

कार्यालय नगर पालिक निगम, रायगढ़ (छ.ग.)


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क्रमांक 923/जल वि./न.पा.नि./2024 रायगढ़, दिनांक 9/07/2024

:- द्वितीय ई-प्रोक्वोरमेंट निविदा आमंत्रण सूचना :-


नगर पालिक निगम रायगढ़ क्षेत्र के नगर पालिक निगम रायगढ़ के वार्ड क्र. 19 टाउन हॉल क्षेत्र में 20 लाख लीटर क्षमता का ओवरहेड टैंक निर्माण कार्य, कार्य की अनु. लागत राशि 194.18/- लाख रु., अमानत राशि 1,45,700.00/- रु., निविदा प्रपत्र शुल्क 3000.00/- रु. हेतु (CG PHE SOR 2020 and PHE SOR 2022-23 Amendment No. 07) से लागू SOR से कम/अधिक अथवा समान दर पर सक्षम श्रेणी में पंजीकृत ठेकेदारों से निविदा प्रपत्र "अ" में दे होगा। उपरोक्त कार्य की सामान्य शर्तें, विस्तृत निविदा दस्तावेज व अन्य जानकारी System Tender No. 155878 ई-प्रोक्वोरमेंट वेब पोर्टल <https://eproc.cgstate.gov.in/> WWW.nagarnigamraigarh.com / uad.cg.gov.in से देखी जा सकती है, निविदा प्रपत्र के साथ निर्धारित प्रपत्र शुल्क डी.डी. के माध्यम से एवं अन्य दस्तावेज दिनांक 26.07.2024 अपराह्न 04:00 बजे तक स्पीडपोस्ट/पंजीकृत डाक से मुहर बंद पद्धति से आमंत्रित की जाती है।


कार्यपालन अभियंता
नगर पालिक निगम
रायगढ़ (छ.ग.)

पृ. क्र. 923/जल वि./न.पा.नि./2024
प्रतिलिपि :-

रायगढ़, दिनांक 09/07/24

1. मान. महापौर/सभापति/प्रभारी जल सदस्य (MIC) नगर पालिक निगम, रायगढ़ को सादर सूचनार्थ।
2. आयुक्त महोदय, नगर पालिक निगम, रायगढ़ को सादर सूचनार्थ।
3. प्रोग्रामर डाटा सेंटर, संचालनालय, नगरीय प्रशासन एवं विकास, अटल नगर नवा रायपुर (छ.ग.) को विभागीय वेबसाइट में अपलोड किये जाने हेतु सूचनार्थ।
4. प्रभारी जनसंपर्क नगर पालिक निगम, रायगढ़ को विज्ञापन देने कार्यवाही हेतु पालनार्थ।
5. संपादक दैनिक समाचार पत्र को से.मी. में प्रकाशन हेतु प्रेषित।
6. कार्यालय नगर पालिक निगम रायगढ़ के नोटिस बोर्ड में वस्पा हेतु।


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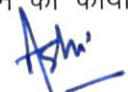
कार्यालय नगर पालिक निगम, रायगढ़ (छ0ग0)

// ओव्हरहेड टैंक निर्माण कार्य के नियम एवं शर्तें //

1. ठेकेदार का जीवित पंजीयन प्रमाण पत्र, आयकर प्रस्तुत करने की विवरणीय वर्ष 2021-22 से पुराना मान्य नहीं होगा, जी. एस.टी. विभाग में पंजीयन की प्रति, दस्तावेज के साथ रु. 100 के स्टॉम्प पेपर में मूल शपथ पत्र जिसमें कार्य अधूरा नहीं छोड़ने तथा फर्म अथवा उसके सदस्यों के नाम की अन्य फर्म को किसी विभाग/संस्था द्वारा काली सूची में नाम दर्ज नहीं होने का उल्लेख किया गया हो। निर्धारित प्रपत्र शुल्क का डी.डी. एवं अमानत राशि का टी.डी.आर./एफ.डी.आर. प्रस्तुत करना होगा तथा समस्त दस्तावेज संलग्न किया जाना होगा। आवश्यकता पड़ने पर शपथ पत्र के अतिरिक्त मूल अभिलेख प्रस्तुत करना होगा। समाचार पत्र में प्रकाशित निविदा सूचना में (उक्त दिनांक में) जितने कार्यों का उल्लेख होगा, उसमें मूल शपथ पत्र सम्मिलित वाली निविदा में भाग लेना अनिवार्य होगा तथा कार्य के स्वसत्यापित प्रति प्रस्तुत कर सकते हैं परन्तु यह सुविधा अन्य दिनांक में प्रकाशित निविदा सूचना के लिए प्रभावशील नहीं होगी।
2. निर्धारित प्रपत्र शुल्क का डी.डी. एवं अमानत राशि का टी.डी.आर./एफ.डी.आर. प्रस्तुत करना होगा।
3. निविदा संबंधी दस्तावेज व अमानत संबंधी लिफाफा स्पीड पोस्ट/पंजीकृत डाक द्वारा ही प्राप्त किये जावेंगे। अन्य किसी माध्यम से जैसे व्यक्तिगत या कोरियर आदि से भेजे गये निविदा स्वीकार नहीं की जावेगी। निर्धारित तिथि व समय के पश्चात प्राप्त निविदायें स्वीकार नहीं की जावेगी एवं न ही खोली जावेगी तथा वापस दी जावेगी डाक विलम्ब के लिए नगर पालिक निगम, रायगढ़ जिम्मेदार नहीं होगा।
4. अमानत राशि के रूप में टी.डी.आर./एफ.डी.आर./एस.टी.डी.आर. आयुक्त नगर पालिक निगम रायगढ़ के नाम से देय होगा।
5. निविदा मूल्य का 15% समतुल्य राशि का बैंक सॉल्वेंसी सर्टिफिकेट (Financial capacity certificate) जमा करना अनिवार्य होगा।
6. रायल्टी क्लियरेंस प्रमाण पत्र प्राप्त कर प्रस्तुत करने के उपरान्त ही अंतिम देयक का भुगतान किया जावेगा।
7. निर्माण कार्य में प्रयुक्त सामग्री तथा सी.सी.क्यूब तथा नगरीय प्रशासन कार्यालय से टेस्टिंग रिपोर्ट प्राप्त होने के बाद अन्तिम देयक देय होगा, अन्तिम देयक के लिए कम से कम 15% (पन्द्रह प्रतिशत) राशि रोकी जावेगी। टेस्टिंग कार्य ठेकेदार को निगम द्वारा अधिकृत प्रयोगशाला से स्वयं के व्यय से कराना होगा।
8. निविदा स्वीकृत की वैधता 120 दिनों की होगी। दरें समस्त करों सहित मान्य होगी। पृथक से किसी भी कर का भुगतान नहीं किया जावेगा। बाजार दर में वृद्धि होने के स्थिति में पृथक से कोई राशि देय नहीं होगी।
9. ठेकेदार को उनके निविदा में उल्लेखित प्रस्तुत दर कम/अधिक प्रतिशत पर ही किये गये कार्य का भुगतान किया जावेगा। कार्य के दौरान मूल्य वृद्धि (Price Escalation) की गणना किसी भी स्थिति में नहीं की जावेगी। सभी देयकों में से अन्य आवश्यक कटौतियों के साथ 05% (पांच प्रतिशत) परफॉर्मन्स राशि अतिरिक्त सुरक्षा राशि के रूप में रोकी जावेगी जो लोक निर्माण विभाग में प्रचलित नियमानुसार अवधि तक रोकी जावेगी। आगामी वर्ष के अवधि में निर्देशित सुधार कार्य करने के बाद रोकी राशि देय होगी। जब तक ठेकेदार के द्वारा अन्तिम देयक का भुगतान प्राप्त नहीं कर लिया जाता है तब तक परफॉर्मन्स अवधि प्रभावशील नहीं होगी। शर्त निविदा मान्य नहीं की जावेगी। ठेकेदार को कार्य पूर्ण होने के बाद प्रतिवर्ष सितम्बर माह सूचना देना होगा कि कार्य स्थल का निरीक्षण कर सुधार हेतु अवगत कराया जावे।
10. एस.ओ.आर. से दस प्रतिशत से कम निविदा दर प्रस्तुत करने की स्थिति में लागत मूल्य के आधार पर अन्तर की राशि का एफ.डी.आर. या अन्य माध्यम से पन्द्रह दिवस में निविदा स्वीकृत की सूचना प्राप्त होने में जमा कराना होगा अन्यथा निविदा स्वतः निरस्त हो जावेगी एवं भविष्य की निविदाओं में भाग लेने से प्रतिबंधित किया जा सकता है।
11. कार्य स्थल में विवाद होने की स्थिति में निविदा निरस्त करते हुए निविदा प्रपत्र के मूल्य के अलावा अन्य जमा करायी गयी राशि वापस करते हुए अनुबंध समाप्त कर दिया जावेगा। ऐसी स्थिति में कोई क्षतिपूर्ति राशि देय नहीं होगी।
12. कार्य गुणवत्ता पूर्ण संपादित कराने का दायित्व ठेकेदार का होगा जिसके समर्थन में संपादित कराये गये कार्य में प्रयुक्त सामग्रियों के खपत के अभिलेख दैनिक रूप से संधारित किया जाना होगा जिसे कार्यालय द्वारा मांग किये जाने पर प्रस्तुत करना होगा।
13. कार्य का अन्य विवरण, देयक से काटी जाने वाली राशि एवं नियम शर्तें कार्यालय में कार्यालयीन अवधि में देखा जा सकता है।
14. नियम एवं शर्तें अनुबंध का एक भाग होगा।
15. किसी भी निविदा को बिना कारण बताए स्वीकृत/अस्वीकृत/निरस्त करने का अधिकार आयुक्त, नगर पालिक निगम, रायगढ़ के पास सुरक्षित रहेगा।
16. निर्धारित तिथि पर अवकाश होने पर निविदा तिथि आगामी दिवस को मान्य होगी।
17. लिफाफा में स्टेपलर से पिन किया हुआ मान्य नहीं होगा एवं लिफाफा को पूर्णतः बंद करना होगा तभी मान्य होगा अथवा बंद लिफाफा पूर्ण रूप से चिपकाने अथवा स्टेपलिंग करने के बाद चिपकाना अनिवार्य होगा।
18. संचालक नगरीय प्रशासन एवं विकास का पत्र दिनांक 28.05.2020 के तहत कार्य की गुणवत्ता में सुधार हेतु स्नातक/डिप्लोमा, इंजीनियर रखना अनिवार्य होगा। जिन ठेकेदारों के पास निकाय में 20 लाख रु. मूल्य के कार्य आबंटित है उन्हें डिप्लोमा, इंजीनियर एवं इससे अधिक मूल्य के कार्यों के पर्यवेक्षण हेतु स्नातक अभियंता को नियुक्त करना होगा, जो चेक लिस्ट तैयार करे। ठेकेदार अपने इंजीनियर से देयक तैयार कराकर प्रस्तुत कर सकेगा जिसका परीक्षण/सत्यापन निगम के अभियंता द्वारा किया जावेगा जो अंतिम एवं बंधन कारी होगा।
19. निविदा राशि का कार्य संपादित नहीं कराने में कोई क्षतिपूर्ति देय नहीं होगी। कार्य की आवश्यकतानुसार 25 प्रतिशत अधिक मूल्य तक का एस.ओ.आर. में प्रावधानित कार्य स्वीकृत निविदा दर से कराया जा सकेगा।



