

दक्षिण पूर्व मध्य रेलवे  
SOUTH EAST CENTRAL RAILWAY

कार्यालय  
वरिष्ठ उपमहाप्रबंधक, बिलासपुर



Office of the  
Sr. Dy. General Manager, Bilaspur.  
Tel.No. 64006(Rly), 07752-414229

पत्र सं. No. WS/P.Way-NGP/18-19/800

दिनांक Dated: 12.06.2018

The Divisional Railway Manager,  
S.E.C. Railway,  
Nagpur.

**Sub: Work study on "Review of existing cadre strength of Track Maintainer category under SSE(P-Way) units of Engineering department in Nagpur Division."**

Ref.: i) This office letter No.WS/ P.Way-NGP/18-19/596 dated 01.05.2018.  
(ii) Sr. DPO/NGP office Letter No. NPB/559/2018 dated 29.05.2018.

The work study had been conducted to review the existing cadre strength of Track Maintainer category of SSE(P-Way) units of Engineering Department in Nagpur division and recommended to implement either of three recommendations: (1) 183 surplus vacant posts of Track Maintainers in view of existing work load or (2) to surrender of 204 surplus vacant posts of Track Maintainers in view of proposed outsourcing or (3) to surrender of 200 surplus vacant posts of Track Maintainers in view of Benchmarking norms.

However, in response to it, 192 posts of Track Maintainers have been surrendered from Engineering Department of Nagpur Division vide Sr.DPO/NGP's Office Order No. NPB/559/2018 dated 29.05.2018.

Therefore, the Work Study mentioned above is here by finalised and treated as closed.

This has approval of SDGM.

(S. N. Pattnaik)  
Asst. Work Study Officer  
For Sr. Deputy General Manager

Copy is forwarded to:-

- 1) The Executive Director, E&R (ME), Railway Board for kind information.
- 2) Secretary/SECR for kind information to GM.
- 3) PCE, CPO/ SECR/ BSP for kind information.
- 4) Sr. DEN(Co)/NGP, Sr.DPO/NGP for information and necessary action.

(S. N. Pattnaik) 12/6/18  
Asst. Work Study Officer  
For Sr. Deputy General Manager

Encl: 01 work study report.



# **SOUTH EAST CENTRAL RAILWAY**

## **WORK STUDY CELL**

*Work study report on*

**“Review of Cadre Strength  
Vis-à-vis  
Existing Work load of Track Maintainers  
under  
SSE(P. Way) Units  
in  
Nagpur Division”**

## **OVER S.E.C. RAILWAY**



**WORK STUDY CELL  
S. E C. RAILWAY  
Nagpur**

**STUDY NO.  
SEC/03/2018-19**

# **SOUTH EAST CENTRAL RAILWAY**

*Work study report on*

**“Review of Cadre Strength  
Vis-à-vis  
Existing Work load of Track Maintainers  
under  
SSE(P. Way) Units  
in  
Nagpur Division”**  
**OVER S.E.C. RAILWAY**

**GUIDED BY**

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**SR.DY. GENERAL MANAGER**

**LED BY**

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**ASST. WORK STUDY OFFICER**

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**WORK STUDY CELL  
S. E. C. RAILWAY BILASPUR**

**STUDY No.  
SEC/03/2018-19**

## **CONTENTS**

<b>Chapter</b>	<b>Description</b>	<b>Page No.</b>
-	Summary of Recommendations & Suggestion	4
I	Introduction	5-7
II	Observations	8-39
III	Critical analysis and Recommendation	40-46
IV	Financial Evaluation	47

## SUMMARY OF RECOMMENDATIONS & SUGGESTIONS

Rec. No.	Description	Para Reference
	<b><u>RECOMMENDATIONS:</u></b> Work Study team has adopted three Methods for assessment of requirement of Gang Strength (Track Maintainer) in Engineering (P. Way) department over Nagpur Division which are as under:	
1.	<b><u>First Method (In view of existing work load):</u></b> Considering the existing work load, it is recommended that as per details given in Para 3.2, the requirement of Track Maintainer comes to 4097 against sanction of 4280 staff. Thus 183 identified surplus vacant posts of Track Maintainer should be surrendered from Engineering Department of Nagpur Division.	3.7.1
2.	<b><u>Second Method (In view of proposed outsourcing):</u></b> After implementation of proposed outsourcing of selected activities as per details given in Para 3.3, 3.4, 204 vacant posts of Trackman are found surplus, should be surrendered from the sanctioned cadre of Trackman category of Engineering department of Nagpur Division.	3.7.2
3.	<b><u>Third Method (As per Benchmarking Norms ):</u></b> After implementation of <b>Benchmarking Norms</b> as per details given in Para 3.6, <b>200 vacant posts of Track Maintainer are found surplus and should be surrendered from Engineering Department(P.Way) of Nagpur Division.</b>	3.7.3
4.	<b><u>Conclusion:</u></b>  As the Productivity has acquired a new and broader meaning in the light of highly competitive economic environment, increasing educational levels and degradation of physical environment creating pressure on the limited available resources, a positive attitude has been applied in evolving the requirement of staff vis-à-vis quantum of work in total and followed a feasible solution to the administration as well as to the employees. To be relevant, the output dimension of the productivity equation needs to be stressed more than before, because improvement in the use of resources alone may not give the desired competitive advantage.  <i>Thus, on being summarised all the above facts and considering the feasibility of the report, either of above three recommendations may be implemented..</i>	3.7.4
5.	The vacant post of SSE/JE in Supervisors category, Artisan category, Trackman category should be filled up for better monitoring of contractual and departmental civil engineering works.	3.7.5
<b><u>Suggestions:</u></b>		
1.	Traffic Block is very crucial issue for maintenance of tracks; it was informed that due to lack of coordination between departments, it is very tough task to get the block approved. Coordination between departments needs to be increased for blocks as and when required.	3.7.6
2.	To Minimize the absenteeism of staff, all efforts such as motivation, interaction with the staff should be made.	3.7.7

## **CHAPTER - I**

### **1.0 Introduction:**

Civil Engineering infrastructure is the largest static infrastructure of Indian Railways comprising of track, bridges, land, etc. Civil engineering department of Indian Railways manages and maintains all these infrastructures.

The P. Way organization is a part of Civil Engineering department at divisional level, functions under the administrative control of Sr. DEN (Co). Officers having entrusted with a particular section comprising of sectional CPWIs/PWIs are in-charge of P. Way Units/depots and responsible for up-keeping of track. The track is maintained with the help of Trackman, Mate, Keyman & Artisan staff. The maintenance of track is a vital activity in the working of train in relation to safety & punctuality and it is duty of engineering department to keep up the standard of track using engineering parameters for the safe running of trains. In this way Engineering Department is the backbone of Railway system.

Permanent way maintenance is largely done by gangs consisting of Gangman under the supervision of a Gang-mate. The gang goes down its assigned section (gang beat), inspecting track and performing normal routine maintenance. A patrolman may be separately deputed to perform visual inspections along the length of a section of track by walking alongside it.

The schedule and track sections to be monitored by Gangman and patrolmen are specified in a Patrol Charts prepared by the Divisional Engineer. These charts also indicates when and where the drivers of trains running to schedule may expect to meet Gangman/Patrolmen and gangs carry Patrol Books in which they record the status of the track and any maintenance they perform on it.

The gang is equipped to deal with minor problems such as fixing small deviations in gauge or elevation of the rails, rearranging ballast, etc. If problems are discovered with the Permanent Way that cannot readily be fixed by the gang, the details are reported to the station master of one of the adjacent block stations, and temporary engineering speed restrictions are put in place for the track. Trains going through that section are then subject to caution orders issued by the stations at either end.

The Permanent Way Inspector (PWI) for a section has ultimate responsibility for the maintenance of the permanent way under his jurisdiction. The PWI and his staff undertake separate regular inspection tours of the various lines, often in a trolley. In the past manually pushed trolleys were used quite often, but their use is declining now.

### **1.1 Present Scenario:**

In present days of modernization, the traditional method of performing P. Way activities related to up-keepings of Railway track has been upgraded by improvising the P. Way Assets (such as introduction of PSC Sleeper, Gauge conversion of tracks, utilization of modern Tools & plants etc.) and by adopting the latest technology/Work culture (such as introduction of Mechanized Maintenance, implementing Outsourcing, elimination of redundant activities etc.) as the Modernization in railway system has become necessity of today so as to haul heavier and longer trains at faster speeds safely and conveniently to achieve better productivity and render better consumer service to rail users. Modernization of track involves use of heavier track structure, long welded rails, modern mechanized methods of track maintenance and quick renewals of track structure etc.



## 1.2 **Terms of Reference:**

The following terms of reference were adopted for conducting the study:-

- I. Review of staff strength of Trackman Category vis-à-vis existing workload.
- II. Higher Benchmarking (B/Marking of P.Way/NGP Div.-1.98) than IR Average (1.41) (as per Benchmarking report, Dec'2017)
- III. Outsourcing activities.
- IV. Identifying redundant/unproductive activities to eliminate wastages.
- V. As suggested by Railway Board to conduct work study of P-Way staff after introduction of small & other track machines.
- VI. Suggesting ways and means to improve the system economically in view of modernization and system improvement.

## 1.3 **Methodology Adopted:**

The work study team conducted a review of need based requirement of Engg. P. Way staff covering all P. Way Units/Depots of Nagpur Division having total Sanctioned strength is 4280, Actual strength is 3745 and vacancy is 535.

The work-study team has adopted the following technique to complete the study

- Verification of Data provided by Engineering Branch in detail with reference to quantum of work load.
- Direct observations regarding working of staff and discussion in details with officer/ Supervisor /Staff.
- Assessment of staff in view of requirement and utilization of existing Manpower in other activities.
- Critical analysis of the data collected.
- Applying Benchmarking norms.
- Need base requirement of staff in present scenario.
- Formulating financial implication involved in saving as a result of surplus staff.

## 1.4 **List of SSE/ P. Way Units existing in Nagpur Division:**

S#	Name of P-Way Units
1	SSE(P-Way)/KP
2	SSE(P-Way)/NAB
3	SSE(PWay)/TAR
4	SSE(P-Way)/CAF
5	SSE(P-Way)/BRD
6	SSE(P-Way)/HBG
7	SSE(P-Way)/TMR
8	SSE(P-Way)/SONR
9	SSE(P-Way)/ G
10	SSE(P-Way)/ CWA
11	SSE(P-Way)/AGN
12	SSE(P-Way)/SEY
13	SSE(P-Way)/DGG
14	SSE(P-Way)/NIR

