

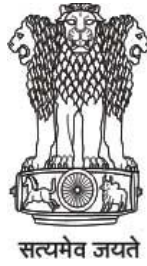
STANDARD BIDDING DOCUMENT

PROCUREMENT OF CIVIL WORKS

PART-I

COMPLETE BIDDING DOCUMENT

NAME OF WORK : **Construction of Class-III Residential Quarters
at District Jail, Dhule (112 Quarters)
Tal.Dist.Dhule**



GOVERNMENT OF MAHARASHTRA

PUBLIC WORKS DEPARTMENT

PUBLIC WORKS CIRCLE, DHULE

PUBLIC WORKS DIVISION, DHULE

Part A : Civil Portion : Rs. 47,26,66,744/-
(Without Royalty and Q.C.)
Part B : Electrical Portion : Rs. 4,75,17,573/-

TENDER COST :- RS. 520184317/-

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

Sr.No.	Subject	Name	Signature
1	Drafts Tender paper Prepared	D.B.Zalte, Sub Divisional Officer, P.W.Sub Division, Dhule	
		D.S.Phad, Sectional Engineer, P.W.Sub Division, Dhule	
2	Drafts Tender paper Checked	Jyoti Fulpagare Project Officer P.W.Division, Dhule	
	Project Branch	G.V.Badgujar Dy. Executive Engineer P.W.Division, Dhule	
3	Drafts Tender paper Check with	Vikrant N. Jadhav, Tender Clerk P.W.Division, Dhule	
	Arithmetically	Sanjeet Singh, Divisional Accounts Officer Gr-I P.W.Division, Dhule	
4	Rate of Schedule A Checked	Nil	

Certified that the rates and unit in Schedule-B Tender are verified as per sanctioned estimate by me.

**Executive Engineer,
P.W.Division, Dhule**

GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
AGREEMENT NO -----
NATIONAL COMPETITIVE BIDDING
(CIVIL WORKS)

NAME OF WORK	:	Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule
PERIOD OF DOWNLOAD OF BIDDING DOCUMENT ONLINE	:	<u>From 2/6/2026 Time : 10.00 Hours</u> <u>To 16/6/2026 Time : 18.00 Hours</u>
TIME AND DATE OF PRE-BID CONFERENCE	:	<u>Date 9/6/2026 Time 12.00 Hours</u>
LAST DATE AND TIME FOR RECIEPT OF BIDS	:	<u>To 16/6/2026 Time : 18.00 Hours</u>
* TIME AND DATE OF OPENING TECHNICAL BIDS	:	<u>Date 18/6/2026 (in Office hours if possible)</u>
* TIME AND DATE OF OPENING FINANCIAL BIDS	:	<u>Date 18/6/2026 (in Office hours if possible)</u>
PLACE OF OPENING OF TECHNICAL BIDS	:	<u>Superintending Engineer, P.W.Circle, Dhule</u>
OFFICER INVITING BIDS	:	Executive Engineer, Public Works Division, Dhule

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

VOLUME I

Invitation for Bids

- 1) Instruction to bidders**
- 2) Qualification information and other forms**
- 3) Conditions of contract**
- 4) Contract Data**

अमरावती, धुळे व परभणी येथील कारागृह
परिसरात अधिकारी/कर्मचारी यांच्या शासकीय
निवासस्थानांच्या बांधकामांच्या अंदाजपत्रकास
प्रशासकीय मान्यता देणेबाबत...

महाराष्ट्र शासन
गृह विभाग

शासन निर्णय क्र. जेएलएम-०१२४/प्र.क्र.०९/तुरुंग-२.

मादाम कामा मार्ग, हुतात्मा राजगुरु चौक,

मंत्रालय, मुंबई-४०००३२.

दिनांक: १६ फेब्रुवारी, २०२६.

वाचा:

- १) नियोजन विभाग, शासन परिपत्रक क्र. ससमा २०१०/प्र.क्र.४८ भाग-१/का-१४६१. दि.११.०६.२०१८.
- २) वित्त विभाग, शासन निर्णय क्र. विअप्र-२०१३/प्र.क्र.३०/१३/विनियम भाग-२. दि.२०.९.२०१९.
- ३) सार्वजनिक बांधकाम विभाग, शासन परिपत्रक क्र. संकीर्ण-२०१२/प्र.क्र.१०/इमा-२. दि.२५.९.२०१९.
- ४) अपर पोलीस महासंचालक व महानिरीक्षक, कारागृह व सुधारसेवा, महाराष्ट्र राज्य, यांचे पत्र क्र. वीएलडी/अमका/कर्म/शानि/प्र-२/बांधकाम/प्रमा/९९३०/कक्ष-६ (३) पुणे-१, दि.०२.१२.२०२४.
- ५) अपर पोलीस महासंचालक व महानिरीक्षक, कारागृह व सुधारसेवा, महाराष्ट्र राज्य, पुणे यांचे पत्र क्र. वीएलडी/घुजिका/अधि/कर्म/शानि/प्रमा/१०७३८/कया-६ (३) पुणे-१, दि.२३.१२.२०२४.
- ६) अपर पोलीस महासंचालक व महानिरीक्षक, कारागृह व सुधारसेवा, महाराष्ट्र राज्य, पुणे यांचे पत्र क्र. वीएलडी/पजिका/अधि/कर्म/शानि/प्रमा/१८३३/कक्ष-६ (३) पुणे-१, दि.२४.०२.२०२५.
- ७) मा. मुख्य सचिव यांच्या अध्यक्षतेखालील उच्चाधिकार सचिव समितीचे दि.२८.१०.२०२५ रोजीच्या बैठकीचे इतिवृत्त.

प्रस्तावना :-

अमरावती, धुळे व परभणी येथील कारागृह परिसरात अधिकारी/कर्मचारी यांच्याकरीता शासकीय निवासस्थानांच्या बांधकामांच्या अंदाजपत्रकास प्रशासकीय मान्यता देण्याबाबतचे प्रस्ताव अपर पोलीस महासंचालक, कारागृह महानिरीक्षक व सुधारसेवा, महाराष्ट्र राज्य, पुणे यांचे कडून वाचा क्र.४ ते ६ अन्वये शासनास प्राप्त झाली आहेत. सदर अंदाजपत्रके सन २०२२-२३ च्या दरसूचीवर तयार केलेली आहेत.

सदर बांधकामांच्या अंदाजपत्रकांना सार्वजनिक बांधकाम विभागाने तांत्रिक छाननी करून, मा. मुख्य सचिव अध्यक्ष असलेल्या उच्चाधिकार सचिव समितीने मान्यता प्रदान केली आहे. त्यानुषंगाने, उक्त बांधकामांच्या अंदाजपत्रकांना प्रशासकीय मान्यता देण्याची बाब शासनाच्या विचाराधीन होती.

शासन निर्णय :-

अमरावती, धुळे व परभणी येथील कारागृह परिसरात अधिकारी/कर्मचारी यांच्या शासकीय निवासस्थानांच्या बांधकामांच्या अंदाजपत्रकास खालील अटी व शर्तीच्या अधिन राहून या शासन निर्णयान्वये प्रशासकीय मान्यता देण्यात येत आहे.

अ.क्र.	कामाचे नाव	अंदाजपत्रकाची किंमत
१.	अमरावती मध्यवर्ती कारागृह परिसरात कारागृह कर्मचारी यांचेकरीता टाईप-२ ची ७८ शासकीय निवासस्थानांचे बांधकाम करणे.	४५.७२ कोटी
२.	धुळे जिल्हा कारागृह परिसरातील वर्ग-क च्या कर्मचाऱ्यांसाठी टाईप -०२ ची ११२ शासकीय निवासस्थानांचे बांधकाम करणे.	६८.१० कोटी
३.	परभणी जिल्हा कारागृह येथील अधिकारी/कर्मचारी यांचेकरीता टाईम-२ चे ०४ व टाईप ०१ चे ४८ असे एकूण ५३ शासकीय निवासस्थानांचे बांधकाम करणे.	२२.४० कोटी

२. अटी व शर्ती:-

- काम सुरु करण्यापूर्वी नमुना नकाशा तसेच विस्तृत नकाशास वास्तुविशारदाकडून मंजुरी घेवूनच सुरु करावे.
- ढोबळ स्वरूपात धरण्यात आलेल्या तरतूदीबाबत काम करतेवेळी विस्तृत अंदाजपत्रक करूनच काम हाती घ्यावे.
- प्रत्यक्ष काम करतेवेळी पर्यावरण विभाग, शासन निर्णय क्र.इएनव्ही-२०१३/प्र.क्र.१७७/तां.क.१. दि.१०.०१.२०१४ मध्ये उल्लेख करण्यात आलेल्या मार्गदर्शक तत्वांनुसार कार्यवाही करण्यात यावी.
- सार्वजनिक बांधकाम विभाग शासन निर्णय क्र. बीडीजी २०१७/प्र.क्र.६०/इमा-२, दि.०७.०७.२०१७ अन्वये कार्यवाही करण्यात यावी.
- सदर कामास प्रशासकीय मान्यता देण्यापूर्वी जागेच्या मालकी हक्काबाबतची खातरजमा करण्यात यावी.
- प्रस्तावातील खरेदीशी संबंधित बाबींकरिता ई-निविदा प्रणालीचा अवलंब करून उद्योग, ऊर्जा व कामगार विभागाकडील दि.२४.०८.२०१७ च्या शासन निर्णयान्वये निर्गमित केलेल्या सूचना विचारात घ्याव्यात.
- सदर बांधकामास सुरुवात झाल्यानंतर ते विहित वेळेत पूर्ण होईल याबाबत दक्षता घेण्यात यावी.
- सदरहू बांधकामासाठी प्राप्त होणाऱ्या निधीचे खर्चाचे उपयोगिता प्रमाणपत्र अपर पोलीस महासंचालक व महानिरीक्षक कारागृह सुधारसेवा, महाराष्ट्र राज्य, पुणे यांना वेळोवेळी सादर करावे.
- प्रस्तावित बांधकामांच्या अंदाजपत्रकात तरतूद केलेल्या फर्निचरची खुल्या बाजारातून खरेदी न करता, ते कारागृहातील बंद्यांकडून तयार करून घेण्यात यावे व त्याची रक्कम संबंधित कारागृहास अदा करण्यात यावी.

३. यासाठी होणारा खर्च मागणी क्र. एच८, मुख्य लेखाशिर्ष ४०५१ सार्वजनिक बांधकामावरील भांडवली खर्च, ०१, कार्यालयीन इमारती, ०५१, बांधकाम, (११) तुरुंग (११) (०१) मोठी बांधकामे (कार्यक्रम), ४०५९०९१२,५३, मोठी बांधकामे या लेखाशिर्षाखाली खर्ची दर्शविण्यात यावा.

४. हा शासन निर्णय वित्त विभाग, शासन निर्णय क्र. विअप्र-२०१३/प्र.क्र.३०/२०१३/विनियम, भाग-२. दिनांक २०.९.२०१९ अन्वये वित्तीय अधिकार नियम पुस्तिका, १९७८ माग पहिला. उपविभाग-पाच अ.क्र.१ नुसार महाराष्ट्र सार्वजनिक बांधकाम नियम पुस्तिकेतील परिच्छेद क्र.१३४(१) अन्वये प्रशासनिक विभागास प्रदान केलेल्या अधिकारानुसार व मा. मुख्य सचिव अध्यक्ष असलेल्या उच्चाधिकार सचिव समितीच्या दि.२८.१०.२०२५ रोजीच्या बैठकीत मान्यता दिल्यानुसार निर्गमित करण्यात येत आहे.

५. सदर शासन निर्णय महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा संगणक संकेतांक २०२६०२१६१६०६३२५५२९ असा आहे. हा आदेश डिजिटल स्वाक्षरीने साक्षांकित करून काढण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,

**NARAYAN
BIRA MANE**

Digitally signed by NARAYAN BIRA MANE
DN: cn=IN, o=GOVERNMENT OF MAHARASHTRA, ou=HOME
DEPARTMENT,
2.5.4.20=10FB457576797050F19AFAA499673FC843C789942499CD
39FC3351071B4C70C, postalCode=400032, st=Maharashtra,
serialNumber=70C06BA32C383E3E229113FC2DCFB23FB6951DAE
A9A24411D7F822D2E020BF, cn=NARAYAN BIRA MANE
Date: 2025.02.16 16:10:44 +05'30'

(नारायण माने)

अवर सचिव, महाराष्ट्र शासन

सोबत: जोडपत्र Recapitulation sheet

प्रत,

- १) मा.मुख्यमंत्री यांचे प्रधान सचिव, मंत्रालय मुंबई.
- २) मा.गृह राज्यमंत्री ग्रामीण/शहरे यांचे खाजगी सचिव, मंत्रालय, मुंबई.
- ३) अपर मुख्य सचिव (अ.व सु) यांचे स्वीय सहायक, गृह विभाग, मंत्रालय, मुंबई.
- ४) अपर मुख्य सचिव (वित्त) वित्त विभाग, मंत्रालय, मुंबई.
- ५) अपर मुख्य सचिव (नियोजन), नियोजन विभाग, मंत्रालय, मुंबई.
- ६) सचिव (बांधकामे), सार्वजनिक बांधकाम विभाग, मंत्रालय, मुंबई
- ७) अपर पोलीस महासंचालक व महानिरीक्षक, कारागृह व सुधारसेवा, महाराष्ट्र राज्य, पुणे.
- ८) कारागृह उपमहानिरीक्षक, मध्य विभाग, छत्रपती संभाजीनगर/पूर्व विभाग, नागपूर/नाशिक विभाग,
- ९) महालेखापाल (लेखा परिक्षा/लेखा व अनुज्ञेयता), महाराष्ट्र-१. मुंबई.
- १०) महालेखापाल (लेखा परिक्षा/लेखा व अनुज्ञेयता), महाराष्ट्र-२. नागपूर.
- ११) मुख्य अभियंता, सार्वजनिक बांधकाम प्रादेशिक विभाग, छत्रपती संभाजीनगर/नाशिक/अमरावती.
- १२) कार्यकारी अभियंता, सार्वजनिक बांधकाम विभाग, धुळे/अमरावती/परभणी.
- १३) निवडनस्ती तुरुंग-२, गृह विभाग, मंत्रालय, मुंबई.

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FINAL

Name of the Department : Home Department
 Name of Work : Construction of Class III Residential Quarters at District Jail, Dhule (112 Qtrs).
 Executing Agency : Public Works Department
 Land Availability : Yes
 Architect : Government

RECAPITULATION SHEET

RECAPITULATION SHEET						
Sr. No.	Particulars of Scope		Unit Rate Norms Rs Per (Sqmt./ Meter/ LumpSum		Cost in Lakh	
					Component Wise	Total
(A) ESSENTIAL ITEMS (Components)						
1	Building proper (Built Up Area - Sq.m) (Type II - 112 Qtrs)					
	Still/Ground Floor	2017.50	Sq. M	28,000	564.90	
	First Floor	2017.50	Sq. M	28,000	564.90	
	Second Floor	2017.50	Sq. M	28,000	564.90	
	Third Floor	1815.75	Sq. M	28,000	508.41	
	Fourth Floor	1815.75	Sq. M	28,000	508.41	
	Fifth Floor	1815.75	Sq. M	28,000	508.41	
	Sixth Floor	1815.75	Sq. M	28,000	508.41	
	Total B.U.A. =		13315.50	Sq. M	Sub Total (A1)	3,728.34
2	Electrification		Internal	5% of (A1)	186.42	
			External	6% of (A1)	223.70	
	Fire Fighting Arrangements etc.			@400/Sq.M.	53.26	
	Pump house, bore well etc			L.S.	10.00	
	AB Room, Area lighting, pumps, Generator			L.S.	10.00	
	Lift	1		2,000,000	20.00	
					Sub Total (2)	503.38
3	Water Supply & Sanitary Works		5% of (A1)		Sub Total (3)	186.42
4	Furniture	9320.85		2,500	Sub Total (4)	233.02
					Sub Total (A)	4,651.16
(B) MISCELLANEOUS ITEMS						
	Compound Wall & Gate (Rmt.)	800.00	Rmt	8.000	64.00	
	Water Main Storage	50000.00	Litres	23	11.50	
	Dismantalling			L.S.	5.00	
	Internal Land Development, Parking, Land Scaping, Soil Investigation etc.		4 5% of (A1)		167.78	
	Guard Room, Weapon Room, Visitor Room, Seating Gallary/Pavallion, Changing Room, Flag Post, Guest Room, Covered Parking, Play School, Cultural Hall, Gym, Indoor Games Hall			L.S.	400.00	
	Plantation (20% of Plot Area x Rs 1650/-)	500.00	Sq. M	1.650	8.25	
					Sub Total (B)	656.53
	Project Cost (P)= (A) + (B)					5,307.68
(C) PROVISIONS						
	(i) Contingencies	4% on (sub total A-1)			149.13	
	(ii) GST	18% on (P)			955.38	
	(iii) Price Escalation	5% on (P)			265.38	
	(iv) PMC Charges	1.5% on (P)			79.62	
	(v) Labour Insurance	1% on (P)			53.08	
					Sub Total (C)	1,502.59
	TOTAL COST OF PROJECT (TPC) (A+B+C)					6,810.28
	Say in Crores					68.10
1	Bldg Civil (A1)		= Rs	28,000 /Sqm		
2	Bldg Civil, Elect, Water Supply, Furniture (A)		= Rs	34,930 /Sqm		
3	Total (A+B)		= Rs	39,861 /Sqm		

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

तांत्रिक मंजूरी आदेश

कामाचे नांव: धुळे येथे जिल्हा कारागृह परिसरातील वर्ग-क च्या कर्मचाऱ्यांसाठी टाईप-०२ ची ११२ शासकीय निवासस्थानांचे बांधकाम करणे. ता.जि.धुळे.

(तांत्रिक मंजूरी नोंदवहीतील क्र. धुळे / इमा / / एप्रिल-२०२६)

- संदर्भ:** १. महाराष्ट्र शासन, गृह विभाग, शासन निर्णय क्र.जेएलएम-०१२४ / प्र.क्र.०९ / तुरुंग-२ मादाम कामा मार्ग हुतात्मा राजगुरु चौक, मंत्रालय मुंबई दि.१६.०२.२०२६ (प्र.मा. रु.६८.१० कोटी)
२. अधीक्षक अभियंता, सा. बा. मंडळ, धुळे यांचे पत्र जा. क्र. अअधु / प्रशा-३ / प्र.क्र-०६३ / १८० / २०२६ दि.१५.०४.२०२६
- १) उपरोक्त विषयांकित कामास संदर्भ क्र.१ मधील आदेशान्वये रु.६८१०.२८ लक्ष इतक्या रक्कमेस प्रशासकीय मान्यता प्रदान करण्यात आलेली आहे. त्या अनुषंगाने अधीक्षक अभियंता, सा. बा. मंडळ, धुळे कार्यालयामार्फत संदर्भ क्र.२ अन्वये सदर कामाचे सविस्तर अंदाजपत्रक तांत्रिक मंजूरी प्रदान करणेसाठी सादर करण्यात आलेले आहे.

सा.बां.नियमावली परिशिष्ट ४२,अ.क्र. १३ अन्वये मुख्य अभियंता यांना प्रदान केलेल्या अधिकारानुसार व महाराष्ट्र शासन, सा.बां.विभाग, शासन निर्णय क्र.वि.अ.सु.-२०१५ / प्र.क्र.२१८ / इमारती-२ / दि.१६.१२.२०१५ अन्वये सुधारित वित्तीय अधिकारानुसार विषयाधीन कामास खालील मुद्यांच्या अनुपालनाच्या अधीन राहून सन-२०२२-२३ च्या राज्य दरसूची नुसार रु.५६,६९,७८,०९२/- (अक्षरी रुपये छप्पन कोटी एकोणसत्तर लक्ष अठ्ठाहत्तर हजार ब्यान्नव मात्र) (GST व Labour Insurance सह) रकमेच्या सविस्तर अंदाजपत्रकास तांत्रिक मंजूरी प्रदान करण्यात येत आहे.

लेखाशिर्ष : "एच८, मुख्य लेखाशिर्ष ४०५१ सार्वजनिक बांधकामावरील भांडवली खर्च, ०१, कार्यालयीन इमारती, ०५१, बांधकाम, (११) तुरुंग (११) (०१) मोठी बांधकामे (कार्यक्रम), ४०५९०९१२,५३, मोठी बांधकामे"


तांत्रिक मान्यतेच्या व्याप्ती बाबतचा तुलनात्मक तक्ता :-

अ.क्र.	तांत्रिक मंजूरीसाठी सादर अंदाजपत्रकीय वाव व रक्कम (रु.)	
1.	Staff Qtrs. Type-III (9 Building P+6)	392848060.35
2.	Staff Qtrs. Type-III (1 Building P+2)	25063407.63
3.	Compound Wall & Development	24838543.78
4.	C.C.Road (Internal)	25756308.76
5.	Landscape	4160423.50
	Royalty	3002108.82
	Quality Control Charges	815405.00
	Total	476484257.84
	GST -18%	85767166.41
	Labour Insurance - 1%	4726667.44
	T.S. Amount	56,69,78,092.00
	Elec, Solar, CCTV, Fire, Lift (With GST)- As Per AA	61758840.00
	Contengencies- 3.00 %	14548682.38
	Price Escalation	30647711.68
	PMC Charges- 1.50 %	7090001.16
	Grand Total	681023326.91
	Say Rs.	6810.24 Lac

२. सदर तांत्रिक मंजूरी बाबत विविध बाबी खालील प्रमाणे नमूद करण्यात येत आहेत.
- २.१) परवानग्या, संकल्पचित्रे, प्रशासकीय मान्यतेतील अटी इ. :-
- सदर कामातील प्रशासकीय मान्यता आदेशातील सर्व अटी व शर्ती यांची पूर्तता करून मगच काम हाती घेण्यात यावे.
 - सदर तांत्रिक मान्यता अंदाजपत्रकात विद्युतीकरण व अग्निशमन यंत्रणेसाठी तरतूद घेण्यात आलेली असल्यास, त्याप्रमाणे योग्य ते नियोजन करावे. विद्युतीकरण व अग्निशमन यंत्रणेच्या अंदाजपत्रकास संबंधीत विभागाकडून तांत्रिक मंजूरी घेऊन एकत्रित निविदा राबविण्यात यावी.
 - सदर कामाचे अंदाजपत्रक कार्यकारी अभियंता, सा. बां. विभाग, धुळे व अधीक्षक अभियंता, सा. बां. मंडळ, धुळे यांचे कडून तांत्रिक तपासणी करून सादर करण्यात आलेले आहे व सदर कामाचे अंदाजपत्रकातील बाबींची मोजमापे व वाव हे सविस्तरपणे संबंधीत सक्षम अधिका-यांनी काटेकोरपणे तपासली असून त्यानुसार तांत्रिक मान्यता अंदाजपत्रकातील तरतूदी व वाव अंतिम करण्यात आला आहे, असे गृहीत धरले आहे.
 - सदर अंदाजपत्रक हे अधीक्षक अभियंता, सा. बां. मंडळ, धुळे यांनी सादर केलेले असल्याने त्यातील वाव व तरतूदी त्यांना मान्य असल्याचे गृहीत धरून व कामाची निकड लक्षात घेता अधीक्षक अभियंता, सा. बां. मंडळ, धुळे यांचे जबाबदारीवर तांत्रिक मान्यता देण्यात येत आहे.
 - सदर कामाच्या प्रशासकीय मान्यतेच्या वावातील सर्व बाबींवर होणारा एकूण खर्च हा प्रशासकीय मान्यता रकमेपेक्षा जास्त होणार नाही याची दक्षता घेण्यात यावी.
 - सदर काम सुरु करण्यापूर्वी त्या कामासाठी आवश्यक असलेली जमीन संबंधीत विभागाचे ताब्यात असल्याबाबत खात्री केल्यानंतर निविदा प्रक्रिया हाती घेण्यात यावी (जमीनीची मालकी किंवा तत्संबंधी कोणत्याही गुंतागुंतीचा प्रश्न उदभवणार नाही, याबाबत कार्यकारी अभियंतायांनी दक्ष असावे.
 - सदर बांधकाम सुरु करण्यापूर्वी वाव बदल असल्यास उपभोक्ता खात्याकडून व प्रशासकीय मान्यता प्रदान करणा-या विभागाकडून मंजूर करून घ्यावा.
 - सदर बांधकाम सुरु करण्यापूर्वी सर्व संबंधितांकडून स्थानिक प्रधिकरणांची ना हरकत प्रमाणपत्रे घेण्यात यावी व परवानग्या प्राप्त झाल्याची खात्री करावी.
 - इमारतीच्या पायाची खोली व स्तर सक्षम अधिका-याने मंजूर करावा. मातीची धारण क्षमता काम सुरु करण्यापूर्वी पुन्हा काम सुरु करण्यापूर्वी सदर कामासाठी आवश्यक असलेले नमुना नकाशा, मांडणी नकाशा, विस्तृत नकाशा, आर.सी.सी डिझाईन व स्ट्रूचरल स्टील डिझाईन सक्षम अधिका-याकडून मंजूर करून घेण्यात यावे व त्यानंतरच काम सुरु करण्यात यावे.तपासावी.
 - बांधकाम प्रस्तावित असलेल्या जागेवर झाडे असल्यास ती तोडण्यास परवानगी कार्यारंभ आदेश देण्यापूर्वी मिळेल याची दक्षता घ्यावी.
 - प्रस्तावित बांधकामामध्ये अस्तित्वातील विद्युत विज वाहिन्या, जलवाहिन्या, टेलीफोनचे केबल, गॅसपाईप लाईन इ. वाहिन्या जात असल्यास, त्या ज्यांच्या मालकीच्या आहे त्यांच्याशी संपर्क करून पर्यायी व्यवस्था करण्याबाबत कळवावे व कार्यारंभ आदेश देण्यापूर्वी पर्यायी व्यवस्था करून बांधकाम सुरु करण्यास कोणतीही अडचण येणार नाही, याची दक्षता कार्यकारी अभियंता यांनी घ्यावी.
 - ढोबळ स्वरूपात धरण्यात आलेल्या तरतूदीबाबत काम करतेवेळी विस्तृत अंदाजपत्रक करून व सक्षम प्राधिका-याकडून मान्यता घेऊन मगच काम हाती घ्यावे.
 - प्रशासकीय मान्यतेत नमूद असलेले मात्र तांत्रिक अंदाजपत्रकात समाविष्ट नसलेल्या बाबींचे अंदाजपत्रक सक्षम प्राधिका-याकडून मंजूर करून घ्यावे (उदा. विद्युतीकरण, अग्निशमन यंत्रणा, सुशोभिकरण इ.)
 - प्रत्यक्ष काम करतेवेळी पर्यावरण विभाग, शासन निर्णय क्र. इएनव्ही-२०१३ / प्र.क्र. १७७ / तां.क.१, दि.१०.०१.२०१४ मध्ये उल्लेख करण्यात आलेल्या मार्गदर्शन तत्वांनुसार कार्यवाही करण्यात यावी.
 - सा. बां. विभागाचा शासन निर्णय क्र. वीडीजी-२०१७ / प्र.क्र. ६० / इमा-२ दि. ०७.०७.२०१७ अन्वये कार्यवाही करण्यात यावी.

- ३) प्रशासकीय मान्यता रकमेपेक्षा प्रकल्पाची किंमत कमी किंवा जास्त असल्यास :-
- ३.१) प्रशासकीय मान्यता किंमतीपेक्षा निविदा मंजूरीची किंमत कमी असल्यास या किंमतीसह प्र.मा.च्या वावातील इतर बाबी (विद्युतीकरण, अंतर्गत रस्ते, पाणीपुरवठा व अन्यबाबी) सह येणारी कमी किंमत ही प्र.मा. ची वित्तीय मर्यादा धरण्यात येईल. सदर किंमत १०% पेक्षा जास्त असल्यास संबंधीत प्रशासकीय विभागास त्या किंमतीस सुधारित प्रशासकीय मान्यता प्रदान करण्याकरीता सुधारित अंदाजपत्रक कार्यकारी अभियंता, सा. बां. विभाग, धुळे यांनी सादर करावे.
- ३.२) तांत्रिक मंजूरीची किंमत प्रशासकीय मान्यतेच्याच भौतीक व्याप्तीकरीता प्रशासकीय मान्यता किंमतीपेक्षा जास्त असल्यास सा.बां.नियमावली परीच्छेद क्र.३०४ (५), ३१२ व ३१३ नुसार अधीक्षक अभियंता यांनी प्रशासकीय मान्यता प्रदान करणा-या उपभोक्ता विभागाच्या प्राधिकरणास जादा खर्चाची टिप्पणी (Excess Note) सादर करावी.
- ४) सा.बां.वि.शा.नि.दि.७.७.२०१७ (संदर्भ क्र.४) नुसार पुरेसा निधी उपलब्ध असल्यास तांत्रिक मंजूरी आदेशाच्या दिनांक पासून २ महिन्यात कार्यारंभ आदेश निर्गमीत करावा.
- ५) स्थापत्य कामाच्या कालावधीतच इमारतीच्या विद्युतीकरणा-सोबत बाह्य पाणीपुरवठा, फर्निचर काम व अग्निशमन यंत्रणा इ. बाबी नियोजनपूर्वक पूर्ण करणे.
- ५.१) विद्युतीकरणाबाबत- सदर अंदाजपत्रकात विद्युतीकरणासाठी प्रशासकीय मान्यता अंदाजपत्रकामध्ये दिल्यानुसार तरतूद घेण्यात आली असून त्याप्रमाणे योग्य ते नियोजन करावे.
- ५.२) अग्निशमन यंत्रणेबाबत- सदर इमारतीत अग्निशमन यंत्रणा बसविण्यासाठी अंदाजपत्रक तयार करून काम करण्याची कार्यवाही करणेबाबत संबंधीत विभागाने दक्षता घ्यावी.
- ५.३) बाह्य पाणी पुरवठा बाबत- प्रस्तुत प्रशासकीय इमारत (अथवा संकुल) पूर्णतः स्थानिक ग्रामपंचायत, नगरपरिषद, महानगरपालिका क्षेत्राबाहेर असल्यास त्यांच्याकडून पाणी पुरवठा उपलब्ध होण्याबाबत सदर इमारतीतील पाणी वापराच्या परिणामाकरिता) वस्तुस्थिती जाणून दृढीकरण करावे.
- ५.४) मुळ अंदाजपत्रकात विद्युतीकरणाची बाब समाविष्ट आहे. त्यामुळे स्थापत्य कामाच्या कालावधीतच इमारतीच्या विद्युतीकरणासोबत बाह्य पाणीपुरवठा, फर्निचर काम व अग्निशमन यंत्रणा या बाबींचे वेगळे अंदाजपत्रक तयार करून सक्षम प्राधिकरणामार्फत मंजूर घेणे आवश्यक आहे. तसेच फर्निचरच्या बाबी सक्षम प्राधिका-याकडून मंजूर करून घेण्यात याव्यात व स्थापत्य कामाच्या निविदेप्रक्रीयेसह समांतर कार्यवाही करावी.
- ५.५) अपेक्षित पाणी पुरवठा शक्य नसल्यास ज्या लांबच्या स्त्रोतातून पाण्याचे अपेक्षित परिणाम उपलब्ध होणे शक्य आहे, त्याप्रमाणे सविस्तर अंदाजपत्रक तयार करण्यात यावे.
- ६) तांत्रिक मान्यतेच्या व्याप्तीत कोणताही बदल सक्षम अधिका-यांच्या मान्यतेशिवाय करू नये. तांत्रिक मंजूरीत बदल करणे आवश्यक असल्यास, असा बदल तांत्रिक मान्यता प्रदान करणा-या अधिका-यापेक्षा वरिष्ठ प्राधिकाराने (मु.अ.पर्यंत सिमीत) मंजूर करावा.
- ७) संबंधीत कार्यकारी अभियंता यांनी अंदाजपत्रकात अंतर्भूत केलेल्या साठवण टाक्यांबाबत (ESR व GSR) महाराष्ट्र जीवन प्राधिकरण यांची मंजूरी घ्यावी व त्याप्रमाणेच काम करण्यात यावे.
- ८) सदरचे काम सुरु करण्यापूर्वी कामाची निकड लक्षात घेऊन फेरनियोजन करून कामाची प्राथमिकता उपभोक्ता खात्याकडून मंजूर करूनच काम हाती घेण्यात यावे.
- ९) सदर कामातील RCC बाबींचे संकल्पन (RCC Design) उपलब्ध Strata प्रमाणे करून त्यास सक्षम प्राधिका-याकडून मंजूरी घेऊन मगच काम हाती घेण्यात यावे.
- १०) सदरचे काम करण्यापूर्वी Building Line व Control Line ची खातरजमा करूनच काम सुरु करण्यात यावे.
- ११) दरसूची बाहेरील बाबींवरील खर्च मंजूर रकमेपेक्षा जास्त होणार नाही, याची सर्वस्वी जबाबदारी कार्यकारी अभियंता व उप अभियंता यांची राहिल.

- १२) पार्क व गार्डनचे काम करतांना संबंधीत दरसूचीमध्ये दिलेल्या अटी व शर्तीचे पालन करण्यात यावे.
- १३) सदर इमारत दिव्यांगांच्या वापराकरीताही योग्य होईल यादृष्टीने नियमानुसार योग्य ती कार्यवाही करावी. त्यासाठी रॅम्प, रेलींग, प्रसाधनगृह व इतर तरतुदी घेण्यात याव्यात.
- १४) काम सुरु करण्यापूर्वी क्षेत्रीय अधिका-यांनी Elevation च्या दृष्टीने अंदाजपत्रकात समाविष्ट असलेल्या बाबींचे Structural Safety च्या दृष्टीने RCC Design तपासूनच सदरचे काम करावे.
- १५) अंदाजपत्रकामध्ये Dismantling ची बाब अंतर्भूत असल्यास त्याकरीता सक्षम प्राधिका-याची मंजूरी घेण्यात यावी. तसेच त्यामधुन प्राप्त होणारी सामग्री / साहीत्याचे Credit घेण्यात यावे व शासन नियमाप्रमाणे त्यामधुन प्राप्त निधी महसुलात जमा करण्यात यावा.
- १६) सदर काम सुरु करण्यापूर्वी त्या कामासाठी आवश्यक असलेली जमीन संबंधीत विभागाच्या ताब्यात असल्याची कार्यकारी अभियंता यांनी खात्री करावी.
- १७) तांत्रिक मान्यता अंदाजपत्रकामध्ये स्थापत्य कामाची किंमत प्रशासकीय मान्यता अंदाजपत्रकातील स्थापत्य किंमतीपेक्षा जास्त येत असल्यास काम परिपूर्ण करून हस्तांतरणयोग्य करण्याच्या दृष्टीने प्रशासकीय मान्यता अंदाजपत्रकातील दुय्यम बाबींचे फेरनियोजन करून शासनाकडून मंजूरी प्राप्त करून घेण्यात यावी.
- १८) सदर कामास पुरेशी तरतुद असल्याशिवाय काम हाती घेऊ नये, याची सर्वस्व जबाबदारी अधीक्षक अभियंता व कार्यकारी अभियंता यांची राहिल.


 (प्र.शा. फोटो)
 मुख्य अभियंता

प्रत :-

- अधीक्षक अभियंता, सा. बां. मंडळ, धुळे यांना माहिती व पुढील कार्यवाही करिता अग्रेषित.
- कार्यकारी अभियंता, सा. बां. विभाग, धुळे यांना माहितीस्तव व आवश्यक त्या कार्यवाहीस्तव.
- कार्यकारी अभियंता, सा.बां. (विद्युत) विभाग, धुळे यांना माहिती व पुढील कार्यवाहीस्तव.

Name of Work:-

Construction of Class III Residential Quarters At District Jail, Dhule (112 Qtrs) .

RECAPITULATION SHEET

PART - A

Estimate : Staff Quaretr Type-III (9 Building P+6)	Rs.	39,28,48,058.93	392848060.35
Sub Est-02 : Staff Quaretr Type-III (1 Building P+2)	Rs.	2,50,58,708.19	25063407.63
Sub Est-03 : Compound Wall & Development	Rs.	2,44,56,445.97	24838543.78
Sub Est-04 : Road	Rs.	2,57,56,308.71	25756308.76
Sub Est-05 : Landscape	Rs.	41,60,423.50	4160423.50
Sub Est-06 : Electrical	Rs.	5,03,17,573.70	-
A Total Cost Of Work Portion	Rs.	52,25,97,519.00	422666744.02

PART - B

Add Royalty 9 Building P+6	Rs.	10,59,749.75	
Add Royalty 1 Building P+2	Rs.	78,169.58	
Add Royalty Compound Wall	Rs.	1,66,332.27	
Add Royalty Road	Rs.	12,33,897.07	
Add Royalty Landscape	Rs.	2,59,416.00	
Add Material Testing 1 Building P+2	Rs.	73,465.00	
Add Material Testing 9 Building P+6	Rs.	6,07,760.00	
Add Material Testing Compound Wall	Rs.	58,495.00	
Add Material Testing Road	Rs.	76410.00	
B Total Amount	Rs.	36,13,694.67	476484257.84
C Total A+B	Rs.	52,62,11,213.67	

Add for GST On A	18.00%	Rs.	9,47,18,018.46	85767166.41
Add for Ele,Solar,CCTV Fire,Lift		Rs.		61758840.00
Add for Contengencies On A	4.00% 3%	Rs.	2,09,03,900.76	14548682.38
Add for Labour Insurance On A	1.00%	Rs.	52,25,975.19	4226667.44
Add for Escalation On A	5.00%	Rs.	2,61,29,875.95	30647711.68
Add PMC Charges	1.50%	Rs.	78,38,962.78	7090001.16
Total	cc T.S.Amt = 566978092/-	Rs.	68,10,27,946.82	681023327.00

Say Rs. 6810.28 Lacs

Sub Divisional Engineer
P.W.D Sub Division,Dhule

Executive Engineer
P.W.Division,Dhule

Sander
अधीक्षक
कुळे जिल्हा कारागृह वर्ग-१
कुळे.

Superintending Engineer,
P.W.Circle,Dhule.

Technically sanctioned for Rs.56,69,78,092.00
(Rs. Fifty six Crore sixty Nine Lachy seventy
eight thousand Ninety two only
registered in this Office No.)

for

Chief Engineer
P. W. Region, Nashik

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

WORK SEQUENCE AND METHODOLOGY

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

- 1) Excavation for Foundation
- 2) RCC Frame Structure
- 3) Brick Work
- 4) Plaster
- 5) Colouring
- 6) Flooring
- 7) Waterproofing
- 8) Doors and Window
- 9) Drainage
- 10) Compound Wall
- 11) Concrete Road
- 12) Landscape
- 13) Electric and Other Misc. Works

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

कामाचे नांव धुळे येथे जिल्हा कारागृह परिसरातील वर्ग-क च्या कर्मचाऱ्यांसाठी टाईप-2
:- ची ११२ शासकीय निवासस्थानांचे बांधकाम करणे ता.जि.धुळे

-: सर्वसाधारण वर्णन :-

तरतुद :-

सदर कामासाठी खालील प्रमाणे तरतुदी घेण्यात आलेल्या आहेत

- 1) R.C.C. Frame Structure मध्ये तळ, अधिक एक ते सहाव्या मजल्याचे बांधकाम करणे (G+6)
- 2) तळमजल्यावर पार्कींगसाठी तरतुद करण्यात आलेली आहे.
- 3) सदर इमारतीच्या जागेमध्ये मातीपरिक्षण करण्यात आलेले असून त्यानुसार आरसीसी Design तयार करण्यात आलेले आहे
- 4) सदर इमारतीसाठी एम-30 ग्रेडचे काँक्रीट व Fe 500 TMT Grade चे स्टील वापरण्याची तरतुद करण्यात आलेली आहे.
- 5) सदर निवासस्थानांमध्ये एका निवासस्थानाचे क्षेत्रफळ ५० चौ.मी. असून याप्रमाणे एकूण निवासस्थानांचे क्षेत्रफळ ५६०० चौ.मी. इतके आहे
- 6) पाणीपुरवठा व जलनिस्सारणासाठी Under Ground Water Tank व Over head Water Tank ची तरतुद इमारतीच्या अंदाजपत्रकात घेण्यात आले आहे.
- 7) रेनवॉटर हार्वेस्टिंगसाठी आरसीसी मध्ये पाण्याच्या टाकीचे बांधकाम करणे
- 8) इमारतीच्या परिसरात ठिकठिकाणी Landscaping करणे प्रस्तावित करण्यात आलेले आहे.
- 9) अंतर्गत रस्ते तयार करणे
- 10) आवार भिंतीचे बांधकाम करणे
- 11) नमुना नकाशाप्रमाणे काम करणे
- 12) इतर अनुषंगिक कामे करणे

महाराष्ट्र शासन

सार्वजनिक बांधकाम विभाग धुळे

कार्यकारी अभियंता यांचे कार्यालय

पत्ता :- बांधकाम भवन, जुने सिव्हील हॉस्पिटल समोर, साक्री रोड, धुळे-424001

ई-मेल पत्ता :- dhuleee2015@gmail.com

ई-निविदा सुचना क्र. 6 सन 2026-27

कार्यकारी अभियंता, सार्वजनिक बांधकाम विभाग, धुळे महाराष्ट्र शासनाच्या सार्वजनिक बांधकाम खात्याकडून कुठलाही सक्षम कंत्राटदार निविदेतील अटी व शर्ती पूर्ण करतील अशा कंत्राटदाराकडून खालील कामाकरीता ब-2 नमुन्यातील निविदा ई निविदा प्रणालीव्दारे (ऑनलाईन) निविदा मागवित आहेत. निविदा कागदपत्र शासनाच्या संकेतस्थळावर <http://mahatenders.gov.in> येथुन डाऊनलोड करण्यात यावी. तसेच निविदा स्विकारण्याचा अथवा नाकारण्याचा अधिकार अधीक्षक अभियंता, सार्वजनिक बांधकाम मंडळ, धुळे यांनी राखुन ठेवला आहे. अट असलेली निविदा स्विकारली जाणार नाही.

अ. क्र.	कामाचे नाव	कामाची अंदाजित किंमत रु.	बीड सिक्युरिटी किंमत रु.	निविदा संचाची फी रुपये
1	धुळे येथे जिल्हा कारागृह परिसरातील वर्ग-क च्या कर्मचाऱ्यांसाठी टाईप-2 ची 112 शासकीय निवासस्थानांचे बांधकाम करणे ता.जि.धुळे	520184317/-	2601000/-	3540/-
ई निविदा उपलब्ध कालावधी		:- दि.2/6/2026 ते 16/6/2026		
निविदापूर्व बैठक		:- दि.9/6/2026 (बैठकीचे ठिकाण :- मुख्य अभियंता, सा.बां.प्रादेशिक विभाग, नाशिक यांचे दालनात)		
ई निविदा उघडणे		:- दि.18/6/2026 (शक्य झाल्यास) अधीक्षक अभियंता, सा.बां.मंडळ, धुळे यांचे कार्यालयात		

खालील संकेतस्थळावर ई-निविदाची सर्व माहिती उपलब्ध आहे.

1. <http://mahatenders.gov.in>

(सदर निविदेसुचनेमध्ये काही बदल होत असल्यास वरील वेबसाईटवरती कळविण्यात येईल.)

2. कार्यकारी अभियंता, सा.बां.विभाग, धुळे कार्यालयातील सुचना फलक

जा.क्र. निविदा/ 2568 / 2026

कार्यालय : कार्यकारी अभियंता,

सार्वजनिक बांधकाम विभाग, धुळे

दुरध्वनी क्र.(02562) 288755

दिनांक : 26 / 5 / 2026

(रविंद्र र.पाटील)

कार्यकारी अभियंता

सा.बां.विभाग, धुळे

**GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
INVITATIONS FOR BIDS (IFB)
NATIONAL COMPETITIVE BIDDING**

Bid No. : 6 For 2026-27

1. The Executive Engineer, P.W.Division, Dhule invites online bids in B-2 form for the construction of work detailed in the table. The bidders may submit bids for any or all of the following works.

TABLE

<u>Sr. No</u>	<u>Name of Work</u>	<u>Approximate value of work (Rs.)</u>	<u>Bid Security (Rs.)</u>	<u>Cost of documents (Rs.)</u>
1	3	4	5	6
1	Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule	520184317/-	2601000/-	3540/-

2. Bidding documents may be purchased from e-tender portal of through web site <https://mahatenders.gov.in> From 2/6/2026 to 16/6/2026 for a non refundable fee as indicated in the form online mode only. Interested bidders may obtain further information from the office of Executive Engineer, P.W.Division, Dhule.
3. Bids must be accompanied by security of the amount specified for the work in the table and shall be paid online.
4. Bids must be submitted online on <https://mahatenders.gov.in> on Date 16/6/2026 & Technical bid will be opened on Dt.18/6/2026 (if possible) in the presence of bidders who wish to attend in the office of the Superintending Engineer, P.W.Circle, Dhule.
5. A prebid meeting will be held on Dt. 9/6/2026 Time 12.00 AM at the office of Chief Engineer, P.W.Division, Dhule to clarify the issues and to answer questions on any matter that may be raised at that stage as stated in clause 9.2 of 'Instructions to Bidders' of the bidding document.
6. Others details can be seen in the bidding documents

No. Tender/ 2568 /2026
Office of the Executive Engineer
P.W.Division, Dhule
Email:dhuleee2015@gmail.com
Date : 26 / 5 /2026

(Ravindra R. Patil)
Executive Engineer
P.W.Division, Dhule

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

SECTION 1 – INSTRUCTIONS TO BIDDERS

Table of Clauses

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A. General		D. Submission of Bids	
1. Scope of Bid		19. Sealing and Marking of Bids	
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A. GENERAL

1. Scope of Bid

- 1.1 The Employer (named in Appendix to ITB) invites online bids for the constructions of works (as defined in these documents and referred to as “the works”) detailed in the table given in IFB. The bidders may submit bids for any or all of the works detailed in the table given in IFB.
- 1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.
- 1.3 Throughout these bidding documents, the terms ‘bid’ and ‘tender’ and their derivatives (bidder/ tenderer, bid/tender, bidding/tendering etc.) are synonymous.

2. Sources of Funds

- 2.1 The expenditure on this project will be met from the budget of Govt. of Maharashtra.

3. Eligible Bidders

- 3.1 This invitation for Bids is open to all bidders.
- 3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is neither associated, nor has been associated, directly or indirectly, with the Consultant or any other entity that has prepared the design, specification, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation of supervision of the works, and any of its affiliates, shall not be eligible to bid.

4. Qualification of the Bidder

- 4.1 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary. The proposed methodology should include programme of construction backed with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.
- 4.2 All bidders shall include the following information and documents with their bids in Section 2.
 - (a) Copies of original documents defining the constitution or legal status, place of registration under partnership or companies Act and principal place of business, written power of attorney of the signatory of the Bid to commit the Bidder ;
 - (b) Total monetary value of construction work performed for each of the last five years ;
 - (c) Experience in works of a similar nature and size for each of the last five years and details of works underway or contractually committed and clients who may be contacted for further information on those contracts ;
 - (d) Major items of construction equipment proposed to carry out the Contract.
 - (e) Qualifications and experience of key site management and technical personnel proposed for contract;

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- (f) Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years ;
- (g) Deleted
- (h) Undertaking that the bidder will be able to invest a minimum cash upto 25% of contract value of work during implementation of work ;
- (i) Authority to seek references from the Bidder's bankers ;
- (j) Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned and disputed amount ;
- (k) Proposals for subcontracting components of the Works amounting to more than 10 percent of the Bid Price (for each, the qualifications and experience of the identified sub contractor in the relevant field should be annexed); and
- (l) The proposed methodology and programme of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

4.3 * ~~If the Employer has not undertaken prequalification of potential bidders, all bidders shall include the following information and documents with their bids in Section 2.~~

- (a) ~~Copies of original documents defining the constitution or legal status, place of registration and principal place of business, written power of attorney of the signatory of the Bid to commit the Bidder;~~
- (b) ~~Total monetary value of construction work performed for each of the last five years;~~
- (c) ~~Experience in works of a similar nature and size for each of the last five years and details of works underway or contractually committed and clients who may be contacted for further information on these contracts ;~~
- (d) ~~Major items of construction equipment proposed to carry out the Contract.~~
- (e) ~~Qualifications and experience of key site management and technical personnel proposed for contract ;~~
- (f) ~~Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years;~~
- (g) ~~Evidence of access to line(s) of credit and availability of other financial resources facilities (10% of contract value) certified by the Bankers. (Not more than 3 months old);~~
- (h) ~~Undertaking that the bidder will be able to invest a minimum cash upto 25% of contract value of work during implementation of work ;~~
- (i) ~~Authority to seek references from the Bidder's bankers ;~~
- (j) ~~Information regarding any litigation, current or during the last five years, in the Bidder is involved, the parties concerned and disputed amount ;~~
- (k) ~~Delete~~
- (l) ~~Delete~~
- (m) Undertaking that the bidder will be able to invest a minimum cash upto 25% of

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contract value of work during implementation of work (undertaking in format given Appendix)

Details of Documents required in Technical Envelope (Envelope No.1)

Eligibility Criteria for Electrical Contractor Only :

1	Prime Contractor should have Valid Electrical Contractor License issued by I.E. & L Deptt. Govt. of Maharashtra.
2	Prime contractor should have valid Lift License for manufacturing 500 Lifts per year and maintenance of 750 lifts per year issued by I. E. and L department Govt. Of Maharashtra
3	Prime Contractor should have valid license of Fire Fighting System Installation such as hydrants, Sprinklers, Pumping and Detection & Fire Suppression System Viz. Smoke detection, Heat Detection, UV, Beam detector, manual call point and fire alarm system of appropriate class issued by director of Maharashtra fire services Mumbai.
4	Details of work tendered for & in hand as per Statement No. I (Work order copy for works in hand must be attached)
5	Details of Technical person on the roll of tenderer who will be exclusively spared for this work by the tenderer. (Information to be given in Statement IV) (Refer G.R. Dated 07.12.2023)

4.4 Bids from Joint Ventures are not acceptable.

4.5. **A. To qualify for award of the contract, each bidder in its name should have in the last five years as referred to in Appendix to ITB.**

- (a) Achieved a maximum annual financial turnover (in all classes of civil engineering construction works only) amount indicated in Appendix in anyone year.
- (b) Satisfactorily completed, as a prime contractor at least one similar work of value not less than amount indicated in Appendix to ITB.
- (c) Executed in anyone year, the minimum quantities of the following items of work as indicated in Appendix to ITB.

~~(usually 80% of the expected peak rate of construction)~~

~~*(d) The contractor or his identified sub-contractor should possess required valid electrical license for executing the building electrification works and should have executed similar electrical works for a minimum amount as indicated in Appendix in any one year.~~

~~*(e) The contractor or his identified sub-contractor should possess required valid license for executing the water supply/sanitary engineering works and should have executed similar water supply/sanitary engineering works for a minimum amount as~~

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~~indicated in Appendix in anyone year.~~

B. Each bidder should further demonstrate:

- (a) Availability (either owned or leased) of the following key and critical equipment for this work:

Based on the studies, carried out by the Engineer the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule are shown in the **Annexure-I.**

- (b) Availability for this work of personnel with adequate experience as required; as per **Annexure-II.**

- (c) Liquid assets and/or availability of credit facilities of no less than amount indicated in Appendix

C. Delete

- 4.6 Sub-contractors' experience and resources shall not 'be taken into account in determining the bidder's compliance with the qualifying criteria except to the extent stated in 4.5 (A) above

- 4.7 **Note : Bidders shall be upload QR based Bid Capacity Certificate Downloaded on or before Two Days of Submission from portal “bidcap.emahapwd.com” If this bid capacity Certificate is not uploaded then tender shall be treated as non-responsive.**

Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under.

Assessed Available Bid Capacity = (A x N x 2) – B

A= Maximum Value of civil engineering works executed in last one years during last five years (updated to the price level of the year indicated in Appendix) taking into account the completed as well as works in progress.

N= Number of year prescribed for completion of the work for which bids are invited.

B= Value (updated to the price level of the year indicated in Appendix) of existing commitments and on-going works to be completed during the next **36 (Thirty Six)**

Calender Months Including Monsoon (period of completion of the works for which bids are invited)

Note: *The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent.*

- 4.8 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- Record of poor performance such as abandoning the works, not properly completing the contract ,in ordinate delays in completion, litigation history, or financial failures etc.; and/or
- Participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

5. One Bid per Bidder

- 5.1 Each bidder shall submit only one bid for one package. A bidder who submits or

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participates in more than one Bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

6. Cost of Bidding

6.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

7. Site Visit

7.1 The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

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B. BIDDING DOCUMENTS

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10

Section	Particulars	Volume No.
	Invitation for Bids	
1	Instruction to Bidders	I
2	Qualification information and other forms	
3	Conditions of Contract	
4	Contract Data	
5	Technical Specification	II
6	Form of Bid	III
7	Bill of Quantities	
8	Securities and other forms	
9	Drawings	IV
10	Documents to be furnished by bidder	V

8.2 Complete bidding document containing volumes - I, II, III and IV are available to the bidders on e-tendering portal <https://mahatenders.gov.in>. Documents to be furnished by the bidder in compliance to section 2 will be prepared by him and uploaded online as “ in “general document ” (Refer clause 12) .

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, technical specifications, bill of quantities, forms, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

9. Clarification of Bidding Documents

9.1 A prospective bidders requiring any clarification of the bidding documents may notify the Employer in writing or by Fax /email at the Employer's address indicated in the invitation to bid before the date and time of the pre-bid meeting specified in the Tender Schedule. The Employer will respond to any request for clarification which he received, earlier than 3 days prior to the Bid due date. Copies of the Employer's response will be uploaded in “edit attachment option” of concern tender on e-tendering portal and viewable to all tenderer, including a description of the enquiry but without identifying its source.

9.2 Pre-bid meeting

9.2.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in NIT.

9.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.2.3 The bidder is requested to submit any questions in writing by fax or by e-mail to reach the Employer well before the date & time of the pre-bid meeting.

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- 9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted by uploading on e-tender portal without delay for information to all intended bidder. Any modifications of the bidding documents listed in sub clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to clause 10 and not through the minutes of the pre-bid meeting.
- 9.2.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.
- 10. Amendment of Bidding Documents**
- 10.1 Before the deadline for submission of bids online, the Employer may modify the bidding documents by issuing addenda.
- 10.2 Any addendum thus issued shall be part of the bidding documents and shall be uploaded in "edit attachment option" of concern tender on e-tendering portal and viewable to all tenderer, including a description of the enquiry but without identifying its source. The uploading of addendum on e-tendering portal shall deemed to be acknowledgement of receipt of each addendum to the employer. The Employer will assume no responsibility for non cognizance by the bidders.
- 10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

C. PREPARATION OF BIDS

11. Language of the Bid

- 11.1 All documents relating to the bid shall be in the English language.

12. Documents Comprising the Bid

- 12.1 The bid to be submitted by the bidder as Volume V of the bid document (refer Clause 8.1) shall be in two separate parts:

Part I shall be named "Technical Bid" and shall comprise

- (i) Bid Security in the form specified in section 8
- (ii) Qualification Information and supporting documents as specified in Sect. 2.
- (iii) Certificates, undertakings, affidavits as specified in Section 2.
- (iv) Any other information pursuant to Clause 4.2 of these instructions.
- (v) Undertaking that the bid shall remain valid for the period specified in Cl 15.1.
- (vi) ~~Acceptance/ non acceptance of Dispute Review Expert proposed in Clause 36.1.~~

Part II Shall be named "Financial Bid" and shall comprise

- (i) Form of Bid as specified in Section 6.
- (ii) Priced Bill of Quantities for items specified in Section 7.
- (iii) Additional performance security deposit in terms Contractor shall have to submit the scanned copy of Bank Guaranty in valid for the period upto end of defect liability period in envelope no. 2

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- 12.2 The bidder shall fill and upload the Technical and Financial bid in and shall upload the supporting document in e tendering portal and submit the bid by using his Digital Signature.
- 12.3 Following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section	Particulars	Volume No.
	Invitation for Bids (IFB)	
1	Instruction to Bidders	Volume I
3	Conditions of Contract	
4	Contract Data	
5	Specifications	Volume II
8	Drawings	Volume IV

13. Bid Prices

- 13.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.
- 13.2 The bidder shall fill rates in 'Rate Column of BOQ Sheet' in figures only for all items of the Works described in the Bill of Quantities. Items for which no rate is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.
- 13.3 All duties, taxes, and other levies payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.
- 13.4 ~~The rates and prices quoted by the bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment on any account (For contracts more than 12 month's~~

~~period)~~

DELETED

~~OR~~

~~The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Conditions of Contract. (For contracts more than 12 month's period).~~

14. CURRENCIES OF BID AND PAYMENT.

- 14.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

15. BID VALIDITY.

- 15.1 Bids shall remain valid for a period not less than 120 days after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to Clause 12.1 (v) and the Form of Bid submitted by the bidder, the latter shall be deemed to stand corrected in accordance with the former and the bidder has to provide for any additional security that is required.

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- 15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid except as provided in 15.3 hereinafter, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.
- 15.3 ~~* In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), in the event that the Employer requests and the Bidder agrees to an extension of the validity period, the contract price, if the bidder is selected for award shall be the bid price corrected as follows:~~
~~The price shall be increased by the factor of 0.2% for each week or part of a week that has elapsed from the expiration of the initial bid validity to the date of issue of letter of acceptance to the successful Bidder.~~
- 15.4 ~~Bid evaluation will be based on the bid prices without taking into consideration the above correction.~~
- 16. Bid Security**
- 16.1 The bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 5 of the table of IFB for this particular work. Bid security shall be paid online only.
- 16.2 Deleted
- 16.3 Deleted
- 16.4 The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 15.1.
- 16.5 The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.
- 16.6 The Bid Security may be forfeited**
- (a) If the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
 - (b) If the Bidder does not accept the correction of the Bid Price, pursuant to Clause 27; or
 - (c) In the case of a successful Bidder, if the Bidder fails within the specified time limit to
 - (i) Sign the Agreement; or
 - (ii) Furnish the required Performance Security.
- 17. Alternative Proposals by Bidders**
- 17.1 Delete
- 18. Format and Signing of Bid**
- 18.1 The bidder shall be required to fill and upload the Technical and Financial Bid by using his Digital Signature of the person who is authorised to submit the Bid, uploaded
- 18.2 The documents are required to be uploaded online. The bidder is required to ensure that the size of each document does not exceed 5 MB.
- 18.3 In case Bidder would like to provide any Supporting Document(s) as a part of the Bid Response, the Bidder may upload such Supporting Document(s) under "General Document Option" of tender.

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D. SUBMISSION OF BIDS

19. Submission of Bids

- 19.1 The Bidder shall submit his bid online only.
- 19.2 The bidder shall submit in sealed cover with name of work on the envelope hard copy of tender document duly signed by bidder to the office of Executive Engineer, P.W.Division, Dhule within 72 hours of the Bid lock time.
- 19.3 Online additional performance security deposit in terms of Bank Guarantee shall be submitted within 3 working days from the date of bid locked.

ADDITIONAL PERFORMANCE SECURITY DEPOSIT : In specified formula on page no. 16.

In case of contractor's bid is below more than 0% of estimated cost put to tender, following procedure shall be adopted.

- 1) As per the Government of Maharashtra, P.W.D. Circular dated 26/11/2018, the L-1 contractor has to submit the FDR / DD / BG in valid form, within 8 days from tender opening, in the office of Executive Engineer, P.W.Division, Dhule. The FDR / DD / BG shall be drawn from Nationalised / Schedule bank, in favour of Executive Engineer, P.W.Division, Dhule.
- 2) The validity of D.D. shall be for 3 months from submission of tender or the validity of Bank Guarantee shall be upto the end of Defect Liability period. The MICR and IFC Code of the issuing bank shall be printed on the Demand Draft.
- 3) If the L-1 contractor fails to submit the FDR / DD / BG of additional performance security deposit, within stipulated time, then his tender will be rejected. The L-2 contractor will be then asked in writing to carry out the work at the rates quoted by L-1 contractor. If L-2 contractor is ready to carry out the work at the rates of L-1 tender, then the work will be allotted to L-2 tender.

Details of amount of performance security shall be as below-

1) for bids, if the tender offer quoted up 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 estimated cost put to tender then performance security shall be 1% plus the percentage by which tender offer is more than 10% below, of estimated cost put to tender.

(Eg : If the quoted percent is 15% below then the performance security shall be 1% plus 5% (=15%-10%), total 5% of estimated cost put to tender.

3) for bids, if the quoted percent is more than 15% below, then for remaining percentage the additional performance security shall be calculated as below.

(Eg : If the quoted percentage is 19% below then additional performance security shall be $19 - 15 = 4\% \times 2 = 8\%$)

Total Performance Security Deposit ($1 + 5 + 8 = 14\%$) (as per Govt. of Maharashtra, P.W.Division Mantralaya, Mumbai Notification No. CAT/2017/Pra.Kra.08/Bldg-2 Dt.26/11/2018)

The original Demand Draft or Bank Guarantee, in sealed envelope with the Name of work and tender number written on it, shall be submitted to the Executive Engineer, P.W. Division, Dhule within 3 working days from last date of submission of tender.

In case of submission of false documents/ Demand Draft or Bank Guarantee, action shall be

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taken against the contractor as stipulated in above mentioned GR.

20. Deadline for Submission of the Bids

20.1 The complete Bids (including Technical and Financial) must be received on e-tendering portal <https://mahatenders.gov.in> not later than the date indicated in NIT.

20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

21.1 Any bid submitting the Bid Security and Cost of Tender Fee document in Original after deadline prescribed in NIT will not be accepted and returned. The bid (including technical and financial) will not be opened. The complete Bids (including Technical and Financial) must be received by the Employer online not later than the deadline indicated in the schedule.

22. Modification and Withdrawal of Bids

22.1 The bidder may modify or cancel their bid online only before the deadline prescribed in clause 20 i.e. Bid due date.

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E. BID OPENING AND EVALUATION

23. Bid Opening

- 23.1 The Employer will open all the Technical Bids received of those tenderer who has submitted the Bid Security and Cost of Tender Fee document in Original before the deadline prescribed in Tender Schedule, in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clause 20 and 23.2. In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.
- 23.2 The Online "Technical Bid" shall be opened first. The Bid Security and Cost of Tender Fee documents uploaded online shall be verified with Original documents submitted by bidders as required as per NIT. The amount, form and validity of the bid security furnished with each bid will be announced. If the bid security furnished does not conform to the amount and validity period as specified in the Invitation for Bid (ref. Column 5 and paragraph 3), and has not been furnished in the form specified in Clause 16, the remaining technical bid online will not be opened.
- 23.3
- (i) Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid bid security will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to Clause 12.1.
 - (ii) After receipt of confirmation of the bid security, the bidder will be asked in writing/online (usually within 10 days of opening of the Technical Bid) to clarify or modify his technical bid, if necessary, with respect to any rectifiable defects.
 - (iii) The bidders will respond in not more than 7 days of issue of the clarification letter/online communication, which will also indicate the date, time and venue of opening of the financial Bid. (usually on the 21st day of opening of the Technical Bid)
 - (iv) Immediately (usually within 3 or 4 days) on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.
- 23.4 At the time of Online opening of "Financial Bid", the names of the bidders who were found responsive in accordance with Clause 23.3 (iv) will be announced. The bids of only these bidders will be opened. The remaining bids will be rejected online. The e-tendering system shall communicate to the rejected bidders along with reasons for their rejection. The responsive Bidder's names, the Bid prices, the total amount of each bid, will be announced by the Employer at the opening.
- 23.5 In case bids are invited in more than one package, the order for opening of the "Financial Bid" shall be that in which they appear in the "Invitation For Bid".
- 23.6 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 23.4. result of financial bids of all the Bidders shall be made available e-tendering portal in option "tender free View"

24. Process to be Confidential

- 24.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contractor shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid

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25. Clarification of Financial Bids

- 25.1 To assist in the examination, evaluation and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 27
- 25.2 Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing/online.
- 25.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

26. Examination of Bids and determination of Responsiveness

- 26.1 During the detailed evaluation of "Technical Bids" the Employer will determine whether each Bid (a) meets the eligibility criteria defined in clause 3 and 4. (b) has been properly signed, (c) is accompanied by the required securities and, (d) is substantially responsive to the requirements of the Bidding documents. During the detailed evaluation of the "Financial Bid", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e. priced bill of quantities, technical specifications and drawings.
- 26.2 A substantially responsive "Financial Bid" is one, which conforms to all the terms, conditions and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works, (b) which limits in any substantial way, inconsistent, with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract, or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 26.3 If a "Financial Bid" is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Correction of Errors

- 27.1 "Financial Bids" determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows :
- (a) Where there is a discrepancy between the rates in figures and in words, the rate in words will govern ; and
 - (b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.
- 27.2 The amount stated in the "Financial Bid" will be corrected by the Employer in accordance with the above procedure and the bid amount adjusted with the concurrence of the Bidder in the following manner :
- (a) If the Bid price increases as a result of these corrections, the amount as stated in the bid will be the 'bid price' and the increase will be treated as rebate;
 - (b) If the bid price decreases as a result of the corrections, the decreased amount will be

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treated as the 'bid price'.

Such adjusted bid price shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected and the Bid Security may be forfeited in accordance with Sub-Clause 16.6(b).

28. Deleted

29. Evaluation and Comparison of Financial Bids

29.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 26.2.

29.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

- (a) Making any correction for errors pursuant to Clause 27; or
- (b) Making an appropriate adjustments for any other acceptable variations, deviations; and
- (c) Making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub-Clause 23.6.

29.3 The Employer reserves the right to accept or reject any variation or deviation. Variations and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.

29.4 The estimated effect of the price adjustment conditions under Clause 47 of the Conditions of contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.

29.5 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineers estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the performance security set forth in Clause 34 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

29.6 A bid which contains several items in the Bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder, may be rejected as non-responsive.

30. Deleted

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F. AWARD OF CONTRACT

31. Award Criteria

31.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined.

- (i) To be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid price and
- (ii) To be within the available bid capacity adjusted to account for his bid price which is evaluated the lowest in any of the packages opened earlier than the one under consideration.

In no case the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid. The contract will in such cases be awarded to the next lowest bidder at his evaluated bid price.

32. Employers Right to accept any Bid and to reject any or all Bids.

32.1 Notwithstanding Clause 31, the Employer reserves the right to accept or reject any bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.

33. Notification of Award and Signing of Agreement

33.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price")

33.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 34.

33.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and sent to the successful Bidder, within 28 days following the notification of award along with the Letter of Acceptance. Within 21 days of receipt, the successful Bidder will sign the Agreement and deliver it to the Employer.

33.4 Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

34. Performance Security

34.1 Within 07 days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent to 1% of the Contract price plus additional security for unbalanced Bids in accordance with Clause 19.3 of ITB and Clause 52 of Conditions of Contract.

- A bank guarantee in the form given in Section 8; or

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- B.G. / FDR / TDR as indicated in Appendix.

Payment of Security Deposit and Performance Security Deposit by Bank Guarantee and Online BG Verification : If the contractor wishes to deposit by Bank Guarantee after tender approval then it is mandatory for contractor to verify the Bank Guarantee by paying verification fees of Rs.1000/- + GST through the link provided below <https://onlinebg.emahapwd.com>

34.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued either (a) at the Bidder's option, by a Nationalized / Scheduled Indian Bank or (b) by a foreign bank located in India and acceptable to the Employer.

34.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 34.1 Shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

35. Deleted

36. Dispute Review Expert :- Deleted

36.1 Deleted

36.2 For works costing above Rs.5 Crore the procedure for arbitration will be as per G.R of Law & Judiciary Department issued vide Sankirn- 2016/C.R. 20/ Ka-19 dt. 13/10/2016 regarding "Institutional Arbitration Policy".

37. Corrupt or Fraudulent Practices

37.1 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with National Highways Authority of India / State PWDNH and any other agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.

37.2 Furthermore, Bidders shall be aware of the provision stated in Sub-Clause 23.2 and Sub-Clause 59.2 of the Conditions of Contract.

