

Brief details guiding the design of depot of Bangalore MRTS

1.1 SALIENT FEATURES OF ROLLING STOCK :

S.No.	Parameter	(East - West) LINE – 1	(North - South) LINE - 2
1	Vehicle dimensions		
	Length	DMC : 21050 mm, TC & MC : 20800 mm	DMC : 21050 mm, TC & MC : 20800 mm
	Width	2880mm	2880mm
	Height	3800mm	3800mm
2	Coach construction	Lightweight stainless steel body	Lightweight stainless steel body
3	Tare Weight	DMC (36T), TC (32T), MC (34T)	DMC (36T), TC (32T), MC (34T)
4	Axle load	15 Ton	15 Ton
5	Propulsion system	3 phase drive system with VVVF control	3 phase drive system with VVVF control
6	Type of traction supply	750 V third rail	750 V third rail

1.3 REQUIREMENT OF COACHES for E-W Corridor

(Line-1 Route Length: 17.39km)

Year	Head way	Cars	Rake requirement				No of Cars	Train Composition
			Bare	Traffic Reserve	R&M	Total Rakes		
2007	4	3	18	1	2	21	63	DMC-TC-DMC
2011	4	6	18	1	2	21	126	DMC-TC-DMC
2021	3	6	24	1	2	27	162	DMC-TC-MC-MC-TC-DMC

1.4 REQUIREMENT OF COACHES for N-S Corridor

(Line-2 Route Length: 14.20km)

Year	Head way	Cars	Rake requirement				No of Cars	Train Composition
			Bare	Traffic Reserve	R&M	Total Rakes		
2007	4	3	15	1	2	18	54	DMC-TC-DMC
2011	4	3	15	1	2	18	54	DMC-TC-DMC
2021	4	6	15	1	2	18	108	DMC-TC-MC-MC-TC-DMC

ANNEXURE-II

LIST OF BUILDINGS FOR BYAPPANAHALLY DEPOT- CUM WORKSHOP

S. No.	Name of Building	Size	Brief Function
1	Inspection Shed Associated sections Workshop Associated sections Sun shade roof	152.5 x 21m 152.5 x 8 m 152.5 x 42m 152.5 x 8 m 155 x 47m	Servicing of 162 cars for daily, 15 day & 45 day inspections. Rooms for carrying out the inspection activity Overhaul of 270 cars at 4 Lakhs & 8 Lakhs Km run. Rooms for carrying out the overhaul activity For stabling 10 rakes of 6 cars each, during daylight hours.
2.	DCOS Stores & Offices including Goods Platform with Ramp	42.5 x 42.5m	(i) Stocking of spares for regular & emergency requirement including consumable items. (ii) This store caters for the requirement of depot and workshop for rolling stock & other disciplines. (iii) To be provided with computerized inventory control. Loading/ Unloading of material received by road.
3.	Elect. Substation	25x22 m	To cater for normal and emergency power supply for depot, workshop, service and all other ancillary buildings, Essential power supply for essential loads and security light.
4.	ETU Shed cum Traction repair depot & E&M repair shop	80 x 30 m (partly double storey)	Stabling and routine maintenance of shunting engine, tower wagon etc. & Traction maintenance depot For maintenance of lifts / escalators and other General service works.
5.	Turn Table	20 m Dia	For reversing coaches, one coach at a time.
6.	Cycle & Scooter Stand	25 x 6 m	To park cycles and Scooter

S. No.	Name of Building	Size	Brief Function
7	Auto Coach washing plant & Washing Apron	90 x 8 m 135 x 6.5m	For automatic washing of coaches washing apron is for collection of dripping water and its proper drainage.
8.	Pit wheel lathe	60 x 12	For re-profiling of wheels upto 6 coaches Train length in situ :
9	Blow down plant	31 x 14m	For dirt blowing from the under frame
10.	P. Way Office, store & Workshop including Welding plant	80 x 20m	For Track maintenance of Bangalore ELRTS Corridor and depot. To weld rails for construction period only To stable track Tamping machine.
11.	Security office & Time Office Garages (4 Nos)	15 x 8m Approx 6 x 8m	For security personnel. For time Punching For parking vehicle jeep, truck etc.
12.	Check post (3 Numbers)	5 x 3	For security check of incoming / outgoing staff material and coaches.
13.	Watch tower (2 Nos.)	3.5x2.5	For security of the depot especially during nighttime.
14.	Depot control centre & Crew booking centre	25X20 (Single Story)	To control movement of trains in and out of the depot & for crew booking.
15.	O.H raw water Tank	1,00,000 Ltrs Capacity	Storage of water, capacity 1,00,000 litres each.
16.	Pump house Bore well	7.3x5.4 200 mm	Submersible type pump planned with 200-mm diameter bore well.
17.	Repair shops for S&T	40x20	For the AFC gates, Signaling and telecom equipment
18.	Work shop Manager Office	30x20m	Office of Depot in charge
19	ATP& ATO Room	4x5 m	To keep equipments of ATP/ATO.
20	Waste Water Treatment Plant	12x6m	For treating the discharge waters of the depot and remove the oil, acids etc. before discharging into the river, with U/G tank.
21.	Canteen	400 sqm	To cater staff of depot and workshop. Obligatory as per statutory requirements.
22.	Compressor room 2 nos	12 x 6m	To supply pneumatic air to workshop and servicing shed
23.	Diesel oil refueling point	3 x 3m	For refueling of diesel Shunter and other vehicles with under ground tank for diesel oil 2 m dia
24.	Traction Substation	66 x 36 m	To provide traction power (if required)

