

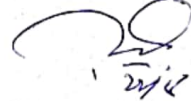
NOTIFICATION

IMPLEMENTATION OF CSR-2024 (Civil Engineering):

Chief Executive Officer/ Sr. General Manger has approved Composite Schedule of Rates of 2024 (CSR-2024) for Civil Engineering Department which is hereby implemented with effect from 01-09-2024. All the ongoing works or works for which administrative approval has already been granted and are in tendering process, shall be executed according to previous Composite Schedule of Rates (CSR-2016). The CSR-2024 has been prepared for entire system of Pakistan Railways. CSR-2024 is to be down loaded from Web Site www.pakrail.gov.pk.

In case, operation of a non-schedule item is considered unavoidable by any Project Director/ Managing Director / Divisional Superintendent for the execution of a particular civil engineering work under his control, he will forward the detailed particulars of such item(s) alongwith the rate analysis and necessary justification, for the approval of Additional General Manager/Infrastructure, through Chief Engineer/Open Line. The sanction if and when accorded shall be notified by Chief Engineer/Open Line in the form of correction slip to the aforesaid documents.

This issues with the approval of Chief Engineer/Open Line.



(Qazi Jawwad Ahmed)
Dy. Chief Engineer/Middle
for Chief Engineer

Copy for information and necessary action to:-

1. CEO/Sr. General Manager, Pakistan Railways, Headquarter Office Lahore.
2. Member Finance, Ministry of Railways, Islamabad.
3. AGM/I, AGM/M, & AGM/Traffic, Pakistan Railways, H.Qs. Office Lahore.
4. Director General Technical, (Railway Board), Ministry of Railways, Islamabad.
5. Divisional Superintendent, Pakistan Railways, Karachi, Sukkur, Multan, Lahore, MGPR, Rawalpindi, Peshawar, and Quetta.
6. FA&CAO, Pakistan Railways, Headquarter Office Lahore.
7. Deputy General Manager, Pakistan Railways, Headquarter Office Lahore.
8. General Manager /M&S, Pakistan Railways, Headquarter Office Lahore.
9. Managing Director /CSF, Pakistan Railways, Headquarter, Office Lahore.
10. Chief Internal Auditor, Pakistan Railways, Headquarter office Lahore.
11. Managing Director, Pakistan Railways, Risalpur.
12. Managing Director /CFI, Pakistan Railways, Islamabad.
13. Director General, Pakistan Railways, Academy Walton.
14. Director General/P&L, Pakistan Railways, Headquarter, Office Lahore.
15. Chief Engineer/S&C, Pakistan Railways, Headquarter, Office Lahore.
16. Chief Engineer/Design, Pakistan Railways, Headquarter, Office Lahore.
17. Director Technical, PRFTC, Lahore.
18. Managing Director, RAILCOP.
19. All, Project Directors, of Pakistan Railways.
20. All PO's Pakistan Railways, Headquarter, Office Lahore.
21. Director/I.T, Pakistan Railways, Headquarter, Office Lahore.

PAKISTAN RAILWAYS



COMPOSITE SCHEDULE OF RATES

2024

PAKISTAN RAILWAYS HEADQUARTER OFFICE
LAHORE – PAKISTAN

PREFACE

After independence in 1947, the first Schedule of Rates for the Civil Engineering Department was issued by the then Railway Administration in 1954, under the title “Revised Schedule of Rates (RSR) 1954”. This document continued to be used up to year 1967.

During the years 1964 to 1967, the Standing Rates Committee constituted by the then Government of West Pakistan compiled and issued, a set of specifications including “Specifications for Materials of Construction” and “Specifications for Execution of Works”, along with “Composite Schedule of Rates” (based on these specifications), for adoption by all engineering departments in the province including Railways, which was under the Provincial Government at that time and was also a member of this Committee. The then Railway Administration adopted the above mentioned Specifications and the Composite Schedule of Rates in 1967.

Although Pakistan Railways became a Federal Government Department after 1971, but it continued to use the above mentioned publications up to 1990 when it issued its own “Pakistan Railways Composite Schedule of Rates-1990”, which was up-dated in 2003. This Schedule of Rates however continued to be based on the above referred Specifications, adopted by Railway Administration in 1967.

Later-on, the Railway Administration revised/updated the specification books and Composite Schedule of Rates (CSR) 2003 and revised Composite Schedule of Rates along-with new Specifications were implemented in 2016.

During 2021, the Railway Administration decided to update Composite Schedule of Rates to commensurate with current market prices and to incorporate amendments issued for CSR-2016. The assignment of revising / updating CSR-2016 was awarded to M/s Crimson Engineering (Pvt) Ltd, Lahore, a local consultancy firm. CSR-2016 has now been revised / updated as ‘Composite Schedule of Rates-2024’ along with the preparation of the ‘Analysis of Composite Schedule of Rates-2024’.

The above mentioned revised/updated Composite Schedule of Rates and the Analysis of these Rates are being published, as under;

- i) Pakistan Railways Composite Schedule of Rates-2024
- ii) Analysis of Pakistan Railways Composite Schedule of Rates-2024 (in 2 volumes)

I, on behalf of the Railway Administration wish to express my thanks to all those who have contributed to the compilation of the above mentioned documents, particularly M/s Crimson Engineering (Pvt) Ltd, Lahore, the Consultants for this assignment.

Any suggestions to improve these publications would be welcome.

Lahore: August, 2024

(Farid Ahmad)
Chief Engineer (Open Line)
Pakistan Railways Headquarters Office,
Lahore.

Conversion Factors

The basic document i.e. the Analysis of the Composite Schedule of Rates-2024 has been prepared in Microsoft Excel software in FPS units while its resultant output in the form of labour and composite rates has been entered in the corresponding book“ Pakistan Railways Composite Schedule of Rates (CSR)-2024” in FPS as well as in SI (metric) units. The conversion factors used for this purpose are tabulated below:

To convert		Into		Multiply by
Length				
Inch	(in)	Millimetre	(mm)	25.400
Millimetre	(mm)	Inch	(in)	0.039
Inch	(in)	Centimetre	(cm)	2.540
Centimetre	(cm)	Inch	(in)	0.394
Foot	(ft)	Metre	(m)	0.305
Metre	(m)	Foot	(ft)	3.281
Mile	(mi)	Kilometre	(km)	1.609
Kilometre	(km)	Mile	(mi)	0.621
Area				
Square inch	(in ²)	Square centimetre	(cm ²)	6.452
Square centimetre	(cm ²)	Square inch	(in ²)	0.155
Square foot	(ft ²)	Square metre	(m ²)	0.093
Square metre	(m ²)	Square foot	(ft ²)	10.765
Square yard	(yd ²)	Square metre	(m ²)	0.836
Square metre	(m ²)	Square yard	(yd ²)	1.196
Square metre	(m ²)	Hectare	(ha)	0,0001
Hectare		Square metre		10,000
Hectare	(ha)	Acre	(acr)	2.475
Acre	(acr)	Hectare	(ha)	0.404
Volume/Capacity				
Cubic inch	(in ³)	Cubic centimetre	(cm ³)	16.387
Cubic centimetre	(cm ³)	Cubic inch	(in ³)	0.061
Cubic feet	(ft ³)	Cubic metre	(m ³)	0.028
Cubic metre	(m ³)	Cubic feet	(cft)	35.320
Cubic yard	(yd ³)	Cubic metre	(m ³)	0.765

To convert	Into	Multiply by
Cubic metre (m ³)	Cubic yard (yd ³)	1.307
Gallon (imperial) (gal)	Litre (lit)	4.546
Litre (l)	Gallon (imperial) (gal)	0.220
Mass/Weight		
Ounce (oz)	Gram (gm)	28.328
Gram (gm)	Ounce (oz)	0.035
Pound (lb)	Kilogram (kg)	0.454
Kilogram (kg)	Pound (lb)	2.204
Tonne (t)	Kilogram (kg)	1000
Kilogram (kg)	Tonne (mt)	0.001
Long ton (T)	Tonne (mt)	1.016
Tonne (mt)	Long ton (T)	0.984
Maund (Md)	Kilogram (kg)	37.324
Force/Stress/ Pressure		
Kilogram (force) (kgf)	Newton (N)	9.806
Pound (force) (lbf)	Newton (N)	4.448
Mega Pascal (MPa)	Newton/mm ² (N/mm ²)	1.000
Mega Pascal (MPa)	Pounds/inch ² (PSI)	145.038
Kilogram/cm ² (kg/cm ²)	Newton/mm ² (N/mm ²)	0.0981

MATERIALS REQUIRED FOR COMMON CONSTRUCTION ACTIVITIES

The estimated quantities of building materials required for common construction activities are generally taken as under:

1. Brick Masonry (100 cft)

- a. No. of Bricks (9"x4 1/2"x3") = 1350 No.
- b. cement sand mortar (dry) = 30 cft.

2. Brick Flooring, Bricks Laid Flat (100 sft.)

- a. No. of Bricks (9"x4 1/2"x3") = 350 No.
- b. cement sand mortar (dry) = 08 cft.

3. Brick Flooring, Bricks Laid on Edge (100 sft.)

- a. No. of Bricks (9"x4 1/2"x3") = 500 No.
- b. cement sand mortar (dry) = 12 cft.

4. Stone Masonry, Random Rubble-coursed (100 cft.)

- a. Stone = 125 cft.
- b. cement sand mortar (dry) = 42 cft.

5. Stone masonry, ashlar block/ashlar fine (100 cft.)

- a. Stone = 200 cft.
- b. cement sand mortar (dry) = 24 cft.

6. Cement Sand Plaster 1/2" (12 mm) thick (100 sft.)

- a. cement sand mortar (dry) = 06 cft.

7. Cement sand pointing for brickwork (100 sft.)

- a. cement sand mortar (dry) = 02 cft.

8. Cement concrete 1:2:4 (100 cft.)

- a. Cement = 22 cft (17.6 bags).
- b. Sand = 44 cft.
- c. Coarse Aggregate = 88 cft.

9. Bitumen 10/20 grade for coating on DPC or Roof (100 sft.)

- a. One coat = 19 lbs.
- b. Two coats = 34 lbs.

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CHAPTER 1

DISMANTLING WORKS

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 2-Dismantling Works of "Specification for Railway Infrastructure Works, Volume I, (2016)".
- (2) Rates for all "Dismantling Works" include the lowering/removal of surplus debris, unused released material and by-products and stacking them within 500 ft (152 m).
- (3) The rates for dismantling roofs or upper storey floors, include the dismantling of all materials, except roof supports such as beams and trusses.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
1.1 Dismantling of Stone Works				2.3 & 2.4	
1.1.1 Dismantling dry stone masonry.	100 cft (m ³)	1070 377.92			
1.1.2 Dismantling stone masonry in mud mortar.	100 cft (m ³)	1573 555.58			
1.1.3 Dismantling stone masonry in lime or cement mortar.	100 cft (m ³)	3775 1333.33			Add extra 13%, 32% and 51% on labour rates only for heights from 14.1 to 26 ft, 26.1 to 38 ft, 38.1 to 50 ft and above, and for 2nd, 3rd and subsequent floors of 12 ft height respectively on item 1.1.3
1.1.4 Dismantling pitching stone:-					
(a) Dry stone or spawl pitching	100 cft (m ³)	1888 666.84			
(b) Stone or spawl pitching (mud grouted)	100 cft (m ³)	2391 844.50			
1.1.5 Dismantling stone pitching or spawl and apron in silted condition.	100 cft (m ³)	3146 1111.17			
1.1.6 Dismantling stone pitching, cement or lime grouted.	100 cft (m ³)	5034 1778.01			
1.1.7 Dismantling stone in crates:-					
(a) In wooden crates	100 cft (m ³)	2517 889.00			
(b) In wire crates	100 cft (m ³)	3146 1111.17			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
1.1.8 Dismantling Dhajji walling.	100 cft (m ³)	1258 444.33			
1.2 Dismantling of Brick Works				2.3 & 2.4	
1.2.1 Dismantling brick work in mud mortar.	100 cft (m ³)	2202 777.75			Add extra 13%, 32% and 51% on labour rates only for heights from 14.1 to 26 ft, 26.1 to 38 ft, 38.1 to 50 ft and above, and for 2nd, 3rd and subsequent floors of 12 ft height respectively on items 1.2.1 to 1.2.3.
1.2.2 Dismantling brick work in lime or cement mortar.	100 cft (m ³)	5348 1888.91			
1.2.3 Dismantling cement block masonry in cement mortar.	100 cft (m ³)	4719 1666.75			
1.3 Dismantling of Concrete				2.3 & 2.4	Add extra 13%, 32% and 51% on labour rates only for heights from 14.1 to 26 ft, 26.1 to 38 ft, 38.1 to 50 ft and above, and for 2nd, 3rd and subsequent floors of 12 ft height respectively on items 1.3.1, 1.3.2 & 1.3.3.
1.3.1 Dismantling lime concrete.	100 cft (m ³)	3461 1222.43			
1.3.2 Dismantling Plain Cement Concrete:-					
(a) Cement concrete with brick or stone aggregate (1:5:10)	100 cft (m ³)	3775 1333.33			
(b) Cement concrete plain 1:4:8	100 cft (m ³)	6921 2444.50			
(c) Cement concrete plain 1:3:6	100 cft (m ³)	11326 4000.34			
(d) Cement concrete plain 1:2:4	100 cft (m ³)	13842 4888.99			
(e) Cement concrete with iron filling	100 cft (m ³)	15101 5333.67			
(f) Cement concrete with rail grillage, separating rails from concrete and clearing the same.	100 cft (m ³)	15101 5333.67			
1.3.3 Dismantling reinforced cement concrete and separating reinforcement from concrete.	100 cft (m ³)	17618 6222.68			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
1.4 Dismantling of Roofing/Ceiling				2.3 & 2.4	
1.4.1 Dismantling tile roofing upto 14ft height.	100 sft (m ²)	1573 169.33			(i) Add extra 13%, 32% and 51% on labour rates only for heights from 14.1 to 26 ft, 26.1 to 38 ft, 38.1 to 50 ft and above, and for 2nd, 3rd and subsequent floors of 12 ft height respectively on items 1.4.1,1.4.2 1.4.4
1.4.2 Dismantling asbestos sheets and ridge coping up to 14 ft height.	100 sft (m ²)	1162 125.09			
1.4.3 Dismantling wooden roof of wooden planks and battens, upto any height.	100 sft (m ²)	929 100.01			
1.4.4 Dismantling jack arch roofing complete with mud and mud plaster, including removal of joists upto 14 ft height.	100 sft (m ²)	2517 270.96			
1.4.5 Dismantling reinforced brick roof complete with mud and mud plaster, including separating reinforcement up to any height.	100 sft (m ²)	2517 270.96			
1.4.6 Dismantling / Stripping slates or tiles from the truss roofing at any height and staking at ground floor.	100 sft (m ²)	1573 169.33			
1.4.7 Dismantling / Stripping corrugated G.I. sheet from truss roofing at any height and staking at ground floor.	100 sft (m ²)	1514 162.98			
1.4.8 Dismantling / Stripping corrugated G.I. sheet from other than truss roofing at any height andn staking at ground floor.	100 sft (m ²)	757 81.49			
1.4.9 Dismantling slates or tile roofing including battens, purlins and planking from other than trusses at any height..	100 sft (m ²)	2517 270.96			
1.4.10 Dismantling precast roofs of any height consisting of;					
(a) Precast prestressed concrete girders & slabs	100 sft (m ²)	2517 270.96			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Prestressed concrete double Tee planks	100 sft (m ²)	1258 135.42			
1.4.11 Dismantling and removing north light glasses upto any height.	100 sft (m ²)	629 67.71			
1.4.12 Dismantling false ceiling of any type upto any height.					
(a) With wooden framework	100 sft (m ²)	1845 198.61			
(b) With Aluminum framework	100 sft (m ²)	738 79.45			
(c) With plaster of paris / gypsum	100 sft (m ²)	1367 147.16			
1.4.13 Dismantling single layer of tiles from roof upto any height.					
(a) Roof tiles without removing earth	100 sft (m ²)	2360 254.05			
(b) Roof tiles with removing earth	100 sft (m ²)	3933 423.39			
1.5 Dismantling of Flooring				2.3 & 2.4	Add extra 13%, 32% and 51% on labour rates only for 2nd, 3rd and subsequent floors of 12 ft height respectively on items 1.5.1, 1.5.2 and 1.5.4 to 1.5.6
1.5.1 Dismantling brick flooring without concrete foundation.	100 sft (m ²)	1070 115.19			
1.5.2 Dismantling planks or wooden block flooring etc.	100 sft (m ²)	1573 169.33			
1.5.3 Dismantling interlocking paver flooring including removing of sand but excluding dismantling of base concrete.	100 sft (m ²)	1258 135.47			
1.5.4 Dismantling mosaic, marble and all kinds of tile flooring (except glazed tiles), excluding base concrete.	100 sft (m ²)	1258 135.42			
1.5.5 Dismantling mosaic, marble and all kinds of tile skirting complete (excluding glazed tiles).	100 sft (m ²)	1573 169.33			
1.5.6 Dismantling glazed tile flooring and skirting.	100 sft (m ²)	2118 228.00			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
1.6 Dismantling of Wood Work & PVC Paneling				2.3 & 2.4	
1.6.1 Removing wooden doors and windows:-					Add extra 13%, 32% and 51% on labour rates only for heights from 14.1 to 26 ft, 26.1 to 38ft, and 38.1 to 50ft and above and for 2nd, 3rd and subsequent floors of 12 ft height respectively on items 1.6.1 to 1.6.7 Measurements shall be for surface area of front of Almirah.
(a) Removing wooden door with chowkat	100 sft (m²)	2927 315.09			
(b) Removing wooden window and sky lights with chowkat	100 sft (m²)	2120 228.22			
(c) Removing iron grill in openings and wall	100 sft (m²)	2120 228.22			
1.6.2 Removing ventilators and wooden sunshades etc.	each	223			
1.6.3 Dismantling wooden beams upto 12' in length	each	315			
1.6.4 Dismantling wooden beams from 12.1' to 23' length	each	629			
1.6.5 Dismantling wooden, laminated sheets and chip board partition, etc.	100 sft (m²)	664 71.48			
1.6.6 Dismantling wooden trusses	100 kg	1436			
1.6.7 Dismantling wooden, laminated sheet almirah.	100 sft (m²)	664 71.48			
1.6.8 Dismantling PVC wall panelling including cleaning of site.	100 sft (m²)	944 101.62			
1.7 Dismantling of Iron Works				2.3 & 2.4	
1.7.1 Dismantling iron work or trusses, sheds, water tanks, etc. including cutting of rivets, upto any height.	100 kg	1904			
1.7.2 Dismantling rolled steel beams or rails etc. upto any height					
(a) Heavy work	100 kg	1258			
(b) Light work	100 kg	826			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
1.7.3 Dismantling water column on broad gauge (B.G) sections.	each	13116			
1.7.4 Dismantling all types of wire fencing, including rolling wire into bundles and collecting material.	100 sft (m ²)	252 27.13			
1.7.5 Dismantling steel grating of any size in any position and any floor including stacking within 100 ft (30 m).	100 kg	2517			
1.8 Dismantling of Pipe Works					
1.8.1 Disjointing R.C.C. pipes inside the trench and dismantling and removing the pipe with fittings from the trench and stacking them outside:-					(i) The rate does not include cost of excavation & refilling of trench, or the demolition of any masonry or brick work for item 1.8.1 to 1.8.3
(a) 4" to 12" diameter	Rft (m)	43 141.08			
(b) 13" to 24" diameter	Rft (m)	68 223.11			
(c) 25" to 36" diameter	Rft (m)	95 311.70			
(d) Above 36" diameter	Rft (m)	136 446.22			(ii) Dismantling of sockets, tees, elbows, bends, crosses, unions and plugs etc., is included in the rates for item 1.8.1 to 1.8.3
1.8.2 Dismantling and stacking within one chain GI, CI, AC and plastic pipes with fittings in any position and any height excluding digging and refilling of trenches:-					
(a) Upto 4" dia	Rft (m)	23 75.46			
(b) From 4.1" to 9" dia	Rft (m)	35 114.84			
(c) From 9.1" dia to 12" dia	Rft (m)	46 150.93			
1.8.3 Dismantling sluice valves upto 12" bore.	each per inch bore	47			
	each per cm bore	18.50			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
1.9 Dismantling of Miscellaneous Items				2.3 & 2.4	Add extra 13%, 32% and 51% on labour rates only for heights from 14.1 to 26 ft, 26.1 to 38 ft, 38.1 to 50 ft and above, and for 2nd, 3rd and subsequent floors of 12 ft height respectively on items 1.9.3 & 1.9.5
1.9.1 Dismantling and removing road metalling.	100 cft (m ³)	2517 889.00			
1.9.2 Dismantling and removing road pavement etc including screening and stacking of by-products upto one chain lead.	100 cft (m ³)	3272 1155.67			
1.9.3 Removing cement sand plaster from walls upto 14 ft height	100 sft (m ²)	419 45.11			
1.9.4 Cleaning mortar of old bricks to be used in brick masonry.	1000 bricks	2202			
1.9.5 Removing of white/colour wash upto 14 ft height	100 sft (m ²)	252 27.13			

CHAPTER 2

CARRIAGE OF MATERIALS

Notes:

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 3 Carriage of Materials of "Technical Specifications for Railway Infrastructure Works, Volume I, (2016)"
- (2) Carriage of material for distance less than one mile shall be normally done by cart & beyond one mile carriage shall invariably be done by truck/tractor trolleys.
- (3) For carriage of material upto 1200 ft (330 m), the relevant carriage rates per chain shall be paid. In case carriage exceeds 1200 ft (360 m), the relevant carriage rates for first 1/4 mile (1st 400 m) and subsequent 1/4 miles (400 m) shall be paid, up to one mile.
- (4) The rates for carriage of materials other than those included in this chapter may be calculated on the basis of their equivalence to 100 cft of volume or 5 tons of weight of the respective items included in this chapter.
- (5) The rates included in this chapter are applicable to carriage of material on pacca roads only. For Kacha roads an allowance of 25% extra shall be allowed for 2nd mile (2nd 1.6 km) and subsequent miles (1.6 km) rates. Rate upto 1st mile (1.6 km) is however common to both kacha and pacca roads.
- (6) For hilly areas 25% above the rates in the plain areas shall be allowed for total distance covered.
- (7) In case of articles longer than 15 ft (4.6 m) carried in trucks/tractor trolleys, the following rates shall be allowed.
 - (i) 15.1 ft to 25 ft (4.6 to 7.5 m): Rate to be paid will be 1.5 times of the rate given in this chapter.
 - (ii) Above 25 ft (7.5 m): Rate to be paid will be 2 times of the rate given in this chapter.

The length measured shall not be the actual length, but the length of the form of consignment as actually received for carriage.
- (8) The term '**mile (kilometer)**' whenever used is to mean statute mile (kilometer).
- (9) The rates for carriage of materials include their loading & unloading and their stacking as directed.
- (10) The rates for carriage by boat or steamer shall be the same as by any other mechanical means on land.
- (11) The term "**chain**" whenever used is to mean 100 linear feet (30 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
2.1 Carriage of Building Materials (General)				3.2 & 3.3	
2.1.1 Carriage of 100 cft (2.83 m ³) of all materials like stone aggregate, ballast, spawl, kankar, brick bats, soil, lime (unslaked), surkhi, sand etc. or 200 cft (5.66 m ³) of timber, by truck or by any other means owned by the contractor.					
(a) 1st Chain (1st 30 m)	chain (m)	318 10.43			This rate will be paid for lead upto 1200 ft (360m) lead beyond 1200ft shall be paid as per items (d) & onward (for 1st and subsequent 1/4 mile /miles).
(b) 2nd Chain (2nd 30 m)	chain (m)	56 1.84			
(c) 3rd to 12th Chain (60 m -360 m)	chain (m)	34 1.12			
(d) 1st 1/4 mile (400 m)	1/4 mile (100 m)	755 188.75			
(e) 2nd and subsequent 1/4 mile (400 m) upto 1 mile (1.6 km)	1/4 mile (100 m)	77 19.25			
(f) 2nd mile (1.6 - 3.2 km)	mile (km)	270 168.75			
(g) 3rd mile (3.21 - 4.8 km)	mile (km)	247 154.38			
(h) 4th mile (4.81 - 6.4 km)	mile (km)	228 142.50			
(i) 5th mile (6.41 - 8.0 km)	mile (km)	213 133.13			
(j) 6th mile (8.01 - 9.6 km)	mile (km)	201 125.63			
(k) 7th mile and subsequent mile (9.61 km & beyond)	mile (km)	145 90.63			
2.1.2 Carriage of 1 ton of all material like, rails, fastenings, points and crossing, girders, pipe, sheets, M.S. bars, etc. by truck or any other means owned by the contractor:-					The word "Pipe" covers G.I., C.I., R.C.C., P.C.C., PPRC/PVC pipe etc.
(a) 1st Chain (1st 30 m)	chain (m)	64 2.10			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) 2nd Chain (2nd 30 m)	chain (m)	11 0.36			
(c) 3rd to 12th Chain (60 m - 360 m)	chain (m)	7 0.23			
(d) 1st 1/4 mile (400 m)	1/4 mile (100 m)	151 37.75			
(e) 2nd and subsequent 1/4 mile (400 m) upto 1 mile (1.6 km)	1/4 mile (100 m)	15 3.75			
(f) 2nd mile (1.61 - 3.2 km)	mile (km)	54 33.75			
(g) 3rd mile (3.21 - 4.8 km)	mile (km)	49 30.63			
(h) 4th mile (4.81 - 6.4 km)	mile (km)	46 28.75			
(i) 5th mile (6.41 - 8.0 km)	mile (km)	43 26.88			
(j) 6th mile (8.01 - 9.6 km)	mile (km)	40 25.00			
(k) 7th mile and subsequent mile (9.61 km & beyond)	mile (km)	29 18.13			
2.2 Carriage of Bricks/Brick Tiles				3.2 & 3.3	
2.2.1 Carriage of 1000 bricks, 9" x 4-1/2" x 3" (Nominal Size) or 1000 brick tiles 12" x 6" x 2":-					
(a) 1st Chain (1st 30 m)	chain (m)	199 6.53			
(b) 2nd Chain (2nd 30 m)	chain (m)	35 1.15			
(c) 3rd to 12th Chain (60 m -360 m)	chain (m)	21 0.69			
(d) 1st 1/4 mile (400 m)	1/4 mile (100 m)	232 58.0			
(e) 2nd and subsequent 1/4 mile (400 m) upto 1 mile (1.6 km)	1/4 mile (100 m)	33 0.33			
(f) 2nd mile (1.61-3.2 km)	mile (km)	120 75.00			
(g) 3rd mile (3.21-4.8 km)	mile (km)	113 70.63			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(h) 4th mile (4.81-6.4 km)	mile (km)	518 323.75			
(i) 5th mile (6.41-8.0 km)	mile (km)	133 83.13			
(j) 6th mile (8.01-9.6 km)	mile (km)	126 78.75			
(k) 7th mile and subsequent mile (9.61 km & beyond)	mile (km)	90 56.25			
2.2.2 Carriage of 1000 Nos. brick tiles, 9"x 4- 1/2" x 1-1/2":					
(a) 1st Chain (1st 30 m)	chain (m)	99 3.25			
(b) 2nd Chain (2nd 30 m)	chain (m)	18 0.59			
(c) 3rd to 12 th Chain (60 m -360 m)	chain (m)	11 0.36			
(d) 1st 1/4 mile (400 m)	1/4 mile (100 m)	161 40.25			
(e) 2nd and subsequent 1/4 mile (400 m) upto 1 mile (1.6km)	1/4 mile (100 m)	19 4.75			
(f) 2nd mile (1.61 - 3.2 km)	mile (km)	69 43.13			
(g) 3rd mile (3.21 - 4.8 km)	mile (km)	64 40.00			
(h) 4th mile (4.81 - 6.4 km)	mile (km)	60 37.50			
(i) 5th mile (6.41 - 8.0 km)	mile (km)	57 35.63			
(j) 6th mile (8.01 - 9.6 km)	mile (km)	55 34.38			
(k) 7th mile and subsequent mile (9.61 km & beyond)	mile (km)	43 26.88			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
2.3 Carriage of Cement Bags				3.2 & 3.3	
2.3.1 Carriage of 100 nos. 50 kg cement bags:-					
(a) 1st Chain (1st 30 m)	chain (m)	318 10.44			
(b) 2nd Chain (2nd 30 m)	chain (m)	56 1.84			
(c) 3rd to 12th Chain (60 m - 360 m)	chain (m)	34 1.12			
(d) 1st 1/4 mile (400 m)	1/4 mile (100 m)	515 128.75			
(e) 2nd and subsequent 1/4 mile (400 m) upto 1 mile (1.6 km)	1/4 mile (100 m)	61 15.25			
(f) 2nd mile (1.61 - 3.2 km)	mile (km)	222 138.75			
(g) 3rd mile (3.21 - 4.8 km)	mile (km)	206 128.75			
(h) 4th mile (4.81 - 6.4 km)	mile (km)	193 120.63			
(i) 5th mile (6.41 - 8.0 km)	mile (km)	183 114.38			
(j) 6th mile (8.01 - 9.6 km)	mile (km)	175 109.38			
(k) 7th mile and subsequent mile (9.61 km & beyond)	mile (km)	137 85.63			
2.4 Carriage of Bitumen, Tar & Lubricants				3.2 & 3.3	
2.4.1 Carriage of bitumen, tar or other lubricants in drums:-					
(a) 1st mile (1st 1.6 km)	per ton	140			For carriage beyond 3 mile (4.8 km) proportional rate based on item 2.1.2 above be paid
(b) 2nd mile (1.6 - 3.2 km)	per ton	44			
(c) 3th mile and subsequent mile (3.2 km and beyond)	per ton	41			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
2.5 Hiring of Truck/Tractor/ Tractor Trolley				3.2 & 3.3	
2.5.1 Hire charges of:-					(i)The rate includes pay of driver and cleaner, repairs if any and the cost of lubricants, fuel, loading and unloading, etc. (ii) The day means the duration of 8 hr
(a) Truck (8 ton capacity)	per day	12800			
(b)Tractor (Fiat-480) and Trolley with Jack, Capacity 7 m ³	per day	13600			
(c)Tractor (Fiat-480) and Trolley without Jack, Capacity 7 m ³	per day	8800			
(d) Tractor with rotator blade	per day	12800			
2.6 Hiring of Excavator and Crane					
2.6.1 Hire charges of:-					(i)The rate includes pay of driver and cleaner, repairs if any and the cost of lubricants, fuel, loading and unloading, etc. (ii) The day means the duration of 8 hr. (iii) For excavator and crane traveling time, from suppliers store to site, is generally charged, if necessary it shall be paid in addition to hiring duration
(a) Excavator (wheeled or chain type) upto 200 HP or more	per day	40000			
(b) Excavator (wheeled or chain type) more than 200 HP or more	per day	40000			
(c) Road crane having capacity upto 10 ton	per day	40000			
(d) Road crane having capacity more than 10 ton	per day	45600			

CHAPTER 3**LOADING, UNLOADING & STACKING**

Note.-

- (1) The rate for loading into and unloading from mobile trucks, trolleys and boats, etc. will be the same as for Railway wagons.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
3.1 Loading/Unloading - Construction Materials					
3.1.1 Loading into or unloading from railway wagons, shingle, sand, ashes, kankar, brick bats, coal and lime etc. including stacking, lead up to one chain (30 m)	100 cft (m ³)	1573 555.58			
3.1.2 Loading into or unloading from railway wagons, including stacking, lead up to one chain (30 m) of:					
(a) Bricks 9" x 4-1/2 x 3" or brick tiles 12" x 6" x 2"	1000 no.	983			
(b) Brick tiles 9" x 4-1/2" x 1-1/2"	1000 no.	492			
(c) Concrete solid blocks 6"x8"x12"	1000 no.	5243			
(d) Concrete hollow blocks 6"x 8"x 16"	1000 no.	4494			
3.1.3 Loading into or unloading from railway wagons, cement in 50 kg bags (from inside or outside the godown) and stacking, lead upto one chain (30 m).	100 no.	1573			
3.1.4 Loading into or unloading from railway wagons, structural steel, R.S. joists, rails and rail fastenings, etc. lead upto one chain (30 m).	per ton	629			
3.1.5 Loading into or unloading, from railway wagons, 45 gallon filled drums, lead upto one chain (30 m).	Each	94			
3.1.6 Loading into or unloading from railway wagons, packages of all sorts, upto one cwt (50 Kg), lead upto one chain (30m)	Each	47			Except cement in jute or paper bags.
3.1.7 Loading into or unloading from railway wagons pitching stone or spawl, including clearing 5ft. away from rails.	100 cft (m ³)	466 164.59			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
3.2 Unloading - POL Items					
3.2.1 Unloading oil, bitumen, tar, from railway wagons					
(a) Crude oil (to be pumped from tank wagon into tank)	1000 gln (1000 lit)	755 166.08			
(b) Crude oil (drained by gravity)	1000 gln (1000 lit)	1966 432.47			
(c) Crude oil materials from railway wagons, including stacking within one chain (30 m) lead.	1000 gln (1000 lit)	3146 692.04			
(d) Fuel oil from tank into empty tins/drums, including stacking within one chain (30 m) lead.	per ton	719			
(e) Petrol/Kerosene oil in 4 gallon tins, including stacking within one chain (30 m) lead.	100 no.	2045			
(f) Tar and bitumen in drums	per ton	787			The rate includes checking and weighing the tins.
3.3 Loading/Unloading - Rail Track Materials					
3.3.1 Loading into or unloading from railway wagons sleepers other than wooden and concrete, including stacking, lead within one chain (30 m).					
(a) Broad gauge sleepers	100 no.	3933			
(b) Meter gauge and narrow gauge sleepers.	100 no.	1966			
3.3.2 Loading into or unloading from railway wagons timber logs or timber for shuttering, including stacking, lead within one chain (30 m).	per ton	524			
3.3.3 Loading into or unloading from railway wagons timbers scraps or wooden plugs and stacking within one chain (30 m) lead.	per ton	787			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
3.3.4 Loading into railway wagons girders, rails, permanent way material (except wooden sleepers), iron work, M.S. bars, Pipes, etc. including lead one chain (30 m) and stacking inside wagons.	per ton	1007			
3.3.5 Unloading from railway wagons girders, rails, permanent way material (except wooden sleepers), iron works, M.S. bars, pipe, etc. including one chain (30 m) lead but excluding stacking.	per ton	503			
3.3.6 Loading into railway wagons wooden broad gauge sleepers including one chain (30 m) lead and stacking.	100 no.	3146			
3.3.7 Unloading from railway wagons wooden broad gauge sleepers including one chain (30 m) lead excluding stacking.	100 no.	2517			
3.3.8 Loading into railway wagons meter gauge or narrow gauge wooden sleepers including one chain (30 m) lead and stacking inside wagons.	100 no.	1678			
3.3.9 Unloading from railway wagons meter gauge or narrow gauge wooden sleepers, including one chain (30 m) lead but excluding stacking.	100 no.	839			
3.3.10 Loading into railway wagons, bridge and crossing timbers, including one chain (30 m) lead and stacking.	100 no.	6292			
3.3.11 Unloading from railway wagons bridge and crossing timbers, including one chain (30 m) lead but excluding stacking.	100 no.	3146			
3.3.12 Loading into railway wagons wooden blocks for sleepers including one chain (30 m) lead and stacking.	100 no.	1180			
3.3.13 Unloading from railway wagons wooden blocks for sleepers from wagons including one chain (30 m) lead but excluding stacking.	100 no.	629			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
3.3.14 Loading into railway wagons B.G. cement concrete sleepers including one chain (30 m) lead and stacking:-					
(a) R.C.C. Twin block sleepers.	100 no.	11545			
(b) P.S.C. Sleepers.	100 no.	13982			
3.3.15 Unloading from railway wagons B.G. cement concrete sleepers including one chain (30 m) lead but excluding stacking:-					
(a) R.C.C. Twin block sleepers	100 no.	6292			
(b) P.S.C. Sleepers	100 no.	7191			
3.4 Loading and Unloading - Earth					
3.4.1 Unloading earth from railway wagons and clearing upto 5ft (1.5 m) from rail.	100 cft (m ³)	472 166.71			
3.4.2 Unloading earth from railway wagons and spreading upto 15ft (4.5 m) from rail.	100 cft (m ³)	787 277.97			
3.5 Removing & Stacking of Materials					
3.5.1 Removing and stacking within one chain (30 m) lead:-					
(a) Stone, spawl, brick bats, brick tiles/concrete blocks of sizes, shingle, sand, lime, surkhi, ashes, Kankar, coal etc:	100 cft (m ³)	787 277.97			
(b) Bricks 9" x 4-1/2" x 3" or brick tiles 12" x 6" x 2".	1000 no.	2288			
(c) Brick tiles 9" x 4-1/2" x 1-1/2"	1000 no.	1144			
(d) Broad gauge wooden sleepers	100 no.	1258			
(e) Meter gauge or narrow gauge wooden sleepers	100 no.	719			
(f) Rails, girders, pipes, cement, structural steel, etc.	per ton	360			
(g) Bridge and crossing timbers, etc.	100 no.	4195			
(h) Wooden Blocks for sleepers	100 no.	472			
(i) B.G. Concrete sleepers of all kinds	100 no.	6292			