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APPENDIX TO ITB

		Clause Reference With respect to Section – I.																												
1.	Name of the Employer is Executive Engineer, P.W.Division, Dhule	[Cl. 1.1]																												
2.	The last five years 2020 - 2021 2021 - 2022 2022 - 2023 2023 - 2024 2024 - 2025																													
3.	Achieved a maximum annual financial turnover in any one year during last Five year of Rs.1300.47 Lakh	[Cl. 4.5.A (a)]																												
4.	Value of similar type of work : The applicant bidder have completed similar type preferring R.C.C. Building and Cement Concrete Road Work during last Five year as per the condition given below. (The information should be submitted in Form No.III) (2020-21, 2021-22, 2022-23, 2023-24, 2024-25) Value of Similar Type of Work executed by contractor during last Five years shall be as following. Completed Three Separate Similar work. The cost of each work shall not be less than 40% of the cost put to tender. (Cost of each R.C.C. Building work minimum Rs. 1787.64 Lakhs and Cost of each Concrete Road work minimum Rs. 103.02 Lakhs) OR Completed Two Separate Similar work. The cost of each work shall not be less than 50% of the cost put to tender. (Cost of each R.C.C. Building work minimum Rs. 2234.55 Lakhs and Cost of each Concrete Road work minimum Rs. 128.78 Lakhs) OR Completed One Similar work. The cost of work shall not be less than 80% of the cost put to tender. (Cost of each R.C.C. Building work minimum Rs. 3575.28 Lakhs and Cost of each Concrete Road work minimum Rs. 206.05 Lakhs) For Electrical Work : Bidder must have satisfactorily completed three similar type of work amounting not below to 40% value of the tender cost OR two similar type of work amounting not below to 50% value of the tender cost OR one similar type of work amounting not below to 80% value of the tender cost in Govt. of Maharashtra/Govt. of India / Semi Govt. / PSU. during last five years. Work completion certificate from competent authority should be attached. (Rank not below the Executive Engineer or Tech. Head) <table><tr><th>S No.</th><th>Work Details</th><th>APT Amount</th><th>Similar type of Work</th><th>40% value of the tender cost</th><th>50% value of the tender cost</th><th>80% value of the tender cost</th></tr><tr><td>1</td><td>Electrical Installation</td><td>18396496/-</td><td>SITC of Internal E.I., LAN wiring, , St. Lt.</td><td>7358598/-</td><td>9198248/-</td><td>14717197/-</td></tr><tr><td>2</td><td>Lift</td><td>17363647 /-</td><td>Passenger lift</td><td>6945458/-</td><td>8681824/-</td><td>13890917/-</td></tr><tr><td>3</td><td>Fire Fighting</td><td>11757430/-</td><td>SITC of Fire Fighting</td><td>4702972/-</td><td>5878715/-</td><td>9405944/-</td></tr></table>	S No.	Work Details	APT Amount	Similar type of Work	40% value of the tender cost	50% value of the tender cost	80% value of the tender cost	1	Electrical Installation	18396496/-	SITC of Internal E.I., LAN wiring, , St. Lt.	7358598/-	9198248/-	14717197/-	2	Lift	17363647 /-	Passenger lift	6945458/-	8681824/-	13890917/-	3	Fire Fighting	11757430/-	SITC of Fire Fighting	4702972/-	5878715/-	9405944/-	[Cl. 4.5.A (b)]
S No.	Work Details	APT Amount	Similar type of Work	40% value of the tender cost	50% value of the tender cost	80% value of the tender cost																								
1	Electrical Installation	18396496/-	SITC of Internal E.I., LAN wiring, , St. Lt.	7358598/-	9198248/-	14717197/-																								
2	Lift	17363647 /-	Passenger lift	6945458/-	8681824/-	13890917/-																								
3	Fire Fighting	11757430/-	SITC of Fire Fighting	4702972/-	5878715/-	9405944/-																								

Note :- देय कामाच्या विशिष्ट स्वरूपानुसार समकक्ष काम कंत्राटदारांनी प्रत्यक्ष केलेले असणे अनिवार्य आहे. संबंधितांनी हे काम अन्य कंत्राटदाराकडून सबलेट (Sublet) करून घेतले असल्यास त्याबद्दल संबंधीत कार्यकारी अभियंता यांची लिखित परवानगी जोडणे अनिवार्य राहिल.

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5.	Quantity of work are – 1) R.C.C. Work Above M-10 to M-25 :- 1065.50 Cum 2) Plaster :- 16554.28 Sqm 3) Flooring :- 4484.85 Sqm 4) TMT :- 304.17 M.T. 5) R.C.C. M-30 & Above :- 2217.23 Cum For Electrical Work : देय कामासाठी मागील 5 वर्षा पैकी (2020-21, 2021-22, 2022-23, 2023-24, 2024-25) कोणत्याही एका वर्षात ज्या महत्वाच्या परिमाणाच्या बाबी करावयाच्या आहेत त्याचे कमीत कमी परिमाण :- 1) E.I Point Wiring :- 1298 Nos. Point 2) Fire Fighting :- 18 Nos. Smoke Detector 1 Nos. Main Fire Pump (Kw-37) 3) Lift :- 10 No. 4 Passenger Lift	[Cl. 4.5.A (c)]
6	The Cost of electric work is Rs. Not Applicable	[Cl. 4.5.A (d)]
7	The cost of water supply / Sanitary Works is Rs. Not Applicable	[Cl. 4.5.A (e)]
8	Liquid assets and/or availability of credit facilities is Rs. Deleted	[Cl.4.5B (c)]
9	Price level of financial year 2024-25	[Cl. 4.7]
10	The Pre-bid meeting will take place at Chief Engineer, P.W.Region, Nashik on Date 9/6/2026 Time 12.00 Hours	[Cl. 9.2.1]
11	The technical bid will be opened online at the Office of the Superintending Engineer, P.W.Circle, Dhule	
12	Address of the Employer Executive Engineer, P.W.Division, Dhule	[Cl. .4.5(a)]
13	Identification : Bid for - Bid Reference : No. 6 For 2026-27 Do not open before --	[Cl. .19.2(b)]
14	The bid should be submitted latest by 16/06/2026	[Cl. 20.1(a)]
15	The Financial bid will be opened at Superintending Engineer, P.W.Circle, Dhule	[Cl.23.1]
16	The Bank Guarantee / Demand Draft / F.D.R. in favour of Executive Engineer, P.W.Division, Dhule payable at Dhule	[Cl.34.1]
17	The name of Dispute Review Expert is (Deleted)	[Cl.36.1]
18	Enhancement factors (for the cost of works executed and financial figure to a common base value for works completed) Year before Multiply factor One 1.10 Two 1.21 Three 1.33 Four 1.46 Five 1.61	

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ANNEXURE-I

LIST of KEY Plant & Equipment to be deployed on Contractor Work (Reference Cl 4.5 (B) (a))

STATEMENT NO.2 (A) (To be uploaded in Envelop No.-1)

A) QUESTIONNAIRE ON MODERN MACHINERY :-

Proforma for information regarding availability / procurement of machinery required for this work
For Building Work (RCC) :

Sr. No.	Name of Machinery	Qty.
1	Fully automatic Micro processor based programmable logical control (PLC) with SCADA enabled concrete batch mix plant (Pan Mixer) of minimum 30 cubic meter per hour capacity of any standard company	1 Number Owned
2	Transit Mixer of minimum 6 cubic meter	3 Numbers Owned
3	Sand screening cum washing unit electrically or diesel operated minimum capacity 80 to 100 TPH	1 Number Owned
4	Pocklain	2 Number Owned
5	Mobile Tower Crane	2 Number Owned
6	Double Beamed Screwed Vibratory of 2 H.P. Capacity	1 Number Owned
7	Tipppers / Trucks / Hywa	4 Number Owned
8	Water Tanker 5000 Litre Capacity	4 Numbers Owned
9	DG Set (160 KVA)	1 Numbers Owned
10	Needle Vibrator	4 Numbers Owned
11	Arco Steel Centering Plates	10000 Sqmt Owned
12	Plate Compactor (Plinth Fill Compactor)	1 Numbers Owned

- 1) As per P.W.D. Mantralaya, Mumbai-32 Letter No. CAT-2017/CR-4 Bldg-2 Dt.27/9/2018
- 2) As per P.W.D. Mantralaya, Mumbai-32 Letter No. Sankirna-2023/Pra.Kra.73/Bldg-2 Dt.21/9/2023

1. The life of new machinery will be considered as 15 years.
2. There will no need of checking by SE(Mechanical) for first 10 years.
3. After 10th year, the machinery shall be got checked and certifying for it fitness from SE Mechanical/ACE (mechanical) every years.

After 15th year, the contractor will be check machinery every year from SE/ ACE (Mechanical) and produce his certificate of fitness. The certificate will be required for these machineries where it is necessary and not issued by RTO.

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ANNEXURE-II

LIST of KEY Personnel to be deployed on Contractor Work (Reference Cl 4.5 (B) (b))

Note : Bidders shall fill the relevant information of key persons and Technical Staff available with him in the formats and fields specified on “bidcap.emahapwd.com” portal.

Out of the total key persons and Technical staff available with bidders shall upload the staff he desires to deploy for this work. This statement shall be downloaded from portal “bidcap.emahapwd.com”. Bidder shall upload this QR based statement downloaded on or before two days of submission.

If this certificate is not uploaded then tender shall be treated as non responsive.

The contractor should have following personnel having Qualification and experience as shown below for deployment on this work.

Sr. No.	Personal	Number	Experience in Building Works
1	Project Manager	1	B.E. Civil + 15 year Experience (5 Years as a Manager)
2	Site Manager	4	B.E. Civil + 10 year Experience (5 Years in Building Construction)
3	Plant Engineer	2	B.E. Mech + 10 year Experience OR Diploma in Mech. + 15 Year Experience
4	Quality Surveyour	2	B.E. Civil + 7 year Experience OR Diploma in Civil + 10 Year Experience
5	Electrical Engineer	2	B.E. Electrical + 8 year Experience OR Diploma in Electrical + 10 Year Experience
6	Soil & Material Engineer	1	B.E. Civil + 10 year Experience
7	Survey Engineer	1	B.E. Civil + 5 year Experience OR Diploma in Civil + 10 Year Experience
8	Safety Engineer	1	B.E. Civil + 5 year Experience
9	Supervisor	2	Diploma in Civil + 8 year Experience

Information regarding technical personnel should be given in Form No.V attached with the document.

Tender Evaluation Committee :-

Supporting documents regarding above Qualification Criteria such as work done certificates which are claimed for calculation of Annual Turn Over and Similar type of work and quantity certificates which have submitted by the contractor shall be verified by following committee.

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Sr. No.	Committee Member	
1	Superintending Engineer, P.W.Circle, Dhule	Chairman
2	Executive Engineer, V.Q.C.C., Nashik Or Deputy Engineer, , V.Q.C.C., Or Asstt. Superintending Engineer, P.W.Circle, Dhule (Depending on Availability)	Member
3	Executive Engineer, P.W.Division, Dhule	Member
4	Divisional Accounts Officer, P.W.Division, Dhule	Member Secretary

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SECTION – 2

QUALIFICATION INFORMATION

The information to be filled in by the bidder in the following pages will be used for purposes of post qualification as provided for in clause 4 of the Instructions to bidders. This information will not be incorporated in the contract

1. For Individual Bidders

1.1 Constitution or legal status of Bidder (if required)

(Attach Copy)

Place of registration: -----

Principal place of business: -----

1.2 Power of attorney of signatory of bid (if required)

(Attach)

1.3 Total value of civil Engineering

1.4 Construction work performed in the
last five years.

2020-2021	-----
2021-2022	-----
2022-2023	-----
2023-2024	-----
2024-2025	-----

(Rupees in Million)

1.3.1 Work performed as prime contractor, on works of a similar nature over the last five years.**

Project Name	Name of the Employer *	Description of work	Contract No.	Value of Contract (Rs. Crore)	Date of Issue of work order	Stipulated period of completion	Actual date of completion *	Remarks explaining reasons for delay & work completed

* Attach certificate(s) from the Engineer(s)-in-charge.

** Immediately preceding the financial year in which bid are received.

β Attach certificate(s) from Chartered Accountant.

1.3.2 Quantities of work executed as prime contractor, in the last five years.**

Year	Name of the work	Name of the Employer*	Quantity of work performed (Cum) @ Remarks					Remarks* (indicate Ref.)
			Cement Concrete	Earth Work	Granular Sub Base	Wet Mix Macadam	Bituminous Work	
2020-21								
2021-22								
2022-23								
2023-24								
2024-25								

* Attach certificate(s) from the Engineer(s)-in-charge.

** Immediately preceding the financial year in which bid are received.

β Attach certificate(s) from Chartered Accountant.

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1.4 Information on Bid capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A) Existing commitments and on-going works :

Description of work	place & State	Contract No.	Name & Address of employer	Value of Contract (Rs. Cr.)	stipulated period of completion	Value of works* remaining to be completed (Rs. Cr.)	Anticipated date of completion
1	2	3	4	5	6	7	8

** Attach certificate(s) from the Engineer(s)-in-charge.*

@ The item of works for which data is requested should tally with that specified in ITB clause 4.5A(C).

*** Immediately preceding the financial year in which bid are received.*

Deleted, if prequalification has been carried out

(B) Works for which bids already submitted:

Description of work	Place & State	Name and Address of Employer	Estimated value of Works (Rs. Cr.)	Stipulated period of completion	Date when decision is expected	Remark, if any
1	2	3	4	5	6	7

1.5 Availability of key items of Contractor's Equipment essential for carrying out the Works [Ref. Clause 4.4.5]. The Bidder should list all the information requested below. Refer also to Sub-Clause 4.3(d) of the Instructions to Bidders.

Item of Equipment	Requirement		Availability Proposal			Remark (from whom to be purchased)
	No.	Capacity	Owned	Nos./ Capacity	Age / Condition	

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- 1.6 Qualification and experience of key personnel required for administration and execution of the contract [Ref. 4.5.4]. Attach biographical data. Refer also to Sub-Clause 4.3 (e) of instructions to Bidders and Sub Clause 9.1 of the Conditions of Contract.

Position	Name	Qualification	Year of Experience (General)	Year of Experience in the proposed position.
Project Manager				

- 1.7 Proposed Sub-Contracts and firms involved [Refer ITB Clause 4.3 (K)]

Sanctions of the works	Value of Sub-Contract	Sub-Contract (Name & Address)	Experience in similar work
----- Delete -----			

- 1.8 Financial reports for the last five years: balance sheets, profit & loss statements, auditor's reports (in case of companies /corporation) etc. List them below and attach copies.

- 1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand. Lines of credit etc. List them below and attach copies of support documents.

- 1.10 Name, address and telephone, telex and fax numbers of the bidder's bankers who may provide reference if contacted by the Employer.

- 1.11 Information on litigation history in which the bidder is involved.

Other party (ies)	Employer	Cause of Dispute	Amount involved	Remarks showing present status

- 1.12 Delete

- 1.13 Proposed work method and schedule. The bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the bidding Documents. [Refer ITB Clause 4.1 & 4.3(1)]

- 1.14 Delete.

- 1.15 Delete

2 Deleted

3 Additional Requirements

- 3.1 Bidders should provide any additional information required to fulfil the requirements of clause 4 of the Instructions to the Bidders, if applicable.

(i) Affidavit

(ii) Undertaking.

* Delete, if prequalification has been carried out

** Fill the name of Consultant

*** Delete, if prequalification has not been carried out.

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ADDITIONAL CONDITIONS OF THE WORK

1. The Contractor shall get the list of make/brands approved by Engineer in- charge or any of his authorized representatives will in advance before the execution of work.
2. The Contractor shall produce & submit original manufacture test certificate for the electrical item/ equipment to be used at site as mention in Schedule “B”
3. No deviation of Make/ Brands will be allowed.
4. The Contractor shall prepare shop drawing before execution of work and get the necessary approval from PWD, Electrical Inspector, Ahmednagar & Chief Fire Officer, Municipal Corporation, Ahmednagar.
5. After the completion of work the contractor shall get necessary final permission from Electrical Inspector & necessary testing from MSEDCL before connecting the installation to license supply.
6. After the completion of work the contractor shall test the entire installation in the presence of Engineer in-charge or any of his authorized representatives and submit the test report.
7. The Various permissions should be taken from various govt. dept./local authority time to time by contractor.
8. MSEDCL related work material purchased by contractor should be as per the MSEDCL company specification and approved from concern competent MSEDCL authority & Engineer in charge.
9. Contractor shall get all sanctions/permissions from MSEDCL regarding execution of substation, overhead line etc. required demand charges paid by PWD only.
10. The complete safety of worker during the execution of work is responsibility of contractor. The contractor will have to follow all the safety rules during the execution of work, the responsibility of compensation will be of the contractor. P.W.D. Department will not responsible for any compensation.
11. Any fees/charges/taxes or penalties towards payment of Government/semi government/local/ private bodies arising during the execution of work is to be borne by the contractor. No refund will be paid for this.
12. The contractor has to maintain the system during the entire period of contract as per existing design in safe manner by adopting all precautions and observing safety rules.
13. The contractor shall have to attend faults, breakdowns and emergency call for 24 hours a day, on all days through his skilled staff during D.L.P.
14. Skilled staff has to be deputed whenever needed and in case of emergency period, the Engineer will intimate the period will in advance.
15. Contractor has to submit the list of skilled staff mentioning their qualifications, ages experience and character with phone numbers.
16. If any part of the complete system is modified or altered with change in design / concept by the contractor. The Executive Engineer will terminate the particular item / full.
17. In case of fatal or non fatal accident occurred to the works during erection and maintenance of system the Department will not be liable to pay for a compensation and its it is duty of contractor to observe all

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Labor Acts and Rules.

18. All complaint calls shall have to be attended by Contractor's workers within reasonable time and with fastest possible speed, but in any case, it shall not be extended beyond 2 hours.
19. The Contractor shall preferably obtain the signature of Engineer in charge after attending the break down calls and inspection / servicing and all work should be carried out with knowledge to in charge.
20. Dully comprehensive contract covers work of replacement of unserviceable / defective operational parts, moving parts switchgears relate in the system, control cables and switchgears etc.
21. 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.
22. The scope of work includes Supply, installation, testing and commissioning & providing free fully comprehensive maintenance including all equipment's, spares of system & consumable for the period of 12 months for EI, 24 Month for DG set system, 36 Month for Ceiling Fan, LED fitting, CCTV , fire fighting/Fire alarm system, Transformer and 60 Month for Solar lights & Solar roof top system after successful commissioning the system. Contractor should arrange the maintenance complaint within 24 hours from getting the complaint.
23. After completion of work as build drawing of work carried out shall be submitted by the tenderer to the Engineer in charge.
24. Electrical work shall comply CEA Regulations - 2010 & other related statutory provisions & N.B.C-16 & Maharashtra Fire Act (Latest update guidelines) (महाराष्ट्र अग्नीप्रतिबंधक व जिवसंरक्षक उपाय योजना (सुधारीत अधिनियम-2023)).
25. Contractor shall prepare all documents & submit to supply company to take supply meter (connection) to site as per direction given by Engineer-in-charge (Quotation amount will be paid by Department)
26. Contractor should arrange Third party inspection on his own cost, as per directions given in the administrative approval (If required).
27. Contractor should take the photographs of site before start the work, at the time of work & after completion of work. The photographs should be submitted in 3 copies to the Engineer-in-charge.
28. Contractor has ensure that the illumination has been maintained as per prevailing act/rules.
29. Electrical appliances such as Fan, Tube, Lamp, Bulkhead fitting, corridor lights, water pump, AC should be energy efficient & 5 star rated shall be used for this work.
30. Its mandatory on the part of contractor to get tested the electrical material used on this work as directed by Engineer in charge from MSME (WR) Sakinaka Mumbai or any other accredited testing lab of Govt. of Maharashtra / Govt. of India. Contractor shall pay the necessary testing fee/Charges.
 - A) After testing, if material used on the work fails the test, it will be the entire responsibility of the contractor to replace it free of cost.
 - B) The final payment will be made only after producing the successful original test certificate of the

Contractor

No.of Corrections

Executive Engineer,
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material for which the testing has been done

31. It is mandatory to pay appropriate amount of stamp duty to Revenue Authority by contractor after acceptance of tender as per Government of Maharashtra, Revenue and Forest Department Circular No. -मुद्रांक-2020/ अनौ क्र. 01/2016/प्र1-म/218.क्र.(धीरण), मंत्रालय, मुंबई दि. 18 मार्च 2021
32. For Non-operation of system (EI, Firefighting & Alarm, lifts, DG, Transformer, AC, PA, Display & other as per BOQ) Rs. 1000/- per day will be deducted from bill.

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UNDERTAKING

(Undertaking shall be submitted on contractor letter pad)

I / We Shri. / M/s. _____ (Name
of Tenderer) _____ hereby declare that I / we have enclosed
additional performance security in the form of D.D. / F.D.R. / B.G. No. _____
(Strike out whichever is not applicable) dated _____ of _____
bank. Which is Scheduled / a Nationalized Bank along with the tender for the work of _____

_____ Tal. _____ Dist.
Dhule in financial envelope no. 2 I am aware of the condition in the tender about rejection of my offer
in case of non-submission of additional Performance security.

Date :-

Signature & Seal

Place :-

Contractor

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Executive Engineer,
P.W.Division, Dhule

AFFIDAVIT

(Separate for Each Work)

(The bond of the above affidavits should be submitted on a Rs.100/- Non Judicial stamp paper and it shall be notarized along with the Tender fee's D.D. / Pay Order & EMD)

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

I _____ age _____ address _____
_____ (Authorized signatory to sign the contract), hereby submit, vide this affidavit in truth, that I am the owner of the contracting Firm _____ / authorized signatory and I am submitting the documents in envelope no. 1 for the purpose of scrutiny of the contract. I hereby agree to the conditions mentioned below :

1. That I have submitted on line Tender for the work **Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule** on portal <http://mahatenders.gov.in> of P.W.D.
2. That I have carefully gone through, read, thoroughly studied and understood all terms and conditions, specification included in the tender document (Tender Form, Detail Tender Notice, Conditions and Specifications common set of Deviations drawings etc.) I hereby accept all these conditions. I agree to abide by the terms and condition in the tender document and agree to execute the work as per terms and conditions, specifications laid down in the tender document.
3. That I have furnished EMD (Earnest Money Deposit) from the Bank Account in the name of my firm only.
4. I do hereby state on oath that the documents uploaded by in Envelope No. 1 of this tender are true, correct and bonafied. There are no errors and omissions in the uploaded documents.
5. I do hereby the state on oath that the value of work in hand (Value of B) is accurate on the date of submission of this tender. If in the future it is found wrong or misleading. I am liable for action under Indian Penal Code, if any papers are found false/ fraudulent during contract period and even after the completion of contract.
6. I am liable for action under Indian Penal Code for submission of any false / fraudulent paper / information submitted in envelope no. 1.
7. The undersigned hereby authorize(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.
8. The undersigned understand and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the Department ! Project implementing agency.

Contractor

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9. I am neither associated, nor has been associated, directly or indirectly, with the Consultant or any other entity that has prepared the design, specification and other documents for the project or being proposed as Project Manager for the Contract.
10. I am liable for action under Indian Penal Code is during contract period and defect liability period, any false information, false bill of purchases supporting proof of purchase, proof of testing submitted by my staff, subletting company or by myself, I will be liable for action under Indian Penal Code.
11. I am liable for action under Indian Penal Code if any paper are found false / fraudulent during contract period and even after the completion of contract (finalisation of final bill).
12. I / We hereby solemnly agree that, I/ We have willingly entered into the contractor with Public Works Department, Government of Maharashtra for the work of **Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule** for the said work, I/ We am / are buying the required quantity of asphalt having stipulated specifications from the refinery of IOC / HP / BP. I / We am / are also aware of the fact that after receiving the said quantity of asphalt from the refinery, it is mandatory upon me to deposit the original copy / copies of challan of asphalt in the office of Executive Engineer in charge of the work or his authorized officer. I / we also agree that if I fail to produce sufficient documentary evidence i.e. original copy / copies of challan for the purchase of asphalt. I will be totally held responsible for this non compliance and in such a case I will be responsible for any actions which the department may deem fit to impose on me / us or legal proceedings as per prevailing law.
- Hence this Affidavit.

Date :-

Place :-

Signature of Contractor

(Signes by an Authorized Officer of the firm)

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

UNDERTAKING

I, the undersigned, do hereby undertake that our firm M/s. _____
would invest minimum cash up to 25 % of the value of work during implementation of the Contract.

(Signed by Authorised Officer of the Firm)

Title of Officer

Name of Firm

DATE

Contractor

No.of Corrections

Executive Engineer,
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UNDERTAKING
(Bid Validity Certificate)

I, the undersigned do hereby undertake that our firm M/s. _____
_____ agree to abide by this bid for a period 120 days for the date fixed for
receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that
period.

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

DATE

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

BOND FOR ANTI-TERMITE TREATMENT

(On Stamp Paper Worthy Rs.100/-)

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

Name of Agency :-

Agreement No. :-

The contractor here by declares that the Anti -termite treatment where ever necessary under this contract shall be” of the best quality and workmanship and shall be strictly in accordance with the specifications and particulars contained / mentioned in the clause here of and the contractor hereby guarantee that the said work would continue to conform to the description and quality aforesaid for a period of Ten years from the date of handing over the said work to the Department and notwithstanding the fact that the Department may have inspected and or approved the said work. If during the aforesaid period and seven years, the said work be discovered not to conform to the description and quality aforesaid or have deteriorated (and the decision of the Engineer in charge in that behalf will be final and conclusive) the Department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the work will be at the contractor's risk and all the provisions herein contained relating to rejection of work etc. shall apply, the contractor shall, if so called upon, have to make good the work etc. or such portion thereof as is rejected by the Engineer in charge, otherwise the contractor shall pay to the Department, such damages, as may arise by the reason of the breach of the condition herein contained. Nothing here in contained shall prejudice any other right of the Department in that behalf under this contract or otherwise.

Date :

Place :

Contractor

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

GUARANTY BOND FOR WATERPROOFING WORK

(On Stamp Paper Worthy Rs.100/-)

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

Name of Agency :-

Agreement No. :-

The contractor hereby declares that the water proofing work carried out under contract shall be of the best quality and workman particulars contained / mentioned in the clause hereof and the contractor hereby guarantee that the said work would continue to confirm to the description and quality aforesaid for a period of **Ten Years** from the date of handing over the said work to the department and notwithstanding the fact that the Department may have inspected and or approved the said work be discovered not to confirm to the description and quality aforesaid or have deteriorated (and the decision of the Engineer-in-charge in that behalf will be final and conclusive) the Department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality.

On such rejection, the work will be at the contractor's risk and all the provisions herein contained relating to rejection of the work etc. shall apply. The contractor shall, if so called upon have to make good the work etc. or such portion thereof, as is rejected by the engineer in charge, otherwise the contractor shall pay to the department, such damages, as may arise be the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Department on that behalf under this contract or otherwise. 25 % amount of executed amount of water proofing (in addition to his bond) will be recovered from running / final bill as a retention money this amount will be refunded to contractor after completion of defect liability period of seven years prescribed for water proofing items.

Date :

Place :

Contractor

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

MEMORANDUM OF UNDERSTANDING (MOU) FOR Lift / Fire Fighting

Between
Party No-1
AND
Party No-2

This Memorandum of Understanding (herein after referred to as 'MOU') entered on the **date**____ at **place**_____ by and between:

Name of 1st Party_____, a company incorporated under the provisions of the Companies Act, 1956, having its registered office at ADDRESS_____ referred to as, **The First Party**

Name of 2nd Party, Address _____ hereinafter referred to as, The **Second Party**

WHEREAS **Tender Inviting Authority**_____ (**Name of Work**_____

The First Party is meeting the Pre-qualification Criteria as per tender and not meeting the additional criteria **Name of work which is to be executed by second party**_____ and the Second Party is meeting the additional criteria as per tender.

The First Party and the Second Party hereby agree as under:

1. Prior to bidding on this tender, the parties on mutual consent shall enter into a Joint Bidding Agreement to detail out each party's obligations and responsibilities for the execution of this identified project, including the allocation of the scope of works in the identified project and the parties respective obligations on the related bidding costs and expenses. And detailed scope of work and pricing.

2. The MOU shall be part of the tender to be submitted to Tender Inviting Authority_____.

3. The MOU does not agree the parties to enter into collaboration with any other parties for this particular tender.

4. In case First Party fails to provide the satisfactory results after sale - service in that situation our company will be totally responsible for providing timely and effective service support **up to minimum 3 years period i.e. within 3 years warranty period**. We also undertake that parts will be made available to the user departments as and when required to keep the system functional.

5. This MOU shall be governed under Indian laws. Disputes, if any shall be resolved amicably, otherwise resolved by arbitration in India in accordance with the Indian Arbitration and Conciliation Act, 1996. The language of the arbitration shall be English language.

This Memorandum of Understanding (MOU), signed in duplicate with each party receiving one original document, shall cease to be valid till the bid validity of the tender from the date of the MOU unless mutually extended in writing by the parties.

For and on behalf of
Name of 1st party

For and on behalf of
Name of 2nd party

Name
Position
Witnesses:

Name-
Position-

1.

2.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

INTEGRITY PACT

Between

Public Works Department, Maharashtra Government
having its Office at Bandhkam Bhawan, Fort Mumbai – 400001

hereinafter referred to as

"PUBLIC WORKS DEPARTMENT",

and

[Insert the name of the Sole Bidder/Lead Partner of Joint Venture]

having its Registered Office at _
(Insert full Address)

and

[Insert the name of the Partner(s) of Joint Venture, as applicable]

having its Registered Office at _
(Insert full Address)

hereinafter referred to as

"The Bidder/Contractor"

Preamble

PUBLIC WORKS DEPARTMENT intends to award, under
laid-down organizational procedures, contract(s) for _
[Insert the name of the package]

Co

— (Signature) _

(For & On behalf of PUBLIC WORKS DEPARTMENT) Partner(s) of

(Signature) _

Joint Venture/ Contractor)

Number _

[Insert Specification Number of the package]

PUBLIC WORKS DEPARTMENT values full compliance with all relevant laws and regulations, and the principles of economical use of resources, and of fairness and transparency in its relations with its Bidders/ Contractors.

In order to achieve these goals, PUBLIC WORKS DEPARTMENT and the above named Bidder/Contractor enter into this agreement called '**Integrity Pact**' which will form a part of the bid.

It is hereby agreed by and between the parties as under:

Section I - Commitments of PUBLIC WORKS DEPARTMENT

- (1) PUBLIC WORKS DEPARTMENT commits itself to take all measures necessary to prevent corruption and to observe the following principles :
 - a) No employee of PUBLIC WORKS DEPARTMENT, personally or through family members, will in connection with the tender, or the execution of the contract, demand, take a promise for or accept, for him/herself or third person, any material or other benefit which he/she is not legally entitled to.
 - b) PUBLIC WORKS DEPARTMENT will during the tender process treat all Bidder(s) with equity and fairness. PUBLIC WORKS DEPARTMENT will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - c) PUBLIC WORKS DEPARTMENT will exclude from evaluation of Bids its such employee(s) who has any personnel interest in the Companies/ Agencies participating in the Bidding/ Tendering process
- (2) If Principle Secretary PWD, Maharashtra Government obtains information on the conduct of any employee of PUBLIC WORKS DEPARTMENT which is a criminal offence under the relevant Anti- Corruption Laws of India, or if there be a substantive suspicion in this regard, he will inform its Chief Vigilance Officer and in addition can initiate disciplinary actions under its Rules.

Section II - Commitments of the Bidder/Contractor

- (1) The Bidder/Contractor commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles

(Signature) _

(For & On behalf of PUBLIC WORKS DEPARTMENT) Partner(s) of

(Signature) _

(For & On behalf of Bidder/
Joint Venture/ Contractor)

during his participation in the tender process and during the contract execution:

- a) The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to PUBLIC WORKS DEPARTMENT, or to any of PUBLIC WORKS DEPARTMENT's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange an advantage during the tender process or the execution of the contract.
 - b) The Bidder/Contractor will not enter into any illegal agreement or understanding, whether formal or informal with other Bidders/Contractors. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - c) The Bidder/Contractor will not commit any criminal offence under the relevant Anti-corruption Laws of India; further, the Bidder/Contractor will not use for illegitimate purposes or for purposes of restrictive competition or personal gain, or pass on to others, any information provided by PUBLIC WORKS DEPARTMENT as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - d) The Bidder/Contractor of foreign origin shall disclose the name and address of the Agents/representatives in India, if any, involved directly or indirectly in the Bidding. Similarly, the Bidder/Contractor of Indian Nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the Bidding.
 - e) The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, or committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and/or with the execution of the contract.
 - f) The Bidder/Contractor will not misrepresent facts or furnish false/forged documents/informations in order to influence the bidding process or the execution of the contract to the detriment of PUBLIC WORKS DEPARTMENT.
- (2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Contractor

(Signature) _____

(For & On behalf of PUBLIC WORKS DEPARTMENT) Partner(s) of

(Signature) _____

(For & On behalf of Bidder/
Joint Venture/ Contractor)

Section III- Disqualification from tender process and exclusion from future contracts

- (1) If the Bidder, before contract award, has committed a serious transgression through a violation of Section II or in any other form such as to put his reliability or credibility as Bidder into question, PUBLIC WORKS DEPARTMENT may disqualify the Bidder from the tender process or terminate the contract, if already signed, for such reason.
- (2) If the Bidder/Contractor has committed a serious transgression through a violation of Section II such as to put his reliability or credibility into question, PUBLIC WORKS DEPARTMENT may after following due procedures also exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder/Contractor and the amount of the damage. The exclusion will be imposed for a minimum of 12 months and maximum of 3 years.
- (3) If the Bidder/Contractor can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system, PUBLIC WORKS DEPARTMENT may revoke the exclusion prematurely.

Section IV - Liability for violation of Integrity Pact

- (1) If PUBLIC WORKS DEPARTMENT has disqualified the Bidder from the tender process prior to the award under Section III, PUBLIC WORKS DEPARTMENT may forfeit the Bid Guarantee under the Bid.
- (2) If PUBLIC WORKS DEPARTMENT has terminated the contract under Section III, PUBLIC WORKS DEPARTMENT may forfeit the Contract Performance Guarantee of this contract besides resorting to other remedies under the contract.

Section V- Previous Transgression

- (1) The Bidder shall declare in his Bid that no previous transgressions occurred in the last 3 years with any other Public Sector Undertaking or Government Department that could justify his exclusion from the tender process.

(Signature) _

(For & On behalf of PUBLIC WORKS DEPARTMENT) Partner(s) of

(Signature) _

(For & On behalf of Bidder/
Joint Venture/ Contractor)

- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section VI - Equal treatment to all Bidders/Contractors

- (1) PUBLIC WORKS DEPARTMENT will enter into agreements with identical conditions as this one with all Bidders.
- (2) PUBLIC WORKS DEPARTMENT will disqualify from the tender process any bidder who does not sign this Pact or violate its provisions.

Section VII - Punitive Action against violating Bidders/Contractors

If PUBLIC WORKS DEPARTMENT obtains knowledge of conduct of a Bidder or a Contractor or his subcontractor or of an employee or a representative or an associate of a Bidder or Contractor or his Subcontractor which constitutes corruption, or if PUBLIC WORKS DEPARTMENT has substantive suspicion in this regard, PUBLIC WORKS DEPARTMENT will inform the Chief Vigilance Officer (CVO).

(*)Section VIII - Independent External Monitor/Monitors

- (1) PUBLIC WORKS DEPARTMENT has appointed a panel of Independent External Monitors (IEMs) for this Pact with the approval of Central Vigilance Commission (CVC), Government of India, out of which one of the IEMs has been indicated in the NIT/IFB.
- (2) The IEM is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement. He has right of access to all project documentation. The IEM may examine any complaint received by him and submit a report to Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT, at the earliest. He may also submit a report directly to the CVO and the CVC, in case of suspicion of serious irregularities attracting the provisions of the PC Act. However, for ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter shall be referred to the full panel of IEMs, who would examine the records, conduct the investigations and submit report to Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT, giving joint findings.

Contra

(Signature) _

(For & On behalf of PUBLIC WORKS DEPARTMENT) Partner(s) of

(Signature) _

Joint Venture/ Contractor)

- (3) The IEM is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT.
- (4) The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all documentation of PUBLIC WORKS DEPARTMENT related to this contract including that provided by the Contractor/Bidder. The Bidder/Contractor will also grant the IEM, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his documentation. The same is applicable to Subcontractors. The IEM is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.
- (5) PUBLIC WORKS DEPARTMENT will provide to the IEM information as sought by him which could have an impact on the contractual relations between PUBLIC WORKS DEPARTMENT and the Bidder/Contractor related to this contract.
- (6) As soon as the IEM notices, or believes to notice, a violation of this agreement, he will so inform the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT and request the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the IEM shall give an opportunity to PUBLIC WORKS DEPARTMENT and the Bidder/Contractor, as deemed fit, to present its case before making its recommendations to PUBLIC WORKS DEPARTMENT.
- (7) The IEM will submit a written report to the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT within 8 to 10 weeks from the date of reference or intimation to him by PUBLIC WORKS DEPARTMENT and, should the occasion arise, submit proposals for correcting problematic situations.
- (8) If the IEM has reported to the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT, a substantiated suspicion of an offence under relevant Anti- Corruption Laws of India, and the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT has not, within the reasonable time taken visible action to proceed against such offence or reported it to the CVO, the Monitor may also transmit this information directly to the CVC, Government of India.

(Signature) _

(For & On behalf of PUBLIC WORKS DEPARTMENT) Partner(s) of

(Signature) _

(For & On behalf of Bidder/

Joint Venture/ Contractor)

(9) The word 'IEM' would include both singular and plural.

(*) *This Section shall be applicable for only those packages wherein the IEMs have been identified in Section – I : Invitation for Bids and/or Clause ITB 9.3 in Section – III: Bid Data Sheets of Conditions of Contract, Volume-I of the Bidding Documents.*

Section IX - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor after the closure of the contract and for all other Bidder's six month after the contract has been awarded.

Section X - Other Provisions

- (1) This agreement is subject to Indian Law Place of performance and jurisdiction is the establishment of PUBLIC WORKS DEPARTMENT. The Arbitration clause provided in the main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.
- (2) Changes and supplements as well as termination notices need to be made in writing.
- (3) If the Contractor is a partnership firm or a consortium or Joint Venture, this agreement must be signed by all partners, consortium members and Joint Venture partners.
- (4) Nothing in this agreement shall affect the rights of the parties available under the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC)
- (5) Views expressed or suggestions/submissions made by the parties and the recommendations of the CVO/IEM# in respect of the violation of this agreement, shall not be relied on or introduced as evidence in the arbitral or judicial proceedings (arising out of the arbitral proceedings) by the parties in connection with the disputes/differences arising out of the subject contract.

CVO shall be applicable for packages wherein IEM are not identified in Section IFB/ BDS of Condition of Contract, Volume-I. IEM shall be applicable for packages wherein IEM are identified in Section IFB/BDS of Condition of Contract, Volume-I.

Cont

(Signature) _

(Signature) _

(For & On behalf of PUBLIC WORKS DEPARTMENT) (For & On behalf of Bidder/
Partner(s) of

Joint Venture/ Contractor)

- (6) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(Signature) _
(For & On behalf of PUBLIC WORKS
DEPARTMENT)

(Office Seal)

Name: _

Designation: _

(Signature) _
(For & On behalf of Bidder/ Partner(s)
of Joint Venture/ Contractor)

(Office Seal)

Name: _

Designation: _

Witness 1 : _

(Name & Address) _

Witness 1 : _

(Name & Address) _

Witness 2 : _

(Name & Address) _

Witness 2 : _

(Name & Address) _

SECTION – 3
CONDITIONS OF CONTRACT

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Tender for the work

I\ we hereby tender for the execution, for the Governor of Maharashtra (herein before and hereinafter referred to as 'Government') of the work specified in the under written memorandum within the time specified in such memorandum for a item rate contract of Rs. *(..... ..) and in accordance in all respects with the specifications, designs, drawings and instructions as per conditions of contract.

MEMORANDUM

	(a) Name of works :-	Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule
	(b) Estimated cost	:- Rs. 520184317/-
©The amount of earnest money to be deposited shall be in accordance with the provisions of paras 206 and 207 of the M.P.W. Manual.	(c) Earnest money	:- Rs. 2601000/-
(d)This deposit shall be in accordance with paras 213 and 214 of the M.P.W Manual.	(d) Security deposit	
	(i) Initial (Not less than the amount of earnest money)	:- Rs. 2601000/-
	(ii) To be deducted from current bills	:- Rs. 2601000/-
	Total	:- Rs. 5202000/-
(e) This percentage where no security deposit is taken, will vary from 2 percent to 10 percent according to the requirement of the case where security deposit is taken see note to clause 34 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.	<u>1%</u> (One Percentage)
	(f) Retention Money	The proportion of payments retained (retention money) shall be 2% from each bill.
(f) Give schedule where necessary by which the various items are to be completed.	(g) Time allowed for the work from the date of written order to commence. (including monsoon)	36 (Thirty Six) Calender Months Including Monsoon

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

1. Should this tender be accepted I/We hereby agree to abide by and fulfil all the terms and provisions of the conditions of contract annexed hereto so far as applicable and in default there of to forfeit and pay to Government the sums of money mentioned in the **said conditions**.
2. Amount to be specified in words and figures : Receipt No. _____ dated _____ from the Government Treasury or Sub Treasury at _____ in respect of the sum of Rs* _____ is herewith forwarded representing the earnest money, the full value of which is to be absolutely forfeited to Government should I/We not deposit the full amount of security deposit specified in the above memorandum otherwise the said sum of Rs. _____/- (Rupees _____ only) shall be refunded.

Date	Signature of contractor before submission of tender	Contractor _____ Address _____ _____ _____
	Signature of witness to contractor's signature.	Dated the _____ day of 202 (Witness) _____ _____ (address) _____ _____ (Occupation) _____

The above tender is hereby accepted by me for and on behalf of the Governor of Maharashtra Dt. _____ the day of _____ 202 .

Executive Engineer
Public Works Division, Dhule

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CONDITIONS OF CONTRACT

A. GENERAL

1. Definitions

- 1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initial are used to identify defined terms.

The **Adjudicator** (synonymous with **Dispute Review Expert**) is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in Clauses 24 and 25. The name of the Adjudicator is defined in the Contract Data.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

Compensation Events are those defined in Clause 44 hereunder.

The **Completion Date** is the date of completion of the Works as certified by the Engineer in accordance with Sub Clause 55.1.

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the works till the completion of defect liability period. It consists of the documents listed in Clause 2.3 below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer and includes Technical and Financial bids.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Day are calendar days; **months** are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

A **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

The **Engineer** is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing the valuing Variations to the Contract, awarding extensions of time and valuing the Compensation Events.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works. (Fully automatic Micro processor based programmable logical control (PLC) with SCADA enabled concrete batch mix plant (Pan Mixer) of minimum 30 cubic meter per hour capacity of any standard company **Must be within 30 Km. from work site**)

The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The intended Completion Date may be revised only by the Engineer by issuing an extension of time.

Materials are all supplies, including consumables, used by the contractor for incorporation in the Works.

Plant is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

Temporary Works are works designed, constructed, installed and removed by the Contractor which are needed for construction or installation of the Works.

A **variation** is an instruction given by the Engineer, which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install and turn over to the Employer, as defined in the Contract Data.

2. Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about the Conditions of Contract.
- 2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works)
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
 - (1) Agreement
 - (2) Letter of Acceptance, notice to proceed with the works.
 - (3) Contractor's Bid
 - (4) Contract Data
 - (5) Conditions of Contract including Special Conditions of Contract
 - (6) Specifications
 - (7) Drawings
 - (8) Bill of Quantities and
 - (9) Any other document listed in the Contract Data as forming part of Contract.

3. Language and Law

- 3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data

4. Engineer's Decisions

- 4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5. Delegation

- 5.1 The Engineer may delegate any of his duties and responsibilities to other people except to the Adjudicator after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. Communications

- 6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of India Contract Act).

7. Sub-Contracting

- 7.1 The Contractor may sub-contract any portion of work, upto limit specified in Contract Data, with the approval of the Engineer but may not assign the Contract without the approval of the Employer in writing. Sub-contracting does not the Contractor's obligations.

8. Other Contractors

- 8.1 The Contractor shall co-operate and share the Site with other contractors, public authorities, utilities and the Employer between the dates given in the Schedule of other Contractors. The Contractor shall as referred to in Contract Data; also provide facilities and services for them as described in the Schedule. The employer may modify the schedule of other contractors and shall notify the contractor of any such modification.

9. Personnel

- 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.
- 9.2 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

10. Employer's and Contractor's Risks

- 10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks, which this Contract states are Contractor's risks.

11. Employer's Risks

- 11.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in India, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or(b) a cause due solely to the design of the Works, other than the Contractor's design.

12. Contractor's Risks

- 12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. Insurance

- 13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks.
- (a) Loss of or damage to the Works. Plant and Materials:
 - (b) Loss of or damage to Equipment:
 - (c) Loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and
 - (d) Personal injury or death.
- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.
- 13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Investigation reports

- 14.1 The contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder.

15. Queries about the Contract Data

- 15.1 The Engineer will clarify queries on the Contract Data.

16. Contractor to Construct the Works

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16.1 The Contractor shall construct and install the Works in accordance with the Specification and Drawings.

17. The Works to be completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

18. Approval by the Engineer

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with the Specifications and Drawings.

18.2 The Contractor shall be responsible for design of Temporary Works.

18.3 The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

22. Access to the Site

22.1 The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured/fabricated/assembled for the works.

23. Instructions

23.1 The contractor shall carry out all instructions of the Engineer pertaining to works which comply with the applicable laws where the Site is located.

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Employer, if so required by the Employer.

24. Disputes

24.1 ~~If the Contractor believes that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to the Dispute Review Expert within 14 days of the notification of the Engineer's decision.~~

25. Procedure for Disputes

25.1 ~~The Employer proposes that [name of proposed Dispute Review Expert as indicated in Appendix] be appointed as Dispute Review Expert under the Contract, at a daily fee as indicated in Appendix plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder~~

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~~should so state in the Bid. If in the Letter of Acceptance, the Employer has not agreed on the appointment of the Dispute Review Expert, the Dispute Review Expert shall be appointed by the Council of Indian Roads Congress at the request of either party.~~

~~25.2 For works costing above Rs.5 Crore the procedure for arbitration will be as per G.R. of Law & Judiciary Department issued vide Sankirn 2016/C.R. 20/ Ka-19 dt. 13/10/2016 regarding “ Institutional Arbitration Policy”.~~

26. Replacement of Dispute Review Expert

~~26.1 Should the Dispute Review Expert resign or die, or should the Employer and the Contractor agree that the Dispute Review Expert is not fulfilling his functions in accordance with the provisions of the Contract, a new Dispute Review Expert will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and (he Contractor, within 30 days, the Dispute Review Expert shall be designated by the Appointing Authority designated in the Contract Data at the request of either party, within 14 days of receipt of such request.~~

B. TIME CONTROL

27. Programme

- 27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Programme showing the general methods, arrangements, order and timing for all the activities in the Works along with monthly cash flow forecast.
- 27.2 An update of the Programme shall be a Programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- 27.3 The contractor shall submit to the Engineer, for approval, an updated Programme at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.
- 27.4 The Engineer's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

28. Extension of the Intended Completion Date

- 28.1 The Engineer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.
- 28.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 35 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to co-operate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.
- 28.3 The Engineer shall within 14 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the Employer his decision. The Employer shall in not more than 21 days communicate to the Engineer the acceptance or otherwise of the Engineer's decision. If the Employer fails to give his acceptance, the Engineer shall not grant the extension and the contractor may refer the matter to the Dispute Review Expert under Clause 24.1

29. Deleted

30. Delays Ordered by the Engineer

- 30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

31. Management Meetings

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- 31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 31.2 The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

32. Early Warning

- 32.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.
- 32.2 The Contractor shall co-operate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

C. QUALITY CONTROL

33. Identifying Defects

- 33.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking neither shall nor affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

34. Tests

- 34.1 If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

35. Correction of Defects

- 35.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 35.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.

If during the period as specified in column A in table attached from the date of completion as certified by the Engineer-in-charge pursuant to clause 7 of the contract or period as specified in Column B in table attached after commissioning the work. whichever is earlier in the opinion of the Executive Engineer, 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 be 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 Executive Engineer get the same executed and carried out departmentally or by any other agency at the risk on account and at the cost of the contractor.

The contractor shall forthwith on demand pay to the Govrnment the amount of such costs, charges and expenses sustained or incurred by the Government of which the certificate of the Executive Engineer shall be final and binding on the contractor. Such costs, 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 Government, the same may be recovered from the contractor as arrears of land revenue. The Government shall also be entitled to deduct the same from any amount which may then be payable or which may thereafter become payable by the Government to the contractor either in respect of the said work or any other work whatsoever or from the amount of security deposit retained by Government. शासन निर्णय क्र. संकीर्ण-2018/प्र.क्र.151/इमारती-2 मंत्रालय, मुंबई दि.14/1/2019

Sr. No.	Particular	DLP For	Column A DLP from date of completion	Column B DLP from date of commencement
1	For Building Original Work	1) RCC Frame work	120 months	144 Months
		2) Waterproofing work	120 Months	144 Months
2	For Road Work Concrete / Rigid Pavement	1) Crush Thickness 30 cm & above as per Design	120 Months	144 Months
		2) Concrete paver block works	60 months	84 Months
3	For Road Metalling works currnt repairs for road	1) Board fixed as per IRC norms	60 months	84 months
		2) Informatory / Direction Thermoplastic paint	36 Months	60 Months
4	For Bridge & C.D. Works	Concrete Built up gutter	120 Months	144 Months
5	Other Work	Other Work	120 Months	144 Months

36. Uncorrected Defects

- 36.1 If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. COST CONTROL

37. Bill of Quantities

- 37.1 The Bill of Quantities shall contain items for the construction, installation, testing and commissioning work to be done by the Contractor.
- 37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

38. Changes in the Quantities

- 38.1 Quantities in respect of the several items shown in the tender are approximate and no revision in the tendered rate shall be permitted in respect of any of the items so long as, subject to any special provision in the specifications prescribing a different percentage of permissible variation, the quantities 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 Engineer, so to do also carry out any quantities in excess of the limit mentioned in sub-clause (1) hereof on the same conditions as and in accordance with 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 being increased or decreased as the case may be, by the percentage which the total tendered amount bears to the estimated cost of the work as put to tender, based upon the schedule of rates applicable to the year in which the tenders were invited.
- 38.3 Claims arising out of reduction in the tendered quantity of any item beyond 25% will be governed by the provisions of clause 15 only when the amount of such reduction beyond 25% at the rate of the item specified in the tender is more than Rs. 5000/-.

(Ref. : 1) Govt. Circular No. संकीर्ण: -2004/प्र.क्र 85 / रस्ते-1% दि. 11.06.2004/03.08.2018 2) Govt. Circular No. CAT/2017/प्रक्र 85 इमा-2% दि.. 22.10.2018

39. Variations : Delete

- 39.1 Delete

40. Payments for Variations : Delete

41. Cash Flow Forecasts

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41.1 When the Programme is updated, the contractor is to provide the Engineer with an updated cash flow forecast.

42. Payment Certificates

42.1 The Contractor shall submit to the Engineer monthly statements of the estimate value of the work completed less the cumulative amount certified previously.

42.2 The Engineer shall check the Contractor's monthly statement within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause 51(3) of the Contract Data (Secured Advance)

42.3 The value of work executed shall be determined by the Engineer.

42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

42.5 The value of work executed shall include the valuation of Variations and Compensation Events.

42.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

43. Payments

43.1 Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of the contract and taxes at source, as applicable under the law. The bill shall be paid after due verification and upon availability of budget.

43.2 If an amount certified is increased in a later certificate as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

43.3 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

43.4 "Contractor shall submit a certificate to the effect the "All the payments to the labour/ staff are made in bank accounts of staff linked to Unique Identification Number (AADHAR CARD)."

44. Compensation Events

44.1 Compensation shall be applicable and only extension may be considered on merits if not on part of Contractor

44.2 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer.

45. Tax

Condition for G.S.T. :-

GST shall be payable on the accepted contract value at prevailing rates separately. Contractor shall quote his rates excluding GST

45.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other taxes that the Contractor will have to pay for performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

46. Currencies

46.1 All payments shall be made in Indian Rupees.

47. Price Adjustment – As per Contract Data's Sr. No. 26

48.0 Retention

48.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works total amount retained is repaid to the Contractor after contract Period has passed and the Engineer has certified that all the works completed as per specification of contract document.

48.3 On completion of the whole works, the contractor may substitute retention money with an "on demand" Bank guarantee.

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49. Liquidated Damages

- 49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor’s liabilities.
- 49.2 If the intended completion date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the over payment calculated from the date of payment to the date of repayment at the rates specified in Sub-Clause 43.1.
- 49.3 If the contractor fails to comply with the time for completion as stipulated in the tender, then the contractor shall pay to the employer the relevant slum stated in the Contract Data as liquidated damages for such default and not as penalty for everyday or part of day which shall elapse between relevant time for completion and the date stated in the taking over certificate of the whole of the works on the relevant section, subject to the limit stated in the contract data.
- The employer may, without prejudice to any other method of recovery deduct the amount of such damages from any monies due or to become due to the contractor. The payment or deduction of such damages shall not relieve the contractor from his obligation to complete the works on from any other of his obligations and liabilities under the contract.
- 49.4 If, before the Time for completion of the whole of the works, or, if applicable, any section, a Taking-Over Certificate has been issued for any part of the Works or of a section, the liquidated damages for delay in completion of the remainder of the works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit there of.

50. Bonus - Deleted

51.0 Secured Advance -

The Engineer shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions stipulated in the Contract Data.

52. Securities

- 52.1 The Performance Security (including additional security for unbalanced bids) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer and denominated in Indian Rupees. The Performance Security shall be valid until a date 28 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion.

53. Deleted

54. Cost of Repairs

- 54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the contractor at the Contractor’s cost if the loss or damage arises from the contractor’s acts or omissions.

E. FINISHING THE CONTRACT

55. Completion

- 55.1 The Contractor shall request the Engineer to issue a Certificate of Completion of the works and the Engineer will do so upon deciding that the work is completed.

56. Taking Over

- 56.1 The Employer shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

57. Final Account

- 57.1 The Contractor shall supply to the Engineer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall

issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor’s account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor’s revised account.

58. Operating and Maintenance Manuals

- 58.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.
- 58.2 If the Contractor does not supply the Drawings and/or Manuals by the dates stated in the Contract Data, or they do not receive the Engineer’s approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

59. Termination

- 59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 59.2 Fundamental breaches of Contract include, but shall not be limited to the following
 - (a) The contractor stops work for 15 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer.
 - (b) The Engineer instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 28 days.
 - (c) The Employer or contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
 - (d) A payment certified by the Engineer is not paid by the Employer to the Contractor within 56 days of the date of the Engineer’s Certificate.
 - (e) The Engineer gives Notice that failure to correct particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer.
 - (f) The Contractor does not maintain a security, which is required.
 - (g) The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract Data; and
 - (h) If the Contractor in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract

For the purpose of this paragraph: “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract executing. “Fraudulent Practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (Prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition”.

- 59.3 When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub-Clause 59.2 above, the Engineer shall decide whether the breach is fundamental or not.
- 59.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.
- 59.5 If the Contract is terminated the Contractor shall stop work immediately, make the site safe and secure and leave the site as soon as reasonably possible.

60. Payment upon Termination

- 60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payments received upon the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the

Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

- 60.2 If the contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a Certificate for the value of the work done, the cost of balance material brought by the contractor and available at site, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's Costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

61. Property

- 61.1 All materials on the site, Plant, Equipments, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor's default.

62. Releases from Performance

- 62.1 If the contractor is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

F. SPECIAL CONDITIONS OF CONTRACT

1. LABOUR

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment housing, feeding and transport. The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the site and such other information as the Engineer may require.

2. COMPLIANCE WITH LABOUR REGULATIONS

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the state or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/Regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor, including his amount of performance security. The Employer / Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.

- a) **Workmen Compensation Act 1923:** - The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- b) **Payment of Gratuity Act 1972:** - Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- c) **Employees P.F. and Miscellaneous Provision Act 1952 :-** The Act provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are :

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- (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.
- d) **Maternity Benefit Act 1951 :-** The Act provides for leave and some other benefits to Women employees in case of confinement or miscarriage etc.
- e) **Contract Labour (Regulation & Abolition) Act 1970 :-** The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or contractor of Principal Employer, if they employ 20 or more contract labour.
- f) **Minimum Wages Act 1948 :-** The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act, if the employment is a scheduled employment. Construction of buildings, Roads, Runways is scheduled employments.
- g) **Payment of Wages Act 1936 :-** It lays down as to by what date the wages are to be paid when it will be paid and what deductions can be made from the wages of the workers.
- h) **Equal Remuneration Act 1979:-** The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- i) **Payment of Bonus Act 1965:-** The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33 % of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs. 2500/- per month or above up to Rs.3500/- per month shall be worked out by taking wages as Rs. 2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- j) **Industrial Disputers Act 1947 :-** The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- k) **Industrial Employment (Standing Orders) Act 1946 :-** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
- l) **Trade Unions Act 1926 :-** The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- m) **Child Labour :-** Prohibition and Regulation) Act 1986 :- The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
- n) **Inter-State Migrating Workmen's (Regulation of Employment & Conditions of Service) Act 1979 :-** The Act is applicable to an establishment which employees 5 or more Inter-State migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back etc.
- o) **The Building and Other Construction Workers (Regulation of Employment and Conditions of Services) Act 1996 and the Cess Act of 1996 :-** All the establishments who carry on any building or other construction work and employees 10 or more workers are covered under this Act,. All such establishments are required to pay cess at the rate not exceeding 2 % of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens First Aid Facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registered Officer appointed by the Government.

- ### 3. Arbitration (GCC Clause 25.3)

25.3(a) Delete
(b) Delete
(c) Delete.
(d) Delete.
(e) Delete.
(f) Delete.

POWER SUPPLY

The contractor has to process all the documents required for power connection to the building, license for operating elevators, NOC of Fire department, Inspection fees of Electrical inspector, Security deposits for permanent electric connections and meters etc. The payments shall be made on the behalf of and on the name of department. All legal fees and deposits paid shall be reimbursed to the contractor, on the submission of original receipts paid on the name of the department.

All tools, tackles, scaffolding and staging required for erection and assembly of the equipment and installation covered by the contractor 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 deemed to be included in the contract. Contractor shall strictly follow all the safety rules & regulations and shall follow good engineering practices in the course of work. If any loss (Monitory & life) is caused to any person on site, due to negligence of the contractor / his staff / his workers, the contractor shall be fully responsible for the same and also for the compensation as per the directions of the relevant laws. The contractor shall have insurance at his own cost, of the all workers, staff working on the site.

Successful tenderer shall co-ordinate his work with other agencies engaged in, the construction of building.

All fittings, unit, assemblies, accessories, hardware, foundation bolts, terminal lugs for electrical connection, cable glands and miscellaneous materials or accessories or items of work which are useful and necessary for efficient assembly and working of the equipment shall be deemed to be included in the tender within the over all cost quoted. The equipment shall be completed in all details whether such details have been mentioned or not.

(a) Maximum ambient temp. 45°C (b) Maximum relative humidity 98 %
(c) Corrosive atmosphere (d) Hot and humid climate close to sea coast

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If the report of the above material is found unsatisfactory, same will have to be replaced by the contractor at his own cost even though already erected. The replaced material shall be sent for testing again and testing fee/charges will be entirely borne by the contractor.

TESTING & HANDING OVER

The Contractor shall carry out tests on different equipment as specified in various standards In the presence of representatives of the Engineer in order to enable him to determine whether the plant, equipment and installation is in general, complying with the specifications.

The installation shall be taken over by the Engineers after satisfactory testing along with four sets of documents each consisting of :-

- i) Detailed equipment data as approved by the Engineer.
- ii) Manufacturer's maintenance and operating instructions.
- iii) Set of drawings, showing plant layouts, piping, ducting etc.
- iv) Approved test readings and certificate of Statutory authorities. v) Test report of the contractor as per I.E. Rules.

Submission of the above documentation shall form a precondition for the final acceptance of the plant and installation and final payment.

PERFORMANCE GUARANTEE

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.

The tenderer shall guarantee the following.

- a) Quality, strength and performance of material used.
- b) Mechanical and Electrical strength of all parts under all specified conditions of operation shall withstand for safe operation
- c) Satisfactory operation during the maintenance period of 1 year after completion.
- d) Performance figures and other particulars as specified by the tenderer as per schedule. e) Quick free of charge service during guarantee period for repairs and breakdowns.
- f) Successful tenderer will have to furnish performance guarantee on the stamp paper of Rs.500/- for 5% of tendered amount in prescribed proforma enclosed. The cost of the stamp paper shall be borne by the tenderer.

STATUTORY INSPECTIONS

The Contractor shall be fully responsible for meeting all the statutory obligations and local inspectorate pertaining to the works carried out by them. The contractor should prepared all working drawings and obtain approved of competent authority and also have the equipment and installation inspected and get approved. All official fees will be borne and paid by the contractor and if paid by the Department to avoid delay directly against demand in writing from the appropriate authority the Department will recover the same from the contractor. All other expenses for submission and approval of the various and relevant statutory bodies including the above shall be deemed to have been embodied in the tender prices.

COMPLIANCE OF SAFETY CODE

Successful tenderer shall ensure compliance with statutory provision of Safety regulation and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. In the event of the contractor fails to observe the same, the Department will be at liberty to make the necessary arrangement at the cost of the contractor and recover this cost from him. The contractor shall be responsible for any compensation to the workmen payable under the Workmen Compensation Act 1923 duly amended as on date or any other statutory Regulations in force.

A competent authorized and licensed supervisor shall be on the site whenever the contractor's men are at work. The supervisor 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 supervisor should also ensure that the workmen are supplied with and made to use safety appliances such as safety belts, life liners, helmets etc. and those prescribed as I. E. Rules, 1956.

It is entirely the responsibility of the contractor to practice the principles of 'Safety First' during the entire tenure of work with adequate comprehensive insurance covering injury or death to workmen or any other persons on site, loss by theft, or damage to materials and property in position or not. The contractor should clear the site of all debris every day to avoid accidents. In case this is not done, the Department may engage necessary labour to maintain the cleanliness of the premises and removal of debris, and debit all or part of the expenditure so incurred to the contractor.

The contractor shall here to, at his own expenses, make all preliminary arrangement as indicated below immediately after the contract is awarded without any loss of time.

He shall construct necessary store sheds with double locking arrangement for the storage of the materials required on the work. The material brought at site for execution of the work shall not be removed without specific permission is obtained from the competent authority in writing.

He shall at his own expenses engage watchman for guarding the materials and the work during day and night against any pilferage or damages and also for prohibiting any trespassers till it is finally handed over to the building authority.

For all temporary electrical connections, contractor should provide healthy condition cables/wires of appropriate capacity without any joints. All the temporary connections shall be taken through RCBO of appropriate capacity. Proper earthing shall be provided for all temporary connections.

While carrying out electric/gas welding work on site, the contractor shall keep fire extinguisher in working condition near the place of welding work.

Note: All codes and standards referred in the specification are 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 corresponding Indian Standards.

(Condition relating to Insurance of Contract Works)

Contractor shall take out necessary Insurance Policy / Policies (Viz-Contractors 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 "Directorate of Insurance, Maharashtra State, Mumbai" only. Its postal address for correspondence is "264, MHADA, First floor, Opp. Kalanagar, Bandra (E), Mumbai 400051" (Telephone No.- 26590403 / 26590690 and Fax No. 26592461 / 26590403). Similarly all workmen's appointed to complete the contract work are required to insure under the 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 Government 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 reserve the right to distribute the risks of Insurance among the other insurers.

The actual amount incurred by contractor for insurance of work shall be reimbursed in production of documentary evidence and after verification by the department. It is obligatory to the contractor to draw the insurance policy within 30 days from the date of work order for the work. In case of failure to do so 1% amount of tendered cost on account of insurance shall be deducted from First R.A.bill.

Third Party Insurance :- As per Govt. Marathi Circular No. Sankirna-2019/Pra.Kra.101/Ra.M.2 Date 11/10/2019

- 1) The contractor shall provide contractor's All Risk Insurance (CAR), in the joint names of the Employer and the contract Insurance cover from the Start Date to the end of the Defect Liability Period in the amounts as deductible stated in the Contract Data for the following events which are due to the Contractor risk.
 - A. Loss of or damage of the works, plant and materials ;
 - B. Loss of or damage of Equipment ;
 - C. Loss or damage of property (except the works, plant, materials and equipments in connection with the contract ; and
 - D. Personal injury or death of any personnel employed by the contract is during execution and maintenance defect liability period, employee of PWD, any person using the facility created by the contract during the construction and defect liability period.
- 2) Policies and certificates for insurance shall be delivered by the contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide is compensation to be payable in the types and proportions of currencies required to rectify the loss of damage incurred.
- 3) If the contractor does not provide any of the policies and certificated required, the employee may affect the insurance which the Contractor should have provided and recover premiums the Employer has paid from payments otherwise due to the Contractor of it's payment is due, the payment of the premiums shall be a debt due shall be recoverable from the bills and deposits of the contractor of any work in Maharashtra and if no dues in work than as arrears of land revenue.
- 4) Alternations to the terms of Insurance shall not be made without the approval of the Engineer.
- 5) Both parties shall comply with any conditions of the insurance policies.

अवर सचिव, सा.बां.विभाग मंत्रालय, मुंबई-32 यांचे पत्र क्र. संकीर्ण-10/09/प्र.क्र.227/इमारती-2 दि.30/10/09 मधील सुचनेनुसार इमारत व इतर बांधकाम कल्याणकारी उपकर अधिनियम 1996 अंतर्गत बांधकामाच्या एकुण मुल्यानुसार 1% उपकर वसूल करण्यात येईल.

रोकड विरहीत व्यवहार : महाराष्ट्र सा.बां.विभाग मंत्रालय, मुंबई यांचा शासन निर्णय क्र. निविदा-2016/प्र.क्र.20/शिकाना/इमा-2 दि.9/12/2016 अन्वये निविदांमध्ये रोकड विरहीत व्यवहार होण्याच्या दृष्टीने खालील प्रमाणे अटी व शर्ती लागू करण्यात येत आहे.

"Contractor shall submit a certificate to the effect the **"All the payments to the labour/ staff are made in bank accounts of staff linked to Unique Identification Number (Adhar Card)."** The certificate shall be submitted by the contractor with 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.

Tree Plantation :

For Building :-

Contractor shall plant 200 trees, within the premises of building as directed by engineer-in-charge. Tree saplings shall be of minimum height 1.50 M or age 3 years, whichever achieved earlier. Contractor shall also maintain (watering, applying manure, erecting tree guards, maintain the trees live) the trees planted for post contract maintenance period from the date of completion of work or package as appropriate.

12.2 Trees shall be planted within 45 days from the date of work order. Engineer-in-charge shall deduct @ Rs.1000/- per tree from the payment due to the contractor in case contractor fails to plant the trees within 45 days. Such Recovery shall be effected from the first R.A. Bill.

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12.3 Employer shall recover Rs. 2000/- per tree not planted / not maintained during post contract maintenance period, from the Security Deposit / Performance warranty of the Contractor.

