Safety First' during the entire tenure of work or damage to the property belonging to owner, owner`s employee, students, Architects, Architect's
Staff, Architect's representative, Site Engineer, Consultants, Sub-Contractor, Supplier and visitors to site or adjacent premises to minimum Rs. 10,00,000/- (Rupees ten lacks only) for single incident.

E.19.7. First aid appliances including adequate supply of sterilized dressing and cotton wool shall be provided on site and readily available to the workers.

E.19.8. The injured person shall be taken to a public hospital without loss of time in cases where the injury necessitates hospitalization.

E.19.9. Suitable and strong scaffolds should be provided for work-men for all works that can not safely be done from ground.

E.19.10. No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm. (clear) and the distance between two adjacent rungs shall not be more than 30 cm. When a ladder is used an extra misdoer shall be engaged Dow holding the ladder.

E.19.11. The excavated material shall not be placed within 1.5 meters of the edges of the trench, or half of the depths of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.

E.19.12. Every opening in the floor of the building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum heights shall be one metre.

E.19.13. No floor of or other part of the structure shall be loaded with debris or materials.

E.19.14. No point containing lead or lead products shall be used except in the form of paste or redeemed paint.

E.19.15. Guidable face-masks should be supplied for use by the workers when the paint is applied in the form of spray or surface having lead paint dry rubbed scrapped.

E. 19.16. The painters shall be provided with suitable clothes overall for while working and shall be provided with water to get wash after painting.

E. 19.17. Hoisting machines and tackle used in the work, including their attachments, anchorage and supports shall be in perfect condition and suitably earthed as per I.E. rules.

E.19.18. The ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from defects.

E.20. **GENERAL INSTRUCTIONS**

E.20.1. SCOPE OF WORK

E.20.1.1. The Contractor's scope of work covers supply, installation, commissioning and testing of the complete Electrical installation as specified in Volume I of Conditions of Contract and Schedule B. in case of ambiguities, the decision of the Architect shall be final.

E.20.1.2. The Contractor shall prepare fabrication and working drawings and all work shall be to approved working drawings. Approval of drawings does not relieve the Contractor of his responsibility to meet with the intents of the Specifications. All such drawings for approval shall be in duplicate.

E.20.1.3. All tools, tackle, scaffolding and staging required for erection and assembly of the equipment and installation covered by the contract shall be obtained by the contractor himself. All other materials such as foundation bolts, nuts etc. required for the installation of the plant shall also be supplied and included in the contract.

E.20.1.4. Tenderer shall quote separately for spares recommended by him for two years operation of each type of equipment covered by these specifications. These rates shall be valid for acceptance for a period of _____ days.

E.20.1.5. The contractor shall chary out tests on different equipment as specified in various sections in the presence of representatives of clients Architects in order to enable them to determine whether the plant, equipment and installation in general comply with the specifications.

E. 20.1.6. All equipment shall be tested after carrying out necessary adjustments and balancing to establish equipment ratings and all other design conditions. At least four sets of readings shall be taken for each item tested and submitted to the Architect. Instruments required for testing shall be furnished by the contractor allaying with initial requirements of all consumables.

E.20.1.7. The plant shall be handed over after satisfactory testing along with four sets of documentation each consisting of

(a) Detailed equipment data as approved by the Architect.
(b) Manufacturer's maintenance and operating instructions.
(c) Set of as-built drawings, showing plant layouts, piping, docketing etc.
(d) Approved Test readings & certificate of local authorities.
(e) List of recommended spares.

Submission of the above documentation shall form a precondition for the final acceptance of the plant and installation and final payment.

E.20.2. **PERFORMANCE GUARANTEE**

E.20.2.1. All equipment and the entire installation shall be guaranteed to yield the specified ratings and design conditions plus/minus 3% tolerance. Any equipment found short of the specified ratings by more than the allowable tolerance as determined by the test readings shall be rejected.

E.20.2.2. Rates for all the items stated in the contract must cover the cost of all the materials labor, tools, machinery, scaffolding, staging, bamboos, props, ropes, templates, pegs, nails and other appliances necessary a for the correct and complete execution of the work as per the general specifications and those mentioned in the bills of quantities.

E.20.2.3. All work carried out shall be as per The Indian Electricity Act Rules and all government, semi government, municipal and other authorities.

E.20.2.4. The materials for all work carried out shall be with the approved materials given in the P.W. and H. Department electrical circle, for the current year, and with the approval of the Architect.

E.20.2.5. Samples of all materials used should be submitted to the Architect for approval before commencement of the work.

E.20.2.6. The electrical contractor shall make good all necessary repairs to civil work due to execution of electrical work, as and when required at his cost. Should a dispute arise between the civil and electrical contractors working at site, the decision of the Architect shall be final and binding.

E.20.3. **GENERAL CONDITIONS**

E.20.3.1. For obtaining additional electric supply, the contractor shall make necessary arrangement and shall obtain necessary forms from M.S.E.B., P.W.D., and with all other concerned authorities at his own cost.

E.20.3.2. The contractor shall obtain service quotation/the estimate of service cable, and electric supply including meter box and necessary meters, etc. and shall do commissioning and installation etc. Complete from M.S.E.B. at his own cost. However, actual amount of estimates obtained from M.S.E.B. shall be paid by owner on submission.

E.20.3.3. The owner shall pay necessary deposit to M.S.E.B. for permanent supply of electricity. However, the contractor shall have to pay all deposits and charges to all concreted authorities where-ever applicable, required while in execution of works and also for obtaining temporary electric supply required for execution of work.

E.20.3.4. The contractor will prepare and submit test report etc. as per the requirement of M.S.E.B. and complete all formalities and obtain regular electric supply at his own cost.

No. of corrections

E.20.3.5. The contractor will complete all required formalities and obtain N.O.C. from P.W.D. at his own cost.

E.20.3.6. You shall provide a site engineer having bachelor degree in electrical engineering with minimum 8 to 10 years experience of electrical installation in buildings with supporting staff as licensed electricians, supervisors etc.

E.20.3.7. The materials and labor components and their constants shall be as per Maharashtra P.W.D.

E.20.3.8. Theoretical consumption of all materials of the items based on D.S.R. shall be as per Maharashtra P.W.D.

E.20.3.9. All the terms and provisions of all conditions of contract stipulated in the tender documents shall be applicable. In the absence of any provision in the tender document for all other matters, the matter shall be dealt in light of Maharashtra P.W.D. provisions.

E.20.3.10. No extra payment shall be made for stuttering, scaffolding etc. required for carrying internal and external electrical works and repairs of Civil Works at any height.

E.20.3.11. The basic rates for all materials and labor, etc. shall be as per provision made in schedule of rates for the year 2008-09 issued by P.W.D., Electrical Wing and in case such basic rates are not available in D.S.R. for year 2008-2009 published by Presidency Divisions. Bombay will be applied.

These rates shall be applicable for administration of this contract including non-schedule items. The analysis of rates of the extra items shall be done/derived from the basic rates given in the schedule of rates. The analysis will be done also as per item NO. E.20.3.7, E.20.3.8, E.20.3.9, E.20.3.10 and with all other related items where-ever basic rates are not available, the prevailing market rates will be taken and the rates shall be derived from the basic consumption of materials and labor components.

The contractor has to accept the rates of such non- schedule items worked out by the Architect based on the above references,

The contractor shall not withhold the work on account of this or any other reasons.

E.20.3.12. APPLICATION OF ITEMS AND RATE FROM D.S.R. OF PRESIDENCY DIVISIONS, BOMBAY

Where-ever, there are no items and rates given in `Schedule `B' of electrical works and also not available in D.S.R. of electrical wing then such items and rates if available shall be taken from schedule of rates for the year 2008-2009 published by Presidency Divisions, Bombay.

E.20.3.13. The contractor must submit every time the manufacturers certificate of all materials and equipments being provided by him in the electrical works. The certificate of the manufacturers shall be submitted every time for the Materials brought on site.

E.20.3.14. The contractor has to arrange the temporary electric supply required for execution of his works at his own cost.

E. 20.3.15. 15% of payment up to the 5 lacks and 10% of payment above five lacks shall be deducted from each R.A. Bill in lieu of testing and commissioning on obtaining approvals from various authorities, etc. and shall be released on completion of complete work and on commissioning and satisfactory testing of all required tests of

entire installation and on obtaining test reports and certificates of approvals where ever required from appropriate authorities.

E.20.3.16. Price variation clause is not applicable to this tender. Hence, escalation shall not be paid under this contract.

E.21. **INSPECTION AND TESTING OF ELECTRICAL EQUIPMENT INSTALLATION**

E.21.1. **INSPECTION**

Inspection shall be carried out to ensure that the complete installation is carried out in accordance with drawings and complies with the requirements laid down by Indian Electricity Rules, regulations for the electrical equipment of building by insurance association of India (Fire Section), Indian Standard specification and Code of Practice, and any other statutory regulations and competent authorities. The complete installation shall be subject to the approval of any of all the competent authorities and the Architect.

E.21.2. **TEST**

(I) On completion of the work, the entire installation shall be subjected to the minimum following tests :-

a. Insulation resistance test
b. Earth resistance test
c. Earth continuity test
d. Operation test

Besides above tests, any other test specified by the local authority shall also be carried out.

(II) The tests specified shall be carried out on the electrical equipment and installation before commissioning the same. The test shall be performed by or under the direct supervision of a competent person, qualified to carry out the test. All tests shall be carried out in presence of Architect or his representative, unless this stipulation is waived in writing.

(III) The installation shall not be accepted by the Architect unless it has been approved by all the competent authorities, and Architect and his representative.

(IV) In case the installation is found to be not in conformity with the requirements of the test results indicate defective materials or workmanship, the same will have to be rectified to the complete satisfaction of the Architect and tested again.

E. 21.2.2. **TESTING OF WIRING**

All the wiring system shall be tested for continuity of circuits, short circuits and earthing after the wiring is completed and before energizing and the work shall be carried out to the complete satisfaction of Architect.

E. 21.2.3. **INSULATION RESISTANCE TEST**

a. The insulation resistance shall be measured between earth and the whole system of conductors, or any section thereof, with all fuses in place and all switches closed and except in concentric wiring all lamps in position of both poles of the installation. The insulation resistance measures as above shall not be less than 50 dividend by the number of points on the circuit provided that the whole installation shall not be required to have an insulation greater than one mega-ohm.

b. The insulation resistance shall also be measures between all conductors connected to one phase conductor of the supply and all the conductors connected to the middle wire of the neutral or to the other phase conductor of the supply. Such a test shall be carried out after removing all metallic connections between the two poles of the installation and in those circumstances the installation shall not be less than that specified above. The insulation resistance between the case of frame work of housing and power appliances, and all live parts of each appliance shall not be less than that specified in the relevant Indiana Standard Specifications or where there is no such specification shall not be less than half a mega-ohm.

E. 21.2.4. **EARTH CONTINUITY TEST**

the earth continuity conductor metallic envelopes of cable shall be tested for electric continuity and the electrical continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance or earth leakage circuit breaker measured from the connection with the earth electrode to any point in the earth continuity conductor into the completed installation shall not exceed one ohm.

E.21.2.5. **TESTING OF POLARITY OF NON LINKED SINGLE POLE SWITCHES**

In a two wire installation, a test shall be made to verify that all non-linked single pole switches have been fitted in the same conductor through out and such conductor shall be labeled or marked for connections to an outer or phase conductor or to the non-earthed conductor of the supply. In the three of four wire installation, a test shall be made a verify that every non-linked single pole switch fitted in a conductor to one of the outer or phase conductor of the supply. The entire electrical installation shall be subjected to the final acceptance of Architect, local authorities and all other related competent authorities.

E. 21.2.6. **EARTH RESISTANCE TEST**

Earth Resistance Test shall be carried out in accordance with Indian Standard Code of Practice for earthing IS 3043- 1966, and with latest amendments. All tests shall be cried out in the presence of the Architect and his representative. The earth resistance shall be measured using gun earth merger.

E.21.3. **RECOMMISSIONING TESTS**

All tests underlined herein and/or called by the local Electrical Authorities, and all other related authorities and as laid down in relevant Indian Standard Specifications and/or Rules and Regulations stated in Indian Electricity Act shall be strictly complied. The earth resistance value for earthing shall not exceed 1 ohm.

E.21.4 **COMMISSIONING**

E.21.4.1. The Contractor shall obtain the written permission and sanction of commissioning the equipment from Electrical Inspector of I.E. & L., Department of Government of Maharashtra State, if required under the specific rules of the Government.

E. 21.4.2. All costs towards visit fees etc. Incidental to such obtaining sanctions from all the related authorities shall be to the Contractors Account, except statutory fees payable under relevant Indian Electricity Act or Rules.