CHAPTER 4 EARTHWORKS

Notes.-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 4 Earthwork of "Technical Specifications for Railway Infrastructure Works, Volume I, (2016)"
- (2) The application of rates given in this chapter for excavation in hard soil, wet soil, slush, daldal and flowing water will be subject to the prior approval of concerned Divisional/Executive Engineer.
- (3) The application of rates given in this chapter for excavation in soft rock, medium hard rock and hard rock shall be subject to the prior approval of Chief Engineer, on the basis of geological investigation report of the relevant project site.
- (4) The following allowances for shrinkage should be provided for earth work which is not compacted, or evenly consolidated:-
 - (a) Deduction for shrinkage from the bank measurements when the earthwork is done by manual labour or tractor trolley = 10%
 - (b) Deduction for settlement from the bank measurements when the earthwork is done by heavy earth moving machinery = 5%
 - (c) No deduction for shrinkage shall be made for earth work carried out and tested for 95% or above modified AASHTO dry density.
- (5) The prescribed field and laboratory tests for the earthwork and its compaction will be arranged by the contractor at his own expenses .
- (6) The rates for earth work are inclusive of charges such as royalty and all other such charges, where ever involved.
- (7) In case of earthwork measurement, where extra lift is to be paid in terms of lead reference may be made to Annexure 1 of this chapter.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.1 Site Clearance					
4.1.1 Clearing and grubbing of sites including removal of stumps, roots,bushes,trees less than 6" (150 mm) girth and objectionable materials upto 12" (300 mm) in depth and disposal of materials within 100 ft (30 m) lead, as per drawings and in accordance with the specifications.	100 sft m ²	551 59.25		4.6.2, 4.6.3, 4.6.4, 4.6.5, 4.6.6	
4.1.2 Cutting of trees, removal and disposal of roots and stumps within 100 ft (30 m) lead, including filling of holes and compaction to required degree, complete in accordance with the specifications.					Uprooting stumps of trees less than 6" (150 mm) girth is included in the relevant rate for earthwork excavation.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
a) Above 6" (150 mm) and up to 12" (300 mm) girth	No.	944			
b) Above 12" (300 mm) and up to 2.0' (600 mm) girth	No.	1573			
b) Above 2.0' (600 mm) girth	No.	3146			
4.1.3 Cutting and Clearing of bush stumps, shrubs, roots, logs and trees less than 6" (150 mm) girth and disposal of material within 100 ft (30 m) lead as per drawings and in accordance with the specifications.					
(a) Trees of Light Concentration	100 sft (m ²)	79 8.49			
(b) Trees of Thick Concentration	100 sft (m ²)	118 12.69			
4.1.4 Stripping and Removal of top soil to required depth and disposal of stripped material in stock pile or spreading at designated area, within 100 ft (30 m) lead, complete as per drawings and in accordance with the specifications.	100 cft (m ³)	629 222.16			
4.2 Excavation - General					
4.2.1 Earth work excavation as per designed section, grade, lines and profiles, undressed, including disposal of excavated material upto single throw of kassi, in accordance with the specifications.				4.6.6, 4.8.3, 4.8.4, 4.8.5, 4.8.6,	
(a) In ashes, sand, soft soil or silt clearance.	100 cft (m ³)	590 208.39			
(b) In ordinary soil.	100 cft (m ³)	708 250.07			
(c) In hard soil or soft Stratum.	100 cft (m ³)	944 333.42			
4.2.2 Excavation as per designed section, grade, lines & profiles, undressed, including disposal of excavated material upto 100 ft (30 m) lead & lift upto 5 ft (1.5 m) in accordance with the specifications					
(a) In ashes, sand, soft soil or silt clearance.	100 cft (m ³)	865 305.52			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) In ordinary soil.	100 cft (m ³)	1022 360.97			
(c) In hard soil or soft Stratum.	100 cft (m ³)	1258 444.33			
4.2.3 Borrow pit excavation, undressed, lead upto 100 ft (30 m) and lift upto 5ft (1.5 m) in accordance with the specifications					
(a) In ordinary soil.	100 cft (m ³)	1101 388.87			
(b) In hard soil or soft murum.	100 cft (m ³)	1353 477.88			
(c) In shingle and gravel formation	100 cft (m ³)	1730 611.04			
4.2.4 Extra for excavation in wet soil.	100 cft (m ³)	551 194.61			
4.2.5 Extra for excavation in slush or daldal	100 cft (m ³)	787 277.97			
4.2.6 Extra for excavation in flowing water	100 cft (m ³)	1101 388.87			
4.2.7 Excavation in rock dressed to designed section, grade, line and profile in accordance with the specifications including the disposal of excavated material upto 100 ft (30 m) lead & lift upto 5 ft (1.5 m).					(i) Tools and plants required shall be the liability of contractor. (ii) Reduce the rate by 8% if the excavated section is not dressed or levelled to designed section
(a) In soft rock, slate, shale, schist or latrite, which can be excavated with pick and crow bar.	100 cft (m ³)	1809 63.89			
(b) In medium hard rock, requiring occasional blasting.	100 cft (m ³)	2339 826.13	2603 919.38		
(c) In hard rock requiring blasting	100 cft (m ³)	4175 147.46	5426 191.65		
4.2.8 Excavation in hard rock requiring blasting but blasting prohibited, dressed to designed section, grade, lines and profile in accordance with the specifications including disposal of excavated material upto 100 ft (30 m) lead and lift upto 5 ft (1.5 m).	100 cft (m ³)	8349 2948.87	10852 3832.93	4.8.4	(i) Tools and plants required shall be the liability of contractor. (ii) Reduce the rate by 8% if the excavated section is not dressed or levelled to designed section.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.3 Structural & Trench Excavations				4.8.4, 4.9, 4.10, 4.11, 4.12	
4.3.1 Structural excavation for foundation of buildings, bridges and other structures upto 5 ft (1.5 m) depth including dagbelling, dressing, refilling around structures with excavated earth, watering and ramming, lead upto 100 ft (30 m) complete in all respects.					
(a) In sand, ashes or loose soil.	100 cft (m ³)	1476 521.32			
(b) In ordinary soil.	100 cft (m ³)	1742 615.27			
(c) In hard soil or soft moorum.	100 cft (m ³)	1954 690.15			
4.3.2 Structural excavation for foundation of buildings, bridges and other structures from 5.1 ft upto 10.0 ft (1.51 - 3.0 m) depth including dagbelling, dressing, refilling, around structure with excavated earth, watering and ramming, lead upto 100 ft (30 m) complete in all respect.					
(a) In sand, ashes or loose soil.	100 cft (m ³)	1634 577.13			
(b) In ordinary soil.	100 cft (m ³)	1900 671.08			
(c) In hard soil or soft moorum.	100 cft (m ³)	2111 745.61			
4.3.3 Structural excavation for foundation of buildings, bridges and other structures upto 5 ft (1.5 m) depth including dagbelling, dressing, refilling, around structure with excavated earth, watering and ramming, lead upto 100 ft (30 m) complete in all respects.					
(a) In soft rock, slate, shale, schist or laterite work, with pick and crow bar.	100 cft (m ³)	2202 77.77			
(b) In medium hard rock requiring occasional blasting.	100 cft (m ³)	2545 898.89	2809 992.14		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(c) In hard rock requiring blasting,	100 cft (m ³)	4489 1585.51	5741 2027.72		
4.3.4 Structural excavation for foundation of buildings, bridges and other structures in hard rock (requiring blasting but blasting not permitted) upto 5 ft (1.5 m) depth including dagbelling, dressing, refilling, around structure with excavated material, including raming, lead upto 100 ft (30 m) complete in all respects	100 cft (m ³)	8978 3171.03	11481 4055.09		Tools and plants required shall be the liability of the contractor.
4.3.5 Extra for excavation requiring shoring.	100 cft (m ³)	224 79.12	270 95.36		Composite rate includes material i.e., planks etc.
4.3.6 Trench excavation in open cutting for sewers and manholes chambers to the designed section, lines, grade and profile according to drawings & specifications and disposal of excavated material within 100 ft. (30m) and dressing in specified manner including shuttering, timbering and removing surface water, in all types of soil, except shingle, gravel and rock:-					
(a) 0 ft to 5.0 ft (0 to 1.52 m) depth.	100 cft (m ³)	1331 470.11	1391 491.30		(i) The rate does not include back filling after laying sewer, which is payable separately under item 4.3.8 below
(b) 5.01 ft to 10.0 ft (1.52 to 3.04 m) depth.	100 cft (m ³)	2214 781.98	2303 813.42		
(c) above 10.0 ft (3.04 m) depth.	100 cft (m ³)	2843 1004.15	2932 1035.58		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.3.7 Trench excavation in open cutting for sewers and manhole chambers, etc. below sub-soil water level to the designed section, line, grade and profile according to drawings & specifications including shoring, timbering and shuttering M.S. sheets on both sides of the trenches including removal / lowering of sub-soil water, in all types of soil, except shingle, gravel and rock:-					ii)The rate does not include backfilling after laying sewers which is payable separately under item 4.3.8 below.
(a) 0 ft to 4.0 ft (0 to 1.2 m) depth below SSWL	100 cft (m ³)	2154 760.79	2616 923.97		
(b) 4.01 ft to 8.0 ft (1.2 to 2.4 m) depth below SSWL	100 cft (m ³)	2692 950.81	3222 1138.01		
(c) exceeding 8 ft (2.4 m) depth below SSWL	100 cft (m ³)	4039 1426.57	4631 1635.67		
4.3.8 Back filling of excavated earth in trenches in all types of soil including dressing, levelling, compaction, etc. and lead upto one chain.	100 cft (m ³)	1004 354.61			
4.3.9 Trench excavation for water supply pipeline upto 5 ft (1.5 m) depth from ground level to the design section, line, grade and profiles according to drawings & specifications in all types of soils, except rock.	100 cft (m ³)	1210 427.37			
4.3.10 Trench excavation in open cutting up to 5' -0" ft depth for storm water channels/drains and sullage drains in open areas, roads, streets and lanes, including under pinning of walls and shoring to protect existing work, shuttering and timbering the trenches, dressed to design level and dimensions, trimming, removal of surface water from trenches, back filling, disposal and dressing of surplus excavated material within 100 ft (30 m) lead, complete.					
(a) In Ordinary soil	100 cft (m ³)	1266 447.15	1281 452.45		
(b) In hard soil	100 cft (m ³)	1481 523.09	1499 529.45		
(c) In gravel and Shingle / Soft rock not requiring blasting	100 cft (m ³)	2114 746.66	2139 755.49		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.3.11 Trench excavation in open cutting 5 - 01 ft to 10 - 0 ft (1.5 to 3.0 m) depth for storm water channels/drains and sullage drains in open areas, roads, streets and lanes including under pinning of walls and shoring to protect existing work, shuttering and timbering the trenches, dressed to design level and dimensions, trimming, removal of surface water from trenches, back filling, disposal and dressing of surplus excavated material within 100 ft (30 m) lead complete.					
(a) In ordinary Soil	100 cft (m ³)	1373 484.94	1427 504.02		
(b) In hard Soil	100 cft (m ³)	1584 559.47	1648 582.07		
(c) In gravel and shingle / soft rock not requiring blasting	100 cft (m ³)	2293 809.89	2353 831.08		
4.4 Filling Earth under Floors / behind Retaining Structures				4.9, 4.10.12, 4.11.10 & 4.12.7	
4.4.1 Filling, watering and ramming earth under floors:-					
(a) With surplus earth from foundation, etc.	100 cft (m ³)	847 299.16			
(b) With new earth excavated from outside the structure	100 cft (m ³)	1948 688.03			
4.4.2 Ramming earth work behind retaining walls.	100 cft (m ³)	315 111.26			
4.4.3 Providing & filling coarse grained granular backfill, without admixture of fine particles, clean and permeable behind the abutments / retaining walls, of approved gradation and source, compacted in layers with approved mechanical means, including all lead, lift, carriage, dressing to designed section / profile, complete in all respect.	100 cft (m ³)	933 329.54	15371 5429.04		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.5 Embankment with Excavated/Barrow Material				4.6.6, 4.6.7, 4.8.7 & 4.12.5	
4.5.1 Earth work for embankment in ordinary soil with excavated material, lead upto 300 ft (90 m) including placing of earth in layers, ploughing & mixing with blade, grader, or disc horrow or other suitable equipment and compaction by mechanical means at optimum moisture content and dressing to designed section, lines, grade and profile according to drawings & specifications complete in all respects.					The "excavated material" includes all suitable material removed from excavation for railway formation, excavations from barrowpits in railway land and surplus material from structural excavations.
(a) 95% to 100% maximum modified AASHTO dry density	100 cft (m ³)	1241 438.32	1401 494.83		
(b) 90% maximum modified AASHTO dry density	100 cft (m ³)	1179 416.42	1331 470.11		
(c) 85% maximum modified AASHTO dry density.	100 cft (m ³)	1120 395.58	1264 446.44		
4.5.2 Compaction of earth work available at site of work, including placing of earth in layers, ploughing & mixing with blade, grader, or disc horrow or other suitable equipment and compaction by mechanical means at optimum moisture content, dressing to designed section, lines, grade and profile according to drawings & specifications complete in all respects.					The rate also includes hire charges of machinery, cost of fuel, lubricant, pay of driver and cleaner, etc., but excludes the cost of supply of earth at site of work.
(a) 95% to 100% maximum modified AASHTO dry density.	100 cft (m ³)	140 49.45	300 105.96		
(b) 90% maximum modified AASHTO dry density.	100 cft (m ³)	133 46.98	285 100.66		
(c) 85% maximum modified AASHTO dry density.	100 cft (m ³)	127 44.86	271 95.72		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.5.3 Compaction of natural ground including ploughing & mixing with blade, grader, or disc horrow or other suitable equipment and compaction by mechanical means at optimum moisture content, dressing to designed section, lines, grade and profile according to drawings & specifications complete in all respects. with power roller as per drawing and in accordance with the specifications.					
(a) 95% to 100% maximum modified AASHTO dry density.	100 cft (m ³)	70 24.72	230 81.24		
(b) 90% maximum modified AASHTO dry density.	100 cft (m ³)	67 23.66	218 77.00		
(c) 85% maximum modified AASHTO dry density.	100 cft (m ³)	60 21.19	204 72.05		
4.5.4 Mixing, moistening earth to optimum moisture content in layers for compaction, etc, complete.	100 cft (m ³)	211 74.5			
4.5.5 Compaction by rolling with animal/hand driven roller including all charges complete:-					
(a) Soft, or sandy soil	100 cft (m ³)	197 69.58			
(b) Ordinary soil	100 cft (m ³)	236 83.36			
(c) Hard soil	100 cft (m ³)	275 97.13			
(d) Admixture of shingle	100 cft (m ³)	315 111.26			
4.5.6 Earthwork to recoup short bank / embankment					
Earth work for recoupment of short embankment in ordinary soil with excavated material, brought from outside Railway land including charges for lifting to top of embankment and lead upto 4.8 km, leveling, breaking clods, compaction and dressing, all labour and material complete in all respect according to drawings & specifications.	100 cft (m ³)	1162 410.42	1580 558.06		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.6 Dressing of Earthwork				4.12	
4.6.1 Dressing of earthwork excavated to designed section and profile etc, complete:-					
(a) Ashes, sand, silt or soft soil	100 cft (m ³)	62 21.90			
(b) In ordinary or hard soil.	100 cft (m ³)	128 45.21			
(c) In gravel work or soft rock not requiring blasting.	100 cft (m ³)	296 104.55			
4.6.2 Dressing of slopes:-					
(a) Dressing slopes of banks or ground surface.	100 sft (m ²)	275 29.60			To be paid only when exclusively dressing is done and no earthwork is carried out in embankment or cutting.
(b) Dressing of earthwork (done by machinery or otherwise and left undressed) to designed section.	100 sft (m ²)	315 33.91			(i) The surface area dressed is to be taken for measurement. (ii) The item is applicable where the dressing is done by the contractor other than the one who executed the work.
4.7 Re-handling & Carriage of Earth				4.6.26 & 4.6.27	
4.7.1 Rehandling of excavated earth, lead upto a single throw of kassi.	100 cft (m ³)	393 138.81			
4.7.2 Rehandling of excavated earth manually/ by cart, lead upto 50 ft (15 m):-					
(a) For earth work soft, ordinary and hard soil	100 cft (m ³)	551 194.61			
(b) For gravel, shingle or rock	100 cft (m ³)	787 277.97			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.7.3 Extra for every 50 ft (15 m) additional lead or part thereof:-					This rate shall be applicable upto 1000 ft (300 m) total distance, including the lead covered in the item of earthwork.
(a) for earth work soft, ordinary, hard and very hard	100 cft (m ³)	35 12.36			
(b) for gravel, shingle or rock	100 cft (m ³)	42 14.83			
4.7.4 Transportation of earth all types when the total distance including the lead covered in the item of work, is more than 1000 ft (300 m):-					This rate will be paid in addition to rate of earth work without deducting the lead cover in the relevant item of earth work.
(a) Upto first 1/4 mile (1320 ft)	100 cft (m ³)	755 26.67			
(b) For every 330 ft (100 m), additional lead or part thereof, beyond 1/4 mile (400 m) upto one mile (1.6 km).	100 cft (m ³)	77 27.20			
(c) For every 1/4 mile (400 m) additional lead or part thereof, beyond one mile upto 2 mile (beyond 1.6 km upto 3.2 km).	100 cft (m ³)	67 23.66			
(d) For every 1/4 mile (400 m) additional lead or part thereof, beyond 2 miles.	100 cft (m ³)	62 21.90			For earth work involving carriage of more than 3 miles through rates will be called
4.8 Miscellaneous Items					
4.8.1 Berm cutting:-					
(a) Lead upto a single throw of kassi without dressing.	100 cft (m ³)	472 166.71			
(b) Upto 50 ft (15 m) lead including dressing.	100 cft (m ³)	926 327.06			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
4.8.2 Ploughing and levelling borrow pits:-					Area ploughed to be measured.
(a) Upto 3 ft (0.9 m) depth	acr (ha)	3146 7787.13			
(b) Above 3 ft (0.9 m) depth	acr (ha)	4719 11680.69			
4.8.3 Levelling, dressing and making lawns.	100 sft (m ²)	755 81.28			
4.8.4 Plantation of grass in lawns (excluding cost of grass).	100 sft (m ²)	629 67.71			
4.8.5 Plantation of grass on slopes of banks or lawns with grass sods including ploughing, laying, setting and watering (Turf got from within a distance of 5 miles (8 km) and maintenance for 15 days) including cost of DACCA/CHINA Grass	100 sft (m ²)	2768 297.98	2784 299.70		
4.8.6 Extra for clay puddling.	100 cft (m ³)	787 277.97			
4.8.7 Removing earth from roofs lowering to ground and disposed with in one chain (30 m) lead.	100 cft (m ³)	881 311.17			
4.8.8 Bailing out water:-					Rate to be operated only for very small quantities.
(a) by hand	100 cft (m ³)	472 166.71			
(b) by pump	100 cft (m ³)	59 20.84	109 38.50		Rate includes cost of providing pump, POL and operation charges etc.

ANNEXURE - A to Chapter- 4
CONVERSION OF LIFT INTO LEAD

In the case of earthwork measurement where extra lead is to be paid in lieu of lift, the method will be as follows:

The lift will be measured from the center of gravity of the excavated earth to that of placed earth. This will constitute the mean lift for the section.

When earth has to be carried over a spoil bank and dumped beyond it the mean lift would be the difference in level between the center of gravity of the excavated earth and the top of the spoil bank omitting the dowel.

The equivalent leads for various mean lifts are given below:

Lift in feet	Conversion factor	Equivalent Horizontal lead in feet
1	1' lift 8' lead	8
2	1' lift 8' lead	16
3	1' lift 8' lead	24
4	1' lift 8' lead	32
5	1' lift 10' lead	50
6	1' lift 10' lead	60
7	1' lift 10' lead	70
8	1' lift 10' lead	80
9	1' lift 11' lead	99
10	1' lift 12' lead	120
11	1' lift 13' lead	143
12	1' lift 14' lead	168
13	1' lift 15' lead	195
14	1' lift 16' lead	224
15	1' lift 17' lead	255
16	1' lift 18' lead	288
17	1' lift 19' lead	323
18	1' lift 20' lead	360
19	1' lift 21' lead	399
20	1' lift 22' lead	440
21	1' lift 23' lead	483
22	1' lift 24' lead	528
23	1' lift 25' lead	575
24	1' lift 26' lead	624
25	1' lift 27' lead	675
26	1' lift 27' lead	702
27	1' lift 27' lead	729
28	1' lift 27' lead	756
29	1' lift 27' lead	783
30	1' lift 27' lead	810

These conversion factors also incorporate allowance for extra lead due to cross lead with a view to ensure a uniform system. The equivalent lead will be added to the horizontal lead to get the total lead to be paid for. The exact site or R.D.s between which extra lead is to be given must be recorded in the first column of detailed measurements in the measurement book.

CHAPTER 5

CONCRETE

Notes:

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 5 "Concrete" of " Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and stacking them within 500 ft (152 m).
- (3) If concrete mixer or high frequency vibrator, etc., is supplied by the department, all charges including depreciation will be recovered from the contractor.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5.1 Dry Ramming of Brick/Stone Ballast				5.2.1	
5.1.1 Providing and laying dry rammed stone ballast 1-1/2" (40 mm) to 2" (50 mm) gauge.	cft (m ³)	63 2223.12	214 7551.54		
5.1.2 Providing and laying dry rammed brick ballast 1-1/2" (40 mm) to 2" (50 mm) gauge.	cft (m ³)	63 2225.16	214 7558.48		
5.2 Cement Concrete in Foundations				5.2.1, to 5.2.3 5.2.6,5.4	
5.2.1 Providing and laying cement concrete with stone ballast 1-1/2" (40 mm) to 2" (50 mm) gauge in foundation and plinth:-					
(a) Ratio 1:3:6	cft (m ³)	116 4097.12	496 17518.72		
(b) Ratio 1:4:8	cft (m ³)	116 4097.12	448 15823.36		
(c) Ratio 1:5:10	cft (m ³)	116 4097.12	420 14834.40		
(d) Ratio 1:6:12	cft (m ³)	116 4097.12	397 14022.04		
5.2.2 Providing and laying cement concrete with brick ballast 1-1/2" to 2" gauge in foundation and plinth:-					
(a) Ratio 1:3:6	cft (m ³)	116 4097.12	496 17518.72		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Ratio 1:4:8	cft (m ³)	116 4097.12	448 15823.36		
(c) Ratio 1:5:10	cft (m ³)	116 4097.12	420 14834.40		
(d) Ratio 1:6:12	cft (m ³)	116 4097.12	397 14022.04		
5.2.3 Extra on item No. 5.2.1 & 5.2.2 above, for sedimentation tank or filter beds:-					
(a) in bed	cft (m ³)	41 1448.12			
(b) on slope	cft (m ³)	58 2048.56			
5.3 Damp Proof Course (DPC)				6.5.3	
5.3.1 Providing and laying damp proof course of cement concrete 1:2:4 nominal mix (using cement, sand and shingle/crushed stone), including bitumen coating:-					The rate includes overlaps of polythene sheet.
(a) With one coat of bitumen 10/20 grade @ 19 lbs per 100 sft and polythene sheet 500 gauge.					
(i) 1-1/2" (40 mm) thick	sft (m ²)	53 570.55	150 1614.75		
(ii) 2" (50 mm) thick	sft (m ²)	53 570.55	171 1840.82		
(iii) 3" (75 mm) thick	sft (m ²)	55 592.08	217 2336.01		
(b) with two coats of bitumen 10/20 grade @34 lbs/100 sft and ploythene sheet 500 gauge.					
(i) 1-1/2" (40 mm) thick	sft (m ²)	53 570.55	166 1786.99		
(ii) 2" (50 mm) thick	sft (m ²)	53 570.55	188 2023.82		
(iii) 3" (75 mm) thick	sft (m ²)	55 592.08	234 2519.01		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5,3.2 Providing and laying damp proof course horizontal or vertical with cement sand plaster and bitumen coating:-					The rate includes overlaps of polythene sheet
(A) With one coat of bitumen 10/20 grade @19 lbs/100 sft and polythene sheet 500 gauge;					
(a) Cement sand plaster ratio 1:4;					
(i) 1/2" (12 mm) thick.	sft (m ²)	40 430.60	85 915.03		
(ii) 3/4" (19 mm) thick	sft (m ²)	40 430.60	93 1001.15		
(b) Cement sand plaster ratio 1:3;					
(i) 1/2" (12 mm) thick.	sft (m ²)	40 430.60	87 936.56		
(ii) 3/4" (19 mm) thick	sft (m ²)	40 430.60	96 1033.44		
(c) Cement sand plaster ratio 1:2;					
(i) 1/2" (12 mm) thick	sft (m ²)	40 430.60	93 1001.15		
(ii) 3/4" (19 mm) thick	sft (m ²)	40 430.60	106 1141.09		
(B) With two coats of bitumen 10/20 grade @34 lbs/100 sft and polythene sheet 500 gauge;					
(a) Cement sand plaster ratio 1:4;					
(i) 1/2" (12 mm) thick	sft (m ²)	40 430.60	101 1087.27		
(ii) 3/4" (19 mm) thick	sft (m ²)	40 430.60	109 1173.39		
(b) Cement sand plaster ratio 1:3;					
(i) 1/2" (12 mm) thick.	sft (m ²)	40 430.60	103 1108.80		
(ii) 3/4" (19 mm) thick	sft (m ²)	40 430.60	112 1205.68		
(c) Cement sand plaster ratio 1:2;					
(i) 1/2" (12 mm) thick.	sft (m ²)	40 430.60	110 1184.15		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5.3.3 (ii) 3/4" (19 mm) thick Supplying and laying polythene sheet under floors and on roofs etc.	sft (m ²)	40 430.60	123 1324.10		The rate includes overlaps.
(a) 300 gauge (.003" thick)	sft (m ²)	4 43.06	8 86.12		
(b) 500 gauge (.005" thick)	sft (m ²)	5 53.83	10 107.65		
5.3.4 Laying 2" thick sand and bitumen carpet, with bitumen 10/20 grade mixed with sand in the ratio of 4% , on top of foundation of oil tank.	sft (m ²)	34 366.01	95 1022.68		
5.4 Plain Cement Concrete				5.2.1 to 5.2.3 5.2.6 & 5.4	
5.4.1 Providing cement concrete plain using coarse sand and screened graded & washed aggregate of approved quality including placing compacting, finishing, curing, complete as per specifications without shuttering on ground floor of building and for structures up to 20ft height.					
(a) Nominal mix 1:2:4	cft (m ³)	130 4591.60	636 22463.52		
(b) Nominal Mix (1:3:6)	cft (m ³)	130 4591.60	516 18225.12		
(c) Nominal Mix (1:4:8)	cft (m ³)	130 4591.60	463 16353.16		
5.4.2 Extra for using sulphate resistant cement.	per bag		220		
5.5 Shuttering for Plain Cement Concrete (vertical)				5.4.9	
5.5.1 Providing vertical wooden/steel shuttering for plain cement concrete works, including its erection and removal complete.	sft (m ²)	58 624.37	96 1033.44		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5.6 Fabrication of Steel Reinforcement				5.3, 5.6	
5.6.1 Providing and laying mild steel reinforcement including the cost of straightening, cutting, bending, binding, wastage, and overlaps, placing in position on cement concrete spacers or MS chairs, tying them with binding wire, complete in all respects as per drawing and in accordance with the specifications.				5.3	The rate includes wastage over laps and chairs, etc.
(a) Steel bars (Grade 40) conforming to ASTM A-615, $f_y=40,000$ Psi/276 N/mm ² (Mpa)	per kg	20	362		For fabrication of steel reinforcement for pile foundations refer to chapter 14
(b) Deformed bars (Grade 60) $f_y=60,000$ Psi/ 412 N/mm ² (Mpa)	per kg	24	372		
(c) Plain bars 1/4" dia (Grade -36 $f_y=36,000$ Psi/248 N/mm ² (Mpa)	per kg	16	347		
5.6.2 Providing and laying high tensile steel prestressing cable conforming to ASTM A-416 for prestressed (post tensioned) concrete including assembling by drawing the H.T. wire through metal spacer plate, inserting in helix core and taping or tying, sheathing in longitudinally welded metal corrugated sheath, positioning, anchorage with male and female set of anchorage cone, forming ducts for transverse cable stressing cables with jack at both ends as per stressing schedule, maintaining stressing record and supply the same in the approved proforma to the Engineer-in-charge, making loop at blind end, including all materials required for it, grouting the cable ducts with cement cutting projected ends & making good recesses etc., complete in all respects in accordance with the specifications.	per kg	104	663	5.6	The rate includes wastage in cutting and breakage in stressing etc

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5.6.3 Fabrication of high tensile steel reinforcement conforming to ASTM A-416 for prestressed (pre-tensioned) concrete work, including inserting wire in moulds, providing M.S. shear bars, spacers and lift hooks, male and female anchorage, tie down, struts, stressing cables, maintaining stress record and supply the same in approved proforma to the Engineer-in-charge, cutting wires and projecting ends and making good recesses. etc. complete in all respects in accordance with the specifications.	per kg	60	627	5.6	(i) The rate includes wastage in cutting and breakage in stressing etc. (ii) Quantity of H.T.wire will form basis of payment.
5.7 Reinforced/Prestressed Cement Concrete				5.2.1 to 5.2.7	
5.7.1 Providing & laying reinforced cement concrete (including prestressed concrete), using coarse sand and crushed stone of approved quality / source, including mixing, transporting, placing, compacting, finishing and curing etc. complete in all respect as per specification but excluding the cost of steel reinforcement, its fabrication and placing in position etc. (a) Reinforced cement concrete in roof slabs, beams, columns, lintels, girders & other structural members cast in-situ or prestressed members cast in-situ complete in all respect as per specifications, including the cost of form work, moulds and shuttering complete in all respects, on ground floor of the building and for structures upto 20 ft height					(1) The rate includes rendering surface smooth and the plastering done for making up all surfaces after removing centering. If plastering for smoothing surface not done the rate be reduced by 5%. (2)The tenders condition should specified whether concrete will be supplied on the basis of nominal mix or 28 days cylinder strength

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(i) Nominal mix 1:1:2	cft (m ³)	211 7452.52	1015 35849.80		(3) For reinforced cement concrete for pile foundation refer to chapter 14
(ii) Nominal mix 1:1-1/2:3	cft (m ³)	211 7452.52	869 30693.08		
(iii) Nominal mix 1:2:4	cft (m ³)	211 7452.52	794 28044.08		
(b) Reinforced cement concrete in rafts/spread/strip foundations base slab of columns, retaining walls floor and track supports etc. and other structural members other than those mentioned in 5.7.1 (a) complete in all respect as per specification, but excluding the cost of form work, moulds and shuttering.					For item (b) the cost of shuttering may be paid against item 5.5.1
(i) Nominal mix 1:1:2	cft (m ³)	137 4838.84	858 30304.56		
(ii) Nominal mix 1:1-1/2:3	cft (m ³)	137 4838.84	713 25183.16		
(iii) Nominal mix 1:2:4	cft (m ³)	137 4838.84	639 22569.48		
(c) Pre-cast reinforced cement concrete and prestressed reinforced cement concrete in columns, beams, lintels, stair cases, shelves, manholes/drain covers etc. including formwork, complete in all respect as per specifications.					
(i) Nominal mix 1:1:2	cft (m ³)	237 8370.84	1019 35991.08		
(ii) Nominal mix 1:1-1/2:3	cft (m ³)	237 8370.84	874 30869.68		
(iii) Nominal mix 1:2:4	cft (m ³)	237 8370.84	800 28256.00		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(d) Reinforced cement concrete with ready mix concrete from batching plant in roof slabs, beams, columns, lintels, girders, foundation, base slab, retaining walls & other structural members cast in-situ or prestressed members cast in-situ complete in all respect as per specifications, including the cost of form work, moulds and shuttering complete in all respects, placing concrete upto any height or in basements, but without use of concrete pump.					1. If concrete pump is used for spreading & placing concrete, the composite rate be increased by 10%
(i) 3000 psi compressive cylinder strength	cft (m ³)		993 35072.76		
(ii) 4000 psi compressive cylinder strength	cft (m ³)		1086 38357.52		
(iii) 5000 psi compressive cylinder strength	cft (m ³)		1269 44821.08		
5.7.2 Erecting and fixing in position, precast cement concrete slabs etc. including all lead and lift complete.	cft (m ³)	152 5368.64	183 6463.56	5.2.1 to 5.2.7 & 5.5	
5.7.3 Extra labour for laying concrete plain or reinforced at					
(a) 2nd and subsequent storeys in buildings.	cft (m ³)	63 2225.16			
(b) Above 20 ft (6 m) upto 40 ft (12 m) for	cft (m ³)	79 2790.28			
(c) For every additional 10 ft (3 m) height beyond 40 ft for other than buildings.	cft (m ³)	39 1377.48			
5.7.4 Lifting transporting and placing in position precast prestressed concrete beam, girder & other members on the bridge to correct alignment and level etc. complete in all respect including horizontal lead upto 100 feet (30m) lift upto 30 feet (10 m)				5.6	
(a) Beam upto 50 ft (15 m) length	cft (m ³)	30 1059.60			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Beam above 50 ft (15 m) upto 75 ft (23 m) length	cft (m ³)	40 1412.80			
(c) Beam above 75 ft (23 m) upto 100 ft (30.5 m) length	cft (m ³)	58 2048.56			
(d) Beam above 100 ft (30.5 m) upto 150 ft (45.75 m) length	cft (m ³)	77 2719.64			
(e) Beam above 150 ft (45.75 m) length.	cft (m ³)	99 3496.68			
5.8 Other Precast Cement Concrete Works					
5.8.1 Providing & fixing in position precast cement concrete solid or face blocks (1:2:4), including cost of templates.	cft (m ³)	128 4520.96	647 22852.04		
5.8.2 Providing & fixing in position precast cement concrete hallow blocks (1:2:4) including cost of templates.	cft (m ³)	129 4556.28	465 16423.80		
5.8.3 Providing and fixing in position ornamental cement concrete (1:2:4) Jali including cost of steel & its fabrication and templates complete in all respects.					
(a) 2" (50 mm) thick	sft (m ²)	106 1141.09	269 2895.79		
(b) 3" (75 mm) thick	sft (m ²)	148 1593.22	351 3778.52		
(c) 4" (100 mm) thick	sft (m ²)	191 2056.12	433 4661.25		
5.8.4 Providing reinforced cement concrete spouts, including fixing in position (2-1/2' x 6" x 5") (760 mm x 150 mm x 125 mm) complete in all respects	each	1059	1573		
5.9 Admixtures					
5.9.1 Extra for adding water proofing agent as approved by the Engineer incharge in cement mortar/concrete.	per kg	--	440	5.2.7 & 5.4	

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5.9.2 Extra for adding setting time accelerating agent as approved by the Engineer incharge in cement mortar/concrete.	per kg	--	385		
5.10 Contraction/Expansion Joints				5.4 & 5.7	
5.10.1 Providing and fixing 6" (150 mm) wide curved sheet of required shape fixed on face of the expansion joint with G.I. Screw 1.5 inch long to cover expansion joints vertically:- (a) Aluminum sheet 1/16 inch thick	per rft (m)	49 160.77	238 780.88		
(b) G.I. Sheet 14 SWG.	per rft (m)	27 88.59	213 698.85		
5.10.2 Providing and fixing 6" (150 mm) wide G.I. sheet 18 SWG stopper to expansion joint.	per rft (m)	16 52.50	186 610.27		
5.10.3 Filling expansion joints with bitumen 10/20 grade / asphaltic mixture.	per rft (m)	15 49.22	40 131.24		
5.10.4 Providing and fixing 5 mm thick rubber water stopper in construction joints of RCC water tanks including fixing in position complete.	sft (m ²)	15 161.48	88 947.32		
5.10.5 Providing brass sheet 3 mm thick water stopper in construction joints & RCC water tanks, including over laps, fixing in position, etc. complete.	sft (m ²)	20 215.30	8204 88316.06		
5.10.6 Providing & laying preformed expansion joint filler, non-extruding and resilient type conforming to AASHTO M-213 specifications as shown on the drawings.	sft (m ²)	45 484.43	458 4930.37		
5.10.7 Providing & filling joint filler, hot poured elastic type, conforming to AASHTO M-173, as shown on the drawings.	ft (m)	37 121.40	351 1151.63		
5.11 Miscellaneous Items					
5.11.1 Nicking cement concrete surface	sft (m ²)	13 139.95			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
5.11.2 Supplying and fixing broken glasses on court yard boundary walls, including 1:3:6 cement concrete coping.	sft (m ²)	77 828.91	183 1970.00		Payment shall be made for actual depth involved
5.11.3 Making holes in old cement concrete or stone masonry walls and repairing.	per inch dia per ft depth	635			
	per cm dia per m depth	820.25			
5.11.4 Keeping holes in cement concrete and fixing bolts in true alignment and levels including grouting with cement concrete 1:1.5:3 excluding cost of bolt.	per inch dia per ft depth	111	174		
	per cm dia per m depth	143.38	224.76		
5.11.5 Supplying and fixing RCC mosaic bench 8-0' long of approved design as per H.Q.E. sketch No. 3298 consisting of 1/2" mosaic topping of one part of white cement and marble powder ratio 3:1 and two parts marble chips laid over 2" thick precast RCC 1:2:4 slab (seat and back of bench). The rate also includes 3 Nos. precast RCC legs 3" thick finished with mosaic in grey cement, bolts and nuts. etc. rubbing, polishing, lead and lift complete in all respects.	each	13153	25109		
5.11.6 Providing and fixing RCC fencing on Platform complete in all respect as per H.Q.E sketch No.29537 (F-54) Type	ft (m)	104 341.22	388 1273.03		
5.11.7 Supplying and fixing RCC mosaic bench 6'-0" long of approved design as per H.Q.E. sketch No. 195 consisting of 1/2" mosaic topping of one part of white cement and marble powder ratio 3:1 and two parts marble chips laid over 2" thick precast RCC 1:2:4 slab (seat and back of bench). The rate also includes precast RCC legs 3" thick finished with mosaic in grey cement, bolts and nuts. etc. rubbing, polishing, lead and lift complete in all respects.	each	10152	19799		