20. कार्य कार्यादेश जारी होने के सात दिवस के अन्दर प्रारंभ कर उल्लेखित समयावधि में पूर्ण किया जाना आवश्यक रहेगा। अतः वही ठेकेदार निविदा में भाग ले जिसके लिए उनके पास संसाधन उपलब्ध हो ऐसी सलाह दी जाती है।
21. प्रस्तावित कार्य आवश्यक स्वरूप के होने से उन्हें तत्काल प्रारम्भ कर आबंटित समय सीमा में पूर्ण करना होगा। कार्य प्रारम्भ नहीं करने अथवा धीमी गति से संपादित करने पर आनुपातिक रूप से कार्य की प्रगति नहीं होने पर समयवृद्धि समाप्त होने के पूर्व भी कार्य को निरस्त कर दिया जावेगा। ऐसी स्थिति में शेष निविदा राशि के कार्य के लिए अपात्र होंगे। देयक से काटी गई सुरक्षा राशि एवं अन्य भुगतान नियमानुसार कार्य पूर्ण होने के पश्चात् दण्ड शुल्क एवं विलम्ब शुल्क की कटौती पश्चात् देय होगा।
22. आबंटित समय सीमा में कार्य प्रारंभ नहीं करने पर ठेकेदार द्वारा निविदा में भाग लेते समय जमा करायी गयी राशि को राजसात कर अनुबंध समाप्त कर दिया जावेगा तथा एम.आई.सी. में ठेकेदार के 01 वर्ष हेतु अयोग्य घोषित करने हेतु प्रकरण प्रस्तुत किया जावेगा जो मान्य होगा।
23. निविदा दर स्वीकृत पश्चात् अनुबंध संपादन का आशय स्वतः कार्य करने की स्वीकृत नहीं है। कार्य प्रारंभ करने की पूर्व फोटो उपलब्ध कराना ठेकेदार का दायित्व होगा। कार्यादेश जारी होने के बाद उप अभियंता से ले आऊट प्राप्त कर कार्य प्रारंभ किया जावे।
24. समय-समय में शासन/उच्च अधिकारियों द्वारा जारी निर्देश स्वतः प्रभावशील होंगे।
25. विज्ञापन में संलग्न एन.आई.टी. कराये जाने वाले कार्यों का स्वरूप है। वास्तविक कार्य एस.ओ.आर. में उल्लेखित आईटम से जुड़े हो सकते हैं जिन्हें पुनरीक्षित पृथक तकनीकी स्वीकृति के साथ उपलब्ध कराया जावेगा।
26. शासन से आबंटन प्राप्त होने पर ही भुगतान किया जावेगा। शासन से आबंटन किश्तों में प्राप्त होने की स्थिति में प्राप्त आवंटन अनुसार अनुपातिक आधार पर भुगतान किया जावेगा। विलम्ब से भुगतान होने पर कार्य को बंद नहीं किया जा सकेगा व कोई क्षतिपूर्ति देय नहीं होगी।
27. नगरीय प्रशासन एवं विकास के अधिकारियों द्वारा निरीक्षण उपरांत दिये गये निर्देश/सुधार का पालन किया जाना बंधनकारी होगा।
28. निविदा प्रस्तुत करने के लिए ठेकेदार को निम्न दस्तावेजों/सत्यप्रतिलिपि अपलोड करना अनिवार्य होगा अन्यथा निविदा पात्र नहीं किया जावेगा।
 - अ. वैध ठेकेदार पंजीयन की जीवित प्रमाण पत्र की प्रति।
 - ब. पैन कार्ड की छायाप्रति, जी.एस.टी. रजिस्ट्रेशन की प्रति।
 - स. इनकम टैक्स प्रस्तुतीकरण की प्रति जो 2021-22 से ज्यादा पुराना नहीं होना चाहिए।
29. दो या दो से अधिक संबंधित व्यक्ति जो एक ही प्रोपाराईटर अथवा भागीदार के रूप में हितबद्ध है, समान कार्य के निष्पादन के लिए निविदा प्रस्तुत नहीं कर सकेंगे। कार्यादेश जारी होने के बाद इस आशय की जानकारी प्राप्त होने की स्थिति के भुगतान स्थगित करते हुये सक्षम प्राधिकारी के निर्णय अनुसार अग्रिम कार्यवाही किया जावेगा जिसमें निविदा निरस्त कर जमा राशि राजसात की स्थिति भी हो सकती है।
30. निविदा के किसी भी सुस्पष्ट भाग अथवा निविदा में संशोधन/स्थगन का अधिकार सक्षम अधिकारी को होगा।
31. ठेकेदार निविदा के अंतर्गत संपूर्ण कार्य अथवा किसी भी भाग किसी अन्य पक्ष अथवा पक्षों का समनुदेश न अथवा उप पट्टे पर नहीं होगा। कार्यों को सबलेट नहीं किया जा सकेगा।
32. ऐसे ठेकेदार जो कि आबंटित कार्यों को अधूरा छोड़ने के कारण दंडित किया गया हो अथवा ब्लेक लिस्टेड ठेकेदार उक्त निविदा में भाग नहीं ले सकते। संज्ञान में आने पर कार्य उसी स्तर पर समाप्त कर दिया जावेगा एवं उक्त ठेकेदार के विरुद्ध वैधानिक कार्यवाही की जावेगी।
33. ठेकेदार को साझेदारी फर्म होने की दशा में पार्टनरशिप डीड की सत्य प्रतिलिपि संलग्न करना होगा।
34. छ.ग. वर्क्स डिपार्टमेन्ट मेन्युअल में दिये गये समस्त निर्देशों का पालन करते हुए गुणवत्तापूर्वक कार्य निर्धारित समयावधि में पूर्ण किया जाए।
35. भुगतान में किसी तरह का अतिरिक्त भुगतान संज्ञान होने पर एजेन्सी से वसूली की जावेगी, जिसके लिए निविदाकर्ता बाध्य है। राजस्व वसूली के समान भरपाई की जावेगी।
36. निविदा में अंकित नॉन SOR की दरें प्रस्तुत की जावे, जिसमें विस्तृत स्पेशिफिकेशन एवं वारेन्टी/गारेन्टी का उल्लेख किया जावे, कम से कम 05 वर्ष किया जावे।
37. OHT के मामले में भूमि की उपलब्धता एवं भार वहन क्षमता के आधार पर निकाय के प्रस्ताव अनुसार सक्षमप्राधिकारी से ड्राईंग/डिजाइन तैयार कर शासकीय इंजीनियरिंग कॉलेज से परीक्षण कर स्वयं के व्यय पर अनुमोदन प्रस्तुत करना होगा, तदनुपरांत कार्यादेश जारी करना होगा। 30 दिवस समय-सीमा नियत की जाती है।
38. अनुभवी के प्राथमिकता PQ/BC आधार पर चयन होगा।
39. PHE मापदण्ड का पालन अनिवार्य होगा।
40. 15 mtr. Staggering व प्रस्तावित क्षमता का 50% क्षमता का उच्च स्तरीय टंकी बनाने का कार्यानुभव होना आवश्यक है।