LIST OF PREFERRED MATERIALS

Sr. No.	Description	Makes / Brand
1	PVC Conduit	Polycab/Legrand/ Precision/ Diamond / Press fit
2	PVC Casing Caping	MODI / DIMOND / Austo Plast / Press fit
3	Under Floor junction / PVC ROH	Legrand /M.K./Honeywell
4	PVC wires	RR Kable/ havells /Finolex / Polycab/Anchor
5	Modular Switches/Sockets/Modular Plates	Legrand / Schneider/Hager/ L&T / Anchor
6	Electronic Step Regulator	Legrand / Schneider/Hager/ Anchor
7	Telephone Jack	Legrand / Schneider/Hager/ Anchor
8	TV Sockets	Legrand / Schneider/Hager/ Anchor
9	Computer Jack	AMP /Legrand / Schneider / Systimax /D-Link
10	Bell indicator	Legrand / Schneider/Hager/ Anchor
11	Telephone Cable	RR Kable/ havells /Finolex / Polycab/Anchor
12	Co-Axial Cable	RR Kable/ havells /Finolex / Polycab/Anchor
13	Telephone Instrument	Panasonic/ Beetal/ G.E
14	CAT-6 Cable	Amp/ Systimax/ Legrand / Schneider /D-link
15	Wi-Fi Instrument	Cisco/ MOJO / Aruba /HP
16	LED Lamps	Bajaj / Wipro / OSARM / Philips / Crompton
17	LED Indoor Lumenaries	Bajaj / Wipro / Crompton / Philips
18	Street Light LED Fitting/ Bollards	Bajaj / Wipro / Crompton / Philips/Sun City
19	Outdoor Landcape Light fitting	Bajaj / Wipro / Philips / K-Lite/ HYBEC
20	Exhaust Fans	Almonard/ Bajaj/Crompton/Orient/GE
21	Sweep Ceiling fan	Almonard/ Bajaj/Crompton/Orient/GE
22	Industrial type exhaust fans	GE / Almonard/ Bajaj/Crompton/Orient
23	Water Heaters	Bajaj / Recold / AO-Smith / Crompton / V-gaurd
24	Split AC	Blue Star / LG / Voltas / Carrier / Toshiba / Diken/ Panasonic
25	Water Cooler	Blue Star / Voltas / Usha
26	Water Purifier	Aquaguard / Kent / Ao-Smith/ PUREIT
27	Inverter	SU- Kam / MICROTECK /LUMINOUS / Neowatt Consul / / V-gaurd
28	UPS	Neowatt - Consul / Emerson - / Numeric- Legrand /Schneider
29	Batteries	Exide / Amaron/ Standard / Luminous/ Inverted / / Vgaurd
30	Modular DB, MCB/MCCB / RCCB / RCBO	Hager / Legrand / Schneider /L&T/ ABB
31	Industrial Sockets	Hager / Legrand / Schneider /L&T/ ABB
32	HT Metering	As per MSEB approved make
33	11 kV Kiosk	As per MSEB approved make
34	APFC Panel	ACCUSONIC / Visa Power /MARIN/ INNOVATION/ L&T / Schneider
35	PVC Armoured Cables	RR Kable/ havells /Finolex / Polycab/Anchor
36	HDPE Pipe	Finolex / Abhay Polyster/Gyamsin India
37	Cable Tray	Parmar/ indmark/ Dumas / Profab
38	GI Pipe Pole	TATA / Jindal / Mittal steel
39	High Mast	Bajaj / Wipro / Philips / Valmart
40	Octagonal Pole	Bajaj / Wipro / Philips / Valmart
41	Maintenance free earthing	Ashlok / Equivalent
42	Transformers	Universal / Kirloskar/ABB/Crompton/Voltamp/ Seimens
43	DG Set	Cummins -Powerica /Caterpillar / Kirlosar / Perkins
44	Pump / Motor Starter	L&T / Seimens / ABB / Schneider
45	Decorative Luminaries	Bajaj / Wipro / Crompton / Philips / Suncity / K-Lite/ HYBEC
46	Exit Signage - self powered	Clipsal / Prolite / bajaj
47	MV Panel	L&T/ Seimens / Legrand
48	ACB	L&T / Seimens / ABB / Schneider / Legrand / C&S
49	HT Panel	Vidyut Controls / HT- Switchgear/ Crompton
50	PIR Motion Sensor	Bajaj / Wipro / Legrand
51	11 KV VCB	Seimens / ABB / Schneider / Crompton
52	11 kV RMU	Seimens / ABB / Schneider / Crompton
53	Decorative Pole	Suncity / Wipro / Neri/ K- Lite / Bajaj
54	PTL / Bollards	Suncity / Wipro / K- Lite / HYBEC / Bajaj / Philips
55	MDF Box	Krone / ITI / Equivalent
56	Krone Module	Krone / ITI / Equivalent
57	POE / Non POE Network Switch	Cisco / D-link / Hetgear
58	Fiber LIU & accessories	Amp / Legrand / D- Link / Schneider/ Systimax

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Sr. No.	Description	Makes / Brand
59	Network Rack	Valrack / Rittal / Sell Rack / Netrack / D- Link
60	Fibre Optic cable and Accessories	Amp / Legrand / D- Link / Schneider / Systimax
61	Beam Detector	System Sensor / Fire Ray / Seimens / Notifier /Simplex
62	Response Indicator	Ravel / Agni /Siemens / Notifier /Simplex
63	FRLS Armoured Cable (Red Colour)	Polycab / Finolex /Lapp / Caliplast / Neolex
64	Cat 6 Armoured cable	Amp / Legrand / D- Link / Schneider / Systimax
65	OutdoorTwin wall Junction BOX	Valrack / Rittal / Sell Rack
66	Wireless LAN controller	Cisco /HP/Mojo
67	EPABX	Matrix / Panasonic /Alkatel
68	Fire Alarm Control Panel	Notifier / Siemens / GE Edward / Simplex
69	Repeater Panel	Notifier / Siemens / GE Edward / Simplex
70	BMS & GUI software	Notifier / Siemens / GE Edward / Simplex
71	Detectors (Smoke, Heat, Muti sensor)	Notifier / Siemens / GE Edward / Simplex
72	Beam Detectors	System Sensor / Fire ray /Siemens /Notifier
73	Manual Call point	Notifier / Siemens / GE Edward / Simplex
74	Control/ Monitor Module	Notifier / Siemens / GE Edward / Simplex
75	Strobe cum sounder / Hooter	Notifier / Siemens / System Sensor
76	Response Indication	Ravel / Agni / Siemens
77	SMPS DC Power Supply	Micro Power / Syntel
78	Speaker (Cone / Box Type / outdoor)	Honeywell / Bosch / Ateis
79	IP Based Zone Controller	Honeywell / Bosch / Ateis
80	Digital Amplifier / Power Amplifier	Honeywell / Bosch / Ateis
81	Mixer Amplifier	Honeywell / Bosch / Ateis
82	Microphone (MIC) / Call station	Honeywell / Bosch / Ateis
83	Wireless Microphone	Honeywell / Bosch / Ateis
84	Music Player	Philips / LG / Samsung / Sony or Equivalent
85	Speaker Armoured / Flexible cable	Finolex / Polycab / Lapp / RR / Neolex / Caliplast
86	IP Dome Type Camera	Bosch / Axis / Honeywell
87	IP Bullet Type Camera	Bosch / Axis / Honeywell
88	IP PTZ Camera	Bosch / Axis / Honeywell
89	Network Video Recorder (NVR)	Bosch / Axis / Honeywell
90	Video management Software	Bosch / Hikvision / Honeywell / Milestone / Genetec
91	Surveillance Hard disk	Seagate / WD / Hikvision
92	Server / CCTV Workstation	Dell / HP / Lenovo
93	CCTV Monitors	Sony / Samsung / LG / Philips / Panasonic
94	Biometric Reader & controller	Verdi / Smart I / Spectra / HID
95	Access Control Software	Verdi / Smart I / Spectra / HID
96	Smart Card	HID
97	Electro Magnetic Door Lock & door Sensor	Trimac / BEL / Draficas / Algatel / Dorma
98	Exit Switch Button (bell push type)	Anchor / Legrand / Honeywell
99	Hotel Door Lock System with software	Onity / Ingersoll Rand / Assa Abloy
100	Projector	Sony / Epson / Panasonic or Equivalent
101	Motorized Screen	Dalite / Liberty / Elite / Panasonic
102	HDMI cable	Kramer / MX /BELDEN
103	Lighting Automation	Lutron / Crestron / Schneider Elelctric / Siemens
104	Smart TV	Sony / Samsung / LG / Philips / Panasonic
105	FRLS Flexible Cable	Finolex / Polycab / RR Kabel / Neolex / KEI / Finolex
106	Solar PV Panel	Havells Enviro, Tata Power Solar Systems Ltd., Jain Irrigation System Ltd / Warry/ Sun Technich / Adumi
107	Solar Inverter	Schneider / Solar Edge / Sungroew/ Delta/Solax / SMA / Fronius / Polycab/ Microtech / Excide / DB
108	VRF Condensing Units / Indoor Units / Normal Indoor & Condensing Units	Mitsubishi / Toshiba / LG / Blue Star / Diakin / Voltas
109	Refnet Joints	Toshiba / LG /Hitachi / Blue Star/ Mitsubishi
110	Copper Pipes	Rajco Metal / Mandev Tubes
111	Dry Air Scrubber	Gorge Rao / Zeco / Nutech
112	Air Washer Units	Eflow / Boomage / Zeco / Nutech
113	Inline Fans	Kruger / Nicotra / System Air
114	Cabinet Type Fans	Kruger / Nicotra / System Air
115	Tube Axial Fans	Kruger / Nicotra / System Air
116	Electrical Motors (Energy Efficient Class EFF1)	Siemens / ABB / Crompton Greaves
117	Variable Frequency Drive	Mitsubishi / Honeywell / Danfoss / Schneider
118	GI Ducting Sheets	Tata / Jindal / Zenith

Sr. No.	Description	Makes / Brand
119	Nitrile Rubber Insulation (Open & Closed Cell Structure)	Armacell / Kflex
120	Under deck Insulation	Armacell / Kflex
121	Aluminum Powder Coated Diffusers with & without Dampers & Jet Nozzles	System Air / Cosmos / Air Product
122	Aluminum Powder Coated Grilles	System Air / Cosmos / Air Product
123	PVC / HDPE Disc Valves	System Air / Cosmos / Air Product
124	Aluminium / GI Powder Coated Box Type Damper	System Air / Cosmos / Air Product
125	Volume Control Damper	System Air / Cosmos / Air Product
126	Motorised Fire Damper	System Air / Cosmos / Air Product
127	Actuators (24V & 230V)	Honeywell / Belimo
128	Fire Damper with Fusible Link	System Air / Cosmos / Air Product
129	CPVC Piping	Astral / Ashirwad / Prince / Jain Pipes
130	Hard PVC Drain Pipes	Finolex / Prince / Kissan
131	GI Ladder Type / Perforated Cable Trays	Elcon / Vishwachaya / Amtech
132	FIRE PUMPS	KIRLOSKAR BROS. LTD / MATHER & PLATT / GRUNDFOS / FLOWMORE / KSB / LUBI
133	G.I./ M.S. PIPES	JINDAL(HISSAR) / TATA / SURYA ROSHINI / ZENITH
134	PIPE FITTINGS	BHARAT FORGE / TUBE PRODUCTS / M.S. FITTINGS / VS BRAND / GOYAL / SANJAY FORGE / B & M
135	BUTTERFLY VALVES	AUDCO / KEY STONE / BDK / FOURESS / INTERVALVE / ZOLTO/LEADER
136	NON – RETURN VALVES	H. SARKER / CRESENT / UPADHAYA / HAWA
137	GATE VALVES (Screwed end)	LEADER / ZOLOTO / ITAP
138	BALL VALVES (Screwed end)	LEADER / ZOLOTO / ITAP
139	STRAINERS	GUJRAT OTO FILT / GRAND FRIX / TEL FLOW
140	C.I. GATE VALVES	H. SARKER / CRESENT / UPADHAYA / HAWA
141	FOOT VALVES	NORMEX / EQUI.
142	FLOW METRE	FORBES MARSHALL / EUREKA or equivalent
143	PRESSURE SWITCH	INDFOS / SWITZER / DELTA CONTROL or
144	PRESSURE GAUGE	H. GURU / FIEBIG / PRICOL / BELLS CONTROL/done foss/fibe/uday.
145	ANTICORROSIVE MATERIAL	I W L / RUSTECH
146	HYDRANT VALVES	NEWAGE / WINCO / SHAHBHOGILAL / MINIMAX / ARIHANT
147	BRANCH PIPE WITH NOZZLE	NEWAGE / WINCO/ SHAHBHOGILAL / MINIMAX / ARIHANT
148	FIRE HOSES	NEWAGE / CRC
149	HOSE COUPLINGS	NEWAGE / WINCO/ SHAHBHOGILAL / MINIMAX / ARIHANT
150	HOSE REEL	EVERSAFE / TYCO / NEWAGE MINIMAX
151	HOSE BOX / FIRE DUCT SHUTTER	EVERSAFE / TYCO / NEWAGE / MINIMAX
152	FIRE EXTINGUISHERS	SAFEX / ACE FIRE / MINIMAX / VIJAY / EVERS SAFE
153	SPRINKLERS	TYCO / VIKING / KIDDE
154	SPRINKLER ALARM VALVE	HD / TYCO / VIKING / KIDDE
155	FLOW SWITCH	SYSTEM SENSOR / POTTER / SWITZER / LEVCON
156	PAINT	ASIAN / BERGER
157	AIR RELEASE VALVES	LEADER / BAJAJ / HAWA
158	WELDING ELECTRODES	ESAB 28/ ADVANI
159	FLEXIBLE DROPS	EASYFLEX / DONGA FLEX / ANY UL LISTED/FM APPROVED MATERIAL
160	ELECTRIC MOTORS	KIRLOSKAR ELECTRIC / CROMPTON GREAVES / SIEMENS / ABB
161	BATTERY	EXIDE / STANDARD / AMRON
162	MOTOR CONTROL CENTRE	PRAGATHI CONTROLS / LOAD CONTROLS / DYNAMO / BRIGHT ENGINEERING/ELLINS / LOTUS
163	CONTROL / POWER CABLES	GLOSTER / UNIVERSAL / ASIAN / CCI/ FINOLEX/ POLYCAB
164	VOLT METER SELECT SWITCH	SALZER / L & T / KAYCEE / AE
165	VOLTMETER (AC / DC)	MECO / AE
166	AMMETER (AC / DC)	MECO / AE
167	POWER CONTACTORS	ABB / SIEMENS /L&T/ SCHNEIDER
168	INDICATING LAPS (LED type) :	BINAY / TEKNIC
169	PUSH BUTTONS	TEKNIC / SIEMENS

Contractor
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Executive Engineer,
P.W.Division, Dhule

Sr. No.	Description	Makes / Brand
170	AUTO / MANUAL SELECTOR	SALZER / KAYCEE
171	TIMERS	EAPL / AE
172	TERMINAL BLOCKS	ELMEX / WAGO
173	CURRENT TRANSFORMERS	KALPA / VOLTAMPS / KAPPA / AE
174	OVER LOAD RELAY	L & T / SIEMENS
175	SINGLE PHASE PREVENTORS	MINILEC / AE / L & T
176	ENGINE CONTROL SELECTOR	SALZER / KAYCEE / L&T
177	MAIN SUPPLY SELECTOR – DPMCB	SIEMENS / MERLINGERIN
178	BATTERY CHARGING SELECTOR	SALZER / L & T/ KAYCEE
179	BATTERY CHARGER	KAYBEE POWEREC / HBL-NIFE/ AFCO/CHABBI
180	SIREN / HOOTER	KHERAJ/EQUI.
181	TOGGLE SWITCH	JAY / EQUI
182	CABLE TRAY	STORACK / PAN / MAG
183	DMX Dimmer (2KW 6 Channel)	Raytech / Canara / Satan or equivalent
184	Lighting Mixer	Raytech / Canara / Satan or equivalent
185	Equipment Rack	President / Alpha/ Deanrack or equivalent
186	MS Perforated Cable trays	reputed brand
187	LED Par lights	Satan (PRO LEDPAR 10Wx18)
188	1000W halogen Fresnel spot light	Satan/Canara/ Wegner/ARRI /Desisti / Wipro / GE
189	1000W spun aluminum PARCAN	Satan/Canara/ Wegner/ARRI /Desisti / Wipro / GE
190	1000W halogen flood light	Satan/Canara/ Wegner/ARRI /Desisti / Wipro / GE
191	Electrical Patch Panel	as per ISI standards.
192	Cabling 3 Core 2.5 S q mm	Polycab / Finolex / Havells
193	1000W PAR lamps	Osram /Philips/ GE/Wipro
194	1000W 240V Gx9.5 base tungsten halogen lamps. (100% Spare)	Osram / Philips / GE/Wipro
195	1000W 240V R7s base double ended tungsten halogen lamps. (100% spares)	Osram / Philips
196	Diecast aluminum "C" clamp with safety pin.	Usha Martin
197	1.5mtr long safety bond with lock clip	Usha Martin
198	8 channel class D Power amplifier	BOSE (PM8500), Lab Gruppen, PowerSoft or equivalent
199	Dual 8" High SPL, Fill or monitor speakers	BOSE (RMU 208), EAW, L Acoustic or equivalent
200	Mid-High loudspeaker	BOSE (LT 9402), EAW, L Acoustic or equivalent
201	Modular Dual 12" (4" Voice Coil) subwoofer	BOSE (LT MB 24), EAW, L Acoustic or equivalent
202	Front Fill speakers	BOSE (RMU 105), EAW, L Acoustic or equivalent
203	Digital Sound Processor	BOSE (ESP4120), Biamp, Symetrix or equivalent
204	Overhead microphone	SHURE (Model :- MX 202)
205	Gooseneck Microphone	SHURE Model :- MX418
206	Boundary microphones	SHURE Model :- MX393
207	Microphone wireless PGX4	SHURE Model PGX 24 (SM58)
208	Microphone wireless Collor PGX4	SHURE Model PGX 14 (WL185)
209	General purpose microphone	SHURE, Model - SM 58 S
210	audio signal speaker cable	RR Cable / Falcon
211	2 core microphone signal cable	RR Cable / Falcon
212	Microphone Patch Panels	LEO, MX, Nutric
213	DVD PLYAER	Any Reputed Brand
214	HEADPHONE	AKG
215	SITC 24 U Floor Mount rack	Any Reputed Brand
216	Projector	SONY VPL CH370
217	Motorized Screen	Crystal / DA-LITE / LIBERTY
218	Custom made Celling Mount Kit 3 x 3	Crystal / DA-LITE / LIBERTY
219	HDMI Cable	Kramer / BELDEN / EXTRON
220	VGA Cable	Kramer / BELDEN / EXTRON
221	85" Diagonal- Commercial / Business Large Format LED Display.	PANASONIC / SAMSUNG / LG
222	Blu-Ray Disc Player	OPPO - BDP Model: 203D
223	Display Mounting	PANASONIC / Samsung / LG / Sony
224	Cable Cubby Enclosure	Logic Model- LG803RC
225	Cable Cubby Enclosure	Logic Model- LM302
226	Switcher Extender	Aten, Model - VE2812T/ VE1812R
227	Wireless Presentation,	Kramer Model -Via Go
228	Speakers,	Current Audio / Equivalent Model - CS301 / Equivalent
229	Amplifiers,	Yamaha Model -PX3 / Sony

Sr. No.	Description	Makes / Brand
230	Video Conferencing Equipment	SONY , Model - XG 100 with DS120 Camera - 9+1 Site lic
231	Multi-site Upgrade / licenses for VC unit, Mention all Bundled/ Embedded Licences / Multi-Site Licenses,	SONY, Model -9+ 1 Site License
232	Control Processor	Crestron Model -CP3
233	Remote for controlling the output	Crestron Model -TSR-310i IR Emitter Probes Make - Crestron Model - Standard IR Emitters
234	Control System	Crestron, Model - DIN-8SW8-I
235	iPad	Crestron -IDOC / Apple / Similar
236	Software Licences for Control on Ipad App	Crestron App / Mobile G Pro
237	RACK & DB ,	Custom / Valrack / Standard , etc
238	Power sequencers	Furman / Equivalent Model - CN-3600 SE SmartSequencer
239	Shielded twisted pair cable -Cat 700	Audioquest Model -Cat 700 pearl (Reel 300 rmt)
240	Speaker Cable	EXTRON / SCP Model -SPK 16/1000 or Equivalent (Reel 300 rmt)
241	Audio Cable	EXTRON / SCP Model -STP20/1000 or Equivalent (Reel 300 rmt)
242	Comm Link control system Cable	EXTRON / SCP Model -CTL/1000 or Equivalent (Reel 300 rmt)
243	Shielded Connectors	EXTRON / SCP Model -XTP DTP 24 Plug or Equivalent
244	HDMI , VGA,	EXTRON / SCP Model –Custom
245	iPad Mini	Apple Model –IPAD
246	Audio Conference system	Nexia VC Discreet boundary mic Make - Shure MX395
247	55" 4K)3840*2160 (4K UHD) 24/7 Professional Display	Samsung / Sony / LG
248	Advanced High End Soundbar	DALI Model - Kubik 1
249	HDMI, CAT 6a,	SCP/ Extron Model -Cables and connectors
250	Lift	KONE, OTIS, THYssenKRUPP,SCHINDLER
Contractor Should take approval for use of any make out of above from Executive Engineer\ P.W. Elec. Division, Dhule before starting of work.		
Note: Makes other than the above if not available in market, prior approval from Engineer -in-charge is essential and the make shall be either from the approved list by Chief Engineer (Electrical), PWD, Mumbai or shall have ISI mark		

SECTION – 4
CONTRACT DATA

CONTRACT DATA

Items marked “N/A” do not apply in this Contract			Clause Reference with respect to Section - 3
1.	The Employer is Name : Executive Engineer, P.W.Division, Dhule		[Cl.1.1]
2.	The Engineer is Executive Engineer, P.W.Division, Dhule Name of Authorized Representative :		
3.	The Dispute Review Expert appointed jointly by the employer and Contractor is: Deleted		[Cl.1.1]
	* Name : Deleted		
	*Address: Deleted		
4.	For Civil Work : The Defects Liability Period is 120 Months For Building and 36 Months for Concrete Road from the date of Completion. For Electrical Work Defects Liability Period is as below :		[Cl.1.1 & 35]
	Name of the work	Defect liability period	
	Internal Electrification	12 Month for EI & 36 Month for LED fixtures & Ceiling Fan After successful commissioning of system	
	Lift & Allied works	36 Month After successful commissioning of system.	
	Fire Fighting	36 Month After successful commissioning of system	
5.	The Start Date shall be 1 days from the date of issue of the Notice to proceed with the work.		[Cl.1.1]
6.	The Intended Completion Date for the whole of the Works is 36 (Thirty Six) Calender Months Including Monsoon period after start of work with the following milestones:		[Cl.1.1, 17 & 28]
Milestone dates:			[Cl.2.2, & 49.1]
	Physical Works to be completed	Period from the start date	
I	Milestone 1 30 % of the contract price	12 (Twelve) Months	
ii	Milestone 2 60 % of the contract price	24 (Twenty Four) Months	
iii	Milestone 3 100 % of the contract price	36 (Thirty Six) Months	
7.	Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule		[Cl.1.1]
8.	The name and identification number of the Contract is : 6 For 2026-27		[Cl.1.1]
9	The work consist of Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule The Work shall, inter alia, include the following, as specified or as directed: (A) Road Works.		[Cl.1.1]

	Site Clearance : Setting-out and layout; widening of existing carriageway and strengthening including camber corrections , construction of new road /parallel service road, bituminous pavements, bituminous macadam, constructions of side shoulder, breast wall with C.C. gutter, earth work, remodelling /construction of drainage channels, flumes, guard posts and guard other, construction/extension of cross drainage works, bridges, approaches and other related stones, road markings, road signs and protective works for roads/bridges, all aspects of quality assurance of various components of the works, rectification of defects in the completed works during the Defect Liability Period submission of “As built” drawings and any other related documents and other item of work as may be required to be carried out for completing the works in accordance with the drawings and provisions of the contract to ensure safety.	
	(B) Bridge Work Site clearance : setting out, provision of foundations, piers abutments and bearings; prestressed / reinforced cement concrete superstructure; wearing coat, hand railings, expansion joints, approach slabs, drainage spouts! downtake pipes, arrangements for fixing light posts, water mains, utilities etc; provision of suitably designed protective works; providing wing / return walls; provision of road markings, road signs etc.; all aspects of quality assurance; clearing the site and handing over the works on completion; rectification of the defects during the Defects Liability Period and submission of "As-built" drawings and other related documents; and other items of work as may be required to be carried out for completing the works in accordance with the drawings and the provisions of the contract and to Insure safety.	
	(C) Building and Other Items Any other items as required to fulfil all contractual obligations as per the Bid documents.	[Cl. 1.1]
10.	The following documents also form part of the Contract: _____	[Cl. 2.3(9)]
11.	The law, which applies to the Contract, is the law of Union of India.	[Cl. 3.1]
12.	The language of the Contract documents is English	[Cl. 3.1]
13.	Limit of subcontracting 50% of the Initial Contract Price	[Cl. 7.1]
14.	The Schedule of Other Contractors-	[Cl. 8]
15.	The Schedule of Key personnel - As per Annex-II to section I	[Cl. 9]
16.	The minimum insurance cover for physical property, injury and death is Rs.5 lakhs per occurrence with the number of occurrences limited to four. After each occurrence, Contractor will pay additional premium necessary to make insurance valid for four occurrences always.	[Cl. 13]
17.	Site investigation report- To be assessed by the contractor.	[Cl. 14]
18.	The site possession Dates shall be same day from issue of work order to proceed with the work.	[Cl. 21]
19.	Fees and types of reimbursable expenses to be paid to the Dispute Review Board : Deleted	[Cl. 25]
20.	Appointing Authority for the Dispute Review Board -council, Indian Roads Congress, New Delhi. : Deleted	[Cl. 26]
21.	The period for submission of the programme for approval of Engineer shall be 21 days from the issue of letter of Acceptance	[Cl. 27.1]
22.	The period between programme updates shall be -- days.	[Cl. 27.3]
23.	The amount to be withheld for late submission of an update programme shall be Rs. -- lakhs.	[Cl. 27.3]

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

24.	The following events shall also be Compensation Events:		[Cl. 44]
	Substantially adverse ground conditions encountered during the course of execution of work not provided for in the bidding document –		
	(i)	Removal of underground utilities detected subsequently	
	(ii)	Significant change in classification of soil requiring additional mobilisation by the contractor e.g. ordinary soil to rock excavation	
	(iii)	Removal of unsuitable material like marsh, debris dumps etc. not caused by the contractor	
	(iv)	Artesian conditions.	
	(v)	Seepage, erosion, landslide	
	(vi)	River training requiring protection of permanent work	
	(vii)	Presence of historical, archaeological or religious structures, monuments interfering with the works	
	(viii)	Restriction of access to ground imposed by civil. judicial, or military authority.	
25.	The currency of the Contract is Indian Rupees		[Cl. 46]
			Clause reference with respect to Section 3
26.	Star Rates for Bitumen, Cement and Steel		Clause No. 47

PRICE VARIATION CLAUSE

If during the operative period of the Contract as defined in condition (i) below, there shall be any variation in the Consumer Price Index (New Series) for Industrial Workers for JALGAON Center as per Labour Gazette published by the Commissioner of Labour, Government of Maharashtra and/or in the wholesale Price Index for all commodities prepared by the Office of Economic Adviser, Ministry of Industry, Government of India, or in the price of period / oil and lubricants and major construction materials like bitumen, cement, steel, various types of metal pipes etc., then subject to the other conditions mentioned below, price adjustment on account of

- 1) Labour component
- 2) Material component
- 3) Petrol, Oil and Lubricants Component
- 4) Bitumen component
- 5) T.M.T. steel component
- 6) Cement Component
- 7) C.I. and D.I. Pipes Component

Calculated as per the formula hereinafter appearing, shall be made. Apart from these, no other adjustments shall be made to the contract price for any reasons whatsoever. Component percentage as given below are as of the total cost of work put to tender. Total of Labour, Material and POL components shall be 100 and other components shall be as per actuals.

1)	Labour component – K ₁	:-	30.06	%
2)	Material component – K ₂	:-	68.27	%
3)	Petrol, Oil and Lubricants Component – K ₃	:-	1.67	%
		:-	100.00	%
			* <u>Star Rate</u>	
4)	Bitumen component 80/100 (VG-10)	:-	Actual	Nil @ PMT.
5)	Bitumen component 60/70 (VG-30)	:-	Acutal	Nil @ PMT.
6)	T.M.T. Steel component (TMT)	:-	Actual	@ PMT.
7)	Cement Component	:-	Actual	@ PMT.
8)	900 mm dia NP-2 pipe	:-	Actual	@ RMT.
9)	1200 mm dia NP-2 pipe	:-	Actual	@ PMT.

Note :- If Cement, HYSD and Mild Steel, Bitumen, C.I. & D.I. Pipes are supplied on Schedule 'A', then respective component shall not be considered. Also if particular component is not relevant same shall be deleted.

1) FORMULA FOR LABOUR COMPONENT :-

$$V_1 = 0.85 P \left[\frac{K_1}{100} \times \frac{(L_1 - L_0)}{L_0} \right]$$

Where,

- V_1 = Amount of price variation in Rupees to be allowed for Labour Component
 P = Cost of work done during the quarter under consideration minus the cost of cement, HYSD and Mild HYSD and Mild Steel, Bitumen, C.I. and D.I. Pipes calculated at the basic star rates as applicable for the tender, consumed during the quarter under consideration.

(These star rates shall be specified here)

Kind of Material		* <u>Star Rate</u>	
4)	Bitumen component 80/100 (VG-10)	:- Actual	@ PMT.
5)	Bitumen component 60/70 (VG-30)	:- Actual	@ PMT.
6)	T.M.T. Steel component (TMT)	:- Actual	61000/- @ PMT.
7)	Cement Component	:- Actual	6000/- @ PMT.
8)	900 mm dia NP-2 pipe	:- Actual	@ RMT.
9)	1200 mm dia NP-2 pipe	:- Actual	@ PMT.

Star Rate :-

At the time of acceptance of tender, C.S.R. / updated cost of work will be worked out for comparison.

Rate of Bitumen on the date of submission of tender will be considered for arriving at C.S.R. updated cost these rates shall be the star rates for the work. These star rates considered while working out C.S.R. / updated cost as above will be communicated with the letter of acceptance and will be mentioned in work order.

- K_1 = Percentage of labour component as indicated above.
 L_0 = Basic consumer price index for **JALGAON** center shall be average consumer price index for the quarter preceding the month in which the last date prescribed for receipt of tender, falls.
 L_1 = Average consumer price index for **JALGAON** center for the quarter under consideration.

2) FORMULA FOR MATERIALS COMPONENT :-

$$V_2 = 0.85 P \left[\frac{K_2}{100} \times \frac{(M_1 - M_0)}{M_0} \right]$$

Where,

- V_2 = Amount of price variation in Rupees to be allowed for Materials Component
 P = Same as worked out for labour component.
 K_2 = Percentage of material component as indicated above.
 M_0 = Basic wholesale price index shall be average wholesale price index for the quarter preceding the month in which to the last date prescribed for receipt of tender, falls.
 M_1 = Average wholesale price index during the quarter under consideration.

3) FORMULA FOR PETROL, OIL AND LUBRICANT COMPONENT :-

$$V_3 = 0.85 P \left[\frac{K_3}{100} \times \frac{(P_1 - P_0)}{P_0} \right]$$

where,

- V_3 = Amount of price variation in Rupees to be allowed for POL Component.
 P = Same as worked out for labour component.
 K_3 = Percentage of Petrol, Oil & Lubricant component.
 P_0 = Average price of HSD at **Mumbai OML** during the quarter preceding the month in which the last date prescribed for receipt of tender, falls.
 P_1 = Average price of HSD at **Mumbai OML** during the quarter under consideration.

4) FORMULA TMT STEEL OTHER PLANT COMPONENT :-

$$V_5 = \frac{S_o (Sl_1 - Sl_2)}{Sl_0} \times T$$

where,

V_5 = Amount of price variation in Rupees to be allowed for HYSD / Mild Steel Component.

S_o = Basic rate of TMT steel Integrated plant in rupees per metric tonne as considered for working out value of P.

Sl_1 = Average Steel Index as per RBI Bulletin during the quarter under consideration.

Sl_0 = Average of Steel Index as per RBI Bulletin for the quarter preceding the month in which the last date prescribed for receipt of tender, falls.

T = Tonnage of steel used in the permanent works for the quarter under consideration.

5) FORMULA FOR CEMENT COMPONENT :-

$$V_6 = \frac{C_o (Cl_1 - Cl_2)}{Cl_0} \times T$$

where,

V_6 = Amount of price escalation in Rupees to be allowed for Cement Component.

C_o = Basic rate of Cement in rupees per metric tonne as considered for working out value of P.

Cl_1 = Average Steel Index published as per RBI bulletin for the quarter under consideration.

Cl_0 = Average of Cement Index published in the RBI bulletin for the quarter preceding the month in which the last date prescribed for receipt of tender, falls.

T = Tonnage of cement used in the permanent works for the quarter under consideration.

6) FORMULA FOR BITUMEN COMPONENT :-

$$V_4 = QB (B_1 - B_0)$$

V_4 = Amount of price variation in Rupees to be allowed for Bitumen Component.

QB = Quantity of Bitumen (Grade..) in metric tonnes used in the permanent works and approved enabling works during the quarter under consideration.

B_1 = Current average ex-refinery price per metric tonne of Bitumen (Grade) under consideration including taxes (ocrai, excise sales tax) during the quarter under consideration.

B_0 = Basic rate of bitumen in rupees per metric tonne as considered for working out value of P or average ex-refinery price in rupees per metric tonne including taxes (ocrai, excise sales tax) of bitumen for the grade of bitumen under consideration prevailing quarter preceding the month in which the last date prescribed for receipt of tender, falls, whichever is higher.

7) FORMULA FOR C.I. / D.I. PIPE COMPONENT :-

$$V_7 = Q_d (D_1 - D_0)$$

where,

V_7 = Amount of price variation escalation in rupees to be allowed for C.I. / D.I. Component.

D_0 = Pig Iron basic price in rupees per tonne considered for working out value of P.

D_1 = Average Pig Iron price in rupees per tonne during the quarter under consideration (published by IISCO)

Q_d = Tonnage of C.I. / D.I. pipes used in the works for the quarter under consideration.

The following conditions shall prevail :

- i) The operative period of the contract shall mean the period commencing from the date of work order issued to the contractor and ending on the date on which the time allowed for the completion of the works specified in the contract for work expires, taking into consideration the extension of time, if any, for completion of the work granted by the Engineer under the relevant clause of the conditions of contract in cases other than those where such extension is necessitated on account of default of the contractor. The decision of the Engineer as regards the operative period of the contract shall be final and binding on the contractor. Where any compensation for liquidated damages is levied on the contractor on account of delay in completion or inadequate progress under the relevant contract provisions, the price adjustment amount for the balance of work from the date of levy of such compensation shall be worked out by pegging the indices, L_1 , M_1 , C_1 , P_1 , B_1 , S_1 and C_1 to the levels corresponding to the date from which such compensation is levied.

- ii) This price variation clause shall be applicable to all contracts in B₁ / B₂ and C form but shall not apply to piece works. The price variation shall be determined during each quarter as per formula given above in this clause.
- iii) The price variation under this clause shall not be payable for the extra items required to be executed during the completion of the work and also on the excess quantities of items payable under the provisions of Clause 38/37 of the contract from B₁ / B₂ respectively. Since the rates payable for extra items or the extra quantities under Clause 38/37 are to be fixed as per current DSR or as mutually agreed to yearly revision till completion of such work. In other words, when the completion / execution of extra items as well as extra quantities under Clause 38/37 of the contract from B₁ / B₂ extends beyond the operative date of the DSR then rates payable for the same beyond the date shall be revised with reference to the current DSR prevalent at that time on year to year basis or revised in accordance with mutual agreement thereon, as provided for in the Contract, whichever is less.
- iv) This clause is operative both ways, i.e. if the price variation as calculated above is on the plus side, payment on account of the price variation shall be allowed to the contract and if it is on the negative side, the Government shall be entitled to recover the same from the contractor and the amount shall be deductible from any amounts due and payable under the contract.
- v) To the extent that full compensation for any rise or fall in costs to the contractor is not entirely covered by the provision of this or other clauses in the contract, the unit rate and prices included in the contract shall be deemed to include amounts to cover the contingency of such other actual rise or fall in costs.

27.

The Proportion of payments retained (retention money) shall be 4% from each bill subject to a maximum of 4% of final contract price.

[Cl. 48]

28.

Amount of liquidated damages for delay in completion of works

(I) for Whole of work

(1/2000)th of the initial contract price rounded off to the nearest thousand per day i.e. **Rs. 260000/-** per day.

For sectional completion (wherever specified. in item 6 of Contract Data) (1 / 200)th of initial contract price for 5 km section, rounded off to the nearest thousand per day.

(ii) Maximum limit delay in completion of work i.e. 10% of contract value **Rs.52018400/-**

[Cl. 49]

29.

The amounts of the advance payment are.

[Cl. 51 & 52]

Nature of advance		Amount (Rs.)	Conditions to be fulfilled
i.	Mobilization	10% of the Contract price	Deleted
ii.	*EQUIPMENT DELETED	90% for new and 50% of depreciated value for old equipment. Total amount will be subject to a maximum of 5 % of the Contract Price.	Delete
iii.	* Secured advance for non-	75% of Invoice Value	a) The materials are in accordance with the specification for works.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

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perishable
materials
brought to site

- b) Such materials have been delivered to site, and are properly stored and protected against damage or deterioration to the satisfaction of the Engineer. The Contractor shall store the bulk material in measurable stacks;
- c) The Contractor’s records of the requirements, orders, receipt and use of materials are kept in a form approved by the Engineer and such records shall be available for inspection by the Engineer.
- d) The contractor has submitted with his monthly statement the estimated value of the materials on site together with such documents as may be required by the Engineer for the purpose of valuation of the materials and providing evidence of ownership and payment thereof.
- e) Ownership of such materials shall be deemed to vest in the Employer for which the Contractor has submitted an Indemnity Bond in an acceptable format, and
- f) The quantities of materials are not excessive and shall be used within a reasonable time as determined by the Engineer.

(The advance payment will be paid to the Contractor no later than 28 days after fulfilment of the above conditions)

For Electrical Work :
Penalty Condition for DLP with FCAMC Period

Contractor has to attend emergency breakdown calls with skilled staff for 24x7 within 2 hours after intimation & fault shall be nullified before 12 hours after attendance of the fault failing to do so will impose the penalty of Rs. 1000.00 Per Day.

Sub Work	Name of the work	Defect liability period
Sub Work-1	Internal Electrification	12 Month for EI & 36 Month for Street Light After successful commissioning of system
Sub Work-2	Water Pump Set	12 Month After successful commissioning of system
Sub Work-3	Fire Fighting	12 Month After successful commissioning of system.
Sub Work-4	Lift & Allied works	24 Month After successful commissioning of system

- 30.** Repayment of Secured advance [Cl. 51.4]
- The advance shall be repaid from each monthly payments to the extent materials [for which advance was previously paid pursuant to Clause 51.4 of G. C. C.] have been incorporated into the works.
- 31.** The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price: [Cl. 52]
- Performance Security for Rs. as per clause no. 19.3 (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5
- The Standard form of Performance Security acceptable to the Employer shall be an unconditional Bank Guarantee of the type as presented in Section 8 of the Bidding Documents.
- 32.** The Schedule of Operating and Maintenance ManualsN/A [Cl. 58]
- 33.** The date by which “as-built” drawings (in scale as directed) in 2 sets are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be. [Cl. 58]
- 34.** The amount to be withheld for failing to supply “as-built” drawings by the date required is **Rs. 1.00 Lakh.** [Cl. 58]
- 35.** The following events shall also be fundamental breach of contract : “The Contractor has contravened Sub-Clause 7.1 and Clause 9 of GCC.” [Cl. 59.2]
- 36.** The Percentage to apply to the value of the work not completed representing the Employer’s additional cost for completing the Works shall be 20 percent. [3, Cl. 60]

VOLUME II

5) Technical Specification

SECTION – 5
TECHNICAL SPECIFICATION

1.1 PREAMBLE

1.1 The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified in Volume –I, III & IV.

1.2 SITE INFORMAION

1.2.1 The information give hereunder and provided elsewhere in these documents is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

1.2.2 The area in which the Works are located is plain terrain

1.2.3 General Climatic Conditions

1.2.3.1 The temperature in this region is a under: During summer months, average maximum temperature is above 40°C.

1.2.3.2 The average annual rainfall in the area is of the order of 500mm

1.2.4 Seismic Zone

The Works are located in Seismic Zone II as defined in IRC: 6-2000.

2 GENERAL REQUIREMENTS

The Technical Specifications in accordance with which the entire work described hereinafter shall be constructed and completed by the Contractor shall comprise of the following,

2.1 PART- 1- General Technical Specifications

The General Technical Specifications shall be the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS” FIFTH REVISION APRIL 2013, issued by the Ministry of Surface Transport (Road Wing), Government of India and published by the Indian Roads Congress.

2.2 Maharashtra State Public Works Department Specifications Book.

2.3 PART – II- Supplementary Technical Specifications.

The Supplementary Technical Specifications shall comprise of various Amendments / Modifications / Additions to the “SPECIFICATION FOR ROAD AND BRIDGE WORKS” referred to in PART–1 above and Additional Specifications for particular item of Works not already covered in PART-1.

2.4 A particular clause or a part thereof in “SPECIFICATION FOR RAOD AND BRIDGE WORKS (FIFTH REVISION, APRIL 2013)” referred in PART-I above, where Amended / Modified / Added upon and incorporated in PART-II, referred to above , such Amended / Modified / Added upon, and incorporated in PART-II, referred to above, such Amendment / Modification / Addition supersedes the relevant Clause or part of the Clause.

2.5 The Additional Specifications shall comprises of specifications for particular item of Works not already covered in PART-I.

2.6 When an Amended / Modified / Added Clause supersedes a Clause or part thereof in the said Specifications, then any reference to the superseded Clause shall be deemed to refer to the Amended / Modified /Added Clause or part thereof.

2.7 In so far as Amended / Modified / Added Clause may come in conflict or be inconsistent with any of the provisions of the said Specifications under reference, the Amended / Modified /Added Clauses shall always prevail.

- 2.8

The following Clauses in the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION APRIL 2013)” are applicable /Modified for project.

112, 201, 202,301, 309,401, 404, 406,408,501, 502, 503, 504, 507, 801, 803, 900, 1000, 3000
- 2.9

In the absence of any definite provision on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specifications of IRC and BIS in that order. Where even these are silent, the construction and completion of the works shall confirm to sound engineering practice as approved by the Engineer and in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final binding on the contractor.

Section	Respective / Clauses
100- General	101 -121- General
200- Site Clearance	201- Clearing and grubbing <p>Contractor shall remove and dispose of all materials such as trees, bushes, shrubs, stumps roots not exceeding 150 mm thick from side berms as directed by Engineer.</p>
	202- Dismantling of pavement
400- Sub –Base coarse (Non- Bituminous)	406- Wet Mix Macadam.
	408- Shoulders,Islands,Medians.
500- Base & Surface courses (Bituminous)	501- General requirement for bituminous pavement layers.
	502- Primer coat over Granular Base.
	503- Tack Coat : Tack coat shall be as specified in the item of work.
	504-. Bituminous macadam
	505- Dense Bituminous macadam
	507- Bituminous concrete.
300- Earth work and Drainage	301- Excavation of road way and drainage
	309- Surface/Surface drain <p>Cement / Lime shall be used as filler Job mix design for bituminous concrete is mandatory and variation in binder content beyond permissible variation of +/- 0.30% by weight of total mix will be assessed and paid accordingly for lower side only. Adjustment in payment will not be allowed for binder content on higher side.</p>
800- Traffic sign, Marking & other road Appurtenances and IRC-67- 2012	801- Traffic signs
	803- Road Markings, 804 Reflective pavement marker
900- Quality Control for Road Works	10 % of the density tests shall be done on edges. “Stone crushing cum screening plant (cone type) should be deployed for getting proper size and grading of aggregates. Combined flakiness and elongation index shall no be allowed more than the specific limit as mentioned in specifications of respective items ”
	Complete clause from 901 to 903 is applicable
1000- Material for structure	All material required for various items shall be confirm to Section 1000
3000- Maintenance of road	The following should be added in this clause.
	The following clauses shall apply for routine maintenance during defect liability period.
	3001- General
	3002- Restoration of rain cuts
	3003- Maintenance of earthen shoulders
	3004- Bituminous work in connection with maintenance and repairs
Thermoplastic paint	IRC 35-2015

Sign/Caution/Mandatory/Information IRC-67, 2012 Road furniture and signs.
Boards etc.

All the defects observed during the defect liability period shall be rectified by the Contractor at his own cost within specified time period as per instruction Engineer-In-Charge.

2.9 The following Clauses in the “SPECIFICATION FOR ROAD AND BRIDGE WORKS (MAHARASHTRA STATE P.W.D. SPECIFICATION BOOK”) are Applicable /Modified for the Project

- Rd-23 Supply of Hard Murum
- Rd-39 Spreading Hard Murum
- Rd-40 Compaction of Hard Murum
- Rd 42 Supply of Bitumen VG-30 Grade
- Rd 47.3. Tack coat Application
- Rd 49.3.1 (e) Tack coat

2.10 In the absence of any definite provision on any particular issue in the aforesaid Specification reference may be made to the latest codes and specifications of IRC and BIS in that order. Where even these are silent, the construction and completion of the Works shall confirm to sound engineering practice as approved by the Engineer and in case of nay dispute arising out of the interpretation of the above, the decision of the Engineer shall be final binding on the Contractor.

A. SUPPLEMENTRAY SPECIFICATION

1. Working Method & Progress Schedule

1.1 Working Method

- a) The Contractor shall submit within the time stipulated by the Engineer-in-charge in writing the details of actual methods that would be adopted by the Contractor for the execution, of any items as required by Engineer-in –charge at each of the location, supported by necessary detailed drawings and sketches including those of the plant and machinery that would be used, their locations, arrangement for conveying and handling materials etc. and obtain prior approval of the Engineer-in-charge well in advance of starting such items of work.
- b) The Engineer-in-charge reserves the right to suggest modifications or make corrections in the method proposed by the Contactor, whether accepted previously or not at any stage of the Work to obtain the desire accuracy, quality, safety and progress of Work which shall be binding on the Contractor. The Contractor shall take cognizance of such suggestions / objections and suitably modify his method of construction. No claim on account of such change in method of execution will be entertained by the Government so long as specification of the item remains unaltered.

1.2 Progress Schedule

- a) The Contractor shall furnish and got approved within twenty one days of the order to start the Work, a programme of Work in quadruplicate indicating the date of actual start, the monthly progress expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating date of procurement of materials and setting up of plant and machinery. The programme is to be such as to be practicable o achievement towards the completion of the whole Work in the time limit and of the particular items, if any, on the due dates specified in the Contract. Planning and programme of Work shall be done by the mutual discussion between the Engineer-in-Charge and Contracts representative in charge of work.
- b) The progress of work shall be reviewed at every mile stone and revised programme shall be drawn up, if necessary. No revised programme shall be operative without the approval of Engineer-in-Charge in writing.
- c) The Engineer-in-Charge is further empowered to ask for more detailed schedule or schedules say weekly for any item or item in case of urgency of Work as will be directed by him and the Contractor shall supply the same when asked for.
- d) Acceptance of the programme or the revised programme, by the Engineer-in-charge shall not relieve the Contractor of his responsibility to complete the whole of the Work by the prescribed time or the extended time if any.

- 1.3
 - a) The Contractor shall furnish sufficient plant, equipment and labour as may be necessary to maintain the progress schedule. The working and shift hours restricted to one shift a day for operations to be done under the Government supervision shall be such as may be approved by the Engineer- in-Charge They shall not be varied without prior approval of the Engineer-in-Charge.
 - b) Night work which requires supervision shall not be permitted except when specifically allowed by Engineer-in-Charge each time, if required by Contractor. The Contractor shall provide necessary lighting arrangement and other measures etc for right Works as directed by Engineers-in Charge without extra cost.

- 1.4 The Contactor shall submit reports on progress of Work in forms and statements etc. at periodical intervals in the form of progress charts forms, statements and /or reports as may be approved by the Engineer-in Charge.

- 1.5 The Contractor shall maintain programme chart, details regarding machinery, equipment, labour, materials and periodical returns thereof in programme to be got approved from the

Engineer-in-charge.

1.6 Priorities of Works to be executed

Priorities for items to be executed shall be determined periodically as deemed fit by the Engineer-in-Charge keeping in view the final time limit allowed for the Work and all the time Schedule fixed for intermediate stages of Works as directed by the Engineer-in-Charge

2 Setting out

2.1.1 The Contractor shall be responsible for

- A) Accurate setting out of the Work in relation to original points lines, and levels of references given by the Engineer-in-charge in writing
- B) The correctness of position, levels dimensions and alignments of all parts of the Work
- C) The provision of all necessary instruments, appliance and labour in connection with forgoing responsibilities.

2.1.2 If at any time during execution of Works any error appears in the position levels, dimensions or alignment of any part of the Work the Contractor on being required so to do by the Engineer-in-Charge shall at his own cost, rectify such error to the satisfaction of the Engineer-in-Charge whatever the case may be as regards the error.

2.1.3 The checking of any setting out or of any line or level by the Engineer-in-charge shall not in any way relieve the Contractor of his responsibility for the accuracy. Thereof and the Contractor shall carefully protect and preserve all benchmarks pegs and other materials used in setting out the Works. The Contractor shall give a notice not less than 48 hours in advance of his intention to set out or layout for any part of the Works to the Engineer-in-charge so that checking can be made in time.

2.1.4 Layout of Work

- i) Layout of the work will be done by Contractor in consultation with the Engineer-in-charge of the Department or his representative Some permanent marks should however be established to indicate the demarcation of the structure or any component thereof made to this permanent marks in measurements books and drawing, signed by the Contractor and departmental officer.

2.2 Road Work

2.2.1 The Contractor shall establish working bench marks in the area soon after taking possession of the site. The reference bench mark for the area shall be as directed by the Engineer-in-charge. The working bench marks shall be at the rate of four per Kilometer and also at or near all drainage structure. Over bridges. The working bench marks shall be got approved from Engineer-in-charge. Checks must be made on these bench marks once every month and adjustment if any got approved form Engineer-in-charge and recorded. An up to if date record of all bench marks including approved adjustment, if any shall be maintained by the Contractor and also a copy the supplied to the Engineer-in-charge for this record.

2.2.2 The lines and levels of formulation, side slopes, drainage, carriageways and shoulders shall be carefully set and frequently checked. Care shall be taken to ensue that correct gradients and cross sections are everywhere obtained.

2.2.3 In order to facilitate the setting out the Works, the center line of the carriage way of highway must be accurately established by the Contractor and approved by the Engineer-in-charge. It must then be accurately referred in a manner satisfied to the Engineer-in-charge at every 50m. Intervals in plan and rolling terrain and 20m intervals in hilly terrain and at the curve points as directed by the Engineer-in-charge with marker pegs and change boards set in or near the fence line and a schedule of reference dimension shall be prepared and supplied by the Contractor to the Engineer-in-charge. These markers shall be maintained until the Works reach finished formation level and are accepted by the Engineer-in-charge.

2.2.4 The Works of setting out shall be deemed to be part of general Works, preparatory to the execution of work and no separate payment shall be made for same.

- 2.2.5 The drawings enclosed with the bidding documents are for general guidance only.
- 2.2.6 All necessary Registers formatted as per instructions of Engineer-in-charge required for documentation of Works shall be supplied by the Contractor in duplicate before commencement of Work. Record shall be maintained by the Contractor and shall be got verified from time to time by the Engineer-in-charge or his representative.

2.3.1 **Responsibilities of Level and alignment**

The Contractor shall be entirely and exclusively responsibilities for the horizontal and vertical alignment the levels and corrections of every part of work and shall rectify effectively any errors or imperfection there in such rectification shall be carried out by the Contractor at his own cost when instructions are issued to that effect by the Engineer-in-charge

2.3.2 **Leveling Instrument**

If measurement of item of the work are based on Volumetric measurements, calculated from levels taken before and after construction of the item a sufficient number of leveling instruments staves tapes etc. will have to be kept availability by the Contractor at the site of work for this purpose. Lack of such leveling instruments staves tapes etc. in required number may cause delay in measurement of the work. The Contractor will have therefore to keep sufficient number of these instruments in working condition readily available at the Work site.

2.4 **Ancillary Works**

The Contractor shall submit to Engineer-in-charge in writing the details of all ancillary Works including layout and specifications to be followed for its constructions. Ancillary Works shall not be taken up in hand unless approved by Engineer-in-charge. The Engineer-in-charge reserves the right to suggest modifications or make complete changes in the layout and specifications proposed by the contract at any stage to ensure the safety on the work site. The Contractor shall carry out all such modification to the ancillary Works at his own expenses as ordered by the Engineer-in-charge.

All above conditions are incidental or Works & no extra payment will be made for this.

3 **Agenda and work order book**

- 3.1 The Contractor shall himself manage the work or engage an authorized all time agent on the work capable of managing supervising and guiding the work and understanding the specifications and contract conditions. A qualified and experienced engineer be provided by the Contractor as his agent for technical matters in case the Engineer-in-charge considers this as essential for the work and so directs the Contractor. Agent will take orders as will be given by the Engineer-in-charge or his representative and shall be responsible for carrying them out. The agent and/or site engineer shall not be changed without prior intimation to the Engineer-in-charge or his representative on the wok site The Engineer-in-charge has the unquestionable right to ask for changes in the quality and strength of Contractors supervisory staff and to order removal from work of any of such staff. The Contractor shall comply with such order and effect replacements to be satisfaction of the Engineer-in-charge.
- 3.2 A work order book shall be maintained on site and it shall be the property of Government and the Contractor shall promptly acknowledge the order given therein by the Engineer-in-charge or his authorized representative or his superior officer and comply with them. The compliance shall be reported by Contractor to the Engineer-in-charge within 15 days from the date of issued of instructions. The blank work order book with machine numbered pages in quadruplicate with perforated sheets (for three copies to be detached) will be provided by the Departments for this purpose. The Contractor will be allowed to copy out the instructions therein from time to time.

4 Land for temporary use

Land for temporary site office, site laboratory, parking yard, store yard, labour camp, Workshop etc. shall have to be arranged by the Contractor at his own cost. The department will extend help by providing recommendation letter etc. if necessary and so desire by the Contractor.

5 Assistance in procuring priorities permits etc.

- 5.1 The Engineer-in-charge on written request by the Contractor, will if in his opinion the request is reasonable and in the interest of work and its progress assist the Contractor in securing the police protection and the priorities for deliveries, transport permits for controlled materials, permits for quarries and other similar permits including labour license etc. where such are needed. All cost in this behalf shall be borne by the Contractor. The department will not however be responsible for the non-availability of such facilities or delays in this behalf and no claims on account of such failure or the Department shall allow delays.

The Contractor has to make his own arrangement for machinery required for the work. However if such machinery is conveniently available with the department it may be spared on hire as per department's rules in force, if requested by the Contractor in writing. The supply or non-supply of machinery shall not form a ground for any claim or extension of time limit for this work.

5.2 Water supply

- i) Availability of adequate water for work and sources thereof shall be confirmed by the Contractor before submitting the tender.
- ii) Water for construction, curing or any other purpose shall be brought by the Contractor at his own cost.

5.3 Electricity

The Contractor will have to make his own arrangement at his own cost for obtaining or providing electric supply at Work site. Electrical supply for the department's use at work site shall be provided by the Contractor. No charges would be payable by the Department.

5.4 Telephone Facilities

Contractor will have to make his own arrangement at his own cost of telephone facilities at work site, if required

6 Quarries

The Contractor will have to make his own arrangement of acquiring land for quarries. The Contractor shall carry out all quarrying operations without endangering the environment and natural beauty of surrounding. All excess and un useful excavated materials shall be stacked at dumping places if available identified by the Department as directed by the Engineer-in-charge otherwise the Contractor has to make his own arrangement for the same.

7 Supervisory staff

The Contractor shall at his own expenses maintain sufficient experienced supervisory staff etc. required for the work and shall make his own arrangement for housing such staff.

8 Co-ordination|

When several agencies for different sub Works of the project are to work simultaneously on the project site, the Contractor shall render full co-ordination for achieving proper co-ordination between different Contractor to ensure timely completion specified in each contract shall therefore be strictly adhered to each Contractor may make his independent arrangements for water power, housing etc. but he will be at liberty to come to mutual agreement with the approval of the Engineer-in-charge. The Contractor shall not take or cause to be taken any steps of action that may cause disruption, discontent or disturbance to work, labour or other arrangements etc. of other Contractors in the project localities. Any action by the Contractors which the Engineer-in-charge in

his unquestioned discretion may consider as infringement of the above code would be considered as a breach of the contract conditions and shall be dealt with accordingly. In case of any dispute or disagreement between the various Contractors, the Engineer-in-charge's decisions regarding the coordination, co-operation and facilities to be provided by any of the Contractor shall be final and binding on the Contractor concerned and such a decision or decision shall not violate any contract nor absolve the Contractor of his obligations under the contract, nor form the ground for any claim or compensation.

9 Relation with public authorities

The Contractor shall comply with all rules, regulations, by laws and directions given from time to time by any local or public authority or body in connection with this work and shall him self pay fees or charges which are livable on him without any extra cost to Government.

10 Work preliminaries

The Contractor shall supply, fix and maintain at his own cost, during the execution of Works, all the necessary centering and scaffoldings, staging, planking, timbering strutting, shoring, plumbing, fencing hoardings, watering, lightening by night as well as the necessary equipment for protection of public and safety at any place adjacent to road and railway line. The Contractor shall remove any/or all such centering, scaffolding, staging planking and equipment when ordered to do so by the Engineer-in-charge and make good all matters and things disturbed during the execution of work to the satisfaction of the Engineer-in-charge.

11 Environmental Safeguards

11.1 NOC for pollution control

It is obligatory on the part of agencies to obtain the N.O.C. regarding Water (Prevention and control of pollution) Act 1974 and Air (Prevention and Control of Pollution) Act 1981 from the Maharashtra Pollution Control Board before starting Crusher/Hot Mix Plant for the work.

11.2 Environmental Safety

The Contractor shall, throughout the part of agencies to obtain the N.O.C. regarding Water (Prevention and control of pollution) Act 1974 and Air (Prevention and Control of Pollution) Act 1981 from the Maharashtra Pollution Control Board before starting Crusher/Hot Mix Plant for the work.

12.0 Arrangement for traffic during construction

The Contractor shall at all time carryout work on the highway in a manner creating least interference to the flow of traffic while consistent with the satisfactory execution of the same. For all the Works involving improvements to the existing highway, the Contractor shall in accordance with the directives of the Engineer, provide and maintain, during execution of the work, a passage for traffic either along a part of the existing carriageway under improvement. The Contractor shall take prior approval of the Engineer regarding traffic arrangements during construction in reference with drawing No. 2 & 3 on page 51 & 52 of Vol-II of Standard Contract Document.

B. Execution of Work

13 Authorities

13.1 Authorities of Engineer-in-charge

13.1 .1 Save in so far as it is legally or physically impossible the Contractor shall execute complete and maintain the Works in strict accordance with the contract under the directions and to the entire satisfaction of the Engineer-in-charge and shall comply with and adhere strictly to the Engineer-in-charge's instructions and directions on any matter (whether mentioned in the Contract or not) pertaining to this Work.

13.1.2 The Engineer-in-charge shall decide all questions which may arise as to quality and acceptability of materials furnished and work executed, manner of execution rate of progress

of the work, interpretation of the plans and specifications and acceptability of fulfillment of contract to on the part of Contractor. He shall determine the amount and quantities of work performed and materials furnished and his decision and measurements shall be final. In all such matters and in any technical questions, which may arise touching the contract, his decision shall be binding on the Contractor.

- 13.1.3. The Engineer-in-charge shall have the power to enforce such decisions and orders if the Contractor fails to carry them out promptly. If the Contractor fails to execute the work ordered by the Engineer-in-charge, the Engineer-in-charge may give notice to the Contractor specifying a reasonable period therein and on the expiry of that period proceed to execute such work as may be deemed necessary and recover the cost thereof from the Contractor.

13.2 Authorities of the Engineer-in-charge’s Representative

- 13.2.1 The duties of the representative of the Engineer-in-charge are to watch and supervise the work and to test and examine the materials to be used for workmanship employed in connection with the work.
- 13.2.2 The Engineer-in-charge may from time to time in writing delegate to his representative any of the powers and authorities vested in the Engineer-in-charge and shall furnish to the Contractor a copy of all such delegations of powers and authorities.
- 13.2.3 Any written instruction of approval given by the representative of the Engineer-in-charge to the Contractor within the terms of such delegations (but not otherwise) shall bind the Contractor and the department as though, it had been given by the Engineer-in-charge, provided always as follows:
 - a) Failure of the representative of the Engineer-in-charge to disapprove any work or materials shall not prejudice the power of the Engineer-in-charge thereafter to disapprove such work or materials and to order its putting down, removal or breaking up thereof.
 - b) If the Contractor is dissatisfied with any decision of the representative of the Engineer-in-charge, he shall be entitled to refer the matter to the Engineer-in-charge who shall there upon confirm, reverse or vary such decision.

14 Work Preliminaries

14.1 Display of Work Information

The two information sign boards in rectangular shape of size 2.45 x 1.2 0m made out of 3mm thick Aluminum sheet painted with one coat of zinc chromate staving primer and two coats of yellow stove enamel paint on front side and gray stove enamel paint on back side and border/messages/symbols etc. with cutout of while retro reflective sheeting of Engineering Grade including M.S .angle iron frame of 35 x 35 x 3mm and two M.S. angle iron post of size 65 x 65 x 6mm properly cross braced with angle iron of 50 x 50 x 5mm etc. duly painted with alternative black and white bands of 25cm in width including G.I. fixtures etc. and fixing the board in 1:4:8 concrete block of size 60 x 60 x 75 cm shall be fixed etc. and fixing the boards in 1.4.8 concrete block of size 60 x 60 x 75 cm shall be fixed on the site (each on one side). It is incidental to the Work and no extra payment will be made to the Contractor. Information Board shall be as per the drawing attached.

14.2 Omissions and Discrepancies

In case of errors omissions and/or disagreement between written and scaled dimension in drawings or between the drawings and specifications etc. the following order of preference shall apply.

- i) Between the actual scaled and written dimension or descriptions on a drawings the latter shall be adopted
- ii) Between the written or shown description or dimension in the drawing and the corresponding one in the specifications, latter shall apply.
- ii) Between the quantities shown in the schedule of quantities and those arrived at from the drawing the latter shall apply.

- iii) Between the quantities shown in the schedule of quantities and those arrived at from the drawing the latter shall apply.
- iv) In case of omissions and /or doubts or discrepancies in dimension or description of any item or specifications a reference shall be made to the Engineer-in-charge whose elucidation, elaboration or decision shall be considered as authentic. The Contractor shall be held responsible for any error that may occur in the work through lack of such reference and precaution.

14.3 Temporary Diversions, Maintenance of Same and Traffic Management

In addition to provision made herein, it is stipulated that the Contractor shall construct, maintain and carry out the traffic management including the safety features, for all temporary diversions.

14.4 Site office

The Contractor shall, for the purpose of supervision of Works & management of work schedule establish fully furnished site office having required floor area & amenities at the place as approved by the Engineer-in-charge. The Contractor shall provide the furniture as per the list as per MORT&H specification (fifth revision) Clause No. 120 as below.

For road and bridge works the site office will have to be established on Work Site only.

14.5 Laboratory for Testing

The Contractor shall for the purpose of testing the materials establish a field laboratory of adequate floor area as approved by Engineer-in-charge. The Contractor shall provide all equipments and amenities as per the details mentioned in MORT& H specification clause No. 121.3.1

Note: The field laboratory shall either be established at plant Site or as directed by Engineer-in-Charge.

14.6 The Contractor will make arrangements to carry out various tests in the field laboratory established for this purpose. The 70% sample could be tested at the field laboratory and 30% samples shall be got tested in the Government laboratory or laboratory approved by the Engineer- in-charge. The charges of testing the material in Government or Government approved laboratory or recognized laboratory approved by Engineer- in-charge shall be borne by the Contractor only.

14.7 The material for which test can not be carried out at the field laboratory shall be tested at the Government laboratory approved by the Engineer- in-charge. The material which can not be tested at Government laboratory shall be tested at the recognized laboratory approved by the Engineer- in-charge in presence of the Engineer- in-charge or his authorized representative.

15. Materials for use on Work

15.1 General

15.1.1 The Contractor shall make his own independent investigations into the availability as well as suitability of the various materials required for construction.

15.1.2 The Contractor will have to make his own arrangement for procuring quarries or quarry permits. Necessary assistance for this will be extending by the Department if desired.

15.1.3 All the material required for construction of work shall be brought by the Contractor at his own cost. The samples of material to be procured shall be got approved from the Engineer- in-charge. The material as per approved samples shall only be procured.

The Contractor shall submit periodically as well as on completion of work, an account of all materials brought by the Engineer- in-charge. The Contractor shall also furnish monthly account of materials. A separate register shall be maintained on Site for recording daily item wise receipt and consumption of cement, steel and bitumen used by him and item wise consumption of other materials used. This register shall be signed daily by the Contractor or his representative and representative of Engineer- in-charge.

15.1.5 The Contractor shall not transfer any material once brought at Work site without prior written permission from Engineer- in-charge and for bonafied reasons only.

15.1.6 Testing of all construction material shall be carried out as per required frequency and MORT& H specification clause No.903.3.1, 1000, 1600, 1700, 1900, 2200, 2700.

- 15.1.7 In case the materials brought by the Contractor become surplus owing to the change in the design for the work the materials should be taken back by the Contractor at his own cost after prior permission of the Engineer- in-charge.
- 15.1.8 The charges for conveyance of materials from the place of delivery to the site of work and the actual spot on work site shall be entirely borne by the Contractor. No claim on this account shall be entertained.

15.2 Cement

- 15.2.1 The Contractor shall make his own arrangement for procurement of Cement required for the Work. The Cement shall be OPC Grade-43 conforming to IS 8222. The supply of cement shall be of brand approved by Engineer-in-Charge. The testing of cement so procured shall be carried out as per the frequency as mentioned in MORT & H specification clause No.1000. The testing charges will have to be borne by the Contractor.
- 15.2.2 Cement to be used on Works shall be as fresh as possible and shall be used as per I.S. Code from the date of manufacture.

15.3 Bitumen

- 15.3.1 Contractor shall procure and use bitumen of required grade from Government refinery.
- 15.3.2 Bitumen to be procured by Contractor shall conform to the IS 73-1992.
- 15.3.3 Contractor should be aware that delay may occur in getting the bulk bitumen to be supplied at the refinery. The Contractor therefore is advised to place indent for their requirement sufficiently in advance to allow for the period usually taken by the refinery for supplying bulk bitumen.
- 15.3.4 The Contractor is expected to know all the rules and regulations framed by the refineries for supply of bitumen.
- 15.3.5 The Contractor shall have to submit attested copy or original purchase voucher duly supported by delivery challan & exit gate pass. The bitumen brought by the Contractor for the work will be open to check by the Engineer- in-charge or his representative at all times.
- 15.3.6 The Engineer- in-charge reserves the right of weight of individual random buzzer as and when considered necessary at the cost of the Contractor.
- 15.3.7 The bitumen so procured will have to be tested as per the frequency as mentioned in MORT & H specification (Fourth revision) clause 903.3.1. The testing charges will have to be borne by the Contractor.
- 15.3.8 The Contractor should inform the schedule of arrival of boozers to the Engineer- in-charge from time to time. The Contractor shall also arrange to provide field laboratory at plant site along with all necessary equipment & materials for testing the grade of bitumen procured by him.

15.4 Bitumen's Mixes.

- (i) The bituminous wearing surfaces and other bituminous overlays as directed by the Engineer- in-charge will have to be executed as per the job mix formula based on mix design. The Contractor will have to inform the Engineer- in-charge in writing at least 20 days before the start of work of the job mix formula proposed for use in the Works. While establishing the job mix formula the Contractor should ensure that it is based on correct and truly representative samples to the materials that will actually be used in the work and that the mixture and its different ingredients satisfy the physical and strength requirement of these specifications.
- (ii) The job mix formula will have to be got approved from the Engineer- in-charge.
- (iii) The approved job mix formula shall remain effective unless and until revised job mix formula is approved. Should a change in the source of material be proposed or when specified by the Engineer- in-charge, a new job mix formula be prepared and submitted for approval. On approval of the job mix formula the Contractor should carry out plant trials to establish that the plant is set up to produce a uniform mix conforming to the approved job mix formula.

The permissible variations as regards a) Individual percentages of various ingredients and b) Binder content shall be as specified in MORT & H specification Revision V Table 500-7 & 500-18. The job mix design shall be carried out in the Regional Laboratory or any other approved laboratory as approved by Engineer- in-charge.

15.5 Cement Concrete

- 15.5.1 The Contractor shall carry out all preliminary tests to work out grading and

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proportioning of aggregates in order to obtain and maintain uniform quality of work. The Contractor shall supply all materials, labour for preparing and testing samples as required by the Engineer-in-charge Unless otherwise specified in the detailed item wise specifications. The concrete cube shall be tested as per CI. 1716.2.4 The contractor shall also make field arrangements for slump test and bulking of sand. The frequency of test as per Ministry's specification. The cubes shall be got tested as approved laboratory and the test results shall conform to the M.O.R.T. & H specifications (4th Revision) Clause No.1716.2.6 or as laid down in the specifications.

- 15.2.2 a) All concrete shall be machine mixed, either in a concrete mixer or in a batching and mixing plant as per specifications. No. hand mixing will be permitted. The mixer or the plant shall be at an approved location considering the proportions of the mixes and transportation means available with the Contractor.

b) For Controlled or High grade concrete, the grading of aggregate shall be got approved from the Engineer-in-Charge. The correct proportions and the total quantity of water for the mix will be determined by means of preliminary test and shall be got approved from the Executive –in – Charge. However, such approval does not relieve the Contractor from his responsibility regarding the minimum strength requirements for Work. Test shall be taken in accordance with relevant codes and specifications
- 15.5.3 Concrete shall meet with any other requirements as specified on the drawings or as directed by Engineer-in-charge. Additional requirements as regards overall limits of deleterious substances in concrete shall be as per M.O.R.T. & H specifications (Fifth Revision) Clause No.1704.4
- 15.5.4 The Concrete shall be mechanically vibrated for proper water from 28 days after the time of its placement or as may be directed by the Engineer-in-charge. Alternate method of curing viz. steam curing, use of curing compound shall be got approved from Engineer-in-charge in writing before its application.

15.3 **Cement- for B.C.**

Cement to be used for the work shall comply with the following with the prior approval of Engineer- in-charge. Ordinary Portland Cement 43 grade only conforming to IS: 8112 shall be used in the item of B.C. as a filler and shall be from the same factory. Independent testing of cement used shall be done by the Contractor at site and in the laboratory approved by the Engineer- in-charge before use. Any cement with lower quality than those shown in manufacturer's certificate shall be debarred from use.

16 **Patented devices**

Whether the Contractor desired to use any designed device, material or process covered by letter of patent or copy right, the right for such use shall be secured by suitable legal arrangement and arrangement with patent owner and the copy of their agreement shall be filed with the Engineer- in-charge if so desired by the latter.

17. **Rejection of Material**

- 17.1 Any stock or batch of material (s) of which sample(s) does not conform to the prescribed test and quality shall be rejected by the Engineer- in-charge or his representative and such material(s) shall be removed from the site by the Contractor at his own cost. Such rejected material shall not be made acceptable by any modifications.
- 17.2 Material not corresponding in character and quality with approved samples will be rejected by the Engineer- in-charge or his representative and shall be removed from site by the Contractor at his own cost.

18. **Stacking, Storage & Guarding of Materials**

- 18.1.1 The stacking and storage of materials at site shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and fitness for the work. Suitable precautions shall be taken by the Contractor to protect against atmospheric actions, fire and other hazard.
- 18.1.2 The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likelihood of subsidence of soil; heavy materials shall be stored on paved platforms. Suitable separating barricades and enclosures as directed by Engineer- in-charge shall be provided to separate various materials brought by Contractor.
- 18.2 The Contractor shall at his own expenses, engage watchmen for guarding the materials, plant, machinery and the work during day and night against any pilferage or damage and also for prohibiting trespassers.
- 18.3 No materials brought to the site shall be removed from the site without the prior

approval of the Engineer- in-charge.

- 18.4 All constructional plant, provided by the Contractor shall, when brought on the site, be deemed to be exclusively intended for the construction and the Contractor shall not remove the same or any part thereof (save for purpose of moving it from one part of the site to another) without the consent in writing of the Engineer- in-charge who shall record the reasons for withholding the consent.
- 18.5 The materials shall not be stacked in place where it is liable to be damaged or lost due to traffic passing over or to be washed away by rain or floods, to be buried under the land slide etc. or slip down on embankment or hill side etc. No claims for any loss due to these and similar causes will be entertained.
- 18.6 Before stacking, the materials shall be free from all earth, rubbish, vegetable matter and other extraneous substance and in the case of metal, screened to gauge, if so directed when ready. It shall be collected/ stacked entirely clear of the roadway, on ground, which has been cleaned of vegetation and leveled. On high banks, ghat roads etc. where it may not be practicable to stack it entirely clear of the road way, it may be stacked with permission of the Engineer- in-charge, on berms in such a way as to cause minimum danger and obstruction to the traffic or as may be directed by him.
- 18.7 The material brought by the Contractor and dismantled material if any shall be so stacked as to allow the traffic on National Highway in smooth and undisturbed manner without any hindrances and as directed by Engineer- in-charge that the material stacked along the road side is causing hindrances to the through traffic or blocking the required working area then the such material will be ordered to be removed or shifted at the place directed by the Engineer- in-charge at the cost of the Contractor.

19 Supervision and Inspection of Work

19.1 Supervision

- 19.1.1 The Contractor shall either himself supervise the execution of the Works or shall appoint the competent agent approved by the Engineer- in-charge to act on his behalf. The intimation of appointment of such agent shall be communicated in writing to the Engineer- in-charge within 10 days of the date of issue of notice to proceed with the work.
- 19.1.2. Orders given to the Contractor's agent shall be considered to have the same force as if these had been given to the Contractor himself. If the Contractor fails to appoint suitable agent as directed by the Engineer- in-charge the Engineer- in-charge shall have full power to suspend the execution of the work until such date a suitable agent is appointed and the Contractor shall be responsible for the delay so caused to the Works and Contractor shall not be entitled for any compensation on this behalf.