No. of corrections

E.21.4.3. Contractor shall furnish all the necessary test and tests-reports to the Electrical Supply Authorities and furnish all formalities required to comply as per the Rules and Regulations laid down for release of Electrical Supply to the Building. If called, the Contractor shall again carry out all such tests and prove the results to the entire satisfaction of the local and electric supply authorities and all other related authorities without any extra cost. All costs and expenses incidental to the release of electric supply shall be to the Contractors account and no demand whatsoever shall be made from the owner except for any security deposits that the supply authorities would deem it necessary for charging of the line etc.

E.21.4.4. All such documents forwarded and/or letters and/or correspondence exchanged to this regard shall be made available for inspection and the Contractor shall furnish 3 sets each of such documents and drawings for the Architect and owners records.

E.21.4.5. After release of Electric Supply to owner, the contractor shall furnish six sets of all tests and test reports declared to the supply authorities and shall record the initial reading of the L.T. Meter and shall furnish all such documents, officially exchanged between the Contractor and the supply authorities for the record of Architect and the owner.

E.21.4.6. Contractor shall also attend and furnish the relevant completion certificate from the Electrical inspector, I.E. & L. Department, Government of Maharashtra and/or any other authority thereof, whichever may be applicable.

E.21.4.7. The Contractor shall maintain a close liaison with the Supply Authorities and keep informed to the Architect of the entire developments and planning, i.e. being done by the Supply Authorities, and all other related authorities.

It is the primary responsibility of the Contractor to approach Supply for obtaining Electrical Loads Sanctions. All formalities connected with this work shall be to the account of the Contractor except for official fees or deposits or any other statutory obligations.

E.22 DOCUMENT, CERTIFICATES, DRAWINGS AND SPARE REQUIREMENTS

E.22.1. The intent of this specification is to give a guideline to the Contractor to furnish in reproducible all sets of relevant papers and lists of snares for the continuous performance of the owner's Building. Nothing shall
Absolve the Contractor from not furnishing any information documents and/or papers that have not been specifically stated herein.

E.22.2. **DOCUMENT**

All relevant documents for maintenance, manuals, procedures and data of all Electrical Equipments supplies and erected by the Contractor on the site. The documents shall be binned and furnished to the Architect and the Owner.

E.22.3. **CERTIFICATES**

All relevant tests certificates etc. and as more specifically stated in clause, shall be furnished. The Contractor shall also furnish all such certificates issued by the original manufacturer towards guarantee of performance of all equipments supplied by the contractor to the Architect/Executive Engineer.

E.22.4. **AS BILL / COMPLIETION UDRAWINGS**

Upon completion of the whole work the contractor shall submit four set of completion work with Original drawings on tracing of all as built / completion drawings comprising all plans and sections and four set of alteration twenty photographs of work done. The drawings should show all fittings & fixtures as fans tube lights light fittings all electrical points, power points fuses and all installation works M.V.panel distribution boards, cable routing, sizes connection diagrams, circuits, wiring diagram, conductor sizes lengths termination details, distribution digrams etc. All these shall be without any extra cost.

The Contractor shall, not withstand anything stated otherwise, shall furnish list of recommended maintenance tools, spares, fuses, sets, codes, catalogues, appropriate pricings, original equipments manufacturer's addresses etc. to the Architect and the owner prior to such furnishings. Contractor shall make a proper assessment of all such requirements and then proceed to make the lists. The Contractor shall also be deemed to have understood the requirements, in such a way that it ensures a continuous operation and functioning of the Electrical Equipment under the stated ratings, conditions and specifications.

E- 23 :- It is necessary to use readymade accessories for all size of PVC casing and capping if contractor fails to provide the readymade accessories the rate will be reduced by minimum 10 % or based on market rate analysis which is higher in case of accessories not being manufactured by approved manufacture of PVC casing and capping the decision of Executive Engineer and architect shall be final and binding to contractor regarding change in make for readymade accessories.

E-24 :- Obtaining electric supply and liasoning etc.
The contractor shall obtain electrical supply from M.S.E.B or from any concern electrical authority as directed by the University and shall complete all the procedural formalities as of applying and filling all forms & obtaining required electrical load liasoning with all the concerned authorities as of above electrical supply company, P.W.D., M.M.R.D.A. and with any required authorities. The contractor also shall obtain the required approval etc. complete. The owner only shall pay the official charges levied by the concerned authorities. The contractor should see that the electric supply / connection be obtained from the any transformer from adjoining plots or from any transformer located in the vicinity for required electric load within one month of date of award of work These all liasoning work etc. shall without any extra cost and nothing shall be paid to the contractor on this account.

I/We hereby declare that I/We have read and understood the above instruction which have been issued as conditions of the contract.

W I T N E S S (Signature of the Tenderer)

No. of corrections

Contractor Executive Engineer Registrar

ANEEXTURE – D (MATERIAL LIST)

List of Approved Electrical Material for Use on Govt. Installation For Fire System

The product listed below shall be considered good materials and this tender should be based on the materials, products, fittings & fixtures etc. of following manufacturers. Incase of the following makes are not available the others make can be allowwd only on satisfactory evidence on non- availability of prescribed make . In both the cases, the necessary tests need to be done only from the approved laboratories

Sr.No.	Category of Electrical Material	Make/Brand Name
1	Fire Fighting sprinkler main Pump, Stand by Pump, Jockey pump	Kirlokar/Lubi/M&P/CRI/Klug/Texmo
2	M.S.c. Class Pipes (IS : 1239)	Jindal/Apollo/Jadiya/Bhushan/Prakash Surya
3	Standard G.I. Fittings	ISI Marks
4	MS/GI forged Steel Fittings	ISI Marks
5	Paints	Asian Paints/Berger/Shalimar
6	Double/Single Headed Landing Valve	Kartar/Fire shield/Newage/Shah Bhogilal/Safepro/Atasee
7	Fire Hose	New Age/ Kartar/FIRE SHIELD/Torrant
8	First Aid Hose Reel (LPCB Approved)	Kartar/Newage/Shah Bhogial/FIRE SHIELD/ Safepro/Atasee
9	Branch Pipe	Kartar/Newage/FIRE SHIELD/ Atasee
10	Fireman Axe	Kartar/Newage/FIRE SHIELD
11	Installatgion Control Value	Kartar/Newage/ FIRE SHIELD/LP
12	Sprinkler Heads	Kartar/HD/FIRE SHIELD
13	Fire Extinguishers Lion Fire	Kanex/FIRE SHIELD/Minimax/Safepro
14	Water Flow Switch/Detector	Honeywell/Apollo/Tyco
15	Wrapping Coating	Supreme/BTP/Shalimar
16	Pipe Clamp & Supoorts	Hitech/Chilly
17	GM/Forged Brass Valves	Kartar/Leader/FIRE SHIELD
18	Sluice Valves	Kartar/IVC/Kirloskar/LP
19	Butterfly Valve	Kartar/Zoloto/IVC/LP
20	Check Valve	Kartar/Zoloto/IVC/LP
21	Check Valve - Dual Plate	Kartar/Zoloto/IVC/LP
22	Pressure Reducing Valve (Listed)	HD/Kartar/Tyco
23	Air Release Valve	Kartar/FIRE SHIELD
24	Ball Float Valve	Normax/Sheetal/Kirloskar
25	Y Strainer	Sheetal/Zoloto/IVC/Kartar
26	Anti Vibration Mounting & Flexible	Dunlop
27	Pressure Guage	H/Guru/Syntific/Wagree/Donfall
28	MCC Panel	L&T/Siemens/Havells

No. of corrections

Contractor Executive Engineer Registrar

Sr.No.	Category of Electrical Material	Make/Brand Name
29	Cable	Polycab/RR/Finolex/Proline
30	Fire Alarm Panel	Agni/Honewell/Spencer/Apollo/Simplex/ Ravel
31	Beam Detector	Agni/Honewell/System Sensor/Apollo/Edward/Simplex/Ravel
32	Optical Smoke Detector	Agni/Honewell/Spencer/Apollo/Simplex/Ravel
33	Hooter	Agni/Spencer/Honeywell/Simplex/Ravel
34	Manual Call Point	Agni/Spencer/Honeywell/Simplex/Ravel
35	Response Indicator	Agni/Spencer/Honeywell/Simplex/Ravel
36	LED Type Signages	Prolight/Maxglow/Autoglow
37	Sprinkler Hose	Agelflex/Kartar/FIRE SHIELD/Tyco/Agni
38	Alarm Valve	HD/Kartar/Tyco
39	Heat Detector	Agni/Honywell/Siemens/Apollo/Ravel
40	Modules	Honywell/Siemens/Apollo
41	Hose Cabinet	CRC Standard Fabricated/ Atasee

Note :-

1) The item having rating of "Four star & above" standardized & labelled by Bureau of Energy Efficiency shall be invariably used.
2) Ceiling Fans having Five Star rating shall be used.
3) The approval to the above material is subject to the validity of approval by Executive Engineer, Construction Department KBCNMU Jalgaon.
4) For Use of Makes other than the above if required Executive Engineer, Shall take prior approval of this office OR have B.I.S. valid approval.

I/We hereby read and understood the make of the above materials/equipment and shall use the materials/equipment only of the above make companies and the Schedule `B' : Bills of Quantities of electrical works is based on the use of above materials.

No extra payment whatsoever will be made for using the above materials. I/We shall not use any duplicate fitting, materials etc. If found, I/We shall be liable for any action imposed by the Architect & Executive Engineer.

No. of corrections

Contractor Executive Engineer Registrar

ANNEXTURE-G

THIS AGREEMENT made at the _____ day _____ Two Thousand Sixteen between_____
hereinafter called "the Owner" of the One Part and _____ _____carrying on business in partnership of _____ at _____in the firm name and style of _____Limited, a company registered under the Companies Act,1956(No.1 of 1956) and having its registered office at_____
_____hereinafter called "the Contractor" (which expression shall unless the context does not so admit include him, his heirs executors and administrators/them the survivors or survivor of them, the heir executors and administrators of last survivor the partners or partners for the time being of the said firm of_____ /its successors) of the other part.
WHEREAS the Owner is desirous of _____as per notice inviting tender dated-_____ (hereinafter called "the Works")at _____
_____AND WHEREAS pursuant to the said Notice Inviting Tenders dated_____, the Contractor has submitted his/their tender for the said work, which has been accepted by_____ on the terms and Conditions contained in the tender documents for the said work. AND WHEREAS AS PER ALL TERMS AND CONDITIONS OF CONTRACT, after making payment of initial Security Deposit of 50% of 5% of the total Estimated Cost of work, the Contractor is required to enter into an Agreement with_____ in connection with execution of the said work being in fact these presents.

AND WHEREAS it has been agreed that the said amount of Security Deposit will not carry any interest.
NOW THIS AGREEMENT WITNESS AND IT IS HEREBY AGREED AND DE-CLARED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:-

1.All the tender documents for ELECTRICAL WORK OF LIFE SCIENCES EXTENSION BUILDING IN NMU CAMPUS JALGAON. issued by The Executive Engineer, North Maharashtra University, Jalgaon. and letter of Acceptance of the Tender dated_____issued by North Maharashtra University, Jalgaon. in favor of the Contractor therewith shall be deemed to form and be read and construed as part of this Agreement (All these documents are hereinafter collectively referred to as "tender documents")

2.The words and expressions used in this Agreement shall have the same meaning as are respectively assignee to them in the tender documents. In case of ambiguities and discrepancies arising out of the provisions contained in the Tender documents, the provisions contained in the tender documents in Volume I, Volume II issued by The Executive Engineer North maharashtra University, Jalgaon shall take precedence over the provisions contained in all other remaining documents.

3. In consideration of the owner having agreed to pay the contractor for the work specified in the under written Memorandum within the time specified in such memorandum at _____

No. of corrections

Contractor Executive Engineer Registrar

Per cent below / above (In word _____) the estimated rates entered in "schedule B" (Memorandum showing items of work to be carried out) at the time and in the manner provided in the contract documents, the Contractors to hereby agree to duly execute and complete the said work in all respects strictly in accordance with the specifications, designs, drawings, all terms and conditions of contract as provided in the tender documents and within the time limit specified therein and in-striations in writing referred to in Rule 1 hereof and in clause 12 of the conditions of contract and agree that when materials for the work are provided by the Registrar such materials and the rates to be paid for them shall be as provided in Schedule A hereto.

