

# **MAHARASHTRA JEEVAN PRADHIKARAN**

( Government of Maharashtra Undertaking )



## **SCHEDULE OF RATES FOR THE YEAR - 2019-2020**

### **NAGPUR & AMRAVATI REGION**

(Effective from **01<sup>st</sup> JUNE 2019**)

APPLICABLE FOR NAGPUR & AMRAVATI REGION  
MAHARASHTRA JEEVAN PRADHIKARAN

**Countersigned For The Year 2019-2020**

Sd/-

**Chief Engineer**

Maharashtra Jeevan Pradhikaran Region  
Nagpur

**MAHARASHTRA JEEVAN PRADHIKARAN  
NAGPUR & AMRAVATI REGION  
SCHEDULE OF RATES  
FOR THE YEAR - 2019-2020  
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दि.७ डिसेंबर १९९० चे सहपत्र

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जिल्हा	तालुका	ज्या डोंगरी भागात आहे त्या डोंगराचे नाव	पूर्ण गट ज्या तालुक्यात ५०% पेक्षा जास्त क्षेत्र आहे तो पूर्णगट	उपगट ज्या तालुक्यात २०% पेक्षा जास्त व ५०% पेक्षा कमी क्षेत्र आहे तो उपगट	शेरा
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जिल्हा	तालुका	ज्या डोंगरी भागात आहे त्या डोंगराचे नाव	पूर्ण गट ज्या तालुक्यात ५०% पेक्षा जास्त क्षेत्र आहे तो पूर्णगट	उपगट ज्या तालुक्यात २०% पेक्षा जास्त व ५०% पेक्षा कमी क्षेत्र आहे तो उपगट	शेरा
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शासन निर्णय, ग्रामविकास विभाग क्र. ग्रापापु-१०९० / सीआर-१६३/३९-अ

दि.७ डिसेंबर १९९० चे सहपत्र

परिशिष्ट - २

तालुकावार झाडीतील उपगट म्हणून घोषित केलेल्या तालुकांतील गावांची झाडी दर्शविणारे विवरणपत्र

जिल्हा म्हणून घोषित केलेला तालुका	उपगट तालुकांतील गावांची नावे
ठाणे १. वसई	१) चांदज २) तिपलिया ३) शिवनासा ४) पानसा ५) उसगांव ६) पारोळ ७) शिरवली ८) जळकीया ९) वसई १०) सारवण ११) घाटेघर १२) भावखल १३) पेलाट १४) साजिवली १५) दापेवली १६) कार्जुरा १७) खाडेकर १८) भिडा १९) खोलसट २०) खैरे २१) संदा २२) चुडाल २३) तिल्लेस २४) सावट २५) मरतारी २६) बिलवुडा २७) गया २८) दडविरा २९) सातिवली ३०) खाडी ३१) दैडा ३२) दडीप ३३) वामन ३४) काजू ३५) कोल्ही ३६) कोळा ३७) चिंचाटी ३८) होवाऊन
२. भिवंडी	१) गणेशपुरी २) वडवली ३) उसगांव ४) धाडगांव ५) आंदीपाडा ६) गोबाटा ७) बोहिली ८) बावची ९) मालवियोर १०) बेलोली ११) उसपाडी पाडा १२) आंबराई पाडा १३) घ्यार १४) खडकी खुर्द १५) पिंपळशेत १६) खडकी बुद्रुक १७) भाऊपोळ १८) कुहापाडा १९) कुहा २०) आंबापाडा २१) देवपाडा कुलईपाडा २२) पायगांव २३) पाया २४) पेरूनपाडा २५) भावडीपाडा २६) खारभाव २७) गाना २८) लाकेवली २९) चिंचपाडा ३०) गौरीपाडा ३१) डोकरनापाडा ३२) अलकौअरी
रायगड ३. पनवेल	१) माणिकघर २) घोडसावना ३) सावना ४) बामणोरी ५) नामदेवी ६) देवलोळी ७) छावना ८) कालेवली ९) सारसाई १०) आपटा ११) कासव १२) कारडा १३) देवटी १४) बुलसुडा १५) अकूवडी १६) घुराडाव १७) वावेघर १८) कोष्टी १९) दापोवली २०) देवतुला २१) सावला २२) करनाहा २३) कला २४) वडाना २५) कारल २६) दुलघट २७) कासभाट २८) दिघारी २९) हातवंडी
रत्नागिरी ४. मंडणगड	१) अंबावना बुद्रुक २) केंजालघर ३) लोरी ४) हेल्टी ५) गारीपाडा ६) पेवा ७) पांडेरी ८) पाडवा ९) अंबरसेट १०) टीव्हेसाई ११) टेरी १२) लोकरवन १३) महाप्रत १४) हडघर १५) तांभी १६) लोहरा १७) गौरज १८) कुंभार १९) गोवेळे २०) पन्हाली २१) धुरी २२) तारवली २३) आंबेगण २४) धनगर २५) सारळ २६) अडखळ २७) व्हेसाई २८) पाट २९) अंजला ३०) सोडली तर्फे व्हेसाई ३१) बुद्रुक ३२) खुर्द ३३) शिंगांव ३४) साडा ३५) लळघर ३६) टाकेटी ३७) पाचरोल ३८) धामणी ३९) वोरखट ४०) गोवा ४१) धामणघर ४२) सामोटी ४३) निगडी
सिंधुदुर्ग ५. मालवण	१) कुसीस २) असरुडी ३) भवानी ४) वंजकार ५) टाटारभाव ६) भाटपावणी ७) शिरावडे ८) राटीवडे ९) आजगणी १०) ब्राह्मण ११) हिवाळे १२) ओवलीये १३) खाटले १४) डुंडुल १५) वायनगावडे १६) वायरन १७) पोईप १८) नेसुरे १९) वाडेच्या पाट २०) नवा पाट २१) गोलवणे २२) डीकवळ २३) चापेखोल २४) कुमामे २५) नांदोसा २६) तिरावडे २७) पारस २९) डेहूल
सातारा ६. कराड	१) मरली २) चोरजवाडी ३) कोरीवळे ४) बेलदारे ५) म्होप्रे ६) भोळेवाडी ७) साकुडी ८) येणके ९) कोळे १०) कुसूर ११) तुळसण १२) सवादे १३) लाटकेवाडी १४) हवेलवाडी १५) म्हासोळी १६) शेळकेवाडी १७) मनु १८) येवती १९) घराळवाडी २०) हणमंतवाडी २१) टाळगांव २२) येळगांव २३) गौरेवाडी २४) गणेशवाडी २५) भरेवाडी २६) सोळशिरमे २७) महारगडेवाडी २८) जिती २९) अक्काईवाडी ३०) कासारशिरमे ३१) निगडी ३२) धोलपावाडी ३३) किवळ ३४) खोडताईवाडी ३५) मसूर ३६) हणबरवाडी ३७) वाण्याची वाडी ३८) मालवाडी ३९) कांबीखाडी ४०) शिरगांव ४१) सुळी ४२) पाल ४३) हरपळवाडी ४४) रिसवड ४५) वरची साकुडी ४६) सांजूर ४७) वानरवाडी ४८) उंडाळे ४९) भुरकुशी ५०) जतीनवाडी ५१) नांदलापूर ५२) वसंतगड ५३) चरेगाव ५४) तांबवे ५५) आरेवाडी ५६) गमेवाडी ५७) मोळवाडी ५८) कोळेवाडी ५९) पांढरवाडी ६०) आपे ६१) आंबवडे ६२) तारुख ६३) बाडूनवाडी ६४) भवानपाडा ६५) शितलवाडी ६६) चिखली ६७) पाचुंद ६८) कामथी ६९) वाघेरी ७०) कुरवडी ७१) हजारमाची ७२) बाबरमाची ७३) वनवासमाची ७४) राजमाची ७५) टेम्भू ७६) सक्ताङ्ग ७७) कोरेगांव ७८) कार्वे ७९) वडगांव हवेली ८०) शेपोली कालवडे

जिल्हा म्हणून घोषित केलेला तालुका	उपगट तालुकातील गावांची नावे
७. फलटण	१) सालपे २) आदकीखुर्द ३) आळजापूर ४) कोराळे ५) वाघोशी ६) लाथवडा ७) मानेवाडी ८) झाडकबाईवाडी ९) वेलोशी १०) उपलवे ११) दाववाडी १२) भेरिवाडी १३) गिरवी १४) धुमाळवाडी १५) बेडकेवाडी १६) सासकळ १७) भाडळी खुर्द १८) दुधभावी १९) झीरडे २०) जावली २१) आंदुड २२) कुरवाली बु.
८. मान	१) कुळकजाई २) कळसकरवाडी ३) गाडेवाडी ४) शिंदे बुद्रुक ५) पाळवण ६) तोंडले ७) उगळेवाडी ८) खंड्याची वाडी ९) झोगराळे १०) शिंगणापूर ११) भांडळी १२) इंजलात १३) कळचोंडी १४) विरळी १५) वळई १६) कुळडवाड १७) मढणे १८) काळेवाडी १९) दोरगेवाडी २०) किरकसाड २१) झहिमानगड २२) दिवडी २३) पांढरवाडी २४) स्वरूपवानवाडी २५) उकिरडे २६) शिंदी बुद्रुक २७) बोधे
९. शाहदा	१) काकरेदे खुर्द २) काकरेदे बुद्रुक ३) कोंढावळ ४) चांदसेली ५) चिरडे ६) वरुड बुद्रुक ७) मळगांव ८) भुलाना ९) दरा १०) राणीपुरी ११) आकसपूर १२) मानमोडया १३) नागझरी १४) लंगडी भवसनी १५) कुकुडवाड १६) मखणे १७) आभाडपूर खुर्द १८) टरबा १९) नायगांव २०) सिसुरा २१) पेठा २२) फोफाराळे २३) चांदपूर २४) गुदा २५) इकरास २६) काटघर २७) पिरपूर
१०. तळोदा	१) सोजूरवाडा २) मळखुर्द ३) चौगांव खुर्द ४) लाकुड शेट ५) खर्डी खुर्द ६) काठोर ७) बंधारा ८) खडी बुद्रुक ९) जुवाणी १०) लाखापूर ११) माळ १२) मोरामाळ १३) आंबा गव्हाण १४) सीतपावळी १५) बामनी १६) मलुवा १७) राजापूर
जळगाव ११. चोपडा	१) मराठा २) सत्रासेन ३) खांडरा ४) भोरचिडा ५) उमरती ६) गोवापाडा ७) कृष्णापूर ८) खान्यापाडा ९) विजापूर १०) मुख्यावतार ११) शेतपाणी १२) बोअरअनंती १३) मालापूर १४) विषणापूर १५) बोरमळी १६) कर्जाणा १७) मेलाना १८) देवहारी
१२. येवला	१) मनुबाई देवस्थान २) लंगडा आंबा ३) गढुन्या ४) जामन्या ५) उसमळी ६) हरीपुरी ७) नागदेवी ८) वाघझीर ९) आसरावारी
१३. रावेर	१) लिडया २) अंधारमाळी ३) मोहमोडी ४) चिचाडी ५) चिमडया ६) गारखेडा ७) मोहमांडली सून ८) पिंपटकुंड ९) पाल १०) मोरव्हाल ११) जिन्सी १२) गारखेड १३) सहस्नलिंग १४) लालमाती
१४. ऐदलाबाद	१) दुई २) सुकली ३) सोमणगांव ४) डोलरखेड ५) नोंदवेल ६) वायल ७) चारठाणे ८) देवी मंदीर ९) मोरझिरा १०) जोनधखेड ११) लालगोडा १२) हलखेडा
बुलढाणा १५. खामगांव	१) गिरोळी २) इसालवाडी ३) चिंचखेडनाथ ४) कठडेगांव ५) चिंचखेडबंद ६) शेंद्री ७) मांडणी ८) बोधा ९) खेडी १०) वाकी ११) गारखेड १२) गारोडी १३) धार १४) माटरगांव १५) चिंचखेड १६) कान्ती १७) कझर १८) पिंपरी १९) धनगर १८) लाखनवाडी खुर्द १९) पतेपूर २०) निमखेडा २१) हिवरखेडा २२) गिरोडा
अकोला १६. पातूर	१) अंबारी २) भानोसा ३) बेलवळ ४) बलकापूर ५) भोकद कंदोली ६) बडी आमराई ७) बोडसा ८) खानापूर ९) काकडदारी १०) कोठारी बुद्रुक ११) पासटल १२) कोसगांव १३) माळराजूर १४) सावरखेड १५) चिंचखेड पातूर १६) शेकापूर १७) कार्ला १८) चारमुळी १९) धरम २०) पांडुर्णा २१) सोनुना २२) चिखलपाव्हळ २३) चोंडी २४) जांब २५) चिंचखेड २६) गोल्लेगांव २७) आधार सावंगी २८) गावडगांव २९) सावरगांव
यवतमाळ १७. पुसद	१) पिंपळगांव २) हौसापूर ३) बामनवाडी ४) कोन्होळ ५) गहुळी ६) चोडी ७) चिंचघाट ८) देवगव्हाण ९) बेलगव्हाण १०) जामनी धुद ११) मोरगड १२) उडाणी १३) पारवा १४) पांडुणी खुर्द १५) खटकोला १६) पन्हाळा १७) मांजरजवळा खुर्द १८) मांजरजवळा १९) सावतमाळ २०) हुनवंतखेड २१) मारवाडी २२) अमृतनगर २३) धनतळ २४) अनजळ २५) उपवनवाडी २६) रामपूरनगर २७) दुधगिरी २८) अनसिंग २९) जांबनाइकर ३०) शिलोना



जिल्हा म्हणून घोषित केलेला तालुका	उपगट तालुकातील गावांची नावे
१८. उमरखेड	१) दिडाळा २) पाडी ३) पिरंजी ४) गोविंदपूर ५) कुरली ६) जाम ७) अकोली ८) सातारा ९) मसळग १०) पाडी ११) जेवळी १२) पिंपळगांव १३) बोडखा १४) पेधा १५) उदापूर १६) सावरगांव १७) परोटी १८) नानी १९) बोरी २०) धेरडी २१) पवनाळा २२) सोनदामी २३) येकंबा २४) मोरचंदी २५) कोसंबी २६) विखली २७) रामपूर २८) बोरगांव २९) डोंगरगांव ३०) धडोली ३१) भोईर ३२) नवेलालपूर ३३) दिग्रस ३४) काटी ३५) कवठा ३६) वहेली ३७) वानोरा ३८) शिवाजीनगर ३९) जवराळा ४०) उमरी ४१) असोली ४२) सेवालालनगर ४३) वडगांव ४४) दामसरी ४५) धार बुद्रुक ४६) सेरंडी ४७) दरारी ४८) मधुरानगर
औरंगाबाद १९. सिल्लोड	१) धनशिंगवाडी २) बाभुळगांव ३) पोखरी ४) बावरा ५) मोमोनाबाद ६) लेहा ७) बाधेगाव बुद्रुक ८) अंधारी ९) जातवा १०) अमरावती ११) घाटानादा १२) परदेशीवाडी १३) चारनेर १४) धावडा १५) अंधारवाडी १६) कडेगांव १७) सिरसाम १८) नातेगांव १९) घाटमखेळ २०) हालदा २१) पिंपळदरी २२) मुखबार २३) वाघरा २४) रांजणी २५) अजिता २६) अनाड २७) आमसरी २८) नारवी २९) वडाळी
२०. कन्नड	१) तांदुळवाडी २) पेवळी ३) मुमसापूर ४) पेकडवाडी ५) कोंडवाडी ६) कल्याणी ७) वडनेर ८) अंबाला ९) आंबा १०) जामडी ११) रेळ १२) कुंजखेड १३) नांदगिरवाडी १४) हिवरखेड १५) वडाळी १६) जेतखेड १७) मालेगांव डोकळ १८) भारवा १९) मालेगांव लोखोंडे २०) मोहाडी २१) हस्ता २२) माहेगांव २३) चेडसर २४) पळसी खुर्द २५) कांबळी २६) भिलदरी २७) गोरपिपळी २८) सवखेड बुद्रुक २९) पिंपरखेडा ३०) सफीयाबाद ३१) खडकी ३२) पिशीर ३३) भातवाडी ३४) वासरी ३५) निभोरा ३६) उमरखेड ३७) सावरगांव ३८) धामणी ३९) आंबेवाडी बुद्रुक ४०) मेहुण ४१) हारेवाडी ४२) वडगांव ४३) लोझा ४४) पांगेरी ४५) भापेवाडी ४६) सोनवाडी ४७) शिवघाट ४८) चिमणापूर ४९) नागापूर ५०) करंजखेड ५१) रेडळगांव ५२) नेवूपूर ५३) घाटशेंठा ५४) टाकळी ५५) अंतूर ५६) लोहगांव
२१. खुलताबाद	१) वडगांव २) पाडळी ३) शिरोळ बुद्रुक ४) सावरखेडा ५) लोधी ६) बोडक ७) खुलताबाद ८) धामणगांव ९) अब्दुलापूर १०) निरगुडी बुद्रुक ११) पिंपरी १२) जमालवाडी १३) म्हैसमाळ १४) शिरसमाळ १५) टाकळी खुर्द १६) आखतवाड १७) वेरुळ १८) मंत्रापूर १९) खुलताबाद २०) सराई २१) बदलाबाई २२) नंदुबाद २३) मापसाळा २४) रसूलपूर २५) शंकरपूरवाडी २६) साबुखेडा २७) खिर्डी २८) सोनखेडा २९) भटजी ३०) लामनगांव ३१) खोतेनापूर ३२) विरमगांव
परभणी २२. हिंगोली	१) नरसी २) लोहगांव ३) सेवली ४) पिंपळी ५) बोरळा ६) जळगांव ७) शेलेगांव ८) सोनेगांव ९) पिंपरखेड १०) देवळा ११) अनापनवाडी १२) ससुलापूर १३) माथा १४) मूर्तिजापूर १५) केहरपिंपरी १६) सिद्धेश्वर १७) दिघुळ १८) दुडचना १९) बडचुना २०) ओढा २१) हनुमानदरी २२) शिवकार २३) जामला २४) जामदन २५) बैजापूर २६) खंबाळा २७) फासेले २८) तबलीगवहाण २९) मांडेगाव ३०) राख ३१) जामरी खुर्द ३२) पांगरी ३३) बोराळा ३४) नांदुरा ३५) कडवी ३६) आमनखेड ३७) ब्रह्मपुरी ३८) खळगांव ३९) जामसन ४०) पारडी ४१) खळगांव ४२) रिघोस ४३) तेजगांव ४४) कोळंब ४५) सुकली बुद्रुक ४६) सुकली ४७) शिंदेपळ ४८) धनगरवाडी ४९) सबळखेड ५०) बाभुळगांव ५१) गोरगांव ५२) पोंडीखुर्द ५३) ब्रह्मणवाडी ५४) पिंपरी पाथबळ ५५) बोरखेड ५६) एकवा ५७) खंडाळा ५८) चिंचोळी ५९) बेलरा ६०) आडगांव ६१) देवठाण ६२) काळेगांव ६३) कलोखेड ६४) कपचुली ६५) चाटोना ६६) देवठाण
२३. कळमनूरी	१) खेड २) धानापूर ३) धोत्रा ४) अमरखोजा ५) शिरस खुर्द ६) शिरस बुद्रुक ७) डिग्रस वापी ८) पिंपरी ९) सांडस १०) रेटकर ११) वराडी १२) खडकत बुद्रुक १३) खडकस खुर्द १४) मंदारी १५) गारखेड १६) महरी खुर्द १७) खडकेत १८) बैज १९) दुधेरी २०) चिंचोळी २१) खोडतला २२) पेडगांव २३) डोंगी २४) नांदुरा २५) बोलापुरी २६) तळेगांव २७) जावा २८) मिसे बुद्रुक २९) कापस ३०) शिपगी ३१) माळवाडी ३२) दाडेगांव ३३) मोतीचोर ३४) विहलवाडी ३५) पिंपरी उर्द ३६) कानेगांव ३७) फाटना ३८) दाभाडी ३९) पुंचा ४०) मोरगांव

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**MAHARASHTRA JEEVAN PRADHIKARAN REGION NAGPUR  
CSR 2019-20 FOR NAGPUR & AMRAVATI REGION**

**SCHEDULE OF RATES FOR THE YEAR 2019-20**

**GENERAL NOTES**

- 1 These rates are applicable to all MJP works in the NAGPUR & AMRAVATI REGION with effect from **dated 01-06-2019**.
- 2 Item of excavation is inclusive of normal manual dewatering, however, separate item for dewatering shall be proposed in the estimate where underground water is anticipated in significant magnitude.
- 3 The rates of excavation for O & M works where limited working space is available and work is required to be carried out on emergency basis, the rate should be adopted as per actual rate analysis which shall be approved by concerned S.E. for that particular work only.
- 4 ***Rates for all items are excluding GST(Goods & Service Tax) levied by Government of India & State Government . While preparation of estimates providing GST percentage, provision should be made separately in recapitulation sheet. Labour rates are inclusive of EPF 12.5 % . These rates are applicable only for tendered works, these rates should be reduced by 12.5 % of labour part when works are to be carried out on piecemeal works and other small works without tendering.***
- 5 For all completed items, **initial lead of 5 kms.** is considered for collection of materials like sand, bricks, metal, stone etc. Appropriate addition for lead charges excluding loading , unloading for these materials shall be done while estimation.

Following quantities shall be considered for additional lead charges beyond 5 km for material required for concrete and reinforcement for structures.

Capacity of ESR (Lit)	Staging Height (M)	Quantity of concrete in cum	Reinforcement Qty (MT)
20,000	12	27.40	2.14
30,000	12	32.70	2.55
40,000	12	37.80	2.95
50,000	12	41.90	3.27
60,000	12	46.40	3.62
70,000	12	51.20	3.99
75,000	12	53.00	4.13
80,000	12	56.00	4.37
90,000	12	62.40	4.87
1,25,000	25	107.40	8.38

1,50,000	12	89.80	7.00
1,60,000	12	94.30	7.36
1,75,000	16	117.60	9.17
2,00,000	20	143.60	11.20
2,00,000	25	157.00	12.25
2,50,000	25	177.00	13.81
3,00,000	25	206.00	16.07

Note : Spiral staircase not considered. Above quantities shall be considered for all type of foundation (SBC) and all type of Seismic Zones.

#### For RCC GSR

Capacity of GSR (Lit)	Concrete Qty (Cum)	Reinforcement Qty (MT)
25,000	13.58	0.945
50,000	18.45	1.586
75,000	30.45	2.095
1,00,000	39.31	2.707
1,50,000	54.699	3.778
2,00,000	73.313	6.577
3,00,000	95.092	9.874
5,00,000	143.277	11.900
10,00,000	222.441	15.418

(For WTP & STP works, the quantities of completed/ongoing works shall be considered)

For Capacities beyond the mentioned capacities of ESR and GSR as well as for all capacities of WTP & STPs, the Quantities shall be considered with respect to the already completed/ on going work in the region. All the concrete items for water retaining structures are taken as M-300 grade. Hence aggregate quantity and sand quantity shall be as per standard consumption.

- 6 These rates are applicable to water supply and sewerage schemes and its allied works only. Rates, for items required for general construction, buildings, roads, Irrigation Works etc. shall be adopted from the current schedule of rates of P.W.D. or Irrigation Deptt. in respective areas. For bore wells, CSR of GSDA shall be followed. Increase in percentage over normal schedule of rates will also be as per norms of respective C.S.R.
- 7 For mechanical and electrical items related to water supply and sewerage schemes, CSR for 2019-20 prepared by Superintending Engineer (Mechanical), Maharashtra Jeevan Pradhikaran shall be adopted.

- 8 Following increase in % over normal schedule of rates of M.J.P. for 2019-20 will be applicable. (Ref. PWD GR. No. DSR/1091/CR-6577/Planning-3,dated 08/07/2003)

	Area	% Increase
a	Works in Corporation area	5.00%
b	Works in Municipal areas/Nagar Panchayat area	2.00%
c	Works in tribal area / hilly and inaccessible areas	10.00%
d	Suger cane area	5.00%
e	Prison / Jail area	15.00%
f	Defence area	20.00%
g	Excavation for pipeline work along National Highway	10.00%
h	Excavation for Dist.system pipe lines,Sewerage system in towns	10.00%
i	Rajbhavan	20.00%
j	For Naxalite Area (Notified)	10.00%

- 9 In case the area of work lies under categories more than one (mentioned at Sr.No.8) the higher percentage increase shall be made applicable (e.g. if any Municipal Council falls in hilly area, then additional percentage in rates will be only 10 % and not with 2 % + 10 %). This additional percentage is only on completed item of work and not applicable to items of providing of materials like steel, pipes, valves, specials etc.
- 10 For hilly and inaccessible areas / Tribal areas approved by Government, Planning Department's Circular Nos.(1)1089/CR-66/Plan-19,DT.23/11/1990 and (2) 1094/P-36/K-1455 dt.02/09/1994, shall be followed . In addition to amendment notification by the planning deptt. time to time.
- 11 For Action Plan Notified Area, Government's Circular in force from time to time shall be followed.
- 12 Whenever basic rates of completed items are increased by percentage given at Sr. No. 9, the issue rates of materials to be supplied by the Department ( if any) shall be increased by same percentage.
- 13 This schedule of rates is based on following basic rates for important materials.

	<b>Material</b>	<b>Rate in Rs. Per MT.</b>
a	Cement	4969.17
b	Mild Steel	36348.01
c	Tor Steel/CTD bars	41781.00
d	Structural Steel	43543.00
e	Corrosion Resistant Steel (Fe 500)	39202.00
f	Diesel	57.85 Per Lit.

- 14 Details of standard cement consumption and standard weight of various pipes are incorporated in this CSR .
- 15 Rates for supply of various types of pipes, specials and valves are exclusive of GST (Goods and service tax) but inclusive of third party inspection charges, storage charges, overhead charges and transportation of materials upto divisional stores / sites and stacking. While preparation of estimates provision for GST should be made seperately in recapitulation sheet.
- 16 Cost of carting of pipes and valves from departmental stores to site of work is not considered in rate analysis, hence this item must be incorporated in each scheme. While inviting tenders if supply is from departmental store, then this item shall appear in the tender, and if the supply is by contractor then this item shall not appear in the tender, even though same is provided in sanctioned scheme, because the contractor is supposed to bring the pipes and valves directly at site.
- 17 Though the contractor is required to do refilling before hydraulic testing to avoid traffic hurdle, no payment for refilling of the trenches of pipeline shall be payable till satisfactory hydraulic testing is given. Re-excavation required if any, during testing, shall be done by the contractor at his own cost.
- 18 10 % of cost of items of water retaining structures, such as GSR/ESR/MBR shall be retained till satisfactory hydraulic testing is given as per IS code.
- 19 For Dams , Balancing Tanks , Aerated Lagoons and similar structures, the rates for Film membranes as per prevailing rates for Irrigation Department will be followed.
- 20 Capacity of ESR / GSR to be constructed shall be rounded to nearest 1000 litres always on higher side i.e. if required capacity is 1,23,570 litre, it shall be rounded to 1,24,000 litre. Similarly, if required capacity is 8,26,070 litre, it shall be rounded to 8,27,000 litre.



- 21 Capacity of Unconventional / conventional Treatment Plants shall be rounded to nearest 0.5 Mld- always on higher side i.e. if WTP of 2.37 Mld is required; it shall be rounded to 2.5 Mld. For WTP having capacity less than 0.5 mld, package type WTP should be considered.
- 22 ***Provision for insurance @ 1% is considered in Rate analysis of CSR 2019-20 These rates are applicable only for tendered works,these rates should be reduced by 1 % of total rate when works are to be carried out on piecemeal works and other small works without tendering.***
- 23 Rates given in this CSR are for estimation purpose only.
- 24 The makes of Sluice / Butterfly valves etc. to be used for inlet / outlets of ESRs / GSRs / MBRs / Pumping main / Rising main and WTP should be from approved makes of M.J.P .
- 25 Mechanical CSR rates for respective items shall be followed while estimation and the list of approved makes shall be given in the item.
- 26 ***As per Govt. Circular No.DSR 1090/CR 6453/PLN\_3 dated 14-07-1993, 1% for labour amenities is considered in the DSR .***
- 27 ***The royalty charges are considered in the rate analysis of CSR 2019-20 as per Revenue & Forest department ,Government of Maharashtra Notification dt.11.5.2015.***
- 28 ***As per Govt. in Industries and Power GR No.BCA-2009/CR108/labour 7-A dated 17-06-2010, 1% cess on labour welfare is considered in DSR while arriving the rates.***
- 29 ***Item of hydraulic testing of pipeline are included separately in respective subwork in the Schedule of Rates.***
- 30 In case of water supplied by MJP cost there of shall be deducted from the item of hydraulic testing with prevalling of non domestic (Bulk Supply) as per MJP notification No.MJP/F II /Cost/23/2015/dt. 17.7.2015
- 31 in case of Geomembrane sheet to be provided by the agency,50 % Payment against supply 30 % Payment against lowering,Laying & 20 % against hydraulic test will be given.
- 32 Diesel rate mentioned in the material section has been worked out with 12 % reduction in the market rate of the diesel.

**MAHARASHTRA JEEVAN PRADHIKARAN, NAGPUR REGION, NAGPUR**  
**FOR NAGPUR & AMRAVATI REGION**  
**MATERIAL FOR 2019-20**

<b>S.No.</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate Adopted 2019-20</b>
1	Alum Grade IV Ex-factory	Mt	7384.99
2	Binding Wire	Kg	66.84
3	Black enamel paint Anti corrosive	Ltr	178.31
4	Bricks	No	5.00
5	Bullies, Struts (125 mm dia 1.5 M long)	Rmt	170.00
6	C.C.Teak wood planks(3" X 6")	Cum	65766.71
7	Cement (Bags)	Bag	248.46
8	Cement (M.T.)	Mt	4969.17
9	Cement Sulphar Resistant	M.T.	6158.27
10	Charcoal	Kg	22.79
11	Coarse sand	Cum	900.00
12	Corrosion Resistant steel	Mt	39202.44
13	Diesel	Lit	57.85
14	Epoxy paint	Kg	363.78
15	Fuse	No	19.00
16	Gun Powder	Kg	65.45
17	Liquid chlorine 900 kg Supplier Containor	No.	14274.99
18	LubricantOil	lit	199.51
19	M.S.angle(50x50x6mm)	Kg	39.69
20	M.S.Bars (Delivery at site)	Mt	36348.01
21	M.S.Bars (in kgs)	Kg	36.75
22	M.S.Flats (40 mm x 3 mm)	Kg	42.36
23	M.S.plate	Kg	46.54
24	Mild steelGrill ready	Kg	62.00
25	Mildsteel grill railing	mt	62.00
26	Mobile oil	Lit	241.13
27	Murum	cum	239.80
28	Nails	Kg	61.28
29	Nutbolts	Kg	79.10
30	Polling board	cum	14673.01
31	R.S.Joist channel etc	MT	44288.11
32	Rapid sand Gravity filter Gravel At Source	Cum	1525.43
33	Rapid sand Gravity filter Gravel At Source (Godhar	Cum	1525.43
34	Ready mixed lead/zinc paint	Ltr	182.78
35	Ready mix oil paint	Ltr	203.96
36	Ready mix primer for steel	Ltr	141.54
37	Ready mix synthetic enamel paint	Lit	150.00
38	Rubber Gasket (8 mm thick)	Kg	74.07
39	Sand	cum	1000.00
40	Spun Yarn	Kg	89.24

S.No.	Material Description	Unit	Rate Adopted 2019-20
41	Stone Aggregate 10 mm	cum	809.22
42	Stone Aggregate 20 mm	cum	809.22
43	Stone Aggregate 40 mm	cum	809.22
44	Structural Steel	M.T.	43543.00
45	T.C.L.(bleaching powder Gr.I) (25kg pack)	Kg	21.00
46	Teak wood	Cum	62888.00
47	Tor Steel	Mt	41781.00
48	Walling ( 100x100mm)	cum	14632.14
49	White cement	Kg	23.74
50	White lead	Kg	158.94
51	Wire	Kg	72.51
52	Plywood Commercial 12 mm thick Waterproof for centering	sqm	440.90
53	Welding Rod Having weight 5.25 kg	Box	1210.25
54	Kasarde sand (for mortar lining work) @ source	cum	1744.00
55	Rubble	cum	446.00
56	Oxygen Gas (Refill)	Cylinder	303.02
57	Acetylene Gas	Cylinder	660.00
	<b>New Item</b>		
58	Liquid chlorine 100 kg Deptt Containor .	No.	2498.71
59	PAC Powder medium Basicity	MT	28099.80
60	PAC Liquid	MT	9595.89
61	Ready Mix Aluminium Paint	Ltr	290.84

**MAHARASHTRA JEEVAN PRADHIKARAN, NAGPUR REGION**  
**FOR NAGPUR & AMRAVATI REGION**

**LABOUR FOR 2019-20**

<b>S.No.</b>	<b>Material Description</b>	<b>Unit</b>	<b>Rate Adopted 2019-20</b>
1	Asst Fitter	No.	512.00
2	Bhandhani	No.	512.00
3	Bhisti with pakahal	No.	512.00
4	Blacksmith IInd class	No.	512.00
5	Breaker	No.	512.00
6	Carpainter 1st class	No.	539.00
7	Carpainter 2nd class	No.	539.00
8	Chiseller	No.	512.00
9	Excavator	No.	493.00
10	Fitter 1st class	No.	539.00
11	Glazier	No.	539.00
12	Helper	No.	493.00
13	Hole Driller	No.	512.00
14	Mason 1st class	No.	539.00
15	Mason 2nd class	No.	539.00
16	MAZDOOR (FEMALE)	No.	493.00
17	Mazdoor(Heavy)	No.	493.00
18	Mazdoor (Light)	No.	493.00
19	MAZDOOR (MALE)	No.	493.00
20	Maistry	No.	539.00
21	Mukadam	No.	539.00
22	Painter (for coloring)	No.	539.00
23	Painter	No.	539.00
24	Polisher	No.	539.00
25	Pump Driver	No.	512.00
26	StoneCutter or dresser	No.	539.00
27	Tile layer	No.	539.00
28	Welder	No.	539.00
29	Welder for pipe line	No.	539.00
30	WhiteWasher	No.	512.00
31	TileTurner	No.	539.00
32	L.M.V. Driver	No.	539.00



33	Electrician	No.	539.00
34	Plumber (Building)	No.	512.00
35	Mali	No.	493.00
36	Wireman	No.	539.00
39	Computer Operator (data entryoperator)	No.	539.00
40	Meter Reader	No.	539.00
41	Filter Operator	No.	539.00
<b>HIRE CHARGES OF MACHINERIES</b>			
1	Rent for chain pully block with tripod	Day	472.50
2	& excluding fuel	BHP-Day	189.00
3	Rent for Mech.Mixer with fuel & crew	Day	2535.75
4	Rent for vibrator with fuel and crew	Day	992.25
5	Plate Bender	Day	945.00
6	Rent for welding set with Electric set	Day	1155.00
7	Rent for welding set with Generator	Day	2520.00
8	Rent for Compressor with fuel	Day	2756.25
9	Rent for Concrete breaker & Compressor	Day	2625.00
10	Rent for poclain	Hour	2205.00
11	Rent for Crane	Hour	1433.25
12	Rent for JCB	Hour	1102.50
13	Truck hire charges upto 20 km	Day	2513.00
14	Truck hire charges for 20 km to 50 km	Day	2295.00
15	Truck hire charges for 50 km & above	Day	1748.00
16	Pipe cutter with opertor	Day	1378.65
17	Desludging/ Desilting pump	Day	2646.00
18	Jeep hire charges with driver and fuel (Upto 300 KM.)	Day	3509.10

## STATEMENT II

Including loading, unloading and stacking

Lead in km	Av. Speed	No. of Trips(N)= 8/ ((2L/S) +1)	Km. Done (2NL+6)	Litres of diesel cons umed	cost of diesel @ 57.85 /lit	Lit. of Mobile oil con- sumed	cost of M.Oil @ 241.13 /lit	cost of 6 mazdoor 554.63 /day	Hire charges of truck Rs. Per day	Total cost (6+8+ 9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0.5	15	7.5	13.50	4.50	260.33	0.096	23.15	3327.75	2513	6124.23	612.42	6736.65	898.22
1	16	7.11	20.22	6.74	389.91	0.144	34.72	3327.75	2513	6265.38	626.54	6891.92	969.33
1.5	16.5	6.77	26.31	8.77	507.34	0.188	45.33	3327.75	2513	6393.42	639.34	7032.76	1038.81
2	17	6.48	31.92	10.64	615.52	0.228	54.98	3327.75	2513	6511.25	651.13	7162.38	1105.31
2.5	17.25	6.2	37.00	12.33	713.29	0.264	63.66	3327.75	2513	6617.70	661.77	7279.47	1174.11
3	17.5	5.96	41.76	13.92	805.27	0.298	71.86	3327.75	2513	6717.88	671.79	7389.67	1239.88
3.5	17.75	5.74	46.18	15.39	890.31	0.330	79.57	3327.75	2513	6810.63	681.06	7491.69	1305.17
4	18	5.54	50.32	16.77	970.14	0.359	86.57	3327.75	2513	6897.46	689.75	7587.21	1369.53
4.5	18.25	5.36	54.24	18.08	1045.93	0.387	93.32	3327.75	2513	6980.00	698	7678.00	1432.46
5	18.5	5.19	57.90	19.30	1116.51	0.414	99.83	3327.75	2513	7057.09	705.71	7762.80	1495.72
6	18.75	4.88	64.56	21.52	1244.93	0.461	111.16	3327.75	2513	7196.84	719.68	7916.52	1622.24
7	19	4.61	70.54	23.51	1360.05	0.504	121.53	3327.75	2513	7322.33	732.23	8054.56	1747.19
8	19.183	4.36	75.76	25.25	1460.71	0.541	130.45	3327.75	2513	7431.91	743.19	8175.10	1875.02
9	19.6	4.17	81.06	27.02	1563.11	0.579	139.61	3327.75	2513	7543.47	754.35	8297.82	1989.88
10	20	4	86.00	28.67	1658.56	0.614	148.05	3327.75	2513	7647.36	764.74	8412.10	2103.03
15	25	3.64	115.20	38.40	2221.44	0.823	198.45	3327.75	2513	8260.64	826.06	9086.70	2496.35
20	25	3.08	129.20	43.07	2491.6	0.923	222.56	3327.75	2513	8554.91	855.49	9410.40	3055.32
25	25	2.67	139.50	46.50	2690.03	0.996	240.17	3327.75	2295	8552.95	855.3	9408.25	3523.69
30	25	2.35	147.00	49.00	2834.65	1.050	253.19	3327.75	2295	8710.59	871.06	9581.65	4077.3
35	30	2.4	174.00	58.00	3355.3	1.243	299.72	3327.75	2295	9277.77	927.78	10205.55	4252.31
40	30	2.18	180.40	60.13	3478.52	1.289	310.82	3327.75	2295	9412.09	941.21	10353.30	4749.22
45	30	2	186.00	62.00	3586.7	1.329	320.46	3327.75	2295	9529.91	952.99	10482.90	5241.45
50	30	1.85	191.00	63.67	3683.31	1.364	328.90	3327.75	2295	9634.96	963.5	10598.46	5728.9
60	30	1.6	198.00	66.00	3818.1	1.414	340.96	3327.75	1748	9234.81	923.48	10158.29	6348.93
70	30	1.41	203.40	67.80	3922.23	1.453	350.36	3327.75	1748	9348.34	934.83	10283.17	7293.03
80	30	1.26	207.60	69.20	4003.22	1.483	357.60	3327.75	1748	9436.57	943.66	10380.23	8238.28
90	30	1.14	211.20	70.40	4072.64	1.509	363.87	3327.75	1748	9512.26	951.23	10463.49	9178.5
100	40	1.33	272.00	90.67	5245.26	1.943	468.52	3327.75	1748	10789.53	1078.95	11868.48	8923.67

Lead in km	Av. Speed	No. of Trips(N)= 8/ ((2L/S) +1)	Km. Done (2NL+6)	Litres of diesel cons umed	cost of diesel @ 57.85 /lit	Lit. of Mobile oil con- sumed	cost of M.Oil @ 241.13 /lit	cost of 6 mazdoor 554.63 /day	Hire charges of truck Rs. Per day	Total cost (6+8+ 9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
125	40	1.1	281.00	93.67	5418.81	2.007	483.95	3327.75	1748	10978.51	1097.85	12076.36	10978.51
150	40	0.94	288.00	96.00	5553.6	2.057	496.00	3128.09	1748	10925.69	1092.57	12018.26	12785.38
175	40	0.82	293.00	97.67	5650.21	2.093	504.69	2728.76	1748	10631.66	1063.17	11694.83	14261.99
200	40	0.73	298.00	99.33	5746.24	2.129	513.37	2429.26	1748	10436.87	1043.69	11480.56	15726.79
250	40	0.59	301.00	100.33	5804.09	2.150	518.43	1963.37	1748	10033.89	1003.39	11037.28	18707.25
300	45	0.56	342.00	114.00	6594.9	2.443	589.08	1863.54	1748	10795.52	1079.55	11875.07	21205.48
420	45	0.41	350.40	116.80	6756.88	2.503	603.55	1364.38	1748	10472.81	1047.28	11520.09	28097.78
540	45	0.32	351.60	117.20	6780.02	2.511	605.48	1064.88	1748	10198.38	1019.84	11218.22	35056.94
660	45	0.26	349.20	116.40	6733.74	2.494	601.38	865.22	1748	9948.34	994.83	10943.17	42089.12
780	45	0.22	349.20	116.40	6733.74	2.494	601.38	732.11	1748	9815.23	981.52	10796.75	49076.14
900	45	0.2	366.00	122.00	7057.7	2.614	630.31	665.55	1748	10101.56	1010.16	11111.72	55558.6
1020	45	0.17	352.80	117.60	6803.16	2.520	607.65	565.72	1748	9724.53	972.45	10696.98	62923.41
1140	45	0.15	348.00	116.00	6710.6	2.486	599.45	499.16	1748	9557.21	955.72	10512.93	70086.2

- Note:
- 1) No. of trips in a working of 8 hours  $N=8 / (2(L+S) + 1)$  where L = Lead in km and S = speed, 1 hour is allowed for loading
  - 2) Consumption of diesel taken as 3 km / litre
  - 3) Consumption of Mobile oil taken as 140 km / litre
  - 4) In col. 4 6 hours has been added for movement from parking place to duty and back
  - 5) Hire charges will remain Rs. 500.00 for 1200 and above km lead
  - 6) Labour required for loading unloading and stacking after the No. of trips reduced below 1 is factorised with actual number of trip.

**STATEMENT III**

Excluding loading, unloading and stacking

Lead in km	Av. Speed	No. of Trips(N)= 8/ ((2L/S)+1)	Km. Done (2NL+6)	Litres of diesel consumed	cost of diesel @ 57.85 /lit	Lit. of Mobile oil consumed	cost of M.Oil @ 241.13 /lit	cost of 6 mazdoor 554.63 /day	Hire charges of truck Rs. Per day	Total cost (6+8+ 9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0.5	15	7.5	13.50	4.50	260.33	0.096	23.15	0	2513	2796.48	279.65	3076.13	410.15
1	16	7.11	20.22	6.74	389.91	0.144	34.72	0	2513	2937.63	293.76	3231.39	454.49
1.5	16.5	6.77	26.31	8.77	507.34	0.188	45.33	0	2513	3065.67	306.57	3372.24	498.12
2	17	6.48	31.92	10.64	615.52	0.228	54.98	0	2513	3183.50	318.35	3501.85	540.41
2.5	17.25	6.2	37.00	12.33	713.29	0.264	63.66	0	2513	3289.95	329	3618.95	583.7
3	17.5	5.96	41.76	13.92	805.27	0.298	71.86	0	2513	3390.13	339.01	3729.14	625.69
3.5	17.75	5.74	46.18	15.39	890.31	0.330	79.57	0	2513	3482.88	348.29	3831.17	667.45
4	18	5.54	50.32	16.77	970.14	0.359	86.57	0	2513	3569.71	356.97	3926.68	708.79
4.5	18.25	5.36	54.24	18.08	1045.93	0.387	93.32	0	2513	3652.25	365.23	4017.48	749.53
5	18.5	5.19	57.90	19.30	1116.51	0.414	99.83	0	2513	3729.34	372.93	4102.27	790.42
6	18.75	4.88	64.56	21.52	1244.93	0.461	111.16	0	2513	3869.09	386.91	4256.00	872.13
7	19	4.61	70.54	23.51	1360.05	0.504	121.53	0	2513	3994.58	399.46	4394.04	953.15
8	19.183	4.36	75.76	25.25	1460.71	0.541	130.45	0	2513	4104.16	410.42	4514.58	1035.45
9	19.6	4.17	81.06	27.02	1563.11	0.579	139.61	0	2513	4215.72	421.57	4637.29	1112.06
10	20	4	86.00	28.67	1658.56	0.614	148.05	0	2513	4319.61	431.96	4751.57	1187.89
15	25	3.64	115.20	38.40	2221.44	0.823	198.45	0	2513	4932.89	493.29	5426.18	1490.71
20	25	3.08	129.20	43.07	2491.6	0.923	222.56	0	2513	5227.16	522.72	5749.88	1866.84
25	25	2.67	139.50	46.50	2690.03	0.996	240.17	0	2295	5225.20	522.52	5747.72	2152.7
30	25	2.35	147.00	49.00	2834.65	1.050	253.19	0	2295	5382.84	538.28	5921.12	2519.63
35	30	2.4	174.00	58.00	3355.3	1.243	299.72	0	2295	5950.02	595	6545.02	2727.09
40	30	2.18	180.40	60.13	3478.52	1.289	310.82	0	2295	6084.34	608.43	6692.77	3070.08
45	30	2	186.00	62.00	3586.7	1.329	320.46	0	2295	6202.16	620.22	6822.38	3411.19
50	30	1.85	191.00	63.67	3683.31	1.364	328.90	0	2295	6307.21	630.72	6937.93	3750.23
55	30	1.71	194.10	64.70	3742.9	1.386	334.21	0	1748	5825.11	582.51	6407.62	3747.15
65	30	1.5	201.00	67.00	3875.95	1.436	346.26	0	1748	5970.21	597.02	6567.23	4378.15
75	30	1.33	205.50	68.50	3962.73	1.468	353.98	0	1748	6064.71	606.47	6671.18	5015.92
85	30	1.2	210.00	70.00	4049.5	1.500	361.70	0	1748	6159.20	615.92	6775.12	5645.93
95	40	1.39	270.10	90.03	5208.24	1.929	465.14	0	1748	7421.38	742.14	8163.52	5873.04



Lead in km	Av. Speed	No. of Trips(N)= 8/ ((2L/S) +1)	Km. Done (2NL+6)	Litres of diesel cons umed	cost of diesel @ 57.85 /lit	Lit. of Mobile oil con- sumed	cost of M.Oil @ 241.13 /lit	cost of 6 mazdoor 554.63 /day	Hire charges of truck Rs. Per day	Total cost (6+8+ 9+10)	Add 10% overhead charges	Total 11+12	cost per trip (13/3)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
105	40	1.28	274.80	91.60	5299.06	1.963	473.34	0	1748	7520.40	752.04	8272.44	6462.84
130	40	1.07	284.20	94.73	5480.13	2.030	489.49	0	1748	7717.62	771.76	8489.38	7934
155	40	0.91	288.10	96.03	5555.34	2.058	496.25	0	1748	7799.59	779.96	8579.55	9428.08
180	40	0.8	294.00	98.00	5669.3	2.100	506.37	0	1748	7923.67	792.37	8716.04	10895.05
230	40	0.64	300.40	100.13	5792.52	2.146	517.46	0	1748	8057.98	805.8	8863.78	13849.66
280	45	0.6	342.00	114.00	6594.9	2.443	589.08	0	1748	8931.98	893.2	9825.18	16375.3
400	45	0.43	350.00	116.67	6749.36	2.500	602.83	0	1748	9100.19	910.02	10010.21	23279.56
520	45	0.33	349.20	116.40	6733.74	2.494	601.38	0	1748	9083.12	908.31	9991.43	30277.06
640	45	0.27	351.60	117.20	6780.02	2.511	605.48	0	1748	9133.50	913.35	10046.85	37210.56
760	45	0.23	355.60	118.53	6856.96	2.540	612.47	0	1748	9217.43	921.74	10139.17	44083.35
880	45	0.2	358.00	119.33	6903.24	2.557	616.57	0	1748	9267.81	926.78	10194.59	50972.95
1000	45	0.18	366.00	122.00	7057.7	2.614	630.31	0	1748	9436.01	943.6	10379.61	57664.5
1120	45	0.16	364.40	121.47	7027.04	2.603	627.66	0	1748	9402.70	940.27	10342.97	64643.56

**STATEMENT VI**  
Including loading, unloading and stacking

Lead in km	Cost / trip	Lime murum building rubbish	Earth	Manure or sludge	Excavated rock	Sand stone aggregate 40 mm & below	Aggregate 40 mm & above	Soling stone	Concrete block (form)	Timber
1	2	3	4	5	6	7	8	9	10	11
	Pay load	6.0 cum	4.8 cum	5.52 cum	3.0 cum	5.75 cum	5.5 cum	4.7 cum	6.0 cum	5.0 cum
0.5	898.22	149.7	187.13	162.72	299.41	156.21	163.31	191.11	149.70	156.21
1	969.33	161.56	201.94	175.60	323.11	168.58	176.24	206.24	161.56	168.58
1.5	1038.81	173.14	216.42	188.19	346.27	180.66	188.87	221.02	173.14	180.66
2	1105.31	184.22	230.27	200.24	368.44	192.23	200.97	235.17	184.22	192.23
2.5	1174.11	195.69	244.61	212.70	391.37	204.19	213.47	249.81	195.69	204.19
3	1239.88	206.65	258.31	224.62	413.29	215.63	225.43	263.80	206.65	215.63
3.5	1305.17	217.53	271.91	236.44	435.06	226.99	237.30	277.70	217.53	226.99
4	1369.53	228.26	285.32	248.10	456.51	238.18	249.01	291.39	228.26	238.18
4.5	1432.46	238.74	298.43	259.50	477.49	249.12	260.45	304.78	238.74	249.12
5	1495.72	249.29	311.61	270.96	498.57	260.13	271.95	318.24	249.29	260.13
6	1622.24	270.37	337.97	293.88	540.75	282.13	294.95	345.16	270.37	282.13
7	1747.19	291.2	364	316.52	582.40	303.86	317.67	371.74	291.20	303.86
8	1875.02	312.5	390.63	339.68	625.01	326.09	340.91	398.94	312.50	326.09
9	1989.88	331.65	414.56	360.49	663.29	346.07	361.80	423.38	331.65	346.07
10	2103.03	350.51	438.13	380.98	701.01	365.74	382.37	447.45	350.51	365.74
15	2496.35	416.06	520.07	452.24	832.12	434.15	453.88	531.14	416.06	434.15
20	3055.32	509.22	636.53	553.50	1018.44	531.36	555.51	650.07	509.22	531.36
25	3523.69	587.28	734.1	638.35	1174.56	612.82	640.67	749.72	587.28	612.82
30	4077.3	679.55	849.44	738.64	1359.10	709.10	741.33	867.51	679.55	709.10
35	4252.31	708.72	885.9	770.35	1417.44	739.53	773.15	904.75	708.72	739.53
40	4749.22	791.54	989.42	860.37	1583.07	825.95	863.49	1010.47	791.54	825.95
45	5241.45	873.58	1091.97	949.54	1747.15	911.56	952.99	1115.20	873.58	911.56
50	5728.9	954.82	1193.52	1037.84	1909.63	996.33	1041.62	1218.91	954.82	996.33
60	6348.93	1058.16	1322.69	1150.17	2116.31	1104.16	1154.35	1350.84	1058.16	1104.16
70	7293.03	1215.51	1519.38	1321.20	2431.01	1268.35	1326.01	1551.71	1215.51	1268.35
80	8238.28	1373.05	1716.31	1492.44	2746.09	1432.74	1497.87	1752.83	1373.05	1432.74
90	9178.5	1529.75	1912.19	1662.77	3059.50	1596.26	1668.82	1952.87	1529.75	1596.26
100	8923.67	1487.28	1859.1	1616.61	2974.56	1551.94	1622.49	1898.65	1487.28	1551.94

Lead in km	Cost / trip	Lime murum building rubbish	Earth	Manure or sludge	Excavated rock	Sand stone aggregate 40 mm & below	Aggregate 40 mm & above	Soling stone	Concrete block (form)	Timber
1	2	3	4	5	6	7	8	9	10	11
	Pay load	6.0 cum	4.8 cum	5.52 cum	3.0 cum	5.75 cum	5.5 cum	4.7 cum	6.0 cum	5.0 cum
125	10978.51	1829.75	2287.19	1988.86	3659.50	1909.31	1996.09	2335.85	1829.75	1909.31
150	12785.38	2130.9	2663.62	2316.19	4261.79	2223.54	2324.61	2720.29	2130.90	2223.54
175	14261.99	2377	2971.25	2583.69	4754.00	2480.35	2593.09	3034.47	2377.00	2480.35
200	15726.79	2621.13	3276.41	2849.06	5242.26	2735.09	2859.42	3346.13	2621.13	2735.09
250	18707.25	3117.88	3897.34	3388.99	6235.75	3253.43	3401.32	3980.27	3117.88	3253.43
300	21205.48	3534.25	4417.81	3841.57	7068.49	3687.91	3855.54	4511.80	3534.25	3687.91
420	28097.78	4682.96	5853.7	5090.18	9365.93	4886.57	5108.69	5978.25	4682.96	4886.57
540	35056.94	5842.82	7303.53	6350.89	11685.65	6096.86	6373.99	7458.92	5842.82	6096.86
660	42089.12	7014.85	8768.57	7624.84	14029.71	7319.85	7652.57	8955.13	7014.85	7319.85
780	49076.14	8179.36	10224.2	8890.61	16358.71	8534.98	8922.93	10441.73	8179.36	8534.98
900	55558.6	9259.77	11574.71	10064.96	18519.53	9662.37	10101.56	11820.98	9259.77	9662.37
1020	62923.41	10487.24	13109.04	11399.17	20974.47	10943.20	11440.62	13387.96	10487.24	10943.20
1140	70086.2	11681.03	14601.29	12696.78	23362.07	12188.90	12742.95	14911.96	11681.03	12188.90

# STATEMENT VII

Including loading, unloading and stacking

Lead in km	Cost / trip	Cement stone block, GI CI CC AC Pipes below 120 mm dia	Tar bitumenn Asphalt roofing felt & Flooring Asphalt etc.	Steam coal	Matting thatching bambu ceiling board rubber PVC pipes fittings	Sheet & plate glass in packs Paints & Distemper s AC Sheets & fittings iron	Bricks modular bricks & Traditional bricks	Tiles half round tiles & Roofing tiles cement flooring tiles	Glass blocks (hollow) 200x200 x120 mm	Empty cement bags
1	2	3	4	5	6	7	8	9	10	11
	Pay load	7.0 Mt	4.5 MT	5.5 MT	3.0 MT	7.0 MT	3500 No.	3200 No.	1000 No.	2000 No.
		per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1000 Nos.	er 1000 No	per 1000 Nos.	per 1000 Nos.
0.5	898.22	128.32	199.60	163.31	299.41	128.32	256.63	280.69	89.82	449.11
1	969.33	138.48	215.41	176.24	323.11	138.48	276.95	302.92	96.93	484.67
1.5	1038.81	148.40	230.85	188.87	346.27	148.40	296.80	324.63	103.88	519.41
2	1105.31	157.90	245.62	200.97	368.44	157.90	315.80	345.41	110.53	552.66
2.5	1174.11	167.73	260.91	213.47	391.37	167.73	335.46	366.91	117.41	587.06
3	1239.88	177.13	275.53	225.43	413.29	177.13	354.25	387.46	123.99	619.94
3.5	1305.17	186.45	290.04	237.30	435.06	186.45	372.91	407.87	130.52	652.59
4	1369.53	195.65	304.34	249.01	456.51	195.65	391.29	427.98	136.95	684.77
4.5	1432.46	204.64	318.32	260.45	477.49	204.64	409.27	447.64	143.25	716.23
5	1495.72	213.67	332.38	271.95	498.57	213.67	427.35	467.41	149.57	747.86
6	1622.24	231.75	360.50	294.95	540.75	231.75	463.50	506.95	162.22	811.12
7	1747.19	249.60	388.26	317.67	582.40	249.60	499.20	546.00	174.72	873.60
8	1875.02	267.86	416.67	340.91	625.01	267.86	535.72	585.94	187.50	937.51
9	1989.88	284.27	442.20	361.80	663.29	284.27	568.54	621.84	198.99	994.94
10	2103.03	300.43	467.34	382.37	701.01	300.43	600.87	657.20	210.30	1051.52
15	2496.35	356.62	554.74	453.88	832.12	356.62	713.24	780.11	249.64	1248.18
20	3055.32	436.47	678.96	555.51	1018.44	436.47	872.95	954.79	305.53	1527.66
25	3523.69	503.38	783.04	640.67	1174.56	503.38	1006.77	1101.15	352.37	1761.85
30	4077.30	582.47	906.07	741.33	1359.10	582.47	1164.94	1274.16	407.73	2038.65
35	4252.31	607.47	944.96	773.15	1417.44	607.47	1214.95	1328.85	425.23	2126.16
40	4749.22	678.46	1055.38	863.49	1583.07	678.46	1356.92	1484.13	474.92	2374.61
45	5241.45	748.78	1164.77	952.99	1747.15	748.78	1497.56	1637.95	524.15	2620.73
50	5728.90	818.41	1273.09	1041.62	1909.63	818.41	1636.83	1790.28	572.89	2864.45
60	6348.93	906.99	1410.87	1154.35	2116.31	906.99	1813.98	1984.04	634.89	3174.47

Lead in km	Cost / trip	Cement stone block, GI CI CC AC Pipes below 120 mm dia	Tar bitumenn Asphalt roofing felt & Flooring Asphalt etc.	Steam coal	Matting thatching bambu ceiling board rubber PVC pipes fittings	Sheet & plate glass in packs Paints & Distemper s AC Sheets & fittings iron	Bricks modular & Traditional bricks	Tiles half round tiles & Roofing tiles cement flooring tiles	Glass blocks (hollow) 200x200x120 mm	Empty cement bags
1	2	3	4	5	6	7	8	9	10	11
	Pay load	7.0 Mt	4.5 MT	5.5 MT	3.0 MT	7.0 MT	3500 No.	3200 No.	1000 No.	2000 No.
		per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1 M.T.	per 1000 Nos.	er 1000 No	per 1000 Nos.	per 1000 Nos.
70	7293.03	1041.86	1620.67	1326.01	2431.01	1041.86	2083.72	2279.07	729.30	3646.52
80	8238.28	1176.90	1830.73	1497.87	2746.09	1176.90	2353.79	2574.46	823.83	4119.14
90	9178.50	1311.21	2039.67	1668.82	3059.50	1311.21	2622.43	2868.28	917.85	4589.25
100	8923.67	1274.81	1983.04	1622.49	2974.56	1274.81	2549.62	2788.65	892.37	4461.84
125	10978.51	1568.36	2439.67	1996.09	3659.50	1568.36	3136.72	3430.78	1097.85	5489.26
150	12785.38	1826.48	2841.20	2324.61	4261.79	1826.48	3652.97	3995.43	1278.54	6392.69
175	14261.99	2037.43	3169.33	2593.09	4754.00	2037.43	4074.85	4456.87	1426.20	7131.00
200	15726.79	2246.68	3494.84	2859.42	5242.26	2246.68	4493.37	4914.62	1572.68	7863.40
250	18707.25	2672.46	4157.17	3401.32	6235.75	2672.46	5344.93	5846.02	1870.73	9353.63
300	21205.48	3029.35	4712.33	3855.54	7068.49	3029.35	6058.71	6626.71	2120.55	10602.74
420	28097.78	4013.97	6243.95	5108.69	9365.93	4013.97	8027.94	8780.56	2809.78	14048.89
540	35056.94	5008.13	7790.43	6373.99	11685.65	5008.13	10016.27	10955.29	3505.69	17528.47
660	42089.12	6012.73	9353.14	7652.57	14029.71	6012.73	12025.46	13152.85	4208.91	21044.56
780	49076.14	7010.88	10905.81	8922.93	16358.71	7010.88	14021.75	15336.29	4907.61	24538.07
900	55558.60	7936.94	12346.36	10101.56	18519.53	7936.94	15873.89	17362.06	5555.86	27779.30
1020	62923.41	8989.06	13982.98	11440.62	20974.47	8989.06	17978.12	19663.57	6292.34	31461.71
1140	70086.20	10012.31	15574.71	12742.95	23362.07	10012.31	20024.63	21901.94	7008.62	35043.10

### STATEMENT VIII

Including loading, unloading and stacking

Lead in km	Cost / trip	R.C.C. STEEL CYLINDER, R.C PIPES, C.I. PIPES,, UNREINFORCED CEMENT PIPES, PRECAST COCRETE PIPES										
		100 mm	125 mm	150 mm	200 mm	250 mm	300 mm	300 & 400 mm	450 & 500 mm	600, 700 & 750 mm	800, 900 & 1000 mm	1200 & 1800 MM
	Pay load in Rmt	292.8	219.6	183	109.8	80.52	62.22	54.9	29.28	18.183	15	5
1	2	3	4	5	6	7	8	9	10	11	12	13