CHAPTER 6

BRICK MASONRY

Notes:

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 6 Brick Masonry of " Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and its stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.1 Brick Work in Cement Sand Mortar				6.4.2 & 6.4.3	
6.1.1 Providing, laying and jointing pacca brick work in foundation and plinth in buildings or other than buildings using first class new bricks, raking of joints and curing as per drawings and specifications, complete in all respects in:-					
(a) Cement sand mortar 1:3	cft (m ³)	144 5086.08	547 19320.04		
(b) Cement sand mortar 1:4	cft (m ³)	144 5086.08	526 18578.32		
(c) Cement sand mortar 1:5	cft (m ³)	144 5086.08	513 18119.16		
(d) Cement sand mortar 1:6	cft (m ³)	144 5086.08	504 17801.28		
6.1.2 Providing, laying and jointing first class pacca brick work in foundation and plinth in buildings or other than buildings, using released bricks, including, raking of joints and curing as per drawings and specifications, complete in all respects in:-					
(a) Cement sand mortar 1:3	cft (m ³)	144 5086.08	264 9324.48		i)The rates do not include cost of released bricks which will be supplied free of cost by Railways.
(b) Cement sand mortar 1:4	cft (m ³)	144 5086.08	244 8618.08		
(c) Cement sand mortar 1:5	cft (m ³)	144 5086.08	231 8158.92		
(d) Cement sand mortar 1:6	cft (m ³)	144 5086.08	221 7805.72		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.1.3 Providing, laying and jointing first class pacca brick work in ground floor for 9" (225 mm) to 13-1/2" (337 mm) thick walls including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects in:-					(i) Masonry of court yard wall to be considered as masonry of buildings.
(a) Cement sand mortar 1:3	cft (m ³)	157 5545.24	560 19779.20		
(b) Cement sand mortar 1:4	cft (m ³)	157 5545.24	540 19072.80		
(c) Cement sand mortar 1:5	cft (m ³)	157 5545.24	526 18578.32		
(d) Cement sand mortar 1:6	cft (m ³)	157 5545.24	517 18260.44		
6.1.4 Providing, laying and jointing first pacca brick work in ground floor for 9" (225 mm) to 13-1/2" (337 mm) thick walls with released bricks including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects. in:-					i)The rates do not include cost of released bricks which will be supplied free of cost by Railways.
(a) Cement sand mortar 1:3	cft (m ³)	157 5545.24	278 9818.96		
(b) Cement sand mortar 1:4	cft (m ³)	157 5545.24	258 9112.56		ii) The labor for cleaning of released bricks to be
(c) Cement sand mortar 1:5	cft (m ³)	157 5545.24	244 8618.08		paid under items 6.8.2 or 6.8.3 as appropriate.
(d) Cement sand mortar 1:6	cft (m ³)	157 5545.24	235 8300.20		
6.1.5 Providing, laying and jointing first class pacca brick work in ground floor for 4-1/2" thick walls. including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects in:-					
(a) Cement sand mortar 1:3	cft (m ³)	175 6181.00	578 20414.96		
(b) Cement sand mortar 1:4	cft (m ³)	175 6181.00	558 19708.56		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(c) Cement sand mortar 1:5	cft (m ³)	175 6181.00	544 19214.08		
(d) Cement sand mortar 1:6	cft (m ³)	175 6181.00	535 18896.20		
6.1.6 Add extra labour on item No.6.1.3, 6.1.4, 6.1.5, for brick work in:-					
(a) First Floor	cft (m ³)	45 1589.40			
(b) Second Floor	cft (m ³)	53 1871.96			
(c) Third Floor	cft (m ³)	67 2366.44			
(d) Fourth and subsequent Floors	cft (m ³)	83 2931.56			
6.2 Cement Concrete Block Masonry				6.5.2 & 6.5.3	
6.2.1 Providing, laying and jointing block masonry using cement concrete (1:3:6) machine moulded solid blocks in foundation and plinth including scaffolding, raking of joints and curing as per drawings and specifications, complete in all respects in:-					The normal size of the solid blocks will be 6"x8"x12" (150 mm x 200mmx 300 mm) or 8"x8"x12" (200mmx 200mmx 300mm) for items 6.2.1 and 6.2.2
(a) Cement sand mortar 1:3	cft (m ³)	99 3496.68	423 14940.36		
(b) Cement sand mortar 1:4	cft (m ³)	99 3496.68	415 14657.80		
(c) Cement sand mortar 1:5	cft (m ³)	99 3496.68	408 14410.56		
(d) Cement sand mortar 1:6	cft (m ³)	99 3496.68	406 14339.92		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.2.2 Providing and laying and jointing block masonry using cement concrete (1:3:6) machine moulded solid blocks in ground floor including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects in:-					Same rate be paid for block masonry in other than buildings.
(a) Cement sand mortar 1:3	cft (m ³)	132 4662.24	456 16105.92		
(b) Cement sand mortar 1:4	cft (m ³)	132 4662.24	448 15823.36		
(c) Cement sand mortar 1:5	cft (m ³)	132 4662.24	441 15576.12		
(d) Cement sand mortar 1:6	cft (m ³)	132 4662.24	439 15505.48		
6.2.3 Providing and laying and jointing block masonry using cement concrete (1:3:6) machine moulded hallow blocks in ground floor including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects in:-					i) The normal size of the hallow blocks will be 6"x8"x16" (150 mm x 200mm x 400 mm)
(a) Cement sand mortar 1:3	cft (m ³)	132 4662.24	334 11796.88		ii) Same rate be paid for block masonry in other than buildings.
(b) Cement sand mortar 1:4	cft (m ³)	132 4662.24	326 11514.32		
(c) Cement sand mortar 1:5	cft (m ³)	132 4662.24	320 11302.40		
(d) Cement sand mortar 1:6	cft (m ³)	132 4662.24	319 11267.08		
6.2.4 Add extra labour on item No.6.2.2, 6.2.3 for block masonry work in:-					
(a) First Floor	cft (m ³)	45 1589.40			
(b) Second Floor	cft (m ³)	53 1871.96			
(c) Third Floor	cft (m ³)	67 2366.44			
(d) Fourth and subsequent Floors	cft (m ³)	83 2931.56			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.3 Brick Work for Cavity Walls				6.4.2, 6.4.3, 6.4.4 & 6.4.12	
6.3.1 Providing , laying and jointing first class pacca brick work in ground floor with 2" to 3" cavity having 4-1/2" thick walls on either side bonded with wall ties of approved design at required horizontal and vertical spacing including scaffolding, raking of joints and curing as per drawings and specifications, complete in all respects, in:-					i) Actual width of wall including cavity will be measured. ii) Extra labour on item no 6.3.1 for brick work in first, Second, Third and fourth floor shall be paid as per item 6.1.6
(a) Cement sand mortar 1:3	cft (m ³)	242 8547.44	576 20344.32		
(b) Cement sand mortar 1:4	cft (m ³)	242 8547.44	608 21474.56		
(c) Cement sand mortar 1:5	cft (m ³)	242 8547.44	590 20838.80		
(d) Cement sand mortar 1:6	cft (m ³)	242 8547.44	578 20414.96		
6.4 Brick Work other than for Buildings				6.4.2, 6.4.3 & 6.4.4	
6.4.1 Providing ,laying and jointing first class pacca brick work other than in buildings above foundations and plinth upto 10 ft (3 m) height including scaffolding, raking of joints and curing as per drawings and specifications, complete in all respects, in:-					Workshops, godowns, bins, house type godowns, reservoirs, filter beds, storage tanks, wells, screening chambers, collecting tanks, manholes, boundary wall etc., are to be treated as masonry other than buildings for items 6.4.1 and 6.4.2.
(a) Cement sand mortar 1:3	cft (m ³)	110 3885.20	528 18648.96		
(b) Cement sand mortar 1:4	cft (m ³)	110 3885.20	508 17942.56		
(c) Cement sand mortar 1:5	cft (m ³)	110 3885.20	495 17483.40		
(d) Cement sand mortar 1:6	cft (m ³)	110 3885.20	485 17130.20		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.4.2 Providing laying and jointing first class pacca brick work other than in buildings above foundations and plinth upto 10 ft (3 m) height using released bricks including scaffolding, raking of joints and curing as per drawings and specifications, complete in all respects, in:-					i)The rates do not include cost of released bricks which will be supplied free of cost by railway.
(a) Cement sand mortar 1:3	cft (m ³)	110 3885.20	230 8123.60		
(b) Cement sand mortar 1:4	cft (m ³)	110 3885.20	210 7417.20		ii) The labor for cleaning of released bricks to be paid under items 6.8.2 or 6.8.3 as appropriate
(c) Cement sand mortar 1:5	cft (m ³)	110 3885.20	197 6958.04		
(d) Cement sand mortar 1:6	cft (m ³)	110 3885.20	187 6604.84		
6.4.3 Extra labour for arch work in brick masonry, including labour for centering and decentering.	cft (m ³)	38 1342.16		6.4.2, 6.4.3 & 6.4.4	
6.4.4 Extra for pucca brick work in steining of wells or any other circular masonry.	cft (m ³)	27 953.64	44 1554.08	6.4.2, 6.4.3	
6.4.5 Extra labour for profile and flared walls.	cft (m ³)	9 317.88		6.4.2, 6.4.3	
6.4.6 Extra labour for pacca brick work in piers and abutment:-				6.4.2, 6.4.3	
(a) From 10 ft to 20 ft.	cft (m ³)	9 317.88			
(b) Above 20 ft height.	cft (m ³)	18 635.76			
6.4.7 Add extra labour on item No. 6.4.1 for every 10 ft additional height, or part thereof.	cft (m ³)	22 777.04			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.5 Reinforced / Perforated Brick Work				6.4.2, 6.4.3 & 6.4.11	
6.5.1 Providing, laying and jointing reinforced brick work in lintel of openings laid in 1:3 cement sand mortar including all labour, material, shuttering & lifting and placing in position etc, and filling of gap between the bricks with 1:2:4 PCC (but excluding cost of steel reinforcement and its fabrications which shall be paid separately) complete in all respects:-	cft (m ³)	310 10949.20	728 25712.96		
6.5.2 Providing, laying and jointing first class pacca brick walling laid in 1:3 cement sand mortar, reinforced with 1" wide 18 gauge hoop iron including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects.					
(a) 4-1/2" thick walling with hoop iron bonding 6" apart.	sft (m ²)	54 581.31	269 2895.79		
(b) 4-1/2" thick walling with hoop iron bonding 12" apart.	sft (m ²)	49 527.49	235 2529.78		
(c) 3" thick walling with hoop iron bonding 6" apart.	sft (m ²)	42 452.13	209 2249.89		
(d) 3" thick walling with hoop iron bonding 12" apart.	sft (m ²)	42 452.13	177 1905.41		
6.5.3 Providing, laying and jointing perforated pacca brick walling half brick 4-1/2" thick in ground floor in cement sand mortar including scaffolding, raking of joints and curing as per drawings and specifications complete in all respects.					
(i) Cement sand mortar 1:3	sft (m ²)	77 828.91	178 1916.17		
(ii) Cement sand mortar 1:4	sft (m ²)	77 828.91	173 1862.35		
(iii) Cement sand mortar 1:5	sft (m ²)	77 828.91	170 1830.05		
(iv) Cement sand mortar 1:6	sft (m ²)	77 828.91	167 1797.76		
6.5.4 Add extra labour on item No. 6.5.3 for pacca brick work in:-					

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(a) First Floor	sft (m ²)	11 118.42			
(b) Second Floor	sft (m ²)	26 279.89			
(c) Third Floor	sft (m ²)	40 430.60			
(d) Fourth & subsequent Floor	sft (m ²)	83 893.50			
6.5.5 Providing, laying and jointing perforated pacca brick walling one brick (9") thick in ground floor in cement sand mortar including scaffolding, raking of joints and curing as per drawing and specifications complete in all respects, in				6.5.6.6.1 & 6.6.10	
(i) Cement sand mortar 1:3	sft (m ²)	116 1248.74	318 3423.27		
(ii) Cement sand mortar 1:4	sft (m ²)	116 1248.74	308 3315.62		
(iii) Cement sand mortar 1:5	sft (m ²)	116 1248.74	301 3240.27		
(iv) Cement sand mortar 1:6	sft (m ²)	116 1248.74	296 3186.44		
6.5.6 Add extra labour on item No. 6.6.5 for perforated pacca brick work in:-					
(a) First Floor	sft (m ²)	45 484.43			
(b) Second Floor	sft (m ²)	53 570.55			
(c) Third Floor	sft (m ²)	67 721.26			
(d) Fourth & subsequent Floor	sft (m ²)	83 893.50			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.6 Special Brick Works					
6.6.1 Providing, laying and fixing pacca Gutka bricks of first quality laid in 1:2 cement sand mortar supported with nails, including scaffolding, raking of joints and curing as per drawing and specifications complete in all respects.					In case of different size, it can be paid in nearest size of relevant thickness
(a) Size 1-1/2"x 1-1/2"x 9" (38 x 38 x 229 mm)	sft (m ²)	79 850.44	270 2906.55		
(b) Size 2-1/4"x 3"x 9" (57 x 75 x 229 mm)	sft (m ²)	79 850.44	206 2217.59		
(c) Size 2-1/4"x 2-1/4"x 9" (57 x 57 x 229 mm)	sft (m ²)	79 850.44	219 2357.54		
(d) Size 2-1/4"x 1-1/2"x 9" (57 x 38 x 229 mm)	sft (m ²)	79 850.44	270 2906.55		
6.6.2 Providing, laying and fixing Special pacca Gutka bricks (Architective Design) with or without raised or engraved deigning, of first quality laid in 1:2 cement sand mortar supported with nails, including scaffolding, raking of joints and curing as per drawing and specifications complete in all respects.					Special Gutka bricks (Architective Design) may vary in size and should be paid in nearest size of relevant thickness
(a) Size 1-1/2"x 1-1/2"x 9" (38 x 38 x 229 mm)	sft (m ²)	79 850.44	296 3186.44		
(b) Size 2-1/4"x 3"x 9" (57 x 75 x 229 mm)	sft (m ²)	79 850.44	232 2497.48		
(c) Size 2-1/4"x 2-1/4"x 9" (57 x 57 x 229 mm)	sft (m ²)	79 850.44	399 4295.24		
(d) Size 2-1/4"x 1-1/2"x 9" (57 x 38 x 229 mm)	sft (m ²)	79 850.44	348 3746.22		
6.6.3 Providing, laying and jointing Fire brick masonry in fire clay mortar including sacafolding,raking of joints and curing as per drawing and specifications, complete in all respects.					
(a) Upto 20 ft (6 m) height including all charges.	cft (m ³)	151 5333.32	688 24300.16		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Extra for every 5 ft (1.5) additional height or part thereof.	cft (m ³)	45 1589.40			
6.6.4 Providing, laying and jointing pacca brick work with special brick (architectural design) including scaffolding, raking of joints and curing as per drawing and specifications, complete in all respects in:-				6.4.10, 6.4.12 to 6.4.18	
(a) Cement sand ratio 1:2	cft (m ³)	139 4909.48	731 25818.92		
(b) Cement sand ratio 1:3	cft (m ³)	139 4909.48	698 24653.36		
(c) Cement sand ratio 1:4	cft (m ³)	139 4909.48	678 23946.96		
6.6.5 Extra for masonry of any description for bonding old and new masonry including making recesses as required in old masonry (actual measurement of new masonry inserted into old masonry to be given).	cft (m ³)	157 5545.24			
6.6.6 Extra for chamfering bricks for:-				6.4.2, 6.4.3	
(a) Special architectural bricks	each	85			
(b) all other purposes.	each	43			
6.6.7 Maroo corners.	each corner	532			
6.7 Termite Proofing				6.6	
6.7.1 Providing pre-construction termite proofing by using diluted spray emulsion of FMC-Biflex or approved equivalent at 40-liter per 100 sft of surface area complete in all respect and as directed by the engineer incharge.	100 sft of each spray (m ² of each spray)	373 4015.35	1693 18225.15		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
6.7.2 Providing termite proofing of existing buildings (inside or outside or both) by drilling 1/4" to 3/8" dia 2' to 3' deep holes at approximately 2' to 3' c/c injecting approved anti termite chemical of FMC-Biflex or approved equivalent, with pressure machine and sealing the same, as per specification complete in all respects as directed by the engineer incharge.	sft (m ²)	13 139.95	22 236.83		
6.7.3 Providing termite proofing of wooden fixtures inside or out side the existing buildings such as doors, windows, almirahs, sun-shades, panellings, ceilings, railings, etc. by injecting the approved anti termite chemical with pressure machine and sealing the same,as per specification complete in all respect.	sft (m ²)	8 86.12	16 172.24		
6.8 Miscellaneous Items					
6.8.1 Dry brick pitching.	cft (m ³)	58 2048.56	152 5368.64		
6.8.2 Cleaning bricks dismantled from kacha pacca masonry.	each	2.75			
6.8.3 Cleaning bricks dismantled from pacca masonry.	each	5			
6.8.4 Replacing kallar eaten bricks.	each	97	120		

CHAPTER 7

STONE MASONRY

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 7 Stone Masonry of "Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) The cost of supply and carriage to site of work of all materials used for stone masonry is included in the composite rates.
- (3) Rates for all finished work include the removal of surplus debris, unused material and by-products and stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
7.1 Stone Masonry Works				7.4&7.5	
7.1.1 Providing, laying and jointing random, rubble stone masonry (uncoursed), in foundation and plinth:-				7.4, 7.7.1, 7.7.2 & 7.7.6	
(a) Dry masonry	cft (m ³)	100 3532.00	232 8194.24		
(b) In mud mortar	cft (m ³)	126.0 4450.32	261 9218.52		
(c) In cement sand mortar:-					
(i) Cement sand mortar 1:3	cft (m ³)	166 5863.12	478 16882.96		
(ii) Cement sand mortar 1:4	cft (m ³)	166 5863.12	448 15823.36		
(iii) Cement sand mortar 1:6	cft (m ³)	166 5863.12	413 14587.16		
(iv) Cement sand mortar 1:8	cft (m ³)	166 5863.12	394 13916.08		
7.1.2 Providing, laying and jointing random rubble stone masonry (uncoursed) in ground floor in buildings or upto 20 ft (6 m) height in other than building:-				7.4, 7.5.1, 7.5.2, & 7.5.6	
(a) Dry masonry	cft (m ³)	100 3532.00	232 8194.24		
(b) In mud mortar	cft (m ³)	137 4838.84	272 9607.04		
(c) In cement sand mortar:-					
(i) Cement sand mortar 1:3	cft (m ³)	170 6004.40	482 17024.24		
(ii) Cement sand mortar 1:4	cft (m ³)	170 6004.40	452 15964.64		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(iii) Cement sand mortar 1:6	cft (m ³)	170 6004.40	417 14728.44	7.4, 7.5.1, 7.5.2, & 7.5.5	
(iv) Cement sand mortar 1:8	cft (m ³)	170 6004.40	398 14057.36		
7.1.3 Providing, laying and jointing coursed rubble stone masonry hammer dressed, in foundation and plinth:-					
(a) Dry masonry	cft (m ³)	140 4944.80	271 9571.72		
(b) In mud mortar	cft (m ³)	177 6251.64	312 11019.84		
(c) In cement sand mortar:-					
(i) Cement sand mortar 1:3	cft (m ³)	231 8158.92	539 19037.48		
(ii) Cement sand mortar 1:4	cft (m ³)	231 8158.92	512 18083.84		
(iii) Cement sand mortar 1:6	cft (m ³)	231 8158.92	481 16988.92		
(iv) Cement sand mortar 1:8	cft (m ³)	231 8158.92	464 16388.48		
7.1.4 Providing, laying and jointing coursed rubble stone masonry hammer dressed, in ground floor in buildings or upto 20 ft (6 m) height, in other than building:-				7.4, 7.7.1, 7.7.2 & 7.7.5	
(a) Dry masonry	cft (m ³)	148 5227.36	279 9854.28		
(b) In mud mortar	cft (m ³)	220 7770.40	342 12079.44		
(c) In cement sand mortar:-					
(i) Cement sand mortar 1:3	cft (m ³)	245 8653.40	552 19496.64		
(ii) Cement sand mortar 1:4	cft (m ³)	245 8653.40	525 18543.00		
(iii) Cement sand mortar 1:6	cft (m ³)	245 8653.40	495 17483.40		
(iv) Cement sand mortar 1:8	cft (m ³)	245 8653.40	478 16882.96		
7.1.5 Extra labour on items 7.1.2 and 7.1.4 above for work in:-					
(a) First Floor	cft (m ³)	53 1871.96			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Second Floor	cft (m ³)	53 1871.96			
(c) Third Floor	cft (m ³)	67 2366.44			
(d) Fourth & subsequent floors.	cft (m ³)	83 2931.56			
7.1.6 Extra labour on items 7.1.2 and 7.1.4 above for every 5 ft (1.5 m) additional height, or part thereof above 20 ft (6 m) in other than buildings.	cft (m ³)	61 2154.52			
7.1.7 Extra labour for arch work in stone masonry, including centering and decentering, etc.	cft (m ³)	53 1871.96	59 2083.88	7.5, 7.7.1 & 7.7.9	
7.1.8 Extra labour for:-				7.7.1 & 7.7.8	
(a) Coping and caps, etc.	cft (m ³)	506 17871.92			
(b) Cornice & string course	per rft (m)	383 1256.62			
7.2 Dressing of Stones				7.7.1 & 7.7.2	
7.2.1 Dressing stones:-					(i) This rate of dressing shall be paid only when undressed stone has been supplied. (ii) In case of rate for stone masonry, dressing is already included and this rate shall not be added thereto. (iii) Only dressed surface of stone shall be measured.
(a) Hammer dressed	sift (m ²)	172 1851.58			
(b) Rough tooled dressed	sft (m ²)	329 3541.69			
(c) Chisel dressed	sft (m ²)	398 4284.47			
7.3 Miscellaneous Items					
7.3.1 Providing and fixing stone blocks from 2 to 6 cft each in cement mortar (1:6), including lift upto 20 ft (6 m).	cft (m ³)	1025 36203.00	1183 41783.56	7.7.1, 7.7.2 & 7.7.4	
7.3.2 Providing and fixing stone blocks, under 2 cft each in cement mortar (1:6), including lift upto 20 ft (6 m).	cft (m ³)	599 21156.68	757 26737.24	7.7.1, 7.7.2 & 7.7.8	

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
7.3.3 Making 1-1/2" x 1-1/2" groove in wall of stone masonry in cement, for fixing planks upto 9" deep.	plank	625			
7.3.4 Drilling holes in stone masonry upto 2" dia, per inch depth.	hole per inch depth	197			The rate is not to be operated for holes exceeding 2" diameter
	(hole per cm depth)	77.56			

CHAPTER 8 ROOFING

Note:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 8 Roofing of "Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.1 RCC Slab Roofing & Roof Treatment				8.4 & 8.5.2	Add extra 6%, 15% & 23% on composite rates for 2nd, 3rd, 4th and subsequent floors respectively for items no. 8.1.1 to 8.1.10
8.1.1 Providing and laying cement concrete (1:2:4) on roof top to required slope including ramming, finishing, smoothing and curing etc. as per specification and complete in all respects.	cft (m ³)	103 3637.96	609 21509.88		
8.1.2 Providing and laying two coats of bitumen laid hot using 34 lb/100 sft over roof and blinded with sand at 1 cft/100 sft as per specification and complete in all respects. .	sft (m ²)	30 322.95	71 764.32		
8.1.3 Providing and laying single layer of tiles 9" x 4-1/2" x 1-1/2", grouted with cement sand mortar 1:3, laid over 1" mud plaster, over 4" thick earth, over 34 lbs per 100 sft bitumen coating blinded with sand at 1 cft/100 sft laid on top of RCC/Precast RCC roof slab, ,excluding polythene sheet as per specification and complete in all respects.	sft (m ²)	56 602.84	176 1894.64		No payment for flush pointing will be made for new roofs.
8.1.4 Providing and laying single layer of tiles 9" x 4-1/2" x 1-1/2" grouted with cement sand mortar 1:3, laid over 1" thick mud mortar mixed with bhoosa over existing earth, including dressing & adjusting slopes of existing earth as per specifications, complete in all respects.					For item (a) No payment for flush pointing will be made for new roofs.
(a) With new tiles	sft (m ²)	40 430.60	121 1302.57		For item (b) Payment for flush pointing shall be made separately for old roofs.
(b) With old / released tiles	sft (m ²)	60 645.90	71 764.32		Old / released tiles to be provided by PR

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.1.5 Earth filling over roof including watering, ramming with 1" mud plaster, finished with gobri leeping as per specification over:-					same remarks under item 8.1.4 above
(a) 3" thick earth filling & 1" mud plaster.	sft (m ²)	20 215.30	28 301.42		
(b) 4" thick earth filling & 1" mud plaster.	sft (m ²)	21 226.07	30 322.95		
8.1.6 Providing and laying roof insulation, comprising of single layer of tiles 9"x4-1/2"x1-1/2" grouted with cement sand mortar 1:3 laid over 2" thick earth (including 1" mud plaster) over thermopore sheet 1" thick , over polythene sheet 300 gauge over a layer of bitumen coating at 34 lbs/100sft, as per specification and complete in all respects:-	sft (m ²)	64 688.96	215 2314.48		Add extra 6%, 15% and 23% on composite rates from 14.1', to 26', 26.1 to 38', 38.1' to 50' and above & for subsequent floors of 12' height respectively.
8.1.7 Providing and laying roof insulation, comprising of single layer of tiles 9"x4-1/2"x1-1/2" grouted with cement sand mortar 1:3 laid over 2" thick earth (including 1" mud plaster) over Poly extruded board (Jumbolon or equivalent), over polythene sheet 300 gauge over a layer of hot bitumen using 34 lbs/100sft, coating complete in all respects:					
(a) 1" thick Poly extruded board (Jumbolon or equivalent)	sft (m ²)	64 688.96	283 3046.50		
(b) 2" thick Poly extruded board (Jumbolon or equivalent)	sft (m ²)	64 688.96	304 3272.56		
8.1.8 Providing a coat of bitumen emulsion at the rate of 4.5 kg per 100 sft on walls and floors in ground floor, as per specification.	sft (m ²)	7 75.36	18 193.77		same remarks under item 8.2.4 above.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.1.9 Providing and laying two layers of bituminous building paper, with a coat of grease in between, under bearing of roof slab, beams, lintels, etc. over 3/8" thick cement sand plaster 1:2 for free expansion and contraction as per specification.	sft (m ²)	47 505.96	220 2368.30		Add extra 6%, 15% & 23% on composite rates for 2nd, 3rd, 4th and subsequent floors respectively.
8.1.10 Providing & fixing PCC Khaprail tiles on roofs, laid in cement sand mortar 1:3, including jointing, curing, etc. complete in all respects as per drawings and as per instructions of Engineer Incharge.					
(a) Size 150 x 150 mm (6"x 6") Grey Colour	sft (m ²)	53 570.55	213 2292.95		
(b) Size 225 x 225 mm (9"x 9") Grey Colour	sft (m ²)	42 452.13	163 1754.70		
(c) Size 300 x 300 mm (12"x 12") Grey Colour	sft (m ²)	32 344.48	125 1345.63		
8.1.11 Providing & fixing Clay Khaprail tiles on roofs, laid in cement sand mortar 1:3, including jointing, curing, etc. complete in all respects as per drawings and as per instructions of Engineer Incharge.					
(a) Glazed Clay Khapril Tiles	sft (m ²)	53 570.55	249 2680.49		
(b) Un-Glazed Clay Khapril Tiles	sft (m ²)	53 570.55	200 2153.00		
8.1.12 Providing & fixing two ply bituminous Felt, in flushing and concrete / brick joint, joint wedged and tucked inside end joints, stuck with approved bituminous adhesive complete in all respects as per drawings and as per instructions of Engineer Incharge.	sft (m ²)	42 452.13	94 1011.91		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
<p>8.1.13 Chemical Water Proofing Treatment on roof slabs or over roof tiles also on parapet (vertical member).</p> <p>Applying float coat of Ozone SBR or equivalent and Crystalline liquid on duly cleaned surface ensuring that all cracks sealed properly, filling of joints in tiles (if applicable) with polymer modified mortar, adjustment of slopes in tiles (if required) then applying two coats of Zoneseal-507 or equivalent complete in all respect as per instructions of Engineer incharge.</p>	sft (m ²)	29 312.19	82 882.73		Removing and re-fixing of roof tiles, if required shall be paid separately in accordance with item 8.1.4 (b), if only removing of tiles is required then according to item 1.4.14 If Polypropylene fabric sheet is used then composite rate should be increased by 20%
<p>8.1.14 Roof insulation by polyurethane foam spray.</p> <p>Applying polyurethane foam spray (created by mixing an isocyanate, like Methylene Diphenyl Isocyanate (MDI) along with a polyol) on duly cleaned surface over roof slabs / roof tiles also on parapet (vertical member) complete in all respect as per instructions of Engineer incharge. Thickness of foam after drying and solidifying should not be less than two (02) inches.</p>	sft (m ²)	29 312.19	117 1259.51		Removing and re-fixing of roof tiles, if required shall be paid separately in accordance with item 8.1.4 (b), if only removing of tiles is required then according to item 1.4.14
<p>8.2 Pre-cast Prestressed Concrete Girders/Slab Roofing</p> <p>8.2.1 Providing and laying roof in ground floor with precast prestressed concrete girders & slabs obtained from approved manufacturers (Izhar or equivalent) including cement sand plaster 1/2" thick (1:3) on top and cement pointing (1:2) flush under-neath, as per drawing & specification, complete in all respects and including all other charges.</p> <p>(a) Span Length upto 15 ft</p> <p>(b) Span length 15.1 ft to 20 ft</p> <p>(c) Span length 20.1 to 25 ft</p> <p>(d) Span length 25.1ft to 30 ft</p>				8.5.3	<p>(i) Add extra 6%, 15% & 23% on composite rates for 2nd, 3rd, 4th and subsequent floors respectively.</p> <p>(ii) The rates are applicable to clear span lengths.</p>
	sft (m ²)	26 279.89	369 3972.29		
	sft (m ²)	25 269.13	400 4306.00		
	sft (m ²)	19 204.54	436 4693.54		
	sft (m ²)	16 172.24	722 7772.33		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.2.2 Providing and erecting in position pre-cast pre-stressed cement concrete double tee (TT) planks roofing at height upto 50 ft of approved design procured from an approved manufacturers and designed for a superimposed dead load of 50 lbs/sft and a live load of 30 lbs/sft duly tested and certified by the manufacturer including loading, transportation, unloading, erection at site and placement in position as per line and level and as directed by the Engineer Incharge.					
(a) Span Length upto 40 ft	sft (m ²)		578 6222.17		
(b) Span Length 41-45 ft	sft (m ²)		600 6459.00		
(c) Span Length 46-50 ft	sft (m ²)		638 6868.07		
(d) Span Length 51-55 ft	sft (m ²)		666 7169.49		
(e) Span Length 56-60 ft	sft (m ²)		710 7643.15		
8.2.3 Providing and laying single layer tiles 9" x 4-1/2"x1-1/2" (first class tiles) at height upto 50 ft grouted with cement, sand mortar 1:3 laid over 3" thick mud on Double Tee Planks roofing covered by 2 coats of hot bitumen using 34 lbs/100 sft and a layer of polythene sheet 500 gauge (005" thick) including overlaps, as per specifications and complete in all respects.	sft (m ²)	79 850.44	208 2239.12		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.3 Jack Arch Roofing				8.4 , 8.5.4	
8.3.1 Providing Jack arch roofing 4-1/2" thick laid in 1:5 cement sand mortar including an average depth of 4" cement concrete (1:3:6) in haunches and over crown, with 3" earth & 1" mud plaster, soffits of arches cement sand plaster 1:6 and 1/2" thick. The rate also includes bitumen coating, erecting and dismantling centering, laying skew bricks in cement sand mortar (1:3) and encasing exposed flanges of the joists with cement concrete 1:2:4 using stone aggregate, as per specifications and complete in all respects.:-	sft (m ²)	232 2497.48	621 6685.07	& 8.5.5	(i) For steel part and its erection etc., items 13.2.1 & 13.4.4 under Chapter 13- structural steel works be referred if supplied by the contractor. (ii) Add extra 6%,15% & 23% on composite rates for 2nd, 3rd, 4th & subsequent floors respectively on items 8.3.1 & 8.3.2. (iii) If Rails/ R.S.Joists. are supplied by Railways then cutting of Rails /R.S.Joist, drilling holes, rivetting and erection should be paid for the items actually involved under Chapter-13. (iv) Payment of the tie rods complete be made under item of fabrication of heavy steel work under Chapter-13. (v) Bearing plates with stirrups etc. for duplicate rail girders as per type plan No.Q-24 be paid under item of fabrication of small iron work under Chapter-13.
8.3.2 Providing Jack arch roofing 4-1/2" thick laid in 1:5 cement sand mortar, including an average depth of 4" cement concrete (1:3:6) in haunches and over crown with 1/2" cement plaster 1:6 on top & soffits (except earth filling, mud plaster and gobi leeping). The rate also includes bitumen coating, erecting and dismantling centering. laying skew bricks in cement sand mortar 1:3 and encasing exposed flanges of the joists with cement concrete 1:2:4 using stone aggregate, as per specifications and complete in all respects:-	sft (m ²)	189 2034.59	581 6254.47		
8.4 Plain/Corrugated G.I Sheet Roofing				8.4.9 & 8.5.7	
8.4.1 Providing Corrugated galvanized iron sheet roofing over the existing trusses / girders etc. including its fixing with G.I. bolts, nuts, limpet and bitumen washers, wind ties complete in all respects, without valleys and ridges as per drawing and specification & complete in all respects.					Add extra 6%, 15% & 23% on composite rates and 13%, 32% and 51% on labour rate for heights from 14.1' to 26', 26.1' to 38', 38.1' to 50' and above for items 8.4.1 to 8.4.5