4. The term the " Executive Engineer in the said conditions shall mean the said" Executive Engineer " or in the event of their death or ceasing to be the Executive Engineer for the purpose of this contract, such other person as the Registrar shall nominate for that purpose, not being a person to whom the contract shall object for reasons considered to be sufficient by Owner provided always that no person subsequently appointed to be the Executive Engineer under this contract shall be entitled to disregard or overrule any certificate or opinion or decision or approval or instructions given or expressed by the Executive Engineer for the time being.

AT WITNESS the hands of the said Parties.

Signed by the said

In the presence of Owner

Witness

Name:

Address:

Signed by the said

In the presence of Contractor

Witness

Name:
Address:

No. of corrections

Contractor Executive Engineer Registrar

ANNEXURE – H

INDENTIRE FOR SECURED ADVANCES

ON Rs. 100/- STAMP-PAPER

(For use in cases which the contract is for finished work the contractor has entered into an agreement / or execution of a certain specified quantity of work in a given time)

NAME OF THE WORK: Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon. THE INDENTURE made at Jalgaon the _____ day of _____ BETWEEN M/s. _____hereinafter called the contractor (which expression shall where the context so admits of implies be deemed to include his executors, administrators and assigns) of the one part AND NORTH MAHARASHTRA UNIVERSITY, JALGAON (Hereinafter called the owners, which expression shall where the context so admits of implies to deemed to include his successors in office and assigns) of the other part

WHEREAS by an agreement dated _____ (hereinafter called the said Agreement) the contractor has agreed.

AND WHEREAS the contractor has applied to the North Maharashtra University, Jalgaon. that be allowed Advances of the security of materials absolutely belonging to hi and brought by him to the site of the works, the subject of the said agreement for use in the construction of subject of the said agreement of the work as he has undertaken to execute at rate fixed for the finished works (Including of the cost of material and labor and other charges)

AND WHEREAS North Maharashtra University, Jalgaon has agreed to advances to the contractor as per the condition of contract and which is as secured advance shall not exceed to 10 % of estimated cost put to tender and which come to Rs._____ at initial stage and thereafter 10% of balance work, as per scheduled 'B' without premium on the aforesaid security and has reserved himself the option of making any further advance or advances of security of aforesaid nature the quantities and other particulars on the materials on the security of which the advances or advance are made being detailed in part II of the running account bill for the said works signed at the time being by the contractor.

NOW THIS INDENTURE WITNESSETH the in pursuance of the said agreement and in consideration of the sum of as per contract conditions and as given and explained above on or before the execution of this presents paid to the contractor by North Maharashtra University, Jalgaon (the receipt whereof the contractor do hereby acknowledged) and of such further advances (if any) as may be made to him as aforesaid the contractor do herby convenient and agree with North Maharashtra University, Jalgaon.

1. That the said sum of Rupees as the amount of per the condition of contract as given and explained above so as advanced by the North Maharashtra University, Jalgaon to the contractor as aforesaid and all or any further sums advanced as aforesaid shall be employed by the contractor in or towards expediting the execution of the said work and for no other purposes whatsoever.
2. That the material detailed in the said running account bill which have been offered to and accepted by the North Maharashtra University, Jalgaon as security are absolutely the contractor's own property and free from encumbrances of any kind and the contractor's will not make any application for or receive a further advance on the security of materials which are not absolutely his own property from encumbrances of any kind and contractor indemnifies the North Maharashtra University, Jalgaon against all claims to any materials in respect of which an advance has been to him as aforesaid.
3. That the material detailed in the said running account bill and all other material on the security of which any further advance or advances may hereafter be made as aforesaid (hereafter called the said material) shall be use by the contractor solely in the execution of the said works in accordance with the directions of the Executive Engineer and as per the direction of the Registrar of the North Maharashtra University, Jalgaon.
4. That the contractor shall make at his own cost all necessary and adequate arrangement for the proper watch, safe custody and protection against all risks of the said materials and the site of the side, works in the contractor's custody and on his own responsibility and shall at all times be open to inspection by the executive Engineer or any person authorized by him and by the Registrar, North Maharashtra University, Jalgaon or any person authorized by him / them. In the event of the said material or any part thereof stolen, destroyed or damaged, the contractor will forthwith replace the same as required b the Executive Engineer or their representative.
5. That the said materials shall not on any account be removed from the site of the said works except with the written permission of the Executive Engineer of the North Maharashtra University, Jalgaon or any person authorized by him or that behalf.

6. That the advance shall be repayable in full when the contractor receives payment from the North Maharashtra University, Jalgaon of the price payable to him for said works under the terms and condition

No. of corrections

Contractor Executive Engineer Registrar

and the provisions of the said agreement provided that if any intermediate payments are made to the contractor on account of the work done then on the occasion of such payment of North Maharashtra University, Jalgaon to make a recovery from the contractor's bill for such payment deducting there from the value of the said material then actually use in the constructions and in respect of which recovery was not been made previously for value of this purpose being determined in respect of each description of materials at the rate at which the amount of the advances made under this presents were calculated.

7. That if the contractor shall at any time made any default in the performance or observances in any respect of any of the terms and provision of the said agreement or these presents the total amount of advance or advances that may still be owning to the North Maharashtra University , Jalgaon shall immediately on the happening of such default be repayable by the contractor to the North Maharashtra University together with interest thereon eighteen percent per annum from the date of respective date of such advances to the date of repayment and with all costs, charges, damages and expenses incurred by the North Maharashtra University in or for the recovery thereof and the enforcement of this security or otherwise by reason of the default of the contractor hereby covenant and agrees with the North Maharashtra University, Jalgaon to repay and pay the same respectively to him accordingly.
8. That the contractor hereby charges all the said materials with repayment to the North Maharashtra University, Jalgaon of the said sum of Rupees as per the conditions of contract and given and explained above and any further sum or sums advanced as aforesaid and all costs, charges, damages and expenses payable under these present PROVIDED ALWAYS and it is hereby agree and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whatsoever the convenient for repayment and payment herein before contained shall become enforceable and the many owning shall not be paid in accordance herewith the North Maharashtra University, Jalgaon may at any time thereafter adopt all or any of the following courses as he may deem best :-

   (a) Size and utilize the said materials or any part thereof in the completion on the said work on behalf of the contractor in accordance with the provision in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the amount due in respect of advance under these presents and crediting the contractor with the value of work done as if he had carried it out in accordance with said agreement and at the rates there by provided. If the balance is the contractor he is to pay same to the North Maharashtra University, Jalgaon

   (b) Remove and sale by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the North Maharashtra university, Jalgaon under this presents and pay over the surplus (if any) t the contractor.

   (c) Deduct all or any of the moneys owning out of the security deposits or any sum due to the contractor under the said agreement.

9. The except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.
10. That in event of any conflict between the provisions of this presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these present the settlement of which has not been hereinafter expressly provided for the same shall be referred to the Executive Engineer, whose / there decisions shall be and the provisions of the agreement of the execution of the said building contract shall apply to any such reference.

IN WITNESSES WHEREOF the said agreement and the order and under the direction of the North Maharashtra University, Jalgaon have hereunto set their respective hands the day and year first above written.

Singed, sealed and delivered by the said contractor in the
Presence of ……

Signature :
Witnesses Name :
Address :

Signed by
The order and direction of the North Maharashtra University, Jalgaon in the
Presence of ……
Signature :
Address :

No. of corrections

Contractor Executive Engineer Registrar

LIST OF TENDER DRAWINGS

Name of Work:- **Supplying ,Erecting and Testing of Fire Hydrant & Fire Alarm System at Seminar Hall, Hostel & Administration Section of Dr. A.P.J. Abdul Kalam Vidyarthi Bhavan Building in the premises of KBCNMU, Jalgaon**.

1)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-1

2)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-2

3)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-3

4)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-4

5)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-5

6)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-6

7)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-7

8)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-8

9)FF-REV-0-KBCNMU-VIDYARTHI BHAWAN-JALGAON-9

No. of corrections

Contractor Executive Engineer Registrar

ESTIMATE AS PER CURRENT SCHEDULE OF RATES FOR YEAR 2022-2023

NAME OF WORK – SUPPLYING , ERECTING AND TESTING OF FRE HYDRANT & FIRE ALARM SYSTEM AT SEMINAR HALL , HOSTEL & ADMINISTRATION SECTION OF DR.A.P.J.ABDUL KALAM VIDYARTHI BHAVAN BUILDING IN HE PREMISES OF KBCNMU.,JALGAON. BELONGS TO – REGISTRAR, KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY,JALGAON

FIRE PROTECTION SYSTEM

SR.NO.	CSR ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	13-1-4 (New)	Supplying, installation, testing and commissioning of **Main Fire Pump (MFP /EP) suitable for water discharge of 2280 to 2850LPM at 80 to 60 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 45 kW or of suitable kW** or of suitable kW capacity for manual/automatic operation and consisting of following : (a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520. (b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation on with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325. (c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required. (d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. **FF-MFP/SSC/EP**	EACH	1	241,282.00	**241,282.00**
2	13-2-1 (New)	Supplying, installation, testing and commissioning of **Jockey Fire Pump (JP) suitable for water discharge of 180 to 240 LPM at 70 to 50 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 5.5 kW or of suitable kW** capacity for manual/automatic operation and consisting of following : (a) Horizontal/vertical type, multi stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520. (b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325. (c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required. (d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003)complete, as per specification no. **FF-MFP/JP.**	EACH	1	62,482.00	**62,482.00**
		Supplying, installation, testing and commissioning of **main fire pump (MFP/DP) suitable for water discharge of 2280 to 2850 LPM at 90 to 60 m head driven by 76 HP or suitable HP capacity diesel engine at required working speed** suitable for manual/automatic operation and consisting of following : (a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.				

3	**13-4-2 (New)**	(b) Water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12/24 volts DC electric starting equipment with battery of required AH capacity with necessary charger suitable to work on 230v, 50Hz AC supply, diesel tank of minimum 150ltr capacity with first filling of diesel up to 100% level with necessary piping with valves up to engine , exhaust pipe extended up to 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications etc. as required.	EACH	1	599,189.00	**599,189.00**
		(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.				
		(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with engine assembly and accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/DP				

4	**13-5-1 (New)**	Supplying, erecting, testing & commissioning of **Fire Pump Control Panel (FCP)** of cubical construction, floor mounted type, fabricated from minimum 2 mm thick CRCA sheet, compartmentalised with hinged lockable doors, with enclosure protection class IP54, duly powder coated or painted with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003), cable alley, interconnection with suitable size solid copper busbar strip of adequate size for all power connections having switchgears and accessories, mountings and internal wiring with adequate size copper conductor cable, earth terminals, numbering etc. complete in all respect, suitable for satisfactory operation of main fire pump and jockey (pressurisation) pumps (1working+1standby) with necessary accessories, wiring & cabling along with allied accessories with following incoming and outgoings, suitable for automatic & manual operation on 415V, 3 phase, 50Hz ac supply as per specifications the capacity of electric motor driven pump are as follows - a. Main fire pump(MFP) having capacity of 22kW 1no (1 working) b. Jockey pump(JP) capacity of suitable capacity 2 nos (1 working +1 standby, alternate run per start in auto mode)comprises of the following features & switchgears: 1. Main incomer FP SFU having rotary handle with HRC fuses of suitable rating. 2. Electrolytic grade copper strips for busbar of suitable sizes for main incomer and branches to motor SFU's, starters & outgoing terminals with necessary accessories like stainless steel nut bolts with spring washers for connections, mounted on required no of epoxy or porcelain support insulators of suitable ratings etc. 3. Individual pump TPN SFU having rotary handle with HRC fuses of suitable rating. 4. Digital voltmeter & ammeter & RYB indicating lamps & push buttons & SPP, O/L & phase reversal protection with emergency stop switch. 5. TPN SPD 100kA Type 1 +2 tested. 6. Required pressure transducer with pressure indication on panel with cabling required for monitoring & automatic operation of fire pumps. 7. System controller to control operation of main electric fire pump, jockey (pressurization) pumps in sequence with interlocking for operation of pumps as per specification with automatic/manual operation with selector switch & alternate run of standby Pumps consisting of relays, timers. sensors, annunciation window for fault indication, complete as per specification. 8.Suitable capacity electric motor starters for all individual pumps with necessary push buttons & indications. 9. Siren of required capacity to be activated when main pump starts & allied accessories as per requirements of local CFO or as directed by engineer in charge. 10. Danger board as per IS. 11. Spare HRC fuses minimum 2nos of each individual rating with required bakelite fuse holder for main & jockey fire pumps MFP=(1working), JP = (1working+1standby, alternate run per start in auto mode) complete panel, as per specification no. **FF-MFP/ECP**	EACH	1	182,320.00	**182,320.00**
		Add on C - For standby main electric motor driven fire hydrant/sprinkler system pump (MFP- 1 standby), add as follows in the basic cost of Item no 13-5-1 towards required switchgears and motor starter along with necessary accessories and updation of control logic with interlocking for operation of pumps MFP=(1working+1standby, alternate run per start in auto mode) JP = (1working+1standby, alternate run per start in auto mode) for main & jockey fire pumps. 4) For standby main electric driven fire hydrant/sprinkler system pump of 45kW capacity, add Rs.....	EACH	1	37,184.00	**37,184.00**

