



**GOVERNMENT OF TAMIL NADU
WATER RESOURCES DEPARTMENT**

**STANDARD SCHEDULE OF RATES
[FOR BASIC ITEMS ONLY]
BASIC RATES (EXCLUDING GST & OTHER TAXES)**

2022-2023

[WITH EFFECT FROM 19.07.2022]



**GOVERNMENT OF TAMIL NADU
WATER RESOURCES DEPARTMENT**

**OFFICE OF THE ENGINEER-IN-CHIEF &
CHIEF ENGINEER (GENERAL), WRD, CHENNAI -5.**

**Present : Er.K.Ramamoorthy, B.E., MBA.,
Engineer-in-Chief &
Chief Engineer (General), WRD,
Chennai - 5.**

Proc. No. HDO/ SrDO-2/SSR 2022-23 /22023 / 2022, Dated: 19.07.2022.

Sub: WRD – Standard Schedule of Rates with Basic Rates for the year 2022-2023 for adoption in preparation of estimates with effect from 19.07.2022 – Approved – Communication of – Regarding.

Ref: Engineer-in-Chief, WRD & Chief Engineer (General), PWD, Chennai-5, Proceedings No. HDO/ SrDO-2/SSR 2021-22 /21022 / 2021, Dated: 13.09.2021

-oOo-

The Standard Schedule of Rates with Basic Rates for Labours, Materials and Works (excluding all taxes and GST) approved for the year 2022-23 by the Schedule of Rates Committee for adoption in the preparation of estimates with effect from 19.07.2022 are herewith enclosed for taking necessary action.

The receipt of the Standard Schedule of rates with Basic Rates for the year 2022-23 along with its enclosures may be acknowledged.

Encl.:

Standard Schedule of Rates
with Basic Rates, 2022-23-1 Booklet


Engineer-in-Chief &
Chief Engineer (General), WRD,
Chennai - 5. (Member)

To

1. The Engineer-in-Chief, Chief Engineer (General) & Chief Engineer Chennai Region, PWD, Chennai-5.
2. The Director General, Highways Department, 76, Sardar Patel Road, Guindy, Chennai-25.
3. The Chief Engineer, WRD, Design Research and Construction Support, Chennai-5.
4. The Deputy Secretary to Government (Finance), Finance Department, Secretariat, Chennai-9.

Copy to all the Chief Engineers of Water Resources Department.

Copy to all the Superintending Engineers of WRD circles.

Copy to the Additional Chief Secretary to Government, WATER RESOURCES Department, Secretariat, Chennai-9

Copy to the Principal Secretary to Government, Municipal Administration and Water Supply Department, Secretariat, Chennai-9.

Copy to the Principal Secretary to Government, Rural Development and Local Administration, Secretariat, Chennai-9.

Copy to All District Collectors.

Copy to the Commissioner, Corporation of Chennai, Chennai

Copy to the Engineering Director, TWAD Board, Chepauk, Chennai-5.

Copy to the Chief Engineer (Civil Design), TNEB, Anna Salai, Chennai-2.

Copy to the Chief Engineer, Tamil Nadu Housing Board, Nandanam, Chennai-35.

Copy to the Chief Engineer (Civil Design), Tamil Nadu Slum Clearance Board, Chennai,

Copy to the Chief Engineer, PWD, Technical Education Circle, Guindy, Chennai-25

Copy to the Chief Engineer, PWD, Fishing Harbour Project Circle, DMS Compound, Chennai-6.

Copy to the Chief Engineer, Tamil Nadu State Police Housing Corporation, Chennai.

Copy to the Joint Chief Engineer (General), PWD, Chennai-5.

Copy to the Joint Chief Engineer (Irrigation), PWD, Chennai-5.

Copy to the Head Draughting Officer, O/o. EIC (WRD) & CE (General), PWD, CH-5.

STANDARD SCHEDULE OF RATES
[FOR BASIC ITEMS ONLY]
BASIC RATES (EXCLUDING GST & OTHER TAXES)

2022-2023
(W.E.F. 19.07.2022)

INDEX

Sl. No.	Description	Page
1	General Note	1-7
2	General Note – Table	8-10
3	Annexure-I – Rates of Labour	11-13
4	Annexure-II – Rates of Materials	14-16
5	Annexure-III – Rates of Works	17-25
6	Annexure-VIII – Rates of Modern Techniques	26-33
7	Annexure-XII – Basic Rates of Gate / Hoist and Allied Works for Irrigation Projects	34-55
8	Annexure-XIII – Basic Rates of Hire Charges for Plants & Machineries	56

GOVERNMENT OF TAMIL NADU
WATER RESOURCES DEPARTMENT
STANDARD SCHEDULE OF RATES FOR THE YEAR 2022-2023
(w.e.f. 19.07.2022)

GENERAL NOTE

For special nature of works, for which rates are not covered in the Schedule of Rates, such as road works, water supply, drainage, etc., separate schedule of rates issued by the respective officers / department / board are to be followed.

Extra percentage other than those for the specified areas noted below, shall not be allowed.

1. CORPORATION LIMITS:

An extra 10% on the Rates of Labour, Rates of Works and for Head Load shall be allowed for the works in

- (i) Erstwhile Chennai Corporation limits and the belt area of 32 km around erstwhile Chennai Corporation limits (i.e.) prior to formation of Greater Chennai Corporation.
- (ii) Madurai Corporation limits.
- (iii) Coimbatore Corporation limits and also for works in Hosur Taluk.

2. An extra 5% on the Rates of Labour, Rates of Works and for Head Load shall be allowed for the works in Trichy, Salem, Tirunelveli, Tiruppur, Erode, Thoothukudi and Vellore Corporation limits.

3. RESTRICTED AREAS:

- (i) **An extra 10%** on the Rates of Labour and Rates of Works shall be allowed for **sewer works under unhygienic condition.**
- (ii) **An extra 10%** on the Rates of Labour, Rates of Works and Conveyance Charges shall be allowed for works in the campus of **Central Jails.**
- (iii) **An extra 5%** on the Rates of Labour, Rates of Works and Conveyance Charges shall be allowed for works in the campus of **Sub-jails.**

- (iv) **An extra 20%** on Rates of Labour, Rates of Materials, Rates of Works, Conveyance Charges and Head Load shall be allowed for works in **Reserve Forest Areas.**

4. FOR WORKS IN HILLS:

As the transport facilities in most of the Hilly Areas are now considerably improved and as there is no necessity for allowing extra percentage as hitherto followed, the Hilly Areas are now again regrouped as detailed hereunder and the extra percentage allowable has been revised accordingly and fixed.

The conveyance table approved and furnished in the schedule of rates under the Head **V. Conveyance Table, (B). Conveyance of Materials by Road on Hills** shall be adopted for all works in hills.

- (i) For works in **Nilgiris District an extra 40% on the** rates of labour, rates of work, head load and an extra 25% on the rates of materials shall be allowed.
- (ii) For works in **Mudumalai Sanctuary, Shandy Nallah Sheep Farm, Dansandle areas, an extra 40%** over rates of labour, rates of work and head load and an extra 25% on the rates of materials shall be allowed.
- (iii) For works in **Valparai Area an extra 40% on the** rates of labour, rates of work, head load and an extra 25% on the rates of materials shall be allowed.
- (iv) For works in **Gudiyalathur, Siruvani, Thavalamalai Hills, Talavadi Hills, Bargur Hills, Anamalai, Chennimalai and Sivanmalai Hills an extra 20%** on the Rates of Labour, Rates of Materials, Rates of Works and Head Load shall be allowed.
- (v) **For works in Western Ghats of Madurai, Virudhunagar, Coimbatore, Tirunelveli & Kanyakumari Districts an extra 20%** on the Rates of Labour, Rates of Materials, Rates of Works and Head Load shall be allowed.

- (vi) (a) **An extra 50%** on the Rates of Labour for works in Thekkady shall be allowed.
- (b) **Add 25% extra** shall be allowable on the Rates of Materials which are to be supplied at Thekkady, subject to the condition that there shall not be any extra on conveyance, tollgate fee, interstate allowance, etc. The conveyance charge as applicable for Ghat Road, Cart Track, etc., as per schedule of rates is only applicable.
- (vii) **An extra 60%** shall be allowable on the Rates of Materials to be supplied for Periyar Dam Site subject to the condition that there shall not be any extra on conveyance, tollgate fee, interstate allowance, etc. The conveyance charge as applicable for Ghat Road, Cart Track, etc., as per schedule of rates is only applicable.
- (viii) **An extra 100%** on the Rates of Labour for works in Periyar Dam Site under normal condition shall be allowed.
- (ix) **An extra 150%** on the Rates of Labour for works in Periyar Dam Site under hanging condition shall be allowed.
- (x) **An extra 50%** on the Rates of Labour, Rates of Materials, Rate of Works and Head Load shall be allowed for the works at Lower Camp above Kuruvanthu Bridge, Bodi Hills, Cumbam mettu, Sirumalai, Pachai Kamatchi Hills, Palani Hills, Tiruparankundram Hills, Idumban Hills, Megamalai Panchayat and Thummakundu Panchayat.
- (xi) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and an extra 25% over the Rates of Materials shall be allowed for the works at Kodaikanal.
- (xii) **An extra 25%** on the Rates of Labour, Rates of Materials, Rates of Works and Head Load shall be allowed for works in Yercaud, Yercaud Sub-Taluk, Boothamalai, Aranuthumalai, Sarugumalai and Thiruchengode Hills in Salem & Namakkal District.

- (xiii) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and **an extra 25%** over the Rates of Materials shall be allowed for works in Kalrayan Hills, Pachamalai Hills and Kolli Hills in Salem & Namakkal Districts.
- (xiv) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and **an extra 25%** over the Rates of Materials shall be allowed for works in Jawadhu Hills, Elagiri Hills, Kalrayan Hills, Nakkanamalai Hills, Naickerner Hills Tiruvannamalai & Vellore Districts.
- (xv) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and **an extra 25%** over the Rates of Materials shall be allowed for works in Piranmalai covering Oduvarpatti, Kattugudi Patti, Ponnadaipattu, V. Pudur Village, Mamalai covering Vannar Irruppu, Nagamangalam Villages, Usilamalai covering Poolankurichi Village, Hillocks at Musundapatti, Usilam, Ammapatti and Thuthampatti in Sivagangai District.
- (xvi) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and **an extra 25%** over the Rates of Materials shall be allowed for works in Chitteri Hills, Sittiling in Kalrayan Hills in Dharmapuri District.
- (xvii) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and **an extra 25%** over the Rates of Materials shall be allowed for works in Kalrayan Hills in Cuddalore & Villupuram Districts.
- (xviii) **An extra 40%** on the Rates of Labour, Rates of Works and Head Load and **an extra 25%** over the Rates of Materials shall be allowed for works in Pachamalai Hills in Tiruchy, Karur & Perambalur Districts.

5. ISLANDS IN RAMANATHAPURAM DISTRICT:

(a). For works in Rameswaram Island:

An extra 25% on the Rates of Labour, Rates of Works and Head Load shall be allowed.

(b). For works in Other Islands:

An extra 125% on the Rates of Labour, Rates of Materials, Rates of Works, Conveyance Charges and Head Load shall be allowed for other Islands in Ramanathapuram viz. (1) Upputhannie Island, (2) Puleevilaichalli Island, (3) Aalaippar Island, (4) Valimunai Island, (5) Appa Island, (6) Thalaiyari Island, (7) Valai Island, (8) Mullai Island, (9) Manoli Island, (10) Minoliputti Island, (11) Nadu Island (12) Nallathannie Island, (13) Pullivasal Island (14) Poomarichan Island, (15) Muyal Island, (16) Singala Island and (17) Kurusedar Island.

(c). For works in Islands of Thoothukudi District:

An extra 125% on the Rates of Labour, Rates of Materials, Rates of Works, Conveyance Charges and Head Load shall be allowed for Van, Kasuvar, Karaichalli Island and Vilankuchali Islands.

6. TUNNELS:

An extra 15% on the Rates of Labour and Rates of Works shall be allowed for works inside Tunnels.

7. DAM SITES UNDER HANGING CONDITION (Other than Periyar Dam Site):

An extra 75% on the Rates of Labour employed for the items of works, which may have to be executed **by hanging from the top of Dam through slings (or) rope ladders to work in dizzy height. (This will apply only for maintenance and repair works).**

8. GENERAL FOOT NOTE:

- (i) The rates of labour means the labour rates fixed under the head, **Rates of Labour.**

- (ii) **Rates of Works** includes the labour for earthwork, refilling foundation, dismantling, jungle clearance, head load, etc., also where human labour alone is involved.
- (iii) The percentage increase provided for the materials are applicable **only for the materials which are quarried or manufactured locally in the specified area.**
- (iv) The percentage increase provided for **Rates of Works** are allowable only on the items where human labour alone is involved.
- (v) The percentage increase provided for **Conveyance Charges** are allowable for the distance covered in the specified area / Special Tract only.
- (vi) The extra percentage allowable as specified above shall not be applicable for the materials / works covered under Annexure-VI "Rates of Other Construction Materials" and Annexure-VII "Rates of Electrical Items of Works". Similarly, no conveyance charges shall be allowed for the items covered under these two categories. The rates approved therein are applicable at site of work.
- (vii) While adopting source of any materials inside the special tracts viz., Corporation limits, Reserve Forest Areas, Hilly Areas, Islands, Dam Sites etc., where extra percentage allowable for the materials which are quarried or manufactured locally, it is the duty of the officer in charge of the work (not below the rank of Assistant Executive Engineer), to analyse and confirm whether the finished cost of such materials / works are higher if the materials are conveyed and brought to the site from the areas outside the specified area, where such extra percentage are not permissible.