Note

- 1 Some of the ancillary buildings are not depicted on the layout map. This shall be suitably done at the detailed design stage incorporating the site topography, architectural nitty gritty and minor adjustment in sizes looking to the available land.
- 2 Some of the buildings like stabling shed, security office etc shall be pre-engineered structure. The decision in this regard may be taken at the detailed design stage.

ANNEXURE-III**MAJOR PLANT & MACHINERY FOR THE BYAPPANAHALLY DEPOT CUM WORKSHOP:**

Sl no.	Specification no.	Equipment
1	BD M&P 01	Turn table for one car
2	BD M&P 02	Under floor wheel lathe
3	BD M&P 03	Chip crusher and conveyor for lathe on pit.
4	BD M&P 04	Electric tractor for under floor wheel lathe
5	BD M&P 05	Compressor for Inspection shed & shop air supply
6	BD M&P 06	Rail car lifting system (3 car unit together)
7	BD M&P 07	Mobile lifting jacks-15T
8	BD M&P 08	Mobile lifting jacks 10T
9	BD M&P 09	Travelling overhead EOT crane for Inspection bay
10	BD M&P 10	Turntable for bogies
11	BD M&P 11	Jib Crane
12	BD M&P 12	Traveling overhead cranes for workshop bay
13	BD M&P 13	Other lifting devices
14	BD M&P 15	Mobile lifting table
15	BD M&P 16	Work lift platform
16	BD M&P 17	Car body stands
17	BD M&P 18	Accommodation bogie
18	BD M&P 19	Under frame blowing plant
19	BD M&P 20	Bogie cleaning plant
20	BD M&P 21	Cleaning booth for TM
21	BD M&P 22	Shot blast cleaner
22	BD M&P 23	Chemical cleaning tank.
23	BD M&P 24	Ultrasonic cleaning tank
24	BD M&P 25	Ultrasonic machine for cleaning electronic equipment

25	BD M&P 26	Transformer oil purification plant
26	BD M&P 27	Floor cleaning machine
27	BD M&P 28	Washing plant for EMU
28	BD M&P 29	Bogie wash plant
29	BD M&P 30	High-pressure washing pump.
30	BD M&P 31	N/A
31	BD M&P 32	Water de-mineralizing plant (Distillation plant)
32	BD M&P 33	Painting booth for separate parts
33	BD M&P 34	Induction heater
34	BD M&P 35	Vertical boring machine
35	BD M&P 36	Press for wheel fitting and removal
36	BD M&P 37	Surface wheel lathe
37	BD M&P 38	Axle journal turning and burnishing lathe
38	BD M&P 39	Bearing puller & press
39	BD M&P 40	Axle shaft inspection station
40	BD M&P 41	N/A
41	BD M&P 42	Storage racks
42	BD M&P 43	Vertical carousel storage system
43	BD M&P 44	Industrial furniture
44	BD M&P 45	Minor equipment and collective tools
45	BD M&P 46	EMU battery charger
46	BD M&P 47	Battery Charger (for road vehicles)
47	BD M&P 48	Welding equipment
48	BD M&P 49	Set of machine tools(one radial drilling machine, one universal milling machine, two slide lathes, one panel sawing machine, one guillotine shears, one cutting machine.
49	BD M&P 50	Electric and pneumatic tools
50	BD M&P 51	Measuring and testing equipment
51	BD M&P 52	Tool kits

52	BD M&P 53	N/A
53	BD M&P 54	Oven for Traction Motor drying
54	BD M&P 55	Mobile safety steps
55	BD M&P 56	Computer MMIS
56	BD M&P 57	Re-railing equipment
57	BD M&P 58	Electric bogie tractor
58	BD M&P 59	Fork lift tractor
59	BD M&P 60	Pallet trucks
60	BD M&P 61	Diesel Shunting Engine
61	BD M&P 62	Cherry picker/ Snorkel
62	BD M&P 63	Road vehicles (pickup van/ truck)
63	BD M&P 64	Double spindle press for bogie assembly / disassembly
64	BD M&P 65	Fire Engine
65	BD M&P 66	Simulator for train drivers
66	N/A	General Specification (Rolling Stock workshop equipment)