		Add on D - For addition of standby main diesel engine driven fire pump (1 standby), add as follows in the basic cost of Item no 13-5-1 towards required 12/24 v battery charger and diesel engine starter along with necessary accessories, indicators etc. with necessary interlocking and updation of control logic with interlocking for operation of pumps MFP for main (1working+1standby mode) & jockey fire pumps (1working+1standby, alternate run per start in auto mode) , add Rs..... The control for diesel engine comprises of automatic/manual selector switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode indicating lamp for high/ low Lub. oil pressure, high water temp and engine on indication battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC voltmeter, and 0-20 A DC ammeter with all standard relays and accessories required for automatic operation of diesel engine with interlocking for operation of main fire pumps.	EACH	1	68,381.00	**68,381.00**
5	**7-1-14**	Supplying, erecting & terminating **FR XLPE insulated, galvanised steel formed wire armoured (strip)** cable 1100 V, **3 core 50 sq. mm. aluminium** conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. **CB-LT/AL.** **(GENERAL NOTE FOR CONTRACTOR - CABLE FOR MAIN FIRE PUMP-MAXIMUM DISTANCE TANKEN FROM PUMP TO PANEL - 30 MTR)**	M	30	324.00	**9,720.00**
6	**7-1-29**	Supplying, erecting & terminating **FR XLPE insulated, galvanised steel formed wire armoured (strip)** cable 1100 V, **4 core 16 sq. mm. aluminium** conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. **CB-LT/AL.** **(GENERAL NOTE FOR CONTRACTOR - CABLE FOR JOCKEY & BOOSTER FIRE PUMP-MAXIMUM DISTANCE TANKEN FROM PUMP TO PANEL - 30 MTR)**	M	180	211.00	**37,980.00**
7	**13-6-2**	Supplying and erecting **G.I. pipe 'C' class ERW 25 mm dia** with necessary fittings duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete as per specification no. **FF-PP**.	M	0	348.00	-
8	**13-6-3**	Supplying and erecting **G.I. pipe 'C' class ERW 50 mm dia** with necessary fittings duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete as per specification no. **FF-PP**.	M	0	705.00	-
		Supplying and erecting **G.I. pipe 'C' class ERW 50 mm dia** with necessary fittings duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR DRAIN RISER-02 NO)**	M	0	705.00	-
9	**13-6-4**	Supplying and erecting **G.I. pipe 'C' class ERW 65 mm dia** with necessary fittings duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR SPRINKLER HEADER)**	M	0	893.00	-

10	**13-6-5**	Supplying and erecting **G.I. pipe 'C' class ERW 75/80 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR EXTERNAL HYDRANT POST & INTERNAL HYDRANT)**	M	12	1,116.00	**13,392.00**
		Supplying and erecting **G.I. pipe 'C' class ERW 75/80 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR SPRINKLER HEADER)**	M	0	1,116.00	-
11	**13-6-6**	Supplying and erecting **G.I. pipe 'C' class ERW 100 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR JOCKEY PUMP)**	M	6	1,588.00	**9,528.00**
		Supplying and erecting **G.I. pipe 'C' class ERW 100 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR 04 NO. VERTICAL HYDRANT RISER)**	M	210	1,588.00	**333,480.00**
12	**13-6-7**	Supplying and erecting **G.I. pipe 'C' class ERW 150 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR PUMP HOUSE)**	M	18	2,409.00	**43,362.00**
		Supplying and erecting **G.I. pipe 'C' class ERW 150 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR EXTARNAL HYDRANT LINE**	M	390	2,409.00	**939,510.00**
		Supplying and erecting **G.I. pipe 'C' class ERW 150 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR 00 NO. VERTICAL HYDRANT RISER)**	M	0	2,409.00	-
		Supplying and erecting **G.I. pipe 'C' class ERW 150 mm dia** with necessary fittings complete as per specification no. **FF-PP**. **(GENERAL NOTE FOR CONTRACTOR - PIPE FOR 00 NO. VERTICAL SPRINKLER RISER)**	M	0	2,409.00	-
13	**13-6-10**	Providing coating of **bitumen paint & 4mm thick wrapping for underground 150 mm ring main** of fire fighting system. **(GENERAL NOTE FOR CONTRACTOR - REQUIRED FOR UNDERGROUND EXTERNAL 150 NB HYDRANT LINE AT VARIOUS LOCATIONS MENTIONED AT TENDER DRAWING)**	M	49	345.00	**16,905.00**
14	**16-1-3 (New)**	**Making trench in soft soil having 0.9m depth and minimum 0.3 m width** as per IS for laying provided cables of voltage range 3.3 kV to 11 kV complete as per specification No. **CW-EXN-CTR.** **(GENERAL NOTE FOR CONTRACTOR - REQUIRED FOR UNDERGROUND EXTERNAL 150 NB PIPE AT VARIOUIS LOCATION MENTIONED AT TENDER DRAWING)**	M	49	223.00	**10,927.00**
15	**13-7-6**	Supplying and erecting **100 mm dia Cast Iron end line strainer** of Y-type flanged end pattern, PN16 pressure rating, SS screen, end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. **FF-VL/ELSV.** **(GENERAL NOTE FOR CONTRACTOR - FOR JOCKEY PUMP)**	EACH	0	6,349.00	-
16	**13-7-7**	Supplying and erecting **150 mm dia Cast Iron end line strainer** of Y-type flanged end pattern, PN16 pressure rating, SS screen, end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. **FF-VL/ELSV.** **(GENERAL NOTE FOR CONTRACTOR - FOR SUCTION HEADER)**	EACH	2	11,102.00	**22,204.00**
17	**13-7-17**	Supplying and erecting **50 mm dia. cast iron double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - BFV FOR DRAIN RISER)**	EACH	0	2,393.00	-

18	**13-7-19**	Supplying and erecting **75/80 mm dia. cast iron double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - BFV FOR EXTERNAL FIRE HYDRANT POST)**	EACH	0	3,183.00	-
		Supplying and erecting **75/80 mm dia. cast iron double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - BFV FOR SPRINKLER HEADER)**	EACH	0	3,183.00	-
19	**13-7-20**	Supplying and erecting **100 mm dia. cast iron double butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED AT PUMP HOUSE FOR JOCKEY PUMP)**	EACH	2	4,121.00	**8,242.00**
		Supplying and erecting **100 mm dia. cast iron double double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL IN VERTICAL HYDRANT LINE)**	EACH	8	4,121.00	**32,968.00**
20	**13-7-21**	Supplying and erecting **150 mm dia. cast iron double double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL AT PUMP HOUSE FOR SUCTION HEADER, MAIN HYDRANT & DIESEL PUMP)**	EACH	4	6,327.00	**25,308.00**
		Supplying and erecting **150 mm dia. cast iron double double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL IN EXTERNAL HYDRANT LINE FOR ISOLATION)**	EACH	6	6,327.00	**37,962.00**
		Supplying and erecting **150 mm dia. cast iron double double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL IN VERTICAL HYDRANT LINE)**	EACH	0	6,327.00	-
		Supplying and erecting **150 mm dia. cast iron double double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL IN VERTICAL SPRINKLER LINE)**	EACH	0	6,327.00	-
		Supplying and erecting **150 mm dia. cast iron double double flange butterfly valve of size** complete with PN16 pressure rating, as per specification no. **FF-VL/BFV**. **(GENERAL NOTE FOR CONTRACTOR - 01 NO. FOR FIRE INLTE)**	EACH	1	6,327.00	**6,327.00**
21	**13-7-24**	Supplying and erecting **100 mm dia cast iron double flange NRV** complete with PN16 pressure rating, as per specification no. **FF-VL/NRV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL AT PUMP HOUSE - JP)**	EACH	1	8,240.00	**8,240.00**
22	**13-7-25**	Supplying and erecting **150 mm dia cast iron double flange NRV** complete with PN16 pressure rating, as per specification no. **FF-VL/NRV**. **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE INSTALL AT PUMP OUTLET OF MAIN HYDRANT, DIESEL PUMP & 01 NO. FOR FIRE INLET)**	EACH	3	13,491.00	**40,473.00**
23	**13-7-35**	Supplying and erecting **stainless steel single outlet hydrant valve** fitted with necessary accessories complete as per specification no. **FF-VL/HV.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED ON EXTERNAL HYDRANT LINE)**	EACH	9	5,799.00	**52,191.00**
		Supplying and erecting **stainless steel single outlet hydrant valve** fitted with necessary accessories complete as per specification no. **FF-VL/HV.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED ON INTERNAL VETRICAL HYDRANT LINE AT FLOOR LEVEL)**	EACH	10	5,799.00	**57,990.00**

24	**13-7-32**	Supplying and erecting **25 mm dia gun metal gate valve** complete withPN16 pressure rating, as per specification no. **FF-VL/GV**	EACH	10	1,202.00	**12,020.00**
25	**13-8-2**	Supplying and installing wall mounting **swinging hose reel** drum fitted with 19 mm dia. 30m long high pressure polypropylene (Polyhose) along with necessary accessories complete as per specification no. **FF-FFA/HV.**	EACH	10	6,921.00	**69,210.00**
26	**13-8-4**	Supplying and erecting **63mm dia, reinforced rubber lined (R.R.L.) hose pipe, 15m in length**, fitted with necessary accessories complete as per specification no. **FF-FFA/RRL.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED NEAR EXTERNAL HYDRANT VALVE)**	EACH	18	5,229.00	**94,122.00**
		Supplying and erecting **63mm dia, reinforced rubber lined (R.R.L.) hose pipe, 15m in length**, fitted with necessary accessories complete as per specification no. **FF-FFA/RRL.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED NEAR INTERNAL HYDRANT VALVE)**	EACH	20	5,229.00	**104,580.00**
27	**13-8-8**	Supplying and erecting **stainless steel branch pipe 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle** complete as per specifications no. **FFFFA/NZ.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED NEAR EXTERNAL HYDRANT)**	EACH	9	1,963.00	**17,667.00**
		Supplying and erecting **stainless steel branch pipe 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle** complete as per specifications no. **FFFFA/NZ.** **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED NEAR INTERNAL HYDRANT VALVE)**	EACH	10	1,963.00	**19,630.00**
28	**13-8-10**	Supplying and erecting **150 mm dia fire brigade header** suitable for supplying water in fire tank complete as per specification no. **FF FA/FBC**	EACH	1	9,479.00	**9,479.00**
29	**13-8-12**	Supplying and erecting **300 mm dia 1.5m in height air vessel / tank fabricated from min 5mm thick M.S. sheet** complete as per specification no. **FF-FFA/ACT**	EACH	1	12,472.00	**12,472.00**
30	**13-8-13**	Supplying and erecting **20/25mm dia gun metal air release cock,** with necessary G.I. coupling to be fitted on top of air vessel or on wet riser complete as per specification no. **FF-FFA/ARV**	EACH	8	840.00	**6,720.00**
31	**13-8-14**	Supplying and erecting **100 mm dia. pressure gauge**, 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm dia. pad cock valve, erected with provided G.I. pipe, elbow etc. complete as per specification no. **FF-FFA/PG**. **(GENERAL NOTE FOR CONTRACTOR - REQUIRED FOR AIR CUSHION TANK AT PUMP HOUSE)**	EACH	3	772.00	**2,316.00**
32	**13-8-15**	Supplying and erecting **12/15 mm dia pressure switch** with provided isolation valve, G.I. nipple, elbow, etc complete as per specification no. **FF-FFA/PS** **(GENERAL NOTE FOR CONTRACTOR - REQUIRED FOR AIR CUSHION TANK AT PUMP HOUSE)**	EACH	3	1,763.00	**5,289.00**