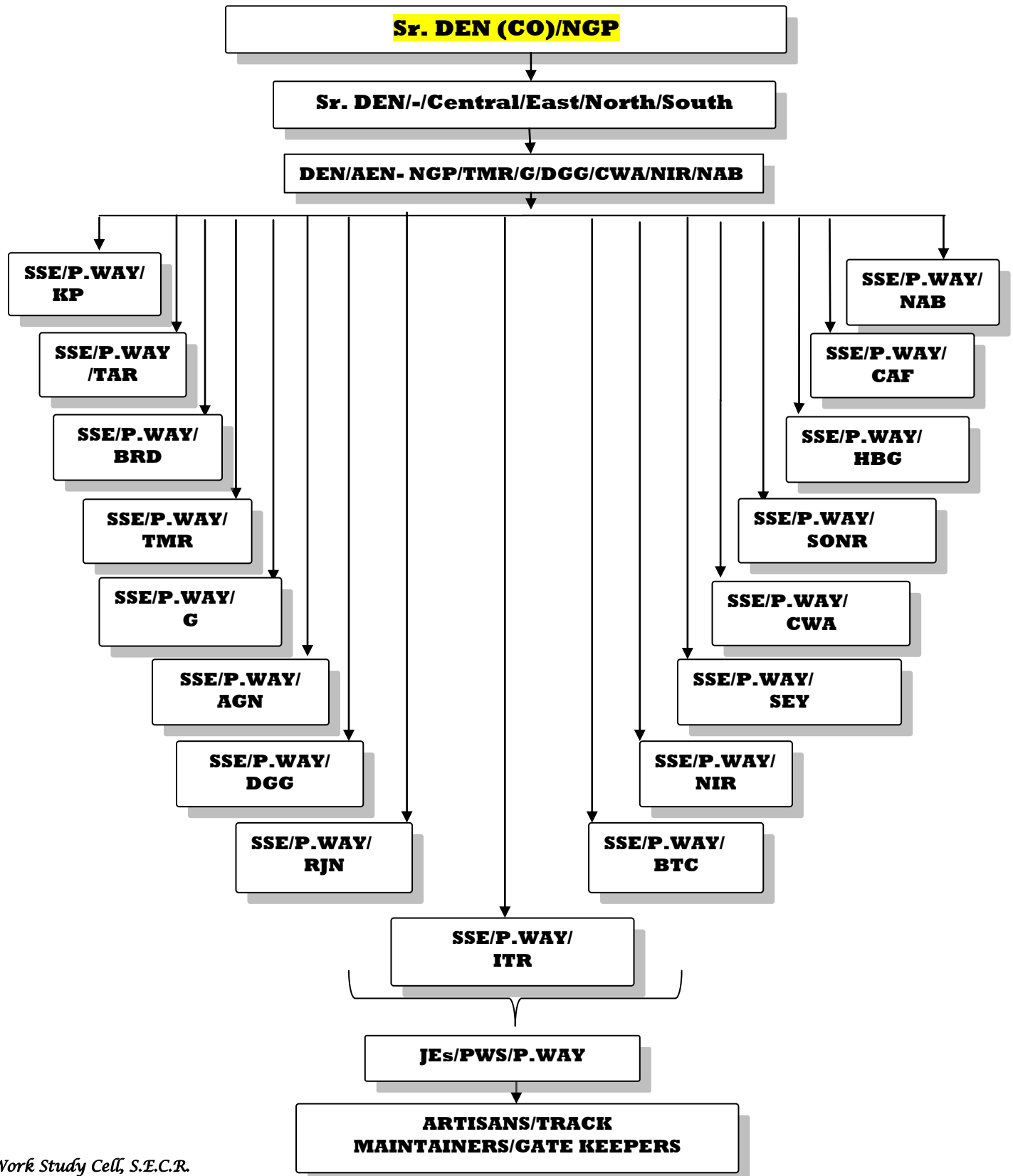
15 SSE(P-Way)/RJN

16 SSE(P-Way)/BTC

17 SSE(P-Way)/ITR

### 1.5 Organisational Chart of Engineering Department (P.WAY) at Divisional level :

P. Way organization is a vital constitute of Engineering department. At divisional level, the P. Way Organization functions under the administrative control of Sr. DEN (Co)/NGP. Officers having entrusted with a particular section comprising of sectional CPWIs/PWIs/PWSs (P. Way) are in-charge of P. Way Units and they are mainly responsible for up-keeping of Railway T rack and associated Structures.





## **CHAPTER-II**

### **2.0 OBSERVATIONS :**

#### **Consolidated Staff strength of Track Maintainer Category:**

The Grade wise Cadre strength of Trackman Category in various SSE (P. Way) Units of Nagpur Division as furnished vide Sr. DPO/NGP Office (By Fax) dated 10.04.2018 & as per data provided by Sr. DEN/Co./Office/NGP vide letter no. E. General /Works Study/ 2018 dated 25.04.2018 is as under:

<b>2.1 Grade wise Cadre Strength of Trackman Category:</b>																
S#	Unit	Track Maintainer-I			Track Maintainer-II			Track Maintainer-III			Track Maintainer-IV			Total		
		S	A	V	S	A	V	S	A	V	S	A	V	S	A	V
1	SSE/P.WAY/KP	20	9	11	40	14	26	75	64	11	196	250	-54	331	337	-6
2	SSE/P.WAY/TAR	12	9	3	24	10	14	44	22	22	111	156	-45	191	197	-6
3	SSE/P.WAY/BRD	14	9	5	26	6	20	48	48	0	116	144	-28	204	207	-3
4	SSE/P.WAY/TMR	24	17	7	46	28	18	85	76	9	216	217	-1	371	338	33
5	SSE/P.WAY/G	18	12	6	34	32	2	63	60	3	156	181	-25	271	285	-14
6	SSE/P.WAY/AGN	16	12	4	32	13	19	58	54	4	150	148	2	256	227	29
7	SSE/P.WAY/DGG	16	16	0	34	9	25	62	44	18	153	188	-35	265	257	8
8	SSE/P.WAY/RJN	14	13	1	28	5	23	52	51	1	135	170	-35	229	239	-10
9	SSE/P.WAY/NAB	16	16	0	32	13	19	59	37	22	159	210	-51	266	276	-10
10	SSE/P.WAY/CAF	12	8	4	24	16	8	46	20	26	121	170	-49	203	214	-11
11	SSE/P.WAY/ITR	16	14	2	32	15	17	59	53	6	147	139	8	254	221	33
12	SSE/P.WAY/SONR	14	11	3	26	16	10	50	34	16	120	78	42	210	139	71
13	SSE/P.WAY/CWA	14	14	0	28	28	0	53	36	17	130	71	59	225	149	76
14	SSE/P.WAY/SEY	14	13	1	28	16	12	52	34	18	126	82	44	220	145	75
15	SSE/P.WAY/NIR	16	15	1	32	21	11	61	53	8	150	64	86	259	153	106
16	SSE/P.WAY/BTC	14	11	3	30	14	16	53	29	24	145	149	-4	242	203	39
17	SSE/P.WAY/HBG	14	11	3	30	14	16	54	18	36	134	69	65	232	112	120
18	Works unit	4	0	4	10	4	6	9	4	5	28	26	2	51	34	17
19	Lien Holder														46	
<b>Total</b>		<b>268</b>	<b>210</b>	<b>58</b>	<b>536</b>	<b>274</b>	<b>262</b>	<b>983</b>	<b>737</b>	<b>246</b>	<b>2493</b>	<b>2512</b>	<b>-19</b>	<b>4280</b>	<b>3779</b>	<b>501</b>

#### **\*Details of DTM/Gangs:-**

- Total No. of DTM + Gang over NGP Div. = 136 DTM
- Total No. of of Store Gang = 17 excluding DTM.
- The jurisdiction of one **DTM** for **D/L** is 6-7 Km (Up line-06 + Dn line-06), i.e 12-13 km.
- The jurisdiction of one **Gang** for **S/L** is 6-7 Km.
- Hence, 02 Gang (existing in S/L section) may be treated as one DTM for assessment of total no. of DTM over NGP Div.

**Two DTMs (Direct Track Maintenance) existing in different Sections have been taken up for sample study from Nagpur division are as under;**

- **DTM/13/BTL under (SSE/P. Way/DGG),**
- **DTM/25/GJ under (SSE/P. Way/G)**

**A. DTM/13/BTL of DGG P.Way Unit existing on main line Durg to Nagpur section with one station yard (BTL),**

**B. DTM/25/GJ of Gondia unit existing on main line Durg to Nagpur section with one station yard (GJ)**

## 2.2 Consolidated Cadre Strength of two P.Way Units selected for the Study:

The consolidated Cadre Strength of concerned P. Way Units [P.Way Unit/DGG & P.Way Unit/G] is as under:

2.2.1	Cadre Strength of P. Way Unit/DGG:				
UNIT → <b>SSE/PW/DGG</b>			BILL UNIT: → <b>5104 &amp; 5117</b>		
S#	Category/Designation	PB + GP	Sanc.	Actual	Vacancy
1	Sr.SE/P.Way	9300-34800 + 4600	9	5	4
2	Junior Engineer (P.Way)	9300-34800 + 4200	6	6	0
3	Chief Office Superintendant	9300-34800 + 4600	0	0	0
4	Office Supdt	9300-34800 + 4200	2	1	1
5	Sr. Clerk	5200-20200 + 2800	0	1	-1
6	Jr. Clerk	5200-20200 + 1900	0	0	0
		<b>TOTAL</b>	<b>17</b>	<b>13*</b>	<b>4</b>
<b>*Male-12, Female-01</b>					
S#	Category/Designation	PB + GP	Sanc.	Actual	Vacancy
1	Technician MCM (EBS)	9300-34800 + 4200	1	2	-1
2	Technician MCM (ECR)	9300-34800 + 4200	0	1	-1
3	Technician MCM (Welder)	9300-34800 + 4200	0	0	0
4	Technician MCM (Painter)	9300-34800 + 4200	0	0	0
5	Technician MCM (Hamr.Man)	9300-34800 + 4200	0	0	0
6	Technician Gr. I (EBS)	5200-20200 + 2800	1	1	0
7	Technician Gr. I (ECR)	5200-20200 + 2800	1	0	1
8	Technician Gr. I (Welder)	5200-20200 + 2800	2	2	0
9	Technician Gr. I (Painter)	5200-20200 + 2800	0	0	0
10	Technician Gr. I (Hammer Man)	5200-20200 + 2800	0	0	0
11	Technician Gr. II (EBS)	5200-20200 + 2400	0	0	0
12	Technician Gr. II (ECR)	5200-20200 + 2400	0	0	0
13	Technician Gr. II (Welder)	5200-20200 + 2400	0	2	-2
14	Technician Gr. II (Painter)	5200-20200 + 2400	1	0	1
15	Technician Gr. II (Hammer Man)	5200-20200 + 2400	0	0	0
16	Technician Gr. III (EBS)	5200-20200 + 1900	0	0	0
17	Technician Gr. III (ECR)	5200-20200 + 1900	0	0	0
18	Technician Gr. III (Welder)	5200-20200 + 1900	2	0	1
19	Technician Gr. III (Painter)	5200-20200 + 1900	0	0	0
20	Technician Gr. III (Hamm.Man)	5200-20200 + 1900	0	0	0
21	Track Maintainer I (Mate)	5200-20200 + 1900	16	8	1
22	Track Maintainer I (Keyman)	5200-20200 + 1900		7	
23	Track Maintainer (Gate Keeper)	5200-20200 + 1900		0	
24	Track Maintainer I (Trolleyman)	5200-20200 + 1900		0	
25	Track Maintainer II (Mate)	5200-20200 + 2400	34	0	29
26	Track Maintainer II (Keyman)	5200-20200 + 2400		0	
27	Track Maintainer II (Gt/ Keeper)	5200-20200 + 2400		1	
28	Track Maintainer II (Troll.yman)	5200-20200 + 2400		1	
29	Track Maintainer II	5200-20200 + 2400		3	
30	Track Maintainer III	5200-20200 + 1900	62	39	23
31	Track Maintainer IV	5200-20200 + 1800	153	185	-32
32	Helper Grade I	5200-20200 + 1900	5	1	3
33	Helper Grade II	5200-20200 + 1800	0	3	-3
34	Chowkidar	5200-20200 + 1800	3	3	0
35	Safaiwala	5200-20200 + 1800	0	0	0
<b>TOTAL</b>			<b>281</b>	<b>259</b>	<b>18</b>
<b>GRAND TOTAL</b>			<b>298</b>	<b>272</b>	<b>22</b>
No. of staff came from N/G=13 & No. of Medical De categorised = 3					