 कार्यपालन अभियंता
 नगर पालिक निगम, रायगढ़

Draft

Conditions of Pre-Qualification and Eligibility of Applicants

S. No.	Eligibility Criteria	Supporting document to be Submitted
1.	Legal Entity: The Bidder should be a company registered under the Companies Act, 2013 OR the Companies Act, 1956 OR a partnership firm registered under LLP Act, 2008 / Indian Partnership Act, 1932 OR the Societies Act 1860 or a Proprietorship Firm having valid registration certificate and should be in existence in India for at least the last 5 years as on 31.03.2023.	Bidder should submit the duly notarised documents as following: a) Certificate of Incorporation / registration b) Copy of GST Registration Certificate. c) Copy of PAN
A)	The Bidder should have a registered office and operations in Chhattisgarh. The Bidder should be operational in India for at least last 5 years as of 31 st March 2023. Consortium/ Joint venture is not allowed.	Bidder should submit the duly notarised documents as following: a) Certificate of incorporation / LLP registered in India.
B)	The Bidder should have Experience of executing at least 1 assignment of Supply, Commissioning, Operation or Maintenance of Same type of Work .	Bidder should submit the duly notarized documents as following: a) Bidder should submit the PO / Work Order along with copy of agreement
2.	Financial Capacity: Turnover: The Bidder should have minimum 50 Lakhs as average annual turnover from consulting services only during last three audited financial years (2020-21, 2021-22 & 2022-23). Net worth: Bidder* should have positive Net worth after tax during last three audited financial years (2020-21, 2021-22 & 2022-23). Net worth (NW) = Share Capital + Reserves and Surplus – Miscellaneous Expenditure – Revaluation Reserves, if any	Bidder should submit any of the following: a. Copies of Certified audited Financial statements/ Balance sheet / Profit & Loss statement for last Three financial years as of 31 st March 2023. b. Certificate from the statutory auditor /Certificate from CA regarding this condition.
3	Blacklisting: As on date of submission of the proposal, the Bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practices with any of the State government/ Central Government / semi government / PSU / Municipal agencies in India at the time of submission. The Bidder should not have been debarred and/or blacklisted by any State/Central Govt./ ULB /Semi-Government Organization/ PSU in India.	a. Bidder should submit Self declaration that the Bidder is not debarred and/or black listed as on the date of issue of this RFP. Self- Declaration Certificate to be enclosed in the bid duly signed by the authorized signatory on its company letter head.
4		

Technical Evaluation

Detailed Marking	Criteria	Maximum Marks
A	Experience of Firm in Similar Assignments & Turn Over	1000
1.	<p>Total Experience of the bidder in India:</p> <p>(i) <5 Years : - 0 marks</p> <p>(ii) ≥ 5 Years <7 Years :- 100 marks</p> <p>(iii) ≥7 Years:- 200 marks</p> <p>Notarized copy of Partnership Deed/Certificate of Incorporation/LLP registration needs to be submitted.</p>	200
2.	<p>The Bidder should have Experience of executing assignments of Supply, Commissioning, Operation & Maintenance of same type of work</p> <p>(i)<1 Assignment: - 0 marks</p> <p>(ii)≥ 1 Assignment <3 Assignment: - 100 marks</p> <p>(iii)≥ 3 Assignment <5 Assignment: - 200 marks</p> <p>(iv)≥5 Assignment: - 300 marks</p> <p>Note: The works assignments can be either completed or ongoing. Ongoing projects meeting other requirements, which have completed at least 12 months of consultancy from the date of Agreement Signing, as on last day of bid submission; shall be considered as eligible project for evaluation.</p> <p>Work Order, Agreement and Provisional/ Experience/Completion Certificate issued not below the rank of Joint Secretary/ E.E/ Commissioner/Nodal Officer/ Contract Signatory (from Client) needs to be submitted.</p>	300
3.	<p>The Bidder should have Experience of executing assignments of Supply, Commissioning, Operation & Maintenance of same type of Work Central/ State Government Department/ Agency/ Company/Society/ ULB each assignment having total project cost as follows during last 5 years preceding the last date of bid submission. (Under such one contract, there might be multiple project components of different contract amounts, cumulative value of the projects shall be available in the client certificate)</p> <p>Min. 3 assignments each having projects executed of total costs 0.8 Cr. - 100 Marks</p> <p>Or</p> <p>Min. 2 assignments each having projects executed of total costs 1.0 Cr. - 150 Marks</p> <p>Or</p> <p>Min. 1 assignment having projects executed of total costs 1.6 Cr. - 250 Marks</p>	250
4.	<p>Average annual turnover of bidder from works services in last 3 consecutive audited financial years 2020-21, 2021-22 & 2022-23)</p> <p><50 Lakhs - 0 Marks</p> <p>≥50 Lakhs <70 Lakhs - 100 Marks</p> <p>≥70 Lakhs <90 Lakhs - 150 Marks</p> <p>≥90 Lakhs <100 Lakhs - 200 Marks</p> <p>≥1000 Lakhs - 25 Marks</p> <p>Copies of Certified audited Financial statements/ CA Certificate needs to be submitted.</p>	250
<p>Only the bidders qualifying the minimum technical score (700) will be considered for financial evaluation.</p>		



Financial Evaluation

Financial Bid of short-listed Bidders who qualify the minimum eligibility criteria and get past the minimum technical score shall be opened in the presence of the representatives of qualified Bidders, who choose to attend.