- (viii) The necessity of inclusion of relevant footnotes in respect of the districts covered under their region other than the general notes furnished above, if any, may be analysed and recommendations sent to the Engineer-in-Chief, WRD & Chief Engineer (General), PWD, Chennai-5 for consideration by the Schedule of Rates Committee and approval.
- (ix) The basic rates of labour and materials provided are exclusive of all taxes including GST


Engineer-in-Chief &
Chief Engineer (General) WRD,
Chennai – 5. (Member)

 19/07/2022

**STATEMENT SHOWING THE EXTRA PERCENTAGE ALLOWABLE AS PER GENERAL NOTE TO
SCHEDULE OF RATES FOR THE YEAR 2022-2023
(with effect from 19.07.2022)**

S.No	Area	Percentage extra allowable on				
		Labour	Material	Rate of work (where human labour involved)	Convey- ance	Head load
1	For works in (i) Erstwhile Chennai Corporation limits and the belt area of 32 km around erstwhile Chennai Corporation limits (i.e.) prior to formation of Greater Chennai Corporation, (ii) Madurai Corporation limits, (iii) Coimbatore Corporation limits and also for works in Hosur Taluk	10%	-	10%	-	10%
2	For works in Trichy, Salem, Tirunelveli, Tiruppur, Erode, Thoothukudi and Vellore Corporation limits	5%	-	5%	-	5%
3	Restricted Areas					
i	For sewer works under unhygienic condition	10%	-	10%	-	-
ii	For works in Central Jail Campus	10%	-	10%	10%	-
iii	For works in Sub-Jail Campus	5%	-	5%	5%	-
iv	For works in Reserve Forest Areas	20%	20%	20%	20%	20%
4	Hills					
i	For works in Nilgiris District	40%	25%	40%	-	40%
ii	For works at Mudumalai Sanctuary, ShandyNalla Sheep Form, Dansandle Area	40%	25%	40%	-	40%
iii	For works at Valparai	40%	25%	40%	-	40%
iv	For works at Gudiyalathur, Siruvani, Thavalamalai Hills, Thalavadi Hills, Bargur Hills, Anamalai, Chennai Malai and Sivanmalai Hills	20%	20%	20%	-	20%
v	For works in Western Ghats of Madurai, Virudhunagar, Coimbatore, Tirunelveli and Kanyakumari Districts	20%	20%	20%	-	20%
	In Madurai, Theni and Dindigul Districts					
vi	For works at Thekkady	50%	25%	-	-	-
vii	For works at Periyar Dam Site	-	60%	-	-	-
viii	For works at Periyar Dam Site under normal condition	100%	-	-	-	-
ix	For works at Periyar Dam Site under hanging condition	150%	-	-	-	-

Sl. No.	Area	Percentage extra allowable on				
		Labour	Material	Rate of work (where human labour involved)	Conveyance	Head load
x	For works at Lower Camp above Kuruvanthu Bridge, Bodi Hills, Cumbam Mettu, Sirumalai, Pachai Kamatchi Hills, Palani Hills, Tiruparankundram Hills, Irdumban Hills, Megamalai Panchayat and Thummakundu Panchayat	50%	50%	50%	-	50%
xi	For works at Kodaikanal	40%	25%	40%	-	40%
xii	For works at Yercaud Hills, Yercaud Sub-Taluk, Boothamalai, Aranuthumalai, Sarugumalai and Tiruchengodu Hills in Salem and Namakkal Districts	25%	25%	25%	-	25%
xiii	For works at Kalrayan Hills, Pachamalai Hills, Kolli Hills in Salem and Namakkal Districts	40%	25%	40%	-	40%
xiv	For works at Jawadhu Hills, Elagiri Hills, Kalrayan Hills, Nakkanamalai Hills, Naickenneri Hills in Tiruvannamalai and Vellore Districts	40%	25%	40%	-	40%
xv	For works at Piranmalai covering Oduvarpatti, Kattugudipatti, Pannadaipattu, V.Pudur Villages, Mamalai covering Vannar Iruppu, Nagamangalam Villages, Usilamalai covering Poolankurichi Village, Hillocks at Musundapatti, Usilam, Ammapatty and Thuthampatti in Sivagangai District	40%	25%	40%	-	40%
xvi	For works at Chitheri Hills, Sittiling in Kalrayan Hills in Dharmapuri District	40%	25%	40%	-	40%
xvii	For works at Kalrayan Hills in Cuddalore and Villupuram Districts	40%	25%	40%	-	40%
xviii	For works at Pachamalai Hills in Trichy, Karur and Perambalur Districts	40%	25%	40%	-	40%
5	Islands					
i	For works at Rameswaram Island in Ramanathapuram District	25%	-	25%	-	25%
ii	For works in other Islands, viz. Upputhannie, Puleevilaichalli, Alaiappar, Valimunai, Appa, Thalayiari, Valai, Mullai, Manoli, Minidiputti, Nadu, Nallathannie, Pullivasal, Poomarichan, Moyal, Singala, Kuruseedar Islands in Ramanathapuram District	125%	125%	125%	125%	125%

Sl. No.	Area	Percentage extra allowable on				
		Labour	Material	Rate of work (where human labour involved)	Conveyance	Head load
iii	For works in Van, Kasuvar, Karaichalli and Vilankurichi Islands in Thoothukudi District	125%	125%	125%	125%	125%
6	Tunnels					
i	Where Human labour alone is involved	15%	-	15%	-	-
7	Dam sites under hanging condition					
i	For works at dam sites other than Periyar Dam Site, which may be executed by hanging from top of dam through slings or rope ladders to work in dizzy height	75%	-	-	-	-


 Engineer-in-Chief &
 Chief Engineer (General) WRD,
 Chennai - 5. (Member)


 19/07/2022

ANNEXURE-I
RATES OF LABOUR

Sl. No.	Sch. Item No.	Description of Labour	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
I		HIGHLY SKILLED CATEGORY		
1	77A	Laboratory Assistant Grade-I (Post Graduate in Science)	Day	878.00
2	77B	Laboratory Assistant Grade-II (Degree in Science / Degree in Geology for Ground Water)	Day	805.00
3	77C	Laboratory Assistant Grade-III (With Degree Qualification to work as Works Clerk)	Day	724.00
4	76E	B.Sc., (Agriculture) Passed	Day	1039.00
5	90A	Irrigation Community Organiser Grade-I [B.E. (Agri) Passed/ B.Sc. (Agri) Passed / P.G. (Geology) & Rural Development]	Day	1112.00
6	90B	Irrigation Community Organiser Grade-II [B.E. (Agri) Failed / B.Sc. (Agri) Failed / Diploma in Agri. Passed]	Day	926.00
II		SKILLED CATEGORY		
7	5	Boat Mazdoor	Day	611.00
8	25	Hammer Mazdoor	Day	586.00
9	26	Head Mazdoor for Well Sinking	Day	611.00
10	38	Mason for Stone Work-I Class	Day	947.00
11	40	Mechanic-I Class	Day	729.00
12	42	Mopla-I Class	Day	727.00
13	43	Navagonies or Javali Man-I Class	Day	611.00
14	46	Pile Driver	Day	672.00
15	56	Stone Cutter-I Class	Day	727.00
16	68	Well Diver for removing silt-I Class	Day	727.00
17	69	Well Sinker-I Class	Day	821.00
18	70	Well Sinking Diver working with Helmet (above two metres depth of water)	Day	848.00

Sl. No.	Sch. Item No.	Description of Labour	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
19	72	Wodder	Day	611.00
20	97	Geological Assistant	Day	898.00
21	98	Stone & Crusher Operator	Day	642.00
22	104	Laboratory Attendant	Day	523.00
III		SEMI SKILLED CATEGORY		
23	18	Ferry Mazdoor	Day	639.00
24	38A	Mason for Stone Work-II Class	Day	884.00
25	39C	Head Mazdoor	Day	639.00
26	40A	Mechanic-II Class	Day	700.00
27	42A	Mopla-II Class	Day	700.00
28	48	Pump Driver	Day	639.00
29	56A	Stone Cutter-II Class	Day	700.00
30	68A	Well Diver for removing silt-II Class	Day	700.00
31	69A	Well Sinker-II Class	Day	796.00
32	78A	Mazdoor employed for Geological mapping	Day	618.00
33	78B	Mazdoor employed for Pitting, Trenching, Sampling & Drilling works	Day	618.00
34	78C	Mazdoor employed for Geophysical investigation works	Day	618.00
35	78D	Head Mazdoor to Supervise exploratory works	Day	653.00
36	79	Mixer Operator (including concrete mixer)	Day	672.00
37	80	Mixer Driver	Day	639.00
38	99	Heavy Mazdoor	Day	672.00

Sl. No.	Sch. Item No.	Description of Labour	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
NOTE:				
1		The Basic Rate adopted under this Head, "Annexure-I — Rates of Labour" is exclusive of all taxes and GST.		
2		The Rates of Labour other than those mentioned above shall be adopted from the Schedule of Rates issued by the Engineer-in-Chief, Chief Engineer (General) & Chief Engineer, Chennai Region, PWD, Chennai-5		


 Engineer-in-Chief &
 Chief Engineer (General), WRD,
 Chennai - 5.


 19/07/2022

ANNEXURE-II
RATES OF MATERIALS

Sl. No.	Sch. Item No.	Description of Materials	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
		B. STONE AND ROAD MATERIALS		
1	27	Rough Stone for masonry works (Hard Granite)	cum.	449.40
2	28	Rough Stone for revetment works	cum.	388.70
3	29	Jeddy size for revetment (Hard Granite)	cum.	428.00
4	29a	Cut Stone Pillar of size 0.15 x 0.15 x 2.1m	Each	165.60
5	30	From boulders without blasting for revetment	cum.	114.10
6	30a	From boulders without blasting for masonry	cum.	147.45
7	32	Course Rubble Stone for masonry works	cum.	358.50
8	33	Course Rubble Stone for Arch works	cum.	388.80
9	33 (A) I	Chisel Dressed Stone 70cm x 30cm x 29cm	Each	176.70
10	II	Chisel Dressed Stone 37cm x 30cm x 29cm	Each	159.50
11	(B)	Hammer Dressed Stone 37cm x 30cm x 29cm	Each	123.20
12	34	Cut Stone Fully Dressed to size on all faces	cum.	6443.00
13	35	Cut Stone Roughly Dressed	cum.	4433.00
14	36	Ashlar Arch Stone Fully Dressed to size all faces	cum.	4893.00
15	38	Flooring Stone SS Size (Not less than 10cm thick)	sqm.	356.50
16	39 a	Stone Slab for Culvert (3 faces one line dressed) Above 1.2m	cum.	4666.00
17	b	Stone Slab for Culvert (3 faces one line dressed) Upto 1.2m	cum.	4242.00
18	40	Stone Slab for Culvert (3 faces two line dressed)	cum.	5191.00
19	41	For Lintel Coping (3 faces two line dressed)	cum.	5191.00
20	42	Bond Stones	cum.	648.40
21	43 a	Kilometre Stone 1.65 x 0.45 x 0.15m	Each	443.30

Sl. No.	Sch. Item No.	Description of Materials	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
22	44 a	Hectametre Stone 0.9x0.1x0.1m	Each	123.20
23	b	Hectametre Stone 0.75x0.23x0.1m	Each	226.20
24	c	Hectametre Stone 0.9x0.15x0.15m	Each	222.20
25	45 a	Demarcation Stone (two line dressed for top 30 cm) 75 x 15 x 15 cm	Each	91.90
26	b	Demarcation Stone (two line dressed for top 30 cm) 90 x 23 x 23 cm	Each	118.10
27	c	Demarcation Stone (two line dressed for top 30 cm) 75 x 23 x 23 cm	Each	110.00
28	d	Demarcation Stone (two line dressed for top 30 cm) 90 x 15 x 15 cm	Each	99.90
29	e	Demarcation Stone with letter cut 75 x 15 x 15cm	Each	123.20
30	f	Edge Stone 45 x 15 x 15 cm	Each	56.00
31	g(i)	T.R.S. Bench mark stone the exposed surface neatly dressed to a height of 15cm including cutting letters 15 x 15 x 60cm	Each	141.40
32	g(ii)	T.R.S. Bench mark stone the exposed surface neatly dressed to a height of 15cm including cutting letters 10 x 10 x 25cm	Each	102.00
33	46 a	Guard Stone (Two line dressed for 45 cm) 23cm dia 1.0m long	Each	163.60
34	b	Guard Stone (Top 0.7m chisel dressed and 0.50m bottom roughly dressed) 0.23 x 0.23 x 1.20m long. Two line dressed top 45cm) 23cm dia 1.0m long	Each	174.70
35	c	Guard Stone (Top 0.7m chisel dressed and 0.50m bottom roughly dressed) 0.23 x 0.23 x 0.90m long. Two line dressed top 45 cm) 23cm dia 0.90m long	Each	163.60
36	d	Guard Stone (Top 0.7m chisel dressed and 0.50m bottom roughly dressed) 0.15 x 0.15 x 0.90m long. Two line dressed top 45 cm) 23cm dia 0.90m long	Each	114.10
37	e	Guard Stone 23cm dia 0.90m long	Each	84.20