Total no. of staff including came from N/G staff= 288					
<b>2.2.2</b>	<b>Cadre Strength of P. Way Unit/Gondia:</b>				
<b>UNIT →SSE/P.Way/GONDIA</b>			<b>BILL UNIT: →5104 &amp; 5117</b>		
<b>S#</b>	<b>Category/Designation</b>	<b>PB + GP</b>	<b>Sanc.</b>	<b>Actual</b>	<b>Vacancy</b>
1	Sr.SE/P.Way	9300-34800 + 4600	10	08	02
2	Junior Engineer (P.Way)	9300-34800 + 4200	05	04	01
3	Chief Office Superintendant	9300-34800 + 4600	01	00	01
4	Office Supdt	9300-34800 + 4200	01	00	01
5	Sr. Clerk	5200-20200 + 2800	00	00	00
6	Jr. Clerk	5200-20200 + 1900	00	02	-02
	<b>TOTAL</b>		<b>17</b>	<b>14</b>	<b>03</b>
	<b>Category/Designation</b>	<b>PB + GP</b>	<b>Sanc.</b>	<b>Actual</b>	<b>Vacancy</b>
1	Technician MCM (EBS)	9300-34800 + 4200	00	01	-01
2	Technician MCM (ECR)	9300-34800 + 4200	00	00	00
3	Technician MCM (Welder)	9300-34800 + 4200	01	00	01
4	Technician MCM (Painter)	9300-34800 + 4200	00	01	-01
5	Technician MCM (Hamr.Man)	9300-34800 + 4200	01	01	01
6	Technician Gr. I (EBS)	5200-20200 + 2800	01	00	01
7	Technician Gr. I (ECR)	5200-20200 + 2800	01	00	00
8	Technician Gr. I (Welder)	5200-20200 + 2800	02	01	02
9	Technician Gr. I (Painter)	5200-20200 + 2800	01	00	01
10	Technician Gr. I (Hammer Man)	5200-20200 + 2800	01	00	01
11	Technician Gr. II (EBS)	5200-20200 + 2400	01	00	01
12	Technician Gr. II (ECR)	5200-20200 + 2400	00	00	00
13	Technician Gr. II (Welder)	5200-20200 + 2400	01	02	-01
14	Technician Gr. II (Painter)	5200-20200 + 2400	00	00	00
15	Technician Gr. II (Hammer Man)	5200-20200 + 2400	00	00	00
16	Technician Gr. III (EBS)	5200-20200 + 1900	00	00	00
17	Technician Gr. III (ECR)	5200-20200 + 1900	00	00	00
18	Technician Gr. III (Welder)	5200-20200 + 1900	01	00	01
19	Technician Gr. III (Painter)	5200-20200 + 1900	00	00	00
20	Technician Gr. III (Hamm.Man)	5200-20200 + 1900	00	01	-01
21	Track Maintainer I (Mate)	5200-20200 + 1900	18	07	06
22	Track Maintainer I (Keyman)	5200-20200 + 1900		05	
23	Track Maintainer (Gate Keeper)	5200-20200 + 1900		00	
24	Track Maintainer I (Trolleyman)	5200-20200 + 1900		00	
25	Track Maintainer II (Mate)	5200-20200 + 2400	34	01	07
26	Track Maintainer II (Keyman)	5200-20200 + 2400		05	
27	Track Maintainer II (Gt/ Keeper)	5200-20200 + 2400		01	
28	Track Maintainer II (Troll.yman)	5200-20200 + 2400		06	
29	Track Maintainer II	5200-20200 + 2400		14	
30	Track Maintainer III	5200-20200 + 1900	63	58	05
31	Track Maintainer IV	5200-20200 + 1800	156	160 12	-16
32	Helper Grade I	5200-20200 + 1900	05	01	04
33	Helper Grade II	5200-20200 + 1800	01	04	-03
34	Chowkidar	5200-20200 + 1800	01	01	00
35	Safaiwala	5200-20200 + 1800	00	00	00
<b>TOTAL</b>			<b>289</b>	<b>281</b>	<b>08</b>
<b>GRAND TOTAL</b>			<b>306</b>	<b>295</b>	<b>11</b>

2.3		Details of Long /unauthorised Absentees for year 2017-18 of SSE/P.Way/DGG:												
S#	DTM Nos.	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
1	DTM-7	-	-	-	-	-	-	-	-	-	1	-	1	2
2	DTM-8	-	-	-	-	-	-	-	-	-	-	-	-	-
3	DTM-9	-	1	-	1	1	2	2	2	1	1	1	1	13
4	DTM-10	1	-	2	2	1	1	1	1	1	1	2	2	15
5	DTM-11	-	-	-	-	-	-	-	-	-	-	-	-	-
6	DTM-12	1	1	1	2	2	1	-	-	-	-	-	-	8
7	DTM-13	1	1	1	1	1	1	1	2	2	2	2	2	17
8	MP	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Others	1	1	-	-	-	1	2	1	1	1	-	-	8
Total		04	04	04	06	05	06	06	06	05	06	05	06	63

2.4	Details of Long /unauthorised Absentees for year 2017-18 of SSE/P.Way/G:			
S#	DTM No.	P.F. No.	Desgn.	Action Taken (if Any)
1	DTM-21	849883	TM-IV	D&A Inquiry under Process
2	DTM-23	850882	TM-IV	
3	DTM-21	14AE0252	TM-IV	
4	DTM-26	724974	TM-IV	
5	DTM-26	849674	TM-IV	
6	DTM-23	39529800673	TM-IV	
7	DTM-22	851241	TM-IV	
8	DTM-25	721352	TM-IV	

2.5		LIST OF LEVEL CROSSING IN NAGPUR DIVISION AS ON 01.04.2018:							
S#.	Route	Gauge	LC No	Location	E= Engg, T=Traffic	Class	M, U/M	Section Name	SSE(PW) Incharge
1	A	BG	448	867/29-31	E	Spl	M	Durg-Nagpur	RJN
2	A	BG	449	869/7-9	E	Spl	M	Durg-Nagpur	RJN
3	A	BG	450	873/7-9	T	Spl	M	Durg-Nagpur	RJN
4	A	BG	451	877/17-19	E	B1	M	Durg-Nagpur	RJN
5	A	BG	453	880/13-15	E	A	M	Durg-Nagpur	RJN
6	A	BG	454	882/0-1	T	A	M	Durg-Nagpur	RJN
7	A	BG	459	895/39-41	T	A	M	Durg-Nagpur	RJN
8	A	BG	460	896/39-41	T	A	M	Durg-Nagpur	RJN
9	A	BG	461	898/7-9	E	Spl	M	Durg-Nagpur	RJN
10	A	BG	463	903/29-31	E	C	M	Durg-Nagpur	RJN
11	A	BG	464	905/21-23	E	A	M	Durg-Nagpur	RJN
12	A	BG	465	908/3-5	E	C	M	Durg-Nagpur	DGG
13	A	BG	466	909/13-15	E	C	M	Durg-Nagpur	DGG
14	A	BG	467	911/5-7	E	C	M	Durg-Nagpur	DGG
15	A	BG	468	912/3-5	E	B2	M	Durg-Nagpur	DGG
16	A	BG	469	915/19-21	T	C	M	Durg-Nagpur	DGG
17	A	BG	472	922/25-27	E	C	M	Durg-Nagpur	DGG
18	A	BG	473	925/7-9	E	C	M	Durg-Nagpur	DGG
19	A	BG	474	928/25-27	T	Spl	M	Durg-Nagpur	DGG
20	A	BG	476	932/21-23	E	B2	M	Durg-Nagpur	DGG
21	A	BG	477	933/23-25	E	B1	M	Durg-Nagpur	DGG

22	A	BG	478	938/17-19	E	A	M	Durg-Nagpur	DGG
23	A	BG	479	943/7-9	E	Spl	M	Durg-Nagpur	DGG
24	A	BG	480	944/27-29	T	C	M	Durg-Nagpur	DGG
25	A	BG	481	948/13-15	E	C	M	Durg-Nagpur	AGN
26	A	BG	482	952/13-15	T	Spl	M	Durg-Nagpur	AGN
27	A	BG	484	957/17-19	E	C	M	Durg-Nagpur	AGN
28	A	BG	485	959/19-21	E	C	M	Durg-Nagpur	AGN
29	A	BG	486	961/29-31	E	C	M	Durg-Nagpur	AGN
30	A	BG	487	963/37-39	T	C	M	Durg-Nagpur	AGN
31	A	BG	488	964/21-23	E	C	M	Durg-Nagpur	AGN
32	A	BG	489	966/15-17	E	C	M	Durg-Nagpur	AGN
33	A	BG	490	966/35-37	E	C	M	Durg-Nagpur	AGN
34	A	BG	491	968/13-15	E	C	M	Durg-Nagpur	AGN
35	A	BG	492	970/17-19	E	C	M	Durg-Nagpur	AGN
36	A	BG	493	974/7-9	E	Spl	M	Durg-Nagpur	AGN
37	A	BG	494	975/11-13	E	C	M	Durg-Nagpur	AGN
38	A	BG	496	977/27-29	T	Spl	M	Durg-Nagpur	AGN
39	A	BG	497	979/5-7	T	C	M	Durg-Nagpur	AGN
40	A	BG	498	980/23-25	E	Spl	M	Durg-Nagpur	AGN
41	A	BG	499	982/19-21	E	C	M	Durg-Nagpur	AGN
42	A	BG	500	983/25-27	E	C	M	Durg-Nagpur	AGN
43	A	BG	501	986/9-11	E	A	M	Durg-Nagpur	AGN
44	A	BG	503	990/3-5	E	B2	M	Durg-Nagpur	G
45	A	BG	504	991/11-13	E	C	M	Durg-Nagpur	G
46	A	BG	505	994/27-29	E	Spl	M	Durg-Nagpur	G
47	A	BG	506	998/31-33	E	Spl	M	Durg-Nagpur	G
48	A	BG	507	1002/5-7	T	Spl	M	Durg-Nagpur	G
49	A	BG	508	1003/3-5	E	Spl	M	Durg-Nagpur	G
50	A	BG	509	1004/9-11	E	A	M	Durg-Nagpur	G
51	A	BG	510	1005/9-11	E	A	M	Durg-Nagpur	G
52	A	BG	511	1008/21-23	E	A	M	Durg-Nagpur	G
53	A	BG	512	1010/13-15	E	A	M	Durg-Nagpur	G
54	A	BG	514	1015/31-33	T	B1	M	Durg-Nagpur	G
55	A	BG	515	1017/27-29	E	A	M	Durg-Nagpur	G
56	A	BG	517	1022/1-3	E	A	M	Durg-Nagpur	G
57	A	BG	518	1024/3-5	T	Spl	M	Durg-Nagpur	G
58	A	BG	519	1025/23-25	E	C	M	Durg-Nagpur	TMR
59	A	BG	520	1028/3-5	E	Spl	M	Durg-Nagpur	TMR
60	A	BG	521	1029/27-29	T	Spl	M	Durg-Nagpur	TMR
61	A	BG	522	1031/9-11	T	B2	M	Durg-Nagpur	TMR
62	A	BG	523	1032/15-17	E	B1	M	Durg-Nagpur	TMR
63	A	BG	524	1034/1	E	C	M	Durg-Nagpur	TMR
64	A	BG	525	1036/11-13	E	B1	M	Durg-Nagpur	TMR
65	A	BG	526	1038/15-17	E	A	M	Durg-Nagpur	TMR
66	A	BG	527	1041/3-5	E	B1	M	Durg-Nagpur	TMR
67	A	BG	530	1044/11-13	E	A	M	Durg-Nagpur	TMR
68	A	BG	531	1047/27-29	E	Spl	M	Durg-Nagpur	TMR
69	A	BG	532	1050/7-9	T	Spl	M	Durg-Nagpur	TMR
70	A	BG	533	1051/25-27	T	C	M	Durg-Nagpur	TMR
71	A	BG	534	1053/29-31	E	B1	M	Durg-Nagpur	BRD
72	A	BG	535	1056/27-29	E	A	M	Durg-Nagpur	BRD
73	A	BG	536	1060/3-5	T	B1	M	Durg-Nagpur	BRD
74	A	BG	537	1063/13-15	E	B1	M	Durg-Nagpur	BRD
75	A	BG	540	1068/37-39	T	A	M	Durg-Nagpur	BRD