33	**13-8-20**	Supplying and erecting **M.S./CRCA cabinet for housing Floor Hydrant valve, hose pipe, hose reel and branch pipe** (size 1000 x 736 x 736 mm.) made from 16 SWG sheet and angle iron 25 x 25 x 4 mm. having front doors with viewing glass (8"x6") and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour (Code538 of IS 5). **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED NEAR EXTERNAL HYDRANT VALVE)**	EACH	9	15,886.00	**142,974.00**
		Supplying and erecting **M.S./CRCA cabinet for housing Floor Hydrant valve, hose pipe, hose reel and branch pipe** (size 1000 x 736 x 736 mm.) made from 16 SWG sheet and angle iron 25 x 25 x 4 mm. having front doors with viewing glass (8"x6") and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour (Code538 of IS 5). **(GENERAL NOTE FOR CONTRACTOR - IT SHALL BE REQUIRED NEAR INTERNAL HYDRANT VALVE)**	EACH	10	15,886.00	**158,860.00**
34	**13-9-10**	Supplying, installing, testing and commissioning **FR, XLPE armoured cable 2 core 1.5 sq.mm. copper conductor** complete erected on wall/ ceiling complete as per specification no. **CB-LT/CU**	M	10274.44	111.00	**1140462.84**
35	**13-10-1**	Supplying, installation, testing and commissioning of **micro processor based intelligent addressable main fire alarm panel, central processing unit with the 1 loop** capacity and capable of supporting upto 250 devices and detectors per loop, with on-board LCD display with min 16 lines of text, operating at 230 V 50 HZ - AC with inbuilt Battery Backup of a minimum 24 hours in normal condition and 30 min in alarm condition, suitable provision for network connectivity, interfacing with third party equipment via a MODBUS/ OPC/ L-ON interface etc. conforming to IS 15908:2021, ,IS 2189: 2008, EN 54 & VDS / FM/ UL 864 (10th edition) with 3 years replacement warranty **FF-AFAS/CP.**	EACH	2	156,398.00	**312,796.00**
36	**13-10-5 (New)**	Supplying, installing, testing and commissioning of repeater panel with suitable battery backup of a minimum of 24 hours in normal condition and 30 min in alarm condition, 80 backlit alphanumeric LCD display with inbuilt buzzer to indicate fault/fire alarm, manual control keys for silence/mute and to reset the FACP from the repeater station. Panel size shall not more than 175 x 275 x 65mm conforming to EN 54 or UL approved with 3 years equipment replacement warranty FF-AFAS/RP. **(GENERAL NOTE FOR CONTRACTOR - REQUIRED 01 NO. AT FIRE CONTROL/SECURITY ROOM)**	EACH	1	74,501.00	**74,501.00**
37	**13-10-6 (New)**	Supplying, installing, testing and commissioning of **Addressable Optical Photo Smoke Detector**. The detector shall have multi co-operative sensing technology for faster response & avoid false alarms. The detector shall have single/twin bicolour LED for 360 deg viewing. The detector is conforming to IS 2189: 2008, 11360_198_Reff 2020_EN 54 /VdS / UL & FM approved with 3 years equipment replacement warranty, Designed to meet UL268, 7th Edition. **FF-AFAS/SD.**	EACH	134	2,371.00	**317,714.00**
38	**13-10-7 (New)**	Supplying, installing, testing and commissioning of **intelligent addressable thermal/heat detector** with rate of rise cum fixed temperature thermistor complete with 0°C to 66°C temperature range, with base as required, single/twin LED's with 360 degree view, in-built locking mechanism to check the removal and pilferage of the detector, Detector Shall conforming to IS : 2175 - 1988 reaffirmed 2000, IS 15908:2021 / EN 54 / VdS / UL & FM approved with 3 years equipment replacement warranty, Designed to meet UL268, 7th Edition. **FF-AFAS/HD - ROR.**	EACH	2	2,705.00	**5,410.00**
39	**13-10-9**	Supplying, installing, testing and commissioning of addressable **manual call points** (break glass type/pull station type), made of addressable break glass plastic square in shape surface/flush mounted with "Break Glass" massage embedded on the glass, complete erected with mounting base and required accessories conforming to EN 54 or UL listed with 3 years equipment replacement warranty **FF-AFAS/MCP.**	EACH	13	3,575.00	**46,475.00**

40	**13-10-10**	Supplying, installing, testing and commissioning of **addressable fire control/relay module** complete as required, with 3 years equipment replacement warranty conforming to IS 5051Part 2 (Sec 1 to 3) : 1982 reed relays, EN 54 or UL Listed **FF-AFAS/CRM. (GENERAL NOTE FOR CONTRACTOR - REQUIRED TO MAKE HOOTER ADDRESSABLE)**	EACH	13	3,775.00	**49,075.00**
41	**13-10-12**	Supplying, installing, testing and commissioning of **addressable fire isolator module** complete as required. EN 54 /FM or UL Listed with 3 years equipment replacement warranty conforming to IS 5051Part 2 (Sec 1 to 3) : 1982 Reed relays **FF-AFAS/ISM**	EACH	6	3,051.00	**17,594.10**
42	**13-10-13**	Supplying, installing, testing and commissioning of Addressable **Sounder cum Strobe**, rated at minimum 75 dB @ 3m for Audible annunciation and minimum 75cd flashing at 1 Hz for visual indication. Module shall conforming to IS 2189: 2008, IS 15908:2021 / EN 54/Vads / UL & FM approved with 3 years equipment replacement warranty, as per specification no. **FF-AFAS/ S-ST**	EACH	13	7,828.00	**101,764.00**
43	**13-5-1**	Supplying & erecting **Carbon Dioxide (CO2) fire extinguisher of 4.5 kg. capacity** cartridge type conform to IS 2878 /15683 complete erected with necessary clamp made from 50 x 6 mm. M. S. flat with nut & bolts routed in wall complete.	EACH	29	9,902.00	**287,158.00**
					TOTAL ESTIMATED AMOUNT IN Rs.	**5,905835.94**
					Insurance 1%	**59058.35**
					Total Amount	**5964894.29**
					EXCLUSIVE GST (18%)	**1073681.97**
					TOTAL AMOUNT WITH GST IN Rs.	**7038576.26**

Dwg : Only For Tender

LEGENDS -

	ABC FIRE EXTINGUISHER
	CO2 FIRE EXTINGUISHER
	FIRE PUMP
	FIRE SPRINKLE - PENDENT TYPE - 68 DC
	FIRE ALARM CONTROL PANEL
	FIRE MANUAL CALL POINT
	FIRE HOOTER WITH PA TALK BACK
	FIRE HYDRANT VALVE
	HR-HOSE REEL
	HB-HOSE BOX
HC	HD-HEAT DETECTOR
SD	SD-SMOKE DETECTOR
	AIR RELEASE VALVE
BFV	BUTTERFLY VALVE
	BALL VALVE
	NRV-NON RETURN VALVE
	BELLOW
	Y-STRAINER
FHP FHP	FIRE HYDRANT STAND POST
	FIRE SERVICE INLET BUTTERFLY VALVE NON RETURN VALVE
	200 NB PIPE LINE - HYDRANT
	150 NB PIPE LINE - HYDRANT
	100 NB PIPE LINE - HYDRANT
	100 NB PIPE LINE - SPRINKLER
	80 NB PIPE LINE
	65 NB PIPE LINE
	50 NB PIPE LINE
	40 NB PIPE LINE
	32 NB PIPE LINE
	25 NB PIPE LINE

TERRACE TANK DETAILS GUEST HOUSE-

TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(3.10 X 2.26 X 1.50 M H)

TERRACE TANK DETAILS VIDYARTHI BH.-

TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(4.88 X 2.32 X 1.00 M H)

UG TANK DETAILS -

UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

UG TANK DETAILS -

UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

FIRE CONSULTANT & CONTRACTOR -

M/S RAYON PROTECTIONS PVT. LTD.
ADD - KAMAL HOSPITAL, PLOT NO. 379/17/12,BEHIND GPO, SINDHI COLONY ROAD, JALGAON - 425001.
MOB. NO. 9423488492,9422782185
Email :- rayonprotectionp319@gmail.com

LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

AUTHORISED SIGNATORY

PROJECT - CONSTRUCTION OF VIDYARTHI BHAVAN BUILDING IN THE PREMISES OF IN PREMISES OF NORTH MAHARASHTRA UNIVERSITY, JALGAON.

Owner - The Registrar NORTH MAHARASHTRA UNIVERSITY, JALGAON.

TITLE - PLINTH PROTECTION

DRAWING No. - UMV/14/VID.BHA/construction/07/R0

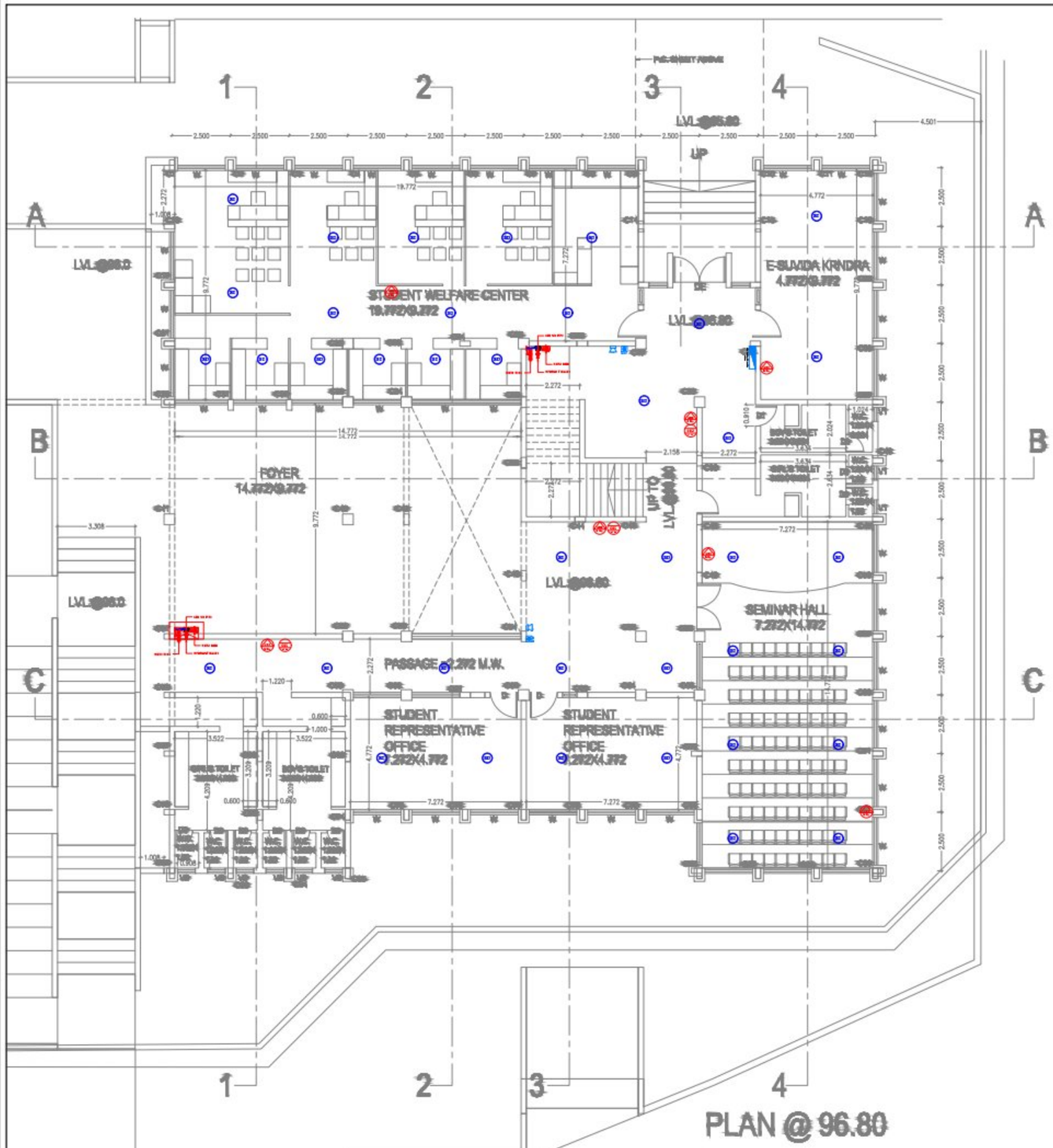
SCALE:- COMP

DRN BY: MADHU

DATE:- 15/04/2014

ARCHITECT

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET - FF-REV-0 01 OF 09
DATE - 10/02/2025	CHECKED BY- SANJAY P.	
SCALE - 1:100	APPROVED BY- SANJAY P.	



