प्रतिभूति कागज कारखाना, नर्मदापुरम - 461005 (म.प्र.)

सिक्योरिटी प्रिंटिंग एंड मिंटिंग कॉरपोरेशन ऑफ इंडिया लिमिटेड की इकाई (भारत सरकार के पूर्ण स्वामित्वाधीन)
मिनीरत्न श्रेणी-I सीपीएसई एवं आई.एस.ओ. 9001:2015, 14001:2015, 45001:2018, 50001:2018 एवं आईईसी 17025:2017 प्रमाणित

सूचना का अधिकार RIGHT TO INFORMATION

SECURITY PAPER MILL, NARMADAPURAM – 461005 (M P)

A Unit of Security Printing & Minting Corporation of India Limited (Wholly owned by Government of India)
Miniratna Category-I CPSE & ISO 9001:2015, 14001:2015, 45001:2018, 50001:2018 & IEC 17025:2017 Certified
CIN:U22213DL2006GOI144763, GSTIN: 23AAJCS6111J3ZE

Tel. No.: 07574-255259, E-mail: gm.spm@spmcil.com, Website: http://spmnarmadapuram.spmcil.com

No. EOI/Sludge beds/25-26/1402 Dated: 20.03.2026

EXPRESSION OF INTEREST (EOI)

For

Upgradation and Renovation of Sludge Beds for Effluent treatment plant (ETP), New Effluent treatment plant (NETP) and Pulp treatment plant (PTP)

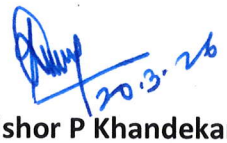
Security Paper Mill, Narmadapuram, a unit of SPMCIL wholly owned by Govt. of India, Ministry of Finance. SPM invites Expression of Interest (EOI) from the reputed firms for Upgradation and Renovation of Sludge Beds for Effluent treatment plant (ETP), New Effluent treatment plant (NETP) and Pulp treatment plant (PTP) at SPM, Narmadapuram.

Type Of Tender/EOI	EXPRESSION OF INTEREST
Brief Description	EOI for Upgradation and Renovation of Sludge Beds for Effluent treatment plant (ETP), New Effluent treatment plant (NETP) and Pulp treatment plant (PTP)
Technical Specifications and Quality Requirement	Attached As Anneuxre I & II
Scope of work	1. Removing of old sludge and old filter media, transfer of same within 2 km area. 2. Providing and laying of reinforced cement concrete (RCC), sources work at bottom surface of filter bed including base concrete, reinforcement, drain cover, lifting of support for FRP sheet structure as per proposed design. 3. Repairing and reconstruction of bed walls, chambers and drainage system including pipe and sluice gate installation. 4. Providing and laying of UPVC water supply pipe in each filter bed with 50 mm diameter pipe including ball valve for backwash/pressure cleaning purpose. 5. Epoxy painting inside the filter beds and acrylic smooth exterior paint with primer of required shade for outside finishing walls (Minimum two coats) including scrapping and removing old paint and also including repairing plaster. 6. Supplying and placing of filter media at all beds (approx. height 3 feet). 7. Providing and fixing FRP grating 25mm thick including steel frame work. 8. Providing and fixing filter cloth. 9. Any other miscellaneous work related to renovation of bed.
Budgetary Quotation	Firms who have experience in providing similar kind of works

	should submit their budgetary quotation as per attached Scope of Work.
Last date and time of submission of EOI	**EOI may be submitted alongwith the Budgetary Quotation** as per attached Scope of work to "The Chief General Manager, Security Paper Mill, Narmadapuram, by 21.04.2026, 11.00 AM through email at purchase.spm@spmcil.com and gm.spm@spmcil.com
Contact Details in case of any query	**Biplab Basak, Manager (MM), SPM, Narmadapuram 07574-286776/ 9903386521/** biplab.basak@spmcil.com **Kishor P Khandekar, Manager (MM), SPM, Narmadapuram 07574-286792/ 9371774027/** kishor.khandekar@spmcil.com

Note:

1) The firm may visit Security paper Mill, Narmadapuram, if desired.
2) The bidders shall have to submit their budgetary quotation as per attached scope of work.