76	A	BG	542	1073/21-23	E	Spl	M	Durg-Nagpur	BRD
77	A	BG	543	1076/13-15	E	C	M	Durg-Nagpur	BRD
78	A	BG	544	1079/9-11	T	Spl	M	Durg-Nagpur	TAR
79	A	BG	548	1088/5-7	T	Spl	M	Durg-Nagpur	TAR
80	A	BG	551	1093/25-27	T	Spl	M	Durg-Nagpur	TAR
81	A	BG	552	1095/5-7	E	C	M	Durg-Nagpur	TAR
82	A	BG	554	1098/33-35	T	Spl	M	Durg-Nagpur	TAR
83	A	BG	556	1102/21-23	E	A	M	Durg-Nagpur	TAR
84	A	BG	557	1105/11-13	T	C	M	Durg-Nagpur	TAR
85	A	BG	558	1106/25-27	T	C	M	Durg-Nagpur	TAR
86	A	BG	559	1111/11-13	T	Spl	M	Durg-Nagpur	KP
87	A	BG	560	1112/27-29	T	C	M	Durg-Nagpur	KP
88	A	BG	561	1112/22-20	T	Spl	M	Durg-Nagpur	KP
89	A	BG	563	1115/11-13	E	Spl	M	Durg-Nagpur	KP
90	A	BG	564	1116/31-33	T	Spl	M	Durg-Nagpur	KP
91	A	BG	565	1118/20-22	E	C	M	Durg-Nagpur	KP
92	A	BG	566	1121/19-21	E	C	M	Durg-Nagpur	KP
93	A	BG	567	1123/9-11	T	Spl	M	Durg-Nagpur	KP
94	A	BG	568	1125/6-4	T	Spl	M	Durg-Nagpur	KP
95	A	BG	569	1126/28-30	E	Spl	M	Durg-Nagpur	KP
96	A	BG	570	1128/6-8	E	Spl	M	Durg-Nagpur	KP
97	D	BG	571	1128/19-21	E	Spl	M	Kalumna-Itwari-Nagpur	KP
98	D	BG	572	1128/33-35	E	Spl	M	Kalumna-Itwari-Nagpur	KP
99	E	BG	GCF-1	1003/6-7	E	C	M	Gondia-Chanda Fort	NAB
100	E	BG	GCF-2	1004/3-4	E	C	M	Gondia-Chanda Fort	NAB
101	E	BG	GCF-4	1007/8-9	E	C	M	Gondia-Chanda Fort	NAB
102	E	BG	GCF-7	1010/15	E	C	M	Gondia-Chanda Fort	NAB
103	E	BG	GCF-12	1016/7-8	T	C	M	Gondia-Chanda Fort	NAB
104	E	BG	GCF-15	1023/8-9	E	C	M	Gondia-Chanda Fort	NAB
105	E	BG	GCF-19	1032/15-16	E	C	M	Gondia-Chanda Fort	NAB
106	E	BG	GCF-20	1035/3-4	E	C	M	Gondia-Chanda Fort	NAB
107	E	BG	GCF-27	1048/14	T	Spl	M	Gondia-Chanda Fort	NAB
108	E	BG	GCF-28	1050/3-4	E	C	M	Gondia-Chanda Fort	NAB
109	E	BG	GCF-32	1056/3-4	E	C	M	Gondia-Chanda Fort	NAB
110	E	BG	GCF-33	1058/10-11	E	C	M	Gondia-Chanda Fort	NAB
111	E	BG	GCF-40	1069/3-4	T	C	M	Gondia-Chanda Fort	NAB
112	E	BG	GCF-44	1075/5-6	E	C	M	Gondia-Chanda Fort	NAB
113	E	BG	GCF-46	1080/3-4	E	C	M	Gondia-Chanda Fort	NAB
114	E	BG	GCF-47	1081/4-5	T	C	M	Gondia-Chanda Fort	NAB
115	E	BG	GCF-48	1082/3-4	E	C	M	Gondia-Chanda Fort	NAB
116	E	BG	GCF-51	1087/2-3	E	C	M	Gondia-Chanda Fort	NAB
117	E	BG	GCF-52	1088/9-10	E	C	M	Gondia-Chanda Fort	NAB
118	E	BG	GCF-60	1106/4-5	E	C	M	Gondia-Chanda Fort	NAB
119	E	BG	GCF-63	1113/12-13	E	C	M	Gondia-Chanda Fort	NAB
120	E	BG	GCF-64	1116/6-7	T	C	M	Gondia-Chanda Fort	NAB
121	E	BG	GCF-71	1125/9-10	E	C	M	Gondia-Chanda Fort	NAB
122	E	BG	GCF-72	1126/11-12	E	C	M	Gondia-Chanda Fort	NAB
123	E	BG	GCF-74	1129/6-7	E	C	M	Gondia-Chanda Fort	NAB
124	E	BG	GCF-78	1133/14-15	T	C	M	Gondia-Chanda Fort	NAB
125	E	BG	GCF-88	1147/13-14	E	C	M	Gondia-Chanda Fort	CAF
126	E	BG	GCF-89	1149/10-11	T	C	M	Gondia-Chanda Fort	CAF
127	E	BG	GCF-97	1161/5-6	T	C	M	Gondia-Chanda Fort	CAF
128	E	BG	GCF-104	1169/14-15	T	C	M	Gondia-Chanda Fort	CAF



129	E	BG	GCF-112	1182/9	T	C	M	Gondia-Chanda Fort	CAF
130	E	BG	GCF-117	1189/6-7	E	C	M	Gondia-Chanda Fort	CAF
131	E	BG	GCF-121	1195/11	E	C	M	Gondia-Chanda Fort	CAF
132	E	BG	GCF-123	1199/6-7	T	B2	M	Gondia-Chanda Fort	CAF
133	E	BG	GCF-125	1206/13	E	C	M	Gondia-Chanda Fort	CAF
134	E	BG	GCF-134	1226/5-6	E	C	M	Gondia-Chanda Fort	CAF
135	E	BG	GCF-143	1240/13-14	T	A	M	Gondia-Chanda Fort	CAF
136	E	BG	TT-2	1053/7	E	C	M	Tumsar-Tirodi	TMR
137	E	BG	TT-4	1055/2-3	E	A	M	Tumsar-Tirodi	TMR
138	E	BG	TT-5	1055/9-10	E	A	M	Tumsar-Tirodi	TMR
139	E	BG	TT-7	1057/1	E	C	M	Tumsar-Tirodi	TMR
140	E	BG	TT-9	1060/13-14	E	B2	M	Tumsar-Tirodi	TMR
141	E	BG	TT-11	1063/5-6	E	C	M	Tumsar-Tirodi	TMR
142	E	BG	TT-20	1073/4	T	C	M	Tumsar-Tirodi	TMR
143	E	BG	TT-23	1075/3	E	C	M	Tumsar-Tirodi	TMR
144	E	BG	TT-26	1077/12	T	C	M	Tumsar-Tirodi	TMR
145	E	BG	TT-33	1085/12-13	E	C	M	Tumsar-Tirodi	TMR
146	E	BG	KR-1	1112/10	T	C	M	Kanhan-Ramtek	KP
147	E	BG	KR-2	1113/1-2	E	C	M	Kanhan-Ramtek	KP
148	E	BG	KR-3	1114/2-3	E	C	M	Kanhan-Ramtek	KP
149	E	BG	KR-4	1115/3-4	E	C	M	Kanhan-Ramtek	KP
150	E	BG	KR-6	1121/10-11	E	C	M	Kanhan-Ramtek	KP
151	E	BG	KR-6A	1123/4-5	T	C	M	Kanhan-Ramtek	KP
152	E	BG	KR-7	1125/11-12	E	C	M	Kanhan-Ramtek	KP
153	E	BG	KR-8	1129/5-6	E	C	M	Kanhan-Ramtek	KP
154	E	BG	KR-11	1133/12	E	C	M	Kanhan-Ramtek	KP
155	E	BG	KR-12	1134/6	E	C	M	Kanhan-Ramtek	KP
156	E	BG	KR-13	1136/3-4	E	C	MM	Kandri siding	KP
157	E	BG	KR-14	1137/4	E	C	MM	Kandri siding	KP
158	E	BG	KR-15	1138/6	E	C	MM	Kandri siding	KP
159	E	BG	KR-16	1138/9	E	C	MM	Kandri siding	KP
160	E	BG	BK-2	1045/2-3	E	C	M	Balaghat-Katangi	BTC
161	E	BG	BK-4	1046/0-1	E	C	M	Balaghat-Katangi	BTC
162	E	BG	BK-7	1047/1-2	E	C	M	Balaghat-Katangi	BTC
163	E	BG	BK-9	1048/0-1	E	A	M	Balaghat-Katangi	BTC
164	E	BG	BK-15	1052/8-9	E	C	M	Balaghat-Katangi	BTC
165	E	BG	BK-20	1056/3-4	E	C	M	Balaghat-Katangi	BTC
166	E	BG	BK-22	1057/3-4	E	C	M	Balaghat-Katangi	BTC
167	E	BG	BK-24	1059/3-4	E	C	M	Balaghat-Katangi	BTC
168	E	BG	BK-25	1059/8-9	T	B1	M	Balaghat-Katangi	BTC
169	E	BG	BK-26	1061/3-4	T	C	M	Balaghat-Katangi	BTC
170	E	BG	BK-30	1063/9-10	E	C	M	Balaghat-Katangi	BTC
171	E	BG	BK-36	1068/3-4	E	C	M	Balaghat-Katangi	BTC
172	E	BG	BK-38	1071/1-2	E	C	M	Balaghat-Katangi	BTC
173	E	BG	BK-52	1078/9-10	E	C	M	Balaghat-Katangi	BTC
174	E	BG	BK-60	1085/3-4	E	C	M	Balaghat-Katangi	BTC
175	E	BG	BK-64	1088/1-2	T	C	M	Balaghat-Katangi	BTC
176	E	BG	GJ-1	1004/0-1	E	C	M	Gondia-Balaghat	BTC
177	E	BG	GJ-1A	1004/9-10	E	Spl	M	Gondia-Balaghat	BTC
178	E	BG	GJ-2	1006/0-1	E	C	M	Gondia-Balaghat	BTC
179	E	BG	GJ-3	1007/6-7	E	C	M	Gondia-Balaghat	BTC
180	E	BG	GJ-8	1012/8-9	E	C	M	Gondia-Balaghat	BTC
181	E	BG	GJ-9	1014/0-1	E	C	M	Gondia-Balaghat	BTC
182	E	BG	GJ-10	1016/7-8	E	C	M	Gondia-Balaghat	BTC

183	E	BG	GJ-12	1017/1-2	E	C	M	Gondia-Balaghat	BTC
184	E	BG	GJ-13	1018/1-2	T	C	M	Gondia-Balaghat	BTC
185	E	BG	GJ-19	1025/2-3	E	C	M	Gondia-Balaghat	BTC
186	E	BG	GJ-21	1026/6-7	E	C	M	Gondia-Balaghat	BTC
187	E	BG	GJ-24	1031/0-1	T	C	M	Gondia-Balaghat	BTC
188	E	BG	GJ-26	1032/9-10	E	C	M	Gondia-Balaghat	BTC
189	E	BG	GJ-28	1034/8-9	E	C	M	Gondia-Balaghat	BTC
190	E	BG	GJ-29	1036/9-10	E	C	M	Gondia-Balaghat	BTC
191	E	BG	GJ-30	1038/0-1	E	C	M	Gondia-Balaghat	BTC
192	E	BG	GJ-31	1038/8-9	E	C	M	Gondia-Balaghat	BTC
193	E	BG	GJ-36	1042/3-4	T	Spl	M	Gondia-Balaghat	BTC
194	E	BG	GJ-37	1044/0-1	E	A	M	Balaghat-Samnapur (BG)	BTC
195	E	BG	GJ-48	1058/12-13	T	C	M	Balaghat-Samnapur (BG)	NIR
196	E	BG	GJ-49	1059/5-6	E	C	M	Balaghat-Samnapur (BG)	NIR
197	NG	BG	GJ-91	1119.619	T	C	M	Nainpur-Kachpura (BG)	NIR
198	NG	BG	GJ-101	1132/6-7	T	C	M	Nainpur-Kachpura (BG)	NIR
199	E	BG	GJ-134	1195/9	E	A	M	Nainpur-Kachpura (BG)	HBG
200	E	BG	GJ-149	1216/8-9	E	C	M	Nainpur-Kachpura (BG)	HBG
201	E	BG	GJ-152	1225/8-9	T	C	M	Nainpur-Kachpura (BG)	HBG
202	NG	BG	NM-12	1128/5-6	E	C	M	Nainpur-Manda Fort (BG)	NIR
203	NG	BG	NM-18	1134/8-9	E	C	M	Nainpur-Manda Fort (BG)	NIR
204	E	BG	CI-1	1261/3-4	E	C	M	Chhindwara-Bhandarkund (BG)	CWA
205	NG	BG	CI-2 (old CI-25)	1286/15	E	C	M	Chhindwara-Bhandarkund (BG)	CWA
206	NG	NG	NI-1	1133/14-15	T	C	M	Nagbhir-Itwari	NAB
207	NG	NG	NI-2	1134/10-11	E	C	M	Nagbhir-Itwari	NAB
208	NG	NG	NI-4	1135/14	E	C	UM	Nagbhir-Itwari	ITR
209	NG	NG	NI-6	1137/10	E	C	UM	Nagbhir-Itwari	ITR
210	NG	NG	NI-7	1140/3	E	C	UM	Nagbhir-Itwari	ITR
211	NG	NG	NI-8	1141/10	E	C	UM	Nagbhir-Itwari	ITR
212	NG	NG	NI-9	1143/4	E	C	UM	Nagbhir-Itwari	ITR
213	NG	NG	NI-10	1144/13	E	C	UM	Nagbhir-Itwari	ITR
214	NG	NG	NI-12	1148/10	E	C	UM	Nagbhir-Itwari	ITR
215	NG	NG	NI-13	1150/7	E	C	UM	Nagbhir-Itwari	ITR
216	NG	NG	NI-14	1151/15	E	C	UM	Nagbhir-Itwari	ITR
217	NG	NG	NI-15	1154/1	E	C	UM	Nagbhir-Itwari	ITR
218	NG	NG	NI-17	1155/3	E	C	UM	Nagbhir-Itwari	ITR
219	NG	NG	NI-19	1159/4	E	C	M	Nagbhir-Itwari	ITR
220	NG	NG	NI-20	1160/3	E	C	UM	Nagbhir-Itwari	ITR
221	NG	NG	NI-21	1163/6	E	C	UM	Nagbhir-Itwari	ITR
222	NG	NG	NI-23	1164/5	E	C	MM	Nagbhir-Itwari	ITR
223	NG	NG	NI-24	1167/5	E	C	UM	Nagbhir-Itwari	ITR
224	NG	NG	NI-26	1171/15	E	C	UM	Nagbhir-Itwari	ITR