19.2 Inspection

- 19.2.1 The Engineer- in-charge and or any person authorized by him shall at all times have access to the Works or part thereof and to all Workshops and places (including required documents) where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall offer every facility for and every assistance in or in obtaining the right to such access.
- 19.2.2 The Contractor shall inform the Engineer- in-charge in writing when any portion of the work is ready for inspection giving him sufficient notice to enable him to inspect the same without affecting the further progress of the work.
- 19.2.3. The Contractor shall provide at his own cost necessary ladders and such arrangements as are considered safe by the Engineer- in-charge for proper inspection of all parts of the work.
- 19.2.4 The Contractor shall extend his full co-operation and make all necessary arrangement when needed for carrying out inspection of the work or any part of the work by the local representatives, M.L.A., M.P. and officers etc. No compensation shall be paid to the Contractor on this account.

20 Measurement of Works

- 20.1 Initial Measurement for Record.
 - 20.1.1 Where for proper measurement of the work, it is necessary to have an initial set of levels or other measurement taken, the same as recorded in the authorized field book or Measurement book of Government by the Engineer- in-charge or his authorized representative will be signed by the Contractor who will be entitled to have a true copy of same made at his cost.
 - 20.1.2 Any failure on the part of the Contractor to get such level etc. recorded before starting

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the work will render him liable to accept the decision of the Engineer- in-charge as to the basis of taking measurements.

- 20.1.3. The Contractor will not cover any work which will render its subsequent measurement difficult or impossible without first getting the same jointly measured by himself and the authorized representative of the Engineer- in-charge. The record on the Government side of such measurement will be signed by the Contractor and he will be entitled to have a true copy of the same made at his cost.

20.2 Intermediate and Final Measurements

The General rules for intermediate & final measurement for payment shall conform to the provision mentioned in clause 113 of MORT&H specifications 5th Revision

21 Completion of Work

- 21.1 The Contractor after completion of work shall clean the site of all debris and remove all unused materials other than those supplied by the department and all plant and machinery, equipment, tools etc. belonging to him within one month from the date of completion of the work, or otherwise the same will be removed by the department at his cost o disposed of as per departmental procedure. In case the material is disposed off by department, the sale proceeds will be credited to the Contractors account after deducting he cost of sale incurred. However no claim of Contractor regarding the price of amount credited will be entertained afterwards.
- 21.2 The work shall not be considered to have been completed in accordance with the terms of the contract until the Engineer- in-charge shall have certified in writing to that effect. No approval of material or workmanship or approval of part of work during the progress of execution shall blind the Engineer- in-charge or in any way prevent him from even rejecting the work which is claimed to be completed and to suspend the issue of his certificate of completion until such alteration and modification or reconstruction have been effected at the cost of the Contractor as shall enable him to certify that the work has been completed to his satisfaction.
- 21.3 After the work is completed the Contractor shall give notice of such completion to the Engineer- in-charge and within 30 days of receipt of such a notice the Engineer- in-charge shall inspect the work and if there is no defect in the work, shall furnish the Contractor with certificate indicating the date of completion. However, if there are any defects which in the opinion of the Engineer- in-charge are rectifiable he shall inform the Contractor the defects noticed. The Contractor after rectification of such defects shall then inform the Engineer- in-charge and Engineer- in-charge on his part shall inspect the work and issue the necessary completion certificate within 30 days if the defects are rectified to his satisfaction and if not he shall inform the Contractor indicating defects yet to be rectified. The time cycle as above, shall continue.
- 21.4 In case defects noticed by the Engineer- in-charge which in his opinion are not rectifiable but otherwise work is acceptable at reduced payment, work shall be treated as completed. In such cases completion certificate shall be issued by the Engineer- in-charge within 30 days indicating the unrectifiable defects for which specified reduction in payment is being made by him.
- 21.5 The completion certificate shall not be issued until the site is thoroughly cleaned and cleared off all unwanted material
- 21.6 On completion of work in all respects necessary certificate will be issued by the Engineer- in-charge and defect liability period will be counted from the date of issue of such certificate.

21.7 **Completion drawing**

The Contractor shall submit to the Engineer- in-charge within 2 (two) months of actual completion “Completion Drawing” as specified below and operation and maintenance instruction for the whole of the work.

These drawings shall be accurate and correct in all respect and shall be shown to and approved by the Engineer- in-charge. For “Completion” drawing 2 (Two) prints and one polyester film of quality approved by the Engineer- in-charge or his representative shall be supplied.

21.8 Supply of Color Record Photographs and Albums

- 21.8.1 The Contractor shall arrange to take colour photograph at various stages / faces of the Works including interesting and novel features of the work as desired by the Engineer- in-charge needed for authentic documentation as desired. The photographs shall be of acceptable quality and they shall be taken by professionally competent photographer with camera having the facility to record the date of photographs taken in the prints and negative /C.D. The Contractor shall supply two color prints of each of the photographs taken to the standard 4’’ x 6’’ size mounted in albums of acceptable quality along with C.D. Also the negative in 35mm. size for

each photograph or in C.D. shall be supplied. Each photograph in the album shall be suitably captioned. It shall be considered as incidental to the work and no additional payment whatsoever will be made for the same.

21.8.2. **Videography**

Contractor shall supply video films/video C.D./Digital Photograph before stating of work, during execution and completed work of important activities of the work as directed by Engineer- in-charge during currency of the project and editing them to a video film / CD of playing time not less than 90 minutes and up to 180 minutes as directed by Engineer- in-charge. Such as film shall be suitably narrative and titled indicating chainage, activities. The video cassette / CD shall be of acceptable quality and shall be capable of producing colored pictures. This is incidental to work and no payments shall be made for the same.

22 Handing over of Work

- 22.1 All the work and material before finally taken over by Government will be the entire liability of the Contractor for guarding, maintaining and making good any damaged of any magnitude. Interim payments made for such work will not alter this position.
- 22.2 The handing over by the Contractor and taking over by the Engineer- in-charge or his authorized representative will always are writing of which copies will go to the Engineer-in-charge and the Contractor. It is however understood that before taking over such Works Government will not put it into regular use as distinct from casual or incidental one, except as specifically mentioned elsewhere in this contract, or as mutually agreed to.

22.3 Indemnity

The Contractor shall indemnify the Government against all action, suits, claims and demands brought or made against it in against of anything done or committed to be done by the Contractor in execution of or in connection with the work of this contract and against any loss or damages to the Government in consequences to 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. The Government may, at its discretion and entirely at the cost of Contractor, defend such sit either jointly with the Contractor or single, in case the latter chooses not to defend the case.

23 Amenities to Department - NIL

24 Maintenance During Contract Period

- 24.1.1 The section of road in which the work lies shall be deemed to be handed over on Date of Work Order (in respect of repairs to pot holes formed during agreement period). Notwithstanding whether the agency has tackled some length or otherwise the responsibility of maintaining the complete length covered under the scope of work will be with the agency only. The agency shall get the potholes filled as per the directions of the Engineer- in-charge and ensure that the road remaining traffic worthy. The Contractor shall maintain the finished surface of the road for a period up to Defect Liability Period without any extra cost to the Government irrespective of the designs standards and specifications and actual traffic etc.
- 24.1.2 All damages during execution shall be made good by the Contractor at his own cost. He will be responsible for any damages to the road surface including B.T. surface in rainy seasons and during construction and guaranteed maintenance period and no separate payment will be made for restoring such damages.
- 24.1.3. Defective work is liable to rejected at any stage. The Contractor on no account shall refuse to rectify the defects merely on reasons that further work has been carried out. No extra payment shall be made for such rectification.

24.2 During Defect Liability Period

- 24.2.1 Defect Liability shall mean the obligation of Contractor to undertake the following Works as per the specifications, to the satisfaction of Engineer- in-charge.
 - a. To complete any work which is outstanding in date stated in Taking Over Certificate within a stipulate d time as directed by Engineer- in-charge and
 - b. To execute all work required to remedy defects or damage as may be as notified by Engineer- in-charge on or before the expiry date of the defects notified by the Engineer- in-charge for the Works or sections as the case may be. If a defect appears

or damage occurs the Contractor shall be notified accordingly by the Engineer- in-charge or his authorized representative on his behalf. The Contractor shall remedy the defects/ damages notified to him within a time period as stipulated by Engineer- in-charge. If the Contractor fails to remedy/ rectify the defects or damages by this notified date, it shall be executed at the risk and cost of Contractor.

- 24.2.2 The Contractor has to commence the remedying work as soon as possible and in any case not later the 3 days of its communication by the Engineer- in-charge and complete the same within 7 days maximum or in a time period as directed by Engineer- in-charge. In case the Contractor fails to start the remedying work within above specified period, the department will take necessary action to carry out such Works at the risk and cost of the Contractor and the amount so incurred will be recovered from the Contractor from any such amount payable to the Contractor by the Government or though the deposit available with the department and even as recovery of land revenues if necessary.
- 24.3 The agency will have to make all necessary arrangements for smooth flow of traffic till the time the remedying rectification work is completed or also this will be done by the department at the risk and cost of Contractor. The Contractor's liability of maintaining the road to the required specifications will commence right from the date of issue of notice to proceed with the work till the expiry of defect liability period. The extends to the untracked portion of work also.

24.4 **Visit of Contractor During Defect Liability Period**

Contractor shall carry out one inspection in every 3 months during the first year after completion of the work and carry minimum 2 inspections per year for the remaining 2 years of Defect Liability Period. However during rainy season the Contractor shall undertake such an inspection every month till the monsoon is over. The inspection shall be in the company of the representative of Engineer- in-charge. The defects noticed during the inspections shall be recorded and signed by the Contractor and representative of Engineer- in-charge. The Contractor shall rectify the defects if any, within 7 days or such period as may be notified by the Engineer- in-charge.

SPECIFICATIONS FOR HOT MIX WORKS

25 Plants and Equipments

- 25.1 Contractor shall use of Batch mix plant type of 100-120 **TPH capacity** of standard make and specification :

General

The Batch mix plant should be of reputed make and proven design, sturdy in structure and capable of producing desire quality of mix as per specification for laying bituminous road surface and should have following essential arrangements.

1) **Cold Aggregate Feeder: -**

The cold aggregate feeder arrangement should have minimum 4 bins of sufficient capacity capable of storing different sizes of aggregate and fines to ensure continuous uninterrupted supply driven by a variable speed motor and a control gate to ensure accurate aggregate feed to meet design mix formula. It is pre-requisite that only properly screened and graded materials are fed to the bins.

There should be a gathering conveyor to receive and transport materials discharged from bins with separate drive arrangements.

There should be a screen or suitable arrangement like baffle plate at the discharge end of gathering conveyor for rejection of any oversize metal above permissible limit. The conveyor should be fitted with suitable electronic load sensor device for weighing quantity of all aggregate being fed to dryer drum.

The plant should have a mineral filler arrangement with suitable control device to accurately proportion the flow of filler material into dryer drum at appropriate stage.

2) **Dryer Drum :**

It should be thermo drum type with smooth rotation arrangement to give rated output and capable of reducing the moisture content of the aggregate to desirable limit of 2% to 6% and achieving hot mix temperature (up to 160°c as per requirement) with such design that no blue smoke is emitted from the exhaust. The drum may have optional arrangement for feeding reclaimed material. There should be arrangement to restrict burner flame up to certain length in the drum before bitumen is injected.

It should be fitted with positive displacement bitumen pump driven by variable

speed motor automatically controlled from control cabin capable of feeding desire quantity of bitumen synchronized with aggregate feed system. Thermo fluid system or hot oil circulation system should be an in built feature to keep bitumen pump and pipes sufficiently hot to avoid clogging of pipes.

- i) Burner: - The burner used should be capable of burning the fuel efficiently and develop the required temperature. It should befit with remote control system to detect flame failure, and also electric spark ignition system or some other suitable arrangement. Burner operation should have thermostatic control of flame within the specified temperature range.
 - ii) Bitumen Heater: - It should consist of an insulated tank of adequate capacity fitted with effective and positive control of temperature, for allowing continuous circulation of bitumen between bitumen heaters and proportioning units. Suitable arrangement should be provided for recording the temperature at the tank and in circulating system.
 - iii) Fuel System: Fuel tanks should be of sufficient capacity and fitted with suitable type of fuel pump to receive the fuel from storage tank and supply to line heater and burner.
 - iv) Cyclone System : Cyclone unit is required to control dust discharge within the admissible standard of pollution board.
 - v) Operating Control Unit: - The Batch mix plant must have centralized control system with operation from a control cabin located adjacent to the drum mix plant. The control system should be capable of following.
 - a. Automatic control of speed of each bin feeder conveyor and gate, so as to control and regulate the flow of various grades o material to ensure constant and accurate proportion of aggregates.
 - b. Pre-set and control percentage of flow of aggregate and bitumen required as per design mix.
 - c. Automatic detection of plant operation fault, display of aggregate temperature, asphalt and mix temperature, aggregate flowing, fully automatic aggregate blending, bitumen /aggregate ratio control and burner control and system.
 - d. Control for pre-setting the moisture content of aggregate displayed distinctly.
 - e. Entire control system should be such that if desired it would be operated manually also.
 - vi) Surge Silo: The plant may have optional arrangement to store and hot mix material for at least equivalent 30% of rated capacity to cater for any delay in loading the tippers, Temporary storage silo should have adequate automatic hydraulic unloading arrangement operated either from the control cabin or manually with necessary safety control.
- 25.2 Hot mix plant shall be calibrated by the recognized agency approved by the Engineer- in-charge or his representative and certificate to that effect shall be produced to Engineer- in-charge
- 25.3 The Contractor will have to make his plant and machinery and equipment open for the inspection by the Engineer- in-charge or his representative or and representative of MORT&H. The Contractor shall carryout necessary modification if any as directed by inspecting authorities.
- 25.4 The plant should have the facility of producing a computerized output of daily consumption of materials as regards the bitumen, materials and mix produced. The Contractor shall make available computer output to the Engineer- in-charge or to his representative as and when asked for.
- The location of the Hot mix plant to be used for the work shall be such that distance mix temperature at the time of laying bituminous mix shall in no case be less than as mentioned in table 500.2 of the MORTH Sp.Vth Rev. (April,2013) published in IRC in Road and Bridge works.
- 25.5 The dry run and trial run of the hot mix plant should be carried out in presence of Engineer-in-charge or his representative as and when directed.
- 25.6 It is obligatory on the part of Contractor to obtain N.O.C. regarding Prevention and Control of Pollution Act, 1974.
- 25.7 The plant should have a fully equipped laboratory with trained personnel to carry out all testing related to bituminous Works, as mentioned in MORT&H specification (fourth revision) clause No. 121.3.1
- 25.8 The contractor should employ qualified and experienced plan operator to run the hot mix plant and he should be capable of understanding and following the instruction of Engineer-in-charge or his representative.

26 Works

- 26.1 The hot mix work should be carried out from the approved plan and approved machinery only.
- 26.2 Sources of metal to be used for work should be the same through out. Should there be any change, the Contractor will have to obtain approval to the revised job mix formula at least 15 days prior to the date of its intended use.
- 26.3 Weather restriction to carryout hot mix work shall be as per MORT&H specification
- 26.4 No hot mix Works shall be carried out during Night time unless otherwise permitted by Engineer- in-charge.
- 26.5 The newly land surface shall not be opened to traffic for at least 24 hours after laying and completion of compaction without the expressed approval of Engineer- in-charge in writing.
- 26.6 The necessary grade and camber for the road length under improvement should be strictly observed during execution.
- 26.7 The traffic management during execution of hot mix Works shall be as per MORT&H specification (fourth revision) clause No. 800.
- 26.8 Bituminous materials shall be transported in clean insulated vehicles and unless otherwise agreed by Engineer- in-charge shall be covered while in transit or waiting tipping.
- 26.9 Contractor should note that once the hot mix work is started he will not be allowed to operate his plant for any work other than the Works of Public Works Department without the specific permission in writing from Engineer- in-charge.
- 26.10 In case for any reasons, the Works get damaged the Contractor has to carry out the rectification at his risk and cost for full width of carriageway.
- 26.11 The work activity program me considering the start date and completion period shall be prepared and submitted for approval of Engineer- in-charge. 15 days prior to start of work. No hot mix work shall be undertaken unless such program me is approved by Engineer- in-charge.
- 26.12 The Contractor shall be required to give a trail run of the equipment such as pavers, vibratory roller, sprayer etc. for establishing their capability to achieve the laid down specification and tolerances to the satisfaction to the Engineer- in-charge before commencement of work. All equipment and personnel shall be removed from Worksite without permission of Engineer- in-charge.
- 26.13 Plant mixed bituminous materials for pavement courses shall be weighted on accurate scales approved by the Engineer- in-charge in the presence of representative of Engineer- in-charge. As and when asked for. The weight slips shall be produced for official record. The activity is obligatory to work.
- 26.14 It is obligatory on the part of Contractor to carry out the field tests as required by the Engineer- in-charge. He should have required equipments and trained personnel to carry out such testing and will be the responsibility of Contractor to maintain record of such testing and to furnish such record to the Engineer- in-charge within 3 days from the date of testing.
- 26.15 The non-working machinery if any shall not be kept at the site of work. After a days work is over, the working machinery shall be parked in such a manner as not to cause any hindrance or pose danger to the traffic plying on the section of road. The working machinery parked on site should have traffic safety devices

27 Roughness Index

The Contractor shall be responsible to measure the roughness of road surface for which he may use the Roughness Index, Testing machine at his own cost Use of "Towed fifth wheel Bump integrator" shall be made to measure the roughness of the road surface. The calibration of the machine shall be done from time to time as and when warranted, from reputed institution like C.R.R.I., New Delhi and their certificate shall be produced to that effect. The values of roughness so measured shall not exceed the values given below for various types of road surfaces under standard conditions of carrying out the test and as specified below.

- i) Bituminous Concrete : 2000 mm / Km.

The Roughness Index test shall be carried out before start of the work and after completion of surface course as directed by Engineer- in-charge.

The result of roughness index test shall be made available to the Engineer- in-charge within 15 days from the test so taken and Engineer in charge shall submit the soft copy of result of roughness index test to the Chief Engineer, P.W.Region, Nashik by email on nashik.ce@mahapwd.com Work shall be commence by the agency only after taking the roughness index test in presence of Engineer-in-charge.

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As an outcome of roughness test, where the surface irregularity of wearing surfaces rails outside the tolerances mentioned above, the Contractor shall be liable to rectify the deficiencies in a manner as directed and to the satisfaction of the Engineer- in-charge .

If the Contractor fails to carry out roughness index test the same will be done departmentally and double the cost so incurred will be recovered from him

28	General		
28.1	Considering the stakes and technical intricacies involved in constructions. It is needless to emphasize that an unfailing control on quality of the work has to be exercised so as to ensure that the structures constructed are stable and sound. Quality of final products depends upon adopting the proper procedure of construction in addition to proper selection of materials. For ensuring the requisites of construction, the materials of work shall be subject to Quality Control test s for ascertaining the quality of material for its approval for construction.		
28.2	All material to be used all methods adopted and all Works performed shall be strictly in accordance with the requirements of these specifications. The Contractor shall set up a field laboratory at locations approved by the Engineer- in-charge and equip the same with adequate equipments and personnel in order to carry out all required tests and Quality Control work as per specification and /or as directed by the Engineer- in-charge. The interest layout of the laboratory shall be as directed by the Engineer- in-charge. The list of equipment and the facilities to be provided shall be got approved from the Engineer- in-charge in advance and shall be as per MORT&H specification (Fifth Revision) clause No.121.3		
28.3	The Contractor shall carry out quality control tests on the materials and work to the frequency stipulated in relevant clause of MORT&H specification. In the absence of clear indication about method and or frequency of tests for any item, the instructions of the Engineer- in-charge shall be followed.		
28.4	For satisfying himself about the quality of the materials and work, quality control tests will also be conducted by the Engineer- in-charge (by himself by his quality control units or by any other agency as deemed fir by the Engineer- in-charge) generally to the frequency set. Additional tests may also conduct where, in the opinion of the Engineer- in-charge, needs for such tests exist.		
28.5	The Contractor shall provide necessary co-operation and assistance in obtaining the samples for tests and carrying out the field tests as required by the Engineer- in-charge from time to time. This shall include provision of labour, attendants, assistance in packing and dispatching and any other assistance considered necessary in connection with the tests by Engineer- in-charge.		
28.6	The Contractor shall carry out modifications in the procedure of work, if found necessary, as directed by the Engineer- in-charge during inspection. Works failing short of quality shall either be rectified or redone by the Contractor at his own cost, shall also remove defective work or material from the site of Works.		
28.7	The cost of laboratory building, including services, essential supplies like water, electricity sanitary services and their maintenance and cost of all equipment, tools, materials, labour and incidents to perform tests and other operation soft quality control according to the specifications requirements be deemed to be incidental to the work and no extra payment shall be made for the same.		
28.8	For testing of samples of soils / soils mixes, granular materials and mixes bituminous materials and mixes, cement and concrete cubes, aggregate mixes etc., samples in the required quantity and form shall be supplied to the Government laboratory or any other laboratory as directed by the Engineer- in-charge by the Contractor at his own cost.		
28.9	For cement bitumen, mild steel, and similar other materials where essential test are to be carried out at the manufacturers plants or at laboratories other that the site laboratory the cost of samples, sampling testing and furnishing of tests certificates shall be borne by the Contractor . He shall also furnish the test certificate to the Engineer- in-charge in reasonable time as directed by the Engineer- in-charge.		
28.10	All materials which the Engineer- in-charge/representative has determined as not conforming to the requirements of the contract shall be rejected whether in place or not, they shall be removed immediately from the site as directed. Materials, which have been subsequently corrected, shall not be used in the work unless approval is accorded in writing by the Engineer- in-charge. Upon failure of the Contractor to comply with any order of the Engineer/his representative, given under this clause, the Engineer- in-charge/his representative shall have authority to cause the removal of rejected material and to deduct the removal cost thereof from any payments due to the Contractor.		
28.11	For ensuring the requisite quality of construction, the materials and Works shall be subjected to quality control tests, as described in MOSRT&H specifications (Fourth Revision) section		
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No.900 and 1000 as mentioned in the relevant clauses for all items. The testing frequencies set forth in relevant clauses for all items are the desirable minimum and the Engineer- in-charge shall have the full authority to vary out additional tests as frequently as he may deem necessary, to satisfy himself that the materials and Works comply with the appropriate specifications.

- 28.12 Test procedures for the various quality control tests are indicated in the respective I.S code. Where no specific testing procedure is mentioned, the tests shall be carried out as per the prevalent accepted engineering practice to the directions of the Engineer- in-charge.

29 Samples & Method of sampling

- 29.1 All materials to be used on work such as cement, aggregate steel, bitumen, wood, tiles etc. shall be got approved in advance from the Engineer- in-charge and shall pass the tests and analysis required by him.

- 29.2 The tests shall be

- (a) as per specifications of the items concerned and or,
- (b) as specified by the Indian Road Congress standard specification and code of practice for road and bridges or,
- (c) I.S. specification whichever and wherever applicable
- (d) As per specification of Ministry of Road Transport and Highways latest edition 900, 1000, 1700 & 1900 Quality control for road work.
- (e) Such recognized specification acceptable to the Engineer- in-charge as equivalent thereto or in the absence of such authorized specification.
- (f) Such requirement/tests and or analysis in the order of precedence given above.

- 29.3 The Contractor shall at his cost make all arrangements and/or shall provide for all such facilities as the Engineer- in-charge may require for collecting, preparing and forward required number of samples for testing or for analysis of the materials or product for which laboratory testing is required to the nearest approved Government laboratory as directed by Engineer- in-charge. The Contractor shall bear all charges and cost of tests or analysis of such samples, shall also be deposited with the laboratories as per their prevailing schedule or rates.

- 29.4 The Contractor shall, if and when required, submit at his cost the samples of materials to be tested or analyzed and if so directed, shall not make use or incorporate in the Works any materials to be represented by the sample until the required test or analysis have been made and after the test results of the material finally accepted by the Engineer- in-charge.

- 29.5 The method of sampling and testing of materials shall be as required by the Handbook of Quality control for construction of Roads and Runways'' (IRC: SP:11), relevant I.S. codes and the relevant MOSRT&H Specifications. Where they are contradicting, the provision in these specifications shall be followed. Where they are silent, sound engineering practices shall be adopted. The sampling and testing procedure to be used shall be as approved by the Engineer- in-charge and his decision shall be final and binding on the Contractor.

30. Testing of Materials

- 30.1 The Contractor shall make field arrangements for testing of all materials as per MORT & H specifications or as directed by Engineer- in-charge in the field laboratory.

- 30.2 The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of testing of material.

- 30.3 The quality control tests shall be carried out at various stages of work, viz. selection of material to be procured for work, acceptance of procured material before its use on the work, acceptance of procured material before its use on the work, after completion of work in view of its strength, durability, serviceability, etc, and as directed by Engineer- in-charge for any other reasons of public interest.

- 30.4 The Contractor shall carry out at least 30 % testing from the Regional/District Laboratory of the department. The necessary testing charges for these 30% tests shall be borne by the Contractor shall carry out remaining 70% tests at his own cost in the laboratory established by him for the work. This is subject to the condition that the field laboratory established by the Contractor at site or plant is certified to have set up as mentioned in the clauses hereunder by the Engineer- in-charge. The testing charges shall be as per the prevailing schedule of rates of Vigilance & Quality control Circle.

Laboratory Setup

31 Field Laboratory

The Contractor for the purpose of testing of material shall arrange to provide and maintain fully furnished and adequately equipped field laboratory of adequate floor area, as shown in drawing. The field laboratory shall preferably be located adjacent to the site of work. In case of road Works the field laboratory shall either be established at plant site or as directed by the Engineer- in-charge. The field laboratory shall be provided with amenities like water, electric supply etc., to be arranged by Contractor.

- (a) The floor space requirement shall include office space for engineer & Contractor's representative storage of samples, installation of equipment, laboratory table, cup boards, working platform of size 1 m x 10 m working space for carrying out various tests. Curing tank, wash basin, toilet etc. and the minimum furniture such as office tables & chairs for material engineers, stools, working tables, store accessories.
- (b) The cost of construction of laboratory & site office at work site or plant site as the case may be, and cost of supply of furniture, electrical equipments fittings during the currency of contractor is incidental to work and no separate payment will be made for the same to the Contractor.
- (c) The laboratory established by the Contractor shall be manned by a qualified material Engineer/ Civil Engineer assisted by experienced technicians, and the set-up shall be got approved from the Engineer-in-charge.
- (d) The Contractor should prepare printed proforma for recording readings results of each type of tests. Such formats shall be got approved from the Engineer-in-charge. The Contractor should keep a daily record of all the tests carried out by him. Two copies of the test results will be returned to the Contractor by Engineer-in-charge for keeping the record of test results in acceptable manner at site of work.
- (e) All Quality Control registers / records shall be maintained by the Contractor and checked by the Engineer-in-charge or his representatives regularly. The list of register required to be maintained shall be got approved from Engineer-in-charge in advance.

32 Set up of equipments

- 32.1 The Contractor shall set up the laboratory equipments for tests to be carried out as per specifications of item or as directed by Engineer-in-charge. Tentative list of equipment shall be as per MORT&H specification (fourth revision) clause no. 121.3
- 32.2 The Contractor shall use calibrated equipment to the latest date in the laboratory so established. The Contractor will have to carry out the calibration of the equipments from the approved agency as and when directed by the Engineer-in-charge at his own cost in cases where the calibration validity stands expired.

33 Frequency of Test

- 33.1 Overall quality of the work depends on the quality of ingredient material being used in the work and exercising adequate control over it. It is therefore prime responsibility of the Contractor to get the ingredient material and product tested strictly as per the frequencies stipulated hereunder.
- 33.2 The testing frequency specified hereunder are minimum and Engineer-in-charge shall have full rights to carry out additional tests as may be necessary to satisfy himself that the material and Works comply with requirement of the specifications.
- 33.3 The frequency of the testing shall be conforming to the MORT&H specification under Chapter 900,1000,1700, &1900
- 33.4 The right of acceptance / rejection of the material / work done is reserved by Engineer-in-charge in view of non conformation of frequency of testing.
- 33.5 The cost involved on account of testing of materials as per the frequency MORT&H specification clause is to be included in the respective tender items. The cost of testing charges as per prevailing schedule of rates VQCC laboratory shall be borne by the Contractor
- 33.6 If the Contractor fails to carryout testing as per the specified frequency, the cost of the testing charges at penal rate equal to ten times the prevailing schedule of rate of VQCC laboratory will be recovered from him to the extent of shortfall. The recovery on account of shortfall in testing with reference to specified frequency will be done from his immediate bills due for payment and will be credited to Government account.
- 33.7 Various tests (and their frequencies) to be conducted to assure quality control on the work shall be as relevant clauses of MORT&H specification (fourth revision) and as directed by Engineer-in-charge.

34 Training of Personnel

The contractor shall arrange training camp, Workshops, seminars etc. for his personnel deployed/ being deployed on site and plant and the departmental staff as identified by the Engineer-in-charge, well in advance of likely start of the work, for monitoring quality of work to the optimum level. The Contractor in consultation with Engineer-in-charge shall decide for training program me schedule and the faculty for the training course as soon as the work order is issued to him.

QUALITY ASSURANCE

35 Quality Assurance

- 35.1 It is a process which exercises various checks at different stages for a work right from its inception till its acceptance, to put it in service to ensure that the work has been properly designed and constructed as per approved designs, drawings and specifications.
- 35.2 In order that the properties of the completed structure be consistent with the requirements and the assumptions made during planning and the design, adequate Quality Assurance measures should be taken at the site of work.
- 35.3 The construction should result in satisfactory strength, serviceability and long term durability so as to lower the overall life cycle cost.
- 35.4 Quality Assurance Manual: It provides a base document outliving policies, procedure, responsibility, compliance acceptance criteria and documentation. It shall generally cover the following aspects
 - a). Identification of all persons of Contractor and as well as department side involved in Quality Assurance and their interrelationship.
 - b). Internal Quality Assurance system of the Contractor and the Engineer-in-charge.
 - c). Levels of cross checking, verification including system of inspection and audit.
 - d). Organization of personnel, responsibilities and lines of reporting.
 - e). Criteria for acceptance / rejection including identification of authorities for making such decisions.
 - f). Inspection at the end of Defect Liability Period.
 - g). Item to be included in maintenance manual
 - h). All formats for documentations.
- 35.5 Quality Assurance Manual shall be prepared and accepted by the Contractor and the Engineer-in-charge before start of the work.
- 35.6 Quality Assurance manual consisting of quality plans, test plans, checklist for inspection, quality Audit and third party inspection shall be prepared and furnished by the Contractor in pursuant to clause no. 59 of condition of contract and shall confirm to the provision stipulate in “ Guideline on Quality system for Roads” – IRC :SP:57-2000.

36. Additional works for Right of Way Integrity

“In addition to the foregoing the engineer may deem it necessary to instruct the performance of other works from time to time during the progress of the Contract go preserve the integrity of the Right of Way”.

37 Deductible amount for Non provision of amenities

- a) Field Laboratory at Plant site Rs.5.00 lakhs
- ii) office at Plant site Rs. 5.00 lakhs
- iii) Furniture Rs. 1.00 lakhs

- 2 Whether the Government land for establishing field laboratory and site office will be made available ? No.
- 3 In case field laboratory and site office along with equipment furniture and amenities is established at Govt. land by the Contractor whether it will be the property of Government. No.
- 4 Whether the roughness index test is intended to be carried out by the Contractor? Yes. (before and after of each layer of bitumen)

38. SPECIAL CONDITIONS

(1) MORTH Specification for Road and Bridges Work (Fifth revision 2013) :

MORTH Specification for Road and Bridge Work (Fifth revision- April 2013) shall form part of the contract documents and the contractors shall be legally bound to the various provisions made therein unless and otherwise specifically relaxed or waived wholly or partly by any special clauses in the contract documents.

(2) Special Condition for B.T. work :

- 2.1 In respect of Black Top Work, 20% (Twenty percent) payment of Black Top in a particular km will be retained till completion of side berms / C.D. Works etc. in that km. After completion of other items satisfactorily, the withheld payment will be released finally.
- 2.2 The aggregate required for the item of Hot Mix shall be screened in” mechanical Vibratory Screening Unit” so as to comply with the grading requirement as specified in MORT&H specification and then only shall be fed to the Hot Mix Plant for heating and mixing. The Mechanical Vibratory screening unit shall consist of main input hopper to receive raw metal, conveyor belt to transport it to the “Mechanical Vibratory Screening Unit.” The Mechanical Vibratory screening unit shall have required number of trays, sieves/decks as directed by Engineer In charge. The output of Mechanical Vibratory Screening unit shall be conveyed to the “storage unit /feeder”. The metal so supplied from the “Mechanical Vibratory Screening unit ” at site shall not exempt the contractor from carrying out tests as specified in the specifications.

However if the mechanical Vibratory Screening unit is installed at quarry site, the contractor shall provide Vehicle Tracking System for all vehicles used for the particular work of National Highway. The contractor shall provide web application that will show all vehicles of the contractor on a GIS map along with the hot mix plant .The contractor shall also provide software that will update the entire mapping on the PWD NH e-governance works management system. The system of complete management of VTS for monitoring by the PWD staff shall have to be provided by Contractor at his own cost.

The above condition of installation of Mechanical vibratory screening unit shall be exempted only, if the contractor uses **the Batch type hot mix plant (Min 100-120 TPH).**

- 2.3 Procurement of aggregate For Grade –I /Grade-II / Grade –III / WBM and for BUSG work
The metal shall be supplied at site only after screening it on “mechanical vibratory screening unit”. The special “mechanical vibratory screening unit” arrangement shall consist of main input hopper to receive raw metal, conveyor belt to transport it to the “mechanical vibratory screening unit”. The “mechanical vibratory screening unit” shall have required number of trays, sieves/decks as directed by the Engineering in charge. The output of “mechanical vibratory screening unit” shall be conveyed to “storage Unit” where metal of different sizes, shall be stored separately. Metal so supplied shall undergo all the tests as per the specifications. As a input to the main input hopper, contractor may use hand broken metal or output of primary crusher of size not less than 24“x18” The metal so supplied from the “mechanical Vibratory screening unit” at site shall not exempt the contractor from carrying out tests as specified in the specifications

2.4 Supervision on Work by Field Officers.

- 2.4.1 The Executive Engineer shall remain present and personally supervise the first 200 m length accordingly in presence of Deputy Engineer, Junior Engineer and Contractor/Contractor’s representative.
- 2.4.2 The Deputy Engineer shall remain present and personally supervise at least 25 % of the area of primer coat / tack coat / seal coat executed .
- 2.4.3 The Junior Engineer shall remain present and personally supervise cent percent length executed.
- 2.4.4 The Executive Engineer shall show the check measurement of primer coat / tack coat accordingly in the measurement book for the executed 200 m demo length. This check measurement shall be part of percentage check measurement required by Executive Engineer as per the Maharashtra Public Works Manual, Appendix-24.
- 2.4.5 The work order book shall be kept to maintain evidence of supervision on work by field officers as mention at Sr.no 2.5.1 to 2.5.4 The measurement of primer coat / tack coat / liquid seal coat of the work shall be recorded by Deputy Engineer only.
- 2.4.6 The Engineer in charge shall allow the commencement of work after inspection of Hot mix plant, sensor paver and other key equipment, testing of material and approval of quarries job mix design of bituminous macadam and BC/SDBC, establishing temporary bench mark on permanent pillar and leveling.

3. DELETED

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4. **Special conditions for Road safety item such as Thermoplastic retro reflective painting, cat eyes, sign boards, W Beam crash barrier.**
- i) The work of road marking with Hot applied thermoplastic compound shall be carried out as per specification in Schedule **C** with approved road marking machine and paint of approved manufactures.
 - ii) The payment of these item shall be made only after furnishing the approved Manufacture’s Test certificates.
 - iii) The work of thermoplastic retro reflective painting, cat eyes, sign boards, W beam crash barrier shall have to be got executed by approved/ specialized agency empanelled / approved by MORT&H.

The contractor shall not sublet the item of road marking without the approval of the Employer i.e. Chief Engineer, National Highway in writing. Sub contracting does not alter the contractors obligations.

- iv) Subletting proposals shall be comprise sublet agreements on Rs.100/- stamp paper mentioning experience of the sub contractor experience certificates & details of Machinery and material to be used.
39. The contractor will have to take levels of the existing road prior to treatment and after the BT work in presence of representative of Engineer-in-charge.

39. Warm Mix Asphalt Provisions

General Description: Warm Mix Asphalt (WMA) is the generic term used to describe the reduction in production, paving and compaction temperatures achieved through the application of one of several WMA technologies. The contractor shall submit a mix design for Warm Mix Asphalt production, or submit a statement that details production and testing items that require attention if the design is performed by standard HMA practice. The design shall be in accordance with CLAUSE 507 OF MORT&H Mix Requirements and IRC SP 101: 2014. Some modifications to asphalt mixture plants may be necessary to accommodate the WMA technologies as instructed and brochures by the manufacturer .All provisions for the production and placement of conventional hot mix asphalt (HMA) mixtures as stipulated in clause 501,503,and 507 of MORT&H are in force except as noted below.

Mix Requirements:

Warm Mix Asphalt (WMA) may be produced by adding , mineral additives, or chemicals that allow the reduction of mix production temperatures by as much as 30°C Apply all mix design requirements for hot mix asphalt to the development of the WMA mix design. A Warm Mix Asphalt (WMA) mixture design shall identify the technology to be used. The Contractor /Producer shall comply with the manufacturer’s recommendations for incorporating additives and WMA technologies into the mix. Comply with the manufacturer’s recommendations regarding receiving, storage, and delivery’ of additives. Maintain supplier recommendations on file at the asphalt mixing plant and make available for reference while producing WMA.

Warm Mix Asphalt (Additive): For WMA using additives, the design shall be performed using the additive. Each WMA design shall specify the production temperatures recommended by the WMA additive manufacturer to be used in production of Warm Mix Asphalt.

Construction Requirements:

Asphalt Mixing Plant: Contractor/Producer modify the asphalt mixing plant as required by the manufacturer to introduce the WMA technology. Plant modifications may include additional plant instrumentation, the such as WMA additive delivery systems, with values tuning the plant burner and adjusting the flights in order to operate at lower production temperatures and/or reduced tonnage.

Equipment: Use an equipment and WMA technology capable of producing an asphalt mixture that meet specification requirements and is workable at the minimum placement and compaction temperature desired, regardless of storage or haul distance considerations.

Placement: Place WMA only on dry, unfrozen surfaces and only when weather conditions allow for proper production, placement, handling and compacting. The minimum delivery, placement, and compaction temperatures should be reviewed to accommodate the WMA reduced temperature and achieve workability and density requirements. Documentation that demonstrates a proven history of the WIVIA technology’s ability to be placed and compacted at the reduced temperatures may be required. A test strip or initial production verification requirement can be used to demonstrate placement and compaction at the reduced temperature. Minimum ambient paving temperature requirements may be lowed by 10°Cto 20°C.

SCOPE OF WORK

Standby arrangement for maintenance shall have to be done by the contractor, in case of any BANDH OR STRIKE OF MAJOOR BREAKDOWN so as to get on uninterrupted service.

If any part of the complete system is modified or altered with change in design/ concept the contractor for the Executive Engineer will terminate the particular item/full.

In case of fatal or non-fatal accident occurred to the works during erection and maintenance of system, the Department will not be liable to pay for compensation and it is duty of contractor to observe all Labor Acts and Rules.

WORKING PRODEDURE

All complaint calls shall have to be attended by Contractor’s workers within reasonable time and with fastest possible speed, but in any case, it shall not be extended beyond 24 hours.

Log Book has to be maintained by the Contractor at site in consultation with the Site Engineer.

Inspection / Inspection note with completion report shall have to be maintained in duplicate by the Contractor mentioning all wok details and to be signed by contractors Representatives and site in charge by handing over one copy to site in charge.

Periodically within monthly shall have to be made with respect to work order schedule for regular servicing and inspection and repair if any required.

The Contractor shall preferably obtain the signature of Engineer in charge after attending the break down calls and inspection/ servicing and all work should be carried out with knowledge to in charge.

Dully comprehensive contract covers work of replacement of unserviceable/ defective operational parts, moving parts switchgears related in the system, control cables and switchgears etc.

The Contractor has to maintain cleanliness towards respective system, sufficient safety, ethics and politeness in behavior by him/ staff.

COMPREHENSIVE CONTRACT COVERS

Works of repair or replacement of unserviceable operational parts or moving parts such as motor, car, rope, governor, gear box, pulley, contact relays, switchgears etc.

Replacement of consumable items such as bulbs, fuses, control cables, lugs, locks with keys etc. and also lubricants, service materials.

Replacement of gearbox oil periodically with test result.

Cleaning of the necessary parts periodically with help of required materials with respect to method of construction / servicing to be decided with Engineer. In charge checking of system and alignment and overhauling.

Complete installation machine room lift pit etc. shall be maintained neat and in clean manner.

Painting shall be done once in a year for complete machinery including moving and not moving parts.

Rewinding of motor and all its preventive maintenance.

Monthly regular servicing & inspection shall be carried out.

Condition of Maintenance of Lifts

PRECAUTION FOR CONTRACT

- 1) The contractor has to maintain the system during the entire period of contract as per existing design in safe manner by adopting all precautions and observing safety rules in force.
- 2) The contractor shall have to attend faults, breakdowns and emergency calls for 24 hours a day, on all days through his skilled staff.
- 3) Skilled staff has to be deputed whenever needed and in case of emergency period, the

Engineer will intimate the period well in advance.

- 4) The contractor shall have to maintain and declare Service Center within Corporation Area.

So as to reach at break down site immediately with phone service or other facility round the clock.

- 5) Contractor has to submit the list of skilled staff mentioning their qualifications, ages experience and character with phone numbers.
- 6) Period of defect liability shall be for 1 year .

SERVICE DURING WARRANTY PERIOD

The scope of maintenance & satisfactory commission service during warranty period shall be as follow.

- a) Checking & servicing the elevators once in a month and as when requested.
- b) Attending the break down when called upon by the client during normal working hours.
- c) Repairing the elevators or part there of free of charge.
- d) Supplying free of charge spares & materials, which are needed for the unit as a result of wear & tear during warranty period.
- e) The complete panel & equipment should be maintained fully comprehensive basis & if any fault is noticed, should be rectified within 24 hours with no extra cost works of repair or replacement of unserviceable operational parts or moving parts, such as motors gear boxes pulleys contact replays ropes etc.
- f) Replacement of gear box oil periodically.
- g) Cleaning of all necessary parts periodically with help of required material with respect to method of construction / servicing to be decided with Engineer-in- charge checking of system & alignment & overhauling.
- h) Complete installation, machine room etc. shall be maintained neat & in clear manner .
- i) Lift will not be treated as completed unless and unit statutory Govt. license from concerned authority is obtained and handed over to department.
- j) Comply of recommendations given by Lift Inspector during annual inspection of Lift.

VOLUME III

- 6) Form of bids
- 7) Bill of Quantities
- 8) Securities and other forms

SECTION – 6
FORM OF BID #

Description of the Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

**Executive Engineer,
P.W.Division, Dhule**

Address : _____

- 1. We offer to execute the works described above and remedy any defects therein in conformity with the conditions of contract, specification, drawings, Bill of Quantities and Addenda for the sum(s) of Rs.
- 2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer’s notice to commence and to complete the whole of the Works comprised in the Contract within the time stated in the document.
- 3. We agree to abide by this Bid for the period of 120 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- 4. Unless and until a format Agreement is prepare and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
- 5. We understand that you are not bound to accept the lowest or any tender you may receive.
- 6. Deleted.

Address

Witness

Address

Occupation

Note-The bidder will submit this form online without his financial offer. The bidder shall fill the rates online in the BOQ sheet provided in the e-tender portal only.

SCHEDULE- A

Estimate No. 3632 of 2025-26 Providing Internal Electrification, LAN Wiring, Lift, Fire Fighting and Street Light for Proposed New Collector office Building At Dhule Tal & Dist. Dhule. (Part A to D)

Schedule showing (approximately) the materials to be supplied from the Departmental stores for work contracted to be executed and preliminary and ancillary work and the rates at which they are to be charged for

Sr. No. SPartic ulars	Particulars	Quantity	Unit	Rate at which the material will be charged to the Contractor		Place of Delivery
				In figure	In Words	
	----- NIL-----	--				

NOTES:

1. The rates mentioned in Schedule 'A' are inclusive of all taxes and storage charges.
2. The person or firm submitting the tender should see that the rates in the above schedule are filled up by the Executive Engineer-in-charge on the issue of the form prior to the submission of the tender.
3. The Contractor should furnish the account of all materials before placing demand for further material and furnish full account of all materials to the department. If any material remained unused with the Contractor, he should return the same to the department. In the even of non return of such material recovery at panel rate of twice the issued rate with S.T. and G.T. will have to be effected from the Contractor.
4. Wastage of Electrical material to be borne entirely by the Contractor.
5. No claim for extra payment on account of delay in supply of these materials will be entertained.
6. The quantities indicated in the above schedule are approximate and may vary as per actual requirement as ascertained by the Engineer-in-charge.
7. The charges for loading, un-loading, conveyance etc. for the material shown above from the place of delivery to the site of work will be borne by the contractor and deemed to be included while quoting for the tender. All the materials shall be made available for delivery on working days during the office hours.
8. All the materials mentioned in Schedule 'A' required for the work shall be taken from the department only. The materials from the outer sources in lieu of materials in Schedule 'A' shall not be allowed except under written permission from the Executive Engineer, The samples of such materials shall be tested at the contractor's cost. The materials not conforming to the required standard shall be removed by the contractor at once from the site of work at his own cost.
9. The contractor will have to construct a shed with double locking arrangements his own cost.
10. If the Electrical material lie unused with the Contractor after completion of the work and if they are not returned, the Contractor shall pay for such materials at double rate at which the material were issued to him. Recovery of Sales Tax and General Tax on cost of surplus materials which are not returned by the Contractor will be levied.

Proper account of day to day consumption of the materials as per Schedule 'A' be maintained by the Contractor or his authorized representative on site and it shall be checked by the departmental officer every day in token of its correctness.

SECTION – 7
BILL OF QUANTITIES

Preamble

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract
3. The rates and prices tendered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.
4. The rates and prices shall be quoted entirely in Indian Currency.
5. A rate or price shall be entered against each item in the Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
6. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no Items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
7. General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities
8. The method of measurement of completed work for payment shall be in accordance with the specification for Road and Bridge Works published by the Ministry of Surface Transport (edition).
9. Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.
10. Rock is defined as all materials which, in the opinion of the Engineer, require blasting or the use of metal wedges and sledgehammers, or the use of compressed air drilling for its removal, and which cannot be extracted by ripping with a tractor of at least 150 kw with a single rear mounted heavy duty ripper.

BILL OF QUANTITIES

Sr. No.	Description of Item (with brief specification and reference to book of specification)	Quantity	Unit	Rate		Amount
				In Figures	In Words	
----- Separate Sheet Attached -----						

Note :

1. Item for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the bill of quantities (Refer: ITB Clause 13.2 and GCC Clause 43.3)
2. Unit rates and prices shall be quoted by the bidder in Indian rupee [ITB Clause 14.1].
3. Where there is a discrepancy between the rate in figures and words, the rates in words will govern. [ITB Clause 27.1(a)].
4. Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern [ITB Clause 27.1(b)].

NAME OF WORK :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

STANDARD SPECIFICATION. (Civil + Electric Work)

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
1	Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to a distance of 50 metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting Etcetera complete. (Lift upto 1.5 metre) By Mechanical Means	Bd.A.1 Page Number 259	Bd.A.1.1. General - The excavation refers to excavation for foundation, wet or dry, ineath, soils of all types, sand, gravel, soft murum and similar other soft or loose material and shall comply with specification No.B.1 subject to the following: Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained fromclearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres(about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item. Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides. Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.
2	Excavation for foundation in earth, soils of all types, sand,gravel and soft murum, including removing the excavated material upto a distance of 50 metres beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting Etcetera complete. (Lift from 1.5 metre to 3.0 metre) By Mechanical Means	Bd.A.1 Page Number 259	Bd.A.1.1. General - The excavation refers to excavation for foundation, wet or dry, ineath, soils of all types, sand, gravel, soft murum and similar other soft or loose material and shall comply with specification No.B.1 subject to the following: Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained fromclearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres(about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item. Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides. Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
3	Excavation Depth 3.00 Meter to 4.50 Meter Rate Increase 20% of SSR Item No.21.04 In Basic Rate	Bd.A.1 Page Number 259	<p>Bd.A.1.1. General - The excavation refers to excavation for foundation, wet or dry, inearth, soils of all types, sand, gravel, soft murum and similar other soft or loose material and shall comply with specification No.B.1 subject to the following:</p> <p>Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained from clearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres (about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item.</p> <p>Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides.</p> <p>Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.</p>
4	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 metres beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting Etcetera complete. (Lift upto 1.50 metre) By Mechanical Means	Bd.A.2 Page Number 259	<p>Bd.A.2.1. General - The excavation refers to excavation for foundation, wet or dry, inearth, soils of all types, sand, gravel, Hard murum and similar other soft or loose material and shall comply with specification No.B.1 subject to the following:</p> <p>Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained from clearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres (about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item.</p> <p>Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides.</p> <p>Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.</p>
5	Excavation for foundation in Hard murum including removing the excavated material upto a distance of 50 metres beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting Etcetera complete. (Lift from 1.5 to 3.0 metre) By Mechanical Means	Bd.A.2 Page Number 259	<p>Bd.A.2.1. General - The excavation refers to excavation for foundation, wet or dry, inearth, soils of all types, sand, gravel, Hard murum and similar other soft or loose material and shall comply with specification No.B.1 subject to the following:</p> <p>Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained from clearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres (about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item.</p> <p>Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides.</p> <p>Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
6	Excavation for foundation in hard murum and boulders including removing the excavated material up to a distance 50 metres, beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting Etcetera complete. (Lift upto 1.5 metre) By Mechanical Means	Bd.A.3 Page Number 259	<p>Bd.A.3.1. General - The excavation refers to excavation for foundation, wet or dry, ineath, soils of all types, sand, gravel, Hard murum and Boulder similar other soft or loose material and shall comply with specification No.B.1 subject to the following:</p> <p>Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained fromclearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres(about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item.</p> <p>Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides.</p> <p>Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.</p>
7	Excavation for foundation in Hard murum and boulders including removing the excavated material upto a distance of 50 metres, beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting Etcetera complete. (Lift from 1.5 metre to 3.0 metre) By Mechanical Means	Bd.A.3 Page Number 259	<p>Bd.A.3.1. General - The excavation refers to excavation for foundation, wet or dry, ineath, soils of all types, sand, gravel, Hard murum and Boulder similar other soft or loose material and shall comply with specification No.B.1 subject to the following:</p> <p>Bd.A.1.2. Disposal of excavated materials - Unsuitable materials obtained fromclearing the site and excavation shall be disposed off within a lead of 50 meters beyond the building area as directed by the Engineer. Useful materials obtained from clearing site and excavation, shall be stacked within a lead of 50 meters beyond the building area as directed by the Engineer. Materials suitable for back-filling or other use shall be stacked at a convenient place within a lead of 50 meters beyond the structure for rouse. Surplus materials shall be used for leveling the ground around the structure within a lead of 50 metres(about 164') if directed by the Engineer. If the surplus materials are required to be conveyed and used or stacked beyond 50 meters conveyance will be paid for under a separate item.</p> <p>Bd.A.1.3. Item to include - As detailed in specification No.B.1.13 The lead for stacking or disposal of materials obtained from excavation or clearing site shall be limited to 50 meters beyond the building on all sides.</p> <p>Bd.A.1.4. Mode of Measurement and payment - The quantity to be measured in One Cubic Meter.</p>
8	Conveying materials obtained from road cutting including all lifts, laying in layers of 20 centimetre to 30 centimetre breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard proctor density for a lead of 300 metre to 500 metre inclusive, from the site of excavation to the site of deposition as directed.	MORTH 305	As Per Directed By Engineer In Charge
9	Filling in plinth and floors with approved excavated material in 15 centimetre to 20 centimetre Layers including watering and compacting Etcetera complete.	Bd.A.10 Page Number 262	<p>B.d.A.10.1 General - After the Structural Foundation and plinth Construction is over the space between ground level and such level below top of plinth depending upon the depth of flooring, its bedding and foundation is to be filled in with approved excavated materials watered and compacted.Bd.A.10.2. Construction - Firstly the ground over which the filling has to be done shall be cleared of all grass, loose stones, rubbish of all kinds, as well as trees, bushes, roots of trees, etc. If there is water in the area, it shall be pumped out or bailed out.The sides of concrete and masonry in the foundation trenches shall be filled with suitable excavated materials and compacted as provided in the specification No.B.1.Next, the approved excavated material, which has been stacked as per the direction of the Engineer shall be cleaned of all rubbish, large size stones etc., clods broken down to a size of 50 mm. or less, conveyed to the site of filling and laid in 15 cm. to 20 cm. layers. Each layer shall be watered and compacted with heavy rammers before the upper layer is laid till the required level is reached so as to form a thoroughly compact base.The process of filling in plinth, watering and compaction shall be carried out by the contract or in such a way as not to endanger the foundation columns, plinth walls etc, already built-up.Under no circumstances, black cotton soil shall be used for filling in plinth.Bd.A.10.3. Item to include -l (1) Cleaning the ground on which filling has to be done and dewatering if necessary.(2) Cleaning the useful excavated material of rubbish, breaking clods etc.(3) Conveying the useful excavated material and filling in plinth in layers, watering and compacting.(4) All labour, equipment and other arrangements</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
			necessary for the satisfactory completion of the item.Bd.A.10.4. Mode of Measurement and payment The contract rate shall be for a unit or one cubic meter of compacted plinth filling with excavated materials. The dimensions shall be measured correct up to 2 places of decimals of a meter and the quantity calculated correct up to 2 places of decimals of a cubic meter. The measurements shall be net for the compacted filling and no deduction for shrinkage or voids shall be made. The levels of the areas to be filled up shall be taken in advance before filling is started to obtain the height of the compacted filling
10	Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 centimetre to 20 centimetre including watering and compaction etcetra complete.	Bd.A.11 Page Number 263	<p>Bd.A.11.1. General - After the structural foundation and plinth construction is over and the sides of foundation trenches are filled up to ground level, the space between ground level and such level below top of plinth depending upon the depth of flooring, its bedding and foundation shall be filled in with contractor's soil, sand or murum, as specified and approved by the Engineer watered and compacted.</p> <p>Bd.A.11.2. Construction-The filling shall be carried out as specified in Bd.A.10 except that the material to be filled in shall be brought from outside instead of from the foundation excavation.</p> <p>The material to be brought from outside shall be either sand, murum, good yellow soil, or a mixture of these and shall be got approved by the Engineer. In no case, black cotton or similar greatly expansive and shrinkable soil shall be used.</p> <p>The approved material to be filled in shall be clean and free from all rubbish and perishable material and all clods shall be broken to a size of 50 mm, or less. The stacking of material should be done in such a way as not to interfere with any general traffic, or any constructional process or activities. The Contractor shall be responsible for any mishap or inconvenience of any kind due to his default in this respect.</p> <p>Bd.A.11.3. Item to include -</p> <p>(1) Clearing the ground on which filling is to be done and dewatering if necessary.</p> <p>(2) Providing the approved material for filling in.</p> <p>(3) Cleaning up the material to be used for filling it necessary.</p> <p>(4) Filling Contractor's soil in plinth in layers, watering and compaction.</p> <p>(5) All labour, equipment and other arrangements necessary for satisfactory completion of the item.</p> <p>Bd.A.11.4. Mode of measurement and payment According to specification</p> <p>No.Bd.A.10.4 except that the material for filling shall be brought by the Contractor from outside instead of from the excavation for the same building. The rate shall include the cost of material.</p>
11	Providing preconstructional antitermite treatment as per Indian Standards 6313 (Part-II) by treating the bottom surface and sides of excavation at the rate of 5 litres of emulsion concentrate of 1.0 percent of chlorophyrifos per square meter of surface area covering 10 years guarantee on bond paper.	BDW As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
12	Providing preconstructional antitermite treatment as per Indian Standards 6313 (Part-II) by treating the top surface of plinth filling at the rate of 5 litres of emulsion concentrate at 1.0 percent of chlorophyrifos per One Square Metre of surface area covering ten years guarantee on bond paper.	BDW As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
13	Providing dry/ trap/ granite/ quartzite/ gneiss rubble stone soling 15 centimetre to 20 centimetre thick including hand packing and compacting Etcetera complete.	Bd.A. 12 Page Number 264	<p>Bd.A.12.1. General - After the structural foundation, plinth construction and filling are completed, rubble soling of specified thickness shall be laid over the consolidated plinth filling hand packed and compacted.Bd.A.12.2. Materials - The stones to be used shall be broken rubble with fairly regular shape and free from weathered, soft and decayed portion. The rubble shall be of sound stones of the type mentioned in the item and selected for their large size. Stones shall be of the full height of the soling and the length and width shall not generally exceed 2 times the height. The stones to be used for wedging in the joints between larger stones, shall be chips of the largest size possible to fit in the interstices. All sound and suitable rubble obtained from the foundation excavation and approved by the Engineer shall be necessarily made use of first unless otherwise directed.Bd.A. 12.3. Construction-The bed on which rubble filling is to be laid shall be cleared of all loose materials, leveled, watered and compacted and got approved by the Engineer before laying rubble soling.Rubble soling shall be laid to the specified thickness closely packed by hand and firmly set with their broadest face downwards. The interstices between adjacent stones shall be wedged in with stones of the proper size and shape and well driven in with wooden mallets to ensure a tightly packed layer. Such wedging shall closely follow the placing of the larger stones. After hand packing and wedging, compaction of the soling shall be done thoroughly with log rammers. Adequate care shall be taken by the Contractor while laying and compacting the rubble soling to see that the masonry or any part of the structure is not damaged. Rubble soling shall be started only after the masonry is fully cured.Bd.A. 12.4. Item to include -(1) Supplying broken rubble of approved quality and size at site.Bd.A. 12.5.(2) All labour, material, tools and equipment for handling, laying hand packing and compacting the rubble(3) Any other incidental charges to complete the work as per sanctioned plan.Bd.A.12.5. Mode of measurement and payment-Rubble soling shall be measured in cubic meters limiting the dimensions to those shown on the drawings or as directed by the Engineer. The dimensions shall be measured correct to two places of decimals of a meter and quantities worked out correct to two places of decimals of a cubic meter. No deduction shall be made for voids.The contract rate shall be for a unit of one cubic meterIf suitable rubble is available from excavated material it shall be issued to the Contractor at the rate mentioned in Schedule A and if there is no such provision the rate to be charged shall be that occurring in the Divisional Schedule or at a mutually agreed rate if there is no such rate in the Divisional Schedule, Such rubble shall be used first and only additional rubble required shall be brought from outside unless otherwise directed</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
14	Providing and laying Cast in situ/Ready Mix cement concrete in Mix-15 of trap/granite/quartzite/gneiss metal for steps including steel centering, formwork, laying/pumping, compacting, roughening them if special finish Indian Standards to be provided, finishing uneven and honeycombed surface and curing Etcetera complete. The Cement Mortar 1:3 plaster Indian Standards considered for rendering uneven and honeycombed surface, only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin Etcetera (Wooden centering will not be allowed.), with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.E.2 Page Number 288 and B.7 Page No 38	<p>Bd.E.2.1. General - The specifications pertain to the cement concrete required for the concrete steps. The concrete shall conform to the specification No.B.5 for ordinary cement concrete subject to the following:--</p> <p>Bd.E.2.2. Proportion - Proportion of materials shall be 1:2:4.</p> <p>Bd.E.2.3. Coarse Aggregates - Coarse aggregate shall be crushed from sound stones of the type mentioned in the item and of approved quality. The maximum size of coarse aggregate shall be 40 mm. and aggregate shall be properly graded from 40 mm. to 5 mm. and shall conform to specification No.A.6.</p> <p>Bd.E.2.4. Placing - The concrete steps shall be cast strictly according to the size and shape as shown on the drawings or as directed by the Engineer. When the top surface of the step is not to be covered with other materials like tiles or is not to be provided with chequered design it shall be leveled and floated to a smooth finish while laying the concrete only. The floating shall be done so as not to bring any excess of mortar to the surface of the concrete. If so directed, chequered design shall be impressed on the treads when it is green at no extra cost.</p> <p>Bd.E.2.5. Compaction - The Engineer may permit manual compaction.</p> <p>Bd.E.2.6. Finishing - Immediately after removing the forms and within a day thereof, the exposed formed surfaces shall be roughened and finished smooth with 1:3 cement plasters to give a uniform surface and cured, unless special finishing is specified under a separate item. The concrete shall be done in such a way that the thickness of finishing plaster should not normally exceed 6 mm. In case a special finishing like tiling etc. is specified, the above noted cement plaster finishing shall not be done but the exposed surface, to receive special finish, shall be roughened. The specials finishing will be paid under a separate item in the tender.</p> <p>Any tiling work for the treads and risers shall be done only after 48 hours after the placing of concrete.</p> <p>Bd.E.2.7. Item to include in addition to items mentioned in general specification</p> <p>Bd.E.3.8. No.B.5.14 the item shall include roughening the exposed faces to receive the special finish specified under a separate item or otherwise finishing with minimum thickness of 1:3 cement plaster to give an even and uniform surface to formed surfaces remaining exposed. Treads shall have chequered design if so directed</p> <p>Bd.E.2.8. Mode of Measurement and Payment - According to specification No.8.5.15. The dimensions shall be measured before finishing plaster is applied on exposed formed faces</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
15	Providing and laying Cast in situ/Ready Mix cement concrete in Mix-10 of trap/ granite/ quartzite/ gneiss metal for foundation and bedding including bailing out water, Steel centering, formwork, laying/pumping, compacting, roughening them if special finish Indian Standards to be provided, finishing if required and curing complete, with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd. E. 1 Page Number 287	<p>Bd.E.1.1. General The specifications pertain to cement concrete of the specified proportion to be laid in raft or strip foundations, thin bedding below R.C.C foundations, bedding below paved floors, etc.Bd.E.1.2. Preparation of Foundation for Laying Concrete Passing foundation.--The foundation shall be passed in writing by the Engineer before concreting is started. The bed of the foundation trenches shall be cleaned of all loose material and well wetted if dry, to prevent absorption of water from the green concrete.In the case of paved floors, plinth filling and rubble soling, if any, shall have been well compacted and brought to the required levels etc. and passed by the Engineer before concrete is allowed to be laid.Bd.E.1.3. Dewatering - If the area on which the concrete is to be placed is under water, water shall be removed as specified for Bd.A.9 Unless dewatering is separately provided for in the tender, the rate for concrete shall include the cost of dewatering also.Bd.E.1.4. Concrete - The cement concrete shall comply with specification No. B.5 for ordinary cement concrete subject to the following:Bd.E.1.4.1. Proportion - Proportion of materials shall be as mentioned in the wording of the item.Bd.E.1.4.2. Coarse Aggregates Coarse aggregate shall be broken from sound stones of the type mentioned in the item and of approved quality. Maximum size of aggregate shall not exceed 50 mm. when the depth of concrete footing is 20 cm. or more and the aggregate shall be well graded between the maximum size and 5 mm. For less depth, the maximum size shall not exceed 1/4th the depth.Bd.E.1.4.3. Forms - If the trenches are dug exactly to the dimensions of footings, no forms will be necessary. But the sides and bottom of the trenches shall be moistened to the extent necessary to prevent absorption of water from the concrete.If, however, footings are dug to dimensions larger than those shown on the drawings or as directed by the Engineer, forms complying with specification No.8.5.5(b) shall be used at the contractor's cost. The side forms shall be removed 48 hours after placement of concrete.Bd.E.1.4.4. Mixing The concrete shall be mixed in mechanical mixers if the total quantity to be mixed is more than 15 cubic meters. For quantity of concrete less than 15 cubic metres for which machine mixing is not specified in the special provisions, hand mixing shall be permitted with additional cement, etc. as specified in B.5.4.Bd.E.1.4.5. Compaction - When the quantity of concrete required for a work is less than 15 cubic meters and the special provisions do not specify mechanical vibration, manual compaction with tamping rods, etc. shall be permitted. In the case of manual compaction the depth of each shall not exceed 20 cm. However, if the quantity of concrete exceeds 15 cubic meters and if the depth of concrete member exceeds 30 cms. compaction shall be done with mechanical vibrators.In case of concrete bedding below paved floors, a screed board shall be used to get a level or sloped surface as required for the top of the bedding. All laitance and loose aggregate, if any, shall be removed and top surface left slightly rough to improve bond with the topping.Bd.E.1.4.6. Tests - If the Engineer so directs, 6 cubes of 15 cm. size shall be cast on the first day and tested for compression at 7 and 28 days. Later on, if the Engineer so directs, 3 cubes shall be tested for every 60 cu. meters of the concrete cast. No tests need be made for 1:5:10 cement concrete. If there is doubt about the strength of 1:3:6 and 1:4:8 concrete tests may be carried out and their cost borne by the Department if the results are satisfactory and by the contractor if they are unsatisfactory.Bd.E.1.5. Interval for Starting Masonry - Masonry will be allowed to be started on the concrete 48 hours after completion of concrete. Side filling between the concrete and sides of excavation shall also be allowed after 48 hours after placement of concrete. But the material adjoining the concrete shall be kept wet for the duration of the curing period.Paving or RCC work over concrete bedding shall be allowed after the concrete is sufficiently set.Bd.E.1.6. Item to include - In addition to the items mentioned in specification No.B.5.14, the item shall include dewatering, if necessary, if not provided as a separate item in the tender.Bd.E.1.7. Mode of measurement and payment - As in specification B.5.15.</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
16	Providing and laying Cast in situ/Ready Mix cement concrete in Mix-20 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete coping to plinth or parapet and sill of doors and windows moulded as per detailed drawings or chamfered as approved by the Engineer including steel centering, formwork, cover blocks, laying/pumping, compacting, curing, finishing and roughening them if special finish Indian Standards to be provided and curing complete. (Excluding reinforcement and structural steel). with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete.With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd. F. 12 Page Number 304 and B-7, Pg 38	Bd.F.12.1. General - The specifications pertain to the cement concrete for R.C.C. copings to the plinth or parapet and stills of doors and windows in building construction. The item shall generally conform to the specifications for item No. Bd.E.3 subject to the following :- Before the concrete is placed the formwork and reinforcement of the coping shall be passed by the Engineer and the measurements of mild steel bar reinforcement recorded. The mild steel bar reinforcement shall be paid under a separate item. 1:3 finishing plaster referred to in the item shall be provided for all the exposed surfaces.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
17	Providing and laying Cast in situ/Ready Mix cement concrete Mix-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete work in foundations like raft, strip foundations, grillage and footings of Reinforced Cement Concrete columns and steel stanchions Etcetera columns as per detailed designs and drawing or as directed including Steel centering formwork, cover blocks laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish Indian Standards to be provided and curing Etcetera complete. (Excluding reinforcement and structural steel). with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.3 Page Number 298 and B.7, Page One Number38	Bd.F.2.1. General - The item refers to the cement concrete required for R.C.C. footings of columns and steel stanchions, grillage and raft and strip foundation in building construction. The concrete shall conform to specification No.B.5. for ordinary cement concrete in all respects subject to the follows:-Bd.F.2.2. Materials -Bd.F. 2.2.1. Proportion of materials for the cement concrete shall be 1:0.75:1.5 as laid down in specification B.5.3.Bd.F. 2.2.2. Coarse aggregates - Coarse aggregates shall conform to specification No.A. 6 and shall be crushed from sound stones of the type mentioned in the item and obtained from approved quarries. The maximum size of the coarse aggregate shall be 40 mm. or 6 mm. (1/4") less than the cover whichever is smaller in each case unless other maximum size is specified in the special provisions.Bd.F.2.3. Construction -Bd.F.2.3.1. Mixing The cement concrete shall be mixed in mechanical mixers. Water cement ratio may be about 0.60 or as directed by Engineer. Slump shall be 5 cm. to 10cm.Bd.2.3.2. Placing -(1) The foundations shall be passed by the Engineer and lean concrete bedding placed, compacted and cured till set before concrete for R.C.C. is laid. The concrete for R.C.C. foundations shall be deposited after the Engineer has inspected and passed the placement of steel and the forms, measured length steel reinforcement, or structural steel and given permission to place the concrete. Reinforcement and structural steel and lean concrete will be paid as separate items.(2) As far as possible, concreting of footings, raft and grillage shall be finished in one continuous operation, but the Engineer may permit construction joint at suitable sections and allow the concreting to be completed in the next operation.In the case of footings for steel stanchions, anchor bolts as shown on the working drawings or as directed shall be fixed in their correct positions which template when the concrete is being placed. Alternatively, holes of appropriate dimensions shall be left at the specified places so that later on, anchor bolts could be inserted and concreted or grunted. The anchor bolts shall be paid separately in steel work.Bd.F.2.3.3. Compaction Compaction shall be done by mechanical vibrators and also by rods so that a dense concrete is obtained, all reinforcement is properly embedded, all corners are properly filed and honey-combing is a voided.Bd.F.2.4. Dewatering If the area on which the concrete is to be placed is under water, water shall be removed as specified for item No. Bd. A. 9. Unless dewatering is separately provided for in the tender, the cost of dewatering shall be covered by the rate of concreteBd.F.2.5. Item to include According to specification No.B.5.14. The item shall also include1) Embedding of anchors and/or leaving holes for anchors,etc.and subsequent grouting of the holes with cement concrete 1:2:4 or 1:2 cement sand mortar grout. Anchors will be paid for separately.2) Dewatering unless it is provided for under a separate item in the tender.Bd.F.2.6. Mode of measurement and payment - According to specification No.B.5.15. In the case of tapering portion of column footings, the quantity shall be calculated by the prismoidal formula correct up to three places of decimals of a cubic meter.No deduction shall be made for reinforcing steel bars and anchors. No deduction shall be made for embedded structural steel if their combined sectional area is less than 500sq.cm. Holes for anchors shall not be deducted nor payment made for grouting these holes.The sizes of R.C.C. members as assumed in the estimate or preliminary drawings are likely to be changed. The contractor shall not be entitled to extra claims due to such changes.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
18	Providing and laying Cast in situ/Ready Mix cement concrete Mix-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete columns as per detailed designs and drawing or as directed including steel centering, formwork,cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish Indian Standards to be provided and curing Etcetera complete,(Excluding reinforcement and structural steel). with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.5 Page Number 300 and B.7, Page Number 38	<p>Bd.F.4.1. General - This item refers to the cement concrete required for R.C.C. columns in building work. The concrete shall conform No.B.6 for ordinary cement concrete subject to the following.Bd.F.4.2. Materials -Bd.F.4.2.1. Proportion of materials for the cement concrete shall be 1:0.75:1.50 as laid down in specification No.B.5.3.Bd.F.4.2.2. Coarse aggregates - Coarse aggregates shall be crushed from stones of the type mentioned in the item and obtained from approved quarries. The maximum size of the coarse aggregate shall be 20 mm. less other maximum size is specified in the special provisions.Bd. F.4.3. Construction -Bd.F. 4.3.1. Form-work - The form-work for columns shall comply with specification No. B. 6.5. (b) subject to the following.The form-work for columns shall be wilt up so that planks on three sides are put up to the required height and those on the fourth side put up in stages of a meter or so in height for facility of placing and compacting. The column formwork shall be kept absolutely plumb during and after placing the concrete and shall be checked and approved by the Engineer. The forms shall be kept rigidly plumb with inclined or other supports from as many sides as possible. Plumb bob shall be kept suspended from the formwork so that verticality of the form-work could be easily checked. If a column as shown in the drawings to be inclined, then the form-work for such columns should also have exactly the same batter as for the column. Arrangements for providing rounding of the corners, grooves, slots, etc., for the columns, if shown in the drawing,Bd.F.4.3.2.or mentioned in the special provisions shall be made by fillets, grooves, etc., in the form-work.Bd.F.4.3.2. Mixing The cement concrete shall be mixed in mechanical mixers. Water cement ratio shall not exceed 0.65 unless otherwise directed by the Engineer. The slump shall be 5cm. to 10cm.Bd.F.4.3.3. Placing - No concrete shall be deposited until the Engineer has inspected and passed the forms, placement of steel, copper strip and other fixtures for expansion joints if any, and measured the steel reinforcement, etc., and given permission to place the concrete. Reinforcement will be paid as a separate item. The copper strip will be paid as a part of separate item in expansion joints.Care shall be taken to avoid segregation of materials while placing. Each column shall be concreted in lifts of a meter or so. Before laying the upper lift, the top surface shall be cleaned of all laitance and loose articles and 6 mm. coat of cement mortar 1:2 applied immediately before placing concrete for the upper lift.Bd.F.4.3.4. Compaction Compaction shall normally be done by mechanical vibrators to get a dense concrete and also by rods to get all reinforcement properly embedded, all corners properly filled and honey-combing avoided. The Engineer may permit manual compaction. But a dense concrete must be ensured.Bd.F.4.3.5. Finishing - Immediately on removing the forms and within a day thereof, the formed faces shall be roughened and finished with 1:3 cement plaster of sufficient minimum thickness to give a smooth and even surface and the same cured. The average thickness of finishing plaster in such cases should not normally exceed 6 mm. If however, it is intended to give a special finishing to; the formed surfaces, then the above plastering shall not be done and the formed faces shall only be roughened to receive the special finishing. The special finishing shall be paid under a separate item.Bd.F.4.3.6. Dewatering If the area on which the concrete is to be placed is under water, the water shall be removed as specified for item Bd.A.9.Unless dewatering is separately provided for in the tender, the cost of dewatering shall be covered by the rate for concrete.Bd.F.4.4. Item to include According to specification No.B.5.14 The rate shall also include finishing with 1:3 cement plaster of required thickness after roughening or simply roughening to receive the special finish and dewatering where necessary.Bd.F.4.5. Mode of measurement and payment - As per B.5.15.Increase in dimensions caused by plaster finish shall not be taken into account.Any concrete work in columns carried out in excess of the dimensions shown on the working drawings or as directed by the Engineer shall be measured and paid. The sizes of R.C.C. columns as assumed in the estimates or preliminary drawings are approximate and likely to be changed. The contractor shall not be entitled to extra claims due to such changes in sizes.For columns below plinth level and having piled foundations, the height of column shall be measured from top of pile cap to the bottom of the plinth. In the case of open foundations, the height shall be measured from top of footing to the top of plinth. For columns in upper stories the height shall be measured from the top of plinth level to top of unner floor slah surface. Any portion of beam and slab bearing on column shall be included in the columns concrete. The Height of Columns Shall be Measured correct 1 cm (Centimeter). The Sectional Dimensions shall be measured correct up to 1/2 a centimeter and the quantity worked out correct up to three places of decimals of a cubic meter.No Dedcution shall be made for Mild Steel reinforcing bars.</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
19	Providing and laying Cast in situ/Ready Mix cement concrete Mix-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/pumping, compaction and roughening the surface if special finish Indian Standards to be provided and curing Etcetera complete. (Excluding reinforcement and structural steel).with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.6 Page Number 300 and B.7, Page One Number38	<p>Bd.F.6.1. General-The item refers to the cement concrete required for RC.C. beams (including cantilevered) and linteis in building construction. This item shall be carried out according to specification No.8.5. for ordinary cement concrete in all respects subject to the followingBd.F.6.2. Materials-Bd.F.6.2.1. Proportion Proportion of cement concrete shall be 1:0.75:1.5 and shall conform to specification No 8.53.Bd.F.6.2.2. Course Aggregates-Coarse aggregates shall be crushed from sound stone of the type mentioned in the item and obtained from approved quaries. The maximum size of coarse aggregate shall be 20mm or 6 mm, less than (1) the minium lateral space between the bars or (ii) the cover whichever is less. The maximum size of the course aggregate may be reduced around the congested reinforcement to comply with the above requirement.Bd.F.6.3. Construction -Bd.F.6.3.1. Dewatering According to specification No. Bd.F.1.4. dewatering, if any, for placing plinth or any other beams shall be covered by the rate of concrete unless a separate item for dewatering is provided in the tender.Bd.F.6.3.2. Mixing-The concrete shall be mixed in mechanical mixtures.Water cement ratio shall be as directed by the Engineer. Slump shall not exceed 8 cm. (about 3") but in thin sections and where reinforcing bars are crowded, slump up to 12 cm. (about 5") may be allowed by the Engineer if considered necessary.Bd.F.6.3.3. Formwork-According to specification No.8.5.5(b). The bottom boards of the formwork for beams shall be given a camber of 1/240 of the span or as directed by the Engineer.Clams, hooks etc., required to be embedded shall be fixed in the formwork at the correct location as directed by the Engineer. Chamfers, groundings, moldings etc shall be made in the form itself.Concreting of the upper floor shall not be done until the concrete of the lower floor has set adequately to take the load.Bd.F.6.3.4. Placing - The forms, centering and reinforcement shall be checked and passed by the Engineer and reinforcement measured before concreting is permitted. Reinforcement will be paid as a separate item. Placing shall be done in a balanced manner to avoid eccentric loading on the formwork. The concreting of the beam shall be done in one continuous operation as far as possible. The Engineer may, however, permit construction joints at approved sections of the beam. The ribs of beams shall normally be concrete together with the slab of which they form a part. The schedule of programme shall be got approved by the Engineer and adequate labour and machinery shall be provided to keep up the programme. Clamps, fan hooks, and other fixtures, etc., shall be embedded in the concrete while placing, if so, required by the Engineer Clamps, etc., themselves will be paid for separately. Bridge shall be provided to avoid walking over the reinforcement and fresh concrete.Bd.F.6.3.5. Compaction Compaction shall be done by vibrators and rods as the concrete is being placed to give a dense concrete free of honey-combing. It should be seen that the vibrator needle does not touch the reinforcement and disturb the concrete already set. Where it is not possible to use the vibrator, Roding shall be resorted to and the concrete with greater slump may be used.Bd.F.6.3.6. Finishing Immediately on removing the forms and within a day thereof the formed faces shall be roughened and finished with 1:3 cement plaster of sufficient minimum thickness to give a smoothy even and finished surface and the same cured. The average thickness of finishing plaster should not normally exceed 6 mm. If, however, it is intended to give a special finish to the formed surface the above plastering shall not be done and the formed faces shall only be roughened to receive the special finish. The special finish shall be paid under a separate item. Bd.F.6.4. Item to include - According to specification No. B.5.14, Finish with 1.3 cement plaster or roughening the surfaces when a special finish is to be provided and labour for embedding clamps, fixtures, etc., shall be included in the rateThe rate shall also include dewatering if required when there is no separate provision for it in the tender.Bd.F.6.5. Mode of Measurement and Payment-According to specification No.B.5.5. The concrete beam and lintel shall be measured for their net length inclusive of bearing on walls correct to a cm, and the sectional measurements correct to the nearest half centimeter. The sizes of beams and lintels assumed in the estimate or preliminary, drawings are approximate and likely to be changed. The contractor shall not be entitled to extra claims due to any such changes in the sizes. The quantity shall be worked out correct to three places of decimals of a cubic meter. The increase in dimensions due to plaster finish shall not be taken into account. No deduction shall be made for reinforcement bars, for pipes not exceeding 25 sp. cms. each in sectional area, for fixtures embedded for ends of dissimilar materials like beams, girders etc, having a sectional arsa up to 500 sq. cm. or for chamfers or groundings of edges The length of a plinth beam shall be measured clear between the faces of pile caps. When a beam is supported on columns, the length of the beam shall be measured between the faces of columns. In beams and slab construction the beam shall be measured as the rib or part below or above the slab.Fillets between beams and slabs and haunches of beams shall be measured as part of beam.</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
20	Providing and laying Cast in situ/Ready Mix cement concrete Mix-30 of trap/ granite / quartzite/ gneiss metal for Reinforced Cement Concrete slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish Indian Standards to be provided and curing Etcetera complete,(Excluding reinforcement and structural steel).with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.8 Page Number 302 and B.7, Page Number 38	<p>Bd.F.8.1. General The item refers to cement concrete required for R.C.C. slabs and landing in building construction. The concrete shall conform to specification No.6.B. 6 for ordinary cement concrete in all respects subject of the following.Bd.F.8.2. Materials -Bd.F.8.2.1. Proportion - Proportion of the materials for the cement concrete shall be 1:0.75:1.5 and shall conform to specification No.8.5.3.Bd.F.8.2.2. Coarse Aggregates - Coarse aggregates shall be crushed from sound stone of the type mentioned in the item and obtained from approved quarries and shall conform to specification No.A.6 The maximum size of coarse aggregates shall be 20 mm. or 6 mm. less than the cover whichever is smaller unless other maximum size is specified in special provision.Bd.F.8.3. Construction -</p> <p>Bd.F.8.3.1. Mixing The concrete shall be mixed in mechanical mixers, watercement ratio shall not exceed 0.55 unless otherwise directed by the Engineer. Slump shall be 8 cm. to 12 cm.Bd.F.8.3.2. Formwork-According to specification No.Bd. F.6.3. For cantilever slabs the formwork shall comply with relevant portion of specification No.Bd.F.9.Bd.F.8.3.3. Placing-No concrete shall be deposited until the Engineer has inspected and passed the forms and the placement of steel reinforcement, measured the steel reinforcement and given permission to place the concrete. The reinforcement will be paid as a separate item.Slab shall be laid to the thickness shown on the working drawings approved by the Engineer. The required thickness of slab shall be ensured at all points by check gauges and straight edges. As far as possible the concreting of slab shall be done in one continuous operation. But the Engineer may allow the joints at suitable sections and allow concreting to be continued in the next operation. For a slab, the placing of concrete shall be done in such a manner as to avoid the necessity of workmen crossing over green concrete. Bridges shall be provided to avoid walking over the reinforcement and fresh concrete. If any hooks, pipes, clamps, frames or other fixtures are to be embedded, they shall be fixed at their correct position. All these fixtures themselves shall be paid for separatelyBd.F.8.3.4. Compaction Compaction shall be done manually with tamping bar, screed board tampers, roads etc, to get a dense concrete.Bd.F.8.3.5. Finishing Immediately on removing the forms and within a day thereof, the formed surfaces of the slab shall be roughened if necessary and finished with 1:3 cement plaster of such minimum thickness as is necessary to give a smooth even and finished surface and cured Engineer's permission shall be taken for such finishing. Edges and junctions of the slabs and beams shall be rounded or chamfered if so required. Unformed exposed surfaces shall be finished to an even and plain surface at the time of compacting. The surfaces on which paving is to be provided shall be left a little rough for bond. If special finished and borders are to be provided, they shall be paid for separately, but the formed faces shall be roughened to receive the special finish and the above finishing plaster shall not be done.Bd.F.8.3.6. Bedding - In the case of basement floor slabs, a lean concrete bedding shall be placed first and cement concrete for the R.C.C. work laid above it. The lean concrete will be paid as a separate item.Bd.F.8.3.7. Dewatering - If dewatering is necessary, it shall be done according to specification for item No.Bd.A.9 Dewatering shall be considered as incidental to the item unless separately provided for in the tender.Bd.F.8.4. Item to include As per B.5. The rate also includes finishing of formed surfaces with plaster 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the formed faces to receive the special finish if such special finish is to be provided and also dewatering where necessary. Rounding, chamfering of comers, and edges and labour for embedding fixtures, clamps, pipes fastenings etc. shall be included in the rate. The item shall cover cantilever slabs also.Bd.F.8.5. Mode of Measurement and Payment - The contract rate shall be per cubic metre of the slab laid to exact thickness as shown in the detailed drawings or ordered by the Engineer. The increase in dimensions cause by plaster finish shall not be taken into account. The length and width limited to those shown in the drawings or directed by the Engineer shall be measured correct up to a centimeter and thickness correct up to half a centimeter. The quantity shall be worked out correct up to three places of decimals of a cubic meter. If the slab</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
21	Providing and laying Cast in situ/Ready Mixcement concrete Mix-25 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete chajja as per detailed design and drawings including steel centering, formwork, cover blocks, laying/pumping, compacting and roughening the surface if special finish Indian Standards to be provided and curing complete. (Excluding reinforcement and structural steel). with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.9 Page Number 303 and B.7, Page Number 38	<p>Bd.F.9.1. General - The item refers to cement concrete required for R.C.C. chajja of the section shown in the working drawings or as directed. The concrete shall conform to specification No.B.6, for ordinary cement concrete in all respects subjects to the following.</p> <p>Bd.F.9.2.- Proportion of the materials for the cement concrete shall be 1:1:2 and shall conform to specification No.B.5.3.</p> <p>Bd.F.8.2.2. Coarse Aggregates - Coarse aggregates shall be crushed from sound stone of the type mentioned in the item and obtained from approved quarries and shall conform to specification No.A.6 The maximum size of coarse aggregates shall be 20 mm. or 6 mm. less than the cover whichever is smaller unless other maximum size is specified in special provision.</p> <p>Bd.F.9.3. Construction According to specification No.Bd. F.8.3. The form work shall be arranged and the concrete cast to obtain the shape, dimensions, slope etc., shown in the drawings. The weight of concrete, centering and shuttering shall be supported rigidly on the floor below and in other secure ways. Care shall be taken to see that formwork is removed only after the period mentioned in B.5. has lapsed and after full stability for the overhanging portion is obtained by anchoring and/or building up masonry over the bearing for all conditions of loading likely to occur during and after construction. The sequence of removal of centering shall be such that no tension is caused in the bottom face. The supports at the overhanging and shall be removed first after the concrete has developed sufficient and full stability is obtained for all overhang.</p> <p>The chajja shall be laid to lines, curves, slopes and the sections shown in the working drawings or as directed by the Engineer.</p> <p>Bd.F.9.4. Finishing According to specification No.Bd.F.8.3.5. Grooves, throatings and borders shall be provided in the concrete and finishing plaster if shown in the drawings and shall be included in the item. But special finishing if intended shall be paid under a separate item.</p> <p>Bd.F.9.5. Item to include - According to specification No.Bd.F.8.4. It shall also include grooves, throatings, and borders in the chajja if shown in the drawings.</p> <p>Bd.F.9.6. Mode of Measurement and Payment-According to specification No.Bd.F.8.5.</p> <p>except for the following:-</p> <p>Where the chajja is combined with lintel, beam, slab, etc., the bearing shall form a part of the item with which it is combined, the chajja being measured only for the projecting portion. Where chajja is not combined with beam, slab etc., the bearing shall be included in the measurement of the chajja and shall be deducted from the masonry in which it is embedded.</p>
22	Providing and laying Cast in situ/Ready Mix cement concrete in Mix-25 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete pardi of required thickness including steel centering, formwork, cover blocks, laying/pumping, compacting and roughening them if special finish Indian Standards to be provided and curing complete. (Excluding reinforcement and structural steel).with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.11 Page Number 304 and B.7, Page Number 38	<p>Bd.F.11.1. General - The item refers to cement concrete required for R.C.C. pardi of the thickness shown in the detailed drawings approved by the Engineer. The item shall comply with specifications for item Bd.F.6. except for the following:- When the pardi is high, formwork for the pardi shall be built up in stages of a meter or so in stages of a metre or so in height at least on one side. The formwork shall be kept absolutely plumb, during and after the placing of concrete and shall be checked and approved by the Engineer.</p> <p>Compaction may be done manually.</p>