(Kishor P Khandekar)
Manager (Material) & Material Head-I/c
For Chief General Manager

Annexure-I

Technical Specifications

Upgradation and Renovation of Sludge Beds for Effluent treatment plant (ETP), New Effluent treatment plant (NETP) and Pulp treatment plant (PTP) shall have following technical specifications:

A

Item No.	DESCRIPTION	Unit	No.	Length (m)	Wide (m)	Depth (m)	Qty	Rate	Amount
A	New filter bed – 4 nos								
	12.80 mt x 09.45 mt (42' x 31') APROX DEPTH 6'								
a	Taking out old sludge and unserviceable filter media and disposal of material by mechanical transport within 2 Km of lead loading unloading complete								
		Cum	4	12.8	9.45	0.90	435.46		
b	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5.3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural and sources work at bottom of filter bed as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	4	12.8	9.45	0.25	120.96		
c	Repairing of chambers and Drainage system I/c providing and laying pipe and construction of chamber including replacement sluice gate etc.								
	L.S.	job	4						
d	Perforated u-pvc underdrain pipes embedded in the bottom layer. Slope of 1–								

	1.5% towards drain outlet to avoid water pooling. Diameter: 110–160 mm main pipe, 63 mm branches; Layout: Fishbone or grid pattern across bed. Provision of Clean out ports. Length of pipe as per size of bed.								
	L.S.	job	4						
e	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural sources work at bed walls as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	4	9.45	1.00	0.20	7.56		
		Cum	4	12.80	1.00	0.20	10.24		
						Total	17.80		
f	1. Scrapping and removing plaster and plastering it with 12 mm cement plaster of mix 1:6 on smooth face of brickwork and 15 mm thick cement plaster of mix 1:6 on rough face of brickwork with mixing of water proofing compound as per manufacturer specifications. 2. Painting: Scrapping and removing old paint Internal: Distempering with 1st quality acrylic distemper (ready mixed) of approved manufacturer of required shade and colour complete, as per manufacturer's specifications. External: Finishing wall with								

	acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm								
		sqm	4	12.8	11.45		586.24		
g	Providing FRP sheet and lifting of support for FRP sheet structure using suitable steel framework.								
		SQM	4	12.8	9.45		483.84		
h	Providing and fixing filter cloth on top layer of each bed. Porosity or Air permeability for Filter Cloth should be 3000ml. Air per minutes (minimum). The test is to be performed by Bendtsen porosity tester by using weight of 150mm water column pressure.								
		each	4	12.8	9.45				
i	Supplying and Loading of new graded filter media of different sizes in 5 layers as mentioned above in the filter beds one by one. Filling height (HT) & Media Size: Layer 1: Top layer Sand 1/16 - 1/32 (540mm) Layer 2: Crushed Gravel 1/4"- 1/8" (100mm HT) Layer 3: Pebble ½" - 1/4" (100mm HT) Layer 4: Pebble ¾"- 1/2" (100mm HT) Layer 5: Pebble 1"-3/4" (100mm HT)								
	One job	each	4						
j.	Site development: Bidder should construct RCC approach road and connect to the nearest road, provide suitable arrangement for drain/rain water in the area.								

	Suitable lighting provision for working in night shifts near the filter bed.								
		LS							
								Total	
						Central GST 9% =			
	New filter bed – 4 nos					State GST 9% =			
	12.80 mt x 09.45 mt (42' x 31') APROX DEPTH 6'							Total	

B.

Item No.	DESCRIPTION	Unit	No.	Length	Wide	Depth	Qty	Rate	Amount
B	Old filter bed – 4 nos								
	12.80 mt x 09.60 mt (40' x 31.5') APROX DEPTH 6'								
a	Taking out old sludge and unserviceable filter media and disposal of material by mechanical transport within 2 Km of lead loading unloading complete								
		Cum	4	12.2	9.6	0.90	421.6		
b	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5.3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural and sources work at bottom of filter bed as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	4	12.2	9.6	0.25	117.1		
c	Repairing of chambers and Drainage system l/c providing and laying pipe and construction of chamber including replacement sluice gate etc.								