225	NG	NG	NI-27	1174/12	E	C	UM	Nagbhir-Itwari	ITR
226	NG	NG	NI-28	1175/3	E	C	UM	Nagbhir-Itwari	ITR
227	NG	NG	NI-29	1176/3	E	A	M	Nagbhir-Itwari	ITR
228	NG	NG	NI-30	1177/3	E	C	UM	Nagbhir-Itwari	ITR
229	NG	NG	NI-31	1180/5	E	C	UM	Nagbhir-Itwari	ITR
230	NG	NG	NI-32	1184/15	E	C	UM	Nagbhir-Itwari	ITR
231	NG	NG	NI-33	1186/10	E	B2	M	Nagbhir-Itwari	ITR
232	NG	NG	NI-34	1187/3	T	C	M	Nagbhir-Itwari	ITR
233	NG	NG	NI-35	1188/6	E	C	UM	Nagbhir-Itwari	ITR
234	NG	NG	NI-36	1189/14	E	C	UM	Nagbhir-Itwari	ITR
235	NG	NG	NI-38	1193/14	E	C	UM	Nagbhir-Itwari	ITR
236	NG	NG	NI-39	1195/10	E	C	UM	Nagbhir-Itwari	ITR
237	NG	NG	NI-40	1197/1	E	C	UM	Nagbhir-Itwari	ITR
238	NG	NG	NI-41	1197/8	E	C	UM	Nagbhir-Itwari	ITR
239	NG	NG	NI-42	1198/3	E	C	UM	Nagbhir-Itwari	ITR
240	NG	NG	NI-44	1199/13	E	C	UM	Nagbhir-Itwari	ITR
241	NG	NG	NI-45	1200/15	E	C	UM	Nagbhir-Itwari	ITR
242	NG	NG	NI-46	1202/9	E	C	UM	Nagbhir-Itwari	ITR
243	NG	NG	NI-47	1204/7	E	C	UM	Nagbhir-Itwari	ITR
244	NG	NG	NI-48	1205/5	E	C	UM	Nagbhir-Itwari	ITR
245	NG	NG	NI-49	1206/12	E	C	UM	Nagbhir-Itwari	ITR
246	NG	NG	NI-50	1207/15	E	C	UM	Nagbhir-Itwari	ITR
247	NG	NG	NI-51	1209/10	E	C	M	Nagbhir-Itwari	ITR
248	NG	NG	NI-52	1213/6-8	E	C	UM	Nagbhir-Itwari	ITR
249	NG	NG	NI-53	1214/9	E	C	UM	Nagbhir-Itwari	ITR
250	NG	NG	NI-54	1216/5	E	C	UM	Nagbhir-Itwari	ITR
251	NG	NG	NI-55	1217/8	E	C	UM	Nagbhir-Itwari	ITR
252	NG	NG	NI-56	1219/9	E	C	UM	Nagbhir-Itwari	ITR
253	NG	NG	NI-58	1222/1	E	C	UM	Nagbhir-Itwari	ITR
254	NG	NG	NI-60	1224/7	E	C	UM	Nagbhir-Itwari	ITR
255	NG	NG	NI-62	1226/1	E	C	UM	Nagbhir-Itwari	ITR
256	NG	NG	NI-63	1227/4	E		UM	Nagbhir-Itwari	ITR
257	NG	NG	NI-64	1227/13	E	C	UM	Nagbhir-Itwari	ITR
258	NG	NG	NI-68	1233/4-5	E	C	UM	Nagbhir-Itwari	ITR
259	NG	NG	NI-69	1234/10	E	C	MM	Nagbhir-Itwari	ITR
260	NG	NG	NI-70	1235/8	E	C	UM	Nagbhir-Itwari	ITR
261	NG	NG	NI-71	1236/3	E	Spl	M	Nagbhir-Itwari	ITR
262	NG	NG	NI-72	1236/10	E	Spl	M	Nagbhir-Itwari	ITR
263	NG	NG	NI-73	1237/10-11	E	Spl	M	Nagbhir-Itwari	ITR
264	NG	NG	NI-74	1240/10-11	E	Spl	M	Nagbhir-Itwari	ITR
265	NG	NG	NI-75	1241/0-1	E	Spl	M	Nagbhir-Itwari	ITR
266	NG	NG	NI-76	1242/5	T	C	M	Nagbhir-Itwari	ITR
267	E	BG	NI-77	1242/5	E	A	M	Motobagh Yard	KP
268	E	BG	23A	989/3-4	T	Spl	M	Chhindwara-Parasia	CWA
269	E	BG	KRD-1	O KRD/16-17	T	Spl	M	Kalumna-Koradi siding	KP

2.6		LIST OF ROAD OVER BRIDGE OVER NAGPUR DIVISION					
S#	BR. NO.	GAUGE	BLOCK SECTION	LOCATION	YEAR OF COMMISSIOING	NO OF SPAN	JURISDIC TION OF ADEN/DEN
1	347B	BG	DUG-RSM	873/17-19	2016	1 x 24.0m + 1 x 36.0m + 1 x 18.0m	DGG
2	347A	BG	DUG-RSM	873/17-19	1991	1 x 28.53m	DGG

3	329A, LC 460	BG	RJN Yard	896.780	1992	1 x 25.00m+ 1 x 12.20m	DGG
4	DGG -ROB	BG	DGG Yard	929/5-7	2013	1 x 24.00m	DGG
5	180B	BG	GONDIA Yard	1000/22-24	2015	1 x 14.0m + 1 x 30.0m + 1 x 26.0m	G
6	180A	BG	GONDIA Yard	1000/22-24	1952	5 x 9.87m	G
7	89C, LC540	BG	BRD Yard	1070/11-12	1997	1 x 10.82m	TMR
8	ROB	BG	SAL-KNHN	1109/29 - 110/1	2012	1 x 26.30m	NGP
9	13B	BG	KAV-NGP	1125/2-4	2010	1 x 17.70m	NGP
10	8AL MASKASAT	BG+ NG	ITR-NGP	1127/45-47	2005	1 x 11.58m	NGP
11	9AL (Sambajikasar)	BG+ NG	ITR-NGP	1127/29-31	1988	1 x 17.88m	NGP
12	11-L	BG+ NG	ITR-NGP	1127/23-25	2014 & 2016	1 x 7.01m + 1 x 10.67m	NGP
13	9A, LC 569	BG	KAV-NGP	1126/28-30	2006	2 x 23.10m	NGP
14	6A, LC 570	BG	KAV-NGP	1128/6-8	1993	1 x 15.00m	NGP
15	PANCHPAOL I, LC 572	BG+ NG	ITR-NGP	1128/31-33	1993	1 x 15.00m	NGP
16	13-L1	BG	KAV-ITR	1124/39	2010	1 x 28.64m	NGP
17	331	BG	KEZ-CAF	1239/5-6	1908	1 x 5.10m	NAB
18	81	NG	MIB Yard	1242/3-4	1908	1 x 3.97m	NGP
19	3B	NG	ITR-KPKD	1399/13-14	1907	1 x 6.10m	CWA
20	22A	NG	KPKD-PTS	1380/13-14	1907	1 x 9.14m	CWA
21	186	NG	BMC-KFP	1297/8-9	1907	1 x 4.27m	CWA
22	92A	NG	SEY-BHV	1196/7-8	2010	1 x 30.00m	CWA
23	5A	BG	KNHN-RTK	1116/3-5	2012	1 x 26.30m+ 2 x 14.33m	NGP
24	52-B	NG	ITR-DGY	1231/5-6	2012	3 x 32.80m	NAB
25	38B	NG	SONR-ITR	1361/13-14	2014	1 x 30.00m	CWA
26	35A, LC- CI 87	NG	CWA-ITR	1366/9-10	2014	1 x 30.00m	CWA
27	1A, LC- 23A	BG	PUX-CWA	989/3-4	2014	1 x 32.90m	CWA
28	163A, LC-NC85	NG	JLY-CWA	1242/3-4	2014	1 x 29.60m	CWA
29	100B, LC-CI 49	NG	RMO-SASR	1324/5-6	2015	1 x 16.90m	CWA
30	89A, LC-CI 52 (M)	NG	SASR-LDE	1328/13-14	2015	1 x 17.00m	CWA
31	182A	NG	NIR-CWA	1254/8-9	2014	1 x 24.00m	CWA
32	230A	NG	CWA-ITR	1267/2-3	2015	1 x 30.00m	CWA
33	226C	NG	CWA-ITR	1272/10-11	2015	1 x 24.00m	CWA

34	2C	NG	CWA-ITR	1400/3-4	2010	1 x 30.10m	CWA
35	15A	NG	CWA-ITR	1386/8-9	NK	1 x 18.50m	CWA
36	374	BG	BUQ-GRG	1200.742	2016	2 x 9.10m	NIR
37	374A	BG	BUQ-GRG	1200.797	2016	1 x 9.10m	NIR
38	435	BG	GRG-KEQ	1228.385	2016	4 x 9.15m	NIR
39	284	BG	SKY-VNK	1164.775	2017	1 x 24.00m	NIR
40	262	BG	GNS-NN	1152/0-1	2017	1 x 17.10m	NIR
41	43	BG	LIG-ULA	1277.542	2017	1 x 7.85m	CWA
42	65	BG	ULA- BDKD	1286.240	2017	1 x 7.85m	CWA
43	76	BG	ULA- BDKD	1288.637	2017	1 x 7.85m	CWA
44	GJ-134	BG	SKS-BUQ	1195/5-6	UC	3 x 36.00m	NIR
45	----	BG	BUQ-GRG	1217/1-2	UC	1 x 30.00m	NIR