Sl. No.	Sch. Item No.	Description of Materials	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
38	59	Sand for Mortar *	cum.	As per G.O Ms. No. 4 WR (I.Spl.2) Dept., Dated : 06.01.2022
39	60	Sand for Filling *	cum.	
40	62	Clay for Puddle & Masonry	cum.	37.35
41	132	Bentonite Powder - Construction grade	Kg	6.05

NOTE:

1	For road works, the Schedule of Rates of Highways Department may be adopted in respect of materials for which rates are not available in this schedule of Rates.
2	For all the materials viz. Bricks and Tile Products, Stone Jelly, Gravel, Sand, Lime Stone, etc., necessary incidental charges, loading charges and unloading charges have been included in the basic cost of materials listed above. Hence, no separate incidental charges, loading charges and unloading charges shall be allowed for the above materials.
3	The Basic Rate adopted under this Head, "Annexure-II — Rates of Materials" is exclusive of all taxes and GST.
4	* The Market rate of Sand as fixed by the Engineer-in-Chief & Chief Engineer (General) WRD, Chennai -5 vide his Proceedings No. HDO / Sr.DO 1 / 22955 / 2022 / Dated : 01.03.2022 Shall be adopted for estimation purposes.
5	The Rates of Materials other than those mentioned above shall be adopted from the Schedule of Rates issued by the Engineer-in-Chief, Chief Engineer (General) & Chief Engineer, Chennai Region, PWD, Chennai-5


 Engineer-in-Chief &
 Chief Engineer (General) WRD,
 Chennai - 5. (Member)
 19/07/2022

ANNEXURE-III
RATES OF WORKS

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
		A. Clearing the Site		
1	1	Clearing Heavy Jungle	sqm.	7.40
2	2	Clearing Light Jungle	sqm.	5.55
3	3	Clearing Scrub Jungle	sqm.	5.15
4	4	Uprooting & Removing Large Palmyrah / Coconut Stumps	Each	152.65
5	5	Uprooting & Removing Small Palmyrah / Coconut Stumps	Each	109.65
6	9	Removing Weeds in Channel and Drain	sqm.	1.95
7	9C	Cleaning Juliflora Jungle with Uprooting	sqm.	8.45
8	9D	Cleaning Juliflora Jungle without Uprooting	sqm.	6.40
		B. Dismantling		
		Dismantling, clearing away and carefully stacking materials useful for re-use for any thickness of walls		
18	18	Cut Stone Slab over culverts upto 3.3m height below GL	cum.	1017.00
19	19	Cut Stone Slab over culverts over 3.3m height below GL	cum.	1060.00
20	20	Removal of Cut Stone Slabs / RCC Cover Slabs	sqm.	442.00
21	22	Refixing Cut Stone Slab / RCC Cover Slab	sqm.	485.00
22	32	Dry Stones Apron or Revetment, stacking within 40m lead	cum.	113.40
23	33	Grouted Stones Apron or Revetment, stacking within 40m lead	cum.	132.40
24	34	Dry Stone Masonry Walls	cum.	96.50

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
		C. Quarrying and Blasting		
29	39	Hard rock measured in solid including blasting & stacking	cum.	751.00
30	39A	Removing hard rock by wedging, chiselling and trimming to proper shape where blasting is prohibited.	cum.	1501.00
31	40A	Medium rock and dense medium rock requiring blasting	cum.	382.00
32	42A	Extra for every additional 10m lead or part thereof over the initial lead for blasted materials	cum.	8.95
33	42B	Extra for every additional 1m lift or part thereof over the initial lift of 2m for blasted materials	cum.	9.20
34	44	Benching, hard rock upto an average 10 cm depth	sqm.	727.00
35	46	Drilling holes in hard granite 40mm diameter	RM	239.70
36	46A	Drilling holes in hard granite 45mm diameter	RM	281.00
37	47	Drilling holes in hard granite 50mm diameter	RM	337.00
38	48	Drilling holes in hard granite 75mm diameter	RM	383.00
39	48A	Drilling holes in hard granite 32mm diameter	RM	203.50
		D. Earth Work		
40	49	ORDINARY SOIL (SS20A) Earth work excavating and depositing on bank with initial lead of 10m & initial lift of 2m in Sand, silt or other loose soil, wet sand or silt not under water, light black cotton soil sandy loam and ordinary soil including excavated earth (SS20A)	cum.	77.75
41	50	ORDINARY SOIL (SS20B) Earth work excavating and depositing on bank with initial lead of 10m & initial lift of 2m in Sand, silt or other loose soil, wet sand or silt not under water, light black cotton soil, sandy loam and ordinary soil including excavated earth (SS20B)	cum.	70.95
42	50A	Sand and Silt Under Water (SS20B) Earth work excavating and depositing on bank with initial lead of 10 m & initial lift of 2m in Slush and silt under water upto 0.75m depth requiring the aid of basket and vessels (SS20B)	cum.	88.75
43	50B	Trimming the bed and the side slope of the bank in all soils except hard rock upto a thickness of 7.5 cm and making it ready to receive the concrete	sqm.	18.00

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
44	50C	Trimming the bed and the side slope of the bank in all soils except hard rock upto a thickness of 7.5 cm to 15 cm and making it ready to receive the concrete	sqm.	21.85
45	50D	Sectioning during forming bunds when earth moving machinery, lorries and rollers are used for consolidation.	cum.	13.20
46	61	HGS SS.20.A. Earth work excavating and depositing on bank with initial lead of 10 m & initial lift of 2m in Hard stiff clay, stiff black cotton, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders SS.20.A.	cum.	113.15
47	62	HGS SS.20.B. Earth work excavating and depositing on bank with initial lead of 10 m & initial lift of 2m in Hard stiff clay, stiff black cotton, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders SS.20B	cum.	106.25
48	67	SDR - (Not Requiring Blasting) Earth work excavating and depositing on bank with initial lead of 10 m & initial lift of 2m in Soft disintegrated rock, laterite, soft rock or kankar, not requiring blasting.	cum.	158.20
49	67A	LOOSE BOULDERS Earth work excavating and depositing on bank with initial lead of 10 m & initial lift of 2m in loose boulders in excavation of various size 150mm to 625 mm	cum.	251.30
50	72	MR-&-DMR (Not Requiring Blasting) Earth work excavating and depositing on bank with initial lead of 10 m & initial lift of 2m in medium rock and dense medium rock not requiring blasting	cum.	277.90
51	76	Extra for every additional 10 metre lead or part thereof over the initial lead	cum.	12.85
52	77	Extra for every additional 1 metre lift or part thereof over the initial lift	cum.	10.00
53	78	Breaking clods, consolidating and sectioning	cum.	6.30
54	78A	Breaking clods, consolidating and sectioning the earth scooped by Bull Dozers.	cum.	19.55
55	79	Add to relevant T.N.D.S.S. No.20.A, rates for new tank bunds and closing breaches for extra watering and consolidation		
56	A	By hand roller	cum.	21.75

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
57	B	By power roller including hire charges	cum.	36.95
58	80	Benching Old Embankment Slopes 45cm x 45cm	sqm.	4.00
59	81	Puddle wall work	cum.	175.50
60	82A	Turfing in slopes including watering and fixing with initial lead upto 50m	sqm.	36.95
61	84	Refilling with excavated sand complying with standard specification for filling in foundation and basement.	cum.	32.45
62	85	Refilling with excavated soil (other than sand) complying with standard specification for filling in foundation and basement.	cum.	36.95
63		E. Open Well Excavation		
64	86	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in sand, silt or other loose soil, Wet sand or silt not under water, light black cotton soil, sandy loam and ordinary soil - First depth of 2 metre.	cum.	70.95
65	88	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravelly soil - First depth of 2 metre	cum.	105.90
66	89	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - First depth of 2 metre	cum.	163.20
67	90	Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in medium rock and dense medium rock not requiring blasting - First depth of 2 metre	cum.	262.70
68	90A	Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in medium rock and dense medium rock requiring blasting - First depth of 2 metre	cum.	393.00
69	91	Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard granite measured in solid including blasting and stacking - First depth of 2 metre	cum.	770.00

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
70	92A	Sinking well in loose soils, light black cotton soil, sandy loam and ordinary soil under water including bailing or pumping charges, if necessary, etc., complete - First depth of 2 metres	cum.	110.00
71	92B	Sinking well in Sand, including bailing or pumping charges, if necessary, etc., complete - First depth of 2 metres	cum.	154.40
72	92C	Sinking well in hard stiff clay, light black cotton soil, hard red earth, shales, murram, gravel, stoney earth, and earth mixed with small size boulders and hard gravelly soil including bailing or pumping charges if necessary etc., complete - First depth of 2 metres	cum.	154.40
		F. Rate for Earth Work Deploying Machinery		
73	1	Earth work in all soils except hard rock requiring blasting and conveying for formation of bund with lead of 0 to 100 metre deploying earth moving machinery and tippers including benching, formation of bunds, breaking clods, sectioning etc., complete	cum.	51.45
74	1a	Earth work in all soils except hard rock requiring blasting and conveying for formation of bund with an extra lead of every 100 metre or part thereof deploying earth moving machinery and tippers including benching, formation of bunds, breaking clods, sectioning etc., complete	cum.	4.05
75	2	Earth work deploying earth moving machinery for desilting channel and forming bund on either side and depositing the earth on banks including jungle clearance etc complete		
76	a	having width up to 3m	cum.	30.35
77	b	having width of 3m -10m	cum.	37.20
78	3	Earth work excavation deploying earth moving machinery for desilting channel having a width of more than 10m and forming bund on either sides and depositing the earth on banks including jungle clearance etc complete	cum.	43.30

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
		G. LIFT CHARGES - Concrete - Brick or Stone Masonry - Above or Below Ground Level		
		STATEMENT I		
	A	Concrete - Above Ground Level		
79	1	Add to the basic rates for works upto 4.50M height in ground floor (height to be reckoned from floor level ie., plinth level in GL)	cum.	113.60
80	2	Add for works in every upper floor over the rate of preceding floor	cum.	223.80
		STATEMENT II		
	A	Concrete - Below Ground Level		
83	1	Add the basic rate for works 1.50m depth and upto 4.5m depth below ground level	cum.	111.80
84	2	Add the basic rate for works 4.50m depth and upto 9m depth below ground level	cum.	224.40
85	3	Add extra over the above item 2 for every additional 4.50m depth beyond 9.0m depth below ground level	cum.	224.40
		H. Concrete Vibrators		
89	1	Where vibrators are specified for consolidation in PCC, this rate per Cu.M over and above the provision made in the standard data book for consolidation with manual labour may be allowed.	cum.	66.20
90	2	Where vibrators are specified for consolidation in RCC, this rate per Cu.M over and above the provision made in the standard data book for consolidation with manual labour may be allowed.	cum.	89.40
		L. Miscellaneous		
95	369 B	Supplying and filling up the empty cement gunny bags with sand, stitching them, conveying the same to site and stacking as directed within a lead of 10 m excluding cost of bags, Jute, thread, needle, sand etc., (Labour only)	Bag	8.10
96	369 B (i)	Driving piles up to 15 cm dia in river bed	RM	25.60
97	(ii)	Pointing the edge and driving bamboo / casurina / eucalyptus piles into river bed for the first 1m depth below ground level.	Each	21.85