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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23	Providing and laying Cast in situ/Ready Mix cement concrete in Mix-25 of trap / quartzite/granite /gneiss metal for Reinforced Cement Concrete Waist slab, and steps of staircases as per detailed design and drawings or as directed including steel centering, plywood/ steel formwork, steel props, laying/pumping, compaction, finishing uneven and honeycombed surface with Cement Mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be provided and curing etcetra complete. (Excluding einforcement, including cover block).(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.) with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetra complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd. F. 13 Page Number 305 /I.S. 456 (2000	<p>Bd.F.13.1. General - The item refers to cement concrete required for R.C.C. staircase building construction. The concrete shall conform to specification No.B.5 for ordinary cement concrete in all respects, subject to the following: Waist slabs and steps shall be constructed complying with specification No.Bd.F.8. If the staircase has an R.C.C. parapet, it shall be constructed as per specifications for item Bd.F.11, for R.C.C. pardi. Formed surfaces which will remain exposed shall be finished with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface. Surfaces which are to receive special finishing or tiling shall be roughened immediately on removing the forms and within a day thereof. Special finishing's or tiling shall be paid for separately. Rowl plugs, bolts or other devices similar to those mentioned in I.S.1946-1961 shall be embedded in the concrete if required by the Engineer for fixing railing etc. The rate for concrete shall be inclusive of such plugs and their fixing. Cement concrete for R.C.C. landing shall be paid under slab concrete.</p> <p>Bd.F.13.2. Item to include - (1) Providing and laying cement concrete for waist slabs, steps and parapets to dimensions and shapes shown on the drawings or as directed by the Engineer, including centering, form-work compacting, finishing with cement plaster of minimum thickness to give a smooth and even surface for formed surfaces remaining exposed roughening the surfaces which are to receive tiling or special finish, embedded plug and curing.</p> <p>(2) Beams, Cross-beams, railing etc. shall not be included in the item.</p> <p>(3) All labour, materials, equipment for satisfactory completion of the item as specified above.</p> <p>Bd.F.13.3. Mode of Measurement and Payment - As per specification No.B.5. The measurement shall be taken before finishing plaster is applied. No deduction shall be made for the embedded plugs nor separate payment made for them. Any portion of steps, waist or parapet embedded in the newel post shall be paid as part of item of the newel post, under a separate item. Portions of waist slab and steps embedded in the masonry shall be included in these measurements and deductions made for them in the masonry.</p>

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24	Providing and fixing in position Thermo Mechanical Treated - FE - 500 bar reinforcement of various diameters for Reinforced Cement Concrete pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches Etcetera as per detailed designs, drawings and schedules. including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete.	Bd.F.17, Page Number 306	<p>B.10.1. General - The item provides for the supply of mild steel bars, cutting, bending, binding with galvanised iron wire and erecting in position for reinforcement in R.C.C.B.10.2. Materials -1) Mild steel bar shall conform to the specification No. A.9.2) The binding wire shall conform to the specification No. A.11.B.10.3. Supply When the supply is made by the Department, the contractor shall convey the mild steel bars from the place of delivery mentioned in schedule 'A' of the tender to the site of work. The contractor shall be solely responsible for any damage during the conveyance and till it is used. When the contractor supplied mild steel reinforcement bars obtained from the market they shall be supplied to the site of work without damage. B.10.4. Fabrication - Reinforcing steel shall be thoroughly cleaned of all coatings of any characters that would destroy or reduce the bond. Bending reinforcement shall conform accurately to the dimensions and shapes shown on the plans or as directed by the Engineer. Bars shall not be bent or straightened in a manner that will injure the material. Bars with kinks, bends or cracks shall not be used. Bars shall be bent cold to the shapes and dimensions shown on the drawings or as directed by the Engineer in writing. Bar bender may be used to attain proper radii of bends and shapes. Bars which may bend in transport or handling shall be properly straightened before being placed in work without heating them. Bending bar by heating to cherry red heat not exceeding 815øc may be allowed for only M.S. bars larger than 25mm. diameter except for bars which depend for their strength on cold working. Hot bars shall not be cooled by quenching. HYSD bars shall not be heated for bending. B.10.4.1. Details of length, sizes, laps and bending diagrams shall be got approved by the Engineer. This is to secure additional precautions against errors. B.10.5. Splicing and Lapping All reinforcement shall be furnished in full lengths indicated on the plans as far as possible, splicing bars except as shown on the plans will not be available, bars shall be spliced, spliced of tensile reinforcement at points of maximum stress and of adjacent bars at the same place shall be avoided. Splices shall be staggered as far as possible and located at suitable points. A welded or mechanical connection if adopted, shall develop the full strength of the bars. Welding of HYSD bars shall not be done. However welding of HYSD bars may be done with written permission of the Engineer in charge by special methods as may be suitable. Unless otherwise shown on the plans, bars shall be lapped as specified in I.S. 456-1964" with due regard to the grade of concrete. In lap-splices, bars shall be placed in contact and just wired together to keep in place. B.10.6. Coupling - Whenever plans and specifications call for the use of coupling-boxes or bottle nuts to join bars, they shall have sufficient cross section to transmit the full strength of the bars. The ends of the bars which are jointed by coupling shall be upset for a sufficient length so that effective cross section after cutting the screw threads shall not be less than the normal cross section of the bars. Screw threads shall be standard Whitworth threads. Coupled joints will be paid for separately. Number of tensile test shall be as indicated in specification No. B.10.7. B.10.7. Welding Whenever plans and specifications call for the welding of joints in reinforcement bars in lieu of lapping them, the bars shall be butt-welded so as to transmit their full strength. Welding shall generally conform to specification No. B- 18 and I.S. 456-1964" except as modified below and when otherwise directed by the Engineer. Welded joints shall be so staggered that in any one section equal to the lap length of the bars, not more than 33% of the bar are welded. Electric arc welding or oxyacetylene process of welding, using a process which will exclude air from the molten metal and conforming to any special provisions for the welding as laid down by the Engineer in writing will be accepted. Suitable means shall be provided for holding the bars securely in position during the process of welding. The ends of the bars shall be cleaned of all loose scale, rust, grease, paint, and other foreign matter and clean original metal exposed before welding. Only competent and experienced welder shall be employed on the work. Preliminary test of the weld shall be carried out at the contractor's cost to see that the actual field welding method is satisfactory and gives the required strength. Two welds in 100 welds or a minimum of 2 welds shall be made on the site on the test pieces under conditions exactly similar to the field welding of actual reinforcement bars and tested for their tensile strength. The strength of the welded joint shall not be less than that of the original bar. If the tests are not satisfactory, change of welding procedure and further tests may be ordered by the Engineer. Bars welded along with the welded samples, found unsatisfactory on tests shall be cut and rewelded. Additional welds if required on this account shall not be paid for. All the tests shall be at the cost of the contractor. When welded joints are required they will be paid for separately. No part of the reinforcement embedded in concrete shall be used for conducting electric current. B.10.8. Substitution - Substitution of size of bars different from those specified will be permitted at the request of the contractor only if authorised by the Engineer. The steel substituted shall have area not less than the designed area provided further that the safe bond stress is not exceeded. If such substituted steel has larger area than that originally specified, such excess weight due to larger area will not be paid for. B.10.9. Placing and Fastening - All reinforcement shall be accurately placed in position with spacing and cover shown on the plan and firmly held so during the placing and setting of concrete. Bars shall be tied at all intersections. Binding wire of 1.63m. or 1.22mm diameter shall be used. Alternatively the Engineer may permit spot welding instead of tying wire. Spacing of bars shall be maintained by means of stays, blocks, ties, spacers, hangers or other approved supports at sufficiently close interval so that bars will not sags between supports nor be displaced during placing, vibrating or compacting concrete or by any other operation. Metal Supports which extends to the surface of the concrete except where shown in the plans and wooden supports as the work progress. will not be permitted. the use of pieces of broken stones or bricks or wooden blocks for maintaining spacing or cover shall not be permitted. Layers of bars shall be separated by pre cast cement mortar blocks spacer bars or other approved devices. Special care shall be taken to prevent any disturbance of the reinforcement in concrete that has already been placed. Reinforcement after being placed in position shall be maintained in a clean condition till it is completely embedded in the concrete. All bars protruding from concrete to which other bars are to be spliced and which are likely to be exposed for an indefinite period shall be</p>

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			<p>protected from rusting from rusting by a thin coat of cement washB.10.10. Inspection - Full details of the numbers, sizes, lengths, weights, laps, welds, spacing of the bars placed in position in different parts of the work shall be recorded, certified and signed by the Engineer to show that all reinforcement has been placed correctly as per the sanctioned drawings or as ordered by the Engineer in writing before placing concrete. No concrete shall be deposited until the Engineer has inspected and certified the correctness of reinforcement, recorded the steel measurements and given permission to place the concrete in writing. After the approval of reinforcement by the Engineer it will be the contractor's responsibility to see that the reinforcement spacing and arrangements are not tempered with in any way before or during concreting.B.10.11. Tests - When the contractor supplies his own steel, he shall produce the test certificate. If there is any doubt about the quality, tensile and cold bend tests shall be carried out according to I.S. 432-1978 in an approved laboratory and the cost of the tests shall be borne by the contractor if the results are unsatisfactory and by the Department if the results are satisfactory.B.10.12. Item to include -1) Cost of labour, material, use of tools, plant and tackle and other incidental items to complete the work included under the item satisfactorily.2) Supplying, conveying, cleaning, cutting, bending, binding with 1.63 mm, or 1.22 mm. (16 or 18 gauge) wire or spot-welding and placing reinforcement in position and maintaining it clean and in position till the concrete is laid3) Cost of sampling and testing.B.10.13. Measurement and Payment - The contract rate shall be on weight basis for 1 quintal of mild steel reinforcement. The weight of steel reinforcement incorporated in the concrete will be measured in quintal based on the total computed weights for the sizes and lengths of bars, as shown on the plan or as ordered by the Engineer. The lengths of the bars shall be measured correct to two planes of decimals in metres and the weight payable would be worked out on the following basis correct to 0.10 of a Kg.Diameter of Bar in Millimeters/Weight in KgPer Meter 1) 6 mm/0.22 kg/m2) 10 mm/0.60kg/m3) 12mm/0.90kg/m4) 16mm/1.60kg/m5) 20mm/2.50kg/m6) 22mm/3.00kg/m7) 25mm/3.80kg/m8) 28mm/4.80kg/m9) 32mm/6.30kg/m10) 36mm/8.00kg/m11) 40mm /9.90kg/m</p>

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25	Providing structural steel work in trusses, other similar trussed purlins and members with all bracing, gusset plates Etcetera as per detailed designs and drawings or as directed including cutting, fabricating, hoisting, erecting fixing in position, Making riveted/ bolted/ welded connection and one coat of anticorrosive paint and over it 2 coats of oil painting approved quality and shade Etcetera complete.	Bd.C.8 Page Number 278	Bd.C.7.1. General - The item refers to structural steel wok in trusses or trussed purlins or other members in roofs etc. with all members, connecting, plates all bracings, bearing plates, gusset plates and anchor bolts if necessary. The item shall comply with specification No.B.19 for structural steel work and Bd.C.5. subject to the following:-Bd.C.7.2. Shop Drawings - The contractor shall prepare shop drawings for the structural steel work to be executed as per I.S. 800-1962, clause 4.1.2. The contractor shall submit the drawings in triplicate to the Engineer for his approval Fabrication shall not be taken in hand until the relevant shop drawings have been approved by the Engineer. However, the contractor shall remain wholly responsible for their correct conformation to the designs and for accurate fabrication to meet the requirements of design and the I.S. one copy of the drawing duly approved shall be returned to the contractor and the work shall be carried out according to the approved designs.Bd.C.7.3. Fabrication - Fabrication shall be done as per I.S.800-1962.The trusses shall be hoisted and fixed in required position as shown on the drawings or as directed by the Engineer.The connections between the truss and the supports shall be as shown on the drawings. Rivets shall be countersunk if so shown or ordered by the Engineer If sliding bearings are provided in the drawings or special provisions, the sliding faces or the plates shall be machined smooth in the direction of movement and the surfaces of the bearing plates shall be true over the whole bearing area, All the machined bearing surfaces in contact shall be fully greased with an approved grease.The steel work shall be painted with one coat of lead and two coats of oil-paint of shade approved by the Engineer. The oil-paint shall comply with the relevant Indian Standard and oil-painting shall be done as specified in B.21.a. The word "Inspector" wherever occurring in I.S. 800-1962 shall carry the same meaning as the word Engineer.Bd.C.7.4. Item to include - As per B.19.8.The item shall include all the structural steel in trusses, purlins, bracings connecting brackets, mild steel plates, gusset plates, angle cleats anchor bolts, etc, fully erected and painted. But all steel connections rigidly attached t the steel column however, shall be included in the item of structural steel for column and not in this item.Bd.C.7.5. Mode of Measurement and payment - Weitght of steelplates and rolled sections shall bve calculated separately on the basis of actual shape provided Waste and cut off will not be measured. The Dimensions and shapes of steel sections shall be limited to thosed shown on the working drawings or as ordered by the engineer for measurement and payment.
26	Providing and fixing 20 to 25 milimetre thick rough shahabad box type waterproofing for basement or underground floor on a base of Cement concrete 1:3:6, including sub base of 2.50 centimeter thick Cement mortar 1:3 with conceal, secrete (RMW), Algae proof or other alike waterproofing liquids, raking of joints upto 35 milimetre depth, filling the joints with 6 milimetre size crushed metal, hand grouting with cement slurry, curing and cleaning, with 7 years guarantee on court fee stamp of Rs. 100/- with ponding test Etcetera complete. (excluding Cement concrete 1:3:6 base concrete)	Bd.J.2 Page Number 355	Bd.J.2.1. General - The items pertains to the provision and laying of damp-proof course over the plinth including bitumen and Shahabad stones or bitumen and 1:2:4 cement concrete layer of specified thickness as mentioned in the item. Bd.J.2.2. Materials - Bitumen shall be blown type conforming to I.S. 702-1988 or bitumen conforming to I.S. 73-1992. The penetration of bitumen shall be limited to 40 when tested in accordance with I.S. 1203-1978. The Shahabad flagstone shall be thickness of the damp-roof course mentioned in the item and of the full width of the masonry and shall conform toBd. M.1.1.1. They shall have exposed edges finely dressed true and square. Cement mortar 1:3 shall conform to B. 5(a) and shall be waterproofed with approved compound like Impermo, Accoproof. Cement concrete 1:2:4 shall conform to B.6 and approved waterproofing compound like Impermo. Accoproof added according to the manufacturer's instructions. Bd.J.2.3. Laying - When 1:2:4 cement concrete is provided, layer of the specified thickness for the full width of the wall shall be provided at the plinth. This shall conform to B. 6. The form shall be used to get the edges straight, even and vertical. The concrete shall be cured for 7 days after which it shall be allowed to dry. When Shahabad flagstone is provided it shall be laid on a bed of 1:3 cement mortar mixed with the approved waterproofing compound and the joints also made with the same mortar. It shall be cured for 7 days and allowed to dry. The damp-proof course shall be provided as shown in the drawing or as ordered by the Engineer. After the concrete or mortar in Shahabad flagstone joints is cured and dry, surface under superstructure shall be cleaned with brushes and finally with cloth soaked in kerosene oil and hot bitumen applied uniformly all over so that no blank spaces are left anywhere. The temperature of the bitumen at the time of application shall not be less than 121°C. The face of the masonry coming in contact with flooring on the inside shall be painted with bitumen. Further work shall be started after the bitumen coat is fairly set. Bd.J.2.4. Item to include - (1) Bitumen and waterproofed concrete or Shahabad stone, and waterproofed cement mortar 1:3 and bitumen. (2) Laying waterproofed concrete or Shahabad stones in waterproofed mortar as provided and painting with bitumen. (3) All necessary labour, materials and use of tools for completing the item satisfactorily. Bd.J.2.5. Mode of Measurement and Payment - The contract rate shall be for one Square Meter of top surface of concrete or Shahabad stone. The measurement shall be for the length and width corresponding to the length and width of the Shahabad slabs or cement concrete of the specified thickness and limited to the dimensions shown in the drawings or ordered by the Engineer. The dimensions shall be measured correct to two places of decimals of a metre and area worked out correct to two places of decimals of a sq. m.
27	Providing and fixing 20 to 25 milimetre thick rough shahabad box type waterproofing treatment to vertical outside faces of Reinforced Cement concrete walls of basement or underground floor including filling the gap of 25 milimetre between rough shahabad and Reinforced Cement Concrete walls	Bd.J.2 Page Number 355	Bd.J.2.1. General - The items pertains to the provision and laying of damp-proof course over the plinth including bitumen and Shahabad stones or bitumen and 1:2:4 cement concrete layer of specified thickness as mentioned in the item.Bd.J.2.2. Materials - Bitumen shall be blown type conforming to I.S. 702-1988 or bitumen conforming to I.S. 73-1992. The penetration of bitumen shall be limited to 40 when tested in accordance with I.S. 1203-1978.The Shahabad flagstone shall be thickness of the damp-roof course mentioned in the item and of the full width of the masonry and shall conform toBd. M.1.1.1. They shall have exposed edges finely dressed true and square. Cement mortar 1:3 shall conform to B. 5(a) and shall be waterproofedwith approved compound like Impermo, Accoproof. Cement concrete 1:2:4 shall conform to B.6 and approved waterproofing compound like Impermo. Accoproof added according to the

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	with cement grout mixed with water proofing liquid Algae proof or other alike with one tile lift method, brushing the joints horizontally with cement slurry mixed with water proofing liquid for width 30 to 35 milimetre and sloping coping over topmost tile with cement mortar 1:3, butting the bottom most with Cement concrete 1:2:4 mixed with water proofing liquid, curing, with 7 years guarantee on court fee stamp of Rs.100/- with ponding test Etcetera complete. (excluding Cement concrete 1:3:6 base concrete)		manufacturer's instructions.Bd.J.2.3. Laying - When 1:2:4 cement concrete is provided, layer of the specified thickness for the full width of the wall shall be provided at the plinth. This shall conform to B. 6. The form shall be used to get the edges straight, even and vertical. The concrete shall be cured for 7 days after which it shall be allowed to dry. When Shahabad flagstone is provided it shall be laid on a bed of 1:3 cement mortar mixed with the approved waterproofing compound and the joints also made with the same mortar. It shall be cured for 7 days and allowed to dry. The damp-proof course shall be provided as shown in the drawing or as ordered by theEngineer. After the concrete or mortar in Shahabad flagstone joints is cured and dry, surface under superstructure shall be cleaned with brushes and finally with cloth soaked in kerosene oil and hot bitumen applied uniformly all over so that no blank spaces are left anywhere. The temperature of the bitumen at the time of application shall not be less than 121°c. The face of the masonry coming in contact with flooring on the inside shall be painted with bitumen. Further work shall be started after the bitumen coat is fairly set.Bd.J.2.4. Item to include - (1) Bitumen and waterproofed concrete or Shahabad stone, and waterproofed cementmortar 1:3 and bitumen.(2) Laying waterproofed concrete or Shahabad stones in waterproofed mortar as provided and painting with bitumen.(3) All necessary labour, materials and use of tools for completing the item satisfactorily.Bd.J.2.5. Mode of Measurement and Payment - The contract rate shall be for one Square Meter of top surface of concrete or Shahabad stone. The measurement shall be for the length and width corresponding to the length and width of the Shahabad slabs or cement concrete of the specified thickness and limited to the dimensions shown in the drawings or ordered by the Engineer. The dimensions shall be measured correct to two places of decimals of a metre and area worked out correct to two places of decimals of a sq. m.
28	Providing second class Burnt Brick masonry with conventional/ Indian Standards type bricks in cement mortar 1:6 in plinth as backing in composite masonry including bailing out water manually, striking joints, raking out joints and watering Etcetera Complete.	Bd.G.3 Page Number 314	Bd.G.3.1. General - The item refers to second class Burnt Brick masonry in plinth a backing in composite masonry. The item shall generally comply with the relevant specifications given for item No.Bd.G.1. subject to the following. Bd.G.3.2. Laying - The laying of brick work as backing in composite masonry shall be done simultaneously with the laying of the facing work. Each facing course shall correspond to the height of complete number of course of brick backing including mortar joints. Bd.G.3.3. Bond - Bond shall be English or as directed by the Engineer. The brick backing shall be bonded well with the facing by using cut bricks where necessary. Facing bond stones shall pass right through to the rear face of the backing. Bd.G.3.4. Item to include - As specified in specification No.B.8.a.9. and shall also include cutting of bricks and wasting of securing proper bond with the facing. Bd.G.3.5. Mode of Measurement and Payment - According to specification No.B.8.a.9. The contract rate shall be for unit of one cubic meter. The thickness of backing shall be taken as the full thickness of the wall minus the total width of facing required to be paid as facing. No further deductions shall be made for the tailing back of any part of facing into the backing. Dimensions shall be measured correct to two places of decimals of a meter and quantity worked out correct to two places of decimals of a cubic meter.
29	Providing Autoclaved Aerated Concrete Block masonry of conforming to Indian Standards :2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in superstructure including striking joints, raking out joints and scaffolding Etcetera Complete. (The test shall be carried out conforming to Indian Standards :6441 (Part I) - 1972)	As directed by engineer in charge	The work shall be carried out as directed by Engineer in Charge
30	Providing Autoclaved Aerated Concrete Block masonry of conforming to Indian Standards :2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in Half brick thick wall including striking joints, raking out joints and scaffolding Etcetera Complete. (The test shall be carried out conforming to Indian Standards :6441 (Part I) - 1972)	As directed by engineer in charge	The work shall be carried out as directed by Engineer in Charge
31	Providing waterproof plaster in Water Closet and bath 12 milimetre thick for dado in cement mortar 1:3 with neat finishing, floating using waterproofing compound at the rate of 1 Kilogram. per bag of cement of approved make and manufacturer and curing Etcetera complete. (Excluding Tiles)	BDJ As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

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32	Providing internal cement plaster 12 milimetre thick in single coat in cement mortar 1:5 without neeru finish to concrete or brick surfaces, in all positions including scaffolding and curing etcetra complete.	Bd. L.2 Page Number 368	<p>Bd.L.1.1. General-The item refers to provision of 6 mm. thick cement plaster to concrete surfaces and shall be carried out in conformity with specification No. B.11 for cement plaster subject to the following additional specifications:-Bd.L.1.2. Tools and Accessories Tools and accessories used in plaster work may advantageously conform to 1. S. 1630-1984. All tools shall be cleaned by scraping and washing at the end of each day's work after use. Metal tools shall be cleaned after each operation. All tools shall be examined to see that they are thoroughly cleaned before plastering is begun.Bd.L.1.3. Programme of Work In Relation To Plastering The programming of other building operations before, during and after plastering shall be according to the instructions contained in clause 4 of I.S. 1661-1972.Bd.L.1.4. General Precautions In Plastering - All general precautions as specified in I.S. 1661-1972 clause 9, shall be taken and preparation of the background shall be done as laid down is I.S. 1661-1972 clause 13. Care shall be taken to see that other parts of the work or adjacent works are not damaged while plastering.Bd.L.1.5. Plastering Plaster of cement mortar shall be laid in with somewhat more than 6 mm. thickness and pressed and levelled with wooden ruler to a finished thickness of 6 mm. Long straight edge shall be freely used to ensure a perfectly even surface. All comers and angles shall be perfectly plumb and soffits of arches true to the specified curve. All junctions of doors and windows and other frames shall be neatly finished. All architectural panelling, grooves, etc., to be shown in the thickness of the plaster shall be so worked. When cement or neeru finish is not specified, the external plaster shall be finished with wooden float to give a granular surface and internal plaster finished smooth with steel trowel.For cement finishing, a coat of pure portland cement slurry (about 1.5 mm. thick) shall be applied to the plastered surface with trowel while the first coat is still plastic. If neeru finish is specified then the surface shall be finished as per specifications for item No. Bd. L.10. The total thickness of the plaster excluding the cement or neeru finish shall be 6 mm. Watering for curing shall be started soon after the initial set of the surface material to avoid damage.Bd.L.1.6. Item to include As per B.11. Plastering in all positions will be included in this item.The item shall be include rounding up of corners and angles, finishing of tops of dados and skirtings, junctions of roof and walls and neeru or cement finish when specified in the item. The plastering of brick cornices, brick copings and other brick moldings shall not be measured. The plastering of bricks cornices, brick copings and other brick moldings shall not be measured nor paid for separately when included in the respective Inclusive items of cornice, coping and molding. Architectural cornices, moldings, ribs,attractives and the like when prepared in plaster only of more than 6 mm. thickness shall be paid under seprate items unless otherwise provided. B.11.11. Mode of Measurement and Payment- The Contract rate shall be per square meter of plastering of specified thickness. All Work Shall be Measured net Square Meter. Dimensions Shall be measured and quantity worked out correct up to two places of decimals in meter and square metre respectively. If the average thickness of plaster provided by the contractor is more than what is specified on any account, on extra payment is made.</p>
33	Providing internal cement plaster 20 milimetre thick in Single coats in cement mortar 1:5 without neeru finish, to concrete, brick surface, in all positions including scaffolding and curing Etcetera complete.	Bd.L.4 Page Number 368	<p>Bd.L.4.1. General-The item refers to provision of 6 mm. thick cement plaster to concrete surfaces and shall be carried out in conformity with specification No. B.11 for cement plaster subject to the following additional specifications:- Bd.L.1.2. Tools and Accessories Tools and accessories used in plaster work may advantageously conform to 1. S. 1630-1984. All tools shall be cleaned by scraping and washing at the end of each day's work after use. Metal tools shall be cleaned after each operation. All tools shall be examined to see that they are thoroughly cleaned before plastering is begun. Bd.L.1.3. Programme of Work In Relation To Plastering The programming of other building operations before, during and after plastering shall be according to the instructions contained in clause 4 of I.S. 1661-1972. Bd.L.1.4. General Precautions In Plastering - All general precautions as specified in I.S. 1661-1972 clause 9, shall be taken and preparation of the background shall be done as laid down is I.S. 1661-1972 clause 13. Care shall be taken to see that other parts of the work or adjacent works are not damaged while plastering. Bd.L.1.5. Plastering Plaster of cement mortar shall be laid in with somewhat more than 6 mm. thickness and pressed and levelled with wooden ruler to a finished thickness of 6 mm. Long straight edge shall be freely used to ensure a perfectly even surface. All comers and angles shall be perfectly plumb and soffits of arches true to the specified curve. All junctions of doors and windows and other frames shall be neatly finished. All architectural panelling, grooves, etc., to be shown in the thickness of the plaster shall be so worked. When cement or neeru finish is not specified, the external plaster shall be finished with wooden float to give a granular surface and internal plaster finished smooth with steel trowel.</p>

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			<p>For cement finishing, a coat of pure portland cement slurry (about 1.5 mm. thick) shall be applied to the plastered surface with trowel while the first coat is still plastic. If neeru finish is specified then the surface shall be finished as per specifications for item No. Bd. L.10. The total thickness of the plaster excluding the cement or neeru finish shall be 6 mm. Watering for curing shall be started soon after the initial set of the surface material to avoid damage.</p> <p>Bd.L.1.6. Item to include As per B.11. Plastering in all positions will be included in this item.</p> <p>The item shall be include rounding up of corners and angles, finishing of tops of dados and skirtings, junctions of roof and walls and neeru or cement finish when specified in the item. The plastering of brick cornices, brick copings and other brick moldings shall not be measured. The plastering of bricks cornices, brick copings and other brick moldings shall not be measured nor paid for separately when included in the respective Inclusive items of cornice, coping and molding. Architectural cornices, moldings, ribs, attractives and the like when prepared in plaster only of more than 6 mm. thickness shall be paid under seprate items unless otherwise provided.</p> <p>B.11.11. Mode of Measurement and Payment- The Contract rate shall be per square meter of plastering of specified thickness. All Work Shall be Measured net Square Meter. Dimensions Shall be measured and quantity worked out correct up to two places of decimals in meter and square metre respectively. If the average thickness of plaster provided by the contractor is more than what is specified on any account, on extra payment is made.</p>
34	Providing fine cement finish 1.5 milimetre thick over green plaster surface including scaffolding curing Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
35	Providing sand faced plaster externally in cement mortar using approved screened sand, in all positions including base coat of 15 milimetre thick in cement mortar 1:4 using waterproofing compound at 1 Kilogram per cement bag curing the same for not less than 2 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 milimetre thick in cement mortar 1:4 finishing the surface by taking out grains and curing for fourteen days scaffolding etc.complete.	Bd.L.7 Page Number 369	<p>Bd.L.4.1. General-The item refers to provision of 6 mm. thick cement plaster to concrete surfaces and shall be carried out in conformity with specification No. B.11 for cement plaster subject to the following additional specifications:-</p> <p>Bd.L.7.2. Bse Coat - The Base Coat Plaste shall be cmenet mortar 1:4 waterproofing compound wall of approved make like Pudlo, Sika,Accoproof shall be added according to the maker's instruction to make the mortor waterproof. the plaster with this mortor shall be laid as specified in Bd.L.2. With a thickness of 15mm. for brick work and concrete surafce, and 20mm. for rubble stone masonry. keys shall be formed on the surface by throyghly combing it with wavyv horizontal lines about 12mm. apart and about 3 mm. deep when the mortor is still plastic.</p> <p>The base coast shall be cured for not less than 2 days.</p> <p>Bd.L.7.3. Sand Faced treatment The cement mortar for sand faced plaster shall have washed Kharasalia or Kasaba or similar type of approved sand with slightly larger proportion of coarse material. The proportion of cement to sand shall be 1: 4. The water is added gradually to make the mixture homogeneous. The thickness of finishing coat shall not exceed 8 mm. After application, the surface should be finished with a wooden float lined with cork and tapped gently to retain a coarse surface texture. When the finishing coat has hardened, the surface shall be kept moist continuously for 14 days.</p> <p>Bd.L.7.4. Item to include - As per relevant portion of Bd.L.1.6. It shall also include the base coat and sand face treatment as above.</p> <p>B.11.11. Mode of Measurement and Payment- The Contract rate shall be per square meter of plastering of specified thickness. All Work Shall be Measured net Square Meter. Dimensions Shall be measured and quantity worked out correct up to two places of decimals in meter and square metre respectively. If the average thickness of plaster provided by the contractor is more than what is specified on any account, on extra payment is made.</p>
36	Providing and applying Texture plaster with finishing with texture material of approved make in 3 to 4 millimeter thickness on previously plastered surface, including Plaster Groove 6 millimeter thickness or Tape Grooves 35 to 45 milimetre thickness or as required, in all position including preparing the surface, scaffolding Etcetera complete.	BDL As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
37	Providing cement based water proofing treatment to terraces (Indian water proofing or alike) with brick bats laid in required slope to drain the water for any span after cleaning the base surface. Applying a coat of cement slurry admixed	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

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	with approved water proofing compound and laying the brick bats on bottom layer in Cement Mortar 1:5 admixed with approved water proofing compound filling up to half depth of brick bats, curing this layer for 3 days, applying cement slurry over this layer joints of brick bats with Cement Mortar 1:3 admixed with approved water proofing compound and finally top finishing with average 20 milimetre thick layers of same mortar added with jute fiber at 1 Kilogram per bag including finishing the surface smooth with cement slurry admixed with approved water proofing compound. Marking finished surface with false squares of 300 milimetre x 300 milimetre making the junctions at the parapet rounded and tapered top for required height, with drip mould at the junction of plaster and parapet and curing and covering 10 years Guarantee against leakproofness on Court fee stamp paper of Rs. 500/- including ponding test Etcetera complete.		
38	Providing and applying water proofing treatment using acrylic polymer modified cement based water proofing coating with fibre glass mesh mixing at the rate of powder to liquid (2:1) by weight covering 9 to 10 Square Metre per Kilogram with two coat using approved chemicals for masonry and concrete surface by brush covering 7 years guarantee on Stamp Papers Etcetera complete.	BDJ As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
39	Providing waterproofing in Water Closet and bath including brick bat coba in all position including providing and laying 12 milimetre bedding in cement mortar 1:3 on vergin concrete slab with waterproofing compound @ 1Kilogram per bag of cement laying brick bat coba of required thickness in cement mortar 1:5 with waterproofing compound 1 Kilogram per bag of cement grouting and finishing the top layer with 20 milimetre thick brick bedding in cement mortar 1:3 with waterproofing compound 1 Kilogram per bag of cement and testing the treated portion for 48 hours by pond test and covering ten years' guarantee on requisite stamp paper including curing Etcetera complete.	BDJAs directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
40	Providing patti/ band 75 milimetre wide on plastered surface 12 milimetre to 15 milimetre thick in Cement Mortar 1:3 line and level including neat finishing scaffolding curing Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
41	Providing patti/ band 100 milimetre wide on plastered surface 12 milimetre to 15 milimetre thick in Cement Mortar 1:3 line and level including neat finishing scaffolding curing Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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42	Providing patti/ band 150 milinetre wide on plastered surface 12 milinetre to 15 milinetre thick in Cement Mortar 1:3 line and level including neat finishing scaffolding curing Etcetera complete.	BDL As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
43	Providing and fixing chicken mesh of 22 gauge, with about 30 centimetre width at the junction of Reinforced Cement Concrete members and brick work, of approved quality including fixing mesh in position by necessary drilling in concrete /Brick Bat masonry and or tying by binding wire Etcetera complete.	As directed by Engineer in Charge	The work shall be carried out as directed by Engineer in Charge
44	Providing and laying Antiskid Ceramic tiles of approved quality of size 30 centimetre x 30 centimetre and confirming to Indian Standards 15622-2006 (Group-B IIA) for antiskid flooring in required position laid on a bed of 1:4 cement mortar including cement float, filling joint with cement slurry cleaning curing Etcetera complete.	Bd. M-12 Page Number 385	<p>Bd.M.12.1.1. Tiles - Tiles including specials shall be of the approved make and quality and shall conform to I. S. 777-1988/I.S.1478-1992 or relevant I.S. in all respects. Samples of tiles shall be got approved by the Engineer, who will keep them in his office for verification as to whether the materials brought for use conform to the approved samples.</p> <p>Bd.M.12.1.2. Mortar-Cement mortar or lime mortar for the bedding and cement mortar for pointing shall be of the proportion as specified in the item. The lime mortar shall comply with and cement mortar shall comply with B. 5 a. Cement mortar may be used for the bedding only when lime mortar is not available. When sand bed is mentioned in the item, sand used shall be coarse and shall not contain more than 10 per cent of clay.</p> <p>Bd.M.12.1.3. White Cement - This shall be of approved quality and make.</p> <p>Bd.M.12.2. Mortgage Bedding - The amount of water added while preparing mortar shall be the minimum necessary to give sufficient plasticity for laying. Care shall be taken in the preparation of the mortar to ensure that there are no hard lumps that would interfere with even bedding of the tiles. Before spreading the mortar bed, the base shall be cleaned of all dirt, scum or laitance and loose materials and then well wetted without forming any pools by the use of screed battens to proper level or slope. The thickness of the bedding shall not be less than 12 mm or more than 20 mm at any one place. The tiles shall be laid on the bedding mortar when it is still plastic but has become sufficiently stiff to offer a fairly firm cushion for the tiles.</p> <p>Bd.M.12.3. Fixing Tiles - The tiles before laying shall be soaked in water for at least 2 hours. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado.</p> <p>Bd.M.12.4. Cleaning - After the tiles have been laid in a room or a day's fixing work is completed, the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, the floor shall be carefully washed clean and dried. When dry, the floor shall be covered with oil free dry saw dust which shall be removed only after completion of the construction work and just before the floor is occupied.</p> <p>Bd.M.12.5. Item to include - The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above:</p> <p>(1) Providing and laying the bedding mortar and levelling.</p> <p>(2) Providing and fixing the tiles including round edges, corner cups etc., in neat cement float over the bedding.</p> <p>(3) Grouting the joints of the tiles with white cement slurry.</p> <p>(4) Curing</p> <p>(5) Cleaning the floor.</p> <p>Bd.M.12.6. Mode of measurement and payment-The contract rate shall be per square metre of the floor area covered by the flooring of the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between the faces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.</p>

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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45	Providing and laying ceramic tiles having size 30 centimetre x 60 centimetre confirming to corresponding Indian Standards for dado and skirting in required position with readymade adhesive mortar of approved quality on plaster of 1:2 cement mortar including joint filling with white/ colour cement slurry cleaning curing Etcetera complete.	Bd.M.13 Page Number 386	<p>Bd.M.13.1. Materials - Same as for item Bd.M.12 except that the thickness of the tiles shall be 6.5 mm. Bd.M.13.2. Plastering - Cement plaster of about 12 mm (about 1/2") for brick walls and 20 mm for stone masonry walls shall be applied to the part of the wall where dado or skirting is to be fixed as per specification No. B. 11. The proportion of mortar shall be as mentioned in the item. Bd.M.13.3. Fixing Tiles - Dado or skirting work shall be done only after fixing tiles on the floor. The white glazed tiles shall be soaked in water for at least 2 hours before being used for skirting or dado work. Tiles shall be fixed when the cushioning mortar is still plastic and before it gets very stiff. The back of tiles shall be covered with a thin layer of neat cement paste and the tile shall then be pressed in the mortar and gently tapped against the wall with a wooden mallet. The fixing shall be done from the bottom of wall upwards without any hollows in the bed or joints. Each tile shall be fixed as close as possible to the one adjoining. The tiles shall be jointed with white cement slurry. Any difference in the thickness of tiles shall be evened out in cushioning mortar so that all tile faces are in one vertical plane. The joints between the tiles shall not exceed 1.5 mm in width and they shall be uniform. After fixing the dado, skirting etc., they shall be kept continuously wet for 14 days. If doors, windows or other openings are located within the dado area, the sills, jambs, angles etc., shall be provided with white glazed tiles and appropriate specials according to the foregoing specification and such tiled area shall be measured net along with the dado. Bd.M.13.4. Cleaning - After the tiles have been fixed the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. After the complete curing, the dado or skirting work shall be washed thoroughly clean. Bd.M.13.5. Item to include - The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above :-(1) Plastering (2) Fixing the tiles including all angles, etc. after applying neat cement paste. (3) Jointing the tiles with white cement slurry. (4) Curing (5) Cleaning the dado and skirting. Bd.M.13.6. Mode of Measurement and Payment - The contract rate shall be per square metre of the net area actually covered by the dado or skirting tiles including special tiles on walls, jambs, sills etc. if necessary. All work shall be measured net. The length of the dado face shall be measured net between its face edges at the ends excluding overlap. The width of the face shall be measured between the top of dado or skirting and the top of flooring. The dimensions shall be measured correct up to two places of decimals of a metre and the area worked out correct up to two places of decimals of a square metre. Teak wood cover moldings if provided shall be paid separately.</p>

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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46	Providing and laying vitrified mirror / glossy finish tiles decorative type having size 590 milimetre to 605 milimetre x 590 milimetre to 605 milimetre of 8 to 10 milimetre thickness and confirming to Indian Standards 15622-2006 (group Bla) of approved make, shade and pattern for flooring in required position laid on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and clearing Etcetera complete.	Bd.M. 12 Page Number385	<p>Bd.M.12.1.1. Tiles - Tiles vitrified mirror / glossy finish tiles decorative type having size 590 mm to 605 mm x 590 mm to 605 mm of 8 to 10 mm thickness and confirming to IS. 15622-2006 (group Bla) of approved make, shade and pattern for flooring. Samples of tiles shall be got approved by the Engineer, who will keep them in his office for verification as to whether the materials brought for use conform to the approved samples.</p> <p>Bd.M.12.1.2. Mortar -</p> <p>Bd.M.12.1.3. White Cement - This shall be of approved quality and make.</p> <p>Bd.M.12.2. Mortgage Bedding - The amount of water added while preparing mortar shall be the minimum necessary to give sufficient plasticity for laying. Care shall be taken in the preparation of the mortar to ensure that there are no hard lumps that would interfere with even bedding of the tiles.</p> <p>Bd.M.12.3. Fixing Tiles - The tiles before laying shall be soaked in water for at least 2 hours. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado.</p> <p>Bd.M.12.4. Cleaning - After the tiles have been laid in a room or a day's fixing work is completed, the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, the floor shall be carefully washed clean and dried. When dry, the floor shall be covered with oil free dry saw dust which shall be removed only after completion of the construction work and just before the floor is occupied.</p> <p>Bd.M.12.5. Item to include - The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above:</p> <p>(1) Providing and laying the bedding mortar and levelling.</p> <p>(2) Providing and fixing the tiles including round edges, corner cups etc., in neat cement float over the bedding.</p> <p>(3) Grouting the joints of the tiles with white cement slurry.</p> <p>(4) Curing</p> <p>(5) Cleaning the floor.</p> <p>Bd.M.12.6. Mode of measurement and payment - The contract rate shall be per squaremetre of the floor area covered by the flooring of the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between the faces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.</p>

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
47	Providing and laying vitrified mirror / glossy finish tiles having size 590 milimetre to 605 milimetre x 590 milimetre to 605 milimetre of 8 to 10 milimetre thickness and confirming to Indian Standards 15622-2006 (group Bla) of approved make, shade and pattern for dado and skirting in required position fixed in 1:4 cement mortar including neat cement float, filling joints, curing and clearing Etcetera complete.	Bd.M. 12 Page One Number385	Bd.M.12.1.1. Tiles - Tiles vitrified mirror / glossy finish tiles having size 590 millimeter to 605 millimeter x 590 millimeter to 605 millimeter of 8 to 10 millimeter thickness and confirming to Indian Standard. 15622-2006 (group Bla) of approved make, shade and pattern for dado and skirting in required position fixed in 1:4. Samples of tiles shall be got approved by the Engineer, who will keep them in his office for verification as to whether the materials brought for use conform to the approved samples.Bd.M.12.1.2. Mortar - Bd.M.12.1.3. White Cement - This shall be of approved quality and make.Bd.M.12.2. Mortgage Bedding - The amount of water added while preparing mortar shall be the minimum necessary to give sufficient plasticity for laying. Care shall be taken in the preparation of the mortar to ensure that there are no hard lumps that would interfere with even bedding of the tiles.Bd.M.12.3. Fixing Tiles - The tiles before laying shall be soaked in water for at least 2 hours. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado.Bd.M.12.4. Cleaning - After the tiles have been laid in a room or a day's fixing work is completed, the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, the floor shall be carefully washed clean and dried. When dry, the floor shall be covered with oil free dry saw dust which shall be removed only after completion of the construction work and just before the floor is occupied.Bd.M.12.5. Item to include - The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above:(1) Providing and laying the bedding mortar and levelling.(2) Providing and fixing the tiles including round edges, corner cups etc., in neat cement float over the bedding.(3) Grouting the joints of the tiles with white cement slurry.(4) Curing(5) Cleaning the floor.Bd.M.12.6. Mode of measurement and payment - The contract rate shall be per squaremetre of the floor area covered by the flooring of the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between the faces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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48	Providing and laying in position flooring of telephone black / Amba White / Cat bary brown / Ruby red / Ocean Brown granite stone of approved shade and size 18 milimetre to 20 milimetre thick on bed 1:6 cement mortar including cement floats striking joints, pointing in Cement Mortar 1:3 curing and cleaning Etcetera complete.	Bd.M. 3 B/Page Number 380	<p>Bd.M.1.1.1. flooring of telephone black / Amba White / Cat bary brown / Ruby red / Ocean Brown granite stone of approved shade and size 18 Millimetr to 20 Millimetr The flag stones shall be hard, sound, durable, resistant to wear, rectangular in shape or square if directed by the Engineer and of the specified width. They shall have plain surface. Uniformity of size shall generally be maintained for the flags used in any one room. The stone flags shall be without any soft veins, cracks or flows and shall have a uniform colour. They shall have even natural surfacs free from broken flakes on top and shall be chiselled on edges of the slab shall not be ensure uniform width of joint. The evenness of the surface and edges of the slab shall not be marked by careless dressing of slabs and no patching up shall be allowed for the slabs. The edges shallbe quite straight. The under face may be left as quarried. Samples of stone slabs to be used and their dressing shall be approved by the Engineer and the slabs to be used shall conform to the approved sample.Bd.M.1.1.2. Bedding - Cement mortar or lime mortar for the bedding and cement mortar for pointing shall be of the proportion as specified in the item. The lime mortar shall comply with and cement mortar shall comply with B. 5 a. Cement mortar maybe used for the bedding only when lime mortar is not available. When sand bed is mentioned in the item, sand used shall be coarse and shall not contain more than 10 per cent of clay.Bd.M.1.2. Constructional Details -Bd.M.1.2.1. Bedding - The base of cement or lime concrete shall be laid and compacted to a reasonably true plain surface and to the required slopes and below the level of the finished floor to the extent of the thickness of the slabs and mortar bedding. Cement concrete or lime concrete bedding shall be paid under a separateitem. Cement mortar for bedding may be mixed manually or by a mechanical mixer. Lime mortar shall be prepared in a mortar mill or pan. The amount of water added shall be the minimum necessary to give just sufficient plasticity for laying and satisfactorybedding. Care shall be taken in preparing the mortar to ensure that there are no hard lumps that would interfere with the even bedding of the stones. Before spreading the mortar, the sub-floor or base shall be cleaned of all dirt, scum or laitance and of loosematerial and then well wetted without forming any pools of water on the surface. In case of R.C.C. floors, the top, shall be left a little rough. All points of level for thefinished paving surface shall be marked out. The mortar shall then be evenly and smoothly spread over the base by the use of screed battens only over so much areas as will be covered with slabs within half an hour. The thickness of the mortar beddingshall not be less 12 mm. not more than 25 mm. The required slope shall be given to the bed. When sand bed is provided the sand shall be spread to give a thickness of about 12 mm.Bd.M.1.2.2. Fixing Stone Slab - Before laying, the stone flags shall be thoroughly wetted with clean water. Neat cement grout of honey like consistency shall be spread on the mortar bed over as much as could be covered with the slabs within half an hour. Cement grout shall be omitted when sand bed in provided. The specified type of stone flags shall be laid on the neat cement float and shall be evenly and firmly bedded to the required level and slope in the mortar bed. Each flag shall be gently tapped with a wooden mallet till it is firmly and properly bedded. There shall be no hollows left. If there is a hollow sound on gentle tapping of the slabs, such slabs shall be removed and reset properly. The mason shall make the joints of uniform thickness and in straight lines. The joints shall be 6 mm. to 10 mm. thick and filled solidly with mortar for their full depth. The joints shall be struck smooth. But there shall be no smearing on mortar over the slabs. When pointing is to be done, the joints shall be raked out for not less than the width of the joints when the mortar is green. The flags shall be laid so as to give continuous parallel long joints with cross joints at right angles to them. The edges of the adjoining slabs shall be in one plane. Where the slabs cover open edges, of floor or windows sills the edges shall be neatly rounded off. This shall be included in the rate. When diamond pattern paving is provided in the item, the slabs shall be square and laid to the diamond pattern with triangular shaped slabs to make up the edges. In plain pattern stones on each course shall break joint with those in the next. Bd.M.1.2.3. Pointing - When pointing is to be done, the joints shall be pointed with cement mortar of the proportion mentioned in the wording of the item according to B.13. If the slabs were smeared with mortar, they shall be cleaned immediately afterpointing. When pointing is not specified joint shall be struck. Bd.M.1.2.4. Curing - The flooring shall be kept well wetted with damp sand or water for fourteen days. It shall be kept undisturbed for at least seven days. Bd.M.1.2.5. Cleaning - All flooring shall be thoroughly cleaned and handed-over clean and free from any mortar stains etc. Bd.M.1.3. Item to include - The rate shall include 1. All labour, materials and equipment, cleaning the sub-base, laying mortar bed and cement grout, or sand as specified fixing stone slabs specified above and making up the joints. 2. Any cutting and waste if required. 3. Cement pointing when including in the item. 4. Curing 5. Cleaning the floor from all stains etc. Bd.M.1.4. Mode of Measurement and Payment - The contract rate shall be per square metre of the floor area covered by the flooring of the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between the faces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.</p>

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No.of Corrections

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
49	Providing leather finished polishing to Granite Stone slab by continuous grinding in 4 coats of different bits to receive rough and matt finish including buffing process before laying and fixing of stone as per drawing and design, including cleaning, washing and finishing Etcetera complete.	BDMAs directed by Engineer in charge	Bd.M.12.1.1. leather finished polishing to Granite Stone slab by continuous grinding in 4 coats of different bits to receive rough and matt finish including buffing process before laying and fixing of stone as per drawing and design, including cleaning, washing and finishing all respects. Samples of tiles shall be got approved by the Engineer, who will keep them in his office for verification as to whether the materials brought for use conform to the approved samples.Bd.M.12.1.2. Mortar-Cement mortar or lime mortar for the bedding and cement mortar for pointing shall be of the proportion as specified in the item. The lime mortar shall comply with and cement mortar shall comply with B. 5 a. Cement mortar maybe used for the bedding only when lime mortar is not available. When sand bed is mentioned in the item, sand used shall be coarse and shall not contain more than 10 per cent of clay.Bd.M.12.1.3. White Cement - This shall be of approved quality and make.Bd.M.12.2. Mortgage Bedding - The amount of water added while preparing mortar shall be the minimum necessary to give sufficientplasticity for laying. Care shall be taken in the preparationof the mortar to ensure that there are no hard lumps that wouldinterfere with even bedding of the tiles. Before spreading the mortar bed, the base shall be cleaned of all dirt, scum or laitance and loose materials and then well wetted without forming any pools by the use of screed battens to proper level or slope. The thickness of the bedding shall not be less than 12 mm or more than 20 mm at any one place. The tiles shall be laid on the bedding mortar when it is still plastic but has become sufficientlystiff to offer a fairly firm cushion for the tiles.Bd.M.12.3. Fixing Tiles - The tiles before laying shall be soaked in water for at least 2 hours. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado. Neat cement grout of honey like consistency shall be spread over the bedding mortar just to cover so much area as can be tiled with half an hour. The edges of the tiles shall be smeared with neat white cement slurry and fixed in this grout one after the other, each tile being well pressed and gently tapped be no hollows in bed or joints. The joints shall be kept as close as possible and in straight grouted with a slurry of white cement. After fixing the tiles finally in an even plane, the flooring shall be covered with wet saw dust and allowed to mature undisturbed for 14 days.Bd.M.12.4. Cleaning - After the tiles have been laid in a room or a day's fixing work is completed, the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, the floor shall be carefully washed clean and dried. When dry, the floor shall be covered with oil free dry saw dust which shall be removed only after completion of the construction work and just before the floor is occupied.Bd.M.12.5. Item to include - The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above:(1) Providing and laying the bedding mortar and levelling.(2) Providing and fixing the tiles including round edges, corner cups etc., in neat cement float over the bedding.(3) Grouting the joints of the tiles with white cement slurry.(4) Curing(5) Cleaning the floor.Bd.M.12.6. Mode of measurement and payment-The contract rate shall be per square metre of the floor area covered by the flooringof the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between thefaces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.
50	Providing and laying chequered tiles of approved quality of size 30 centimetre x 30 centimetre, confirming to corresponding Indian Standards for flooring in required position laid on a bed of 1:4 cement mortar including cement float, filling joint with cement slurry cleaning curing Etcetera complete.	Bd. M-12 Page Number 385	Bd.M.12.1.1. Tiles - chequered tiles of approved quality of size 30 centimeter x 30 centimeter, confirming to corresponding Indian.Standard. for flooring in all respects. Samples of tiles shall be got approved by the Engineer, who will keep them in his office for verification as to whether the materials brought for use conform to the approved samples.Bd.M.12.1.2. Mortar-Cement mortar or lime mortar for the bedding and cement mortar for pointing shall be of the proportion as specified in the item. The lime mortar shall comply with and cement mortar shall comply with B. 5 a. Cement mortar may be used for the bedding only when lime mortar is not available. When sand bed is mentioned in the item, sand used shall be coarse and shall not contain more than 10 per cent of clay.Bd.M.12.1.3. White Cement - This shall be of approved quality and make.Bd.M.12.2. Mortgage Bedding - The amount of water added while preparing mortar shall be the minimum necessary to give sufficient plasticity for laying. Care shall be taken in the preparation of the mortar to ensure that there are no hard lumps that would interfere with even bedding of the tiles. Before spreading the mortar bed, the base shall be cleaned of all dirt, scum or laitance and loose materials and then well wetted without forming any pools by the use of screed battens to proper level or slope. The thickness of the bedding shall not be less than 12 mm or more than 20 mm at any one place. The tiles shall be laid on the bedding mortar when it is still plastic but has become sufficiently stiff to offer a fairly firm cushion for the tiles.Bd.M.12.3. Fixing Tiles - The tiles before laying shall be soaked in water for at least 2 hours. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado. Neat cement grout of honey like consistency shall be spread over the bedding mortar just to cover so much area as can be tiled with half an hour. The edges of the tiles shall be smeared with neat white cement slurry and fixed in this grout one after the other, each tile being well pressed and gently tapped be no hollows in bed or joints. The joints shall be kept as close as possible and in straight grouted with a slurry of white cement. After fixing the tiles finally in an even plane, the flooring shall be covered with wet saw dust and allowed to mature undisturbed for 14 days.Bd.M.12.4. Cleaning - After the tiles have been laid in a room or a day's fixing work is completed, the surplus cement grout that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, the floor shall be carefully washed clean and dried. When dry, the floor shall be covered with oil free dry saw dust which shall be removed only after completion of the construction work and just before the floor is occupied.Bd.M.12.5. Item to include - The rate shall include all labour, materials, tools and equipment required for the following operations to carry out the item as specified above:(1) Providing and laying the bedding mortar and levelling.(2) Providing and fixing the tiles including round edges, corner cups etc., in neat cement float over the bedding.(3) Grouting the joints of the tiles with white cement slurry.(4) Curing(5) Cleaning the floor.Bd.M.12.6. Mode of measurement and payment-The contract