2.7		LIST OF ROAD UNDER BRIDGES IN NAGPUR DIVISION							
S#	BRO. NO.	MAJOR SECTION	BLOCK SECTION	LOCATI ON	TYPE OF BRIDGE	TYPE OF STRUCTURE	SPAN	YEAR OF COMMISS IOING	JURISDICT ION OF ADEN/DEN
<b>Road Under Bridge (RUB)</b>									
1	179-A(UP&D N)	DUG-NGP	Gondia Yard	1001/13-15	RUB	RCC Box	2 x 5.48m	1965	NGP
2	33 DN	DUG-NGP	KNHN-Yd	1113/18-20	RUB	Girder	1 x 12.20m	NK	NGP
3	26-A(UP & DN)	DUG-NGP	KNHN-KP	1115/18-20	RUB	RCC Box	1 x 8.10m	2003	NGP
4	10(UP & DN)	DUG-NGP	KAV-NGP	1126/27-29	RUB	RCC Box	1 x 6.00m	2006 & 2017	NGP
5	5 B	CWA-ITR	KPKD-ITR	1397/3-4	RUB	Girder	1 x 7.62m	NK	CWA
6	RUB-1 (LC. BK-10)	Balaghat-Katangi	BTC-WRI	1049/1	RUB	RCC Box	1 x 4.15x3.15m	2010	NIR
7	RUB-2 (LC. BK-11)	Balaghat-Katangi	BTC-WRI	1049/8-9	RUB	RCC Box	1 x 4.15x3.15m	2011	NIR
8	RUB-3 (LC.BK-27)	Balaghat-Katangi	WRI-KGE	1062/6-7	RUB	RCC Box	1 x 4.15x3.15m	2011	NIR
9	440	Kachhpura-Nainpur	KEQ-GRG	1230.845	RUB	RCC Box	1 x 6.10m	2016	NIR
10	439	Kachhpura-Nainpur	KEQ-GRG	1230.060	RUB	RCC Box	1 x 6.10m	2016	NIR
11	438	Kachhpura-Nainpur	KEQ-GRG	1229.611	RUB	RCC Box	1 x 6.10m	2016	NIR
12	5	Chhindwara-Bhandarkund	CWA-LIG	1260.479	RUB	RCC Box	1 x 6.00m	2017	CWA
13	8	Chhindwara-Bhandarkund	CWA-LIG	1260.804	RUB	RCC Box	1 x 5.00m	2017	CWA
14	13	Chhindwara-Bhandarkund	CWA-LIG	1264.091	RUB	RCC Box	1 x 6.00m	2017	CWA
15	19	Chhindwara-Bhandarkund	CWA-LIG	1265.699	RUB	RCC Box	1 x 6.00m	2017	CWA
16	21	Chhindwara-Bhandarkund	CWA-LIG	1266.900	RUB	RCC Box	1 x 6.00m	2017	CWA
17	23	Chhindwara-Bhandarkund	CWA-LIG	1268.713	RUB	RCC Box	1 x 4.00m	2017	CWA
18	25	Chhindwara-Bhandarkund	LIG Yard	1269.070	RUB	RCC Box	1 x 6.00m	2017	CWA
19	28	Chhindwara-Bhandarkund	LIG-ULA	1271.528	RUB	RCC Box	1 x 6.00m	2017	CWA
20	32	Chhindwara-Bhandarkund	LIG-ULA	1272.611	RUB	RCC Box	1 x 6.00m	2017	CWA
21	36	Chhindwara-Bhandarkund	LIG-ULA	1275.549	RUB	RCC Box	1 x 6.00m	2017	CWA
22	39	Chhindwara-Bhandarkund	LIG-ULA	1276.769	RUB	RCC Box	1 x 6.00m	2017	CWA
23	42	Chhindwara-Bhandarkund	LIG-ULA	1277.194	RUB	RCC Box	1 x 6.00m	2017	CWA
24	47	Chhindwara-Bhandarkund	LIG-ULA	1278.488	RUB	RCC Box	1 x 5.00m	2017	CWA
25	49	Chhindwara-Bhandarkund	LIG-ULA	1279.593	RUB	RCC Box	1 x 6.00m	2017	CWA



26	50	Chhindwara-Bhandarkund	LIG-ULA	1280.350	RUB	RCC Box	1 x6.00m	2017	CWA
27	52	Chhindwara-Bhandarkund	LIG-ULA	1280.737	RUB	RCC Box	1 x6.00m	2017	CWA
28	53	Chhindwara-Bhandarkund	ULA Yard	1281.510	RUB	RCC Box	1 x6.00m	2017	CWA
29	55	Chhindwara-Bhandarkund	ULA Yard	1282.336	RUB	RCC Box	1 x6.00m	2017	CWA
30	58	Chhindwara-Bhandarkund	ULA-BDKD	1283.740	RUB	RCC Box	1 x4.00m	2017	CWA
31	61	Chhindwara-Bhandarkund	ULA-BDKD	1284.444	RUB	RCC Box	1 x4.00m	2017	CWA
32	68	Chhindwara-Bhandarkund	ULA-BDKD	1287.019	RUB	RCC Box	1 x6.00m	2017	CWA
33	82	Chhindwara-Bhandarkund	BDKD Yard	1291.329	RUB	RCC Box	1 x4.00m	2017	CWA

### Limited Height Subway (LHS)

1	456	Durg-Nagpur	MUP-PMS	885/15-17	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
2	457	Durg-Nagpur	PMS-RJN	891/1-3	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
3	470	Durg-Nagpur	MUA-JTR	916/11-13	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
4	471	Durg-Nagpur	MUA-JTR	919/3-5	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
5	528	Durg-Nagpur	MNU-TMR	1041/35-37	LHS	RCC Box	1x4.10m x3.60m	2014	NGP
6	538	Durg-Nagpur	K-BRD	1065/5-7	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
7	539	Durg-Nagpur	K-BRD	1066/11-13	LHS	RCC Box	1x4.15m x3.75m	2011	NGP
8	545	Durg-Nagpur	KT-RRL	1081/13-15	LHS	RCC Box	1x4.15m x4.65m	2013	NGP
9	546	Durg-Nagpur	KT-RRL	1083/17-19	LHS	RCC Box	1x4.15m x3.60m	2012	NGP
10	547	Durg-Nagpur	KT-RRL	1084/27-29	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
11	555	Durg-Nagpur	CHCR-SAL	1101/5-7	LHS	RCC Box	1x4.15m x3.15m	2015	NGP
12	GCF-6	Gondia-Chanda Fort	G-HDM	1009/15	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
13	GCF-9	Gondia-Chanda Fort	G-HDM	1013/4-5	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
14	GCF-10	Gondia-Chanda Fort	G-HDM	1013/13-14	LHS	RCC Box	1x4.15m x3.75m	2014	NGP
15	GCF-11	Gondia-Chanda Fort	G-HDM	1015/1-2	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
16	GCF-13	Gondia-Chanda Fort	HDM-GNL	1020/7-8	LHS	RCC Box	1x4.15m x3.60m	2016	NGP
17	GCF-14	Gondia-Chanda Fort	HDM-GNL	1021/3-4	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
18	GCF-21	Gondia-Chanda Fort	GNL-SNV	1037/8-9	LHS	RCC Box	1x4.15m x3.75m	2016	NGP
19	GCF-30	Gondia-Chanda Fort	SNV-DEW	1053/4-5	LHS	RCC Box	1x4.15m x3.75m	2015	NGP
20	GCF-35	Gondia-Chanda Fort	SNV-DEW	1060/13-14	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
21	GCF-36	Gondia-Chanda Fort	SNV-DEW	1063/8-9	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
22	GCF-38	Gondia-Chanda Fort	SNV-DEW	1067/11-12	LHS	RCC Box	1x4.15m x3.60m	2012	NGP

23	GCF-41	Gondia-Chanda Fort	DEW-AJU	1071/5-6	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
24	GCF-42	Gondia-Chanda Fort	DEW-AJU	1072/7-8	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
25	GCF-43	Gondia-Chanda Fort	DEW-AJU	1073/9-10	LHS	RCC Box	1x4.15m x3.60m	2017	NGP
26	GCF-45	Gondia-Chanda Fort	DEW-AJU	1077/4-5	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
27	GCF-49	Gondia-Chanda Fort	AJU-WDG	1084/12-13	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
28	GCF-53	Gondia-Chanda Fort	WDG-WSA	1089/9-10	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
29	GCF-56	Gondia-Chanda Fort	WDG-WSA	1093/2-3	LHS	RCC Box	1x4.15m x3.60m	2016	NGP
30	GCF-57	Gondia-Chanda Fort	WDG-WSA	1095/8-9	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
31	GCF-58	Gondia-Chanda Fort	WDG-WSA	1102/1	LHS	RCC Box	1x4.00m x3.75m	2015	NGP
32	GCF-59	Gondia-Chanda Fort	WDG-WSA	1105/3-4	LHS	RCC Box	2x4.15m x3.75m	2017	NGP
33	GCF-61	Gondia-Chanda Fort	WSA-BMP	1110/1-2	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
34	GCF-62	Gondia-Chanda Fort	WSA-BMP	1111/1-2	LHS	RCC Box	1x4.00m x3.75m	2015	NGP
35	GCF-65	Gondia-Chanda Fort	BMP-NAB	1117/4-5	LHS	RCC Box	1x2.50m x3.00m	2013	NGP
36	GCF-70	Gondia-Chanda Fort	BMP-NAB	1124/9-10	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
37	GCF-73	Gondia-Chanda Fort	BMP-NAB	1127/10-11	LHS	RCC Box	1x4.15m x3.00m	2010	NGP
38	GCF-75	Gondia-Chanda Fort	BMP-NAB	1130/10-11	LHS	RCC Box	1x4.15m x3.60m	2010	NGP
39	GCF-76	Gondia-Chanda Fort	BMP-NAB	1131/6-7	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
40	GCF-77	Gondia-Chanda Fort	BMP-NAB	1132/5-6	LHS	RCC Box	1x4.15m x3.00m	2015	NGP
41	GCF-79	Gondia-Chanda Fort	NAB-TUD	1136/7-8	LHS	RCC Box	1x4.15m x3.00m	2010	NGP
42	GCF-80	Gondia-Chanda Fort	NAB-TUD	1137/9-10	LHS	RCC Box	1x4.15m x3.00m	2010	NGP
43	GCF-82	Gondia-Chanda Fort	NAB-TUD	1139/5-6	LHS	RCC Box	1x4.15m x3.00m	2012	NGP
44	GCF-83	Gondia-Chanda Fort	NAB-TUD	1141/7-8	LHS	RCC Box	1x4.15m x3.00m	2010	NGP
45	GCF-84	Gondia-Chanda Fort	NAB-TUD	1142/14-15	LHS	RCC Box	1x4.15m x3.60m	2012	NGP
46	GCF-86	Gondia-Chanda Fort	NAB-TUD	1145/5-6	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
47	GCF-90	Gondia-Chanda Fort	TUD-AWH	1151/8-9	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
48	GCF-91	Gondia-Chanda Fort	TUD-AWH	1152/11-12	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
49	GCF-93	Gondia-Chanda Fort	TUD-AWH	1155/6-7	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
50	GCF-94	Gondia-Chanda Fort	TUD-AWH	1158/7-8	LHS	RCC Box	1x2.50m x3.00m	2014	NGP
51	GCF-95	Gondia-Chanda Fort	TUD-AWH	1159/8-9	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
52	GCF-98	Gondia-Chanda Fort	AWH-SYE	1162/5-6	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
53	GCF-105	Gondia-Chanda Fort	SYE-ROL	1170/15	LHS	RCC Box	1x4.15m x3.75m	2015	NGP

54	GCF-107	Gondia-Chanda Fort	SYE-ROL	1173/6-7	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
55	GCF-110	Gondia-Chanda Fort	SYE-ROL	1177/14-15	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
56	GCF-111	Gondia-Chanda Fort	SYE-ROL	1179/14-15	LHS	RCC Box	1x4.15m x3.60m	2012	NGP
57	GCF-116	Gondia-Chanda Fort	ROL-MME	1187/7-8	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
58	GCF-119	Gondia-Chanda Fort	ROL-MME	1192/4-5	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
59	GCF-122	Gondia-Chanda Fort	ROL-MME	1197/9-10	LHS	RCC Box	1x4.15m x3.60m	2013	NGP
60	GCF-129	Gondia-Chanda Fort	KEZ-CAF	1213/2-3	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
61	TT-1	Tumsar-Tirodi	TMR-GBRI	1051/15	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
62	TT-6	Tumsar-Tirodi	TMR-GBRI	1056/9	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
63	TT-8	Tumsar-Tirodi	TMR-GBRI	1059/7	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
64	TT-10	Tumsar-Tirodi	TMR-GBRI	1061/5	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
65	TT-12	Tumsar-Tirodi	TMR-GBRI	1065/1	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
66	TT-13	Tumsar-Tirodi	TMR-GBRI	1066/8	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
67	TT-16	Tumsar-Tirodi	TMR-GBRI	1068/5	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
68	TT-17	Tumsar-Tirodi	TMR-GBRI	1069/7	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
69	TT-25	Tumsar-Tirodi	GBRI-DGBZ	1076/10-11	LHS	RCC Box	1x4.15m x3.75m	2014	NGP
70	TT-27	Tumsar-Tirodi	DGBZ-TRDI	1079/10-11	LHS	RCC Box	1x4.15m x3.75m	2014	NGP
71	TT-28	Tumsar-Tirodi	DGBZ-TRDI	1080/9	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
72	TT-29	Tumsar-Tirodi	DGBZ-TRDI	1081/2-3	LHS	RCC Box	1x4.15m x3.75m	2013	NGP
73	TT-30	Tumsar-Tirodi	DGBZ-TRDI	1083/2-3	LHS	RCC Box	1x4.15m x3.60m	2014	NGP
74	TT-39	Tumsar-Tirodi	DGBZ-TRDI	1091/7	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
75	TT-43	Tumsar-Tirodi	DGBZ-TRDI	1094/14	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
76	TT-44	Tumsar-Tirodi	DGBZ-TRDI	1096/3	LHS	RCC Box	1x4.15m x3.60m	2011	NGP
77	BK-12	Balaghat-Katangi	BTC-WRI	1050/6-7	LHS	RCC Box	1x4.15m x3.15m	2015	NIR
78	BK-13	Balaghat-Katangi	WRI-KGE	1052/2-3	LHS	RCC Box	1x4.15m x3.15m	2015	NIR
79	BK-18	Balaghat-Katangi	WRI-KGE	1054/7-8	LHS	RCC Box	1x4.15m x3.15m	2015	NIR
80	BK-31	Balaghat-Katangi	WRI-KGE	1064/9-10	LHS	RCC Box	1x4.15m x3.15m	2015	NIR
81	BK-33	Balaghat-Katangi	WRI-KGE	1066/1-2	LHS	RCC Box	1x4.15m x4.15m	2016	NIR
82	BK-34	Balaghat-Katangi	WRI-KGE	1066/9-10	LHS	RCC Box	1x4.15m x4.65m	2014	NIR
83	BK-37	Balaghat-Katangi	WRI-KGE	1070/1-2	LHS	RCC Box	1x4.15m x3.00m	2012	NIR
84	BK-41	Balaghat-Katangi	WRI-KGE	1072/1-2	LHS	RCC Box	1x4.15m x4.15m	2016	NIR