The financial score shall be given for each bidder. The consultant with lowest financial bid (L1) will be awarded 100% score of 1000.

Financial Scores for other consultants will be evaluated using the following Formula, Financial Score (FS) = (Total Financial Quote of L1/ Total Financial Quote of the Consultant under consideration) X 1000

Overall Evaluation :

In determination of the best value bid, the following weightage should be given for the technical and commercial scores of the bidders in a Quality and Cost Based Selection methodology (QCBS):

Technical Score: 70%

Financial Score: 30%

For every bidder the Final Total Score (S) will be calculated using the formula $S = 0.70 \times TS + 0.30 \times FS$ the bidder with the highest value of S should be selected as the successful bidder.

- If there are multiple bidders scoring same final score, then Authority shall decide the work to be awarded based on the cost implications; wherein the bidder who has higher financial score shall be considered as the preferred bidder.

Notwithstanding anything mentioned herein above, it shall be noted that the final decision of awarding the work shall remain with the Authority, and no bidder shall be allowed to question the decision of the authority. Authority also retains the right to annul the bidding process and re-invite the proposals.

Bidders are advised that selection will be entirely at the combined score achieved and discretion of the Client if two bidders arrive at the similar score, financial score shall prevail. Bidders will be deemed to have understood & agreed that no explanation or justification on any aspect of the Selection Process or Selection will be given by the Client.

Any information contained in the Proposal shall not in any way be construed as binding on the Client, its agents, successors or assigns, but shall be binding against the Bidder if the Bidder is subsequently awarded to it.

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GENERAL INSTRUCTIONS : Annexure 02

1.0 SCOPE OF WORK & SPECIFICATION OF WORK : FOR RCC OHT'S

- 1.1 The Service Reservoir should be circular/rectangular in shape supported over circular/rectangular columns. The depth of water in the tank shall be the difference of level between supply and full supply level of the tank and shall not be greater than 5.0m. The foundation, columns, bracings etc. should be so designed, so as to have a provision for construction of a double story building between the G.L. bracing and first bracing with R.C.C. roof and brick walls. The live load of roof slab shall be taken as 150 kg/m² and the dead load of roof slab shall be taken as 360 kg/sqm. The position of bottom of bracing shall be so fixed that the head room of ground floor if constructed should be not be less than approximately 3.5m. The construction of such building works is not included in this lump sum contract except specified.
Freeboard for the container of OHSR shall be minimum 30 cm.


2.0 GENERAL

- 2.1 The work of construction of R.C.C. Over Head Service Reservoirs involves specialised workmanship, hence requirement of higher standard than general concrete work is essential. The height of staging will be reckoned from an assumed ground level at the site and main road level to the site, i.e., the ground level at the site or road level which ever is higher shall be treated as the base level for determination of staging height. The contractor shall construct proper plinth protection surrounding the GL brace to give finished look after construction. **The structural designs of the RCC OHTs shall be prepared by reputed designers (Post graduate in Structures) and shall be got approved by Govt Engg College/ NIT Raipur/ VNIT Nagpur, the cost of such approval charges shall be borne by the contractor.**
- 2.2 The contractor has to carry out plate load test at OHSR site to ascertain bearing capacity for all design purposes. SBC shall be got certified by the Govt Engineering / Polytechnic Colleges at the cost of contractor and also checked & verified by conducting suitable Soil Bearing Capacity conforming to relevant IS code. Indtz type tanks shall not be allowed.
- 2.3 The offer shall include provision for 1.2 m wide R.C.C. balcony at each slab level, railing on balcony and at roof level, lightning arrestor, digital water level indicator, 1.2 meter wide RCC stairs from ground level to balcony and 0.70 m (with GI Pipe railing & RCC posts including blister) wide RCC stairs from balcony to roof of the tank. Steel ladder from roof of the tank to floor of the tank, all pipes and fitting (including puddle collars) up to duck foot bends and from duck foot bend up to minimum 5.0 meters outside the supporting structures i.e. RCC column including C.I./DI valves etc. including their painting and architectural treatment, protection and drainage work .
- 3.0 **S.B.C.**
- 3.1 SBC of the soil is to be got tested by contractor by conducting Plate load test by GEC/NIT/Govt. Polytechnic. Soil Bearing Capacity conforming to relevant IS code, however the min SBC for design shall be 5.0 T/Sqm and the max shall be 20 T/SqM for design purpose
- 3.2 **TRIAL PIT**
Contractors are advised to carry out their own trial pit section to get the idea of soil condition.
- 4.0 **STEEL :**
- 4.1 The contractor shall have to arrange himself the entire quantity of steel required for the completion of the work under contract, No steel shall be supplied by the department. No extension of time will be granted by the department for non availability of or non procurement of steel in time or late supply of steel or for any other reasons what-so-ever. Steel shall conform to relevant IS code.


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- 4.2 The steel for reinforcement shall be ISI mark thermo mechanically treated bars conforming to relevant IS code. a test certificate shall be required to be furnished to the department in support thereof. The stresses in steel for design purposes should be taken as specified in IS Code 3370 (Part-II) 1965 amended up to date.
The weight of steel shall be standard & as per ISI
- 4.3 In additions, the contractor shall be required to get tested the random samples of the Steel brought at site to see whether they conform to relevant I.S. specifications. The cost of such tests shall be borne by the contractor.
- 5.0 The contractor shall have to make his own arrangement for requirement of electric power and telephone connections for construction work, if they desire these facilities. The department shall provide assistance by way of recommendation only.
- 6.0 For blasting operation, if required in foundation, excavation, the contractor will make his own arrangement for license, permits and blasting materials from competent authority.
- 7.0 The contractor will have to make his own arrangement for water, required for execution of the works. For testing of tanks, the department will provide water at ground level near the tank. However all other arrangement for testing of tank shall have to be made by the contractor at his own cost.
- 8.0
- 9.0
- 10.0 GI Pipe railing of 25mm dia, in three rows shall be provided for RCC stairs from ground level to balcony, around the balcony, one side on stairs from balcony to roof of the tank and around the roof slab.
- 11.0 The Railing post shall consist of 100 mm dia RCC posts having four nos. T.M.T. bars of 8 mm dia, 1.2 m clear height @ 1.2 m c/c. These bars shall be welded with the main reinforcement of RCC stairs, balcony and roof slab. The RCC post shall be very carefully fixed and embedded into concrete.
- 12.0 A steel ladder shall be provided from man hole on the top slab to the inside floor of the tank. The steel ladder 600 mm wide shall comprise of 2 nos. 75 mm x 10 mm steel flat section stringers and 2 nos 16 mm dia M.S. bar footrest at 400 mm c/c. The bars of 16 mm dia shall be inserted in to the flat section by drilling holes in the flat and the bars shall be welded with the flat from inside and outside. The ladder shall be finished at welded joints so that all sharp edges are removed. The ladder shall be painted with chlorine resistant epoxy paints.
- 13.0 To avoid any unauthorised person to climb the over head tank, the entry at the bottom of the stair case should be closed with suitable arrangements.
- 14.0 Two C.I. Manhole covers and frame of approved quality 455 mm x 610 mm internal dimension weighing not less than 38 kg shall be provided. The weight of cover shall be 23 kg and weight of frame 15 kg.
- 15.0 Air vents wherever necessary shall be 150 mm dia swan neck type or ventilating shaft, as per design.
- 16.0 To avoid any accident at the time of cleaning or maintenance of the tank, the opening of the out let and scour pipes should be covered with cast iron or stainless steel grating / Jali of suitable size.
- 17.0 **Lightening conductor**:- Copper Lightening conductor shall be provided & fixed with proper earthing arrangements as per relevant IS Specification.
- 18.0 **By-Pass Arrangement** :While erecting CIDF / DIDF pipes for Inlet, Outlet and Overflow arrangement it will be and washout arrangement as well By-pass Arrangement shall be made directly connecting the Inlet pipe with Outlet Pipe before Inlet pipe entering the MBR / OHSR and which shall have a controlling valve which will be closed always except when needed for Repairs, O&M of MBR / OHSR.
- 18.0 **Water level indicator** :- Digital/ mercury Water level indicator shall comprise of electronic sensor system for accurate level marking with mercury level and all the allied fittings such as electronic display