Sl. No.	Sch. Item No.	Description of Works	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
98	(iii)	Driving bamboo / casurina / eucalyptus piles into ground beyond 1m depth from ground level. For every 1m (or) part thereof	RM	21.85
		M. River Conservancy of Korambu Works		
99	375A	Brush wood bundles one metre girth and one metre long within an initial lead of 1.6 K.M.	one bundle	4.15
100	375B	Extra for every additional lead of 1.6 K.M (for the above item)	one bundle	0.49
101	378A	Driving casurina piles into bed including scaffolding etc., complete	RM	10.60
102	378B	Casurina walling pieces 40 mm to 50 mm diameter including fixing with nails and tying with ropes	RM	14.80
		P. Breaking Metals		
103	50A	Labour charges for breaking 40mm metal from departmental blasted stones	cum.	385.00
104	50B	Labour charges for breaking 20mm metal from departmental blasted stones	cum.	576.00
105	50C	Labour charges for breaking 50mm metal from departmental blasted stones	cum.	231.00
Note:	The Basic Rate adopted under this Head, "Annexure-III – Rates of Works" is exclusive of all taxes and GST.			
FOOT NOTE:				
DISMANTLING				
1	For dismantling 0.75m below ground level 25% extra over the basic rates (i.e. the rates already available in the Schedule of Rates for dismantling is allowed).			
2	The rate of dismantling lime concrete, cement concrete and reinforced cement concrete are exclusive of bailing out water charges. The rate is same in all floors.			
3	Add 25% extra for cause of restricted partial dismantling in existing structures where extra care is required for safeguarding the main structure.			
QUARRYING AND BLASTING - APPLICABLE FOR SCHEDULE ITEM No. 39 and 39A				
1	The deduction of 40% is to be made for the quantity of voids on stock measurement and payment is for the lesser of the two viz. solid measurement (or) stock measurement minus 40% of stock measurement for voids.			
2	The rates for extra leads and lifts are on the quantity as per solid measurements or stock measurements less 40% for voids whichever is less. These rates are applicable for head load only. The Notes 3, 4, 5 under (D) Earth Work shall be applicable to Schedule Item No.39, 39A and 40A			

EARTH WORK	
1	Standard specification No.20A requires breaking clods, ramming and sectioning of spoil bank and compacting by watering and consolidation in accordance with TNBP.
2	Standard specification No.20B does not requires breaking clods, ramming, sectioning but require neat banking in accordance with the standard specifications.
3	Double the relevant rate for standard specification No.20B will apply to excavation in all soils and rock classification given above for foundation of buildings, abutments, piers, wings and returns of bridges, culverts, sluices, regulators and cross masonry works, retaining walls, toe walls, cut-off walls and body walls of anicuts, weirs, retaining walls of causeway, bed dams, trenches for water supply and drainage works for laying pipes and sewers, pits and avenue trees, trial pits and pits for poles and towers and toe wall for revetment.
4	An extra 50% over the rate of ordinary excavation in all soils, the rock classification given above shall be allowed for drains, channels and canal having bed width 1.25 metre and below. The extra percentage is applicable only for depth upto 2 metre; the depth being measured from the bottom of excavation.
5	An extra 25% over the rate of ordinary excavation in all the soils and rock classification given above shall be allowed for drains, channels and canal having bed width 1.25 metre to 2 metre. The extra percentage is applicable only for depth upto 2 metre. The depth being measured from the bottom of excavation.
OPEN WELL EXCAVATION	
1	Upto 2 metre diameter of wall 10% excess will be allowed over the basic rates of open well excavation.
2	The rates do not include bailing charges. The de-watering is to be done departmentally. 10% of cost of excavation shall be allowed for de-watering for estimate purpose. Actuals (or) 10% wherever is less to be allowed for de-watering charges. For any expenditure above this percentage, prior approval of the Superintending Engineer should be obtained.
3	For open well excavation for rates upto 12 metre depth, the progress should be X, 2X, 3X, 4X, 5X, 6X and for rates beyond 12 metre depth, the progress should be 8X, 10X, 12X, 14X, 16X & so on.
SINKING OF WELLS	
1	For sinking of wells 20% excess will be allowed over the basic rates for wells of diameter 3 metre and above.
2	For well sinking for rates upto 12 metre depth, the progress should be Y, 2Y, 4Y, 6Y, 8Y and 10Y and for rates beyond 12 metre depth, the progress should be 13Y, 16Y, 19Y and so on.
3	The rates of sinking wells will apply when sinking is underwater at the initial depth itself. If water is met with at a lower depth, the rate applicable for open excavation shall be adopted upto the depth at which the water is met with. Beyond that the rate for the portion underwater shall be the rate for the previous stage under open well excavation plus 2Y.

4	A schematic working sheet for open well excavation and sinking of wells for deriving the rates is given below:	
Open Well	Depth in metres	Sinking of Wells
X	2	Y
2X	4	2Y
3X	6	4Y
4X	8	6Y
5X	10	8Y
6X - 12 metre	12	10Y
8X	14	13Y
10X and so on	16	16Y and so on
Note: X - Basic rate for open well excavation		
Note: Y - Basic rate for sinking well		
LIFT CHARGES - CONCRETE - BRICK OR STONE MASONRY ABOVE OR BELOW GROUND LEVEL		
A	Concrete above ground level	
B	Brick or Stone Masonry above ground level	
	The extra rates as allowed for building works are applicable to the irrigation and road works. The extra rates may be allowed for the structure beyond 1 metre from ground level	
A	Concrete above ground level	
B	Brick or Stone Masonry above ground level	
	The above extra rates are applicable to building, irrigation and road works. The extra rates may be allowed for the structure beyond 1.50 metre from ground level. (The depth is to be reckoned from 1.50 metre below ground level).	
General	The rates for items other than those mentioned above shall be adopted from the Schedule of Rates issued by the Engineer-in-Chief, Chief Engineer (General) & Chief Engineer Chennai Region, PWD, Chennai -5.	


 Engineer-in-Chief &
 Chief Engineer (General) WRD,
 Chennai - 5. (Member)


 17/07/2022

ANNEXURE-VIII
RATES OF MODERN TECHNIQUES

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
	I. RATES OF MATERIALS		
	Geogrids		
1	Bi-Axial Extruded Geogrids of Minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction	sqm.	106.00
2	Bi-Axial Extruded Geogrids of Minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction	sqm.	121.00
3	Bi-Axial Extruded Geogrids of Minimum Tensile Strength 30 kN/m in the longitudinal and transverse direction	sqm.	196.00
4	Bi-Axial Extruded Geogrids of Minimum Tensile Strength 40 kN/m in the longitudinal and transverse direction	sqm.	291.00
5	Synthetic Geogrid having Ultimate Tensile Strength 100 kN /m	sqm.	233.00
6	Synthetic Geogrid having Ultimate Tensile Strength 150 kN /m	sqm.	243.00
7	Synthetic Geogrid having Ultimate Tensile Strength 200 kN /m	sqm.	339.00
8	Synthetic Geogrid having Ultimate Tensile Strength 250 kN /m	sqm.	376.00
9	Synthetic Geogrid having Ultimate Tensile Strength 300 kN /m	sqm.	386.00
10	Synthetic Geogrid having Ultimate Tensile Strength 350 kN /m	sqm.	392.00
11	Synthetic Geogrid having Ultimate Tensile Strength 400 kN /m	sqm.	503.00
12	Synthetic Geogrid having Ultimate Tensile Strength 500 kN /m	sqm.	567.00
13	Synthetic Geogrid having Ultimate Tensile Strength 600 kN /m	sqm.	583.00
14	Synthetic Geogrid having Ultimate Tensile Strength 700 kN /m	sqm.	726.00
15	Synthetic Geogrid having Ultimate Tensile Strength 800 kN /m	sqm.	795.00
16	Synthetic Geogrid having Ultimate Tensile Strength 900 kN /m	sqm.	954.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
17	Synthetic Geogrid having Ultimate Tensile Strength 1000 kN /m	sqm.	1086.00
18	Synthetic Geogrid having Ultimate Tensile Strength 1100 kN /m	sqm.	1060.00
19	Synthetic Geogrid having Ultimate Tensile Strength 1200 kN /m	sqm.	1153.00
	Drainage Composite		
20	Geosynthetic Drainage with Two Filtering Non-woven Geotextiles having a "W" configuration as longitudinal parallel channels. Minimum thickness to be 7.2mm, with two filtering UV stabilized polypropylene nonwoven Geotextiles of minimum thickness of 0.75mm having pores of 150 micron and tensile strength of 8.0 kN/m and having plane flow capacity of 2.1 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure, tensile strength of 18 kN/m with mass per unit area of 740 gsm.	sqm.	561.00
21	Geosynthetic Drainage Composite having thermobonding a draining core - HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyethylene film and a nonwoven Geotextiles having mass per unit area 130 g/m ² and tensile strength of 8.0 kN/m having in plane flow capacity of 0.7 L / (ms) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 13.5 kN/m with mass per unit area of 830 gsm.,	sqm.	667.00
	II. RATES OF WORKS		
	A. Geosynthetics - Geotextiles		
1	Providing and laying Woven Geotextiles of Type-I on the prepared subgrade as the separator cum reinforcement with necessary overlap as per drawing and as per MORTH Specification 702	sqm.	156.00
2	Providing and laying Woven Geotextiles of Type-II on the prepared subgrade as the separator cum reinforcement with necessary overlap as per drawing and as per MORTH Specification 702	sqm.	144.00
3	Providing and laying Woven Geotextiles of Type-III on the prepared subgrade as the separator cum reinforcement with necessary overlap as per drawing and as per MORTH Specification 702	sqm.	130.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
4	Providing and laying needle punched and mechanically bonded Non-woven Geotextiles of Type-I indigenously manufactured from high quality fibres on the prepared subgrade for separation as per MORTH Specification 702	sqm.	148.00
5	Providing and laying needle punched and mechanically bonded Non-woven Geotextiles of Type-II indigenously manufactured from high quality fibres on the prepared subgrade for separation as per MORTH Specification 702	sqm.	132.00
6	Providing and laying needle punched and mechanically bonded Non-woven Geotextiles of Type-III indigenously manufactured from high quality fibres on the prepared subgrade for separation	sqm.	116.00
	B. Geosynthetics - Geomembranes		
7	Supplying and laying of HDPE Geomembrane 750 micron thickness of smooth surfaces on both sides / only one face textured. The width of geomembrane roll shall not be less than 4.5m at easily accessible location including top and bottom with all leads and lifts manpower and machinery, materials labour etc, complete and as directed by Engineer-in-Charge as per MORTH Specification 701	sqm.	143.00
8	Supplying and laying of HDPE Geomembrane 1000 micron thickness of smooth surfaces on both sides / only one face textured. The width of geomembrane roll shall not be less than 4.5m at easily accessible location including top and bottom with all leads and lifts, manpower materials and machinery labour etc, complete and as directed by Engineer-in-Charge as per MORTH Specification 701	sqm.	172.00
9	Supplying and laying of HDPE Geomembrane 1500 micron thickness of smooth surfaces on both sides / only one face textured. The width of geomembrane roll shall not be less than 4.5m at easily accessible location including top and bottom with all leads and lifts, manpower materials and machinery labour etc, complete and as directed by Engineer-in-Charge as per MORTH Specification 701	sqm.	200.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
	C. Geogrids		
10	Supplying and laying high strength flexible Geogrids (HSFG) as soil reinforcement / basal reinforcement as per MORTH 3100 and IRC 113, made of high tenacity polyester core with polyethylene coating with Minimum Long Term Design Strength (LTDS) of more than 50% of Ultimate Tensile Strength at 30 degree celsius corresponding to 12% strain		
a	Ultimate Tensile Strength - 100 kN/m	sqm.	368.00
b	Ultimate Tensile Strength - 150 kN/m	sqm.	384.00
c	Ultimate Tensile Strength - 200 kN/m	sqm.	524.00
d	Ultimate Tensile Strength - 250 kN/m	sqm.	579.00
e	Ultimate Tensile Strength - 300 kN/m	sqm.	595.00
f	Ultimate Tensile Strength - 350 kN/m	sqm.	602.00
g	Ultimate Tensile Strength - 400 kN/m	sqm.	766.00
h	Ultimate Tensile Strength - 500 kN/m	sqm.	860.00
i	Ultimate Tensile Strength - 600 kN/m	sqm.	883.00
j	Ultimate Tensile Strength - 700 kN/m	sqm.	1094.00
k	Ultimate Tensile Strength - 800 kN/m	sqm.	1195.00
l	Ultimate Tensile Strength - 900 kN/m	sqm.	1429.00
m	Ultimate Tensile Strength - 1000 kN/m	sqm.	1624.00
n	Ultimate Tensile Strength - 1100 kN/m	sqm.	1585.00
o	Ultimate Tensile Strength - 1200 kN/m	sqm.	1722.00
11	Supplying and laying of Bi-Axial Extruded High Modulus Polypropylene Geogrids conforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum Tensile Strength 15 kN/m in the longitudinal and transverse direction, with 5kN/m and 7kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm x 38mm mesh opening.	sqm.	181.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
12	Supplying and laying of Bi-Axial Extruded High Modulus Polypropylene Geogrids conforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum Tensile Strength 20 kN/m in the longitudinal and transverse direction, with 7 kN/m and 14 kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm x 38mm mesh opening.	sqm.	205.00
13	Supplying and laying of Bi-Axial Extruded High Modulus Polypropylene Geogrids conforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum Tensile Strength 30 kN/m in the longitudinal and transverse direction, with 10.5 kN/m and 21kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm x 38mm mesh opening.	sqm.	314.00
14	Supplying and laying of Bi-Axial Extruded High Modulus Polypropylene Geogrids conforming to MORTH SPECIFICATION for base/sub-base reinforcement having minimum Tensile Strength 40 kN/m in the longitudinal and transverse direction, with 14 kN/m and 28 kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm d 38mm mesh opening	sqm.	454.00
15	Providing and laying Fibreglass Geogrids of Tensile Strength - 50 kN/m manufactured from high quality fibre glass strands and coated with a polymer modified bitumen as reinforcement to asphalt overlay flexible pavements and asphalt over distressed grid PCC as per MORTH Specification 708	sqm.	159.00
16	Providing and laying fibreglass geogrid of Tensile Strength - 100 kN/m manufactured from high quality fibre glass strands and coated with a polymer modified bitumen as reinforcement to asphalt overlay flexible pavements and asphalt over distressed grid PCC as per MORTH Specification 708	sqm.	257.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
	D. Geosynthetic Clay Liners (GCL)		
17	Supplying and laying of 6.5mm thick GCL consisting of a layer of bentonite encapsuled between two nonwoven polypropylene needle punched Geotextiles with 11 kN/m tensile strength in longitudinal direction and 4200 g/me bentonite content. The width of GCL roll shall not be less than 4.55m at easily accessible location including top and bottom with all leads and lifts manpower and machinery materials labour etc complete and as directed by Engineer-in-Charge as per MORTH Specification 700	sqm.	452.00
18	Supplying and laying of 5mm thick GCL consisting of a layer of bentonite encapsuled between two nonwoven polypropylene needle punched Geotextiles with 11.7 kN/m tensile strength in longitudinal direction and 3000 g/me bentonite content. The width of GCL roll shall not be less than 5m at easily accessible location including top and bottom with all leads and lifts manpower and machinery materials labour etc complete and as directed by Engineer-in-Charge as per MORTH Specification 700	sqm.	436.00
	E. Drainage Composite		
19	Supplying and laying of drainage composite for use behind walls, between two different fills, alongside-drains of road, below concrete lining of canals etc. Geocomposite for planar drainage, realized by thermo bonding a draining core in extruded monofilaments with two filtering nonwoven Geotextiles that may also be working as separation or protecting layers. The draining three dimensional core will have a "W" configuration as longitudinal parallel channels. Minimum thickness to be 7.2mm, with two filtering UV stabilized polypropylene nonwoven Geotextiles of minimum thickness of 0.75mm characteristic opening size (O90) of 110 micron and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, Geocomposite having in plane flow capacity of 2.1 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 18 kN/m with mass per unit area of 740 gsm, supplied in the form of roll for easy transportation to site of work as per detailed specification all complete as per directions of Engineer-in Charge	sqm.	852.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
20	Supplying and laying of drainage composite for use behind walls, between two different fills, alongside drains of road, below concrete lining of canals etc. having thermobonding a draining core – HDPE geonet comprises of two sets of parallel overlaid ribs integrally connected to have a rhomboidal shape with a polyethylene film and a nonwoven Geotextiles having mass per unit area 130 gsm and tensile strength of 8.0 kN/m that will be working as separation or protecting layer, Geocomposite having in plane flow capacity of 0.7 L / (m.s) at hydraulic gradient of 1.0 & 20 kPa pressure and tensile strength of 13.5 kN/m , with mass per unit area of 830 gsm, at easily accessible location including top and bottom, with all leads and lifts, materials, manpower and machinery, materials, labour etc., complete and as directed by Engineer-in-Charge	sqm.	1008.00
	VI. Gabion		
21	Providing and making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh Gabion Boxes as per IS 16014:2012, MORTH Clause 2500, of required size, Mesh Type 10 x 12 (D=100mm with tolerance of + 2%) Zinc Coated, Mesh Wire diameter 3.0 mm, mechanically edged / selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2mm, supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per direction of Engineer-in-Charge	cum.	3447.00
22	Providing and making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh Gabion Boxes as per IS 16014:2012, MORTH Clause 2500, of required size, Mesh type 10 x 12 (D= 100mm with tolerance of A 2 ⁰ /o) Zizzc -F PVC Coated, Mesh wire diameter 2.7 / 3.7mm, mechanically edged / selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2 / 3.2mm (ID/OD), supplied @3 ⁰ /o by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer-in-Charge	cum.	3673.00