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			rate shall be per square metre of the floor area covered by the flooring of the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between the faces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.
51	Providing and laying Rough Shahabad Stone Flooring 50 milimetre to 60 milimetre thick and of required width in plain/ diamond pattern on a bed of 1:6 Cement Mortar including cement float, striking joints, pointing in cement mortar 1:3 curing and cleaning Etcetera etcetra complete.	Bd.M.1 Page Number 379	<p>Bd.M.1.1. Materials -</p> <p>Bd.M.1.1.1. Rough Paving Slabs - The flag stones specified in the item shall be got approved by the Engineer. At its thinnest part, no stone shall be thinner than 25 mm. The flag stones shall be hard, sound, durable, resistant to wear, rectangular in shape or square if directed by the Engineer and of the specified width. The edges shall be quite straight. The under face may be left as quarried. Samples of stone slabs to be used and their dressing shall be approved by the Engineer and the slabs to be used shall conform to the approved sample.</p> <p>Bd.M.1.2. Constructional Details -</p> <p>Bd.M.1.2.1. Bedding - The base of cement or lime concrete shall be laid and compacted to a reasonably true plain surface and to the required slopes and below the level of the finished floor to the extent of the thickness of the slabs and mortar bedding. Cement concrete or lime concrete bedding shall be paid under a separate item.</p> <p>Bd.M.1.2.2. Fixing Stone Slab - Before laying, the stone flags shall be thoroughly wetted with clean water. Neat cement grout of honey like consistency shall be spread on the mortar bed over as much as could be covered with the slabs within half an hour. Cement grout shall be omitted when sand bed is provided.</p> <p>Bd.M.1.2.3. Pointing - When pointing is to be done, the joints shall be pointed with cement mortar of the proportion mentioned in the wording of the item according to</p> <p>B.13. If the slabs were smeared with mortar, they shall be cleaned immediately after pointing. When pointing is not specified joint shall be struck.</p> <p>Bd.M.1.2.4. Curing - The flooring shall be kept well wetted with damp sand or water for fourteen days. It shall be kept undisturbed for at least seven days.</p> <p>Bd.M.1.2.5. Cleaning - All flooring shall be thoroughly cleaned and handed-over clean and free from any mortar stains etc.</p> <p>Bd.M.1.3. Item to include - The rate shall include</p> <ol style="list-style-type: none"> 1. All labour, materials and equipment, cleaning the sub-base, laying mortar bed and cement grout, or sand as specified fixing stone slabs specified above and making up the joints. 2. Any cutting and waste if required. 3. Cement pointing when including in the item. 4. Curing 5. Cleaning the floor from all stains etc. <p>Bd.M.1.4. Mode of Measurement and Payment - The contract rate shall be per square metre of the floor area covered by the flooring of the specified type. All work shall be measured net. The length and width of the flooring shall be measured net between the faces of skirtings or dados or plastered faces of walls. Paving under the dado, skirting or plaster shall not be measured.</p>
52	Providing and fixing black kadappa stone as shelves 25 milimetre thick machine polished, extending the polish upto 20 centimetre width on lowerside, rounding corners, laying in position jointing with bedding cement mortar 1:4 proportion curing Etcetera Etcetera complete.	Bd.M.29 Page Number 391	<p>Bd.M.29.1. General - The item refers to providing sills of polished Shahabad, Tandur or Kotah stone slabs mentioned in the item for window etc. The item shall comply with relevant specifications given for item No. Bd.M.28.2 and Bd.M.28.3. and the following :-As far as possible sills of windows shall be in one piece. The outer edges of sills of windows shall be rounded when so shown in the drawings or directed by the Engineer. Measurements shall be taken as if the edges were square including the rounding. Bd.M.28.2. The slabs shall be uniform in thickness and be preferably of one stone and at least as long as can be procured. the out-side edges shall be rounded or square as shown in the drawings or directed by the Engineer. The projection of the sill beyond each edge of the splayed jam shall be uniform for all windows and shall not normally exceed 2 cm. There shall be no gap between the sill and the frame. Bd. M.28.3. Mode of Measurement and Payment - The contract rate shall be per sq. m. of the sill area. The dimensions shall be measured overall including all the embedded portions limited to those shown on the drawings or directed by the Engineer in writing. The length shall not be more than 2 cm beyond each splayed jamb at the ends. The dimensions shall be measured correct up to a cm and the area worked out correct upto 2 places of decimals of a square metre. No deductions shall be made for ends of sills embedded in the jambs. The rounded edges shall be measured square including the rounding.</p>

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53	Providing and laying telephone black / Amba White / Cadburybrown / Ruby red / Ocean Brown granite stone of 18 to 20 milimetre thick for door frame/ dado/ window boxing Etcetera On Cement Mortar 1:6 including filling joints with polymer base filler nosing/moulding the sharp edges wherever necessary, curing, Etcetera complete.	BDM As directed by Engineer-In-Charge	The work shall be carried out as directed by Engineer in Charge
54	Providing and fixing Mix-40 grade thick vibrated pull cast or similar type concrete frame with chamfer conforming to Indian Standards 65241983 having 6 milimetre diametre bars 3 Numbers And stirrups @250 milimetre center to center and fixing in wall with 6 Numbers of hold fast of 12 milimetre dia bars 500 milimetre long including primer and oil painting etcetra, complete) frame size 60 milimetre x 100 milimetre.	BDT As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
55	Providing and fixing machine cut machine polished 18 milimetre to 20 milimetre thick telephone black / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone for treads and risers of steps and staircases of approved colour and shade with full moulding and three grooved line for the treads on bed of 1:4 Cement mortar including float filling joints with neat cement slurry curing polishing and cleaning Etcetera complete.	Bd. M.22 B/Page Number 390	Bd.M.22.1. General - The item refers to the laying of machine cut machine polished 18 Millimetr to 20 Millimetr thick telephone black / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone for treads and risers of steps and staircases The slabs for the treads shall be laid as specified for item No. Bd.M.3. and those for risers shall be as specified for item No. Bd.M.5. subject to the following : The nosing of the treads shall be rounded as directed. As far as possible the slabs for the treads shall be in the longest lengths available. Final polishing may be done by hand when it cannot be done with the usual polishing machines. Bd.M.22.2. Item to include - As specified forBd.M.3. and Bd.M.5. the rate shall also include rounding of the nosing of treads when so shown in the drawing or directed by the engineer polishing after laying may be done by hand. Landings shall be considered as part of flooring. Bd.M.22.3. Mode of Measurement and Payment - The contract rate shall be per square metre of slabs laid in position. The dimensions shall be measured net for the exposed lengths and widths of riser and tread slabs, correct up to 2 places of decimals of a metre and the area worked out correct upto two places of decimals of a square metre. Overlap shall not be measured. The width of tread shall be measured as if the rounded nosing was square.
56	Providing and constructing granite kitchen platform with fixing of stainless steel sink 600 milimetre x 450 milimetre size as per detailed drawing including vertical both side polished kadappah stone 25 to 30 milimetre thick supports with kadappah top 35 to 40 milimetre thick and polished granite 16 to 20 milimetre top with side strips of granite at front and both sides of platform raised with two vertical granite supports 15 centimetre height and top granite of 75 x 40 centimetre including cutting, opening for sink of required size in kadappah as well as granite Etcetera complete. (Platform top size 5.00 metre x 0.60 metre and height Indian Standards 0.75 metre)	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
57	Providing and fixing machine cut mirror polished 18 milimetre to 20 milimetre thick telephone black granite / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone partition with full moulding the edges Etcetera complete. Both side polish	Bd.M.35 B/Page Number 393	Bd.M.35.1.1. Stone Slabs - machine cut mirror polished 18 mm to 20 mm thick telephone black granite / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone partition with full moulding the edges with Both Side Polish specifications given in Bd.M.3.and marble slabs shall comply with specification in Bd. M.16.1. The slabs shall be polished on both sides. The Tandur or marble stone slabs shall be of the shape and size as shown on the drawingsor as directed by the Engineer and shall be uniform thickness.The exposed edges of the slabs shall be rounded unless otherwise directed by the Engineer.Bd.M.35.1.2. Cement Mortar - This shall be of the specified proportion and shall conform of B.5.a.Bd.M.35.2. Fixing - Before fixing holes of appropriate size shall be cut into the slabs in the appropriate positions to receive any pipes etc. The partitions slabs shall be fixed securely in wall and / or flooring in the required

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			positions in cement mortar 1:3. To get afirm grip, the slab shall be embedded in the wall and / or flooring for a depth not less than 25 mm (about 1"). Grouting of the joints shall be done in neat ordinary, white or coloured cement to match the adjoining surface.Bd.M.35.3. Curing - The mortar shall be cured for 14 days.Bd. M.35.4. Cleaning - the partition slabs shall be cleaned with water and all mortar droppings or strain etc., removed.Bd. M.35.5. Item to include - (1) Providing at the site polished stone slabs of the specified type, size, shape andthickness.(2) Fixing the partition including cutting holes etc., as describedabove.(3) Curing(4) Cleaning(5) All labour, material and tools to carry out the item as specified above.Bd.M.35.6. Mode of measurement and payment - The contract rate shall be for one sq. metre of the slab. Dimensions shall be measured for the exposed slabs onlycorrect to two places of decimals of a metre and area calculated correct to two places of decimals of a sq. metre. Curved shapes shall be measured square, for the least rectangular slab from which the curved shape can be obtained. Embedded portions shall not be measured.
58	Providing and Fixing 19 milimetre Ply For Door Frame Including Finishing Laminate Etcetra Complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
59	Providing sills of required material 20 milimetre to 25 milimetre thick, on a bed of cement mortar 1:4 including cement float, filling joints with neat cement slurry, curing, moulding edges, polishing,cleaning complete. b) Granite	Bd.M.31/Page Number 393	Bd.M.31.1. General - The item refers to the provision of sills of marble for window etc. The item shall comply with specifications given for item No. Bd. M. 16 subject to the relevant stipulations in Bd. M.28. The outside edges of sills of windows shall be rounded when so shown in the drawing or directed by the Engineer. The mortar bedding shall be just sufficiently thick to give an even bedding.
60	Providing and fixing frame with / without ventilator of size as specified with Country cut teak wood for doors and windows including chamfering, rounding, rebating, iron holdfast of size 300 milimetre x 40 milimetre x 5 milimetre with oil painting, Etcetera complete.	BDT As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
61	Providing and fixing Country cut teak wood double or single leaf second class fully panelled door shutter with 35 milimetre thick style and rail with 25 milimetre thick panels with openable fan light as per detailed drawings. Excluding the door frame 60 milimetre x 100 milimetre stainless steel fixtures and fastening and finishing the wood work with oil painting 3 coats. (Excluding the door frame)	BD-T-7 and 8 Page Number 481-82	Bd.T.7.1. General - The item shall be carried out in conformity with I.S. 1003-1966 (specifications for timber panelled and glazed doors and windows) for the requirements of material, construction, workmanship and sizes (unless otherwise specified) subject to thefollowing:-Bd.T.7.2. Materials -Bd.T.7.2.1. Timber - Timber shall be country teak wood only and shall comply withA.12.Bd.T.7.2.2. Fixtures and fastenings - As per Bd.T.5. except that the fixtures and fastenings although similar in pattern to those in Bd.T.5. shall be of iron instead of brass. Aldrops and handles may be somewhat inferior to the brass type but samples shall be gotapproved by the Engineer.All bolts, hinges and other items of iron mongery with moving parts shall be properly oiled by the contractor before handing over the building. The finishing of other iron fixtures and fastenings shall be as ordered by the Engineer.Bd.T.7.3. Construction - The item shall be carried out in conformity with I.S. 1003-1966 regarding material construction and workmanship, finished dimensions of components being entirely as per clause 6 therein and as specified in the table attached unless other wise shown on the detailed drawings. When ventilator is included, it shall be provided by having full length one piece posts for door or windows and ventilator extending the frame on top of the head to the required extent. The unrebated edges of the frame in the opening shall be rounded or headed uniformly unless other types of moldings are shown on the drawing. Horns in heads and sills shall be 15 cm. long. When no sills are provided the vertical posts of the frame in the ground floor shall be embedded in the sill masonry for 10 cm. On upper floors the vertical posts shall be fixed in the floor slab or masonry by forming notches 1 cm deep. Holdfasts shall be fixed as indicated in para. 7 of I.S. 1003- 1966 with iron screws. Any slight adjustment of spacing necessary shall be done to have the holdfasts in the joints of masonry courses. The frames shall be erected in position and held plumb with strong supports form both sides and built in solid in masonry as it is being built. The shutters shall be fixed later.Bd.T.7.4. Finishing - The wood work shall be finished as mentioned in the item by oiling or oil painting in two coats of approved colour as in Bd.N. The iron bars shall be finished with two coats of oil paint of approved colour over a priming coat of red lead. It shall be done as specified in B.21. a.Bd.T.7.5. Item to include - Same as for item No. Bd.T.5. and as specified above.Bd.T.7.6. Mode of measurement and payment - The contract rate shall be for a unit of one square metre of the clear unrebated opening of the door. When doors are combined with fanlights or ventilators, the height shall be measured between the unrebated opening between the sill of the door and the head of the ventilator and the width between the unrebated opening between the posts.When the doors are combined with windows, they shall be measured separately for their respective leaf unrebated openings.Linear dimensions shall be measured correct up to one centimetre and the area worked out correct up to 3rd place of decimal of a square metre.
62	Providing and fixing solid core flush door shutter in single leaf 32 milimetre	BD-T-34 Page	Bd.T.34.1. General - The door shall be of flush type solid core, single shutter with T.W. frame following specification shall apply.

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	thick decorative type of exterior grade as per detailed drawings approved face veneers 3 milimetre thick on both faces or as directed, all necessary beads, mouldings and lipping, wrought iron hold fasts, chromium plated fixtures and fastenings, with brass mortise lock, chromium plated handles on both sides, and finishing with French Polish Etcetera complete.	Number 499	<p>Bd.T.34.2. Shutter - The solid core shutter shall be of the decorative type of the exterior or interior grade as mentioned in the item. It shall confirm to the relevant specification for the type and grade given in I.S.2202/1973 and 1966. Specifications for wooden flush Door shutters (solid core type) It shall be obtained from manufacturers from the approved list of I.S.I. with I.S.I. marking whenever available within reasonable distance or as approved by Engineers. The finished thickness of the shutter shall be as mentioned in the item. Face veneers used shall be of the pattern and colour approved by the Engineer and an approved sample shall be deposited with the Engineer for reference. When glazing and venetians are provided in the item, the glazing shall be done in the door shutter in the position shown on the detailed drawing or as directed by the Engineer. The glazed opening and the type of venetians as specified in Bd. T.5 with wooden beads.</p> <p>Venetians shall be in the positions shown in the drawings . The size of the venetined opening shall be as specified on the detailed drawings. Venetians shall be of the fixed type. When no drawing are supplied, venetians and glazing , as per I.S.2202-1973 and 1966 shall be followed.</p> <p>Bd.T.34.3. Door frame -Timber used shall be as mentioned in the item Burmah teak or superior Indian teak wood form Dandeli, Ballarshah, etc and shall conform to A.12.</p> <p>Bd.T.34.4. Holdfasts -Three holdfasts shall be fixed to each post of the door frame and two to each post of the window frame. The iron holdfasts shall be of the size 30 cm x 40 mm. x 5 mm of the form and each shall have two holes drilled in for fixing screws. Each holdfasts shall be fixed with two long screws.</p> <p>Bd.T.34.5. Fixtures and fastenings - As specified for item No.Bd.T.5. Unless shown otherwise on the detailed drawing the fixtures and fastenings shall be chromium plated. The mortise lock shall be of brass and shall have chromium plated handle on both sides.</p> <p>Bd.T.34.6. Finishing - The wood work shall be finished by french polishing or waxing as specified in Bd.N.</p> <p>Bd.T.34.7. Item to include - As per Bd.T.5. The door frame, leaf, fixture and fastenings and fixing shall be as specified above.</p> <p>Bd.T.34.8. Mode of measurement and payment -The contract rate shall be for a unit of one square metre of the clear unreputed opening of the door. When doors are combined with fanlights or ventilators, the height shall be measured between the unreputed opening between the sill of the door and the head of the ventilator and the width between the unreputed opening between the posts. When the doors are combined with windows, they shall be measured separately for their respective leaf unreputed openings. Linear dimensions shall be measured correct up to one centimetre and the area worked out correct up to 3rd place of decimal of a square metre.</p>
63	Providing and fixing 37 milimetre thick factory made polynvinyl chloride Door shutter, styles and rails made of polynvinyl chloride hollow extruded printed and laminated section having overall dimension 115 milimetre x 37 milimetre with wall thickness 2 milimetre (± 0.2 milimetre) with inbuilt beading on one side, the styles and rails mitred cut and joint at corners by inserting 2 numbers polynvinyl chloride profile reinforcement of size 75 milimetre x 200 milimetre long with cross section size of 29 milimetre x 31 milimetre having wall thickness 2 milimetre (± 0.2 milimetre). Styles, rails and reinforcements to be fusion welded together. Only hinge side vertical style to be reinforced with polynvinyl chloride profile reinforcement in full length. Printed and laminated polynvinyl chloride lock rail of size 110 milimetre x 37 milimetre having wall thickness 2 milimetre (± 0.2 milimetre) to be welded horizontally with the vertical styles after inserting polynvinyl chloride profile reinforcement as in styles and rails, providing with polynvinyl chloride snap fit beading, panels of 100 x 20 milimetre printed and laminated and inserting 2 numbers 6 milimetre diameter bright steel rod horizontally with both side threaded and tightened with check nuts and washers complete, all as per manufacturer's specification and direction of engineer-in-	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge

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	charge.		
64	Providing and fixing Mild Steel grill door 24 Kilogram per One Square Metre of various size as per detailed drawings without hot dip coating, iron fixtures and fastenings and 3 coats of oil painting etcetra.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
65	Providing and fixing collapsible steel gate in one / two leaves with hot rolled vertical channels of 18 x 9 x 3 milimetre minimum size, crossings of Mild Steel flats of size 18 x 5 milimetre T or E section for runner of minimum 40 x 6 milimetre size for flange, Mild Steel flat for top runner of minimum size 40 x 12 milimetre with roller wheels confirming to grade F.G. 150 fitted with snap headed rivets of minimum size 6 milimetre max. spacing of vertical channels be 100 milimetre enclosed gate position and clear space of 150 milimetre between two sets of crossings with hold fasts, stoppers, spaces, handles, locking arrangement and one coat of red lead primer and oil painting Etcetera complete. (Indian Standards 105211983).	BD-T-57 Page Number 511	The work shall be carried out as directed by Engineer in Charge
66	Providing and fixing shutter to wall cupboard made from 19 milimetre thick Teak particle board with approved coloured laminated face 1.5 milimetre thick bonded with phenol formaldehyde synthetic resin Boiling Water Proof grade including lipping beading iron oxidised fixtures and fastening and oil primer coat Etcetera complete. (Excluding cupboard frame).	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
67	Providing and fixing mild steel grill work for windows, ventilators Etcetera 20 Kilogram per One Square Metre as per drawing including fixtures, necessary welding and painting with one coats of anticorrosive paint and two coats of oil painting complete.	Bd.U.1 Page Number 537	The work shall be carried out as directed by Engineer in Charge
68	Providing and fixing 40 milimetre diameter and 1.5 milimetre thick Stainless steel hand railing in Stainless steel 304 Grade including fabricating, fixtures, erecting, necessary welding, grinding, finishing, buffing to stainless steel pipe Etcetera complete.	BDW As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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69	Providing and fixing 900 milimetre high Stainless Steel 304 Grade Stainless steel railing with 40 milimetre diameter and 1.5 milimetre thick at top, 40 milimetre diameter and 1.5 milimetre thick vertical supports spaced at 1.5 metre center to center and 8 milimetre thick toughened glass including fabricating, fixtures, erecting, necessary welding, grinding, finishing, buffing to stainless steel pipe Etcetera complete.	BDWAs directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
70	Providing and fixing in position (as per 1868 / 1982) Alluminium sliding window of three tracks with rectangular pipe 95 x 38.10 x 0.90 milimetre at weight 0.637 Kilogram per One Running Metre with window frame bottom track section 92 x 31.75 x 1.30 milimetre at weight 1.070 Kilogram per One Running Metre Top and side track section 92 x 31.75 x 1.30 milimetre at weight 0.933 Kilogram per Running metre. The shutter should be of bearing bottom 40 x 18 x 1.25 milimetre at weight 0.417 Kilogram per One Running Metre Inter locking section 40 x 18 x 1.10 milimetre at weight 0.469 Kilogram per Running metre and handle and top section 40 x 18 x 1.25 milimetre at weight 0.417 Kilogram per Running metre. As per detailed drawings and as directed by Engineer in charge with all necessary Aluminium sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5 milimetre thick plain glass and aluminium mosquito net shutter with stainless steel jail with all required screws and nuts etcetra, complete. With colour Anodising with box	BDT As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
71	Providing and fixing in position powder coated aluminium louvered windows / ventilator of various sizes with powder coating as per detailed drawing and specifications including aluminium frames 80 x 38 milimetre x 1.22 milimetre box type, 5 milimetre thick sheet glass louvers, of approved quality Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
72	Providing and applying Two coats of wall care Putty on plastered surface and Ceiling and Walls to prepare surface even and smooth of approved make, Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
73	Providing and applying priming coat on concrete/ masonry/ Asbestos Cement plastered surfaces including scaffolding if necessary, preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter and sand papering as required Etcetera complete.	BDO 8E As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
74	Providing and applying pearl/ luster finish paint of approved colour and shade to the existing plaster surface including scaffolding, preparing the surface, applying the acrylic wall putti etcetra complete.	BDO As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
75	Providing and applying two coats of exterior weather shield paint of approved manufacture and of approved colour to the plastered surfaces including cleaning , preparing the plaster surface, applying primer coat, scaffolding if necessary, and watering the surface for two days Etcetera complete. NOTE: For Item One Number 15 to 18 prior approval of Superintending Engineer will be necessary	BDO As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
76	Providing and applying two coats of textured synthetic paint of approved shade and quality and one coat of primer before applying textured paint including scaffolding if necessary preparing surface by thoroughly cleaning oil, grease, dirt and other materials as required, Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
77	Kitchen Trolley : Providing and Fixing stainless steel kitchen trolley of overall 26 " height and 22" depth,supported on aluminium pipes ,trolley basket made out of 5 milimetre stainless steel rod fitted on telescopic channel of size 1.5 " x 20 " x 22 " on both sides of trolley of 12 " or above size, panel having 40Kilogramload bearing capacity of trolley made out of 20 milimetre PUC coated plywood and colour combination as directed by E-I-C.Inner side of panel covered by white mica ,100 milimetre s.s. decorative handle.(The width and height of individual compartments shall be kept as directed by Engineer-in-charge)	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
78	Providing and fixing 90 centimetre x 60 centimetre Granite plate engraving 10 centimetre height letter, figures including painting the lefters/figures with approved colour and shade complete.	Bd.W.7 Page Number 586	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
79	Providing and fixing board displaying information, such as 'Name of work, Tender cost, Name of Contractor, Work completion and liability period etc', having rectangular shape of 1.20 metre x 0.90 metre size made out 18 gauge (1.25 milimetre) thick mild steel sheet painted with one coat of Zinc chromate stoving primer and two coats of enamel paint on front side and grey stove enamel on back side and border / messages / symbols Etcetera with approved colour shade paint complete, on Mild Steel angle of size 35 x 35 x 3 milimetre frame with properly cross braced Mild Steel angles of size 35 milimetre x35 milimetre x3 milimetre duly painted including Two Mild Steel angle iron posts of size 65 milimetre x 65 milimetre x 6 milimetre, 3.65 metre long painted with alternate black and white bands of 25 centimetre width including all fixtures etc.and fixing the boards in 1:4:8 concrete block of size 60 centimetre x 60 centimetre x 75 centimetre including, excavation, refilling, transportation, and labour Etcetera complete.	MORTH 801 As directed by Engineer in Charge.	The work shall be carried out as directed by Engineer in Charge
80	Providing and fixing lioghtening conductor system comprising of erecting Air-Termination consisting of tubular copper rod of 25 milimetre diameter 1.2 milimetre thick with multiple points head 1.2 metre long (Heavy Duty) welded or clamped to Galvanised Iron pipe pole B grade 50 milimetre dia of required length with Mild Steel round bnase plate 25 centimetre diameter and 10 milimetre thick at bottom embeded in cement concrete 1:3:6 dfoundation of size 45 centimetre diameter x 45 centimetre Height and providing earthing with copper earth plate of size 60 x 60 x 0.3 centimeters with cadmium plated nut bolts to fix earthing strip burried in specially prepared earth pits 1.5 metre below ground level with 40 Kilogram charcoal and salt with alternate layers of charcoal and salt and Galvanised Iron pipe 40 milimetre diameter 2 meter length burried in earthe upto earthling plate remining portion above ground level for watering and refilling complete Note- Copper strip fropm lightning conductor Indian Standards not considered in this item.	BDW 1 Page 581	The work shall be carried out as directed by Engineer in Charge
81	Providing and fixing copper strip 25 milimetre wide and 3 milimetre thick for lightning conductor including fixing with screws required scaffolding etcetra complete. Note- Lightning conductor and earthinf pits Indian Standards not considered in this item	BdW 1 Page 581 As directed Engineer in Charge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
82	Providing and fixing European type wall-hung white water closet of approved make with push valve concealed type with cover plate 32 milimetre size of approved make including soil pipe, vent pipe up to outside face of wall ,100 milimetre diameter Galvanised Iron plug bend inlet pipe all fittings, cuttingand making good walls, floors Etcetera complete.	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
83	Providing and fixing Table top white wash basin of size 120x635x405 milimetre rubber plugs and brass chain, with pillar cock, C.P.Angular stop cock long thread, continental including S.S. bottle trap of approved make having necessary pipe connection up to theoutside face of the wall.etc complete as directed by Engineer in charge.	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
84	Providing and fixing Orissa Pan of size 580x445x260 milimetre with approved make flush valve including trap, Cast Iron soil and vent pipe upto outside face of wall including 100 milimetre diameter Cast Iron plug, bend and necessary pipe connection, Etcetera complete.	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
85	Providing and fixing wall hung white wash basin of size 550 x 400 x 195 milimetre with pillar cock having flow rate up to 6.0 Litre per Minute, Chromium Plated Angular stop cock long thread of Jaquar/Cera/Hindware /Perryware or equivalent make, including Stainless Steel bottal trap of approved make etc complete as directed by Engineer in charge. (Make shall conform to manufacturer's Green product and shall got approved from the Engineer In Charge.)	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
86	Providing and fixing divertor with overhead shower,shower arm,spout,hand shower with wall bracket having flow rate up to 12 liters/minutes of Jaquar/Cera/Hindware /Perryware or equivalent make including all necessary pipes,fittings etc.complete as directed by Engineer In Charge.(Make shall conform to manufacturer's Green product and shall got approved from the Engineer In Charge.)	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
87	Providing and fixing Chromium Plated 2 Way BIB cock with wall flange of approved make including necessary sockets/ union nut Etcetera complete as directed by Engineer in charge.	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
88	Providing and fixing Chromium Plated Angular stop cock with wall flange of approved make continental including necessary sockets/union nut Etcetera complete.	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
89	Providing and fixing sink cock with regular swinging spout (Wall Mounted Model) with wall flange with approved make includng other necessary fitting, Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
90	Providing and fixing Chromium Plated BIB cock with wall flange of approved make including necessary sockets/ union nut Etcetera complete as directed by Engineer in charge.	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
91	Providing and fixing 450 milimetre x 550 milimetre size superior type Belgium mirror with 16 milimetre diametre nickel plated towel rod Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
92	Providing and fixing 8 centimetre Cast Iron Nahani Trap including Cast Iron grating bend and piece of Cast Iron pipe upto the outside face of the wall complete.	Bd.V.32 Page One Number567	Bd.V.32.1. General - The item pertains to the provision and fixing 8 cm. cast iron nahani trap in sinks and baths including the cast iron grating bends and cast iron pipe piece up to the outside face of the wall. This item shall be subject to the general specification.Bd.V.32.2. Material - The 8 cm. cast iron nahani trap, bend and pipe with 12.5 cm. grating shall be the best available in the market and approved by the Engineer. It shall conform to relevant I.S. specification.Bd.V.32.3 Fixing - The cast iron nahani trap with the bend and pipe piece shall be fixed as per the drawing or the instructions of the Engineer. The joints shall be sealed with 1:1 cement mortar.Bd.V.32.4 Item to include - (1) Nahani trap with grating bend cast iron cast iron pipe up to the outside face of the wall and cement mortar.(2) Fixing of the trap, bend and pipe cutting and waste.(3) All necessary labour materials and use of tools.Bd.V.32.5 Mode of measurement and payment - The contract rate shall be for one nahani trap fixed. The measurement shall be for number of nahani traps fixed.
93	Providing and fixing on walls/ ceiling/ floor 15 milimetre diametre Chlorinated Polyvinyl Cloride pipe with necessary fittings, remaking good the demolished portion Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
94	Providing and fixing on walls/ceiling/floor 20 milimetre diametre Chlorinated Polyvinyl Cloride pipe with necessary fittings, remaking good the demolished portion Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	<p>Bd.V.5.1. General - The item pertains to providing and fixing of heavy or medium type as mentioned in the item galvanised iron pipes of the specified diameter for water supply including necessary galvanised iron fittings and all connected work such as excavation, drilling through walls, slabs, fixing with clamps backfilling and making good the damage. This item shall be subject to general specifications.</p> <p>Bd.V.5.2. Materials - The galvanised iron pipes shall be of the type and diameter specified in the wording of the item and shall comply with I.S.1239--1973 and 1969 for the specified type. The specified diameter of the pipes shall refer to the inside diameter of the bore pipes and fittings of which the galvanising has been damaged shall be used. Unless otherwise specified heavy type (C class) galvanised iron pipes shall be used in Greater Mumbai and medium type (B class) elsewhere. Clamps, screws and galvanised iron fittings shall be of the standard type to match the pipes. Fine hemp and linseed oil for fixing of the fittings.</p> <p>Bd.V.5.3. Excavation - The trench for laying the pipes shall be excavated to the lines and levels as directed by the Engineer. The bed shall be made even. Unless otherwise specified in the special provisions, the excavation shall be about 30 cm. wide and not less than 45 cm. deep. The trench shall be excavated through all strata met with. Where necessary, sides may be shored or sloped. In case rock is met with the section of the trench may be slightly reduced but sufficient to receive the pipe and the cushioning with a safe margin, dewatering shall be done where necessary. The excavation shall be done only so much in advance of laying of pipes as to cause least damage to the trench and least inconvenience to traffic and in other respects. In case of excavation across, a road permission of road authorities shall be obtained for the excavation of the road surface which shall be made good and restored to the original condition at the contractor's cost. At all road crossing, the trench shall be dug only for half the width of the road and pipe laid The other half shall be excavated only after back filling is done over the laid pipe and making it suitable for the traffic. In case of such road excavations and in other cases where accidents are likely to occur due to the excavation and pipe laying operations sufficient care shall be taken to avoid accidents etc, by erecting barricades, caution boards, keeping watchmen and maintaining red lights at night time. The contractor shall be responsible for accidents due to his carelessness in this respect and shall bear the consequences. At all the road crossings the pipes shall be laid lower than the crust of the road. All the pipes, water mains, cables etc, met in the excavation shall be carefully protected and supported. Any damage done shall be made good by contractor at his own cost. The pipe shall be laid on a well compacted bed in the trench. The trench after laying the pipe shall be refilled except at the joints, in layers and manually rammed. Care shall be taken to see that no earth, etc, gets inside the pipes. The fillings shall be kept raised by about 5 cm, for subsequent settlement. In case of trench at the joints shall be filled similarly after satisfactory testing of the pipe. Any excavated stuff shall be disposed of satisfactorily without causing nuisance.</p> <p>Bd.V.5.4. Laying and fixing - The plumbing contractor shall get the layout of the plumbing and drainage system approved by the competent authorities as may be required by the bye-laws. Should any changes in the layout be necessary to get such approval the contractor shall get the approval of the Engineer and make the amendments to comply with the bye-laws. The pipe shall be generally so laid or fixed as not to be exposed to the heat of the sun or be subject to any injury or risk to the pipe. As far as possible, the pipes shall be laid plumb, level in straight and parallel lines. The pipe shall be laid to falling or raising gradients or dead level so as to avoid air locks. It should be possible to empty the pipes readily and completely. All water-supply pipes shall as far as possible be kept outside of walls, portions and floors and be exposed to view and accessible. They shall be used in standard length cut lengths being used only where necessary to make up the exact lengths. The pipe shall be laid into the trench and screwed with socket elbows tees, bends etc, as necessary. In making the joints a few turns of fine hemp, dipped in linseed oil shall be taken over the threaded end of the pipe and the socket screwed home over the pipe with wrench Pipes connected shall generally touch each other, the socket covering each end about equally. The branch connections shall not protrude in the bore of the parent pipes. No joint shall be located in the thickness of the walls. If the pipe is required to be cut end shall be file smooth and any obstruction in the bore shall be entirely eliminated. The rate includes wastage in cutting, etc. When the pipe is to be fixed to walls it shall be fixed with standard brackets, clips or holder bates keeping the pipe about 12mm. clear of the wall. The pipe shall be fixed to the wall horizontally and vertically and parallel to one another when more than one pipe is laid unless unavoidable. The supporting clips, etc, for the pipe shall be spaced at about two metres or so as necessary. When holes are not left during construction they shall be cut into the walls or slabs, etc, to pass the pipe through or to fix clamps, etc. After fixing of the pipes, clamps etc, these shall be neatly made good.</p> <p>Bd.V.5.5. Painting - After laying of the pipes, the trench shall be refilled as explained earlier. All external pipes shall be painted with two coats of approved shade of anticorrosive paint and internal pipes with two coats of oil paints of approved shade according to B.21.</p> <p>Bd.V.5.6. Testing - On completion of laying the pipe line and fixing taps, etc, the pipeline shall be tested with a hydraulic pump for a pressure of 7 kg/sq.cm. or for any other pressure if mentioned in the special provisions of the Municipal Bye laws. No leakage at the joints shall be allowable. Any leakage found shall be removed by redoing the joint satisfactorily, without extra cost to the Department. Any other tests specified in the Bye-laws of the local authority shall be carried out by the contractor to the satisfaction of such authorities and any defects found out shall be remedied by the contractor without extra claims.</p> <p>Bd.V.5.7. Item to include - (1) Supply of galvanised iron pipes of specified diameter and type and galvanised iron fittings such as, sockets, elbows, wooden plugs, etc, to fix the pipe to walls etc, and making good.</p> <p>(2) Laying jointing and fixing the pipe with the fittings including dewatering cutting through walls, floor etc, making good.</p> <p>(3) Laying jointing and fixing the pipe with the fittings including cutting pipes, wastage and trending the ends.</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
			(4) Painting exposed pipes. (5) Testing. (6) All necessary labour, materials and use of tools. Bd.V.5.8. Mode of measurement and payment - The contract rate shall be for one metre of each type and diameter of pipe laid complete with fittings, clamps etc, as specified. The length shall be measured net on the straight and bends along the centre line of the pipes and fittings correct up to a cm.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
95	Providing and fixing on walls/ ceiling/ floor 25 milimetre diametre Chlorinated Polyvinyl Cloride pipe with necessary fittings, remaking good the demolished portion Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	<p>Bd.V.5.1. General - The item pertains to providing and fixing of heavy or medium type as mentioned in the item galvanised iron pipes of the specified diameter for water supply including necessary galvanised iron fittings and all connected work such as excavation, drilling through walls, slabs, fixing with clamps backfilling and making good the damage. This item shall be subject to general specifications.Bd.V.5.2. Materials - The galvanised iron pipes shall be of the type and diameter specified in the wording of the item and shall comply with I.S.1239--1973 and 1969 for the specified type. The specified diameter of the pipes shall refer to the inside diameter of the bore pipes and fittings of which the galvanising has been damaged shall be used. Unless otherwise specified heavy type (C class) galvanised iron pipes shall be used in Greater Mumbai and medium type (B class) elsewhere. Clamps, screws and galvanised iron fittings shall be of the standard type to match the pipes.Fine hemp and linseed oil for fixing of the fittings.Bd.V.5.3. Excavation - The trench for laying the pipes shall be excavated to the lines and levels as directed by the Engineer. The bed shall be made even. Unless otherwise specified in the special provisions, the excavation shall be about 30 cm. wide and not less than 45 cm. deep. The trench shall be excavated through all strata met with. Where necessary, sides may be shored or sloped. In case rock is met with the section of the trench may be slightly reduced but sufficient to receive the pipe and the cushioning with a safe margin, dewatering shall be done where necessary. The excavation shall be done only so much in advance of laying of pipes as to cause least damage to the trench and least inconvenience to traffic and in other respects. In case of excavation across, a road permission of road authorities shall be obtained for the excavation of the road surface which shall be made good and restored to the original condition at the contractor's cost. At all road crossing, the trench shall be dug only for half the width of the road and pipe laid The other half shall be excavated only after back filling is done over the laid pipe and making it suitable for the traffic. In case of such road excavations and in other cases where accidents are likely to occur due to the excavation and pipe laying operations sufficient care shall be taken to avoid accidents etc. by erecting barricades, caution boards, keeping watchmen and maintaining red lights at night time. The contractor shall be responsible for accidents due to his carelessness in this respect and shall bear the consequences. At all the road crossings the pipes shall be laid lower than the crust of the road. All the pipes, water mains, cables etc, met in the excavation shall be carefully protected and supported. Any damage done shall be made good by contractor at his own cost. The pipe shall be laid on a well compacted bed in the trench. The trench after laying the pipe shall be refilled except at the joints, in layers and manually rammed. Care shall be taken to see that no earth, etc, gets inside the pipes. The fillings shall be kept raised by about 5 cm, for subsequent settlement. In case of trench at the joints shall be filled similarly after satisfactory testing of the pipe. Any excavated stuff shall be disposed of satisfactorily without causing nuisance.Bd.V.5.4. Laying and fixing - The plumbing contractor shall get the layout of the plumbing and drainage system approved by the competent authorities as may be required by the bye-laws. Should any changes in the layout be necessary to get such approval the contractor shall get the approval of the Engineer and make the amendments to comply with the bye-laws. The pipe shall be generally so laid or fixed as not to be exposed to the heat of the sun or be subject to any injury or risk to the pipe. As far as possible, the pipes shall be laid plumb, level in straight and parallel lines. The pipe shall be laid to falling or raising gradients or dead level so as to avoid air locks. It should be possible to empty the pipes readily and completely. All water-supply pipes shall as far as possible be kept outside of walls, portions and floors and be exposed to view and accessible. They shall be used in standard length cut lengths being used only where necessary to make up the exact lengths. The pipe shall be laid into the trench and screwed with socket elbows tees, bends etc, as necessary. In making the joints a few turns of fine hemp, dipped in linseed oil shall be taken over the threaded end of the pipe and the socket screwed home over the pipe with wrench Pipes connected shall generally touch each other, the socket covering each end about equally. The branch connections shall not protrude in the bore of the parent pipes. No joint shall be located in the thickness of the walls. If the pipe is required to be cut end shall be file smooth and any obstruction in the bore shall be entirely eliminated. The rate includes wastage in cutting, etc. When the pipe is to be fixed to walls it shall be fixed with standard brackets, clips orholder bates keeping the pipe about 12mm. clear of the wall. The pipe shall be fixed to the wall horizontally and vertically and parallel to one another when more than one pipe is laid unless unavoidable. The supporting clips, etc, for the pipe shall be spaced at about two metres or so as necessary. When holes are not left during construction they shall be cut into the walls or slabs, etc, to pass the pipe through or to fix clamps, etc. After fixing of the pipes, clamps etc, these shall be neatly made good.Bd.V.5.5. Painting - After laying of the pipes, the trench shall be refilled as explained earlier. All external pipes shall be painted with two coats of approved shade of anticorrosive paint and internal pipes with two coats of oil paints of approved shade according to B.21. Bd.V.5.6. Testing - On completion of laying the pipe line and fixing taps, etc, the pipeline shall be tested with a hydraulic pump for a pressure of 7 kg/sq.cm. or for any other pressure if mentioned in the special provisions of the Municipal Bye laws. No leakage at the joints shall be allowable. Any leakage found shall be removed by redoing the joint satisfactorily, without extra cost to the Department. Any other tests specified in the Bye-laws of the local authority shall be carried out by the contractor to the satisfaction of such authorities and any defects found out shall be remedied by the contractor without extra claims.Bd.V.5.7. Item to include - (1) Supply of galvanised iron pipes of specified diameter and type and galvanised iron fittings such as, sockets, elbows, wooden plugs, etc, to fix the pipe to walls etc, and making good.(2) Laying jointing and fixing the pipe with the fittings including dewatering cutting through walls, floor etc, making good.(3) Laying jointing and fixing the pipe with the fittings including cutting pipes, wastage and trending the ends.(4) Painting exposed pipes.(5) Testing.(6) All necessary labour, materials and use of tools.Bd.V.5.8. Mode of measurement and payment - The contract rate shall be for one metre of each type and diameter of pipe laid complete with fittings, clamps etc, as specified. The length shall be measured net on the straight and bends along the centre line of the</p>

Contractor

No.of Corrections

Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
			pipes and fittings correct up to a cm.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
96	Providing and fixing on walls/ ceiling/ floor 32 milimetre diametre Chlorinated Polyvinyl Cloride pipe with necessary fittings, remaking good the demolished portion Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	<p>Bd.V.5.1. General - The item pertains to providing and fixing of heavy or medium type as mentioned in the item galvanised iron pipes of the specified diameter for water supply including necessary galvanised iron fittings and all connected work such as excavation, drilling through walls, slabs, fixing with clamps backfilling and making good the damage. This item shall be subject to general specifications.Bd.V.5.2. Materials - The galvanised iron pipes shall be of the type and diameter specified in the wording of the item and shall comply with I.S.1239--1973 and 1969 for the specified type. The specified diameter of the pipes shall refer to the inside diameter of the bore pipes and fittings of which the galvanising has been damaged shall be used. Unless otherwise specified heavy type (C class) galvanised iron pipes shall be used in Greater Mumbai and medium type (B class) elsewhere. Clamps, screws and galvanised iron fittings shall be of the standard type to match the pipes. Fine hemp and linseed oil for fixing of the fittings.Bd.V.5.3. Excavation - The trench for laying the pipes shall be excavated to the lines and levels as directed by the Engineer. The bed shall be made even. Unless otherwise specified in the special provisions, the excavation shall be about 30 cm. wide and not less than 45 cm. deep. The trench shall be excavated through all strata met with. Where necessary, sides may be shored or sloped. In case rock is met with the section of the trench may be slightly reduced but sufficient to receive the pipe and the cushioning with a safe margin, dewatering shall be done where necessary. The excavation shall be done only so much in advance of laying of pipes as to cause least damage to the trench and least inconvenience to traffic and in other respects. In case of excavation across, a road permission of road authorities shall be obtained for the excavation of the road surface which shall be made good and restored to the original condition at the contractor's cost. At all road crossing, the trench shall be dug only for half the width of the road and pipe laid The other half shall be excavated only after back filling is done over the laid pipe and making it suitable for the traffic. In case of such road excavations and in other cases where accidents are likely to occur due to the excavation and pipe laying operations sufficient care shall be taken to avoid accidents etc. by erecting barricades, caution boards, keeping watchmen and maintaining red lights at night time. The contractor shall be responsible for accidents due to his carelessness in this respect and shall bear the consequences. At all the road crossings the pipes shall be laid lower than the crust of the road. All the pipes, water mains, cables etc, met in the excavation shall be carefully protected and supported. Any damage done shall be made good by contractor at his own cost. The pipe shall be laid on a well compacted bed in the trench. The trench after laying the pipe shall be refilled except at the joints, in layers and manually rammed. Care shall be taken to see that no earth, etc, gets inside the pipes. The fillings shall be kept raised by about 5 cm, for subsequent settlement. In case of trench at the joints shall be filled similarly after satisfactory testing of the pipe. Any excavated stuff shall be disposed of satisfactorily without causing nuisance.Bd.V.5.4. Laying and fixing - The plumbing contractor shall get the layout of the plumbing and drainage system approved by the competent authorities as may be required by the bye-laws. Should any changes in the layout be necessary to get such approval the contractor shall get the approval of the Engineer and make the amendments to comply with the bye-laws. The pipe shall be generally so laid or fixed as not to be exposed to the heat of the sun or be subject to any injury or risk to the pipe. As far as possible, the pipes shall be laid plumb, level in straight and parallel lines. The pipe shall be laid to falling or raising gradients or dead level so as to avoid air locks. It should be possible to empty the pipes readily and completely. All water-supply pipes shall as far as possible be kept outside of walls, portions and floors and be exposed to view and accessible. They shall be used in standard length cut lengths being used only where necessary to make up the exact lengths. The pipe shall be laid into the trench and screwed with socket elbows tees, bends etc, as necessary. In making the joints a few turns of fine hemp, dipped in linseed oil shall be taken over the threaded end of the pipe and the socket screwed home over the pipe with wrench Pipes connected shall generally touch each other, the socket covering each end about equally. The branch connections shall not protrude in the bore of the parent pipes. No joint shall be located in the thickness of the walls. If the pipe is required to be cut end shall be file smooth and any obstruction in the bore shall be entirely eliminated. The rate includes wastage in cutting, etc. When the pipe is to be fixed to walls it shall be fixed with standard brackets, clips orholder bates keeping the pipe about 12mm. clear of the wall. The pipe shall be fixed to the wall horizontally and vertically and parallel to one another when more than one pipe is laid unless unavoidable. The supporting clips, etc, for the pipe shall be spaced at about two metres or so as necessary. When holes are not left during construction they shall be cut into the walls or slabs, etc, to pass the pipe through or to fix clamps, etc. After fixing of the pipes, clamps etc, these shall be neatly made good.Bd.V.5.5. Painting - After laying of the pipes, the trench shall be refilled as explained earlier. All external pipes shall be painted with two coats of approved shade of anticorrosive paint and internal pipes with two coats of oil paints of approved shade according to B.21. Bd.V.5.6. Testing - On completion of laying the pipe line and fixing taps, etc, the pipeline shall be tested with a hydraulic pump for a pressure of 7 kg/sq.cm. or for any other pressure if mentioned in the special provisions of the Municipal Bye laws. No leakage at the joints shall be allowable. Any leakage found shall be removed by redoing the joint satisfactorily, without extra cost to the Department. Any other tests specified in the Bye-laws of the local authority shall be carried out by the contractor to the satisfaction of such authorities and any defects found out shall beremedied by the contractor without extra claims.Bd.V.5.7. Item to include - (1) Supply of galvanised iron pipes of specified diameter and type and galvanised iron fittings such as, sockets, elbows, wooden plugs, etc, to fix the pipe to walls etc, and making good.(2) Laying jointing and fixing the pipe with the fittings including dewatering cutting through walls, floor etc, making good.(3) Laying jointing and fixing the pipe with the fittings including cutting pipes, wastage and trending the ends.(4) Painting exposed pipes.(5) Testing.(6) All necessary labour, materials and use of tools.Bd.V.5.8. Mode of measurement and payment - The contract rate shall be for one metre of each type and diameter of pipe laid complete with fittings, clamps etc, as specified. The length shall be measured net on the straight and bends along the centre line of the</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
			pipes and fittings correct up to a cm.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
97	Providing and fixing on walls /ceiling/ floor 40 milimetre diametre Chlorinated Polyvinyl Cloride pipe with necessary fittings, remaking good the demolished portion Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	<p>Bd.V.5.1. General - The item pertains to providing and fixing of heavy or medium type as mentioned in the item galvanised iron pipes of the specified diameter for water supply including necessary galvanised iron fittings and all connected work such as excavation, drilling through walls, slabs, fixing with clamps backfilling and making good the damage. This item shall be subject to general specifications.Bd.V.5.2. Materials - The galvanised iron pipes shall be of the type and diameter specified in the wording of the item and shall comply with I.S.1239--1973 and 1969 for the specified type. The specified diameter of the pipes shall refer to the inside diameter of the bore pipes and fittings of which the galvanising has been damaged shall be used. Unless otherwise specified heavy type (C class) galvanised iron pipes shall be used in Greater Mumbai and medium type (B class) elsewhere. Clamps, screws and galvanised iron fittings shall be of the standard type to match the pipes.Fine hemp and linseed oil for fixing of the fittings.Bd.V.5.3. Excavation - The trench for laying the pipes shall be excavated to the lines and levels as directed by the Engineer. The bed shall be made even. Unless otherwise specified in the special provisions, the excavation shall be about 30 cm. wide and notless than 45 cm. deep. The trench shall be excavated through all strata met with. Where necessary, sides may be shored or sloped. In case rock is met with the section of the trench may be slightly reduced but sufficient to receive the pipe and the cushioning with a safe margin, dewatering shall be done where necessary.The excavation shall be done only so much in advance of laying of pipes as to cause least damage to the trench and least inconvenience to traffic and in other respects. In case of excavation across, a road permission of road authorities shall be obtainedfor the excavation of the road surface which shall be made good and restored to the original condition at the contractor's cost. At all road crossing, the trench shall be dug only for half the width of the road and pipe laid The other half shall be excavated only after backfilling is done over the laid pipe and making it suitable for the traffic. In case of such road excavations and in other cases where accidents are likely to occur due to the excavation and pipe laying operations sufficient care shall be taken to avoid accidents etc. by erecting barricades, caution boards, keeping watchmen and maintaining red lights at night time. The contractor shall be responsible for accidents due to his carelessness in this respect and shall bear the consequences. At all the road crossings the pipes shall be laid lower than the crust of the road.All the pipes, water mains, cables etc, met in the excavation shall be carefully protected and supported. Any damage done shall be made good by contractor at his own cost. The pipe shall be laid on a well compacted bed in the trench. The trench after layingthe pipe shall be refilled except at the joints, in layers and manually rammed. Care shall be taken to see that no earth, etc, gets inside the pipes. The fillings shall be kept raised byabout 5 cm, for subsequent settlement. In case of trench at the joints shall be filled similarly after satisfactory testing of the pipe. Any excavated stuff shall be disposed of satisfactorily without causing nuisance.Bd.V.5.4. Laying and fixing - The plumbing contractor shall get the layout of the plumbing and drainage system approved by the competent authorities as may be required by the bye-laws. Should any changes in the layout be necessary to get such approval thecontractor shall get the approval of the Engineer and make the amendments to comply with the bye-laws. The pipe shall be generally so laid or fixed as not to be exposed to the heat of the sun or be subject to any injury or risk to the pipe. As far as possible, the pipes shall be laid plumb, level in straight and parallel lines. The pipe shall be laid to falling or raising gradients or dead level so as to avoid air locks. It should be possible to empty the pipesreadily and completely. All water-supply pipes shall as far as possible be kept outside of walls, portions and floors and be exposed to view and accessible. They shall be used in standard length cut lengths being used only where necessary to make up the exact lengths. The pipe shall be laid into the trench and screwed with socket elbows tees, bends etc, as necessary. In making the joints a few turns of fine hemp, dipped in linseed oil shall betaken over the threaded end of the pipe and the socket screwed home over the pipe with wrench Pipes connected shall generally touch each other, the socket covering each end about equally. The branch connections shall not protrude in the bore of the parent pipes. No joint shall be located in the thickness of the walls.If the pipe is required to be cut end shall be file smooth and any obstruction in the bore shall be entirely eliminated. The rate includes wastage in cutting, etc. When the pipe is to be fixed to walls it shall be fixed with standard brackets, clips orholder bates keeping the pipe about 12mm. clear of the wall. The pipe shall be fixed to the wall horizontally and vertically and parallel to one another when more than one pipe is laidunless unavoidable. The supporting clips, etc, for the pipe shall be spaced at about two metres or so as necessary. When holes are not left during construction they shall be cut into the walls or slabs, etc, to pass the pipe through or to fix clamps, etc. After fixing of the pipes, clamps etc, these shall be neatly made good.Bd.V.5.5. Painting - After laying of the pipes, the trench shall be refilled as explained earlier. All external pipes shall be painted with two coats of approved shade of anticorrosive paint and internal pipes with two coats of oil paints of approved shade according to B.21. Bd.V.5.6. Testing - On completion of laying the pipe line and fixing taps, etc, the pipeline shall be tested with a hydraulic pump for a pressure of 7 kg/sq.cm. or for any other pressure if mentioned in the special provisions of the Municipal Bye laws. No leakage at the joints shall be allowable. Any leakage found shall be removed by redoing the joint satisfactorily, without extra cost to the Department. Any other tests specified in the Bye-laws of the local authority shall be carried out by the contractor to the satisfaction of such authorities and any defects found out shall beremedied by the contractor without extra claims.Bd.V.5.7. Item to include - (1) Supply of galvanised iron pipes of specified diameter and type and galvanised iron fittings such as, sockets, elbows, wooden plugs, etc, to fix the pipe to walls etc, and making good.(2) Laying jointing and fixing the pipe with the fittings including dewatering cutting through walls, floor etc, making good.(3) Laying jointing and fixing the pipe with the fittings including cutting pipes, wastage and trending the ends.(4) Painting exposed pipes.(5) Testing.(6) All necessary labour, materials and use of tools.Bd.V.5.8. Mode of measurement and payment - The contract rate shall be for one metre of each type and diameter of pipe laid complete with fittings, clamps etc, as specified. The length shall be measured net on the straight and bends along the centre line ofthe</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
			pipes and fittings correct up to a cm.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
98	Providing and fixing on walls/ ceiling/ floor 50 milimetre diameter Chlorinated Polyvinyl Chloride pipe with necessary fittings, remaking good the demolished portion Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
99	Providing and fixing screw down for 20 milimetre diameter wheeled stop tap of brass including necessary sockets/union nut complete.	Bd.V.9 Page Number 555	Bd.V.9.1. General - The item shall conform to the specification No.Bd.V.8 in all respects except that it shall have an operating wheel. The material of the wheeled stop valve shall be gun metal/brass as specified in the item.
100	Providing and fixing screw down for 25 milimetre diameter wheeled stop tap of brass including necessary sockets/union nut complete.	Bd.V.9 Page Number 555	Bd.V.9.1. General - The item shall conform to the specification No.Bd.V.8 in all respects except that it shall have an operating wheel. The material of the wheeled stop valve shall be gun metal/brass as specified in the item.
101	Providing and fixing screw down for 40 milimetre diameter wheeled stop tap of brass including necessary sockets/union nut complete.	Bd.V.9 Page Number 555	Bd.V.9.1. General - The item shall conform to the specification No.Bd.V.8 in all respects except that it shall have an operating wheel. The material of the wheeled stop valve shall be gun metal/brass as specified in the item.
102	Providing and fixing screw down for 50 milimetre diameter wheeled stop tap of brass including necessary sockets/ union nut complete.	Bd.V.9 Page Number 555	Bd.V.9.1. General - The item shall conform to the specification No.Bd.V.8 in all respects except that it shall have an operating wheel. The material of the wheeled stop valve shall be gun metal/brass as specified in the item.
103	Providing and fixing screw down 15 milimetre diameter wheeled stop tap of brass including necessary sockets/union nut complete.	Bd.V.9 Page Number 555	Bd.V.9.1. General - The item shall conform to the specification No.Bd.V.8 in all respects except that it shall have an operating wheel. The material of the wheeled stop valve shall be gun metal/brass as specified in the item.
104	Providing and fixing 25 milimetre diameter water meter with non return valve including strainer, sockets/ union nut and including water meter box making locking arrangement and lock. [Without chamber].	Bd.V.7 Page Number 554	The work shall be carried out as directed by Engineer in Charge
105	Providing and fixing Polynvinyl Chloride Rain water pipes of 160 milimetre outer diameter and having wall thickness of 2.2 to 2.7 milimetre confirming to Indian Standards 13592-1992 including proper rainwater receiving recess with Polynvinyl Chloride plug, bend, necessary fittings, such as, offsets, shoes, including fixing the pipe on wall using approved wooden cleats projecting 25 milimetre to 40 milimetre from face of wall a fixing with clips of approved quality and One Number, filing the joint using rubber gasket with solvent cement and properly resting the shoe of pipes on Cement Concrete or masonry blocks, including necessary scaffolding and maintenance for 3 yrs for any leakages or dislocations of pipes. All the Polynvinyl Chloride fittings and additional 2 piece socket clips shall be got approved from engineer in charge Etcetera complete.	BDV As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
106	Providing and laying in trenches 25 milimetre daimetre Chlorinated Polyvinyl Cloride pipe including necessary excavation, fittings. Refilling trenches Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551As directed by Engineer in charge	<p>Bd.V.5.1. General - The item pertains to providing and fixing of heavy or medium type as mentioned in the item galvanised iron pipes of the specified diameter for water supply including necessary galvanised iron fittings and all connected work such as excavation, drilling through walls, slabs, fixing with clamps backfilling and making good the damage. This item shall be subject to general specifications.Bd.V.5.2. Materials - The galvanised iron pipes shall be of the type and diameter specified in the wording of the item and shall comply with I.S.1239--1973 and 1969 for the specified type. The specified diameter of the pipes shall refer to the inside diameter of the bore pipes and fittings of which the galvanising has been damaged shall be used. Unless otherwise specified heavy type (C class) galvanised iron pipes shall be used in Greater Mumbai and medium type (B class) elsewhere. Clamps, screws and galvanised iron fittings shall be of the standard type to match the pipes. Fine hemp and linseed oil for fixing of the fittings.Bd.V.5.3. Excavation - The trench for laying the pipes shall be excavated to the lines and levels as directed by the Engineer. The bed shall be made even. Unless otherwise specified in the special provisions, the excavation shall be about 30 cm. wide and not less than 45 cm. deep. The trench shall be excavated through all strata met with. Where necessary, sides may be shored or sloped. In case rock is met with the section of the trench may be slightly reduced but sufficient to receive the pipe and the cushioning with a safe margin, dewatering shall be done where necessary. The excavation shall be done only so much in advance of laying of pipes as to cause least damage to the trench and least inconvenience to traffic and in other respects. In case of excavation across, a road permission of road authorities shall be obtained for the excavation of the road surface which shall be made good and restored to the original condition at the contractor's cost. At all road crossing, the trench shall be dug only for half the width of the road and pipe laid The other half shall be excavated only after back filling is done over the laid pipe and making it suitable for the traffic. In case of such road excavations and in other cases where accidents are likely to occur due to the excavation and pipe laying operations sufficient care shall be taken to avoid accidents etc. by erecting barricades, caution boards, keeping watchmen and maintaining red lights at night time. The contractor shall be responsible for accidents due to his carelessness in this respect and shall bear the consequences. At all the road crossings the pipes shall be laid lower than the crust of the road. All the pipes, water mains, cables etc, met in the excavation shall be carefully protected and supported. Any damage done shall be made good by contractor at his own cost. The pipe shall be laid on a well compacted bed in the trench. The trench after laying the pipe shall be refilled except at the joints, in layers and manually rammed. Care shall be taken to see that no earth, etc, gets inside the pipes. The fillings shall be kept raised by about 5 cm, for subsequent settlement. In case of trench at the joints shall be filled similarly after satisfactory testing of the pipe. Any excavated stuff shall be disposed of satisfactorily without causing nuisance.Bd.V.5.4. Laying and fixing - The plumbing contractor shall get the layout of the plumbing and drainage system approved by the competent authorities as may be required by the bye-laws. Should any changes in the layout be necessary to get such approval the contractor shall get the approval of the Engineer and make the amendments to comply with the bye-laws. The pipe shall be generally so laid or fixed as not to be exposed to the heat of the sun or be subject to any injury or risk to the pipe. As far as possible, the pipes shall be laid plumb, level in straight and parallel lines. The pipe shall be laid to falling or raising gradients or dead level so as to avoid air locks. It should be possible to empty the pipes readily and completely. All water-supply pipes shall as far as possible be kept outside of walls, portions and floors and be exposed to view and accessible. They shall be used in standard length cut lengths being used only where necessary to make up the exact lengths. The pipe shall be laid into the trench and screwed with socket elbows tees, bends etc, as necessary. In making the joints a few turns of fine hemp, dipped in linseed oil shall be taken over the threaded end of the pipe and the socket screwed home over the pipe with wrench Pipes connected shall generally touch each other, the socket covering each end about equally. The branch connections shall not protrude in the bore of the parent pipes. No joint shall be located in the thickness of the walls. If the pipe is required to be cut end shall be file smooth and any obstruction in the bore shall be entirely eliminated. The rate includes wastage in cutting, etc. When the pipe is to be fixed to walls it shall be fixed with standard brackets, clips or holder bates keeping the pipe about 12mm. clear of the wall. The pipe shall be fixed to the wall horizontally and vertically and parallel to one another when more than one pipe is laid unless unavoidable. The supporting clips, etc, for the pipe shall be spaced at about two metres or so as necessary. When holes are not left during construction they shall be cut into the walls or slabs, etc, to pass the pipe through or to fix clamps, etc. After fixing of the pipes, clamps etc, these shall be neatly made good.Bd.V.5.5. Painting - After laying of the pipes, the trench shall be refilled as explained earlier. All external pipes shall be painted with two coats of approved shade of anticorrosive paint and internal pipes with two coats of oil paints of approved shade according to .Bd.V.5.6. Testing - On completion of laying the pipe line and fixing taps, etc, the pipeline shall be tested with a hydraulic pump for a pressure of 7 kg/sq.cm. or for any other pressure if mentioned in the special provisions of the Municipal Bye laws. No leakage at the joints shall be allowable. Any leakage found shall be removed by redoing the joint satisfactorily, without extra cost to the Department. Any other tests specified in the Bye-laws of the local authority shall be carried out by the contractor to the satisfaction of such authorities and any defects found out shall be remedied by the contractor without extra claims.Bd.V.5.7. Item to include - (1) Supply of galvanised iron pipes of specified diameter and type and galvanised iron fittings such as, sockets, elbows, wooden plugs, etc, to fix the pipe to walls etc, and making good.(2) Laying jointing and fixing the pipe with the fittings including dewatering cutting through walls, floor etc, making good.(3) Laying jointing and fixing the pipe with the fittings including cutting pipes, wastage and trending the ends.(4) Painting exposed pipes.(5) Testing.(6) All necessary labour, materials and use of tools.Bd.V.5.8. Mode of measurement and payment - The contract rate shall be for one metre of each type and diameter of pipe laid complete with fittings, clamps etc, as specified. The length shall be measured net on the straight and bends along the centre line of the</p>

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
			pipes and fittings correct up to a cm.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
107	Providing and laying in trenches 50 milimetre daimetre Chlorinated Polyvinyl Cloride pipe including necessary excavation, fittings. Refilling trenches Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BD.V 5 page 551 As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge
108	Providing and constructing Brick Masonry Inspection Chamber 60 centimetre x 45 centimetre x 90 centimetre including 1:4:8 cement concrete foundation 1:2:4 cement concrete channels half round Glazed Stoneware pipes, Brick Masonry, plastering from inside and with frame fixed in cement concrete with Reinforced Cement Concrete Cover medium duty 140 Kilogram with frame Etcetera complete.	Bd.V.43, Page Number 574	Bd.V.43.1. General - The item pertains to the provision of inspection chamber of brick masonry of the internal size specified in the item and of the required depth including 1:4:8 cement concrete foundation.1:2:4 cement concrete channels corresponding to the pipes or salt glazed stoneware half round channels, one brick masonry in cement mortar 1:6 plastered on the inside with cement mortar 1:3 with cast iron frame and air-tight lid fixedinto a concrete slab at top. This item shall be subject to the general specification.Bd.V.43.2. Materials - Brick shall conform to A.9.2 of I.S. or conventional type as order. Cement mortar 1:6 and 1:3 shall conform to B.4. Cast iron frame and lid shall conform to I.S. 1726--1991 and shall be of the full size of the chamber. They shall be the air-tight and heavy type where subject to vehicular traffic.Bd.V.43.3. Construction - The inspection chamber shall be the internal dimensions specified and shall have sufficient depth so as to receive the pipes. Necessary excavation shall be done for the construction of the chamber. Foundation of 1:4:8 concrete shall be 15 cm. thick and shall extend 8 cm. beyond the outside faces of the chamber to B.5. The brick masonry shall be one brick, in cement mortar 1:1 and shall conform to B.8(b). The cement concrete 1:2:4 shall be laid to necessary shapes inside to form channels for the pipes being received. The channels shall be of the appropriate diameter &shall be half-round. The sides shall be kept sloping towards the channels. Alternatively if so provided, half-round S.W.G. pipes shall be fixed to form channels. The brick masonry shall be plastered with 1:3 cement mortar on the inside and shall conform to B.11. The cast iron frame and lid shall be fixed into the 1:2:4 concrete slab 10 cm. at the top.Bd.V.43.4. Item to include - (1) Excavating, concreting foundation, constructing brick masonry, laying 1:2:4 concrete forming channels or laying half round salt glazed stoneware pipes, plastering the inside faces, fixing cast iron frames and lid in concrete.(2) All necessary labour, materials and use of tools.Bd.V.43.5. Mode of measurement and payment - The contract rate shall be for one inspection chamber of the specified size constructed as detailed above. The measurement shall be for the number of such chambers constructed.
109	Providing, laying and fixing ,jointing Eco- drain 160 milimetre SN 4 Nu- Drain Unplasticized polynvinyl cloride pipes or of equivalent make, manufacture as per EN 13476 or equivalent as per Indian Standards 15328 with fittings such a bends, tees, coupler, etcetra jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated material etcetra complete.	Bd-V As Directected By Engineer In charge	The work shall be carried out as directed by Engineer in Charge
110	Providing and laying concrete pipes of Indian Standards Non Pressure class of 150 milimetre diameter in proper line, level and slope including necessary collars, excavation, laying, fixing with collars in cement mortar 1:1 and refilling the trench complete.	Bd.V.41, Page Number 573	The work shall be carried out as directed by Engineer in Charge
111	Providing and laying concrete pipes of Indian Standards Non Pressure class of 300 milimetre diameter in proper line, level and slope including necessary collars, excavation, laying, fixing with collars in cement mortar 1:1 and refilling the trench complete.	Bd.V.41, Page Number 573	The work shall be carried out as directed by Engineer in Charge
112	Providing and fixing 15 centimetre x 10 centimetre salt glazed stoneware gully trap in cement concrete 1:4:8 outside the building including cast iron grating in the sink, connecting glazed stoneware pipe, brick masonry chamber with cast	Bd.V.38, Page Number 572	Bd.V.38.1. General - The item pertains to the provision and fixing of a salt glazed stoneware gully trap outside the building including cast iron grating for the gully tap. This item shall be subject to the general specification. Bd.V.38.2 Material - Cast iron grating in the sink shall be of the size as shown on the drawing or as ordered by the Engineer and shall conform to relevant I.S. A similar cast iron grating shall be provided for the trap in the chamber outside. The chamber shall have a cast

Contractor

No.of Corrections

Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	iron lid and cast iron grating for the gully trap.		<p>iron frame and cover. Salt glazed stoneware pipes shall conform to I.S 651 cm x 15cm x 10 cm. and shall be the best available in the market and approved by the Engineer. Salt glazed stoneware pipes shall conform to I.S. 651 --1992 and shall be of the internal diameter indicated on the drawing or as ordered by the Engineer. Bricks shall conform to A 9.2.cement mortar 1:6 and 1:3 shall conform to B.4. Cement concrete 1:4:8 shall conform to B.5.</p> <p>Bd.V.38.3. Fixing - The arrangement shall conform to the drawing or the instructions of the Engineer. The gully trap shall be set into 1:4:8 cement concrete extending 30 cm. beyond the trap on three sides over which shall be constructed one brick masonry chamber of the dimensions indicated on the drawings or as ordered by the Engineer. There will be wall on the fourth side. The brick masonry shall be constructed in cement mortar 1:6 and shall conform to B.8(b). The inside shall be plastered with cement mortar 1:3 which shall conform to B,11. The top lid of cast iron along with the cast iron frame shall be fixed in cement concrete 1:2:4 slab 10 cm. thick. Hole shall be cut into the masonry if not left and the stoneware pipe shall run through the wall. Cast iron grating shall be fixed in the bath or the site and the hole shall be made good properly. The trap in the chamber shall have a similar cast iron grating.</p> <p>Bd.V.38.4. Item to include - (1) Cast iron grating, glazed stoneware pipe, gully trap, cement concrete, brick masonry chamber with cast iron frame and lid. (2) Cutting hole in the masonry, fixing cast iron gratings, stoneware pipe, gully trap in cement concrete, constructing brick masonry chamber with frame and lid including cutting and waste.</p> <p>(3) All necessary labour, materials and use of tools.</p> <p>Bd.V.38.5. Mode of measurement and payment - The contract rate shall be for one gully trap fixed.</p> <p>The measurement shall be for the number of gully traps fixed.</p>
113	Providing and constructing Brick Masonry Inspection Chamber 90 centimetre x 45 centimetre x 90 centimetre including 1:4:8 cement concrete foundation 1:2:4 cement concrete channels half round Glazed Stoneware pipes, Brick Masonry, plastering from inside and with frame fixed in cement concrete with Reinforced Cement Concrete Cover medium duty 140 Kilogram with frame Etcetera complete.	Bd.V.43, Page Number 574	<p>Bd.V.43.1. General - The item pertains to the provision of inspection chamber of brick masonry of the internal size specified in the item and of the required depth including 1:4:8 cement concrete foundation.1:2:4 cement concrete channels corresponding to the pipes or salt glazed stoneware half round channels, one brick masonry in cement mortar 1:6 plastered on the inside with cement mortar 1:3 with cast iron frame and air-tight lid fixed into a concrete slab at top. This item shall be subject to the general specification.Bd.V.43.2. Materials - Brick shall conform to A.9.2 of I.S. or conventional type as order. Cement mortar 1:6 and 1:3 shall conform to B.4. Cast iron frame and lid shall conform to I.S. 1726--1991 and shall be of the full size of the chamber. They shall be the air-tight and heavy type where subject to vehicular traffic.Bd.V.43.3. Construction - The inspection chamber shall be the internal dimensions specified and shall have sufficient depth so as to receive the pipes. Necessary excavation shall be done for the construction of the chamber. Foundation of 1:4:8 concrete shall be 15 cm. thick and shall extend 8 cm. beyond the outside faces of the chamber to B.5. The brick masonry shall be one brick, in cement mortar 1:1 and shall conform to B.8(b). The cement concrete 1:2:4 shall be laid to necessary shapes inside to form channels for the pipes being received. The channels shall be of the appropriate diameter & shall be half-round. The sides shall be kept sloping towards the channels. Alternatively if so provided, half-round S.W.G. pipes shall be fixed to form channels. The brick masonry shall be plastered with 1:3 cement mortar on the inside and shall conform to B.11. The cast iron frame and lid shall be fixed into the 1:2:4 concrete slab 10 cm. at the top.Bd.V.43.4. Item to include - (1) Excavating, concreting foundation, constructing brick masonry, laying 1:2:4 concrete forming channels or laying half round salt glazed stoneware pipes, plastering the inside faces, fixing cast iron frames and lid in concrete.(2) All necessary labour, materials and use of tools.Bd.V.43.5. Mode of measurement and payment - The contract rate shall be for one inspection chamber of the specified size constructed as detailed above. The measurement shall be for the number of such chambers constructed.</p>
114	RWH - Recharge Pit : Providing and constructing recharge pit of 2.0m deep and 1.0m dia of pre-cast Reinforced Cement Concrete rings with 6.5" dia x 25m deep borewell at the floor of recharge pit including installation of combination of solid/perforated Polynvinyl Chloride casing pipe wrapped around with netlon mesh including 300mm thick sidefilling around outside of Reinforced Cement Concrete rings (annular space) with 40 milimetre size boulders including filling of recharge pit up to 0.5m depth with 25-75mm clean washed gravels from bottom up followed by 0.5m depth of 10-25mm of clean washed stones followed by 0.5m of washed river fine aggregate (natural sand/crushed sand Verticle Shaft Impactor grade finely washed etc.) including netlon mesh between each gravel/fine aggregate (natural sand/crushed sand Verticle Shaft Impactor grade finely washed etc.) media layer including	As directed by Engineer in charge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	covering with Reinforced Cement Concrete slab, manhole frame and cover, Polynvinyl Cloride rungs, Polynvinyl Cloride end-caps, fittings Etcetera including arrangement for inlet and outlet pipe excavation and backfilling as shown in the drawing.The rate shall be inclusive of all labour, material, wastage, scaffolding, transportation, taxes, including all leads, lifts at all levels. All material should be of approved make. All works complete as per the drawing, technical specification and direction of the Engineer in charge.		
115	Providing soak pit of size 120 centimetre x 120 centimetre x 120 centimetre including excavating and filling with brick-bats.	Bd.V.46, Page Number 576	Bd.V.46.1 General - The item pertains to the provision of specified size including excavating pits and filling with brickbats. This item shall be subject to the general specifications. Bd.V.46.2 Materials - Brickbats shall be of properly burnt bricks. Bd.V.46.3 Construction - A pit of the specified dimension shall be excavated at the specified space or as ordered by the Engineer. The pit shall be completely filled with loosely packed brickbats. Bd.V.46.4 Item to include - 1) Excavating pits and filling with brickbats. 2) All necessary labour, materials and use of tools. Bd.V.46.5 Mode of measurement and payment - The contract rate shall be for one soak pit of the specified size. The measurement shall be for the number of soak pits constructed. The stoneware glazed inlet pipe will be paid for separately.
116	Providing and fixing High Density Polythylene container one piece moulded water tank made out of low density polythyler and built corrugation including of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow of all tanks capacity above 1000 to 20,000 litres.	BDV As directed by engineer-in-charge.	The work shall be carried out as directed by Engineer in Charge
117	Providing and fixing in position Unplasticized polynvinyl cloride ultra violet stabilized 110 milimetre outer diameter cowl dome confirming to Indian Standard-4985 including making joints with solvent cement Etcetera complete.	BDV 23	The work shall be carried out as directed by Engineer in Charge
118	Providing, laying and fixing Polynvinyl Cloride pipe of 50 milimetre diametre with fittings such as bends, tees, reducers, clamps, Etcetera including necessary excavation, trench filling Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BDV 60 As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
119	Providing, laying and fixing Polynvinyl Cloride pipe of 75 milimetre diametre with fittings such as bends, tees, reducers, clamps, Etcetera including necessary excavation, trench filling Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BDV 60 As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
120	Providing, laying and fixing Polynvinyl Cloride pipe of 110 milimetre diametre with fittings such as bends, tees, reducers, clamps, Etcetera including necessary excavation, trench filling Etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in Public Works Department chowky or as directed Etcetera complete.	BDV 60 As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
121	Drilling Surface Borewell 200 milimetre Diametre In All Types of Starta Inlcuding Transportation etcetra complete. Specification Number As Directed By Engineer In Charge.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
122	Providing and Fixing of Polynvinyl Cloride Casing For Borewell 200 milimetre Diametre In All Types of Starta Inlcuding Transportation etcetra complete. A) Ground Floor	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
123	Providing, constructing and fixing 600 milimetre diametre Inspection chamber made up of Polypropylene / polyethylene material Having 315 milimetre diameter inlet(s)/outlets and with eccentric reducers as per requirement to connect 160 milimetre and 200 milimetre pipes having thickness of 5 milimetre and 600 milimetre in height, with inbuilt shaft achieve the invert depth as per site condition of wall thickness of 5 milimetre having Reinforced Cement Concrete cover and frame fixing in 150 milimetre thick in cement concrete 1:2:4, having crushed sand bed of 150 milimetre thick of size 750 milimetre diametre Including excavation and refilling the sides of chamber by sand crushed cushioning 150 milimetre thickness, connecting all required Unplasticized polynvinyl cloride fittings with rubber lubricant etc.complete.	As Directected By Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
124	Providing and laying cement concrete pipe of Indian Standards 458:2003 Non Pressure-2 class of 450 milimetre diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing Etcetera complete.	CD.7 Page.No. 162	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
125	Providing and laying cement concrete pipe of Indian Standards 458:2003 Non Pressure-2 class of 600 milimetre diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing Etcetera complete.	CD.7 Page.No. 162	The work shall be carried out as directed by Engineer in Charge
126	Providing and laying cement concrete pipe of Indian Standards 458:2003 Non Pressure-2 class of 900 milimetre diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing Etcetera complete.	CD.7 Page.No. 162	The work shall be carried out as directed by Engineer in Charge
127	Providing & Fixing of Wall Paneling For Meter Room With Finished With 1.25 mm Thick Laminate All Material Lead & Lift including All,Etc Complete.	As directed by Engineer in charge.	
128	Providing and fixing in position Gypsum board false ceiling with 12.5 milimetre thick Gypsum boards, screwed/fixd to the under structure of suspended Galvanised Iron Grid constructed and suspended from the main ceiling consisting of ceiling sections of size 25 x 50 milimetre maximum center to center distance of 600 milimetre perimeter channel and intermediate channels at maximum center to center distance 1200 milimetre galvanized grid should be fixed to reinforced cement concrete slab. The gypsum board should be fixed to galvanized iron grid with necessary screws. The boards should be taped and filled from underside to give smooth, seamless ceiling. The rate should include necessary additional ceiling sections and intermediate channels. Additional intermediate channels should be fixed to strap hangers for additional support to prevent strapping at every 1200 milimetre item to be completed in all respect including necessary sleeves for ducts finishing of joints cut outs, painting including labour, material, lifts Etcetera all complete.	As directed by Engineer in charge.	