#### UNIT PER 100 RMT

0.5	898.22	306.77	409.03	490.83	818.05	1115.52	1443.62	1636.1	3067.69	4908.31	5988.13	17964.4
1	969.33	331.06	441.41	529.69	882.81	1203.84	1557.91	1765.63	3310.55	5296.89	6462.2	19386.6
1.5	1038.81	354.78	473.05	567.66	946.09	1290.13	1669.58	1892.19	3547.85	5676.56	6925.4	20776.2
2	1105.31	377.5	503.33	603.99	1006.66	1372.71	1776.45	2013.32	3774.97	6039.95	7368.73	22106.2
2.5	1174.11	400.99	534.66	641.59	1069.32	1458.16	1887.03	2138.63	4009.94	6415.9	7827.4	23482.2
3	1239.88	423.46	564.61	677.53	1129.22	1539.84	1992.74	2258.43	4234.56	6775.3	8265.87	24797.6
3.5	1305.17	445.75	594.34	713.21	1188.68	1620.93	2097.67	2377.36	4457.55	7132.08	8701.13	26103.4
4	1369.53	467.74	623.65	748.38	1247.3	1700.86	2201.11	2494.59	4677.36	7483.77	9130.2	27390.6
4.5	1432.46	489.23	652.3	782.77	1304.61	1779.01	2302.25	2609.22	4892.28	7827.65	9549.73	28649.2
5	1495.72	510.83	681.11	817.33	1362.22	1857.58	2403.92	2724.44	5108.33	8173.33	9971.47	29914.4
6	1622.24	554.04	738.72	886.47	1477.45	2014.7	2607.26	2954.9	5540.44	8864.7	10814.93	32444.8
7	1747.19	596.72	795.62	954.75	1591.25	2169.88	2808.08	3182.5	5967.18	9547.49	11647.93	34943.8
8	1875.02	640.38	853.83	1024.6	1707.67	2328.64	3013.53	3415.34	6403.76	10246.01	12500.13	37500.4
9	1989.88	679.6	906.14	1087.37	1812.28	2471.29	3198.14	3624.55	6796.04	10873.66	13265.87	39797.6
10	2103.03	718.25	957.66	1149.2	1915.33	2611.81	3379.99	3830.66	7182.48	11491.97	14020.2	42060.6
15	2496.35	852.58	1136.77	1364.13	2273.54	3100.29	4012.13	4547.09	8525.79	13641.26	16642.33	49927
20	3055.32	1043.48	1391.31	1669.57	2782.62	3794.49	4910.51	5565.25	10434.84	16695.74	20368.8	61106.4
25	3523.69	1203.45	1604.59	1925.51	3209.19	4376.17	5663.28	6418.38	12034.46	19255.14	23491.27	70473.8
30	4077.3	1392.52	1856.69	2228.03	3713.39	5063.71	6553.04	7426.78	13925.2	22280.33	27182	81546
35	4252.31	1452.29	1936.39	2323.67	3872.78	5281.06	6834.31	7745.56	14522.92	23236.67	28348.73	85046.2
40	4749.22	1622	2162.67	2595.2	4325.34	5898.19	7632.95	8650.67	16220.01	25952.02	31661.47	94984.4
45	5241.45	1790.11	2386.82	2864.18	4773.63	6509.5	8424.06	9547.27	17901.13	28641.8	34943	104829
50	5728.9	1956.59	2608.79	3130.55	5217.58	7114.88	9207.49	10435.15	19565.92	31305.46	38192.67	114578
60	6348.93	2168.35	2891.13	3469.36	5782.27	7884.91	10204	11564.54	21683.5	34693.61	42326.2	126978.6
70	7293.03	2490.79	3321.05	3985.26	6642.1	9057.41	11721.36	13284.21	24907.89	39852.62	48620.2	145860.6
80	8238.28	2813.62	3751.49	4501.79	7502.99	10231.35	13240.57	15005.97	28136.2	45017.92	54921.87	164765.6
90	9178.5	3134.73	4179.64	5015.57	8359.29	11399.03	14751.69	16718.58	31347.34	50155.74	61190	183570
100	8923.67	3047.7	4063.6	4876.32	8127.2	11082.55	14342.12	16254.41	30477.02	48763.22	59491.13	178473.4

Lead in km	Cost / trip	R.C.C. STEEL CYLINDER, R.C PIPES, C.I. PIPES,, UNREINFORCED CEMENT PIPES, PRECAST COCRETE PIPES										
		100 mm	125 mm	150 mm	200 mm	250 mm	300 mm	300 & 400 mm	450 & 500 mm	600, 700 & 750 mm	800, 900 & 1000 mm	1200 & 1800 MM
	Pay load in Rmt	292.8	219.6	183	109.8	80.52	62.22	54.9	29.28	18.183	15	5
1	2	3	4	5	6	7	8	9	10	11	12	13

**UNIT PER 100 RMT**

125	10978.51	3749.49	4999.32	5999.19	9998.64	13634.51	17644.66	19997.29	37494.91	59991.86	73190.07	219570.2
150	12785.38	4366.59	5822.12	6986.55	11644.24	15878.51	20548.67	23288.49	43665.92	69865.46	85235.87	255707.6
175	14261.99	4870.9	6494.53	7793.44	12989.06	17712.36	22921.87	25978.12	48708.98	77934.37	95079.93	285239.8
200	15726.79	5371.17	7161.56	8593.87	14323.12	19531.53	25276.1	28646.25	53711.71	85938.74	104845.3	314535.8
250	18707.25	6389.09	8518.78	10222.54	17037.57	23233.05	30066.3	34075.14	63890.88	102225.41	124715	374145
300	21205.48	7242.31	9656.41	11587.69	19312.82	26335.67	34081.45	38625.65	72423.09	115876.94	141369.9	424109.6
420	28097.78	9596.24	12794.98	15353.98	25589.96	34895.4	45158.76	51179.93	95962.36	153539.78	187318.5	561955.6
540	35056.94	11973	15964	19156.8	31928	43538.18	56343.52	63855.99	119729.99	191567.98	233712.9	701138.8
660	42089.12	14374.7	19166.27	22999.52	38332.53	52271.63	67645.64	76665.06	143746.99	229995.19	280594.1	841782.4
780	49076.14	16760.98	22347.97	26817.56	44695.94	60949.01	78875.18	89391.88	167609.77	268175.63	327174.3	981522.8
900	55558.6	18974.93	25299.91	30359.89	50599.82	68999.75	89293.8	101199.6	189749.32	303598.91	370390.7	1111172
1020	62923.41	21490.24	28653.65	34384.38	57307.3	78146.31	101130.52	114614.6	214902.36	343843.77	419489.4	1258468
1140	70086.2	23936.54	31915.39	38298.47	63830.78	87041.98	112642.56	127661.6	239365.44	382984.7	467241.3	1401724



# STATEMENT IX

Including loading, unloading and stacking

## STONEWARE PIPES

Load in k	Cost/trip	100 mm	150 mm	200 mm	230 mm	250 mm	300 mm	350 mm	400 mm
	Pay Load	480 m	240 m	135 m	105 m	84 m	66 m	43 m	27 m
1	2	3	4	5	6	7	8	9	10

### Unit Per 100 Rmt

0.5	898.22	187.13	374.26	665.35	855.45	1069.31	1360.94	2088.88	3326.74
1	969.33	201.94	403.89	718.02	923.17	1153.96	1468.68	2254.26	3590.11
1.5	1038.81	216.42	432.84	769.49	989.34	1236.68	1573.95	2415.84	3847.44
2	1105.31	230.27	460.55	818.75	1052.68	1315.85	1674.71	2570.49	4093.74
2.5	1174.11	244.61	489.21	869.71	1118.2	1397.75	1778.95	2730.49	4348.56
3	1239.88	258.31	516.62	918.43	1180.84	1476.05	1878.61	2883.44	4592.15
3.5	1305.17	271.91	543.82	966.79	1243.02	1553.77	1977.53	3035.28	4833.96
4	1369.53	285.32	570.64	1014.47	1304.31	1630.39	2075.05	3184.95	5072.33
4.5	1432.46	298.43	596.86	1061.08	1364.25	1705.31	2170.39	3331.3	5305.41
5	1495.72	311.61	623.22	1107.94	1424.5	1780.62	2266.24	3478.42	5539.7
6	1622.24	337.97	675.93	1201.66	1544.99	1931.24	2457.94	3772.65	6008.3
7	1747.19	364	728	1294.21	1663.99	2079.99	2647.26	4063.23	6471.07
8	1875.02	390.63	781.26	1388.9	1785.73	2232.17	2840.94	4360.51	6944.52
9	1989.88	414.56	829.12	1473.99	1895.12	2368.9	3014.97	4627.63	7369.93
10	2103.03	438.13	876.26	1557.8	2002.89	2503.61	3186.41	4890.77	7789
15	2496.35	520.07	1040.15	1849.15	2377.48	2971.85	3782.35	5805.47	9245.74
20	3055.32	636.53	1273.05	2263.2	2909.83	3637.29	4629.27	7105.4	11316
25	3523.69	734.1	1468.2	2610.14	3355.9	4194.87	5338.92	8194.63	13050.7
30	4077.3	849.44	1698.88	3020.22	3883.14	4853.93	6177.73	9482.09	15101.11
35	4252.31	885.9	1771.8	3149.86	4049.82	5062.27	6442.89	9889.09	15749.3
40	4749.22	989.42	1978.84	3517.94	4523.07	5653.83	7195.79	11044.7	17589.7
45	5241.45	1091.97	2183.94	3882.56	4991.86	6239.82	7941.59	12189.42	19412.78
50	5728.9	1193.52	2387.04	4243.63	5456.1	6820.12	8680.15	13323.02	21218.15
60	6348.93	1322.69	2645.39	4702.91	6046.6	7558.25	9619.59	14764.95	23514.56
70	7293.03	1519.38	3038.76	5402.24	6945.74	8682.18	11050.05	16960.53	27011.22
80	8238.28	1716.31	3432.62	6102.43	7845.98	9807.48	12482.24	19158.79	30512.15
90	9178.5	1912.19	3824.38	6798.89	8741.43	10926.79	13906.82	21345.35	33994.44
100	8923.67	1859.1	3718.2	6610.13	8498.73	10623.42	13520.71	20752.72	33050.63

Head in k	Cost/trip	100 mm	150 mm	200 mm	230 mm	250 mm	300 mm	350 mm	400 mm
	Pay Load	480 m	240 m	135 m	105 m	84 m	66 m	43 m	27 m
1	2	3	4	5	6	7	8	9	10

**Unit Per 100 Rmt**

125	10978.51	2287.19	4574.38	8132.23	10455.72	13069.65	16634.11	25531.42	40661.15
150	12785.38	2663.62	5327.24	9470.65	12176.55	15220.69	19371.79	29733.44	47353.26
175	14261.99	2971.25	5942.5	10564.44	13582.85	16978.56	21609.08	33167.42	52822.19
200	15726.79	3276.41	6552.83	11649.47	14977.9	18722.37	23828.47	36573.93	58247.37
250	18707.25	3897.34	7794.69	13857.22	17816.43	22270.54	28344.32	43505.23	69286.11
300	21205.48	4417.81	8835.62	15707.76	20195.7	25244.62	32129.52	49315.07	78538.81
420	28097.78	5853.7	11707.41	20813.17	26759.79	33449.74	42572.39	65343.67	104065.85
540	35056.94	7303.53	14607.06	25968.1	33387.56	41734.45	53116.58	81527.77	129840.52
660	42089.12	8768.57	17537.13	31177.13	40084.88	50106.1	63771.39	97881.67	155885.63
780	49076.14	10224.2	20448.39	36352.7	46739.18	58423.98	74357.79	114130.6	181763.48
900	55558.6	11574.71	23149.42	41154.52	52912.95	66141.19	84179.7	129206.1	205772.59
1020	62923.41	13109.04	26218.09	46609.93	59927.06	74908.82	95338.5	146333.5	233049.67
1140	70086.2	14601.29	29202.58	51915.7	66748.76	83435.95	106191.21	162991.2	259578.52

**STATEMENT IV**  
**Including loading, unloading and stacking**

Lead in km	Cost per trip	Cement pay load 9.00 MT	Steel pay load 9.00 MT	Bulk Asphalt in Bouzer pay load 4.50 MT	M.S.Bar 9.0 MT	Sand 5.75 cum
1	2	3	4	5	6	7
0.5	898.22	99.80	99.80	199.60	99.80	156.21
1	969.33	107.70	107.70	215.41	107.70	168.58
1.5	1038.81	115.42	115.42	230.85	115.42	180.66
2	1105.31	122.81	122.81	245.62	122.81	192.23
2.5	1174.11	130.46	130.46	260.91	130.46	204.19
3	1239.88	130.46	130.46	260.91	137.76	215.63
3.5	1305.17	145.02	145.02	290.04	145.02	226.99
4	1369.53	152.17	152.17	304.34	152.17	238.18
4.5	1432.46	159.16	159.16	318.32	159.16	249.12
5	1495.72	166.19	166.19	332.38	166.19	260.13
6	1622.24	180.25	180.25	360.50	180.25	282.13
7	1747.19	194.13	194.13	388.26	194.13	303.86
8	1875.02	208.34	208.34	416.67	208.34	326.09
9	1989.88	221.10	221.10	442.20	221.10	346.07
10	2103.03	233.67	233.67	467.34	233.67	365.74
15	2496.35	277.37	277.37	554.74	277.37	434.15
20	3055.32	339.48	339.48	678.96	339.48	531.36
25	3523.69	391.52	391.52	783.04	391.52	612.82
30	4077.3	453.03	453.03	906.07	453.03	709.10
35	4252.31	472.48	472.48	944.96	472.48	739.53
40	4749.22	527.69	527.69	1055.38	527.69	825.95
45	5241.45	582.38	582.38	1164.77	582.38	911.56
50	5728.9	636.54	636.54	1273.09	636.54	996.33
60	6348.93	705.44	705.44	1410.87	705.44	1104.16
70	7293.03	810.34	810.34	1620.67	810.34	1268.35
80	8238.28	915.36	915.36	1830.73	915.36	1432.74
90	9178.5	1019.83	1019.83	2039.67	1019.83	1596.26
100	8923.67	991.52	991.52	1983.04	991.52	1551.94
125	10978.51	1219.83	1219.83	2439.67	1219.83	1909.31
150	12785.38	1420.60	1420.60	2841.20	1420.60	2223.54
175	14261.99	1584.67	1584.67	3169.33	1584.67	2480.35
200	15726.79	1747.42	1747.42	3494.84	1747.42	2735.09
250	18707.25	2078.58	2078.58	4157.17	2078.58	3253.43
300	21205.48	2356.16	2356.16	4712.33	2356.16	3687.91
420	28097.78	3121.98	3121.98	6243.95	3121.98	4886.57
540	35056.94	3895.22	3895.22	7790.43	3895.22	6096.86
660	42089.12	4676.57	4676.57	9353.14	4676.57	7319.85
780	49076.14	5452.90	5452.90	10905.81	5452.90	8534.98
900	55558.6	6173.18	6173.18	12346.36	6173.18	9662.37
1020	62923.41	6991.49	6991.49	13982.98	6991.49	10943.20
1140	70086.2	7787.36	7787.36	15574.71	7787.36	12188.90

# STATEMENT V

## Excluding loading, unloading and stacking

Lead in km	Cost per trip	Cement pay load 9.00 MT	Steel pay load 9.00 MT	Bulk Asphalt in Bouzer pay load 4.50 MT
1	2	3	4	5
0.5	410.15	45.57	45.57	91.14
1	454.49	50.50	50.50	101.00
1.5	498.12	55.35	55.35	110.69
2	540.41	60.05	60.05	120.09
2.5	583.7	64.86	64.86	129.71
3	625.69	64.86	64.86	129.71
3.5	667.45	74.16	74.16	148.32
4	708.79	78.75	78.75	157.51
4.5	749.53	83.28	83.28	166.56
5	790.42	87.82	87.82	175.65
6	872.13	96.90	96.90	193.81
7	953.15	105.91	105.91	211.81
8	1035.45	115.05	115.05	230.10
9	1112.06	123.56	123.56	247.12
10	1187.89	131.99	131.99	263.98
15	1490.71	165.63	165.63	331.27
20	1866.84	207.43	207.43	414.85
25	2152.7	239.19	239.19	478.38
30	2519.63	279.96	279.96	559.92
35	2727.09	303.01	303.01	606.02
40	3070.08	341.12	341.12	682.24
45	3411.19	379.02	379.02	758.04
50	3750.23	416.69	416.69	833.38
55	3747.15	416.35	416.35	832.70
65	4378.15	486.46	486.46	972.92
75	5015.92	557.32	557.32	1114.65
85	5645.93	627.33	627.33	1254.65
95	5873.04	652.56	652.56	1305.12
105	6462.84	718.09	718.09	1436.19
130	7934	881.56	881.56	1763.11
155	9428.08	1047.56	1047.56	2095.13
180	10895.05	1210.56	1210.56	2421.12
230	13849.66	1538.85	1538.85	3077.70
280	16375.3	1819.48	1819.48	3638.96
400	23279.56	2586.62	2586.62	5173.24
520	30277.06	3364.12	3364.12	6728.24
640	37210.56	4134.51	4134.51	8269.01
760	44083.35	4898.15	4898.15	9796.30
880	50972.95	5663.66	5663.66	11327.32
1000	57664.5	6407.17	6407.17	12814.33
1120	64643.56	7182.62	7182.62	14365.24

**STATEMENT SHOWING STANDARD WEIGHTS OF PIPES TO BE  
FOLLOWED FOR CARTING OF VARIOUS DIAMETERS AND TYPES OF  
PIPES**

**I) C.I.Pipes (IS:1536-1989)**

Diameter of pipes in mm	Class of pipes and its weights in kg. per meter length		
	LA	A	B
80	16.00	17.38	18.46
100	19.82	21.82	23.27
125	25.82	28.18	30.36
150	32.10	35.27	38.00
200	47.09	51.09	55.27
250	63.45	69.09	74.73
300	81.82	89.45	96.91
350	103.09	111.82	121.27
400	125.45	137.09	140.00
450	151.27	166.10	179.27
500	177.09	192.91	208.73
600	236.00	257.64	335.01
700	304.55	335.73	359.45
750	341.09	372.91	404.55
800	381.00	416.00	450.00
900	465.09	507.45	549.80
1000	558.73	610.36	659.64

**STATEMENT SHOWING THE TOTAL WEIGHTS OF VARIOUS DIA D.I.K-9 PIPES  
INCLUDING WEIGHT OF MORTER LINING PER LENGTH**

**II) D.I. PIPES**

- 1) Barrel Mass as per IS : 8329-1994
- 2) Socket Mass as per IS : 8329-1994
- 3) Cement Mortar Lining Weights as per ISO : 4179-1985

Nominal dia meter	Weight / M Length of D.I. K-9 Pipes of			
	4M	5M	5.50M	6M
80 mm wt. of D.I. pipe / M	13.00	13.00	12.91	12.67
weight mortar / m	1.56	1.56	1.56	1.56
Total wt. / M	14.56	14.56	10.47	14.23
100 mm wt. of D.I. pipe / M	16.25	16.00	16.00	15.86
weight mortar / m	1.93	1.93	1.93	1.93
Total wt. / M	18.18	17.93	17.93	17.76
125 mm wt. of D.I. pipe / M	20.50	20.00	20.00	19.83
weight mortar / m	2.45	2.42	2.42	2.42
Total wt. / M	22.92	22.42	22.42	22.25
150 mm wt. of D.I. pipe / M	24.75	24.20	24.18	24.00
weight mortar / m	2.90	2.90	2.90	2.90
Total wt. / M	27.65	27.10	27.08	26.90
200 mm wt. of D.I. pipe / M	33.25	32.60	33.54	32.33
weight mortar / m	3.88	3.88	3.88	3.88
Total wt. / M	37.13	36.48	36.42	36.21
250 mm wt. of D.I. pipe /	43.75	43.00	42.73	42.50
M weight mortar / m	4.84	4.84	4.84	4.84
Total wt. / M	88.59	47.84	47.57	47.34
300 mm wt. of D.I. pipe / M	55.50	54.60	54.18	53.83
weight mortar / m	5.80	5.80	5.80	5.80
Total wt. / M	61.30	60.40	59.98	59.63
350 mm wt. of D.I. pipe / M	69.25	68.00	67.45	67.17
weight mortar / m	12.12	12.12	12.12	12.12
Total wt. / M	81.37	80.12	79.57	79.29
400 mm wt. of D.I. pipe / M	82.75	81.40	80.91	80.33
weight mortar / m	13.82	13.82	13.82	13.82
Total wt. / M	96.57	95.22	94.73	94.15
450 mm wt. of D.I. pipe / M	98.75	97.00	96.36	95.83
weight mortar / m	15.53	15.53	15.53	15.53
Total wt. / M	114.28	112.53	111.89	111.36

Nominal dia meter	Weight / M Length of D.I. K-9 Pipes of			
	4M	5M	5.50M	6M
500 mm wt. of D.I. pipe / M	115.00	112.80	112.00	111.50
weight mortar / m	17.26	17.26	17.26	17.26
Total wt. / M	132.26	130.06	129.26	128.76
600 mm wt. of D.I. pipe / M	152.00	149.00	147.82	147.00
weight mortar / m	320.75	20.75	320.75	320.75
Total wt. / M	172.73	169.73	168.55	167.73
700 mm wt. of D.I. pipe / M	193.75	189.80	188.36	187.70
weight mortar / m	29.45	29.45	29.45	29.45
Total wt. / M	223.20	219.25	217.81	217.25
750 mm wt. of D.I. pipe / M	217.50	213.00	211.45	210.00
weight mortar / m	31.56	31.56	31.56	31.56
Total wt. / M	249.06	244.56	243.01	241.56
800 mm wt. of D.I. pipe / M	240.75	235.80	233.82	232.33
weight mortar / m	33.69	33.69	33.69	33.69
Total wt. / M	274.44	269.49	267.51	265.92
900 mm wt. of D.I. pipe / M	292.75	286.20	283.82	281.83
weight mortar / m	37.89	37.89	37.89	37.89
Total wt. / M	330.64	324.09	321.71	319.72
1000 mm wt. of D.I. pipe / M	3495.75	341.60	338.55	336.17
weight mortar / m	42.08	42.08	42.08	42.08
Total wt. / M	391.83	383.68	380.63	378.25

**Note:**

These weights are as per the circular issued by Superintending Engineer, (HQ) vide L.No.Maharashtra Jeevan Pradhikaran/10-2000/The Superintending Engineer, Maharashtra Jeevan Pradhikara, Circle, Amravati. (HQ)/DI/15/ AMDT/Stores/255 Dt.:26.6.2000.



**STATEMENT SHOWING STANDARD WEIGHTS TO BE FOLLOWED FOR CARTING OF  
VARIOUS DIAMETERS AND TYPES OF PIPES**

**III) M.S. Pipes**

**Note:** Weight of M.S. pipes is to be computed by considering density of steel as 7850 kg/cum considering the diameter and thickness of plate used for manufacturing of M.S. pipes

**IV) A.C. Pressure Pipes (ISO-160)**

Diameter of pipes in mm	Class of pipes and its weights in kg per meter length			
	Class 5	Class 10	Class 15	Class 20
80	6.00	6.20	6.40	6.80
100	7.60	7.70	8.20	10.30
125	9.57	9.80	11.00	13.30
150	11.87	12.20	15.30	19.00
200	15.57	19.30	25.60	32.70
250	19.25	25.20	32.70	41.50
300	24.97	32.30	45.10	58.10
350	39.77	47.52	55.27	71.42
400	49.20	60.20	71.36	93.10
450	56.92	70.27	83.63	111.37
500	72.84	89.54	104.25	136.52
600	102.50	137.32	148.35	193.16

**V) P.V.C. Pipes (IS:4985-1988)**

Diameter of pipe in mm	Class of pipes and its weights in kg per meter length		
	4.00 sq.cm	6.00 sq.cm	10.00 sq.cm
63	0.47	0.67	1.01
75	0.67	0.93	1.44
90	0.92	1.33	2.05
110	1.32	1.89	3.08
140	2.13	3.10	4.99
160	2.78	3.92	6.56
180	3.56	5.07	8.10
200	4.26	7.00	10.20
225	5.48	7.84	12.56
250	6.63	10.19	15.31
280	8.34	12.16	19.80
315	10.55	15.37	25.00

**VI) R.C.C. Pipes**

Diameter of pipe in mm	Class of pipes and its weights in kg per meter length					
	P-1	P-2	P-3	NP-2	NP-3	NP-4
100	23.56	23.56	23.56	21.20	21.20	21.20
150	33.00	33.00	33.00	29.40	29.40	29.40
200	42.10	42.10	42.10	37.90	37.90	37.90
250	51.84	63.40	75.18	57.10	67.60	77.20
300	74.64	102.50	117.10	92.25	105.40	119.10
350	92.28	134.30	168.10	120.80	151.30	170.20
400	104.16	169.60	208.10	152.60	187.30	212.40
450	127.92	188.70	235.23	169.90	211.70	240.80
500	141.36	229.90	261.37	206.90	235.23	270.50
600	192.96	305.70	313.64	275.10	282.27	320.20
700	225.59	325.80	365.92	293.20	329.32	370.90
800	257.82	345.19	418.19	310.60	376.30	425.40
Weights of pipes	290.00	389.58	470.47	350.60	423.00	482.30
1000	322.28	443.98	510.00	399.80	459.00	531.40

**V) P.V.C. Pipes (IS:4985-1988)**

Diameter of pipe in mm	Class of pipes and its weights in kg per meter length		
	4.00 sq.cm	6.00 sq.cm	10.00 sq.cm
63	0.47	0.67	1.01
75	0.67	0.93	1.44
90	0.92	1.33	2.05
110	1.32	1.89	3.08
140	2.13	3.10	4.99
160	2.78	3.92	6.56
180	3.56	5.07	8.10
200	4.26	7.00	10.20
225	5.48	7.84	12.56
250	6.63	10.19	15.31
280	8.34	12.16	19.80
315	10.55	15.37	25.00

**VI) R.C.C. Pipes**

Diameter of pipe in mm	Class of pipes and its weights in kg per meter length					
	P-1	P-2	P-3	NP-2	NP-3	NP-4
100	23.56	23.56	23.56	21.20	21.20	21.20
150	33.00	33.00	33.00	29.40	29.40	29.40
200	42.10	42.10	42.10	37.90	37.90	37.90
250	51.84	63.40	75.18	57.10	67.60	77.20
300	74.64	102.50	117.10	92.25	105.40	119.10
350	92.28	134.30	168.10	120.80	151.30	170.20
400	104.16	169.60	208.10	152.60	187.30	212.40
450	127.92	188.70	235.23	169.90	211.70	240.80
500	141.36	229.90	261.37	206.90	235.23	270.50
600	192.96	305.70	313.64	275.10	282.27	320.20
700	225.59	325.80	365.92	293.20	329.32	370.90
800	257.82	345.19	418.19	310.60	376.30	425.40
900	290.00	389.58	470.47	350.60	423.00	482.30
1000	322.28	443.98	510.00	399.80	459.00	531.40

**VII) P.S.C. Pipes of all classes and B.W.S.C. Pipes of all classes**

Diameter of pipes in mm	Weight of pipe per meter length for all classes
350	197.50 kg/km
400	240.00 kg/km
450	257.50 kg/km
500	292.50 kg/km
600	375.00 kg/km
700	432.50 kg/km
800	582.50 kg/km
900	705.00 kg/km
1000	825.00 kg/km
1100	947.50 kg/km
1200	1115.00 kg/km
1300	1190.00 kg/km
1400	1370.00 kg/km
1500	1560.00 kg/km
1600	1767.50 kg/km
1700	1987.50 kg/km
1800	2205.50 kg/km

**VIII) Stoneware Pipes**

Diameter of pipes in mm	Weight of 0.60 M long pipe in kg per pipe
100	8.70 kg/each
150	15.00 kg/each
200	20.85 kg/each
225	23.70 kg/each
250	27.57 kg/each
300	43.60 kg/each

**IX) G.I. Pipes**

Diameter of pipes in mm	Class of pipes and its weights in kg per meter length		
	Light (Blue)	Medium (Yellow)	Heavy (Red)
15	0.96	1.23	1.46
20	1.42	1.59	1.91
25	2.03	2.40	2.99
32	2.61	3.17	3.97
40	3.29	3.65	4.47
50	4.18	5.16	6.24
65	5.92	6.63	8.02
80	6.98	8.64	10.30
100	10.20	12.40	14.70
125	--	16.70	18.30
150	--	19.70	21.80

## SECTION-D- CEMENT CONSUMPTION

### STANDARD CEMENT CONSUMPTION TO BE FOLLOWED FOR VARIOUS ITEMS OF WORKS

Sr. No.	Item of Works	Unit	Standard Cement Consumption
<b>A.</b>	<b>P.C.C. &amp; R.C.C. Works</b>		
	1:½:1 (M-300) with finishing in CM 1:3 proportion	Cum	9.20 bags
	1:½:2 (M-250) with finishing in CM 1:3 proportion	Cum	8.50 bags
	1:1½:3 (M-200) with finishing in CM 1:3 proportion	Cum	6.90 bags
	1:1½:3 (M-200) without finishing	Cum	6.80 bags
	1:2:4 (M-150) without finishing in CM 1:3 proportion	Cum	5.90 bags
	1:2:4 (M-150) without finishing	Cum	5.80 bags
<b>B.</b>	<b>Brick Masonry Works</b>		
	B.B. Masonry - IInd sort in CM 1:6 proportion	Cum	1.44 bags
	B.B. Masonry - IInd sort in CM 1:5 proportion	Cum	1.62 bags
	B.B. Masonry - IInd sort in CM 1:4 proportion	Cum	2.30 bags
	Half brick walls in CM 1:4 proportion	Sqm	0.22 bags
<b>C.</b>	<b>Stone Masonry Works</b>		
	U.C.R. Masonry - IInd sort in CM 1:6 proportion	Cum	1.77 bags
	U.C.R. Masonry - IInd sort in CM 1:4 proportion	Cum	2.65 bags
	Ramdom Rubble Masonry - IInd sort in CM 1:6 proportion	Cum	1.77 bags
	Ramdom Rubble Masonry - IInd sort in CM 1:4 proportion	Cum	2.65 bags
	C.R. Masonry - IInd sort in CM 1:4 proportion	Cum	2.45 bags
	C.R. Masonry - IInd sort in CM 1:6 proportion	Cum	1.50 bags
<b>D.</b>	<b>Water Proofing Works</b>		
1	Damp-proof course 50 mm thick in 1:2:4 proportion with bituman layer W.P. compound	Sqm.	0.35 bags
	Integral finishing to newly laid slab in CM 1:3 proportion with W.P. Compound	Sqm.	0.06 bags
	Water Proofing treatment over old slab with W.P. cement slurry as tack coat 12 mm thick, W.P. plaster in CM 1:3 proportion, brick bat coba average 9.50 cm thick in CM 1:6 proportion and 20 mm thick W.P. cement plaster over it in CM 1:3 proportion and finishing with cement slurry with novelling	Sqm.	0.37 bags
<b>E.</b>	<b>Plastering and Pointing Works</b>		

Sr. No.	Item of Works	Unit	Standard Cement Consumption
	<b>i) 12 mm thick plaster</b> CM 1:2 proportion CM 1:3 proportion CM 1:4 proportion	Sqm. Sqm. Sqm.	0.16 bags 0.12 bags 0.10 bags
	<b>ii) 20 mm thick plaster</b> CM 1:2 proportion CM 1:3 proportion CM 1:4 proportion	Sqm. Sqm. Sqm.	0.27 bags 0.19 bags 0.15 bags
	<b>iii) 25 mm thick plaster</b> CM 1:2 proportion CM 1:3 proportion CM 1:4 proportion	Sqm. Sqm. Sqm.	0.34 bags 0.25 bags 0.19 bags
	<b>iv) Cement pointing in CM 1:3 proportion</b>	Sqm.	0.03 bags
	<b>v) Tuck cement pointing in CM 1:3 proportion</b>	Sqm.	0.05 bags
	<b>vi) Sand faced plaster in CM 1:4 proportion including base coat 15 mm thick in CM 1:4 proportion with W.P. compound</b>	Sqm.	0.22 bags
	<b>vii) Rough cast cement plaster in CM1:4 proportion in two coats.</b>	Sqm.	0.22 bags
<b>F.</b>	<b>Flooring Works</b>		
	i) I.P.S. flooring - 40 mm thick	Sqm.	0.30 bags
	i) I.P.S. flooring - 50 mm thick	Sqm.	0.37 bags
	i) Rough Shahabad - any other similar flooring in CM 1:4 proportion bedding	Sqm.	0.15 bags
	iv) All types of cement / kadappa / polished / mosaic tiles flooring or skirting / dado set on CM 1:4 proportion bedding	Sqm.	0.18 bags
	v) Glazed / Ceramic tiles flooring or skirting / dado fixed with plain cement slurry	Sqm.	0.22 bags

Section - E- Excavation				
Sr No	Item Description	Unit	Rate (in Rs.) 2019-2020	LABOUR INVOLVED
1	Excavation for foundation / pipe trenches in <b>earth, soils of all types, sand, gravel and soft murum</b> , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, manual dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. <b>(Bd-A-1/259)</b> <b>Lift 0 to 1.5 M</b>	Cu.m	140.00	139.00
2	Excavation for foundation / pipe trenches in <b>hard murum</b> including removing the excavated material upto a distace of 50 M and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. <b>(Bd-A2/259)</b> <b>Lift 0 to 1.5 M</b>	Cu.m	157.00	156.00
3	Excavation for foundation / pipe trenches in <b>hard murum and boulders</b> , W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatreing, preparing the bed for foundation and excluding backfilling, etc. complete. <b>(Bd-A-3/259)</b> <b>Lift 0 to 1.5 M</b>	Cu.m	175.00	172.00
4	Add for every additional lift of 1.5 M beyond initial lift of 1.5 M for Item Nos. 1 to 3	Cu.m	13.00	13.00
5	Excavation for foundation / pipe trenches in <b>soft rock and old cement and lime masonry</b> foundation asphalt road by all means including removing the excavated material upto a distance of 50 M beyond area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. <b>( Bd-A-4/259)</b> <b>Lift 0 to 1.5 M</b>	Cu.m	513.00	455.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-2020	LABOUR INVOLVED
6	Excavation for foundation / pipe trenches in <b>hard rock by controlled blasting</b> , including trimming and levelling the bed by chiselling where necessary and removing the excavated material and stacking it in measurable heaps within a distance of 50 metres from the area and lifts as below, normal dewatering, excluding backfilling, etc. complete. <b>(Bd-A-5/259)</b> <b>Lift 0 to 1.5 M</b>	Cu.m	<b>684.00</b>	573.00
7	Excavation for foundation / pipe trenches in <b>hard rock and concrete road by chiselling</b> , wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. <b>(Bd-A-1/259)</b> <b>Lift 0 to 1.50 M</b>	Cu.m	<b>957.00</b>	947.00
8	Excavation for foundation /pipe trenches in <b>Slush Muddy/ Marshy /Slushy /Soil</b> including use of poclain, labour for dewatering during execution including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, preparing the bed by cleaning the mud, labour required for execution for shutterng item but excluding back filling etc. complete. Providing and fixing shuttering shall be paid separately. <b>Lift 0 to 1.5 M</b>	Cu.m	<b>344.00</b>	202.00
9	Add for every additional lift of 1.5 M beyond initial lift of 1.5 M for Item Nos 5 to 9	Cu.m	<b>24.00</b>	24.00



Sr No	Item Description	Unit	Rate (in Rs.) 2019-2020	LABOUR INVOLVED
<b>10</b>	<b>HEAD WORKS</b> Excavation in general in soft material <b>comprising of soft soil, soft murum, sand, hard murum with boulders</b> in wet or dry condition for Head Works i.e. Intake Well, Connecting Pipe, Jack Well, Pump House, Supply Well, etc. for lift 0 to 1.5 M and lead of 150 M including baricating, gurading, disposing off surplus excavated stuff within a radius of 0.5 km. as directed by Engineer-in- charge, etc. complete excluding refilling.			
a)	For Head Works on river or dam submergence for initial lift of 0 to 1.5 M	Cu.m	<b>422.00</b>	416.00
b)	For Head works on nalla or any other site of GSDA for initial Lift of 0 to 1.5M	Cum	<b>295.00</b>	292.00
c)	Add for every additional lift of 1.5 M beyond initial lift of 1.5 M	Cu.m	<b>25.00</b>	25.00
<b>11</b>	Excavation in general in hard material comprising of <b>soft rock, hard rock, Manjara rock</b> , etc, by blasting / controlled blasting, chiselling as required in wet or dry condition for Head Works i.e. Intake Well, Connecting Pipe, Jack Well, Pump House, supply Well, etc. for lift 0 to 1.5 M and lead of 150 M including baricading, guarding, disposing off surplus excavated stuff within a radius of 0.5 km. as directed by Engineer-in-charge, excluding refilling.			
a)	For Head Works on river or dam sub mergence for initial lift of 0 to 1.5 M	Cu.m	<b>903.00</b>	707.00
b)	For Head Works on nalla or any other site of GSDA for initial lift of 0 to 1.5 M	Cum	<b>623.00</b>	454.00
c)	Add for each additional lift to 1.5 M beyond initial lift of 1.5 M	Cu.m	<b>25.00</b>	25.00
<b>12</b>	Excavation in general in soft material <b>comprising of soft soil, soft murum, sand, hard murum</b> with boulders in wet or dry condition for Head Works and allied works by <b>well sinking process</b> for average depth of 12 M and lead of 150 M including shoring, barricading, guarding, refilling, disposing of surplus excavated stuff as directed by Engineer-in-charge, etc. complete.			
a)	Diameter upto and including 3 M	Cu.m	<b>812.00</b>	771.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-2020	LABOUR INVOLVED
<b>b)</b> <b>13</b>	Diameter more than 3 M	Cu.m	<b>684.00</b>	648.00
	Desilting the Supply Well, Intake Well / Head Works, sump of water supply/ sewerage works etc. in wet or dry condition including lifts upto 10.5 M and lead upto 150 M as required beyond the work site, stacking, spreading, including necessary guarding, etc. complete, as directed by Engineer-in-charge.	Cu.m	<b>703.00</b>	666.00
	Add for every additional lift of 1.5 M beyond initial lift of 10.50 M	Cu.m	<b>23.00</b>	21.00
<b>14</b>	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	Bhp/ Hr	<b>70.00</b>	12.00
	i) The contractor at his request may allowed to start construction of masonry steining so as not to allow silting of well in oncoming monsoon and while paying masonry, 25% amount shall be withheld and released only when excavation to the full depth is completed.			
	ii) Dewatering : Total dewatering charges are to be proposed in tender as lumpsum amount and 75% is payable for excavation and 25% is payable for construction of well / gallery. Out of 75% excavation breakup shall be as under			
	25% for last 1 Mtr. Depth.			
	20% for 2 M depth which just above last 1 M depth.			
	15% for 2 M depth which just above last 3 M depth.			
	15% for the rest of depth from water table level			
	The above conditions will restrict the tendency of agencies to avoid deeping of wells etc. to the required depths.			
<b>15</b>	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cu.m	<b>72.00</b>	70.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-2020	LABOUR INVOLVED
16	Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials from foundation 15cm to 20cm layers including watering and compaction complete.	Cu.m	72.00	70.00
17	Filling in plinth and floors / trenches with contractor's murum for bedding in 15cm to 20cm layers including watering and compaction complete.	Cu.m	701.00	78.00
18	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15cm to 20 cm thick layers (including hand packing and compacting), etc. complete.	Cu.m	993.00	220.00
19	Providing and filling in sand boxing in pipeline or for foundation with sand of approved quality including watering compaction, etc. complete.	Cu.m	1016.00	170.00
20	Open timbering in trenches of depth more than 1.5 m for shoring and strutting including use of and waste of all necessary timber works including walling, struts, open polling boards/ horizontal sheeting, runners, etc. as may be necessary and fixing and removal complete. (Measurements to be taken of the face/area timbered)(NBO Item No. 4-15 page No.59 )			
a)	Lift 0 to 1.5 M [ for non-water logged area ]	Sq.m	179.00	3.00
	Additional per Sqm. for further lifts of 1.5M each.	Sq.m	33.00	14.00
b)	Lift for 0 to 1.5 M [ For water logged area.]	Sq.m	193.00	10.00
	Additional per Sqm. for further lifts of 1.5M each	Sq.m	32.00	9.00
	<b>Note:-</b> For the trenches with more than 1.5 M depth shoring if required from G.L. is to be done and is payable from GL.			

**Section - F- Iron And Structural Steel Work.**

<b>Sr. No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Rate (in Rs.) 2019-2020</b>	<b>LABOUR INVOLVED</b>
<b>1</b>	Providing and fixing <b>mild steel grill</b> work for windows/ventilators of 20 Kg./Sqm. as per drawings including necessary welding and painting with one coat of anticorrosive paint and two coats of oil painting, etc. complete.  <b>(Bd-U-1/537)</b>	Sq.m	<b>1634.00</b>	58.00
<b>2</b>	Providing and fixing <b>mild steel grill</b> railing of 20 Kg./Sqm. with teak wood hand railing, still and newel posts for staircase and including fabricating, fixtures, erecting, painting the grill work with approved oil paint and polishing the hand rail and newel posts with French polish two coats, etc. complete.  <b>(Bd-U-2 /537)</b>	Sq.m	<b>2431.00</b>	176.00
<b>3</b>	Providing <b>structural steel work in rolled stanchions fixed with connecting plates</b> or angle cleats as in main and cross beams, hip and jack rafters, purlins connecting to truss members and like as per detailed <b>desings and drawings</b> or as directed by Engineer-in-charge including cutting, fabricating, hoisting, erecting, fixing in position, making riveted / bolted /welded connections and one coat of anticorrosive paints and over it two coats of oil painting, etc. complete.  <b>(Bd-C-3 /275)</b>	M.T	<b>64460.00</b>	4837.00
<b>4</b>	Providing <b>stuctural steel work in single stanchions composed of RSJ, channel</b> , etc, with caps, bases, mild steel plates, angles, brackets, cleats, gusset plates, anchor bolts, etc. as per detailed design and drawing or as directed by Engineer-in-charge including cutting, fabrication, hoisting, erecting, fixing in position, making riveted/ bolted / welded connections and one coats of anticorrosive paint and over it two coats of oil painting, etc. complete.			

Sr. No.	Item Description	Unit	Rate (in Rs.) 2019-2020	LABOUR INVOLVED
	(Bd-C-6 /277)	M.T	63225.00	4498.00
5	Providing <b>structural steel work in rolled sections like joists, channels, angles, tees</b> , etc. as per detailed designs and drawings including fixing in position without connecting plates, braces, etc. and one coat of anticorrosive paint and over it two coats of oil painting, of approved quality and shade, etc. complete.			
	(Bd-C-2 /275)	M.T	67095.00	5242.00
6	Providing <b>structural steel work in trusses, other similar trussed purlins and members with all bracing, gusset plates</b> , etc. as per detailed design and drawing or as directed by Engineer-in-charge including cutting, fabricating, hoisting, erecting and fixing in position, making reveted / bolted / welded connections and one coat of anticorrosive paint and over it two coat of oil painting, etc. complete.			
	(Bd-C-8 /278)	M.T	85140.00	12008.00

Section - G- Plain and Reinforced Cement Concrete				
Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
<b>1</b>	Providing and laying in situ following grades of <b>Plain Cement concrete</b> of trap/ granite/ quartzite/ gneiss metal for <b>foundation and bedding</b> including normal dewatering, form work, compaction and curing, etc, complete. Use of L & T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.)  (Bd-E-1 /287)			
<b>a</b>	In PCC M-100	Cu.m	<b>4262.00</b>	909.00
<b>b</b>	In PCC M-150	Cu.m	<b>4647.00</b>	881.00
<b>2</b>	Providing and laying in situ Cement concrete of trap/granite/quartzite/ gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering, 'plywood form work, bully/steel propups, compaction, finishing and curing, etc, complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L & T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted.) (excluding M.S. or Tor reinforcement)			
<b>a</b>	In RCC M-150	Cu.m	<b>5497.00</b>	1051.00
<b>b</b>	In RCC M-200	Cu.m	<b>5551.00</b>	1036.00
<b>c</b>	In RCC M-250	Cu.m	<b>6024.00</b>	1016.00
<b>d</b>	In RCC M-300	Cu.m	<b>6230.00</b>	793.00
<b>3</b>	Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, 'plywood formwork, bully/steel prop-ups, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C. C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted) (excluding M.S, or Tor reinforcement)			

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
a	For RCC M-150 grade - all types of columns	Cu.m	<b>6552.00</b>	968.00
b	For RCC M-200 grade - all types of columns.	Cu.m	<b>6773.00</b>	955.00
c	For RCC M-250 grade - all types of columns.	Cu.m	<b>7245.00</b>	947.00
d	For RCC M-300 grade - all types of columns.	Cu.m	<b>7452.00</b>	944.00
<b>4</b>	Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, 'plywood formwork, bully/steel prop-ups, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C. C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted) (excluding M.S, or Tor reinforcement)			
a	For RCC M-150 grade Beams/Braces/Lintels	Cu.m	<b>6435.00</b>	689.00
b	For RCC M-200 grade Beams/Braces/Lintels	Cu.m	<b>6683.00</b>	943.00
c	For RCC M-250 grade Beams/Braces/Lintels	Cu.m	<b>7128.00</b>	935.00
d	For RCC M-300 grade Beams/Braces/Lintels	Cu.m	<b>7335.00</b>	932.00
<b>5</b>	Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, 'plywood formwork, bully/steel prop-ups, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C. C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted) (excluding M.S, or Tor reinforcement)			
a	For RCC M-150 grade Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>6857.00</b>	912.00



Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
b	For RCC M-200 grade Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>7220.00</b>	943.00
c	For RCC M-250 grade Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>7692.00</b>	936.00
d	For RCC M-300 grade Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>7899.00</b>	934.00
<b>6</b>	Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, 'plywood formwork, bully/steel prop-ups, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C. C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted) (excluding M.S, or Tor reinforcement)			
a	For RCC M-150 grade Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies	Cu.m	<b>6962.00</b>	926.00
b	For RCC M-200 grade Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies	Cu.m	<b>7183.00</b>	939.00
c	For RCC M-250 grade Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies	Cu.m	<b>7656.00</b>	932.00
d	For RCC M-300 grade Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies	Cum	<b>7862.00</b>	929.00
<b>7</b>	Providing and casting in situ Cement Concrete of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, 'plywood formwork, bully/steel prop-ups, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness if special finish is to be provided and curing, etc. complete. (By weigh batching and mix design for M-250 and M-300 only. Use of L&T, A.C. C., Ambuja, Birla Gold, Manikgad, Rajashree, etc. cement is permitted) (excluding M.S, or Tor reinforcement)			

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
a	For RCC M-150 grade - Domes	Cu.m	<b>7271.00</b>	935.00
b	For RCC M-200 grade - Domes	Cu.m	<b>7492.00</b>	925.00
c	For RCC M-250 grade - Bottom Domes only	Cu.m	<b>7965.00</b>	920.00
d	For RCC M-300 grade - Bottom Domes only	Cu.m	<b>8171.00</b>	918.00
<b>8</b>	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete. (including cost of binding wire).			
a	Mild Steel	M.T.	<b>53794.00</b>	4887.00
b	Tor Steel	M.T	<b>53794.00</b>	4887.00
c	Corrosion Resistant steel (Fe 500)	M.T	<b>57884.00</b>	7406.00
<b>9</b>	Providing fusion bonded epoxy coating to reinforcement bars as per IS-13620-1993 specificaion for a thickness of 175 (+50) microns including extra cost on account of careful handling, extra cost on account of using PVC coated binding wire instead of G. I. wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost on account of transportation , loading, unloading, etc. complete.			
<b>(a)</b>	For reinforcement Diameterwise rates.			
1	8 mm dia.	M.T	<b>17529.00</b>	
2	10 mm dia.	M.T	<b>15465.00</b>	
3	12 mm dia.	M.T	<b>14111.00</b>	
4	16 mm dia.	M.T	<b>13595.00</b>	
5	20 mm dia.	M.T	<b>12497.00</b>	
6	25 mm dia.	M.T	<b>11336.00</b>	
7	28 mm dia.	M.T	<b>10820.00</b>	
8	32 mm dia.	M.T	<b>10045.00</b>	

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
(b)	Average rates ( for estimation only)			
1	For 8mm to 20mm dia	M.T.	14639.00	
2	For above 20mm dia	M.T.	10733.00	
	<b>Notes for Estimations</b>			
1	All the rates of Reinforced Cement Concrete Items From 2 to 7 shall be increased by 10% for each brace height above 1st brace for R.C.C. E. S. R.s.e.g. For a R.C.C. E.S. R. with 7 M staging and first brace at 3.50 M above ground, the concrete in columns above first brace, concrete of ring beam and bottom slab is entitled for 10% increase, concrete of vertical wall, roof slab and roof beams, columns in container are entitled for 20% increase.			
2	All the rates of Reinforced Cement Concete Items from 2 to 7 shall be increased by 2% for every floor height above ground floor for building works.			
3	These rates are applicable for R. C. C. well works also. These rates shall be increased by 10% for every 5 M depth below initial 5 M depth.			
4	Rates for Item Nos. 8 and 9 shall be increased by 5% for each brace height above first brace for R.C.C.E.S.Rs. By 5% for every ring beam below first ring beam for R. C. C. wells. By 1% building works for every floor height.			
5	Volumetric mix as per 1: 11/2 :3 shall be adopted with 56.5 kg. of cement for RCC-250 and 59.5 kg. of cement for RCC- 300, per load of mixer of 1bag capacity.			
6	Fusion bonded epoxy coating to be proposed only in Coastal Area with prior approval of the Chief Engineer.			

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
7	For estimation purpose, average rates as per item no. 8 b shall be considered wherever necessary.			
	<b>READY MIX CONCRETE</b>			
10	Providing and laying in situ Ready Mix Cement Concrete grade of trap/granite/quartzite/ gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC column and steel stanchions including normal dewatering, form work, compaction, finishing and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G. L. and 5.0 M lift below G. L., etc. complete. (Excluding reinforcement and structural steel)			
	a) In RCC M-200	Cu.m	<b>5480.00</b>	838.00
	b) In RCC M-250	Cu.m	<b>5997.00</b>	889.00
	c) In RCC M-300	Cu.m	<b>6090.00</b>	895.00
11	Providing and casting in situ Ready Mix Cement Concrete grade of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G. L. and 5.0 M lift below G. L., etc. complete.			
	(Excluding reinforcement and structural steel)			
	a) In RCC M-200 - all types of columns	Cu.m	<b>6956.00</b>	3203.00
	b) In RCC M-250 - all types of columns	Cu.m	<b>7338.00</b>	3232.00
	c) In RCC M-300 - all types of columns	Cu.m	<b>7347.00</b>	3170.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
<b>12</b>	Providing and casting in situ Ready Mix Cement Concrete grade of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G. L. and 5.0 M lift below G. L., etc. complete.			
	(Excluding reinforcement and structural steel)			
	a) In RCC M-200 - Beams / Braces / Lintels	Cu.m	<b>6944.00</b>	2787.00
	b) In RCC M-250 - Beams / Braces / Lintels	Cu.m	<b>7525.00</b>	2929.00
	c) In RCC M-300 - Beams / Braces / Lintels	Cu.m	<b>7539.00</b>	2860.00
<b>13</b>	Providing and casting in situ Ready Mix Cement Concrete grade of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering centering, form work, compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 30 km., pouring the concrete at work site for 1.5 M lift above G. L. and 5.0 M lift below G. L., etc. complete.			
	(Excluding reinforcement and structural steel)			
	a) In RCC M-200 Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>7221.00</b>	3702.00
	b) In RCC M-250 Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>7818.00</b>	3904.00
	c) In RCC M-300 Slabs / Landings / Vertical Walls / Waist Slabs / Steps for Staircase	Cu.m	<b>7827.00</b>	3844.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
<b>14</b>	Providing and casting in situ Ready Mix Cement Concrete grade of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G. L. and 5.0 M lift below G. L., etc. complete.			
	(Excluding reinforcement and structural steel)			
	a) For RCC M-200 Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies	Cu.m	<b>7505.00</b>	3680.00
	b) For RCC M-250 Chajjas / Parapets / Curtain Walls / Partition Walls / Pardies	Cu.m	<b>8107.00</b>	3870.00
	c) For RCC M-300 Chajjas / Parapets / Curtain Walls	Cu.m	<b>8194.00</b>	3880.00
<b>15</b>	Providing and casting in situ Ready Mix Cement Concrete grade of trap/granite/quartzite/ gneiss metal of approved quality for RCC work as per detailed drawings and designs or as directed by Engineer-in-charge including normal dewatering, centering, form work compaction, finishing the formed surfaces with CM 1:3 of sufficient minimum thickness to give a smooth and even surface wherever necessary or roughening if special finish is to be provided and curing including transporting from mixing plant upto distance of 25 km., pouring the concrete at work site for 1.5 M lift above G. L. and 5.0 M lift below G. L., etc. complete.			
	(Excluding reinforcement and structural steel)			
	a) For RCC M-200 - Domes	Cu.m	<b>7771.00</b>	4219.00
	b) For RCC M-250 - Domes	Cu.m	<b>8371.00</b>	4439.00
	c) For RCC M-300 - Domes	Cu.m	<b>8382.00</b>	4376.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
	<b>Note :</b> 1) Add Rs.10/- per Cum for transportation beyond 25 km. for every additional lead of 1 km. 2) Beyond 1.5 M above G.L. and 5.0 M below G. L., concreting is to be done by pumping by the Company. 3) Additional rate of pumping a) Static pump Rs. 175/- per Cum b) Mobile pump Rs. 250/- per Cum 4) For Ready Mix Concrete, prior permission from Chief Engineer shall be obtained.			

Section - H- Miscellaneous Works				
Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
1	Providing and fixing <b>G.I. pipe railing having 1.0 M height</b> consisting 50 x 50 x 6 mm thick M. S. angles as verticals at 1.5 M c/c, and additional posts at every corner with 3 rows of 25 mm dia G.I. pipes of medium class variety as horizontal and painting 3 coats of oil paint over 1 coat of anticorrosive paint of approved colour and shade including cost of all labour, transporting bends to curved shape, etc. complete.	RMT	873.00	49.00
1A	As above but <b>with only 2 rows</b>	RMT	639.00	31.00
2	<b>Dismantling of ESRs</b> of various capacities and heights using crane (10 MT capacity) and handing over M.S./ C.I./ G.I. pipes, valves, bends, etc. to the Department However taking steel reinforcement by the dismantling agency including removing dismantled materials from site and disposing them at suitable place as directed, etc.complete.			
a	Capacity of E.S.R. upto 2 lakh litres and staggering upto 12.00 M height			
	<b>i) conjusted area.</b>	Litres	2.10	2.00
	<b>ii) Open Area</b>	Litres	1.05	1.00
b	Capacity of ESR above 2 lakh ltrs. and staging upto 12 M hieght			
	<b>i) Conjusted area</b>	Litres	2.10	2.00
	<b>ii) Open Area</b>	Litres	1.05	1.00
3	Providing and fixing <b>M.S. gate 2.5 M wide</b> for compound with 40 mm dia M.S.black pipe medium class, approved grill work, RCC M - 150 side pillars of 25 cm x 40 cm x 2.5 M height, its foundation, finishing, painting etc. complete.	No.	29573.0	3430.00
4	Providing and fixing <b>Wicket gate 1.0 M wide</b> for compound with 40 mm dia M.S.black pipe medium class, approved grill work, RCC M-150 side pillars of 25 cm x 40 cm x 2.5 M height, its foundiaion, finishing painting, etc. complete.	No.	17111.00	2299.00



Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
<b>5</b>	<b>Taking Trial Bore</b> (Core Bore Sampling) by Calyxe machine with TCT/NX bits together undisturbed strata samples for investigation in all types of strata soft soil, murum, hard murum with boulders, soft rock hard rock & quartzite etc. The item includes all Hire & running cost of Callyx Machine conveying all materials to site of work excluding conveyance of callyx, machine and back sampling all over burden strata in glass jar and core samples serially numbered at site in a wooden Core Box, Samples to be taken at 1.0 m interval and conveying to the place as directed by Engineer-in-charge, The diameter of bore in overburden shall be 100 mm and of NX size (50mm) in other strata. The item shall also include M.S. casing pipe of 2.5 mm thick plate in overburden only and shall be 1.0 m above GL with cap over it.			
a	In Overburden (Soft soil, murum)	RMT	<b>1802.00</b>	<b>235.00</b>
b	In Weathered rock with boulders	RMT	<b>5473.00</b>	<b>1433.00</b>
c	In Weathered rock / Soft rock	RMT	<b>2808.00</b>	<b>731.00</b>
d	In Hard rock other than quartzite	RMT	<b>3706.00</b>	<b>968.00</b>
e	In Hard rock quartzite	RMT	<b>8610.00</b>	<b>2187.00</b>
<b>6</b>	<b>Providing pressure grouting at a pressure of 0.56 kg/sqcm</b> in required row/zigzag fashion as specified at 1.5 M interval as per site conditions to stop leakages through water retaining structures to the entire satisfaction of the Engineer-in-charge including material compound, hardening materials, compressor equipment including scaffolding smooth finishing, etc. complete.			
a	For masonry structure	Bag	<b>1036.00</b>	<b>68.00</b>
b	For Concrete structure	Bag	<b>1024.00</b>	<b>63.00</b>
<b>7</b>	<b>Drilling 40 mm dia holes in masonry or concrete structure</b> with providing and fixing 0.5 M long G. I. pipe line for pressure grouting including all Material labour cost and machinery charges, etc. complete.	RMT	<b>928.00</b>	<b>75.00</b>
<b>8</b>	<b>Providing and casting ferrocrete water tank</b> at site including all cost of labour and material, etc, complete. upto 25,000 literes (for foundation and providing and fixing taps, etc. shall be considered separately).	Litre	<b>6.00</b>	

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
9	<b>Providing and applying two coat of Gamma</b> coating or equivalent such as Dr. Bake, Krishna conchem, Asian Paint, Atul Ltd. Burger Paints, Epoxy primer 50 to 60 microns thick and covering two coat of Gamma coating or equivalent such as Dr. Bake, Krishna conchem, Asian Paint, Atul Ltd. Burger Paints, 30 micron thick is to new M.S. pipe and structural steel or concrete surface including preparing the surface by finishing by solvent degreasing and derusting by applying chemical method and scaffolding of necessary etc. complete as manufacturer's specifications.	sqm	<b>328.00</b>	<b>163.00</b>
10	<b>Making cross connection to existing distribution main</b> of any type including excavation, breaking and removing exiting pipes, lowering, laying of specials and pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line (the number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores).			
	80 mm	No	<b>2158.00</b>	<b>1834.00</b>
	100 mm	No	<b>2443.00</b>	<b>2075.00</b>
	125 mm	No	<b>2688.00</b>	<b>2284.00</b>
	150 mm	No	<b>3023.00</b>	<b>2569.00</b>
	200 mm	No	<b>3191.00</b>	<b>2712.00</b>
	250 mm	No	<b>3835.00</b>	<b>3259.00</b>
	300 mm	No	<b>4488.00</b>	<b>3815.00</b>
	350 mm	No	<b>5281.00</b>	<b>4489.00</b>
	400 mm	No	<b>6343.00</b>	<b>5391.00</b>
	450 mm	No	<b>7108.00</b>	<b>6042.00</b>
	500 mm	No	<b>8759.00</b>	<b>7445.00</b>
	600 mm	No	<b>15557.00</b>	<b>13224.00</b>
	700 mm	No	<b>19121.00</b>	<b>16253.00</b>
	750 mm	No	<b>24114.00</b>	<b>20497.00</b>
	800 mm	No	<b>31006.00</b>	<b>26356.00</b>
	900 mm	No	<b>40532.00</b>	<b>34452.00</b>
	1000 mm	No	<b>56483.00</b>	<b>48011.00</b>
<b>Note : Only 75% rate shall be payable till satisfactory hydraulic testing is given.</b>				

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
11	<b>Dismantling dead pipeline of M.S./R.C.C./ C.I./ P.S.C. and G.I./ A. C. / P. V. C. / S. W. / H. D. P. E.</b> pipe including cost of necessary excavation and refilling of trenches, breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete.			
<b>A</b>	<b>For M.S./R. C. C./ C.I./ P. S. C.</b>			
	80 mm	RMT	148.50	32.00
	100 mm	RMT	165.00	47.00
	125 mm	RMT	169.00	51.00
	150 mm	RMT	172.00	54.00
	200 mm	RMT	189.00	64.00
	250 mm	RMT	209.00	75.00
	300 mm	RMT	228.00	86.00
	350 mm	RMT	256.00	106.00
	400 mm	RMT	277.00	120.00
	450 mm	RMT	315.00	133.00
	500 mm	RMT	330.00	139.00
	600 mm	RMT	405.00	177.00
	700 mm	RMT	474.00	206.00
	750 mm	RMT	531.00	233.00
<b>B</b>	<b>For G.I./AC/PVC/S. W. / H.D.P.E.</b>			
	80 mm	RMT	89.10	19.00
	100 mm	RMT	98.00	28.00
	125 mm	RMT	100.00	30.00
	150 mm	RMT	101.00	32.00
	200 mm	RMT	116.00	39.00
	250 mm	RMT	127.00	46.00
	300 mm	RMT	135.00	51.00
	350 mm	RMT	153.00	64.00
	400 mm	RMT	167.00	73.00
	450 mm	RMT	187.00	79.00
	500 mm	RMT	199.00	84.00
	600 mm	RMT	242.00	106.00
	700 mm	RMT	284.00	124.00
	750 mm	RMT	318.00	140.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
<b>12</b>	<b>Providing and constructing two taps standpost</b> as per type design with excavation 15 cm thick PCC 1:3:6 bedding 20 mm thick PCC 1:2:4 concrete for platform of 1.75 M dia. with side curb and bucket rest, 80 mm dia, heavy duty GI pipe central post duly filled therein with C. C. 1:2:4, 5 M long, 20 mm dia. medium G.I. pipe from point of tapping to standpost additional 20 mm dia G.I. pipe fixed vertically upto 15 mm dia self closing water taps, one brass ferrule etc. complete together with all labour and material charges as per drawing and as directed by Engineer-in-charge when good foundation is available. Rate includes draining arrangement by excavating open gutters.	No	<b>8375.40</b>	<b>1113.00</b>
<b>a</b>	As above but when R.C.C. platform or Precast standpost issued free of cost.	No.	<b>4816.00</b>	<b>509.00</b>
<b>13</b>	<b>Providing and constructing two taps standpost</b> as per type design with excavation 15cm thick boulder filling, 15 cm thick PCC 1:3:6 bedding 20 mm thick PCC 1:2:4 concrete for platform of 1.75 M dia. with side curb and bucket rest, 80 mm dia, heavy duty GI pipe central post duly filled therein with C. C. 1:2:4, 5 M long, 20 mm dia. medium G.I. pipe from point of tapping to standpost additional 20 mm dia G.I. pipe fixed vertically upto 15 mm dia self closing water taps, one brass ferrule etc. complete together with all labour and material charges as per drawing and as directed by Engineer-in-charge <b>when B.C. Soil is available</b> . Rate includes draining arrangement by excavating open gutters.	No	<b>8798.00</b>	<b>1114.00</b>
<b>a</b>	As above but when R.C.C. platform or Precast standpost issued free of cost.	No	<b>5465.00</b>	<b>608.00</b>

<b>Sr No</b>	<b>Item Description</b>	<b>Unit</b>	<b>Rate (in Rs.) 2019-20</b>	<b>LABOUR INVOLVED</b>
<b>14</b>	Pushing of M.S. pipe of following dia for road crossing and Railway crossing by push through method in all types of strata by using hydraulic jack and drilling machine of required diameter, elow 3.0 m depth including lowering, laying, jointing of M.S. casing pipe including cost of labour fuels and material, required welding machinary, tripod, chain pulley block, vrane, blower etc. transportation and dewatering etc. complete as diredeted by Engineer-in-charge but excluding cost of M.S. pipe			
	a) 200 mm dia to 499 mm dia M.S. Pipe	Rmt	<b>25522.00</b>	--
	b) 500 mm dia to 1000 mm dia M.S. Pipe	Rmt	<b>31904.00</b>	--
<b>15</b>	Providing V wire underdrain system including V wire screen made of SS 304 fitted on UPVC base 90 mm diameter, V wire screen having screen shot of 300/350 microns having 16 % open area. Base pipe of lateral 80 mm dia UPVC SCH-40, Air heater made up of UPVC SCH 40. Tee for manifold with main header is of UPVC saddle with SS304 nuts and bolts. Rate to include all material,labour,providing and welding of end ring per 2 m latgeral length, cutting, threading of UPVC pipes coupers,tees,air nipples,clamps with stainless steel fasteners etc complete.	Rmt	<b>9426.00</b>	
<b>16</b>	Laying V wire underdrain system including laying and fixing of laterals in position,fixing end caps to one end and tee to other end of the lateral,fixing separate air header with coupler over tee of the lateral and air header with couple whole assembly over themainfold. All central assembly and end of the laterals must be embedded with M25 concrete,curing,testing,dewatering charges,consumables,transporatation etc. complete, but excluding the cost of concrete which will be paid separately.	Rmt of Laterl as	<b>722.00</b>	

<b>Sr No</b>	<b>Item Description</b>	<b>Unit</b>	<b>Rate (in Rs.) 2019-20</b>	<b>LABOUR INVOLVED</b>
<b>17</b>	Providing and making MDPE pipe consumer service connection on C.I/D.I./H.D.P.E. pipe. With the help of electrofusion machine or Ratechet and dye drill including all labour, MDPE pipe 10 m lenth MDPE Specials like electrofusion tee, double compression elbow,female thereaded adopter with metal insert,UPVCcompressin end ball valve, G.I. casing pipe of 40/50 mm for road crossing. The rate to include labour required,excavation fitting,refilling,Closing the water supply,trasportation etc.complete as directed by Engineer in charge. A) For connection on HDPE Pipes (With Road Crossing)			
	i) 15 mm	No.	<b>4357.00</b>	
	ii)20 mm	No.	<b>5097.00</b>	
	iii) 25 mm	No.	<b>5885.00</b>	
	B) For connection on HDPE Pipes (Without Road Crossing)			
	i) 15 mm	No.	<b>3628.00</b>	
	ii) 20 mm	No.	<b>3853.00</b>	
	iii) 25 mm	No.	<b>4270.00</b>	
	C) For connection on C.I./D.I./G.I. Pipes (With Road Crossing)			
	i) 15 mm	No.	<b>3053.00</b>	
	ii) 20 mm	No.	<b>3792.00</b>	
	iii) 25 mm	No.	<b>4479.00</b>	
	D) For connection on C.I./D.I./G.I. Pipes (With Road Crossing)			
	i) 15 mm	No.	<b>2291.00</b>	
	ii) 20 mm	No.	<b>2696.00</b>	
	iii) 25 mm	No.	<b>2966.00</b>	

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
18	Providing and applying 3 layer polyethylene coating of minimum 1000 micron composite coating and internal fusion bounded epoxy lining as per IS 3589 annex Cove 400 micron thickness for under ground laying M.S. pipes, Similarly dual layer polyester coating of 400 micron externally and internal fusion bounded lining as per Is 3531 for above ground laying M.S. pipes. Rate shall include cost of material coating and wrapping over the pipes handling charges,preparation of pipe surface,all labour, material,including transportation of pipes from site of works to factory and back to site of works after coating etc. complete.(The rate is for inside plus outside area both included)			
	Note - Pipe coating shall be done at factory.			
	Rate with E.D.	Sqm	1470.00	
	Rate without E.D.	Sqm	1308.00	
19	Supply and installation of pre fabricated ground water storage bolted tanks, a complete package in knockdown ready to assemble construction consisting of outer wall surface made out of special grade hot dip aluminum - Zinc alloy,metallic factory coated steel confirming to IS - 15961-2012, minimum thickness of 0.6 mm. The inner surface should be provided with liners of minimum 0.6 mm thickness of reinforce polythylene or polypropelene or metallo cene material suitable for drinking water purpose. Top cover shall be of polyethene ape monophylament yarn or woven polypropylene lkor corrugated G.I. sheets. Rate includes cost of the inlet,outlet,overflow.Pipes upto 5 m from periphery fo the tank including ball valves of sandeard quality,aluminum ladder, level inicagtor, water tightness test, transportation upto site of work etc. complete.			