85	BK-45	Balaghat-Katangi	WRI-KGE	1074/3-4	LHS	RCC Box	1x4.15m x2.65m	2013	NIR
86	BK-46	Balaghat-Katangi	WRI-KGE	1075/7-8	LHS	RCC Box	1x4.15m x4.65m	2013	NIR
87	BK-47	Balaghat-Katangi	WRI-KGE	1076/4-5	LHS	RCC Box	1x4.15m x2.65m	2014	NIR
88	BK-49	Balaghat-Katangi	WRI-KGE	1077/5-6	LHS	RCC Box	1x4.15m x3.15m	2016	NIR
89	BK-51	Balaghat-Katangi	WRI-KGE	1078/2-3	LHS	RCC Box	1x4.15m x3.15m	2016	NIR
90	BK-53	Balaghat-Katangi	WRI-KGE	1080/5-6	LHS	RCC Box	1x4.15m x2.65m	2014	NIR
91	BK-55	Balaghat-Katangi	WRI-KGE	1081/8-9	LHS	RCC Box	1x4.15m x4.65m	2015	NIR
92	BK-56	Balaghat-Katangi	WRI-KGE	1082/4-5	LHS	RCC Box	1x4.15m x3.15m	2015	NIR
93	BK-57	Balaghat-Katangi	WRI-KGE	1083/6-7	LHS	RCC Box	1x4.15m x3.00m	2012	NIR
94	BK-63	Balaghat-Katangi	WRI-KGE	1087/3-4	LHS	RCC Box	1x4.15m x3.85m	2012	NIR
95	GJ-4	Gondia-Balaghat	G-BRA	1008/3-4	LHS	RCC Box	1x4.15m x3.15m	2017	NIR
96	GJ-6	Gondia-Balaghat	G-BRA	1010/0-1	LHS	RCC Box	1x4.15m x3.15m	2017	NIR
97	GJ-14	Gondia-Balaghat	BRA-HTT	1020/1-2	LHS	RCC Box	1x4.00m x2.85m	2011	NIR
98	GJ-15	Gondia-Balaghat	BRA-HTT	1020/9-10	LHS	RCC Box	1x4.15m x3.15m	2017	NIR
99	GJ-16	Gondia-Balaghat	BRA-HTT	1021/7-8	LHS	RCC Box	1x4.00m x2.85m	2011	NIR
100	GJ-22	Gondia-Balaghat	HTT-BTC	1027/9-10	LHS	RCC Box	1x4.15m x3.15m	2017	NIR
101	GJ-32	Gondia-Balaghat	HTT-BTC	1040/2-3	LHS	RCC Box	1x4.15m x3.85m	2012	NIR
102	422	Kachhpura-Nainpur	KEQ-GRG	1222.147	LHS	RCC Box	1 x4.50m	2016	NIR
103	418	Kachhpura-Nainpur	KEQ-GRG	1220.155	LHS	RCC Box	1 x4.15m	2016	NIR
104	412-A	Kachhpura-Nainpur	KEQ-GRG	1218.435	LHS	RCC Box	1 x4.15m	2016	NIR
105	405-A	Kachhpura-Nainpur	GRG-BUQ	1213.851	LHS	RCC Box	1 x5.50m	2016	NIR
106	405	Kachhpura-Nainpur	GRG-BUQ	1213.025	LHS	RCC Box	1 x4.50m	2016	NIR
107	403-A	Kachhpura-Nainpur	GRG-BUQ	1211.857	LHS	RCC Box	1 x4.15m	2016	NIR
108	403	Kachhpura-Nainpur	GRG-BUQ	1211.491	LHS	RCC Box	1 x4.00m	2016	NIR
109	392	Kachhpura-Nainpur	GRG-BUQ	1209.251	LHS	RCC Box	1 x4.15m	2016	NIR
110	389	Kachhpura-Nainpur	GRG-BUQ	1207.545	LHS	RCC Box	1 x4.15m	2016	NIR
111	386	Kachhpura-Nainpur	GRG-BUQ	1206.196	LHS	RCC Box	1 x4.15m	2016	NIR
112	382	Kachhpura-Nainpur	GRG-BUQ	1204.624	LHS	RCC Box	1 x4.00m	2016	NIR
113	378	Kachhpura-Nainpur	GRG-BUQ	1203.517	LHS	RCC Box	1 x4.00m	2016	NIR
114	369	Kachhpura-Nainpur	BUQ-SOY	1198.942	LHS	RCC Box	1 x4.15m	2016	NIR
115	357-A	Kachhpura-Nainpur	BUQ-SOY	1193.037	LHS	RCC Box	1 x4.15m	2016	NIR

116	349	Kachhpura-Nainpur	BUQ-SOY	1191.022	LHS	RCC Box	1 x4.15m	2016	NIR
117	345	Kachhpura-Nainpur	BUQ-SOY	1189.372	LHS	RCC Box	1 x4.15m	2016	NIR
118	339	Kachhpura-Nainpur	SOY-SKY	1187.108	LHS	RCC Box	1 x5.00m	2017	NIR
119	333	Kachhpura-Nainpur	SOY-SKY	1185.258	LHS	RCC Box	1 x4.15m	2017	NIR
120	329	Kachhpura-Nainpur	SOY-SKY	1183.770	LHS	RCC Box	1 x5.00m	2017	NIR
121	326	Kachhpura-Nainpur	SOY-SKY	1182.265	LHS	RCC Box	1 x4.15m	2017	NIR
122	322-B	Kachhpura-Nainpur	SOY-SKY	1180.979	LHS	RCC Box	1 x6.00m	2017	NIR
123	316	Kachhpura-Nainpur	SOY-SKY	1177.877	LHS	RCC Box	1 x4.15m	2017	NIR
124	275-A	Kachhpura-Nainpur	VNK-GNS	1159.373	LHS	RCC Box	1 x6.80m	2017	NIR
125	270	Kachhpura-Nainpur	VNK-GNS	1158.103	LHS	RCC Box	1 x4.00m	2017	NIR
126	267-A	Kachhpura-Nainpur	VNK-GNS	1154.708	LHS	RCC Box	2 x7.60m	2017	NIR
127	241	Kachhpura-Nainpur	NN-PDE	1141/3-4	LHS	RCC Box	1 x4.00m	2017	NIR
128	239	Kachhpura-Nainpur	NN-PDE	1139/9-10	LHS	RCC Box	1 x4.00m	2017	NIR
129	235-A	Kachhpura-Nainpur	NN-PDE	1138/1-2	LHS	RCC Box	1 x7.50m	2017	NIR
130	232	Kachhpura-Nainpur	NN-PDE	1136/2-3	LHS	RCC Box	1 x4.00m	2017	NIR
131	216-A	Kachhpura-Nainpur	PDE-NIR	1131/0-1	LHS	RCC Box	1 x7.50m	2017	NIR
132	213	Kachhpura-Nainpur	PDE-NIR	1129/5-6	LHS	RCC Box	1 x4.15m	2017	NIR
133	210	Kachhpura-Nainpur	PDE-NIR	1127/0-1	LHS	RCC Box	1 x4.15m	2017	NIR
134	207	Kachhpura-Nainpur	PDE-NIR	1125/4-5	LHS	RCC Box	1 x4.15m	2017	NIR
135	205-B	Kachhpura-Nainpur	PDE-NIR	1124/9-10	LHS	RCC Box	1 x6.85m	2017	NIR
136	200	Kachhpura-Nainpur	PDE-NIR	1120/6-7	LHS	RCC Box	1 x7.50m	2017	NIR
137	198	Kachhpura-Nainpur	PDE-NIR	1119/8-9	LHS	RCC Box	1 x4.15m	2017	NIR

## 2.8 Details of SSE/P. Way/ Units existing in Nagpur Division:

The Engineering (P. Way) Department NGP Division has been classified into Seventeen “SSE (P. way) units” and these Units are further sub-divided into various no. of DTMs & Gangs to execute the relevant works. The jurisdictions along the no. of DTM/Gangs existing under control of these Units is given as under:

<b>2.8.1</b>	<b>SSE/PW(I/c)/KP</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Kalumna Nagpur	DOWN LINE	1124	308	1129	230
Kalumna Nagpur	UP LINE	1124	308	1129	230
Kalumna-Koradi Siding	SINGLE LINE	1124	308	1134	0
Kanhan Kalumna	DOWN LINE	1111	965	1124	308
Kanhan Kalumna	UP LINE	1111	965	1124	308
Kanhan Ramtek	SINGLE LINE	1112	0	1135	811
Ramtek-Kandri Siding	SINGLE LINE	1135	811	1141	0
Tumsar Road Kanhan	DOWN LINE	1111	0	1111	965
Tumsar Road Kanhan	UP LINE	1111	0	1111	965
<b>Total Jurisdiction of Sectional Gangs</b>					
Kanhan Kalumna	DOWN LINE	1111	965	1117	1
Kanhan Kalumna	UP LINE	1111	965	1117	1
Kanhan Ramtek	SINGLE LINE	1112	1	1134	960
Tumsar Road Kanhan	DOWN LINE	1111	0	1111	965
Tumsar Road Kanhan	UP LINE	1111	0	1111	965

<b>2.8.2</b>	<b>SSE/PW(I/c)/TAR</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Tumsar Road Kanhan	DOWN LINE	1079	0	1111	0
Tumsar Road Kanhan	UP LINE	1079	0	1111	0
<b>Total Jurisdiction of Sectional Gangs</b>					
Tumsar Road Kanhan	DOWN LINE	1079	0	1111	0
Tumsar Road Kanhan	UP LINE	1079	0	1111	0

<b>2.8.3</b>	<b>SSE/PW(I/c)/BRD:</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Tumsar Road Kanhan	DOWN LINE	1052	0	1079	0
Tumsar Road Kanhan	UP LINE	1052	0	1079	0
<b>Total Jurisdiction of Sectional Gangs</b>					
Tumsar Road Kanhan	DOWN LINE	1052	0	1079	0
Tumsar Road Kanhan	UP LINE	1052	0	1079	0

<b>2.8.4</b>	<b>SSE/PW(I/c)/TMR</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Gondia Tumsar Road	DOWN LINE	1025	500	1050	485
Gondia Tumsar Road	UP LINE	1025	500	1050	485
Tumsar Road Kanhan	DOWN LINE	1050	485	1052	0



Tumsar Road Kanhan	UP LINE	1050	485	1052	0
Tumsar Road Tirodi	SINGLE LINE	1050	485	1097	800
<b>Total Jurisdiction of Sectional Gangs</b>					
Gondia Tumsar Road	DOWN LINE	1025	500	1042	450
Gondia Tumsar Road	UP LINE	1025	500	1042	450
Gondia Tumsar Road	YARD	1029	1000	1030	650