	L.S.	job	4						
d	Perforated u-pvc underdrain pipes embedded in the bottom layer. Slope of 1–1.5% towards drain outlet to avoid water pooling. Diameter: 110–160 mm main pipe, 63 mm branches; Layout: Fishbone or grid pattern across bed. Provision of Clean out ports. Length of pipe as per size of bed.								
	L.S.	job	4						
e	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural sources work at bed walls as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	4	9.60	1.00	0.20	7.68		
		Cum	4	12.20	1.00	0.20	9.76		
						Total	17.44		
f	1. Scrapping and removing plaster and plastering it with 12 mm cement plaster of mix 1:6 on smooth face of brickwork and 15 mm thick cement plaster of mix 1:6 on rough face of brickwork with mixing of water proofing compound as per manufacturer specifications. 2. Painting: Scrapping and removing old paint Internal: Distempering with 1st quality acrylic distemper								

	(ready mixed) of approved manufacturer of required shade and colour complete, as per manufacturer's specifications. External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm								
		job	4	12.2	9.6		468.48		
g	Providing FRP sheet and lifting of support for FRP sheet structure using suitable steel framework.								
		SQM	4	12.2	9.6		468.5		
h	Providing and fixing filter cloth on top layer of each bed. Porosity or Air permeability for Filter Cloth should be 3000ml. Air per minutes (minimum). The test is to be performed by Bendtsen porosity tester by using weight of 150mm water column pressure.								
		Each	4	12.2	9.6				
i.	Supplying and Loading of new graded filter media of different sizes in 5 layers as mentioned above in the filter beds one by one. Filling height (HT) & Media Size: Layer 1: Top layer Sand 1/16 - 1/32 (540mm) Layer 2: Crushed Gravel 1/4"-1/8" (100mm HT) Layer 3: Pebble ½" - 1/4" (100mm HT) Layer 4: Pebble ¾"- 1/2" (100mm HT) Layer 5: Pebble 1"-3/4" (100mm HT)								
	One job	each	4						
j.	Site development: Bidder should construct RCC approach road and connect								

	to the nearest road, provide suitable arrangement for drain/rain water in the area. Suitable lighting provision for working in night shifts near the filter bed.								
		LS							
								Total	
							Central GST 9% =		
B	Old filter bed - 4 nos						State GST 9% =		
	12.20 mt x 09.60 mt (40' x 31.5') APROX DEPTH 6'							Total	

C

Item No.	DESCRIPTION	Unit	No.	Length	Wide	Depth	Qty	Rate	Amount
C	Pulp Treatment Plant (PTP) filter bed - 3 nos								
	8.50 x 7.30 mt (28' x 24') APROX DEPTH 6'								
a	Taking out old sludge and unserviceable filter media and disposal of material by mechanical transport within 2 Km of lead loading unloading complete								
		Cum	3	8.5	7.3	0.90	167.54		
b	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5.3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural and sources work at bottom of filter bed as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	3	8.5	7.3	0.25	46.538		
	Repairing of chambers and Drainage system I/c								

c	providing and laying pipe and construction of chamber including replacement sluice gate etc.								
	L.S.	job	3						
d	Perforated u-pvc underdrain pipes embedded in the bottom layer. Slope of 1–1.5% towards drain outlet to avoid water pooling. Diameter: 110–160 mm main pipe, 63 mm branches; Layout: Fishbone or grid pattern across bed. Provision of Clean out ports. Length of pipe as per size of bed.								
	L.S.	job	3						
e	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural sources work at bed walls as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	3	7.30	1.00	0.20	4.38		
		Cum	3	8.50	1.00	0.20	5.1		
						Total	9.48		
f	1. Scrapping and removing plaster and plastering it with 12 mm cement plaster of mix 1:6 on smooth face of brickwork and 15 mm thick cement plaster of mix 1:6 on rough face of brickwork with mixing of water proofing compound as per manufacturer specifications.								

	2. Painting: Scrapping and removing old paint Internal: Distempering with 1st quality acrylic distemper (ready mixed) of approved manufacturer of required shade and colour complete, as per manufacturer's specifications. External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm								
		SQM	3	8.5	7.3		186.15		
g	Providing FRP sheet and lifting of support for FRP sheet structure using suitable steel framework.								
		SQM	3	8.5	7.3		186.15		
h	Providing and fixing filter cloth on top layer of each bed. Porosity or Air permeability for Filter Cloth should be 3000ml. Air per minutes (minimum). The test is to be performed by Bendtsen porosity tester by using weight of 150mm water column pressure.								
		each	3	8.5	7.3				
i	Supplying and Loading of new graded filter media of different sizes in 5 layers as mentioned above in the filter beds one by one. Filling height (HT) & Media Size: Layer 1: Top layer Sand 1/16 - 1/32 (540mm) Layer 2: Crushed Gravel 1/4"-1/8" (100mm HT) Layer 3: Pebble ½" - 1/4" (100mm HT) Layer 4: Pebble ¾"- 1/2" (100mm HT) Layer 5: Pebble 1"-3/4" (100mm HT)								