Sl. No.	Description	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
23	Providing and making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh Gabion Boxes as per IS 16014:2018, SP 116:2018 of required size, Mesh type 10 x 12 (D=100mm with tolerance of 3-2%), Zinc + 10a/o Aluminium Alloy + PVC Coated, Mesh Wire diameter 2.7 / 3.7mm (ID/OD), mechanically edged / selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2 / 3.2mm (ID/OD), supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200mm, as per drawing, all complete as per directions of Engineer-in-Charge	cum.	4201.00
24	Carrying out Topographical survey using DGPS/ HRSI Image/ Drone/ Modern technology latest equipment integrated with latest technologies and preparation of River area maps. A. Superimposing, Ortho-mosaic (<3.6cm/Pixel), DEM, DSM in GIS format. B. GCP at every 250m grid. C. Superimposing village maps. D. 1m contours. E. 5x5m RL levels. F. All format soft copy.	sq.km	13750.00
25	Arranging and conducting cadastral survey/ Land survey including water logged area under water profile for establishing of boundaries of the river banks, Roads, existing spot (grid size 20m x50m) level on upstream and downstream of proposed structure alignment to a distance of 300m and 200m respectively, taking cross section at 250m interval and Longitudinal section at 100m interval contour to the area of 24 sq.km and plotting of survey points of the proposed structure including transportation of necessary equipment to the site etc.,	sq.km	74500.00
NOTE:			
1	The Basic Rate adopted under this Head, "Annexure-VIII - Modern Techniques" is exclusive of all taxes and GST.		


 Engineer-in-Chief &
 Chief Engineer (General) WRD,
 Chennai - 5. (Member)