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(a) 20 S.W.G. sheets	sft (m ²)	40 430.60	372 4004.58		
(b) 22 S.W.G. sheets	sft (m ²)	40 430.60	301 3240.27		
(c) 24 S.W.G. sheets	sft (m ²)	40 430.60	254 2734.31		
8.4.2 Providing and fixing plain galvanized iron sheets 20 S.W.G. 4" diameter rain water down pipe including clamps complete in all respects.	rft (m)	200 656.20	549 1801.27		
8.4.3 Providing and fixing 4" dia M.S rain water down pipe including clamps complete in all respects.	rft (m)	200 656.20	1010 3313.81		
8.4.4 Providing and fixing 20 S.W.G plain galvanized iron sheet flashing etc complete in all respects.	sft (m ²)	185 1991.53	462 4973.43		
8.4.5 Providing and fixing 20 S.W.G plain galvanized iron sheet ridges including fixtures complete in all respects.					
(a) 6" lap and 18" overall length	rft (m)	200 656.20	1503 4931.34		
(b) 9" lap and 24" overall length	rft (m)	247 810.41	1614 5295.53		
(c) 12" lap and 30" overall length	rft (m)	247 810.41	1729 5672.85		
8.5 Corrugated Asbestos Cement Sheet Roofing				8.4.10 & 8.5.8	
8.5.1 Supplying & fixing Asbestos cement corrugated sheet roofing of approved quality (Izhar or equivalent) over the existing trusses / girders etc. including necessary over laps & G.I. hook bolts, nuts, screws, limpet and, bitumastic washers , wind ties, etc. (excluding valleys and ridges, etc), complete at any height as per specification complete in all respects.	sft (m ²)	56 602.84	276 2971.14		
8.5.2 Supplying & fixing corrugated asbestos cement sheet ridges & valleys at any height complete in all respects.	ft (m)	68 223.11	260 853.06		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.5.3 Extra labour for erection of G.I. Sheets (only flat sheets) or asbestos sheet roofing, or fiber glass roofing above 20 ft (6 m) height in difficult position, including lifting with care and special scaffolding along live electric wires.	Sft (m ²)	9 96.89			
8.6 Fiber Glass (Corrugated and Plain) Roofing				8.4.11 & 8.5.9	
8.6.1 Providing and fixing corrugated fiberglass sheet roofing over the existing trusses / girders etc at any height including all fittings as per specifications and complete in all respects.	sft (m ²)	56 602.84	454 4887.31		
8.6.2 Providing and fixing plain fiberglass sheet roofing at any height, including all fittings as per specifications and complete in all respects.	sft (m ²)	56 602.84	427 4596.66		
8.6.3 Providing and fixing corrugated fiber glass sheet roof drains/ridge at any height including all fittings as per specifications and complete in all respects.	ft (m)	68 223.11	403 1322.24		
8.6.4 Providing and fixing plain fiberglass sheet roof drains/ridge at any height including all fittings as per specifications and complete in all respects.	ft (m)	68 223.11	381 1250.06		
8.6.5 Providing and fixing corrugated fiberglass sheet north light glass at roof at any height including all fittings complete.	sft (m ²)	48 516.72	447 4811.96		
8.6.6 Providing and fixing plain fiberglass sheet north light glass at roof at any height including all fittings as per specifications and complete in all respects.	sft (m ²)	48 516.72	419 4510.54		
8.7 Roof Drainage Items				8.5.10 & 8.5.11	
8.7.1 Khassi parnalas in cement sand mortar (1:2) 12" outside width finished smooth with a floating coat of neat cement as per specifications, complete in all respects	ft (m)	177 580.74	240 787.44		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.7.2 Khurras on roof 2' x 2' x 1 1/2" of cement concrete (1:2:4) laid over 3" thick 1:4:8 concrete as per specifications, complete in all respects.	each	829	1745		
8.7.3 Bottom Khurras on ground in size brick masonry in cement mortar 1:6, of size 4' x 2' x 4-1/2" laid over 3" cement concrete 1:4:8 as per specifications complete.	each	926	2862		
8.7.4 Supplying and fixing in position cast iron rain water down pipe as per specification (BS 416:Part-1-1990) excluding heads and shoes but including painting and clamps etc complete in all respects.					
(a) 4" dia (internal) cast iron down pipe	ft (m)	106 347.79	2285 7497.09		
(b) 3" dia (internal) cast iron down pipe	ft (m)	106 347.79	1798 5899.24		
8.7.5 Supplying & fixing in position rain water down pipe cast iron heads as per specification (BS 416:Part-1-1990) including cost of clamps holdfast and painting complete in all respects.	each	577	1581		
8.7.6 Supplying & fixing shoes, bends or offsets of cast iron rain water down pipe as per specification (BS 416:Part-1-1990) including painting, complete in all respects.	each	212	914		
8.7.7 Supplying and fixing in position plain 22 gauge G.I sheet iron spouts 3" to 4" diameter as per specification complete in all respects.	each	666	992	8.6.9	
8.7.8 Supplying and fixing in position 22 gauge G.I sheet gutter semi-circular 8" (200 mm) dia as per specification, complete in all respects.	ft (m)	120 393.72	630 2067.03		
8.7.9 Providing and fixing in position G.I sheet water spouts or parnalas as per drawing complete in all respects.	each	750			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
8.7.10 Making drip course 2" x 1/2" under R.C.C. slab edges in outer opening, in cement sand mortar 1:2.	ft (m)	52 170.61	56 183.74		
8.8 Miscellaneous Items					
8.8.1 Making jharries in existing brick masonry for providing recesses for bearing of R.C.C. roof slab including repairing the damaged face:-					Rate will be increased by 1.5 times for making recesses / jharries in stone masonry or plain concrete and 2 times for making recesses / jharries in reinforced cement concrete.
(a) for slabs upto 6" deep	ft (m)	61 200.14	66 216.55		
(b) for slabs exceeding 6" upto 12" deep	ft (m)	88 288.73	96 314.98		
8.8.2 Making recess in existing brick masonry for bearing of beam girder, R.S. joist, etc.. Including repairing damaged face:-					
(a) upto 1.0' height of girder or beam	each	131	150		
(b) for every 6" additional height or part thereof.	each	63	72		

CHAPTER 9

FLOORING

Note:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 9 Flooring of "Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.1 Brick / Brick Tile Flooring				9.3.6, 9.4.1 & 9.4.2	
9.1.1 Providing, laying, watering and ramming brick ballast 1-1/2" to 2" gauge mixed with 25% sand, for floor foundations, complete in all respects.	cft (m ³)	41 1448.12	195 6887.40		
9.1.2 Providing dry brick paving laid flat, sand grouted, including preparation of bed by watering, ramming, and bringing the same to proper camber by 1/2" thick mud plaster, complete in all respects	sft (m ²)	27 290.66	104 1119.56		
9.1.3 Providing 4-1/2" thick dry brick on edge paving, sand grouted, including preparation of bed by watering, ramming and bringing the same to proper camber by 1/2" thick mud plaster, , complete in all respects					
(a) With new bricks	sft (m ²)	39 419.84	154 1657.81		
(b) With old / released bricks	sft (m ²)	39 419.84	44 473.66		Old / released bricks to be provided by PR
9.1.4 Grouting 4-1/2" dry brick on edge flooring with cement sand mortar ratio 1:3., complete in all respects	sft (m ²)	27 290.66	42 452.13		
9.1.5 Providing flat brick flooring laid in 1:6 cement sand mortar over a bed of 3/4" thick cement sand mortar 1:6, complete in all respects	sft (m ²)	51 549.02	154 1657.81		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.1.6 Providing brick on edge flooring, laid in 1:6 cement sand mortar over a bed of 3/4" thick cement sand mortar 1:6, complete in all respects	sft (m ²)	66 710.5	210 2261		
9.1.7 Brick tiles 9" x 4-1/2" x 1-1/2" laid on edge 1:3 cement sand mortar over a bed of 3/4" thick cement mortar 1:6, complete in all respects.	sft (m ²)	104 1119.56	376 4047.64		
9.1.8 Brick tiles 9"x4-1/2"x1-1/2" laid flat in 1:3 cement sand mortar over a bed of 3/4" thick cement sand mortar 1:6, complete in all respects.	sft (m ²)	58 624.37	160 1722.40		
9.2 Cement Concrete Tile Flooring / Skirting				9.3.8 & 9.4.4	
9.2.1 Providing cement concrete tiles laid flat in 1:2 cement sand mortar over 3/4" thick bed of cement sand mortar 1:2, complete in all respects.					
(a) 12" x 12" x 1"	sft (m ²)	70 753.55	761 8192.17		
(b) 9" x 9" x 3/4"	sft (m ²)	70 753.55	857 9225.61		
(c) 8" x 8" x 3/4"	sft (m ²)	70 753.55	857 9225.61		
(d) 6" x 6" x 3/4"	sft (m ²)	70 753.55	869 9354.79		
9.2.2 Providing coloured cement concrete tiles 8" x 8" x 3/4" of approved shade laid flat in 1:2 cement sand mortar over 3/4" thick cement sand mortar of 1:2, complete in all respects.	sft (m ²)	70 753.55	509 5479.39		
9.2.3 Providing 3/4" thick cement concrete tile skirting laid in 1:2 cement sand mortar, over 3/4" thick cement sand mortar 1:2, complete in all respects.	sft (m ²)	57 613.61	858 9236.37		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.3 Cement Concrete Flooring				9.3.8 & 9.4.4	
9.3.1 Providing & laying topping of cement concrete 1:2:4 flooring including surface finishing and dividing into pannels as per specifications and complete in all respects:-					If glass, brass or Aluminum strips are used for panelling, it will be paid extra as per item No.9.4.5
(a) 1" thick	sft (m ²)	43 462.90	87 936.56		
(b) 1-1/2" thick	sft (m ²)	51 549.02	116 1248.74		
(c) 2" thick	sft (m ²)	60 645.90	146 1571.69		
(d) 3" thick	sft (m ²)	69 742.79	197 2120.71		
(e) 4" thick	sft (m ²)	77 828.91	251 2702.02		
(f) 6" thick	sft (m ²)	103 1108.80	359 3864.64		
9.3.2 Providing and laying conglomerate flooring (two layer work) with top layer of 1/2" thick wearing surface consisting of one part of cement and 2 parts of stone chips passing 3/16" sieve over bottom layer of cement concrete 1:2:4, including surface finishing and dividing into pannels as per specifications and complete in all respects.				9.4.3 & 9.4.5	If glass, brass or Aluminum strips are used for panelling, it will be paid extra as per item No.9.4.5
(a) 1-1/2" thick bottom layer	sft (m ²)	68 732.02	170 1830.05		
(b) 2" thick bottom layer	sft (m ²)	75 807.38	199 2142.24		
9.3.3 Add extra in cement concrete floor topping, if finished with pigment and polishing.	sft (m ²)	21 226.07	35 376.78		
9.3.4 Extra labour for each storey above ground for mosaic, conglomerate stone, tiles and wooden floor.	sft (m ²)	12 129.18			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.3.5 Providing & laying cement concrete 1:2:4 flooring 3" thick for workshop mixed with iron dust/chipping, including surface finishing and dividing into panels as per specification complete in all respects.	sft (m ²)	69 742.79	213 2292.95		Same remarks as of item No. 9.3.2
9.3.6 Providing grey cement skirting or dado 3/8" thick, including rounding of corner & straightening of top edge and finishing to smooth surface after plastering complete in all respects.					
(a) 1:2 cement sand mortar	sft (m ²)	95 1022.68	114 1227.21		
(b) 1:3 cement, sand mortar	sft (m ²)	76 818.14	90 968.85		
(c) Extra if skirting or dado is finished with pigment of any colour.	sft (m ²)	4 43.06	11 118.42		
9.4 Mosaic / Mosaic Tile Flooring and Skirting				9.4.5 & 9.4.8	
9.4.1 Providing and laying 1-3/8" thick mosaic flooring, consisting of 3/8" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips laid over 1" thick flooring of 1:2:4 cement concrete including rubbing, polishing and finishing complete in all respects.					(i) If glass or brass or Aluminum strips are used for panelling, it will be paid extra as per item No.9.4.5.
(a) using grey cement	sft (m ²)	205 2206.83	300 3229.50		(ii) Add 2% if pigment of approved quality and shade is used.
(b) using white cement	sft (m ²)	205 2206.83	315 3390.98		
9.4.2 Providing and laying 1-1/2" thick mosaic flooring, consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips laid over 1" thick flooring of 1:2:4 cement concrete including rubbing, polishing & finishing complete in all respects.					If glass or brass or Aluminum strips are used for panelling, it will be paid extra as per item No.9.4.5
(a) using grey cement	sft (m ²)	205 2206.83	306 3294.09		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) using white cement	sft (m ²)	205 2206.83	324 3487.86	9.4.6	
9.4.3 Providing and laying floor of mosaic marble chips/high strength terrazo tiles of minimum size 12"x 12",of approved shade and design laid in 1:2 cement mortar over 3/4" thick bedding of cement sand mortar 1:2 including rubbing, polishing and finishing complete in all respects.					
(a) Tile 1" thick (+/- 0.12 inches)	sft (m ²)	77 828.91	320 3444.80		
(b) Tile 2" thick (+/- 0.12 inches)	sft (m ²)	77 828.91	338 3638.57	10.5.9.7	Labour for fixing already included in items No.9.3.1,9.3.2 9.4.1 & 9.4.2 of this chapter.
9.4.4 Rubbing and chemical polishing old grit/ mosaic floor and dado, including repairing voids, uneven surface, complete in all respects.	sft (m ²)	31 333.72	36 387.54		
9.4.5 Providing and fixing 5 mm thick and 1-1/2" wide strips for dividing flooring into panels.					
(a) Glass	ft (m)		10 32.81		
(b) Brass	ft (m)		666 2185.15		
(c) Marble	ft (m)		9 29.53		
9.4.6 Providing tile skirting laid in 1:2 cement, sand mortar, over 1/2" to 3/4" thick cement mortar 1:2 complete in all respects.					
(a) Mosaic tiles 3/4" to 1" thick in grey cement.	sft (m ²)	96 1033.44	356 3832.34		
(b) Mosaic tiles 3/4" to 1" thick in white cement with matching colour pigment.	sft (m ²)	96 1033.44	375 4036.88		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.4.7 Providing and laying mosaic dado or skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing, polishing and finishing complete in all respects.					
(a) using grey cement					
(i) 3/8" thick	sft (m ²)	209 2249.89	274 2949.61		
(ii) 1/2" thick	sft (m ²)	209 2249.89	290 3121.85		
(b) using white cement					
(i) 3/8" thick	sft (m ²)	209 2249.89	286 3078.79		
(ii) 1/2" thick	sft (m ²)	209 2249.89	319 3434.04		
9.5 Ceramic / Porcelain Tile Flooring / Skirting				9.4.8	The composite rates under item 9.5 for local tile flooring / skirting are for Sonex / Master or equivalent quality of tiles / skirting.
9.5.1 Providing and laying floor of Local Ceramic white / coloured, glazed or mat tiles 1/4" (6 mm) thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond over bed of 3/4" thick cement mortar 1:2, matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	79 850.44	309 3326.39		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	79 850.44	356 3832.34		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	79 850.44	399 4295.24		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.5.2 Providing and fixing on dado / skirting / wall, Local Ceramic white / coloured, glazed or mat tiles 1/4" (6 mm) thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond and matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	93 1001.15	322 3466.33		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	93 1001.15	370 3983.05		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	93 1001.15	412 4435.18		
9.5.3 Providing and laying floor of Imported Ceramic white / coloured, glazed or mat tiles 1/4" (6 mm) thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond over bed of 3/4" thick cement mortar 1:2, matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	79 850.44	335 3606.28		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	79 850.44	442 4758.13		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	79 850.44	469 5048.79		
9.5.4 Providing and fixing on dado / skirting / wall, Imported Ceramic white / coloured, glazed or mat tiles 1/4" (6 mm) thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond and matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	93 1001.15	348 3746.22		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	93 1001.15	455 4898.08		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	93 1001.15	482 5188.73		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.5.5 Providing and laying floor of Local Porcelain white / coloured, glazed or mat tiles 8 mm thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond over bed of 3/4" thick cement mortar 1:2, matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	79 850.44	313 3369.45		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	79 850.44	356 3832.34		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	79 850.44	426 4585.89		
9.5.6 Providing and fixing on dado / skirting / wall, Local Porcelain white / coloured, glazed or mat tiles 1/4" (6 mm) thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond and matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	93 1001.15	327 3520.16		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	93 1001.15	370 3983.05		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	93 1001.15	439 4725.84		
9.5.7 Providing and laying floor of Imported Porcelain white / coloured, glazed or mat tiles 8 mm thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond over bed of 3/4" thick cement mortar 1:2, matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	79 850.44	313 3369.45		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	79 850.44	442 4758.13		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	79 850.44	469 5048.79		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.5.8 Providing and fixing on dado / skirting / wall, Imported Porcelain white / coloured, glazed or mat tiles 1/4" (6 mm) thick of approved quality / design and size laid in cement sand mortar 1:2 or with tile bond and matching pigment (if required) complete in all respects.					
(a) Tile Size - having tile area upto 1.8 sft	sft (m ²)	93 1001.15	327 3520.16		
(b) Tile Size - having tile area more than 1.8 sft and upto 4.0 sft	sft (m ²)	93 1001.15	455 4898.08		
(c) Tile Size - having tile area more than 4.0 sft	sft (m ²)	93 1001.15	482 5188.73		
9.5.9 Providing and fixing glazed tile coloured / printed border / gola of approved quality and shade / design, jointed in white cement / tile bond with matching pigment complete in all respects.					
(a) Border / Gola size - 1-1/2" wide	Rft (m)	32 104.99	212 695.57		
(b) Border / Gola size - 3" wide	Rft (m)	46 150.93	290 951.49		
(c) Border / Gola size - 4" wide	Rft (m)	58 190.30	351 1151.63		
9.6 Marble & Granite Stone Flooring / Skirting and Marble slabs				9.4.7	
9.6.1 Providing and laying marble stone tile in floor, laid in white cement with matching color pigment, over 3/4" thick cement sand mortar 1:2, including jointing, curing, rubbing and chemical polishing complete in all respects and as per instructions of Engineer-in-charge.					Add Rs. 16 in the composite rate if marble is fixed on dado / skirting / wall

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(a) Black Marble					
i) Size 12" x 12" x 7/16" (300 x 300 x 11 mm) and 12" x 24" x 7/16" (300 x 600 x 11 mm)	sft (m ²)	95 1022.68	323 3477.10		10% less in size of marble tile (Length & Width) is allowed
ii) Size 12" x 12" x 11/16" (300 x 300 x 19 mm) and 12" x 24" x 11/16" (300 x 600 x 19 mm)	sft (m ²)	95 1022.68	454 4887.31		
(b) Sunny Grey					
i) Size 12" x 12" x 7/16" (300 x 300 x 11 mm) and 12" x 24" x 7/16" (300 x 600 x 11 mm)	sft (m ²)	95 1022.68	224 2411.36		
ii) Size 12" x 12" x 11/16" (300 x 300 x 19 mm) and 12" x 24" x 11/16" (300 x 600 x 19 mm)	sft (m ²)	95 1022.68	299 3218.74		
(c) Boticina					
i) Size 12" x 12" x 7/16" (300 x 300 x 11 mm) and 12" x 24" x 7/16" (300 x 600 x 11 mm)	sft (m ²)	95 1022.68	282 3035.73		
ii) Size 12" x 12" x 11/16" (300 x 300 x 19 mm) and 12" x 24" x 11/16" (300 x 600 x 19 mm)	sft (m ²)	95 1022.68	415 4467.48		
(d) Lasbela					
i) Size 12" x 12" x 7/16" (300 x 300 x 11 mm) and 12" x 24" x 7/16" (300 x 600 x 11 mm)	sft (m ²)	95 1022.68	282 3035.73		
ii) Size 12" x 12" x 11/16" (300 x 300 x 19 mm) and 12" x 24" x 11/16" (300 x 600 x 19 mm)	sft (m ²)	95 1022.68	415 4467.48		
(e) China verona					
i) Size 12" x 12" x 7/16" (300 x 300 x 11 mm) and 12" x 24" x 7/16" (300 x 600 x 11 mm)	sft (m ²)	95 1022.68	322 3466.33		
ii) Size 12" x 12" x 11/16" (300 x 300 x 19 mm) and 12" x 24" x 11/16" (300 x 600 x 19 mm)	sft (m ²)	95 1022.68	541 5823.87		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(f) Badal					
i) Size 12" x 12" x 7/16" (300 x 300 x 11 mm) and 12" x 24" x 7/16" (300 x 600 x 11 mm)	sft (m ²)	95 1022.68	219 2357.54		
ii) Size 12" x 12" x 11/16" (300 x 300 x 19 mm) and 12" x 24" x 11/16" (300 x 600 x 19 mm)	sft (m ²)	95 1022.68	288 3100.32		
9.6.2 Providing and laying marble stone slab 3/4" thick in kitchen, staircase etc., laid in white cement mortar with matching color pigment over 3/4" thick base of cement sand mortar 1:2, including jointing, curing, rubbing and polishing complete in all respects.					
(a) Black	sft (m ²)	95 1022.68	831 8945.72		
(b) Sunny Grey	sft (m ²)	95 1022.68	474 5102.61		
(c) Boticina	sft (m ²)	95 1022.68	658 7083.37		
(d) Lasbela	sft (m ²)	95 1022.68	658 7083.37		
(e) China verona	sft (m ²)	95 1022.68	889 9570.09		
(f) Badal	sft (m ²)	95 1022.68	474 5102.61		
9.6.3 Extra labour for rounding of edges of marble slabs including polishing.	lft	22			
9.6.4 Providing and laying Granite stone size 24"x24" or other appropriate size having varying thickness from 7/8" to 1" on floors, laid in white cement mortar with matching color pigment over 3/4" thick base of cement sand mortar 1:2, including jointing, curing, rubbing and chemical polishing complete in all respects.					
(a) Indian Galaxy Black	sft (m ²)	108 1162.62	2395 25782.18		Add Rs. 16 in the composite rate if Granite stone is fixed on dado / skirting / wall

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Embed Pearl	sft (m ²)	108 1162.62	2164 23295.46		
(c) Silver Pearl	sft (m ²)	108 1162.62	2164 23295.46		
(d) Ten Brown	sft (m ²)	108 1162.62	1933 20808.75		
(e) Red Robe	sft (m ²)	108 1162.62	2048 22046.72		
9.7 Wooden Flooring / Skirting				9.3.10 & 9.4.11	
9.7.1 Providing shisham wood boarding or strips flooring 3/4" thick (sawn to required size) tongued and grooved and splayed rebated fixed with brass screws on kale wood battens 1-1/2" x 2" placed at 12" center to center, including two coats of bitumen laid hot on the base, complete in all respects.	sft (m ²)	125 1345.63	1871 20141.32		
9.7.2 Providing deodar wood boarding or strips flooring 3/4" thick (sawn to required size) tongued and grooved or splayed rebated fixed with brass screws on kail wood battens 1-1/2" x 2" size, placed at 12" center to center, including two coats of bitumen laid hot on the base, complete in all respects.	sft (m ²)	127 1367.16	1717 18483.51		
9.7.3 Providing and laying imported laminated wood flooring of approved quality / design/size including the under lay, laid over cement concrete base, complete in all respects.	sft (m ²)	42 452.13	469 5048.79		The cost of base for laminated wood flooring is not included in the rate and is payable separately
9.7.4 Providing and laying imported laminated wood skirting of approved quality / design/ size including the under lay, laid over cement concrete base, complete in all respects.	sft (m ²)	21 226.07	448 4822.72		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
9.8 Rubber / Vinyl Tile Flooring				9.3.9 & 9.4.9	
9.8.1 Rubber / Vinyl tiles flooring, consisting of 12" x 12" x 1/8" rubber tiles of approved quality, laid on concrete flooring.	sft (m ²)	50 538.25	239 2572.84		The cost of base floor for rubber / vinyl flooring is not included in the rate and is payable separately.
9.9 Interlocking Paver Tile Flooring					
9.9.1 Providing and fixing paver tiles (7000 psi) unglazed of different colours manufactured by Izhar/ Envircrete, or equivalent, over 2" thick sand base, as per specifications and details given in the drawing, including providing,levelling and compacting sand and preparation of the surface prior to laying of pavers / interlocking tiles					
(a) 80 mm thick interlocking pavers					
(i) Grey/natural colour	sft (m ²)	50 538.25	288 3100.32		
(ii) Pigmented colour	sft (m ²)	50 538.25	317 3412.51		
(b) 60 mm thick interlocking pavers					
(i) Grey/natural colour	sft (m ²)	50 538.25	242 2605.13		
(ii) Pigmented colour	sft (m ²)	50 538.25	282 3035.73		
9.10 Miscellaneous Items					
9.10.1 Cleaning and washing mosaic, marble, glazed tiles, etc., in floor and dado with caustic soda mixture.	sft (m ²)	4 43.06	6 64.59		
9.10.2 Supplying and filling sand under floors.	cft (m ³)	8 282.56	35 1236.20		

CHAPTER 10

SURFACE RENDERING

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 10 Surface Rendering of "Technical Specification for Railway Infrastructure Works, Volume I (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).
- (3) Rates include scraping of existing white wash, distemper, colour wash, emulsion, paint etc.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
10.1 Mud Plaster & Gobri Leeping				10.4.5	
10.1.1 Mud plaster on floor or on roof upto 20ft (6m) height (excluding gobri leeping):-					
(a) 1/2" thick	sft (m ²)	12 129.18	14 150.71		
(b) 1" thick	sft (m ²)	12 129.18	16 172.24		
10.1.2 Gobri leeping over roofs upto 20ft (6m) height	sft (m ²)	3.60 38.75	4.00 43.06		
10.2 Gypsum Plaster				10.4.6	
10.2.1 Gypsum plaster upto 20 ft (6 m) height:-					
(a) 3/8" thick (9 mm)	sft (m ²)	30 322.95	42 452.13		
(b) 1/2" thick (12 mm)	sft (m ²)	30 322.95	45 484.43		
(c) 3/4" thick (19 mm)	sft (m ²)	39 419.84	63 678.20		
10.2.2 Providing under coat of Gypsum sand in ratio 1:1 (average thickness 1/2") upto 20 ft (6 m) height.	sft (m ²)	31 333.72	38 409.07		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
10.3 Cement Sand Plaster				10.3, 10.4.1, 10.4.2 & 10.4.3	
10.3.1 Cement sand plaster 1:2 upto 20 ft (6 m) height:-					
(a) 3/8" thick (9 mm)	sft (m ²)	40 430.60	58 624.37		
(b) 1/2" thick (12 mm)	sft (m ²)	40 430.60	64 688.96		
(c) 3/4" thick (19 mm)	sft (m ²)	50 538.25	87 936.56		
10.3.2 Cement sand plaster 1:3 upto 20 ft (6 m) height:-					
(a) 3/8" thick (9 mm)	sft (m ²)	40 430.60	53 570.55		
(b) 1/2" thick (12 mm)	sft (m ²)	40 430.60	57 613.61		
(c) 3/4" thick (19 mm)	sft (m ²)	50 538.25	77 828.91		
10.3.3 Cement sand plaster 1:4 upto 20 ft (6 m) height:-					
(a) 3/8" thick (9 mm)	sft (m ²)	40 430.60	52 559.78		
(b) 1/2" thick (12 mm)	sft (m ²)	40 430.60	55 592.08		
(c) 3/4" thick (19 mm)	sft (m ²)	50 538.25	74 796.61		
10.3.4 Cement sand plaster 1:5 upto 20 ft (6 m) height:-					
(a) 3/8" thick (9 mm)	sft (m ²)	40 430.60	50 538.25		
(b) 1/2" thick (12 mm)	sft (m ²)	40 430.60	53 570.55		
(c) 3/4" thick (19 mm)	sft (m ²)	50 538.25	72 775.08		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
10.3.5 Cement sand plaster 1:6 upto 20 ft (6 m) height:-					
(a) 3/8" thick (9 mm)	sft (m ²)	40 430.60	49 527.49		
(b) 1/2" thick (12 mm)	sft (m ²)	40 430.60	52 559.78		
(c) 3/4" thick (19 mm)	sft (m ²)	50 538.25	68 732.02		
10.3.6 Stucco cement plaster 2" (50 mm) thick 1:2:4 (cement, sand and shingle), upto 20 ft (6 m) height.	sft (m ²)	94 1011.91	191 2056.12		
10.3.7 Providing and laying machine sprayed plaster 1/2" thick, using cement and chips zero gauge, over the existing plastered and roughened surface, upto 20 ft (6 m) height:-					
(a) Ratio 1:1	sft (m ²)	38 409.07	84 904.26		
(b) Ratio 1:1-1/2"	sft (m ²)	38 409.07	81 871.97		
(c) Ratio 1:2	sft (m ²)	38 409.07	79 850.44		
10.3.8 Extra cost of labour and material for red oxide pigment in cement pointing to match with the colour of bricks.	sft (m ²)	3.90 41.98	12.50 134.56		
10.3.9 Extra labour for making vertical or Horizontal grooves in cement plaster upto 1/2" width and 3/8" depth.	ft (m)	3.90 12.80			
10.3.10 Extra for making cement sand plaster mixed with waterproofing admixture (febtite powder, etc.).					
(a) Cement plaster 1:2	sft (m ²)		5.50 59.21		
(b) Cement plaster 1:3	sft (m ²)		3.87 41.66		
(c) Cement plaster 1:4	sft (m ²)		3.21 34.56		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
10.4 Cement Sand Pointing				10.3, 10.4.1,& 10.4.6	
10.4.1 Cement sand pointing flush, upto 20 ft (6 m) height:-					
(a) Ratio 1:2	sft (m ²)	36 387.54	50 538.25		
(b) Ratio 1:3 (Cement & sand)	sft (m ²)	36 387.54	47 505.96		
10.4.2 Cement sand pointing 1:2 flush, on floor.	sft (m ²)	27 290.66	40 430.60		
10.4.3 Cement sand pointing struck joints on walls, upto 20 ft (6 m) height:-					
(a) Ratio 1:2 (Cement & sand)	sft (m ²)	41 441.37	55 592.08		
(b) Ratio 1:3 (Cement & sand)	sft (m ²)	41 441.37	52 559.78		
10.4.4 Pointing flush on stone work, upto 20 ft (6 m) height:-					
(a) In cement mortar 1:3	sft (m ²)	34 366.01	44 473.66		
(b) On stone work raised in cement mortar 1:3.	sft (m ²)	63 678.20	73 785.85		
10.5 Colour/Cement/White Washing				10.3, 10.4.7 & 10.4.8	
10.5.1 Colour washing:-					
(a) New surface:					
(i) One coat	sft (m ²)	2.80 30.14	4.90 52.75		
(ii) Two coat	sft (m ²)	4.20 45.21	7.60 81.81		
(b) Old surface:					
(i) One coat	sft (m ²)	2.80 30.14	4.10 44.14		
(ii) Two coat	sft (m ²)	4.20 45.21	6.80 73.20		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
10.5.2 Cement washing.	sft (m ²)	12.10 130.26	14.30 153.94		
10.5.3 White washing:- (a) New surface:					
(i) One coat	sft (m ²)	2.80 30.14	4.00 43.06		
(ii) Two coats	sft (m ²)	4.20 45.21	5.90 63.51		
(iii) Three coats	sft (m ²)	5.50 59.21	7.90 85.04		
(b) Old surface:					
(i) One coat	sft (m ²)	2.80 30.14	3.80 40.91		
(ii) Two coats	sft (m ²)	4.20 45.21	5.70 61.36		
10.6 Distempering				10.1 & 10.4.9	
10.6.1 Priming coat of chalk under distemper.	sft (m ²)	3.80 40.91	4.40 47.37		
10.6.2 Distempering:- (a) New surface:					
(i) One coat	sft (m ²)	5.40 58.13	12.90 138.87		
(ii) Two coat	sft (m ²)	7.90 85.04	17.90 192.69		
(iii) Three coat	sft (m ²)	10.50 113.03	22.80 245.44		
(b) Old surface:					
(i) One coat	sft (m ²)	4.90 52.75	9.90 106.57		
(ii) Two coat	sft (m ²)	7.90 85.04	15.40 165.78		
10.7 Extra for Work above 20 ft Height					
10.7.1 Extra labour for mud, cement or Gypsum plaster and pointing from 20 (6 m) and above, for each additional 10 ft (3 m) height, or part thereof.	sft (m ²)	7.10 76.43			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
10.7.2 Extra labour for white washing, colour washing, cement washing, priming coat and distempering etc. from 20 (6 m) height and above requiring scaffolding, for every additional 10 ft (3 m) height or part thereof.	sft per coat (m ²)	0.17 1.83			The height will be taken from the floor, roof or ground underneath, as the case may be on the side towards which the work is to be done.
10.8 Miscellaneous Items					
10.8.1 Raking and washing joints of stone masonry (old work).	sft (m ²)	15.70 169.01			
10.8.2 Raking and washing joints of brick masonry (old work).	sft (m ²)	7.90 85.04			

CHAPTER 11**WOOD WORK**

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 11 Wood Work of "Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) No extra rate is to be paid for sawing as the rates are inclusive of this.
- (3) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m) .