SCHEDULE OF FINISHING ITEMS

01) FLOORING

ROOMS,PASSAGES:– AS PER DETAIL PLAN 2"X2" VITRIFIED CERAMIC TILE SAMPLE AS APPROVED BY ARCHITECT
TREADS, RISERS & LANDING:– ONE PIECE MIRROR POLISHED KOTA STONE
TOILETS:– 300m.m.X300 m.m(12"X12") ANTI SKID CERAMIC TILES FOR FLOORING AS APP. BY ARHITECT

02) DADO/SKIRTING

PASSAGE SIDE WALL & LOBBY:– 3" TK. VITRIFIED WALL FLUSH SKIRTING
STAIR CASE SIDE WALL :– 3" TK. WALL FLUSH KOTAH STONE SKIRTING
ROOMS– 76 MM (3") WALL FLUSH VITRIFIED CERAMIC TILE SKIRTING
TOILETS– 300X300 (12"X12") ANTISKID TILES FOR FLOOR
TOILETS– 200X200 (8"X8") GLAZED TILES FOR DADO UP TO 2.10M.
TOILETS– CROME PLATED FIXER AS PER MATERIAL LIST
TOILETS– SOLAR HEATING WITH ELECTRICAL BACKUP
TOILETS– CHEMICAL WATER PROFFING FOR SUNK SLAB

02A) BRICK WORK

9"/4.5" BURNT CLAY BRICKS

03) PLASTERING:-

MINIMUM 12 m.m.THIK PLASTERING(1:4) WITH NEERU FINISH FOR CEILING 1:4
MINIMUM 20 m.m. THIK NEERU PLASTERING(1:4) FOR INTERNAL WALLS
SANDFACED PLASTER DOUBLE COAT FOR EXTERNAL WALLS WITH RAIN WATER DRIP MOULD
BASECOAT PLASTER BELOW DADO

04) DOORS & WINDOWS :-

DOOR FRAMES TO BE IN ONE PIECE 3/4"" TH GREEN MARBLE MEMBERS FOR TOILET.
M.S. DOOR FRAM AS PER SPECIFICATION.
WINDOW JAMB 3/4" COLOUR MARBLE WITH 1/4" GROVE ALL AROUND
FLUSH DOOR SHUTTERS FOR ALL DOORS EXCEPT TOILETS & MAIN ENTRACE
FLUSH DOOR SHUTTERS FOR ALL TOILETS WITH 1MM ALUMINIUM FOIL LAYER FROM WITHIN
POWDER COATED ALU. DOOR WITH 5 MM THK GLASS PANEL FOR MAIN ENTRANCE
ALU. SLIDING WINDOWS/ VENTILATOR AS PER SPECIFICATION FOR ROOMS
POWDERCOATED THREE TRACK ALUMINIUM WINDOW INCLUSIVE OF TWO TRACK GLASS & ONE MASQUOTONET SHUTTER
M.S. GRILL FOR ALL WINDOWS
M.S. GRILL GATE FOR ENTRANCE
M.S. PIPE RAILING FOR PASSAGES, STAIR CASE, OTHER PLACES UNLESS OTHETWISW SPECIFIED.

05) COLOURS :-

APEX PAINT FOR ALL EXTERNAL WALLS AS PER 3D VIEW
INTERNAL MANGNOLIA DISTEMBER PAINT FOR WALL, 0.00 WHITE OF CEILING,
INTERNAL LUSTER PAINT UP TO 7'0" & ABOVE 7.0" O.B.D PAINT FOR INTERNAL WALLS
DOOR FRAM & WINDOW, VINTILATOR – BONE WHITE, RAILING, DOOR SHUTTER AND ALL FEBRICATION LEMON YELLOW AS APPROVED BY ARCHITECT

06) OTHERS:-

All Rain Water & sanitary pipe to be cancel led 110mm Dia P.V.C.in B.B. Masonry wall
Staircase trade to KOTA flooring & Riser to plain plaster with nosing.
All Diamention is finish to finish unfinished lintel LVL.(+7/3")2.21m
Stair case railing and r.c.c. pardi Ht. as desided by architect on site.

LEGENDS -

- ABC FIRE EXTINGUISHER
- CO2 FIRE EXTINGUISHER
- FIRE PUMP
- FIRE SPRINKLE - PENDENT TYPE - 68 DC
- FIRE ALARM CONTROL PANEL
- FIRE MANUAL CALL POINT
- FIRE HOOTER WITH PA TALK BACK
- FIRE HYDRANT VALVE
- HR-HOSE REEL
- HB-HOSE BOX
- HD-HEAT DETECTOR
- SD-SMOKE DETECTOR
- AIR RELEASE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- NRV-NON RETURN VALVE
- BELLOW
- Y-STRAINER
- FIRE HYDRANT STAND POST
- FIRE SERVICE INLET
- BUTTERFLY VALVE
- NON RETURN VALVE
- 200 NB PIPE LINE - HYDRANT
- 150 NB PIPE LINE - HYDRANT
- 100 NB PIPE LINE - HYDRANT
- 100 NB PIPE LINE - SPRINKLER
- 80 NB PIPE LINE
- 65 NB PIPE LINE
- 50 NB PIPE LINE
- 40 NB PIPE LINE
- 32 NB PIPE LINE
- 25 NB PIPE LINE

TERRACE TANK DETAILS GUEST HOUSE-
TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(3.10 X 2.26 X 1.50 M H)

TERRACE TANK DETAILS VIDYARTHI BH.-
TERRACE TANK FOR FIRE FIGHTING
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(4.88 X 2.32 X 1.00 M H)

UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

FIRE CONSULTANT & CONTRACTOR -
M/S RAYON PROTECTIONS PVT. LTD.
ADD - KAMAL HOSPITAL PLOT NO. 379/17/12, BEHIND GPO, SINDHI COLONY ROAD, JALGAON - 425001.
MOB. NO. 9423488492, 9422782185
Email :- rayonprotectionp319@gmail.com
LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

AUTHORISED SIGNATORY

REVISION	DATE	DESCRIPTION
		DWG. Only For Tender

PROJECT;– PROPOSED VIDYARTHI BHAWAN ADMINISTRATIVE BUILDING AT NORTH MAHARASHTRA UNIVERSITY,JALGAON.

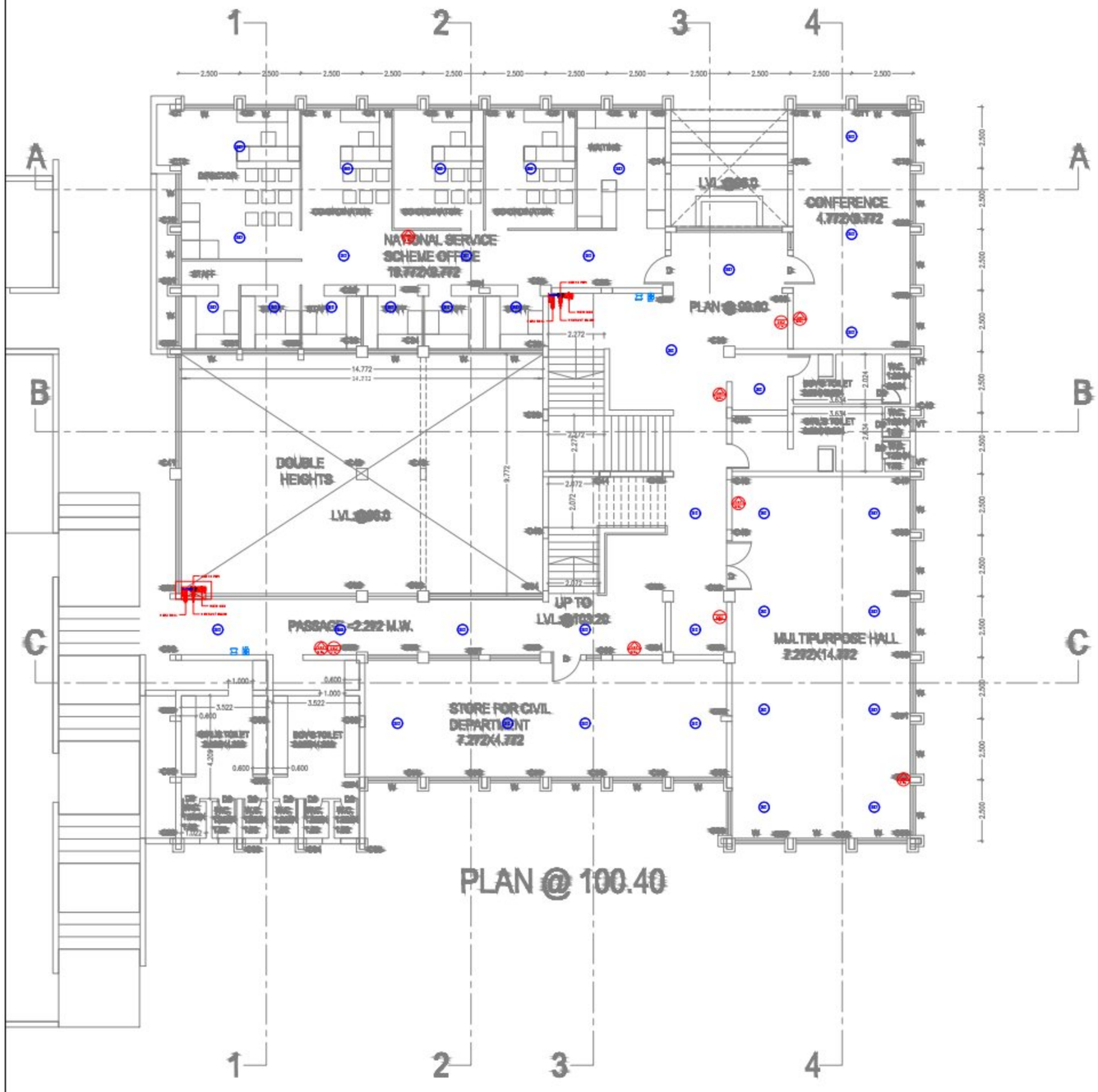
TITLE PLAN AT 96.80 M.LVL. GROUND FLOOR PLAN — ADMINISTRATIVE BLDG.

OWNER NORTH MAHARASHTRA UNIVERSITY,JALGAON.

ARCHITECT
Ar. Sanjay M.Patil
ENVIRON PLANNERS
3PURNAWAD NAGAR
AKSHWANI OPP.SANGAPUR ROAD, NASHIK

Drg.no.
DRN.BY.:MADHU
CHK.BY.:
SCALE.:
DATE 21/01/2014

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET - FF-REV-0 02 OF 09
DATE - 10/02/2025	CHECKED BY- SANJAY P.	
SCALE - 1:100	APPROVED BY- SANJAY P.	



SCHEDULE OF FINISHING ITEMS

01) FLOORING

ROOMS,PASSAGES:– AS PER DETAIL PLAN 2'X2' VITRIFIED CERAMIC TILE SAMPLE AS APPROVED BY ARCHITECT
TREADS, RISERS & LANDING:– ONE PIECE MIRROR POLISHED KOTA STONE
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TOILETS– SOLAR HEATING WITH ELECTRICAL BACKUP
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9"/4.5" BURNT CLAY BRICKS

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MINIMUM 12 m.m.THIK PLASTERING(1:4) WITH NEERU FINISH FOR CEILING 1:4
MINIMUM 20 m.m. THIK NEERU PLASTERING(1:4) FOR INTERNAL WALLS
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BASECOAT PLASTER BELOW DADO

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WINDOW JAMB 3/4" COLOUR MARBLE WITH 1/4" GROVE ALL AROUND
FLUSH DOOR SHUTTERS FOR ALL DOORS EXCEPT TOILETS & MAIN ENTRACE
FLUSH DOOR SHUTTERS FOR ALL TOILETS WITH 1MM ALUMINIUM FOIL LAYER FROM WITHIN
POWDER COATED ALU. DOOR WITH 5 MM THK GLASS PANEL FOR MAIN ENTRANCE
ALU. SLIDING WINDOWS/ VENTILATOR AS PER SPECIFICATION FOR ROOMS
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INTERNAL MANGNOLIA DISTEMBER PAINT FOR WALL, 0.00 WHITE OF CEILING,
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DOOR FRAM & WINDOW, VINTILATOR – BONE WHITE, RAILING, DOOR SHUTTER AND ALL FEBRICATION LEMON YELLOW AS APPROVED BY ARCHITECT

06) OTHERS:-

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Staircase trade to KOTA flooring & Riser to plain plaster with nosing.
All Diamention is finish to finish unfinished lintel LVL.(+7/3")2.21m
Stair case railing and r.c.c. pardi Ht. as desided by architect on site.