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
	Notes:-			
	1) Above tanks can be installed on elevated platform.(ESR) The rate of tank dose not include the cost of elevated platform.2% extra tobe consitered for instllation of tank on elevated on elevated platform. The elevated platform needs tobe designed as per requirements & which will be paid separatel.The elevated platform must be of steel framed structure.			
	2) For the dome type corrugated roof structure with hot dip galvanized trusses with GI manhole for access for cleaning and maintenance. 10% extra shall be added.			
	3) For heavy duty layer polypropylene reinforced liner with metallocene contact layer having a minimum thickness fo 1 mm. 10% extra shall be added.			
	4) In case rain water harvesting filters & system to catch the rain from the GI tank roof is mounded on the tank roof and supplied with the tank then 10% extra shall be added.			
Sr.No.	Capacity in Litres	Unit	Rate for 2019-20	
			With R.C.C. Foundation	Without Foundation
1	25000	Lit.	13.18	12.5
2	30000	Lit.	11.96	11.28
3	50000	Lit.	10.93	10.25
4	7500	Lit.	9.30	8.63
5	100000	Lit.	8.03	7.35
6	150000	Lit.	7.19	6.51
7	200000	Lit.	6.68	6.00
8	250000	Lit.	6.06	5.38
9	300000	Lit.	5.86	5.19
10	375000	Lit.	5.14	4.46
11	500000	Lit.	4.72	4.04
12	750000	Lit.	4.41	3.73
13	1000000	Lit.	4.24	3.56
14	1500000	Lit.	3.92	3.24



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	<b>1. C.I. PIPES</b>			
1	Providing and supplying ISI mark <b>C.I. S&amp;S pipes</b> (push on joints pressure pipes of C.I of following class and diameters confirming to the I.S.specification inclusive cost of jointing materials(Rubber gasket of EPDM Quality) excluding GST levied by GoI and GoM in all respect, including Third party inspection charges of TPI Agency approved by MJP, Transit insurance, Railway Freight, Unloading from railway wagon, Loading into Truck, Transportation to departmental store/site of work,unloading, stacking etc. completed as directed by Engineer –in-charge (IS 1536/2001 for pipes and IS 158/1969 and IS 12820/1989 or latest edition / revision with amendments for Rubber Gaskets.			
	<b>(Suitable for Tyton / Pig lead joints)</b>			
	<b>a) Class 'LA'</b>			
	80 mm	Rmt	797.00	
	100 mm	Rmt	999.00	
	150 mm	Rmt	1622.00	
	200 mm	Rmt	2335.00	
	250 mm	Rmt	3147.00	
	300 mm	Rmt	4058.00	
	<b>b) Class 'A'</b>			
	80 mm	Rmt	823.00	
	100 mm	Rmt	1028.00	
	125 mm	Rmt	1338.00	
	150 mm	Rmt	1647.00	
	200 mm	Rmt	2380.00	
	250 mm	Rmt	3216.00	
	300 mm	Rmt	4163.00	
	350 mm	Rmt	5204.00	
	400 mm	Rmt	6383.00	
	450 mm	Rmt	7732.00	
	500 mm	Rmt	8865.00	
	600 mm	Rmt	11837.00	
	700 mm	Rmt	15427.00	
	750 mm	Rmt	17135.00	
	800 mm	Rmt	19156.00	
	900 mm	Rmt	23316.00	
	1000 mm	Rmt	28046.00	
	<b>c) Class 'B'</b>			
	80 mm	Rmt	875.00	
	100 mm	Rmt	1096.00	
	125 mm	Rmt	1440.00	
	150 mm	Rmt	1773.00	
	200 mm	Rmt	2572.00	
	250 mm	Rmt	3478.00	
	300 mm	Rmt	4510.00	
	350 mm	Rmt	5645.00	

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	400 mm	Rmt	6518.00	
	450 mm	Rmt	8343.00	
	500 mm	Rmt	9590.00	
	600 mm	Rmt	12636.00	
	700 mm	Rmt	16517.00	
	750 mm	Rmt	18590.00	
	800 mm	Rmt	20722.00	
	900 mm	Rmt	25262.00	
	1000 mm	Rmt	30308.00	
2	<b>Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes</b> of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, <b>including cost of jointing materials and rubber rings labour</b> etc. complete.			
	<b>Note : Only SBR Rubber gaskets to be used as per IS-5382 and IS-12820.</b>		<b>Without Rubber Rings</b>	<b>With Rubber Rings</b>
	<b>a) C.I. 'L.A.' Class / Mortar inlined DI K-9/K-7</b>			
	80 mm	Rmt	48.00	55.00
	100 mm	Rmt	58.00	64.00
	150 mm	Rmt	78.00	87.00
	200 mm	Rmt	103.00	114.00
	250 mm	Rmt	135.00	149.00
	300 mm	Rmt	146.00	167.00
	350 mm	Rmt	182.00	205.00
	400 mm	Rmt	219.00	253.00
	450 mm	Rmt	219.00	266.00
	500 mm	Rmt	253.00	308.00
	600 mm	Rmt	332.00	409.00
	700 mm	Rmt	429.00	576.00
	750 mm	Rmt	480.00	630.00
	800 mm	Rmt	587.00	739.00
	900 mm	Rmt	702.00	928.00
	1000 mm	Rmt	829.00	1125.00
	<b>b) C.I. 'A' Class</b>			
	80 mm	Rmt	50.00	62.00
	100 mm	Rmt	62.00	73.00
	125 mm	Rmt	79.00	87.00
	150 mm	Rmt	86.00	94.00
	200 mm	Rmt	111.00	122.00
	250 mm	Rmt	146.00	161.00
	300 mm	Rmt	160.00	179.00
	350 mm	Rmt	196.00	220.00
	400 mm	Rmt	221.00	254.00
	450 mm	Rmt	232.00	268.00
	500 mm	Rmt	273.00	327.00
	600 mm	Rmt	361.00	437.00
	700 mm	Rmt	464.00	611.00
	750 mm	Rmt	523.00	670.00
	800 mm	Rmt	616.00	766.00
	900 mm	Rmt	741.00	967.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	1000 mm	Rmt	866.00	1162.00
	<b>c) C.I. 'B' Class</b>			
	80 mm	Rmt	55.00	64.00
	100 mm	Rmt	65.00	79.00
	125 mm	Rmt	85.00	94.00
	150 mm	Rmt	95.00	106.00
	200 mm	Rmt	122.00	136.00
	250 mm	Rmt	158.00	179.00
	300 mm	Rmt	173.00	193.00
	350 mm	Rmt	212.00	246.00
	400 mm	Rmt	246.00	279.00
	450 mm	Rmt	251.00	287.00
	500 mm	Rmt	294.00	348.00
	600 mm	Rmt	391.00	464.00
	700 mm	Rmt	502.00	645.00
	750 mm	Rmt	567.00	714.00
	800 mm	Rmt	661.00	809.00
	900 mm	Rmt	783.00	1008.00
	1000 mm	Rmt	894.00	1187.00
	<b>Note : Only 85% rate shall be payable till satisfactory hydraulic testing is given.</b>			
3	<b>Providing D.I. pipes</b> (push on joints pressure pipes of D. I. of following class and diameters confirming to the I. S. specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality ) excluding GST levied by GOI & GOM in all respect including Third party inspection charges of TPI Agency approved by MJP, Transit insurance, Railway Freight, Unloading from railway wagon, Loading into Truck, Transportation to departmental store, unloading, stacking etc. completed as directed by Engineer in charges (IS 8329/2000 for pipes and IS 158/1969 and IS 12820/1989 or latest edition/ revision with amendments for Rubber Gaskets.			
	<b>(IS:8329-2000 Latest Version)</b>		<b>D. I. K-7</b>	<b>D. I. K-9</b>
	100mm	Rmt	808.00	952.00
	150mm	Rmt	1192.00	1383.00
	200mm	Rmt	1469.00	1870.00
	250mm	Rmt	2044.00	2485.00
	300mm	Rmt	2505.00	3106.00
	350 mm	Rmt	3371.00	3919.00
	400 mm	Rmt	3774.00	4558.00
	450 mm	Rmt	4696.00	5560.00
	500 mm	Rmt	5349.60	6405.00
	600 mm	Rmt	6817.50	8175.00
	700 mm	Rmt	9245.00	10370.00
	750 mm	Rmt	10759.00	12130.00
	800 mm	Rmt	12215.00	13188.00
	900 mm	Rmt	14852.00	16283.00
	1000 mm	Rmt	17900.00	19580.00
	1100 mm	Rmt	24375.00	24397.00
	1200 mm	Rmt	26964.00	27874.00
	Note: For DI pipe supply from MJP 18% GST would be applicable			

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
4	<b>Providing and making lead caulked joint with molten lead to Cast Iron pipes</b> and / or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.			
	80 mm	Joint	792.00	
	100 mm	Joint	980.00	
	125mm	Joint	1166.00	
	150mm	Joint	1448.00	
	200mm	Joint	2111.00	
	250mm	Joint	2563.00	
	300mm	Joint	3091.00	
	350 mm	Joint	3504.00	
	400 mm	Joint	4087.00	
	450 mm	Joint	5675.00	
	500 mm	Joint	6101.00	
	600 mm	Joint	7839.00	
	700 mm	Joint	9209.00	
	750 mm	Joint	10459.00	
	800 mm	Joint	11232.00	
	900 mm	Joint	11980.00	
	1000 mm	Joint	12774.00	
	<b>Note :Only 85 % rate shall be payable till satisfactory Hydraulic testing is given.</b>			
5	Providing and supplying ISI standard <b>CI double flanged pipes</b> excluding all statutory duties & taxes such as GST levied by GOI & GOM in all respect, including railway freight, insurance, unloading from railway wagon, loading into truck transport to stores / site, unloading etc. complete as directed by Engineer-in-charge			
	80 mm	Rmt.	1333.00	
	100 mm	Rmt.	1648.00	
	125 mm	Rmt.	2145.00	
	150 mm	Rmt.	2677.00	
	200 mm	Rmt.	4108.00	
	250 mm	Rmt.	5535.00	
	300 mm	Rmt.	7117.00	
	350 mm	Rmt.	9289.00	
	400 mm	Rmt.	11326.00	
	450 mm	Rmt.	13600.00	
	500 mm	Rmt.	15961.00	
	600 mm	Rmt.	22705.00	
	700 mm	Rmt.	30419.00	
	750 mm	Rmt.	33097.00	
6	Providing and supplying ISI standard <b>CI flanged / S&amp; S specials</b> including railway freight, insurance, unloading from railway wagon, loading into truck transport to departmental store /site, unloading stacking etc but excluding GST levied by GOI & GOM in all respect, etc complete.			
	<b>D/F Specials</b>			
	80 to 300 mm dia.	Kg.	66.00	
	350 to 600 mm dia	Kg.	71.00	

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	above 600 mm dia	Kg.	76.00	
	<b>S/S Specials / Socketed Branch Flanged Specials</b>			
	80 to 300 mm dia.	Kg.	64.00	
	350 to 600 mm dia	Kg.	68.00	
	above 600 mm dia	Kg.	73.00	
	<b>Plain ended /plain ended branch flanged specials</b>			
	80 to 300 mm dia.	Kg.	62.00	
	350 to 600 mm dia	Kg.	68.00	
	above 600 mm dia	Kg.	73.00	
7	Providing and supplying ISI standard <b>MS specials</b> of required thickness with 3 coats of approved make epoxy paint (Shalimar, Ciba or Mahindra & Mahindra make) from inside and outside excluding GST levied by GOI & GOM in all respect, including inspection charges, transportation to stores / site, and stacking, etc. complete.			
	a) Machine ends suitable for PSC pipes of all diameters as per detailed drawing with 10mm thick x 0.7 M long barrel welded to it.	Kg.	84.00	
	b) Only flanges with machining and drilling holes, etc. complete more than 40 mm thick	Kg.	82.00	
	c) Double flanged specials of all diameters	Kg.	79.00	
	d) All socketed specials or socketed branch flanged specials of all diameters	Kg.	79.00	
	e) Plain ended specials or plain ended branch flanged specials of all diameters	Kg.	79.00	
	f) MS barrels (pipepieces) locally manufactured (for small quantities)	Kg.	77.00	
8	<b>Providing and making flanged joints to flanged C.I./M.S. pipes</b> of all classes/specials etc. including cost of all jointing materials (rubber packing, nut bolts, etc.), labour, hydraulic testing etc. complete.			
	80 mm	Joint	239.00	
	100 mm	Joint	412.00	
	125 mm	Joint	431.00	
	150 mm	Joint	827.00	
	200 mm	Joint	857.00	
	250 mm	Joint	1229.00	
	300 mm	Joint	1276.00	
	350 mm	Joint	1662.00	
	400 mm	Joint	2071.00	
	450 mm	Joint	2531.00	
	500 mm	Joint	2620.00	
	600 mm	Joint	2813.00	
	700 mm	Joint	4237.00	
	750 mm	Joint	4356.00	
	800 mm	Joint	6028.00	
	900 mm	Joint	6248.00	
	1000mm	Joint	6468.00	
	<b>Note : Only 85 % rate shall be payable till satisfactory Hydraulic testing is given.</b>			

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
9	<b>Erecting and hoisting in position and jointing, testing M.S./ C.I. D/F pipes and specials</b> in vertical position including cost of all jointing materials (rubber packing, nut bolts, etc.) labour, scaffolding, hydraulic testing etc. complete.			
	80 mm	Joint	242.00	
	100 mm	Joint	409.00	
	125 mm	Joint	432.00	
	150 mm	Joint	804.00	
	200 mm	Joint	854.00	
	250 mm	Joint	1220.00	
	300 mm	Joint	1287.00	
	350 mm	Joint	1672.00	
	400 mm	Joint	2079.00	
	450 mm	Joint	2540.00	
	500 mm	Joint	2658.00	
	600 mm	Joint	2917.00	
	700 mm	Joint	4327.00	
	750 mm	Joint	4492.00	
	800 mm	Joint	6083.00	
	900 mm	Joint	6403.00	
	1000mm	Joint	6749.00	
	<b>Note : Only 85 % rate shall be payable till satisfactory hydraulic testing is given.</b>			
10	Providing and supplying ISI standard D. I. specials & fitting with sealing rubber gasket of S.B.R, complete with cast iron follower gland and M. S. nut bolts coated or otherwise protected from rusting and suitable for D.I.pipes including cost of labour ,materials, and transportation to stores / site, loading and unloading excluding GST levied by GOI & GOM in all respect, complete as per IS-9523. <b>For all types of specials, bends tees etc.</b>			
	80 to 300 mm dia	Kg.	103.00	
	350 mm and above dia	Kg.	125.00	
11	Providing and supplying ISI standard welded <b>DI double flanged pipe</b> excluding GST levied by GOI & GOM in all respect, including railway freight, insurance, unloading from railway wagon, loading into truck transport to store / site, unloading, stacking etc. complete as directed by Engineer -in- charge. (for 2.75 m bare pipe)			
	100 mm	Rmt.	1725.00	
	150 mm	Rmt.	2343.00	
	200 mm	Rmt.	2997.00	
	250 mm	Rmt.	4069.00	
	300 mm	Rmt.	5120.00	
	350 mm	Rmt.	6669.00	
	400 mm	Rmt.	8072.00	
	450 mm	Rmt.	9646.00	
	500 mm	Rmt.	11212.00	
	600 mm	Rmt.	14762.00	
	700 mm	Rmt.	19864.00	
	800 mm	Rmt.	24281.00	

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	900 mm	Rmt.	30139.00	
	1000 mm	Rmt.	35388.00	
12	<b>Hydraulic testing of C.I./D.I. pipe line</b> to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position using water supplied by the contractor.			
	<b>A) C.I. L.A. Class / Mortar lined D.I.K-9/ K-7</b>			
	80 mm	Km	6155.00	
	100 mm	Km	7201.00	
	125 mm	Km	8942.00	
	150 mm	Km	9639.00	
	200 mm	Km	12659.00	
	250 mm	Km	16491.00	
	300 mm	Km	18581.00	
	350 mm	Km	22646.00	
	400 mm	Km	28104.00	
	450 mm	Km	29614.00	
	500 mm	Km	34143.00	
	600 mm	Km	45524.00	
	700 mm	Km	63986.00	
	750 mm	Km	70028.00	
	800 mm	Km	82222.00	
	900 mm	Km	103126.00	
	1000 mm	Km	125074.00	
	<b>B) C.I. "A" Class</b>			
	80 mm	Km	6852	
	100 mm	Km	8014	
	125 mm	Km	9639	
	150 mm	Km	10452	
	200 mm	Km	13472	
	250 mm	Km	17768	
	300 mm	Km	19858	
	350 mm	Km	24388	
	400 mm	Km	28221	
	450 mm	Km	29846	
	500 mm	Km	36350	
	600 mm	Km	48543	
	700 mm	Km	67822	
	750 mm	Km	74441	
	800 mm	Km	85125	
	900 mm	Km	107538	
	1000 mm	Km	129023	
	<b>C) C.I. "B" Class</b>			
	80 mm	Km	7201.00	
	100 mm	Km	8710.00	
	125 mm	Km	10452.00	

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	150 mm	Km	11729.00	
	200 mm	Km	15098.00	
	250 mm	Km	19975.00	
	300 mm	Km	21369.00	
	350 mm	Km	27408.00	
	400 mm	Km	31123.00	
	450 mm	Km	31936.00	
	500 mm	Km	38556.00	
	600 mm	Km	51563.00	
	700 mm	Km	71654.00	
	750 mm	Km	79319.00	
	800 mm	Km	89887.00	
	900 mm	Km	111951.00	
	1000 mm	Km	131926.00	
13	<b>Providing and supplying C.I. detachable joints</b> suitable for A. C. pressure pipes manufactured as per IS-1538-1993 standards of following calass and diameter including cost of insurance, railway freight, inspection charges, unloding from railway wagon, loding into truck, transporting to departmental store, unloading, stacking and cost of rubber rings, nut bolts. excluding GST levied by GOI & GOM in all respect etc. complete (IS-1538-1993)			
	<b>Class 10/15</b>			
	80 mm	Rmt	254.00	
	100 mm	Rmt	321.00	
	125 mm	Rmt	432.00	
	150 mm	Rmt	538.00	
	200 mm	Rmt	812.00	
	250 mm	Rmt	1017.00	
	300 mm	Rmt	1395.00	
	<b>Class 20</b>			
	80 mm	Rmt	392.00	
	100 mm	Rmt	408.00	
	125 mm	Rmt	507.00	
	150 mm	Rmt	608.00	
	200 mm	Rmt	817.00	
	250 mm	Rmt	1153.00	
	300 mm	Rmt	1651.00	



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>II. P. V. C. PIPES</b>		
1	Providing and supplying in <b>standard lengths ISI mark rigid unplasticised PVC pipes</b> suitable for potable water with solvent cement joints including cost of couplers, as per IS specification no. 4985 / 1988 excluding GST levied by GOI and GOM in all respect, including transportation, freight charges, inspection charges, loading, unloading, conveyance to the departmental stores and stacking the same in closed shed duly protected from sun rays and rains including cost of jointing material i.e. solvent cement, etc. complete (selffit type to be jointed with cement solvent).		
	<b>Note : 1) 10% of cost of pipes shall be considered for cost of PVC specials for estimate purpose only.</b>		
	<b>2) One coupler and required cement solvent shall be provided with each full length pipe cost of which is included in rates below.</b>		
	<b>a) Working Pressure 4 Kg./Sq.cm.</b>		
	63 mm	Rmt	50.00
	75 mm	Rmt	71.00
	90 mm	Rmt	99.00
	110 mm	Rmt	135.00
	140 mm	Rmt	226.00
	160 mm	Rmt	297.00
	180 mm	Rmt	406.00
	200 mm	Rmt	501.00
	225 mm	Rmt	641.00
	250 mm	Rmt	783.00
	280 mm	Rmt	1041.00
	315 mm	Rmt	1324.00
	<b>b) Working Pressure 6 Kg./Sq.cm.</b>		
	63 mm	Rmt	71.00
	75 mm	Rmt	101.00
	90 mm	Rmt	147.00
	110 mm	Rmt	201.00
	140 mm	Rmt	335.00
	160 mm	Rmt	433.00
	180 mm	Rmt	575.00
	200 mm	Rmt	736.00
	225 mm	Rmt	928.00
	250 mm	Rmt	1158.00
	280 mm	Rmt	1527.00
	315 mm	Rmt	1949.00
	<b>c) Working Pressure 8 Kg./Sq.cm.</b>		
	63 mm	Rmt	98.00
	75 mm	Rmt	140.00
	90 mm	Rmt	198.00
	110 mm	Rmt	281.00
	140 mm	Rmt	465.00
	160 mm	Rmt	610.00
	180 mm	Rmt	807.00
	200 mm	Rmt	1015.00
	225 mm	Rmt	1289.00
	250 mm	Rmt	1612.00
	280 mm	Rmt	2123.00
	315 mm	Rmt	2689.00
	<b>d) Working Pressure 10 Kg./Sq.cm.</b>		
	63 mm	Rmt	119.00
	75 mm	Rmt	169.00
	90 mm	Rmt	242.00
	110 mm	Rmt	342.00
	140 mm	Rmt	554.00
	160 mm	Rmt	725.00
	180 mm	Rmt	999.00
	200 mm	Rmt	1235.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	225 mm	Rmt	1575.00
	250 mm	Rmt	1990.00
	280 mm	Rmt	2503.00
	315 mm	Rmt	3179.00
	<b>e) Working Pressure 12.5 Kg./Sq.cm.</b>		
	63 mm	Rmt	151.00
	75 mm	Rmt	212.00
	90 mm	Rmt	307.00
	110 mm	Rmt	434.00
	140 mm	Rmt	707.00
	160 mm	Rmt	930.00
	180 mm	Rmt	1271.00
	200 mm	Rmt	1576.00
	225 mm	Rmt	2003.00
	250 mm	Rmt	2533.00
	280 mm	Rmt	3188.00
	315 mm	Rmt	4064.00
2	<b>Providing and supplying in standard lengths ISI mark rigid unplasticised PVC for potable water with rubber ring joints including cost of rubber ring as per IS-4985-1998, excluding GST levied by GOI and GOM in all respect, including transportation, freight charges, transit insurance, inspection charges, loading, unloading, conveyance to store and stacking the same in closed shed duly protected from sun rays and rains, etc. complete (with third party inspection) (socketed)</b>		
	<b>a) Working Pressure 4 Kg./Sq.cm.</b>		
	63 mm	Rmt	55.00
	75 mm	Rmt	77.00
	90 mm	Rmt	110.00
	110 mm	Rmt	151.00
	125 mm	Rmt	207.00
	140 mm	Rmt	251.00
	160 mm	Rmt	331.00
	180 mm	Rmt	450.00
	200 mm	Rmt	554.00
	225 mm	Rmt	712.00
	250 mm	Rmt	872.00
	280 mm	Rmt	1156.00
	315 mm	Rmt	1469.00
	<b>b) Working Pressure 6 Kg./Sq.cm.</b>		
	63 mm	Rmt	78.00
	75 mm	Rmt	113.00
	90 mm	Rmt	163.00
	110 mm	Rmt	222.00
	125 mm	Rmt	307.00
	140 mm	Rmt	373.00
	160 mm	Rmt	480.00
	180 mm	Rmt	641.00
	200 mm	Rmt	815.00
	225 mm	Rmt	1030.00
	250 mm	Rmt	1287.00
	280 mm	Rmt	1696.00
	315 mm	Rmt	2163.00
	<b>c) Working Pressure 8 Kg./Sq.cm.</b>		
	63 mm	Rmt	107.00
	75 mm	Rmt	157.00
	90 mm	Rmt	220.00
	110 mm	Rmt	311.00
	125 mm	Rmt	429.00
	140 mm	Rmt	516.00
	160 mm	Rmt	677.00
	180 mm	Rmt	898.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	200 mm	Rmt	1128.00
	225 mm	Rmt	1431.00
	250 mm	Rmt	1789.00
	280 mm	Rmt	2358.00
	315 mm	Rmt	2988.00
	<b>d) Working Pressure 10 Kg./Sq.cm.</b>		
	63 mm	Rmt	132.00
	75 mm	Rmt	188.00
	90 mm	Rmt	268.00
	110 mm	Rmt	381.00
	125 mm	Rmt	523.00
	140 mm	Rmt	615.00
	160 mm	Rmt	805.00
	180 mm	Rmt	1109.00
	200 mm	Rmt	1371.00
	225 mm	Rmt	1749.00
	250 mm	Rmt	2212.00
	280 mm	Rmt	2780.00
	315 mm	Rmt	3532.00
	<b>e) Working Pressure 12.5 Kg./Sq.cm.</b>		
	63 mm	Rmt	166.00
	75 mm	Rmt	235.00
	90 mm	Rmt	341.00
	110 mm	Rmt	484.00
	125 mm	Rmt	667.00
	140 mm	Rmt	785.00
	160 mm	Rmt	1031.00
	180 mm	Rmt	1411.00
	200 mm	Rmt	1750.00
	225 mm	Rmt	2225.00
	250 mm	Rmt	2812.00
	280 mm	Rmt	3539.00
	315 mm	Rmt	4510.00
3	Providing and supplying in <b>ISI mark rigid PVC-O class-500</b> s/s pipe (push on joints) pressure pipes confirming to IS specifications no 16647-2017 inclusive cost of EPDM gasket seals on joints including all statutory duties excluding GST levied by Government of India and Government of Maharashtra in all respect including third party inspection charges of agency approved by MJP, transit insurance loading, unloading charges conveyance to the departmental store / site and stacking the same in closed shade duly protected from sunrays etc complete.		
	<b>Note :-</b> a) 10% cost of pipe shall be considered for the cost of O-PVC/DI compatable specials for estimate purpose b) Diameter wise overlapping lengths are respectively, 110mm 2.92%, 160mm- 3.33%, 200mm 3.75%, 250mm 4.5%, 315mm 5.42%, 400mm 6.25%		
	<b>a) PVC -O-Class 500 - PN 12.5</b>		
	110 mm	Rmt	519.00
	160 mm	Rmt	895.00
	200 mm	Rmt	1226.00
	250 mm	Rmt	1681.00
	315 mm	Rmt	2180.00
	400 mm	Rmt	3360.00
	450 mm	Rmt	4045.00
	500 mm	Rmt	4687.00
	560 mm	Rmt	6248.00
	630 mm	Rmt	7947.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>b) PVC -O-Class 500 - PN 16</b>		
	110 mm	Rmt	622.00
	160 mm	Rmt	1042.00
	200 mm	Rmt	1292.00
	250 mm	Rmt	1818.00
	315 mm	Rmt	2291.00
	400 mm	Rmt	3495.00
	450 mm	Rmt	4609.00
	500 mm	Rmt	5751.00
	560 mm	Rmt	7161.00
	630 mm	Rmt	9071.00
	<b>c) PVC -O-Class 500 - PN 25</b>		
	110 mm	Rmt	775.00
	160 mm	Rmt	1126.00
	200 mm	Rmt	1532.00
	250 mm	Rmt	2144.00
	315 mm	Rmt	3344.00
	400 mm	Rmt	5072.00
	450 mm	Rmt	6496.00
	500 mm	Rmt	8040.00
	560 mm	Rmt	10067.00
	630 mm	Rmt	12730.00
4	<b>Lowering, laying and jointing with P.V.C. pipes and specials of following class and diameter including cost of conveyance from stores to site of works including cost of all labour, material, except cement solvent, rubber ring, as per IS code, etc. complete (with cement solvent joint / ring fit joint).</b>		
	<b>Note: For PVC O pipes of all pressure 4 (b) rates applied.</b>		
	<b>a) Working Pressure 4 Kg./Sq.cm.</b>		
	63 mm	Rmt	18.00
	75 mm	Rmt	23.00
	90 mm	Rmt	28.00
	110 mm	Rmt	32.00
	125 mm	Rmt	34.00
	140 mm	Rmt	37.00
	160 mm	Rmt	42.00
	180 mm	Rmt	46.00
	200 mm	Rmt	50.00
	225 mm	Rmt	58.00
	250 mm	Rmt	63.00
	280 mm	Rmt	69.00
	315 mm	Rmt	78.00
	<b>b) Working Pressure 6 to 12.5 Kg./Sq.cm.</b>		
	63 mm	Rmt	24.00
	75 mm	Rmt	32.00
	90 mm	Rmt	36.00
	110 mm	Rmt	41.00
	125 mm	Rmt	44.00
	140 mm	Rmt	48.00
	160 mm	Rmt	51.00
	180 mm	Rmt	58.00
	200 mm	Rmt	64.00
	225 mm	Rmt	69.00
	250 mm	Rmt	76.00
	280 mm	Rmt	86.00
	315 mm	Rmt	95.00
	400 mm	Rmt	105.00
	450 mm	Rmt	114.00
	500 mm	Rmt	125.00
	560 mm	Rmt	136.00
	630 mm	Rmt	149.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
5	<b>Hydraulic testing of PVC pipe line</b> to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.		
	<b>a) Working Pressure 4 Kg./Sq.cm.</b>		
	63 mm	Km	2255.00
	75 mm	Km	2255.00
	90 mm	Km	3383.00
	110 mm	Km	3383.00
	125 mm	Km	3947.00
	140 mm	Km	4510.00
	160 mm	Km	4510.00
	180 mm	Km	5638.00
	200 mm	Km	5638.00
	225 mm	Km	6765.00
	250 mm	Km	6765.00
	280 mm	Km	7893.00
	315 mm	Km	9020.00
	<b>b) Working Pressure 6 to 12.5 Kg./Sq.cm.</b>		
	63 mm	Km	2255.00
	75 mm	Km	3383.00
	90 mm	Km	4510.00
	110 mm	Km	4510.00
	125 mm	Km	5074.00
	140 mm	Km	5638.00
	160 mm	Km	5638.00
	180 mm	Km	6765.00
	200 mm	Km	6765.00
	225 mm	Km	7893.00
	250 mm	Km	7893.00
	280 mm	Km	9020.00
	315 mm	Km	10148.00
	400 mm	Km	10148.00
	450 mm	Km	11275.00
	500 mm	Km	11275.00
	560 mm	Km	12403.00
	630 mm	Km	13530.00

**Note:**

1)

Only 85% rate shall be payable till satisfactory hydraulic testing is given.

2) Third party inspecting agency shall invariably carry out.

I) Specific Gravity Test.

II) Weight / Rmt.

III) Ash Content Test and confirm in writing that those are within prescribed limits. This condition shall appear in tender conditions.

3) After receipt of pipes at site, concerned Deputy Engineer shall confirm that weight of pipe for every class and diameter is not less than the pre-scribed standard weight as per IS-4985/1998 (Which is given in CSR), Under weight pipes shall be rejected. This condition shall appear in the tender conditions.