	One job	each	3						
j.	Site development: Bidder should construct RCC approach road and connect to the nearest road, provide suitable arrangement for drain/rain water in the area. Suitable lighting provision for working in night shifts near the filter bed.								
		LS							
								Total	
							Central GST 9% =		
C	BLTP filter bed - 3 nos						State GST 9% =		
	8.5 mt x 7.30 mt (28' x 24') APROX DEPTH 6'							Total	

D

Item No.	DESCRIPTION	Unit	No.	Length	Wide	Depth	Qty	Rate	Amount
D	New filter bed - 1 nos								
	4.60 mt x 4.60 mt (15' x 15') APROX DEPTH 6'								
a	Taking out old sludge and unserviceable filter media and disposal of material by mechanical transport within 2 Km of lead loading unloading complete								
		Cum	1	4.6	4.6	0.90	19.044		
b	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5.3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural and sources work at bottom of filter bed as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								

		Cum	1	4.6	4.6	0.25	5.29		
c	Repairing of chambers and Drainage system l/c providing and laying pipe and construction of chamber including replacement sluice gate etc.								
	L.S.	job	1						
d	Perforated u-pvc underdrain pipes embedded in the bottom layer. Slope of 1–1.5% towards drain outlet to avoid water pooling. Diameter: 110–160 mm main pipe, 63 mm branches; Layout: Fishbone or grid pattern across bed. Provision of Clean out ports. Length of pipe as per size of bed.								
	L.S.	job	1						
e	Providing and laying in position specified grade of reinforced cement concrete, 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) derived from natural sources: 3 grade stone aggregate 20 mm nominal size derived from natural sources work at bed walls as per drawing (drawing submitted by vender before execution of work) including the cost of reinforcement (Thermo-mechanically Treated bars of Fe 500, 10 mm steel @100cc) and cleaning and surface preparation complete.								
		Cum	2	4.6	4.6	0.20	8.464		
f	1. Scrapping and removing plaster and plastering it with 12 mm cement plaster of mix 1:6 on smooth face of brickwork and 15 mm thick cement plaster of mix 1:6 on rough face of brickwork with mixing of water proofing compound as per manufacturer specifications.								

	2. Painting: Scrapping and removing old paint Internal: Distempering with 1st quality acrylic distemper (ready mixed) of approved manufacturer of required shade and colour complete, as per manufacturer's specifications. External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm								
		SQM	1	4.6	4.6		21.16		
g	Providing FRP sheet and lifting of support for FRP sheet structure using suitable steel framework.								
		SQM	1	4.6	4.6		21.16		
h	Providing and fixing filter cloth on top layer of each bed. Porosity or Air permeability for Filter Cloth should be 3000ml. Air per minutes (minimum). The test is to be performed by Bendtsen porosity tester by using weight of 150mm water column pressure.								
		each	1	4.6	4.6				
i.	Supplying and Loading of new graded filter media of different sizes in 5 layers as mentioned above in the filter beds one by one. Filling height (HT) & Media Size: Layer 1: Top layer Sand 1/16 - 1/32 (540mm) Layer 2: Crushed Gravel 1/4"-1/8" (100mm HT) Layer 3: Pebble ½" - 1/4" (100mm HT) Layer 4: Pebble ¾"- 1/2" (100mm HT)								

	Layer 5: Pebble 1"-3/4" (100mm HT)								
	One job	each	1						
j.	Site development: Bidder should construct RCC approach road and connect to the nearest road, provide suitable arrangement for drain/rain water in the area. Suitable lighting provision for working in night shifts near the filter bed.								
		LS							
								Total	
						Central GST 9% =			
D	New filter bed - 1 nos					State GST 9% =			
	4.60 mt x 4.60 mt (15' x 15') APROX DEPTH 6'							Total	

TECHNICAL DETAILS:

Sludge Beds:

- Pulp-treatment Filter Bed (PTP) (28' X24'x6'): 3 Nos.
- Old filter bed (ETP) (31.5' X40'x6'): 4 Nos.
- New filter bed (NETP) (42' X 31' x6'):4 Nos.
- New filter bed (NETP) (15' X 15' x6'): 1 No.
- Filling Area & Media Size:

  Layer 1: Top layer Sand 1/16 - 1/32 (540mm HT)
  Layer 2: Crushed Gravel 1/4"-1/8" (100mm HT)
  Layer 3: Pebble ½" - 1/4" (100mm HT)
  Layer 4: Pebble ¾"- 1/2" (100mm HT)
  Layer 5: Pebble 1"-3/4" (100mm HT)

Scope of work: Renovation and upgradation of 12 nos of sludge beds for ETP, PTP & NETP at Environment Section, SPM Narmadapuram.