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.1 Wood Work (General)				11.4 & 11.5.1	
11.1.1 Providing plain wood work sawn, wrought, planned & fixed in position, including cost of nails and screws etc complete in all respects.					
(a) Deodar wood	cft (m ³)	2044 72194	18234 644025		
(b) Shisham wood	cft (m ³)	3449 121819	19545 690329		
11.1.2 Sawing wood by hand:-					
(a) Soft wood (deodar, kail or chir)	sft (m ²)	14 150.71			
(b) Hard wood (shisham, kikar or teak)	sft (m ²)	28 301			
11.1.3 Sawing wood by machine:-					
(a) Soft wood (deodar, kail or chir)	sft (m ²)	11 118.42			
(b) Hard wood (shisham, kikar or teak)	sft (m ²)	17 183.01			
11.1.4 Making and fixing sun-shade of deodar wood, including fixing brackets.	sft (m ²)	313 3369	1513 16287		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.2 Panelled & Glazed Doors & Windows				11.4, 11.5.1 & 11.5.2	
11.2.1 Providing first class deodar wood wrought joinery in doors and windows, etc. panelled, or panelled and glazed, or fully glazed, fixed in position, including deodar wood chowkat, holdfast, hinges, tower bolts, chocks, rubber stop, cleats/G.I. Clamp handles and chord with hooks, etc. complete in all respects (excluding sliding bolt and lock):-					
(a) Panelled					
(i) 2" thick	sft (m ²)	354 3811	3832 41251		
(ii) 1-3/4" thick	sft (m ²)	354 3811	3362 36192		
(iii) 1-1/2" thick	sft (m ²)	354 3811	3123 33619		
(b) Panelled & glazed with 5mm thick plain glass					
(i) 2" thick	sft (m ²)	354 3811	3497 37645		
(ii) 1-3/4" thick	sft (m ²)	354 3811	3262 35115		
(iii) 1-1/2" thick	sft (m ²)	354 3811	3049 32822		
(c) Fully glazed with 5mm thick plain glass					
(i) 2" thick	sft (m ²)	354 3811	3329 35837		
(ii) 1-3/4" thick	sft (m ²)	354 3811	3094 33307		
(iii) 1-1/2" thick	sft (m ²)	354 3811	2926 31498		
Note-1: For item no.11.2.1, Deduction if door provided without chowkat	sft (m ²)		1057 11379		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
Note-2: For item no.11.2.1, Extra if door provided with Dolly Frame instead of solid chowkat. Dolly Frame shall be of full width jam upto 13.5" with 2"x1-1/2" vertical & cross pieces of deodar @ 6" c/c covered with commercial ply	sft (m ²)		303 3265		
11.2.2 Extra for brass fittings to doors and windows, except for hinges which shall be of iron:-					
(a) Deodar wood panelled or panelled and glazed or fully glazed.	sft (m ²)	11 118.42	200 2153.00		
(b) Deodar wood wire gauzed shutters.	sft (m ²)	5 53.83	143 1539.40		
11.2.3 Providing & fixing approved quality rim lock.	each	703	3376		
11.2.4 Providing and fixing handle lock of approved make/quality	each	933	2616		
11.2.5 Providing 1-1/2" thick deodar wood panelled or panelled and glazed, doors and windows, with mild steel chowkat as detailed below, fixed in position complete in all respects (excluding sliding bolt and lock) with:-					
(a) M.S. angle iron 1-1/2" x 1-1/2" x 1/4" welded with M.S. flat 2" x 1/4"					
(i) Panelled	sft (m ²)	364 3918	2727 29356		
(ii) Panelled & glazed with 5mm thick plain glass	sft (m ²)	364 3918	2638 28398		
(iii) Fully glazed with 5mm thick plain glass	sft (m ²)	364 3918	2446 26331		
Note-3: For item no.11.2.5 (a), Deduction if door provided without chowkat	sft (m ²)		494 5318		
(b) M.S tee iron 1-1/2"x1-1/2"x1/4" welded with M.S. flat 1/2"x1/4".					
(i) Panelled	sft (m ²)	364 3918	2613 28129		
(ii) Panelled & glazed with 5mm thick plain glass	sft (m ²)	364 3918	2526 27192		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(iii) Fully glazed with 5mm thick plain glass	sft (m ²)	364 3918	2334 25126		
Note-4: For item no.11.2.5 (b), Deduction if door provided without chowkat	sft (m ²)		350 3768		
11.2.6 Providing first class deodar wood wrought joinery in sliding windows 1-1/2" thick in cabin fully glazed, fixed in position as per type 0-42/R-I including chowkat, hold fast, tower bolts, handles flat iron 2" x 1/4" on top and bottom and 1-1/2"x1/8" at bottom only fixed to frame, etc. complete in all respects.	sft (m ²)	611 6577	4021 43286		
11.2.7 Providing casement windows (excluding chowkat) panelled or panelled and glazed, or fully glazed, flush, ledged & battened and fixed in position including holdfasts, hinges, etc. complete in all respect as per specification.					
(a) Deodar wood frame (3" x 1-1/2") & 3/4" panel	sft (m ²)	287 3090	1852 19937		
(b) Deodar wood battened 3/4" & ladedged 3/4", 2' apart	sft (m ²)	176 1895	1571 16912		
11.2.8 Providing and fixing uPVC doors with uPVC frame / beholds i/c latches, lock of approved quality, handle, etc i/c all material, labour complete in all respect but without Chowkat, if chowkat is provided it should be paid separately depending upon type of chowkat.	sft (m ²)	101 1087	926 9968		
Note:5 (a) Extra for item 11.2.8, If chowkat of Deodar, 3" x 4½" is provided	sft (m ²)	--	1057 11378.61		For MS Sheet chowkat, extra payment shall be made according to item 11.6.2
(b) Extra for item 11.2.8 If chowkat of M.S. angle iron (1-1/2"x1-1/2" x 1/4" welded with M.S. flat) is provided	sft (m ²)	--	494 5317.91		
(c) Extra for item 11.2.8 If chowkat of M.S tee iron (1-1/2" x 1-1/2" x 1/4" welded with M.S. flat 1/2" x 1/4") is provided	sft (m ²)	--	350 3767.75		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.3 Framed, Ledged, Braced, Battened Doors & Windows				11.4, 11.5.1, 11.5.2, 11.5.5 to 11.5.7	
11.3.1 Providing deodar wood framed, braced and battened doors and windows, complete with iron fittings and fixed in position, excluding wooden chowkats, sliding bolts & lock, complete in all respect.					
(a) 2-1/4" thick, with 1-1/4" battens and 1" planks.	sft (m ²)	392 4220	3491 37581		
(b) 1-3/4" thick, with 1" battens and 3/4" planks.	sft (m ²)	354 3811	2952 31778		
(c) 1-1/2" thick, with 3/4" battens and 3/4" planks.	sft (m ²)	340 3660	2864 30831		
11.3.2 Providing 1" thick battened doors and windows fitted in position, complete with iron fittings, without chowkats.	sft (m ²)	526 5662	1866 20087		
11.4 Wire Gauzed Doors & Windows				11.4, 11.5.1, 11.5.2, 11.5.8 & 11.5.9	
11.4.1 Providing and fixing first class deodar wood wrought joinery work in wire gauze doors and windows with 22 SWG G.I. wire gauze, 12x12 meshes per square inch including iron fittings, wooden strips etc. complete in all respects.					
(a) Deodar wood framing 1-3/4" thick with wire gauze fixed in position;					
(i) Without springs or spring hinges	sft (m ²)	382 4112	1460 15717		
(ii) With springs or spring hinges.	sft (m ²)	382 4112	1609 17321		
(b) Deodar wood framing 1-1/2" thick, with wire gauze fixed in position;					
(i) Without springs or spring hinges	sft (m ²)	382 4112	1333 14350		
(ii) With springs or spring hinges.	sft (m ²)	382 4112	1470 15825		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(c) G.I. Wire gauze 22 SWG, 12x12 meshes per square inches, fixed to chowkat with 3/4" thick deodar wood strip and screws.	sft (m ²)	144 1550	514 5533		
(d) G.I. Wire gauze 22 SWG, 12x12 meshes per square inches, fixed to chowkat with 1/2" strip on separate frame of deodar wood 2"x2".	sft (m ²)	199 2142	1175 12649		
11.4.2 Providing and fixing spring hinges, to wire gauzed doors:-					
(a) Brass	each	212	4062		
(b) Iron Enameled	each	212	927		
11.4.3 Providing and fixing G.I. wire gauze 22 SWG 12x12 meshes per square inch, fixed to steel window with flat iron patti 1/2" x 1/8" and machine made screws, complete in all respects.	sft (m ²)	50 538	230 2476		
11.4.4 Providing and fixing expended metal, fixed to steel window with flat iron patti 1/2" x 1/8" and machine made screws, complete in all respects.	sft (m ²)	50 538	169 1819		
11.5 Hallow & Solid Flush Doors				11.4, 11.5.1, 11.5.2 & 11.5.3	
11.5.1 Providing 1-1/2" thick hollow flush doors, with commercial ply (3 Ply) on both faces of deodar wood shutter frame 1-1/4" thick and partal wood braces at about 4" apart and deodar wood lipping 1-1/2" x 3/8", fixed in position including chromium plated fitting, complete in all respects (excluding chowkat lock & sliding bolt):-	sft (m ²)	239 2573	851 9161		
11.5.2 Providing 24 SWG aluminum kick plate, fixed in position with screws, on bottom rail of flush doors.					
a) 4" high	ft (m)	80 262	115 377		
b) 6" high	ft (m)	80 262	132 433		
c) 8" high	ft (m)	80 262	149 489		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.5.3 Providing and fixing 1-1/2" thick hollow flush doors & windows with commercial ply (3 ply) on both faces of deodar wood shutter frame 1-1/4" thick and deodar wood braces at about 4" apart and deodar wood lipping 1-1/2"x 3/8" fixed to deodar wood dolly frame of full width of jamb for 9" to 13-1/2" walls made of 2"x 1-1/2" vertical battens and cross pieces at 6" c/c including commercial ply and deodar wood fillets, etc. complete in all respects. The rate also includes chromium plated fittings but excludes sliding bolts and lock.	sft (m ²)	530 5705	1696 18257		
11.6 Wooden / Steel Chowkats for Doors & Windows				11.4 & 11.5.1, 11.5.2 & 11.5.8.2	
11.6.1 Providing and fixing deodar wood chowkat (3"x4") for doors, windows and C. windows, including holdfast etc. complete in all respects.	sft (m ²)	62 667	1057 11379		
11.6.2 Providing and fixing MS sheet 16 gauge chowkat, molded in the shape of wooden chowkat including application of bitumen compound inside the chowkat and filling it with CC 1:3:6 including cost of hold fast 2 Nos. round iron at bottom of chowkat complete in all respects as per instruction of Engineer Incharge:					
(a) Size 2" x 5"	sft (m ²)	65 700	292 3143		
(b) Size 2" x 10"	sft (m ²)	65 700	411 4424		
(c) Size 2" x 14"	sft (m ²)	98 1055	548 5899		
11.6.3 Providing and fixing mild steel chowkat of doors, windows, C. windows, etc. including holdfast, making and threading holes for hinges etc. complete:-					

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(a) M.S. angle iron 1-1/2" x 1-1/2" x 1/4" welded with M.S. Flat 2" x 1/4"	sft (m ²)	90 969	494 5318		
(b) M.S. tee iron 1-1/2" x 1-1/2" x 1/4" welded with M.S. Flat 1/2" x 1/4"	sft (m ²)	90 969	350 3768		
11.7 Wooden almirah/wardrobe/showcase/ cabinets				11.4, 11.5.1 & 11.5.2	
11.7.1 Providing and fixing deodar wood almirahs:-					
(a) 12" depth, including boxing with 3/4" thick back, shelves, shutter and brass fittings, etc complete in all respects.	sft (m ²)	496 5339	4541 48884		
(b) 12" depth, with 3/4" thick shelves, shutters, brass fittings, etc. complete in all respects, (without boxing and back)	sft (m ²)	363 3908	2421 26062		
11.7.2 Providing and fixing wooden box type wardrobe 22" deep, including 3/4" thick boxing and shelves, hanger rods, hard board back, drawers, brass fittings, locking arrangements handles, internal bolts, shoe, rods etc. including three coats of enamel paints on internal side, complete in all respects.					If hollow flush door leaves 1" thick with commercial ply (3 ply) on both sides of deodar wood frame is used, the composite rate will be reduced by Rs.12.00 per Sft.
(a) Partial wood boxing and back, deodar wood shelves and leaves, etc.	sft (m ²)	633 6814	2661 28646		
(b) Deodar wood boxing, and deodar wood shelves and leaves and back etc.	sft (m ²)	633 6814	4306 46354		
11.7.3 Providing and fixing in position wardrobe box type 2 ft deep made of lamination sheet including lamination board door shutters piano hinges, haweess handles, catchers, locks all labour and material complete.	sft (m ²)	686 7385	1683 18117		If UV coated lamination sheet is used, composite rate should be increased by Rs.
					253

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.7.4 Providing & fixing in position show case made of lamination sheets depth 2'-0" and height 2'-0" to 8'-0" including all labour and material C.P. Brass mongry, sliding glass shutters, lamination sheet doors complete in all respects.	sft (m ²)	306 3294	1175 12649		
11.7.5 Providing and fixing kitchen wall cabinet made of lamination board including all labour and material C.P. Brass mongrey and fittings etc. complete.	sft (m ²)	379 4080	1676 18042		If UV coated lamination sheet is used, composite rate should be increased by Rs. 531
11.7.6 Fixing wooden almirahs and wardrobes:-	sft (m ²)	182 1959			
11.8 Wooden Planking/Shelves				11.4 & 11.5.1	
11.8.1 Providing deodar wood planking in eave boards, etc planed on both sides, rebated and fixed in position, including nails and screws, bolts and brackets:-					
(a) 1" (25 mm) thick	sft (m ²)	122 1313	1439 15491		
(b) 3/4" (19 mm) thick	sft (m ²)	122 1313	1109 11938		
(c) 1/2" (13 mm) thick.	sft (m ²)	122 1313	781 8407		
11.8.2 Providing and fixing deodar wood shelves, including brackets:-					
(a) 1" (25 mm) thick	sft (m ²)	122 1313	1439 15491		
(b) 1-1/2" (31 mm) thick	sft (m ²)	122 1313	2097 22574		
(c) 2" (50 mm)thick.	sft (m ²)	122 1313	2756 29668		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.9 Fixing Glass Panes to Doors & Windows				11.4 & 11.5.11	
11.9.1 Glazing with plate glass 5 mm thick including the cost of deodar wood fillets and putty, upto any height complete in all respects.	sft (m ²)	111 1195	470 5060		
11.9.2 Glazing with plate glass 8 mm thick including the cost of deodar wood fillets and putty, upto any height complete in all respects	sft (m ²)	111 1195	488 5253		
11.9.3 Glazing with tinted glass including the cost of deodar wood fillet, nails and putty, upto any height complete in all respects.					
(a) Tinted glass 5 mm thick	sft (m ²)	117 1260	614 6610		
(b) Tinted glass 8 mm thick	sft (m ²)	117 1260	1008 10851		
11.9.4 Glazing with tampered plate glass 5 mm thick including the cost of deodar wood fillets and putty, complete in all respects.	sft (m ²)	111 1195	675 7266		
11.9.5 Glazing with reinforced plate glass 5 mm thick including the cost of deodar wood fillets and putty, complete in all respects.	sft (m ²)	111 1195	610 6567		
11.10 Doors & Windows Fixtures				11.5.1 & 11.5.2	
11.10.1 Providing & Fixing:-					
(a) Cleats for doors and windows, including hinges and screws.	each	138	495		
(b) Cleats with brass hooks for roof ventilators.	each	169	522		
(c) G.I. Hook with clamps for doors.	each	7	53		
(d) Doors stop of 1-1/2" dia rubber block.	each	27	126		
11.10.2 Extra for providing and fixing iron double spring hinges, with brass fittings (it shall include brass finger plate, 6" tower bolt).	sft (m ²)	10 107.7	121 1302.6		
11.10.3 Providing and fixing approved quality lock for drawer/box, complete in all respects.	each	133	148		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.10.4 Providing and fixing hydraulic door closer heavy duty, approved superior quality including screws etc, complete in all respects.	each	690	8390		
11.10.5 Supplying and fixing tower bolts including screws for doors and windows, complete in all respects.					
(a) Iron Tower Bolts 6" long	each	27	269		
(b) Brass/chromium plated tower bolts 6" long	-do-	27	852		
11.10.6 Supplying and fixing handles with screws complete for doors and windows.					
(a) Iron handles	each	42	272		
(b) Brass/chromium plated handles	each	42	922		
11.10.7 Providing and fixing, sliding bolt to doors, complete in all respects.					
(a) Iron sliding bolt, 10" (250 mm) long	each	216	821		
(b) Iron sliding bolt, 12" (300 mm) long	each	216	1151		
(c) Brass sliding bolt, 10" (250 mm) long	each	216	3516		
(d) Brass sliding bolt, 12" (300 mm) long	each	216	2966		
(e) C.P.brass sliding bolt, 10" (250 mm) long	each	216	2746		
(f) C.P.brass sliding bolt, 12" (300 mm) long	each	216	3516		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.11 Wooden Partitions				11.4 & 11.5.1	
11.11.1 Providing & fixing partition, including framework of deodar wood 2"x3" at 2' c/c, complete in all respects.					
(a) Sheets on one side of frame work;					
(i) Hard board	sft (m ²)	50 538	639 6879		
(ii) Ply wood Teak (3 Ply)	sft (m ²)	50 538	734 7902		
(iii) Ply wood commercial (3 Ply)	sft (m ²)	50 538	639 6879		
(iv) Chip Board 1/2" thick	sft (m ²)	50 538	602 6481		
(b) Sheets on both side of frame work;					
(i) Hard board	sft (m ²)	58 624	746 8031		
(ii) Ply wood Teak (3 Ply)	sft (m ²)	58 624	935 10065		
(iii) Ply wood commercial (3 Ply)	sft (m ²)	58 624	746 8031		
(iv) Chip Board 1/2" thick	sft (m ²)	58 624	672 7234		
11.12 Wooden / Gypsum Board / Thermopore False Ceiling				11.4 & 11.5.1	
11.12.1 Providing and fixing false ceiling, including framework of deodar wood 2"x2" at 2' centers on either side, cost of M.S. Clamps, making holes in walls and repairing damaged surfaces complete in all respects, with:-					
(a) Hard board	sft (m ²)	66 710	862 9279		
(b) Chip Board 1/2" thick	sft (m ²)	66 710	827 8903		
(c) Ply wood Teak (3 Ply)	sft (m ²)	66 710	873 9398		
(d) Ply wood commercial (3 Ply)	sft (m ²)	66 710	835 8989		
(e) Thermopore 1" thick	sft (m ²)	66 710	785 8451		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.12.2 Providing and fixing false ceiling of Gypsum board (laminated with plastic sheet on front side) 7.5 mm thick as per approved shade/design fixed/ laid on aluminum Angle / T-section size 1" x 1" x 1" x 1/16" including hanger clips, jointing clips and copper wires wire, etc complete in all respect.	sft (m ²)	58 624	237 2551		
11.12.3 Providing and fixing false ceiling of Plaster of paris as per approved shape and design, directly fixed with roof through copper wires (after fixing, wires duly wrapped with jute & plaster of paris) including rawal plug, jointing material, etc., complete in all respect. Work also includes 2 coats of distempering of false ceiling with approved colour.	sft (m ²)	82 883	301 3240		
Note-6: Extra for painting ceiling of item 11.12.3 with marble grain, wood grain or other textured painting	sft (m ²)	--	15 161.48		
11.12.4 Providing and fixing false ceiling of Thermopore sheet of prime quality (20 mm thick) as per approved shade/design fixed/ laid on aluminum Angle / T-section size 1" x 1" x 1" x 1/16" including hanger clips, jointing clips and 14 SWG GI wire, etc complete in all respect.	sft (m ²)	29 312	165 1776		
11.13 Wooden and PVC Paneling				11.4 , 11.5.1 & 11.5.3.3	
11.13.1 Providing and fixing paneling including deodar wood frame work 1"x3/4" at appropriate spacing not exceeding 2' including cost of nails, screws and deodar wood moulding on top of panelling etc, complete in all respects, with:-					
(a) Hard board	sft (m ²)	62 667	349 3757		
(b) Vin board	sft (m ²)	62 667	337 3628		
(c) Chip board 1/2" thick	sft (m ²)	62 667	311 3348		
(d) Deodar wood 1/2" thick	sft (m ²)	141 1518	1023 11013		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.13.2 Providing and fixing 3 ply over hard board/Vin board/Chip board panelling complete in all respects including the cost of deodar wood moulding on top of panelling:-					
(a) Commercial ply (3 ply)	sft (m ²)	62 667	161 1733		
(b) Teak ply (3 ply)	sft (m ²)	62 667	257 2767		
11.13.3 Providing and fixing wall panelling of approved colour and design comprising of vinyl PVC 1.5 mm thick double sheet braced @ 15 mm apart, over all minimum thickness 8.0 mm works includes PVC gola at top/ corner and PVC channel at bottom complete in all respect as approved by the engineer in charge including all material, labour, etc.					
(a) PVC panelling with pannel width upto 10"	sft (m ²)	71 764	169 1819		
(b) PVC panelling with pannel width more than 10" and upto 16"	sft (m ²)	71 764	212 2282		
(c) PVC panelling with pannel width more than 16"	sft (m ²)	71 764	230 2476		
11.14 Miscellaneous Items					
11.14.1 Providing and fixing deodar wood architrave 3"x1-1/2" of approved design including moulding etc. complete in all respects.	ft (m)	212 696	865 2838		
11.14.2 Fixing doors & windows including chowkats, complete in all respects.					
(a) Fixing door, including chowkats	sft (m ²)	38 409			
(b) Fixing windows, including chowkats	sft (m ²)	19 204.54			
11.14.3 Supplying & fixing formica of approved quality and shade including cost of glue/solution, complete in all respects.	sft (m ²)	13 139.95	110 1184		
11.14.4 Making and fixing 1" thick kail or chir wood notice board with frame, complete in all respects	sft (m ²)	176 1895	489 5264		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
11.14.5 Dismantling and refixing eave boards.	ft (m)	49 160.8			
11.14.6 Providing and fitting curtain railing of approved design / quality to doors and windows, fixed over 4"x3/4" deodar wood strip, including painting, complete in all respects.	ft (m)	33 108.3	508 1667		

CHAPTER 12

PAINTING & VARNISHING

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in chapter 12 "Painting & Varnishing" of "Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) The rates include charges for scaffolding and other arrangements.
- (3) The rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.1 Cleaning & Scraping of Painted Surfaces				12.4	
12.1.1 Cleaning painted wood work with oil and water.	sft (m ²)	3.10 33.37	4.60 49.52		
12.1.2 Oiling wood work with boiled linseed oil.	sft (m ²)	3.10 33.37	8.60 92.58		
12.1.3 Scraping and brushing blisters of old paints, from wood work.	sft (m ²)	6.30 67.82			
12.1.4 Scraping, brushing and removing old paint, from metal surface.	sft (m ²)	16 172.24			
12.1.5 Burning off or rubbing down with pumice stone, old paint from wood work.	sft (m ²)	19.70 212.07	19.80 213.15		
12.1.6 Removing with caustic soda, old paint from wood work.	sft (m ²)	7.90 85.04	7.90 85.04		
12.1.7 Removing paint or varnish from wall.	sft (m ²)	15.70 169.01			
12.1.8 Scraping rust from old rail or girders.	sft (m ²)	23.60 254.05	25.60 275.58		
12.1.9 Chiselling old paint from brick work.	sft (m ²)	31.50 339.10	32.60 350.94		
12.1.10 Cleaning glasses, with chalk and spirit, etc.	sft (m ²)	21.00 226.07	21.20 228.22		
12.1.11 Cleaning and oiling rafter or rolled steel beams.	sft (m ²)	7.90 85.04	9.00 96.89		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.2 Painting Old Surfaces				12.3, 12.4 & 12.5	
12.2.1 Painting corrugated surfaces, patent roofing, etc with oil paint;					
(a) First coat	sft (m ²)	13.20 142.10	22.5 242.21		
(b) Each subsequent coat.	sft (m ²)	10.00 107.65	14.70 158.25		
12.2.2 Painting sashes, fanlights, glazed or gauzed doors and windows;					
(a) First coat	sft (m ²)	8.00 86.12	12.90 138.87		
(b) Each subsequent coat.	sft (m ²)	6.80 73.20	10.60 114.11		
12.2.3 Painting doors and windows, of type other than those under item 12.2.2;					
(a) First coat	sft (m ²)	13.20 142.10	21.60 232.52		
(b) Each subsequent coat.	sft (m ²)	10.00 107.65	16.30 175.47		
12.2.4 Painting guard bars, gates of iron bars, gratings, railing boiler tube, tie bar and wooden fencing (including standards, braces, etc) and similar open work;					
(a) First coat	sft (m ²)	8.00 86.12	12.40 133.49		
(b) Each subsequent coat.	sft (m ²)	6.80 73.20	10.20 109.80		
12.2.5 Painting fillets, framings, skirting, pipes, gutters and similar linear work, not exceeding 6" in girth;					
(a) First coat	ft (m)	6.80 22.31	11.20 36.75		
(b) Each subsequent coat.	ft (m)	4.80 15.75	8.20 26.91		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.2.6 Painting small detached articles, not exceeding one square foot of painted surface;					
(a) First coat	each	28	36		
(b) Each subsequent coat.	each	22	26		
12.2.7 Painting small detached articles, exceeding one square foot but not exceeding three square feet of painted surface;					
(a) First coat	each	56	81		
(b) Each subsequent coat.	each	32	44		
12.2.8 Painting railway girders and other heavy railway steel structures, including scaffolding upto 20ft height as per specifications complete in all respects.				12.4.4	
(a) First coat	sft (m ²)	11 118.42	18 193.77		
(b) Each subsequent coat.	sft (m ²)	9 96.89	13 139.95		
12.3 Painting New Surfaces				12.3 & 12.4.1 to 12.4.7 & 12.5	The rates of painting new surfaces under subsection 12.3 are by using best quality paints such as ICI, Berger or Equivalent as specified /approved by Engineer in-charge.
12.3.1 Preparing surface and painting corrugated surface, patent roofing etc;					
(a) Priming Coat	sft (m ²)	14 150.71	28 301.42		
(b) Each subsequent coat of paint.	sft (m ²)	7 75.36	19 204.54		
12.3.2 Preparing surface and painting sashes, fan light, glazed or gauzed doors and windows, etc. any type (including edges);					
(a) Priming coat	sft (m ²)	7.30 78.58	15.60 167.93		
(b) Each subsequent coat of paint.	sft (m ²)	4.80 51.67	11.40 122.72		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.3.3 Preparing surface and painting of doors and windows, of type other than those under item 12.3.2 (including edges);					
(a) Priming coat	sft (m ²)	14 150.71	26 279.89		
(b) Each subsequent coat of paint.	sft (m ²)	7 75.36	18 193.77		
12.3.4 Preparing surface and painting guard bars, gates of iron bars, gratings, railing, boiler tube, tie bar and wooden fencing (including standards, braces, etc.) and in similar open work;					
(a) Priming coat	sft (m ²)	9 96.89	16 172.24		
(b) Each subsequent coat of paint.	sft (m ²)	4.80 51.67	10.60 114.11		
12.3.5 Preparing surface and painting of fillets, framing, skirtings, pipes, gutters and similar linear work, not exceeding 6" girth.					
(a) Priming coat	sft (m)	7 75.36	12 129.18		
(b) Each subsequent coat of paint.	sft (m)	3 32.30	8 86.12		
12.3.6 Preparing surface and painting of small detached articles, not exceeding one sft of painted surface;					
(a) Priming coat	per no.	30	55		
(b) Each subsequent coat of paint.	per no.	15	35		
12.3.7 Preparing surface and painting of small detached articles, exceeding one sft. but not exceeding 3 sft of painted surface;					
(a) Priming coat	per no.	58	107		
(b) Each subsequent coat of paint.	per no.	26	62		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.3.8 Extra for knotting and stopping to priming coat on new surface of wood.	sft (m ²)	1.50 16.15	1.60 17.22	12.4.4	
12.3.9 Preparing surface and painting with epoxy paint of approved quality, on heavy steel (foot over bridges) complete in all respect.	sft (m ²)	24 258.36	48 516.72		
12.3.10 Preparing surface and Painting railway girders and other heavy railway steel structures, including scaffolding upto 20ft height as per specifications complete in all respects;					
(a) Priming coat	sft (m ²)	12 129.18	22 236.83		
(b) Each subsequent coat.	sft (m ²)	7 75.36	15 161.48		
12.4 Painting with Emulsion Paint				12.3, 12.4.1, 12.4.8, 12.4.9 & 12.5	The rates of painting new surfaces under subsection 12.4 are by using best quality paints such as ICI, Berger or Equivalent as specified /approved by Engineer in-charge.
12.4.1 Preparing surface and painting with emulsion paint:-					
(a) Priming coat	sft (m ²)	9 96.89	32 344.48		
(b) Second and each subsequent coat	sft (m ²)	7 75.36	24 258.36		
12.4.2 Preparing surface and painting exteriors of buildings with weather shield paint:-					
(a) Priming coat	sft (m ²)	9 96.89	18 193.77		
(b) Second and each subsequent coat	sft (m ²)	7 75.36	14 150.71		
12.4.3 Preparing surface and painting interiors of building with textured paint complete in all respect.					
(a) Priming coat	sft (m ²)	9 96.89	32 344.48		
(b) Second and each subsequent coat	sft (m ²)	7 75.36	24 258.36		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.5 Polishing				12.3, 12.4.1, 12.4.14, 12.4.15 & 12.5	
12.5.1 French polishing complete:-					
(a) On new work.	sft (m ²)	52 559.78	211 2271.42		
(b) on old work.	sft (m ²)	43 462.90	144 1550.16		
12.6 Varnishing				12.3, 12.4.1, 12.4.13 & 12.5	
12.6.1 Varnishing wood work, including cleaning and preparing surface:-					
(a) First Coat	sft (m ²)	8 86.12	20 215.30		
(b) Second Coat	sft (m ²)	4 43.06	13 139.95		
(c) Third Coat	sft (m ²)	4 43.06	11 118.42		
12.7 Painting/Varnishing above 20 ft height					
12.7.1 Extra labour for painting, varnishing etc. from 20' height and above for every additional 10' height or part thereof requiring scaffolding.	sft (m ²)	4 43.06			The height will be taken from the floor, roof or ground underneath as the case may be, on the side towards which the work is to be done.
12.8 Painting with Coal tar/ Bitumen Solignum & Creosote				12.3, 12.4.1, 12.4.15 & 12.5	
12.8.1 Bitumen coating to plastered or cement concrete surface:-					
(a) 9 kg per 100 sft	sft (m ²)	8 86.12	32 344.48		
(b) 6.3 kg per 100 sft	sft (m ²)	6 64.59	23 247.60		
(c) 4.5 kg per 100 sft	sft (m ²)	5 53.83	17 183.01		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
12.8.2 Coaltar painting:-					
(a) First Coat, laid hot	sft (m ²)	5 53.83	24 258.36		
(b) Second Coat, laid hot	sft (m ²)	3 32.30	14 150.71		
12.8.3 Solignum painting:-					
(a) one coat, applied hot	sft (m ²)	8 86.12	15 161.48		
(b) two coats, applied hot	sft (m ²)	12 129.18	24 258.36		
12.8.4 Creosote painting:-					
(a) one coat, applied hot	sft (m ²)	8 86.12	10 107.65		
(b) two coats, applied hot.	sft (m ²)	12 129.18	16 172.24		
12.9 Miscellaneous Items					
12.9.1 Pavement marking with machine with reflective Roadex Chlorinated Rubber Based (CR) Paint					
(a) For lines of 15 cm width	Rft (m)	28 91.87	51 167.33		
(a) For lines of 20 cm width	Rft (m)	28 91.87	66 216.55		
12.9.2 Pavement marking with machine with reflective Thermoplastic (TP) Paint					
(a) For lines of 15 cm width	Rft (m)	28 91.87	35 114.84		
(a) For lines of 20 cm width	Rft (m)	28 91.87	37 121.40		

CHAPTER 13**STRUCTURAL STEEL / ALUMINUM WORKS**

Note:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in chapter 13 "Technical Structural Steel / Aluminum Works" of "Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) The rates for all finished works include the removal of surplus debris, unused material and by products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.1 Fabrication of Small Steel Works				13.3	
13.1.1 Fabrication of small steel work, such as gusset plates, knees, bends, stirrups, straps, rings, etc, including cutting, drilling, revitting, handling, assembling and fixing but excluding erection in position.	per kg	178	572	13.4.1 to 13.4.7, 13.4.14 & 13.5	
13.1.2 Making bolts and nuts of steel rods.	per kg	143	491		
13.1.3 Hoop iron netted trelliss work fixed with nails.	sft (m ²)	118 1270.27	--		
13.2 Fabrication of Heavy Steel Works, i.e. Trusses, Girder & Tanks etc.				13.3	
13.2.1 Fabrication of heavy steel works, with angle, tees, flat iron, round iron and sheet iron for making trusses, girders, tanks, gate leaves, special type iron grills, etc. including cutting, drilling, revitting/welding, handling, assembling and fixing but excluding erection in position.	per kg	71	343	13.4.1 to 13.4.7, 13.4.14 & 13.5	
13.3 Revitting Works				13.3,13.4.	
13.3.1 Revitting 1/8" to 1 "				1,13.4.5 & 13.5	
a) Revitting 1/8" to 3/8" dia.	per no.	2.30	46		
b) Revit 1/2"	per no.	3.80	81		
c) Revit 5/8"	per no.	4.20	158		
d) Revit 3/4"	per no.	9.10	251		
e) Revit 7/8"	per no.	10.20	340		
f) Revit 1"	per no.	12.00	364		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.3.2 Cutting out refits size 1/8" to 1 "					
a) Revitting 1/8" to 3/8" dia.	per no.	6	--		
b) Revit 1/2"	per no.	10	--		
c) Revit 5/8"	per no.	13	--		
d) Revit 3/4" to 7/8"	per no.	19	--		
e) Revit 1"	per no.	23	--		
13.4 Erection of Small/Heavy Steel Works				13.4.1, 13.4.8 to 13.4.10 & 13.5	
13.4.1 Erection and fitting in position iron trusses, staging of water tanks, manufactured girders, steel tanks, M.S gutters, chequered plate, etc.	per kg	21	--		
13.4.2 Fixing corrugated iron sheet, including revitting, etc.	sft (m ²)	32 344.48	--		
13.4.3 Erecting cast iron sheet tanks upto 20' height.	per kg	25	--		
13.4.4 Erecting rolled steel beams or old rails in roofs, etc. erection and fixing in position.	per kg	16	--		
13.4.5 Erecting rolled steel beams or rails, erection for posts, gate leaves, special type iron grills, etc. (other than in roofs).	per kg	8	--		
13.5 Providing & Fixing Steel Doors & Windows				11.7	
13.5.1 Providing and fixing steel grated doors, complete with locking arrangement, angle iron frames 2" x 2" x 3/8" and 3/4" square bars 4" center to center.	sft (m ²)	309 3326	1657 17838		
13.5.2 Providing and fixing steel grated doors with 20 SWG thick sheeting, including angle iron frame 2" x 2" x 3/8" and 3/4" square bars 4" center to center, with locking arrangement.	sft (m ²)	365 3929	1859 20012		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.5.3 Providing and fixing grating in opening, including fixing at site with flat iron 2" x 3/8" and 3/4" square bars at 4" center to center.	sft (m ²)	278 2993	1214 13069		
13.5.4 Providing and fixing G.I. Wire gauze 24 SWG 12x12 meshes per square inch fixed to steel windows or doors with flat iron 1/16" thick and screws, complete in all respects.	sft (m ²)	65 699.73	142 1528.63		
13.5.5 Providing and fixing steel windows with openable glazed panells, using beam section for frame 1-1/2" x 1" x 5/8" x 1/8", Z-section for leaves 3/4" x 1" x 3/4" x 1/8", T-section sashes 1" x 1" x 1/8", glass panes, wooden screed for glazing embedded over a thin layer of putty duly screwed with leaves, brass fittings holdfast, duly painted, complete in all respects, including all cost of material and labour, etc., as per approved design and as directed by the engineer-in-charge:-					
(a) without wire gauze:-					
(i) Glass Pane 3 mm thick.	sft (m ²)	261 2810	1362 14662		
(ii) Glass Pane 4 mm thick.	sft (m ²)	261 2810	1412 15200		
(iii) Glass Pane 5 mm thick.	sft (m ²)	261 2810	1445 15555		
(b) fixed with wire gauze 24 SWG					
(i) Glass Pane 3 mm thick.	sft (m ²)	237 2551	1529 16460		
(ii) Glass Pane 4 mm thick.	sft (m ²)	237 2551	1578 16987		
(iii) Glass Pane 5 mm thick.	sft (m ²)	237 2551	1612 17353		
Note 1: Reduction in the composite rates under 13.5.5 above in case of fixed panels.	sft (m ²)		180 1937.70		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.5.6 Providing and fixing in position steel pipe window, partly fixed and partly sliding made of hollow steel pipe of 16 gauge, fixing wire gauze 22 SWG, glazing with tinted glass 5 mm thick including holdfast, handles, latches, hooks, sliding rail and wheels, painting including steel pipe grill complete	sft (m ²)	218 2347	520 5598		
13.5.7 Making and fixing steel door with 20 SWG sheet fixed on 1-1/4"x1-1/4"x1/8" angle iron frame & Chowkat of angle iron frame 2"x2"x3/16" including locking arrangement complete.	sft (m ²)	164 1765.46	307 3305		
13.5.8 Providing and fixing panelled door of M.S. sheet, with forged door leaves of M.Sc. sheet 22 S.W.G. fitted in hollow frame chowkat 3"x4-1/2" made of M.S. sheet 18 S.W.G. filled with plain cement concrete 1:3:6 etc. complete, with all fittings and hammer painting, including carriage to site and fixing in position.	sft (m ²)	330 3552	1146 12337		
13.6 Providing & Fixing Steel Railings					
13.6.1 Providing and fixing stair railing (all types and designs) of hard wood, including bends and corner screwed to 5/8" x 5/8" M.S. square bars 2.75 ft. high at 5.5 inch center to center fixed in steps of stairs, M.S. flat 1/2" x 1/4" welded to bars, painting/polishing 3 coats, etc. complete.	ft (m)	1075 3527	3080 10105		
13.6.2 Providing and fixing terrace railing of 2" i/d conduit pipe 16 SWG, welded with 5/8" x 5/8" square bar 2.75 ft. high fixed at 5" center to center, in reinforced cement concrete slab with suitable arrangement, complete in all respects, as per design and drawing.	ft (m)	253 830.09	2265 7431		
13.6.3 Providing and fixing M.S. angle iron 1-1/2"x 1-1/2"x1/4" edge protector nozing of steps of stairs, having holdfast of 3/8" dia. M.S. bars 8" long welded at 2' center to center & embedded in cement concrete on steps, compete in all respects.	ft (m)	83 272.32	447 1467		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.6.4 Providing and fixing stair railing of 2-1/2" i/d G.I. pipe welded with 5/8" x 5/8" square M.S. bars 2'-9" high fixed in each step, complete in all respects including painting three coats.	ft (m)	192 629.95	1879 6165		
13.7 Providing & Fixing Steel Grill for Windows				13.3, 13.4.1, 13.4.14 to 13.4.17 & 13.5	
13.7.1 Providing and fixing M.S. flat 1/2" x 1/8" or M.S. Square 1/4" x 1/4" grill in windows, of approved design, including painting 3 coats, complete in all respects.	sft (m ²)	516 5555	818 8806		
13.8 Providing & Fixing Steel Gates				13.3, 13.4.1, 13.4.14 to 13.4.17 & 13.5	
13.8.1 Providing and fixing collapsible gate made of 2"x2"x1/4" tee iron at top and bottom, channel iron verticals 3/4" x 1/4"x1/4"x1/8" at 3" to 5" center to center (approximate) and flat iron crosses 3/4"x3/16" and best quality rollers at bottom of 3" diameter including holdfast, handles 12" long of 3/4"x1/4"x1/4"x1/8" channel iron, locking arrangement inside and outside, painting 3 coats of black Japan enamel, complete in working order.	sft (m ²)	631 6793	1757 18914		
13.8.2 Providing and fixing 24 SWG G.I. sheet rolling shutter, consisting of steel frame of M.S. channel 2"x 1-1/4"x1/8" angle iron 1-1/2" x 1-1/2"x1/8" M.S. flat 1"x1/8" G.I. Pipe 1-1/2" dia, springs 2' center to center, rollers 24" SWG G-I. Covering 1 ft. x 1 ft. handles, holdfast, and painting three coats, complete in all respects.	sft (m ²)	415 4467	921 9915		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.9 Providing & Fixing Aluminum Doors & Windows				11.5	
13.9.1 Providing and fixing aluminum door consisting of chowkat of special type 'U' section 4"x1-3/4" (1.6 mm thick) and leaf of rectangular section 2" x1-3/4" (1.6 mm thick) jointed with sheet metal screws including pivoted hinges, 6" handles. 9" tower bolts on top and bottom and 5 mm thick glass fixed with special type rubber channel etc. complete in all respect as approved by the Engineer Incharge.	sft (m ²)	235 2530	3155 33964		Note:- For rate of items 13.9.1 to 13.9.4 (i) For sections 2mm in thickness, the composite rates will be increased by 10%
13.9.2 Providing and fixing aluminum windows sliding, consisting of chowkat (1.6 mm thick) of special type 'U' section 4"x1" and leaf (1.6 mm thick) with vertical styles 2"x1", 1-1/4" x 1" bottom rail 2-1/2"x1" and top rail 1-1/4"x1" including latch, screws, sliding wheels, 5 mm. glass sheet fixed with special rubber channel etc. complete in all respects as approved by the Engineer Incharge.	sft (m ²)	171 1841	1394 15006		
13.9.3 Providing and fixing aluminum wire gauze shutter to windows consisting of special type section 1-5/8"x1/2" with Aluminum wire gauze of 16x16 mesh per square inch fixed with special rubber channel including cost of wheels, screws, etc. complete as approved by the Engineer Incharge.	sft (m ²)	30 322.95	343 3692		
13.9.4 Providing and fixing frame work of aluminum sections D 11, D 15 & D 16 and glazing with glass sheet fixed with rubber ring as per design and approved by Engineer Incharge:- (a) With plain glass sheet; (i) 5 mm thick (ii) 8 mm thick (iii) 12 mm thick (b) With tinted glass sheet; (i) 5 mm thick	sft (m ²) sft (m ²) sft (m ²) sft (m ²)	54 581.31 54 581.31 54 581.31	626 6739 760 8181 1082 11648		
	sft (m ²)	54 581.31	653 7030		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(ii) 8 mm thick	sft (m ²)	54 581.31	985 10604		
(iii) 12 mm thick	sft (m ²)	54 581.31	1227 13209		
13.9.5 Providing and fixing 12 mm thick plain tempered glass, frameless door fitted with hinges and hydraulic concealed floor machine including S.S door handle, lock, etc., complete in all respect.	sft (m ²)	54 581	1211 13036		
13.9.6 Providing and fixing frosting paper on glass	sft (m ²)	6 65	105 1130		
13.9.7 Frosting on glass of approved design and shape	sft (m ²)	85 915	--		
13.9.8 Providing and fixing Hydraulic floor machine in doors	each	799	7399		
13.10 Providing & Fixing Barbed Wire Fencing / Razor Wire Fencing				13.3, 13.4.1, 13.4.14 to 13.4.17 & 13.5	
13.10.1 Providing and fixing barbed wire fencing consisting of 1-1/2"x1-1/2"x3/16" angle iron post 3-1/4 ft. long 5 to 6 ft. center to center embedded in cement concrete 1:2:4, base of size 9"x9"x12", and three rows of barbed wire, painting posts, etc., complete in all respects.	Rft (m)	35 114.84	345 1132		
13.10.2 Providing and fixing barbed wire fencing on compound wall, consisting of 1-1/2"x1-1/2"x 3/16" angle iron post 3' long 4' apart embedded in cement concrete 1:2:4 base of size 6" x 6" x 9" and 4 rows of barbed wire, including binding wire, painting posts, etc. complete in all respects.	Rft (m)	58 1.90	440 14.44		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.10.3 Providing and fixing barbed wire fencing with 4 horizontal and 2 number cross wires fixed with posts of R.C.C. 1:2:4 straining posts 7' x 9" x 9" at 100 center to center stiffening posts 7' x 6" x 6" at 50 ft. interval and intermediate post 7' x 5" x 5" at 8 ft. center to center, including cost of steel, its fabrication and placing of steel reinforcement, eye bolts, washers, etc. Also including base concrete (1:2:4) with shuttering and excavation as per P.R. Type No.F-64 complete.	Rft (m)	85 279	351 1152		(i) Vertical bars in straining and stiffening posts to be 4 Nos. each 1/2" dia for intermediate posts to be 4 Nos. of 3/8" dia. (ii) Stirrups for all posts to be 1/4" dia at 12" center to center.
13.10.4 Providing and fixing fencing consisting of 1-1/2" dia G.I pipe (medium quality) at 6' c/c embedded in cement concrete (1:2:4) base of size 9" x 9" x 18" deep and 2" x 2" G.I mesh chain link fencing wire fixed to pipe with G.I hooks complete in all respects.					Measurement shall be made of only mesh chain link area.
(a) 8 SWG chain link wire	Rft (m)	234 768	1264 4147		
(b) 10 SWG chain link wire	Rft (m)	810 2658	1148 3767		
13.10.5 Supply and fixing razor barbed wire fencing consisting of 1-1/2" x 11/2" x 3/16" angle iron post (duly painted) 2' 6" long 10' center to center embedded in C.C 1:2:4 case of size 3"x9"x6" with 1/2" dia round bar at top and bottom to hold razor wire, complete in all respect.	Rft (m)	82 269	944 3097		
13.10.6 Supply and fixing razor barbed wire coil fencing on Y shaped angle iron (1-1/2" x 1-1/2" x 3/16") post (duly painted). Opening of Y at top should be 450 mm or equal to dia of razor wire coil. Height of upper portion of Y should be 12" with two cuts on each side to fix 4 longitudinal razor wire, bottom leg 12" embedded in C.C 1:2:4 case of size 3"x9"x6". Y to be fitted at 10' center to center. Coiled Razor wire be fixed on longitudinal razor wires fixed on Y, complete in all respect.	Rft (m)	122 400	1585 5200		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
13.11 Miscellaneous Items					
13.11.1 Cutting rails, rolled steel joists and beams, with hacksaw:- (a) upto 6" size.	cut	635	-		
(b) above 6" size.	cut	953	-		
13.11.2 Cutting rails or rolled steel beams of size upto 6" with jim.	cut	296	-		
13.11.3 Bending rolled steel beams or rails.	bend	2671	-		
13.11.4 Drilling holes, in plates upto 1/2" thick per inch dia or part thereof.	hole	112	-		
13.11.5 Extra for drilling holes in plates over 1/2" thick per inch dia, or part thereof.	hole	58	-		
13.11.6 Providing, cutting and fixing iron bars for 1/2" dia for barred windows.	bar	121	166		
13.11.7 Cutting G.I. Sheets.	each cut	65	-		
13.11.8 Notching web or foot of rail posts.	notch	3049	-		