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>III. GI PIPES</b>		
1	Providing <b>ISI mark G.I. pipe</b> of following class and dia. excluding GST levied by GOI & GOM in all respect, including inspection charges, transportation to stores, etc. complete as per IS-1239/2004. <b>Note :</b> One coupler shall be provided with each full length of pipe cost of which is included in rates below.		
<b>a)</b>	<b>LIGHT</b>		
	15 mm. ( 0.96 kg./m )	Rmt	64.00
	20 mm. ( 1.42 kg./m )	Rmt	95.00
	25 mm. ( 2.03 kg./m )	Rmt	130.00
	32 mm. ( 2.61 kg./m )	Rmt	165.00
	40 mm. ( 3.29 kg./m )	Rmt	207.00
	50 mm. ( 4.18 kg./m )	Rmt	253.00
	65 mm. ( 5.92 kg./m )	Rmt	348.00
	80 mm. ( 6.98 kg./m )	Rmt	418.00
	100 mm. ( 10.20 kg./m )	Rmt	593.00
<b>b)</b>	<b>MEDIUM</b>		
	15 mm. ( 1.23 kg./m )	Rmt	76.00
	20 mm. ( 1.59 kg./m )	Rmt	98.00
	25 mm. ( 2.40 kg./m )	Rmt	150.00
	32 mm. ( 3.17 kg./m )	Rmt	188.00
	40 mm. ( 3.65 kg./m )	Rmt	217.00
	50 mm. ( 5.16 kg./m )	Rmt	300.00
	65 mm. ( 6.63 kg./m )	Rmt	381.00
	80 mm. ( 8.64 kg./m )	Rmt	501.00
	100 mm. ( 12.40 kg./m )	Rmt	714.00
	125 mm ( 16.70 kg/m )	Rmt	972.00
	150 mm.( 19.70 kg./m )	Rmt	1143.00
<b>c)</b>	<b>HEAVY</b>		
	15 mm.	Rmt	87.00
	20 mm.	Rmt	112.00
	25 mm.	Rmt	175.00
	32 mm.	Rmt	222.00
	40 mm.	Rmt	257.00
	50 mm.	Rmt	356.00
	65 mm.	Rmt	458.00
	80 mm.	Rmt	585.00
	100 mm ( 14.70 kg./m )	Rmt	845.00
	125 mm ( 18.30 kg/m )	Rmt	1046.00
	150 mm ( 21.80 kg./m )	Rmt	1257.00
2	<b>Lowering, laying and jointing G. I. pipes and specials</b> of following class and diameter including conveyance from stores to site of works, all labour, etc. complete either underground or in vertical position, as directed by Engineer-in-charge.		
<b>a)</b>	<b>LIGHT</b>		
	15 mm. ( 0.96 kg./m )	Rmt	26.00
	20 mm. ( 1.42 kg./m )	Rmt	29.00
	25 mm. ( 2.03 kg./m )	Rmt	36.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	32 mm. ( 2.61 kg./m )	Rmt	41.00
	40 mm. ( 3.29 kg./m )	Rmt	50.00
	50 mm. ( 4.18 kg./m )	Rmt	61.00
	65 mm. ( 5.92 kg./m )	Rmt	88.00
	80 mm. ( 6.98 kg./m )	Rmt	97.00
	100 mm. ( 10.20 kg./m )	Rmt	117.00
<b>b)</b>	<b>MEDIUM</b>		
	15 mm. ( 1.23 kg./m )	Rmt	28.00
	20 mm. ( 1.59 kg./m )	Rmt	31.00
	25 mm. ( 2.40 kg./m )	Rmt	37.00
	32 mm. ( 3.17 kg./m )	Rmt	43.00
	40 mm. ( 3.65 kg./m )	Rmt	56.00
	50 mm. ( 5.16 kg./m )	Rmt	65.00
	65 mm. ( 6.63 kg./m )	Rmt	95.00
	80 mm. ( 8.64 kg./m )	Rmt	107.00
	100 mm. ( 12.40 kg./m )	Rmt	117.00
	125 mm ( 16.70 kg/m )	Rmt	125.00
	150 mm.( 19.70 kg./m )	Rmt	131.00
<b>c)</b>	<b>HEAVY</b>		
	15 mm.	Rmt	30.00
	20 mm.	Rmt	34.00
	25 mm.	Rmt	40.00
	32 mm.	Rmt	46.00
	40 mm.	Rmt	59.00
	50 mm.	Rmt	74.00
	65 mm.	Rmt	103.00
	80 mm.	Rmt	125.00
	100 mm ( 14.70 kg./m )	Rmt	117.00
	125 mm ( 18.30 kg/m )	Rmt	130.00
	150 mm ( 21.80 kg./m )	Rmt	140.00
	<b>Note : Only 85% rate shall be payable till satisfactory hydraulic testing is given.</b>		
3	<b>Hydraulic testing of G. I. pipe line</b> to specified pressure including cost of all materials and labour and water for testing for the length upto 1km using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour operation charges etc. required for testing, The rates under this item shall also include cost of retesting if necessary and reinstating to original postion.		
<b>a)</b>	<b>LIGHT</b>		
	15 mm. ( 0.96 kg./m )	Km	2255.00
	20 mm. ( 1.42 kg./m )	Km	3383.00
	25 mm. ( 2.03 kg./m )	Km	3383.00
	32 mm. ( 2.61 kg./m )	Km	4510.00
	40 mm. ( 3.29 kg./m )	Km	5638.00
	50 mm. ( 4.18 kg./m )	Km	6765.00
	65 mm. ( 5.92 kg./m )	Km	10148.00
	80 mm. ( 6.98 kg./m )	Km	11275.00
	100 mm. ( 10.20 kg./m )	Km	12403.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
<b>b)</b>	<b>MEDIUM</b>		
	15 mm. ( 1.23 kg./m )	Km	3383.00
	20 mm. ( 1.59 kg./m )	Km	3383.00
	25 mm. ( 2.40 kg./m )	Km	4510.00
	32 mm. ( 3.17 kg./m )	Km	4510.00
	40 mm. ( 3.65 kg./m )	Km	5638.00
	50 mm. ( 5.16 kg./m )	Km	6765.00
	65 mm. ( 6.63 kg./m )	Km	10148.00
	80 mm. ( 8.64 kg./m )	Km	11275.00
	100 mm. ( 12.40 kg./m )	Km	12403.00
	125 mm ( 16.70 kg/m )	Km	13530.00
	150 mm.( 19.70 kg./m )	Km	14658.00
<b>c)</b>	<b>HEAVY</b>		
	15 mm.	Km	3383.00
	20 mm.	Km	3383.00
	25 mm.	Km	4510.00
	32 mm.	Km	5638.00
	40 mm.	Km	6765.00
	50 mm.	Km	7893.00
	65 mm.	Km	11275.00
	80 mm.	Km	13530.00
	100 mm ( 14.70 kg./m )	Km	12403.00
	125 mm ( 18.30 kg/m )	Km	14658.00
	150 mm ( 21.80 kg./m )	Km	15785.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>(IV) D.I. SPECIALS AND MECHANICAL FITTINGS</b>		
	<b>D.I. Socket and flanged fittings :-</b>		
1	Providing and supplying <b>D.I. fitting with ISI mark</b> socket pushon joints or flanged joints confirming to table 12 to 31 of IS 9523/2000 upto latest amendments including cost of SBR/ EDPM tyton rings. Fittings should be with internally ordinary portland cement mortar lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation up to store excluding GST levied by GOI and GOM in all respect etc. complete.		
	<b>Diameter in mm</b>		
I	<b>Double socket bend 90 degree</b>		
	80 mm dia	Nos	1091.00
	100 mm dia	Nos	1360.00
	150 mm dia	Nos	2450.00
	200 mm dia	Nos	3116.00
	250 mm dia	Nos	5958.00
	300 mm dia	Nos	8269.00
	350 mm dia	Nos	11679.00
	400 mm dia	Nos	15438.00
	450 mm dia	Nos	20136.00
	500 mm dia	Nos	25387.00
	600 mm dia	Nos	41220.00
	700 mm dia	Nos	64057.00
II	<b>Double socket bend 45 degree</b>		
	80 mm dia	Nos	1010.00
	100 mm dia	Nos	1225.00
	150 mm dia	Nos	1895.00
	200 mm dia	Nos	3221.00
	250 mm dia	Nos	4533.00
	300 mm dia	Nos	6347.00
	350 mm dia	Nos	8726.00
	400 mm dia	Nos	11410.00
	450 mm dia	Nos	14497.00
	500 mm dia	Nos	17840.00
	600 mm dia	Nos	27171.00
	700 mm dia	Nos	41503.00
III	<b>Double socket bend 22.50 degree</b>		
	80 mm dia	Nos	884.00
	100 mm dia	Nos	1136.00
	150 mm dia	Nos	1761.00
	200 mm dia	Nos	2718.00
	250 mm dia	Nos	3691.00
	300 mm dia	Nos	5440.00
	350 mm dia	Nos	7174.00
	400 mm dia	Nos	8898.00
	450 mm dia	Nos	11410.00
	500 mm dia	Nos	13997.00
	600 mm dia	Nos	21681.00
	700 mm dia	Nos	32549.00
IV	<b>Double socket bend 11.25 degree</b>		
	80 mm dia	Nos	884.00
	100 mm dia	Nos	1091.00
	150 mm dia	Nos	1628.00
	200 mm dia	Nos	2584.00
	250 mm dia	Nos	3581.00
	300 mm dia	Nos	4823.00
	350 mm dia	Nos	5720.00
	400 mm dia	Nos	7718.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	450 mm dia	Nos	10202.00
	500 mm dia	Nos	12350.00
	600 mm dia	Nos	18114.00
	700 mm dia	Nos	26156.00
V	<b>Double socket concentric reducer</b>		
	100 x 80 mm dia	Nos	1010.00
	150 x 80 mm dia	Nos	1628.00
	150 x 100 mm dia	Nos	1761.00
	200 x 80 mm dia	Nos	2526.00
	200 x 100 mm dia	Nos	2526.00
	200 x 150 mm dia	Nos	2680.00
	250 x 80 mm dia	Nos	3497.00
	250 x 100 mm dia	Nos	3366.00
	250 x 150 mm dia	Nos	3713.00
	250 x 200 mm dia	Nos	3581.00
	300 x 100 mm dia	Nos	4921.00
	300 x 150 mm dia	Nos	5052.00
	300 x 200 mm dia	Nos	4957.00
	300 x 250 mm dia	Nos	4662.00
	350 x 200 mm dia	Nos	6900.00
	350 x 250 mm dia	Nos	6719.00
	350 x 300 mm dia	Nos	6628.00
	400 x 200 mm dia	Nos	9129.00
	400 x 250 mm dia	Nos	8322.00
	400 x 300 mm dia	Nos	8055.00
	400 x 350 mm dia	Nos	7174.00
	450 x 350 mm dia	Nos	9665.00
	450 x 400 mm dia	Nos	8898.00
	500 x 350 mm dia	Nos	13052.00
	500 x 400 mm dia	Nos	12350.00
	500 x 450 mm dia	Nos	11663.00
	600 x 300 mm dia	Nos	19760.00
	600 x 350 mm dia	Nos	20337.00
	600 x 400 mm dia	Nos	19211.00
	600 x 450 mm dia	Nos	18663.00
	600 x 500 mm dia	Nos	17015.00
	700 x 450 mm dia	Nos	32388.00
	700 x 500 mm dia	Nos	28818.00
	700 x 600 mm dia	Nos	30697.00
	800 x 600 mm dia	Nos	40198.00
	800 x 700 mm dia	Nos	30141.00
VI	<b>All Socket Tee</b>		
	80 x 80 mm dia	Nos	1493.00
	100 x 80 mm dia	Nos	1761.00
	100 x 100 mm dia	Nos	1895.00
	150 x 80 mm dia	Nos	2526.00
	150 x 100 mm dia	Nos	2718.00
	150 x 150 mm dia	Nos	3121.00
	200 x 80 mm dia	Nos	3542.00
	200 x 100 mm dia	Nos	3809.00
	200 x 150 mm dia	Nos	4346.00
	200 x 200 mm dia	Nos	5055.00
	250 x 80 mm dia	Nos	4792.00
	250 x 100 mm dia	Nos	5091.00
	250 x 150 mm dia	Nos	5513.00
	250 x 200 mm dia	Nos	6476.00
	250 x 250 mm dia	Nos	7383.00
	300 x 80 mm dia	Nos	6068.00
	300 x 100 mm dia	Nos	6201.00
	300 x 150 mm dia	Nos	7447.00
	300 x 200 mm dia	Nos	8269.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	300 x 250 mm dia	Nos	9067.00
	300 x 300 mm dia	Nos	10102.00
	350 x 80 mm dia	Nos	7785.00
	350 x 100 mm dia	Nos	7920.00
	350 x 150 mm dia	Nos	9129.00
	350 x 200 mm dia	Nos	10067.00
	350 x 250 mm dia	Nos	12082.00
	350 x 300 mm dia	Nos	13424.00
	350 x 350 mm dia	Nos	13692.00
	400 x 80 mm dia	Nos	9800.00
	400 x 100 mm dia	Nos	9665.00
	400 x 150 mm dia	Nos	12082.00
	400 x 200 mm dia	Nos	12350.00
	400 x 250 mm dia	Nos	14095.00
	400 x 300 mm dia	Nos	15797.00
	400 x 400 mm dia	Nos	17452.00
	450 x 100 mm dia	Nos	12082.00
	450 x 150 mm dia	Nos	14095.00
	450 x 200 mm dia	Nos	15438.00
	450 x 250 mm dia	Nos	16070.00
	450 x 300 mm dia	Nos	17977.00
	450 x 350 mm dia	Nos	20136.00
	450 x 400 mm dia	Nos	22151.00
	450 x 450 mm dia	Nos	22553.00
	500 x 100 mm dia	Nos	14743.00
	500 x 150 mm dia	Nos	17153.00
	500 x 200 mm dia	Nos	17840.00
	500 x 250 mm dia	Nos	20583.00
	500 x 300 mm dia	Nos	21957.00
	500 x 400 mm dia	Nos	25387.00
VII	<b>Double Socket Tee with Flange branch-PN-10</b>		
	80 x 80 mm dia	Nos	1854.00
	100 x 80 mm dia	Nos	1986.00
	100 x 100 mm dia	Nos	2118.00
	150 x 80 mm dia	Nos	2780.00
	150 x 100 mm dia	Nos	2846.00
	150 x 150 mm dia	Nos	3574.00
	200 x 80 mm dia	Nos	3838.00
	200 x 100 mm dia	Nos	4102.00
	200 x 150 mm dia	Nos	4765.00
	200 x 200 mm dia	Nos	5493.00
	250 x 80 mm dia	Nos	5020.00
	250 x 100 mm dia	Nos	5089.00
	250 x 150 mm dia	Nos	6241.00
	250 x 200 mm dia	Nos	7055.00
	250 x 250 mm dia	Nos	8141.00
	300 x 80 mm dia	Nos	6513.00
	300 x 100 mm dia	Nos	6785.00
	300 x 150 mm dia	Nos	7734.00
	300 x 200 mm dia	Nos	8820.00
	300 x 250 mm dia	Nos	10042.00
	300 x 300 mm dia	Nos	10855.00
	350 x 80 mm dia	Nos	8155.00
	350 x 100 mm dia	Nos	8297.00
	350 x 150 mm dia	Nos	9843.00
	350 x 200 mm dia	Nos	10688.00
	350 x 250 mm dia	Nos	12658.00
	350 x 300 mm dia	Nos	15469.00
	350 x 350 mm dia	Nos	16031.00
	400 x 80 mm dia	Nos	9843.00
	400 x 100 mm dia	Nos	10266.00
	400 x 150 mm dia	Nos	11251.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	400 x 200 mm dia	Nos	12938.00
	400 x 250 mm dia	Nos	15469.00
	400 x 300 mm dia	Nos	16031.00
	400 x 400 mm dia	Nos	20392.00
	450 x 80 mm dia	Nos	12235.00
	450 x 100 mm dia	Nos	12375.00
	450 x 150 mm dia	Nos	13782.00
	450 x 200 mm dia	Nos	15188.00
	450 x 250 mm dia	Nos	16876.00
	450 x 300 mm dia	Nos	18845.00
	450 x 350 mm dia	Nos	23907.00
	450 x 400 mm dia	Nos	24049.00
	450 x 450 mm dia	Nos	24486.00
	500 x 80 mm dia	Nos	14663.00
	500 x 100 mm dia	Nos	14807.00
	500 x 150 mm dia	Nos	17683.00
	500 x 200 mm dia	Nos	18114.00
	500 x 250 mm dia	Nos	21563.00
	500 x 300 mm dia	Nos	22139.00
	500 x 400 mm dia	Nos	26021.00
VIII	<b>Flange Socket-PN-10</b>		
	80 mm dia	Nos	953.00
	100 mm dia	Nos	1071.00
	150 mm dia	Nos	1668.00
	200 mm dia	Nos	2499.00
	250 mm dia	Nos	3287.00
	300 mm dia	Nos	4314.00
	350 mm dia	Nos	5568.00
	400 mm dia	Nos	6834.00
	450 mm dia	Nos	7657.00
	500 mm dia	Nos	9316.00
	600 mm dia	Nos	13586.00
	700 mm dia	Nos	23478.00
IX	<b>Flange Spigot-PN-10</b>		
	80 mm dia	Nos	939.00
	100 mm dia	Nos	1183.00
	150 mm dia	Nos	1895.00
	200 mm dia	Nos	2720.00
	250 mm dia	Nos	3839.00
	300 mm dia	Nos	4908.00
	350 mm dia	Nos	7214.00
	400 mm dia	Nos	8227.00
	450 mm dia	Nos	10504.00
	500 mm dia	Nos	9636.00
	600 mm dia	Nos	20184.00
	700 mm dia	Nos	30419.00
X	<b>Blank Flange -PN-10</b>		
	80 mm dia	Nos	488.00
	100 mm dia	Nos	590.00
	150 mm dia	Nos	976.00
	200 mm dia	Nos	1342.00
	250 mm dia	Nos	2126.00
	300 mm dia	Nos	3053.00
	350 mm dia	Nos	4363.00
	400 mm dia	Nos	5420.00
	450 mm dia	Nos	7403.00
	500 mm dia	Nos	8775.00
	600 mm dia	Nos	12691.00
	700 mm dia	Nos	26399.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
XI	<b>Double Flange Bend 90 Deg -PN-10</b>		
	80 mm dia	Nos	1166.00
	100 mm dia	Nos	1399.00
	150 mm dia	Nos	2518.00
	200 mm dia	Nos	3670.00
	250 mm dia	Nos	6524.00
	300 mm dia	Nos	8827.00
	350 mm dia	Nos	11610.00
	400 mm dia	Nos	14890.00
	450 mm dia	Nos	21453.00
	500 mm dia	Nos	23713.00
	600 mm dia	Nos	38148.00
	700 mm dia	Nos	73097.00
XII	<b>Double Flange Bend 45 Deg -PN-10</b>		
	80 mm dia	Nos	1107.00
	100 mm dia	Nos	1399.00
	150 mm dia	Nos	2214.00
	200 mm dia	Nos	3206.00
	250 mm dia	Nos	4879.00
	300 mm dia	Nos	9171.00
	350 mm dia	Nos	9717.00
	400 mm dia	Nos	12367.00
	450 mm dia	Nos	15142.00
	500 mm dia	Nos	23807.00
	600 mm dia	Nos	35402.00
	700 mm dia	Nos	50503.00
		Nos	
XIII	<b>Double Flange Duck Foot Bend -PN-10</b>		
	80 mm dia	Nos	1790.00
	100 mm dia	Nos	2237.00
	150 mm dia	Nos	3858.00
	200 mm dia	Nos	6054.00
	250 mm dia	Nos	9674.00
	300 mm dia	Nos	13458.00
	350 mm dia	Nos	19622.00
	400 mm dia	Nos	24229.00
	450 mm dia	Nos	34322.00
	500 mm dia	Nos	43712.00
	600 mm dia	Nos	61216.00
	700 mm dia	Nos	106913.00
XIV	<b>All Flange Tee -PN-10</b>		
	80 x 80 mm dia	Nos	1865.00
	100 x 80 mm dia	Nos	2098.00
	100 x 100 mm dia	Nos	2214.00
	150 x 80 mm dia	Nos	3263.00
	150 x 100 mm dia	Nos	3380.00
	150 x 150 mm dia	Nos	3730.00
	200 x 80 mm dia	Nos	4779.00
	200 x 100 mm dia	Nos	5036.00
	200 x 150 mm dia	Nos	5246.00
	200 x 200 mm dia	Nos	5712.00
	250 x 80 mm dia	Nos	6486.00
	250 x 100 mm dia	Nos	7762.00
	250 x 150 mm dia	Nos	7362.00
	250 x 200 mm dia	Nos	9075.00
	250 x 250 mm dia	Nos	9195.00
	300 x 80 mm dia	Nos	7777.00
	300 x 100 mm dia	Nos	10340.00
	300 x 150 mm dia	Nos	9080.00
	300 x 200 mm dia	Nos	11343.00
	300 x 250 mm dia	Nos	11109.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	300 x 300 mm dia	Nos	13494.00
	350 x 80 mm dia	Nos	11505.00
	350 x 100 mm dia	Nos	14133.00
	350 x 150 mm dia	Nos	13190.00
	350 x 200 mm dia	Nos	14839.00
	350 x 250 mm dia	Nos	15960.00
	350 x 300 mm dia	Nos	17285.00
	350 x 350 mm dia	Nos	19306.00
	400 x 80 mm dia	Nos	13837.00
	400 x 100 mm dia	Nos	17585.00
	400 x 150 mm dia	Nos	15797.00
	400 x 200 mm dia	Nos	18297.00
	400 x 250 mm dia	Nos	19064.00
	400 x 300 mm dia	Nos	19937.00
	400 x 400 mm dia	Nos	21453.00
	450 x 100 mm dia	Nos	22343.00
	450 x 150 mm dia	Nos	17883.00
	450 x 200 mm dia	Nos	23471.00
	450 x 250 mm dia	Nos	21179.00
	450 x 300 mm dia	Nos	22012.00
	450 x 350 mm dia	Nos	25237.00
	450 x 400 mm dia	Nos	25170.00
	450 x 450 mm dia	Nos	28393.00
	500 x 100 mm dia	Nos	27064.00
	500 x 150 mm dia	Nos	27450.00
	500 x 200 mm dia	Nos	27708.00
	500 x 250 mm dia	Nos	28352.00
	500 x 300 mm dia	Nos	34018.00
	500 x 400 mm dia	Nos	34520.00
	500 x 500 mm dia	Nos	37614.00
	600 x 100 mm dia	Nos	44678.00
	600 x 150 mm dia	Nos	45141.00
	600 x 200 mm dia	Nos	44779.00
	600 x 250 mm dia	Nos	47941.00
	600 x 300 mm dia	Nos	46467.00
	600 x 400 mm dia	Nos	48275.00
	600 x 500 mm dia	Nos	48312.00
	600 x 600 mm dia	Nos	53406.00
XV	<b>Double Socket Level Invert Flange Branch Tee PN10</b>		
	200 x 80 mm dia	Nos	3334.00
	250 x 80 mm dia	Nos	4347.00
	300 x 80 mm dia	Nos	5802.00
	350 x 80 mm dia	Nos	7249.00
	350 x 100 mm dia	Nos	7926.00
	400 x 100 mm dia	Nos	9478.00
	450 x 80 mm dia	Nos	11522.00
	450 x 100 mm dia	Nos	11766.00
	500 x 80 mm dia	Nos	13214.00
	500 x 100 mm dia	Nos	14464.00
XVI	<b>Cap</b>		
	80 mm dia	Nos	445.00
	100 mm dia	Nos	573.00
	150 mm dia	Nos	1017.00
	200 mm dia	Nos	1812.00
	250 mm dia	Nos	2179.00
	300 mm dia	Nos	3435.00
	350 mm dia	Nos	5557.00
	400 mm dia	Nos	7249.00
	450 mm dia	Nos	9181.00
	500 mm dia	Nos	11238.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	600 mm dia	Nos	15684.00
	700 mm dia	Nos	27827.00
XVII	<b>Plug</b>		
	80 mm dia	Nos	326.00
	100 mm dia	Nos	557.00
	150 mm dia	Nos	989.00
	200 mm dia	Nos	1531.00
	250 mm dia	Nos	2118.00
	300 mm dia	Nos	3339.00
	350 mm dia	Nos	5315.00
	400 mm dia	Nos	6282.00
	450 mm dia	Nos	8318.00
	500 mm dia	Nos	10127.00
	600 mm dia	Nos	14995.00
	<b>D.I. FITTINGS (Mechanical Joints)</b>		
2	Providing and supplying D.I. fittings with <b>ISI mark Mechanical joint</b> confirming to tables 12 to table 31 of IS 9523/2000 upto latest amendments including cost of SBR/ EDPM gaskets, Nuts, Bolts, Washers and Ductile iron follower glands. Fittings should be with internally Ordinary portland cement mortar lined and externally metallic zinc coating/zinc rich paint with finishing layer of black bitumen coating including transportation up to store excluding GST levied by GOI and GOM in all respect etc. complete.		
<b>I</b>	<b>MJ Collar/Coupling</b>		
	80 mm dia	Nos	2098.00
	100 mm dia	Nos	2292.00
	150 mm dia	Nos	2805.00
	200 mm dia	Nos	5015.00
	250 mm dia	Nos	6635.00
	300 mm dia	Nos	8600.00
	350 mm dia	Nos	12167.00
	400 mm dia	Nos	15223.00
	450 mm dia	Nos	17619.00
	500 mm dia	Nos	22771.00
	600 mm dia	Nos	28761.00
	700 mm dia	Nos	39467.00
<b>II</b>	<b>Double Socket Bend 90 degree</b>		
	80 mm dia	Nos	1126.00
	100 mm dia	Nos	1418.00
	150 mm dia	Nos	2445.00
	200 mm dia	Nos	3669.00
	250 mm dia	Nos	5200.00
	300 mm dia	Nos	6949.00
	350 mm dia	Nos	10114.00
	400 mm dia	Nos	13023.00
	450 mm dia	Nos	16844.00
	500 mm dia	Nos	19211.00
	600 mm dia	Nos	28060.00
<b>III</b>	<b>Double Socket Bend 45 degree</b>		
	80 mm dia	Nos	1126.00
	100 mm dia	Nos	1320.00
	150 mm dia	Nos	2066.00
	200 mm dia	Nos	3154.00
	250 mm dia	Nos	4242.00
	300 mm dia	Nos	5930.00
	350 mm dia	Nos	8819.00
	400 mm dia	Nos	11254.00
	450 mm dia	Nos	12867.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	500 mm dia	Nos	14987.00
	600 mm dia	Nos	21524.00
<b>IV</b>	<b>Double Socket Bend 22.5 degree</b>		
	80 mm dia	Nos	1040.00
	100 mm dia	Nos	1320.00
	150 mm dia	Nos	1980.00
	200 mm dia	Nos	2825.00
	250 mm dia	Nos	3766.00
	300 mm dia	Nos	5270.00
	350 mm dia	Nos	7629.00
	400 mm dia	Nos	9306.00
	450 mm dia	Nos	11687.00
	500 mm dia	Nos	13950.00
	600 mm dia	Nos	18015.00
<b>V</b>	<b>Double Socket Bend 11.25 degree</b>		
	80 mm dia	Nos	1040.00
	100 mm dia	Nos	1365.00
	150 mm dia	Nos	1883.00
	200 mm dia	Nos	2727.00
	250 mm dia	Nos	3582.00
	300 mm dia	Nos	4805.00
	350 mm dia	Nos	6601.00
	400 mm dia	Nos	8495.00
	450 mm dia	Nos	11002.00
	500 mm dia	Nos	13148.00
	600 mm dia	Nos	16341.00
<b>VI</b>	<b>Double socket concentric reducer</b>		
	100 x 80 mm dia	Nos	1853.00
	150 x 80 mm dia	Nos	2670.00
	150 x 100 mm dia	Nos	2910.00
	200 x 80 mm dia	Nos	3757.00
	200 x 100 mm dia	Nos	3770.00
	200 x 150 mm dia	Nos	4194.00
	250 x 80 mm dia	Nos	4913.00
	250 x 100 mm dia	Nos	5136.00
	250 x 150 mm dia	Nos	5475.00
	250 x 200 mm dia	Nos	5475.00
	300 x 100 mm dia	Nos	6810.00
	300 x 150 mm dia	Nos	7145.00
	300 x 200 mm dia	Nos	6867.00
	300 x 250 mm dia	Nos	7369.00
	350 x 200 mm dia	Nos	10379.00
	350 x 300 mm dia	Nos	10798.00
	400 x 200 mm dia	Nos	12868.00
	400 x 300 mm dia	Nos	13111.00
	400 x 350 mm dia	Nos	12328.00
	450 x 400 mm dia	Nos	14965.00
	500 x 300 mm dia	Nos	19980.00
	500 x 350 mm dia	Nos	18540.00
	500 x 400 mm dia	Nos	18290.00
	600 x 350 mm dia	Nos	25707.00
	600 x 400 mm dia	Nos	25430.00
	600 x 500 mm dia	Nos	23674.00
<b>VII</b>	<b>All Socket Tee</b>		
	80 x 80 mm dia	Nos	2518.00
	100 x 80 mm dia	Nos	2959.00
	100 x 100 mm dia	Nos	3180.00
	150 x 80 mm dia	Nos	4285.00
	150 x 100 mm dia	Nos	4507.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	150 x 150 mm dia	Nos	5186.00
	200 x 80 mm dia	Nos	5577.00
	200 x 100 mm dia	Nos	5986.00
	200 x 150 mm dia	Nos	6802.00
	200 x 200 mm dia	Nos	7952.00
	250 x 80 mm dia	Nos	7244.00
	250 x 100 mm dia	Nos	7619.00
	250 x 150 mm dia	Nos	8281.00
	250 x 200 mm dia	Nos	9625.00
	250 x 250 mm dia	Nos	10645.00
	300 x 80 mm dia	Nos	9167.00
	300 x 100 mm dia	Nos	9387.00
	300 x 150 mm dia	Nos	10952.00
	300 x 200 mm dia	Nos	11989.00
	300 x 250 mm dia	Nos	13314.00
	300 x 300 mm dia	Nos	14505.00
	350 x 80 mm dia	Nos	13179.00
	350 x 100 mm dia	Nos	13434.00
	350 x 150 mm dia	Nos	14965.00
	350 x 200 mm dia	Nos	16154.00
	350 x 250 mm dia	Nos	18791.00
	350 x 300 mm dia	Nos	20831.00
	350 x 350 mm dia	Nos	22192.00
	400 x 80 mm dia	Nos	16835.00
	400 x 100 mm dia	Nos	16750.00
	400 x 150 mm dia	Nos	19705.00
	400 x 200 mm dia	Nos	20319.00
	400 x 250 mm dia	Nos	22021.00
	400 x 300 mm dia	Nos	23978.00
	400 x 400 mm dia	Nos	28143.00
	450 x 100 mm dia	Nos	20342.00
	450 x 150 mm dia	Nos	23038.00
	450 x 200 mm dia	Nos	23528.00
	450 x 250 mm dia	Nos	24658.00
	450 x 300 mm dia	Nos	27123.00
	450 x 350 mm dia	Nos	32352.00
	450 x 400 mm dia	Nos	32995.00
	450 x 450 mm dia	Nos	34181.00
	500 x 100 mm dia	Nos	21295.00
	500 x 150 mm dia	Nos	24426.00
	500 x 200 mm dia	Nos	24928.00
	500 x 250 mm dia	Nos	29993.00
	500 x 300 mm dia	Nos	30940.00
	500 x 400 mm dia	Nos	34573.00
VIII	<b>Double Socket Tee with Flange branch-PN-10</b>		
	80 x 80 mm dia	Nos	2746.00
	100 x 80 mm dia	Nos	3228.00
	100 x 100 mm dia	Nos	3469.00
	150 x 80 mm dia	Nos	4675.00
	150 x 100 mm dia	Nos	4916.00
	150 x 150 mm dia	Nos	5657.00
	200 x 80 mm dia	Nos	6084.00
	200 x 100 mm dia	Nos	6530.00
	200 x 150 mm dia	Nos	7420.00
	200 x 200 mm dia	Nos	8675.00
	250 x 80 mm dia	Nos	7903.00
	250 x 100 mm dia	Nos	8311.00
	250 x 150 mm dia	Nos	9034.00
	250 x 200 mm dia	Nos	10500.00
	250 x 250 mm dia	Nos	11613.00
	300 x 80 mm dia	Nos	9999.00
	300 x 100 mm dia	Nos	10240.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	300 x 150 mm dia	Nos	11947.00
	300 x 200 mm dia	Nos	13078.00
	300 x 250 mm dia	Nos	14525.00
	300 x 300 mm dia	Nos	15824.00
	350 x 80 mm dia	Nos	14377.00
	350 x 100 mm dia	Nos	14655.00
	350 x 150 mm dia	Nos	16324.00
	350 x 200 mm dia	Nos	17623.00
	350 x 250 mm dia	Nos	20499.00
	350 x 300 mm dia	Nos	22724.00
	350 x 350 mm dia	Nos	24209.00
	400 x 80 mm dia	Nos	18334.00
	400 x 100 mm dia	Nos	18272.00
	400 x 150 mm dia	Nos	21497.00
	400 x 200 mm dia	Nos	22166.00
	400 x 250 mm dia	Nos	24023.00
	400 x 300 mm dia	Nos	26158.00
	400 x 400 mm dia	Nos	30702.00
	450 x 80 mm dia	Nos	22191.00
	450 x 100 mm dia	Nos	25133.00
	450 x 150 mm dia	Nos	25668.00
	450 x 200 mm dia	Nos	26899.00
	450 x 250 mm dia	Nos	29589.00
	450 x 300 mm dia	Nos	35293.00
	450 x 350 mm dia	Nos	35995.00
	450 x 400 mm dia	Nos	37289.00
	450 x 450 mm dia	Nos	23231.00
	500 x 80 mm dia	Nos	26647.00
	500 x 100 mm dia	Nos	27194.00
	500 x 150 mm dia	Nos	32719.00
	500 x 200 mm dia	Nos	33753.00
	500 x 250 mm dia	Nos	37716.00
	500 x 300 mm dia	Nos	32124.00
	500 x 400 mm dia	Nos	36213.00
	500 x 500 mm dia	Nos	42500.00
IX	<b>Flange Socket-PN-10</b>		
	80 mm dia	Nos	1452.00
	100 mm dia	Nos	1594.00
	150 mm dia	Nos	2417.00
	200 mm dia	Nos	3369.00
	250 mm dia	Nos	4642.00
	300 mm dia	Nos	6073.00
	350 mm dia	Nos	9016.00
	400 mm dia	Nos	10936.00
	450 mm dia	Nos	12270.00
	500 mm dia	Nos	14692.00
	600 mm dia	Nos	20452.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	<b>RCC PIPES</b>			
1	Providing <b>ISI standard R.C.C. pipes</b> in standard lengths of following class and diameter suitable for either collar joints or rubber ring joints, excluding GST levied by GOI and GOM in all respect, including inspection charges, transport to departmental stores/site, unloading and stacking etc. complete as per IS-458/1988  <b>Note : One collar should be supplied with each full length plain ended RCC pipe, cost including in rates below. One rubber ring should be supplied with each full length of socketed pipe, cost included in rates below.</b>			
	<b>a) Class 'P-I'</b>		<b>Collar Joint</b>	<b>R/R Joint</b>
	80 mm	Rmt	272.00	240.00
	100 mm	Rmt	284.00	258.00
	150 mm.	Rmt	300.00	266.00
	200 mm.	Rmt	348.00	312.00
	225 mm.	Rmt	397.00	357.00
	250 mm.	Rmt	435.00	390.00
	300 mm.	Rmt	556.00	497.00
	350 mm.	Rmt	599.00	538.00
	400 mm.	Rmt	760.00	687.00
	450 mm.	Rmt	935.00	844.00
	500 mm.	Rmt	1126.00	1013.00
	600 mm.	Rmt	1419.00	1280.00
	700 mm.	Rmt	1849.00	1663.00
	800 mm.	Rmt	2134.00	1919.00
	900 mm.	Rmt	2685.00	2417.00
	1000 mm.	Rmt	3147.00	2834.00
	1100 mm.	Rmt	3574.00	3218.00
	1200 mm.	Rmt	4294.00	3869.00
	<b>Class, 'P-II'</b>			
	80 mm	Rmt	290.00	256.00
	100 mm	Rmt	308.00	277.00
	150 mm	Rmt	369.00	333.00
	200 mm	Rmt	496.00	450.00
	225 mm	Rmt	588.00	530.00
	250 mm.	Rmt	637.00	579.00
	300 mm.	Rmt	841.00	802.00
	350 mm.	Rmt	1050.00	950.00
	400 mm.	Rmt	1171.00	1066.00
	450 mm	Rmt	1420.00	1274.00
	500 mm	Rmt	1983.00	1807.00
	600 mm	Rmt	2459.00	2217.00
	700 mm.	Rmt	3350.00	3047.00
	800 mm.	Rmt	4028.00	3671.00
	900 mm.	Rmt	4538.00	4572.00
	1000 mm.	Rmt	5491.00	4944.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	<b>Class 'P-III'</b>			
	80mm.	Rmt	312.00	307.00
	100 mm.	Rmt	338.00	332.00
	150 mm.	Rmt	384.00	384.00
	200 mm	Rmt	522.00	522.00
	225 mm	Rmt	622.00	622.00
	250 mm	Rmt	728.00	727.00
	300 mm	Rmt	1013.00	1012.00
	350 mm	Rmt	1320.00	1320.00
	400 mm	Rmt	1817.00	1817.00
	450 mm	Rmt	2112.00	2086.00
	500 mm	Rmt	2545.00	2544.00
	600 mm	Rmt	3268.00	3268.00
	700 mm.	Rmt	4663.00	4662.00
	800 mm.	Rmt	5921.00	5921.00
	<b>Class `NP-II'</b>			
	<b>( For 2.00 m. length )</b>			
	80 mm.	Rmt	234.00	236.00
	100 mm.	Rmt	240.00	245.00
	150 mm.	Rmt	262.00	262.00
	200 mm.	Rmt	327.00	327.00
	225 mm	Rmt	366.00	373.00
	250 mm	Rmt	394.00	402.00
	300 mm	Rmt	510.00	510.00
	<b>( For 2.50 m. length )</b>			
	350 mm.	Rmt	644.00	657.00
	400 mm.	Rmt	743.00	743.00
	450 mm.	Rmt	878.00	891.00
	500 mm	Rmt	941.00	941.00
	600 mm	Rmt	1188.00	1188.00
	700 mm	Rmt	1584.00	1584.00
	800 mm.	Rmt	1782.00	1782.00
	900 mm.	Rmt	2277.00	2277.00
	1000 mm	Rmt	2772.00	2772.00
	1100 mm	Rmt	3780.00	3780.00
	1200 mm.	Rmt	4512.00	4512.00
	1400 mm.	Rmt	5465.00	5574.00
	1600 mm.	Rmt	6275.00	6400.00
	1800 mm.	Rmt	8789.00	8965.00
	<b>Class NP-III</b>			
	<b>(For 2.50 M. length)</b>			
	80mm	Rmt	265.00	269.00
	100 mm	Rmt	291.00	306.00
	150 mm	Rmt	331.00	337.00
	200mm	Rmt	455.00	372.00
	225 mm	Rmt	510.00	434.00
	250 mm	Rmt	540.00	510.00
	300 mm	Rmt	701.00	714.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
			4	5
1	2	3		
	350 mm.	Rmt	1239.00	1188.00
	400 mm.	Rmt	1388.00	1267.00
	450 mm.	Rmt	1651.00	1366.00
	500 mm	Rmt	1833.00	1683.00
	600 mm	Rmt	2415.00	1980.00
	700 mm.	Rmt	3218.00	2772.00
	800 mm.	Rmt	3911.00	2970.00
	900 mm	Rmt	4518.00	3466.00
	1000 mm	Rmt	5148.00	3862.00
	1100 mm	Rmt	6394.00	6522.00
	1200 mm.	Rmt	7435.00	7435.00
	1400 mm	Rmt	8742.00	8742.00
	1600 mm	Rmt	13135.00	13263.00
	1800 mm	Rmt	16233.00	16233.00
	<b>Class 'NP-IV'</b>			
	80 mm.	Rmt	285.00	290.00
	100 mm.	Rmt	334.00	340.00
	150 mm.	Rmt	378.00	386.00
	200 mm.	Rmt	528.00	421.00
	225 mm.	Rmt	582.00	495.00
	250 mm.	Rmt	639.00	582.00
	300 mm.	Rmt	896.00	891.00
	350 mm.	Rmt	1361.00	1267.00
	400 mm.	Rmt	1457.00	1386.00
	450 mm.	Rmt	1718.00	1485.00
	500 mm.	Rmt	2100.00	1832.00
	600 mm.	Rmt	2568.00	2376.00
	700 mm.	Rmt	3844.00	2970.00
	800 mm.	Rmt	4390.00	3218.00
	900 mm.	Rmt	5140.00	3763.00
	1000 mm.	Rmt	7278.00	4159.00
	1100 mm.	Rmt	7895.00	7981.00
	1200 mm.	Rmt	7931.00	8089.00
	1400 mm.	Rmt	12383.00	11522.00
	1600 mm.	Rmt	15439.00	15481.00
	1800 mm.	Rmt	21164.00	19980.00
	<b>Note : Only 85% rate is payable till satisfactory hydraulic testing is given.</b>			
2	<b>Lowering, laying and jointing</b> in proper grade and alignment R.C.C. pipes with collar joints in C.M.1:1 proportion or socketed R.C.C. pipes with rubber joints (excluding cost of rubber ring or R.C.C. collar,) including cost of conveyance from stores to site of work, cost of jointing material, labour, etc. complete as directed by Engineerin- charge <b>(For all class of pipes.) as per IS- 783-1985.</b>		<b>Collar Joint</b>	<b>R/R Joint</b>
	80 mm.	Rmt	48.00	35.00
	100 mm.	Rmt	57.00	41.00
	150 mm.	Rmt	88.00	62.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	5
	200 mm.	Rmt	117.00	83.00
	225 mm.	Rmt	136.00	96.00
	250 mm.	Rmt	153.00	107.00
	300 mm.	Rmt	185.00	130.00
	350 mm.	Rmt	189.00	133.00
	400 mm.	Rmt	241.00	171.00
	450 mm.	Rmt	294.00	204.00
	500 mm.	Rmt	319.00	222.00
	600 mm.	Rmt	404.00	279.00
	700 mm.	Rmt	457.00	317.00
	800 mm.	Rmt	529.00	366.00
	900 mm.	Rmt	582.00	405.00
	1000 mm.	Rmt	637.00	443.00
	1100 mm.	Rmt	886.00	600.00
	1200 mm.	Rmt	939.00	638.00
	1400 mm.	Rmt	1046.00	716.00
	1600 mm.	Rmt	1154.00	793.00
	1800 mm.	Rmt	1262.00	869.00
3	<b>Hydraulic testing of RCC pipe line</b> to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.		<b>Collar Joint</b>	<b>R/R Joint</b>
	80 mm.	Km	5638.00	3383.00
	100 mm.	Km	6765.00	4510.00
	150 mm.	Km	10148.00	6765.00
	200 mm.	Km	12403.00	9020.00
	225 mm.	Km	14658.00	10148.00
	250 mm.	Km	16913.00	12403.00
	300 mm.	Km	20295.00	14658.00
	350 mm.	Km	21423.00	14658.00
	400 mm.	Km	27060.00	19168.00
	450 mm.	Km	32698.00	22550.00
	500 mm.	Km	34953.00	24805.00
	600 mm.	Km	45100.00	31570.00
	700 mm.	Km	50738.00	34953.00
	800 mm.	Km	58630.00	40590.00
	900 mm.	Km	64268.00	45100.00
	1000 mm.	Km	71033.00	49610.00
	1100 mm.	Km	98093.00	66523.00
	1200 mm.	Km	104858.00	71033.00
	1400 mm.	Km	116133.00	80053.00
	1600 mm.	Km	128535.00	87945.00
	1800 mm.	Km	139810.00	96965.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>VI. P. S. C. PIPES</b>		
1	Providing <b>ISI standard Pre - stressed Cement concrete</b> pipes of following class and diameter including cost of all material and labour required, inspection charges, transportaion to stores, unloading and stacking excluding GST levied by GOI & GOM in all respect etc. complete as per IS- 784-2001.		
	<b>i) Factory test pressure</b> a) Site test pressure + 01N/mm2, For working pressure upto 1 N/mm2 b) Site test pressure + 02N/mm2, For working pressure upto 1 N/mm2 <b>ii) Site test pressure</b> - 1.5 times working pressure pertaining to the section or 1.1 times static pressure, which ever is more (such pressure is <b>to be control within 25% of pumphead incase of pumping main</b> ) <b>iii) Working pessure</b> - The maximum sustained internal pressure excluding surge to which each portion of pipeline my be subjected when installed.		
	<b>Note : One rubber ring should be supplied with each pipe, cost included in rates below.</b>		
	<b>a) Factory test Pressure 2 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3131.00
	400	Rmt	3369.00
	450	Rmt	3534.00
	500	Rmt	3890.00
	600	Rmt	4677.00
	700	Rmt	5207.00
	800	Rmt	6431.00
	900	Rmt	7997.00
	1000	Rmt	9323.00
	1100	Rmt	10647.00
	1200	Rmt	12302.00
	1300	Rmt	14225.00
	1400	Rmt	15652.00
	1500	Rmt	17914.00
	1600	Rmt	19869.00
	1700	Rmt	21825.00
	1800	Rmt	23781.00
	<b>b) Factory test Pressure 4 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3131.00
	400	Rmt	3370.00
	450	Rmt	3534.00
	500	Rmt	3890.00
	600	Rmt	4678.00
	700	Rmt	5209.00
	800	Rmt	6431.00
	900	Rmt	7998.00
	1000	Rmt	9326.00
	1100	Rmt	10649.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1200	Rmt	12303.00
	1300	Rmt	14229.00
	1400	Rmt	15653.00
	1500	Rmt	17918.00
	1600	Rmt	19872.00
	1700	Rmt	21829.00
	1800	Rmt	23784.00
	<b>c) Factory test Pressure 6 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3137.00
	400	Rmt	3388.00
	450	Rmt	3544.00
	500	Rmt	3919.00
	600	Rmt	4740.00
	700	Rmt	5390.00
	800	Rmt	6668.00
	900	Rmt	8314.00
	1000	Rmt	9697.00
	1100	Rmt	11041.00
	1200	Rmt	12789.00
	1300	Rmt	14775.00
	1400	Rmt	16256.00
	1500	Rmt	18621.00
	1600	Rmt	20681.00
	1700	Rmt	22741.00
	1800	Rmt	24800.00
	<b>d) Factory test Pressure 8 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3140.00
	400	Rmt	3413.00
	450	Rmt	3566.00
	500	Rmt	3974.00
	600	Rmt	4900.00
	700	Rmt	5662.00
	800	Rmt	6951.00
	900	Rmt	8667.00
	1000	Rmt	10133.00
	1100	Rmt	11595.00
	1200	Rmt	13426.00
	1300	Rmt	15529.00
	1400	Rmt	17163.00
	1500	Rmt	19667.00
	1600	Rmt	22190.00
	1700	Rmt	24714.00
	1800	Rmt	27241.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>e) Factory test Pressure 10 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3157.00
	400	Rmt	3458.00
	450	Rmt	3690.00
	500	Rmt	4133.00
	600	Rmt	5111.00
	700	Rmt	5889.00
	800	Rmt	7306.00
	900	Rmt	9104.00
	1000	Rmt	10663.00
	1100	Rmt	12236.00
	1200	Rmt	14175.00
	1300	Rmt	16412.00
	1400	Rmt	18551.00
	1500	Rmt	21268.00
	1600	Rmt	23698.00
	1700	Rmt	26131.00
	1800	Rmt	28563.00
	<b>f) Factory test Pressure 12 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3158.00
	400	Rmt	3468.00
	450	Rmt	3719.00
	500	Rmt	4175.00
	600	Rmt	5190.00
	700	Rmt	6012.00
	800	Rmt	7476.00
	900	Rmt	9295.00
	1000	Rmt	10892.00
	1100	Rmt	12485.00
	1200	Rmt	14715.00
	1300	Rmt	16945.00
	1400	Rmt	18856.00
	1500	Rmt	21591.00
	1600	Rmt	24060.00
	1700	Rmt	26526.00
	1800	Rmt	28994.00
	<b>g) Factory test Pressure 14 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3236.00
	400	Rmt	3561.00
	450	Rmt	3833.00
	500	Rmt	4310.00
	600	Rmt	5391.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	700	Rmt	6272.00
	800	Rmt	7814.00
	900	Rmt	9739.00
	1000	Rmt	11617.00
	1100	Rmt	13350.00
	1200	Rmt	15476.00
	1300	Rmt	17866.00
	1400	Rmt	20360.00
	1500	Rmt	23330.00
	1600	Rmt	26090.00
	1700	Rmt	28851.00
	1800	Rmt	31610.00
	<b>h) Factory test Pressure 16 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3308.00
	400	Rmt	3656.00
	450	Rmt	3952.00
	500	Rmt	4454.00
	600	Rmt	5588.00
	700	Rmt	6536.00
	800	Rmt	8152.00
	900	Rmt	10821.00
	1000	Rmt	12178.00
	1100	Rmt	14615.00
	1200	Rmt	16870.00
	1300	Rmt	19418.00
	1400	Rmt	21433.00
	1500	Rmt	25457.00
	1600	Rmt	28555.00
	1700	Rmt	31651.00
	1800	Rmt	34746.00
	<b>i) Factory test Pressure 18 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3383.00
	400	Rmt	3757.00
	450	Rmt	4065.00
	500	Rmt	4592.00
	600	Rmt	5788.00
	700	Rmt	7148.00
	800	Rmt	8920.00
	900	Rmt	11281.00
	1000	Rmt	13257.00
	1100	Rmt	15299.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1200	Rmt	17683.00
	1300	Rmt	20367.00
	1400	Rmt	26876.00
	1500	Rmt	30304.00
	1600	Rmt	34158.00
	1700	Rmt	38008.00
	1800	Rmt	41859.00
	<b>j) Factory test Pressure 20 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	350	Rmt	3462.00
	400	Rmt	3847.00
	450	Rmt	4183.00
	500	Rmt	4734.00
	600	Rmt	5992.00
	700	Rmt	7918.00
	800	Rmt	10535.00
	900	Rmt	12452.00
	1000	Rmt	14980.00
	1100	Rmt	17808.00
	1200	Rmt	22395.00
	1300	Rmt	24641.00
	1400	Rmt	28787.00
	1500	Rmt	32634.00
	1600	Rmt	36498.00
	1700	Rmt	40361.00
	1800	Rmt	44225.00
	Note : 1) Only 85% rates of providing item shall be payable till satisfactory hydraulic testing is given.		
2	<b>Lowering, laying and jointing</b> in proper grade and alignment Pre-Stressed Cement Concrete Pipes with rubber ring joints including cost of conveyance from stores to site of works, all labour involved, etc. complete but excluding cost of rubber rings (for all class of pipes)		
	350	Rmt	116.00
	400	Rmt	163.00
	450	Rmt	197.00
	500	Rmt	222.00
	600	Rmt	298.00
	700	Rmt	326.00
	800	Rmt	367.00
	900	Rmt	378.00
	1000	Rmt	488.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1100	Rmt	641.00
	1200	Rmt	686.00
	1300	Rmt	815.00
	1400	Rmt	860.00
	1500	Rmt	1085.00
	1600	Rmt	1221.00
	1700	Rmt	1360.00
	1800	Rmt	1322.00
3	<b>Hydraulic testing of Pre-Stressed Cement Concrete Pipes</b> with rubber ring joints to specified pressure including cost of all materials and labour and water for testing for the length upto 1 km., using reciprocating type pumps which should be able to provide specified test pressure guages and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.		
	350	Km	12403.00
	400	Km	18040.00
	450	Km	21423.00
	500	Km	24805.00
	600	Km	32698.00
	700	Km	36080.00
	800	Km	40590.00
	900	Km	41718.00
	1000	Km	54120.00
	1100	Km	71033.00
	1200	Km	76670.00
	1300	Km	90200.00
	1400	Km	95838.00
	1500	Km	120643.00
	1600	Km	135300.00
	1700	Km	151085.00
	1800	Km	160105.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>VII. BAR WRAPPED STEEL CYLINDER PIPES (BWSC)</b>		
1	<b>Providing and supplying European Standard EN 639/1994 and EN 641/1994 or AWWA C-303 standard and reinforced concrete pressure pipes cylinder type or IS-15155-2002</b> (Bar wrapped steel cylinder pipes suitable for overlapping steel welded joint or butt welded steel joints) of following class and diameter including cost of all material and labour required, inspection charges, transportation to stores, transit insurance, loading, unloading and stacking excluding GST levied by GOI & GOM in all respect, etc. complete.		
	<b>i) Factory test pressure</b> a) Site test pressure + 01N/mm <sup>2</sup> , For working pressure upto 1 N/mm <sup>2</sup> b) Site test pressure + 02N/mm <sup>2</sup> , For working pressure upto 1 N/mm <sup>2</sup> <b>ii) Site test pressure</b> - 1.5 times working pressure pertaining to the section or 1.1 times static pressure, which ever is more (such pressure is to be control within 25% of pumphead incase of pumping main) <b>iii) Working pressure</b> - The maximum sustained internal pressure excluding surge to which each portion of pipeline may be subjected when installed.		
	<b>Note : 1) Class mentioned below represents the working pressure of pipe.</b> <b>2) For external coating at site to the joints, necessary polythene wrapping for pouring cement slurry shall also be given free with each pipe.</b>		
	<b>A) Factory test Pressure 4 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3154.00
	350	Rmt	3548.00
	400	Rmt	3892.00
	450	Rmt	4309.00
	500	Rmt	4793.00
	600	Rmt	6232.00
	700	Rmt	7202.00
	800	Rmt	7822.00
	900	Rmt	10930.00
	1000	Rmt	12596.00
	1100	Rmt	18103.00
	1200	Rmt	20189.00
	1300	Rmt	23577.00
	1400	Rmt	25288.00
	1500	Rmt	26988.00
	1600	Rmt	29074.00
	1700	Rmt	30845.00
	1800	Rmt	32934.00
	<b>B) Factory test Pressure 6 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3158.00
	350	Rmt	3551.00
	400	Rmt	3896.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	450	Rmt	4311.00
	500	Rmt	4802.00
	600	Rmt	6241.00
	700	Rmt	7209.00
	800	Rmt	7828.00
	900	Rmt	10936.00
	1000	Rmt	12602.00
	1100	Rmt	18112.00
	1200	Rmt	20197.00
	1300	Rmt	23582.00
	1400	Rmt	25296.00
	1500	Rmt	26995.00
	1600	Rmt	29083.00
	1700	Rmt	30851.00
	1800	Rmt	32939.00
	<b>C) Factory test Pressure 8 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3161.00
	350	Rmt	3557.00
	400	Rmt	3899.00
	450	Rmt	4314.00
	500	Rmt	4812.00
	600	Rmt	6250.00
	700	Rmt	7218.00
	800	Rmt	7838.00
	900	Rmt	10947.00
	1000	Rmt	12613.00
	1100	Rmt	18122.00
	1200	Rmt	20206.00
	1300	Rmt	23592.00
	1400	Rmt	25304.00
	1500	Rmt	27005.00
	1600	Rmt	29093.00
	1700	Rmt	30861.00
	1800	Rmt	32951.00
	<b>D) Factory test Pressure 10 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3162.00
	350	Rmt	3558.00
	400	Rmt	3903.00
	450	Rmt	4316.00
	500	Rmt	4826.00
	600	Rmt	6266.00
	700	Rmt	7234.00
	800	Rmt	7854.00
	900	Rmt	10962.00
	1000	Rmt	12627.00
	1100	Rmt	18135.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1200	Rmt	20222.00
	1300	Rmt	23608.00
	1400	Rmt	25318.00
	1500	Rmt	27020.00
	1600	Rmt	29106.00
	1700	Rmt	30877.00
	1800	Rmt	32966.00
	<b>E) Factory test Pressure 12 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3106.00
	350	Rmt	3495.00
	400	Rmt	3833.00
	450	Rmt	4241.00
	500	Rmt	4757.00
	600	Rmt	6167.00
	700	Rmt	7117.00
	800	Rmt	8801.00
	900	Rmt	10757.00
	1000	Rmt	13373.00
	1100	Rmt	17816.00
	1200	Rmt	19863.00
	1300	Rmt	23186.00
	1400	Rmt	24867.00
	1500	Rmt	26818.00
	1600	Rmt	29666.00
	1700	Rmt	32109.00
	1800	Rmt	35709.00
	<b>F) Factory test Pressure 14 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3111.00
	350	Rmt	3501.00
	400	Rmt	3836.00
	450	Rmt	4253.00
	500	Rmt	4841.00
	600	Rmt	6279.00
	700	Rmt	8171.00
	800	Rmt	9579.00
	900	Rmt	11816.00
	1000	Rmt	14226.00
	1100	Rmt	17890.00
	1200	Rmt	19856.00
	1300	Rmt	23759.00
	1400	Rmt	26849.00
	1500	Rmt	29873.00
	1600	Rmt	33311.00
	1700	Rmt	36575.00
	1800	Rmt	40014.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>g) Factory test Pressure 16 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3113.00
	350	Rmt	3504.00
	400	Rmt	3841.00
	450	Rmt	4403.00
	500	Rmt	5192.00
	600	Rmt	6740.00
	700	Rmt	8697.00
	800	Rmt	10422.00
	900	Rmt	12889.00
	1000	Rmt	15666.00
	1100	Rmt	18870.00
	1200	Rmt	22004.00
	1300	Rmt	26213.00
	1400	Rmt	29590.00
	1500	Rmt	32999.00
	1600	Rmt	36698.00
	1700	Rmt	40733.00
	1800	Rmt	45451.00
	<b>h) Factory test Pressure 18 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3267.00
	350	Rmt	3676.00
	400	Rmt	4083.00
	450	Rmt	4758.00
	500	Rmt	5601.00
	600	Rmt	7329.00
	700	Rmt	9635.00
	800	Rmt	11371.00
	900	Rmt	14054.00
	1000	Rmt	17145.00
	1100	Rmt	20629.00
	1200	Rmt	24037.00
	1300	Rmt	28542.00
	1400	Rmt	32616.00
	1500	Rmt	36024.00
	1600	Rmt	40865.00
	1700	Rmt	45322.00
	1800	Rmt	50163.00
	<b>i) Factory test Pressure 20 Kg/Sqcm</b>		
	<b>Dia. in mm</b>		
	300	Rmt	3333.00
	350	Rmt	3662.00
	400	Rmt	4312.00
	450	Rmt	4925.00
	500	Rmt	5972.00
	600	Rmt	7812.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	700	Rmt	10157.00
	800	Rmt	12398.00
	900	Rmt	15310.00
	1000	Rmt	18731.00
	1100	Rmt	22481.00
	1200	Rmt	26136.00
	1300	Rmt	31046.00
	1400	Rmt	35780.00
	1500	Rmt	40296.00
	1600	Rmt	45008.00
	1700	Rmt	50280.00
	1800	Rmt	55658.00

Notes :

1) For lowering, laying & pouring of cement mortar in the field on joints ( after laying and welding ), rates as per P. S. C. pipes lowering, laying and jointing shall be adopted.

2) For field welding rates applicable for similar welding in M. S. pipes given in that section shall be adopted.

3) Whenever manufacturer is separate and contractor for lowering laying, jointing and testing is separate, the principal contractor shall be enter into an agreement with B. W. S. C. pipe manufacturer for satisfactory manufacturing transporting, lowering, laying, jointing and testing of pipes.

**This footnote shall appear into the tender condition.**

4) Only 85% providing rates shall be payable till satisfactory Hydraulic testing is given.

5) No negative tolerance shall be accepted for the M. S. Shell thickness of B. W. S. C. pipes over the thickness mentioned in E. N. 641 of AWWA AC 303.

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>VIII. GLASS REINFORCED PLASTIC PIPES (GRP)</b>		
	Providing and supplying Glass fibre reinforced polyester pipes conforming to BIS - 12709 / BIS 14402 with double bell REKA GRP coupling EPDM rubber gaskets for sealing of following pressure diameter and stiffness class including cost of all material and labour required, insurance, transportation to store, unloading and stacking excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>A. Class (SN) 2500</b>		
	<b>a) 3 Kg/Sq.cm.</b>		
	300 mm	Rmt	1515.00
	350 mm	Rmt	1752.00
	400 mm	Rmt	1929.00
	450 mm	Rmt	2170.00
	500 mm	Rmt	2455.00
	600 mm	Rmt	3155.00
	700 mm	Rmt	3922.00
	800 mm	Rmt	4815.00
	900 mm	Rmt	5883.00
	1000mm	Rmt	6978.00
	1100mm	Rmt	8483.00
	1200mm	Rmt	9876.00
	1300mm	Rmt	11183.00
	1400mm	Rmt	12913.00
	1500mm	Rmt	14676.00
	1600mm	Rmt	17092.00
	1700mm	Rmt	20427.00
	1800mm	Rmt	22290.00
	1900mm	Rmt	24917.00
	2000mm	Rmt	26939.00
	2100mm	Rmt	30104.00
	2200mm	Rmt	32314.00
	2300mm	Rmt	34922.00
	2400mm	Rmt	37330.00
	<b>b) 6 kg/Sq.cm.</b>		
	300 mm	Rmt	1573.00
	350 mm	Rmt	1797.00
	400 mm	Rmt	2020.00
	450 mm	Rmt	2242.00
	500 mm	Rmt	2549.00
	600 mm	Rmt	3302.00
	700 mm	Rmt	4105.00
	800 mm	Rmt	5030.00
	900 mm	Rmt	6128.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1000mm	Rmt	7289.00
	1100mm	Rmt	8833.00
	1200mm	Rmt	10221.00
	1300mm	Rmt	11695.00
	1400mm	Rmt	13383.00
	1500mm	Rmt	15266.00
	1600mm	Rmt	17805.00
	1700mm	Rmt	21287.00
	1800mm	Rmt	23163.00
	1900mm	Rmt	25919.00
	2000mm	Rmt	27991.00
	2100mm	Rmt	31293.00
	2200mm	Rmt	33723.00
	2300mm	Rmt	36345.00
	2400mm	Rmt	38811.00
	<b>c) 9 kg/Sq.cm.</b>		
	300 mm	Rmt	1623.00
	350 mm	Rmt	1885.00
	400 mm	Rmt	2102.00
	450 mm	Rmt	2383.00
	500 mm	Rmt	2702.00
	600 mm	Rmt	3504.00
	700 mm	Rmt	4364.00
	800 mm	Rmt	5435.00
	900 mm	Rmt	6640.00
	1000mm	Rmt	7862.00
	1100mm	Rmt	9501.00
	1200mm	Rmt	11032.00
	1300mm	Rmt	12739.00
	1400mm	Rmt	14638.00
	1500mm	Rmt	16624.00
	1600mm	Rmt	19408.00
	1700mm	Rmt	23254.00
	1800mm	Rmt	25431.00
	1900mm	Rmt	28251.00
	2000mm	Rmt	30655.00
	2100mm	Rmt	34114.00
	2200mm	Rmt	36675.00
	2300mm	Rmt	39600.00
	2400mm	Rmt	42706.00
	<b>d) 12 kg/Sq.cm.</b>		
	300 mm	Rmt	1719.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	350 mm	Rmt	1984.00
	400 mm	Rmt	2210.00
	450 mm	Rmt	2886.00
	500 mm	Rmt	2501.00
	600 mm	Rmt	3763.00
	700 mm	Rmt	4668.00
	800 mm	Rmt	5784.00
	900 mm	Rmt	7092.00
	1000mm	Rmt	8454.00
	1100mm	Rmt	10362.00
	1200mm	Rmt	12086.00
	1300mm	Rmt	13677.00
	1400mm	Rmt	15742.00
	1500mm	Rmt	17999.00
	1600mm	Rmt	20877.00
	1700mm	Rmt	25062.00
	1800mm	Rmt	27477.00
	1900mm	Rmt	30415.00
	2000mm	Rmt	33075.00
	2100mm	Rmt	36873.00
	2200mm	Rmt	39790.00
	<b>e) 15 kg/Sq.cm.</b>		
	300 mm	Rmt	1790.00
	350 mm	Rmt	2067.00
	400 mm	Rmt	2300.00
	450 mm	Rmt	2650.00
	500 mm	Rmt	3046.00
	600 mm	Rmt	4025.00
	700 mm	Rmt	5019.00
	800 mm	Rmt	6263.00
	900 mm	Rmt	7721.00
	1000mm	Rmt	9163.00
	1100mm	Rmt	11242.00
	1200mm	Rmt	13044.00
	1300mm	Rmt	14972.00
	1400mm	Rmt	17233.00
	1500mm	Rmt	19550.00
	1600mm	Rmt	22684.00
	1700mm	Rmt	27612.00
	1800mm	Rmt	30176.00
	1900mm	Rmt	33695.00
	2000mm	Rmt	36671.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>B. Class (SN) 5000</b>		
	<b>a) 3 Kg/Sq.cm.</b>		
	300 mm	Rmt	1624.00
	350 mm	Rmt	1905.00
	400 mm	Rmt	2170.00
	450 mm	Rmt	2470.00
	500 mm	Rmt	2732.00
	600 mm	Rmt	3561.00
	700 mm	Rmt	4457.00
	800 mm	Rmt	5523.00
	900 mm	Rmt	6802.00
	1000mm	Rmt	8089.00
	1100mm	Rmt	9807.00
	1200mm	Rmt	11494.00
	1300mm	Rmt	13088.00
	1400mm	Rmt	15041.00
	1500mm	Rmt	17166.00
	1600mm	Rmt	19954.00
	1700mm	Rmt	23911.00
	1800mm	Rmt	26225.00
	1900mm	Rmt	29189.00
	2000mm	Rmt	31747.00
	2100mm	Rmt	35346.00
	2200mm	Rmt	38152.00
	<b>b) 6 Kg/Sq.cm.</b>		
	300 mm	Rmt	1649.00
	350 mm	Rmt	1938.00
	400 mm	Rmt	2141.00
	450 mm	Rmt	2441.00
	500 mm	Rmt	2812.00
	600 mm	Rmt	3638.00
	700 mm	Rmt	4571.00
	800 mm	Rmt	5656.00
	900 mm	Rmt	6967.00
	1000mm	Rmt	8271.00
	1100mm	Rmt	10117.00
	1200mm	Rmt	11759.00
	1300mm	Rmt	13438.00
	1400mm	Rmt	15419.00
	1500mm	Rmt	17566.00
	1600mm	Rmt	20446.00
	1700mm	Rmt	24495.00
	1800mm	Rmt	26858.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1900mm	Rmt	29918.00
	2000mm	Rmt	32596.00
	2100mm	Rmt	36260.00
	2200mm	Rmt	39200.00
	<b>c) 9 Kg/Sq.cm.</b>		
	300 mm	Rmt	1709.00
	350 mm	Rmt	2003.00
	400 mm	Rmt	2254.00
	450 mm	Rmt	2566.00
	500 mm	Rmt	2936.00
	600 mm	Rmt	4034.00
	700 mm	Rmt	4791.00
	800 mm	Rmt	6170.00
	900 mm	Rmt	7283.00
	1000mm	Rmt	8689.00
	1100mm	Rmt	14027.00
	1200mm	Rmt	15959.00
	1300mm	Rmt	17981.00
	1400mm	Rmt	20128.00
	1500mm	Rmt	23057.00
	1600mm	Rmt	26194.00
	1700mm	Rmt	31536.00
	1800mm	Rmt	34364.00
	<b>d) 12 Kg/Sq.cm.</b>		
	300 mm	Rmt	1758.00
	350 mm	Rmt	2085.00
	400 mm	Rmt	2305.00
	450 mm	Rmt	2669.00
	500 mm	Rmt	3048.00
	600 mm	Rmt	4025.00
	700 mm	Rmt	5073.00
	800 mm	Rmt	6261.00
	900 mm	Rmt	7819.00
	1000mm	Rmt	9196.00
	1100mm	Rmt	11303.00
	1200mm	Rmt	13135.00
	1300mm	Rmt	15054.00
	1400mm	Rmt	17347.00
	1500mm	Rmt	19703.00
	1600mm	Rmt	22773.00
	1700mm	Rmt	27413.00
	1800mm	Rmt	30136.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1900mm	Rmt	33396.00
	<b>e) 15 Kg/Sq.cm.</b>		
	300 mm	Rmt	1821.00
	350 mm	Rmt	2167.00
	400 mm	Rmt	2423.00
	450 mm	Rmt	2798.00
	500 mm	Rmt	3193.00
	600 mm	Rmt	4238.00
	700 mm	Rmt	5335.00
	800 mm	Rmt	6675.00
	900 mm	Rmt	8232.00
	1000mm	Rmt	9814.00
	1100mm	Rmt	11937.00
	1200mm	Rmt	13987.00
	1300mm	Rmt	15983.00
	1400mm	Rmt	18442.00
	1500mm	Rmt	20975.00
	1600mm	Rmt	24285.00
	1700mm	Rmt	29161.00
	1800mm	Rmt	32117.00

Note :

1) For lowering, laying & jointing rates of GRP pipes 50 % rates for lowering, laying & jointing of PSC pipes of corresponding diameter shall be adopted.

2) Where manufacturer is separate & contractor for lowering, laying jointing & testing is separate the principal contractor shall enter into an agreement with G.R.P. pipe manufacture for satisfactory manufacturing, transporting, lowering, laying, jointing & testing of pipe.

**This foot Note shall appear in tender conditions.**

3) Only 85 % Payment shall be payable till satisfactory hydraulic testing is given.

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	<b>IX. H. D. P. E. PIPES</b>		
1	<b>Providing and supplying in standard lengths Polyethelene Pipes,</b> confirming to IS 4984 /14151 / 12786 / 13488 with nesessary jointing material like mechanical connector i. e. thread / insert joint / quick release coupler joint /compression fitting joint or flanged joint excluding coupler/specials, including transportation and freight charges, inspection charges, loading / unloading charges, conveyance to the departmental stores & stacking the same in closed shade duly protecting from sunrays & rains, excluding GST levied by GOI & GOM in all respect etc. complete. <b>As per IS:4984-2016</b>		
A)	<b>PE 100</b>		
	<b>a) 6 Kg/cm2,</b>		
	63mm	Rmt	87.00
	75mm	Rmt	122.00
	90mm	Rmt	173.00
	110mm	Rmt	251.00
	125mm	Rmt	344.00
	140mm	Rmt	432.00
	160mm	Rmt	559.00
	180mm	Rmt	704.00
	200mm	Rmt	825.00
	225mm	Rmt	1063.00
	250mm	Rmt	1307.00
	280mm	Rmt	1637.00
	315mm	Rmt	2074.00
	355mm	Rmt	2628.00
	400mm	Rmt	3443.00
	450 mm	Rmt	4536.00
	500 mm	Rmt	5609.00
	560 mm	Rmt	7021.00
	630 mm	Rmt	8836.00
	710 mm	Rmt	11409.00
	800 mm	Rmt	13754.00
	900 mm	Rmt	17425.00
	1000 mm	Rmt	21487.00
	<b>b) 8 Kg/cm2</b>		
	63mm	Rmt	110.00
	75mm	Rmt	147.00
	90mm	Rmt	210.00
	110mm	Rmt	307.00
	125mm	Rmt	398.00
	140mm	Rmt	545.00
	160mm	Rmt	706.00
	180mm	Rmt	891.00
	200mm	Rmt	1048.00
	225mm	Rmt	1346.00
	250mm	Rmt	1659.00
	280mm	Rmt	2080.00
	315mm	Rmt	2635.00
	355mm	Rmt	3334.00
	400mm	Rmt	4377.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	450 mm	Rmt	5852.00
	500 mm	Rmt	7218.00
	560 mm	Rmt	9062.00
	630 mm	Rmt	11402.00
	710 mm	Rmt	14722.00
	800 mm	Rmt	17760.00
	900 mm	Rmt	21942.00
	1000 mm	Rmt	22481.00
	<b>c) 10 Kg/cm2</b>		
	63mm	Rmt	135.00
	75mm	Rmt	191.00
	90mm	Rmt	275.00
	110mm	Rmt	405.00
	125mm	Rmt	520.00
	140mm	Rmt	650.00
	160mm	Rmt	845.00
	180mm	Rmt	1070.00
	200mm	Rmt	1255.00
	225mm	Rmt	1607.00
	250mm	Rmt	2005.00
	280mm	Rmt	2477.00
	315mm	Rmt	3180.00
	355mm	Rmt	3991.00
	400mm	Rmt	5316.00
	450 mm	Rmt	7073.00
	500 mm	Rmt	8743.00
	560 mm	Rmt	10515.00
	630 mm	Rmt	13802.00
	710 mm	Rmt	17532.00
	800 mm	Rmt	21131.00
	900 mm	Rmt	21383.00
	1000 mm	Rmt	24024.00
	<b>d) 12.5 Kg/cm2</b>		
	63mm	Rmt	161.00
	75mm	Rmt	226.00
	90mm	Rmt	325.00
	110mm	Rmt	479.00
	125mm	Rmt	618.00
	140mm	Rmt	776.00
	160mm	Rmt	1009.00
	180mm	Rmt	1275.00
	200mm	Rmt	1499.00
	225mm	Rmt	1934.00
	250mm	Rmt	2378.00
	280mm	Rmt	2983.00
	315mm	Rmt	3776.00
	355mm	Rmt	4795.00
	400mm	Rmt	6302.00
	450 mm	Rmt	8422.00
	500 mm	Rmt	10380.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	560 mm	Rmt	12634.00
	630 mm	Rmt	16595.00
	710 mm	Rmt	17114.00
	800 mm	Rmt	18747.00
	900 mm	Rmt	23751.00
	1000 mm	Rmt	28927.00
	<b>e) 16 Kg/cm<sup>2</sup></b>		
	63mm	Rmt	183.00
	75mm	Rmt	260.00
	90mm	Rmt	372.00
	110mm	Rmt	549.00
	125mm	Rmt	711.00
	140mm	Rmt	886.00
	160mm	Rmt	1163.00
	180mm	Rmt	1463.00
	200mm	Rmt	2297.00
	225mm	Rmt	2903.00
	250mm	Rmt	3581.00
	280mm	Rmt	4491.00
	315mm	Rmt	5677.00
	355mm	Rmt	7200.00
	400mm	Rmt	9329.00
	450 mm	Rmt	11824.00
	500 mm	Rmt	14581.00
	560 mm	Rmt	16041.00
	630 mm	Rmt	16842.00
	710 mm	Rmt	17980.00
	800 mm	Rmt	21663.00
	900 mm	Rmt	27418.00
	1000 mm	Rmt	33664.00
2	<b>Lowering, Laying and Jointing H. D. P. E./M. D. P. E. pipes</b> in proper position including all specials by compression fitting/electrofusion and butt fusion jointing procedure as per relevent IS Code complete with all materials for jointing procedure like Electrofusion machine, Electric heater/ butt fusion welding machine with hydraulic jack, top loading clamp etc. and all labours as directed by engineer in charge as per IS-7634 Part II		
	<b>For all classes.</b>		
	20mm	Rmt	11.00
	25mm	Rmt	17.00
	32mm	Rmt	21.00
	40mm	Rmt	28.00
	50mm	Rmt	34.00
	63mm	Rmt	41.00
	75mm	Rmt	44.00
	90mm	Rmt	61.00
	110mm	Rmt	64.00
	125mm	Rmt	73.00
	140mm	Rmt	97.00
	160mm	Rmt	105.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	180mm	Rmt	105.00
	200mm	Rmt	117.00
	225mm	Rmt	150.00
	250mm	Rmt	154.00
	280mm	Rmt	191.00
	315mm	Rmt	210.00
	355mm	Rmt	229.00
	400mm	Rmt	232.00
	450 mm	Rmt	262.00
	500 mm	Rmt	337.00
	560 mm	Rmt	378.00
	630 mm	Rmt	425.00
3	<b>Hydraulic testing of H. D. P. E./ M. D. P. E. pipe line</b> to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.		
	20mm	Km	1128.00
	25mm	Km	2255.00
	32mm	Km	2255.00
	40mm	Km	3383.00
	50mm	Km	3383.00
	63mm	Km	4510.00
	75mm	Km	4510.00
	90mm	Km	6765.00
	110mm	Km	6765.00
	125mm	Km	7893.00
	140mm	Km	11275.00
	160mm	Km	11275.00
	180mm	Km	11275.00
	200mm	Km	12403.00
	225mm	Km	16913.00
	250mm	Km	16913.00
	280mm	Km	21423.00
	315mm	Km	23678.00
	355mm	Km	25933.00
	400mm	Km	25933.00
	450 mm	Km	29315.00
	500 mm	Km	37208.00
	560 mm	Km	41718.00
	630 mm	Km	47355.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
4	Providing supplying in standard length (PE material) <b>HDPE Double wall corrugated pipe</b> for non pressure underground drainage and sewerage with smooth internal & corrugated external surface confirming to IS 16098:Part-2 2013 with spigot or plain end with necessary jointing material coupler excluding GST levied by GOI and GOM in all respect, including transportation and freight charges, inspection charges, loading and unloading charges, conveyance to departmental store/site and stacking the same in in closed shade duly protected from direct sun ray and rain etc. complete.		
	<b>CL SN4</b>		
	ID 135 mm dia	Rmt	249.00
	ID 150 mm dia	Rmt	318.00
	ID 170mm dia	Rmt	370.00
	ID 200 mm dia	Rmt	506.00
	ID 250mm dia	Rmt	835.00
	ID 300 mm dia	Rmt	1289.00
	ID 400 mm dia	Rmt	1740.00
	ID 500 mm dia	Rmt	2874.00
	ID 600 mm dia	Rmt	4374.00
	ID 800 mm dia	Rmt	7093.00
	<b>CL SN8</b>		
	ID 135 mm dia	Rmt	298.00
	ID 150 mm dia	Rmt	381.00
	ID 170mm dia	Rmt	443.00
	ID 200 mm dia	Rmt	608.00
	ID 250mm dia	Rmt	1002.00
	ID 300 mm dia	Rmt	1548.00
	ID 400 mm dia	Rmt	2088.00
	ID 500 mm dia	Rmt	3449.00
	ID 600 mm dia	Rmt	5249.00
	ID 800 mm dia	Rmt	8510.00
5	<b>Lowering, Laying and Jointing (PE material) HDPE double wall corrugated pipe</b> for non pressure underground drainage and sewerage applicable of following class and diameter including cost of conveyance from stores to site of works including cost of all labour, material, except O ring coupler as per relevent ISO etc. complete		
	<b>Rate for SN 4 and SN 8</b>		
	ID 135 mm dia	Rmt	34.00
	ID 150 mm dia	Rmt	36.00
	ID 170mm dia	Rmt	40.00
	ID 200 mm dia	Rmt	43.00
	ID 250mm dia	Rmt	53.00
	ID 300 mm dia	Rmt	65.00
	ID 400 mm dia	Rmt	79.00
	ID 500 mm dia	Rmt	94.00
	ID 600 mm dia	Rmt	108.00
	ID 800 mm dia	Rmt	125.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
6	<b>Hydraulic testing of HDPE double wall corrugated pipe</b> for non pressure underground line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position		
	<b>Rate for SN 4 and SN 8</b>		
	ID 135 mm dia	Km	3383.00
	ID 150 mm dia	Km	3383.00
	ID 170mm dia	Km	4510.00
	ID 200 mm dia	Km	4510.00
	ID 250mm dia	Km	5638.00
	ID 300 mm dia	Km	6765.00
	ID 400 mm dia	Km	7893.00
	ID 500 mm dia	Km	9020.00
	ID 600 mm dia	Km	11275.00
	ID 800 mm dia	Km	12403.00
	<b>Only 85% rates of providing item shall be payable till satisfactory hydraulic testing is given.</b>		

**Note:-** The pipes which are available in coil shall be supplied in coil only. The pipes which are supplied in coils shall be jointed by couple fusion joints and other pipes shall be jointed by butt joint. This condition shall be included in tender.

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>X. M. D. P. E. PIPES &amp; HDPE / MDPE Specials</b>		
1	<b>Providing and Supplying Blue MDPE pipes</b> conforming to ISO 4427:1996 manufactured from virgin resin PE 80 Food grade compounded Raw Material having Blue Colour only with quality assurance certificate from quality agencies like WRC /CIPET (India) /DVGM /KIWA /SPGN etc. for usage in Drinking Water system. The cost shall include testing of all materials, Inspection charges, transportation up to store, transit insurance, loading, as specified and directed, unloading, stacking excluding GST levied by GOI & GOM in all respect, etc. complete as specified and directed.		
	<b>a) PN 16 (SDR 9)</b>		
	20mm	Rmt	23.00
	25mm	Rmt	31.00
	32mm	Rmt	51.00
	40mm	Rmt	75.00
	50mm	Rmt	113.00
	63mm	Rmt	167.00
	75mm	Rmt	225.00
	90mm	Rmt	326.00
	110mm	Rmt	483.00
	125mm	Rmt	624.00
	140mm	Rmt	784.00
	160mm	Rmt	1039.00
	180mm	Rmt	1316.00
	200mm	Rmt	1627.00
	225mm	Rmt	2060.00
	250mm	Rmt	2534.00
	280mm	Rmt	3184.00
	315mm	Rmt	4095.00
	<b>b) PN 12.5 (SDR 11)</b>		
	25mm	Rmt	29.00
	32mm	Rmt	48.00
	40mm	Rmt	71.00
	50mm	Rmt	100.00
	63mm	Rmt	135.00
	75mm	Rmt	188.00
	90mm	Rmt	273.00
	110mm	Rmt	401.00
	125mm	Rmt	523.00
	140mm	Rmt	652.00
	160mm	Rmt	854.00
	180mm	Rmt	1108.00
	200mm	Rmt	1357.00
	225mm	Rmt	1718.00
	250mm	Rmt	2128.00
	280mm	Rmt	2652.00
	315mm	Rmt	3362.00
	<b>C) PN 10 (SDR 13.6)</b>		