ANNEXURE-XII

RATES OF GATE / HOIST AND ALLIED WORKS FOR IRRIGATION PROJECTS

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
I	GATES AND HOISTS FOR DAM		
1	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, wall plates, seal seats, anchors, anchor girders, yoke girders, tie flats, trunnion supports, rope and pulley supports etc., with all accessories for spillway radial gates including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set embedded parts in tonnes $= 0.0177 \times (L^2 \times H \times h)^{0.673}$ Where (L) is length in m = clear distance between piers (H) is height of radial gate in m = FRL - Sill level + 0.15 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 97.9% of computed weight of 1 set	Tonne	217500.00
2	Design, fabrication, supply, erection, testing and commissioning of radial gate consisting of skin plate, stiffeners, horizontal girders, sector arms, trunnion assemblies, tie beam, pulley supports, bracings, rubber seals, clamps etc., with all accessories for spillway including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of 1 spillway gate in tonnes $= 0.0710 \times (L^2 \times H \times h)^{0.673}$ Where, (L) is length in m = clear distance between piers (H) is height of radial gate in m = FRL - Sill level + 0.15 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 92.5% of computed weight of 1 gate	Tonne	272930.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
3	Design, fabrication, supply, erection, testing and commissioning of electrically operated rope drum hoist with deck bridge of adequate capacity consisting of base frames, rope drums, connecting shaft, gear system, brake system, electric motor, wire ropes, gate position indicator, manual operation arrangement etc., with all accessories for spillway radial gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, greasing, providing hand railing and approach staircase with gate to hoist platform, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Hoist capacity in t including 25 % reserve capacity= 1.5 x Wt. of gate(Hoist capacity shall be rounded off to next 10 tonne) 2. Weight of hoist with all accessories: 175 kg. per tonne capacity of hoist2. Quantity of structural steel = 39.2% of computed weight of 1 hoist	Tonne	62630.00
4	Design, fabrication, supply, erection and commissioning of 1 metre wide catwalk connecting spillway piers / abutments at trunnion platform level including cost of all materials, machinery, labour, cutting, aligning welding, anchoring, finishing, cleaning, applying one coat of zinc rich epoxy primer and two coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of catwalk: 300 kg. per metre length of catwalk 2. Quantity of structural steel = 95.6% of computed weight per metre length	RM	38480.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
5	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, slide tracks, seal seats, guide rails, dogging sets for storage of stop log elements etc., with all accessories for spillway stop log gate elements including cost of all materials, machinery labour, cutting, aligning, welding, anchoring, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set embedded parts in tonnes $= 0.0025 \times (L^2 \times H \times h)^{0.716}$ Where (L) is length = clear distance between piers + 0.65 m (H) is total height of stop log gate in m = FRL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 83.8% of computed weight of 1 set	Tonne	356020.00
6	Design, fabrication, supply, erection, testing and commissioning of vertical lift sliding type all interchangeable (except bottom element) stop log gate elements consisting of skin plate, horizontal and vertical girders, stiffeners, lifting pins, bronze padded slide blocks, guide shoes, rubber seals, clamps etc., with all accessories for spillway including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Total wt of 1 set stoplog elements in tonnes $= 0.0553 \times (L^2 \times H \times h)^{0.716}$ Where (L) is length = Clear distance between piers + 0.65 m. (H) is total height of stoplog gate in m = FRL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 99.3% of computed weight of 1 set	Tonne	182550.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
7	Design, fabrication, supply, erection, testing and commissioning of automatic lifting beam with all accessories for handling, lowering and lifting of spillway stop log gate elements including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and two coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other components / materials. Note: 1. Weight of lifting beam in tonnes $= 0.02212 \times (L^2 \times H \times h)^{0.716} / n$ Where (L) is length = clear distance between piers + 0.65 m (H) is total height of stoplog gate in m = FRL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FRL - Sill level (n) is number of gate elements in 1 set 2. Quantity of structural steel = 94.1 % of computed weight of 1 No.	Tonne	215160.00
8	Design, fabrication, supply, erection, testing and commissioning of adequate capacity Class - II type moving gantry crane consisting of rail mounted gantry frame, top platform with hand railing, long / cross travel arrangements, rope drums, gear systems, electric motors, electro-magnetic brake system, cabin, control panel, wire rope, ladder, motorised cable reeling drum etc., with all accessories for operating spillway stop log gate elements and river sluice / canal sluice emergency gates including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing, cleaning, greasing, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Capacity of gantry crane in tonnes including 25% reserve capacity $= 2.5 \times (\text{Weight of 1 set of stop log gate} / \text{number of elements})$ (Hoist capacity shall be rounded off to next 5 tonne) Weight of moving gantry crane: 0.25 tonne per tonne capacity of gantry 2. Quantity of structural steel = 70.4% of computed weight of gantry	Tonne	345690.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
9	Design, fabrication, supply, erection and commissioning of rail track using 45 kg / m standard rails on spillway bridge for movement of gantry crane for handling and operating spillway stop log gate elements / river sluice / canal sluice emergency gate including cost of all materials, machinery, labour, aligning, anchoring, welding, cleaning, applying one coat of zinc rich epoxy primer and two coats of cold applied coal tar epoxy paint for buffers and rail supporting plates etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of gantry track including fixtures: 100 to 105 kg / RM of track. (Weight per metre includes rails with fixtures on both sides) 2. Quantity of structural steel = 5.3% of computed weight of track	RM	9250.00
10	Design, fabrication, supply, erection and commissioning of embedded parts (without groove liner) consisting of sill beam, wheel tracks, seal seats, guide rails, breast wall liner (upto one vent height plus 1 m above the roof of vent) etc., with all accessories for river / canal sluice service gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set embedded parts in tonnes $= 0.0444 \times (L^2 \times H \times h)^{0.659}$ Weight of breast wall lining: 250 kg / sqm of breast wall Where (L) is length = Clear vent opening in m + 0.70 m. (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 85.0% of computed weight of 1 set	Tonne	265960.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
11	Design, fabrication, supply, erection and commissioning of embedded parts (with groove liner upto breast wall level) consisting of sill beam, wheel tracks, seal seats, guide rails, breast wall liner (upto one vent height plus 1 m above the roof of vent) etc., with all accessories for river / canal sluice service gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set embedded parts in tonnes $= 0.0444 \times (L^2 \times H \times h)^{0.659}$ Weight of breast wall lining: 250 kg / sqm of breast wall Weight of groove liner: 200 kg. / sqm of groove lining Where(L) is length = clear vent opening in m + 0.70 m. (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 90.5% of computed weight 1 set	Tonne	213870.00
12	Design, fabrication, supply, erection and commissioning of vent liner using 20 mm thick plates with stiffeners and anchors for river sluice / canal sluice vents including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat zinc rich epoxy primer and four coats cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of vent liner including stiffeners / anchors: 200 kg. / sqm area 2. Quantity of structural steel = 100.0% of computed weight	sqm	32390.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
13	Design, fabrication, supply, erection, testing and commissioning of fixed wheel type vertical lift service gate consisting of skin plate, vertical and horizontal girders, wheels, stiffeners, lifting brackets, guide rollers, ballast blocks, teflon claded rubber seals etc., with all accessories for river sluice /canal sluice vent including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note:1. Wt of 1 gate in tonnes (including ballast) $= 0.0888 (L^2 \times H \times h)^{0.659}$ Where, (L) is length = clear vent opening in m + 0.70 m. (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 47.5% of computed weight of 1 gate	Tonne	186620.00
14	Design, fabrication, supply, erection, testing and commissioning of adequate capacity rope drum hoist or Screw gearing Hoist consisting of hoist platform, rope drum, gear system, electric motor, electro-magnetic brake system, hand operation assembly, control panel, wire rope, pulleys, ladder etc., with all accessories for operating river sluice / canal sluice service gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, greasing, applying one coat zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Capacity of hoist in tonnes including 25% reserve capacity $= 2.5 \times \text{Weight of gate including ballast}$ (Hoist capacity shall be rounded off to next 5 tonne) Weight of hoist with all accessories: 250 kg. per tonne capacity of hoist 2. Quantity of structural steel = 34.0% of computed weight of 1 hoist	Tonne	76620.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
15	Design, fabrication, supply, erection and commissioning of embedded parts (without groove liners) consisting of sill beam, wheel tracks, seal seats, guide rails, breast wall liner upto 1m height above the roof of vent etc., with all accessories for river / canal sluice emergency gate including cost of all materials, machinery, labour, cutting, aligning, welding anchoring, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other components / materials. Note:1. Wt of 1 set embedded parts in tonnes $= 0.0444 \times (L^2 \times H \times h)^{0.659}$ Weight of breast wall lining: 250 kg per sqm of breast wall Where, (L) is length = clear vent opening in m + 0.70 m (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 87.0% of computed weight of 1 set	Tonne	289310.00
16	Design, fabrication, supply, erection and commissioning of embedded parts (with groove liners) consisting of sill beam, wheel tracks, seal seats, guide rails, breast wall liner (upto 1 m above the roof of vent), groove liner upto breast wall level etc., with all accessories for river / canal sluice emergency gate including cost of all materials, machinery labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set embedded parts in tonnes $= 0.0600 \times (L^2 \times H \times h)^{0.659}$ Weight of breast wall lining: 250 kg / sqm of breast wall Weight of groove liner: 200 kg / sqm of groove lining Where, (L) is length = Clear vent opening in m + 0.70 m (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 92.7% of computed weight of 1 set	Tonne	221500.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
17	Design, fabrication, supply, erection, testing and commissioning of fixed wheel type vertical lift emergency gate consisting of skin plate, horizontal and vertical girders, wheels, stiffeners, lifting brackets, guide rollers, ballast blocks, teflon claded rubber seals etc., with all accessories for river sluice / canal sluice vent including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note:1. Wt of 1 gate in tonnes (including ballast) $= 0.0888 (L^2 \times H \times h)^{0.659}$ Where, (L) is length = Clear vent opening in m + 0.70 m. (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 46.7% of computed weight of 1 gate.	Tonne	185610.00
18	Design, fabrication, supply, erection, testing and commissioning of automatic lifting beam with all accessories for handling, lowering and lifting of river sluice / canal sluice emergency gate including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and two coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of lifting beam in tonnes = $0.0090 \times (L^2 \times H \times h)^{0.659}$ Where, (L) is length = Clear vent opening in m + 0.70 m (H) is height of gate in m = Clear vent height in m + 0.30 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 76.3% of computed weight of 1 beam	Tonne	283520.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
II	GATES AND HOISTS FOR BARRAGE:		
19	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, wheel tracks, seal seats, guide rails etc., with all accessories for vertical lift barrage gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other components / materials. Note: 1. Wt of 1 set of embedded parts in tonnes $= 0.0055 (L^2 \times H \times h)^{0.716}$ Where (L) is length = Clear distance between piers in m + 1 m. (H) is total height of gate in m = FRL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 82.3% of computed weight of 1 set	Tonne	348400.00
20	Design, fabrication, supply, erection, testing and commissioning of fixed wheel type vertical lift gate consisting of skin plate, vertical and horizontal girders, wheels, stiffeners, lifting brackets, guide shoes, rubber seals etc., with all accessories for barrage including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of 1 gate in tonnes = $0.0335 (L^2 \times H \times h)^{0.716}$ Where, (L) is length = Clear distance between piers in m + 1 m (H) is total height of gate in m = FRL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FRL - Sill level 2. Quantity of structural steel = 96.7% of computed weight of 1 gate	Tonne	199230.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
21	Design, fabrication, supply, erection and commissioning of structural steel hoist bridge consisting of columns, beams, bracings, stiffeners, ties, chequered plate covering, hand railing, ladder etc., with all other accessories for supporting rope drum hoist for operating barrage gates including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: - Columns (with bracings / anchors / stiffeners): 400 kg. per metre height Beams (with cross beams / stiffeners): 400 kg. per metre span Railing / Chequered plate / Ladder etc: 10 % of wt columns / beams Weight proposed includes all columns / beams for 1 hoist. - Quantity of structural steel = 97.8% of computed weight for 1 span.	Tonne	171740.00
22	Design, fabrication, supply, erection, testing and commissioning of adequate capacity rope drum hoist consisting of hoist platform, rope drums, shafts, pulleys, gear system, electric motor, electro-magnetic brake system, manual operation assembly, gate position indicator, control panel, wire rope etc., with all accessories for operating vertical lift roller gate for barrage including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing, cleaning, greasing, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: - Capacity of hoist in "t" with 25 % reserve capacity = $1.5 \times \text{Wt of gate}$. (Hoist capacity shall be rounded off to next 10 tonne) Weight of hoist with all accessories: 100 kg per tonne capacity of hoist - Quantity of structural steel = 12.4% of computed weight for 1 hoist.	Tonne	57850.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
III	AUTOMATIC OUTFLOW REGULATING GATE FOR BARRAGE / ESCAPE		
23	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, wall plates, seal seats, first stage anchors, anchor girders, anchor bars, trunnion supports etc., with all accessories for outflow regulating automatic gates for barrage/escape including cost of all all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of 1 set embedded parts in tonnes $= 0.046 \times (L^2 \times H \times h)^{0.673}$ Where, (L) is length = Clear distance between piers in m. (H) is height of gate in m = FSL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 94.0% of computed weight for 1 set.	Tonne	263800.00
24	Design, fabrication, supply, erection, testing and commissioning of automatic outflow regulating gate and fulcrum assembly consisting of skin plate, stiffeners, horizontal girders, trunnion assemblies, gate bracket, base plate, rolling surface assembly, link brackets, link assembly, rubber seals, seal clamps etc., with all accessories for barrage / escape including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of gate & fulcrum assembly in tonnes $= 0.1325 \times (L^2 \times H \times h)^{0.673}$ Where, (L) is length = Clear distance between piers in m. (H) is height of gate in m = FSL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 94.2% of computed weight for 1 gate.	Tonne	211950.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
25	Design, fabrication, supply, erection, testing and commissioning of hoisting cum damping system consisting of low level horizontal lever link, low level long actuating lever, high level vertical lever link, high level short actuating lever, high level hoisting bracket, axle for lever system, friction shoes, supporting box for shoes, rack assembly, ratchet pawl, supporting structure, bracket plate etc., with all accessories for outflow regulating automatic gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of hoisting cum damping system in tonnes $= 0.0695 \times (L^2 \times H \times h)^{0.673}$ Where, (L) is length = Clear distance between piers in m. (H) is height of gate in m = FSL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 94.2% of computed weight for 1 gate.	Tonne	291470.00
IV	GATES AND HOISTS FOR CANAL REGULATORS		
26	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, wall plates, first stage anchors, anchor girders, anchor bars, trunnion supports, wire rope / pulley supports etc., with all accessories for canal regulator radial gates including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of 1 set embedded parts in tonnes $= 0.092 \times (L^2 \times H \times h)^{0.673}$ Where, (L) is length = Clear distance between piers in m (H) is height of gate in m = FSL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 95.1% of computed weight for 1 set.	Tonne	217510.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
27	Design, fabrication, supply, erection, testing and commissioning of radial gate consisting of skin plate, stiffeners, horizontal girders, sector arms, trunnion assemblies, tie beam, pulley supports, bracings, rubber seals, seal clamps etc., with all accessories for canal regulator including cost of all materials, machinery, labour, cutting, bending, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of 1 radial gate in tonnes $= 0.1685 \times (L^2 \times H \times h)^{0.673}$ Where (L) is length = Clear distance between piers in m (H) is height of gate in m = FSL - Sill level + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 94.3% of computed weight for 1 gate	Tonne	219660.00
28	Design, fabrication, supply, erection, testing and commissioning of adequate capacity electrically operated rope drum hoist consisting of hoist platforms, rope drums, connecting shaft, gear system, electric motor, electromagnetic brake system, control panel, pulleys, wire rope, manual operation system, railing, ladder etc., with all accessories for operating canal regulator radial gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, greasing, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Capacity of hoist in t with 25 % reserve capacity $= 2.00 \times \text{Wt of gate}$ (Hoist capacity shall be rounded off to next 5 tonne) Weight of hoist with all accessories: 300 kg per tonne capacity of hoist 2. Quantity of structural steel = 66.4% of computed weight for 1 hoist.	Tonne	89760.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
29	Design, fabrication, supply, erection, testing and commissioning of adequate capacity manually operated rope drum hoist consisting of hoist platforms, rope drums, connecting shaft, gear system, brake system, pulleys, wire rope, manual operation system, railing, ladder etc., with all accessories for operating canal regulator radial gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, greasing, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Capacity of hoist in t with 25 % reserve capacity= 2.00 x Wt of gate (Hoist capacity shall be rounded off to next 5 tonne) Weight of hoist with all accessories: 275 kg. per tonne capacity of hoist 2. Quantity of structural steel = 66.4% of computed weight for 1 hoist.	Tonne	82200.00
30	Design, fabrication, supply, erection and commissioning of embedded parts (with top seal seat) consisting of sill beam, wheel tracks, seal seats, guide rails, groove lining upto top etc., with all accessories for vertical lift roller gate for canal escape / regulator including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set of embedded parts in tonnes $= 0.1332 \times (L^2 \times H \times h)^{0.659}$ Where, (L) is length = Clear vent width in m + 0.50 m (H) is height of gate in m = Clear vent height in m + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 95.4% of computed weight for 1 set.	Tonne	236650.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
31	Design, fabrication, supply, erection, testing and commissioning of fixed wheel type vertical lift gate (with top seal) consisting of skin plate, stiffeners, horizontal and vertical girders, wheels, guide rollers, rubber seals etc., with all accessories for canal escape / regulator vent including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Weight of 1 gate in tonnes = $0.0888 (L^2 \times H \times h)^{0.659}$ Where (L) is length = Clear vent width in m + 0.50 m (H) is height of gate in m = Clear vent height in m + 0.20 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 92.1% of computed weight for 1 gate	Tonne	226690.00
32	Design, fabrication, supply, erection, testing and commissioning of adequate capacity screw type hoist consisting of supporting structure, platform, railing, ladder etc., with all accessories for operating canal escape / regulator gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, greasing, applying two coats of zinc chromate red oxide primer and three coats of approved synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Capacity of hoist in t with 25% reserve capacity = $2.50 \times Wt$ of gate. (Hoist capacity shall be rounded off to next 1 tonne) Weight of hoist with all accessories: 300 kg per tonne capacity of hoist 2. Quantity of structural steel = 61.2% of computed weight for 1 hoist.	Tonne	57420.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
33	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, wheel tracks, seal seats, guide rails, gate groove liners etc., with all accessories for canal escape / regulator stop log gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set of embedded parts in tonnes $= 0.0665 \times (L^2 \times H \times h)^{0.716}$ Where, (L) is length = Clear distance between piers in m + 0.50 m. (H) is total height of stoplog gate in m = FSL - Sill level + 0.30 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 95.9% of computed weight for 1 set	Tonne	230190.00
34	Design, fabrication, supply, erection, testing and commissioning of sliding type interchangeable stop log gate elements consisting of skin plate, stiffeners, horizontal and vertical girders, lifting hooks, bronze padded slide blocks, guide shoes, rubber seals etc., with all accessories for canal regulator vent including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coats of zinc rich epoxy primer and three coats of cold applied coal tar seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set of stoplog elements in tonnes $= 0.0995 (L^2 \times H \times h)^{0.716}$ Where, (L) is length = Clear distance between piers in m + 0.50 m (H) is total height of stoplog gate in m = FSL - Sill level + 0.30 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 98.5% of computed weight for 1 gate.	Tonne	209130.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
V	GATES AND HOISTS FOR PUMP HOUSE INTAKE		
35	Design, fabrication, supply, erection and commissioning of embedded parts consisting of liners for trash rack grooves (for coarse and fine screens) with all accessories for pump house intake structure including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set of embedded parts in tonnes = 100 to 125 kg / m height 2. Quantity of structural steel = 100.0% of computed weight for 1 set.	Tonne	222810.00
36	Design, fabrication, supply, erection and commissioning of trash racks consisting of a number of panels of suitable height with vertical trash bars welded to structural steel frame at wider interval and provided with weld mesh frame for pump house intake structure including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coat of zinc rich epoxy primer and four coats cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of trash rack panels for 1 vent in tonnes = $0.0375 \times (L^2 \times H \times h)^{0.716}$ Where (L) is length = Clear distance between piers in m + 0.20 m (H) is total height of trash rack panels in m (h) is head of water above sill of trash rack in m = FSL - Sill level 2. Quantity of structural steel = 100.0% of computed weight	Tonne	152980.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
37	Design, fabrication, supply, erection and commissioning of embedded parts consisting of sill beam, wheel tracks, seal seats, guide rails, gate groove liners etc., with all accessories for pump house intake stop log gate including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying one coat zinc rich epoxy primer and four coats of cold applied coal tar epoxy paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 set of embedded parts in tonnes $= 0.0665 \times (L^2 \times H \times h)^{0.716}$ Where, (L) is length = Clear distance between piers in m + 0.50 m (H) is total height of stoplog gate in m = FSL - Sill level + 0.30 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 95.9% of computed weight for 1 set.	Tonne	230190.00
38	Design, fabrication, supply, erection, testing and commissioning of sliding type stop log gate consisting of skin plate, horizontal and vertical girders, lifting hooks, bronze padded slide blocks, stiffeners, guide shoes, rubber seals etc., with all accessories for pump house intake vent including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, applying one coats of zinc rich epoxy primer and three coats of cold applied coal tar epoxy paint, seal fixing etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Wt of 1 stoplog gate in tonnes $= 0.0995 (L^2 \times H \times h)^{0.716}$ Where (L) is length = Clear distance between piers in m + 0.50 m (H) is total height of stoplog gate in m = FSL - Sill level + 0.30 m (h) is head of water above sill of gate in m = FSL - Sill level 2. Quantity of structural steel = 98.5% of computed weight for 1 gate.	Tonne	209130.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
39	Design, fabrication, supply, erection and commissioning of electrically operated mono-rail hoist assembly consisting of electric motor, rope drum, gear system, wire rope with lifting attachment, festoon cabling etc., with all accessories for operating pump house stop-log gate including cost of all materials (excluding providing mono-rail hoist supporting structure and mono-rail with fixtures), machinery, labour, cleaning, greasing etc., complete as per specifications and approved drawings with all leads and lifts. Note:1. Hoist capacity = 1.50 x weight of stop-gate	Tonne	66570.00
40	Design, fabrication, supply, erection and commissioning of structural steel hoist supporting structure consisting of columns, cross beams, bracings, stiffeners, mono-rail with fixtures etc., with all accessories for electrically operated monorail rope drum hoist for operating pump house intake vertical lift gates including cost of all materials, machinery, labour, cutting, aligning, anchoring, welding, finishing, cleaning, applying two coats of zinc chromate red oxide primer and three coats of synthetic enamel paint etc., complete as per specifications and approved drawings with lead upto 1 km and all lifts for structural steel components and all leads and lifts including packing / forwarding charges for other materials. Note: 1. Columns with bracings / anchors / stiffeners: 150 kg per metre height. Weight proposed above is for each intake vent 2. Mono rail beam with cross beams: 100 kg per metre length 3. Quantity of structural steel = 97.8% of computed weight for 1 span.	Tonne	171740.00