CHAPTER 14

PILE FOUNDATIONS

Notes:

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 14 Pile Foundations of "Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).
- (3) If concrete mixer or high frequency vibrator, etc., is supplied by the department, all charges including depreciation will be recovered from the contractor.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
14.1 Providing Cast-in-Situ Bored RCC Piles				14.4 & 14.5.1 to 14.5.4 & 14.5.6	
14.1.1 Boring of RCC piles in common soil, including lowering of steel cage and casting in situ bored reinforced concrete piles with nominal concrete mix, using 10% extra cement in dry mix, including all labour and material (except the cost of steel reinforcement and labour for its fabrications etc. which will be paid separately) complete in all respects as per specification.					
(a) Nominal Mix 1:2:4 (fc' =3000 psi)					
(i) 18" (450 mm) dia pile	ft (m)	2316 7599	3306 10847		fc' = 28 days compressive cylinder strength of concrete.
(ii) 24" (600 mm) dia pile	ft (m)	4125 13534	5883 19302		
(iii) 30" (750 mm) dia pile	ft (m)	6192 20316	8926 29286		
(iv) 36" (900 mm) dia pile	ft (m)	8894 29181	12841 42131		
(v) 42" (1050 mm) dia pile	ft (m)	12119 39762	17489 57381		
(vi) 48" (1200 mm) dia pile	ft (m)	15800 51840	22815 74856		
(vii) 78" (1950 mm) dia pile	ft (m)	17602 57752	36124 118523		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Nominal Mix 1:1-1/2:3 (fc' = 4000 Psi)					
(i) 18" (450 mm) dia pile	ft	2316	3466		
	(m)	7599	11372		
(ii) 24" (600 mm) dia pile	ft	4125	6165		
	(m)	13534	20227		
(iii) 30" (750 mm) dia pile	ft	6192	9366		
	(m)	20316	30730		
(iv) 36" (900 mm) dia pile	ft	8894	13476		
	(m)	29181	44215		
(v) 42" (1050 mm) dia pile	ft	12119	18353		
	(m)	39762	60216		
(vi) 48" (1200 mm) dia pile	ft	15800	23944		
	(m)	51840	78560		
(vii) 78" (1950 mm) dia pile	ft	17602	39105		
	(m)	57752	128304		
(c) Nominal Mix 1:1:2 (fc' = 5000 Psi)					
(i) 18" (450 mm) dia pile	ft	2316	3745		
	(m)	7599	12287		
(ii) 24" (600 mm) dia pile	ft	4125	6661		
	(m)	13534	21855		
(iii) 30" (750 mm) dia pile	ft	6192	10135		
	(m)	20316	33253		
(iv) 36" (900 mm) dia pile	ft	8894	14588		
	(m)	29181	47863		
(v) 42" (1050 mm) dia pile	ft	12119	19865		
	(m)	39762	65177		
(vi) 48" (1200 mm) dia pile	ft	15800	25920		
	(m)	51840	85044		
(vii) 78" (1950 mm) dia pile	ft	17602	44321		
	(m)	57752	145417		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
14.2 Fabrication of Steel				14.4 & 14.5.1 to 14.5.4 & 14.5.6	The rate includes wastage and over laps, etc.
14.2.1 Fabrication of mild steel reinforcement conforming to ASTM A615 bar cage for RCC bored piles, including cutting, bending, laying in position, welding & fastening including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from the bars):-					
(a) Deformed steel bars (Grade 40)	per kg	20	362		
(b) Deformed steel bars (Grade 60)	per kg	34	382		
14.3 Testing of Piles				14.5.3 & 14.5.6	i)The cost of casting test piles shall be paid separately under items nos. 14.1 ii) For intermediate test load rate may be calculated by interpolation.
14.3.1 Carrying out load test on piles including cost of making suitable load platform to hold the test load, arrangement of load material & its placing on load platform, providing and installation of necessary equipment like pressure gauge, hydraulic jack, removal and disposal of load material, complete in all respects including submission of test report as per specification.					
(a) upto 250 ton	each test	73568	748601		
(b) from 251 ton to 500 ton	each test	77924	1386191		
(c) from 501 ton to 750 ton	each test	79666	2021166		
(d) from 751 ton to 1000 ton	each test	82280	2657013		
14.4 Miscellaneous Items					
14.4.1 Providing & installation of liner of M.S sheet 10 mm thickness for piles.	kg	24	279		
14.4.2 Providing & fixing Elastomeric Bearing Pads imported including their fixing with epoxy coating as per approved design complete in all respects as per specification.	cm ³	12	47		

CHAPTER 15

WELL FOUNDATIONS

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 15 Well Foundations of "Technical Specification for Railway Infrastructure Works, Volume I, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).
- (3) Well curbs to be laid at spring level or as deep as possible.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
15.1 Excavation of Well in Dry				15.4.3	
15.1.1 Excavation of well in dry upto 20 ft below ground level, and disposal of soil within one chain as per specification.					
(a) in ordinary soil or sand;					
(i) from 0' to 5' (0 to 1.500 m) depth.	cft (m ³)	12 423.84			
(ii) from 5.1' to 10' (1.530 m to 3.000 m) depth	cft (m ³)	12 423.84			
(iii) from 10.1' to 15' (3.030 m to 4.500 m) depth.	cft (m ³)	14 494.48			
(iv) from 15.1' to 20' (4.530 m to 6.000 m) depth.	cft (m ³)	16 565.12			
(b) in hard soil;					
(i) from 0' to 5' (0 to 1.500 m) depth .	cft (m ³)	14 494.48			
(ii) from 5.1' to 10' (1.530 m to 3.000 m) depth	cft (m ³)	15 529.80			
(iii) from 10.1' to 15' (3.030 m to 4.500 m) depth.	cft (m ³)	16 565.12			
(iv) from 15.1' to 20' (4.530 m to 6.000 m) depth.	cft (m ³)	18 635.76			
(c) in shingle and gravel, etc.;					
(i) from 0' to 5' (0 to 1.500 m) depth.	cft (m ³)	31 1094.92			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(ii) from 5.1' to 10' (1.530 m to 3.000 m) depth	cft (m ³)	32 1130.24			
(iii) from 10.1' to 15' (3.030 m to 4.500 m) depth.	cft (m ³)	33 1165.56			
(iv) from 15.1' to 20' (4.530 m to 6.000 m) depth.	cft (m ³)	36 1271.52			
15.2 Dry Sinking of Wells				15.4.3	
15.2.1 Dry sinking of well, including loading, and removing excavated material within one chain as per specification.					
(a) In ordinary soil or sand					
(i) from 0' to 5' (0 m to 1.500 m) depth.	cft (m ³)	31 1094.92			
(ii) from 5.1' to 10' (1.530 m to 3.000 m) depth.	cft (m ³)	47 1660.04			
(iii) from 10.1' to 15' (3.030 m to 4.500 m) depth.	cft (m ³)	63 2225			
(iv) from 15.1' to 20' (4.530 m to 6.000 m) depth.	cft (m ³)	79 2790			
(v) from 20.1' to 25' (6.030 m to 7.500 m) depth.	cft (m ³)	94 3320			
(vi) from 25.1' to 30' (7.530 m to 9.000 m) depth.	cft (m ³)	110 3885			
(vii) from 30.1' to 35' (9.030 m to 10.500 m) depth.	cft (m ³)	126 4450			
(viii) from 35.1' to 40' (10.530 m to 12.000 m) depth.	cft (m ³)	142 5015			
(ix) from 40.1' to 45' (12.030 m to 13.500 m) depth.	cft (m ³)	157 5545			
(x) from 45.1' (13.530 m) to any depth.	cft (m ³)	173 6110			
(b) in hard soil;					
(i) from 0' to 5' (0 m to 1.500 m) depth.	cft (m ³)	55 1942.60			
(ii) from 5.1' to 10' (1.530 m to 3.000 m) depth.	cft (m ³)	71 2508			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(iii) from 10.1' to 15' (3.030 m to 4.500 m) depth.	cft (m ³)	87 3073			
(iv) from 15.1' to 20' (4.530 m to 6.000 m) depth.	cft (m ³)	102 3603			
(v) from 20.1' to 25' (6.030 m to 7.500 m) depth.	cft (m ³)	118 4168			
(vi) from 25.1' to 30' (7.530 m to 9.000 m) depth.	cft (m ³)	134 4733			
(vii) from 30.1' to 35' (9.030 m to 10.500 m) depth.	cft (m ³)	149 5263			
(viii) from 35.1' to 40' (10.530 m to 12.000 m) depth.	cft (m ³)	165 5828			
(ix) from 40.1' to 45' (12.030 m to 13.500 m) depth.	cft (m ³)	181 6393			
(x) from 45.1' (13.530 m) to any depth.	cft (m ³)	197 6958			
(c) In hard strata such as shingle, gravel etc.;					
(i) from 0' to 5' (0 m to 1.500 m) depth.	cft (m ³)	87 3073			
(ii) from 5.1' to 10' (1.530 m to 3.000 m) depth.	cft (m ³)	102 3603			
(iii) from 10.1' to 15' (3.030 m to 4.500 m) depth.	cft (m ³)	118 4168			
(iv) from 15.1' to 20' (4.530 m to 6.000 m) depth.	cft (m ³)	134 4733			
(v) from 20.1' to 25' (6.030 m to 7.500 m) depth.	cft (m ³)	149 5263			
(vi) from 25.1' to 30' (7.530 m to 9.000 m) depth.	cft (m ³)	165 5828			
(vii) from 30.1' to 35' (9.030 m to 10.500 m) depth.	cft (m ³)	181 6393			
(viii) from 35.1' to 40' (10.530 m to 12.000 m) depth.	cft (m ³)	197 6958			
(ix) from 40.1' to 45' (12.030 m to 13.500 m) depth.	cft (m ³)	212 7488			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(x) from 45.1' (13.530 m) to any depth.	cft (m ³)	228 8053			
15.3 Wet Sinking of Wells				15.3, 15.4.1 to 15.4.6 & 15.4.7	
15.3.1 Wet sinking of well, in ordinary soil (value of C upto 5), for depths below spring level, as per specification, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain:-					The outer dimensions of the curb shall form basis of payment.
(a) from 0' to 10' (0 to 3.000 m) depth.	cft (m ³)	153 5404			C means cohesion of soil which is measure of clay content in the soil
(b) above 10.1' to 20' (3.030 m to 6.000 m) depth.	cft (m ³)	172 6075			
(c) above 20.1' to 30' (6.030 m to 9.000 m) depth.	cft (m ³)	212 7488			
(d) above 30.1' to 40' (9.030 m to 12.000 m) depth.	cft (m ³)	276 9748			
(e) above 40.1' to 50' (12.030 m to 15.000 m) depth.	cft (m ³)	307 10843			
(f) above 50.1' to 60' (15.030 m to 18.000 m) depth.	cft (m ³)	345 12185			
(g) above 60.1' to 70' (18.030 m to 21.000 m) depth.	cft (m ³)	354 12503			
(h) above 70.1' to 80' (21.030 m to 24.000 m) depth.	cft (m ³)	363 12821			
(I) above 80' (24.000 m) to any depth.	cft (m ³)	394 13916			
15.3.2 Wet sinking of well, in cohesive soil (value of C more than 5), for depths below spring levels per specification, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain:-					The outer dimensions of the curb shall from basis of payment.
(a) from 0' to 10' (0 to 3.000 m) depth.	cft (m ³)	212 7488			
(b) above 10.1' to 20' (3.030 m to 6.000 m) depth.	cft (m ³)	260 9183			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(c) above 20.1' to 30' (6.030 m to 9.000 m) depth.	cft (m ³)	297 10490			
(d) above 30.1' to 40' (9.030 m to 12.000 m) depth.	cft (m ³)	400 14128			
(e) above 40.1' to 50' (12.030 m to 15.000 m) depth.	cft (m ³)	531 18755			
(f) above 50.1' to 60' (15.030 m to 18.000 m) depth.	cft (m ³)	657 23205			
(g) above 60.1' to 70' (18.030 m to 21.000 m) depth.	cft (m ³)	811 28645			
(h) above 70.1' to 80' (21.030 m to 24.000 m) depth.	cft (m ³)	985 34790			
(I) above 80' (24.000 m) to any depth.	cft (m ³)	1174 41466			
15.3.3 Wet sinking of well, in shingle, or gravel etc. for depths below spring level as per specification including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain:-					The outer dimensions of the curb shall form basis of payment.
(a) from 0' to 10' (0 to 3.000 m) depth.	cft (m ³)	266 9395			
(b) above 10.1' to 20' (3.030 m to 6.000 m) depth.	cft (m ³)	341 12044			
(c) above 20.1' to 30' (6.030 m to 9.000 m) depth.	cft (m ³)	468 16530			
(d) above 30.1' to 40' (9.030 m to 12.000 m) depth.	cft (m ³)	645 22781			
(e) above 40.1' to 50' (12.030 m to 15.000 m) depth.	cft (m ³)	926 32706			
(f) above 50.1' to 60' (15.030 m to 18.000 m) depth.	cft (m ³)	1331 47011			
(g) above 60.1' to 70' (18.030 m to 21.000 m) depth.	cft (m ³)	1683 59444			
(h) above 70.1' to 80' (21.030 m to 24.000 m) depth.	cft (m ³)	2130 75232			
(I) above 80' (24.000 m) to any depth.	cft (m ³)	2662 94022			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
<p>15.4 Providing & Laying RCC Curbs</p> <p>15.4.1 Providing, making and laying R.C.C. well curb in position, using coarse sand for concrete, including all kinds of forms, moulds, curing, shuttering, rendering and finishing the exposed surface, (including screening & washing of aggregate:-</p> <p>(a) Ratio 1:1-1/2:3.</p> <p>(b) Ratio 1:2:4.</p> <p>15.4.2 Providing and fixing structural steel cutting edge for well curb.</p>	<p>cft (m³)</p> <p>cft (m³)</p> <p>kg</p>	<p>571 20168</p> <p>571 20168</p> <p>21</p>	<p>1282 45280</p> <p>1205 42561</p> <p>289</p>	<p>15.3, 15.4.1 & 15.4.7</p>	<p>(i) The rate does not include cost of steel reinforcement and labour for its fabrication and laying in positions etc complete, which is payable separately under item 5.6.1.</p>
<p>15.5 Providing False Brick Masonry on Wells & its Dismantling</p> <p>15.5.1 Providing false brick masonry on wells in 1:8 cement sand mortar and its dismantling after sinking of wells to required depth including the scraping of the released brick sand their stacking within 100 ft (30 m).</p>	<p>cft (m³)</p>	<p>167 5898</p>	<p>480 16954</p>	<p>15.3.4, 15.4.2 & 15.4.7</p>	<p>In case scraped released bricks are used for brick masonry of buildings or other than buildings it shall be paid under the appropriate item of brick masonry with released bricks in chapter 6. Brick Masonry</p>

CHAPTER 16

PROTECTION & DIVERSION WORKS

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 16 River Protection & Diversion Works of "Technical Specification for Railway Infrastructure Works, Volume I, (2016)".
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).
- (3) The composite rates of the items of this chapter in which stone, boulders or spawl are used do not include the carriage of these materials from the quarry to site of work, which will be paid separately by road, and/or rail, whichever means of transport is approved before the commencement of work. The supply and carriage to site of work of all other materials, required in these items, is included in their composite rates.
- (4) The quantity of finished and completed item of work shall ordinarily form the basis of payment.
- (5) Where stone, boulder or spawl is issued from stock and contractor is paid for its carriage and/or labour only, or where such stone product is supplied, carried or handled by the contractor in which no laying is required, the actual stack measurement (without any reduction factor) shall form the basis of payment of supply or carriage of the stone, boulder or spawl, etc.
- (6) In case of the items in which the rates include carriage of stacks, bushing, pilchi, sarkanda or farash etc: within one mile (1.6 km):-
 - (i) the cost of the carriage within one mile (1.6 km) shall not be deducted from the carriage charges to follow thereafter from the point of supply.
 - (ii) if the site of work happens to be within one mile (1.6 km) of the source of supply, the materials will be collected and measured at site of work and no extra carriage would be admissible in such cases.
 - (iii) where the site of the work is situated at more than one mile (1.6 km) distance from the source of supply, the point of supply will be fixed carefully by the Engineer-in-charge in such a way that the carriage charges would be arrived at most economically. Extra carriage will be admissible from the place of supply of the material which will be considered its starting point. The demarcation of the place of supply will be pre-determined before calling the tenders.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.1 Cutting Pilchi, Farash & Sarkanda, making Bundles and Launching them in Position				16.2, 16.3.1 & 16.4	
16.1.1 Cutting pilchi, farash or Sarkanda including carriage within one mile (1.6 km).	cft (m ³)	24 847.68			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.1.2 Weaving mattresses.	cft (m ³)	45 1589.40			
16.1.3 Making compact round pilchi, farash or sarkanda round bundles of specified size for the work.	cft (m ³)	31 1094.92	33 1165.56		Measured in the shape of compact round bundles and of size specified for the work, before filling at site.
16.1.4 Launching of Pilchi, Farash or sarkanda round bundle etc. and placing in position.	cft (m ³)	15 529.80			
16.2 Supplying jute bags, filling them with sand/earth and laying them in position				16.2, 16.3.2 & 16.4	
16.2.1 Supplying and filling jute bags:-					The rate does not include supply of sand or earth for filling bags, which will be paid extra.
(a) Supplying and filling jute bags 1.25 cft capacity, with sand or earth, sewing and stacking in dry.	bag	71	238		
(b) Supplying and filling jute bags 1.25 cft capacity, with sand or earth, sewing and laying in position under water.	bag	110	278		
16.2.2 Supplying & filling new jute bags:-					The rate does not include supply of sand or earth for filling bags, which will be paid extra.
(a) Supplying and filling new jute bags 4 to 5 cft capacity, with sand or earth, sewing and stacking in dry.	bag	157	383		
(b) Supplying and filling new Jute bags 4 to 5 cft capacity, with sand or earth, sewing and laying in position, under water.	bag	252	478		
16.2.3 Carriage of jute bags 1.25 cft capacity, filled with sand or earth:-					
(a) 1st, chain (30 m)	no.	6.30			
(b) 2nd, to 4th chain (30 m to 120 m) Rate for each chain (30 m)	no.	2.27			
(c) 5th and subsequent chains (120 m to 150 m and beyond) Rate for each chain (30 m)	no.	0.88			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.2.4 Carriage of new jute bags 4 to 5 cft capacity filled with sand or earth:- (a) 1st, chain (30 m) (b) 2nd, to 4th chain (30 m to 120 m) Rate for each chain (30 m) (c) 5th and subsequent chains (120 m to 150 m and beyond) Rate for each chain (30 m)	no.	25			
	no.	9			
	no.	3			
16.3 Supplying boulders, Munj or Patha Trungers & G.I. Wire nets				16.2, 16.3 & 16.4	
16.3.1 Supplying and stacking within 5 chains (150 m):- (a) Boulders 9" (225 mm) and above	cft (m ³)	46 1624.72	62 2189.84		The rate of the boulder is at source and lead will be payable at the site of work against corresponding rate in chapter 2
(b) Over size shingle 3" to 9" (75 to 225 mm)	cft (m ³)	30 1059.60	52 1836.64		
(c) Mixed graded shingle	cft (m ³)	36 1271.52	58 2048.56		
16.3.2 Supplying and stacking Munj or Patha Trungers 6" x 6" (150 x 150 mm) mesh to hold 3 cft (0.085 m ³) of boulders.	each	197	289		
16.3.3 Providing and weaving G.I wire netting for wire crates with G.I wires of approved size (including siding & partition to make crate):- (a) 6" mesh;					
(i) 15 SWG wire	sft (m ²)	28 301.42	40 430.60		
(ii) 10 SWG wire	sft (m ²)	30 322.95	64 688.96		
(iii) 8 SWG wire	sft (m ²)	30 322.95	84 904.26		
(b) 4" mesh;					
(i) 15 SWG wire	sft (m ²)	36 387.54	54 581.31		
(ii) 10 SWG wire	sft (m ²)	40 430.60	92 990.38		
(iii) 8 SWG wire	sft (m ²)	40 430.60	121 1302.57		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.3.4 Supplying welded mesh manufactured from 6" x 6" (150 x 150 mm) mesh, 8 SWG G.I. Wire, including all charges complete:-					
(a) 3.15 m x1.05 m x1.05 m fitted with two equally spaced divider 1.05 m x1.05 m	each		10808		
(b) 2.1 m x1.05 m x1.05 m fitted with one centrally spaced divider 1.05 m x1.05 m	each		7931		
(c) 1.05 m x 1.05 m x 1.05 m	each		4043		
16.3.5 Supplying weld mesh manufactured from 4" x 4" (100 mm x 100mm) mesh, 8 SWG G.I. Wire, including all charges complete:-					
(a) 3m x 1m x1m fitted with two equally spaced dividers 1m x 1m	each		12482		
(b) 2m x 1m x1m fitted with one centrally spaced dividers 1m x1m	each		8880		
(c) 1m x1mx1m	each		4769		
16.4 Supplying and dumping at site boulders/ brick bats etc. without boats.				16.2. 16.3 & 16.4	
16.4.1 Providing and laying shingle on top of bund, including handling of materials within three chains (90 m).	cft (m ³)	16 565.12	38 1342.16		
16.4.2 Supplying & dumping at site without boat, including handling of materials within three chains (90 m):-					The rate includes supply of brickbats to site of work.
(a) Stone or boulder	cft (m ³)	27.50 971.30	44.00 1554.08		
(b) Shingle or spawl	cft (m ³)	28 988.96	50 1766.00		
(c) Brick bats	cft (m ³)	21 741.72	131 4626.92		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.5 Supplying and Dumping Boulders/Brick Bats with Boats				16.2. 16.3 & 16.4	
16.5.1 Supplying & dumping by boat, including loading into boats within three chains (150 m) lead, and hire charges of boat and boatman:-					
(a) stone or boulder	cft (m ³)	47.2 1667.10	63.7 2249.88		
(b) shingle or spawl	cft (m ³)	47 1660.04	69 2437.08		
(c) brickbats	cft (m ³)	41 1448.12	151 5333.32		The rate includes supply of brickbats to site of work.
16.5.2 Providing and filling brickbats in crates (excluding cost of crates).	cft (m ³)	36 1271.52	146 5156.72		same remarks as against item 16.5.1 (c) above
16.5.3 Supplying & filling bricks in crates and hand packing (excluding cost of crates).	cft (m ³)	44 1554.08	72 2543.04		same remarks as against item 16.5.1 (c) above
16.5.4 Supplying and filling in wire crates, including sewing crates (excluding cost of crates):-					
(a) Stone or boulder	cft (m ³)	50 1766.00	67 2366.44		
(b) Shingle or spawl	cft (m ³)	50 1766.00	72 2543.04		
16.5.5 Extra for anchoring boat, for dumping by boats or tipping crates.	cft (m ³)	6 211.92			
16.5.6 Extra for tipping crates (in addition to anchoring boats).	cft (m ³)	25 883.00			
16.6 Providing and Laying Pilchi Revetment				16.2.1 16.3.1 & 16.4	
16.6.1 Providing and laying pilchi revetment, including carriage upto one mile (1.6 km).	sft (m ²)	16 172.24	64 688.96		
16.6.2 Providing and laying surface protection with pilchi mattresses, carriage upto one mile (1.6 km).	sft (m ²)	39 419.84	45 484.43		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.7 Providing and laying Stone Pitching				16.2.2, 16.3.2 & 16.4	
16.7.1 Providing and laying stone pitching, dry hand packed, behind retaining walls.	cft (m ³)	31.50 1112.58	51.30 1811.92		
16.7.2 Providing and laying stone pitching, dry hand packed with surface levelled off to the correct section in floors of bridges along banks and in aprons etc.:-					
(a) Top layer on slope	cft (m ³)	80 2826	100 3532		
(b) Top layer on level	cft (m ³)	72.00 2543	91.80 3242		
16.7.3 Providing and laying stone or spawl filling, dry hand packed in floor of bridges along banks and in aprons etc.:-					
(a) On slope (other than top layer)	cft (m ³)	26 918.32	53 1871.96		
(b) On level (other than top layer)	cft (m ³)	21 741.72	48 1695.36		
16.7.4 Providing and laying stone pitching, hand packed with surface levelled off to the correct section and voids filled in 1:8 cement sand mortar, in floors of bridges along banks and in aprons etc.:-					
(a) Top layer on slope	cft (m ³)	118 4168	203 7170		The cost of pitching stone does not include the lead charges from quarry to site of work, as per note 3 at the start of this chapter.
(b) Top layer on level	cft (m ³)	110 3885	195 6887		
(c) Stone pitching on slope or level (other than top layer).	cft (m ³)	63 2225	147 5192		
16.7.5 Grouting stone pitching or apron, etc. in:-					
(a) cement sand mortar 1:3	sft (m ²)	36 387.54	156 1679.34		
(b) cement sand mortar 1:8	sft (m ²)	33 355.25	112 1205.68		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
16.7.6 Sand grouting in stone apron, with high pressure hose.	sft (m ²)	12 129.18	45 484.43		
16.7.7 Grouting stone filling or pitching, with bajri.	sft (m ²)	20 215.30	72 775.08		
16.7.8 Removing stone and repitching hand packed, on slopes or level after making good damaged slope/portion.	cft (m ³)	93 3285			
16.8 Miscellaneous Items					
16.8.1 Collecting and stacking boulders from nullah beds or loose shale, or from any other site, within 3 chains (90 m) lead.	cft (m ³)	25 883.00			
16.8.2 Levelling and dressing stone filling under blocks and grouting with shingle.	cft (m ³)	21 742	28 989		
16.8.3 Grouting jharies between blocks with bajri.	cft (m ³)	21 741.72	56 1977.92		
16.8.4 Breaking stone into spawls and stacking.	cft (m ³)	19 671.08			

CHAPTER 17

ROAD AND ROAD STRUCTURES

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 17 "Technical Road & Road Structures" of "Specification for Railway Infrastructure Works, Volume II, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused materials and by-products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
17.1 Sub Base Course					
17.1.1 Providing and laying sub-base course of brick on edge 4-1/2" thick, including compaction to required camber, grade and density.	cft (m ³)	88 3108	396 13987	17.5.2 to 17.5.4	The nominal thickness of bricks shall be taken for the purpose of measurement and payment.
17.1.2 Providing and laying sub-base course of stone product of approved quality and grade, including placing, mixing, spreading and compaction of sub-base material to required depth, camber, grade to achieve 100% maximum modified AASHTO dry density, including carriage of all material to site of work, except crushed stone aggregate, for which supply within three miles is included in the rate.				17.5.2 to 17.5.4	No reduction in the rate will be made if carriage of crushed stone aggregate or gravel is less than three miles.
(a) Pit run or bed run gravel	cft (m ³)	86 3038	95 3355		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) Crushed stone aggregate as per specifications	cft (m ³)	86 3038	110 3885		(i) For the carriage of gravel or crushed stone aggregate, the whole distance to the site of work shall be calculated on the basis of the rate of actual means of transport used in carriage, i.e. road and/or rail, as the case may be and it shall be reduced by the carriage rates for the 1st three miles (4.8 km). (ii) It shall be payable from the nearest approved quarry. (iii) The quantity of material for payment of carriage shall be taken on the basis of the finished and consolidated measurements of the sub-base.
17.2 Base Course				17.6.2 to 17.6.4	
17.2.1 Providing and laying base course of crushed stone aggregate of approved quality and grade, and supply and spreading of stone, screening, including placing, mixing, spreading and compaction of base course material, stone dust, etc., to required depth, camber and grade to achieve 100% maximum modified AASHTO dry density, including carriage of all materials to site of work except crushed stone aggregate, for which supply within three miles is included in the rate.	cft (m ³)	86 3038	116 4097		Same as item against 17.1 2

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
17.3 Bitumen Work & Surfacing					
17.3.1 Providing and laying bituminous priming coat, using 10 lbs, kerosene oil and 10 lbs bitumen (binder) per 100sft.	sft (m ²)	3.10 0.33	30.20 3.25	17.8.1 to 17.8.4	
17.3.2 Providing and laying bituminous tack coat using 15 lbs of bitumen (binder) per 100sft.	sft (m ²)	3.10 0.33	19.90 2.14	17.9.1 to 17.9.4	
17.3.3 Providing surface treatment to roads, including supply of bitumen and bajri/crushed stone aggregate of approved quality, including cleaning of road surface, heating and spraying bitumen, spreading bajri and rolling with road roller (including its operation cost, fuel and hire charges, etc) etc, complete, including carriage of all materials to site of work except crushed stone aggregate, for which supply within three miles is included in the rate.				17.10.1 to 17.10.4	i) No reduction in the rate will be made if carriage of crushed stone aggregate or gravel is less than three miles. ii) For carriage of crushed stone same remarks as against item 17.1.2 above
(a) 1st coat;					
(i) 40 lbs, bitumen, and 5.5 cft bajri of nominal size 1" per 100sft	sft (m ²)	9.70 104.42	59.0 635.14		
(ii) 35 lbs, bitumen and 4.0 cft bajri of nominal size 3/4"per 100sft.	sft (m ²)	9.70 104.42	52.0 559.78		
(b) 2nd coat;					
(i) 25 lbs, bitumen and 2.75 cft bajri of nominal size 1/2"per	sft (m ²)	7.40 79.66	38.0 409.07		
(ii) 18 lbs, bitumen and 2.0 cft bajri of nominal size 3/8" per 100sft.	sft (m ²)	7.40 79.66	29.00 312.19		
(c) 3rd coat;					
(i) 14 lbs, bitumen and 1.5 cft bajri of nominal size 1/4" per 100sft.	sft (m ²)	5.10 54.90	21.00 226.07		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
17.3.4 Resurfacing of road, including supply of bitumen and bajri/crushed stone aggregate of approved quality, including cleaning of road surface, heating and spraying of bitumen, and spreading bajri/crushed stone aggregate and rolling with road roller (including its operation cost, fuel and hire charges, etc) complete, including carriage of all materials to site of work except crushed stone aggregate, for which supply within three miles is included in the rate.					
(a) Bitumen and bajri					
(i) 22 lbs, bitumen and 2.5 cft bajri of nominal size 1/2".	sft (m ²)	5.30 57.05	32 344.48		
(ii) 20 lbs, bitumen, and 2.0 cft bajri of nominal size 3/8".	sft (m ²)	5.30 57.05	29 312.19		
17.3.5 Providing and laying plant premix bituminous carpet mixed in batching plant and laid with paver premix including compaction, finishing to required camber, grade and density (including seal coat) complete in all respect:-				17.11.1 to 17.11.4	Mixing and rolling to be done by mechanical means.
(a) 4.0% Bitumen	sft per in thick (m ² per cm thick)	28 118.67	91 3.86		
(b) 5.0% Bitumen	sft per in thick (m ² per cm thick)	28 118.67	105 4.45		
17.3.6 Scarifying old road surface, including removal of debris within one chain.	sft (m ²)	5 53.83			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
17.3.7 Only for Level Crossing road surface repair. Providing and laying premix bituminous carpet mixed in local / manual plant and laid manually including compaction, finishing to required camber, grade and density (including seal coat) complete in all respect with 4.0% Bitumen.	sft per in thick (m ² per cm thick)	12 50.86	75 3.18		
17.4 Dry Brick Pavement/Soling				17.5.1 & 17.5.4	
17.4.1 Providing and laying dry brick pavement/soling in streets or roads, etc. sand grouted, laid in proper camber, including preparation, watering, compaction of bed to proper camber and sand cushion.	cft (m ³)	64 2260	372 131.39		The nominal thickness of bricks shall be taken for the purpose of measurement and payment.
17.5 Road Edging					
17.5.1 Providing and laying road edging of 3" wide and 9" deep brick on edge, complete in all respect:-	ft (m)	19 62.34	60 196.86	17.7.1 to 17.7.4	
17.5.2 Providing and laying road edging of 6" wide and 18" deep precast concrete kerb stone (1:2:4) of approved quality complete in all respect.	ft (m)	38 124.68	180 590.58	17.12.1 to 17.12.3	
17.6 Supplying and fixing Cats - Eye.				17.13.1 to 17.13.3	
17.6.1 Cats-eye single (Flush / raised surface) Plastic	each	399	867		
17.6.2 Cats-eye double (Flush / raised surface) Plastic	each	399	949		
17.6.3 Cats-eye single (Flush / raised surface) Aluminum	each	399	1323		
17.6.4 Cats-eye double (Flush / raised surface) Aluminum	each	399	1499		