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	63mm	Rmt	115.00
	75mm	Rmt	162.00
	90mm	Rmt	233.00
	110mm	Rmt	344.00
	125mm	Rmt	443.00
	140mm	Rmt	556.00
	160mm	Rmt	726.00
	180mm	Rmt	919.00
	200mm	Rmt	1133.00
	225mm	Rmt	1436.00
	250mm	Rmt	1767.00
	280mm	Rmt	2215.00
	315mm	Rmt	2798.00
	<b>D) PN 8 (SDR 17)</b>		
	63mm	Rmt	92.00
	75mm	Rmt	131.00
	90mm	Rmt	189.00
	110mm	Rmt	280.00
	125mm	Rmt	358.00
	140mm	Rmt	450.00
	160mm	Rmt	588.00
	180mm	Rmt	747.00
	200mm	Rmt	919.00
	225mm	Rmt	1167.00
	250mm	Rmt	1463.00
	280mm	Rmt	1832.00
	315mm	Rmt	2321.00
	<b>E) PN 6 (SDR 21)</b>		
	63mm	Rmt	71.00
	75mm	Rmt	104.00
	90mm	Rmt	146.00
	110mm	Rmt	221.00
	125mm	Rmt	279.00
	140mm	Rmt	353.00
	160mm	Rmt	461.00
	180mm	Rmt	576.00
	200mm	Rmt	717.00
	225mm	Rmt	907.00
	250mm	Rmt	1110.00
	280mm	Rmt	1403.00
	315mm	Rmt	1764.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
2	<b>Providing &amp; Supply of Electro Fusion Fittings</b> in accordance with BS EN12201: Part-3 suitable for drinking water with in black/ blue colour manufactured from compounded PE80/ PE100 virgin polymer and compatible with PE80/PE100 pipes, in pressure rating SDR11 with min PN12.5 rated for water application and shall be inclusive of all cost such as testing, inspection charges, transportation up to store, transit insurance, loading, unloading, stacking excluding GST levied by GOI & GOM in all respect, etc. complete.		
	<b>Couplers</b>		
	Couplers 20	No.	87.00
	Couplers 25	No.	87.00
	Couplers 32	No.	87.00
	Couplers 40	No.	151.00
	Couplers 50	No.	188.00
	Couplers 63	No.	224.00
	Couplers 75	No.	379.00
	Couplers 90	No.	415.00
	Couplers 110	No.	577.00
	Couplers 125	No.	588.00
	Couplers 140	No.	1257.00
	Couplers 160	No.	1366.00
	Couplers 180	No.	1960.00
	Couplers 200	No.	2202.00
	Couplers 225	No.	2775.00
	Couplers 250	No.	4325.00
	Couplers 280	No.	4871.00
	Couplers 315	No.	5321.00
	Couplers 355	No.	5818.00
	Couplers 400	No.	7582.00
	Couplers 450	No.	13734.00
	Couplers 500	No.	14448.00
	<b>Equal Tee</b>		
	Equal Tee 20	No.	183.00
	Equal Tee 25	No.	183.00
	Equal Tee 32	No.	183.00
	Equal Tee 40	No.	404.00
	Equal Tee 50	No.	412.00
	Equal Tee 63	No.	674.00
	Equal Tee 75	No.	988.00
	Equal Tee 90	No.	1409.00
	Equal Tee 110	No.	1957.00
	Equal Tee 125	No.	2700.00
	Equal Tee 160	No.	4680.00
	Equal Tee 180	No.	5878.00
	Equal Tee 200	No.	9422.00
	Equal Tee 225	No.	10626.00
	Equal Tee 250	No.	15567.00
	Equal Tee 315	No.	16906.00
	Equal Tee 400	No.	23560.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>Elbow 90 Deg.</b>		
	Elbow 90 Deg. 20	No.	97.00
	Elbow 90 Deg. 25	No.	97.00
	Elbow 90 Deg. 32	No.	98.00
	Elbow 90 Deg. 40	No.	133.00
	Elbow 90 Deg. 50	No.	158.00
	Elbow 90 Deg. 63	No.	219.00
	Elbow 90 Deg. 75	No.	343.00
	Elbow 90 Deg. 90	No.	405.00
	Elbow 90 Deg. 110	No.	557.00
	Elbow 90 Deg. 125	No.	710.00
	Elbow 90 Deg. 160	No.	1554.00
	Elbow 90 Deg. 180	No.	1801.00
	Elbow 90 Deg. 200	No.	2331.00
	Elbow 90 Deg. 225	No.	5080.00
	Elbow 90 Deg. 250	No.	9519.00
	Elbow 90 Deg. 315	No.	9686.00
	Elbow 90 Deg. 400	No.	13121.00
	<b>Elbow 45 Deg.</b>		
	Elbow 45 Deg. 32	No.	104.00
	Elbow 45 Deg. 40	No.	126.00
	Elbow 45 Deg. 50	No.	150.00
	Elbow 45 Deg. 63	No.	209.00
	Elbow 45 Deg. 75	No.	326.00
	Elbow 45 Deg. 90	No.	385.00
	Elbow 45 Deg. 110	No.	557.00
	Elbow 45 Deg. 125	No.	710.00
	Elbow 45 Deg. 160	No.	1308.00
	Elbow 45 Deg. 180	No.	1714.00
	Elbow 45 Deg. 200	No.	1801.00
	Elbow 45 Deg. 225	No.	2331.00
	Elbow 45 Deg. 250	No.	5080.00
	Elbow 45 Deg. 315	No.	9658.00
	Elbow 45 Deg. 400	No.	13099.00
	<b>Reducer</b>		
	Reducer 25X20	No.	131.00
	Reducer 32X20	No.	137.00
	Reducer 32X25	No.	144.00
	Reducer 40X32	No.	156.00
	Reducer 50X32	No.	156.00
	Reducer 50X40	No.	156.00
	Reducer 63X32	No.	188.00
	Reducer 63X40	No.	188.00
	Reducer 63X50	No.	188.00
	Reducer 75 x 63	No.	425.00
	Reducer 90X63	No.	467.00
	Reducer 90X75	No.	474.00
	Reducer 110X50	No.	576.00
	Reducer 110X63	No.	576.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	Reducer 110X75	No.	606.00
	Reducer 110X90	No.	606.00
	Reducer 125X90	No.	673.00
	Reducer 160X90	No.	1129.00
	Reducer 160X110	No.	1191.00
	Reducer 180X125	No.	1483.00
	Reducer 200X63	No.	1712.00
	Reducer 200X90	No.	1828.00
	Reducer 200X110	No.	2123.00
	Reducer 200X160	No.	1758.00
	Reducer 225X160	No.	2571.00
	Reducer 250X110	No.	3297.00
	Reducer 250X160	No.	3551.00
	Reducer 250X200	No.	3883.00
	Reducer 315 x 200	No.	7379.00
	Reducer 315 x 250	No.	7481.00
	Reducer 400 x 200	No.	7947.00
	Reducer 400 x 315	No.	8535.00
	<b>End Cap</b>		
	End Cap 20	No.	34.00
	End Cap 25	No.	34.00
	End Cap 32	No.	48.00
	End Cap 40	No.	52.00
	End Cap 50	No.	55.00
	End Cap 63	No.	73.00
	End Cap 75	No.	268.00
	End Cap 90	No.	305.00
	End Cap 110	No.	428.00
	End Cap 125	No.	543.00
	End Cap 140	No.	888.00
	End Cap 160	No.	962.00
	End Cap 180	No.	1055.00
	End Cap 200	No.	1788.00
	End Cap 225	No.	3071.00
	End Cap 250	No.	3958.00
	End Cap 315	No.	6548.00
	<b>Ferrule Tapping Tee</b>		
	Ferrule tapping tee 63 x 1/2"	No.	658.00
	Ferrule tapping tee 63 x 3/4"	No.	658.00
	Ferrule tapping tee 63 x 1"	No.	658.00
	Ferrule tapping tee 75 x 1/2"	No.	658.00
	Ferrule tapping tee 75 x 3/4"	No.	658.00
	Ferrule tapping tee 75 x 1"	No.	658.00
	Ferrule tapping tee 90 x 1/2"	No.	658.00
	Ferrule tapping tee 90 x 3/4"	No.	649.00
	Ferrule tapping tee 90 x 1"	No.	649.00
	Ferrule tapping tee 90 x 1 1/4"	No.	855.00
	Ferrule tapping tee 90 x 1 1/2"	No.	855.00
	Ferrule tapping tee 90 x 2"	No.	855.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	Ferrule tapping tee 110 x 1/2"	No.	658.00
	Ferrule tapping tee 110 x 3/4"	No.	658.00
	Ferrule tapping tee 110 x 1"	No.	658.00
	Ferrule tapping tee 110 x 1 1/4"	No.	855.00
	Ferrule tapping tee 100 x 1 1/2"	No.	855.00
	Ferrule tapping tee 110 x 2"	No.	855.00
	Ferrule tapping tee 160 x 1/2"	No.	658.00
	Ferrule tapping tee 160 x 3/4"	No.	658.00
	Ferrule tapping tee 160 x 1"	No.	658.00
	Ferrule tapping tee 160 x 1 1/4"	No.	931.00
	Ferrule tapping tee 160 x 1 1/2"	No.	931.00
	Ferrule tapping tee 160 x 2"	No.	931.00
	Ferrule tapping tee 200 x 1/2"	No.	929.00
	Ferrule tapping tee 200 x 3/4"	No.	929.00
	Ferrule tapping tee 200 x 1"	No.	929.00
	Ferrule tapping tee 200 x 1 1/4"	No.	1340.00
	Ferrule tapping tee 200 x 1 1/2"	No.	1340.00
	Ferrule tapping tee 200 x 2"	No.	1340.00
	Ferrule tapping tee 250 x 1/2"	No.	929.00
	Ferrule tapping tee 250 x 3/4"	No.	929.00
	Ferrule tapping tee 250 x 1"	No.	929.00
	Ferrule tapping tee 250 x 1 1/4"	No.	1340.00
	Ferrule tapping tee 250 x 1 1/2"	No.	1340.00
	Ferrule tapping tee 250 x 2"	No.	1340.00
	Ferrule tapping tee 315 x 1/2"	No.	1106.00
	Ferrule tapping tee 315 x 3/4"	No.	1106.00
	Ferrule tapping tee 315 x 1"	No.	1106.00
	Ferrule tapping tee 315 x 1 1/4"	No.	1502.00
	Ferrule tapping tee 315 x 1 1/2"	No.	1502.00
	Ferrule tapping tee 315 x 2"	No.	1502.00
	<b>Electrofusion Reducing Tee</b>		
	Reducing Tee 32 x 32 x 20	No.	153.00
	Reducing Tee 32 x 32 x 25	No.	153.00
	Reducing Tee 40 x 40 x 20	No.	344.00
	Reducing Tee 40 x 40 x 25	No.	348.00
	Reducing Tee 40 x 40 x 32	No.	373.00
	Reducing Tee 50 x 50 x 20	No.	383.00
	Reducing Tee 50 x 50 x 25	No.	393.00
	Reducing Tee 50 x 50 x 32	No.	407.00
	Reducing Tee 50 x 50 x 40	No.	427.00
	Reducing Tee 63 x 63 x 20	No.	614.00
	Reducing Tee 63 x 63 x 25	No.	628.00
	Reducing Tee 63 x 63 x 32	No.	642.00
	Reducing Tee 63 x 63 x 40	No.	659.00
	Reducing Tee 63 x 63 x 50	No.	682.00
	Reducing Tee 75 x 75 x 40	No.	873.00
	Reducing Tee 75 x 75 x 50	No.	887.00
	Reducing Tee 75 x 75 x 63	No.	906.00
	Reducing Tee 90 x 90 x 50	No.	1271.00
	Reducing Tee 90 x 90 x 63	No.	1299.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	Reducing Tee 90 x 90 x 75	No.	1322.00
	Reducing Tee 110 x 110 x 50	No.	1756.00
	Reducing Tee 110 x 110 x 63	No.	1785.00
	Reducing Tee 110 x 110 x 75	No.	1812.00
	Reducing Tee 110 x 110 x 90	No.	1844.00
	Reducing Tee 125 x 125 x 63	No.	2368.00
	Reducing Tee 125 x 125 x 75	No.	2394.00
	Reducing Tee 125 x 125 x 90	No.	2425.00
	Reducing Tee 125 x 125 x 110	No.	2454.00
	Reducing Tee 160 x 160 x 50	No.	4128.00
	Reducing Tee 160 x 160 x 63	No.	4146.00
	Reducing Tee 160 x 160 x 75	No.	4167.00
	Reducing Tee 160 x 160 x 90	No.	4267.00
	Reducing Tee 160 x 160 x 110	No.	4362.00
	Reducing Tee 180 x 180 x 160	No.	5378.00
	Reducing Tee 200 x 200 x 63	No.	8539.00
	Reducing Tee 200 x 200 x 75	No.	8581.00
	Reducing Tee 200 x 200 x 90	No.	8620.00
	Reducing Tee 200 x 200 x 110	No.	8670.00
	Reducing Tee 200 x 200 x 160	No.	8717.00
	Reducing Tee 250 x 250 x 63	No.	13181.00
	Reducing Tee 250 x 250 x 75	No.	13235.00
	Reducing Tee 250 x 250 x 90	No.	13277.00
	Reducing Tee 250 x 250 x 110	No.	13317.00
	Reducing Tee 250 x 250 x 160	No.	13355.00
	Reducing Tee 250 x 250 x 200	No.	13412.00
	Reducing Tee 315 x 315 x 200	No.	17647.00
	Reducing Tee 315 x 315 x 250	No.	18016.00
	Reducing Tee 400 x 400 x 110	No.	23037.00
	Reducing Tee 400 x 400 x 160	No.	23553.00
	Reducing Tee 400 x 400 x 200	No.	24055.00
	Reducing Tee 400 x 400 x 250	No.	24417.00
	Reducing Tee 400 x 400 x 315	No.	24801.00
	<b>Spigot Long Neck Pipe End (Stub End) for Electro Fusion joint</b>		
	LNPE 63	No.	353.00
	LNPE 75	No.	397.00
	LNPE 90	No.	499.00
	LNPE 110	No.	761.00
	LNPE 125	No.	1197.00
	LNPE 140	No.	1363.00
	LNPE 160	No.	1951.00
	LNPE 180	No.	2630.00
	LNPE 200	No.	3093.00
	LNPE 225	No.	3710.00
	LNPE 250	No.	4260.00
	LNPE 280	No.	4769.00
	LNPE 315	No.	6199.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
3	<b>Providing &amp; Supply of Compression fittings</b> , PN16 rated in conformation to ISO:14236-2000 and shall be tested as per ISO:3459, ISO:3501 & ISO:3503, suitable for drinking water & approved by WRAS, UK/ KIWA etc, in food grade polypropylene and shall be inclusive of all cost such as testing, inspection charges, transportation up to store, transit insurance, loading, unloading, stacking excluding GST levied by GOI & GOM in all respect, etc. complete.		
	<b>Male Adaptor</b>		
	Male Adaptor 20x1/2"	No.	54.00
	Male Adaptor 25x3/4"	No.	62.00
	Male Adaptor 32x1"	No.	80.00
	Male Adaptor 40x1 1/4"	No.	146.00
	Male Adaptor 50x1 1/2"	No.	192.00
	Male Adaptor 63x2"	No.	273.00
	<b>Female Adaptor</b>		
	Female Adaptor 20x1/2"	No.	58.00
	Female Adaptor 25x3/4"	No.	68.00
	Female Adaptor 32x1"	No.	86.00
	Female Adaptor 40x1 1/4"	No.	161.00
	Female Adaptor 50x1 1/2"	No.	205.00
	Female Adaptor 63x2"	No.	290.00
	<b>Coupling</b>		
	Coupling 20x20	No.	56.00
	Coupling 25x25	No.	61.00
	Coupling 32x32	No.	78.00
	Coupling 40x40	No.	148.00
	Coupling 50x50	No.	191.00
	Coupling 63x63	No.	276.00
	<b>Reducing Coupling</b>		
	Reducing Coupling 25x20	No.	102.00
	Reducing Coupling 32x20	No.	135.00
	Reducing Coupling 32x25	No.	135.00
	Reducing Coupling 40x25	No.	230.00
	Reducing Coupling 40x32	No.	230.00
	Reducing Coupling 50x32	No.	297.00
	Reducing Coupling 50x40	No.	297.00
	Reducing Coupling 63x50	No.	422.00
	<b>90 Deg. Elbow</b>		
	90 Deg. Elbow 20	No.	104.00
	90 Deg. Elbow 25	No.	124.00
	90 Deg. Elbow 32	No.	151.00
	90 Deg. Elbow 40	No.	248.00
	90 Deg. Elbow 50	No.	352.00
	90 Deg. Elbow 63	No.	477.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>90 Deg. Elbow threaded male take off</b>		
	90 Deg. Elbow threaded male off take 20x1/2"	No.	62.00
	90 Deg. Elbow threaded male off take 25x3/4"	No.	76.00
	90 Deg. Elbow threaded male off take 32x1"	No.	98.00
	90 Deg. Elbow threaded male off take 40x1 1/4"	No.	156.00
	90 Deg. Elbow threaded male off take 50x1 1/2"	No.	214.00
	90 Deg. Elbow threaded male off take 63x2"	No.	297.00
	<b>90 Deg. Elbow threaded female off take</b>		
	90 Deg. Elbow threaded female off take 20x1/2"	No.	71.00
	90 Deg. Elbow threaded female off take 25x3/4"	No.	87.00
	90 Deg. Elbow threaded female off take 32x1"	No.	105.00
	90 Deg. Elbow threaded female off take 40x1 1/4"	No.	204.00
	90 Deg. Elbow threaded female off take 50x1 1/2"	No.	267.00
	90 Deg. Elbow threaded female off take 63x2"	No.	352.00
	<b>Equal Tee</b>		
	Equal Tee 20x20x20	No.	124.00
	Equal Tee 25x25x25	No.	162.00
	Equal Tee 32x32x32	No.	209.00
	Equal Tee 40x40x40	No.	347.00
	Equal Tee 50x50x50	No.	469.00
	Equal Tee 63x63x63	No.	667.00
	<b>End Cap</b>		
	End Cap 20	No.	31.00
	End Cap 25	No.	31.00
	End Cap 32	No.	44.00
	End Cap 40	No.	48.00
	End Cap 50	No.	50.00
	End Cap 63	No.	67.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>XI. P. C. C. PIPES</b>		
1	<b>Providing and Supplying Prestressed Concrete Cylinder Pipes</b> suitable for sliding overlap weld joint or confined rubber ring joint with necessary rubber ring of following class and diameter including cost of transportation, inspection charges to store, transit insurance, unloading and stacking excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>i) Factory test pressure</b> a) Site test pressure + 01N/mm <sup>2</sup> , For working pressure upto 1 N/mm <sup>2</sup> b) Site test pressure + 02N/mm <sup>2</sup> , For working pressure upto 1 N/mm <sup>2</sup> <b>ii) Site test pressure</b> - 1.5 times working pressure pertaining to the section or 1.1 times static pressure, which ever is more (such pressure is to be control within 25% of pumphead in case of pumping <b>main</b> ) <b>iii) Working pressure</b> - The maximum sustained internal pressure excluding surge to which each portion of pipeline may be subjected when installed. <b>As Per 784 : 2001</b>		
	<b>a) F.T.P. - 4 kg/Sq.cm.</b>		
	350 mm	Rmt	4445.00
	400 mm	Rmt	4886.00
	450 mm	Rmt	5368.00
	500 mm	Rmt	5940.00
	600 mm	Rmt	7183.00
	700 mm	Rmt	8298.00
	800 mm	Rmt	9345.00
	900 mm	Rmt	11452.00
	1000 mm	Rmt	13225.00
	1100 mm	Rmt	14807.00
	1200 mm	Rmt	16279.00
	1300 mm	Rmt	18809.00
	1400 mm	Rmt	20425.00
	1500 mm	Rmt	22853.00
	1600 mm	Rmt	24393.00
	1700mm	Rmt	25935.00
	1800mm	Rmt	27473.00
	<b>b) F.T.P. - 5.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4445.00
	400 mm	Rmt	4909.00
	450 mm	Rmt	5397.00
	500 mm	Rmt	5974.00
	600 mm	Rmt	7233.00
	700 mm	Rmt	8364.00
	800 mm	Rmt	9453.00
	900 mm	Rmt	11558.00
	1000 mm	Rmt	13355.00
	1100 mm	Rmt	14978.00
	1200 mm	Rmt	17086.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1300 mm	Rmt	19086.00
	1400 mm	Rmt	20779.00
	1500 mm	Rmt	23223.00
	1600 mm	Rmt	24764.00
	1700mm	Rmt	26304.00
	1800mm	Rmt	27845.00
	<b>c) F.T.P. - 7.0 kg/Sq.cm.</b>		
	350 mm	Rmt	4455.00
	400 mm	Rmt	4929.00
	450 mm	Rmt	5421.00
	500 mm	Rmt	6006.00
	600 mm	Rmt	7281.00
	700 mm	Rmt	8443.00
	800 mm	Rmt	9588.00
	900 mm	Rmt	11706.00
	1000 mm	Rmt	13558.00
	1100 mm	Rmt	15225.00
	1200 mm	Rmt	17382.00
	1300 mm	Rmt	19437.00
	1400 mm	Rmt	21361.00
	1500 mm	Rmt	23257.00
	1600 mm	Rmt	24798.00
	1700mm	Rmt	26341.00
	1800mm	Rmt	27880.00
	<b>d) F.T.P. - 8.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4473.00
	400 mm	Rmt	4957.00
	450 mm	Rmt	5449.00
	500 mm	Rmt	6040.00
	600 mm	Rmt	7346.00
	700 mm	Rmt	8542.00
	800 mm	Rmt	9724.00
	900 mm	Rmt	11872.00
	1000 mm	Rmt	13761.00
	1100 mm	Rmt	15472.00
	1200 mm	Rmt	17829.00
	1300 mm	Rmt	19949.00
	1400 mm	Rmt	21768.00
	1500 mm	Rmt	23681.00
	1600 mm	Rmt	25221.00
	1700mm	Rmt	26762.00
	1800mm	Rmt	28302.00
	<b>e) F.T.P. - 10 kg/Sq.cm.</b>		
	350 mm	Rmt	4489.00
	400 mm	Rmt	4976.00
	450 mm	Rmt	5484.00
	500 mm	Rmt	6091.00
	600 mm	Rmt	7416.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	700 mm	Rmt	8638.00
	800 mm	Rmt	9870.00
	900 mm	Rmt	12037.00
	1000 mm	Rmt	13963.00
	1100 mm	Rmt	15860.00
	1200 mm	Rmt	18130.00
	1300 mm	Rmt	20305.00
	1400 mm	Rmt	22184.00
	1500 mm	Rmt	24115.00
	1600 mm	Rmt	25659.00
	1700mm	Rmt	27199.00
	1800mm	Rmt	28739.00
	<b>f) F.T.P. - 11.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4507.00
	400 mm	Rmt	5007.00
	450 mm	Rmt	5524.00
	500 mm	Rmt	6142.00
	600 mm	Rmt	7491.00
	700 mm	Rmt	8736.00
	800 mm	Rmt	10145.00
	900 mm	Rmt	11140.00
	1000 mm	Rmt	14168.00
	1100 mm	Rmt	16113.00
	1200 mm	Rmt	18434.00
	1300 mm	Rmt	20665.00
	1400 mm	Rmt	22605.00
	1500 mm	Rmt	24554.00
	1600 mm	Rmt	26094.00
	1700mm	Rmt	27635.00
	1800mm	Rmt	29176.00
	<b>g) F.T.P. - 13.0 kg/Sq.cm.</b>		
	350 mm	Rmt	4542.00
	400 mm	Rmt	5048.00
	450 mm	Rmt	5570.00
	500 mm	Rmt	6193.00
	600 mm	Rmt	7563.00
	700 mm	Rmt	8835.00
	800 mm	Rmt	10314.00
	900 mm	Rmt	12367.00
	1000 mm	Rmt	14465.00
	1100 mm	Rmt	16369.00
	1200 mm	Rmt	18744.00
	1300 mm	Rmt	21029.00
	1400 mm	Rmt	23020.00
	1500 mm	Rmt	24988.00
	1600 mm	Rmt	26530.00
	1700mm	Rmt	28069.00
	1800mm	Rmt	29598.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>h) F.T.P. - 14.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4582.00
	400 mm	Rmt	5094.00
	450 mm	Rmt	5627.00
	500 mm	Rmt	6252.00
	600 mm	Rmt	7640.00
	700 mm	Rmt	9417.00
	800 mm	Rmt	10481.00
	900 mm	Rmt	12654.00
	1000 mm	Rmt	14677.00
	1100 mm	Rmt	16624.00
	1200 mm	Rmt	19048.00
	1300 mm	Rmt	21387.00
	1400 mm	Rmt	24059.00
	1500 mm	Rmt	26072.00
	1600 mm	Rmt	27614.00
	1700mm	Rmt	29154.00
	1800mm	Rmt	30694.00
	<b>i) F.T.P. - 17.0 kg/Sq.cm.</b>		
	350 mm	Rmt	4618.00
	400 mm	Rmt	5141.00
	450 mm	Rmt	5683.00
	500 mm	Rmt	6321.00
	600 mm	Rmt	7739.00
	700 mm	Rmt	9038.00
	800 mm	Rmt	10684.00
	900 mm	Rmt	12834.00
	1000 mm	Rmt	14891.00
	1100 mm	Rmt	16894.00
	1200 mm	Rmt	19359.00
	1300 mm	Rmt	21753.00
	1400 mm	Rmt	24522.00
	1500 mm	Rmt	26558.00
	1600 mm	Rmt	28098.00
	1700mm	Rmt	29640.00
	1800mm	Rmt	31180.00
	<b>j) F.T.P. - 18.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4653.00
	400 mm	Rmt	5187.00
	450 mm	Rmt	5741.00
	500 mm	Rmt	6390.00
	600 mm	Rmt	7836.00
	700 mm	Rmt	9151.00
	800 mm	Rmt	11035.00
	900 mm	Rmt	13058.00
	1000 mm	Rmt	15146.00
	1100 mm	Rmt	17157.00
	1200 mm	Rmt	19669.00
	1300 mm	Rmt	22798.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1400 mm	Rmt	25159.00
	1500 mm	Rmt	26673.00
	1600 mm	Rmt	28215.00
	1700mm	Rmt	29756.00
	1800mm	Rmt	31296.00
	<b>k) F.T.P. - 20 kg/Sq.cm.</b>		
	350 mm	Rmt	4690.00
	400 mm	Rmt	5235.00
	450 mm	Rmt	5798.00
	500 mm	Rmt	6463.00
	600 mm	Rmt	7934.00
	700 mm	Rmt	9378.00
	800 mm	Rmt	11299.00
	900 mm	Rmt	13356.00
	1000 mm	Rmt	15497.00
	1100 mm	Rmt	17564.00
	1200 mm	Rmt	20698.00
	1300 mm	Rmt	23288.00
	1400 mm	Rmt	25715.00
	1500 mm	Rmt	27253.00
	1600 mm	Rmt	28794.00
	1700mm	Rmt	30335.00
	1800mm	Rmt	31875.00
	<b>l) F.T.P. - 21.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4732.00
	400 mm	Rmt	5282.00
	450 mm	Rmt	5854.00
	500 mm	Rmt	6531.00
	600 mm	Rmt	8050.00
	700 mm	Rmt	9837.00
	800 mm	Rmt	11479.00
	900 mm	Rmt	13654.00
	1000 mm	Rmt	15851.00
	1100 mm	Rmt	18448.00
	1200 mm	Rmt	21211.00
	1300 mm	Rmt	23829.00
	1400 mm	Rmt	27126.00
	1500 mm	Rmt	28725.00
	1600 mm	Rmt	30269.00
	1700mm	Rmt	31809.00
	1800mm	Rmt	33351.00
	<b>m) F.T.P. - 23 kg/Sq.cm.</b>		
	350 mm	Rmt	4767.00
	400 mm	Rmt	5327.00
	450 mm	Rmt	5914.00
	500 mm	Rmt	6600.00
	600 mm	Rmt	8219.00
	700 mm	Rmt	10148.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	800 mm	Rmt	11831.00
	900 mm	Rmt	13949.00
	1000 mm	Rmt	16203.00
	1100 mm	Rmt	18937.00
	1200 mm	Rmt	21735.00
	1300 mm	Rmt	24505.00
	1400 mm	Rmt	27630.00
	1500 mm	Rmt	29250.00
	1600 mm	Rmt	30792.00
	1700mm	Rmt	32333.00
	1800mm	Rmt	33871.00
	<b>n) F.T.P. - 24.5 kg/Sq.cm.</b>		
	350 mm	Rmt	4804.00
	400 mm	Rmt	5376.00
	450 mm	Rmt	5972.00
	500 mm	Rmt	6672.00
	600 mm	Rmt	8549.00
	700 mm	Rmt	10287.00
	800 mm	Rmt	11844.00
	900 mm	Rmt	14186.00
	1000 mm	Rmt	16963.00
	1100 mm	Rmt	19427.00
	1200 mm	Rmt	22262.00
	1300 mm	Rmt	26448.00
	1400 mm	Rmt	28157.00
	1500 mm	Rmt	29798.00
	1600 mm	Rmt	31339.00
	1700mm	Rmt	32878.00
	1800mm	Rmt	34420.00

**Note :**

- 1) For PCCP pipes lowering, laying, and pouring of cement mortar in the field on joints (after laying and welding), rates as per PSC pipes lowering, laying and jointing shall be adopted.
- 2) For field welding rates applicable for similar welding in MS pipes given in that section shall be adopted.
- 3) Whenever manufacturer is separate and contractor for lowering, laying, jointing and testing is separate the principal contractor shall enter into an agreement with PCCP pipe manufacturer for satisfactory manufacturing transporting, lowering, laying, jointing and testing of pipes.

**This foot notes shall appear in the tender conditions.**

- 4) Only 85% providing rates shall be payable til satisfactory Hydraulic testing is given.

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>XII. PIPES APPURTENANCES</b>		
1	Providing and supplying <b>ISI mark CI D/F reflux valves</b> (non-return valves ) of following dia including railway freight, inspection charges, unloading from railway wagon, loading into truck, transportation upto departmental stores, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete. Reflux valves as per I.S.5312 Part I (1984)		
	<b>a) Without by pass arrangement -PN -1</b>		
	50 mm	No	3102.00
	65 mm	No	3631.00
	80 mm	No	3824.00
	100 mm	No	5339.00
	125 mm	No	7623.00
	150 mm	No	9230.00
	200 mm	No	16590.00
	250 mm	No	28312.00
	300 mm	No	38794.00
	350 mm	No	60343.00
	400 mm	No	71777.00
	450 mm	No	103211.00
	500 mm	No	152929.00
	600 mm	No	187271.00
	700 mm	No	439275.00
	<b>b) With by pass arrangement - PN-1</b>		
	80 mm	No	4415.00
	100 mm	No	6290.00
	125 mm	No	8565.00
	150 mm	No	10171.00
	200 mm	No	18963.00
	250 mm	No	30996.00
	300 mm	No	41606.00
	350 mm	No	68214.00
	400 mm	No	82545.00
	450 mm	No	107098.00
	500 mm	No	173812.00
	600 mm	No	215361.00
	700 mm	No	664985.00
	750 mm	No	727888.00
	800 mm	No	790792.00
	900 mm	No	862683.00
	1000 mm	No	1006464.00
	<b>c) Without by pass arrangement - PN -1.6</b>		
	50 mm	No	3025.00
	65 mm	No	3268.00
	80 mm	No	5361.00
	100 mm	No	6867.00
	125 mm	No	9567.00
	150 mm	No	13005.00
	200 mm	No	22770.00
	250 mm	No	36554.00
	300 mm	No	49420.00
	350 mm	No	75429.00
	400 mm	No	89722.00
	450 mm	No	119948.00
	500 mm	No	191160.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	600 mm	No	234088.00
	700 mm	No	345994.00
	750 mm	No	397187.00
	800 mm	No	451912.00
	900 mm	No	571949.00
	1000 mm	No	706111.00
	1100 mm	No	854392.00
	1200 mm	No	1017173.00
	<b>d) With by pass arrangement - PN-1.6</b>		
	50 mm	No	3105.00
	65 mm	No	3495.00
	80 mm	No	5143.00
	100 mm	No	6650.00
	125 mm	No	9293.00
	150 mm	No	11279.00
	200 mm	No	22782.00
	250 mm	No	34426.00
	300 mm	No	52012.00
	350 mm	No	80367.00
	400 mm	No	103181.00
	450 mm	No	123163.00
	500 mm	No	199917.00
	600 mm	No	269201.00
	700 mm	No	352410.00
	750 mm	No	404553.00
	800 mm	No	460292.00
	900 mm	No	582557.00
	1000 mm	No	719204.00
	1100 mm	No	870238.00
	1200 mm	No	1035654.00
2	Providing <b>double flange sluice valve</b> confirming for IS- 14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation upto departmental store, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) Sluice valves - PN -1 without bypass arrangement</b>		
	50 mm	No	3923.00
	65 mm	No	4641.00
	80 mm	No	4796.00
	100 mm	No	6388.00
	125 mm	No	7989.00
	150 mm	No	9580.00
	200 mm	No	17365.00
	250 mm	No	26848.00
	300 mm	No	34085.00
	350 mm	No	50141.00
	400 mm	No	66014.00
	450 mm	No	70972.00
	500 mm	No	102290.00
	600 mm	No	151547.00
	700 mm	No	281691.00
	750 mm	No	319114.00
	800 mm	No	389272.00
	900 mm	No	510436.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1000 mm	No	763408.00
	1100 mm	No	978703.00
	1200 mm	No	1157135.00
	<b>b) Sluice valves - PN -1.0 With bypass arrangement</b>		
	50 mm	No	4117.00
	65 mm	No	4651.00
	80 mm	No	4796.00
	100 mm	No	6388.00
	125 mm	No	7989.00
	150 mm	No	10089.00
	200 mm	No	17397.00
	250 mm	No	26879.00
	300 mm	No	34115.00
	350 mm	No	52005.00
	400 mm	No	66112.00
	450 mm	No	81511.00
	500 mm	No	102443.00
	600 mm	No	151771.00
	700 mm	No	286437.00
	750 mm	No	319431.00
	800 mm	No	389656.00
	900 mm	No	510941.00
	1000 mm	No	775059.00
	1100 mm	No	979672.00
	1200 mm	No	1158240.00
	<b>c) Sluice valve - PN - 1.6 without bypass arrangement</b>		
	50 mm	No	4917.00
	65 mm	No	5800.00
	80 mm	No	6316.00
	100 mm	No	8416.00
	125 mm	No	10515.00
	150 mm	No	11152.00
	200 mm	No	21711.00
	250 mm	No	33569.00
	300 mm	No	42629.00
	350 mm	No	64910.00
	400 mm	No	82403.00
	450 mm	No	101829.00
	500 mm	No	127794.00
	600 mm	No	189388.00
	700 mm	No	286861.00
	750 mm	No	319904.00
	800 mm	No	390235.00
	900 mm	No	511699.00
	1000 mm	No	789331.00
	1100 mm	No	981127.00
	1200 mm	No	1159998.00
	<b>d) Sluice valve - PN - 1.6 with bypass arrangement</b>		
	50 mm	No	5442.00
	65 mm	No	5811.00
	80 mm	No	6327.00
	100 mm	No	8432.00
	125 mm	No	10530.00
	150 mm	No	12610.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	200 mm	No	21742.00
	250 mm	No	33601.00
	300 mm	No	42659.00
	350 mm	No	65006.00
	400 mm	No	82526.00
	450 mm	No	101980.00
	500 mm	No	127983.00
	600 mm	No	189670.00
	700 mm	No	287216.00
	750 mm	No	320299.00
	800 mm	No	390718.00
	900 mm	No	512332.00
	1000 mm	No	790305.00
	1100 mm	No	982337.00
	1200 mm	No	1161432.00
3	Providing, <b>double flanged short body pattern type manually operated Butterfly Valve</b> having body, disc and end cover in graded cast iron to IS-210 Gr.CF 200 generally confirming to IS-13095-1991, Synthetic rubber faced ring secured on disc by retaining ring with stainless steel screw stub shaft of stainless steel riding in teflon bearing including inspection charges, transportation up to departmental store, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. excluding C.C. foundation /structural steel support.		
	<b>a) Butterfly valves - PN -1 with bypass arrangement</b>		
	80 mm	No	5445.00
	100 mm	No	6961.00
	125 mm	No	7939.00
	150 mm	No	10262.00
	200 mm	No	13675.00
	250 mm	No	17093.00
	300 mm	No	27046.00
	350 mm	No	44378.00
	400 mm	No	55057.00
	450 mm	No	64265.00
	500 mm	No	69421.00
	600 mm	No	81299.00
	700 mm	No	121901.00
	750 mm	No	144366.00
	800 mm	No	153756.00
	900 mm	No	197398.00
	1000 mm	No	254482.00
	1100 mm	No	545472.00
	1200 mm	No	516163.00
	1400 mm	No	787015.00
	1500 mm	No	977904.00
	<b>b) Butterfly valves - PN -1.6 Without bypass arrangement</b>		
	80 mm	No	6042.00
	100 mm	No	7911.00
	125 mm	No	8735.00
	150 mm	No	11800.00
	200 mm	No	15729.00
	250 mm	No	19657.00
	300 mm	No	31103.00
	350 mm	No	55472.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	400 mm	No	67955.00
	450 mm	No	78510.00
	500 mm	No	86205.00
	600 mm	No	101624.00
	700 mm	No	152376.00
	750 mm	No	180457.00
	800 mm	No	192196.00
	900 mm	No	246748.00
	1000 mm	No	318102.00
	1100 mm	No	645207.00
	1200 mm	No	681832.00
	1400 mm	No	983769.00
	1500 mm	No	1214115.00
4.a.	Lowering, laying and jointing in position following <b>C.I.D/F Reflex valves, Butterfly valves and Sluice valves</b> including cost of all labour jointing material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves.)		
	50 mm	No	757.00
	65 mm	No	1137.00
	80 mm	No	1580.00
	100 mm	No	2065.00
	125 mm	No	2571.00
	150 mm	No	3245.00
	200 mm	No	3376.00
	250 mm	No	4399.00
	300 mm	No	4563.00
	350 mm	No	5623.00
	400 mm	No	6784.00
	450 mm	No	8072.00
	500 mm	No	8358.00
	600 mm	No	8872.00
	700 mm	No	9565.00
	750 mm	No	10534.00
	800 mm	No	12552.00
	900 mm	No	13319.00
	1000 mm	No	15701.00
	1100 mm	No	18130.00
	1200 mm	No	19923.00
4.b.	Giving satisfactory <b>hydraulic testing of following C. I. D / F Reflex valves, Butterfly valves and Sluice valves.</b>		
	50 mm	No	85.00
	65 mm	No	127.00
	80 mm	No	176.00
	100 mm	No	229.00
	125 mm	No	285.00
	150 mm	No	361.00
	200 mm	No	375.00
	250 mm	No	488.00
	300 mm	No	507.00
	350 mm	No	625.00
	400 mm	No	755.00
	450 mm	No	897.00
	500 mm	No	930.00
	600 mm	No	986.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	700 mm	No	1064.00
	750 mm	No	1170.00
	800 mm	No	1395.00
	900 mm	No	1481.00
	1000 mm	No	1745.00
	1100 mm	No	2015.00
	1200 mm to 1500 mm	No	2213.00
5	Providing and <b>supplying Air Valves</b> as per IS- 14845-2000 and MJP's standard specifications of approved make and quality of following diameters including railway freight, inspection charges, unloading from railway wagons, loading into truck, transportation upto departmental stores, unloading and stacking excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) Air Valve Single Ball Flanged / Screwed Type - PN -1</b>		
	12/15 mm	No	592.00
	20 mm	No	714.00
	25 mm	No	985.00
	32 mm	No	1076.00
	40 mm	No	1184.00
	50 mm	No	1300.00
	<b>b) Air Valve Single Ball Flanged /Screwed Type -PN -1.6</b>		
	12/15 mm	No	693.00
	20 mm	No	985.00
	25 mm	No	1184.00
	32 mm	No	1276.00
	40 mm	No	1367.00
	50 mm	No	1784.00
6	Providing and <b>supplying Air Valves</b> as per IS- 14845 and MJP's standard specifications double orifice type combined with screw down isolating valve, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) Double Ball Flanged Type - PN -1 With small Orifice</b>		
	50 mm	No	5467.00
	65 mm	No	6379.00
	80 mm	No	7286.00
	<b>b) Double Ball Flanged Type - PN -1.6 With small Orifice</b>		
	50 mm	No	7242.00
	65 mm	No	8201.00
	80 mm	No	10148.00
7	Providing and <b>supplying Air Valves</b> as per IS- 14845-2000 and MJP's standard specifications double orifice type combined with isolating sluice valve, mounted in horizontal position and operated by wheel gearing, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental store, excluding GST levied by GOI & GOM in all respect etc. complete.		

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>a) Double Ball Flanged Type - PN -1.0</b>		
	100 mm	No	9214.00
	150 mm	No	16792.00
	200 mm	No	28239.00
	<b>b) Double Ball Flanged Type - PN -1.6</b>		
	100 mm	No	14087.00
	150 mm	No	19845.00
	200 mm	No	33375.00
8	Providing and <b>supplying Kinetic Double Orifice type Air Valves</b> confirming to IS 14845 as per MJP's standard specifications combined with screw down isolating valve, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) Kinetic Air Valve Flanged Type P-1</b>		
	40 mm	No	8471.00
	50 mm	No	9576.00
	80 mm	No	11233.00
	<b>b) Kinetic Air Valve Flanged Type P-1.6</b>		
	40 mm	No	10588.00
	50 mm	No	11969.00
	80 mm	No	14040.00
9	Providing and <b>supplying Kinetic Double Orifice type Air Valves</b> confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in Kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) Kinetic Air Valve Flanged Type P-1</b>		
	100 mm	No	12245.00
	150 mm	No	17126.00
	200 mm	No	26700.00
	<b>b) Kinetic Air Valve Flanged Type P-1.6</b>		
	100 mm	No	15308.00
	150 mm	No	21406.00
	200 mm	No	33375.00
10	<b>Lowering, laying and fixing</b> in proper alignment and position all types of <b>C.I. air valves</b> as directed by Engineer-in-charge including cost of conveyance from stores to site of work, cost of all material and giving satisfactory hydraulic testing, etc. complete. (for all class of valves).		
	<b>a) Air Valve Single Ball (PN-1 and PN - 1.6)</b>		
	15 mm	No	121.00
	20 mm	No	153.00
	25 mm	No	198.00
	32 mm	No	219.00
	40 mm	No	234.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	50 mm	No	254.00
	65 mm	No	267.00
	80 mm	No	279.00
	100 mm	No	312.00
	125 mm	No	378.00
	150 mm	No	420.00
	200 mm	No	462.00
	<b>b) Air Valve Double Ball (PN-1 and PN - 1.6)</b>		
	15 mm	No	132.00
	20 mm	No	164.00
	25 mm	No	198.00
	32 mm	No	224.00
	40 mm	No	262.00
	50 mm	No	303.00
	65 mm	No	349.00
	80 mm	No	416.00
	100 mm	No	440.00
	125 mm	No	484.00
	150 mm	No	662.00
	200 mm	No	728.00
	<b>c) Kinetic Air Valve (PN-1 and PN - 1.6)</b>		
	40 mm	No	300.00
	50 mm	No	347.00
	65 mm	No	378.00
	80 mm	No	416.00
	100 mm	No	458.00
	125 mm	No	499.00
	150 mm	No	716.00
	200 mm	No	780.00
11	<b>Providing erecting Cast Steel/ Spheroidal Graphite (S.G) Iron D/F Sluice Valves / Butterfly Valves</b> with jointing to pipe work (including all hardware and packing) water works quality, having non-rising spindle with hand wheel and without bypass arrangement, spindle of stainless steel as per requirement, inspection charges, transportation upto departmental store, unloading, stacking, excluding GST levied by GOI & GOM in all respect etc. excluding C. C. foundation / structural steel support.		
	<b>A) For Rating Class 150 (Working Pressure 20 kg/cm2 and Test Pressure 30 kg/cm2)</b>		
	<b>a) Sluice Valves. CS-150</b>		
	80 mm	No	14124.00
	100 mm	No	18831.00
	150 mm	No	28247.00
	200 mm	No	44053.00
	250 mm	No	63396.00
	300 mm	No	81115.00
	350 mm	No	108154.00
	400 mm	No	180478.00
	450 mm	No	246243.00
	500 mm	No	289697.00
	600 mm	No	330736.00
	<b>b) Butterfly Valves. CS-150</b>		

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	300 mm	No	101999.00
	350 mm	No	108736.00
	400 mm	No	122134.00
	450 mm	No	130109.00
	500 mm	No	150611.00
	600 mm	No	169496.00
12	<b>Providing erecting Cast Steel D/F Sluice Valves / Butterfly Valves</b> with jointing to pipe work (including all hardware and packing) water works quality having non-rising spindle with hand wheel and without bypass arrangement, spindle of stainless steel as per requirement, inspection charges, transportation upto departmental store, unloading, stacking, excluding GST levied by GOI & GOM in all respect etc. excluding C. C. foundation / structural steel support.		
	<b>For Rating Class 300 (Working Pressure 52 kg/cm2 and Test Pressure 78 kg/cm2)</b>		
	<b>a) Sluice Valves CS-300</b>		
	80 mm	No	15203.00
	100 mm	No	24003.00
	150 mm	No	36596.00
	200 mm	No	57395.00
	250 mm	No	61956.00
	300 mm	No	104445.00
	350 mm	No	176149.00
	400 mm	No	256971.00
	450 mm	No	309395.00
	500 mm	No	482009.00
	600 mm	No	728543.00
	<b>b) Butterfly Valves CS-300</b>		
	300 mm	No	124438.00
	350 mm	No	132659.00
	400 mm	No	149003.00
	450 mm	No	158733.00
	500 mm	No	183747.00
	600 mm	No	206785.00
13	<b>Providing erecting Cast Steel /Spheroidal Graphite (S.G.) Iron D/F Reflux Valves</b> Single Door with jointing to pipe work (including all hardware and packing) water works quality with jointing to pipe without bypass arrangement, with gunmental seats including inspection charges, transportation upto departmental store, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. completed excluding C. C. foundation / structural steel support.		
	<b>For Rating Class 150 (Working Pressure 20 kg/cm2 and Test Pressure 30 kg/cm2)</b>		
	<b>Reflux valve CS-150</b>		
	80 mm	No	9856.00
	100 mm	No	15091.00
	150 mm	No	25566.00
	200 mm	No	48610.00
	250 mm	No	84641.00
	300 mm	No	111510.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
14	<b>Providing erecting Cast Steel D/F Reflux Valves</b> Single door with jointing to pipe work (including all hardware and packing) water works quality with jointing to pipe without bypass arrangement, with gunmetal seat including inspection charges, transportation upto departmental store, unloading, stacking excluding GST levied by GOI & GOM in all respect etc. completed excluding excluding C. C. foundation / structural steel support.		
	<b>For Rating Class 300 (Working Pressure 52 kg/cm2 and Test Pressure 78 kg/cm2)</b>		
	<b>Reflux valve CS-300</b>		
	80 mm	No	14684.00
	100 mm	No	20697.00
	150 mm	No	34419.00
	200 mm	No	60975.00
	250 mm	No	110393.00
	300 mm	No	134411.00
15	<b>Providing, erecting Kinetic Double Orifice Cast Steel Air Valves</b> with an isolating Sluice Valve mounted in horizontal position operated by wheel gear suitable for working pressure of Class-150 rating (20 kg/cm2)		
	<b>Air valve CS-150</b>		
	80 mm	No	28474.00
	100 mm	No	39689.00
	150 mm	No	76053.00
	200 mm	No	98308.00
16	<b>Providing, erecting Kinetic Double Orifice Cast Steel Air Valves</b> with an isolating Sluice Valve mounted in horizontal position operated by wheel gear suitable for working pressure of Class 300 rating (52 kg/cm2)		
	<b>KDB Air valve CS-300</b>		
	80 mm	No	34689.00
	100 mm	No	39653.00
	150 mm	No	92664.00
	200 mm	No	111855.00
17	<b>Providing and fixing in position air valve shaft</b> including providing and fixing GI Medium Class or 6 mm thick M.S. pipe shaft 2.70 M long over branch flange of air valve tee, providing PCC block of M-150 concrete, 150 mm thick around the air valve tee including encasing of vertical shaft in PCC M-150 as shown in type design together with providing and making flanged joints wherever required and fixing of air valve tee, etc. complete as per type design and as directed by Engineer - in- charge for following diameters of pipe lines (type design attached.)		
	<b>a) Foundation on Murum and Harder Strata.</b>		
	upto 150 mm	No	5071.00
	200 to 400 mm	No	5941.00
	450 to 900 mm	No	12082.00
	1000 to 1200 mm	No	15172.00
	<b>b) Foundation in B. C. Soil or Any Other Soil.</b>		
	upto 150 mm	No	6008.00
	200 to 400 mm	No	7247.00
	450 to 900 mm	No	13801.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	1000 to 1200 mm	No	17307.00
18	Providing and supplying <b>C.I. D/F angle type spring loaded pressure relief valves</b> of approved make and quality including inspection charges, transportation to departmental stores excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) Type PN-1</b>		
	25 mm	No	3974.00
	40 mm	No	5179.00
	50 mm	No	6707.00
	80 mm	No	10171.00
	100 mm	No	14238.00
	125 mm	No	19414.00
	150 mm	No	22184.00
	200 mm	No	48987.00
	250 mm	No	68860.00
	300 mm	No	90812.00
	<b>b) Type PN-1.6</b>		
	25 mm	No	4968.00
	40 mm	No	6470.00
	50 mm	No	7334.00
	80 mm	No	11772.00
	100 mm	No	16162.00
	125 mm	No	24261.00
	150 mm	No	27729.00
	200 mm	No	61230.00
	250 mm	No	86074.00
	300 mm	No	113780.00
19	<b>Lowering, laying and fixing in proper alignment and position all types of C.I. D/F angle type spring loaded pressure relief valves</b> including cost of all material, labour, cost of conveyance from stores to site of work and giving satisfactory hydraulic testing, etc. complete. (For all class of valves.)		
	25 mm	No	226.00
	40 mm	No	300.00
	50 mm	No	348.00
	80 mm	No	415.00
	100 mm	No	455.00
	125 mm	No	507.00
	150 mm	No	716.00
	200 mm	No	781.00
	250 mm	No	912.00
	300 mm	No	1041.00
20	<b>Cutting and champhering of pipes</b> of following diameters including cost of all materials and labour involved, etc. complete as directed by Engineer-in-charge (for all class of pipes).		
	<b>a) C.I.Pipes</b>		
	80 mm	No	41.00
	100 mm	No	47.00
	150 mm	No	73.00
	200 mm	No	92.00
	250 mm	No	132.00
	300 mm	No	156.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	350 mm	No	161.00
	400 mm	No	204.00
	450 mm	No	237.00
	500 mm	No	283.00
	600 mm	No	345.00
	700 mm	No	407.00
	750 mm	No	486.00
	800 mm	No	531.00
	900 mm	No	584.00
	1000 mm	No	635.00
21	Providing and supplying I.S.I. mark <b>rubber gasket suitable</b> for C.I. or D. I. pipe of all class for tyton joints including inspection charges, transportation upto departmental stores excluding GST levied by GOI & GOM in all respect etc. complete.		
	<b>a) S.B.R. Gaskets for C. I. / D.I. Pipes</b>		
	80 mm	No	39.00
	100 mm	No	43.00
	150 mm	No	60.00
	200 mm	No	102.00
	250 mm	No	132.00
	300 mm	No	186.00
	350 mm	No	213.00
	400 mm	No	296.00
	450 mm	No	323.00
	500 mm	No	441.00
	600 mm	No	612.00
	700 mm	No	1089.00
	750 mm	No	1132.00
	800 mm	No	1173.00
	900 mm	No	1696.00
	1000 mm	No	2179.00
	<b>b) Sealing 'O' Rings of SBR (for CID Joints)</b>		
	80 mm	set	44.00
	100 mm	set	54.00
	125 mm	set	63.00
	150 mm	set	75.00
	<b>c) Flat Flanged Gaskets moulded out of SBR (For Flanged Joints)</b>		
	80 mm	set	82.00
	100 mm	No	108.00
	125 mm	No	128.00
	150 mm	No	176.00
	200 mm	No	217.00
	250 mm	No	305.00
	300 mm	No	323.00
	350 mm	No	392.00
	400 mm	No	484.00
	450 mm	No	529.00
	500 mm	No	620.00
	600 mm	No	834.00
	<b>d) Providing Rubber Gasket - EPDM Gaskets for C. I. / D.I. Pipes</b>		
	80 mm.	No	45.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	
	100 mm.	No	47.00	
	150 mm.	No	70.00	
	200 mm.	No	117.00	
	250 mm.	No	160.00	
	300 mm.	No	211.00	
	350 mm.	No	246.00	
	400 mm.	No	336.00	
	450 mm.	No	376.00	
	500 mm.	No	498.00	
	600 mm.	No	699.00	
	700 mm.	No	1313.00	
	750 mm.	No	1376.00	
	800 mm.	No	1678.00	
	900 mm.	No	2166.00	
	1000 mm	No	2517.00	
22	Providing and fixing in position and jointing <b>high performance C. I. Air valves</b> for water combination type ( Kinetic air valve along with automatic air valves ) double ball, double orifice with stainless steel ball, tamper proof air vents rolling seal mechanism for air release and anti vacuum application designed for 16 Kg. Per sq. cm. working pressure and tested for 20 for kg per sq. cm. pressure. ( Rate to include cost of gaskets, bolt, nut and any other material required for jointing and its transportation etc. excluding GST levied by GOI & GOM in all respect.			
	1. C. I. ARV FLFF PN 1.6 50mm Dia.	No	8920.00	
	2. C. I. ARV FLFF PN 1.6 80mm Dia.	No	12377.00	
	3. C. I. ARV FLFF PN 1.6 100mm Dia.	No	19901.00	
	4. C. I. ARV FLFF PN 1.6 150mm Dia.	No	33312.00	
	5. C. I. ARV FLFF PN 1.6 200mm Dia.	No	40351.00	
23	Providing and supplying at site of <b>ductile iron /spheroidal graphite (S.G.) iron D/F double eccentric resilient seated short body butterfly valves</b> with gear box & handwheel, without bypass arrangement. Valves in accordance with BS EN 593 of PN 10/16 rated, with body & disc of ductile iron confirming to EN 1563/IS 1865 Gr.500/7 or Gr.400/15, Body seat of intergral SG Iron/S.S. AISI 316, seal retaining ring of steel C45/S.S. 1.4436, Shaft of S.S. 1.4021, Periferial disc seal and “O” rings of WRAS approved EPDM rubber (suitable for drinking water), Internal fasteners of stainless steel A2. Body & disc coated inside & outside with electrostatically applied epoxy powder coated blue colour. (suitable for drinking water.) as per DIN 30677- 2 & GSK guidelines with a coating thickness of min. 250 microns. Valves should be 100% tight shutoff. Face to face is per IS 13095 short body. Flange drilling as per IS 1538 raised face & pressure testing at manufactures works shall be done as per IS 13095. including transportation charges excluding GST levied by GOI & GOM in all respect etc. complete.			
			<b>PN-10</b>	<b>PN-16</b>
	i) 200 mm.	No.	73085.00	88275.00
	ii) 250 mm.	No.	91533.00	114230.00
	iii) 300 mm.	No.	117497.00	150920.00
	iv) 350 mm.	No.	146297.00	178408.00
	v) 400 mm.	No.	174371.00	203598.00
	vi) 450 mm.	No.	225938.00	275976.00
	vii) 500 mm.	No.	246472.00	330811.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020	
1	2	3	4	
	viii) 600 mm.	No.	358824.00	505483.00
	ix) 700 mm.	No.	596783.00	696246.00
	x) 800 mm.	No.	708679.00	851659.00
	xi) 900 mm.	No.	870307.00	#####
	xii) 1000 mm	No.	1230863.00	#####
24	Providing and supplying at site of <b>ductile iron / spheroidal graphite (S.G.) iron D/F non-rising spindle resilient seated glandless sluice valves</b> with handwheel & without bypass arrangement. Valves in accordance with BS 5163 of PN-10/ 16 rated, with body and bonnet of ductile iron conforming to IS 1865 Gr. 500/7 or Gr.400/15. Wedge fully encapsulated WRAS approved EPDM rubber (approved for drinking water), Wedge nut of brass, shaft of stainless steel 1.4021/1.4104, stem seals min. 3 nos. of NBR, internal fasteners of stainless steel A2. Body & Bonnet coated inside & outside with electrostatically applied epoxy powder coated blue colour (suitable for drinking water) as per DIN 30677-2 & GSK guidelines with a coating thickness of min. 250 microns. Valves should be full bore & tight shut-off. Flange drilling as per IS 1538 raised face & pressure testing at manufactures works shall be done as per IS 14846. including transportation charges excluding GST levied by GOI & GOM in all respect etc. complete. (For PN 10 & 16)			
	i) 50 mm dia	No.	10251.00	
	ii) 80 mm dia	No.	13017.00	
	iii) 100 mm dia	No.	16127.00	
	iv) 150 mm dia	No.	22495.00	
	v) 200 mm dia	No.	35702.00	
	vi) 250 mm dia	No.	63251.00	
	vii) 300 mm dia	No.	84787.00	
	viii) 350 mm dia	No.	194052.00	
	ix) 400 mm dia	No.	234160.00	
	x) 450 mm dia	No.	319957.00	
	xi) 500 mm dia	No.	404064.00	
	xii) 600 mm dia	No.	584595.00	
25	Providing and supplying at site <b>ductile iron / Spheroidal Graphite (S.G.) iron single / Double chamber tamper proof air valve</b> without isolating sluice valve. Valves in accordance with BSEN 1074-4 of PN 10/16 rated, with body and bonnet of ductile iron conforming to EN 1563/IS 1865 Gr. 500/7 or Gr.400/15 floats, float guide, seat ring of stainless steel 1.4436/1.4306, seat ring gasket of WRAS approved EPDM rubber (suitable for drinking water), internal fasteners of stainless steel A2. Body & Bonnet coated inside & outside with electrostatically applied epoxy powder coated blue colour (suitable for drinking water) as per DIN 30677-2 & GSK guidelines with a coating thickness of min. 250 microns. Flange connections as per IS 1538 raised face & pressure testing at manufactures works shall be done as per IS 14845. including transportation charges excluding GST levied by GOI & GOM in all respect etc. complete. (For PN 10 & 16)			
	i) 50 mm dia	No.	23168.00	
	ii) 80 mm dia	No.	23774.00	
	iii) 100 mm dia	No.	29245.00	
	iv) 150 mm dia	No.	40674.00	
	v) 200 mm dia	No.	42308.00	

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>XIII. MECHANICAL JOINTS / FITTING</b>		
1	<b>Supply of C. I. Mechanical Compression Flanged / Socket Tailpiece</b> (Popularly known as I TM Flanged / Socket Tailpiece) suitable for making flanged connection with the plain barrel of C. I. Spun Pipes ( as per - IS - 1536 /2001) and D. I. Pipes ( as per IS: 8329 / 2000).The Tailpiec to be supplied complete with sealing rubber gasket of S.B.R, C.I. Follower Glands and M.S. Nut Bolts.The whole assembly should be mechanically and hydraulically tested to the provisions as laid down in IS:1538 /1993. The rates are inclusive of cost of material, freight charges, loading, transportation and unloading at departemental store, excluding GST levied by GOI and GOM in all respect, etc. complete as directed.		
	80 mm dia	No.	1311.00
	100 mm dia	No.	1430.00
	125 mm dia	No.	1800.00
	150 mm dia	No.	2574.00
	200 mm dia	No.	3335.00
	250 mm dia	No.	5031.00
	300 mm dia	No.	5632.00
	350 mm dia	No.	7427.00
	400 mm dia	No.	9694.00
	450 mm dia	No.	11380.00
	500 mm dia	No.	14299.00
	600 mm dia	No.	18336.00
	700 mm dia	No.	25009.00
	750 mm dia	No.	30390.00
2	<b>Supply of C. I. Mechanical Compression Collar Coupling</b> suitable for C. I. Spun Pipes ( as per - IS - 1536 /2001) and complete with sealing rubber gasket of SBR,.C.I. follower Glands and M.S. nut Bolts.The whole assembly should be mechanically and hydraulically tested to the provisions as laid down in IS:1538 /1993.		
	80 mm dia	No.	826.00
	100 mm dia	No.	886.00
	125 mm dia	No.	1181.00
	150 mm dia	No.	1593.00
	200 mm dia	No.	1818.00
	250 mm dia	No.	2914.00
	300 mm dia	No.	3729.00
	350 mm dia	No.	4597.00
	400 mm dia	No.	7154.00
	450 mm dia	No.	8033.00
	500 mm dia	No.	10977.00
	600 mm dia	No.	13692.00
	700 mm dia	No.	17889.00
	750 mm dia	No.	20990.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
3	<b>Supply of C. I. Mechanical Joint Double Socket 900 (11/4'') Bends</b> as dimensionally described in Table-14 of IS-13382/ 1992 complete with sealing rubber gasket of SBR (dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.		
	80 mm dia	No.	2247.00
	100 mm dia	No.	2607.00
	125 mm dia	No.	3045.00
	150 mm dia	No.	4787.00
	200 mm dia	No.	6353.00
	250 mm dia	No.	9455.00
	300 mm dia	No.	11507.00
	350 mm dia	No.	19053.00
	400 mm dia	No.	25968.00
	450 mm dia	No.	33146.00
	500 mm dia	No.	41247.00
	600 mm dia	No.	58295.00
	700 mm dia	No.	92016.00
	750 mm dia	No.	104509.00
4	<b>Supply of CI Mechanical joint Double Socket 450 (11/8'') Bends</b> as dimensionally described in Table -15 of IS - 13382/ 1992 complete with sealing rubber gasket of S.B.R. (dimensionally described in IS-12820/1989) with cast iron follower gland mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.		
	80 mm dia	No.	2087.00
	100 mm dia	No.	2323.00
	125 mm dia	No.	2936.00
	150 mm dia	No.	4032.00
	200 mm dia	No.	5311.00
	250 mm dia	No.	7791.00
	300 mm dia	No.	9400.00
	350 mm dia	No.	15681.00
	400 mm dia	No.	19349.00
	450 mm dia	No.	26989.00
	500 mm dia	No.	30069.00
	600 mm dia	No.	41633.00
	700 mm dia	No.	59329.00
	750 mm dia	No.	78462.00
5	<b>Supply of C. I. Mechanical Joint Double Socket 22.50 (1/6'') Bends</b> as dimensionally described in Table -16 of IS-13382/ 1992 complete with sealing rubber gasket of SBR (dimensionally described in IS-12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.		
	80 mm dia	No.	2003.00
	100 mm dia	No.	2230.00
	125 mm dia	No.	2677.00
	150 mm dia	No.	3785.00
	200 mm dia	No.	4747.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	250 mm dia	No.	7179.00
	300 mm dia	No.	8664.00
	350 mm dia	No.	13677.00
	400 mm dia	No.	17534.00
	450 mm dia	No.	22182.00
	500 mm dia	No.	25851.00
	600 mm dia	No.	34252.00
	700 mm dia	No.	51524.00
	750 mm dia	No.	56739.00
6	<b>Supply of CI Mechanical joint Double Socket 11.250 (1/32'') Bends</b> as dimensionally described in Table -17 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R.( dimensionally described in IS-12820 /1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.		
	80 mm dia	No.	1983.00
	100 mm dia	No.	2178.00
	125 mm dia	No.	2366.00
	150 mm dia	No.	3700.00
	200 mm dia	No.	4556.00
	250 mm dia	No.	6735.00
	300 mm dia	No.	7462.00
	350 mm dia	No.	11777.00
	400 mm dia	No.	15951.00
	450 mm dia	No.	20134.00
	500 mm dia	No.	21947.00
	600 mm dia	No.	30086.00
	700 mm dia	No.	40559.00
	750 mm dia	No.	45249.00
7	<b>Supply of CI Mechanical joint All Socket Tees</b> as dimensionally described in Table -18 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R. (dimensionally described in IS- 12820/1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.		
	80x80x80 mm dia	No.	3039.00
	100x100x80 mm dia	No.	3267.00
	100x100x100 mm dia	No.	3622.00
	150x150x80 mm dia	No.	5074.00
	150x150x100 mm dia	No.	5146.00
	150x150x150 mm dia	No.	6382.00
	200x200x80 mm dia	No.	6120.00
	200x200x100 mm dia	No.	6188.00
	200x200x150 mm dia	No.	7370.00
	200x200x200 mm dia	No.	8109.00
	250x250x80 mm dia	No.	8619.00
	250x250x100 mm dia	No.	8809.00
	250x250x150 mm dia	No.	10513.00
	250x250x200 mm dia	No.	11108.00
	250x250x250 mm dia	No.	12459.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	300x300x80 mm dia	No.	9451.00
	300x300x100 mm dia	No.	9664.00
	300x300x150 mm dia	No.	12393.00
	300x300x200 mm dia	No.	12803.00
	300x300x250 mm dia	No.	13555.00
	300x300x300 mm dia	No.	14960.00
8	<b>Supply of CI Mechanical joint Double Socket with Flanged Tees</b> dimensionally described in Table -19 of IS - 13382/1992 complete with sealing rubber gasket of S.B.R.( dimensionally described in IS-12820/ 1989) with cast iron follower gland and mild steel nut bolts coated or galvanised coated or otherwise protected from rusting and suitable for C. I. pipes.		
	80x80x80 mm dia	No.	2976.00
	100x100x80 mm dia	No.	3266.00
	100x100x100 mm dia	No.	3455.00
	150x150x80 mm dia	No.	4928.00
	150x150x100 mm dia	No.	5050.00
	150x150x150 mm dia	No.	6015.00
	200x200x80 mm dia	No.	5784.00
	200x200x100 mm dia	No.	6170.00
	200x200x150 mm dia	No.	7106.00
	200x200x200 mm dia	No.	8147.00
	250x250x80 mm dia	No.	8169.00
	250x250x100 mm dia	No.	8597.00
	250x250x150 mm dia	No.	10200.00
	250x250x200 mm dia	No.	10673.00
	250x250x250 mm dia	No.	11052.00
	300x300x80 mm dia	No.	9590.00
	300x300x100 mm dia	No.	9778.00
	300x300x150 mm dia	No.	11289.00
	300x300x200 mm dia	No.	11385.00
	300x300x250 mm dia	No.	12564.00
	300x300x300 mm dia	No.	15398.00
	350x350x80 mm dia	No.	13413.00
	350x350x100 mm dia	No.	14265.00
	350x350x150 mm dia	No.	15348.00
	350x350x200 mm dia	No.	17885.00
	350x350x300 mm dia	No.	18323.00
	350x350x350 mm dia	No.	20968.00
	400x400x80 mm dia	No.	17534.00
	400x400x100 mm dia	No.	18587.00
	400x400x150 mm dia	No.	20694.00
	400x400x200 mm dia	No.	21111.00
	400x400x300 mm dia	No.	25442.00
	400x400x400 mm dia	No.	29130.00
	450x450x80 mm dia	No.	20913.00
	450x450x100 mm dia	No.	21969.00
	450x450x200 mm dia	No.	25764.00
	450x450x300 mm dia	No.	32511.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
	450x450x350 mm dia	No.	34304.00
	450x450x450 mm dia	No.	37261.00
	500x500x100 mm dia	No.	23529.00
	500x500x250 mm dia	No.	32175.00
	500x500x300 mm dia	No.	33333.00
	500x500x400 mm dia	No.	40191.00
	500x500x500 mm dia	No.	48523.00
	600x600x100 mm dia	No.	33626.00
	600x600x300 mm dia	No.	46175.00
	600x600x400 mm dia	No.	52605.00
	600x600x500 mm dia	No.	56927.00
	600x600x600 mm dia	No.	69896.00
	700x700x100 mm dia	No.	44565.00
	700x700x200 mm dia	No.	51630.00
	700x700x350 mm dia	No.	62385.00
	700x700x400 mm dia	No.	67024.00
	750x750x150 mm dia	No.	53153.00
	750x750x250 mm dia	No.	60958.00
	750x750x750 mm dia	No.	116950.00
9	<b>Supply of CI Mechaincal joint Double Socket Reducers</b> as described in Table -21 of IS - 13382/1992 complete with sealing rubber gasket of SBR( dimensionally described in IS-12820/ 1989) with cast iron follower gland and mild steel nut bolts coated or otherwise protected from rusting and suitable for C. I. pipes.		
	100x80 mm dia	No.	2108.00
	150x80 mm dia	No.	3317.00
	150x100 mm dia	No.	3511.00
	200x100 mm dia	No.	4041.00
	200x150 mm dia	No.	4420.00
	250x150 mm dia	No.	5891.00
	250x200 mm dia	No.	6038.00
	300x150 mm dia	No.	7427.00
	300x200 mm dia	No.	7439.00
	300x250 mm dia	No.	7566.00
	350x200 mm dia	No.	10692.00
	350x250 mm dia	No.	10726.00
	350x300 mm dia	No.	10600.00
	400x250 mm dia	No.	16149.00
	400x300 mm dia	No.	14307.00
	400x350 mm dia	No.	14402.00
	450x300 mm dia	No.	17884.00
	450x350 mm dia	No.	17874.00
	450x400 mm dia	No.	17650.00
	500x350 mm dia	No.	21500.00
	500x400 mm dia	No.	21172.00
	500x450 mm dia	No.	20636.00
	600x400 mm dia	No.	31217.00
	600x450 mm dia	No.	30382.00
	600x500 mm dia	No.	28526.00