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
129	Providing and laying Cast in situ/Ready Mix cement concrete in Mix-20 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete coping to plinth or parapet and sill of doors and windows moulded as per detailed drawings or chamfered as approved by the Engineer including steel centering, formwork, cover blocks, laying/pumping, compacting, curing, finishing and roughening them if special finish Indian Standards to be provided and curing complete. (Excluding reinforcement and structural steel). with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete.With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd. F. 12 Page Number 304 and B-7, Pg 38	Bd.F.12.1. General - The specifications pertain to the cement concrete for R.C.C. copings to the plinth or parapet and stills of doors and windows in building construction. The item shall generally conform to the specifications for item No. Bd.E.3 subject to the following :- Before the concrete is placed the formwork and reinforcement of the coping shall be passed by the Engineer and the measurements of mild steel bar reinforcement recorded. The mild steel bar reinforcement shall be paid under a separate item. 1:3 finishing plaster referred to in the item shall be provided for all the exposed surfaces.

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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130	Providing and laying in situ /Ready Mix cement concrete Mix-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete work in foundations like raft, strip foundations, grillage and footings of Reinforced Cement Concrete columns and steel stanchions Etcetera including bailing out water, Steel centering formwork, laying/pumping cover blocks, compaction and curing roughening the surface if special finish Indian Standards to be provided (Excluding reinforcement and structural steel) Etcetera complete, with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.3 Page Number 298 and B.7, Page Number38	<p>Bd.F. 3.1. General - The specification for this item shall be the same as for item No. Bd.F. 2 in all respects except that the proportion of materials for the cement concrete shall be 1:1-1/2:.3 as laid down in specification In ordinary concrete, although proportion of cement to fine and coarse aggregate is specified by volume, the quantity of cement shall be determined by weight assuming one bag of cement weighing 50 Kg. nett to be equivalent to 35 litres. Fine and coarse aggregates shall be measured by dry volumes in suitable wooden boxes. Due allowance shall be made for bulking in the fine aggregate due to moisture if any, at the time of mixing. In case of slabs special mixes with smaller size aggregates shall be taken out and placed below bottom steel to obtain dense cover. The ratio of the volumes of the fine and coarse aggregates may be varied within limits of 1:1.5 to 1:2.5 as directed by the Engineer to suit the maximum size of coarse aggregate, the grading, density, workability and strength without extra cost. But the sum of the volumes of the fine and coarse aggregates so adjusted shall however be equal to the sum of the volumes of fine and coarse aggregates given above for a particular mix. The quantity of water shall be just sufficient, but not more than sufficient, to produce a dense concrete of required workability for its purpose. An accurate control shall be kept on the quantity of mixing water. An allowance shall be made for surface moisture present in the aggregates when computing water content as indicated in I.S. 456-1978. In the case of reinforced concrete work, the workability shall be such that the concrete will surround and properly grip all the reinforcement. Water cement ratio will such as will give concrete just sufficiently weight to be placed and compacted without difficulty. For vibrated concrete, water content may be reduced by 15% to 20% to give the required reduced slump.B.5.4. Mixing - For all important works concrete shall be mixed in mechanical mixer at the site of work. Care shall be taken to see that the mixer and other accessories are in first class working condition especially the blades which have to extend right up to the bottom of the drum. Trial mix shall be taken out to ensure good mixing. Mixing shall be continued till there is uniform distribution of the materials and a uniform colour is obtained and each individual particle of the coarse aggregate shall show a complete coating of mortar containing its proportionate amount of cement. In no case mixing shall be done for less than 1.5 minutes. The water cement ratio shall range between 0.55 to 0.64 for 1:2:4 mix. When hand mixing is permitted by the Engineer it shall be done on a smooth water tight platform large enough to allow efficient turning over of the ingredients of concrete before and after adding water. Mixing platform shall be so arranged that no foreign matter shall get mixed with concrete nor the mixing water shall flow out. The cement in required number of bags shall be placed in a uniform layer on top of the measured quantity to fine aggregate required, also spread in a layer of uniform depth in the mixing platform. Dry sand and cement then shall be mixed thoroughly by turning over to get a mixture of uniform colour.Enough water shall then be added gradually through a rose and the mass turned over till a mortar of required consistency is obtained. The measured quantity of coarse aggregate shall then be placed on a mixing platform and wetted and the mortar added and the entire mass turned and returned until all the particle of the coarse aggregate are fully covered with mortar and mixture is of a uniform colour and required consistency. In hand mixing, quantity of cement shall be increased by 5% above that specified in para. B.5.3 without any extra cost. Concrete shall have a consistency such that it will be workable in the required position and in the case of R.C.C., flow around reinforcing steel also. For vibrated concrete, slump shall range between 2.5 cm. to 5 cm. For hand tamped concrete, slump shall range between 8 cm. to 13cm.according to the type and nature of the concrete item. The slump shall be least permitted by workability and maintained throughout the concreting operation of a member. The concrete shall be placed in its final position and rammed, vibrated and finished within 30 minutes of adding water to cement.</p> <p>Retempering or remixing of partially hardened concrete shall not be permitted.B.5.5(a). Scaffolding - All scaffolding, hoisting arrangements and ladders, etc., required for the facility of concreting shall be provided by the contractor at his own expense and removed on the completion of work. The scaffolding, hoisting arrangements and ladders, etc., shall be strong enough to withstand all live, dead and impact load expected to act and shall be subjected to the approval of the Engineer. However the contractor shall be solely responsible for the safety of scaffolding, hoisting arrangement, ladders, work and workmen. The contractor shall pay the necessary compensations arising out of the use of the scaffolding hoisting arrangements and ladders and for damages to work, properties and injuries to persons. The scaffolding, hoisting arrangements and ladders shall allow easy approach to work spot and afford easy inspection.B.5.5.(b). Forms - Forms shall generally comply with I.S.456-1964,para.7.2. B.5.5.(b).1. Design - The detailed design of the formwork and falsework shall be prepared by the contractor and got approved by the Engineer well in time. Such an approval however will not relieve the contractor of his responsibility for the adequacy and strength of the formwork and falsework.B.5.5.(b).2. Materials - The forms and false work shall be made of wood or metal. The timber from which the forms are prepared should preferably be partially seasoned as too dry a timber will swell for absorption of moisture while green timber will dry and shrink. It shall be free from sap, shakes, loose knots, wormholes or other defects. The plants and scantlings shall be sawn straight and all edges and planes shall be straight and free from warps. Partially seasoned soft wood is generally preferable for formwork as it is difficult to drive nails in hard wood. The dimensions of scantlings should conform to the design. The strength of the wood shall not be less than that assumed in the design. In metal form, steel sheets of designed gauge strengthened with framing of angle or other sections shall be used. Wooden forms may also be lined with thin steel sheets or plywood to give the required surface or finish.</p>

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
131	Providing and laying Cast in situ/Ready Mix cement concrete Mix-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete columns as per detailed designs and drawing or as directed including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish Indian Standards to be provided and curing Etcetera complete. (Excluding reinforcement and structural steel).with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.5 Page Number 300 and B.7, Page Number 38	Bd.F.4.1. General - This item refers to the cement concrete required for R.C.C. columns in building work. The concrete shall conform No.B.6 for ordinary cement concrete subject to the following.Bd.F.4.2. Materials -Bd.F.4.2.1. Proportion of materials for the cement concrete shall be 1:2:4 as laid down in specification No.B.5.3.Bd.F.4.2.2. Coarse aggregates - Coarse aggregates shall be crushed from stones of the type mentioned in the item and obtained from approved quarries. The maximum size of the coarse aggregate shall be 20 mm. less other maximum size is specified in the special provisions.Bd. F.4.3. Construction -Bd.F. 4.3.1. Form-work - The form-work for columns shall comply with specification No. B. 6.5. (b) subject to the following.The form-work for columns shall be wilt up so that planks on three sides are put up to the required height and those on the fourth side put up in stages of a meter or so in height for facility of placing and compacting. The column formwork shall be kept absolutely plumb during and after placing the concrete and shall be checked and approved by the Engineer. The forms shall be kept rigidly plumb with inclined or other supports from as many sides as possible. Plumb bob shall be kept suspended from the formwork so that verticality of the form-work could be easily checked. If a column as shown in the drawings to be inclined, then the form-work for such columns should also have exactly the same batter as for the column. Arrangements for providing rounding of the corners, grooves, slots, etc., for the columns, if shown in the drawing,Bd.F.4.3.2. or mentioned in the special provisions shall be made by fillets, grooves, etc., in the form-work.Bd.F.4.3.2. Mixing The cement concrete shall be mixed in mechanical mixers. Water cement ratio shall not exceed 0.65 unless otherwise directed by the Engineer. The slump shall be 5cm. to 10cm.Bd.F.4.3.3. Placing - No concrete shall be deposited until the Engineer has inspected and passed the forms, placement of steel, copper strip and other fixtures for expansion joints if any, and measured the steel reinforcement, etc., and given permission to place the concrete. Reinforcement will be paid as a separate item. The copper strip will be paid as a part of separate item in expansion joints. Care shall be taken to avoid segregation of materials while placing. Each column shall be concreted in lifts of a meter or so. Before laying the upper lift, the top surface shall be cleaned of all laitance and loose articles and 6 mm. coat of cement mortar 1:2 applied immediately before placing concrete for the upper lift.Bd.F.4.3.4. Compaction Compaction shall normally be done by mechanical vibrators to get a dense concrete and also by rods to get all reinforcement properly embedded, all corners properly filled and honey-combing avoided. The Engineer may permit manual compaction. But a dense concrete must be ensured.Bd.F.4.3.5. Finishing - Immediately on removing the forms and within a day thereof, the formed faces shall be roughened and finished with 1:3 cement plaster of sufficient minimum thickness to give a smooth and even surface and the same cured. The average thickness of finishing plaster in such cases should not normally exceed 6 mm. If however, it is intended to give a special finishing to; the formed surfaces, then the above plastering shall not be done and the formed faces shall only be roughened to receive the special finishing. The special finishing shall be paid under a separate item.Bd.F.4.3.6. Dewatering If the area on which the concrete is to be placed is under water, the water shall be removed as specified for item Bd.A.9. Unless dewatering is separately provided for in the tender, the cost of dewatering shall be covered by the rate for concrete.Bd.F.4.4. Item to include According to specification No.B.5.14 The rate shall also include finishing with 1:3 cement plaster of required thickness after roughening or simply roughening to receive the special finish and dewatering where necessary.Bd.F.4.5. Mode of measurement and payment - As per B.5.15.Increase in dimensions caused by plaster finish shall not be taken into account. Any concrete work in columns carried out in excess of the dimensions shown on the working drawings or as directed by the Engineer shall be measured and paid. The sizes of R.C.C. columns as assumed in the estimates or preliminary drawings are approximate and likely to be changed. The contractor shall not be entitled to extra claims due to such changes in sizes. For columns below plinth level and having piled foundations, the height of column shall be measured from top of pile cap to the bottom of the plinth. In the case of open foundations, the height shall be measured from top of footing to the top of plinth. For columns in upper stories the height shall be measured from the top of plinth level to top of unner floor slah surface. Any portion of beam and slab bearing on column shall be included in the columns concrete. The Height of Columns Shall be Measured correct 1 cm (Centimeter). The Sectional Dimensions shall be measured correct up to 1/2 a centimeter and the quantity worked out correct up to three places of decimals of a cubic meter.No Dedcution shall be made for Mild Steel reinforcing bars.

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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132	Providing and laying Cast in situ/Ready Mix cement concrete Mix-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/pumping, compactionand roughening the surface if special finish Indian Standards to be provided and curing Etcetera complete. (Excluding reinforcement and structural steel). with fully automatic microprocessor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) Etcetera complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.6 Page Number 300 and B.7, Page Number38	Bd.F.6.1. General-The item refers to the cement concrete required for RC.C. beams (including cantilevered) and linteis in building construction. This item shall be carried out according to specification No.8.5. for ordinary cement concrete in all respects subject to the followingBd.F.6.2. Materials-Bd.F.6.2.1. Proportion Proportion of cement concrete shall be 1:1.5:3 and shall conform to specification No 8.53.Bd.F.6.2.2. Course Aggregates-Coarse aggregates shall be crushed from sound stone of the type mentioned in the item and obtained from approved quaries. The maximum size of coarse aggregate shall be 20mm or 6 mm, less than (1) the minimum lateral space between the bars or (ii) the cover whichever is less. The maximum size of the course aggregate may be reduced around the congested reinforcement to comply with the above requirement.Bd.F.6.3. Construction -Bd.F.6.3.1. Dewatering According to specification No. Bd.F.1.4. dewatering, if any, for placing plinth or any other beams shall be covered by the rate of concrete unless a separate item for dewatering is provided in the tender.Bd.F.6.3.2. Mixing-The concrete shall be mixed in mechanical mixtures.Water cement ratio shall be as directed by the Engineer. Slump shall not exceed 8 cm. (about 3") but in thin sections and where reinforcing bars are crowded, slump up to 12 cm. (about 5") may be allowed by the Engineer if considered necessary.Bd.F.6.3.3. Formwork-According to specification No.8.5.5(b). The bottom boards of the formwork for beams shall be given a camber of 1/240 of the span or as directed by the Engineer.Clams, hooks etc., required to be embedded shall be fixed in the formwork at the correct location as directed by the Engineer. Chamfers, groundings, moldings etc shall be made in the form itself.Concreting of the upper floor shall not be done until the concrete of the lower floor has set adequately to take the load.Bd.F.6.3.4. Placing - The forms, centering and reinforcement shall be checked and passed by the Engineer and reinforcement measured before concreting is permitted. Reinforcement will be paid as a separate item. Placing shall be done in a balanced manner to avoid eccentric loading on the formwork. The concreting of the beam shall be done in one continuous operation as far as possible. The Engineer may, however, permit construction joints at approved sections of the beam. The ribs of beams shall normally be concrete together with the slab of which they form a part. The schedule of programme shall be got approved by the Engineer and adequate labour and machinery shall be provided to keep up the programme. Clamps, fan hooks, and other fixtures, etc., shall be embedded in the concrete while placing, if so, required by the Engineer Clamps, etc., themselves will be paid for separately. Bridge shall be provided to avoid walking over the reinforcement and fresh concrete.Bd.F.6.3.5. Compaction Compaction shall be done by vibrators and rods as the concrete is being placed to give a dense concrete free of honey-combing. It should be seen that the vibrator needle does not touch the reinforcement and disturb the concrete already set.Where it is not possible to use the vibrator, Roding shall be resorted to and the concrete with greater slump may be used.Bd.F.6.3.6. Finishing Immediately on removing the forms and within a day thereof the formed faces shall be roughened and finished with 1:3 cement plaster of sufficient minimum thickness to give a smoothy even and finished surface and the same cured. The average thickness of finishing plaster should not normally exceed 6 mm. If, however, it is intended to give a special finish to the formed surface the above plastering shall not be done and the formed faces shall only be roughened to receive the special finish. The special finish shall be paid under a separate item.Bd.F.6.4. Item to include - According to specification No. B.5.14. Finish with 1.3 cement plaster or roughening the surfaces when a special finish is to be provided and labour for embedding clamps, fixtures, etc., shall be included in the rateThe rate shall also include dewatering if required when there is no separate provision for it in the tender.Bd.F.6.5. Mode of Measurement and Payment-According to specification No.B.5.5.The concrete beam and lintel shall be measured for their net length inclusive of bearing on walls correct to a cm, and the sectional measurements correct to the nearest half centimeter. The sizes of beams and lintels assumed in the estimate or preliminary, drawings are approximate and likely to be changed. The contractor shall not be entitled to extra claims due to any such changes in the sizes. The quantity shall be worked out correct to three places of decimals of a cubic meter. The increase in dimensions due to plaster finish shall not be taken into account.No deduction shall be made for reinforcement bars, for pipes not exceeding 25 sp. cms. each in sectional area, for fixtures embedded for ends of dissimilar materials like beams, girders etc, having a sectional arsa up to 500 sq. cm. or for chamfers or groundings of edges The length of a plinth beam shall be measured clear between the faces of pile caps. When a beam is supported on columns, the length of the beam shall be measured between the faces of columns. In beams and slab construction the beam shall be measured as the rib or part below or above the slab.Fillets between beams and slabs and haunches of beams shall be measured as part of beam.

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
133	Providing and laying Cast in situ/Ready Mix cement concrete Mix-20 of trap/ granite /quartzite/ gneiss metal for Reinforced Cement Concrete slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetra complete, (Excluding reinforcement and structural steel).with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetra complete. With fine aggregate (Crushed sand Verticle Shaft Impactor Grade)	Bd.F.8 Page Number 302 and B.7, Page One Number38	The work shall be carried out as directed by Engineer in Charge
134	Providing fly ash brick masonry with conventional/ Indian Standards type bricks in cement mortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding Etcetera Complete.	As director by engineer inchargeBDG- 2 and 5	Bd.G.5.1. General The item refers to second class brick work in superstructure and shall comply with specification No. Bd.G. 4 subject to the following.Bd.G.5.2. Bricks - Bricks shall be of second class of the type mentioned in the item. The size may be as approved by the Engineer.Bd.G.5.3. Thickness of Joints - Thickness of joints shall be 10mm, for brick work with I.S. type bricks and 12 mm. for brick work with conventional bricks.Bd.G.5.5. Raking Out Joints - The joints shall be raked out to a depth, of not less than the thickness of joints for affording good bond when plastering or pointing is to be done. Other joints shall be struck.Bd.G.5.6. Item to include According to Bd.G.4.3.The item provides for striking joints. Pointing shall be done when it is specially included in the working of the item.
135	Providing and erecting chain link fencing 1.6 Metre height with Galvanised Iron chain link of size 50 x 50 milimetre, 8 gauge thick and fixed 75 milimetre above ground level on vertical Mild Steel Angles of 40 x 40 x 6 milimetre size, includind excavating pits for foundation and embedded in Cement Concrete block of 1:4:8 mix of size 450 x 450 x 670 milimetre at 1.75 Metre center to center with iron bar 16 milimetre diametre as hold fast including welding link with angle frame at 30 centimetre center to center with nuts and bolts and horizontal Mild Steel Angles at top and bottom of 25 x 25 x 5 milimetre size and vertical Mild Steel flat 35 x 5 milimetre and 25 x 5 milimetre horizontal including cross support of 40 x 40 x 6 milimetre angles both side at every corner or bend embedded in concrete blocks of 1:4:8 of size 450 x 450 x 670 milimetre including 3 coats of oil painting Etcetera complete.	BDW As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
136	Providing and applying two coats of exterior acraylic emulsion paint confirming to corresponding Indian Standards of approved manufacture and of approved colour to the plastered surfaces including cleaning, preparing the plaster surface, applying primer coat, scaffolding if necessary, and watering the surface for two days Etcetera complete.	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
137	Providing and applying washable oil-bound distemper of approved colour and shade to old and new surfaces in two coats including scaffolding, preparing the surfaces. (excluding the primer coat.) Etcetera complete.	Bd.P.5 Page Number 413	The work shall be carried out as directed by Engineer in Charge
138	Providing and fixing heavy duty inter locking concrete Rubber mould glossy paving blocks of 80 milimetre thickness of having a strength of 400 Kilogram per Square centimetre of approved quality and shape on a bed of crushed sand of 25 to 30 milimetre thick including skirting joints and cleaning Etcetera complete. (using 100% crushed sand)	BDM	The work shall be carried out as directed by Engineer in Charge
139	Providing, fabricating and erecting at site of work the tubular steel structure (shed) as per standard design and specifications having various spans in between trusses and in multiples of standard length of bays as specified as per standard specifications, inclusive of cost of steel tubular trusses, tubular columns purlins, tie runners, foundation bolts, base plates, nuts and bolts, welding wherever required Etcetera as per detailed drawing inclusive of one coat of anticorrosive paint and two coats of oil painting of approved quality and shade Etcetera complete.	B-18 Page Number 78 As directed by Engineer-in-charge.	The work shall be carried out as directed by Engineer in Charge
140	Public Seating Chair. - 3 Seater : Providing and Fixing 3 seater Public seating chair made of complete metal with Legs in Crome finish and seates in silver powder coating finish.	As directed by Engineer-in-charge	The work shall be carried out as directed by Engineer in Charge
141	Providing and fixing colour coated Zinalume (R) AZ150 (min 150 gramms per square metre total on each side) profiled sheets for roofing. The feed material Indian Standards manufactured out of nominal 0.45 milimetre Base Metal Thickness (BMT) (0.5 milimetre TCT), Hi-strength steel with min.550 MPa yield strength, metallic hot dip coated with Aluminium-Zinc alloy (55% aluminium 43.4% zinc 1.6% silicon) with COLORBOND (R) steel quality super durable polyester paint coat (with inorganic pigment). The paint shall have a total coating thickness of nominal 35 um, comprising of nominal 25 um exterior coat on top surface and nominal 10 um reverse coat on back surface. Profile sheet shall have nom. 950-1050 milimetre effective cover width and nominal 25-30 milimetre deep ribs with subtle square fluting in the five pan at nominal 180-250 milimetre center- to-center. The end rib shall be designed for anti-capillary groove and return leg. The feed material should have coil manufacturers product details marked a regular interval. Including fasteners with min. fastened with min. 25 um Zinc-Tin alloy coated, Hex head, self-drilling screw Etcetera	BDRAs directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	complete. (weight of profile 4.52 Kilogram per One Square Metre)		
142	Providing and fixing of colour coated Zincaluminium(R) AZ150 (min 150 gramms per square metre total on each side) profiled sheets for roofing. The feed material Indian Standards manufactured out of nominal 0.45 milimetre Base Metal Thickness (BMT) (0.5 milimetre TCT), Hi-strength steel with min.550 MPa yield strength, metallic hot dip coated withAluminium-Zinc alloy (55% aluminium 43.4% zinc 1.6% silicon) with COLORBOND (R) steel quality super durable polyster paint coat (with inorganic pigment). The paint shall have a total coating thickness of nominal 35 milimetre, comprising of nominal 25 milimetre exterior coat on top surface and nominal 10 um reverse coat on back surface. Profile sheet shall have nom. 950-1050 milimetre effective cover width and nominal 25-30 milimetre deep ribs with sublet square fluting in the five pan at nominal 180-250 mmcenter- to-center. The end rib shall be designed for anti-capacity groove. and return leg. The feed material should have coil manufacturers product details marked a regular interval. including fasteners with min. fastened with min. 25 um Zinc-Tin alloy coated, Hex head, self-drilling screw Etcetera complete. (weight of profile 4.52 Kilogram per One Square Metre) 600 milimetre girth (Surface Width).	As directed by Engineer in charge.	The work shall be carried out as directed by Engineer in Charge
143	Providing and Laying hot applied thermoplastic road marking strip on Bituminous Surface of specified shade/ colour of 2.5 milimetre thick including 1.5 Refractive index reflectorizing glass beads @ 250 gramme per square metre Thickness of 2.5 milimetre is exclusive of surface applied glass beads as per Indian Roads Congress 35:2015. Initial Dry reflectivity RL shall be > 250 mcd/sqm/lux measured in the initial 7 days and sustained reflectivity RL of 100 mcd/sqm/ lux and Qd of 100 mcd/sqm/ lux measured at the end of 2 years by means of a Standard Reflectometer of Zehntner, EasyLux, Delta make capable of measuring RL and QD both according to Indian Roads Congress 35:2015 clause 15.5. The finished surface to be level, uniform, and free from streaks and holes complete as per direction of Engineer-in-charge and in accordance with applicable specifications.(Refer MORTH Clause 803 for technical Specification and Performance for Indian Roads Congress 35:2015).	MORTH 803.4	The work shall be carried out as directed by Engineer in Charge
144	Excavation for roadway in earth, soil of all sorts, sand, gravel or soft murum including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50 metre and spreading for embankment or stacking as directed.	MORTH 301	The work shall be carried out as directed by Engineer in Charge

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Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
145	Conveying materials obtained from road cutting including all lifts, laying in layers of 20 centimetre to 30 centimetre breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50 metre to 300 metre inclusive from the site of excavation to the site of deposition as directed.	MORTH 305	The work shall be carried out as directed by Engineer in Charge
146	Supplying hard murum/ kankar at the road site, including conveying and stacking complete.	As Directed by Engineer in Charge	The work shall be carried out as directed by Engineer in Charge
147	Supplying soft murum at the road site, including conveying and stacking complete.	As Directed by Engineer in Charge	The work shall be carried out as directed by Engineer in Charge
148	Spreading hard murum/ soft murrum/ gravel or kankar for side width complete.	As Directed by Engineer in Charge	The work shall be carried out as directed by Engineer in Charge
149	Compacting the hard murum side widths including laying in layers on each side with vibratory roller including artificial watering Etcetera complete.	As Directed by Engineer in Charge	The work shall be carried out as directed by Engineer in Charge
150	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting with vibratory roller to the required density. By Mechanical Means -Grading I (Using Screening Type B (11.2 milimetre) Aggregate)	MORTH 404	The work shall be carried out as directed by Engineer in Charge
151	Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate (natural sand/ Verticle Shaft Impactor grade finely washed crushed sand) conforming to Indian Standards: 383, the size of coarse aggregate not exceeding 25 milimetre, cement content not to be less than 150 kilogramme per cubic metre, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer-in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade	MORTH 601	The work shall be carried out as directed by Engineer in Charge

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Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	surface if required etcetra complete. with fully automatic micro processor based Programmable logic controller with Supervisory Control and Data Acquisition enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetra complete.		
152	Providing and laying in situ cement concrete Mix-30 with tremix treatment for 200 milimetre thickness for Concrete Road Indian Standards including laying plastic sheet for 125 micron thickness with groove cutting of 4 milimetre wide and 20 milimetre deep with necessary refilling with bitumen (excluding reinforcement) with coarse and fine aggregate (natural sand/ Verticle Shaft Impactor grade finely washed crushed sand) Etcetera complete.	MORTH 602 As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
153	Providing and fixing in position Thermo Mechanical Treated FE 500, 32 milimetre dia dowel bars precoated with anticorrosive epoxy paint of required diametre 60 centimeters Long and at 30.00 centimetre Center to Center and wherever directed including handling, straightening, necessary cutting supported by Thermo Mechanical Treated FE 500, chairs with proper alignment by using properly designed assembly of Bulkheads lubricating half length with bituminous paint as directed Etcetera complete.	MORTH 602.6.5	The work shall be carried out as directed by Engineer in Charge
154	Providing and fixing in position Thermo Mechanical Treated FE 500, tie bars precoated with anticorrosive epoxy paint of 12 milimetre diametre 70 centimetres long and at 30.00 centimetre Center to Center and wherever directed including handling, straightening wrapping with paper of approved quality for half length, necessary cutting, handling, straightening, supported by assembly of Thermo Mechanical Treated FE 500, chairs with proper alignment Etcetera complete.	MORTH 602.6.4.2	The work shall be carried out as directed by Engineer in Charge
155	Providing and casting in situ or precast tapering Reinforced Cement Concrete Mix-20 Barrier type Kerb without gutter (as per Indian Roads Congress 86 1983) embedded 125 milimetre below ground level over Mix-10 Plain Cement Concrete finished neatly with Cement Mortar 1:2, setting the same in Cement Mortar 1:2, including the required excavation in any strata and removing the excavated stuff any where in city and redoing the surface as specified and directed by Engineering In-charge. Using Concrete Batching and Mixing Plant	MORTH 408	The work shall be carried out as directed by Engineer in Charge
156	Providing and fixing road junction/information sign boards of size 1.80 x 0.90 Meter Prepared 16 guage Mild Steel sheet on frame of Mild Steel angle of size 35 x 35 x 5 milimetre with cross bracing of size 35x35x5 milimetre including	IRC-67 2012	The work shall be carried out as directed by Engineer in Charge

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Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	painting with one coat of zinc cromate stoving primer and two coats each of green/white back ground and back side gray stove enamelled, bonded with red retro reflective sheet Engineering grade, border / letters / numeral /arrows, coated with non pealable crystal clear protective transperent coat retaining 100% reflection including two angle iron post of size 65 x 65 x 6 milimetre of 3.65 metre long inflated at bottom ,drilled on top and painted in white and black bands of 30 centimetre with 4 Numbers high strength Galvanised Iron bolts and nuts of size 10 milimetre diametre and 20 milimetre long Sheet and angle iron post in one piece without joints including all taxes, conveying, fixing in ground with cement concrete 1:4:8 block of 60 centimetre x 60 centimetre x 75 centimetre size as directed by Engineer-in- charge Etcetera complete. Mild Steel Board with Engineering Grade.		
157	Fixing in position Cautionary/ Mandatory sign boards in ground with Cement Concrete 1:4:8 block of 60 centimetre x 60 centimetre x 75 centimetre size Etcetera complete as directed including all leads.	MORTH 801	The work shall be carried out as directed by Engineer in Charge
158	GARDEN SOIL: -Supplying on site garden soil well sieved 80 % to pass through I.S. sieve of 10 mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The color of the soil generally is red. The soil will be measured by measuring box. (Farma) Item includes Transporting, loading -unloading etc. (Lead charges per 15 km. considered. Excluding Royalty)	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
159	Areca Palm Plantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a)Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items ofgarden work,Sr No.44b)Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list srno1,item no 5 B)Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	required distance of 50mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11)Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of gardenwork,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34)		
160	Area Fox Tail PalmPlantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /diesease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list srno1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11)Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of gardenwork,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Area Fox Tail Palm	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
161	Tulus Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	<p>x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Tulas</p>		
162	<p>spider lily hymenocallisPlantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list srno1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	(1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of gardenwork,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) spider lily hymenocallis		
163	Bhava Amaltas Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work, Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Bhava Amaltas	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
164	BakulPlantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a)	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	<p>Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Bakul</p>		
165	<p>Largestroemea Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Largesstr Oemea		
166	SpathodiaPlantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list srno1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Spathodia	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
167	Rangoon creeper/ Madhu malati(Combretumindicum)Plantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

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Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /diesease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Rangoon creeper/ Madhu malati (Combretumindicum)		
168	Duranta golden(Combretumindicum)Plantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /diesease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list srno1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc.	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

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Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Duranta golden (Combretumindicum)		
169	Duranta golden Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Duranta golden	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
170	Aboli/CrossandraPlantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b)	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	<p>Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Aboli/Crossandra</p>		
171	<p>Allamanda Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26)</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Allamanda		
172	Caesalpinia pulcherrimaPlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /diesease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Caesalpinia pulcherrima	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
173	Hamelia patens Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /diesease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

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Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Hamelia patens		
174	Ixora Duffy pinkPlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Ixora Duffy pink	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
175	<p>Ixora singaporensis</p> <p>Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Ixora singaporensis</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
176	<p>JatrophaPlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Jatropa		
177	Tagar mini Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Tagar mini	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
178	Murraya / KaminiPlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots,	As directed by Engineer	The work shall be carried out as directed by Engineer in Charge

Contractor

No.of Corrections

Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	<p>other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Murraya / Kamini</p>	Incharge	
179	<p>Mussaenda Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	<p>pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Mussaenda</p>		
180	<p>Nerium Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Nerium</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
181	<p>Nerium dwarf Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Nerium dwarf		
182	Ratrani/Night queenPlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34)Ratrani/Night queen		
183	Pentas Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Pentas	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
184	PlumbagoPlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	<p>required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Plumbago</p>		
185	<p>Powder puff plant Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26)</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Powder puff plant		
186	Tagar variegated Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Tagar variegated	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
187	Tecoma capensis Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Tecoma capensis		
188	Heliconia any typePlantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Heliconia any type	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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189	<p>Plumeria Dwarf singapore pink</p> <p>Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Plumeria Dwarf singapore pink</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
190	<p>Plumeria RubraPlantation of Trees (Ht.1-2 mtrs)Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including</p>	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
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	removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Plumeria Rubra		
191	Spathiphyllum Plantation of Trees (Ht.1-2 mtrs) Supplying on site fresh Garden soil (i. e. 3 part soil) (free from stones rubbish like dried grass roots, other such materials) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44a) Supplying on site well decomposed Farm Yard Manure FYM (i. e. 1 part FYM) for excavated pit size area of 0.60 x 0.60 x 0.60m (consolidated thickness).(As per P&G DSR 2022-23 Items of garden work,Sr No.44b) Providing on site required variety of Tree (free from weeds /disease etc.) 30 cms. apart c/c.Name:- Bahava;Bag Size 13 x13", ht 6-8'(plants list sr no1,item no 5 B) Excavation pit size 0.60 x 0.60 x 0.60m for planting small & medium ornamental plants/ large flowering/ shady trees (plant height 1 to 2 mtr.)/ palm varieties upto height 1 to 2 mtrs. in earth, soil of all types, soft murum, including removing the excavated & unwanted material up to a required distance of 50 mtrs. (As per P&G DSR 2022-23 Items of garden work,Sr No.11) Filling fresh garden soil / silt & manure in excavated pit size area of 0.60 x 0.60 x 0.60m (1/10 of unskilled labour)(As per P&G DSR 2022-23 Items of garden work,Sr No.21) Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species as directed etc. complete for required pit size 0.60 x 0.60 x 0.60m. (1/10 of semiskilled labour) (As per P&G DSR 2022-23 Items of garden work,Sr No.26) Maintenance of Newly Planted tree varieties having height 1mtr. - 2mtr. For First 30 days Only (As per P&G DSR 2022-23 Items of garden work,Sr No.34) Spathiphyllum	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
192	Preparation of Instant Lawn : Excavation for planting lawn in earth, soil of all types, soft murum, including removing the excavated material up to a distance of 50 mtrs. for a depth of 20 cms. Supplying on site fresh Garden soil (free from	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge

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	stones rubbish like dried grass roots, other such materials) for excavation area of depth of 20 cms. Supplying on decomposed Farm Yard Manure for excavation area of depth of 20 cms. Providing on site well established (free from weeds/disease etc.) ready to fix lawn turf in slabs/ rolls of required variety as directed. Filling fresh garden soil / silt & manure in excavated area of depth 20cms. Mixing garden soil/silt & manure thoroughly well, watering previous night. Planting required plant species; lawn grass as directed etc. complete for required depth 20 cms. for planting lawn/ shrub / flower bed / hedges / edges / canna bed / ground cover. Maintenance of Newly Developed lawn (Instant Lawn) Area. For First 30 days Only DSR-2223, Page No.48 Sqm		
193	Maintenance of Newly Developed lawn & Other Planitation For First 30 Days Area. (Paspalum/ selection/Tree/Planitation)	As directed by Engineer Incharge	The work shall be carried out as directed by Engineer in Charge
194	Electric Work Supplying and erecting 20 mm dia corrugated flexible polypropylene conduit		As per Direction by Engineer in Charge
195	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 32 mm with accessories on wall/ceiling as per specification No WG-MA/CON		As per Direction by Engineer in Charge
196	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 40 mm with accessories on wall/ceiling as per specification No WG-MA/CON.		As per Direction by Engineer in Charge
197	Supplying and erecting mains with 2x1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No WG-MA/BW		As per Direction by Engineer in Charge
198	Supplying and erecting green colour earthing with 1x 1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No WG-MA/BW		As per Direction by Engineer in Charge
199	Supplying and erecting mains with 2x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No WG-MA/BW		As per Direction by Engineer in Charge
200	Supplying and erecting green colour earthing with 1x 2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No WG-MA/BW		As per Direction by Engineer in Charge

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201	Supplying and erecting mains with 2x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No WG-MA/BW		As per Direction by Engineer in Charge
202	Supplying and erecting green colour earthing with 1x 4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No WG-MA/BW		As per Direction by Engineer in Charge
203	Supplying and erecting green colour earthing with 1x 10 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No WG-MA/BW		As per Direction by Engineer in Charge
204	Supplying and erecting mains with 2x10 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No WG-MA/BW		As per Direction by Engineer in Charge
205	Supplying and erecting modular type switch 6A / 10A duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
206	Supplying and erecting modular type switch 16A duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
207	Supplying and erecting modular type 3 pin 6A multi socket with safety shutter duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
208	Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
209	Supplying and erecting modular type T.V. socket single outlet duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
210	Supplying and erecting modular type (two module) electronic step regulator for fan duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
211	Supplying and erecting PVC Surface modular switch box with double mounting plate for 2 module duly erected.		As per Direction by Engineer in Charge
212	Supplying and erecting PVC Surface modular switch box with double mounting plate for 3 module duly erected.		As per Direction by Engineer in Charge

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213		Supplying and erecting PVC Surface modular switch box with double mounting plate for 6 module duly erected.		As per Direction by Engineer in Charge
214		Supplying and erecting PVC Surface modular switch box with double mounting & front plate for 8 module complete duly connected.		As per Direction by Engineer in Charge
215		Supplying and erecting 16 / 20 / 25 A starter (modular range) 2 module for AC unit on provided box complete & duly concealed with necessary material and connected.		As per Direction by Engineer in Charge
216		Point wiring for light/bell/exhaust fan in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire modular type switch earthing and required accessories as per specification No WG-PW/SW		As per Direction by Engineer in Charge
217		Point wiring for ceiling fan in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire modular type switch earthing and required accessories as per specification No WG-PW/SW		As per Direction by Engineer in Charge
218		Wiring for plug on board with Switch socket surface/concealed type copper wiring and earthing and with modular accessories as per specification No WG-PW/CW		<p>WG-PW/CW</p> <p>Material :- PVC conduit: PVC pipe of minimum 20mm dia and above depending No. of wires to be drawn (refer Table No 1 / 2); ISI mark, HMS grade (2mm thick), accessories for PVC pipes of the same make that of pipe; such as Spacers & Saddles, Couplers, Bends, deep / normal Junction boxes of required ways and resin / adhesive to make all joints rigid. Black pipe shall not be used for surface type wiring. Rigid Steel conduit: Rigid steel screwed conduit minimum 20mm dia. and higher depending on No. of wires to be drawn as per Table No.1/1, 16 gauge, ISI mark, ERW grade duly processed for anti-rust treatment and painted with black enamel paint, accessories for rigid steel conduits such as sockets, bends, deep / normal junction boxes of required ways all of the same make. Sheet metal Junction boxes / Draw-in boxes: Junction box shall be 5 sided with removable top plate, fabricated from 16g CRCA sheet steel with earth terminal duly treated with antirust treatment and painted with two coats of red oxide paint. There shall be knockout holes in required numbers and dia. for entry of conduit pipes and arrangement to fix surface cover plate on it. Cover plate shall be made up of fire resistant PVC material / 3mm thick laminate / Bakelite / Hylam / transparent acrylic sheet painted from inside to match colour of wall with duly tapered edges. Wires: phase and neutral wires PVC insulated wires of specified size, 1.1 kV, & minimum FR grade insulation, electrolytic tough pitch (ETP) copper conductor, ISI marked, of required colour coding as per Table No 1/5 Earth Continuity Wire: PVC insulated minimum FR grade copper wires of electrolytic grade, having insulation of 1.1 kV grade, of green colour, ISI marked, 2.5 Sqmm or bare copper wire of 14g Lugs: Pin type Copper lugs. Accessories: Switch: 1 or 2 way Modular type switch 6/10A. Outlet: Modularity type 6A angle / batten lamp holder or 3 plate ceiling-rose or Bakelite / porcelain 3 way connector or if plug point, 6A, 3-pin plug shuttered socket. Boards: Switchboards shall comprise of; concealed type box of required modules made of sheet metal or Polypropylenematerial, mounting plate and cover plate. The required modules shall be worked out on the basis of points, plug socket/sockets, step type fan regulator, etc are to be fixed. For every blank module, 1 way blank plate shall be fixed. All the above accessories shall be of samemake, as that of switch. Hardware: Sheet Metal (SM) screws of sizes specified in Method of Construction, washers, rawl / PVC / fill type plugs / wooden gutties, 'U' nails, plumbing nails, steel binding wire, fish wire 20g, rub ber / PVC bushes etc. Other material for Surface finishing: Sand, Cement, water etc. Construction :- Point wiring (Concealed): Concealing of conduits: General: Work shall be done in co-ordination with civil work and to suite final approved layout. Size of conduit shall be correct depending on number of wires to be drawn. (Table No. 1/1 for Steel conduits & Table No 1/2 for PVC conduits) Separate pipe shall be used for each phase in 1-ph distribution and for power and light distribution and also for wiring for other utilities like data, telephone, TV cabling, etc. The distance between pipes shall not be less than 300 mm. Adequate use of conduit accessories shall be made at required locations. Entries in wall shall be at level of corresponding conduit with colour coding as per Table No. 1/4. (For Visual identification) Flexible conduits shall be used at expansion joints. Erection shall be done as per the layout finalized, with minimum sharp bends, with junction boxes at angular junctions and for straight runs at every 4.25m, in such manner so as to facilitate drawing of wires. All the bends shall be done with Bending Spring. Concealing of conduits: In RCC work Work shall be commenced after fixing of steel (re-enforcement) on centering material. Conduits shall be firmly fixed on steel of RCC work by binding wire. Fixing of conduits shall be such that it will remain rigid during casting of slab, beam, and column even after use of vibrator. Deep junction boxes and other draw-in boxes shall be such that their open end and centering material will not have gap in between so as to avoid concrete entering inside even after fixing covers to steel re-enforcement; and be filled with dry sand. Open ends of conduits; to be concealed in walls, shall be provided with couplers / sockets at ends and be flush with bottom of beam, and at located at the center of the beam. As far as possible bunching / grouping of conduits shall be avoided so that it will not affect strength of RCC work especially in beams. Suitable steel fish wire shall be drawn through in the conduits for</p>

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				<p>drawing of wires later on. Concealing of Conduits: In walls Chases shall be made in walls of adequate width, with cutter and chiseling through it. Necessary finishing of the surface shall be done. Conduits of adequate size shall be erected with use of appropriate accessories and 'U' nails. Drawing of wires: Use of Steel fish wire shall be made for drawing of wires. Wires shall be drawn with adequate care. Correct colour coding shall be used for phase, neutral and earth. Wires shall not have intermediate joint in between terminals of the accessories. Earth-wire and Return wire (neutral) may be looped within circuit only. For lighting load distribution, wires of two different phases shall not be drawn in single pipe. Wires shall be terminated in the terminals of accessories only. Adequate extra length shall be left at termination points. In case of 2-way point wiring additional wires of phase conductor shall be provided between the 2-way switches. Fixing Switchboards and accessories: Control switchboards shall generally be erected at 1.35m height or as specified in line and plum and shall be in level with wall surface so as to fix mounting plate flush with wall, Termination of wires shall be done in switch and other accessories only by carefully inserting all strands in terminals and proper tightening. Switches shall be provided on phase wire only. Bare wire shall not be used for looping incoming supply to switches. Phase wire shall be routed through switch only. For plug socket phase wire shall be connected in right side terminal when seen from front. Proper termination of earth wire in Earth terminal shall be ensured. All blank modules shall be plugged with blanking plates.</p> <p>Testing :- Insulation resistance test: All wiring shall be tested with 500V Meggar between phases, phase – neutral and to Earth. IR value shall not be less than 1M-ohm. Earth continuity: Earth continuity shall be ensured at all earth terminals of plug outlets and at earth terminals of metal enclosures. Polarity test: Polarity test shall be carried out for ensuring the correct polarity in switch and plug.</p>
219		Supplying and erecting 10 pair 0.5mm dia jelly filled unarmoured telephone copper cable with poly-al laminate moisture barrier laid in provided PVC casing capping/conduit as per specification No. WG-TW		As per Direction by Engineer in Charge
220		Supplying and erecting LED square / circular Max. 18 W down lighter/ Panel Light having pressure die-cast aluminium housing polystyrene diffuser having system lumens output of Min. 2000 Lumens min. efficacy of 110 lumen/W CRI>80 CCT upto 6500K Beam Angle of 120 deg. max. ripple of 5% THD<10% p.f. >0.95 operating range of 120-270V surge protection of 2.5 kV Life class of 50 000 Hrs. at L70B50 including driver having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.		As per Direction by Engineer in Charge
221		Supplying and erecting bulk head LED fitting max. 10W with high transitivity diffuser with system lumens output of min. 1100 lumens min. efficacy of 110 lumen/W CRI>80 CCT upto 6500K Beam Angle of 120 deg. THD<10% p.f. >0.95 operating range of 140-260V in built surge protection of 2.5 kV Life class of 50 000 Hrs. at L70B50 including driver IP66 IK09 rated on provided PVC Block / wooden board with 3 years warranty.		As per Direction by Engineer in Charge
222		Supplying and erecting anodized aluminium corridor / passage / mirror light LED fitting (2 feet) Max. 12W with high transitivity diffuser with min. system lumens output of 1200 lumens min. efficacy of 100 lumen/W CRI>80 CCT upto 6000K Beam Angle of 110 deg. Ripple<5% THD<10% p.f. >0.95 operating range of 200-270V surge protection of 2 kV Life class of 50 000 Hrs. at L70B50 including driver with end caps on provided PVC Block / wooden board with 3 years warranty.		As per Direction by Engineer in Charge

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223	Supplying and erecting anodized aluminium corridor / passage light LED fitting (4 feet) Max. 22W with high transitivity diffuser with system lumens output of Min.2200 lumens min. efficacy of 100 lumen/W CRI>80 CCT upto 6000K Beam Angle of 110 deg. Ripple<5% THD<10% p.f. >0.95 operating range of 200-270V surge protection of 2 kV Life class of 50 000 Hrs. at L70B50 including driver with end caps on provided PVC Block / wooden board with 3 years warranty.		As per Direction by Engineer in Charge
224	Supplying and erecting ding dong / electronic musical type call bell with heavy duty coil suitable to operate on 230V A.C. supply erected on polished double wooden block/sunmica block of suitable size.		As per Direction by Engineer in Charge
225	Supplying and erecting integrated LED street light fitting 40 to 50W IP65 & IK08 class having single piece pressure die-cast aluminium housing having system lumens output of Min. 4400 Lumens min. efficacy of 110 lumen/W CRI>70 CCT upto 6500K THD<10% p.f. >0.95 operating range of 140-270V inbuilt surge protection of 10 kV Life class of 50 000 Hrs. at L70B50 including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.		Material :- Fitting: ISI marked Energy efficient T-5 2X14 & 2X24 Street Light fitting complete with electronic ballast, transparent cover made out of 3mm thick acrylic sheet, gear cum reflector tray, canopy and lamp holder duly wired for use on 240 volt AC single phase 50 Hz without T-5 lamp. Canopy shall be made of Aluminum sheet of width 3" minimum per lamp. Gear cum reflector tray (GCRT) shall be made of either CRCA sheet of 0.8 mm thick or Aluminum sheet of 1.25 mm thick.Fitting shall be suitable for mounting up to a height of 15 meters and shall be able to withstand wind load test. It shall conform to class-1 of IS: 10322 (part 5/sec 3)/87 with amdt 1 and IP-65 protection i) Various component of fittings shall conform to IS specification as noted below. a) Electronic ballast (EB) to IS: 13021:Part-1:1991 with Amendment No.1, IS:13021: Part-2:1991 with Amendment Nos.1 and 2 and additional requirement as per the b) Bi-pin lamp holders to IS:3323/80 with amendment No.1/ c) PVC cables to IS:694/90 with amdt.No.1 & 2. ii) Surface of CRCA Steel and Aluminum sheets used shall be properly phosphatised and stove enameled white on the reflector side, tray side and other surface stove enameled grey. iii) The street light fittings shall be required with socket bore of 30mm or 40 mm or 50mm for side entry/top entry type fittings. The socket bore, however, will be specified by the indenters at the time of placement of supply order. iv) All wire leads to be adequately covered with sleeves for protection against accidental contracts. v) All hardware parts used should be zinc coated or nickel/chromium plated so as to be corrosion resistant. vi) Fitting shall be wired with multi-stranded copper wire terminating on suitable connectors. The wiring shall be properly clamped. Construction :- The complete fitting with all the above accessories shall be erected with provided bracket, on wall/street light pole or at any place as directed by Site engineer, duly connected and giving necessary testing.
226	Supplying and erecting street light Wall bracket made from 40 mm. dia ' G.I. pipe 1.2 m. in total length complete as per specification no. FG-BKT/WB		Material :- GI Pipe: GI Pipe of specified diameter as per (CW-PLB/GP) mentioned in chapter 17.5 Hardware: Grouting MS bolts, nuts of 10 mm dia. & 100 mm length. 'U' shaped clamps of suitable diameter made of GI. MS Flat: MS flat 3 mm thick 50 mm wide as shown in drawing. Paint: Red oxide & Aluminium paint. Wire leads: 1.5 mm2, as per (WG-MA/BW) mentioned in chapter 1.3 Miscellaneous: Cement, Sand, Water, etc. Construction :- The bracket fabricated as per drawing shall be erected on wall as explained below: • MS flat of length 15 cm with 10 mm diameter hole shall be welded to the pipe as shown in drawing. • Grouting bolts shall be grouted in wall and finished with cement plaster. • Bracket shall be placed on the grouted bolts with clamps and nut shall be tightened. • Fitting shall then be inserted onto the bracket and connections shall be made.
227	Supplying and erecting fresh air cum exhaust fan of light duty 250 V A.C. 50 cycles 225mm. 1400 RPM rust proof body & blades wire mesh duly erected complete.		As per Direction by Engineer in Charge

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228		Supplying and erecting energy saving ceiling fan 230 V A.C. 50 cycles 1200 mm complete erected in position as per specification no. FG-FN/CF		<p>Material :- Ceiling Fan: Electric Ceiling fan capacitor type with double ball bearing complete with capacitor, 300 mm down rod, canopies, shackles, reel insulator, half threaded bolts of 9.53 mm (3/8") dia 62.5 mm (2-1/2") to 88 mm (3-1/2") long and 7.94 mm (5/16") dia 44.5 mm (1-3/4") to 57 mm (2-1/4") long with nuts, with lock type split pin, spring & plate washers, etc.; three number blade made of Aluminium alloy, suitable for single phase, AC</p> <p>210 volts, 50 Hz supply and conforming to class I of IS : 374/1979 with amendment no 1 to 6 except for performance parameters to the extent modified as details in general requirements. The down rod shall be capable to withstand a tensile load of 1000 kg without breakdown and a torsion load of 500 kg.cm without breakage as per Clause 10.14.1 of IS: 374/1979 with amendment no.1 to 6. Electrical motor should be single phase permanent capacitor type with no. of poles 12/14/16/18 (As per sweep), Class-I with basic insulation. Class of insulation shall be B class. The winding wire used for fan should be synthetic enamelled of 30 to 38 SWG. Connection wire: Flat / round Two core flexible stranded copper wire cord 24/0.2mm ISI marked. Paint: Superior quality enamel paint of specified colour for marking Sr. No and date of erection.</p> <p>Construction :- Blades of ceiling fan shall be properly fixed. Down rod, clamp shall be carefully fixed with nut bolt and split pin. Canopies shall be tightened on down rod keeping sufficient clearance. Wiring connections shall be made with required wire leads. Regulator of fan shall be erected on provided switchboard with required wire leads.</p> <p>Testing :- After erection fan shall be tested by connecting to supply at all positions of regulator. Also steadiness of fan shall be checked at full speed, so that there is no wobbling.</p>
229		Supplying, erecting and marking SPMCB 6A to 32A C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB		<p>Material :- General Specifications for MCB's • MCB's shall be of current limiting type, ISI marked confirms to IS 8828 – 1996. • The power loss per pole shall be low and shall be in accordance with IS 8828 – 1996. • All cable entries shall be either from bottom or top. • MCB's shall be of C-curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 kA short circuit both on the manual & automatic operation. • All the active, live parts of MCB's should be out of human reach, ensuring safety & confirms to IP: 55 degree of protection. • The MCB's must house transparent label holder to ensure circuit identification. • The MCB's must have fully insulated safety shutters.</p> <p>• The MCB's shall have lockable switching lever. • The Minimum electrical endurance shall be 20,000 operations. • The housing of the MCB shall be mounted self-extinguishing DMC (Dough Moulding Compound). • The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established. • All MCB's shall have a minimum short circuit Capacity of 10kA RMS. Material : Single Pole / Single pole with Neutral / Double Pole / Triple pole / Four pole: MCB, ISI marked as per IS 8828 : 1996 (IEC 60898) with hammer trip and watch mechanism 15 arc plates, 10 KA capacity with nominal rating of 240/415V. Lugs: Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable</p> <p>Construction :- MCB shall be erected in provided enclosure / distribution board and terminating the provided wires by copper lugs (crimping type) and connecting the same.</p>
230		Supplying, erecting and marking SPMCB 6A to 32A B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB		<p>Material :- General Specifications for MCB's • MCB's shall be of current limiting type, ISI marked confirms to IS 8828 – 1996. • The power loss per pole shall be low and shall be in accordance with IS 8828 – 1996. • All cable entries shall be either from bottom or top. • MCB's shall be of C-curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 kA short circuit both on the manual & automatic operation. • All the active, live parts of MCB's should be out of human reach, ensuring safety & confirms to IP: 55 degree of protection. • The MCB's must house transparent label holder to ensure circuit identification. • The MCB's must have fully insulated safety shutters.</p> <p>• The MCB's shall have lockable switching lever. • The Minimum electrical endurance shall be 20,000 operations. • The housing of the MCB shall be mounted self-extinguishing DMC (Dough Moulding Compound). • The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established. • All MCB's shall have a minimum short circuit Capacity of 10kA RMS. Material : Single Pole / Single pole with Neutral / Double Pole / Triple pole / Four pole: MCB, ISI marked as per IS 8828 : 1996 (IEC 60898) with hammer trip and watch mechanism 15 arc plates, 10 KA capacity with nominal rating of 240/415V. Lugs: Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable</p> <p>Construction :- MCB shall be erected in provided enclosure / distribution board and terminating the provided wires by copper lugs (crimping type) and connecting the same.</p>
231		Supplying, erecting and marking DPMCB 40A to 63A C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB		<p>Material :- General Specifications for MCB's • MCB's shall be of current limiting type, ISI marked confirms to IS 8828 – 1996. • The power loss per pole shall be low and shall be in accordance with IS 8828 – 1996. • All cable entries shall be either from bottom or top. • MCB's shall be of C-curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 kA short circuit both on the manual & automatic operation. • All the active, live parts of MCB's should be out of human reach, ensuring safety & confirms to IP: 55 degree of protection. • The MCB's must house transparent label holder to ensure circuit identification. • The MCB's must have fully insulated safety shutters.</p> <p>• The MCB's shall have lockable switching lever. • The Minimum electrical endurance shall be 20,000 operations. • The housing of the MCB shall be mounted self-extinguishing DMC (Dough Moulding Compound). • The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established. • All MCB's shall have a minimum short circuit Capacity of 10kA RMS. Material : Single Pole / Single pole with Neutral / Double Pole / Triple pole / Four pole: MCB, ISI marked as per IS 8828 : 1996 (IEC 60898) with hammer trip and watch</p>

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				mechanism15 arc plates,10 KA capacity with nominal rating of 240/415V. Lugs: Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Construction :- MCB shall be erected in provided enclosure / distribution board and terminating the provided wires by copper lugs (crimping type) and connecting the same.
232		Supplying and erecting single pole and neutral distribution board (SPNDB) with 2 ways for incoming and 10 ways (10 poles) for outgoing SP MCBs with door 1.2mm thickness surface / flush mounted IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB		Material :- General Specifications for MCBDB's • DB's shall be prewired and shall be fabricated as per IS: 8623. • Suitable for flush mounting & surface mounting, with 100 A copper bus bar (For Horizontal type DB), neutral bar, earth bar & cable ties for cable management. • In case of Vertical DB the bus bar shall be of 200 A rating. • DB's shall be of IP – 43 degree of protection. • All the MCB distribution boards shall be fabricated out of 18 SWG thick sheet steel duly rust inhibited through a process of degreasing, pickling, phosphating & powder coating to an approved colour over primer & shall be of the totally enclosed dust proof type suitable for wall mounting. • All components shall be mounted on DIN rails & covered totally with a sheet steel cover rendering it finger-safe. Access to the internal connections shall be only through removing the cover sheet. • All DB's shall be internally prewired using copper insulated high temperature PVC wires. • Bus bars & neutral bar shall be fully insulated with standard colour code. • Bus bar withstanding capacity shall be 10kA. • DB's must have facility of reversing door without modification, pan assembly for ease of installation & convertible locking. Material : Horizontal/Vertical type MCBDB: ISI marked as per IS 8623, of specified ways (poles), surface/flush mounting, with/without door, suitable for 230 V / 415 V. Lugs – Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Iron work: Suitable size of angle/flat. Hardware: SM screws, rawl plug, gutties, etc. Construction :- MCBDB shall be erected at designated location and directed by site engineer and terminating the provided wires by copper lugs (crimping type) and connecting the same.
233		Supplying and erecting CRCA sheet metal one way enclosures of 1.2mm thickness suitable for DP MCB /TP MCB/FP MCB/RCCB/RCBO complete erected on angle iron/GI frame.		Material :- General Specifications for MCBDB's • DB's shall be prewired and shall be fabricated as per IS: 8623. • Suitable for flush mounting & surface mounting, with 100 A copper bus bar (For Horizontal type DB), neutral bar, earth bar & cable ties for cable management. • In case of Vertical DB the bus bar shall be of 200 A rating. • DB's shall be of IP – 43 degree of protection. • All the MCB distribution boards shall be fabricated out of 18 SWG thick sheet steel duly rust inhibited through a process of degreasing, pickling, phosphating & powder coating to an approved colour over primer & shall be of the totally enclosed dust proof type suitable for wall mounting. • All components shall be mounted on DIN rails & covered totally with a sheet steel cover rendering it finger-safe. Access to the internal connections shall be only through removing the cover sheet. • All DB's shall be internally prewired using copper insulated high temperature PVC wires. • Bus bars & neutral bar shall be fully insulated with standard colour code. • Bus bar withstanding capacity shall be 10kA. • DB's must have facility of reversing door without modification, pan assembly for ease of installation & convertible locking. Material : Horizontal/Vertical type MCBDB: ISI marked as per IS 8623, of specified ways (poles), surface/flush mounting, with/without door, suitable for 230 V / 415 V. Lugs – Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Iron work: Suitable size of angle/flat. Hardware: SM screws, rawl plug, gutties, etc. Construction :- MCBDB shall be erected at designated location and directed by site engineer and terminating the provided wires by copper lugs (crimping type) and connecting the same.
234		Supplying, Erecting and Commissioning of 2 pole RCCB 40A electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB		Material :- Cables: Cables shall be PVC / XLPE of aluminium conductor as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/AL) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc. Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No 7/1 shall be run. Cable with G I wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or 50x6 mm MS strip of required length and fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to

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					inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loopshall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable.
235		Supplying and erecting plywood 12 mm thick fixed to wall or on provided panel board with necessary materials such as screws wall fasteners supports nuts bolts etc. complete.			Material :- Box: 16 gauge CRCA sheet / FRP type with mounting arrangement for kitkat / MCB Bakelite connectors: Bakelite connector of 2/4 ways, 32A, 250 V. MS Clamps: Clamps fabricated of required length and shape, of 3 mm thick mild steel having 40 mm width. Hardware: 10 mm mild steel nuts and bolts. Paint for CRCA box: Superior quality aluminum / silver paint or required shade enameled paint as per the requirement of site engineer. Primer / Red oxide: Superior quality primer / red oxide for use on sheet metal. Construction :- CRCA Sheet metal boxes: Box shall be fabricated from 16 gauge CRCA sheet as per dimensions specified in item, with minimum 3 mm fold on front side of the box so as to make it water proof (Rubber beading / gasket shall be pasted on the edges / asbestos rope beading). Edges of front cover shall be folded in such a manner so that it shall cover the front opening of the box. The front cover shall be fixed either by screws or be hinged (as per requirement), with self-locking arrangement. There shall be provision of fixing connector / porcelain kitkat fuse / single pole MCB, inside the box. Provision of two holes of minimum 10 mm dia. for fixing bolt of clamp and one hole of required dia. for PVC wire leads, shall be made at the rear side of the box and provision for holes of required dia. at bottom for fixing the cable gland of incoming and outgoing cables. Box shall have earth terminal. Box shall have anti rust treatment and be painted with two coats of red oxide and finally two coats aluminum / silver paint. Rubber gasket shall be provided for making the box watertight. Unless and otherwise specified, the mounting height of the box shall be minimum 1750 mm from the finished ground level for facilitating easy maintenance. FRP boxes: FRP boxes manufactured with minimum wall thickness of 2.7 mm either gray or blue in colour, having provision for fixing either porcelain kitkat fuse or Single pole MCB, 4 way bakelite connector, and with provision of two holes of minimum 10 mm dia. for fixing bolt of clamp and one hole of required dia. for PVC wire leads, shall be made at the rear side of the box and one hole of required dia. at bottom to for fixing the cable gland of incoming and outgoing cables. The front cover shall be hinged, with locking arrangement and lock and key. The mounting height of the box shall be minimum 1750 mm from the finished ground level for facilitating easy maintenance. Wherever required fixing of box shall be done with MS clamps of required length, so as to hold pipe pole / RSJ pole and shall be duly painted in approved manner.
236		Supplying, erecting & terminating FR XLPE insulated galvanised steel formed wire armoured (strip) cable 1100 V 2 core 4 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			Material :- Cables: Cables shall be PVC / XLPE of aluminium conductor as per Table no.7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/AL) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc. Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No7/1 shall be run. Cable with G I wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or50x6 mm MS strip of required lengthand fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loopshall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable.
237		Supplying and erecting FRP box of size 150mm x 125mm x 100 mm 2.7 mm thick complete on pole/wall as per specification No. CB-SB			Material :- Box: 16 gauge CRCA sheet / FRP type with mounting arrangement for kitkat / MCB Bakelite connectors: Bakelite connector of 2/4 ways, 32A, 250 V. MS Clamps: Clamps fabricated of required length and shape, of 3 mm thick mild steel having 40 mm width. Hardware: 10 mm mild steel nuts and bolts. Paint for CRCA box: Superior quality aluminum / silver paint or required shade enameled paint as per the requirement of site engineer. Primer / Red oxide: Superior quality primer / red oxide for use on sheet metal. Construction :-

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				CRCA Sheet metal boxes: Box shall be fabricated from 16 gauge CRCA sheet as per dimensions specified in item, with minimum 3 mm fold on front side of the box so as to make it water proof (Rubber beading / gasket shall be pasted on the edges / asbestos rope beading). Edges of front cover shall be folded in such a manner so that it shall cover the front opening of the box. The front cover shall be fixed either by screws or be hinged (as per requirement), with self-locking arrangement. There shall be provision of fixing connector / porcelain kitkat fuse / single pole MCB, inside the box. Provision of two holes of minimum 10 mm dia. for fixing bolt of clamp and one hole of required dia. for PVC wire leads, shall be made at the rear side of the box and provision for holes of required dia. at bottom for fixing the cable gland of incoming and outgoing cables. Box shall have earth terminal. Box shall have anti rust treatment and be painted with two coats of red oxide and finally two coats aluminum / silver paint. Rubber gasket shall be provided for making the box watertight. Unless and otherwise specified, the mounting height of the box shall be minimum 1750 mm from the finished ground level for facilitating easy maintenance. FRP boxes: FRP boxes manufactured with minimum wall thickness of 2.7 mm either gray or blue in colour, having provision for fixing either porcelain kitkat fuse or Single pole MCB, 4 way bakelite connector, and with provision of two holes of minimum 10 mm dia. for fixing bolt of clamp and one hole of required dia. for PVC wire leads, shall be made at the rear side of the box and one hole of required dia. at bottom to for fixing the cable gland of incoming and outgoing cables. The front cover shall be hinged, with locking arrangement and lock and key. The mounting height of the box shall be minimum 1750 mm from the finished ground level for facilitating easy maintenance. Wherever required fixing of box shall be done with MS clamps of required length, so as to hold pipe pole / RSJ pole and shall be duly painted in approved manner.
238		Providing earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials testing & recording the results as per specification no. EA-EP		<p>Material :- Earth Plate: Galvanised cast iron / Copper earth plate or G.I. pipe as per specifications given in Table No 9.1/1 of Specification book. CI Cover: As per specifications given in Table No 9.1/1 of Specification book. Earthing Conductor: Copper/G.I strip/Annealed bare copper wire/G.I. earth wire of size as per specifications given in Table No 9.1/1 of Specification book. GI Pipe: As per specification (CW-PLB/GP) mentioned chapter no. 17.5 for watering, and as enclosure for Earth wire, refer specifications given in Table No 9.1/1 of Specification book. Hardware: Screw / nut bolts with required washer of dimensions, Rawl plug / clip/ 'U' nails and material as per specifications given in Table No 9.1/1 of Specification book. Filling material: Coal /Charcoal/ salt as per specifications given in Table No 9.1/1 of Specification book. as per specifications given in Table No 9.1/1 of Specification book. Lugs: As per specification (CB-LG/AL, CB-LG/CU) mentioned chapter 7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No 9.1/1 of Specification book.</p> <p>Construction :- Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvanised cast iron / Copper earth plate or G.I. pipe shall be as per Table No 9.1/1 in Specification book. The earth connection to equipment/ switch gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connections shall be made either by strip or double run of earth wire with drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip shall be used, but where ever jointing of strip is unavoidable, the overlap portion must not be less than 21/2 times the width of the strip either welded/ brazed/soldered by all sides or 6 inches overlap with two nut bolts/ riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and salt, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS: 3043, with laying wires in PVC/ G.I. pipe and watering arrangement as per diagram and covered with C.I. Cover (Where ever applicable). Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing of resistance of earth electrode. Testing :- The value of each earth electrode shall be measured by earth tester in presence of site Engineer and record to be submitted.</p>
239		Supplying, installing, testing and commissioning of ETC solar water heating system without heat exchanger type of 300 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I 2004 complete as per specification no. ESD-SHWS-ETC		As per Direction by Engineer in Charge
240		Supplying and erecting 20/25 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC) thickness 2.6 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC		As per Direction by Engineer in Charge

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241	Supplying and erecting 32/40 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC) thickness 3.8 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC		As per Direction by Engineer in Charge
242	Providing and fixing high-density polyethylene (HDPE) container one piece moulded triple layer water tank made out of high density polyethylene and built corrugated inclusive of delivery up to destination hoisting and fixing of accessories such as inlet outlet overflow pipe inclusive of all tanks capacity up to 20000 litres.		As per Direction by Engineer in Charge
243	Supplying and erecting iron work sheet metal work consisting of CRCA sheets various sections of iron plates chequered plates rods bars MS pipes etc. for panel board or any other purpose with bending cutting drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.		As per Direction by Engineer in Charge
244	Supplying and erecting 25 mm dia. gun metal sluice valve at position with necessary materials complete.		As per Direction by Engineer in Charge
245	Supplying and erecting 40 mm. dia. gun metal sluice valve at position with necessary materials complete.		As per Direction by Engineer in Charge
246	Supplying and erecting non return valve 25 mm dia in position made of gun metal complete.		As per Direction by Engineer in Charge
247	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.		As per Direction by Engineer in Charge
248	Supplying and erecting mains with 3x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW		As per Direction by Engineer in Charge
249	Supplying and erecting modular type switch 16A duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
250	Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge

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251		Supplying and erecting PVC Surface modular switch box with double mounting plate for 3 module duly erected.		As per Direction by Engineer in Charge
252		Providing and fixing high-density polyethylene (HDPE) container one piece moulded triple layer water tank made out of high density polyethylene and built corrugated inclusive of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow pipe inclusive of all tanks capacity up to 20000 litres.		As per Direction by Engineer in Charge
253		Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.		As per Direction by Engineer in Charge
254		Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 35 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		As per Direction by Engineer in Charge
255		Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU		As per Direction by Engineer in Charge
256		Providng earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP		As per Direction by Engineer in Charge

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1	2	3	4
257	Supplying and erecting GI strip of high purity required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint with joints required. As per specification no EA-EP.		<p>Material :- Cables: Cables shall be PVC / XLPE of aluminium conductor as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/AL) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc.</p> <p>Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No 7/1 shall be run. Cable with G I wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or50x6 mm MS strip of required lengthand fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loopsshall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable.</p>
258	Supplying, installation, testing and commissioning of booster fire pump [BP] suitable for water discharge of 900 LPM at 35 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 7.5 kW or of suitable kW capacity for manual/automatic operation and consisting of following :(a) Horizontal/vertical type, single/multi stage, centrifugal casing pump of cast iron body & bronze/CI 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/BP		<p>Material :- Cables: Cables shall be PVC / XLPE with Copper conductor as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/CU) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc.</p> <p>Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No7/1 shall be run. Cable with G I wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or50x6 mm MS strip of required lengthand fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to inspect</p>

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				the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loopsshall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable.
259		Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 1800 to 2280 LPM at 80 to 60 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 37kW 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 (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/SSC/EP		Material :- Earth Plate: Galvanised cast iron / Copper earth plate or G.I. pipe as per specifications given in Table No 9.1/1 of Specification book. CI Cover: As per specifications given in Table No 9.1/1 of Specification book. Earthing Conductor: Copper/G.I strip/Annealed bare copper wire/G.I. earth wire of size as per specifications given in Table No 9.1/1 of Specification book. GI Pipe: As per specification (CW-PLB/GP) mentioned chapter no. 17.5 for watering, and as enclosure for Earth wire, refer specifications given in Table No 9.1/1 of Specification book. Hardware: Screw / nut bolts with required washer of dimensions, Rawl plug / clip/ 'U' nails and material as per specifications given in Table No 9.1/1 of Specification book. Filling material: Coal /Charcoal/ salt as per specifications given in Table No 9.1/1 of Specification book. As per specifications given in Table No 9.1/1 of Specification book. Lugs: As per specification (CB-LG/AL, CB-LG/CU) mentioned chapter 7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No 9.1/1 of Specification book. Construction :- Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvanised cast iron / Copper earth plate or G.I. pipe shall be as per Table No 9.1/1 in Specification book. The earth connection to equipment/ switch gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connections shall be made either by strip or double run of earth wire with drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip shall be used, but where ever jointing of strip is unavoidable, the overlap portion must not be less than 21/2 times the width of the strip either welded/ brazed/soldered by all sides or 6 inches overlap with two nut bolts/ riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and salt, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS: 3043, with laying wires in PVC/ G.I. pipe and watering arrangement as per diagram and covered with C.I. Cover (Where ever applicable). Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing of resistance of earth electrode.
260		Supplying, installation, testing and commissioning of jockey fire pump (JP) suitable for water discharge of 180 to 240 LPM at 90 to 70 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 9.3 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.		Material :- Earth Plate: Galvanised cast iron / Copper earth plate or G.I. pipe as per specifications given in Table No 9.1/1 of Specification book. CI Cover: As per specifications given in Table No 9.1/1 of Specification book. Earthing Conductor: Copper/G.I strip/Annealed bare copper wire/G.I. earth wire of size as per specifications given in Table No 9.1/1 of Specification book. GI Pipe: As per specification (CW-PLB/GP) mentioned chapter no. 17.5 for watering, and as enclosure for Earth wire, refer specifications given in Table No 9.1/1 of Specification book. Hardware: Screw / nut bolts with required washer of dimensions, Rawl plug / clip/ 'U' nails and material as per specifications given in Table No9.1/1 of Specification book. Filling material: Coal /Charcoal/ salt as per specifications given in Table No 9.1/1 of Specification book. As per specifications given in Table No 9.1/1 of Specification book. Lugs: As per specification (CB-LG/AL, CB-LG/CU) mentioned chapter7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No 9.1/1 ofSpecification book.Construction :- Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvanised cast iron / Copper earth plate or G.I. pipe shall be as per Table No9.1/1 in Specification book. The earth connection to equipment/ switch gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connections shall be made either by strip or double run of earth wire with drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip shall be used, but where ever jointing of strip is unavoidable, the overlap portion must not be less than 21/2 times the width of the strip either welded/ brazed/soldered by all sides or 6 inches overlap with two nut bolts/ riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and salt, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS:3043, with laying wires in PVC/ G.I. pipe and watering arrangement as per diagram and covered with C.I. Cover (Where ever applicable). Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing of resistance of earth electrode.Testing :- The value of each earth electrode shall be measured by earth tester in presence of site Engineer and record to be submitted.