CHAPTER 18

INSTALLATION OF TUBE WELLS

Note:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 18 Installation of Tube Wells of "Technical Specification for Railway Infrastructure Works, Volume II, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
18.1 Percussion Drilling for Tube Well				18.2,	
18.1.1 Drilling of Bore holes for tube well by percussion method in all types of soil except shingle and rock, from ground level upto 100 ft (30 m) depth, including sinking, collection of 100 % corings and withdrawing of casing pipe, complete as per specifications.				18.3.1 to	
				18.3.6 &	
				18.4.1	
(a) Internal dia of bore 3"(75 mm)	ft	79			
	(m)	259.20			
(b) Internal dia of bore 4"(100 mm)	ft	121			
	(m)	397.00			
(c) Internal dia of bore 5"(125 mm)	ft	240			
	(m)	787.44			
(d) Internal dia of bore 6" (150 mm)	ft	380			
	(m)	1246.78			
(e) Internal dia of bore 8" (200 mm)	ft	607			
	(m)	1992			
(f) Internal dia of bore 10" (250 mm)	ft	759			
	(m)	2490			
(g) Internal dia of bore 12"(300 mm)	ft	828			
	(m)	2717			
18.1.2 Drilling of Bore holes for tube well by percussion method in all types of soil except shingle and rock, from a depth of 100.1 ft to 200 ft (30 to 60 m) below ground level, including sinking, collection of 100 % corings and withdrawing of casing pipe, complete as per specifications.					
(a) Internal dia of bore 5"(125 mm)	ft	285			
	(m)	935.09			
(b) Internal dia of bore 6" (150 mm)	ft	434			
	(m)	1423.95			
(c) Internal dia of bore 8" (200 mm)	ft	701			
	(m)	2300			
(d) Internal dia of bore 10" (250 mm)	ft	828			
	(m)	2717			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(e) Internal dia of bore 12" (300 mm)	ft (m)	911 2989			
18.1.3 Drilling of Bore holes for tube well by percussion method in all types of soil except shingle and rock, from a depth of 200.1 ft to 300 ft (60 to 90 m) below ground level, including sinking , collection of 100 % corings and withdrawing of casing pipe, complete as per specifications.					
(a) Internal dia of bore 5" (125 mm)	ft (m)	337 1105.70			
(b) Internal dia of bore 6" (150 mm)	ft (m)	479 1572			
(c) Internal dia of bore 8" (200 mm)	ft (m)	759 2490			
(d) Internal dia of bore 10" (250 mm)	ft (m)	911 2989			
(e) Internal dia of bore 12" (300 mm)	ft (m)	1012 3320			
18.1.4 Drilling of Bore holes for tube well by percussion method in all types of soil except shingle and rock, from a depth of 300.1 ft to 400 ft (90 to 120 m) below ground level, including sinking, collection of 100 % corings and withdrawing of casing pipe, complete as per specifications.					
(a) Internal dia of bore 8" (200 mm)	ft (m)	828 2717			
(b) Internal dia of bore 10" (250 mm)	ft (m)	1012 3320			
(c) Internal dia of bore 12" (300 mm)	ft (m)	1139 3737			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
<p>18.2 Direct Rotary/Reverse Rotary Drilling in Common Soil</p> <p>18.2.1 Direct rotary/ reverse rotary drilling of bore for tube wells in all type of soil except shingle, gravel and rock including sinking, collection of 100 % corings & withdrawing of casing pipe complete as per specifications.</p> <p>(a) From ground level to 250 ft (75 m), below ground level:</p> <p>(i) 15" (375 mm) to 18" (450 mm) i/d</p> <p>(ii) 20" (500 mm) to 26" (650 mm) i/d</p> <p>(b) Exceeding 250 ft (75 m) depth below</p> <p>(i) 15" (375 mm) to 18" (450 mm) i/d</p> <p>(ii) 20" (500 mm) to 26" (650 mm) i/d</p>	<p>ft</p> <p>(m)</p> <p>ft</p> <p>(m)</p> <p>ft</p> <p>(m)</p> <p>ft</p> <p>(m)</p>	<p>1673</p> <p>5489</p> <p>2407</p> <p>7897</p> <p>2076</p> <p>6811</p> <p>3114</p> <p>10217</p>		<p>18.2,</p> <p>18.3.1 to</p> <p>18.3.6 &</p> <p>18.4.1</p>	
<p>18.3 Direct Rotary/Reverse Rotary Drilling in Shingle & Gravel</p> <p>18.3.1 Direct rotary/ reverse rotary drilling of bore for tube wells in shingle, gravel and rock, including sinking, collection of 100 % corings & withdrawing of casing pipe complete as per specifications.</p> <p>(a) From ground level to 250 ft (75 m), below ground level:</p> <p>(i) 12" (300 mm) to 18" (450 mm) i/d</p> <p>(ii) 20" (500 mm) to 26" (650 mm) i/d</p> <p>18.3.1 (b) Exceeding 250 ft (75 m) depth below ground level:</p> <p>(i) 12" (300 mm) to 18" (450 mm) i/d</p> <p>(ii) 20" (500 mm) to 26" (650 mm) i/d</p>	<p>ft</p> <p>(m)</p> <p>ft</p> <p>(m)</p> <p>ft</p> <p>(m)</p> <p>ft</p> <p>(m)</p>	<p>3774</p> <p>12382</p> <p>5104</p> <p>16746</p> <p>4529</p> <p>14860</p> <p>7548</p> <p>24765</p>		<p>18.2,</p> <p>18.3.1 to</p> <p>18.3.6 &</p> <p>18.4.1</p>	<p>Location and depth of shingle, gravel or rock is to be determined from the bore log.</p>

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
18.4 Collection & Preservation of Coring and Water Samples from Bore Holes				18.3.1.7	
18.4.1 Providing strong box of deodar wood 4' x 2½' x 9" with compartments, lock and locking arrangement, and preserving in it the corings / samples of strata collected from bore hole and supply to the approved soil testing laboratory for testing.	job for each bore hole	3037	19334		
18.4.2 Collection and submission at approved soil testing laboratory of two water samples in two bottles from bore hole for testing.	job	436	535		
18.5 Providing & Installing Brass Strainers				18.3.2 & 18.4.2	
18.5.1 Providing and installing Brass Strainer of approved make \ quality in tubewell bore hole, including socket, special sockets, studs etc. complete as per specification.					Cost/labour of jointing both ends is included in the rate.
(a) 2" (50 mm) i/d 5/32" (4 mm) thick	ft (m)	52 170.61	2111 6926		
(b) 3" (75 mm) i/d 5/32" (4 mm) thick	ft (m)	52 170.61	3244 10644		
(c) 4" (100 mm) i/d 3/16" (5 mm) thick	ft (m)	69 226.39	3921 12865		
(d) 5" (125 mm) i/d 3/16" (5 mm) thick	ft (m)	79 259.20	4208 13806		
(e) 6" (150 mm) i/d 3/16" (5 mm) thick	ft (m)	86 282.17	4666 15309		
(f) 7" (175 mm) i/d 3/16" (5 mm) thick	ft (m)	103 337.94	6113 20057		
(g) 8" (200 mm) i/d 3/16" (5 mm) thick	ft (m)	129 423.25	7283 23896		
(h) 9" (225 mm) i/d 3/16" (5 mm) thick	ft (m)	129 423.25	8911 29237		
(i) 10" (250 mm) i/d 3/16" (5 mm) thick	ft (m)	147 482.31	9832 32259		
(j) 10" (250 mm) i/d 1/4" (6 mm) thick	ft (m)	147 482.31	10052 32981		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(k) 12" (300 mm) i/d 1/4" (6 mm) thick	ft (m)	147 482.31	10999 36088		
(l) 15" (375 mm) i/d 1/4" (6 mm) thick	ft (m)	172 564.33	14477 47499		
(m) 18" (450 mm) i/d 1/4" (6 mm) thick	ft (m)	172 564.33	18327 60131		
(n) 20" (500 mm) i/d 1/4" (6 mm) thick	ft (m)	206 675.89	24412 80096		
(o) 22" (550 mm) i/d 1/4" (6 mm) thick	ft (m)	206 675.89	27471 90132		
18.6 Providing & Installing M.S Bail Plug				18.3.2 & 18.4.2	
18.6.1 Providing and installing M.S. Bail plug of approved make / quality in tubewell bore hole complete as per specification:-					In the case of increase or decrease in the length of bail plug, the rate will be increased or decreased as per rates given against item No. 18.7.1 of this chapter for the respective diameter.
(a) 2" (50 mm) i/d 1.5 ft (450 mm) long.	each	90	2077		
(b) 3" (75 mm) i/d 1.5 ft (450 mm) long.	each	90	2937		
(c) 4" (100 mm) i/d 2 ft (600 mm) long.	each	112	5310		
(d) 5" (125 mm) i/d 2 ft (600 mm) long.	each	112	6056		
(e) 6" (150 mm) i/d 2 ft (600 mm) long.	each	160	8042		
(f) 7" (175 mm) i/d 2 ft (600 mm) long.	each	160	9234		
(g) 8" (200 mm) i/d 2 ft (600 mm) long.	each	187	12900		
(h) 9" (225 mm) i/d 2 ft (600 mm) long.	each	187	13667		
(i) 10" (250 mm) i/d 2 ft (600 mm) long.	each	187	19567		
(j) 12" (300 mm) i/d 2 ft (600 mm) long.	each	224	23098		
(k) 15" (375 mm) i/d 2 ft (600 mm) long.	each	224	28472		
(l) 18" (450 mm) i/d 2 ft (600 mm) long.	each	280	33846		
(m) 20" (500 mm) i/d 2 ft (600 mm) long.	each	298	47765		
(n) 22" (550 mm) i/d 2 ft (600 mm) long.	each	298	52938		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
18.7 Providing & Installing M.S Blind Pipe				18.3.2 & 18.4.2	
18.7.1 Providing and installing M.S. blind pipe of socketed & welded, M.S. reducer (where necessary) of approved make / quality in tubewell bore hole, including jointing/welding with strainer, etc. complete as per specification:-					
(a) 2" (50 mm) i/d 1/8" (3 mm) thick	ft (m)	113 370.75	490 1608		
(b) 3" (75 mm) i/d 1/8" (3 mm) thick	ft (m)	113 370.75	674 2211		
(c) 4" (100 mm) i/d 1/8" (3 mm) thick	ft (m)	141 462.62	878 2881		
(d) 5" (125 mm) i/d 3/16" (5 mm) thick	ft (m)	141 462.62	1588 5210		
(e) 6" (150 mm) i/d 3/16" (5 mm) thick	ft (m)	202 662.76	2017 6618		
(f) 7" (175 mm) i/d 3/16" (5 mm) thick	ft (m)	202 662.76	2391 7845		
(g) 8" (200 mm) i/d 3/16" (5 mm) thick	ft (m)	235 771.04	2633 8639		
(h) 9" (225 mm) i/d 3/16" (5 mm) thick	ft (m)	235 771.04	2985 9794		
(i) 10" (250 mm) i/d 1/4" (6 mm) thick	ft (m)	235 771.04	3806 12487		
(j) 12" (300 mm) i/d 1/4" (6 mm) thick	ft (m)	282 925.24	4717 15476		
(k) 15" (375 mm) i/d 1/4" (6 mm) thick	ft (m)	282 925.24	6365 20884		
(l) 18" (450 mm) i/d 1/4" (6 mm) thick	ft (m)	353 1158.19	7086 23249		
(m) 20" (500 mm) i/d 1/4" (6 mm) thick	ft (m)	377 1236.94	8214 26950		
(n) 22" (550 mm) i/d 1/4" (6 mm) thick	ft (m)	377 1236.94	8841 29007		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
18.8 Shrouding of Tube Well Bore with Gravel				18.3.3 & 18.4.3	
18.8.1 Shrouding with graded pea gravel 3/8" (10 mm) to 1/8" (3 mm) around tubewell in bore hole complete as per specification:-	100 (m ³)	6764 2389	25244 8916		The rate includes wastage, etc.
18.9 Testing/Developing of Tube Well				18.3.5, 18.3.6 & 18.4.5	
18.9.1 Testing and developing of tubewell of size 6" i/d and above by using temporary submersible pump complete as per specifications:-					
(a) Upto 1.5 cusecs discharge	hr	2656			
(b) Above 1.5 cusecs discharge.	hr	3246			
18.10 Providing & Installing Fiber Glass Strainers					
18.10.1 Providing and installing Fiberglass reinforced Polypropylene strainer of specified wall thickness having slot size of 0.9mm to 1.00 mm in Tubewell borehole i/c the cost of male/female coupling with nylon strip, studs, others accessories complete in all respect as approved and directed by the Engineer Incharge:-					
(a) 2" (50 mm) dia, 5 mm thick	ft (m)	103 337.94	1167 3829		
(b) 3" (76 mm) dia, 5 mm thick	ft (m)	103 337.94	1469 4820		
(c) 4" (101 mm) dia, 5 mm thick	ft (m)	103 337.94	1775 5824		
(d) 6" (152 mm) dia, 6 mm thick	ft (m)	103 337.94	2199 7215		
(e) 8" (203 mm) dia, 6 mm thick	ft (m)	103 337.94	2578 8458		
(f) 10" (254 mm) dia, 6 mm thick	ft (m)	119 390.44	2902 9521		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(g) 12" (304 mm) dia, 6 mm thick	ft (m)	119 390.44	3094 10151		
(h) 14" (355 mm) dia, 6 mm thick	ft (m)	135 442.94	4320 14174		
(i) 16" (406 mm) dia, 6 mm thick	ft (m)	135 442.94	4980 16339		
(j) 18" (457 mm) dia, 6 mm thick	ft (m)	135 442.94	5640 18505		
18.11 Providing & Installing Fiber Glass Blank / Blind Pipe					
18.11.1 Providing and installing, Fiber Glass blank / blind pipe in the tubewell borehole including jointing with the Fiber Glass blind pipe / strainer pipe, including reducer (if required) complete in all respect.					
(a) 2" (50 mm) dia, 5 mm thick	ft (m)	98 321.54	983 3225		
(b) 3" (76 mm) dia, 5 mm thick	ft (m)	98 321.54	1273 4177		
(c) 4" (101 mm) dia, 5 mm thick	ft (m)	98 321.54	1563 5128		
(d) 6" (152 mm) dia, 6 mm thick	ft (m)	98 321.54	1999 6559		
(e) 8" (203 mm) dia, 6 mm thick	ft (m)	98 321.54	2266 7435		
(f) 10" (254 mm) dia, 6 mm thick	ft (m)	114 374.03	2572 8439		
(g) 12" (304 mm) dia, 6 mm thick	ft (m)	114 374.03	3190 10466		
(h) 14" (355 mm) dia, 6 mm thick	ft (m)	130 426.53	3931 12898		
(i) 16" (406 mm) dia, 6 mm thick	ft (m)	130 426.53	4512 14804		
(j) 18" (457 mm) dia, 6 mm thick	ft (m)	130 426.53	5383 17662		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
18.12 Providing & Installing Fiber Glass Bail Plug					
18.12.1 Providing and installing Fiber Glass Bail plug of approved make / quality in tubewell bore hole complete in all respect :-					In the case of increase in the length of bail plug, additional length be paid as per rates given in item 18.11.1 of this chapter for the respective diameter.
(a) 2" (50 mm) dia, 5 mm thick, 1.5 ft long	Each	100	2300		
(b) 3" (76 mm) dia, 5 mm thick, 1.5 ft long	Each	100	2465		
(c) 4" (101 mm) dia, 5 mm thick, 2 ft long	Each	100	3620		
(d) 6" (152 mm) dia, 6 mm thick, 2 ft long	Each	100	6150		
(e) 8" (203 mm) dia, 6 mm thick, 2 ft long	Each	100	6700		
(f) 10" (254 mm) dia, 6 mm thick, 2 ft long	Each	100	7030		
(g) 12" (304 mm) dia, 6 mm thick, 2 ft long	Each	100	7250		
(h) 14" (355 mm) dia, 6 mm thick, 2 ft long	Each	100	7690		
(i) 16" (406 mm) dia, 6 mm thick, 2 ft long	Each	100	8350		
(j) 18" (457 mm) dia, 6 mm thick, 2 ft long	Each	100	8900		

CHAPTER 19

WATER SUPPLY

Note:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 19 Water Supply System of " Technical Specification for Railway Infrastructure Works, Volume II, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
19.1 Providing & Laying Cast Iron Pipes				19.6.1, 19.7.1 to 19.7.6, 19.7.8, 19.7.9 & 19.8	
19.1.1 Providing, laying, cutting, jointing, testing and disinfecting grey cast iron spun pipes in trenches with spigot and socket, caulked lead joint (BS 416 Part-1), including cost of jointing material, such as lead, yarn, etc. complete as per specifications.					i) Cost of providing and installing specials is not included in the rate. ii) Labour includes the cost of jointing material
(a) 3" (75 mm) i/d	ft (m)	180 590.58	1778 5834		
(b) 4" (100 mm) i/d	ft (m)	235 771.04	2311 7582		
(c) 6" (150 mm) i/d	ft (m)	338 1108.98	3338 10952		
(d) 8" (200 mm) i/d	ft (m)	401 1315.68	3788 12428		
19.1.2 Providing, laying, cutting, jointing, testing and disinfecting grey cast iron (C.I) spun pipes in trenches with flanged joints (BS 2035), including cost of jointing materials such as nuts & bolts, rubber sheets etc. complete as per specifications.					i)Cost of providing and installing specials is not included in the rate. ii) Labour includes the cost of jointing material
(a) 3" (75 mm) i/d	ft (m)	101 331.38	1698 5571		
(b) 4" (100 mm) i/d	ft (m)	107 351.07	2184 7166		
(c) 6" (150 mm) i/d	ft (m)	158 518.40	3159 10365		
(d) 8" (200 mm) i/d	ft (m)	172 564.33	3559 11677		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
19.2 Providing & Fixing Cast Iron Specials/Fixtures				19.6.1, 19.7.1 to 19.7.6, 19.7.8, 19.7.9, 9.7.14 & 19.8	
19.2.1 Providing and fixing cast iron special of BSS class "B" (such as bend, tee, cross collar, reducer, tail piece, flanged spigot, cap, flanged socket, taper, angle branch, plug, etc.) for cast iron pipe line, complete:-					
(a) C.I. S.S.Specials with spigot and socket joints:					
(i) 1-1/2" (38mm) to 4" (100mm) i/d	kg	283	679		
(ii) 6" (150 mm to 8 (200 mm)" i/d"	kg	196	592		
(b) C.I.flanged specials, with flanged joints:					
(i) 1-1/2" (38mm) to 4" (100mm) i/d	kg	371	767		
(ii) 6" (150mm) to 8" (200mm) i/d	kg	205	601		
19.2.2 Providing and fitting C.I./G.I. Flanges on pipes, including turning, threading, facing and fitting etc., complete in all respects:-					
(i) 1-1/2" (38mm) to 4" (100mm) i/d	kg	95	535		
(ii) 6" (150mm) to 8" (200mm) i/d	kg	196	636		
19.2.3 Cutting C.I. Pipe, and welding spigot or socket, flanged or tyton end, after finishing ends of pipes:-					
(a) 1-1/2" (38mm) to 4" (100mm) i/d	per inch i/d of pipe		195		
	per cm i/d of pipe		77		
(b) 6" (150mm) to 8" (200mm) i/d	-do- -do-		241 94.88		
19.2.4 Providing and fixing, fire hydrants B.S.S. quality and weight of 2-1/2" (65 mm) dia (including cost of jointing material):-	each	954	28454		Connecting pipes and special if used, will be paid extra.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
19.2.5 Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for cast iron pipeline (including cost of jointing material):-					
(a) Sluice Valve 3" (75 mm) i/d	each	1845	21540		
(b) Sluice Valve 4" (100 mm) i/d	each	2239	25271		
(c) Sluice Valve 5" (125 mm) i/d	each	3963	35278		
(d) Sluice Valve 6" (150 mm) i/d	each	4356	44471		
19.2.6 Providing and fixing, air valve (Kitz Japan make or equivalent) 3" dia of B.S.S. quality and weight (BS 1074) complete with jointing material.					
(a) Single	each	133	3878		
(b) Double	each	133	7283		
19.2.7 Supplying and installation of Brass Non return valves (Kitz Japan make or equivalent) on pipe complete with jointing material.					
(a) size 12 mm (1/2") Ø dia	each	666	2316		
(b) size 19 mm (3/4") Ø dia	each	666	2481		
(c) size 25 mm (1") Ø dia	each	666	2756		
(d) size 38 mm (1-1/2") Ø dia	each	666	5506		
(e) size 50 mm (2") Ø dia	each	666	7926		
(f) size 75 mm (3") Ø dia	each	666	18381		
(g) size 100 mm (4") Ø dia	each	666	28098		
19.3 Providing & Laying Galvanized Iron (GI) Pipes				19.6.1, 19.7.1 to 19.7.6, 19.7.8, 19.7.10 & 19.8	
19.3.1 Providing, laying, cutting, jointing, testing and disinfecting GI pipeline in trenches, with socket joint, using GI pipes of B.S.S. Class 'B' working pressure ' (medium quality IIL or equivalent) including specials and valves etc. complete as per specifications.					i) Cost of sockets, tees, elbows, bends, crosses, unions and plugs etc., is included in the rates. ii) In case these items are to be operated for internal GI piping (1", 3/4" & 1/2" dia)
(a) 1/2" (15 mm) dia	ft (m)	15 49.22	203 666.04		
(b) 3/4" (20 mm) dia	ft (m)	17 55.78	259 849.78		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(c) 1" (25 mm) dia	ft (m)	26 85.31	397 1302.56		in bath room / lavatories, the composite rate be reduced by 8% and specials mentioned in note 1 above be paid under chapter 20.
(d) 1-1/4" (32 mm) dia	ft	26	505		
(e) 1-1/2" (40 mm) dia	ft (m)	27 88.59	578 1896.42		
(f) 2" (50 mm) dia	ft (m)	28 91.87	803 2634.64		
(g) 2-1/2" (65 mm) dia	ft (m)	29 95.15	1034 3393		
(h) 3" (80 mm) dia	ft (m)	33 108.27	1335 4380		
(i) 4" (100 mm) dia	ft (m)	37 121.40	1944 6378		
(j) 5" (125 mm) dia	ft (m)	44 144.36	2539 8330		
(k) 6" (150 mm) dia	ft (m)	44 144.36	2773 9098		
19.3.2 Providing, laying, cutting, jointing, testing and disinfecting G.I. Pipe line in trenches, with flanged joints, using G.I. Pipe of B.S.S. class 'B' (medium quality ILL or equivalent including specials and valves etc. complete as per specifications.					
(a) G.I Flanged Joints					
(i) 1-1/2" (38 mm) i/d	ft (m)	27 88.59	606 1988.29		
(ii) 2" (50 mm) i/d	ft (m)	27 88.59	840 2756.04		
(iii) 2-1/2" (65 mm) i/d	ft (m)	30 98.43	1082 3550		
(iv) 3" (75 mm) i/d	ft (m)	32 104.99	1397 4584		
(v) 4" (100 mm) i/d	ft (m)	36 118.12	2029 6657		
(vi) 6" (150 mm) i/d	ft (m)	51 167.33	2872 9423		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
19.4 Providing and Laying Unplasticised Polyvinyl Chloride (UPVC) Pressure Pipes				19.6.1, 19.7.1 to	
19.4.1 Providing, laying, cutting, jointing, testing and disinfecting UPVC pressure pipeline in trenches (conforming to BS 3505 manufactured by Dadex/Beta or equivalent) jointed with socket, elbow, tee, bend and plug bend etc. manufactured by the respective manufacturer complete as per specifications.				19.7.6, 19.7.8, 19.7.12 & 19.8	Cost of sockets, tees, elbows, bends, crosses, unions and plugs etc., is included in the rates.
(a) UPVC Pressure Pipes Class B (6 Bar)					
(i) 3" (75 mm) i/d	ft (m)	21 68.90	514 1686.43		
(ii) 4" (100 mm) i/d	ft (m)	26 85.31	761 2496.84		
(iii) 5" (125 mm) i/d	ft (m)	30 98.43	1069 3507.39		
(iv) 6" (150 mm) i/d	ft (m)	30 98.43	1459 4787		
(v) 8" (200 mm) i/d	ft (m)	41 134.52	2316 7599		
(v) 10" (250 mm) i/d	ft (m)	54 177.17	3542 11621		
(v) 12" (300 mm) i/d	ft (m)	66 216.55	4947 16231		
(b) UPVC Pressure Pipes Class D (12 Bar)					
(i) 2" (50 mm) i/d	ft (m)	18 59.06	369 1210.69		
(ii) 3" (75 mm) i/d	ft (m)	21 68.90	794 2605.11		
(iii) 4" (100 mm) i/d	ft (m)	26 85.31	1316 4318		
(iv) 5" (125 mm) i/d	ft (m)	30 98.43	1917 6290		
(v) 6" (150 mm) i/d	ft (m)	31 101.71	2809 9216		
(vi) 8" (200 mm) i/d	ft (m)	33 108.27	4276 14030		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
<p>19.5 Providing and Laying Polypropylene Random Copolymer (PPRC) Pipes & Fittings</p> <p>19.5.1 Providing, laying cutting, jointing, testing PPRC pipeline in walls/trenches with pipes (confirming to DIN 8077/8078, PN 20 manufactured by Dadex/Beta or equivalent & fittings conforming to DIN 16962,PN25 of the same manufacturer) for cold/hot water supply systems including specials complete in all respect as per specifications.</p> <p>(i) 3/4" (20 mm) external dia</p> <p>(ii) 1" (25 mm) external dia</p> <p>(iii) 1-1/4" (32 mm) external dia</p> <p>(iv) 1-1/2" (40 mm) external dia</p> <p>(v) 2" (50 mm) external dia</p> <p>(vi) 2-1/2" (63 mm) external dia</p>				19.6.1, 19.7.1 to 19.7.8, 19.7.12 & 19.8	Cost of sockets, tees, elbows, bends, crosses, unions and plugs etc., is included in the rates.
	Rft (m)	43 141.08	238 780.88		
	Rft (m)	43 141.08	299 981.02		
	Rft (m)	43 141.08	723 2372		
	Rft (m)	43 141.08	1071 3514		
	Rft (m)	43 141.08	1676 5499		
	Rft (m)	43 141.08	2726 8944		
<p>19.6 Providing & Fixings Hand Pumps & Pressure Pipes</p> <p>19.6.1 Supplying and fixing 2-1/2" dia G.I. Pipe hand pump machine 3' long with brass accessories and iron handle etc. complete in all respect.</p> <p>19.6.2 Supplying and fixing perforated 1- 1/4" G.I. Pipe with brass strainer for hand pump, complete:-</p> <p>19.6.3 Supplying and fixing plunger valves for hand pump complete.</p> <p>19.6.4 Supplying and fixing brass cup for top and bottom and sleeves etc. for hand pump.</p>					The composite rate may be increase by 15% for every additional 1 ft length of the hand pump machine
	each	799	3549		
	ft of filter (m of filter)	471 1545.35	1082 3550		
	each	266	3016		
	kg	333	3633		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
19.6.5 Supplying and fixing leather cup bucket/rubber ring of plunger valve for hand pump.	each	133	738		
19.6.6 Hand pump and pressure pipe cutting pipes above 2" dia.	cut	290			
19.6.7 Threading pipe ends 1-1/2" to 4" dia.	each	217			
19.6.8 Assembling 1/2" to 3" dia pressure pipe.	100 ft	837			
19.6.9 Boring and fixing pressure pipe upto 3" dia:					
(a) in ordinary soil	ft (m)	272 892.43			
(b) in clay	ft (m)	508 1666.75			
(c) in shingle	ft (m)	744 2441			
19.6.10 Repair to hand pump, pulling out and refitting.	ft (m)	109 357.63			
19.7 Supply and Installation of Water Pumps					
19.7.1 Supplying and installation of Goldamatic water pumps complete in all respect, as per instructions of Engineer Incharge.					
(a) Model G1, 0.5 H.P motor 15 m suction & 30 m head (non automatic)	each	2662	31042		
(b) Model G2, 1 H.P motor, 21 m suction & 30 m head (non automatic)	each	2662	44132		
(c) Model G3, 2 H.P motor. 27 m suction & 35 m head (non automatic)	each	2662	49962		
(d) Model G4, 2.5 H.P motor. 38 m suction & 38 m head (non automatic)	each	2662	59862		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
19.8 Supply and installation of water storage tanks (polyethylene) Blue.					
19.8.1 Supplying and installation of vertical water storage tanks (polyethylene) blue (Dura or equivalent), complete in all respect, as per instructions of Engineer Incharge.					
(a) Size 200 gln capacity	each	3221	30721		
(b) Size 250 gln capacity	each	3221	37871		
(c) Size 300 gln capacity	each	3221	43811		
(d) Size 500 gln capacity	each	3221	63721		