<b>Sr. No.</b>	<b>Description</b>	<b>Unit</b>	<b>Rate (in Rs.) 2019-2020</b>
	700x500 mm dia	No.	42851.00
	700x600 mm dia	No.	38889.00
	750x600 mm dia	No.	46189.00
	750x700 mm dia	No.	42694.00
	800x450 mm dia	No.	63544.00
	800x700 mm dia	No.	54549.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
1	<b>Manufacturing, providing and supplying spirally welded / ERW/ SAW / fabricated M. S. pipes</b> (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including railway freight, insurance, unloading from railway wagon, loading into truck, transport to stores, unloading, stacking excluding GST levied by GOI & GOM in all respect, etc, complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).		
	219.10 ( O.D.)	4.80 Rmt	1577.00
		5.60 Rmt	1832.00
		6.40 Rmt	2087.00
		7.00 Rmt	2275.00
		7.90 Rmt	2557.00
		8.20 Rmt	2651.00
		8.70 Rmt	2806.00
		9.50 Rmt	3052.00
	273.1 ( O.D.)	4.80 Rmt	1974.00
		5.60 Rmt	2296.00
		6.40 Rmt	2616.00
		7.20 Rmt	2934.00
		7.80 Rmt	3172.00
		8.70 Rmt	3526.00
		9.30 Rmt	3760.00
	323.90 ( O.D.)	5.60 Rmt	2732.00
		6.40 Rmt	3114.00
		7.10 Rmt	3446.00
		7.90 Rmt	3826.00
		8.40 Rmt	4062.00
		8.70 Rmt	4202.00
		9.50 Rmt	4578.00
	355.7 ( O.D.)	5.60 Rmt	3004.00
		6.40 Rmt	3426.00
		7.10 Rmt	3793.00
		7.90 Rmt	4210.00
		8.70 Rmt	4625.00
		9.50 Rmt	5040.00
	406 ( O.D.)	5.60 Rmt	3436.00
		6.40 Rmt	3919.00
		7.10 Rmt	4340.00
		7.90 Rmt	4820.00
		8.70 Rmt	5297.00
		9.50 Rmt	5773.00
		10.00 Rmt	6070.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
	457 ( O.D.)	5.60	Rmt	3875.00
		6.40	Rmt	4420.00
		7.10	Rmt	4896.00
		7.90	Rmt	5437.00
		8.70	Rmt	5977.00
		9.50	Rmt	6516.00
		10.00	Rmt	6851.00
	508 ( O.D.)	5.60	Rmt	4313.00
		6.40	Rmt	4920.00
		7.10	Rmt	5450.00
		7.90	Rmt	6055.00
		8.70	Rmt	6658.00
		9.50	Rmt	7259.00
		10.00	Rmt	7633.00
	559 ( O.D.)	5.60	Rmt	4750.00
		6.40	Rmt	5420.00
		7.10	Rmt	6006.00
		7.90	Rmt	6673.00
		8.70	Rmt	7338.00
		9.50	Rmt	8002.00
		10.00	Rmt	8414.00
	610 ( O.D.)	5.60	Rmt	5188.00
		6.40	Rmt	5921.00
		7.10	Rmt	6560.00
		7.90	Rmt	7290.00
		8.70	Rmt	8017.00
		9.50	Rmt	8743.00
		10.00	Rmt	9196.00
		12.00	Rmt	10998.00
	660 ( O.D.)	5.60	Rmt	5617.00
		6.40	Rmt	6410.00
		7.10	Rmt	7105.00
		7.90	Rmt	7895.00
		8.70	Rmt	8684.00
		9.50	Rmt	9472.00
		10.00	Rmt	9962.00
	711 ( O.D.)	5.60	Rmt	6054.00
		6.40	Rmt	6911.00
		7.10	Rmt	7660.00
		7.90	Rmt	8513.00
		8.70	Rmt	9364.00
		9.50	Rmt	10214.00
		10.00	Rmt	10744.00
		12.00	Rmt	12856.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
	762 ( O.D.)	5.60	Rmt	6492.00
		6.40	Rmt	7412.00
		7.10	Rmt	8215.00
		7.90	Rmt	9130.00
		8.70	Rmt	10044.00
		9.50	Rmt	10957.00
		10.00	Rmt	11526.00
	813 ( O.D.)	5.60	Rmt	6930.00
		6.40	Rmt	7912.00
		7.10	Rmt	8770.00
		7.90	Rmt	9748.00
		8.70	Rmt	10724.00
		9.50	Rmt	11699.00
		10.00	Rmt	12307.00
		12.00	Rmt	14731.00
	864 ( O.D.)	5.60	Rmt	7367.00
		6.40	Rmt	8412.00
		7.10	Rmt	9325.00
		7.90	Rmt	10366.00
		8.70	Rmt	11404.00
		9.50	Rmt	12440.00
		10.00	Rmt	13088.00
	914 ( O.D.)	5.60	Rmt	7796.00
		6.40	Rmt	8902.00
		7.10	Rmt	9868.00
		7.90	Rmt	10970.00
		8.70	Rmt	12071.00
		9.50	Rmt	13170.00
		10.00	Rmt	13854.00
	965 ( O.D.)	5.60	Rmt	8233.00
		6.40	Rmt	9403.00
		7.10	Rmt	10423.00
		7.90	Rmt	11468.00
		8.70	Rmt	12751.00
		9.50	Rmt	13912.00
		10.00	Rmt	14636.00
	1016 ( O.D.)	5.60	Rmt	8731.00
		6.40	Rmt	9904.00
		7.10	Rmt	10978.00
		7.90	Rmt	12206.00
		8.70	Rmt	13432.00
		9.50	Rmt	14654.00
		10.00	Rmt	15418.00
		12.00	Rmt	18466.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
	1067 ( O.D.)	5.60	Rmt	9110.00
		6.40	Rmt	10403.00
		7.10	Rmt	11533.00
		7.90	Rmt	12823.00
		8.70	Rmt	14111.00
		9.50	Rmt	15396.00
		10.00	Rmt	16199.00
	1118 ( O.D.)	5.60	Rmt	9547.00
		6.40	Rmt	10903.00
		7.10	Rmt	12088.00
		7.90	Rmt	13441.00
		8.70	Rmt	14791.00
		9.50	Rmt	16139.00
		10.00	Rmt	16981.00
	1168 ( O.D.)	5.60	Rmt	9977.00
		6.40	Rmt	11394.00
		7.10	Rmt	12632.00
		7.90	Rmt	14046.00
		8.70	Rmt	15458.00
		9.50	Rmt	16867.00
		10.00	Rmt	17748.00
	1219 ( O.D.)	6.40	Rmt	11894.00
		7.10	Rmt	13187.00
		7.90	Rmt	14663.00
		8.70	Rmt	16138.00
		9.50	Rmt	17610.00
		10.00	Rmt	18529.00
		12.00	Rmt	22198.00
	1296 ( O.D.)	9.50	Rmt	18731.00
		9.98	Rmt	19669.00
		10.00	Rmt	19710.00
	1321.00	6.40	Rmt	12894.00
	( O.D.)	7.10	Rmt	14297.00
		7.90	Rmt	15899.00
		8.70	Rmt	17498.00
		9.50	Rmt	19094.00
		10.00	Rmt	20093.00
		7.10	Rmt	15396.00
	1422.00	7.90	Rmt	17122.00
	( O.D.)	8.70	Rmt	18845.00
		9.50	Rmt	20566.00
		10.00	Rmt	21641.00
		12.00	Rmt	25932.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
	1473.00	9.50	Rmt	21308.00
	( O.D.)	9.98	Rmt	22378.00
	1524.00	7.10	Rmt	16506.00
	( O.D.)	7.90	Rmt	18356.00
		8.70	Rmt	20204.00
		9.50	Rmt	22051.00
		10.00	Rmt	23204.00
		11.90	Rmt	27577.00
		12.00	Rmt	27808.00
	1550.00	10.00	Rmt	23602.00
	( O.D.)	11.00	Rmt	25945.00
	1576.00	9.50	Rmt	22808.00
	( O.D.)	10.00	Rmt	24001.00
	1626.00	7.10	Rmt	17616.00
	( O.D.)	7.90	Rmt	19592.00
		8.70	Rmt	21565.00
		9.50	Rmt	23536.00
		10.00	Rmt	24767.00
		12.00	Rmt	29684.00
	1650.00	7.90	Rmt	19883.00
	( O.D.)	8.70	Rmt	21884.00
		9.50	Rmt	23885.00
		10.00	Rmt	25134.00
		12.00	Rmt	30125.00
	1700.00	7.90	Rmt	20486.00
	( O.D.)	8.70	Rmt	22550.00
		9.50	Rmt	24613.00
		10.00	Rmt	25901.00
		12.00	Rmt	31044.00
	1750.00	7.90	Rmt	21092.00
	( O.D.)	8.70	Rmt	23218.00
		9.50	Rmt	25342.00
		10.00	Rmt	26668.00
		12.00	Rmt	31964.00
	1800.00	7.90	Rmt	21698.00
	( O.D.)	8.70	Rmt	23885.00
		9.50	Rmt	26070.00
		10.00	Rmt	27433.00
		12.00	Rmt	32884.00
	1850.00	7.90	Rmt	
	( O.D.)	8.70	Rmt	24551.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
		9.50	Rmt	26797.00
		10.00	Rmt	28200.00
		12.00	Rmt	33803.00
	1900.00	7.90	Rmt	22909.00
	( O.D.)	8.70	Rmt	25218.00
		9.50	Rmt	27526.00
		10.00	Rmt	28967.00
		12.00	Rmt	34723.00
	1950.00	7.90	Rmt	23514.00
	( O.D.)	8.70	Rmt	25884.00
		9.50	Rmt	28253.00
		10.00	Rmt	29732.00
		12.00	Rmt	35642.00
	2000.00	7.90	Rmt	24120.00
	( O.D.)	8.70	Rmt	26551.00
		9.50	Rmt	28981.00
		10.00	Rmt	30499.00
		12.00	Rmt	36563.00
	2050.00	7.90	Rmt	24725.00
	( O.D.)	8.70	Rmt	27218.00
		9.50	Rmt	29708.00
		10.00	Rmt	31265.00
		12.00	Rmt	37482.00
	2100.00	7.90	Rmt	25331.00
	( O.D.)	8.70	Rmt	27884.00
		9.50	Rmt	30762.00
		10.00	Rmt	32032.00
		12.00	Rmt	38401.00
	2150.00	7.90	Rmt	25937.00
	( O.D.)	8.70	Rmt	28552.00
		9.50	Rmt	31165.00
		10.00	Rmt	32798.00
		12.00	Rmt	39320.00
	2200.00	7.90	Rmt	26540.00
	( O.D.)	8.70	Rmt	29218.00
		9.50	Rmt	31894.00
		10.00	Rmt	33564.00
		12.00	Rmt	40241.00
	2250.00	7.90	Rmt	27146.00
	( O.D.)	8.70	Rmt	29885.00
		9.50	Rmt	32621.00
		10.00	Rmt	34331.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
		12.00	Rmt	41160.00
	2300.00	7.90	Rmt	27752.00
	( O.D.)	8.70	Rmt	30552.00
		9.50	Rmt	33349.00
		10.00	Rmt	35096.00
		12.00	Rmt	42079.00
	2350.00	7.90	Rmt	28357.00
	( O.D.)	8.70	Rmt	31218.00
		9.50	Rmt	34076.00
		10.00	Rmt	35863.00
		12.00	Rmt	42998.00
	2400.00	7.90	Rmt	28963.00
	( O.D.)	8.70	Rmt	31885.00
		9.50	Rmt	34805.00
		10.00	Rmt	36630.00
		12.00	Rmt	43919.00
	2450.00	7.90	Rmt	29568.00
	( O.D.)	8.70	Rmt	32551.00
		9.50	Rmt	35534.00
		10.00	Rmt	37396.00
		12.00	Rmt	44838.00
	2500.00	7.90	Rmt	30173.00
	( O.D.)	8.70	Rmt	33218.00
		9.50	Rmt	36262.00
		10.00	Rmt	38162.00
		12.00	Rmt	45757.00
		16.00	Rmt	60913.00
2	Manufacturing, providing and supplying spirally welded / ERW/ SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming ‘V’ edge on both ends of pipes including railway freight, insurance, unloading from railway wagon, loading into truck, transport to stores, unloading, stacking, excluding GST levied by GOI & GOM in all respect etc. complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).			
		5.00	Rmt	1571.00
		6.00	Rmt	1894.00
	200.00 ( I.D.)	7.00	Rmt	2221.00
	( I.D.)	8.00	Rmt	2550.00
		9.00	Rmt	2882.00
		10.00	Rmt	3218.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
		5.00	Rmt	1955.00
		6.00	Rmt	2354.00
	250.00	7.00	Rmt	2758.00
	( I.D.)	8.00	Rmt	3163.00
		9.00	Rmt	3574.00
		10.00	Rmt	3985.00
		5.00	Rmt	2336.00
		6.00	Rmt	2814.00
	300.00	7.00	Rmt	3293.00
	( I.D.)	8.00	Rmt	3776.00
		9.00	Rmt	4262.00
		10.00	Rmt	4752.00
		5.00	Rmt	2720.00
		6.00	Rmt	3274.00
	350.00	7.00	Rmt	3830.00
	( I.D.)	8.00	Rmt	4390.00
		9.00	Rmt	4952.00
		10.00	Rmt	5518.00
		5.00	Rmt	3103.00
		6.00	Rmt	3733.00
	400.00	7.00	Rmt	4367.00
	( I.D.)	8.00	Rmt	5002.00
		9.00	Rmt	5642.00
		10.00	Rmt	6284.00
		5.00	Rmt	3487.00
		6.00	Rmt	4193.00
	450.00	7.00	Rmt	4903.00
	( I.D.)	8.00	Rmt	5616.00
		9.00	Rmt	6331.00
		10.00	Rmt	7050.00
		5.00	Rmt	3870.00
		6.00	Rmt	4654.00
	500.00	7.00	Rmt	5438.00
	( I.D.)	8.00	Rmt	6229.00
		9.00	Rmt	7021.00
		10.00	Rmt	7817.00
		5.00	Rmt	4253.00
		6.00	Rmt	5113.00
	550.00	7.00	Rmt	5976.00
	( I.D.)	8.00	Rmt	6841.00
		9.00	Rmt	7711.00
		10.00	Rmt	8582.00
		5.00	Rmt	4636.00
		6.00	Rmt	5572.00
		7.00	Rmt	6512.00



Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
	600.00	8.00	Rmt	7454.00
	( I.D.)	9.00	Rmt	8400.00
		10.00	Rmt	9348.00
		12.00	Rmt	11255.00
		5.00	Rmt	5020.00
		6.00	Rmt	6032.00
		7.00	Rmt	7048.00
	650.00	8.00	Rmt	8068.00
	( I.D.)	9.00	Rmt	9090.00
		10.00	Rmt	10115.00
		12.00	Rmt	12175.00
		5.00	Rmt	5402.00
		6.00	Rmt	6492.00
		7.00	Rmt	7585.00
	700.00	8.00	Rmt	8681.00
	( I.D.)	9.00	Rmt	9779.00
		10.00	Rmt	10882.00
		12.00	Rmt	13096.00
		5.00	Rmt	5786.00
		6.00	Rmt	6952.00
		7.00	Rmt	8122.00
	750.00	8.00	Rmt	9294.00
	( I.D.)	9.00	Rmt	10469.00
		10.00	Rmt	11647.00
		12.00	Rmt	14014.00
		5.00	Rmt	6168.00
		6.00	Rmt	7412.00
		7.00	Rmt	8658.00
	800.00	8.00	Rmt	9907.00
	( I.D.)	9.00	Rmt	11159.00
		10.00	Rmt	12414.00
		12.00	Rmt	14934.00
		5.00	Rmt	6552.00
		6.00	Rmt	7871.00
		7.00	Rmt	9193.00
	850.00	8.00	Rmt	10519.00
	( I.D.)	9.00	Rmt	11848.00
		10.00	Rmt	13180.00
		12.00	Rmt	15853.00
		5.00	Rmt	6935.00
		6.00	Rmt	8332.00
		7.00	Rmt	9731.00
	900.00	8.00	Rmt	11132.00
	( I.D.)	9.00	Rmt	12538.00
		10.00	Rmt	13946.00
		12.00	Rmt	16774.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
		5.00	Rmt 7319.00
		6.00	Rmt 8791.00
		7.00	Rmt 10267.00
	950.00	8.00	Rmt 11746.00
	( I.D.)	9.00	Rmt 13229.00
		10.00	Rmt 14713.00
		12.00	Rmt 17692.00
		5.00	Rmt 7702.00
		6.00	Rmt 9251.00
		7.00	Rmt 10804.00
	1000.00	8.00	Rmt 12360.00
	( I.D.)	9.00	Rmt 13918.00
		10.00	Rmt 15479.00
		12.00	Rmt 18612.00
		5.00	Rmt 8084.00
		6.00	Rmt 9710.00
		7.00	Rmt 11339.00
	1050.00	8.00	Rmt 12972.00
	( I.D.)	9.00	Rmt 14608.00
		10.00	Rmt 16246.00
		12.00	Rmt 19531.00
		5.00	Rmt 8467.00
		6.00	Rmt 10170.00
		7.00	Rmt 11876.00
	1100.00	8.00	Rmt 13585.00
	( I.D.)	9.00	Rmt 15298.00
		10.00	Rmt 17011.00
		12.00	Rmt 20452.00
		5.00	Rmt 8851.00
		6.00	Rmt 10631.00
		7.00	Rmt 12413.00
	1150.00	8.00	Rmt 14198.00
	( I.D.)	9.00	Rmt 15986.00
		10.00	Rmt 17778.00
		12.00	Rmt 21371.00
		5.00	Rmt 9234.00
		6.00	Rmt 11090.00
		7.00	Rmt 12949.00
	1200.00	8.00	Rmt 14810.00
	( I.D.)	9.00	Rmt 16676.00
		10.00	Rmt 18545.00
		12.00	Rmt 22290.00
		6.00	Rmt 11550.00
		7.00	Rmt 13486.00
	1250.00	8.00	Rmt 15425.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	( I.D.)	9.00	Rmt 17366.00
		10.00	Rmt 19310.00
		12.00	Rmt 23210.00
		6.00	Rmt 12010.00
		7.00	Rmt 14022.00
	1300.00	8.00	Rmt 16038.00
	( I.D.)	9.00	Rmt 18055.00
		10.00	Rmt 20077.00
		12.00	Rmt 24130.00
		7.00	Rmt 14558.00
		8.00	Rmt 16650.00
	1350.00	9.00	Rmt 18745.00
	( I.D.)	10.00	Rmt 20844.00
		12.00	Rmt 25050.00
		7.00	Rmt 15094.00
		8.00	Rmt 17263.00
	1400.00	9.00	Rmt 19435.00
	( I.D.)	10.00	Rmt 21610.00
		12.00	Rmt 25968.00
		7.00	Rmt 15631.00
		8.00	Rmt 17876.00
	1450.00	9.00	Rmt 20124.00
	( I.D.)	10.00	Rmt 22376.00
		12.00	Rmt 26888.00
		7.00	Rmt 16168.00
		8.00	Rmt 18488.00
	1500.00	9.00	Rmt 20814.00
	( I.D.)	10.00	Rmt 23142.00
		12.00	Rmt 27808.00
		7.00	Rmt 16704.00
		8.00	Rmt 19103.00
	1550.00	9.00	Rmt 21504.00
	( I.D.)	10.00	Rmt 23909.00
		12.00	Rmt 28728.00
		7.00	Rmt 17240.00
		8.00	Rmt 19716.00
	1600.00	9.00	Rmt 22194.00
	( I.D.)	10.00	Rmt 24676.00
		12.00	Rmt 29646.00
		8.00	Rmt 20329.00
	1650.00	9.00	Rmt 22884.00
	( I.D.)	10.00	Rmt 25441.00
		12.00	Rmt 30566.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
		8.00	Rmt	20941.00
	1700.00	9.00	Rmt	23574.00
	( I.D.)	10.00	Rmt	26208.00
		12.00	Rmt	31486.00
		8.00	Rmt	21554.00
	1750.00	9.00	Rmt	24263.00
	( I.D.)	10.00	Rmt	26974.00
		12.00	Rmt	32406.00
		8.00	Rmt	22168.00
	1800.00	9.00	Rmt	24953.00
	( I.D.)	10.00	Rmt	27740.00
		12.00	Rmt	33325.00
		8.00	Rmt	22781.00
	1850.00	9.00	Rmt	25643.00
	( I.D.)	10.00	Rmt	28507.00
		12.00	Rmt	34244.00
		8.00	Rmt	23394.00
	1900.00	9.00	Rmt	26332.00
	( I.D.)	10.00	Rmt	29273.00
		12.00	Rmt	35165.00
		8.00	Rmt	24007.00
	1950.00	9.00	Rmt	27022.00
	( I.D.)	10.00	Rmt	30040.00
		12.00	Rmt	36084.00
		8.00	Rmt	24619.00
		9.00	Rmt	27712.00
	2000.00	10.00	Rmt	30806.00
	( I.D.)	12.00	Rmt	37004.00
		16.00	Rmt	49436.00
		8.00	Rmt	25232.00
		9.00	Rmt	28400.00
	2050.00	10.00	Rmt	31572.00
	( I.D.)	12.00	Rmt	37922.00
		16.00	Rmt	50663.00
		8.00	Rmt	25847.00
		9.00	Rmt	29090.00
	2100.00	10.00	Rmt	32339.00
	( I.D.)	12.00	Rmt	38843.00
		16.00	Rmt	51888.00
		8.00	Rmt	26459.00
		9.00	Rmt	29779.00
	2150.00	10.00	Rmt	33104.00
	( I.D.)	12.00	Rmt	39762.00

Sr. No.	Description		Unit	Rate (in Rs.) 2019-2020
1	2		3	4
		16.00	Rmt	53114.00
		8.00	Rmt	27072.00
		9.00	Rmt	30469.00
	2200.00	10.00	Rmt	33871.00
	( I.D.)	12.00	Rmt	40682.00
		16.00	Rmt	54341.00
		8.00	Rmt	27685.00
		9.00	Rmt	31160.00
	2250.00	10.00	Rmt	34638.00
	( I.D.)	12.00	Rmt	41600.00
		16.00	Rmt	55566.00
		8.00	Rmt	28298.00
		9.00	Rmt	31849.00
	2300.00	10.00	Rmt	35404.00
	( I.D.)	12.00	Rmt	42521.00
		16.00	Rmt	56792.00
		8.00	Rmt	28910.00
		9.00	Rmt	32539.00
	2350.00	10.00	Rmt	36170.00
	( I.D.)	12.00	Rmt	43440.00
		16.00	Rmt	58019.00
		8.00	Rmt	29525.00
		9.00	Rmt	33229.00
	2400.00	10.00	Rmt	36936.00
	( I.D.)	12.00	Rmt	44360.00
		16.00	Rmt	59244.00
		8.00	Rmt	30138.00
		9.00	Rmt	33918.00
	2450.00	10.00	Rmt	37702.00
	( I.D.)	12.00	Rmt	45278.00
		16.00	Rmt	60472.00
		8.00	Rmt	30750.00
		9.00	Rmt	34608.00
	2500.00	10.00	Rmt	38468.00
	( I.D.)	12.00	Rmt	46199.00
		16.00	Rmt	61697.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>XV. FABRICATION OF M.S. PIPES &amp; SPECIALS</b>		
1	Providing, fabricating and fixing <b>expansion joints</b> for pipelines as per the drawing. The rate to include machining the strakes and steel ring as shown in the drawing and welding on either automatic welding machine or manually, Rate includes plates and flats required for expansion joint and all other materials such as synthetic rubber, rubber ring, etc. including packing as per specifications, grease, bolts and nuts, local handling, excluding GST levied by GOI & GOM in all respect etc. complete.		
	Expansion joints suitable for pipe diameters.		
	300 mm	Each	28832.00
	400 mm	Each	41608.00
	450 mm	Each	54122.00
	500 mm	Each	72563.00
	600 mm	Each	85246.00
	700 mm	Each	106120.00
	750 mm	Each	116944.00
	800 mm	Each	136096.00
	900 mm	Each	158016.00
	1000 mm	Each	189208.00
	1200 mm	Each	251290.00
2	<b>Blast cleaning the surface</b> of the old or new pipeline <b>internally</b> to remove all rust etc. complete, including providing copper slag/garnet, machinery, labour, cutting of pipes at required places and rewelding the same etc, complete as directed by Engineer-in-charge. (Pipes pieces if required for rewelding of old pipeline shall be paid separately.)	Sqm.	124.00
3	<b>Blast Cleaning</b> of old or new pipeline surface internally with mechanical cleaning machine having steel scraper blades with required passes including removing all rust, scaling etc. including cutting of pipes at required places, rewelding the same including cost of all materials and labour, etc, complete (Pipes pieces if required for rewelding of old pipeline shall be paid separately.)	Sqm.	124.00
4	<b>Blast Cleaning</b> of old pipeline surface internally by using swabbing method by passing polyurethane foam "Pig" with required hydraulic pressure, cutting of pipes at required places, rewelding the same including cost of all materials and labour, etc. complete. (Pipe pieces if required for rewelding of old pipeline shall be paid separately.)	Sqm.	146.00
5	<b>Blast cleaning</b> the surface of the old or new pipeline externally to remove all rust including providing copper slag/garnet machinery etc. complete as directed by Engineer-in-charge.	Sqm.	134.00
6	Providing and applying <b>primer</b> and <b>one coat of red oxide</b> of iron paint internally to blast cleaned surface of the pipes.	Sqm.	40.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
7	Providing and applying <b>primer and one coat of red oxide</b> of iron paint <b>internally</b> including cleaning the surface of the pipes with steel scrappers, wire brushes, and metal cleaning solution, etc.	Sqm.	67.00
8	Providing and applying <b>primer and one coat of red oxide</b> of iron paint <b>externally</b> to blast cleaned surface of the pipes.	Sqm.	44.00
9	Providing and applying <b>primer and one coat of red oxide of iron paint</b> externally including cleaning the surface of the pipes with steel scrappers, wire brushes, and metal cleaning solution, etc.	Sqm.	96.00
10	Providing and applying <b>covering coat of grey graphite</b> of approved quality including dusting the surface etc. complete.	Sqm.	49.00
11	Providing and applying <b>one coat of zinc rich epoxy primer</b> to the internal surface of pipe line at site.	Sqm.	104.00
12	Providing and applying <b>primer first coat of intertol 49 W emaline 05/58 pipe coat</b> or any other equivalent approved paint to the internal surface of pipe line at site.	Sqm.	80.00
	b) Second coat	Sqm.	65.00
	c) Third coat	Sqm.	64.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>XVI. M. S. PIPES LAYING</b>		
1	Lowering, <b>laying in position to correct line and level including M. S. pipes</b> with / without any outcoating on pedestals or chairs upon prepared formation. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, and transportation upto 500 M. etc. completed as specified.		
	<b>a) 5 mm to 8 mm thick</b>		
	Upto 250 mm. dia.	Rmt	413.00
	Above 250 mm. Upto 500 mm. dia.	Rmt	486.00
	Above 500 mm. Upto 750 mm. dia.	Rmt	557.00
	Above 750 mm. Upto 1000 mm. dia.	Rmt	631.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	705.00
	<b>b) Above 8 mm upto 12 mm thick</b>		
	From 750 mm.Upto 1000 mm. dia.	Rmt	840.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	936.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	1033.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	1132.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	1229.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	1326.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1427.00
	<b>c) Above 12 mm upto 16 mm thick</b>		
	From 2000 mm. Upto 2250 mm. dia.	Rmt	1264.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1364.00
	Above 2500 mm. Upto 2750 mm. dia.	Rmt	1456.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	1550.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	1643.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	1739.00
	<b>d) Above 16 mm upto 20 mm thick</b>		
	From 2500 mm. Upto 2750 mm. dia.	Rmt	1910.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2016.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2123.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2226.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	2334.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	2441.00
	<b>e) Above 20 mm upto 25 mm thick</b>		
	From 3500 mm. Upto 3750 mm. dia.	Rmt	2603.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	2751.00
2	Lowering, laying in position to correct line and level including <b>M. S. specials with / without any outcoating such as distance pieces, straps, bends, tapers, etc. on pedestals or chairs</b> upon formation. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, and transportation upto 500M etc. complete.		
	<b>a) 5 mm to 8 mm thick</b>		
	Upto 250 mm. dia.	Rmt	576.00
	Above 250 mm. Upto 500 mm. dia.	Rmt	677.00
	Above 500 mm. Upto 750 mm. dia.	Rmt	782.00
	Above 750 mm. Upto 1000 mm. dia.	Rmt	882.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	986.00
	<b>b) Above 8 mm upto 12 mm thick</b>		
	From 750 mm.Upto 1000 mm. dia.	Rmt	1176.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	1312.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	1447.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	1583.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	1723.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	1856.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1993.00



Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
	<b>c) Above 12 mm upto 16 mm thick</b>		
	From 2000 mm. Upto 2250 mm. dia.	Rmt	1833.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1907.00
	Above 2500 mm. Upto 2750 mm. dia.	Rmt	2041.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2170.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2305.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2434.00
	<b>d) Above 16 mm upto 20 mm thick</b>		
	From 2500 mm. Upto 2750 mm. dia.	Rmt	2629.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2747.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2972.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	3120.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	3266.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	3416.00
	<b>e) Above 20 mm upto 25 mm thick</b>		
	From 3500 mm. Upto 3750 mm. dia.	Rmt	3640.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	3850.00
3	Lowering, <b>laying in position to correct line and level including M. S. pipes with / without any outcoating, on pedestals or chairs</b> upon piers, trestles etc. The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, transportation upto 500 m. etc. complete.		
	<b>a) 5 mm to 8 mm thick</b>		
	Upto 250 mm. dia.	Rmt	494.00
	Above 250 mm. Upto 500 mm. dia.	Rmt	580.00
	Above 500 mm. Upto 750 mm. dia.	Rmt	669.00
	Above 750 mm. Upto 1000 mm. dia.	Rmt	757.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	846.00
	<b>b) Above 8 mm upto 12 mm thick</b>		
	From 750 mm. Upto 1000 mm. dia.	Rmt	1008.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	1123.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	1241.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	1357.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	1476.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	1592.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1707.00
	<b>c) Above 12 mm upto 16 mm thick</b>		
	From 2000 mm. Upto 2250 mm. dia.	Rmt	1454.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1525.00
	Above 2500 mm. Upto 2750 mm. dia.	Rmt	1748.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	1862.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	1977.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2072.00
	<b>d) Above 16 mm upto 20 mm thick</b>		
	From 2500 mm. Upto 2750 mm. dia.	Rmt	2291.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2420.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2545.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2672.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	2800.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	2928.00
	<b>e) Above 20 mm upto 25 mm thick</b>		
	From 3500 mm. Upto 3750 mm. dia.	Rmt	3121.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	3301.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
4	<b>Lowering and laying in position</b> to correct line and level including <b>M. S. specials such as distance pieces, straps, bends, tapers, etc. on pedestals or chairs upon piers or trestles.</b> The rate to include loading, unloading, hoisting, marginal cutting wherever required, assembling and tack welding, and including transportation upto 500 m. etc. complete as specified.		
	<b>a) 5 mm to 8 mm thick</b>		
	Upto 250 mm. dia.	Rmt	691.00
	Above 250 mm. Upto 500 mm. dia.	Rmt	814.00
	Above 500 mm. Upto 750 mm. dia.	Rmt	935.00
	Above 750 mm. Upto 1000 mm. dia.	Rmt	1060.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	1179.00
	<b>b) Above 8 mm upto 12 mm thick</b>		
	From 750 mm.Upto 1000 mm. dia.	Rmt	1411.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	1575.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	1738.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	1901.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	2066.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	2231.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	2394.00
	<b>c) Above 12 mm upto 16 mm thick</b>		
	From 2000 mm. Upto 2250 mm. dia.	Rmt	2199.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	2287.00
	Above 2500 mm. Upto 2750 mm. dia.	Rmt	2448.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2606.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2762.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2924.00
	<b>d) Above 16 mm upto 20 mm thick</b>		
	From 2500 mm. Upto 2750 mm. dia.	Rmt	3212.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	3387.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	3566.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	3739.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	3919.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	4100.00
	<b>e) Above 20 mm upto 25 mm thick</b>		
	From 3500 mm. Upto 3750 mm. dia.	Rmt	4371.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	4619.00
5	<b>Transporting within 500 meters,</b> laying in position to correct line and level <b>M. S. pipes with / without any outcoating, on prepared bedding in trenches</b> including marginal cutting wherever required, assembling tack welding the same. The rate to include loading, unloading, hoisting, etc. complete as specified.		
	<b>a) 5 mm to 8 mm thick</b>		
	Upto 250 mm. dia.	Rmt	421.00
	Above 250 mm. Upto 500 mm. dia.	Rmt	498.00
	Above 500 mm. Upto 750 mm. dia.	Rmt	573.00
	Above 750 mm. Upto 1000 mm. dia.	Rmt	647.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	723.00
	<b>b) Above 8 mm upto 12 mm thick</b>		
	From 750 mm.Upto 1000 mm. dia.	Rmt	861.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	960.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	1060.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	1162.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	1258.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	1357.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1456.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	<b>c) Above 12 mm upto 16 mm thick</b>		
	From 2000 mm. Upto 2250 mm. dia.	Rmt	1340.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1398.00
	Above 2500 mm. Upto 2750 mm. dia.	Rmt	1494.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	1590.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2941.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	1784.00
	<b>d) Above 16 mm upto 20 mm thick</b>		
	From 2500 mm. Upto 2750 mm. dia.	Rmt	1953.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2059.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2170.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2280.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	1970.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	2498.00
	<b>e) Above 20 mm upto 25 mm thick</b>		
	From 3500 mm. Upto 3750 mm. dia.	Rmt	2659.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	2813.00
6	Transporting within 500 meters, laying in position to correct line and level <b>M. S. specials pipes with / without any outcoating, such as distance pieces, straps, bends, tapers, etc.</b> on prepared bedding in trenches including marginal cutting wherever required, assembling tack welding, the same. The rate to include loading, unloading, hoisting, etc. complete as specified.		
	<b>a) 5 mm to 8 mm thick</b>		
	Upto 250 mm. dia.	Rmt	594.00
	Above 250 mm. Upto 500 mm. dia.	Rmt	695.00
	Above 500 mm. Upto 750 mm. dia.	Rmt	801.00
	Above 750 mm. Upto 1000 mm. dia.	Rmt	904.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	1012.00
	<b>b) Above 8 mm upto 12 mm thick</b>		
	From 750 mm. Upto 1000 mm. dia.	Rmt	1206.00
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	1345.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	1483.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	1623.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	1885.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	1968.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	2041.00
	<b>c) Above 12 mm upto 16 mm thick</b>		
	From 2000 mm. Upto 2250 mm. dia.	Rmt	1876.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	2030.00
	Above 2500 mm. Upto 2750 mm. dia.	Rmt	2089.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2225.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	2365.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	2498.00
	<b>d) Above 16 mm upto 20 mm thick</b>		
	From 2500 mm. Upto 2750 mm. dia.	Rmt	2714.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	2886.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	3039.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	3192.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	3344.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	3499.00
	<b>e) Above 20 mm upto 25 mm thick</b>		
	From 3500 mm. Upto 3750 mm. dia.	Rmt	3721.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	3939.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
7	<b>Welding in all positions</b> with required number of runs, for M. S. pipes internally and / or externally including gauging wherever necessary, fixing appurtenances and other accessories in connection with pipe laying work as per specification.		
	<b>A) Butt Joints : Plate thickness</b>		
	4 mm.	Rmt	191.00
	5 mm.	Rmt	289.00
	6 mm.	Rmt	681.00
	7 mm.	Rmt	759.00
	8 mm.	Rmt	954.00
	10 mm.	Rmt	1168.00
	12 mm.	Rmt	1251.00
	14 mm.	Rmt	1489.00
	16 mm.	Rmt	1804.00
	18 mm.	Rmt	1953.00
	20 mm.	Rmt	2340.00
	22 mm.	Rmt	2937.00
	25 mm.	Rmt	3986.00
	<b>B) Lap joints with convex fillet welds Lap Lengths</b>		
	5 mm.	Rmt	268.00
	6 mm.	Rmt	343.00
	8 mm.	Rmt	454.00
	10 mm.	Rmt	507.00
	12 mm.	Rmt	759.00
	14 mm.	Rmt	1031.00
	16 mm.	Rmt	1135.00
	18 mm.	Rmt	1378.00
	20 mm.	Rmt	1553.00
	22 mm.	Rmt	2077.00
	25 mm.	Rmt	2521.00
8	<b>Shifting and aligning ring girders</b> including removing tack welds and re-tacking in the correct position etc. complete as per specification for the pipes of following diameter.		
	Above 1000 mm. Upto 1250 mm. dia.	Rmt	520.00
	Above 1250 mm. Upto 1500 mm. dia.	Rmt	637.00
	Above 1500 mm. Upto 1750 mm. dia.	Rmt	751.00
	Above 1750 mm. Upto 2000 mm. dia.	Rmt	867.00
	Above 2000 mm. Upto 2250 mm. dia.	Rmt	981.00
	Above 2250 mm. Upto 2500 mm. dia.	Rmt	1096.00
	From 2500 mm. Upto 2750 mm. dia.	Rmt	1210.00
	Above 2750 mm. Upto 3000 mm. dia.	Rmt	1328.00
	Above 3000 mm. Upto 3250 mm. dia.	Rmt	1443.00
	Above 3250 mm. Upto 3500 mm. dia.	Rmt	1559.00
	Above 3500 mm. Upto 3750 mm. dia.	Rmt	1673.00
	Above 3750 mm. Upto 4000 mm. dia.	Rmt	1799.00
9	Transporting within 500 meters and <b>fixing in position stools, base plates, roller sets, grease box covers, etc.</b> including welding wherever necessary. The rate also to include fixing stools, base plates, etc. in true line and level, connecting the base plate to anchor bolts by flush welding including cutting the bolts, if required, assembling and aligning C. I. or M. S. roller sets of any size including oiling, greasing, etc. The rate also to include grouting anchor bolts, welding of two halves of grease box covers as directed by Engineer-in-charge, for pipes of following dia.		
	Above 1000 mm. Upto 1250 mm. dia.	Each	1901.00
	Above 1250 mm. Upto 1500 mm. dia.	Each	2056.00
	Above 1500 mm. Upto 1750 mm. dia.	Each	2212.00
	Above 1750 mm. Upto 2000 mm. dia.	Each	2366.00
	Above 2000 mm. Upto 2250 mm. dia.	Each	2521.00
	Above 2250 mm. Upto 2500 mm. dia.	Each	2676.00
	From 2500 mm. Upto 2750 mm. dia.	Each	2833.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	Above 2750 mm. Upto 3000 mm. dia.	Each	2985.00
	Above 3000 mm. Upto 3250 mm. dia.	Each	3142.00
	Above 3250 mm. Upto 3500 mm. dia.	Each	3297.00
	Above 3500 mm. Upto 3750 mm. dia.	Each	3479.00
	Above 3750 mm. Upto 4000 mm. dia.	Each	3605.00
10	Transporting within 500 meters and aligning, <b>fixing in position and tack welding expansion joints</b> suitable for pipeline of diameters.		
	Above 1000 mm. Upto 1250 mm. dia.	Each	6432.00
	Above 1250 mm. Upto 1500 mm. dia.	Each	6670.00
	Above 1500 mm. Upto 1750 mm. dia.	Each	6911.00
	Above 1750 mm. Upto 2000 mm. dia.	Each	7151.00
	Above 2000 mm. Upto 2250 mm. dia.	Each	13518.00
	Above 2250 mm. Upto 2500 mm. dia.	Each	13820.00
	From 2500 mm. Upto 2750 mm. dia.	Each	14121.00
	Above 2750 mm. Upto 3000 mm. dia.	Each	14330.00
	Above 3000 mm. Upto 3250 mm. dia.	Each	14726.00
	Above 3250 mm. Upto 3500 mm. dia.	Each	15029.00
	Above 3500 mm. Upto 3750 mm. dia.	Each	15327.00
	Above 3750 mm. Upto 4000 mm. dia.	Each	15630.00
11	Transporting within 500 meters aligning and fixing in position and tack welding only, including marginal cutting, supplying and providing <b>rubber packing</b> etc. where necessary.		
	<b>A)</b> Minor fixtures such as manhole cover, pressure and non-pressure type blank flanges, loose rings, small pipes to form saddle bypass arrangement, plug plates, ladders, platform, stiffener rings, etc.	MT	11513.00
	<b>B)</b> Minor fixtures such as tees, domes, 'Y' branches, insulating flange ring assembly, etc.	MT	5850.00
12	<b>Gas cutting (either square cut or V cut) pipes, plates, etc.</b> of thickness.		
	i) Upto 5 mm.	Rmt	87.00
	ii) Above 5 mm. Upto 10 mm.	Rmt	123.00
	iii) Above 10 mm. Upto 14 mm.	Rmt	158.00
	iv) Above 14 mm. Upto 18 mm.	Rmt	182.00
	v) Above 18 mm. Upto 22 mm.	Rmt	252.00
	vi) Above 22 mm.	Rmt	337.00
13	<b>Gas cutting</b> holes upto 50 mm dia (for plugs) <b>Thickness of shell</b>		
	a) 5 mm. to 12 mm	No.	95.00
	b) Above 12 mm	No.	133.00
14	Providing <b>M.S. bar mesh</b> prepared out of 16 mm dia M.S. bar at 15 cm. c/c both ways, welded to flanged ring including tack welding of bars and fixing the same with nuts and bolts on open faces of outlet/inlet pipes in the sump or reservoir, etc. complete as directed by Engineer-in-charge.	Sqm	1746.00
15	Providing <b>permanent test points</b> on the pipe line as per drawing and as directed by Engineer-in-charge including providing and fixing sluice valves, road boxes for sluice valves of size 80 mm to 250 mm in one brick masonry chamber 300 mm x 300 mm clear C. M. 1:5 with 12 mm thick in 1:3 cement plaster both inside and outside on M-100 C.C. 150 mm thick etc. complete as specified and directed.	No.	3915.00
16	Supplying transporting, the <b>S.P. fire hydrants</b> including duck foot bend, S.V. and S.V. road box, painting the hydrant, fixing the saddle piece, supplying, and laying required length of C.I. pipeline and jointing the same spun yarn, molten lead including caulking, fixing the S.V. road box in one brick masonry chamber in 1:5 C.M. with 12 mm thick 1:3 cement plaster both inside and outside on 1:3:6: C.C.150 mm thick etc, complete specified and directed. [As per I.S.900/1965 Revised]	No.	15507.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
17	<b>Hydraulic testing</b> of M.S. pipeline to specified pressure including cost of all materials and labour and water for testing for the length upto 1km., using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary.		
a)	i) Upto 600 mm. dia. (I.D.)	Km	54504.00
	ii) Above 600 mm. upto 750 mm. dia. (I.D.)	Km	54584.00
	iii) Above 750 mm. upto 900 mm. dia. (I.D.)	Km	54710.00
	iv) Above 900 mm. upto 1050 mm. dia. (I.D.)	Km	54899.00
	v) Above 1050 mm. upto 1200 mm. dia. (I.D.)	Km	55086.00
	vi) Above 1200 mm. upto 1500 mm. dia. (I.D.)	Km	55458.00
	vii) Above 1500 mm. upto 1800 mm. dia. (I.D.)	Km	56003.00
	viii) Above 1800 mm. upto 2250 mm. dia. (I.D.)	Km	56918.00
	ix) Above 2250 mm. upto 2500 mm. dia. (I.D.)	Km	57586.00
	x) Above 2500 mm. dia. (I.D.)	Km	58252.00
b)	<b>Extra work initial km</b>		
	xi) Upto 600 mm dia. (I.D.)	Km	276.00
	xii) Above 600 mm dia. upto 750 mm dia. (I.D.)	Km	397.00
	xiii) Above 750 mm dia. upto 900 mm dia. (I.D.)	Km	589.00
	xiv) Above 900 mm dia. upto 1050 mm dia. (I.D.)	Km	778.00
	xv) Above 1050 mm dia. upto 1200 mm dia. (I.D.)	Km	1001.00
	xvi) Above 1200 mm dia. upto 1500 mm dia. (I.D.)	Km	1480.00
	xvii) Above 1500 mm dia. upto 1800 mm dia. (I.D.)	Km	2235.00
	xviii) Above 1800 mm dia. upto 2250 mm dia. (I.D.)	Km	3430.00
	xix) Above 2250 mm dia. upto 2500 mm dia. (I.D.)	Km	4271.00
	xx) Above 2500 mm dia. upto 2750 mm dia. (I.D.)	Km	5167.00
	xxi) Above 2750 mm dia. upto 3000 mm dia. (I.D.)	Km	6096.00
18	Providing and applying with mechanical arrangement 1:3 proportion cement sand gunite, 40 to 50 mm thick to M. S. pipe surface under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials as directed by Engineer-in-charge and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials within a lead of 50 M, etc. complete as directed by Engineer-in-charge.	Sqm.	609.00
19	Providing and applying <b>anticorrosive prefabricated polymetric tape of 4mm thick, reinforced with fiber glass</b> after a coat of solvent based rubber modified bituminous primer of density 0.92 gms/cu cm and viscosity of 1000-2000 cps @ 150 gms/sqm followed by seven layers of polythene polymerised bitumen and HMHDPE ( High Molecular High Density Poly Ethelene). It should conform to requirement of IS-10221 and AWWA C-203 for prefabricated tapes including covering cost on pipe coating. Rates shall include cost of material coating and wrapping over the pipes, handling charges, preparation of pipe surface, all labour, material, etc. complete.	Sqm.	656.00
	<b>Note : Pipe coating is to be done at laying work site only.</b>		
20	Providing and applying with mechanical arrangement cement sand gunite of 50 mm thickness to floors, walls, floor slabs or any other structure under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials on surface, cleaning with comperssed air, degreasing, etc. including scaffolding and curing for 21 days, providing and fixing BRC fabric no. 14 but excluding cost of reinforcement, if any and removing rebound materials within a lead of 50 M, etc. complete as directed by Engineer-in-charge (for GSRs and buildings.)	Sqm.	600.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
21	Providing and applying with mechanical arrangement <b>cement sand gunite of 50 mm thickness</b> to floors, walls, roof slabs or any other structure under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials on surface, cleaning with compressed air, degreasing, etc. including scaffolding and curing for 21 days, providing and fixing BRC fabric no. 14 but excluding cost of reinforcement, if any and removing rebound materials within a lead of 50 M, for staging and bottom of bottom slab, etc. complete as directed by Engineer-in-charge (for RCC ESRs)	Sqm.	530.00
22	Providing and making <b>inner cement mortar lining to M.S. pipes</b> with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments and taking necessary access openings and manholes, cuts at suitable intervals as directed by Engineer-in-charge and rewelding the same after done with doubler plates pipes including necessary excavation, refilling concrete breaking and remaking if any, breaking guniting and remaking the same, repainting wherever required with epoxy paint in 3 coats, all dewatering including emptying the pipeline and refilling the same after done with (water to be supplied by department free of cost within 5 km. lead at fixed point and all other arrangements to be done by agency), including carrying out "C" value performance test of pipeline, complete job as per the directions of the Engineer-in-charge.		
	i) 9 mm thick for pipes upto 700 mm dia.	Sqm.	476.00
	ii) 12 mm thick for pipes above 700 mm dia.	Sqm.	552.00
23	Providing and <b>applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm2, antifungal, antibacterial, anticorrosive, graft co-polymer Coating</b> on smooth plastered surface. 100 Micron dyufilm thickness of self bonding with plastered surface and 100 Micron of top coat. For sewage treatment plant (R. C. C. Tank inside coating) and water treatment plant.	Sqm.	1547.00
24	Providing and applying <b>external and internal coating for steel structures</b> in sewage treatment plant/water treatment plant with elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm2, antifungal, antibacterial, anticorrosive, graft co-polymer. 50 Micron DFT. of self bonding with steel, 50 Micron DFT. of inner coat and 50 Micron DFT of top coat.	Sqm.	904.00
25	Providing and <b>applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm2, antifungal, antibacterial, anticorrosive, graft co-polymer coating</b> on external pipe lines in unlaidd/laid condition after proper cleaning. 50 micron DFT of self bonding grade with metal surface, <b>50 Micron DFT of self bonding grade with metal surface, 50 Micron DFT inner coat and 50 Micron DFT of top coat.</b>		
	1) Water and sewage pipe lines (external) in unlaidd condition.	Sqm.	946.00
	2) Water and sewage pipe lines (external) in laidd condition.	Sqm.	970.00
26	Providing and <b>applying of elastomeric (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 Kg/cm2, antifungal, antibacterial, anticorrosive, graft co-polymer coating</b> on internal surface of pipe lines. <b>100 Micron DFT of site bonding grade with steel surface and 100 Micron DFT of top coat.</b>		
	1) Pipe line in unlaidd condition	Sqm.	1191.00
	2) Pipe line in laidd condition	Sqm.	1271.00

Sr. No.	Description	Unit	Rate (in Rs.) 2019-2020
1	2	3	4
27	Providing and <b>applying of elastomeric</b> (450% elongation), thermoplastic, fire retardant, coating skin tensile strength 18 to 21 kg/cm2, antifungal, antibacterial, anticorrosive, graft co-polymer coating on cleaned steel reinforcement bars. <b>80 to 100 micron DFT With self bonding trade of bar coating.</b>		
	1. 6 mm dia.	MT	43309.00
	2. 8 mm dia.	MT	33140.00
	3. 10 mm dia.	MT	26260.00
	4. 12 mm dia.	MT	21852.00
	5. 16 mm dia.	MT	16363.00
	6. 20 mm dia.	MT	13316.00
	7. 25 mm dia.	MT	10515.00
	8. 32 mm dia.	MT	8427.00
	9. 40 mm dia.	MT	6400.00
28	Providing and <b>applying of H D P E coating for MS pipe internally as well as externally</b> including cost of H D P E powder moulding pipe grade, labour, scrapping the pipe surface with wire brushes, degreasing, cleaning by compressed air and surface grinding and finishing including cost of loading , unloading and handling of pipe at factory etc. complete as directed by Engineer -in -charge.		
	<div> <div>HDPE coating</div> <div>External</div> </div> <div> <div>thickeess in micron</div> <div>Internal</div> </div> <div> <div>Total coating</div> <div>thickness in micron</div> </div>		
	1. 0 2000 2000	Sq. m	2383.00
	2. 2000 micron 1000 3000	Sq. m	2993.00
	3. 3000 micron 1000 4000	Sq. m	3440.00
	4. 3000 micron 2000 5000	Sq. m	3953.00



<b>Section - I- (XVIII) - TREATMENT PLANT (W.T.P. &amp; S.T.P.)</b>				
<b>Sr No</b>	<b>Item Description</b>	<b>Unit</b>	<b>Rate (in Rs.)</b>	
1	<p>Designing (aesthetically), providing and constructing high rate Unconventional Water Treatment Plant i.e. Simplified Water Treatment Plants consisting of Civil works including cost of Providing and applying Epoxy paint to inside surface of water retaining structures in contact with chlorine and providing anti - termite treatment to entire structure below Ground level, <b>ceramic tiles for flooring, Acrylic emulsion with silicon additives paint from outside. stainless steel railing</b>, Mechanical and Electrical components of various sub-works as given below : including necessary hydraulic testing, structural testing and trial run for 3 months, etc. complete as directed by Engineer-in-charge (turn-key job) works.</p> <p>1) <b>Aeration Fountain</b>  2) <b>Inlet arrangements</b>  3) <b>Mixing channel</b> with ventury flume and flow measuring arrangement  4) <b>Inlet channel</b>  5) <b>Flocculator -</b>  Confirming to I.S. 7208-1974 (Type - C) with detention period of 30 minutes  6) <b>Tube Settlers -</b>  “Designing, fabricate and construct Tube Settlers with square or any other shaped tube like Circular, Chevron, Hexagonal etc. having proven performance.”  7) <b>Rapid sand gravity filters. <u>All valve shall be glandless.</u></b>  8) <b>Filter house</b>  9) <b>Chemical house</b>  10) <b>Alum tanks</b> 2 Nos. with mixing carrying and dosing arrangements with piping.  11) <b>100 kg chlorine cylinder for capacity upto 5 mld and chlorine tonner for capacity above 5 mld.</b>  12) <b>TCL solution tank</b> with mixing, carrying and dosing arrangement with piping  13) <b>Bye-pass arrangement</b>  14) <b>External and internal electrification</b>  15) <b>Laboratory equipments</b></p>			

Sr No	Item Description	Unit	Rate (in Rs.)	
16)	<b>Wash water tanks</b> of capacity equal to 12 minutes to wash specified number of filter beds at time at 600 lit/m <sup>2</sup> /m under head of 12 m at under drain			
17)	<b>Wash water pumps</b> with 100% standby			
18)	<b>Air blowers</b> capable of delivering 600 LPM per square metre of free air of filter area at 0.4 Kg/sqcm at the under drains (100% standby) <b>Air blowers shall be adopted for WTP having capacity more than 3 mld only. Below 3 mld capacity, Air blowers shall not be adopted.</b>			
19)	<b>Pure water sump</b> capacity equal to 1 hour pumping capacity			
20)	<b>Pure water pump house</b> over the sump / by the side of sump			
21)	<b>Drainage arrangements</b>			
22)	<b>Alum store</b>			
23)	<b>Sanitary block</b> with necessary water supply and drainage arrangement and internal WBM roads			
24)	These rates are <b>applicable for seismic zones 2,3 and 4</b>			
25)	Rates given below are inclusive of uplift pressure if any and dewatering during the entire work			
26)	All RCC structures shall be constructed in M-250. Structures in contact with water shall be in M-300.			
27)	Unconventional Treatment Plants less than 1 MLD capacity shall not be constructed.			
28)	All the structural steel work / fabrications are to be provided with application of Hot Dip Zinc coating according to specifications as per IS 4759 :1996 (Reaffirmed 2006)			
<b>Note:</b>	Conditions from Sr. No. 1 to 28 shall form a part and parcel of the tender and must be included in draft tender papers for the work of unconventional treatment plants.			
	<b>Unconventional Water Treatment Plant</b>			<b>LABOUR</b>
S.No.	Capacity in Mld	Unit	Rate in Lakhs	Rate in Lakhs
1	Fixed cost for 1 MLD	Job	53.66	21.65
2	Add for capacity above 1 MLD upto 2 MLD	MLD	24.29	9.61
3	Cost of 2 MLD Treatment Plant	Job	77.95	31.28
4	Add for capacity above 2 MLD upto 5 MLD	MLD	18.23	7.19
5	Cost of 5 MLD Treatment Plant	Job	132.60	52.93
6	Add for capacity above 5 MLD	MLD	14.17	5.77
7	Cost of 10 MLD Treatment Plant	Job	203.45	81.37

Sr No	Item Description	Unit	Rate (in Rs.)	
2	<p>Designing (aesthetically), providing and constructing and commissioning Conventional Water Treatment Plant consisting of all Civil, works including cost of Providing and applying Epoxy paint to inside surface of water retaining structures in contact with chlorine and providing anti - termite treatment to entire structure below Ground level, <b>ceramic tiles for flooring, Acrylic emulsion with silicon additives paint from outside. stainless steel railing</b>, Mechanical and Electrical components of various sub-works as given below : including necessary hydraulic testing, structural testing equipment testing, trial run for a period of 3 months, etc. complete as directed by Engineer-in-charge (turn-key job).</p> <p>1) <b>Aeration Fountain</b> Plan area not less than 1.25 square metre per MLD</p> <p>2) <b>Ventury Flume</b> With necessary devices, consisting of simple mechanical indicator. ( Pedestal type gauge)</p> <p>3) <b>Flash Mixer</b> Rapid mixing device, detention time 60 seconds to give velocity gradient 300 to 400 sec<sup>-1</sup> vane mixer type confirming to I.S. 7090 of 1985.</p> <p>4) <b>Flocculator</b> Confirming to I.S. 7208 of 1974 (Type-C) with detention period of 30 minutes.</p> <p>5) <b>Clarifier</b> Horizontal flow circular tank, detention period 2-5 hours, overflow rate 30 cubic metre per square metre per day (to be specified), Weir loading not more than 300 cubic metre per metre per day, with mechanical sludge scraper conforming to I.S. No. 10313 -1982 with necessary inlet arrangements.</p> <p>6) <b>Rapid Sand Filters and Filter House</b> Filter designed for filtration rate of 4800 liters per square metre per hour for normal run and it shall not exceed 6000 liters per square metre per hour when one bed is under maintenance, minimum 2 beds for plant upto 10 MLD, for larger plants as specified,</p>			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<p>filters to be located in filter house with roof slab, pipe gallery and platform minimum 5.5 metre in width with constant rate filtration or declining rate filtration. <b>All valve shall be glandless.</b></p> <p><b>a) Filter Sand</b> Effective size 0.45 to 0.70 mm, uniformity coefficient not more than 1.7, nor less than 1.3, depth of water over sand 0.75 M, free board 50 cm, gravel 0.45 M in depth, sand and gravel confirming to I.S. 849 (i)-77, back wash by air wash, standard appurtenances</p> <p><b>b)Wash Water Tank</b> Capacity to be specified and suitable to supply water to wash specified number of filter beds at a time 12 minutes @ 600 lit/sqm/min under a head of 12 m at under drain.</p> <p><b>c)Wash Water Pumps</b> Capacity to fill water tank in 1 hour with 100 % standby.</p> <p><b>d)Air Blowers</b> Capable of delivering 600 LMP per square metre of free air, of filter area at 0.4 kg/square cm at the underdrains (100% stand by) for period of 5 min. <b>Air blowers shall be adopted for WTP having capacity more than 3 mld only. Below 3 mld capacity, Air blowers shall not be adopted.</b></p> <p><b>7) Chemical House in Two Storeys</b> a)Ground floor to accommodate 7 days alum requirement and sundry storage (Minimum 4 m height) b)First floor to accommodate alum and lime tanks. chain pulley block etc. (min. 5 m height) <b>c) Solution tanks</b> Minimum 3 tanks (one for preparation. second for dosing and third as standby), each tank capable of giving 8 hours maximum dose without interruption, minimum free board 0.30 M, trays for dissolving, level indicator, mechanical agitation devices, solution feed and drain lines, solution feed device (constant head device, strength of solution upto 10% only) conforming to I.S. 9222 part-I/1979.</p> <p><b>8) Pure Water Sump and Pump House</b> a) <b>Capacity of sump</b> One hour of designed flow.</p>			

Sr No	Item Description	Unit	Rate (in Rs.)	
b)	<b>Pump House</b> Pump house of required size over the sump or by the side.			
9)	<b>Store House</b> Suitable for alum storage of three months and 7 days temporary storage, 7 days TCL requirement in mansoon with 20 % extra capacity for other sundry articles.			
10)	<b>Vacuum feed type chlorinators - make to be approved by MJP.</b>			
a)	Confirming to I.S. 10533 - A Part-II 1983.			
b)	Rate of withdrawal.			
	<b>Temperature Kg.of Chlorine discharge per day</b>			
	Degree "C"		<u>Cylinders</u>	
		45	67	Tonners
	10	6.35	9.50	110
	15	10.75	16.10	130
	20	14.50	21.24	254
	27 & above	18.70	28.12	315
c)	<b>Chlorinator equipment and container room:</b> to confirm to I.S. 10553 Part - I 1983.			
d)	<b>100% Standbye</b> shall be provided			
e)	<b>100 kg chlorine cylander for capacity upto 5 mld and chlorine tonner for capacity above 5 mld.</b>			
11)	<b>By pass arrangements - D.I. pipes.</b>			
	i) By passing all units of T.P.			
	ii) By passing flash mixer, clarifloculator.			
	iii) By passing flash mixer, clarifloculator & filter units			
12)	<b>Disposal of waste from WTP :</b> Safe disposal arrangement to nearby nalla including cost of pipe			
13)	<b>For WTP of capacity 30 mld and more</b> additional arrangement for backwash water recycle shall be provided, including sump, pumping machinary, rising main etc. complete.			
14)	<b>Drainage arrangements</b> To decant all units of WTP with DI pipes upto boundary of each unit and further extension with RCC pipes to nearby nalla.			
15)	<b>Electrical installation.</b> Both internal and external including entire plant area.			

Sr No	Item Description	Unit	Rate (in Rs.)	
16)	<b>Laboratory equipment.</b> As per requirement (to be specified during tendering.)			
17)	<b>Sanitary blocks.</b> Carpet area-15 square metre minimum upto 25 Mld and 25 square metre above 25 Mld.			
18)	<b>Administrative block and internal road.</b> To accommodate office room, chlorine room, laboratory room, panel board room, blower room etc. and WBM road to connect all units from main gate of plot.			
19)	Rates given below are <b>inclusive of uplift pressure if any and dewatering during entire work.</b>			
20)	Disposal of waste from WTP: Safe disposal arrangement to nearby nalla including cost of pipes.			
21)	For WTP of capacity 30 mld and more additional arrangement for backwash water recycle shall be provided, including sump, pumping machinery, rising main etc. complete.			
22)	These rates are applicable for seismic zones-2,3 and 4.			
23)	All RCC structures shall be constructed in M-300.			
24)	All pipes and conduits channel with 20% overloading capacity.			
25)	All the structural steel work / fabrications are to be provided with application of Hot Dip Zinc coating according to specifications as per IS 4759 :1996 (Reaffirmed 2006)			
<b>Note:</b>	Conditions from Sr. No. 1 to 26 shall form a part and parcel of the tender and must be incorporated in draft tender papers of conventional treatment plants.			
	<b>Rates for Conventional Treatment Plants</b>			<b>LABOUR</b>
S.No.	Capacity in Mld	Unit	Rate in Lakhs	Rate in Lakhs
1	Upto 5 MLD	MLD	34.47	13.88
2	Cost of 5 MLD Treatment Plant	Job	172.35	69.47
3	Add for capacity above 5 MLD upto 10 MLD	MLD	25.07	9.92
4	Cost of 10 MLD Treatment Plant	Job	297.69	119.08
5	Add for capacity above 10 MLD upto 20 MLD	MLD	15.66	6.47

Sr No	Item Description	Unit	Rate (in Rs.)	
6	Cost of 20 MLD Treatment Plant	Job	454.37	183.62
7	Add for capacity above 20 MLD upto 50 MLD	MLD	14.63	5.95
8	Cost of 50 MLD Treatment Plant	Job	893.06	362.23
9	Add for capacity above 50 MLD upto 100 MLD	MLD	8.77	3.50
10	Cost of 100 MLD Treatment Plant	Job	1331.76	534.91
11	Add for capacity above 100 MLD	MLD	7.54	3.02
3	Designing (aesthetically), providing, fabricating, Package Water Treatment Plant. At the shop, transporting to site, installing, testing and commissioning at the site, giving necessary one month's free test and trial run with guarantee for one year, etc. complete. <b>Prefabricated Package Water Treatment Plant comprising following</b>			
1	<b>Rapid mixing channel</b> in M.S. sheets and M. S. baffle.			
2	<b>Flocculator</b> not less than 10 minutes detention, in M.S. prefabricated box, flocculation being achieved either by glass pebbles of graded size or PVC tetrapod or equivalent arrangement to ensure good flocformation.			
3	<b>Plate or tube settlers</b> of not less than 30 minutes detention, in M.S. prefabricated box, plates / tubes mounted in the settler basin with inclination of not less than 60 degree to horizontal.			
4	<b>Rapid sand gravity filter</b> in M. S. prefabricated box with filter sand not less than 500 mm thick, supported on false floor below with polypropylene nozzles spaced at not more than 500 mm centres in either direction			
5	<b>Backwashing, inlet facilities</b> only shall be provided. Department shall provide either ESR giving 8 to 10 M head at filter nozzles or backwash pump, having flow rate of 0.6 Cum per minute per square metre of filter bed. (Limit upto 5.0 M. from W.T.P. face)			
6	<b>All civil works</b> for foundation, consisting of raised RCC platform above G.L. or walls in B.B. masonry or UCR masonry shall be provided as per needs at site.			