LEGENDS -

	ABC FIRE EXTINGUISHER
	CO2 FIRE EXTINGUISHER
	FIRE PUMP
	FIRE SPRINKLE - PENDENT TYPE - 68 DC
	FIRE ALARM CONTROL PANEL
	FIRE MANUAL CALL POINT
	FIRE HOOTER WITH PA TALK BACK
	FIRE HYDRANT VALVE
	HR-HOSE REEL
	HB-HOSE BOX
	HD-HEAT DETECTOR
	SD-SMOKE DETECTOR
	AIR RELEASE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	NRV-NON RETURN VALVE
	BELLOW
	Y-STRAINER
	FIRE HYDRANT STAND POST
	FIRE SERVICE IN LET BUTTERFLY VALVE NON RETURN VALVE
	200 NB PIPE LINE - HYDRANT
	150 NB PIPE LINE - HYDRANT
	100 NB PIPE LINE - HYDRANT
	100 NB PIPE LINE - SPRINKLER
	80 NB PIPE LINE
	65 NB PIPE LINE
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	40 NB PIPE LINE
	32 NB PIPE LINE
	25 NB PIPE LINE

TERRACE TANK DETAILS GUEST HOUSE-
TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(3.10 X 2.26 X 1.50 M H)

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TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(4.88 X 2.32 X 1.00 M H)

UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

REVISION	DATE	DESCRIPTION
		DWG. Only For Tender

PROJECT:– PROPOSED VIDYARTHI BHAWAN
ADMINISTRATIVE BUILDING
AT NORTH MAHARASHTRA UNIVERSITY,JALGAON.

TITLE PLAN AT 100.40 M.LVL.
FIRST FLOOR PLAN
ADMINISTRATIVE BLDG.

OWNER NORTH MAHARASHTRA UNIVERSITY,JALGAON.

ARCHITECT
Ar. Sanjay M.Patil
ENVIRON PLANNERS
[illegible]
NASHIK
e-mail:[illegible]

Drg.no.
DRN.BY.:MADHU
CHK.BY.:
SCALE.:
DATE 21/01/2014

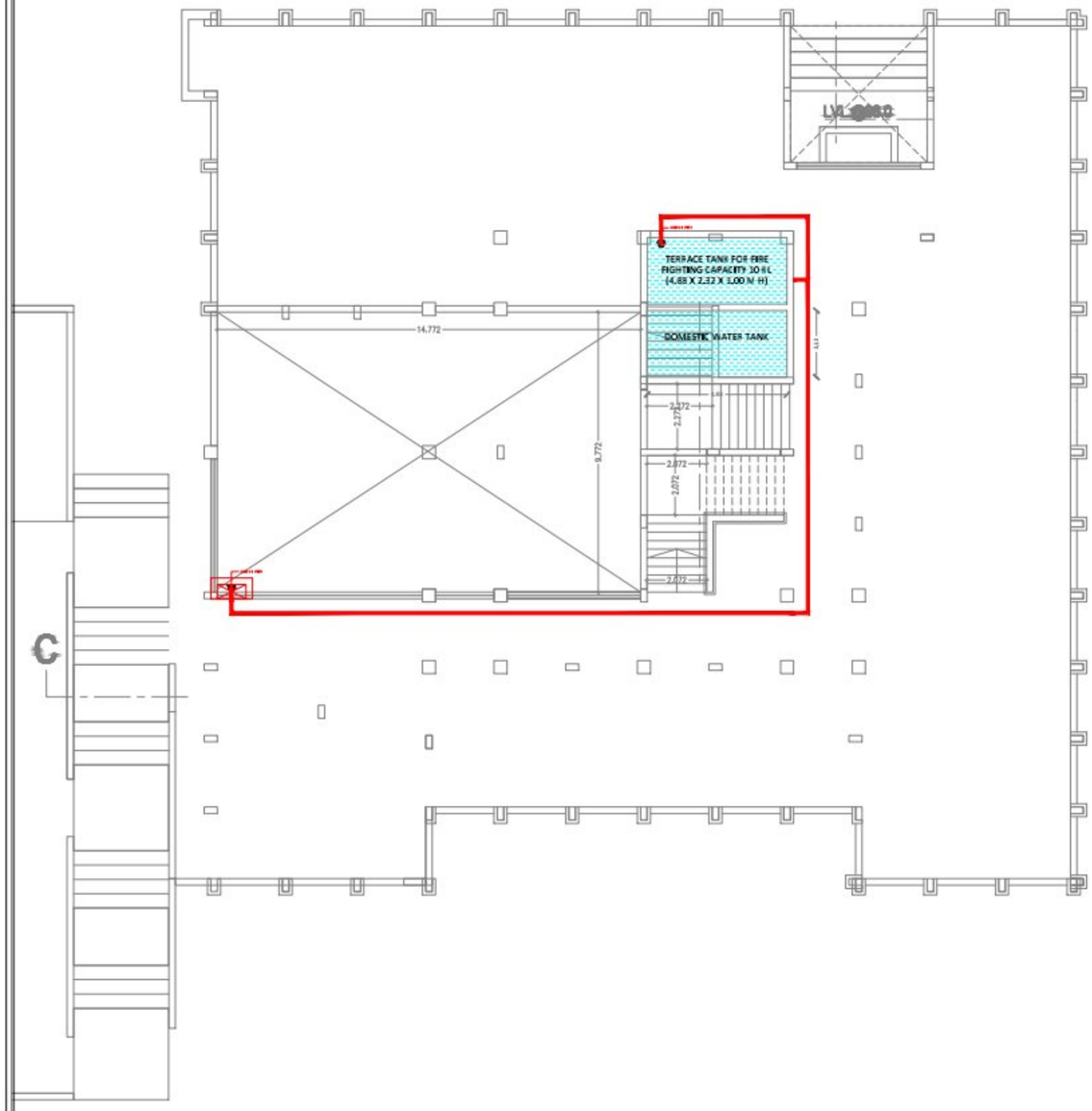
FIRE CONSULTANT & CONTRACTOR -
M/S RAYON PROTECTIONS PVT. LTD.
ADD - KAMAL HOSPITAL, PLOT NO. 379/17/12,BEHIND GPO, SINDHI COLONY ROAD, JALGAON - 425001.
MOB. NO. 9423488492,9422782185
Email :- rayonprotection319@gmail.com

LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

AUTHORISED SIGNATORY

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET - FF-REV-0 03 OF 09
DATE - 10/02/2025	CHECKED BY- SANJAY P.	
SCALE - 1:100	APPROVED BY- SANJAY P.	



LEGENDS -

	ABC FIRE EXTINGUISHER
	CO2 FIRE EXTINGUISHER
	FIRE PUMP
	FIRE SPRINKLE - PENDENT TYPE - 68 DC
	FIRE ALARM CONTROL PANEL
	FIRE MANUAL CALL POINT
	FIRE HOOTER WITH PA TALK BACK
	FIRE HYDRANT VALVE
	HR-HOSE REEL
	HB-HOSE BOX
	HD-HEAT DETECTOR
	SD-SMOKE DETECTOR
	AIR RELEASE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	NRV-NON RETURN VALVE
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	Y-STRAINER
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	200 NB PIPE LINE - HYDRANT
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TERRACE TANK DETAILS GUEST HOUSE-
TERRACE TANK FOR FIRE FIGHTING CAPACITY 10 KL
(3.10 X 2.26 X 1.50 M H)

TERRACE TANK DETAILS VIDYARTHI BH.-
TERRACE TANK FOR FIRE FIGHTING CAPACITY 10 KL
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UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

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FIRE CONSULTANT & CONTRACTOR -
M/S RAYON PROTECTIONS PVT. LTD.
ADD - KANAL HOSPITAL, PLOT NO. 379/17/12, BEHIND GPO, SINDHI COLONY ROAD, JALGAON - 425001.
MOB. NO. 9423488492,9422782185
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LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VLT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

AUTHORISED SIGNATORY

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET - FF-REV-0 04 OF 09
DATE - 10/02/2025	CHECKED BY- SANJAY P.	
SCALE - 1:100	APPROVED BY- SANJAY P.	

LEGENDS -

	ABC FIRE EXTINGUISHER
	CO2 FIRE EXTINGUISHER
	FIRE PUMP
	FIRE SPRINKLE - PENDENT TYPE - 68 DC
	FIRE ALARM CONTROL PANEL
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	HR-HOSE REEL
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HD	HD-HEAT DETECTOR
SD	SD-SMOKE DETECTOR
	AIR RELEASE VALVE
BFV	BUTTERFLY VALVE
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TERRACE TANK DETAILS GUEST HOUSE-

TERRACE TANK FOR FIRE FIGHTING
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TERRACE TANK DETAILS VIDYARTHI BH.-

TERRACE TANK FOR FIRE FIGHTING
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UNDERGROUND WATER TANK FOR FIRE
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JALGAON - 425001.
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LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

REVISION	DATE	DESCRIPTION

PROJECT;– **PROPOSED VIDYARTHI BHAWAN SEMINAR HALL BUILDING AT NORTH MAHARASHTRA UNIVERSITY,JALGAON.**

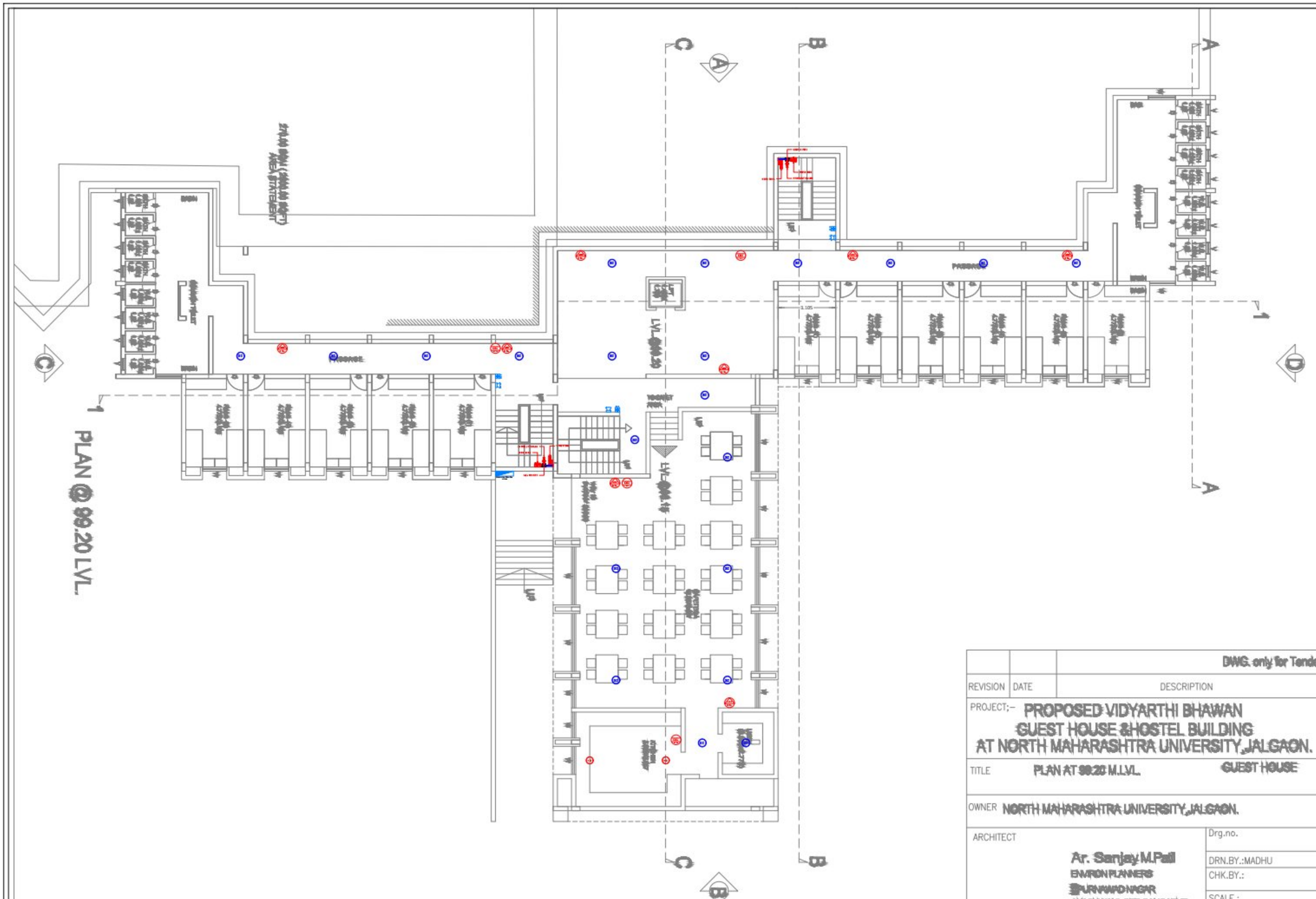
TITLE **PLAN AT 99.90 M.LVL. GROUND FLOOR PLAN**

OWNER **NORTH MAHARASHTRA UNIVERSITY,JALGAON.**

ARCHITECT	
Ar. Sanjay M.Pati	Drg.no.
ENVIRON PLANNERS	DRN.BY.:MADHU
	CHK.BY.:
	SCALE.:
	DATE 16/04/2014

AUTHORISED SIGNATORY

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET -
DATE - 10/02/2025	CHECKED BY- SANJAY P.	FF-REV-0 05 OF 09
SCALE - 1:100	APPROVED BY- SANJAY P.	