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board and battery backup etc complete

- 19.0 **M.S. Clamps** :- The MS clamps 50mm x 10 mm should be provided at 3.0 M C/C for clamping all the vertical pipes, the clamps should be fixed in bracing with nut bolts.
- 20.0 **Painting** :- Painting of OHSR, exposed surface of sump well & RCC pump house shall be done with premium smooth emulsion paint as per manufacturers specifications to give protective & decorative finish. The inside of container above water level and the roof from inside shall be painted with Epoxy paint to avoid corrosion due to chlorine.

21.0 **WORKMAN SHIP :**

21.1 **EXCAVATION :**

The depth of excavation will generally be guided by the underground strata and the safe bearing capacity of the foundation soil and as directed by the Engineer-in-Charge. The contractor has to carry other tests of under ground strata/soil at his own cost. No payment will be made to the contractor for carrying out test or on account of any variation in the soil bearing capacity & design change due to strata. No dewatering shall be payable under any circumstances whether natural, artificial man made. Minimum depth of Excavation on Original Soil should not be less than 2.5 Mtrs.

21.2 **FILLING FOUNDATION WITH BED CONCRETE (Levelling course) :**

The foundation shall be laid over bed concrete (i.e. levelling course) of at least 150 mm thick or more, with at least 1:2:4 (M-150) concrete with 40/20 mm gauge graded metal or the prescribed mix as per instruction of Engineer-in-Charge and as per relevant I.S. Code.

21.3 **REINFORCED CONCRETE WORK :**

It shall be strictly as per Annexure 'E1' special condition. The concrete mix and minimum cement concrete specified in Annexure 'E1' shall be rigidly followed all RCC work shall be carried out as per IS 456:2000. Where the concrete has not fully hardened all laitance shall be removed by scrubbing the wet surface with wire or bristle brushes, care being taken to avoid dislodgement of the particle of aggregate. The surface shall be thoroughly wetted and all free water removed. The surface shall then be coated with neat cement grout. The first layer of concrete to be placed on this surface shall not exceed 15 CM (or 6") in thickness, and shall be rammed against old work, particulars attention being paid to corners and close spots. Concrete should be thoroughly compacted and fully worked around the reinforcement around embedded fixes and into corner of the form work.

21.4 **MEASURING (Concrete mix proportioning) :**

The quantity of cement shall be determined by weight. The quantities of fine and coarse aggregates shall be determined either by volume or by weight. The proportion of fine and coarse aggregate shall be in accordance to para 8 of IS 456-2000.

21.5 **MIXING :**

Concrete shall be mixed in a mechanical mixer. Mixing shall be continued till there is a uniform distribution of the ingredients and the mass is uniform in colour and consistency but in no case the mixing shall be done for less than two minutes the contractor can use cement admixtures, plasticizers for enhancement of the quality of concrete but no extra payment shall be made on this account.

21.6 **TRANSPORTING :**

Concrete shall be handled from the place of mixing to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of any ingredients and maintaining the required workability.

21.7 **PLACING AND COMPACTING :**

The concrete shall be placed and compacted before setting could commence and should not be subsequently disturbed. Methods of placing should be such that there is no segregation (Concreting) shall be carried out continuously up to construction joints, the position and arrangement of which shall be

determined by the designer. When the work has to be resumed on surface which has hardened, such surface shall be roughened. It shall then be swept clean, then the roughly wetted and covered with a 12 mm layer of mortar which shall be freshly mixed and placed immediately before the placing of the concrete.

21.8 **MECHANICAL VIBRATION :**

When mechanical vibrations for compacting concrete are used, reduced water content should be adopted. Over vibration or vibration of very wet mixed is harmful and should be avoided when-ever vibration has to be applied externally the design of form work and the disposition of vibrators should receive special consideration to ensure efficient compaction and to avoid surface blemishing.

21.9 **CURING :**

The concrete shall be covered with a layer of old gunny bags or canvass or similar absorbent material and kept constantly wet for at least twenty eight days from the date of placing of concrete.

21.10 **FORM WORK**

21.10.1 The form work shall conform to the shape lines and dimensions as shown on the drawings and so constructed as to remain sufficiently rigid during the placing and compacting of concrete, and shall be sufficiently tight to prevent loss of liquid from concrete. Only well designed and proper steel form work shall be used.

21.10.2 The form work shall be cleared off. All rubbish particularly chippings, shaving and saw dust shall be removed from the interior of the forms before the concrete is placed and the form work in contact with the concrete shall be cleaned and thoroughly wetted or treated with an approved composition.

21.11 **STRIPPING OF FORM WORK :**

In no circumstance form work should be struck off until the concrete reaches the strength of atleast twice the stress to which the concrete may be subjected at the time of stripping.

In normal circumstances i.e. temperature above 20° C form work may be struck after expiry of the following periods as per IS 456-1978.

- (A) Vertical sides of slabs, beams and columns 48 hours.
- (B) Bottom of slabs under 4.5 M Span : 7 days
- (C) Bottoms of slabs over 4.5M Span : 14 days
- (D) Bottoms of beam under 6 M Span : 14 days and
- (E) Bottoms of beam over 6 M Span : 21 days

The form work should be left longer, as it would assist the curing. The number of props, their sizes and position shall be such as to be able to safely carry the full dead load of the slab, beam or arch as the case may be together with any live load likely to occur during curing or further construction.

22 **MATERIAL :**

STEEL :

All metal for reinforcement shall be free from loose mill scale, loose rusts, oil and grease or other harmful matter. The steel used for reinforcement shall be cleaned immediately before placing the concrete.

PLACING :

All reinforcement shall be placed and maintained in position shown in the drawing. It is very difficult and costly to alter concrete once placed. It is, therefore very important to check the reinforcement and its placing before being covered.

SIZE AND QUALITY OF STEEL BARS :

The steel bars used for reinforcement shall be strictly as per relevant IS Specifications, and the contractor shall have to produce the test certificate of the Steel to be used.

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22.2 **AGGREGATES :**

All aggregates shall conform to all provisions and test methods of IS 383-1970

22.3 **STORAGE OF MATERIALS :**

Cement shall be stored properly in a dry ventilated buildings.

23.0 **DESIGN MIX :**

23.1 The contractor shall submit mix designs for each strength the proposed slump proportional weight of cement saturated surface, dry aggregates and water. The mixes shall have to be designed as per relevant I.S. Specification.

23.2 The proportion of the concrete shall be such as to work readily into forms angles and ground the reinforcement without excessive manipulation, segregation of water gain.

23.3 The water content shall not be increased from the amount required by the design mix unless cement at required water cement ratio added. The Engineer-in-charge may require additional cement without extra compensation to the contractor if he considers that concrete does not produce the required strength.