Sr No	Item Description	Unit	Rate (in Rs.)	
7	<b>Bypass in the form of pipes or M.S. channels</b> included in the design, effecting bypass of such new tank and filter individually or both. (Limit upto 5.0 M. from W.T.P. face)			
8	The entire <b>M.S. fabricated tank</b> provided with FRP lining (5 mm thick) to inside face in contact with water epoxy painting- two coats with one coat of primer on outside. The thickness of plates employed shall not be less than 6 mm			
9	<b>Alum dosing and mixing arrangements</b> to be provided in twin tanks, each of 8 hours capacity, capable of importing does of 20 ppm with 5% solution. The alum tanks provided with a dose in steps of 5 ppm and entire unit mounted on the top of flocculator / settler box, in the form of prefabricated structure, with access platform and ladder. Alum boxes with FRP lining (5 mm thick) inside and epoxy paint two coats with one coat of primer on outside.			
10	<b>Both flocculator and settling basins</b> provided with hopper bottom with slope not less than 45 degrees to the horizontal drain pipes and valves provided to both flocculator and settling basin.			
11	<b>Flow ratings</b> to conform following parameters : a) Velocities in channels not to exceed 0.6 M./Second. b) Velocities in filter outlet pipes and valves not to exceed 1 M./Second. c) Velocities in interconnecting pipe and controls not to exceed 1M./Second. d) Backwash with air : Not required. e) Backwash with water : Not less than 0.6 M./ Sqm. of filter bed area in filter box.			
12	Free board for all units not less than 300 mm			
13	Rates as above exclude all taxes, GST levied by GOI & GOM which would be specific to the site locations.			



Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>Rates for Package Water Treatment Plant</b>			LABOUR
S.No.	Capacity in Mld	Unit	Rate in Lakhs	Rate in Lakhs
1	21 Cum / Hr. (0.50 MLD)	Each	28.61	11.59
2	34 Cum / Hr. (0.80 MLD)	Each	35.20	14.11
3	42 Cum / Hr. (1.00 MLD)	Each	39.48	15.78
4	63 Cum / Hr. (1.50 MLD)	Each	49.52	19.85
5	83 Cum / Hr. (2.00 MLD)	Each	58.70	23.51
6	125 Cum / Hr. (3.00 MLD)	Each	75.61	30.19
	Note : Depending upon the capacity required for the scheme,one of the above capacity should be choiced.			
	<b>SEWAGE TREATMENT PLANT (STP )</b>			
	A) Designing (aesthetically), providing, and constructing and giving satisfactory trials of modernised <b>Sewage Treatment Plant</b> consisting of receiving chamber, screen chamber, grit chamber, measuring flume, distribution chamber with primary and secondary treatment, etc. as detailed below, administration block of suitable size including allied units for waste disposal with all civil and mechanical works involved, etc. complete (Turn key job).			
	<b>A) Primary and Secondary Treatment (Extended Aeration Process)</b>			LABOUR
S.No.	Capacity of Plant	Unit	Rate in Lakhs	Rate in Lakhs
1)	1. Upto 10 MLD	MLD	50.13	19.85
2)	2. Cost of 10 MLD Plant	Job	501.37	198.46
3)	3. Add for capacity above 10 MLD upto 20 MLD	MLD	42.52	16.80
4)	4. Cost of 20 MLD Plant	Job	940.06	371.82
5)	5. Add for capacity above 20 MLD	MLD	37.61	14.93
6)	6. Cost of 50 MLD Plant	Job	2068.13	819.74
7)	7. Add for capacity above 50 MLD	MLD	22.34	8.87
8)	8. Cost of 100 MLD Plant	Job	3185.21	1263.02

Sr No	Item Description	Unit	Rate (in Rs.)	
B)	Designing (Aesthetically) Providing and constructing, hydraulic testing commissioning and giving satisfactory trials of <b>modernised sewage treatment plant</b> consisting of inlet chamber, screen chamber, Detritus tanks, Parshall flume, primary settling tanks, Aeration tanks, Secondary settling tanks, Sludge Sump and Pump House ,Sludge Thickner, Primary digester , Secondary digester, SST Sump and Pump house, Chlorine contact tank, Chlorinators, Chlorinator room, sump cum blending tank, PST sludge sump cum blending tank,Pump house, Sludge Centrifuge, gas holder, necessary piping work with required valves, gates, drains, pathways, Administrative Building cum Laboratory, Laboratory equipments, tools and plants, Spare parts etc. complete as turnkey job with all involved civil electrical and mechanical works inclusive of following items, units as per detailed specification for civil, Electrical and Mechanical Components with all duties etc.complete.			
1	<b>Inlet Chamber:</b>			
	Designing, providing and constructing R.C.C. (M:300) Inlet chamber designed for the peak flow 2 DWF including necessary excavation in all types of strata including walkway around the periphery. Each compartment will have phosper bronze, steel gate with extension rod, head stock, opeating wheel, G.I. Pipe railing etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.			
2	<b>Screen Chambers:</b>			
	Designing, providing and constructing and testing commissioning screen chamber, designed for average 1DWF & maximum 2 DWF in RCC (M-300), including inlet pipe/Channel from inlet chamber outlet, pipe/channel to detritus tank, free board of 0.50 m minimum, RCC walkway 1.2M wide with G.I. Pipe railing. RCC stair case of 1.2 m width from G.L. to screen chamber.			

Sr No	Item Description	Unit	Rate (in Rs.)	
3	<b>Detritus Tank :</b>			
	Designing, providing and constructing continuously grit removal type of Detritus Tank, mechanically operated in RCC (M-300) capable of removing 100% 0.20mm size particle and above, having specific gravity 2.30, designed for one peak 2 DWF with suitable arrangement of separation of grit from putrescible solids including providing and making necessary arrangement of JB-1. inlet and outlet channels of required sizes as may be required to connect the flow to parshall flume etc. complete including hydraulic testing for water tightness of the structure having minimum free board of 0.30 m, washout arrangement to grit chamber and platform 1.20m wide RCC walkway with G.I. pipe hand railing shall be provided. A pit for collecting grit conveyed by conveyor shall be provided It should be suitable to handle the grit for carting. All arrangements shall be as per detailed specifications and as directed.			
4	<b>Parshall Flume:</b>			
	Designing, Providing and constructing Parshall Flume Channel in RCC(M-300) for			
5	measuring quantity of sewage received at the treatment works, max flow of 2 DWF and minimum flow of 1/2 DWF including providing and making necessary arrangement of approach channel as may be required to connect the flow having minimum velocity of 0.3m per second to Distribution Box (DB-1) The unit shall be provided with walkway & RCC staircase having width of 1.20 m each etc. complete, including hydraulic testing for water tightness of the civil structure having free board of 0.6 m including electrically operated, flow indicating and flow integrating devices having a standby of float operated ROF meter. All arrangements as per specifications.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>Primary Settling Tanks With Equipments :</b>			
	Designing, providing, constructing and hydraulic testing in RCC (M-300) water tight Primary Settling Tanks of 1 DWF capacity with feed chamber sludge and effluent chamber, base adequately supported providing 1.20m wide clear peripheral and approach walkway interconnecting C.I. double flanged pipes from feed chamber of the clarifier distribution well grouting wherever necessary, including foundation etc. as per specifications water depth at outer side shall be minimum 3.0 meters, weir loading shall not be greater than 125 cum DMF for average flow Bottom slope shall be 1:12			
	The floor of clarifier shall have 40 mm thick (min.) screed course of cement grout of mix in C.M. 1:2 Detention period shall be 2.25 hrs. dispersion box and stiffened weir plate made of mild steel plate not less than 8 mm thick, anticorrosive epoxy paint on both faces shall be provided Minimum free board of 0.50 m. be provided it includes inlet pipe from distribution chamber, central shaft inlet baffle outlet chamber, Scum remover, skimming device, scum chamber, connecting channel from PST outlet chamber to DB-2 as per detailed specifications.			
6	<b>Aeration Tank (AT) :</b>			
	Designing, providing and constructing in RCC mix (M-300) Aeration Tank in compartments to handle combined flow of 1 DWF, incoming flow and recirculation flow including construction of inlet, outlet and distribution chamber DB-3 and providing 1.20m wide clear peripheral and approach walk ways, expansion joints wherever necessary, including foundation etc. as per specifications. Peak factor shall be 2, F/M ratio shall be 0.40, low speed aerator speed between 20 to 100 RPM recirculation			

Sr No	Item Description	Unit	Rate (in Rs.)	
	flow @ 50% and free board 0.60 m Depth, (SWD) 3.50 m minimum D.O. level at A.T. 2 Mg/Lit, MLVSS concentration shall be 2500 Mg/Lit and MLVSS concentration shall be 2000 Mg/Lit, HRT shall be 4 to 6 hours and STR 6-8 days. It should have compartments for washing, oxygen transfer capacity of mechanical aerator shall not be less than 1.5 Kg/KWH, BOD of effluent 20 mg/lit with input to aerator 0.15 to 0.30 Kwh/1000 Cum of Aeratoin tank. All related works shall be as per detailed specifications.			
7	<b>Secondary Settling Tanks with equipments :</b>			
	Designing, providing & constructing in RCC (M-300) water tight secondary settling tank having detention period 2 hours and SWD shall be 4.20 meter. The effluent BOD & SS from the secondary clarifier shall not be more then 20 Mg/lit and 30 mg/lit respectively. It should be hydraulically tested, bottom floor slope of 1:12 and free board of 0.60 m minimum Dispersion box shall be made of Mild Steel plate not less then 8 mm thick with anticorrosive epoxy paint from both faces and well stiffened The sewage admitted at the centre flowing upward and outwards towards periphery be slowly and continuously collected towards a convenient discharge point near centre by a rotating wheel arm. The Clarifier will be completed with end drive half rotating bridge, structural steel rake, over flow weir, walkway diffuser, over load alarms, having push bottoms, starters for the clarifier, walkway and the suitable sludge withdrawing arrangement with flush valve capable of withdrawing moisture content not more then 97% to 98%, slo			
	rotating sludge scrapper mechanism fitted with squeezes including providing and making necessary arrangement to connect the flow to outlet chamber (DB-4) then the gravity mains for final diaposal and as per detailed specifications and obligatory provision. All other arrangements shall be as per detailed specifications.			

Sr No	Item Description	Unit	Rate (in Rs.)	
8	<b>Sludge Thickner with equipments:</b>			
	Designing providing and constructing water tight of Sludge Thickner (Gravity type) including foundation in RCC (M-300) with inlet and outlet chamber influent well, inlet and outlet pipes, with sludge pit and sludge removal arrangement, grouting wherever necessary with walkway all around of 1.20 m width G.I. pipe railing interconnecting CI pipes all complete as per specifications Detention time 24 hours. SWD shall be 4.25 metre with necessary fixed bridge scraper arrangement as per detailed specifications and necessary inlet and outlet arrangement. All other arrangement as per detailed specifications.			
9	<b>Primary Digester with mixer equipment (Fixed Cover)</b>			
	Designing, providing and constructing unit of water tight and gas tight Primary Digester suitable for 1 DWF plant and complete with pipe gallery, building, staircase for access from dome of digester into inside staircase, walkways at springing levels etc. walls and base slab being in RCC M-300, domes in structural concrete including providing burners and civil works for gas collection, grouting wherever necessary etc. complete as per specifications. It should be designed for min 90 C and max. 450C. and minimum detention time of 30 days, water depth shall not be more than 8.5m free board shall be 0.6m with inlet and outlet arrangement of D.I. flanged pipes including giving hydraulic testing and air tightness testing. The item includes providing works for collecting Gas and Gas burner as per specification.			

Sr No	Item Description	Unit	Rate (in Rs.)	
10	<b>Secondary Digester with equipment (Fixed cover)</b>			
	Designing, providing and constructing including foudation unit of watertight and gastight Secondary Digester to deal with 1 DWF complete with pipe gallery, building, staircase for access from dome of digester into inside, staircase to walkways at springing levels etc., Walls and base slab and domes being in RCC M-300, providing arrangement for digested sludge from digesters to centrifuge, providing burners and civil works for gas collection grouting wherever necessary etc. complete. as per specifications and obligatory provision All other arrangements as per detailed specifications.			
11	<b>S.S.T. Sump &amp; Pump House with recirculation Pumps and Sludge Pumps to Digester:</b>			
	Designing, providing & constructing Sump & Pump house of requisite capacity with ceiling height not less then 6.M., Sludge stream for recirculation to aeration tank & excess sludge to SCBT, including C.I. Piping to carry this flow to sump as per detailed specification & as directed by Engineer-in-charge.			
12	<b>Chlorine Contact Tank :</b>			
	Designing, providing and constructing Chlorine Contact chamber of adequate capacity to deal with 1 DWF. Average flow. The chlorine contact tank should be of 30 minutes capacity during average flow to achieve 99.99% coliform reduction. Chlorine dose shall be maintained as per standard provisions including provisions including designing, providing and constructing water supply arrangment for chlorination, including providing dewatering and by-pass arrangements jointing to final effluent main and outlet weir etc complete. The effluent quality should match with the standards laid down by Maharashtra Water pollution Control Board and as per the obligatary provision and detailed specifications and as directed by Engineer-in- charge.			

Sr No	Item Description	Unit	Rate (in Rs.)	
13	<b>Chlorinator and chlorinator Room/Tonner Room.</b>			
	Designing, providing and constructing chlorinators vaccum type 2 Nos each having capacity of 10 Kg/Hr as per obligatory provisions and detailed sprcifications with necessary provision of chlorinator room having floor area not less then 30 Sqmt including automatic residual chiorine controller with actuator and residual chlorine analyser including cost of chlorine cylinder, piping, valves, measuring and controlling equipments, safty devices, lifting equipments, etc. complete as per I.S - 10553 (Part II) 1982.The tonner room should have 3 MT capacity crane for loading and unloading facility. Tonner storage should distinctly isolated and should be for minumum 10 Tonners space and arrangements as per gas laws 1981 and factory act shall be provided. and all other matching amenities be provided, 5 MT gantry shall be provided for full length of Tonner room at 6 m height from floor level, with /outlet chember and treated effluet outlet channel etc. complete as per detailed specifications.			
14	<b>Sump cum Blending Tank (SCBT)</b>			
	Designing providing and constructing sump cum blending tank of appropriate size and detention time with free board of 0.60 m. The slope of floor 1:4 with suction pit at the centre as per detailed specifications and obligatory requirements.			
15	<b>P.S.T. Sump Cum Blending Tank, Pump House with recirculation pumps:</b>			
	Designing providing and constructing pump house of appropriate size with pumps, ceiling height minimum 6m over the circular sump for discharging the sludge to thickner and recycling of flow for blending with D.I. piping etc. complete as per detailed specifications.			



Sr No	Item Description	Unit	Rate (in Rs.)	
16	<b>Sludge Centrifuge Room with Centrifuges.:</b>			
	Designing, providing constructing and installing including foundation etc. Sludge Centrifuge to handle the sludge flow of one day in one hour per unit with sludge dewatering unit drain etc. Complete as per specifications. sludge centrifuge with all necessary arrangements as per detailed specifications mentioned in Volume -II and Volume -III of tender and obligatory provisions, be provided with satisfactory functioning.			
17	<b>Gas Holder:</b>			
	Designing, providing and constructing gas holder having gas collection system, gas flow meter and gas burner with floating dome arrangement and storage time 6 hrs. to be constructed in M-300 having appropriate diameter as per detailed specifications and obligatory provisions. The floating dome shall be of 8mm thick M.S. Plate minimum and shall be provided with two coats of anticorrosive epoxy coating from both faces.			
18	<b>Outfall Sewer :</b>			
	Designing providing and constructing appropriate Outfall Sewer of R.C.C. NP-2 pipe, to discharge treated effluent, untreated effluent form outlet chamber (after secondary clarifier) to the local nallah at a point shown on the drawing including necessary chambers for inspection / cleaning including necessary excavation dewatering, refilling, concrete encasing/bedding concrete steps to reach the nallah bed level. pitching and energy dissipation chamber in the nallah portion etc. complete.			
19	<b>Piping work in D.I.- including Sluice Valve, Reflux Valve, M. S. Gate.</b>			
	Providing laying and jointing pipes other than those already included in the above items for interconnection by-pass drains etc. of all units including adequate numbers of manhole chambers. The item includes excavations, refilling and hydraulic testing of pipes, valves , gates ,accessories and cost of jointing materials The item includes required channels with gates for interconnection of units by pass drains etc. for all units and as directed etc. complete as per detailed specifications.			

Sr No	Item Description	Unit	Rate (in Rs.)	
20	All the structural steel work / fabrications are to be provided with application of Hot Dip Zinc coating according to specifications as per IS 4759 :1996 (Reaffirmed 2006)			
21	<b>Administrative Building Cum Laboratory (G+1)</b>			
	Designing providing and constructing Adminisrative Building, Office Cum Laboratory including stores. This shall be a building having appropriate Carpet area at ground floor and at first floor complete as per specifications including necessary excavation, foundation in RCC M-250 framed structure B. B. masonry (II-Class in C. M. 1:6) 20 mm cement plaster in C. M. 1:3 inside and outside painting. Alluminum door and window with glass pannels, mosaic tile flooring and skirting and all other allied items, fixtures fastening electrification arrangement water supply arrangment etc. complete. The building will have laboratory on upper floor of administrative building and should be so centralised that it should not be attached with any unit but should have complete control of every unit as per Laboratory Equipment, beautification, telephone and intercom arrangement and Wireless system etc. complete			
22	<b>Primary and secondary treatment-with digesters, sludge drying beds etc. complete.</b>		Rs.in Lakh	
S.No.	Capacity of Plant	Unit		Labour
1	Upto 10 MLD	MLD	59.55	23.81
2	Cost of 10 MLD Plant	Job	595.38	238.09
3	Add for capacity above 10 MLD upto 20 MLD	MLD	52.22	20.89
4	Cost of 20 MLD Plant	Job	1117.63	447.00
5	Add for capacity above 20 MLD	MLD	44.91	17.86
6	Cost of 50 MLD Plant	Job	2465.04	982.76
7	Add for capacity above 50 MLD	MLD	26.85	10.66
8	Cost of 100 MLD Plant	Job	3807.62	1515.36
<b>5</b>	<b>Moving Media Bio Reactor (MMBR) / FAB</b>			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>(Fluidised Aerated Bed) Process</b>			
	Designing, providing, construction, hydraulic testing, commissioning and giving satisfactorily trials of STP consisting of Inlet Chamber, screen chamber, Grit Separator, MMBR / FAB (Based on technologies providing attached growth on plastic meddi kept suspended in the waste water due to low density of plastic & provided with compressed air for aeration with very high MLSS of greater than 15,000 mg/lit.) tank, Secondary Clari settler, Sludge sump, Sludge Thickener, Chlorine Contact Tank, Chlorinator room/Shed, sludge Centrifuge, associated piping work with required valves, gates, drains, pathways, Administration Block cum Laboratory, Laboratory Equipments, spares parts for 2 years of operation, etc. complete as turnkey job with all involved civil, electrical and mechanical works inclusive of following items, units as per detailed specifications			
	for civil, electrical and mechanical components with all duties etc. complete to acheive BOD < 10 ppm, COD < 50 ppm, TSS < 10 ppm Ph between 7 to 8.5, oil and Grease < 10 ppm recyclable qauality of water for industrial / agricultural purpose			
	<b>FOLLOWING UNITS ARE INCLUDED</b>			
	<b>1. Inlet Chamber</b>			
	Designing, providing and constructing RCC (M:25) inlet chamber designed for the peak flow including necessary excavation in all types of strata including walkway all around the periphery. Each compartment will have CI gates with extension rod. Head stock, operating wheels, GI pipe railing etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.			
	<b>2. Screen Chamber</b>			
	Designing, providing, constructing, testing and commissioning of screen chamber, designed for peak flow in RCC (M-300), including walkway 1.2 m wide with GI pipe.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>3. Grit Separator</b>			
	Designing, providing & constructing detritor type grit removal mechanism in RCC (M-300) capable of removing 100% 0.2 mm size particle & above having specific gravity 2.30 designed for peak flow with suitable arrangement of separation of grit from putrescible solids including providing & making necessary arrangements of Jb-1. Inlet & outlet channels of required sizes as make be required to connect the flow to connecting unit etc. complete including hydraulic testing for water tightness of structure having minimum FB of 0.3 m, wash out arrangement to grit chamber & platform 1.2 m wide RCC walkway with GI pipe handling shall be provided. A pit for collecting grit conveyed by conveyor shall be provided. It should be suitable to handle the grit for carting. All arrangements shall be as detailed specifications and as directed.			
	<b>4. MMBR / FAB Tank</b>			
	Designing, providing & constructing in RCC (M-300) biological reactor tank for removal of BOD along with nutrient removal to handle the average flow & having hydraulics suitable to handle peak flow conditions with suitable 1.2 m wide walk way, expansion joints as required, including foundation etc as per specifications. The tank shall be equipped with inlet & outlet arrangement, air blowers for supply of air, coarse bubble diffusers & aeration grid in SS 304, PP carrier bio media etc. FB of 0.5 m & SWD as required should be complete as per detailed specifications.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>5. Secondary Clarisettler</b>			
	Designing, providing & constructing in RCC (M-300) water tight secondary clarisettler having SWD of 3.75 m + 0.5 m FB & has tube media in the clarification zone to provide additional surface area for settling. The settler shall be provided with a scraper mechanism in MS with epoxy painting for collecting the settled solids at the bottom (bottom slope 1:12). The central feed well shall be made of MS with epoxy painting from both faces & well stiffened. The sewage will be admitted in the feed well & then will move outwards towards periphery slowly & continuously over a weir & will be collected in a launder.			
	<b>6. Chlorine Contact Tank</b>			
	Designing, providing & constructing chlorine contact tank of adequate capacity to deal with average flow. The contact time provided is 30 mm to achieve 99.99 % reduction in coliform during average flow condition. Chlorine dosage will be as per standard provisions including designing, providing & constructing water supply provision for chlorination, including providing dewatering & by pass arrangement for joining to final effluent mains & outlet weir etc complete. The effluent quality should match with the standards laid down by Maharashtra Pollution Control Boars & as per obligatory provision & as detailed specification & as directed by engineer in charge.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>7. Chlorinator &amp; Chlorinator Room / Tonner Room</b>			
	Designing, providing & constructing vacuum type chlorinators having adequate capacity for dosage of adequate chlorine to ensure 99.99% coliform reduction as per obligatory provisions detailed specifications with necessary provision of having chlorinator room of adequate size. The chlorinator equipment shall include chlorine cylinders I tonners, piping, valves, measuring controlling equipments, safety devises, lifting equipment etc. complete as per IS 10553 (Part II) 1982. The tonner room should have mm 3 MT capacity crane for loading & unloading facility. Tonner storage should be distinctly isolated and should have min. storage space as per the detailed specifications & as per gas law 1981 & factory act shall be provided. All other matching amenities shall be provided, 5 MT gantry rail shall be provided for full length of tonner room a 6 m Ht from level of tonner room with outlet.			
	<b>8. Sludge Sump</b>			
	Designing, providing & constructing of sludge sump and pump for discharging sludge to sludge thickener using MS pipe complete as per detailed specification.			
	<b>9. Sludge Thickener</b>			
	Designing, providing & constructing water tight of sludge thickener - gravity type in RCC (M-300) with inlet & outlet pipes, central feed well, sludge it & sludge removal arrangement, grouting wherever necessary with walkway all around of 1.20 m with GI pipe railing interconnecting CI pipes all complete as per specifications, having bottom slope 1:8 & 3 m SWD with necessary fixed bridge scraper arrangement as per detailed specifications & necessary inlet & outlet arrangement. All other arrangement as per detailed specifications.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>10. Sludge Centrifuge Platform with Centrifuge</b>			
	Designing, providing, constructing & installing including foundation etc. Sludge centrifuge to handle the sludge flow of 1 day in 18 hrs per unit with sludge dewatering unit drain etc complete is per specification. Sludge centrifuge with necessary arrangements as per detailed specification mentioned in tender and obligatory provisions to be provided with satisfactory functioning.			
	<b>11. Outfall sewer</b>			
	Designing, providing, constructing appropriate outfall sewer of RCC NP2 pipe to discharge treated effluent, untreated effluent from outlet chamber (after basin / chlorination tank) to the local Nallah at the point shown on the drawing including necessary chambers for inspection & cleaning including excavation, dewatering, refilling, concrete encasing I bedding concrete.			
	<b>12. Pining work in CI- LA class including sluice valves, reflux valves, MS Gates</b>			
	Providing, laying & jointing pipes other than hose already included in the above items for interconnection by pass drains etc. of all units including adequate numbers of manhole chambers. The item includes excavations, refilling & hydraulic testing of pipes, valves, gates, accessories & cost of jointing materials. The item includes required channels with gates or interconnection of units, by pass drains etc. for ill units as directed etc complete as per detailed specifications.			
	13. All the structural steel work / fabrications are to be provided with application of Hot Dip Zinc coating according to specifications as per IS 4759 :1996 (Reaffirmed 2006)			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>14. Administrative Building cum Laboratory (G+1)</b>			
	Designing, providing & constructing administrative building, office cum laboratory including stores. This shall be building having appropriate carpet area & ground floor & at first floor complete as per specifications including necessary excavation, foundation in RCC M-250 framed structure, BB masonry (II class in CM 1:6) 20 mm cement plaster in CM 1:3 inside & outside painting, aluminum door & window with glass panels, mosaic tile flooring & skirting & all other allied items, fixtures, fastening, electrification arrangement, water supply arrangement etc complete. The building will have laboratory on upper floor of administrative building & should have complete control of every unit as per laboratory equipment, beautification, telephone & intercom arrangement & wireless system etc. complete.			
	<b>Capacity of Plant                      Area Required</b>			
	01                                      0450	MLD	<b>145.24</b>	
	03                                      0650	MLD	<b>85.51</b>	
	05                                      1000	MLD	<b>73.72</b>	
	08                                      1500	MLD	<b>66.94</b>	
	10                                      1800	MLD	<b>65.47</b>	
	13                                      2300	MLD	<b>59.24</b>	
	15                                      2650	MLD	<b>53.88</b>	
	18                                      3250	MLD	<b>53.16</b>	
	20                                      3500	MLD	<b>51.34</b>	
	25                                      4350	MLD	<b>49.37</b>	
	<b>NOTES</b>			
	1 Screen chamber & grit separator up to 5 MLD Capacity are manual type.			
	2 Up to 5 MLD Capacity STP chlorination is done by using sodium hypochlorite solution. Above 5 MLD capacity gas chlorinator is provided.			
	3 Sludge thickener is not provided up to 3 MLD capacity STP. Sludge will be collected into sludge sump & pumped directly to sludge dewatering system			



Sr No	Item Description	Unit	Rate (in Rs.)	
	4 For all STP sludge dewatering is using solid bowl centrifuge.			
	5 Chlorinator room not provided for STP up to 3 MLD. For STP up to 3 MLD laboratory I administration building is not provided. Only a room for operator is provided.			
	6 Boundary wall, fencing, gate, storm water drains, site clearance is not considered in scope.			
	7 All water retaining structures are in M -300 grade of concrete.			
	8 Water table is considered 5 m below GL for design.			
	9 Soil bearing capacity is considered as 20 T/m <sup>2</sup> at 1.5 m below GL.			
	10 Lead for excavation is considered as 0.5 km.			
	11 Grade of cement used is OPC 43 grade.			
	12 Grade of steel used is Fe 415.			
	13 Peak factor considered for design for plants up to 3 MLD is 3, 4 to 15 MLD is 2.5, 16 to 20 MLD is 2.0.			
	14 Chemicals required during trial run & commissioning is not considered.			
	15 Water & power during construction, trial run & commissioning shall be provided by client.			
	16 Power available at STP location is assumed as LT power supply.			
	<b>IV MAKES OF EQUIPMENT</b>			
	<b>S.No. Description Make</b>			
	1 Centrifugal Pumps - Kirloskar /			
	Jhonson /Kishor			
	/ Eqv.			
	2 Screw Pumps - Roto/Tushaco/Eqv.			
	3 Air Blower - Usha/Swam/Kay/			
	Kulkarni / Eqv.			
	4 Dosing Pumps - Milton Roy/VK			
	Pumps/Positive/			
	Minimax / Eqv.			
	5 Agitators/ - Pavan/Fibre&Fibre			
	Flocculators - / Ceecons			
	fabricated as per			
	MJP approved			
	design / make			
	7 Screens - To be fabricated as			
	per MJP approved			
	design / make			

Sr No	Item Description	Unit	Rate (in Rs.)	
8	Grit Separator - To be fabricated as per MJP approved design / make			
9	Chlorinator - Toshcon Jesco / Banaco/Perfect Chloro/Chlorocontrol/Metito/Eqv.			
10	Chlorine Tonner - Meenakshi / Eqv.			
11	Solid Bowl Centrifuge - Alfa Laval/Humbolt /Wedag/Hiller/Eqv.			
12	Motors - Crompton/Siemens /Lakshmi			
13	Cables - Finolex/ Polycab			
14	MS pipes - Mahalakshmi Seamless/ Maharashtra Seamless/ Suryaroshni/Jindal /Eqv.			
15	CI Pipes - Truform/Electrosteel /Kejriwal/Eqv.			
16	Valves - Intervale/BDK/ Procon/Tyco/AV valves/Eqv.			
17	Clarissettler - Media Cooldeck/ Munters			
18	Bio Reactor - As per MJP approved			
	Carrier Media - design /make			

Sr No	Item Description	Unit	Rate (in Rs.)
6	<b>CYCLIC ACTIVATED SLUDGE PROCESS ( CASP)</b>		
	Designing , providing, constructing, hydraulic testing, commissioning and giving satisfactory trials of Cyaclic Activeted Sludge Process Based(CASP) on Sequencing Batch Reactor (SBR) Technology,STP consisting of Inlet Chamber, Screen Chamber,Detritus Tanks, Distribution Chamber, Biological CASP Basins, Sludge thickner and equipment, Sludge Sump, Chlorine Cantact Tank, Chlorinator Room / Shed, Sludge Centrifuge with necessary piping work including required valves,gates,drains,pathways administration Block cum Laboratory, Laboratory Equipmens, Tools and Plants, Spare Parts etc. complete as turnkey job with all invoved civil,electrical and mechanical works inclusive of following items,units as per detailed specification for civil,electrical and mechanical components with all duties and taxes etc. complete to achieve BOD < 5 mg/l, COD <100 mg/l, TSS < 10 mg/l,		
	to get recyclabele quality of water for industrial / agricultural purposes. (In case Cyclic activated sludge plant is designed N,P removal outlet parameters shall also include TN < 10 mg/l, NH <sub>3</sub> N < 2 mg/l & TP < 1 mg/l). All structural steel works / fabrications are to be provided, with application of hot dip zinc coating according to specifications as per IS 4759 : 1996 (Reaffirmed 2006)		
	<b>UNITS INCLUDED</b>		
	<b>1. Inlet Chamber</b>		
	Designing, providing, and constructing RCC (M-300) inlet chamber for the peak low of 2 DWF including necessary excavation in all types of strata including walkway all around the periphery. Each compartment will have phosphor bronze steel gates with extension rod, head stock, operating wheels. GI pipe railing etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.		

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>2. Screen Chamber</b>			
	Designing, providing, constructing, testing and commissioning of screen chamber, designed for average 1 DWF and maximum peak flow of 2 DWF in RCC (M -300), including inlet pipe / channel from inlet chamber, outlet pipe channel to detritus tank, free board of 0.5 m minimum, RCC walkway 1.2 m wide with GI pipe railing, RCC stair case of 1.2 m width from GL to screen chamber.			
	<b>3. Detritus Tank</b>			
	Designing, providing and constructing continuous grit removal type of Detritus Tank, mechanically operated in RCC (M 300) capable of removing 100% of 0.2 mm size particle and above, having specific gravity 2.30 designed for one peak 2 DWF with suitable arrangement of separation of grit from putrescible solids. Inlet and outlet channels of required sizes as may be required to connect the flow to connecting unit etc. Complete including hydraulic testing for water tightness of structure having minimum FB of 0.3 m, wash out arrangement to Grit chamber and platform 1.2 m wide RCC walkway with GI pipe handling shall be provided. A pit for collecting grit conveyed by conveyor shall be provided. It should be suitable to handle the grit for carting. All arrangements shall be as detailed specifications and as directed.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>4. CASP Basins</b>			
	Designing, providing and constructing in RCC (M 300), CASP basins for biological removal of BOD along with nitrification, denitrification, Bio-P removal in compartments to handle combine flow of 1 DWF incoming flow and recirculation flow including construction of selector compartments and providing 1.2 m wide clear approach walkways, expansion joints wherever necessary, including foundations etc as per specifications. Peak factor shall be 2, F/M ration shall be 0.15, complete with air blowers, fine diffused aeration grid / equipment and FB 0.5 m and SWD as required. DO level in basin to be minimum 2 mg/l complete with “Oxygen Uptake Rate” control system and all related instruments. Stainless steel decanters and automation works. MLSS concentrations shall be 2000-5500 mg/l or more, MLVSS to MLSS ratio to be 0.8. HRT shall be between 12 to 13 hrs and SRT suitable for fully digested sludge. It should have all other related works as per detailed specification. In Case CASP is designed to achieve N, P removal.			
	<b>5. Chlorine Contact Tank</b>			
	Designing providing and constructing chlorine contact chamber of adequate capacity to deal with 1 DWF average flow. The chlorine contact tank should be 30 min capacity, during average flow to achieve 99.99% coliform reduction. Chlorine dose shall be maintained as per standard provisions, including designing, providing and constructing water supply provision for chlorination including providing dewatering and by pass arrangement jointing to final effluent mains and outlet weir, etc complete. The effluent quality should match with the standards laid down by Maharashtra water pollution control board and as per obligatory provision and as detailed specification and as directed by Engineer-in-charge.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>6. Chlorinator and Chlorinator Room / Tonner Room</b>			
	Designing, providing and constructing chlorinators vacuum type 2 Nos. with auto switchover facility and having capacity for dosage of adequate chlorine to ensure 99.99% coliform reduction as			
	per obligatory provisions and detailed specifications with necessary provision of having chlorinator room of adequate size. The chlorinator equipment shall include cost of chlorine cylinders / tonner piping, valves, measuring and controlling equipments, safety devices, lifting equipments, etc. complete as per IS-10553 (part II) 1982. The tonner room should have minimum 3 MT capacity Hoist for loading and unloading facility. Tonner storage should be distinctly isolated and should be for minimum storage space as directed in the design specification and as per gas laws 1981 and factory act shall be provided. All other matching amenities shall be provided, 5 MT gantry rail shall be provided for full length of tonner room at 6 m height from level of tonner room, with outlet chamber and treated effluent outlet channel etc. complete.			
	<b>7. Sludge Sump</b>			
	Designing, providing and constructing of sludge sump and pump house of appropriate size with pumps, ceiling height minimum 6 m over sump for discharging sludge to centrifuge using D.I. pipe complete as per detailed specification.			
	<b>8. Sludge Centrifuge Platform with Centrifuges</b>			
	Designing, providing, constructing and installing including foundation etc., sludge centrifuge to handle the sludge flow of 1 day in 20 hours per unit with sludge dewatering unit drain etc complete as per specification. Sludge centrifuges with the necessary arrangement, as per detailed specification mentioned in tender and obligatory provisions to be provided with satisfactory functioning.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>9. Outfall Sewer</b>			
	Designing, providing and constructing appropriate outfall sewer of RCC NP2 pipe, to discharge treated effluent from outlet chamber after chlorination			
	tank to the local Nallah at the point shown on the drawing including necessary chamber for inspection and cleaning including necessary excavation, dewatering, refilling concrete encasing / bedding concrete steps to reach the nallah bed level, pitching and energy dissipation chamber in nallah portion etc. complete upto 50 m length RCC NP2 pipe line and including all above items.			
	<b>10. Piping work in D.I. - including Sluice valves, Reflux Valves, MS gates</b>			
	Providing laying and jointing pipes other than those already included in the above items for interconnection by - pass drains etc. of all units including adequate numbers of manhole chambers. The item includes excavations, refilling and hydraulic testing of pipes, valves, gates, accessories and cost of jointing materials. The items includes required channels with gates for interconnection of units by pass drains etc for all units as directed etc complete as per detailed specifications.			

Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>11. Administrative Building cum Laboratory (G+1)</b>			
	Designing, providing and constructing administrative building, office cum laboratory including stores. This shall be a building having appropriate carpet area and ground floor and at first floor complete as per specifications including necessary excavation, foundation in RCC M-250 framed structure B. B masonry (11- class in C.M. 1:6) 20 mm cement plaster in CM 1:3 inside and outside painting. Aluminium door and window with glass panels, mosaic tile flooring and skirting and all other allied items, fixtures fastening electrification arrangement water supply arrangement etc complete. The building will have laboratory on upper floor of administrative building and should be so centralized that it should not be attached with any unit but should have complete control of every unit			
	as per laboratory euipment, beautification, telephone and intercom arrangement and wireless system.			
	<b>Sr No      Capacity of Plant in MLD      Area required in Ha      No. of Basins</b>			
	1)      1      0.5      2	MLD	302.42	
	2)      2      0.6      2	MLD	202.2	
	3)      5      0.65      2	MLD	127.04	
	4)      10      0.70      2	MLD	103.79	
	5)      15      0.75      2	MLD	90.06	
	6)      20      0.80      4	MLD	85.24	
	7)      25      1.00      4	MLD	84.63	
	8)      30      1.20      4	MLD	79.66	
	9)      40      1.60      4	MLD	74.68	
	10)      50      1.75      4	MLD	73.02	
	11)      60      1.90      4	MLD	62.53	
	12)      75      2.25      4	MLD	61.08	
	13)      100      2.40      6	MLD	58.17	
	14)      125      3.00      6	MLD	55.26	
	15)      150      3.50      6	MLD	53.81	



Sr No	Item Description	Unit	Rate (in Rs.)	
	<b>NOTES</b>			
	a. These Rates are for Civil Works, in M- 300 grade RCC.			
	b. Water Table is considered at 5 m below ground level.			
	c. Soil bearing capacity considered as 20 T/m <sup>2</sup> at 1.5 m below ground level.			
	d. OPC has been considered for costing purposes.			
	e. All civil items, electrical, piping, valves, pumps, motors, blowers, etc. are considered as per MJP Schedule of Rates.			
	f. I. No.1,2 includes sludge drying beds instead of sludge centrifuge and DWPE dosing system.			
	g I. No.1,2,3 includes NaOCl Dosing System instead of Gas Chlorination.			
	h. I. No.1,2,3 do not includes Lab and Lab Equipments.			
	i. O&M shall be added extra			
	j. No piling, dewatering, soil improvent, desilting considered in the cost.			
	k. Site is cleared flat and levelled. No site development works filling dewatering considered.			
	l. Peak factor considered as 2.0 times average flow. For every 25% increase in peak factor, 10% extra cost shall be added over the above rates.			
	m. OPC TOR steel considered.			
	n. Treated water disposal upto 50 m considered.			
	o. N&P reduction not considered.			
	p. HT electrical works shall be added as per case specific conditions.			
	q. Raw sewage pumping shall be added as per case specific conditions.			
	r. In case TN<10 & TP<1 quality is required, above rates shall be increased by 10%			
	s. Cost of I.No. 1 to 5 do not include HT station, Lab and Mechanical dewatering of sludge.			

Section - I- (XIX) - R.C.C. G.S.Rs AND SUMPS					
Sr No	Item Description		Unit	Rate (in Rs.) 2019-20	
	Designing (aesthetically), and constructing RCC ground service reservoirs / RCC sumps in M-300 mix. of required capacity including excavation in all types of strata, foundation concrete, container walls, bottom slab top RCC roof slab / or dome, 20 mm thick cement plaster with water proofing compound in CM 1:3 proportion. to inside face of the container,including epoxy paint from inside including refilling and disposing of surplus stuff within lead of 50 M, all labour and material charges, for laying and jointing of pipe assembly for inlet, outlet washout, over flow and bye-pass arrangement consisting of D.I./ M.S. D/F. pipes, specials and valves of given diameters, providing and fixing accessories such as M.S. ladder outside, Stainless Steel Ladder in container, C.I. Manhole frame and cover, water top slab, B.B. masonry chamber for all valves,				
	ventilating shafts, including giving satisfactory hydraulic test and water tightness test as per IS code and providing three coat of <b>Acrylic emulsion with silicon additives paint</b> to all expose surface of structure including roof surface etc. complete as per design data, criteria, obligatory requirements and detailed specifications.Anti termitite treatment shall be given for under ground portion of the structure.				
<b>Note :</b>					
	1	The designing shall be in accordance with various rel evant I.S. specification (I.S. 456/2000, I.S. 875 - 1987, I.S.3370-1965 or revised.)			
	2	Only M.S. bars grade I confirming to I.S. 432 part I or high yield strength deformed bars confirming to I.S. 1786 or I.S.1139 shall be used grade II M.S. bars shall not be used.			
	3	Entire structure shall be in M - 300 only.			
	4	The scope of pipe assembly work shall be upto 5 metre beyond outside face of the wall, cost of pipes valves and specials is not included in the rate but labour cost for laying and jointing is included.			

Sr No	Item Description		Unit	Rate (in Rs.) 2019-20	
	5	The G.S.R. / Sump above 15 lakh litres capacity shall			
		be in two compartment			
	6	The job includes designing the structure for uplift pressure and dewatering if required using entire execution and disposal of surplus excavated stuff with in lead of 50 metres as directed by Engineer-in-charge. If up lifts considered in design then these rate shall be increased by 7.5%.			
	7	G.S.R. outlets shall be with bell mouth of approved partern in bottom slab and cost of designing bell mouth is included in the rate. Sump well includes cost of suction pit required at bottom.			
	8	For pipe diameters upto 300 mm only DI pipes and DI specials shall be used. For pipe diameters above 300mm, M.S. pipes and specials minimum 10 mm thick shall be used with proper anticorrosive epoxy treatment from in side and outside.			
	9	Cost of pump house is not included in these rates.			
	10	Above rates are applicable for seismic zones-2,3 and 4			
	11	75% part rate shall be payable for reinforcement,concrete and plastering items of all types of G.S.R.s. and sumps till satisfactory hydraulic testing for water tightness test is given and till that work shall be treated as incomplete			
	12	10% shall be added for sump if overhead pump house is proposed			
	<b>Note: Condition from Sr. No. 1 to 11 shall form a part and parcel of tender and must be included in the Draft tender papers for work of R.C.C. GSRs and sump. Rates for R.C.C.G.S.Rs or Sumps</b>				
	<b>Rates for R.C.C. G.S.Rs and Sumps</b>				
	S.No.	Capacity in Litres	Unit	Rate in Rs.	Labour Rates in Rs.
	1	Upto 25000 lit	Lit.	12.64	4.97
	2	Cost of 25000 lit capacity		315986.00	126416.99
	3	Add for capacity above 25000 to 50000 lit	Lit.	7.45	3.00
		Cost of 50000 lit capacity		502286.00	200998.07
	4	Add for capacity above 50000 to 75000 lit	Lit.	6.13	2.49

Sr No	Item Description		Unit	Rate (in Rs.) 2019-20	
	5	Cost of 75000 lit capacity		655466.00	262269.52
		Add for capacity above 75000 to 100000 lit	Lit.	5.46	2.48
	6	Cost of 100000 lit capacity		792086.00	316887.59
	7	Add for capacity above 100000 to 150000 lit	Lit.	5.16	2.07
		Cost of 150000 lit capacity		1050318.00	420200.18
	8	Add for capacity above 150000 to 200000 lit	Lit.	4.40	1.76
	9	Cost of 200000 lit capacity		1270773.00	508510.42
		Add for capacity above 200000 to 300000 lit	Lit.	4.26	1.76
	10	Cost of 300000 lit capacity		1696158.00	678793.18
	11	Add for capacity above 300000 to 500000 lit	Lit.	3.30	1.34
	12	Cost of 500000 lit capacity		2356488.00	943309.74
	13	Add for capacity above 500000 to 1000000 lit	Lit.	3.05	1.24
		Cost of 1000000 lit capacity		3877938.00	1551770.04
	14	Add for capacity above 1000000 to 1500000 lit	Lit.	2.44	1.04
	15	Cost of 1500000 lit capacity		5094063.00	2037738.67
		Add for capacity above 1500000	Lit.	1.82	0.73

### Section - I- (XX) - R.C.C. E.S.Rs

Sr No	Item Description	Unit	Rate (in Rs.)	2019-20
	<p>Designing (aesthetically), and constructing RCC elevated service reservoirs of following capacity with RCC staging consisting of columns, internal and external bracings spaced vertically not more than 4.5 meters centre to centre for ESR having Capacity upto 500 Cum. and not more than 6 m c/c for ESRs having capacity above 500 cum including excavation in all types of strata, foundation concrete, cement plaster with water proofing compound to the inside face of the container including refilling disposing of the surplus stuff within a lead of 50 meters, all labour and material charges including lowering, laying, erecting, hoisting and jointing of pipe assembly of inlet, outlet, washout, overflow and bypass arrangements as per departmental design, providing and fixing accessories such as <b>M.S. ladder out side, stainless steel Ladder in container</b>, C. I. manhole frame and covers water level indications, lightening conductor, G. I. pipe railing around walk way and top slab, providing spiral staire case from ground level to roof level, M.S. grill gate of 2 mtr. height with locking arrangement of approved design. B.B. masonry chambers for all valves, ventilating shafts, providing and applying three coats of <b>Acrylie</b></p>			

Sr No	Item Description	Unit	Rate (in Rs.)	2019-
			20	
	<p><b>emulsion with silicon additives paint</b> to the structure including roof slab epoxy painting to internal surface &amp; anti termite treatment for underground parts of the structure. and giving satisfactory water tightness test as per I.S. code, The job to include painting the name of the scheme and other details on the reservoir as per the directions of Engineer-in-charge.</p>			
1	The design of the structure be in accordance with relevent (I.S.3370 - 2009 or revised)			
2	The design shall satisfy the stipulation as per IS 1893-1984 and I.S. 13920/1993 for seismic focrcce and I.S.- 11682/1985 for R.C.C. staging of overhead tanks.			
3	For design having more than 6 columns, Providing of internal bracing is obligatory,. External bracking is also obligatory.			
4	The entire structure shall be in M-30 mix only.			
5	Plain round mild steel bars grade - I confirming to I.S:432 Part-I or high yield strengh deformed bars confirming to I.S. 1786 or I.S. 1139 shall be used, grade-II mild steel bars will not be allowed.			
6	Irrespective of the type of foundation proposed in the design, one set of bracing be provided at the gound level.			

Sr No	Item Description	Unit	Rate (in Rs.)	2019-20
	<p>7 These rates include providing, M.S. ladder for E.S.R's upto 2 lakhs liters capacity and providing RCC spiral staircase for E.S.R. above 2 lakhs liters capacity.</p> <p>8 Staging shall have to be designed with stresses of M-25 for ESR. However RCC construction shall be done in M-30.</p> <p>9 These rates are including the cost of uplift pressure if any and entire dewatering during execution. In case of water logging area where water is struck at shallow depth extra provision of dewatering shall be made as per site condition.</p> <p>10 All condition given in the Member Secretary"s Circular No.MJP/TS-I/350/1668 dt. 2.8.97 and MJP/S-I/350/2127 dt. 13.7.99 shall be strictly followed and additional cost, if any due to these conditions is included in the rates mentioned below.</p> <p>11 75% part rate shall be payable for reinforced concrete and plastering items of containers of E.S.R. till satisfactory hydraulic testing for water tightness is given ; and till that work shall be treated as incomplete.</p> <p>12 The rates indicated in the table are excluding the cost of pipes, specials and valves required for inlet, outlet washout overflow and by-pass arrangement. The scope of work, however includes cost of erecting, laying and jointing of pipes and valves including cost of jointing materials upto 5M beyond outer face of outermost column.</p>			

Sr No	Item Description	Unit	Rate (in Rs.)	2019-20
13	For ESR upto 500cum capacity D.I. double flanged pipes upto 300mm dia shall be provided and C.I.Specials shall be used.For ESR above 500 cum capacity D.I./M.S. pipes assembly with minimum 8mm thick ness up to 500mm dia. And minimum 10mm thickness above 500mm dia can be used with proper anti-corrosive epoxy teratment from inside and outside.			
14	Below mentioned rates are for foundation, with individuals footing with bearing capacity of 20 tonnes per square metre. For raft foundations, these rates shall be increased by 7.5% wheresafebearing capacity ( SBC) is 5 M.T. per Sq.m and by 5% where SBC is more than 5 MT/Sqm. and upto 10MT/Sq.m. This percentage of 5% or 7,5% is applicable for estimation of amount of L.S. items ESR for Extra item due to change from individual footing foundation to raft actual increase in concrete and steel quantities be paid as per relevent DSR Item.			
15	The rates shall be increase by 30% for brearing piles upto depth of 10m and for further increased in depth by 5M each it shall be increased by another 10% These rates are applicable where raft is not reasible for pile foundation sulfate resistant cement shall only be used. Single pile for the column is not permitted Group of piles shall be designed with pile cap for each column of ESR.			
16	These rates are applicable for staging height of 12 M These rates shall be increased or decreased for per metre variation in the staging height as below			



Sr No	Item Description	Unit	Rate (in Rs.)	2019-20
	<p>12 to 16 M staging            2% per metre  16 to 20m staging            3% per meter  20 M and abovd            4% per metre  i.e. for 17m staging height  percentage calculation will be like below</p> <p>12 to 16m    = 4 x 2                      = 8%  16 to 17 m x 1 x 3                      = 3%  <b>Total</b>                                      = <b>11 %</b></p> <p>For 21 m staging height  Percentage calculation will be like below</p> <p>12 to 16m = 4 x 2                      = 8%  16 to 20m = 4 x 3                      = 12%  20 to 21m = 1 x 4                      = 4%  <b>Total</b>                                      = <b>24%</b></p> <p>17 Following rates are for seismic zone-III  for Zone-IV these rates shall be increased  by 5% and for Zone-II, these rates shall  be decreased by 5% concerned Executive  Engineer shall confirm the seismic zone  for the scheme from seismic zones plan  before estimation and adopt appropriate  rates as per actual seismic zones( Seismic  maps attached in this C.S.R.)</p> <p><b>Note:</b>  1) Condition from Sr.No.1 to 11 shall  form a part and parcel of the tender  papers and shall be included in the DTP  for works of R.C.C.E.S.R.  2) Condition from Sr.No.12 to 17 are for  estimation purpose only and shall not be  appear in the tender.</p>			
S.No.	Capacity in Litres	Unit	for Seismic Zone-III Rate in Lakh Rs.	LABOUR Rate in Lakh Rs.
1	Upto 25000 lit	Litre	27.40	7.54
2	Cost of 25000 lit capacity	Job	685032.00	188706.00

Sr No	Item Description	Unit	Rate (in Rs.)	2019-20
3	Add for capacity above 25000 to 50000 lit	Litre	12.16	3.31
4	Cost of 50000 lit capacity	Job	988839.00	272462.00
5	Add for capacity above 50000 to 75000 lit	Litre	8.49	2.34
6	Cost of 75000 lit capacity	Job	1201152.00	330528.00
7	Add for capacity above 75000 to 100000 lit	Litre	8.49	2.57
8	Cost of 100000 lit capacity	Job	1413465.00	565483.00
9	Add for capacity above 100000 to 150000 lit	Litre	6.50	2.67
10	Cost of 150000 lit capacity	Job	1738386.00	695546.00
11	Add for capacity above 150000 to 200000 lit	Litre	6.50	2.63
12	Cost of 200000 lit capacity	Job	2063307.00	825420.00
13	Add for capacity above 200000 to 250000 lit	Litre	6.50	2.65
14	Cost of 250000 lit capacity	Job	2388228.00	955490.00
15	Add for capacity above 250000 to 300000 lit	Litre	4.52	1.77
16	Cost of 300000 lit capacity	Job	2614031.00	1045710.00
17	Add for capacity above 300000 to 400000 lit	Litre	4.52	1.78
18	Cost of 400000 lit capacity	Job	3065636.00	1226446.00
19	Add for capacity above 400000 to 500000 lit	Litre	4.51	1.79
20	Cost of 500000 lit capacity	Job	3517241.00	1406897.00
21	Add for capacity above 500000 to 750000 lit	Litre	4.51	1.80
22	Cost of 750000 lit capacity	Job	4646253.00	1858404.00
23	Add for capacity above 750000 to 1000000 lit	Litre	3.82	1.54
24	Cost of 1000000 lit capacity	Job	5601075.00	2240690.00
25	Add for capacity above 1000000 to 1500000 lit	Litre	3.82	1.45
26	Cost of 1500000 lit capacity	Job	7510075.00	3003647.00
27	Add for capacity above 1500000 to 2000000 lit	Litre	3.82	1.46
28	Cost of 2000000 lit capacity	Job	9419075.00	3767532.00

**Section -I (XXI)- CHAMBERS, MANHOLES and DRAINAGE**

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
1	Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 Proportion precast RCC frame and cover, etc. complete as directed by Engineer-in-charge.  <b>Note:</b> Wall thickness : 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)			
A.	As above of 60 x 45 cm internal size and depth upto 0.9M .	No	5816.00	1461.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	1265.00	347.00
B.	As above of 90 x 45 cm internal size and depth upto 1.2M .	No	8606.00	2196.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	1513.00	418.00
C.	As above of 90 x 60 cm internal size and depth upto 1.2M .	No	9356.00	2402.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	1636.00	455.00
D.	As above of 90 x 90 cm internal size and depth upto 1.2M .	No	10179.00	2618.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	1802.00	508.00
E.	As above of 1.2 x 1.2 M internal size and depth upto 1.2M .	No	13102.00	3371.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	2143.00	547.00
F.	As above of 1.5 x 1.5M internal size and depth upto 1.5M .	No	15007.00	3862.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	2397.00	690.00
G.	As above of 90 cm internal dia size and depth upto 1.2 M .	No	11451.00	3016.00
	a). Add for every increase of depth of 30cm or part thereof.	30cm depth	2013.00	588.00
2	Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 proportion 12 mm thick cement plaster in cm 1:4 proportion on both sides with providing and fixing C.I. manhole frame and cover in RCC 1:2:4 coping or RCC 1:2:4 proportion 15 cm thick slab, etc.complete as directed by Engineer-in-charge.  <b>Note:</b> Wall thickness : 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M  <b>Valve Chamber with Cast iron frame &amp; covers.</b>			
A.	As above of 60x45 cm internal size and depth upto 0.9 M with 60 x 45 cm size CI manhole frame and cover of 40 kg	No	9074.00	1377.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1265.00	346.00
B.	As above of 90x45 cm internal size and depth upto 1.2 M with 90 x 45 cm size CI manhole frame and cover of 40 kg	No	11814.00	2073.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1444.00	397.00
C.	As above of 90x60 cm internal size and depth upto 1.2 M with 90 x 60 cm size CI manhole frame and cover of 50 kg	No	13476.00	2272.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1565.00	433.00
D.	As above of 90x90 cm internal size and depth upto 1.2 M with 53 cm dia CI manhole frame and cover of 90 kg fixed in R.C.C. Slab	No	18662.00	2695.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1888.00	530.00
E.	As above of 1.2 x 1.2M internal size and depth upto 1.2 M with 53 cm dia CI manhole frame and cover of 90 kg fixed in R.C.C. Slab	No	21856.00	3546.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	2396.00	687.00
F.	As above of 1.5 x 1.5 M internal size and depth upto 1.5 M with 53 cm dia CI manhole frame and cover of 90 kg fixed in R.C.C. Slab	No	28203.00	5334.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	2899.00	844.00
3	Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 Proportion precast S. F. R. C.frame and cover,etc.complete as directed by Engineer-in-charge. <b>Note:</b> Wall thickness : 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M <b>Valve Chamber with Precast steel fibre reinforced concrete ( S.F.R.C.) frame &amp; covers.</b>			
A.	As above of 60x45 cm internal size and depth upto 0.9 M .	No	8397.00	1554.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1271.00	235.00
B.	As above of 90x45 cm internal size and depth upto 1.2 M .	No	12101.00	2238.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1450.00	269.00
C.	As above of 90x60 cm internal size and depth upto 1.2 M .	No	13321.00	2465.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1572.00	290.00
D.	As above of 90x90 cm internal size and depth upto 1.2 M .	No	15666.00	2898.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	1815.00	335.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
E.	As above of 1.2 x 1.2M internal size and depth upto 1.2 M with S.F.R.C. frame and cover of size 540 mm dia fixed in R.C.C. Slab	No	19421.00	3594.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	2408.00	445.00
F.	As above of 1.5 x 1.5 M internal size and depth upto 1.2 M with S.F.R.C. frame and cover of size 540 mm dia fixed in R.C.C. Slab	No	26047.00	4818.00
	a). Add for every increase in depth of 30cm or part thereof	30cm depth	2912.00	539.00
4	Providing and fixing in position M.S. Air valve boxes fabricated with 2 mm thick M.S. plate, 30 x 30 x 3 mm size M.S. angle frame, concre- ting in M-150 for fixing the box in position, applying two coats of oil paint, painting chainage, locking arrangement, etc. complete as directed by Engineer-in-charge.			
a)	For single ball air valve	No	2185.00	84.00
b)	For Double ball air valve	No	3062.00	217.00
5	Providing and fixing C.I. road box including loading, unloading and carting to site of work including all necessary excavation in all types of strata and fixing in murum packing, etc. complete.			
a)	100 mm x 225 mm (20 kg)	No	1572.00	291.00
b)	225 mm x 300 mm (40 kg)	No	3144.00	582.00
6	Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.2 M dia. at bottom and 0.5 M dia. at top and upto a depth of 2.00 M with 23 cm brick work in CM 1:4 proportion with 20 mm thick smooth plaster om both sife in C M 1:2 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.	No	22847.00	3908.00
	a) Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	3039.00	1458.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
7	Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.5 M dia. at bottom and 0.5 M dia. at top and upto a depth of 5.00 M with 23 cm brick work up to depth of 2 M from top and 35 cm thick brick work for balance depth in CM 1:4 proportion with 20 mm thick smooth plaster on both side in cm 1:2 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighting 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.	No	62523.00	3908.00
	a) Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	6069.00	4058.00
8	Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.5 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proporpion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.	No	130966.00	3889.00
	a) Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	7537.00	5421.00
9	Providing and constructing B.B. masonry circular manhole without conical shape excluding			

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
	excavation, RCC 1:2:4 proportion, 20 cm bedding brick masonry in CM 1:4 proportion, 23 cm thick for 2 M depth from top 35 cm thick for 2 M below it and 45 cm thick for balance depth, RCC slab at top and at 2 M depth from top for supporting brick masonry above it, plastering with smooth finish in CM 1:2 proportion C.C.1:2:4 finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., providing and fixing S.F.R.C. frame and cover of 56 cm.dia. at top including cost of all materials and labour, etc.complete.			
A.	1.00 M dia x 2 M Depth	No	20930.00	3535.00
	a). Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	3069.00	719.00
B.	1.00 M dia x 3 M Depth	No	30084.00	5636.00
	a). Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	4287.00	949.00
C.	1.00 M dia x 4.5 M Depth	No	45607.00	9231.00
	a). Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	5306.00	1180.00
D.	1.50 M dia x 2 M Depth	No	31227.00	5471.00
	a). Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	3677.00	941.00
E.	1.50 M dia x 3 M Depth	No	39929.00	8021.00
	a). Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	5502.00	1307.00
F.	1.50 M dia x 4.5 M Depth	No	59688.00	12859.00
	a). Rebate for every decrease in depth of 50 cm or part thereof	50cm depth	6800.00	1601.00
	<b>Drainage Drops</b>			
10	Providing 150 mm dia S.W. or R.C.C.pipes in vertical drop arrangement including providing 150 mm dia S.W.and R.C.C. pipe fixed in B.B. masonry of manhole at the required level including providing 150 mm dia double tee, 150 mm dia right angled bend, encasing in B.B. masonry 1:4 proportion all around the pipe,double tee, bend upto the foundation of manhole, jointing, cutting, filleting including neat cement rendering, plugging the opening with jungle wood knob complete as directed by Engineer-in-charge (0.60M depth) excluding cost of chamber.	No	1951.00	365.00
	a). Extra for every 0.5 M depth beyond initial depth of 0.60 M	50cm depth	806.00	110.00
11	As above but for 200 mm dia. Pipes & depth 0.60 M	No	2478.00	451.00
	a). Extra for every 0.5 M depth beyond initial depth of 0.60 M	50cm depth	919.00	127.00
12	As above but for 250 mm dia. Pipes & depth 0.60 M	No	2946.00	549.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
13	a). Extra for every 0.5 M depth beyond initial depth of o.60 M As above but for 300 mm dia. Pipes & depth 0.60 M	50cm depth No	979.00 3632.00	138.00 660.00
14	a). Extra for every 0.5 M depth beyond initial depth of o.60 M As above but for 400 mm dia. Pipes & depth 0.60 M	50cm depth No	1060.00 5249.00	136.00 910.00
15	a). Extra for every 0.5 M depth beyond initial depth of o.60 M As above but for 500 mm dia. Pipes & depth 0.60 M	50cm depth No	1503.00 6417.00	160.00 1093.00
16	a). Extra for every 0.5 M depth beyond initial depth of o.60 M As above but for 600 mm dia. Pipes & depth 0.60 M	50cm depth No	1806.00 8552.00	176.00 1466.00
17	a). Extra for every 0.5 M depth beyond initial depth of o.60 M Providing and fixing in position steel fibre reinforced concrete (S.F.R.C.) frame and covers of approved make including loading, unloading, transportation, all taxes, etc. complete as directed by Engineer-in-charge (20 tonnes capacity)	50cm depth No	2430.00 3012.00	230.00 558.00
	a) 540 mm dia	No	4294.00	794.00
	b) 560 mm dia	No	3012.00	558.00
	c) 90 x 45 cm size	No	3264.00	604.00
	d) 90 x 60 cm size	No	2981.00	551.00
	e) 60 x 60 cm size	No	2583.00	477.00
	f) 60 x 45 cm size	No		
18	Providing and fixing intercepting sewer trap including concrete bedding, etc. complete.			
	a) 150 x 100 mm	No	493.00	50.00
	b) 100 x 100 mm	No	356.00	33.00
19	Providing and fixing in position S.W. bends of various size,etc. complete.			
	a) 100 mm	No	158.00	13.00
	b) 150 mm	No	188.00	15.00
20	Providing and fixing 'Y' junction and labour, etc. complete.			
	a) Saddle junction 100 x 100 mm	No	174.00	14.00
	b) "Y" junction 150 x 150 x 100 mm	No	209.00	19.00
	c) "Y" junction 300 x 300 x 300 mm	No	248.00	22.00
	d) "Y" junction 300 x 300 x 100 mm	No	209.00	19.00
21	Providing and fixing in position A.C. soil ventilators / slotted as necessary and as directed by Engineer-in-charge etc. complete.			
	a) 80 mm	No	174.00	14.00
	b) 100 mm	No	209.00	17.00
	c) 150 mm	No	297.00	24.00
22	Providing and fixing A.C. soil pipe or downtake pipe with all required fittings, taking hole, etc. complete (as per manufacturer's code of practice).			
	a) 80 mm	No	298.00	24.00
	b) 100 mm	No	362.00	29.00



<b>Sr No</b>	<b>Item Description</b>	<b>Unit</b>	<b>Rate (in Rs.) 2019-20</b>	<b>LABOUR INVOLVED</b>
c) 23	150 mm Providing and fixing Cast Iron soil pipe of 1.8 M length including taking out holes and all required fittings, etc. complete. S / S	No	543.00	44.00
a)	80 mm	No	1024.00	81.00
b)	100 mm D / S	No	1174.00	94.00
a)	80 mm	No	1113.00	89.00
b)	100 mm	No	1285.00	103.00

**Section -J - WELL SINKING AND RIVER INFILTRATION  
WORKS**

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
1	<p>Providing, constructing coffer dam in river basin / dam storages as per type design including excavation, filling, the middle portion with B. C. soil (in gunny bags if required). Providing impervious / semipervious materials on both side of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge, till the completion of work including dismantling coffer dam after completion of works and disposing off the material as directed by the Engineer-in-charge.</p> <p>Note : Pay line maximum- Top width payable shall be 2 mtr. And maximum payable side slopes shall be 1.5 Horizontal to 1 vertical, if the constructed top width of the side slopes are less, then the measurements at actual are payable. Extra top width or flatter slopes are not payable Contractor is free to use ballies, plastic sheets, piles, pipes, CGI sheets for supporting hearting materials instead of impervious/semipervious hearting materials for which no extra payments shall be payable. 30% payment shall be withheld for dismantling of coffer dam. This foot note shall appear in tender condition. (type section is shown on last page of type design section of CSR)</p>	Cum	694.00	20.00
2	<p>Providing and fabricating at work shop, carting to site of work, including transport, loading, unloading, hoisting, lowering and setting out at actual site of well, sinking M.S. plate cutting edge. for R.C.C. well curb consisting of 350 mm M.S. plate, 10 mm thick, champhering at bottom. Cutting edge should be provided in pieces not less than 2 M in length. Each joint should be plain from outside and jointed by gusset plate 400 x 200 x 12 mm thick M. S. plate with 12 nos. of 20 mm dia. crurshank headed bolts (gusset plates</p>	Kg	86.00	13.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
	14mm from bottom so that 15mm side should be in contact with cutting edge with overlap of 300 mm joints. 16 mm dia bar should be welded to M.S. plate 200 mm below the top surface and length should be 1.8 M above plate with a bend 300 mm from plate surface including 3 coats of anticorrosive paint as directed by Engineer-in-charge.			
3	Providing and filling puddle (selected good impervious clay) in Kolhapur type weirs in proper layers of 15 cm including watering, ramming and compaction, etc. complete with all leads and lifts.	Cum	278.00	120.00
4	Providing and filling around the well boulders filling of selected variety and size of boulders including cost of all materials, labour, transportation, etc. complete with all leads and lifts.	Cum	876.00	194.00
5	Providing, and fixing 80 mm dia A.C./P.V.C. pipe weep holes at 1.5 M c/c staggered including cost of all materials and labour involved with all leads and lifts.etc. complete with all leads and lifts.	Rmt	193.00	38.00
6	Providing and fixing M.S. chaquerred plate flooring of following thickness supported on M.S.angles (25 x 25 x 5 mm size) including welding, cutting and fabricating the plate to the required square or rounding shape, making holes in the plate, including providing and applying 3 coats of anticorrosive paint, etc. complete as directed by Engineer-in-charge.			
	a) 6 mm thick	Sqm	3706.00	337.00
	b) 8 mm thick	Sqm	4698.00	335.00
7	Providing at site of works ISI standard RCC slotted pipes of NP-3 class including cost of all central and local taxes, octroi, inspection, transportation, etc. complete including cost of RCC collar, etc. complete.			
	450 mm dia	RMT	3848.00	
	600 mm dia	RMT	5985.00	

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
8	Lowering, laying and jointing RCC slotted pipes of following diameters including all leads and lifts, cost of jointing material, labour, etc. complete as directed by Engineer-in-charge.			
	450 mm dia	RMT	216.00	142.00
	600 mm dia	RMT	287.00	182.00
9	Lowering, laying and jointing CI 'B' class connecting mains with rubber gaskets including transportation of pipes from stores to site of works, cost of jointing materials, cost of rubber gasket with all leads and lifts, etc. complete.			
	300 mm dia	RMT	296.00	269.00
	350 mm dia	RMT	361.00	325.00
	400 mm dia	RMT	439.00	403.00
	450 mm dia	RMT	464.00	441.00
	500 mm dia	RMT	494.00	481.00
	600 mm dia	RMT	689.00	678.00
	700 mm dia	RMT	903.00	856.00
	750 mm dia	RMT	1023.00	990.00
10	Providing, lowering, laying and placing in position, shrouding material for porous pipe gallery / slotted pipe gallery/ trench gallery with all leads and lifts involved including transportation of materials to site of works, screening and washing of materials and placing in position with given section, etc. complete as directed by Engineer-in-charge.			
	40 mm pebbles	Cu.m	1493.00	229.00
	<b>12 mm to 20 mm pebbles</b>	Cu.m	1807.00	260.00
	6 mm to 12 mm pebbles	Cu.m	2059.00	297.00
	Coarse Sand (from river sand at site)	Cu.m	900.00	130.00
	Fine Sand (from river sand at site)	Cu.m	1000.00	144.00
11	Providing and fixing in position C.I. Type dapuri steps of 22 mm dia. M.S. bar step with proper anchorage, etc. and providing and applying 3 coats of ant-corrosive paint, etc complete as directed by Engineer-in-charge.			
		No	454.00	62.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
12	Providing and fixing M.S. sluice gates in position as per detailed drawing and specification including cost of all materials, labour, operating pedestal, connecting rod, painting with three coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge.	Kg	106.00	40.00
13	Providing and fixing in position C.I. /M.S. rose pieces in intake wells including cost of all materials and labour, painting with three coats of anti-corrosive oil paint, etc.complete as directed by Engineer-in-charge.	Kg	79.00	12.00
14	Providing and spreading around the well 1 mm thick polyethylene sheet complete as directed by Engineer-in-charge.	Sq.m	24.00	3.00
15	Dewatering charges for estimation purpose for head works in river basin or dam			
	Approach channel	RMT	5723.00	744.00
	Intake well of 3 M dia	No	76330.00	9913.00
	Inspection well of 2 M dia	No	49149.00	7463.00
	Connecting main	RMT	4587.00	713.00
	Jack well of 6 M dia	No	228977.00	23066.00
	Approach Bridge	RMT	771.00	141.00
	<b>Notes</b>			
1)	The Contractor at his request may be allowed to start construction of masonry steining so as not to allow silting of well inoncoming withheld and released only when excavation to the full depth is completed.			
2)	Dewatering: Total dewatering charges are to be proposed in the tender as lumpsum amount and 75% is payable for excavation and 25% is payable for construction of well / gallery. Out of 75% excavation, break-up shall be as under:  25% for last 1 M depth. 20%for2Mdepthwhichjustabovela1M depth. 15%for2Mdepthwhichjustabovela3M depth. 15%fortherestofdepthfromwatertablelevel.			
3)	The provisions made for dewatering in the tender being on lumpsum basis, the same shall have to be reduced / increased proportionately as the length of approach channel, connecting main or approach bridge reduces / increases during actual execution.			