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
41	Design, fabrication, supply, erection, testing and commissioning EOT crane consisting of double girder box type construction, rail mounted end carriages with long and cross travel arrangement, main and auxiliary hoists of specified capacity, rails, pendant control, gear boxes, electric motors, brakes, rope drums, wire ropes, sheaves, end buffer stoppers, pendant operated DSL bus bars with all accessories for main and auxiliary hoists for handling pumps and accessories in pump house including cost of all materials, machinery, labour, cutting, aligning, welding, finishing, cleaning, greasing, applying two coats of zinc chromate red oxide primer and three coats of synthetic enamel paint etc., complete as per specifications and approved drawings with all leads and lifts. Note: 1. EOT crane Main hoist capacity = 1.25 x Maximum lifting load in tonne 2. EOT crane auxiliary hoist capacity = 10 % of main hoist 3. Rate for EOT crane shall be based on capacity of main hoist	Tonne	238900.00
NOTE:			
1	All notes under General Notes on Schedule of Rates and Notes on lead, lift, loading and unloading charges are applicable to Gate / Hoist and Allied Works also to the extent they are relevant.		
2	All materials / bought out components for embedded parts, gates, hoists and allied works shall conform to relevant Indian standards / technical specifications and approved drawings.		
3	The basic rates are inclusive of preparation of designs / drawings / bill of materials etc., as per specifications and other technical data including revisions.		
4	The basic rates are inclusive of cost of all materials, machinery, labour, fabrication, erection, commissioning and testing of gates, hoists and other related components as per technical specifications.		
5	The basic rates are inclusive of rehandling at fabrication and erection sites.		
6 a	The basic rates are inclusive of 1 km lead and all lifts for structural steel and all leads and lifts for other materials. For working out additional lead charges for structural steel 1 km lead included in basic rate shall be deducted from total lead. The quantity of structural steel for working out additional lead, loading and un-loading charges shall be as per Note: 2 under each item.		
6 b	The basic rates are inclusive of 3 percent provision towards cost of packing, forwarding and transportation of all materials other than structural steel from their source of supply upto work site. No lead charges shall be added for materials other than structural steel.		
7	Unless otherwise specified the basic rates are inclusive of standard finish required for all the fabricated and bought out gate and hoist components.		
8	The basic rates are inclusive of preparatory works such as rectification of damages, repairing shop painting, cleaning, positioning and anchoring first stage embedment's, cleaning surface for field painting etc.		

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
9	The basic rates are exclusive of cost of river diversion dewatering, desilting etc.		
10	Unless otherwise specified, the basic rates for all items are on per tonne basis. The rate per set or per number shall be worked out on the basis of rate per tonne and the tonnage computed as per detailed designs or as per empirical formulae furnished in the " Note " under each item.		
11	Minimum dry film thickness for zinc rich epoxy primer paint and coal tar epoxy paint shall be 40 microns per coat and 100 microns per coat respectively.		
12	The Basic Rate adopted under this Head, "Annexure-XII - Basic Rates of Gate / Hoist and Allied Works for Irrigation Projects" is exclusive of all taxes and GST.		


 Engineer-in-Chief &
 Chief Engineer (General) WRD,
 Chennai - 5. (Member)


 19/07/2022

ANNEXURE-XIII

RATES OF HIRE CHARGES FOR PLANTS & MACHINERIES

Sl. No.	Description of Machineries	Unit	Basic Rate approved for the year 2022-2023 (w.e.f. 19.07.22)
1	Pumping charges of concrete including hire charges of pump, piping work and accessories etc.	Cum.	244.00
2	Carriage of concrete by Transit Mixer	Km. / cum.	34.60
3	Cutting Saw Machine	Day	1572.00
4	Concrete Joint Cutting Machine	Day	1048.00
5	Air Compressor 250 cfm. with two leads for Pneumatic Cutters / Hammers	Day	1864.00
6	Excavation of diaphragm wall by Mechanical Grab	Sq.m	1515.00
7	Hire and running charges of Bentonite Pump	Day	4078.00
8	Hire and running charges of Crane 20 Tonne capacity	Day	8155.00
9	Hire and running charges of Crane 40 Tonne capacity	Day	9320.00
10	Hire and running charges of Crane 80 Tonne capacity	Day	17480.00
NOTE:			
1	The Basic Rate adopted under this Head, "Annexure-XIII - Basic Rates of Hire Charges for Plants and Machineries" is exclusive of all taxes and GST.		
2	The above hire charges include cost of services of operating staff, cost of lubricating oil, diesel / petrol / Kerosene and other consumables for running the plant and machinery.		
3	The hire charges of plant machinery on per day basis are for single shift of EIGHT working hours.		


 Engineer-in-Chief &
 Chief Engineer (General) WRD,
 Chennai - 5. (Member)

**Proceedings of the Engineer-in-Chief & Chief Engineer (Gl),
Water Resources Department, Chennai-600 005.**

Present: Er. K.Ramamoorthy, B.E., M.B.A.,
Engineer-in-Chief & Chief Engineer (Gl), WRD

Proc No. HDO / Sr.DO-1 / 22955 / 2022 / Dated: 01.03.2022

Sub: Sand Quarrying Operation – Revision of cost of sand sale at
Government Depots – Rate Approval requested - Regarding

- Ref: 1. G.O.Ms No. 135 PW (I.Spl.2) Dept., Dated: 13.06.2017.
2. G.O.Ms No. 4 PW (I.Spl.2) Dept., Dated: 06.01.2022.
3. The Superintending Engineer, Mining & Monitoring
Circle, Chennai Letter No. AE/ F.21/ M&M/ dated:
23.02.2022
4. The Superintending Engineer, Middle Cauvery Basin
Circle, Trichy Letter No. 186M / DO-2/ F.1733/ Sand
Quarry/ 2022, dated: 28.02.2022

-oOo-

In the Government order first cited, the overhead charges such as
*"loading and unloading charges, shunting charges, Rental charges of the
depot and maintenance charges of the depot"* should be levied in addition
to the basic cost of sand, if in the case of Sale of sand at Depot.

In the Government order second cited, the basic cost of sand at
quarry has been refixed to Rs.1,000/- per unit and permitted to operate
16 lorry quarries and 21 bullock cart quarries at first instance.

Accordingly, the Superintending Engineer, Mining & Monitoring
Circle, Chennai and the Superintending Engineer, Middle Cauvery Basin
Circle, Trichy in their letter third & fourth cited has requested to refix the
cost of sand for cart load and lorry load at quarry and specified
Government depots.

Under the circumstances, the cost of sand for cart load and lorry loads at quarry site and at specified Government depots are hereby refixed as mentioned below. The Superintending Engineer and the Executive Engineers concerned are requested to adhere the norms stipulated in the Government order second cited scrupulously, while carrying out the sale process.

S.No	Lead ranges from quarry to depot	Sale price including GST @ 5%
1.	Cost of Sand at quarry site for cart load - per 0.25 Unit	Rs.350/-
2.	Cost of Sand at Specified Government Depots for a range of 0 - 25 km for cart load - per 0.25 Unit	Rs.700/-
3.	Cost of Sand at Specified Government Depots for a range of 25 - 50 km for cart load - per 0.25 Unit	Rs.800/-
4.	Cost of Sand quarried from Palar River (0 - 25 km range) at specified Government depots per 1 unit	Rs.3,150/-
5.	Cost of Sand quarried from other rivers (0 - 25 km range) at specified Government depots per 1 unit	Rs.2,650/-
6.	Cost of Sand quarried from other rivers (25 - 50 km range) at specified Government Depots per 1 unit	Rs.3,250/-

Encl: Calculation sheet Annexure -1 to 6


 Engineer-in-Chief &
 Chief Engineer (Gl), WRD,
 Chennai -5.


 J01/03/22

To

The Superintending Engineer, WRD,
Mining & Monitoring Circle,
Chepauk, Chennai – 600 005.

The Executive Engineer,
Mining & Monitoring Division,
Chennai, Villupuram, Trichy, Thanjavur & Madurai

Copy to the Superintending Engineer, Middle Cauvery Basin Circle, Trichy
for information and further necessary action.

Copy to the Superintending Engineer, Periyar Vaigai Basin Circle, Madurai
for information and further necessary action.

Copy to the Chief Engineer, Trichy Region for information and further
necessary action.