24.0 **TEST :**

24.1 All tests as specified in the I.S. Specifications codes and required for the execution of the work shall be carried out by the contractor at his cost as per instruction of Engineer-in-charge.

24.2 **FIELD TESTS :**

The contractor shall provide all arrangements for field test to exercise proper quality control over works specifically for test mentioned under para 25.1. The contractor will also establish a field Laboratory consisting of all relevant equipment as required for testing of materials such as aggregate, sand, cement, steel and crushing machine with calibration duly certified by Government Engineering/ polytechnic college.

24.3 All double flanged pipes shall be ISI mark (D.I. pipe conforming to relevant IS code) and D.F. cast iron puddle collars, bell mouths and other specials required for inlet, outlet, over flow and scour shall be ISI mark conforming to IS 1538:1976 required for inlet, outlet, overflow and scour will be supplied and fixed in position by the contractor from desired inside level of the tank to duck foot bend one metre below G.L. and further providing and fixing all double flanged D.I. Pipes and specials from duck foot bend on ward up to minimum 5.0 m outside the supporting structure of the tank (i.e. RCC column) shall also be supplied and fixed by the contractor including testing of the fittings and joints with cost of the materials and joints. All the fittings shall be cast iron mechanical joint fittings suitable for DI pipes as per I.S. Specifications. The arrangement for inlet, outlet, overflow and scour pipes shall be such that all these pipes and independent of each other and each of these shall have bell mouths at their ends. The top of bell mouths of inlet and over flow shall be at F.T.L. and top of bell mouths of outlet shall be 15 cm above floor of the tank, where as the bell mouth of scour pipe shall be flushed with floor level. All these vertical pipes shall terminate with flanged duck foot bends bottom fixed one meter below ground level. Further D.F. pipes should be provided up to minimum 2.0m away from the supporting structure of the tank.

All these duck foot bends shall be fixed with sluice valves class PN 1.6 of IVI/IVC/Kirloskar/VAG/ Durga/ Upadhyay make with dismantling joints. The contract also includes providing and fixing of sluice valves, RCC Valves chambers and chamber covers. The size of valve chambers shall be such that a clear space of minimum 500 mm is available on all sides of the valve. All the valves, fittings and pipes and specials shall be third party tested.

All the pipes and specials required for above shall be fixed during concreting. Specials which are to be embedded in concrete shall have puddle collars at the centre of concrete thickness.



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The dimensions of the CI/DI/MS DF pipes shall be as under: -

Note – All the CI/DF/ DI DF/MSDF pipes, valves & specials should be duly inspected and approved by DGS&D/SGS/RITES.

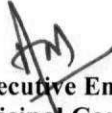
The pipes above 500mm shall only be MS DF pipes/ CI/ DI DF pipes, for diameters below 500mm shall be invariably CI/DI DF pipes

- 24.4 Scour pipe of OHSR should be connected to the nearest natural drain/sewerage line available with pipes and other required specials provided by the department but including testing by the contractor.
- 25.0 The tank & sump well will have to be tested for the water tightness as per IS 3370 and it will be the responsibility of the contractor to make it water tight. Any defects, shrinkage or other faults which may appear within six months from the commissioning of the tank arising out of defective or improper materials or workmanship are upon the direction of the Executive Engineer to be amended and made good by the contractor(s) at his/their own cost and in case the contractor fails to rectify the defect. The Corporation/ MC of C.G. may recover from the contractor (s) the cost of making good the works. The arrangements of water for construction and testing shall be done by the contractor at his own cost.
- For testing purposes, the contractor will have to conduct a test of water tightness of the reservoir & sump well to the entire satisfaction of the department. The responsibility of structural stability shall also rest solely with the contractor. The refund of earnest money and security deposit contemplated in the agreement clause 15 shall be refunded only after expiry of defect liability period after the satisfactory commissioning of tank.
- 26.0 No charges for the plastering if required for proper finishing of the surface of structures shall be paid under any circumstances.
- 27.0 The contractor shall be required to submit the detailed completion drawing (As Built Drawing) in six copies of the work immediately on completion of the work.
- 28.0 The work shall be treated as completed when the same is completely tested and handed over to the department including site clearance.
- 29.0 The tenderer should give at time of tendering the outline of architectural appearance, design and drawing.
- 30.0 The tenderer shall have to produce the complete design and working drawing of each component of structure before starting of work and get the same approved by the Engineer –in-charge.
- 31.0 Special considerations should be given in the preparation of design for seismic forces.
- 32.0 The structural design of R.C.C. service reservoir shall be done on continuity theory and rotation of joints.
- 33.0 Due consideration for wind pressure should be taken in the design of structure, as per provision of relevant IS specification, the wind pressure may be taken as per the wind pressure map of India in IS 75 – 1964 with special consideration to the previous experience of wind pressure experienced in the locality.
- 34.0 All duck foot bends shall be fixed and anchored properly in concrete blocks to prevent any displacement of pipe due to water thrust.
- 35.0 The contractor may note that the department may not be in a position to acquire or make available sufficient land (space) for collection, storage of construction materials and equipment's and working. It shall therefore be contractor's responsibility to make arrangement of land space for this purpose.
- 36.0 In case there is any delay in land acquisition by the department by the concerned competent authority the contractor shall only be allowed extension of time on this account. No compensation for financial claim shall be accepted.
- 37.0 If under unavoidable circumstances or for reasons beyond control of the department, the proposed site of construction of tank is required to be changed/shifted, the contractor shall have to take up construction at alternative site, and the contractor shall not have any claim on this account.
- 38.0 The R.C.C. elevated tank shall be designed, executed and tested in accordance to relevant I.S.


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Specification.

- 39.0 The firms/contractors are directed to submit the details plan and elevation of all the overhead tanks showing the dimensions of all components and other details.
- 40.0 The contractor shall propose colour scheme with atleast three alternatives and after approval only the work shall be started.
- 41.0 All the valves and electromechanical fittings shall be SCADA & PLC compatible with actuators for implementation of SCADA.
- 42.0 The contractor has to procure and install informatory board's displaying Name of work at the location given by BMC at his own cost.


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SPECIAL CONDITIONS

ANNEXURE - 03

DESIGN, CONSTRUCTION OF R.C.C. ELEVATED SERVICE RESERVOIRS /OHSR's INCLUDING TESTING AND COMMISSIONING

The relevant IS standard specifications shall be strictly followed.

GENERAL INSTRUCTIONS :

- 1.0 Elevated service reservoir should be designed to provide architectural appearance and all the related civil features should be as per appearance.
- 1.1 The RCC columns supporting to the tank should necessarily be round shape and not square or rectangular. The top i.e. water container may be circular/square or rectangular.
- 1.2 On the bottom floor of the water container cast iron or stainless steel grating should be provided over the supply outlet and scour outlet. This is essential to prevent any accident for the labour attending to periodical cleaning of the tanks. One such accident occurred at Sehore when two persons in succession were sucked in to the scour pipe, the top of which could not be seen because of calcium deposits due to regular use of bleaching powder. Cast Iron grating 20x20mm or stainless steel square 20x20mm can be used with square frames on top of the outlet.
- 1.3 The over flow pipe should not be connected to the distribution system. Connection of over flow pipe to the distribution system can result in over filling of the elevated service reservoir in case supply valves of the distribution system are not open. The over flow pipe should always be kept open for draining any excess storage in the tank.
- 1.4 It is extremely important to make arrangements for supply of sufficient water at the construction site for curing of the concrete. Continuous and efficient curing is extremely important for development of good compressing strength in any concrete structure.
- 1.5 It is advisable to use metal derived from igneous rock preferably of basaltic or granite origin. The coarse sand should be free from soil. This can be checked easily by half filling a transparent glass with the sand sample and the other half by clean water. Stir the sand vigorously. Silt in the sand can then be easily seen in the top water portion.
- 1.6 It is extremely essential the contractors undertaking the work should have a concrete mixer with them. No hand mixing shall be allowed. Ready Mix Concrete obtained from a Batching & Mixing Plant only shall be used for construction of all components of OHSRs & MBR from RCC foundation upwards.
- 1.7 In no case the concrete should be laid without vibration. It is desirable to keep two concrete vibrators at the construction site so that in case of a break down the other vibrator can be used. It is desirable that the divisions have with them at least two concrete vibrators, of suitable diameters which is an essential T&P for laying concrete.