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
16	<p>Condition No. 1 and 2 shall appear in Tender condition</p> <p>Carrying out recuperation / Yield test for ascertaining the discharge of constructed well / excavated profile as directed by Engineer - In - Charge. The test carried out by drawing down water from the well / profile below normal / subsoil water level upto full depth rise is recorded. The normal water level / subsoil water level / subsoil water level in the well / profile as well as strainer / suction level at pump as per design of W.S. Scheme shall be recorded prior to the test including cost of all materials, overload, labours etc. complete as directed.</p> <p><b>The test shall be carried out as per technical circular No. 2597 dt. 20.11.1997 and shall be carried out for 7 days.</b></p>			
	a) Lps more than 25000	Day	2591.00	2075.40
	b) Lps less than 25000	Day	1865.00	2168.80
17	<p>Providing and laying HDPE Geo-membrane sheet of following thickness 100% acid, alkali proof, 100% rain forced sealing quality, every joints electronically welded, as per relevant IS specification &amp; placing in proper position on prepared bed on foundation/ embankment with welding the joints of sheet using hot sedge and extrusion welding techniques according to the liner manufacturers specifications at ambient temperatures of 5<sup>0</sup> C to 45<sup>0</sup> C including all taxes &amp; labour for jointing and placing etc. complete.</p>			
	500 micron	Per Sqm.	259.00	
	250 micron	Per Sqm.	179.00	

### Section -K - ANCILLARY ITEMS FOR RESERVOIRS

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
1	Providing and fixing in position copper lightening conductor including copper rod of 20 mm dia as per upper terminal 1.5 M long with a knob at end and with conical spike at top, copper tape conductor 20 x 3 mm size, copper earth plate of 3 mm thick and 0.81 sqm. in area, clamps at 1 M centre to centre including, necessary excavation, laying and fixing the conductor, providing and fixing 40 mm G.I pipe upto 3 M height from ground and 0.5 M below ground including making all connections, filling the earthing pit with charcoal, salt, etc. and refilling and watering, etc. complete as per specifications laid down in relevent I.S. codes.			
i)	For Tape of 10M length	No	<b>11250.00</b>	1000.00
ii)	Rebate / Extra rate per metre length or part thereof over and above initial length of 10M	Mtr	<b>294.00</b>	11.00
2	Providing and fixing in position copper lightening conductor including copper rod of 20 mm dia as per upper terminal 1.5M long with a knob at end and with conical spike at top, aluminium tape conductor 20 x 3 mm size copper earth plate of 3 mm thick and 0.81 sqm. in area, clamps at 1 M centre to centre including, necessary excavation, laying and fixing the conductor, providing & fixing 40 mm G.I pipe upto 3 M height from ground and 0.5 M below ground including making all connections, filling the earthing pit with charcoal, salt, etc. and refilling and watering, etc. complete as per specifications laid down in relevent I.S. codes.			
i)	For Tape of 10M length	No	<b>10261.00</b>	1003.00
ii)	Rebate / Extra rate per metre length or part thereof over and above initial length of 10M	Mtr	<b>135.00</b>	5.00
3	Providing, hoisting and fixing in position inverted 'J' type 100 mm dia. C.I. cowl type ventilators with mosquitoproof aluminium mesh at top including			
	applying 2 coats of anti-corrosive paint, etc. complete as directed by Engineer-in-charge, weighing not less than 35 kg.	No	<b>2125.00</b>	1021.00
4	Providing, hoisting and fixing in position C.I. manhole, frame and cover of best quality and of required size and shape with locking arrangements including applying 2 coats of anti-corrosive paint, etc. complete			
i)	90 x 60 cm size and weight 35 kg	No	<b>2924.00</b>	220.00
ii)	Rate on weight basis for any size and type of frame and cover	Kg	<b>84.00</b>	7.00

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
5	Providing and fixing in position M.S. ladder 0.50 M wide consisting of 75 x 10 mm M.S. flats as stringers and 16 mm dia M.S. bars in double rows as steps placed at 25 cm c/c including cost of material and labour involved, welding, anchoring and applying 3 coat of anti-corrosive paint, etc. complete as directed by Engineer-in-charge.	RMT	1362.00	195.00
6	Providing and applying epoxy paint of approved make (Shalimar, Ciba or Mahindra & Mahindra) to concrete surface of RCC ESR or GSR or any other structure including cleaning the surface by scrapping and air blowers to the satisfaction of Engineer-in-charge, necessary scaffolding, etc complete with all leads and lifts and giving satisfactory hydraulic test for water tightness as per I.S. codes			
	a) For new surfaces - Two coats.	Sq.m	640.00	336.00
	b) For old surfaces - Two coats.	Sq.m	721.00	405.00
7	Providing and constructing RCC spiral staircase in M-150 mix concrete at site of work and consisting of central vertical column of 400 mm dia and steps in RCC M-150, tie members at each brace level, RCC parapet wall 80 cm high including cost of all labour and material involved, cost of scaffolding, centering, shuttering, curing, finishing in CM 1:3 proportion including RCC M-150 footing foundation, its excavation, refilling and cleaning the site, etc. complete as per type design, with 3 coats of cement paint.	RMT	5594.00	379.00
8	Providing and constructing RCC ventilating shaft of diameters and height mentioned below with required number of RCC 15 x 15 cm size columns and RCC circular slab or dome over the pillars in M-150 including cost of all material and labour, providing and fixing steel or wooden frame & providing & fixing G.I. flyproof mesh of 26 gauge and providing and applying in 3 coats of oil paint to wooden or steel frame and cement paint to concrete structure. etc. complete as directed by Engineer-in-charge.			
i)	0.9 M dia x 1.35 M height	No	5910.00	672.00
ii)	1.2 M dia x 1.80 M height	No	7634.00	873.00
iii)	1.5 M dia x 2.25 M height	No	12049.00	1397.00



Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
9	Providing and installing mercury water level indicator for RCC ESR and wash water tank site as per instructions of Engineer-in-charge at ground level of the tank or nearing pump house or room for RCC ESR having 15 mtrs. staging height and 5 mtrs. water storage height with indication of water height in storage tank in metre and 1/10th of meter including providing and installing 15 mm dia class 'B' G.I. piping with necessary accessories from bottom of the tank upto the instrument as per instructions of Engineer-in-charge.	No	<b>19246.00</b>	3212.00
	For Extra stage height over 15M or part thereof and water depth over 5 M or part thereof	Mtr	<b>1026.00</b>	171.00
10	Providing and Erecting, installing and commissioning Barometric Leg Chlorination system for water treatment plant upto 5 MLD. capacity as per manufacturers specifications with all required materials viz. 15 Kg. pressure yellow PVC pipe, specially prepared chamber, mixing chamber, scrubber unit, gas pressure flexible pipe, brass nozzle nipple, electronic alarm unit, PPM dose, indicator of 25 mm dia. 4mm thick glass tube (Borosil), gas ubit opening spanner 3 hole type, instruction board, aluminium pipe upto sump (Maximum length 15 Mtr.) etc. including civil works wherever required for above material			
	fittings, including satisfactory test and trial at work site etc. complete. ( Item do not include construction of chlorine Gas Room of 3.0 x 3.0 Mtr. or adequate size).			
	For 5 MLD Capacity	1No. per unit	<b>118798.00</b>	11452.00
	Add/Deduct per MLD or part of per MLD capacity.	MLD	<b>4008.00</b>	394.00
11	Providing and fixing water level indicator upto 5 M height including M.S. enamelled gauge plate 300 mm wide 3 mm thick, P.V.C. float, providing and fixing required accessories such as pointer, pulleys, nylon thread including cost of all material, labour, etc. complete.	No	<b>10032.00</b>	1789.00
12	Providing and fixing water level indicator upto 5 M height including M.S. enamelled gauge plate 150 mm wide 3 mm thick, P.V.C.float, providing and fixing required accessories such as pointer, pulleys, nylon thread including cost of all material, labour, etc. complete.	No	<b>6184.00</b>	1824.00

### Section -L - TRIAL RUN

Sr No	Item Description	Unit	Rate (in Rs.) 2019-20	LABOUR INVOLVED
1	Commisioning running and maintaining the scheme to quantites, rated capacity, including manning necessary personnel such as operator, valveman, etc. as per requirements of the scheme and who should also administer chemical dose for a period of 1 month for individual scheme and 3 months for regional scheme, together with training of personnel spared by MJP/ Local Body and handing over the scheme to Local Body after completion of the above period as directed by Engineer-in-charge.			
	Note: Required chemicals to be supplied by Department free of cost and electricity bill will also be paid by the Depertment.			
	a) For single village without WTP	Month	22399.00	15444.00
	b) For single village with WTP	Month	26132.00	18018.00
	c) For regional scheme upto 3 villages with raw water pumping, one treatment plant with pumps, raw water pumping main, leading main, ESR, BPT and distribution system etc. (With WTP).	Month	46372.00	38503.00
	d) For regional scheme upto 3 villages with pumping, pumping main, leading main, ESR, BPT and distribution system etc. (Without WTP).	Month	29993.00	24903.00
	e) For regional schemes upto 3 villages, trial period shall be one year with raw water pumping , one treatment plant with pumps,raw water pumping main, leading main,ESR, BPT and distribution system etc. (with WTP)	Month	47037.00	39055.00
	f) For regional schemes upto 3 villages, trial period shall be one year with raw water pumping , pumps , raw water pumping main, leading main,ESR, BPT and distribution system etc. ( Without WTP)	Month	30448.00	25281.00
	f) Add for every additional village	Month	8296.00	6126.00
	g) Add for every pumping station.	Month	13649.00	12717.00

# ORIENTED PVC PIPE (O-PVC)

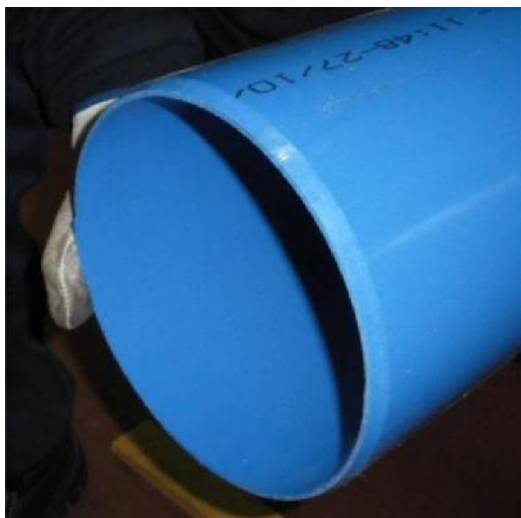
## RECEPTION, STORAGE, INSTALLATION AND TEST INSTRUCTIONS

### RECEPTION

After the reception of the pipes, it is necessary to check their state. Before its installation, you should remove the caps and make a sampling to verify that all the pipes are correct.

Checking the next points is particularly important:

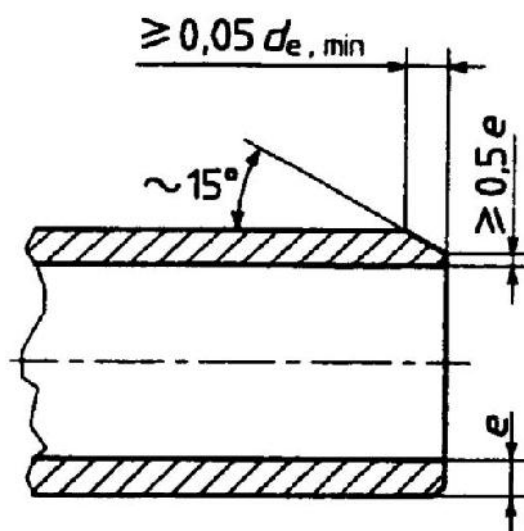
- The pipes should be free of dirt.
- The chamfer in the spigot end should not be damaged.



CORRECT



INCORRECT



- The seals should be placed correctly in their housings.



**CORRECT**



**INCORRECT**

- The surface and the inner part of the pipes and sockets should not be damaged.

## STORAGE

We suggest the following guidelines:

- Store the pipes horizontally on a flat surface and place supports every 1.5 meters to avoid the bending of the product.
- Avoid scratches especially in the crest of the socket, due to dragging the pipe on the ground, mainly if the surface is made of stone, concrete or asphalt.
- Do not stack more than 1.5 meters high, as this can damage lower pipes or even the upper pipes could fall.
- The sockets should be free, alternating sockets and ends.
- In case of prolonged sun exposure, protect pallets with an opaque material. White colour is preferable because it avoids the over-heating of the pipes.



## REALIZATION OF THE TRENCH

The trench must be free of stones at the bottom and at the sides.

Stones smaller than 10-20 mm are allowed, but they cannot be the main size of the ground particles.

Minimum trench width:

DN (mm)	Minimum width of trench B (m)	Depth of trench H (m)	Minimum width of trench B (m)
90-250	0.60	$h < 1.00$	0.60
315	0.85	$1.00 < h < 1.75$	0.80
355	1.00	$1.75 < h < 4.00$	0.90
400	1.10	$h > 4.00$	1.00
450	1.15		
500	1.20		
630	1.35		
800	1.65		

As a rule of thumb, when there is no road traffic involved, the pipes' crown will be at a minimum depth of 0.6 meters; with road traffic, the minimum depth is 1 meter.

## BEDDING AND FILLING THE TRENCH

Pipe must be installed in the following circumstances:

1. Before placing the pipe, a sand bed should be prepared (a fine granular material could be used instead of sand) with a thickness from 10 cm to 15 cm. The pipe should be well aligned and levelled.
2. The pipe must lie on the sand bed. It must be ensured that all the lower part of the pipe is settled on the sand bed trying to soak as much as possible in order to make the angle of sand that supports the kidneys of the pipe as big as possible.
3. Once the pipe is placed, chamberlain sides must be filled with the selected material and compacted to achieve >95% Proctor Normal.
4. The trench must be filled with the selected material and compacted laterally until the upper part of the pipe is buried at least 30 cm.
5. Steps 3 and 4 can be done with the same natural material obtained from the excavation, trying to avoid rocks and large stones, and checking that this natural material can support the forces produced by the pressure inside of the pipe.

Natural soil can be used as the selected filler material whenever it fulfills the following criteria:

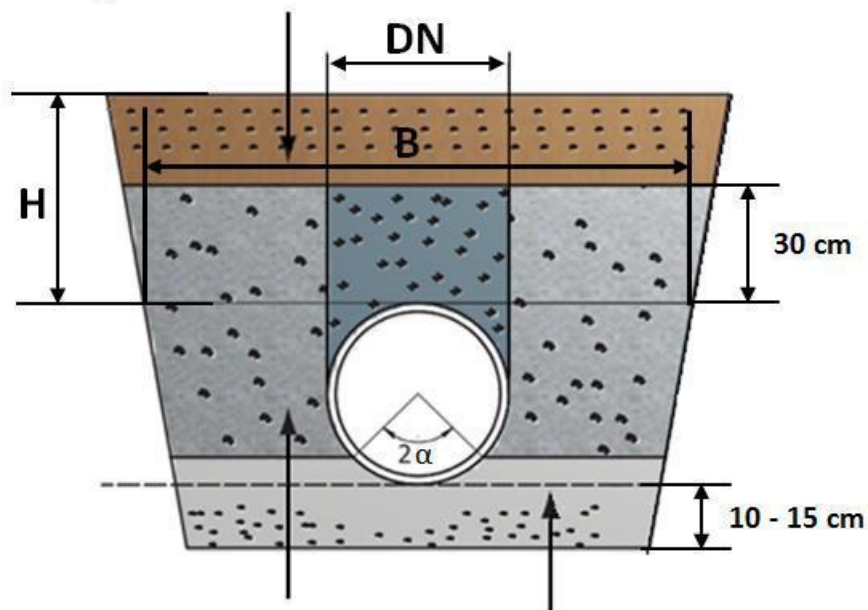
- a) The material cannot consist of angular stones or similar material.
- b) Filler material should not contain bigger particles than the ones shown in the following table.
- c) Filler material should not contain blocks of soil twice the size of the maximum dimensions of the particles given in the table.

**Maximum particle size**

Nominal diameter DN	Maximum size mm
DN <100	15
100 ≤ DN <300	20
300 ≤ DN <600	30
600 ≤ DN	40

- 6. From the 30 cm above the pipe until the surface of the ground, the trench can be filled with natural material not specifically selected and compacting directly over the whole surface of the trench.

Natural, tightly-packed  
filling 100% P.N.

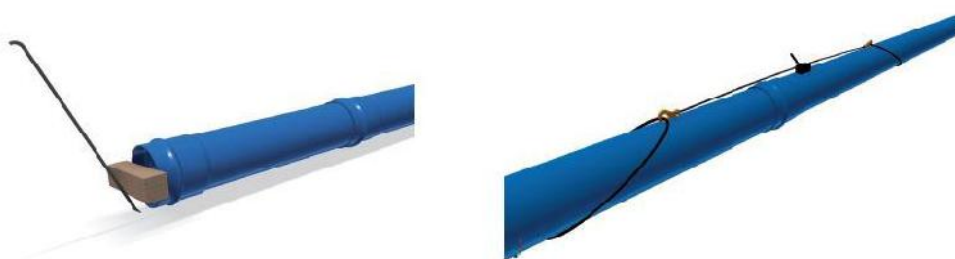


Selected,  
tightly-packed  
filling  
>95% P.N.

Granular  
tightly-packed  
material  
>95% P.N.

## ASSEMBLY

- Remove the protection caps.
- Verify that the pipe is clean and in good condition. Paying attention to the sockets and spigot ends.
- Check that the chamfer is correct and free of cracks.
- Verify that the seal is in its place, clean and free of foreign materials (stones, sand, etc.).
- Lubricate the chamfer of the spigot and the seal with joint lubricant.
- Line up the pipe as much as possible horizontal and vertically.
- Insert only the chamfer edge of the socket, just to support the pipe but leaving the socket lip free.
- In the case of pipes with nominal diameter  $\leq 250$  mm, a firm and dry push should be given to seize the momentum produced by the free movement in the lip of the socket and introduce it until the mark is hidden into the socket.
- When installing diameters  $> 250$  mm, one should use mechanical means to introduce the pipe using materials such as wood, hoists, tackles or slings.



In the next table, you can find an approximated number of assemblies per diameter with 1kg of lubricant.

DN (mm)	90	110	140	160	200	225	250	315	355	400	450	500	630	800
Assemblies	87	76	54	46	34	32	30	25	21	17	16	14	12	9

## PIPE CUTTING

Pipes can be cut transversally using a circular saw or a hacksaw. The resulting male cut ends should be chamfered in order to be entered manually in another socket pipe or fitting. The chamfer can be made with a circular saw and be reviewed later with a file. The chamfer should be approximately of 15°.

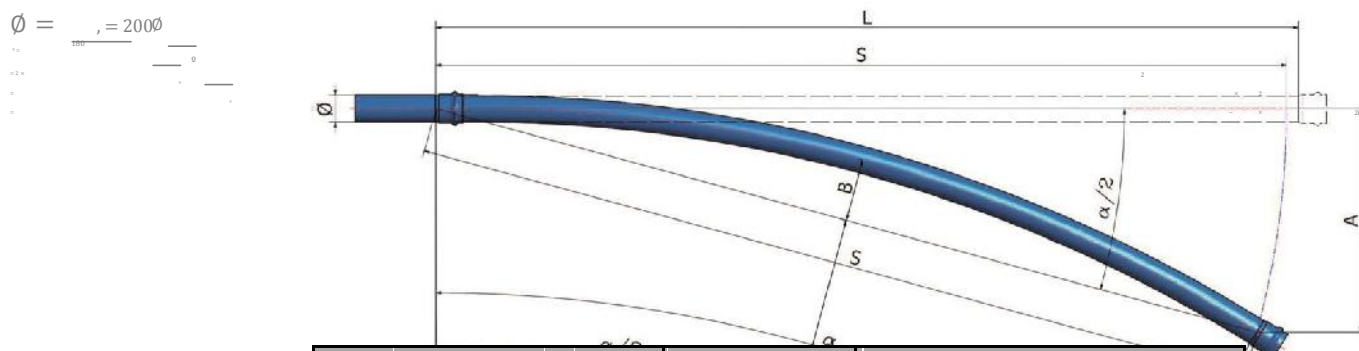
A mask must be worn to prevent dust inhalation and protections and safety measures must to be taken for cutting machines.

Pipes chamfered on-site are less accurate than those made at the factory. Because of that, they could require higher introduction efforts or even require simple mechanical means to place the spigot inside the socket.



## COLD BENDING OF PIPE (23° C)

The pipe can bend at room temperatures ( $\pm 23^{\circ}\text{C}$ ) in the trench up to the limits defined in the next table. These curves must to be done always in cold (don't heat any part of the pipe or socket) by manual efforts (you can use simple items to help in case of pipes DN> 250mm) and without damaging the geometry of the plugs.



		Pipe curvature			Angular deviation of the socket	Curvature + angular deviation (full angle) angular		
DN	L	R	$\alpha/2$	A	angle	R'	$\alpha'/2$	A'
mm	m	m	degrees	m	degrees	m	degrees	m
90	5,78	18	9,2	0,92	2	15	11,2	1,12
110	5,78	22	7,5	0,75	2	17	9,5	0,95
140	5,76	28	5,9	0,59	2	21	7,9	0,79
160	5,75	32	5,1	0,52	2	23	7,1	0,71
200	5,73	40	4,1	0,41	2	27	6,1	0,61
225	5,70	45	3,6	0,36	2	29	5,6	0,56
250	5,68	50	3,3	0,32	2	31	5,3	0,52
315	5,63	63	2,6	0,25	2	35	4,6	0,45
355	5,61	71	2,3	0,22	2	38	4,3	0,42
400	5,58	80	2,0	0,19	2	40	4,0	0,39
450	5,56	90	1,8	0,17	2	42	3,8	0,37
500	5,58	100	1,6	0,16	2	44	3,6	0,35
630	5,53	126	1,3	0,12	2	49	3,3	0,31
800	5,42	160	1,0	0,09	2	52	3,0	0,28

The pipes may be subjected to greater curvatures with high efforts, but it is not recommended to overcome these limits to avoid compromising the safety coefficient of the pipe.



## ANGULAR DEVIATION ALLOWED IN THE SOCKET

In addition to the curvature of the pipe, an angular deviation is allowed at the junction between pipes. Therefore in the final layout of the pipes, one can add both effects.

It is important not to exceed the established values of angular deviation in the socket-end when bending the pipe.



(1) Total length of the pipe: 5.95 meters.

DN	Maximum angular deviation	Displacement in the socket (D)
mm	angle (°)	D(mm) <sup>(1)</sup>
<b>90-800</b>	2°	200

The pipe connections can be subject to greater angular deviations if subjected to high stresses. It's recommended not to exceed those limits in order to avoid endangering the safety coefficients of the assembly under pressure.

## FORCES PRODUCED BY THE BENDING OF THE PIPE

The bent pipeline behaves like a narrow-angle curve; this means that there is some backpressure on the ground as the table below shows. These cross-pressures, under normal conditions, can be supported by a sufficiently compacted soil, otherwise, if necessary, they should be supported with anchors in excessive curvatures.

	Forces in a curved pipe ( $\alpha / 2$ ) <sup>(2)</sup>					
	bar	bar	bar	bar	bar	bar
DN	1	5	10	15	20	25
mm	kN	kN	kN	kN	kN	kN
<b>90</b>	0,10	0,51	1,02	1,53	2,04	2,55
<b>110</b>	0,12	0,62	1,25	1,87	2,49	3,12
<b>140</b>	0,16	0,79	1,58	2,37	3,17	3,96
<b>160</b>	0,18	0,90	1,81	2,71	3,61	4,51
<b>200</b>	0,22	1,12	2,25	3,37	4,50	5,62
<b>225</b>	0,25	1,26	2,52	3,78	5,04	6,29
<b>250</b>	0,28	1,39	2,79	4,18	5,58	6,97
<b>315</b>	0,35	1,74	3,48	5,22	6,96	8,70
<b>355</b>	0,39	1,96	3,91	5,87	7,82	9,78
<b>400</b>	0,44	2,19	4,38	6,57	8,76	10,96
<b>450</b>	0,49	2,46	4,91	7,37	9,82	12,28
<b>500</b>	0,55	2,74	5,48	8,22	10,96	13,69
<b>630</b>	0,68	3,42	6,84	10,26	13,68	17,10
<b>800</b>	0,85	4,26	8,51	12,77	17,03	21,28

(2) Resultant forces in a pipe 5.95 meters long.

## PRESSURE TEST AT WORKS

On-site testing should be performed according to local regulations and instructions laid down in the project.

During the assembly, the pipe installed should be tested in sections fully executed (the length may vary between 500 and 1.000 meters). The ends of the sections should be closed with appropriate fittings when being tested.

- Two main aspects must be taken into account: When the assembly are exposed, the water-tightness of the network should be checked, to see if there is any leak in such unions and locate them in case they exist. Except the cases of seal expulsion due to over-pressures or excessive angular deflections, leaks are manifested especially at very low pressures.
- On the other hand, for testing high-pressure pipes and fittings, they must be properly anchored (reductions, changes in direction, junctions, valves, cutting, etc.) and the pipes should be conveniently set in the trench (burial and compaction landfill). Otherwise, pipes and fittings could be unplugged by landslides in the field.

Therefore, it is recommended to test one of the following methods:

■

### **Method A:**

Burying the pipe conveniently with enough compaction to be able to withstand the stresses caused by the pressure of the test, but leaving assemblies uncovered (in some circumstances it is difficult to anchor pipes and fittings, leaving the unions visible). Any reductions, changes in direction, junctions and shutoff valves must be properly anchored.

Under these conditions, all pressure and leakage tests can be performed observing the uncovered unions and spot the appearance of leaks.

■

### **Method B:**

Perform a shallower anchorage of pipes and fittings, leaving assemblies out of any possible problems. Doing a first leak test by filling the line with water and observe that there are no water losses at the unions (most of the leaks occur at low pressures). In case of leaks, the reparation would be easier than with the fully anchored and buried pipes.

If required by local regulations, you could anchor the pipes and accessories conveniently for testing high pressure, keeping the assemblies exposed. If not, you can complete the burial of pipes and fittings with the correct compaction, thus facilitating the necessary anchorage for the high pressure test.

The pressures and time limits to test the pipes on-site are:

	Pressure	Maximum Time	Pressure	Maximum Time
<b>PN16</b>	Up to 21 bars	120 minutes	21 – 22.4 bars	60 minutes
<b>PN20</b>	Up to 25 bars	120 minutes	25 - 28 bars	60 minutes
<b>PN25</b>	Up to 30 bars	120 minutes	30 - 35 bars	60 minutes

## EFFECT OF TEMPERATURE

When the temperature is high, plastic pipes undergo a loss of mechanical properties and we must take this into account. Because of that, we must avoid the following conditions during pressure tests:

- Pipe partially or fully exposed to weathering (line uncovered).
- High outside temperature.
- Standing water inside the pipe.
- Prolonged sun exposure prior to the test.

All these circumstances may increase the temperature of the pipe above its operating temperature, so the overpressure test can damage the pipeline. In order to avoid that, it is recommended to:

- Cover the pipe once the tightness of the network is verified.
- Wait for pressure testing when the pipe has been exposed to sunlight.

High temperatures (over 25°C) or demanding or aggressive applications can reduce Allowable Operating Pressure (**PFA**) of pipes in comparison to the Nominal Pressure (NP).

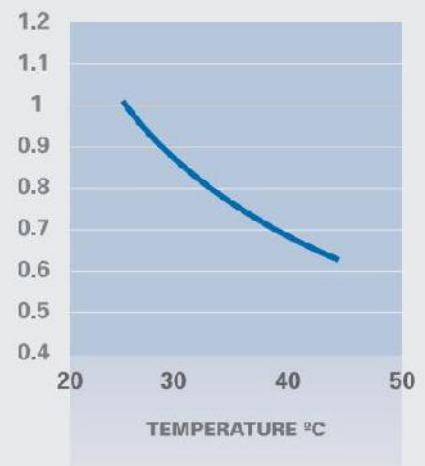
$$PFA = PN \cdot f_T \cdot f_A$$

The derating factor ( $f_T$ ) as function of operating temperature can be obtained from the graph on the right.

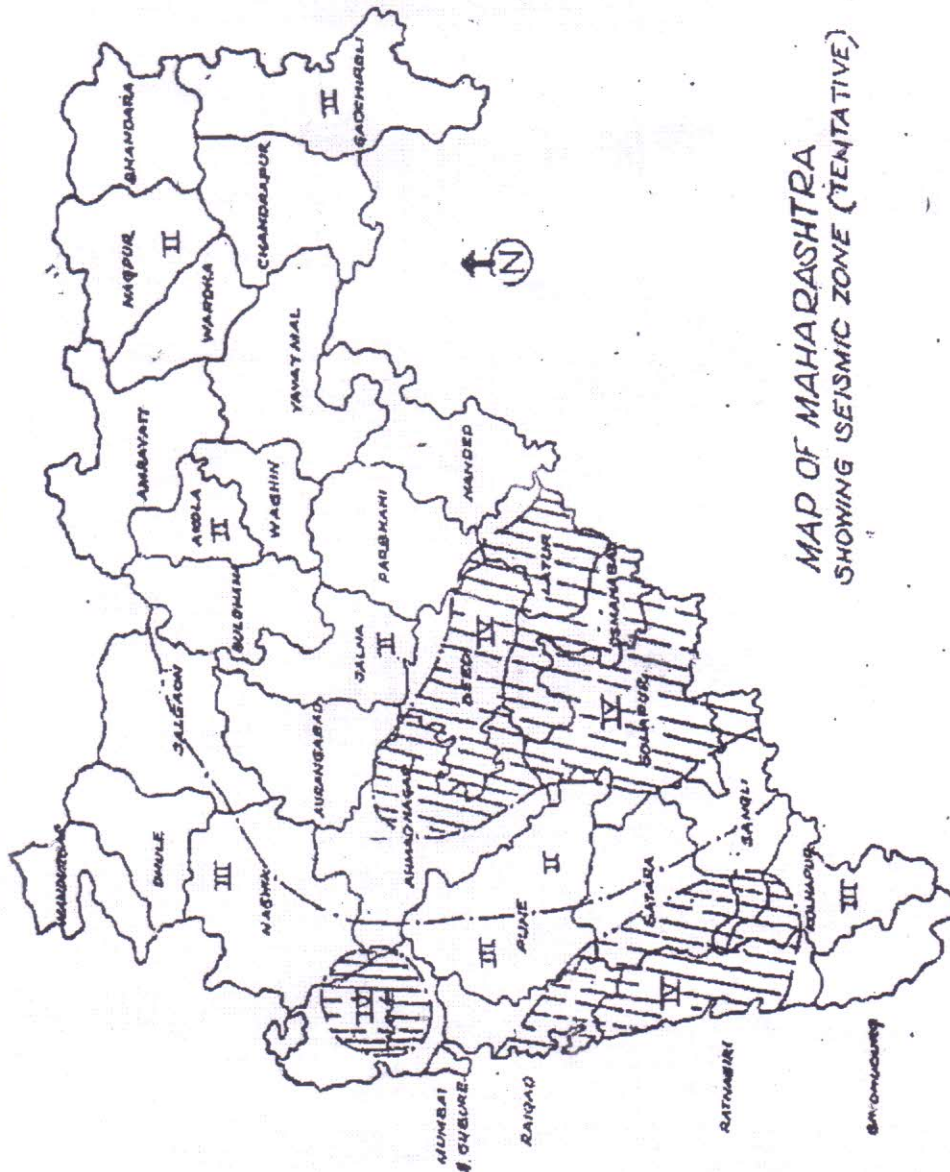
The derating factor related to application of the system ( $f_A$ ) must be determined by the Project Manager.

Note: Project design and execution is responsibility of the Project Manager and the Contractor, respectively.

Temperature Ratio Graph



# MAHARASHTRA JEEVAN PRADHIKARAN



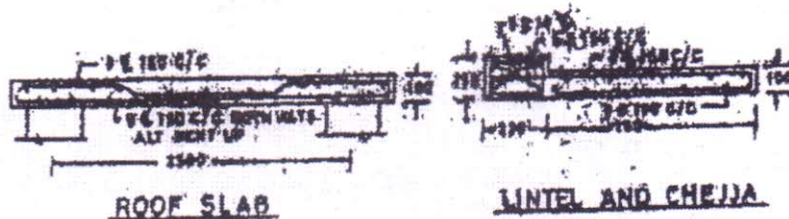
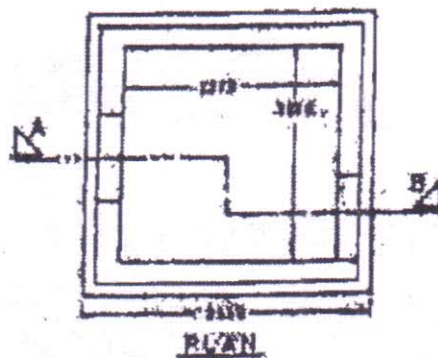
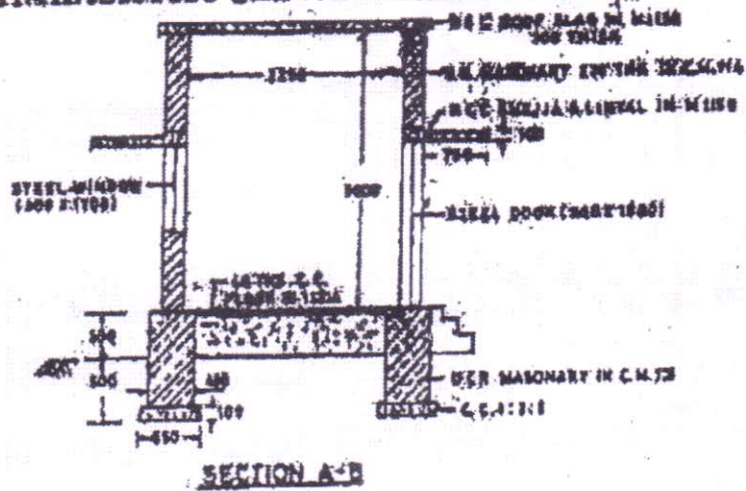
MAP OF MAHARASHTRA  
SHOWING SEISMIC ZONE (TENTATIVE)

SECTION - I : (XIX) RCC ESRs

216

seismic zone map

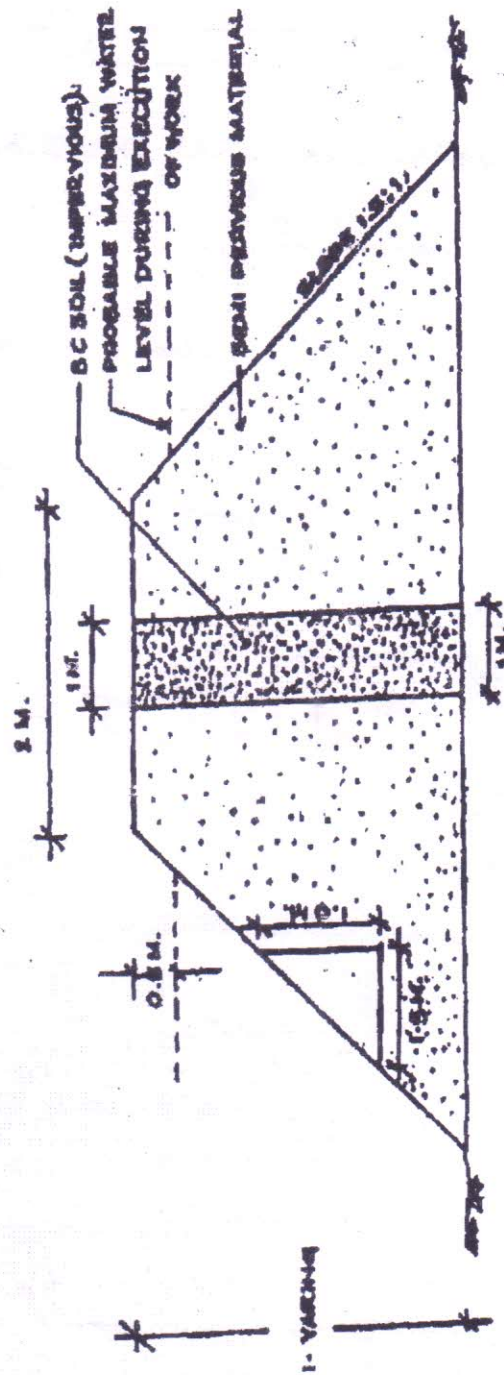
# MAHARASHTRA JEEVAN PRADHIKARAN



TYPE DESIGN OF SWITCH HOUSE WHEN GOOD FOUNDATION IS AVAILABLE AND C.L. IS ABOVE H.E.L.

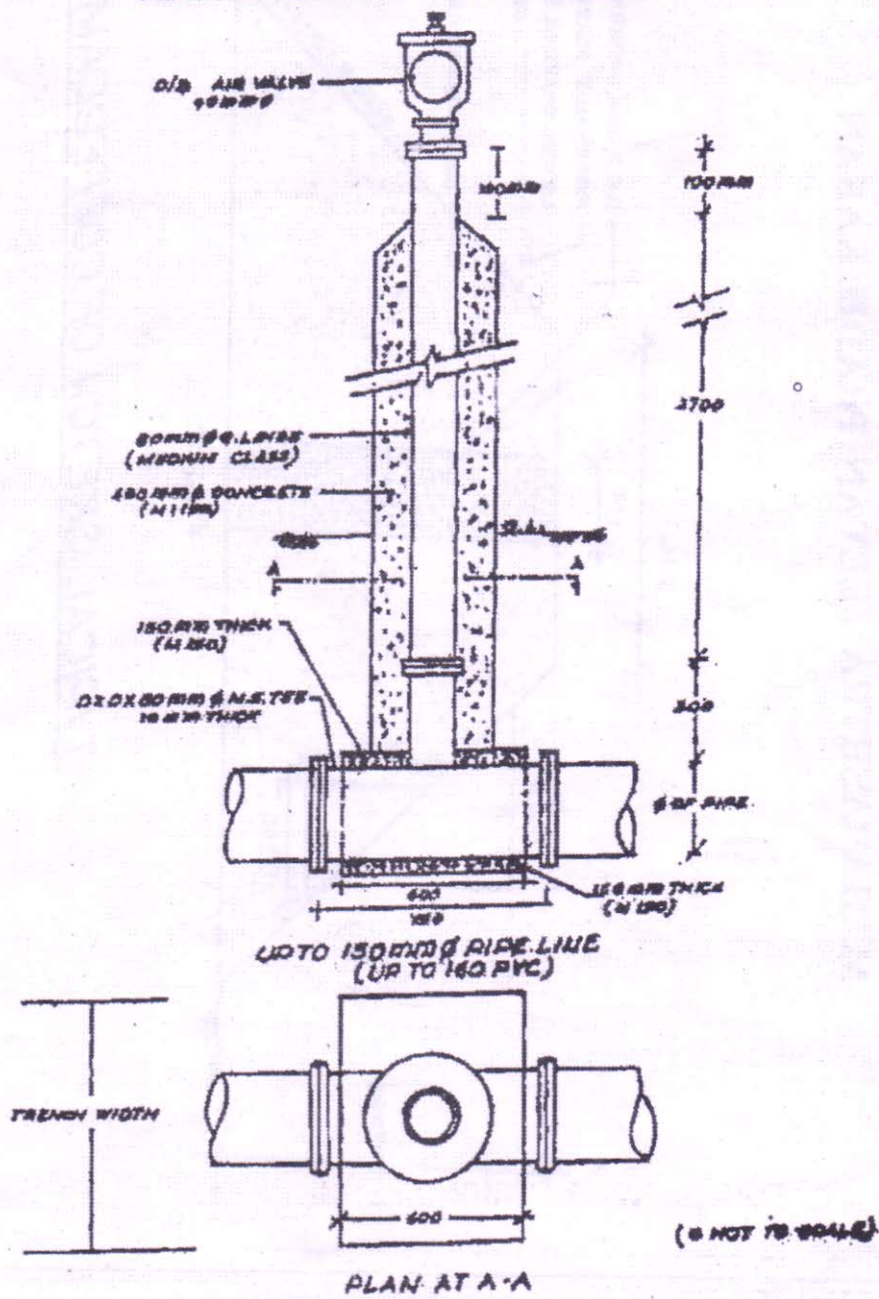


# MAHARASHTRA JEEVAN PRADHIKARAN



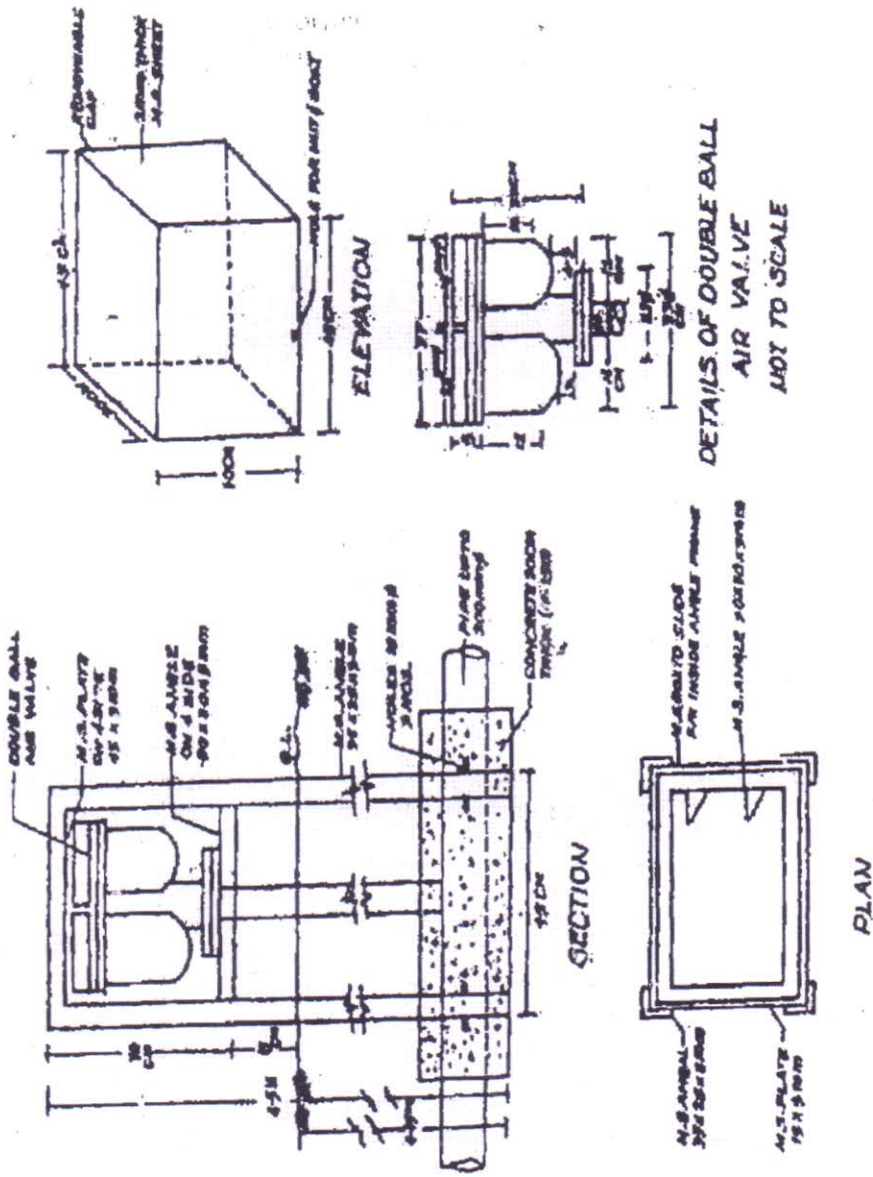
TYPICAL SKETCH OF COFFERDAM

# MAHARASHTRA JEEVAN PRADHIKARAN



TYPE DESIGN FOR FIXING OF AIR VALVE ON SHAFT

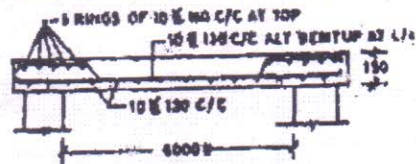
# MAHARASHTRA JEEVAN PRADHIKARAN



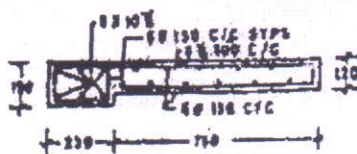
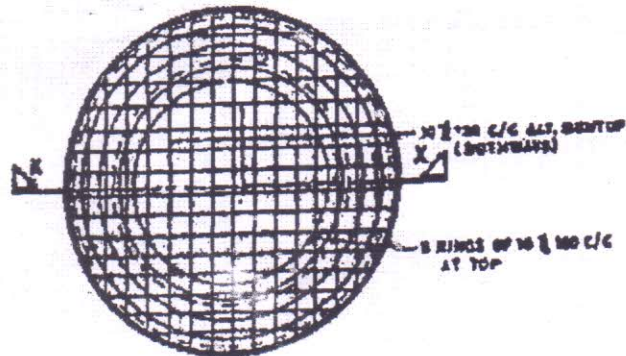
DETAILS OF CAGE FOR DOUBLE BALL AIR VALVE 50mm Ø BELOW 50mm Ø



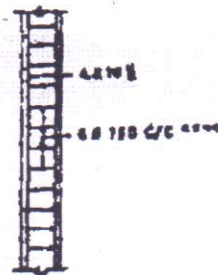
# MAHARASHTRA JEEVAN PRADHIKARAN



SECTION X-X



LINTAL AND CHAJJA

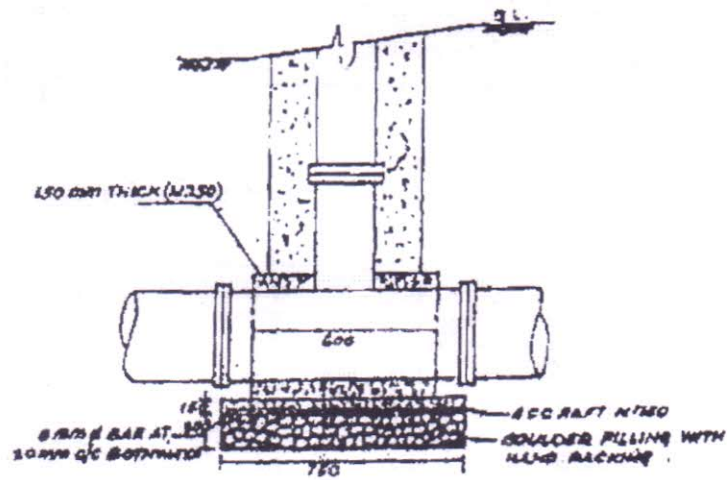


COLUMN

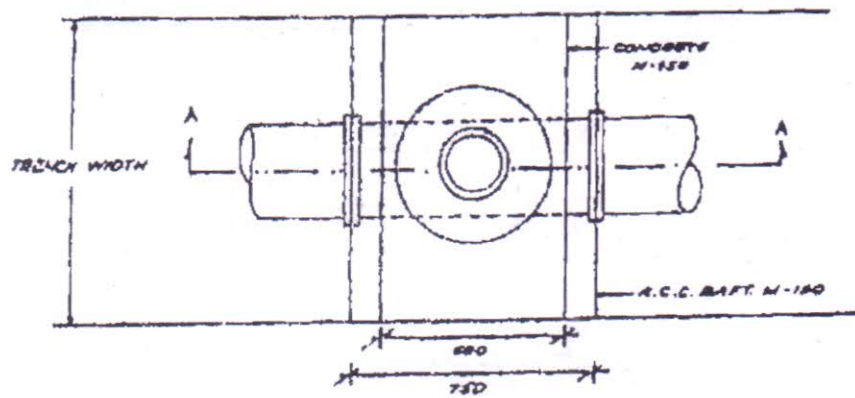
TYPE DESIGN OF REINFORCEMENT OF VARIOUS  
MEMBERS OF PUMP HOUSE OVER R.C.C. JACK-WELL

MAHARASHTRA JEEVAN PRADHIKARAN

TYPE DESIGN FOR RAFT FOUNDATION  
OF AIR-VALVE SHAFT (FOR ALL DIAMETERS OF PIPELINE)



SECTION - A A



PLAN

(• NOT TO SCALE)

30 MM. SPRING LOADED PRESSURE RELIEF VALVE

10 MM DIA. DOUBLE ACTING AIR VALVE

10 MM M.S. SWEEL

BUSH END 12 MM THICK

100 715 400 (20) 1200

1.5. 2 7/8 DISTANCE PIECE FOR SUPPORTING THE DRUM

10 MM. DIA. G.I. DIST. PIPE (ON D/S TO B/S)

1000 LITER M.S. DRUM MANUFACTURED OUT OF M.S. PLATE

P.C.C. BLOCK WITH (150 X 150 X 300)

1200

**SECTION**

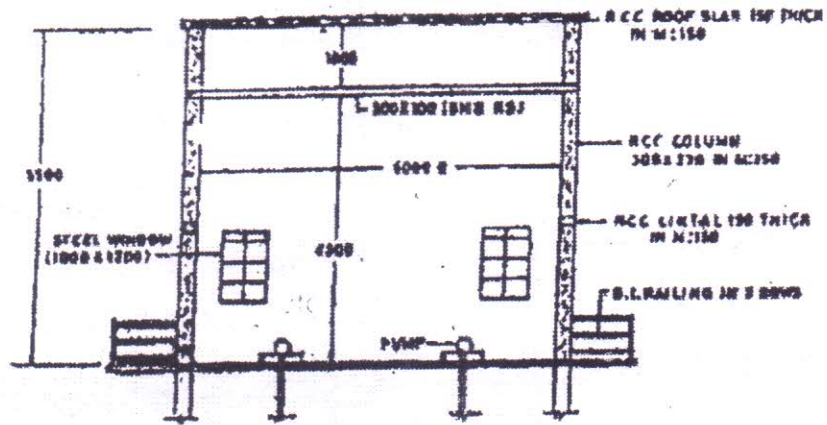
1.5. 2 7/8 DIST. PIECE (4 NOS) FOR SUPPORTING THE DRUM

**PLAN**

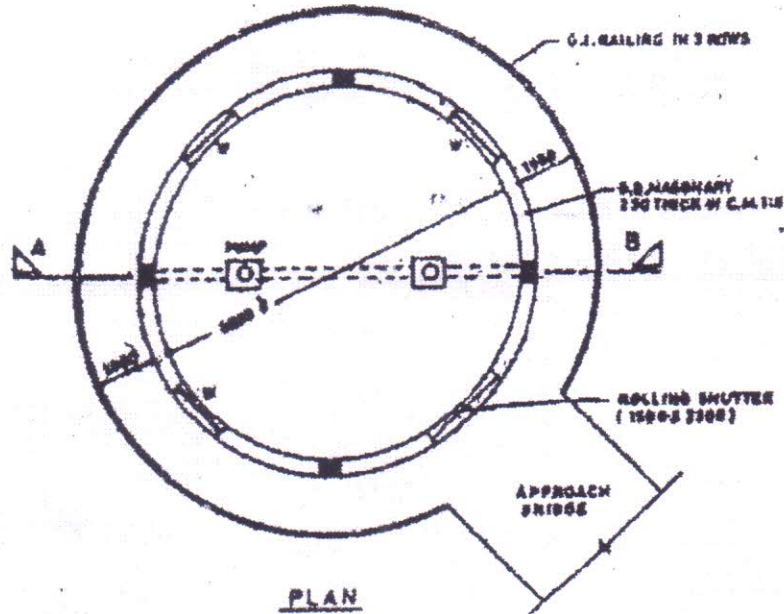
### TYPE DESIGN OF DRUM TYPE AIR VALVE



# MAHARASHTRA JEEVAN PRADHIKARAN



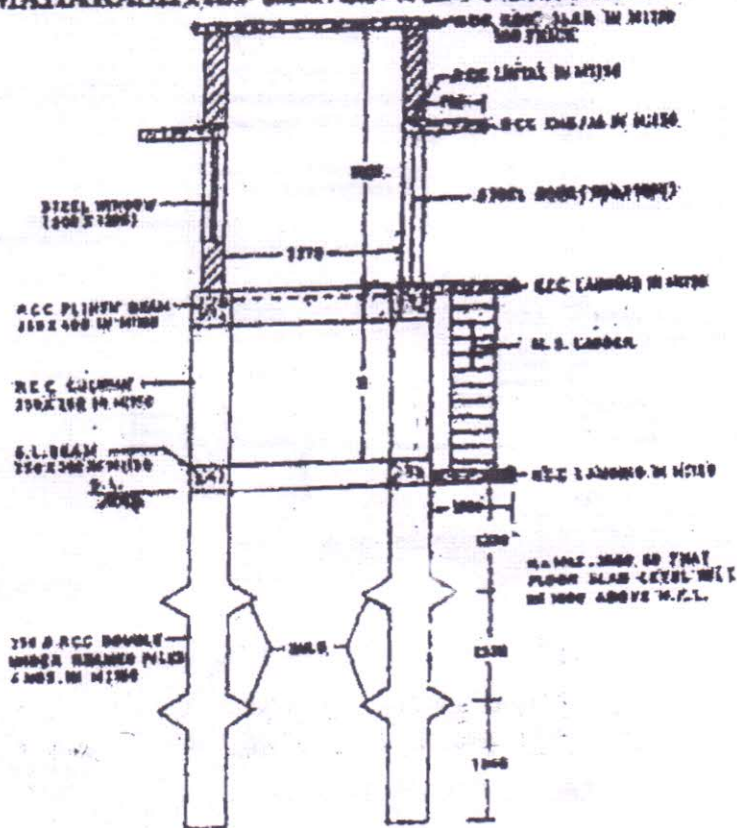
SECTION A-B



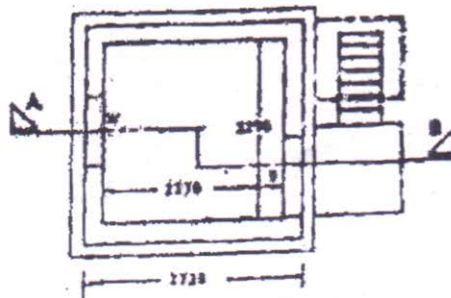
PLAN

## TYPE DESIGN OF PUMP HOUSE OVER R.C.C. JACK-WELL

# MAHARASHTRA JEEVAN PRADHIKARAN



SECTION A-B



PLAN

TYPE DESIGN OF SWITCH HOUSE WHEN B.C. SOIL IS AVAILABLE AND G.L. IS BELOW H.F.L.

[illegible]

## PLAN

TYPE DESIGN OF SWITCH HOUSE WHEN R.C. SOIL  
IS AVAILABLE AND G.L. IS BELOW M.F.L.



Diagram illustrating the structural layout of a building, showing various components and dimensions:

- STEEL WINDOW (200 X 1200)
- REC. COLUMN 250 X 300 CM. M. 750
- STEEL ROOF (SPALTING)
- R.C.C. PLINTH BEAM 250 X 400 CM. M. 750
- G.L. BEAM 750 X 300 CM. M. 750
- M.S. LADDER
- R.C.C. LANDING IN M. 750
- 750 X 300 CM. M. 750
- H. MAX. 2000, SO THAT FLOOR SLAB LEVEL WILL BE 1000 ABOVE M.F.L.

TYPE DESIGN OF SWITCH HOUSE WHEN B.C. SOIL IS AVAILABLE AND G.L. IS BELOW H.F.L.