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261		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),		As per Direction by Engineer in Charge
262		Supplying & erecting D.O.L Starter suitable for 415 V, 3 phase 50 cycles with no volt coil and overload element with necessary materials and connected to supply for 10 H.P.		As per Direction by Engineer in Charge
263		Supplying and erecting G.I. pipe 'C' class ERW 25 mm dia with necessary fittings complete as per specification no. FF-PP		As per Direction by Engineer in Charge
264		Supplying and erecting G.I. pipe 'C' class ERW 75/80 mm dia with necessary fittings complete as per specification no. FF-PP		As per Direction by Engineer in Charge
265		Supplying and erecting G.I. pipe 'C' class ERW 100 mm dia with necessary fittings complete as per specification no. FF-PP		As per Direction by Engineer in Charge
266		Supplying and erecting G.I. pipe 'C' class ERW 150 mm dia with necessary fittings complete as per specification no. FF-PP		As per Direction by Engineer in Charge
267		Providing coating of bitumen paint & 4mm thick wrapping for underground 150 mm ring main of fire fighting system.		As per Direction by Engineer in Charge
268		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		As per Direction by Engineer in Charge
269		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		Material :- Body: a) Brass, b) Lead tin bronze Bonnet or cover: a) Lead tin bronze, b) Forged brass, c) Brass Stuffing box, disc hinge, check nut, stem nut, disc retaining nut, gland, gland nut, gland flange, body seat rings and disc or wedge facing rings (where renewable): a) Lead tin bronze, b) Extruded brass rod, c) Forged brass, d) Brass Stem, hinge pin and plug: a) Extruded brass rod, b) High-tensile brass, c) Forged Brass Ball (for ball type check valves): Chromium steel Nut bolts: Mild steel Hand wheel: Cast iron Gasket: Compressed asbestos fibre Gland packing: a) Hemp and jute, b) Asbestos Spring: Phosphor bronze wire Seating ring: Synthetic rubber Construction :- The double flange sluice valve shall be fitted with provided flange, gaskets, Nut bolts, etc. to be fitted to pipe, accessories with

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				washers, spring washers, check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants.
270		Supplying and erecting 150 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV		Material :- Body: Cast iron Spheroid graphite iron Carbon steel Disc: a) Cast iron Spheroid graphite iron carbon steel, b) Stainless steel Gun metal c) Aluminum bronze Shaft: a) Stainless steel, b) Carbon steel Aluminum bronze Nickel copper alloy Seating ring/Seal retaining ring: a) Stainless steel, b) Gun metal aluminum bronze deposited metal suitable for duty or resilient material Seat: Elastomers Shaft bearing seals: Manufacturer's standards suitable for duty Internal fastenings: Stainless steel External bolting: Carbon steel: tensile strength 390 n/mm or MPa Construction :- The double flange butterfly valve shall be fitted with provided flange, gaskets, Nut bolts etc. to be fitted to pipe, accessories with washers, spring washers, check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants.
271		Supplying and erecting 150 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV		Material :- Body: Cast iron Spheroid graphite iron Carbon steel Disc: a) Cast iron Spheroid graphite iron carbon steel, b) Stainless steel Gun metal c) Aluminum bronze Shaft: a) Stainless steel, b) Carbon steel Aluminum bronze Nickel copper alloy Seating ring/Seal retaining ring: a) Stainless steel, b) Gun metal aluminum bronze deposited metal suitable for duty or resilient material Seat: Elastomers Shaft bearing seals: Manufacturer's standards suitable for duty Internal fastenings: Stainless steel External bolting: Carbon steel: tensile strength 390 n/mm or MPa Construction :- The double flange butterfly valve shall be fitted with provided flange, gaskets, Nut bolts etc. to be fitted to pipe, accessories with washers, spring washers, check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants.
272		Supplying and erecting 20 mm dia gun metal gate valve complete with PN16 pressure rating, as per specification no. FF-VL/GV		Material :- Body, cover, door, bearing holder: Grey cast iron Hinge pin, door pin and door suspension pin: Stainless steel Body seat rings: Leaded tin bronze Door face ring: Leaded tin bronze Bearing bushes/ Bearing block: Leaded tin bronze Plugs for hinged pin/Air release plug: Leaded tin bronze Bolts: Carbon steel Nuts: Carbon steel Gaskets: Rubber Hinges: Grey cast iron Construction :- The double flange NRV shall be fitted to pipe with provided flange, gaskets, and Nut bolts etc, accessories with washers, spring washers, and check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants.
273		Supplying and erecting 25 mm dia gun metal gate valve complete with		Material :- Body: a) Brass, b) Leaded tin bronze Bonnet or cover: a) Leaded tin

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	PN16 pressure rating, as per specification no. FF-VL/GV		bronze, b) Forged brass, c) Brass Stuffing box, disc hinge, check nut, stem nut, disc retaining nut, gland, gland nut, gland flange, body seat rings and disc or wedge facing rings (where renewable): a) Leaded tin bronze, b) Extruded brass rod, c) Forged brass, d) Brass Stem, hinge pin and plug: a) Extruded brass rod, b) High-tensile brass, c) Forged Brass Ball (for ball type check valves): Chromium steel Nut bolts: Mild steel Hand wheel: Cast iron Gasket: Compressed asbestos fibre Gland packing: a) Hemp and jute, b) Asbestos Spring: Phosphor bronze wire Seating ring: Synthetic rubber Construction :- The Gate Valve shall be fitted to pipe with provided flange, gaskets, and Nut bolts etc, accessories with washers, spring washers, and check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants.
274	Supplying and erecting stainless steel single outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV		Material :- Body: a) Brass, b) Leaded tin bronze Bonnet or cover: a) Leaded tin bronze, b) Forged brass, c) Brass Stuffing box, disc hinge, check nut, stem nut, disc retaining nut, gland, gland nut, gland flange, body seat rings and disc or wedge facing rings (where renewable): a) Leaded tin bronze, b) Extruded brass rod, c) Forged brass, d) Brass Stem, hinge pin and plug: a) Extruded brass rod, b) High-tensile brass, c) Forged Brass Ball (for ball type check valves): Chromium steel Nut bolts: Mild steel Hand wheel: Cast iron Gasket: Compressed asbestos fibre Gland packing: a) Hemp and jute, b) Asbestos Spring: Phosphor bronze wire Seating ring: Synthetic rubber Construction :- The Gate Valve shall be fitted to pipe with provided flange, gaskets, and Nut bolts etc, accessories with washers, spring washers, and check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants
275	Supplying and installing one piece moulded HDPE / fibre water tank for negative suction only, having capacity 1000 litres fitted with necessary accessories complete as per specification no. FF-FFA/PT		Material :- Body: a) Brass, b) Leaded tin bronze Bonnet or cover: a) Leaded tin bronze, b) Forged brass, c) Brass Stuffing box, disc hinge, check nut, stem nut, disc retaining nut, gland, gland nut, gland flange, body seat rings and disc or wedge facing rings (where renewable): a) Leaded tin bronze, b) Extruded brass rod, c) Forged brass, d) Brass Stem, hinge pin and plug: a) Extruded brass rod, b) High-tensile brass, c) Forged Brass Ball (for ball type check valves): Chromium steel Nut bolts: Mild steel Hand wheel: Cast iron Gasket: Compressed asbestos fibre Gland packing: a) Hemp and jute, b) Asbestos Spring: Phosphor bronze wire Seating ring: Synthetic rubber Construction :- The Gate Valve shall be fitted to pipe with provided flange, gaskets, and

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				Nut bolts etc, accessories with washers, spring washers, and check nuts as required with proper alignment so as to be leak proof including necessary labour and required tools and plants.
276		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		Material :- Valve Body, bonnet, stop valve, Check nut, female outlet: Bronze/ Aluminium alloy or Stainless Steel Valve spindle: Bronze/ Aluminum alloy or Stainless Steel Hand Wheel: M.S. or C.I. (Black painted) Spring: Made of phosphor wire. Washer, Gasket: Rubber Blank Cap: ABS plastic.Construction :- The hydrant valve shall be connected with provided flange, gaskets, Nut bolts etc. with use of required tools and plants. The water discharge shall be not less than 900 lpm for single head and 1800 lpm for double head valves at 7 kg / cm ²
277		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		Material :- Priming Tank: HDPE/ Fiber of good quality material Gate Valves: As per (FF- VL/GV) above. Construction :- The Priming tank shall be installed on provided M.S. structural supports with 20/25 mm dia. inlet valve and 50 mm dia. outlet valve with provided necessary G.I. piping up to delivery of main fire pump before non-return valve.
278		Supplying and erecting stainless steel branch pipe 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle complete as per specifications no. FF-FFA/NZ		As per Direction by Engineer in Charge
279		Supplying and erecting 150 mm dia fire brigade header suitable for supplying water in fire tank complete as per specification no. FF-FA/FBC		Material :- Hose pipe material: Rubber lined woven jacketed & 63mm in dia., the lining and the cover shall be of uniform thickness, reasonably concentric and free from air blisters, porosity and splits. The tensile shall be minimum 5.00 MPa and shall withstand pressure of 10.2 kg/ cm ² Coupling: Gun metal Construction :- Hose pipe of 15 metre length with male and female Gun metal coupling shall be connected as per direction.
280		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		Material :- Nozzle: Chrome plated Gun metal Construction :- Gun metal hexagonal nozzle fitted with required tools and plants including necessary labour, material, etc.

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281		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		As per Direction by Engineer in Charge
282		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		Material :- Air release Valve: Gun metal Coupling: G.I. Construction :- Air release Valve with necessary GI Coupling shall be fixed on top of wet riser with required labour, tools, etc.
283		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(Code 538 of IS 5)		Material :- Pressure Gauge: 100 mm diameter made from Brass metal. Cock valve, elbow, and pipe: G.I Construction :- The 100 mm dia pressure gauge with G I cock valve, erected with GI Pipe including accessories, with required labour, tools, etc, as directed by the Engineer-in-charge.
284		Supplying, erecting testing and commissioning multi sensor heat detector with smoke and heat combination (RoR + fix temperature) with base on back box, necessary connections complete as per specification no. FF-FAS/HD		Material :- Pressure switch: Brass metal Isolation valve, elbow, Nipple: G.I Construction :- The Pressure switch with G I isolation valve, and necessary GI fittings (elbow, Nipple) fitted with required labour, tools, etc.
285		Supplying, erecting testing and commissioning manual call point (Pill box) with break glass, push button (resettable type) in metal enclosure complete as per specification no. FF-FAAS/MCP		Material :- Body: Stainless steel 6 mm thick Construction :- The Orifice plate shall be placed before the hydrant valve
286		Supplying, erecting, testing and commissioning hooters having high (100dB @ 1m) and low (94dB @ 1m) volume setting, group addressing facility allowing multiple sounders to be activated with CRCA enclosure complete as per specification no. FF-FAAS/HTR		Material :- Heat detector: UL listed / LPCB marked with 3600 blinking LED & having 680 C/780 C fixed temperature. Box: CRCA/MS sheet of 16 gauges Red oxide paint: Superior quality Enamel paint: Superior quality of specified colour Hardware: Sheet metal screws Plugs: Plastic Construction :- The Heat Detector shall be fixed on the CRCA/MS sheet box duly painted with one coat of red oxide & 2 coats of enamel paint of specified shade with necessary SM screws, plugs, etc on ceiling, duly terminating the provided cable with provided glands and making the connection.

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1	2		3	4
287		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		Material :- Push Button: Plastic Enclosure: CRCA/MS with 100/150 mm round/square with Glass cover Hammer with chain: Brass Enamel paint: Superior quality Post Office red colour Hardware: S.M. Screw Plugs: Plastic Construction :- The pill box with break glass cover, push button in circular/ square enclosure with push button kept inside per set with a glass outside marked "IN CASE OF FIRE BREAK GLASS" provided with a small hammer and chain fixed to the pill box shall be mounted on wall or any other place as directed and provided with cable entry with suitable terminal inside and painted with two coats of red oxide and two coats of post office red enamel paint.
288		Supplying, installing, testing and commissioning of 8 Zones Microprocessor based conventional fire alarm control panel (FACP) with standard accessories , 16x2 Character LCD Display, provision for zone wise contact and beep sound alarm, suitable to operate on 120-220 V AC, 0 - 49 Deg C, 93 ± 2 Percentage RH (non- condensing) at 32 ± 2 Deg C complete as per specification no. FF-FAAS/FACP		Material :- Hooter: Electronic type with 6W output, Line matching transformer Enclosure: CRCA sheet of 14 SWG with perforation Enamel paint: Superior quality Post Office red colour Hardware: S.M. Screw Plugs: Plastic Gitties: Wooden Construction :- The electronics hooter with Line matching transformer shall be enclosed in suitable size perforated CRCA enclosure and installed as per instructions and shall be connected and fixed at suitable site to ensure that the alarm is heard anywhere in the protected area. The minimum sound level shall be 80 dB.
289		Supplying, erecting, testing and commissioning 120 W amplifier suitable to operate on 230 Volts A.C. / 12 Volts D.C. supply complete as per specification no. FF-PA/AFR		Material :- Cables: Cables shall be PVC / XLPE with Copper conductor as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/CU) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc. Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No 7/1 shall be run. Cable with GI wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or 50x6 mm MS strip of required length and fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loop shall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of

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			cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable.
290	Supplying, erecting, testing and commissioning 15 to 30 Watts sound column or ceiling mounted complete as per specification no. FF-PA/SOC		Material :- Panel: Microprocessor based Conventional Main Fire Alarm Control Panel (FACP) with necessary Test Certificate from ERTL as per IS 2189-1999 provided with SMPS (Switch Mode Power Supply) of suitable battery (2x12V) 24V, 24 AH capacity maintenance free battery as standby supply to switch over automatically for a period of 8 hours in case of A.C. supply failure to panel with 7 AH capacity battery charger, panel shall have following features. a) Visual zone indication in which fire has emerged. b) Audio alarm devices. c) Acknowledge reset and test devices. d) Visual indication (2x20 character LCD display) incorporating following indications: (i) Fire condition (ii) Fault condition (iii) A.C. Pilot indication (iv) Low battery indication (v) Blown fuse indication A.C. as well as D.C. (vi) Built in electronic hooters of 2 tone round for fire condition and single tone for fault condition. (vii) Open and short circuit fault. (viii) Push button switch for checking each zone. (ix) Push button to disable audio alarm. (x) Reset push button. e) Fire protection and alarm circuit shall have modular design using electronic plug in type printed circuit boards (PCB) with spare cards. Construction :- The microprocessor based main fire Alarm control panel designed as per IS2189- 1999 with ERTL Test certificate shall be fixed at accessible place so that security or fire personal can attend to the fault immediately. Testing :- Testing: The control shall be tested for following features: 1) Alarm cancel Test 2) Reset 1 lamp 3) Fire Test 4) Open Test (for detector & hooter) 5) Short circuit Test (for detector & hooter) 6) Walk Test(one man test) 7) Sounder Test
291	Supplying, erecting, testing and commissioning stand mounted/handheld type wired microphone having 2 mV/Pa sensitivity, impedance level limit 300 ohms and 50 - 16000 Hz suitable to operate in -10 deg C to +55 deg C with min. 7 metre shielded cable and 3 Pin Professional XLR Connector, stereo jack complete as per specification no. FF-PA/MIC		Material :- Amplifier: Amplifier unit with wall mounted closed cabinet having rated output wattage 120 W / 250W with 4 Nos input channels (2 Nos for Microphone & 2 Nos Auxiliary), 4/8/16 Output lines, suitable to work on 230 V AC supply / 12 V DC supply, and necessary protection circuit. Construction :- Amplifier unit shall be installed as per guide lines of manufacture and shall be tested for rated output.
292	Supplying, erecting, testing and commissioning rust free microphone table stand of chrome plating/powder coating or S.S. material, up to 500 mm height and suitable base for sturdy mechanism ensuring trouble free movement complete.		Material :- Sound Column: Wall mounted Sound column shall give 15 watts output, with necessary fixing arrangement. Construction :- Sound column shall be installed as per guide lines of and connected to the amplifier duly tested.
293	Supplying, erecting, testing and commissioning of 2 core shielded cable complete as per specification no. FF-PA/MCC		Material :- Microphone: Microphone unit as per manufacturer's standard specifications. Construction :- Microphone unit shall be connected with cord to amplifier unit as per guide lines of manufacture and shall be tested.
294	Supplying, erecting, testing and commissioning of 1.0 sq. mm speaker wire complete.		As per Direction by Engineer in Charge
295	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.		As per Direction by Engineer in Charge

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296		Making cement concrete foundation in 1:2:4 cement concrete with foundation bolts and nuts complete. (cost of wooden box is included) (for pumps).		As per Direction by Engineer in Charge
297		Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with PVC accessories on wall /ceiling as per specification No: WG-MA/CON.		As per Direction by Engineer in Charge
298		Supplying and erecting mains with 1x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit /trunking /inside pole/Bus bars or any other places. as per specification No: WG-MA/BW		As per Direction by Engineer in Charge
299		Supplying and erecting mains with 2x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit /trunking /inside pole/Bus bars or any other places. as per specification No: WG-MA/BW		As per Direction by Engineer in Charge
300		Supplying and erecting PVC insulated PVC round sheathed 4 sq.mm (56 no. x 0.30 mm dia.) 3 core flexible multi stranded copper Industrial cable for voltage grade up to 1.1 kV		As per Direction by Engineer in Charge
301		Supplying and erecting modular type switch 16A duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
302		Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
303		Supplying and erecting modular type (two module) electronic step regulator for fan, duly erected on provided plate and box with wiring connections complete.		As per Direction by Engineer in Charge
304		Supplying and erecting PVC Surface modular switch box with double mounting plate for 4 modules duly erected.		As per Direction by Engineer in Charge

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305		Point wiring for light/bell/exhaust fan in PVC trunking (casing-capping) with1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW		As per Direction by Engineer in Charge
306		Point wiring for ceiling fan in PVC trunking (casing-capping) with1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW		As per Direction by Engineer in Charge
307		Wiring for plug on board with Switch socket surface/concealed type, copper wiring and earthing and with modular accessories as per specification No: WGPW/CW		<p>Material :- PVC conduit: PVC pipe of minimum 20mm dia and above depending No. ofwires to be drawn (refer Table No 1 / 2); ISI mark, HMS grade (2mm thick), accessories for PVC pipes of the same make that of pipe; such as Spacers & Saddles, Couplers, Bends, deep / normal Junction boxes of required ways and resin / adhesive to make all joints rigid. Black pipe shall not be used for surface type wiring. Rigid Steel conduit: Rigid steelscrewed conduit minimum 20mm dia. and higher depending on No. of wires to be drawn as per Table No.1/1, 16 gauge, ISI mark, ERW grade duly processed for anti-rust treatment and painted with black enamel paint, accessories for rigid steel conduits such as sockets, bends, deep / normal junction boxes of required ways all of the same make. Sheet metal Junction boxes / Draw-in boxes: Junction box shall be 5 sided with removable top plate, fabricated from 16g CRCA sheet steel with earth terminal duly treated with antirust treatment and painted with two coats of red oxide paint. There shall be knockout holes in required numbers and dia. for entry of conduit pipes and arrangement to fix surface cover plate on it. Cover plate shall be made up of fire resistant PVC material / 3mm thick laminate / Bakelite / Hylam / transparent acrylic sheet painted from inside to match colour of wall with duly tapered edges. Wires: phase and neutral wires PVC insulated wires of specified size, 1.1 kV, & minimum FR grade insulation, electrolytic tough pitch (ETP) copper conductor, ISI marked, of required colour coding as per Table No 1/5 Earth Continuity Wire: PVC insulated minimum FR grade copper wires of electrolytic grade, having insulation of 1.1 kV grade, of green colour, ISI marked, 2.5 Sqmm or bare copper wire of 14g Lugs: Pin type Copper lugs. Accessories: Switch: 1 or 2 way Modular type switch 6/10A. Outlet: Modular type 6A angle / batten lamp holder or 3 plate ceiling-rose or Bakelite / porcelain 3 way connector or if plug point, 6A, 3-pin plug shuttered socket. Boards: Switchboards shall comprise of; concealed type box of required modules made of sheet metal or Polypropylene material, mounting plate and cover plate. The required modules shall be worked out on the basis of points, plug socket/sockets, step type fan regulator, etc are to be fixed. For every blank module, 1 way blank plate shall be fixed. All the above accessories shall be of same make, as that of switch. Hardware: Sheet Metal (SM) screws of sizes specified in Method of Construction, washers, rawl / PVC / fill type plugs / wooden gutties, 'U' nails, plumbing nails, steel binding wire, fish wire 20g, rubber / PVC bushes etc. Other material for Surface finishing: Sand, Cement, water etc. Construction :- Point wiring (Concealed): Concealing of conduits: General: Work shall be done in co-ordination with civil work and to suite final approved layout. Size of conduit shall be correct depending on number of wires to be drawn. (Table No. 1/1 for Steel conduits & Table No 1/2 for PVC conduits) Separate pipe shall be used for each phase in 1-ph distribution and for power and light distribution and also for wiring for other utilities like data, telephone, TV cabling, etc. The distance between pipes shall not be less than 300 mm. Adequate use of conduit accessories shall be made at required locations. Entries in wall shall be at level of corresponding conduit with colour coding as per Table No. 1/4. (For Visual identification) Flexible conduits shall be used at expansion joints. Erection shall be done as per the layout finalized, with minimum sharp bends, with junction boxes at angular junctions and for straight runs at every 4.25m, in such manner so as to facilitate drawing of wires. All the bends shall be done with Bending Spring. Concealing of conduits: In RCC work Work shall be commenced after fixing of steel (re-enforcement) on centering material. Conduits shall be firmly fixed on steel of RCC work by binding wire. Fixing of conduits shall be such that it will remain rigid during casting of slab, beam, and column even after use of vibrator. Deep junction boxes and other draw-in boxes shall be such that their open end and centering material will not have gap in between so as to avoid concrete entering inside even after fixing covers to steel re-enforcement; and be filled with dry sand. Open ends of conduits; to be concealed in walls, shall be provided with couplers / sockets at ends and be flush with bottom of beam, and at located at the center of the beam. As far as possible bunching / grouping of conduits shall be avoided so that it will not affect strength of RCC work especially in beams. Suitable steel fish wire shall be drawn through in the conduits for drawing of wires later on. Concealing of Conduits: In walls Chases shall be made in walls of adequate width, with cutter and chiseling through it. Necessary finishing of the surface shall be done. Conduits of adequate size shall be erected with use of appropriate accessories and 'U' nails. Drawing of wires: Use of Steel fish wire shall be made for drawing of wires. Wires shall be drawn with adequate care. Correct colour coding shall be used for phase, neutral and earth. Wires shall not have intermediate joint in between terminals of the accessories. Earth-wire and Return wire (neutral) may be looped within circuit only. For lighting load distribution, wires of two different phases shall not be drawn in single pipe. Wires shall be terminated in the terminals of accessories only. Adequate extra length shall be left at termination points. In case of 2-way point wiring additional wires of phase conductor shall be provided between the 2-way switches. Fixing Switchboards and accessories: Control switchboards shall generally be erected at 1.35m height or as specified</p>

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308	Supplying and erecting CRCA powder coated corridor/passage light LED fitting (4 feet) Max. 17W with high transitivity diffuser with system lumens output of Min. 2000 lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.		As per Direction by Engineer in Charge
309	Supplying and erecting bulk head LED fitting max. 10W with high transitivity diffuser with system lumens output of min. 1100 lumens, min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., THD<10%, p.f. >0.95, operating range of 140-260V, in built surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, IP66, IK09 rated on provided PVC Block / wooden board with 3 years warranty.		As per Direction by Engineer in Charge
310	Supplying and erecting energy saving ceiling fan 230 V A.C. 50 cycles 1200mm complete erected in position as per specification no. FG-FN/CF		Material :- Ceiling Fan: Electric Ceiling fan capacitor type with double ball bearing complete with capacitor, 300 mm down rod, canopies, shackles, reel insulator, half threaded bolts of 9.53 mm (3/8") dia 62.5 mm (2-1/2") to 88 mm (3-1/2") long and 7.94 mm (5/16") dia 44.5 mm (1-3/4") to 57 mm (2-1/4") long with nuts, with lock type split pin, spring & plate washers, etc.; three number blade made of Aluminium alloy, suitable for single phase, AC210 volts, 50 Hz supply and conforming to class I of IS : 374/1979 with amendment no 1 to6 except for performance parameters to the extent modified as details in general requirements. The down rod shall be capable to withstand a tensile load of 1000 kg without breakdown and a torsion load of 500 kg.cm without breakage as per Clause 10.14.1 of IS:374/1979 with amendment no.1 to 6. Electrical motor should be single phase permanent capacitor type with no. of poles 12/14/16/18 (As per sweep), Class-I with basic insulation. Class of insulation shall be B class. The winding wire used for fan should be synthetic enamelled of 30 to 38 SWG. Connection wire: Flat / round Two core flexible stranded copper wire cord 24/0.2mm ISI marked. Paint: Superior quality enamel paint of specified colour for marking Sr. No and date of erection.Construction :- Blades of ceiling fan shall be properly fixed. Down rod, clamp shall be carefully fixed with nut bolt and split pin. Canopies shall be tightened on down rod keeping sufficient clearance. Wiring connections shall be made with required wire leads. Regulator of fan shall be erected on provided switchboard with required wire leads.Testing :- After erection fan shall be tested by connecting to supply at all positions of regulator. Also steadiness of fan shall be checked at full speed, so that there is no wobbling.
311	Supplying, erecting & marking SPMCB 6A to 32A, C-series with rated short -circuit breaking capacity (Icn) 10kA in provided distribution board as perspecification no. SW-SWR/MCB		Material :- General Specifications for MCB's • MCB's shall be of current limiting type, ISI marked confirms to IS 8828 – 1996. • The power loss per pole shall be low and shall be in accordance with IS 8828 – 1996. • All cable entries shall be either from bottom or top. • MCB's shall be of C-curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 kA short circuit both on the manual & automatic operation. • All the active, live parts of MCB's should be out of human reach, ensuring safety & confirms to IP: 55 degree of protection. • The MCB's must have transparent label holder to ensure circuit identification. • The MCB's must have fully insulated safety shutters. • The MCB's shall have lockable switching lever. • The Minimum electrical endurance shall be 20,000 operations. • The housing of the MCB shall be mounted self-extinguishing DMC (Dough Moulding Compound). • The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established. • All MCB's shall have a minimum short circuit Capacity of 10kA RMS. Material : Single Pole / Single pole with Neutral / Double Pole / Triple pole / Four pole: MCB, ISI marked as per IS 8828 : 1996 (IEC 60898) with hammer trip and watch mechanism15 arc plates,10 KA capacity with nominal rating of 240/415V. Lugs: Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Construction :- MCB shall be erected in provided enclosure / distribution board and terminating the provided wires by copper lugs (crimping type) and connecting the same.

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312		Supplying, erecting & marking SPMCB 6A to 32A, B-series with rated short -circuit breaking capacity (Icn) 10kA in provided distribution board as perspecification no. SW-SWR/MCB		Material :- General Specifications for MCB's • MCB's shall be of current limiting type, ISI marked confirms to IS 8828 – 1996. • The power loss per pole shall be low and shall be in accordance with IS 8828 – 1996. • All cable entries shall be either from bottom or top. • MCB's shall be of C-curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 kA short circuit both on the manual & automatic operation. • All the active, live parts of MCB's should be out of human reach, ensuring safety & confirms to IP: 55 degree of protection. • The MCB's must house transparent label holder to ensure circuit identification. • The MCB's must have fully insulated safety shutters. • The MCB's shall have lockable switching lever. • The Minimum electrical endurance shall be 20,000 operations. • The housing of the MCB shall be mounted self-extinguishing DMC (Dough Moulding Compound). • The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established. • All MCB's shall have a minimum short circuit Capacity of 10kA RMS. Material : Single Pole / Single pole with Neutral / Double Pole / Triple pole / Four pole: MCB, ISI marked as per IS 8828 : 1996 (IEC 60898) with hammer trip and watch mechanism15 arc plates,10 KA capacity with nominal rating of 240/415V. Lugs: Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Construction :- MCB shall be erected in provided enclosure / distribution board
313		Supplying, fixing and commissioning 2 pole RCBO 32/40A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection, with 30/100/300 mA sensitivity and short circuit and earth leakage trip indication as per specification no SW-RCCB/RCBO		Material :- General Specifications for MCB's • MCB's shall be of current limiting type, ISI marked confirms to IS 8828 – 1996. • The power loss per pole shall be low and shall be in accordance with IS 8828 – 1996. • All cable entries shall be either from bottom or top. • MCB's shall be of C-curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 kA short circuit both on the manual & automatic operation. • All the active, live parts of MCB's should be out of human reach, ensuring safety & confirms to IP: 55 degree of protection. • The MCB's must house transparent label holder to ensure circuit identification. • The MCB's must have fully insulated safety shutters. • The MCB's shall have lockable switching lever. • The Minimum electrical endurance shall be 20,000 operations. • The housing of the MCB shall be mounted self-extinguishing DMC (Dough Moulding Compound). • The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established. • All MCB's shall have a minimum short circuit Capacity of 10kA RMS. Material : Single Pole / Single pole with Neutral / Double Pole / Triple pole / Four pole: MCB, ISI marked as per IS 8828 : 1996 (IEC 60898) with hammer trip and watch mechanism15 arc plates,10 KA capacity with nominal rating of 240/415V. Lugs: Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Construction :- MCB shall be erected in provided enclosure / distribution board and terminating the provided wires by copper lugs (crimping type) and connecting the same.
314		Supplying, erecting & marking TPMCB 40A to 63A, with rated short -circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB		As per Direction by Engineer in Charge
315		Supplying and erecting single pole and neutral distribution board (SPNDB),with 2 ways for incoming and 6 ways (6 poles) for outgoing SP MCBs, with door, 1.2mm thickness surface / flush mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB		Material :- General Specifications for MCBDB's • DB's shall be prewired and shall be fabricated as per IS: 8623. • Suitable for flush mounting & surface mounting, with 100 A copper bus bar (For Horizontal type DB), neutral bar, earth bar & cable ties for cable management. • In case of Vertical DB the bus bar shall be of 200 A rating. • DB's shall be of IP – 43 degree of protection. • All the MCB distribution boards shall be fabricated out of 18 SWG thick sheet steel duly rust inhibited through a process of degreasing, pickling, phosphating & powder coating to an approved colour over primer & shall be of the totally enclosed dust proof type suitable for wall mounting. • All components shall be mounted on DIN rails & covered totally with a sheet steel cover rendering it finger-safe. Access to the internal connections shall be only through removing the cover sheet. • All DB's shall be internally prewired using copper insulated high temperature PVC wires. • Bus bars & neutral bar shall be fully insulated with standard colour code. • Bus bar withstanding capacity shall be 10kA. • DB's must have facility of reversing door without modification, pan assembly for ease of installation & convertible locking. Material : Horizontal/Vertical type MCBDB: ISI marked as per IS 8623, of specified ways (poles), surface/flush mounting, with/without door, suitable for 230 V / 415 V. Lugs – Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Iron work: Suitable size of angle/flat. Hardware: SM screws, rawl plug, gutties, etc. Construction :- MCBDB shall be erected at designated location and directed by site engineer and terminating the provided wires by copper lugs (crimping type) and connecting the same.

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316		Supplying & erecting CRCA sheet metal one way enclosures of 1.2mm thickness suitable for DP MCB /TP MCB/FP MCB/RCCB/RCBO complete erected on angle iron/GI frame.		Material :- General Specifications for MCBDB's • DB's shall be prewired and shall be fabricated as per IS: 8623. • Suitable for flush mounting & surface mounting, with 100 A copper bus bar (For Horizontal type DB), neutral bar, earth bar & cable ties for cable management. • In case of Vertical DB the bus bar shall be of 200 A rating. • DB's shall be of IP – 43 degree of protection. • All the MCB distribution boards shall be fabricated out of 18 SWG thick sheet steel duly rust inhibited through a process of degreasing, pickling, phosphating & powder coating to an approved colour over primer & shall be of the totally enclosed dust proof type suitable for wall mounting. • All components shall be mounted on DIN rails & covered totally with a sheet steel cover rendering it finger-safe. Access to the internal connections shall be only through removing the cover sheet. • All DB's shall be internally prewired using copper insulated high temperature PVC wires. • Bus bars & neutral bar shall be fully insulated with standard colour code. • Bus bar withstanding capacity shall be 10kA. • DB's must have facility of reversing door without modification, pan assembly for ease of installation & convertible locking. Material : Horizontal/Vertical type MCBDB: ISI marked as per IS 8623, of specified ways (poles), surface/flush mounting, with/without door, suitable for 230 V / 415 V. Lugs – Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Iron work: Suitable size of angle/flat. Hardware: SM screws, rawl plug, gutties, etc.Construction :- MCBDB shall be erected at designated location and directed by site engineer and terminating the provided wires by copper lugs (crimping type) and connecting the same.
317		Providing, erecting & commissioning 4 pole RCCB 40A, with added immunity to avoid DC pulse tripping with 30/100/300 mA sensitivity complete as per specification no. SW-RCCB/RCCB		As per Direction by Engineer in Charge
318		Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU		Material :- Cables: Cables shall be PVC / XLPE with Copper conductor as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/CU) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc. Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No 7/1 shall be run. Cable with G I wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or50x6 mm MS strip of required lengthand fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loopsshall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable
319		Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 4 sq mm copper conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/CU		Material :- Cables: Cables shall be PVC / XLPE with Copper conductor as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No, manufacturer's name, size, duly embossed / screen printed at every metre and having the total count of progressive length in meter at each mark. Earth wire: Galvanized Iron (G I) wire of appropriate gauge as per Table No 7/1. Glands: As per specification (CB-GL) Lugs: As per specification (CB-CL/CU) Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary shearing mechanical strength, semi circular shaped with extended piece having suitable holes for fixing. G I Strip: 22 g x 25 mm width G I Strip. Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden / resin cast grip for holding the cable. Identification tags: For identifying root, connection position GI strip with identification mark / name embossed / painted

Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Sr.No.	Item of work			Standard Specification No. and Page No.	If any additional specification
1	2			3	4
					with arrangement to tie should be fix on cable or arrangement of ferrulesto be done. Hardware: Sheet Metal (SM) screws of required sizes, plugs / wooden gutties, etc.Construction :- General: a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped, as directed by Site engineer. b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2. Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating. Cables shall be tagged/ferruled with identification name / mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table no. 7/1 shall run along with the cable. Earth wire running with the cable shall be terminated at the earth terminal nearest to cable termination. Erection of Cable on Surface: Erection shall be done as per the routes and layout finalized, in perfect level and in plumb. Before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No7/1 shall be run. Cable with GI wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wall with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports / saddles shall be maximum 450 mm). Wooden gutties shall be used wherever required (Especially for stone wall).The entries made in wall, floor slab, etc for laying the cable shall be made good by filling and finishing with plastering the same. Erection of Cable on Trusses: Cable along with bare GI earth wire, while erecting on trusses, shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts. Erection of Cable on Pole: Cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden / epoxy resin cast grips, clamped with 25 x 3 mm or50x6 mm MS strip of required lengthand fixed to pole with nuts and bolts. Laying of Cable in provided Trench/Pole: While laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above G L). Care shall be taken to inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4. Suitable size of cable loopsshall be provided near termination point at adequate depth. Erecting cable in constructed Trench / duct: Erection of cable/s in constructed trench / duct, shall be as per guide lines of IS 1255. Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. At bending point care shall be taken so that sharp edges of sheet will not damage insulation of cable
320		Providing earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP			Material :- Earth Plate: Galvanised cast iron / Copper earth plate or G.I. pipe as per specifications given in Table No 9.1/1 of Specification book. CI Cover: As per specifications given in Table No 9.1/1 of Specification book. Earthing Conductor: Copper/G.I strip/Annealed bare copper wire/G.I. earth wire of size as per specifications given in Table No 9.1/1 of Specification book. GI Pipe: As per specification (CW-PLB/GP) mentioned chapter no. 17.5 for watering, and as enclosure for Earth wire, refer specifications given in Table No 9.1/1 of Specification book. Hardware: Screw / nut bolts with required washer of dimensions, Rawl plug / clip/ 'U' nails and material as per specifications given in Table No 9.1/1 of Specification book. Filling material: Coal /Charcoal/ salt as per specifications given in Table No 9.1/1 of Specification book. as per specifications given in Table No 9.1/1 of Specification book. Lugs: As per specification (CB-LG/AL, CB-LG/CU) mentioned chapter 7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No 9.1/1 of Specification book. Construction :- Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvanised cast iron / Copper earth plate or G.I. pipe shall be as per Table No 9.1/1 in Specification book. The earth connection to equipment/ switch gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connections shall be made either by strip or double run of earth wire with drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip shall be used, but where ever jointing of strip is unavoidable, the overlap portion must not be less than 21/2 times the width of the strip either welded/ brazed/soldered by all sides or 6 inches overlap with two nut bolts/ riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and salt, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS: 3043, with laying wires in PVC/ G.I. pipe and watering arrangement as per diagram and covered with C.I. Cover (Where ever applicable). Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing of resistance of earth electrode.
321		Supply, Installation, Testing and commissioning of maintenance free earthing comprising of Electrode of 17.2 mm diameter Low Carbon Steel with 250 micron molecular copper bonded earthing rod of Length 3m along with 25 kg Carbon based environment friendly back fill ground enhancing compound required to fill up the excavated earth with required quantity complete. Specification no. EA-MOBI			As per Direction by Engineer in Charge
322		Supplying and erecting copper strip of high purity required size used for			Material :- Earth Plate: Galvanised cast iron / Copper earth plate or G.I. pipe as per specifications given in Table No 9.1/1 of Specification book. CI Cover: As per specifications given in Table No 9.1/1 of Specification book. Earthing Conductor: Copper/G.I strip/Annealed bare copper wire/G.I. earth wire of size as per specifications given in Table No 9.1/1 of Specification book. GI Pipe: As per specification

Contractor

No.of Corrections

Executive Engineer,
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Sr.No.	Item of work		Standard Specification No. and Page No.	If any additional specification
1	2		3	4
		earthing on wall and/or any other purpose with necessary copper clamps fixed on wall painted with bituminous paint with joints required. As per specification no. EAEP.(15mtrx2 =30 mtr x 0.590Kg/Mtr= 17.7 Kg)		(CW-PLB/GP) mentioned chapter no. 17.5 for watering, and as enclosure for Earth wire, refer specifications given in Table No 9.1/1 of Specification book. Hardware: Screw / nut bolts with required washer of dimensions, Rawl plug / clip/ 'U' nails and material as per specifications given in Table No9.1/1 of Specification book. Filling material: Coal /Charcoal/ salt as per specifications given in Table No 9.1/1 of Specification book. as per specifications given in Table No 9.1/1 of Specification book. Lugs: As per specification (CB-LG/AL, CB-LG/CU) mentioned chapter 7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No 9.1/1 of Specification book. Construction :- Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvanised cast iron / Copper earth plate or G.I. pipe shall be as per Table No9.1/1 in Specification book. The earth connection to equipment/ switch gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connections shall be made either by strip or double run of earth wire with drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip shall be used, but where ever jointing of strip is unavoidable, the overlap portion must not be less than 2 1/2 times the width of the strip either welded/ brazed/soldered by all sides or 6 inches overlap with two nut bolts/ riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and salt, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS:3043, with laying wires in PVC/ G.I. pipe and watering arrangement as per diagram and covered with C.I. Cover (Where ever applicable). Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing of resistance of earth electrode. Testing :- The value of each earth electrode shall be measured by earth tester in presence of site Engineer and record to be submitted.
323		Supplying and erecting GI strip of high purity required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint with joints required. As per specification no EA-EP.		Material :- Earth Plate: Galvanised cast iron / Copper earth plate or G.I. pipe as per specifications given in Table No 9.1/1 of Specification book. CI Cover: As per specifications given in Table No 9.1/1 of Specification book. Earthing Conductor: Copper/G.I strip/Annealed bare copper wire/G.I. earth wire of size as per specifications given in Table No 9.1/1 of Specification book. GI Pipe: As per specification (CW-PLB/GP) mentioned chapter no. 17.5 for watering, and as enclosure for Earth wire, refer specifications given in Table No 9.1/1 of Specification book. Hardware: Screw / nut bolts with required washer of dimensions, Rawl plug / clip/ 'U' nails and material as per specifications given in Table No 9.1/1 of Specification book. Filling material: Coal /Charcoal/ salt as per specifications given in Table No 9.1/1 of Specification book. as per specifications given in Table No 9.1/1 of Specification book. Lugs: As per specification (CB-LG/AL, CB-LG/CU) mentioned chapter 7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No 9.1/1 of Specification book. Construction :- Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvanised cast iron / Copper earth plate or G.I. pipe shall be as per Table No 9.1/1 in Specification book. The earth connection to equipment/ switch gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connections shall be made either by strip or double run of earth wire with drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip shall be used, but where ever jointing of strip is unavoidable, the overlap portion must not be less than 2 1/2 times the width of the strip either welded/ brazed/soldered by all sides or 6 inches overlap with two nut bolts/ riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and salt, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS: 3043, with laying wires in PVC/ G.I. pipe and watering arrangement as per diagram and covered with C.I. Cover (Where ever applicable). Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing of resistance of earth electrode. Testing :- The value of each earth electrode shall be measured by earth tester in presence of site Engineer and record to be submitted.

Contractor

No.of Corrections

Executive Engineer,
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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
324	<p>SITC of Electric Traction Passenger Lift with Rated capacity :- 04 Passenger/272Kg . Floors :- G+1 floor (2 Stops/2 Landings) . Travel :- 3 to 4.2 mtrs. Location of Lift Machine:- MR/MRL . Rated speed :- 1.0mps VS . Car/Landing door clear opening of 700/800 mm wide x 2000 mm high . Clear Car size of mm wide x mm deep x 2250mm high . Lift shaft available having clear size of mm wide x mm deep, 1800 mm Pit depth, mm Overhead. Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). . Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and</p>		As per Direction by Engineer in Charge

Contractor

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P.W.Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	<p>travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. Fireman controller having fireman switch at fire Landing. CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min.18" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. Other mechanical parts such as 'T' section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if</p>		

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
	<p>required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. - The above rate includes Fully Comprehensive AMC for one year from the date of commissioning.</p>		

Contractor

No.of Corrections

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Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
325	For Lift having 700mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid (non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.		As per Direction by Engineer in Charge
326	For Lift travelling above First floor & up to Sixth floor & up to Sixth floor for full collective system		As per Direction by Engineer in Charge
327	Royalty Charges for Sand	As directed by Engineer Incharge	As per Government of Maharashtra, Revenue and Forest Departments Gazatte No. 146 Dt. 4 June 2021, the Royalty Charges are amended to Rs.600/- per Brass (i.e. Rs.211.95 or Cum)
328	Royalty Charges for Other Minerals		
329	Material Testing Charges Cement : Standard Consistancy, Fineness, Specific Gravity, Setting Time (Initial & Final), Compressive Strength, Soundness.	As directed by Engineer Incharge	If the contractor fails to produce test results from P.W.D. Laboratory and Contractor's field Laboratory as per prescribed frequency, recovery at the rate of five times of stipulated testing charges of P.W.D. Laboratory shall be made from the contractor's final bill.
330	Aggregate : Water Absorption, Specific Gravity, Impact Value/Crushing Value		
331	Sieve Analysis		
332	Abrasion Value		
333	Flakiness Index & Elongation Index		
334	Striping Value		
335	Soundness		
336	Sand : Finess Modulus (Sieve Analysis), Silt & Clay Content		
337	Brick : Water Absorption (Set of 5 Bricks), Compressive Strength (Set of 5 Bricks) Efflorescence (Set of 5 Bricks)		
338	Flooring Natural Stone : Flooring of Natural Stone (Kota, Marble, Granite, Tandar. Etc.) - Water Absorption, Specific Gravity)		
339	Ceramic Tiles : Water Absorption, Modulus of Rupture (Set of 6 Tiles)		
340	Concrete : Compressive Strength of C.C. Cube (Set of 3 Cubes)		
341	Concrete Mix Design (With all Tests on Basic Materials)		
342	Stone / Rubble : Crushing Value / Compressive Strength Water Absorption & Specific Gravity		
343	Murum : Sieve Analysis		

Contractor

No. of Corrections

Executive Engineer,
P.W. Division, Dhule

Sr.No.	Item of work	Standard Specification No. and Page No.	If any additional specification
1	2	3	4
344	Compaction Test		
345	Steel : Up to 16mm (Set of 3 Bars)		
346	Above 16mm (Set of 3 Bars) (Tensile Strength, % Elongation, Yield Stress, Weight- Per Meter, Bend / Rebend Test, Proof Stress)		
347	Paver Block : i) Compressive Strength ii) Water Absorption		
348	HOLLOW BLOCKS/SOLID BLOCKS : Density Test . (Set of 3 Blocks),Compressive Strength. (Set of 3 Blocks),Water Absorption Test (Set of 3 Blocks)		

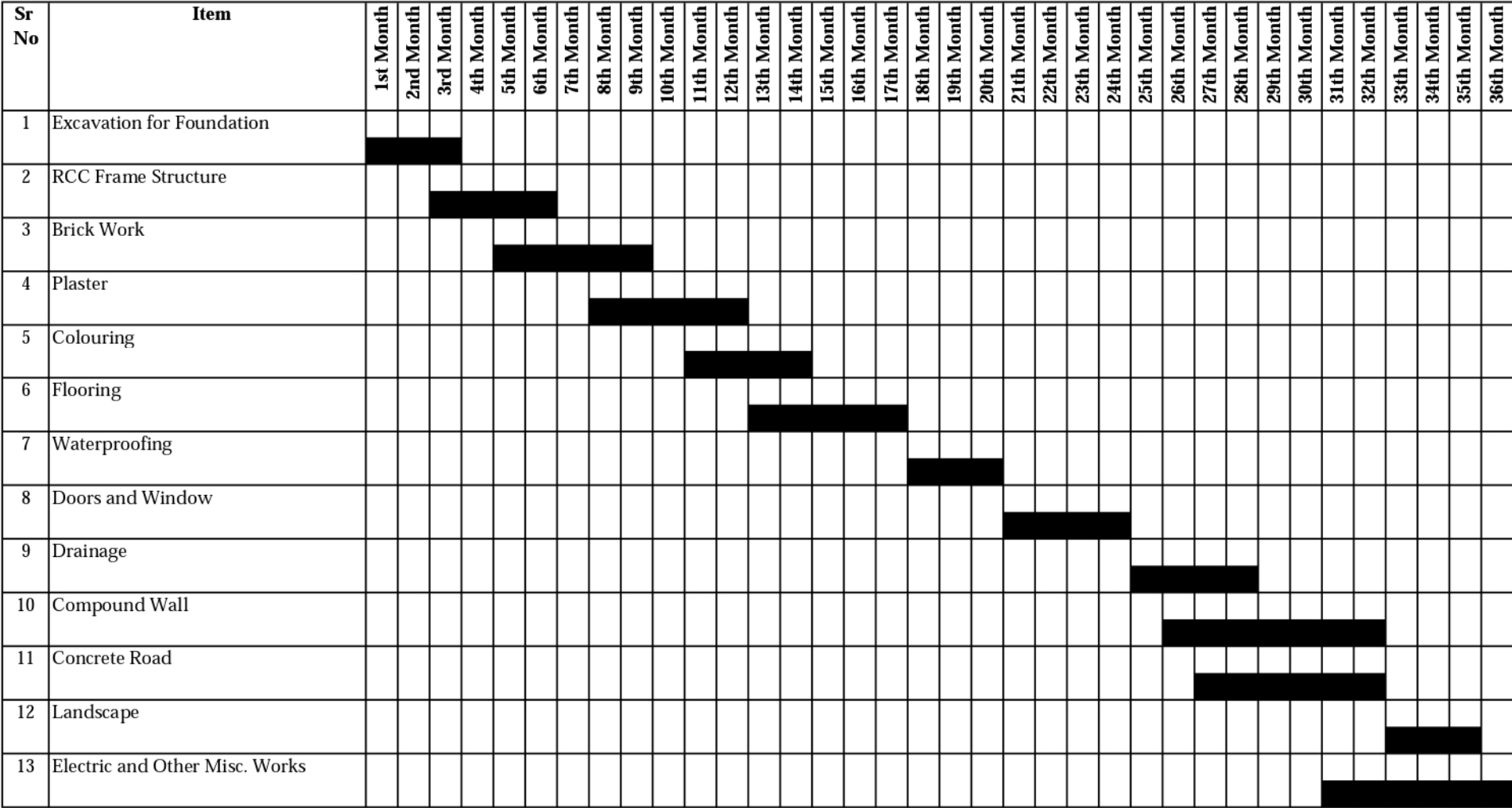
Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule

Bar Chart



Contractor

No.of Corrections

Executive Engineer,
P.W.Division, Dhule

Name of Work :- Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters)
Tal.Dist.Dhule

TEST FREQUENCY

Sr. No.	Item of Work	Total Estimated Quantity	Type of test	Frequenncy of Test	Total No. of test	No of Test Carried out at site lab	No. of test carried out in nearest quantity control lab of VQCC	Rate as per VQC Nashik	Rate as per VQC Nashik (6 x 9)
1	2	3	4	5	3	4	5	6	7
	Cement		Standard Consistency, Fineness, Specific Gravity, Setting Time (Initial & Final), Compressive Strength, Soundness.	1 Test / Source	104	72	32	3960	126720
	Aggragate		Water Absorption, Specific Gravity, Impact Value/Crushing Value	1 Test / 200 Cum	80	56	24	2730	65520
			Sieve Analysis	1 Test / 200 Cum	80	56	24	725	17400
			Abrasion Value	1 Test / 200 Cum	80	56	24	1230	29520
			Flakiness Index & Elongation Index	1 Test / 200 Cum	80	56	24	895	21480
			Striping Value	1 Test / 200 Cum	80	56	24	780	18720
			Soundness	1 Test / 200 Cum	80	56	24	2620	62880
	Sand		Finess Modulus (Sieve Analysis), Silt & Clay Content	1 Test	5	0	5	1450	7250
	Brick		Water Absorption (Set of 5 Bricks), Compressive Strength (Set of 5 Bricks) Efflorescence (Set of 5 Bricks)	1 Set / 50000 Nos.	16	10	6	2285	13710
	Flooring Natural Stone		Flooring of Natural Stone (Kota, Marbel, Granite, Tandur. Etc.) - Water Absorption, Specific Gravity)	6 Tiles Shall be tested or every test for every 2000 tiles	8	4	4	1450	5800
	Ceramic Tiles		Water Absorption, Modulus of Rapture (Set of 6 Tiles)	6 Tiles Shall be tested or every test for every 2000 tiles	21	15	6	1675	10050
	Concrete		Compressive Strength of C.C. Cube (Set of 3 Cubes)	1 Set / 0 to 5 Cum	835	584	251	725	181975
			Concete Mix Design (With all Tests on Basic Materials)	1 Test / Source	4	0	4	14445	57780
	Stone / Rubble		Crushing Value / Compressive Strength Water Absorption & Specific Gravity	1 Test	4	0	4	2120	8480
	Murum		Sieve Analysis	1 Test	2	0	2	725	1450
			Compaction Test	1 Test	2	0	2	1955	3910
	Steel		Up to 16mm (Set of 3 Bars)	1 Test	60	42	18	1340	24120
			Above 16mm (Set of 3 Bars) (Tensile Strength, % Elongation, Yield Stress, Weight- Per Meter, Bend / Rebend Test, Proof Stress)	1 Test	202	141	61	1675	102175
	Paver Block		i) Compressive Strength ii) Water Absorption	1 Test for 50000 Blocks	16	11	5	2620	13100
	HOLLOW BLOCKS/SOLID BLOCKS		Density Test . (Set of 3 Blocks), Compressive Strength. (Set of 3 Blocks), Water Absorption Test (Set of 3 Blocks)	1 Test for 50000 Blocks	69	48	21	2065	43365
								Total Rs.	815405

The contractor shall at his risk & cost make all arrangement & or shall provide all such facilities for collecting, preparing required number of samples for test or analysis at such time & to such place or places as may be as directed by Engineer-in-charge.

SECTION – 8
SECURITIES AND OTHER FORMS

BID SECURITY

Bid security shall be paid online mode only.

PERFORMANCE BANK GUARANTEE

To,

_____ [name of Employer]

_____ [address of Employer]

WHEREAS _____ [name and address of Contractor]
(hereafter called “The Contractor”) has undertaken, in pursuance of Contract No. _____
dated _____ to execute _____ [name of Contract and brief description of
Works] (hereinafter called “the Contractor”)

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee.

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on
behalf of the Contractor, up to a total of _____ [amount of guarantee]*
_____(in words), such sums being payable in the types and proportions of
currencies in which the Contract Price is payable, and we undertake to pay you, upon your first
written demand and without cavil or argument, any sum or sums within the limits of
_____ [amount of guarantee] as aforesaid without your needing to prove
or to show ground or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before
presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the
Contract or of the Works to be performed thereunder or of any of the Contract documents which may
be made between your and the Contractor shall in any way release us from any liability under this
guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid 28 days from the date of expiry of the Defect Liability Period.

Signature and Seal of the Guarantor _____

Name of Bank _____

Address _____

Date _____

* An Amount shall be inserted by the Guarantor, representing the percentage the contract price
specified in the Contract including additional security for unbalanced Bids, if any and denominated
in Indian Rupees.

BANK GUARANTEE FOR ADVANCE PAYMENT

----- Deleted -----

INDENTURE FOR SECURED ADVANCES

FROM 31

(For use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time.)

This indenture made the _____ day of _____, 20 _____ BETWEEN _____ (hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) or the one part and the employer 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 Employer that he may be allowed advanced on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he has undertaken to execute at rates fixed for the finished works (inclusive of the cost of materials and labour and other charges)

AND WHEREAS the Employer has agreed to advance to the Contractor the sum of Rupees _____ on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account bill for the said works signed by the Contractor on _____ and the Employer has reserved to himself the option of making any further advance or advance on the security of other materials brought by the Contractor to the site of the said works.

Now THIS INDENTURE WITNESSE that in pursuance of the said agreement and in consideration of the sum of Rupees _____ on or before the execution of these presents paid to the Contractor by the Employer (the receipt where of the Contractor doth hereby acknowledge) and of such further advance (if any) as may be made to him as a for said the Contractor doth hereby covenant and agree with the President and declare as follows :

- (1) That the said sum of Rupees _____ so advanced by the Employer to the Contractor as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the Contractor in or towards expending the execution of the said works and for no other purpose whatsoever.
- (2) That the materials detailed in the said Account of Secured Advances which have been offered to and accepted by the Employer as security are absolutely the Contractor's own propriety and free from encumbrances of any kind the contractor will not make any application for or receive a further advance of the security of materials which are not absolutely his own property and free from encumbrances of any kind and the contractor indemnified the Employer against all claims to any materials in respect of which an advance has been made to him as aforesaid.
- (3) That the materials detailed in the said account of Secured Advance and all other materials on the security of which any further advance or advance may hereafter be made as aforesaid (hereafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Engineer.
- (4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility and shall at all times be open to inspection by the Engineer or any officer authorised by him. In the event of the said materials or any part thereof

being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same required by the Engineer.

(5) That the said materials shall not be in any account be removed from the site of the said works except with the written permission of the Engineer or an officer authorized by him on that behalf

(6) That the advance shall be the price payable in full when or before the Contractor receives payment from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payment are made to the Contractor on account of work done then on the occasion of each such payment the Employer will be at liberty to make a recovery from the contractor's bill for such payment by deducting there from the value of the said materials then actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

(7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing of the Employer shall immediately on the happening of such default be repayable by the Contractor to the Employer together with interest thereon at twelve percent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the **Employer** in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the **Employer** to repay and pay the same respectively to him accordingly.

(8) That the contractor hereby charges all the said materials with the repayment to the Employer of the said sum of Rupees _____ and any further sum or sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the power contained therein if and whenever the covenant for payment and repayment here-in-before contained shall become enforceable and the money owing shall not be paid in accordance therewith the **Employer** may at any time thereafter adopt all or any of the following courses as he may deem best :

- (a) Seize and utilise the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the amount due to the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the contractor, he is to pay same to the **Employer** on demand.
- (b) Remove and sell 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 **Employer** under these presents and pay over the surplus (if any) to the Contractor.
- (c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said advance shall not be payable.

(9) That 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 the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been here-in-before expressly provided for the same shall be referred to the Employer whose decision shall be final and the provision of the Indian Arbitration Act for the time being in force shall apply to any such reference.

Letter of Acceptance

(Letterhead paper of the Employer)

_____ (Date)

To,

_____ [name and address of the Contractor]

Dear Sirs,

This is to notify you that your online bid dated _____ for execution of the _____ (name of the contract and identification number, as given in the Instructions to Bidders) for the Contract Price of Rupees _____ (_____) (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders¹ is hereby accepted by our agency.

We accept / do not accept that _____ be appointed as the Adjudicator². You are hereby requested to furnish Performance Security, in the form detailed in Para 34.1 of ITB for an amount equivalent to Rs. _____ within 07 days of the receipt of the letter of acceptance valid up to 28 days from the date of expiry of defects Liability Period i.e. up to _____ and sign the contract, failing which action as stated in Para 34.2 of ITB will be taken.

Yours faithfully,

Authorised Signature
Name and title of Signatory
Name of Agency

¹ Delete “Corrected and” or “and modified” if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.

² To be used only if the contractor disagrees in his Bid with the Adjudicator proposed by the Employer in the “ Instructions to Bidders”.

Issue of Notice to proceed with the work

(Letter head paper of the Employer)

_____(Date)

To,

_____ [name and address of the Contractor]

Dear Sirs,

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 34.1 and signing of the Contract for the work of **Construction of Class-III Residential Quarters at District Jail, Dhule (112 Quarters) Tal.Dist.Dhule**

Bid Price of Rs.520184317/- (Rs. Fifty Two Crore One Lakh Eighty Four Thousand Three Hundred Seventeen Only)

You are hereby instructed to proceed with the execution of the said works in accordance with the documents.

Yours faithfully,

(Signature, name and title of Signatory

Authorised to sign on behalf of Employer)

AGREEMENT FORM

Agreement

This agreement, made the _____ day of _____ between _____ (name and address of the Employer) [hereinafter called “the Employer] and _____ (name and address of contractor) hereinafter called “the Contractor” of the other part.

Whereas the employer is desirous that the Contractor execute _____ (name and identification number of Contractor) (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a cost of Rs _____

NOW THIS AGREEMENT WITNESSTH as follows :

- (1) In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to form and be read and construed as part of this Agreement.
- (2) In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to all aspects with the provisions of the contract.
- (3) The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
- (4) The following documents shall be deemed to form and be ready construed as part of this agreement viz.
 - i) Letter of Acceptance
 - ii) Notice to proceed with the works
 - iii) Contractor’s Bid
 - iv) Condition of contract : General and Special
 - v) Contract Date
 - vi) Additional condition
 - vii) Drawings
 - viii) Bill of Quantities and
 - ix) Any other documents listed in the Contract Data as forming part of the Contract.

In witnessed whereof the parties there to have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____ was hereunto affixed in the presence of :

Signed, Sealed and Delivered by the said _____

in the presence of :

Binding Signature of Employer _____

Binding Signature of Contractor _____

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s. _____
_____ agree to abide by this bid for a period _____ days for the
date fixed for receiving the same and it shall be binding on us and may be accepted at any time
before the expiration of that period.

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

DATE

VOLUME IV

10) Drawings

SECTION – 9
DRAWINGS

VOLUME V

11) Documents to be furnished by bidder

SECTION – 10
DOCUMENTS TO BE FURNISHED BY THE BIDDER