FOLLOWING SPECIFICATIONS SHOULD BE STRICTLY FOLLOWED :

2.0 CEMENT AND CONCRETE :

2.1 Minimum Strength of Concrete :


Minimum strength of concrete for components of elevated tank will be as below :-

Columns staging - M25 (250 kg/sqcm)
Tank including roof - M30 (300 kg/sqcm)

2.2 Minimum Cement Content

From durability considerations minimum cement content shall be as below (conforming to IS 456) :-

Concrete - M25 - 350 kg/cum
Concrete - M30 - 400 kg/cum


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Cover of Concrete :

The minimum cover shall be 40 mm for all the reinforcement. For foundations this cover shall be 60 mm. For Slab, Minimum cover should be 25mm below Reinforcement and 40mm above reinforcement.

2.4 Cement

The cement shall be ordinary port land cement/port land slag cement/concrete special cement conforming to ISS.

2.5 Water Cement Ratio :

Water Cement Ratio shall not be more than 0.45 this means 22.5 Litres of water per 50 kg. bag cement.

2.6 Use of Construction Chemicals :-

When the water cement ratio is less, the strength and durability of concrete is good. It is advisable to use plasticisers in concrete and reduce water cement ratio up to 0.4. Plasticisers manufactured by reputed companies are recommended.

Proportion of plasticiser to be used shall be as per the instruction manual supplied by the manufacturers.

2.8 Construction Joints :

Construction joints be treated in accordance with IS 456:2000. The surface of already laid concrete be cleaned by water jet and cement slurry be applied. Cement mortar 10mm thick of the same proportion as in concrete be applied and then fresh concrete of the lift be laid. The form work must overlay 100 mm on the already laid concrete.

2.9 Minimum Dimensions and Shapes :

Minimum Dimensions shall be as below :

Circular columns	-	400 mm
Tank wall		200mm
Bottom slab/ Dome		200mm
Top slab		150 mm

Note -

Rectangular/square columns are not allowed Circular shafts are also not allowed.

Footing - The depth of footing on the face of the column shall not be less than 1/3rd of the spread of footing from the face.

3.0 STEEL : (Conforming to relevant IS code of water retaining structures)

3.1 Minimum steel : Design requirements as set out in relevant codes in respect of steel shall be fully satisfied. However, following minimum steel should be provided.

- (a) Vertical steel in columns 0.8% of cross sectional area actually required and 0.3% where larger section than actually required is provided.
- (b) Horizontal link in columns Not less than 8 mm dia at 200mm c/c or 10 mm dia not more than 300 mm c/c.
- © Exposed RCC surface On both faces when thickness is 150 mm or more
2 kg/sqm in perpendicular direction
The above requirement is satisfied if
8 mm bars @ 200mm c/c OR 10 mm bars @ 300mm c/c are provided.
Even if design steel is less than above, the above minimum shall be provided.

- (d) Steel in tank As per provision of IS 3370 subject to minimum as set out in (b) above.

3.2 **Maximum spacing of reinforcement :**

Maximum spacing of main reinforcement in slab or walls shall not be more than 150 mm centre to centre. The spacing of secondary bars, such as distribution steel or vertical bars in columns, shall be as per IS.

3.3 **Type of Steel :**

The steel for reinforcement shall be thermo mechanically treated bars conforming to ISS.

Detailing of Steel

Before commencing the work, Executive Engineer in-charge should study the drawing. It must be insisted that the designer provides details of the shape of each bar its diameter, length and numbers of each category in a schedule of reinforcement. This must be incorporated in every working drawing.

4.0 **Protection work Drainage :**

At the ground level, 100 mm thick cement concrete flooring in M₁₀ should be provided for an area which is 1.5 metre more than the dimensions of tank on all sides plus Staircase area. This should be laid in a slope of 1:60 from the centre and drain be constructed around for outlet of water.

5.0 **Approval of Design & Drawing :**

The contractor will submit the detail design & drawings of the R.C.C. elevated reservoirs within 30 days from the date of issue of written order to commence the work duly approved by NIT for approval of the competent authority of the Department in five copies through BMC.


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**ANNEXURE - 04
BREAK UP SCHEDULE OF PAYMENT**

STAGE WISE PAYMENT OF WORK :

BREAK UP :

Break up of Payment Schedule for Individual OHSR

Sl. No	Description	Breakup of Payment
1	Geotechnical investigations for determination of SBC including approval of Design and Drawings.	2%
2	Excavation for foundation and construction of stable course of PCC(1:2:4) for foundation of OHSR complete including establishing Laboratory at Site.	3%
3	After casting of foundation including columns upto GL	10%
4	After casting of 50% of RCC complete staging	10%
5	After completion of casting of complete RCC staging	10%
6	After completion of casting of Ring Beam & Bottom Slab	15%
7	After completion of casting of vertical walls of reservoir / container complete	10%
8	After completion of casting of staircase , top dome / slab	10%
9	On supply and fixing of pipes & specials , valves , water level indicators, railing , lightning arrestor & Earthing (as per IS-3043) complete at site including approval by the Third Party Inspection.	15%
10	After finishing, distempering and painting & successful Water tightness test of work and commissioning. (No Part Payment)	15%
Total :-		100%


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ANNEXURE- 05
MODEL RULES RELATING TO LABOUR, WATER SUPPLY AND SANITATION IN LABOUR CAMPS

Note: These model rules are intended primarily for labour camps which are not of a permanent nature. They lay down the minimum desirable standard which should be adhered to Standards in Permanent or semipermanent labour camps should not obviously be lower than those for temporary camps.

1. **Location:** The camp should be located in elevated and well drained ground in the locality.
2. **Labour:** Hut to be constructed for one family of persons each. The layout to be shown in the prescribed sketch.
3. **Hutline:** The huts to be built of local materials. Each hut should provide atleast 20 Sqm. of living space.
4. **Sanitary facilities:** There shall be provided latrines and urinals atleast 15.M away from the nearest quarter separately, for men and women specially so marked on the following scale.
5. **Latrines:** Pit provided at the rate of 10 users or two families per set. Separate Urinals as required as the privy can also be used for this purpose.
6. **Drinking water:** Adequate arrangement shall be made for the supply of drinking water. If practicable, filtered and chlorinated supply shall be arranged. Where supply is from intermittent sources, an overhead covered storage tank shall be provided with a capacity of five litres per person per day. Where the supply is to be made from a well it shall conform to the sanitary standards. Laid down in the report of the Rural Sanitation Committee. The well should be at least 30 metres away from any latrine or other sources of pollution. If possible, a hand pump should be installed for drawing the water from well. The well should be effectively disinfected once every month and quality of water should be got tested at Public Health institution between each work of disinfection.
Washing and bathing should be strictly prohibited at places where water supply is from a river. The daily supply must be disinfected. In the storage reservoir and given at least 3 minutes contact with the disinfectant before it is drawn for use.
7. **Bathing and Washing:** Separate bathing and washing place shall be provided for men and women for every 25 persons in the camp. There shall be a gap and space of 2 Sq.M. for washing and bathing. Proper drainage for waste water should be provided.
8. **Waste disposal:** Dustbins shall be provided at suitably place in camp and the residents shall be directed to throw all rubbish into these dustbins. The dustbins shall


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be provided with covers. The contents shall be removed every day and disposed off by trenching.