Copy to the Chief Engineer, Madurai Region for information and further

COST OF SAND FOR CART LOAD AT QUARRY

		Amount in Rs.
I.	Basic Cost of Sand - (per unit i.e., 2.83m³)	1000.00
III.	Quarry charges (per unit) Provision for Environmental Clearance processing fee, Formation of Katcha road and its Maintenance at quarry, Amenities to the quarry, Provision for CCTV at quarry, Provision for online charges, Water sprinkling for dust suppression in Katcha roads, Labour to maintaining the sand quarry such as regulating the carts, Monitoring the entry and exit of carts at quarry, Stationaries, Thermal printer paper roll, Provision for unforeseen item and Contingencies for quarry.	284.00
	Sub Total	1284.00
	for 1Cart = 25 Cubic feet = 0.25 unit	321.00
	Say	321.00
	CGST 2.5 %	9.00
	SGST 2.5 %	9.00
	Cost of Sand Per Cart (25cft or 0.25unit)	339.00
	Rounded off	350.00


 Engineer-in-Chief &
 Chief Engineer (General), WRD,
 Chennai - 600 005


 10/03/22

COST OF SAND FOR CART LOAD AT DEPOT 0 -25KM

	For 25 KM Conveyance of sand	Amount in Rs.
I.	Basic Cost of Sand - (per unit i.e., 2.83m³)	1000.00
II.	Cost of conveyance & loading (per unit) a. Excavation of sand & Loading Charges at quarry site (As per Revised Schedule of rate 2021-2022 Rate for Earthwork deploying Machinery - Bund formation for 1m ³ of sand - Rs.50.00, subtracting cost of breaking clods, consolidating and sectioning - Rs.5.75) = (50.00 - 5.75) = Rs.44.25 For 1 unit of sand = $44.25 \times 2.83 = 125.23$ b. Lead charges for 25 Km (Conveyance as per Revised Schedule of Rate 2021-2022 for 1m ³ of sand = Rs. 247.50) For 1 unit of sand = $247.50 \times 2.83 = 700.43$ c. Loading charges at sand depot to Consumer Vehicle (As per Revised Schedule of rate 2021-2022, for 1m ³ of sand Rs. 42.55) For 1 unit of sand = $42.55 \times 2.83 = 120.42$	946.08
III.	Quarry charges (per unit)	284.00
IV	Depot charges (per unit) Provision of Rest shed at depot, track formation, Sprinkling of water, provision for Fencing, Drop gate, water supply, Electrical Installation, Furniture arrangements and Sanitary arrangements, Provision for CCTV Camera and Public Audio system, Safety equipments, Provision for Maintaining the Depot Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at depot, Provision for Online payment charges, Lease Rent, current consumption charges, Stationeries, Maintenance of computer and printer, and	254.00
	Sub Total :	2484.08
	for 1 Cart = 25 Cubic feet = 0.25 unit :	621.02
	say :	621.00
	CGST 2.5 % :	16.00
	SGST 2.5 % :	16.00
	Cost of Sand Per Cart (25cft or 0.25unit) :	653.00
	Rounded off :	700.00


 Engineer-in-Chief &
 Chief Engineer (General), WRD,
 Chennai - 600 005


 10/03/22

COST OF SAND FOR CART LOAD AT DEPOT 25 - 50KM

From 25 KM to 50 KM Conveyance of sand		Amount in Rs.
I.	Cost of Sand - (per unit i.e., 2.83m3)	1000.00
II.	Cost of conveyance & loading (per unit) a. Excavation of sand & Loading Charges at quarry site (As per Revised Schedule of rate 2021-2022 Rate for Earthwork deploying Machinery - Bund Formation for 1m3 of sand - Rs.50.00, subtracting cost of breaking clods, consolidating and sectioning - Rs.5.75) = (50.00 - 5.75) = Rs.44.25 For 1 unit of sand= 44.25x2.83 = 125.23 b. Lead charges for 50 Km (Conveyance as per Revised Schedule of Rate 2021-2022 for 1m3 of sand = Rs. 447.40) For 1 unit of sand = 447.40*2.83 = 1266.14 c. Loading charges at sand depot to Consumer Vehicle (As per Revised Schedule of rate 2021-2022, for 1m3 of sand Rs. 42.55) For 1 unit of sand=42.55 x 2.83m3 = 120.42	1511.79
III.	Quarry charges (per unit) Provision for Fixing of Boundary Pillars at quarry, Provision for Formation of Katcha Road and its maintenance at quarry, Protection Arrangements at quarry, Temporary Rest shed, Toilet and Sanitary arrangements, water supply arrangements, Furniture arrangements, Electrical arrangements including Deposit at quarry, Online payment for Monitoring and tracking the vehicles etc., at quarry, labour for Maintaining the sand quarry Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at quarry, current consumption charges, Stationeries at quarry, Provision for Safety equipments, Fixing of GPS tracking System and Computers, CCTV camera arrangements at quarry. Provision for Preparation of Mining Plan, Processing charges for SEIAA/DEIAA, Consent fees for TNPCB, Maintenance of flora fauna, Test charges for air & water, Video, Photo and Documentation charges, EMP Cost, Awareness program, Advertisement charges at quarry.	284.00
IV	Depot charges (per unit) Provision of Rest shed at depot, track formation, Sprinkling of water, provision for Fencing, Drop gate, water supply, Electrical Installation, Furniture arrangementsand Sanitary arrangements, Provision for CCTV Camera and Public Audio system, Safety equipments, Provision for Maintaining the Depot Such as regulating the traffic, Monitoring the entry and exit of vehicles etc.,at depot, Provision for Online payment charges, Lease Rent, current consumption charges, Stationeries, Maintenance of computer and printer, and Documentation charges at Depot.	254.00
	Sub Total	3049.79
	for 1Cart = 25 Cubic feet = 0.25 unit	762.45
	Say	762.00
	CGST 2.5 %	19.00
	SGST 2.5 %	19.00
	Cost of Sand Per Cart (25cft or 0.25unit)	800.00

Engineer-in-Chief &
Chief Engineer (General), WRD,
Chennai - 600 005

01/03/22

COST OF SAND AT SAND DEPOT (FOR 1 UNIT)

For 25 KM Conveyance of sand		Amount in Rs.
I.	Basic Cost of Sand - (per unit i.e., 2.83m³)	1000.00
II.	Cost of conveyance & loading (per unit) a. Excavation of sand & Loading Charges at quarry site (As per Revised Schedule of rate 2021-2022 Rate for Earthwork excavation in OS soil - Rate for 1m ³ of sand Rs.64.50) For 1 unit of sand=64.50 x 2.83m ³ = 182.54 b. Head load charges:(per unit) from 10m to 100m (61.80 x 2.83) = 174.90 from 100m to 150m (48.30 x 2.83) = 136.69 c. Loading charges from temporary depot to shunting vehicles (42.55 x 2.83) = 120.42 d. Lead charges for 25 Km (Conveyance as per Revised Schedule of Rate 2021-2022 for 1m ³ of sand = Rs. 247.50) For 1 unit of sand = 247.50*2.83 = 700.43 e. Loading charges at sand depot to Consumer Vehicle (As per Revised Schedule of rate 2021-2022, for 1m ³ of sand Rs. 42.55) For 1 unit of sand=42.55 x 2.83m ³ = 120.42	1435.40
III.	Quarry charges (per unit) Provision for Fixing of Boundary Pillars at quarry, Provision for Formation of Katcha Road and its maintenance at quarry, Protection Arrangements at quarry, Temporary Rest shed, Toilet and Sanitary arrangements, water supply arrangements, Furniture arrangements, Electrical arrangements including Deposit at quarry, Online payment for Monitoring and tracking the vehicles etc., at quarry, labour for Maintaining the sand quarry Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at quarry, current consumption charges, Stationeries at quarry, Provision for Safety equipments, Fixing of GPS tracking System and Computers, CCTV camera arrangements at quarry. Provision for Preparation of Mining Plan, Processing charges for SEIAA/DEIAA, Consent fees for TNPCB, Maintenance of flora fauna, Test charges for air & water, Video, Photo and Documentation charges, EMP Cost, Awareness program, Advertisement charges at quarry.	284.00
IV	Depot charges (per unit) Provision of Rest shed at depot, track formation, Sprinkling of water, provision for Fencing, Drop gate, water supply, Electrical Installation, Furniture arrangements and Sanitary arrangements, Provision for CCTV Camera and Public Audio system, Safety equipments, Provision for Maintaining the Depot Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at depot, Provision for Online payment charges, Lease Rent, current consumption charges, Stationeries, Maintenance of computer and printer, and Documentation charges at Depot.	254.00
	Sub Total :	2973.40
	say :	2974.00
	CGST 2.5 % :	74.35
	SGST 2.5 % :	74.35
	Total :	3122.70
	Cost of Sand / unit :	3123.00
	Rounded Off :	3150.00


 Engineer-in-Chief &
 Chief Engineer (General), WRD,
 Chennai - 600 005


 10/03/22

COST OF SAND AT SAND DEPOT (FOR 1 UNIT)

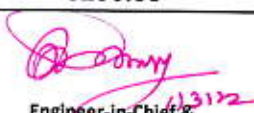
For 25 KM Conveyance of sand		Amount in Rs.
I.	Basic Cost of Sand - (per unit i.e., 2.83m³)	1000.00
II.	Cost of conveyance & loading (per unit) a. Excavation of sand & Loading Charges at quarry site (As per Revised Schedule of rate 2021-2022 Rate for Earthwork deploying Machinery for 1m ³ of sand - Rs.50.00, subtracting cost of breaking clods, consolidating and sectioning - Rs.5.75) = (50.00 - 5.75) = Rs.44.25 For 1 unit of sand = 44.25x2.83 = 125.23 b. Lead charges for 25 Km (Conveyance as per Revised Schedule of Rate 2021-2022 for 1m ³ of sand = Rs. 247.50) For 1 unit of sand = 247.50x2.83 = 700.43 c. Loading charges at sand depot to Consumer Vehicle (As per Revised Schedule of rate 2021-2022, for 1m ³ of sand Rs. 42.55) For 1 unit of sand = 42.55 x 2.83m ³ = 120.42	946.08
III.	Quarry charges (per unit) Provision for Fixing of Boundary Pillars at quarry, Provision for Formation of Katcha Road and its maintenance at quarry, Protection Arrangements at quarry, Temporary Rest shed, Toilet and Sanitary arrangements, water supply arrangements, Furniture arrangements, Electrical arrangements including Deposit at quarry, Online payment for Monitoring and tracking the vehicles etc., at quarry, labour for Maintaining the sand quarry Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at quarry, current consumption charges, Stationeries at quarry, Provision for Safety equipments, Fixing of GPS tracking System and Computers, CCTV camera arrangements at quarry. Provision for Preparation of Mining Plan, Processing charges for SEIAA/DEIAA, Consent fees for TNPCB, Maintenance of flora fauna, Test charges for air & water, Video, Photo and Documentation charges, EMP Cost, Awareness program, Advertisement charges at quarry.	284.00
IV	Depot charges (per unit) Provision of Rest shed at depot, track formation, Sprinkling of water, provision for Fencing, Drop gate, water supply, Electrical Installation, Furniture arrangements and Sanitary arrangements, Provision for CCTV Camera and Public Audio system, Safety equipments, Provision for Maintaining the Depot Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at depot, Provision for Online payment charges, Lease Rent, current consumption charges, Stationeries, Maintenance of computer and printer, and Documentation charges at Depot.	254.00
	Sub Total :	2484.08
	say :	2484.00
	CGST 2.5 % :	62.10
	SGST 2.5 % :	62.10
	Total :	2608.20
	Cost of Sand / unit (Say) :	2609.00
	Rounded Off :	2650.00


 Engineer-in-Chief &
 Chief Engineer (General), WRD,
 Chennai - 600 005


 10/10/22

COST OF SAND AT SAND DEPOT (FOR 1 UNIT)

From 25 KM to 50 KM Conveyance of sand		Amount in Rs.
I.	Cost of Sand - (per unit i.e., 2.83m3)	1000.00
II.	Cost of conveyance & loading (per unit) a. Excavation of sand & Loading Charges at quarry site (As per Revised Schedule of rate 2021-2022 Rate for Earthwork deploying Machinery for 1m3 of sand - Rs.50.00, subtracting cost of breaking clods, consolidating and sectioning - Rs.5.75) = (50.00 - 5.75) = Rs.44.25 For 1 unit of sand = 44.25x2.83 = 125.23 b. Lead charges for 50 Km (Conveyance as per Revised Schedule of Rate 2021-2022 for 1m3 of sand = Rs. 447.40) For 1 unit of sand = 447.40*2.83 = 1266.14 c. Loading charges at sand depot to Consumer Vehicle (As per Revised Schedule of rate 2021-2022, for 1m3 of sand Rs. 42.55) For 1 unit of sand = 42.55 x 2.83m3 = 120.42	1511.79
III.	Quarry charges (per unit) Provision for Fixing of Boundary Pillars at quarry, Provision for Formation of Katcha Road and its maintenance at quarry, Protection Arrangements at quarry, Temporary Rest shed, Toilet and Sanitary arrangements, water supply arrangements, Furniture arrangements, Electrical arrangements including Deposit at quarry, Online payment for Monitoring and tracking the vehicles etc., at quarry, labour for Maintaining the sand quarry Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at quarry, current consumption charges, Stationeries at quarry, Provision for Safety equipments, Fixing of GPS tracking System and Computers, CCTV camera arrangements at quarry. Provision for Preparation of Mining Plan, Processing charges for SEIAA/DEIAA, Consent fees for TNPCB, Maintenance of flora fauna, Test charges for air & water, Video, Photo and Documentation charges, EMP Cost, Awareness program, Advertisement charges at quarry.	284.00
IV	Depot charges (per unit) Provision of Rest shed at depot, track formation, Sprinkling of water, provision for Fencing, Drop gate, water supply, Electrical Installation, Furniture arrangements and Sanitary arrangements, Provision for CCTV Camera and Public Audio system, Safety equipments, Provision for Maintaining the Depot Such as regulating the traffic, Monitoring the entry and exit of vehicles etc., at depot, Provision for Online payment charges, Lease Rent, current consumption charges, Stationeries, Maintenance of computer and printer, and Documentation charges at Depot.	254.00
	Sub Total	3049.79
	Say	3050.00
	CGST 2.5 %	76.25
	SGST 2.5 %	76.25
	Total	3202.50
	Cost of Sand / unit (say)	3203.00
	Rounded Off	3250.00


 Engineer-in-Chief &
 Chief Engineer (General), WRD,
 Chennai - 600 005


 10/05/22