CHAPTER 20

PLUMBING AND SANITARY INSTALLATIONS

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 20 Plumbing & Sanitary Installations of "Technical Specification for Railway Infrastructure Works, Volume II, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).
- (3) The rates include cutting and making good of the surface of walls, roofs, floors, etc. where necessary.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.1 Providing & Fixing Water Closets, Urinals & other Sanitary ware				20.4 to 20.6, 20.7.1, to 20.7.3, 20.7.15, 20.8, & 20.9	The rates of sanitary ware included under subsection 20.1 are for best quality locally manufactured sanitary ware such as Sonex, Master, and Faisal or equivalent (Class A) as specified /approved by Engineer in-charge.
20.1.1 Providing and fixing glazed earthenware water closet european type, of approved make/size, excluding seat & cover complete in all respects:-					
(a) White	each	1059	15541		
(b) Coloured	each	1059	18841		
20.1.2 Providing and fixing double seat and cover only for european style water closet.					
(a) bakelite	each	14	1994		
(b) plastic	each	14	1334		
20.1.3 Providing and fixing white / coloured glazed earthenware water closet squatter type combined with foot rest, 19" measured between flushing rims complete in all respects.					
(a) White	each	738	4079		
(b) Coloured	each	862	4423		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.1.4 Providing and fixing white / coloured glazed earthenware water closet, squatter type, without foot rest, 19" measured between flushing rims complete in all respects.					
(a) White	each	862	8460		
(b) Coloured	each	862	8603		
20.1.5 Providing and fixing glazed earthenware flat back urinal complete in all respects.	each	960	5436		
20.1.6 Providing and fixing glazed earthenware low down flushing cistern 3 gallons (13.63 litres) capacity, including bracket set, copper connection, etc. complete in all respects.					
(a) white	each	960	8581		
(b) coloured	each	960	8966		
20.1.7 Providing and fixing low down flushing cistern 3 gallons (13.63 litres) capacity, including bracket set, copper connection, etc. complete in all respects.					
(a) white enamelled cast iron	each	960	7326		
(b) plastic	each	960	6491		
(c) stainless steel	each	960	4951		
20.1.8 Providing and fixing cast iron high level flushing cistern, including cost of bracket set, copper connection, etc complete in all respects.					
(a) 3 gallons (13.63 litres) capacity	each	1027	10891		
(b) 1 gallons (4.55 litres) capacity	each	1027	5000		
20.1.9 Providing and fixing chromium plated soap dish complete.	each	67	1532		
20.1.10 Providing and fixing glazed earthenware soap dish complete.	each	67	1312		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.1.11 Providing and fixing, chromium plated toilet paper holder complete.	each	89	2564		
20.1.12 Providing and fixing chromium plated towel rail complete.					
(a) 60 cm (24") long and 2 cm (3/4") dia	each	89	2344		
(b) 50 cm (20") long and 1.5 cm (1/2") dia	each	89	1794		
(c) circular type	each	89	2179		
20.1.13 Providing and fixing looking glass 5 mm thick, neatly fitted on masonry walls etc., as per instructions of Engineer In-charge complete.					
(a) Looking glass (Class A) with deodar wood frame	sft (m ²)	111 1194.92	505 5436		
(b) Looking glass (Class A) without frame fitted on masonite sheet.	sft (m ²)	53 570.55	393 4231		
(c) Looking glass (Class A) with beveled edge frame.	sft (m ²)	53 570.55	511 5501		
(d) Looking glass (Class A) with plastic frame.	sft (m ²)	53 570.55	393 4231		
20.1.14 Providing and fixing glass shelf 60cm x 13 cm (24" x 5") with 5 mm thick glass complete.					
(a) with chromium plated brackets and railing	each	191	3327		
(b) glass shelf only, without chromium plated brackets and railing.	each	133	2333		
20.1.15 Providing and fixing glazed earthen ware shelf 60cm x 13 cm (24" x 5") with chromium plated bracket and railing.					
(a) white	each	191	2227		
(b) coloured	each	191	2447		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.1.16 Providing and fixing superior quality:-					
(a) plastic soap dish	each	67	597		
(b) plastic toilet paper holder	each	89	1505		
(c) plastic towel rail	each	89	1285		
(d) plastic shelf 60 x 13 cm (24" x 5") with bracket.	each	89	1285		
20.1.17 Supplying and fixing, telephone shower with flexible pipe 4 ft (1.3 m) long, complete.					
(a) Plastic	each	266	3346		
(b) Chromium Plated	each	266	3346		
(c) Chromium Gold	each	266	5766		
20.1.18 Supplying and fixing Muslim shower with flexible pipe 3 ft (1m) long complete.					
(a) Plastic	each	266	2686		
(b) Chromium Plated	each	266	4666		
(c) Chromium Gold	each	266	5216		
20.1.19 Supplying and fixing wall shower of complete in all respect.					
(i) Plastic	each	266	3016		
(ii) Chromium Plated	each	266	9616		
(iii) Chromium Gold	each	266	14016		
20.1.20 Providing and fixing, shower rose Complete:-					
(a) Size 1/2" x 4" (5 mm x 100 mm)					
(i) Plastic	each	89	1629		
(ii) Chromium Plated	each	89	4269		
(iii) Chromium Gold	each	89	6689		
(b) Size 3/4" x 6" (20mm x 150 mm)					
(i) Plastic	each	89	2839		
(ii) Chromium Plated	each	89	5589		
(iii) Chromium Gold	each	89	8229		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.1.21 Supplying and fixing, flexible pipe 3 ft (1 m) long, for telephone shower, complete.					
(a) Plastic	each	106	656		
(b) Chromium Plated	each	106	1206		
(c) Chromium Gold	each	106	2086		
20.1.22 Supplying and fixing chromium plated, shower rose with handle for telephone shower, complete.	each	106	5606		
20.1.23 Providing and fixing glazed earthenware colored/white coupled set including WC, flushing tank, rubber connection and bakelite seat as per instructions of Engineer In-charge.					
(a) Bathroom coupled set Master or equivalent (White)	set	2662	41712		
(b) Bathroom coupled set Master or equivalent (Coloured)	set	2662	45012		
20.1.24 Providing and fixing bath room accessories set consisting of looking glass, shelf, towel rail, towel ring, toilet paper holder, soap dish and brush holder complete in all respects and as per instructions of Engineer Incharge.					
(a) Plastic	set	1331	2651		
(b) Chrome Plated	set	2662	15617		
(c) Chrome Gold	set	2662	18864		
20.1.25 Providing and fixing bath cabinet of approved quality neatly fitted on masonry wall in toilets complete in all respect as instruction of Engineer in-charge.					
(a) Supreme quality (Class A)	each	266	5766		
(b) Good quality (Class B)	each	266	5216		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.2 Providing & Fixing Sinks, Wash Hand Basin, Bath Tubs				20.4 to 20.6, 20.7.4, 20.7.5, 20.7.16, 20.7.17 20.8,& 20.9	The rates of sanitary ware included under subsection 20.2 are for best quality locally manufactured sanitary ware such as Sonex, Master, and Faisal or equivalent (Class A) as specified /approved by Engineer in-charge.
20.2.1 Providing and fixing 22" x 16" glazed earthenware wash hand basin including bracket set, waste pipe and waste coupling, etc. complete:-					
(i) white, with pedestal	each	1059	13159		
(ii) coloured, with pedestal	each	1059	12609		
(iii) white, without pedestal	each	960	8440		
(iv) coloured, without pedestal	each	960	9760		
20.2.2 Providing and fixing stainless steel sink, including bracket set, waste pipe and waste coupling, etc. complete:-					
(a) with single drain board size 105 x 45 cm (42"x18").	each	960	13000		
(b) with double drain board size 150 x 60 cm (60"x24")	each	960	28950		
20.2.3 Providing and fixing glazed earthenware sink, including bracket set, waste pipe and waste coupling complete.					
(a) 60 x 45 cm (24"x18")	each	960	8620		
(b) 37.5 x 45 cm (15"x18")	each	960	6970		
20.2.4 Providing and fixing, angle iron brackets for:-					
(a) wash hand basin and cistern.	each	133	2729		
(b) sinks.	each	133	2729		
20.2.5 Supplying and fixing, earthen ware pedestal for 22" x 16" wash hand basin of approved make /quality.	each	106	2306		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.2.7 Supplying and fixing, bath tub (5'x2.5'x1.2'5(1.5x0.75x0.375M) Complete with all accessories of approved quality / make.					
(a) Fiber Glass	each	7139	37939		
(b) Acrylic	each	7139	45639		
20.2.8 Providing and fixing glazed earthenware under counter wash hand basin with bottle trap complete in all respect of approved quality / make.					
(a) 570x415 mm (22"x16") (+/- 5%)	each	1059	10409		
(b) 470x385 mm (18"x15") (+/- 5%)	each	1059	9309		
20.3 Providing & Fixing Various Valves, Cocks & Traps				20.4 to 20.6, 20.7.18 to 20.7.21, 20.8,& 20.9	The rates of sanitary ware included under subsection 20.3 are for best quality locally manufactured sanitary ware such as Sonex, Master, and Faisal or equivalent (Class A) as specified /approved by Engineer in-charge.
20.3.1 Providing and fixing, chromium plated stop cock, heavy of approved quality.					
(a) 3/4" (20mm)	each	89	5039		
(b) 1/2" (15mm)	each	89	5039		
20.3.2 Providing and fixing, chromium plated stop cock, heavy of approved quality					
(a) 3/4" (20mm) dia	each	89	2069		
(b) 1/2" (15mm) dia	each	89	1849		
20.3.3 Providing and fixing underground stop cock 1/2" (15mm) with chromium plated cover of approved quality.	each	124	1955		
20.3.4 Providing & fixing, chromium plated bib cock of approved quality					
(a) 3/4" (20mm) dia	each	89	2839		
(b) 1/2" (15mm) dia	each	89	2069		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.3.5 Providing and fixing chromium plated tee stop cock 1/2" (15mm) dia of approved quality.	each	89	2069		
20.3.6 Providing & fixing chromium plated mixing valve (large size), for wash hand basin, sink or shower of approved quality.	each	111	8361		
20.3.7 Providing & fixing, gun metal gate valve (screwed) of approved quality.					
(a) 1-1/4" (30 mm) dia.	each	133	7806		
(b) 1-1/2" (40 mm) dia.	each	133	9043		
(c) 2" (50 mm) dia.	each	133	11133		
(d) 2-1/2" (65 mm) dia.	each	133	13333		
(e) 3" (75 mm) dia.	each	133	23233		
20.3.8 Providing and fixing, chromium plated or brass oxidised, swan neck cock 1/2" (15mm) dia of approved quality.					
(a) single way.	each	89	2839		
(b) double way.	each	133	5083		
(c) three way.	each	177	6777		
20.3.9 Providing and fixing, union brass cock of approved quality					
(a) 1/2" (15mm) dia	each	89	1409		
(b) 3/4" (20mm) dia	each	89	1629		
20.3.10 Providing and fixing, floor trap of cast iron, of approved quality including concrete chamber all round, and C.I. grating:-					
(a) 4" x 2" (100 mm x 50 mm).	each	266	1326		
(b) 4" x 3" (100 mm x 75 mm)	each	266	1546		
20.3.11 Providing and fixing, 'P' trap, of approved quality including concrete chamber with G.I. grating:-					
(a) 4" (100 mm) of cast iron.	each	222	2368		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(b) 4" (100 mm) glazed.	each	222	1312		
20.3.12 Providing and fixing 4" (100 mm) gully trap, of approved quality including cement concrete cost of PVC grating 6" x 6" (150 x 150 mm) and masonry chamber 12" x 12" (300 x 300 mm).	each	333	2460		
20.3.13 Providing and fixing, brass stop cock/bib cock of approved quality					
(a) 1/2" (15 mm) dia.	each	89	727		
(b) 3/4" (20 mm) dia.	each	89	1244		
20.3.14 Providing and fixing, chromium plated bottle trap of approved quality with waste pipe, etc. of approved quality complete:-					
(a) 1-1/4" (30 mm) dia	each	133	4753		
(b) 1-1/2" (40 mm) dia	each	133	5083		
20.3.15 Providing and fixing, brass ball float valve of approved quality.					
(a) 1/2" (15 mm) dia.	each	111	1706		
(b) 3/4" (20 mm) dia.	each	111	2256		
(c) 1" (25 mm) dia.	each	111	2806		
(d) 1-1/4" (30 mm) dia.	each	111	3961		
(e) 1- 1/2" (40mm) dia.	each	111	5061		
(f) 2" (50 mm) dia.	each	111	7591		
20.3.16 Supplying and fixing, C.I. water hydrant/control valve of special type with brass spindle and detachable spanner required to be fixed with 2" (50 mm) to 3" (75 mm) dia pipe of approved quality. Also includes 3/4" (20 mm) dia G.I. bend complete.	each	106	19906		
20.4 Providing & Laying Soil, Waste and Vent Pipes				20.4 to 20.6, 20.8,& 20.9	
20.4.1 Providing & fixing, cast iron soil pipe of approved quality with:-					
(a) Lead caulked, yarn joint;					
(i) 4" (100 mm) dia	ft (m)	89 292.01	2203 7228		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(ii) 2" (50 mm) dia.	ft (m)	35 114.84	1406 4613		
(b) Cement caulked joint;					
(i) 4" (100 mm) dia	ft (m)	23 75.46	2110 6923		
(ii) 2" (50 mm) dia..	ft (m)	9 29.53	1366 4482		
20.4.2 Providing and fixing, Asbestos Cement (A.C) / fiber cement. soil pipe (DADEX or equivalent) with cement caulked joint, including all specials complete in all respects.					
(a) 60 mm (2-1/4") i/d.	ft (m)	19 62.34	294 964.61		
(b) 80 mm (3-1/4") i/d.	ft (m)	21 68.90	535 1755.34		
(c) 100 mm (4") i/d.	ft (m)	23 75.46	698 2290.14		
(d) 150 mm (6") i/d.	ft (m)	31 101.71	980 3215.38		
20.4.3 Providing and fixing, cast iron specials, such as tee, bend, collar, cross, etc. plain type of approved quality.					
(a) lead caulked joint	kg	165	655		
(b) cement caulked joint	kg	161	567		
20.4.4 Providing and fixing, uPVC Pipes for Soil, Waste, rain water & Vent System (DADEX or equivalent) including cost of all specials complete in all respects.					
(a) 40 mm (1-1/2") outer dia, min. wall thickness 2.5mm	ft (m)	21 68.90	385 1263.19		
(b) 50 mm (2") outer dia, min. wall thickness 2.5mm	ft (m)	32 104.99	487 1597.85		
(c) 75 mm (3") outer dia, min. wall thickness 2.5mm	ft (m)	42 137.80	750 2460.75		
(d) 110 mm (4-1/2") outer dia, min. wall thickness 3.0 mm	ft (m)	53 173.89	1158 3799.40		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(e) 160 mm (6-5/16") outer dia, min. wall thickness 3.0 mm	ft (m)	64 209.98	1698 5571.14		
(f) 200 mm (7-7/8") outer dia, min. wall thickness 3.0 mm	ft (m)	74 242.79	2558 8392.80		
20.5 Providing & Fixings C.I Manhole Covers				20.4 to 20.6, 20.7.22 20.8,& 20.9	
20.5.1 Supplying and fixing, cast iron manhole cover with frame, etc. (Heavy Type) of approved quality complete.					
(a) 12" (300 mm) dia.	each	133	2113		
(b) 18" (450 mm) dia.	each	133	3983		
(c) 24" (600 mm) dia.	each	177	8427		
20.5.2 Supplying & fixing, C.I. manhole cover without frame, heavy type of approved quality complete.					
(a) 12" (300 mm) dia.	each		1980		
(b) 18" (450 mm) dia.	each		3850		
(c) 24" (600 mm) dia.	each		8250		
20.6 Providing & Laying RCC Pipe in Trenches				21.4 to 21.6	
20.6.1 Providing, laying, cutting, jointing and testing of R.C.C. pipe 4" (100mm) dia in 1:1-1/2 3, in cement concrete, laid in trenches as per specifications complete in all respects.	ft (m)	44 144.36	141 462.62		
20.7 Providing & Laying G.I Pipe Fittings				19.6.1, 19.7.1 to 19.7.6, 19.7.8, 19.7.10 & 19.8	
20.7.1 Supplying and fixing, G.I. pipe fittings such as, socket, nipple, elbow, check nut and plug (ordinary or reducing) of approved quality as per specifications and compete in all respects.					
(a) 1/2" (15 mm) dia.	each	29	114		
(b) 3/4" (20 mm) dia.	each	29	155		
(c) 1" (25 mm) dia.	each	33	255		
(d) 1-1/4" (30 mm) dia.	each	67	395		
(e) 1-1/2" (40 mm) dia.	each	75	461		
(f) 2" (50 mm) dia.	each	75	708		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(g) 2-1/2" (62 mm) dia.	each	75	1296		
(h) 3" (75 mm) dia.	each	85	2072		
(i) 4" (100 mm) dia.	each	120	2842		
20.7.2 Supplying and fixing G.I. Bend, bush, crosspieces and Tees (ordinary or reducing) of approved quality complete in all respects.					
(a) 1/2" dia.	each	48	262		
(b) 3/4" dia.	each	48	344		
(c) 1" dia.	each	53	567		
(d) 1-1/4" dia.	each	76	948		
(e) 1-1/2" dia.	each	80	1246		
(f) 2" dia.	each	87	2061		
(g) 2-1/2" dia.	each	87	3902		
(h) 3" dia.	each	93	5324		
(i) 4" dia.	each	120	9697		
20.7.3 Supplying and fixing, G.I. Union nuts, wheel valves, sluice valves, etc of approved quality complete in all respects.					
(a) 1/2" dia.	each	48	375		
(b) 3/4" dia.	each	48	486		
(c) 1" dia.	each	53	641		
(d) 1-1/4" dia.	each	76	935		
(e) 1-1/2" dia.	each	80	1246		
(f) 2" dia.	each	87	1743		
(g) 2-1/2" dia.	each	87	3651		
(h) 3" dia.	each	93	4735		
(i) 4" dia.	each	120	8255		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
20.8 Miscellaneous Items					
20.8.1 Providing and fixing, chromium plated waste coupling of approved quality.					
(a) 3 cm (1-1/4").	each	133	738		
(b) 4 cm (1-1/2").	each	133	738		
20.8.2 Providing and fixing, rubber plug with chain of approved quality.					
(a) 3 cm (1-1/4").	each	5	225		
(b) 4 cm (1-1/2").	each	5	225		
20.8.3 Providing and fixing, waste pipe of PVC of approved quality.					
(a) 3 cm (1-1/4").	each	67	177		
(b) 4 cm (1-1/2").	each	67	177		
20.8.4 Providing and fixing, flushing bend of PVC of approved quality.					
(a) 3 cm (1-1/4").	each	59	279		
(b) 4 cm (1-1/2").	each	59	279		
20.8.5 Providing and fixing, 1.5 cm (1/2") dia connection including check nuts etc of approved quality.					
(a) Plastic/rubber connection.	each	53	603		
(b) copper connection.	each	53	878		
20.8.6 Providing and Fixing, brass chromium plated bathroom sanitary fitting complete set comprising Basin Mixer, wall shower with bib cock, three tee cocks, one double bib cock, Muslim shower (plastic or chromium plated with flexible pipe), complete in all respect (Master, Sonex or equivalent)	set	1331	39831		

CHAPTER 21

SEWERAGE & RCC PIPE SEWERS

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 21 Sewerage & RCC Pipe Sewers of "Specification for Railway Infrastructure Works, Volume II, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
21.1 Providing & Laying Reinforced Concrete (RCC) Pipes in Trenches				21.4 to 21.6	
21.1.1 Providing and laying R.C.C. pipe, moulded with cement concrete 1:1-1/2:3, with spigot, socket or collar joint, etc. including cost of reinforcement, conforming to B.S. 5911: Part-I, 1981 Class "L" including carriage, lowering in trenches to correct alignment and grade, jointing, cutting pipe where necessary, finishing and testing, etc. complete:-					
(a) 4"(100 mm) i/d.	ft	55	172		
	(m)	180.46	564.33		
(b) 6" (150 mm) i/d.	ft	66	239		
	(m)	216.55	784.16		
(c) 9" (225 mm) i/d	ft	123	511		
	(m)	403.56	1676.59		
21.1.2 Providing & laying R.C.C. pipe sewers, moulded with cement concrete 1:1-1/2:3 conforming to ASTM specification C-76-79, Class II, Wall B, including carriage, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing, etc. complete:-					
(a) 12" (300 mm) i/d.	ft	126	863		
	(m)	413.41	2832		
(b) 15" (375 mm) i/d.	ft	157	1147		
	(m)	515.12	3763		
(c) 18" (450 mm) i/d.	ft	188	1486		
	(m)	616.83	4876		
(d) 21" (525 mm) i/d.	ft	235	1764		
	(m)	771.04	5788		
(e) 24" (600 mm) i/d.	ft	269	2046		
	(m)	882.59	6713		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(f) 27" (685 mm) i/d.	ft (m)	401 1315.68	3008 9869		
(g) 30" (760 mm) i/d.	ft (m)	481 1578.16	3836 12586		
(h) 33" (840 mm) i/d.	ft (m)	601 1971.88	4280 14043		
(i) 36" (910mm) i/d.	ft (m)	739 2425	4809 15778		
(j) 42" (1070 mm) i/d.	ft (m)	961 3153	5603 18383		
(k) 48" (1220mm) i/d.	ft (m)	1833 6014	7036 23085		
(l) 54" (1370 mm) i/d.	ft (m)	2566 8419	9001 29532		
(m) 60" (1520 mm) i/d.	ft (m)	3208 10525	12701 41672		
(n) 66" (1680 mm) i/d.	ft (m)	5133 16841	16419 53871		
(o) 72" (1830 mm) i/d.	ft (m)	6416 21051	18901 62014		
21.1.3 Providing & laying R.C.C. pipe sewers, moulded with cement concrete 1:1-1/2:3 conforming to ASTM specification C-76-79, Class III, Wall B, including carriage, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing, etc. complete:-					
(a) 12" (300 mm) i/d.	ft (m)	126 413.41	874 2868		
(b) 15"(375 mm) i/d.	ft (m)	157 515.12	1174 3852		
(c) 18" (450 mm) i/d.	ft (m)	188 616.83	1552 5092		
(d) 21" (525 mm) i/d.	ft (m)	235 771.04	1841 6040		
(e) 24" (600 mm) i/d.	ft (m)	269 882.59	1974 6477		
(f) 27" (690 mm) i/d.	ft (m)	401 1315.7	3294 10808		
(g) 30" (760 mm) i/d.	ft (m)	481 1578.16	4441 14571		
(h) 33" (840 mm) i/d.	ft (m)	601 1971.88	4892 16051		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(i) 36" (910 mm) i/d.	ft (m)	739 2425	5590 18341		
(j) 42" (1070 mm) i/d.	ft (m)	961 3153	6538 21451		
(k) 48" (1220 mm) i/d.	ft (m)	1833 6014	8235 27019		
(l) 54" (1370 mm) i/d.	ft (m)	2566 8419	11608 38086		
(m) 60" (1520 mm) i/d.	ft (m)	3208 10525	13614 44668		
(n) 66" (1680 mm) i/d.	ft (m)	5133 16841	19059 62533		
(o) 72" (1830 mm) i/d.	ft (m)	6416 21051	23378 76703		
21.1.4 Providing & laying R.C.C. pipe moulded with cement concrete 1:1-1/2:3 conforming to ASTM specification C-76-79, Class II, Wall B, fixed with R.C.C. collar for culvert, bridges etc., including carriage, lowering in trenches to correct alignment and grade, cutting pipes where necessary, gape filled with cement concrete 1:2:4 complete in all respect:-					
(a) 12" (310 mm) i/d.	ft (m)	126 413.41	874 2868		
(b) 15" (380 mm) i/d.	ft (m)	157 515.12	1174 3852		
(c) 18" (460 mm) i/d.	ft (m)	188 616.83	1552 5092		
(d) 21" (530 mm) i/d.	ft (m)	235 771.04	1841 6040		
(e) 24" (610 mm) i/d.	ft (m)	269 882.59	1974 6477		
(f) 27" (690 mm) i/d.	ft (m)	401 1315.68	3294 10808		
(g) 30" (760 m m) i/d	ft (m)	481 1578.16	4441 14571		
(h) 33" (840 mm) i/d.	ft (m)	601 1971.88	4892 16051		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(i) 36" (910 mm) i/d.	ft (m)	739 2425	5590 18341		
(j) 42" (1070 mm) i/d.	ft (m)	961 3153	6538 21451		
(k) 48" (1220 mm) i/d.	ft (m)	1833 6014	8235 27019		
(l) 54" (1370 mm) i/d.	ft (m)	2566 8419	11608 38086		
(m) 60" (1520 mm) i/d.	ft (m)	3208 10525	13614 44668		
(n) 66" (1680 mm) i/d.	ft (m)	5133 16841	19059 62533		
(o) 72" (1830 mm) i/d.	ft (m)	6416 21051	23378 76703		
21.2 Providing & Laying Non Reinforced Concrete Pipes in Trenches				21.4 to 21.6	
21.2.1 Providing and laying non-reinforced concrete pipe moulded with cement concrete 1:1-1/2:3 conforming to ASTM Specification C-14-73, Class-2, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing, cutting pipe where necessary, finishing and testing, etc. complete:-					
(a) 4" (100 mm) i/d.	ft (m)	55 180.46	109 357.63		
(b) 6" (150 mm) i/d.	ft (m)	66 216.55	129 423.25		
(c) 8" (200 mm) i/d.	ft (m)	92 301.85	173 567.61		
(d) 9" (225 mm) i/d.	ft (m)	123 403.56	221 725.10		
(e) 10" (250 m m) i/d.	ft (m)	134 439.65	245 803.85		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
21.3 Lowering of Sub Soil Water Table & Laying of Pipe Sewers in Trenches				21.4 to 21.6	
21.3.1 Lowering of sub soil water table, by installation of tubewells along sewer line for laying of pipe sewer in trenches complete in all respects.					(i) This rate shall be payable, in addition to the item of excavation below SSWL for sewers & manholes under chapter, earthwork and laying of sewer pipe under items 21.1 and 21.2
(a) 0-1 ft. (0-0.300 m) below SSWL.	ft (m of laid sewer)		542 1778.30		
(b) 0-2 ft. (0-0.600 m) below SSWL.	-do-		1040 3412		(ii) The grant of these rates shall be subject to approval of Chief Engineer.
(c) 0-3 ft. (0- 0.900 m)below SSWL.	-do-		1767 5798		(iii) The rate includes cost of providing pumps, POL,
(d) 0-4 ft. (0-1.200 m) below SSWL.	-do-		2550 8367		
(e) 0-5 ft. (0-1.500 m) below SSWL.	-do-		3666 12028		and all operation charges at the site of work etc.
(f) 0-6 ft. (0-1.800 m) below SSWL.	-do-		4535 14879		
(g) 0-7 ft. (0-2.100 m) below SSWL.	-do-		5494 18026		
(h) 0-8 ft. (0-2.400 m) below SSWL.	-do-		6226 20428		
(i) 0-9 ft. (0-2.700 m) below SSWL.	-do-		6609 21684		
(j) 0-10 ft. (0-3.000 m) below SSWL.	-do-		7622 25008		
(k) 0-11 ft. (0-3.300 m) below SSWL.	-do-		8481 27826		
(l) 0-12 ft. (0-3.600 m) below SSWL.	-do-		9401 30845		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
21.4 Construction Gully Grating Chamber with Gully Trap				21.4 to 21.6	
21.4.1 Constructing gully grating chamber, 12"x12" (300 mm x300 mm) complete in all respects:-					Pipe connection to be paid separately.
(a) With C.I. Gully Trap, weighing 81 lbs, frame hinged safety type.	each	5156	9945		
(b) Concrete Gully Trap.	each	2728	7859		
21.5 Providing Manhole Chambers & Manhole Covers				21.4 to 21.6	
21.5.1 Extra for making and finishing benching floor work in manhole chamber, with 1/8" (3 mm) thick cement finish.	100 sft (m²)	2745 295.50	4206 452.78		
21.5.2 Providing and fixing 1-1/4" x 1-1/4" x 3/16" angle iron step in manhole chambers, including carriage and setting the same in work to correct lines and levels.	each	132	651		
21.5.3 Fixing manhole frame and cover in R.C.C. slab, including carriage to site.	set	581			
21.5.4 Providing and fixing 3" (75 mm) thick R.C.C. manhole cover 22" (550 mm) dia with tee shaped C.I. Frame of 20" (500 mm) clear i/d (frame weighing 37.324 KG approx) as per H.Q.E. Sketch No.3295 complete in all respects.	set	649	11676		
21.5.5 Providing and fixing "6 thick R.C.C. manhole cover with 3" x 3" x 1/4" angle iron frame 22" i/d as per H.Q.E. Sketch No.3297 complete in all respects.	set	106	6811		
21.5.6 Providing and fixing "6 thick R.C.C. manhole cover with 3" x 3" x 1/4" angle iron frame 24" i/d as per H.Q.E. Sketch No.3297 complete in all respects.	set	133	7297		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
21.6 Desilting of Disposal Works, Collecting Tanks & Wells					
21.6.1 Desilting of disposal work collecting tank, including removal of sludge within 3 chains (90 m).	100 cft (m ³)		964 340.48		
21.6.2 Silt clearing 10' (3 m) dia. wells and					
(a) Upto 10' (3 m) depth of slush.	well	14204			
(b) Beyond 10' (3 m) depth of slush.	well	28424			

CHAPTER 22

SUI GAS

Notes:-

- (1) The items of work included in this chapter, shall conform to the relevant specifications, given in Chapter 23 Sui Gas Supply System of "Specification for Railway Infrastructure Works, Volume II, (2016)"
- (2) Rates for all finished works include the removal of surplus debris, unused material and by-products and their stacking within 500 ft (152 m).
- (3) The rates include cutting and making good of the surface of walls, roofs, floors, etc. where necessary.
- (4) All materials should conform to specifications of Sui Northern Gas Pipeline & Sui Southern Gas Pipeline Companies.

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
22.1 Supplying & Laying High Pressure Sui Gas Pipeline				23.4 to 23.6	
22.1.1 Supplying, laying, cutting, jointing and welding in position high pressure sui gas pipe line (class medium of IIL or equivalent) wrapped with fiber sheet & coated with approved bitumen compound complete in all respect as per specification. One wrap two coats;					The rate does not include digging and back filling of trenches which is payable separately.
(a) 1" (25 mm) dia Pipe (M.S. Pipe 8 SWG).	ft (m)	48 157.49	329 1079.45		
(b) 1-1/2" (38 mm) dia Pipe (M.S. Pipe 8 SWG).	ft (m)	69 226.39	496 1627.38		
(c) 2" (50 mm) dia Pipe (M.S. Pipe 7 SWG).	ft (m)	73 239.51	669 2194.99		
(d) 3" (75 mm) dia Pipe (M.S. Pipe 6 SWG).	ft (m)	87 285.45	1134 3720.65		
(e) 4" (100 mm) dia Pipe (M.S. Pipe 5 SWG).	ft (m)	108 354.35	1618 5309		
(f) 6" (150 mm) dia Pipe (M.S. Pipe 5 SWG).	ft (m)	138 452.78	2675 8777		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
22.2 Supplying & Laying Low Pressure Sui Gas Pipeline				23.4 to 23.6	
22.2.1 Supplying, laying, cutting and jointing in position low pressure sui gas pipe line for internal fittings (G.I. Pipe, class medium of ILL) complete in all respect as per specification.					(i) The rate includes making & repairing holes in wall and roof etc.
(a) 1/2" (12.5 mm) dia	ft (m)	22 72.18	211 692.29		(ii) Cost of sockets, tees, elbows, union, reducers, nipples etc. is included in the rates.
(b) 3/4" (19 mm) dia	ft (m)	22 72.18	270 885.87		
(c) 1"(25 mm) dia	ft (m)	26 85.31	401 1315.68		
(d) 1-1/4" (31 mm) dia	ft (m)	26 85.31	492 1614.25		
(e) 1-1/2" (38 mm) dia	ft (m)	30 98.43	552 1811.11		
(f) 2" (50 mm) dia	ft (m)	43 141.08	784 2572.30		
22.3 Supplying & Fixing in Position Sui Gas Appliances & Their Fittings				23.4 to 23.6	
22.3.1 Supplying & fixing in position approved quality Sui Gas Burners:-					
(a) Single Burner.	each	532	2457		
(b) Double Burner.	each	532	4987		
(c) Commercial Burner;					
(i) 12 Nozzles.	each	532	4107		
(ii) 18 Nozzles.	each	532	5207		
(iii) 24 Nozzles.	each	532	6582		
(iv) 32 Nozzles.	each	532	7682		
22.3.2 Supplying and fixing Sui Gas lamp of superior quality including bracket complete.	each	532	1632		
22.3.3 Supplying and fixing in position approved quality Sui Gas room heaters of superior quality with exhaust etc:-					

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(a) Single Plate.	each	1059	6652		
(b) Double Plate.	each	1059	12334		
22.3.4 Providing and fixing in position Sui gas water heater best quality manufacturer with fittings including thermostat, safety valve etc.:					
(a) 35 Gallon capacity.	each	2118	51618		
(c) 55 Gallon capacity.	each	2118	73618		
22.3.5 Providing and fixing in position approved quality Instant Gas water heaters with fittings including thermostat, safety valve etc:-					
(a) 6 Gallon capacity.	each	2118	26318		
(b) 12 Gallon capacity.	each	2118	32918		
22.3.6 Supplying and fixing in position approved quality Sui Gas cooking range:-					
(a) Three Burners.	each	799	33799		
(b) Five Burners.	each	799	42599		
22.3.7 Providing and fixing Bunsen burner, complete.	each	133	1068		
22.3.8 Supplying and fixing in position approved quality fittings of Sui Gas appliances:-					
(a) Black pipe for single burner.	each	133	172		
(b) Black pipe for double burner.	each	133	177		
(c) Jet.	each	133	166		
(d) C.I. Tikkee.	each	133	298		
(e) C.I. Grating.	each	133	375		
(f) Bush	each	133	243		
(g) Regulator Plug.	each	133	188		
(h) Copper pipe for pilot burner.	each	133	738		
(i) Peeble regulator.	each	133	793		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(j) Regulator 043.	each	133	3983		
(k) Regulator 143.	each	133	5413		
(l) Exhaust for room heater.	each	1059	2159		
(m) Thermostat for water heater.	each	1331	6281		
(n) Knob.	each	133	254		
(o) Radiant plate for heater.	each	133	925		
22.4 Supplying & Fixing in Position Valves/Cocks etc.				23.4 to 23.6	
22.4.1 Supplying and fixing in position approved quality ball valve (Kitz Japan):-					
(a) 1/2" dia.	each	266	1641		
(b) 3/4" dia.	each	266	2246		
(c) 1" dia.	each	266	2686		
(d) 1-1/2" dia.	each	266	3346		
(e) 2" dia.	each	266	4226		
22.4.2 Supplying and fixing in position approved quality Audco type valve or Eclips cocks:-					
(a) 3/4" dia.	each	133	656		
(b) 1" dia.	each	266	927		
(c) 1-1/2" dia.	each	266	1326		
(d) 2" dia.	each	266	1535		
22.4.3 Making connection with existing Sui Gas Pipe line complete in all respect.	per in dia per connection	2783	2860		
	per cm dia per connection	1096	1126		
22.4.4 Providing & fixing Brass cocks, complete 1/4":-					
(a) One way.	each	133	716		
(b) Two way.	each	133	848		

CHAPTER 23

MISCELLANEOUS

Note:-

- (1) Rate for all finished works include the removal of surplus debris, unused material and by products and their stacking within 500 ft (152 m).

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
23.1 Miscellaneous Items					
23.1.1 Notice board made of cement sand mortar 1:3.	sft (m ²)	66 710.49	96 1033.44		The board is to be of cement plaster 1/2" thick, with 2" wide and 1" thick beading.
23.1.2 Fixing handles to iron hammer.	each	333			
23.1.3 Supplying Bamboo Jhandies 10' to 12' with iron shoes, and flags 15" square.	each	138	1148		
23.1.4 Supplying wooden pegs for levelling 1-1/2" dia 6" long.	each	13	16		
23.1.5 Supplying wooden pegs for alignment, 2" to 3" dia. 9" long.	each	27	37		
23.1.6 Fixing enamelled iron gauges flush with masonry including cost of hooks.	ft (m)	188 616.83	199 652.92		
23.1.7 Placing boundary pillars in position, including digging pits.	each	125			
23.1.8 Fixing mainline type distance mark in position including making 1:3:6 cement concrete base block size 14" x 10" x 15".	each	532	1047		Composite rate does not include cost of iron distance marks.
23.1.9 Washing Niwar of bed.	per bed	1180	1251		
23.1.10 Washing Durries.	sft (m ²)	16 172.24	17 183.01		
23.1.11 Recaning chairs:-					
(a) Office chairs, single caning seat only.	each	1089	1147		
(b) Office chairs, double caning seat only.	each	1437	1517		
(c) Office chairs, single caning back only.	each	933	962		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
(d) Office chairs, double caning back only.	each	1361	1419		
(e) Easy chairs, single caning seat only.	each	1634	1713		
(f) Easy chairs, double caning seat only.	each	2178	2293		
(g) Easy chairs, single caning only back and seat in one piece.	each	4356	4601		
(h) Easy chairs, double caning back and seat in one piece or couches with caned area about 16 sft.	each	6534	7182		
23.1.12 Making and fixing hat pegs fixed on wooden strip 4" wide 3/4" thick at 9" spacing including polishing complete:-					Rate be reduced/ increased by 17% for each peg if number of pegs are reduced /increased.
(a) 4 No. ordinary shisham wooden pegs.	each	319	2306		
(b) 4 No special alloy pegs on deodar wood strip.	each	266	1401		
23.1.13 Weaving charpy.	each	715			
23.1.14 Sweeping chimneys.	each	393	406		
23.1.15 Cutting fuel wood, from plantation.	100 kg	422			
23.1.16 Splitting fuel wood.	100 kg	843			
23.1.17 Filling cement bags with coal and sewing (including cost of strings).	cft (m ³)	40 1412.80	40 1412.80		
23.1.18 Supplying manure.	cart load	272	514		Capacity of cart 20 cft.
23.1.19 Washing punkha frills.	each	393			
23.1.20 Washing:-					
(a) Table cloth	each	98			
(b) Napkins, dusters, etc.	each	61			
(c) Bed sheet	each	157			
(d) Carpet	sft	16			
23.1.21 Hoisting and placing sleepers for centering including carriage within one chain.	each	157			

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
23.1.22 Dismantling sleepers from centering including stacking within one chain.	each	189			
23.1.23 Dredging Sumps.	shift	5899			Not less than five gangmen to be employed for each shift to ensure effective dredging.
23.1.24 Fixing 'U' bolt in masonry or concrete, including levelling and tying for fixing angle iron post.	each	617			
23.1.25 Drilling holes in R.C. Trough.	each	363			
23.1.26 Providing and fixing chain type Roller blinds with sheer/ transparent or thick fabric of approved colour / design complete in all respect.	sft (m ²)	22 236.83	319 3434.04		
23.1.27 Providing and fixing chain type Zebra Roller blinds (having double layer of fabric) with fabric of approved colour / design complete in all respect.	sft (m ²)	22 236.83	363 3907.70		
23.2 Providing and Fixing various sign boards					
23.2.1 Road Side Indication Board for Un-Manned Level Crossing Providing and fixing triangular shaped Road Side indication Board for Un-manned Level Crossing (refer Type Plan No. 64/R-II). Each side of equilateral triangle is 87cm (+/- 10mm) made of 1.8mm thick G.I sheet pasted with 3M Diamond Grade or equivalent reflective sheet, Digital Printing with UV ink duly laminated after printing. Erected with G.I pipe having 3 inch (75 mm) dia, 8 SWG thick, filled with PCC 1:2:4, fixed in ground in PCC according to referred Type Plan having pole height 60 inches, including G.I channels, clamps, etc., complete in all respect.	each	1331	26765		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
Note: Deduction from composite rate, if only Board is supplied with clamping device but without G.I pipe and fixing in ground.	each		17745		
23.2.2 Road Side Indication Board for Manned Level Crossing Providing and fixing triangular shaped Road Side indication Board for manned Level Crossing (refer Type Plan No. 63/R-II). Each side of equilateral triangle is 87cm (+/- 10mm) made of 1.8mm thick G.I sheet pasted with 3M Diamond Grade or equivalent reflective sheet, Digital Printing with UV ink duly laminated after printing. Erected with G.I pipe having 3 inch (75 mm) dia, 8 SWG thick, filled with PCC 1:2:4, fixed in ground in PCC according to referred Type Plan having pole height 60 inches, including G.I channels, clamps, etc., complete in all respect.	each	1331	26765		
Note: Deduction from composite rate, if only Board is supplied with clamping device but without G.I pipe and fixing in ground.	each		17745		
23.2.3 Stop Board Providing and fixing Stop Board, octagonal shaped (refer Type Plan No. 67/R-II). Each side of octagonal is 30cm (+/- 10mm) made of 1.8mm thick G.I sheet pasted with 3M Diamond Grade or equivalent reflective sheet, Digital Printing with UV ink duly laminated after printing. Erected with G.I pipe having 3 inch (75 mm) dia, 8 SWG thick, filled with PCC 1:2:4, fixed in ground in PCC according to referred Type Plan having pole height 60 inches, including G.I channels, clamps, etc., complete in all respect.	each	1331	28745		
Note: Deduction from composite rate, if only Board is supplied with clamping device but without G.I pipe and fixing in ground.	each		17745		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
<p>23.2.4 Sighting Distance Board Providing and fixing Sighting Distance Board, round shaped (refer Type Plan No. 66/R-II). Diameter of round board is 76cm (+/- 10mm) made of 1.8mm thick G.I sheet pasted with 3M Diamond Grade or equivalent reflective sheet, Digital Printing with UV ink duly laminated after printing. Erected with G.I pipe having 3 inch (75 mm) dia, 8 SWG thick, filled with PCC 1:2:4, fixed in ground in PCC according to referred Type Plan having pole height 108 inches, including G.I channels, clamps, etc., complete in all respect.</p>	each	1331	41360		
<p>Note: Deduction from composite rate, if only Board is supplied with clamping device but without G.I pipe and fixing in ground.</p>	each		28160		
<p>23.2.5 Whistle Board Providing and fixing Whistle Board, square shaped (refer Type Plan No. 60/R-II), having size 76x76 cm (+/- 10mm) made of 1.8mm thick G.I sheet pasted with 3M Diamond Grade or equivalent reflective sheet, Digital Printing with UV ink duly laminated after printing. Erected with G.I pipe having 3 inch (75 mm) dia, 8 SWG thick, filled with PCC 1:2:4, fixed in ground in PCC according to referred Type Plan having pole height 108 inches, including G.I channels, clamps, etc., complete in all respect.</p>	each	1331	42460		
<p>Note: Deduction from composite rate, if only Board is supplied with clamping device but without G.I pipe and fixing in ground.</p>	each		28160		

Description	Unit	Rate (PKR)		Railway Specification	Remarks
		Labour	Composite		
1	2	3	4	5	6
<p>23.2.6 Warning Board for Un-manned Level Crossings Providing and fixing Warning Board, rectangular shaped (refer Type Plan No. 65/R-II), having size 106x45 cm (+/- 10mm) made of 1.8mm thick G.I sheet pasted with 3M Diamond Grade or equivalent reflective sheet, Digital Printing with UV ink duly laminated after printing. Erected with two G.I pipe having 3 inch (75 mm) dia, 8 SWG thick, filled with PCC 1:2:4, fixed in ground in PCC according to referred Type Plan having pole height 60 inches, including G.I channels, clamps, etc., complete in all respect.</p> <p>Note: Deduction from composite rate, if only Board is supplied with clamping device but without G.I pipe and fixing in ground.</p>	each	1331	42060		
	each		29960		
<p>23.3 Chequered Plate</p> <p>23.3.1 Providing and fixing of M.S Chequered plate including cutting, jointing, drilling, rivetting/welding, handling, assembling, and fixing, but excluding the cost of erection in position as per site condition complete in all respects.</p>	Kg	143	573		