LEGENDS -

	ABC FIRE EXTINGUISHER
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REVISION	DATE	DESCRIPTION
		DWG. only for Tender

PROJECT;– PROPOSED VIDYARTHI BHAWAN
GUEST HOUSE &HOSTEL BUILDING
AT NORTH MAHARASHTRA UNIVERSITY,JALGAON.

TITLE PLAN AT 99.20 M.LVL. GUEST HOUSE

OWNER NORTH MAHARASHTRA UNIVERSITY,JALGAON.

ARCHITECT
Ar. Sanjay M.Pall
ENVIRON PLANNERS
[illegible]
AKASHWANI,OPP.GANGAPUR
ROAD, NASHIK
[illegible]

Drg.no.
DRN.BY.:MADHU
CHK.BY.:
SCALE.:
DATE 06/03/2014

FIRE CONSULTANT & CONTRACTOR -
M/S RAYON PROTECTIONS PVT. LTD.
ADD - KAMAL HOSPITAL, PLOT
NO. 379/17/12,BEHIND GPO,
SINDHI COLONY ROAD,
JALGAON - 425001.
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Rayonprotection319@gmail.com

LICENCE NO - MFS - LA/RF- 229 / VLT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VLT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

AUTHORISED SIGNATORY

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET - FF-REV-0 06 OF 09
DATE - 10/02/2025	CHECKED BY- SANJAY P.	
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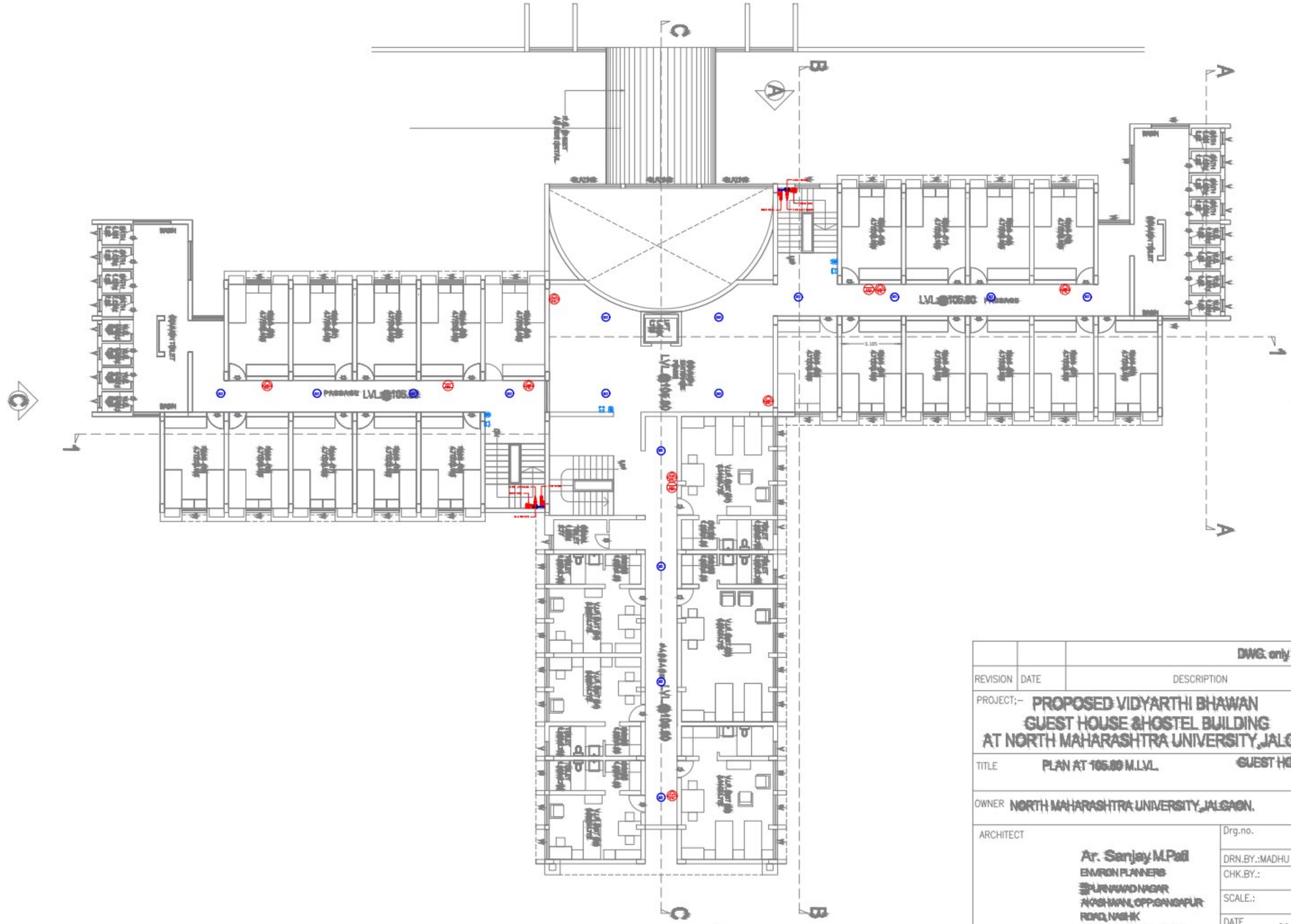

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	AIR RELEASE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	NRV-NON RETURN VALVE
	BELLOW
	Y-STRAINER
	FIRE HYDRANT STAND POST
	FIRE SERVICE INLET BUTTERFLY VALVE NON RETURN VALVE
	200 NB PIPE LINE - HYDRANT
	150 NB PIPE LINE - HYDRANT
	100 NB PIPE LINE - HYDRANT
	100 NB PIPE LINE - SPRINKLER
	80 NB PIPE LINE
	65 NB PIPE LINE
	50 NB PIPE LINE
	40 NB PIPE LINE
	32 NB PIPE LINE
	25 NB PIPE LINE

TERRACE TANK DETAILS GUEST HOUSE-
TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(3.10 X 2.26 X 1.50 M H)

TERRACE TANK DETAILS VIDYARTHI BH.-
TERRACE TANK FOR FIRE FIGHTING
CAPACITY 10 KL
(4.88 X 2.32 X 1.00 M H)

UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

UG TANK DETAILS -
UNDERGROUND WATER TANK FOR FIRE FIGHTING CAPACITY 100 KL
(8.35 X 4.00 X 3.00 M H)

REVISION	DATE	DESCRIPTION
		DWG. only for Tender

PROJECT;– PROPOSED VIDYARTHI BHAWAN
GUEST HOUSE &HOSTEL BUILDING
AT NORTH MAHARASHTRA UNIVERSITY,JALGAON.

TITLE PLAN AT 105.80 M.LVL. GUEST HOUSE

OWNER NORTH MAHARASHTRA UNIVERSITY,JALGAON.

ARCHITECT
Ar. Sanjay M.Patil
ENVIRON PLANNERS
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ROAD, NASHIK
email-sanjaypatil@gmail.com

Drg.no.
DRN.BY.:MADHU
CHK.BY.:
SCALE.:
DATE 06/03/2014

FIRE CONSULTANT & CONTRACTOR -
M/S RAYON PROTECTIONS PVT. LTD.
ADD - KAMAL HOSPITAL, PLOT NO. 379/17/12,BEHIND GPO, SINDHI COLONY ROAD, JALGAON - 425001.
MOB. NO. 9423488492,9422782185
Email :- rayonprotection319@gmail.com
LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RD- 216 / VUT - 04/05/2024
LICENCE NO - MFS - LA/RP- NIL

FIRE CONSULTANT SEAL & SIGN-

AUTHORISED SIGNATORY

DESIGN BY - ANKIT K.	DRAWN BY - ANKIT K.	SHEET - FF-REV-0 07 OF 09
DATE - 10/02/2025	CHECKED BY- SANJAY P.	
SCALE - 1:100	APPROVED BY- SANJAY P.	

LEGENDS -

	ABC FIRE EXTINGUISHER
	CO2 FIRE EXTINGUISHER
	FIRE PUMP
	FIRE SPRINKLE - PENDENT TYPE - 68 DC
	FIRE ALARM CONTROL PANEL
	FIRE MANUAL CALL POINT
	FIRE HOOTER WITH PA TALK BACK
	FIRE HYDRANT VALVE
	HR-HOSE REEL
	HB-HOSE BOX
	HD-HEAT DETECTOR
	SD-SMOKE DETECTOR
	AIR RELEASE VALVE
	BUTTERFLY VALVE
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Email :- rayonprotection9.319@gmail.com

LICENCE NO - MFS - LA/RF- 229 / VUT - 04/05/2024
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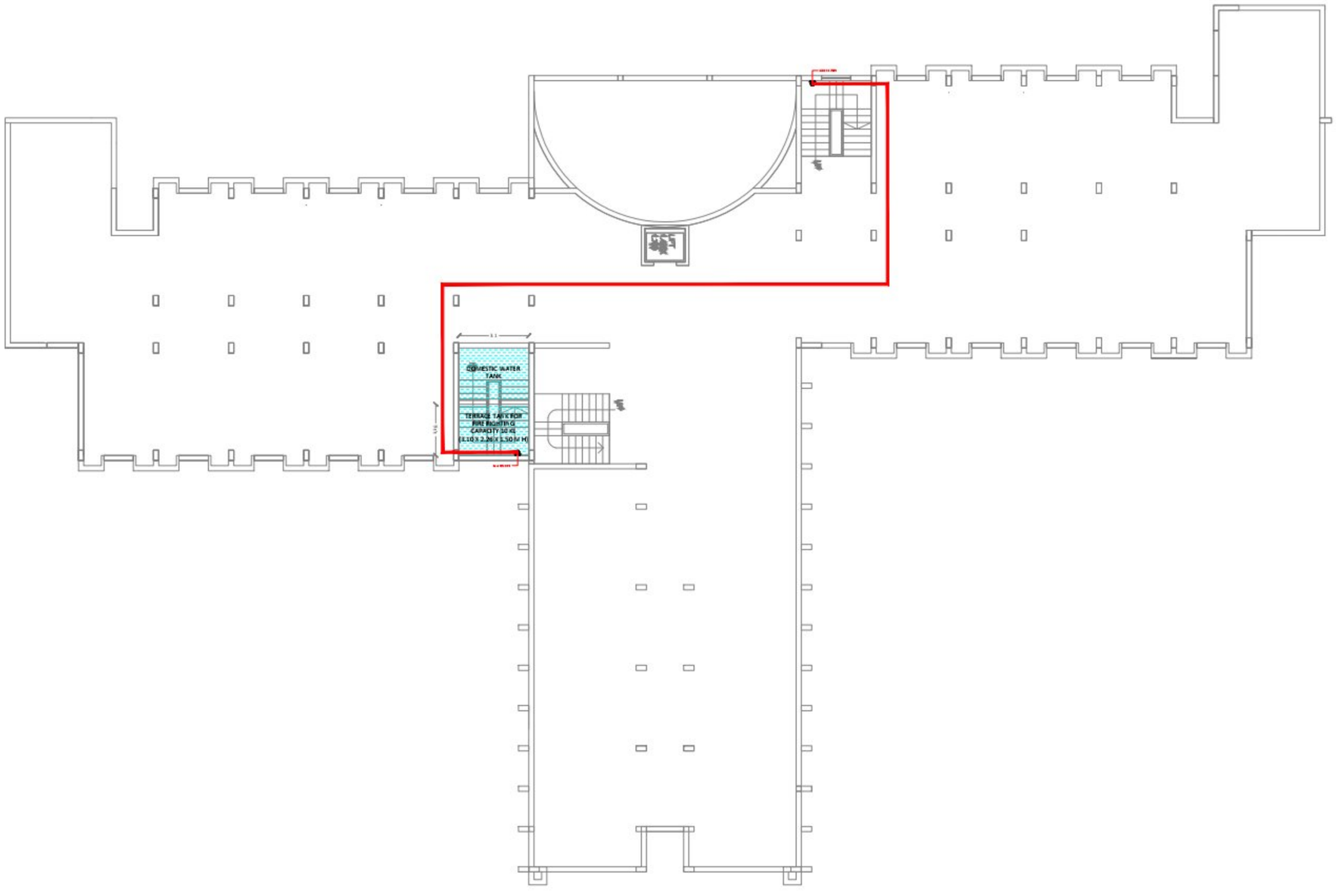

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