9. Medical facilities.

- a) Every camp where 1000 or more persons reside shall be provided with whole time, doctor and dispensary. If there are women in the camp a whole time nurse shall be employed.
- b) Every camp where less than 1000 but more than 250 persons reside shall be provided with dispensary and a part time nurse/midwife shall also be employed.
- c) If there are less than 250 persons in any camp a first aid kit shall be maintained in- charge of the whole time persons.

All the medical facilities mentioned above shall be for all residents in the camp, including a dependent of the workers, if any, free of cost.

Sanitary Staff: For each labour camp there should be qualified sanitary Inspector & Sweepers should be provided in the following scale:

- | | | |
|----|---|--|
| 1. | For Camps with strength over 200 but not exceeding 500 persons. | One Sweeper for every 75 persons above the first 200 for which three sweepers should be provided |
| 2. | For camps with strength over 500 persons | One sweeper for every 100 persons above the first 500 for which six Sweepers should be provided. |


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ANNEXURE – 06

CONTRACTOR'S LABOUR REGULATIONS.

The Contractor shall pay not less than fair wage to Labourers engaged by him in the work.

Explanation:

- a) "Fair Wages" means wages whether for time or piece work as notified at the time of inviting tenders for the works and where such wages have not been so notified the wages prescribed by the Department for the division in which the work is done.
- b) The Contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid a fair wage to labourers indirectly engaged on the work including any labour engaged by his sub-contractors in connection with the said work as if labourers had been immediately employed by him.
- c) In respect of all labour directly or indirectly employed on the works on the performance of his contract, the contractor shall comply with their cause to be complied with the labour act in force.
- d) The Executive Engineer/Sub Divisional Officer shall have the right to reduce from the money due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or the deductions made from his or their wages, which are not justified by the terms of the contract or non-observance of regulations.
- e) The contractor shall be primarily liable for all payments to be made under and for the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractors.
- f) The regulations aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be breach of this contract.
- g) The contractor shall obtain a valid licence under the contract (Regulations and Abolition) Act enforce and rules made there under by the competent authority from time to time before commencement of work and continue to have a valid license until the completion of the work.

Any failure to fulfil this requirement shall attract the penal provisions of this contract arising out of the resulted non-execution of the work assigned to the Contractor.


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ANNEXURE 06

SAFETY CODE

Scaffolding:


- (i) Suitable scaffold should be provided for workman for all works that cannot safely be done from the grounds or from solid construction except such short period work as can be done safely from ladder is used on extra Mazdoor shall be engaged for holding the ladder for carrying materials as well suitable foot holes and hand holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to $\frac{1}{4}$ Horizontal and 1 vertical).
- (ii) Scaffolding or staging more than 12 M above, the ground floor swung or suspended from an overhead support or erected with stationer/support shall have a guard rail property attached, bolted, braced or otherwise secured at least 1 meter high above the floor platforms of such scaffolding or staging and extending along the entire length of the outside the ends thereof with only such opening as may be necessary for the delivery of the materials. Such scaffolding or staging shall be fastened as to prevent it from swaying from the building of structure.
- (iii) Working platform gangways and stairway should be so constructed that they should not away unduly or unequally and if the height of the platform of the Gangway or the stairway is more than 3.54 metres above ground level and or floor level they should be closely bearded, should have adequate width and should be suitably fenced as described (ii) above.
- (iv) Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the falling of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 metre.
- (v) Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable ladder shall be over 9 metre in length while the width between side rails in ring ladder shall be in no case be less than 0.3 metres from ladder upto and including 3 meter length. For longer ladders this width should be increased at least 2 cm. For each additional meter of length. Uniform step spacing shall not exceed 0.3 M adequate precaution shall be taken to prevent danger form electrical equipment. No material on any of the work site shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall also provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defence of every suit action or other precautions of law that may be brought by any person for injury sustained owing to neglect of the above and to pay any damages and costs which may be awarded in any such suit action or proceeding to any such person or which may with consent of the contractor be paid to compromise by any such person.

1. **Excavation and Trenching:** All trenches 1.2 metre or more in depth, shall at all times be supplied with at least one ladder for each 30 Metre in length of friction thereof. Ladder shall be extended from bottom of the trench to atleast 1 metre above the surface of the ground. The side of trenches which are 1.5 metre or more in depth shall be stepped back to give suitable slopes or securely held by timber bracing so as to avoid the danger of sides to collapse The excavated materials shall not be placed within 1.5 metre of the edge of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or under cutting shall be done.

2. **Demolition:** Before any demolition work is commenced and also during the process of the works.

- (a) All roads and open area adjacent to the work site shall either be closed or suitably protected.


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- (b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
- (c) All precautionary steps shall be taken to prevent danger to persons employed from risk of fire or explosion of flooring. No floor roof or other part of the building shall be so overloaded with debris of materials as to render it unsafe.
3. **Painting:** All necessary personal safety equipment as considered adequate by the Engineer-in-charge should be kept available for the use of person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
- a) Workers employed on mixing asphaltic materials cement lime mortars shall be provided with protective footwear and protective goggles.
- b) Stone brackets shall be provided with protective goggles and protective clothing, and seated at sufficiently safe intervals.
- c) Those engaged in welding works shall be provided with welder's protect.
- d) When workers are employed in sewers and manholes which are in use, the Contractors shall ensure that the manhole covers are open and are ventilated atleast for an hour before the work shall be coronet off with suitable railing and provided with warning signals or boards to prevent accident to the public.
- e) The Contractor shall not employ men below the age of 19 and women on the work of painting with products containing lead in any form whenever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.
- i) No paint containing lead or lead shall be used except in the form of paste or ready made paint.
- ii) Suitable face masks should be supplied for use by the workers when paint applied in the form of spray or a surface having lead paint dry rubble and scrapped.
- iii) Overhauled shall be supplied by the contractor to the workman and adequate facilities shall be provided to enable the working painters to wash during the cessations of work.
4. **Drawing:** When the work is done near any place where there is risk of drawing all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment for all injuries likely to be sustained during the course of the work.
- a) Every crane driver or hosing applicants operator shall be properly qualified and no personal order an age of 21 years should in-charge of any hoisting machine including any scaffold which give signals to the operator.
- b) In case of every hoisting machine and every chain ring lowering or as means of suspensions. The safe working load shall be ascertained by adequate means. Every hoisting machine and gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for load purpose of testing.
- c) In case of departmental machine the safe working and load shall be notified by the Electrical Engineer-in-charge. As regarded contractor's machine the contractor shall notify the safe working load of the machine to the Engineer-in-charge, whenever he brings any machinery to site of work and get verified by the Electrical Engineer concerned.
- d) Motors, gearing transmission, Electric wiring and other dangerous part of the hoisting appliance should be provided with efficient safe guards and with such means as well reduce adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load be coming accidentally dispraced When workers employed on Electrical installations which are already unregistered insulating mats wearing apparel such as gloves sleeves and boots as may be necessary should be provided the workers should not wear rings, watches and carry keys, or other materials which are good conductors of electricity.


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7. All scaffolds, ladders and their safety device mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
8. These safety provisions should be brought to the notice of all concerned by display on a Notice Board at prominent places at the work spot. The persons responsible for compliance of the safety code shall be named therein by the contractor.
9. To ensure effective endorsement of the rules and regulations relating to safety precautions the arrangement made by the contractor shall be open to inspection by the Labour Officer, Engineer-in-charge, or the Department or their representatives.
10. Notwithstanding the above clause (1) to (9) there is nothing in these to except the contractors to exclude the operations of any other act or rule in force in the Republic of India.


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