ANNEXURE-IV**LIST OF BUILDINGS FOR BAYAPANHALLI DEPOT- CUM WORKSHOP**

S. No.	Name of Building	Size	Brief Function
1	Car Shed Building	145 x 21m	Servicing of 108 cars for daily, 15 day & 45 day inspections.
	Unscheduled Workshop	145 x 21m	For the unscheduled attention required on a coach/ rake
	Sun shed roof	155 x 35m	For stabling 7 rakes of 6 cars each, during daylight hours.
2.	DCOS Stores & Offices	7 x 14m	Stocking of spares for regular & emergency requirement including consumable items. This store caters for the requirement of depot.
3.	Elect. Substation	20x20 m	To cater for normal and emergency power supply for depot and all other ancillary buildings, Essential power supply for essential loads and security light.
4	Cycle & Scooter Stand	15 x 6 m	To park cycles and Scooter
5	Coach washing plant	30 x 9 m	For automatic washing of coaches
6	& Washing Apron	145 x 6.5m	washing apron is for collection of dripping water and its proper drainage.
7	Work shop Manager Office	10x20m	Office of Depot in charge
8	Security office	5 x 5m	For security personnel.
	Time Office	15 x 8m	For time Punching
	Garages (4 Nos)	6 x 8m	For parking vehicle jeep, truck etc.
9	Check post (4 Numbers)	5 x 3	For security check of incoming / outgoing staff material and coaches.
10	Watch tower (2 Nos.)	3.5x2.5	For security of the depot especially during nighttime.
11	Depot control CENTRE	10X15 (Single Story)	To control movement of trains in and out of the depot & for crew booking.
12	O.H raw water Tank	50,000 Ltrs capacity	Storage of water, capacity 50,000 litres each.
13	Pump house Bore well	5mx 5m 200 mm	Submersible type pump planned with 200-mm diameter bore –well.
14	Waste Water	8x6m	For treating the discharge waters of the

S. No.	Name of Building	Size	Brief Function
	Treatment Plant		depot and remove the oil, acids etc. before discharging into the river, with U/G tank.
15	Canteen	15 x 10m	To cater for staff of depot. It is obligatory as per statutory requirements.
16	Compressor room	6 x 8m	To supply pneumatic air to unscheduled workshop and servicing shed
17	Shed for fire fighting gear with Under Ground Reservoir	15x10m 10m Dia. 7.4 x4.4 x 3.5m	For fire fighting
18	Traction Substation	66 x 36 m	To provide traction power (if required)

ANNEXURE-V**MAJOR PLANT & MACHINERY FOR THE YASHWANTPUR DEPOT:**

Sl no.	Spec no.	Equipment
1	YP WE 05	Compressor for shop air supply
2	YP WE 06	Synchronized pit jacks system for three car lifting.
3	YP WE 09	Travelling O/H crane Inspection shed
4	YP WE 10	Turntable for bogies
5	YP WE 11	Jib Crane
6	YP WE 12	Travelling O/H crane Workshop
7	YP WE 15	Mobile lifting table
8	YP WE 16	Work lift platform
9	YP WE 17	Car body stands
10	YP WE 27	Floor cleaning machine
11	YP WE 28	Automatic Washing plant for Metro cars.
12	YP WE 30	High-pressure washing pump for front and rear end cleaning of cars.
13	YP WE 32	Water de-mineralizing plant (Distillation plant)
14	YP WE 40	Axle UST inspection machine
15	YP WE 42	Storage racks
16	YP WE 44	Industrial furniture
17	YP WE 45	Minor equipment and collective tools
18	YP WE 46	EMU battery charger
19	YP WE 47	Battery Charger (for road vehicles)
20	YP WE 48	Welding equipments (Mobilewelding, oxyacetelene, fixed arc welding)
21	YP WE 50	Electric and pneumatic tools
22	YP WE 51	Measuring and testing equipment
23	YP WE 52	Tool kits
24	YP WE 55	Mobile safety steps
25	YP WE 56	Computer MMIS for the Shed
26	YP WE 57	Re-railing equipment and associated jack system etc
27	YP WE 58	Electric bogie tractor for pulling cars and bogies inside workshop
28	YP WE 59	Fork lift tractor
29	YP WE 60	Pallet trucks
30	YP WE 61	Diesel Shunting Engine
31	YP WE 63	Road vehicles (pickup van/ truck)