I. Following are the detailed scope of works:

1. Supply, unloading, segregations and cleaning (if required) of new graded filter media for filter bed at ETP, NETP and PTP under the supervision of SPM officials.
2. Removal, segregation and cleaning of old sludge and old filter media from filter beds one by one under the supervision of SPM officials.

3. Disposal/dumping of waste, unusable materials safely inside or outside SPM premises as per instruction of concerned SPM officials.
4. Providing and laying of reinforced cement concrete (RCC), sources work at bottom surface of filter bed including base concrete, reinforcement, drain cover, lifting of support for FRP sheet structure. Thermo-mechanically Treated bars of grade Fe-500D or more for R.C.C. work of 10mm @100mm c/c
5. Repairing and reconstruction of bed walls, chambers and drainage system including pipe and sluice gate installation.
6. Scrapping and removing plaster and plastering it with 12 mm cement plaster of mix 1:6 on smooth face of brickwork and 15 mm thick cement plaster of mix 1:6 on rough face of brickwork with mixing of water proofing compound as per manufacturer specifications.
7. Painting: Scrapping and removing old paint.
   7.1 Internal: Distempering with 1st quality acrylic distemper (ready mixed) of approved manufacturer of required shade and colour complete, as per manufacturer's specifications.
   7.2 External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm
8. Loading of new graded filter media of different sizes in 5 layers as mentioned above in the filter beds one by one under the supervision of SPM officials.
9. The job of filter media replacement in the filter beds shall be done one by one, only one filter bed to be handed over to the bidder at a time. Only after satisfactory completion of filter media replacement in one filter bed, another filter bed shall be taken for media filling.
10. Providing and fixing filter cloth on top layer of each bed. Porosity or Air permeability for Filter Cloth should be 3000ml. Air per minutes (minimum). The test is to be performed by Bendtsen porosity tester by using weight of 150mm water column pressure.
11. Installation of perforated upvc underdrain pipes embedded in the bottom layer. Ensure slope of 1–1.5% towards drain outlet to avoid water pooling. Diameter: 110–160 mm main pipe, 63 mm branches; Layout: Fishbone or grid pattern across bed. Provision of Clean out ports. Length of pipe as per size of bed.
12. Site development: Bidder should construct RCC approach road and connect to the nearest road, provide suitable arrangement for drain/rain water in the area. Suitable lighting provision for working in night shifts near the filter bed.
13. Any other miscellaneous work related to renovation, efficiency and performance of beds.

II. The successful bidder should prepared and submit drawings of all filter beds before start of renovation activities for approval of competent authority of SPM.

1. Plans in triplicate drawn to scale showing –

   (i) The site of work and immediate surrounding including adjacent building and other structures, road, drain etc. drawn to a scale not less than 1cm equal to 500 cm.

   (ii) The plan, elevation and necessary cross sectional elevation of the various building and structures including all relevant details.

III. **Quantity of work:** SPM authority reserve the full rights to decrease the quantities of item, at the time of award tender and any time during execution of contract period or extended period of contract as per its actual requirement.

IV. **Records:** The Firm shall maintain complete official records like material brought at site register, site order book, cement register, test register, hindrance register etc. SPM have rights to see these records time to time and firm shall submit all records as mentioned in this point to SPM after completion of the work.

V. Any defect in quality of work or deviations from drawings / specifications pointed out during inspection shall be made good by the contractor in the same way as if pointed out by the representative of SPM, without any cost implication to SPM.

VI. The contractor shall himself engage an authorized all time supervisor on the work capable of managing and guiding the work and understanding the specifications and contract conditions. A qualified and experienced Engineer shall be provided by the contractor as his supervisor for technical matters. Site engineer can also be designated as an supervisor of the contractor. Supervisor will take orders as will be given by the Engineer in charge or his representative and shall be responsible for carrying them out. This supervisor shall not be changed without prior intimation of the Engineer in charge and his representative on the work site. The Engineer-in-charge has the unquestionable right to ask for changes in the quality and strength of supervisory staff of contractor and to order removal from work of any of such staff. The contractor shall comply with such order and effect replacements of the satisfaction of the Engineer-in-charge.

Annexure-II

Quality Control Requirement
LIST OF MANDATORY TESTS

Material	Test	Laboratory test	Test procedure	Min. quantity of material for carrying out the test	Frequency of testing
Water	i. pH Value ii. Limits of Acidity iii. Limits of Alkalinity iv. Percentage of solids (a) Chlorides (b) Suspended (c) Sulphates (d) Inorganic (e) Organic	Laboratory Laboratory Laboratory Laboratory	IS 3025	one	Water from each source shall be got tested before the commencement of work and there after once in every three Months till the completion of the work. Water from municipal source need be tested only once in six months. Number of test for each source shall be 3
Cement	(a) Physical requirement (i) Fineness (ii) Soundness (iii) Setting time (Initial & Final) (iv) Compressive strength (v) Consistency of standard cement paste	 Laboratory Laboratory Laboratory Laboratory Laboratory	 IS 4031(Part II) IS 4031 (Part III) IS 4031(Part V) IS 4031(Part VI) IS 4031 (Part IV)-	Each lot	Every 50 tonnes or part thereof. Each brand of cement brought to site shall be tested as per this frequency.
Sand and aggregates	Organic impurities	Laboratory	As per CPWD Specification	One for 20 cum	Every 20 cum or part thereof or more frequently as decided by Engineer-in-charge
	Silt Content	Laboratory	As per CPWD Specification	One for 20 cum	--do--
	Particle size distribution	Laboratory	As per CPWD Specification	One for 40 cum	40 cum or part thereof
	Bulking of Sand	Laboratory	As per CPWD Specification	One for 20 cum	Every 20 cum or part thereof or more frequently as decided by Engineer-in Charge.

Bricks	Testing of Brick for dimensions, Compressive strength, Water absorption and efflorescence	Laboratory	As per CPWD Specification	As per Table 6.3 and 6.4 of CPWD Specification	As per Table 6.3 and 6.4 of CPWD Specification
Steel reinforcement for R.C.C. work		Thermo-mechanically Treated bars of grade Fe-500D or more for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Reinforcement bars shall conform to IS; 432 and/or IS 1786 and welded wire fabric to IS 1566 All reinforcement shall be clean, free from pitting, oil grease, paint loose mill scales, rust, dirt, dust or any other substance that will destroy or reduce bond.			
Concrete		Concrete in the works shall be DESIGN MIX CONCRETE OR NOMINAL MIX CONCRETE. All concrete works upto grade M15 can be NOMINAL MIX CONCRETE whereas all other grade, M20 and above, shall be DESIGN MIX CONCRETE. The minimum grade of concrete shall be as per Table 5 of IS 456 for various exposure conditions of concrete. For various environmental conditions, refer Table 3 of IS 456. The minimum cement content for Design Mix Concrete shall be as per Table 5 of IS 456. It shall be CONTRACTOR's sole responsibility to carry out the mix design at his own cost. Curing period : As per IS 456.			
Filter Cloth and FRP		As per original Manufacturer Test Report for each lot of supply.			

Note: Test Report to be obtained from IIT/NIT/Govt. Engineering College/ NABL Accredited Lab. Testing Charges to be borne by the contractor.

Scope of Service:

a. Repair, Renovation, Loading of new graded filter media of different sizes & commissioning of all requirements under this contract.

b. All other allied works in connection with the above work whether specifically mentioned in the specification or not but necessary to complete the work shall be deemed to be included under the scope of this specification.

c. Design and construction of structure are to be carried out as per CPWD specification 2019 Vol I & II with up to date correction slip and relevant IS code.

Safety arrangement:-

- Safety arrangement is in the scope of vendor.
- All safety and security norms (Police Verification of their workman/ supervisor) should be followed in true spirit.
- All PPEs i.e. Safety Shoes/ Gum boot, helmet, Gloves etc should be provided to their workman/ supervisor, in the scope of vendor.
- Safety shoes, gloves must be used while operation and maintenance activity.