<b>2.8.5</b>	<b>SSE/PW(I/c)/G</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Durg Gondia	DOWN LINE	988	0	1000	700
Durg Gondia	UP LINE	988	0	1000	700
Gondia Nagbhir	SINGLE LINE	1000	700	1002	882
Gondia Tumsar Road	DOWN LINE	1000	700	1025	500
Gondia Tumsar Road	UP LINE	1000	700	1025	500
<b>Total Jurisdiction of Sectional Gangs</b>					
Durg Gondia	DOWN LINE	988	0	1000	700
Durg Gondia	UP LINE	988	0	1000	700
Gondia Tumsar Road	DOWN LINE	1000	700	1025	500
Gondia Tumsar Road	UP LINE	1000	700	1025	500

<b>2.8.6</b>	<b>SSE/PW(I/c)/AGN</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Durg Gondia	DOWN LINE	946	0	988	0
Durg Gondia	UP LINE	946	0	988	0
<b>Total Jurisdiction of Sectional Gangs</b>					
Durg Gondia	DOWN LINE	946	0	988	0
Durg Gondia	UP LINE	946	0	988	0

<b>2.8.7</b>	<b>SSE/PW(I/c)/DGG</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Durg Gondia	DOWN LINE	907	0	946	0
Durg Gondia	UP LINE	907	0	946	0
<b>Total Jurisdiction of Sectional Gangs</b>					
Durg Gondia	DOWN LINE	907	0	946	0
Durg Gondia	UP LINE	907	0	946	0
Durg Gondia	YARD	927	0	928	630

<b>2.8.8</b>	<b>SSE/PW(I/c)/RJN:</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Durg Gondia	DOWN LINE	867	0	907	0
Durg Gondia	IIIrd Line	867	0	874	500
Durg Gondia	UP LINE	867	0	907	0

<b>2.8.9</b>	<b>SSE/PW(I/c)/NAB</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Gondia Nagbhir	SINGLE LINE	1002	882	1133	706
Nagbhir Ballarshah	SINGLE LINE	1133	706	1134	686
Nagbhir Nagpur	SINGLE LINE	1133	252	1134	738
<b>Total Jurisdiction of Sectional Gangs</b>					
Gondia Nagbhir	SINGLE LINE	1002	882	1133	706
Nagbhir Ballarshah	SINGLE LINE	1133	706	1134	686
Nagbhir Nagpur	SINGLE LINE	1133	252	1134	738

<b>2.8.10</b>	<b>SSE/PW(I/c)/CAF</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Nagbhir Ballarshah	SINGLE LINE	1134	686	1241	117
<b>Total Jurisdiction of Sectional Gangs</b>					
Nagbhir Ballarshah	SINGLE LINE	1134	686	1241	117

<b>2.8.11</b>	<b>SSE/PW(I/c)/ITR</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Chhindwara Itwari	SINGLE LINE	1401	465	1402	15
Nagbhir Nagpur	SINGLE LINE	1134	738	1243	500
<b>Total Jurisdiction of Sectional Gangs</b>					
Chhindwara Itwari	SINGLE LINE	1401	465	1402	0
Nagbhir Nagpur	SINGLE LINE	1134	728	1243	500

<b>2.8.12</b>	<b>SSE/PW(I/c)/SONR</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Chhindwara Itwari	SINGLE LINE	1311	400	1365	0
Chhindwara Itwari	SINGLE LINE	1370	100	1401	465
<b>Total Jurisdiction of Sectional Gangs</b>					
Chhindwara Itwari	SINGLE LINE	1311	400	1401	465

<b>2.8.13</b>	<b>SSE/PW(I/c)/CWA</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Amla Chindwara	SINGLE LINE	989	300	991	0
Chhindwara - Bhandarkund	SINGLE LINE	1257	619	1292	59
<b>Total Jurisdiction of Sectional Gangs</b>					
Chhindwara Itwari	SINGLE LINE	1260	245	1279	130
Chhindwara Itwari	SINGLE LINE	1285	560	1311	365
Nainpur Chhindwara	SINGLE LINE	1226	662	1244	854
Nainpur Chhindwara	SINGLE LINE	1251	379	1257	875

<b>2.8.14</b>	<b>SSE/PW(I/c)/SEY</b>				
Section	Line	Location From		Location To	
		km	m	km	m

Nainpur Chhindwara	SINGLE LINE	1119	21	1170	0
Nainpur Chhindwara	SINGLE LINE	1175	0	1226	700
<b>Total Jurisdiction of Sectional Gangs</b>					
Nainpur Chhindwara	SINGLE LINE	1119	938	1220	865
Nainpur Chhindwara	SINGLE LINE	1220	866	1226	662

<b>2.8.15</b>	<b>SSE/PW/(I/C)/NIR</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Balaghat Nainpur	SINGLE LINE	1054	0	1119	0
Nainpur Jabalpur	SINGLE LINE	1119	500	1132	800
Nainpur Mandla Fort	SINGLE LINE	1119	400	1161	574
<b>Total Jurisdiction of Sectional Gangs</b>					
Balaghat Nainpur	SINGLE LINE	1060	300	1105	600
Nainpur Mandla Fort	SINGLE LINE	1123	120	1161	574

<b>2.8.16</b>	<b>SSE/PW(I/c)/BTC</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Aghat-Bharveli Siding	SINGLE LINE	1043	885	1049	700
Balaghat Katangi	SINGLE LINE	1043	800	1089	651
Gondia Balaghat	SINGLE LINE	1002	900	1043	885
Gondia Balaghat	YARD	1042	500	1043	885
<b>Total Jurisdiction of Sectional Gangs</b>					
Aghat-Bharveli Siding	SINGLE LINE	1043	885	1049	700
Balaghat Katangi	SINGLE LINE	1043	804	1089	460
Balaghat Nainpur	SINGLE LINE	1042	885	1054	0
Gondia Balaghat	SINGLE LINE	1002	900	1043	885
Gondia Balaghat	YARD	1042	885	1043	885

<b>2.8.17</b>	<b>SSE/PW(I/c)/HBG</b>				
Section	Line	Location From		Location To	
		km	m	km	m
Nainpur Jabalpur	SINGLE LINE	1132	800	1232	300
<b>Total Jurisdiction of Sectional Gangs</b>					
Nainpur Jabalpur	SINGLE LINE	1132	800	1156	800
Nainpur Jabalpur	SINGLE LINE	1158	500	1184	300

## 2.9 Duties of P. Way staff

The duties of P. Way staff category-wise are as under:

### (i) **SSE/JE (P. Way):-**

SSE/JE( P. Way) perform their duties in office as well as in field units which are broadly mentioned as follows:

Inspections and maintenance of track in his jurisdiction in a safe condition for traffic. Inspections and maintenance of Engg. L/C Gate in his jurisdiction. Accountal, procurement and periodical verification of stores & tools required for regular maintenance. Execution of new/sanctioned works including zonal works. Measurements and bills pertaining to p. way works including correspondence, if any. Periodical inspection of new works and inspections as specified in Engineering Manual.

**(ii) PWS:-**

They supervise the works carried out by Gang Mate.

**(iii) Mate:-**

He is assigned for the work that the prescribed system of track maintenance is adhered to and the task allotted to him either verbally or through gang chart/diary are carried out efficiently, ensure the tools & equipment as prescribed available at site of work, ensure his length of line is kept safe for the passage of trains and any unsafe condition is reported immediately, inspect the whole gang length once a week for on the spot supervision regarding track condition.

**(iv) Keyman:-**

The keyman inspects by foot his entire beat once a day, both the tracks and bridges for lookout of defects like loose spikes, keys, chairs, fish bolts, fittings on grinder bridges/culverts, broken/burnt sleepers, broken plates/tie bars etc. and attend them as necessary and report it to Mate/PWS/JE.

**(v) Trackman:-**

They are assigned the work of track maintenance like packing, casual renewal of rail/sleeper, lubrication of rail joints, attention to point & crossing, drain cleaning, vegetation cleaning, loading/unloading of materials, patrolling, protecting line in emergency etc.

**(vi) Trolley man:-**

These staff are engaged for operation of Trollies available with SSE/JE.

**(vii) Black Smith:-**

These staff are engaged for smithy related activities.

**(viii) ECR:-**

These staff are engaged for carpentry related activities as and when required. However, at present the work of Carpenter has been reduced in view of no wooden sleeper.

**(ix) Welder:-**

Welder are utilized for welding work.

**(x) Luter:-**

Luter are utilized for luting during welding work.

**(xi) Chowkidar:-**

Chowkidar staff are utilized in EI roster as care taker in the offices, stores etc.

**2.10 Classification of Track Maintenance Activities as per MCNTM report:**

**The Rational Formulae (MCNTM):**

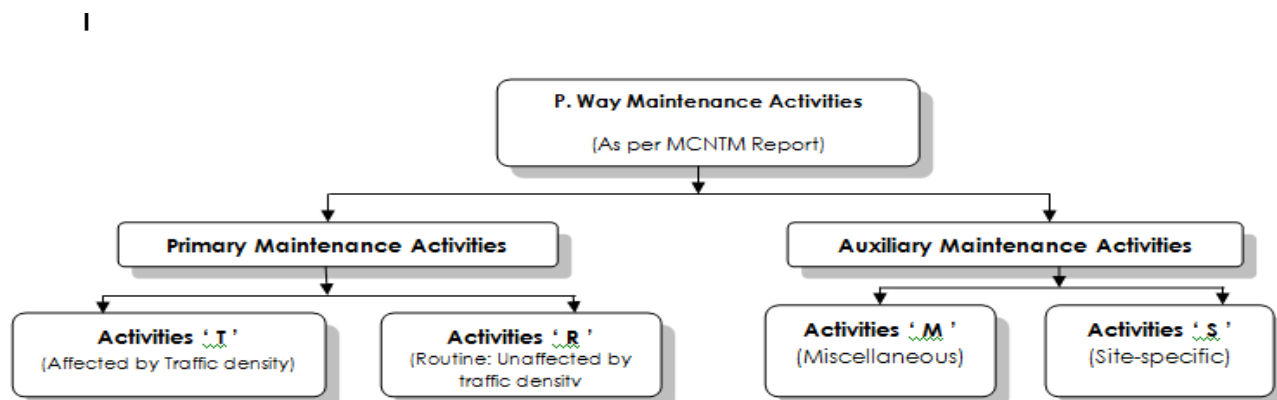
These formulae were developed because the Special Committee Formula above was felt inadequate to account for differing manpower availability (skill sets, age distribution) in different regions or zones, increasing use of casual labour and private contractors for certain track maintenance activities, etc. In 1996, another committee was constituted by the Railway Board to look into this matter and to recommend changes to the Special Committee Formula.

These new Rational Formulae are much more involved, and account for a wide variety of factors in terms of the nature of the maintenance work, the type of track and traffic carried on it, the distribution of casual and contracted labour for permanent way operations, etc. The Rational Formulae are actually many different formulae, for each kind of maintenance operation, and they also specify the equivalence of different kinds of work for the purposes of computing wages and so on. The latest set of Rational Formulae was adopted in 2006 on the basis of recommendation of “The Committee on Manpower and Cost Norms for Track Maintenance” (MCNTM Committee).

In order to cover certain gang activities left out which affect track maintenance effort and to

take into account the effect of machine packing and track modernization, the Committee on Manpower and Cost Norms for Track Maintenance (MCNTM) found it more logical and rational to adopt zero based approach. The Committee recommended that the Railway may sanction Casual/Seasonal labour for all these works as and when required on the basis of volume of work.

As per MCNTM report the track maintenance activities are categorized as Primary maintenance and Auxiliary maintenance given as under:



### **PRIMARY MAINTENANCE ACTIVITIES:**

These activities are directly related to P. Way maintenance, needing manpower based on continuous length of track, further classified as follows:

#### **Activities T (Affected by Traffic density):**

These are aimed at achieving safety and acceptable running quality, commensurate with the loads and speeds carried.

#### **Activities R (Routine: Unaffected by traffic density):**

These are for maintaining track, formation and other integrated assets, which are of routine nature, but quite important for train operation and for achieving reliability and long life of assets.

### **AUXILIARY MAINTENANCE ACTIVITIES :**

These are related to upkeep of P. Way section as a whole, needing manpower based on localized problems, special features and geographical nature of P. Way section, further classified as follows:

#### **Activities M (Miscellaneous):**

For these activities, the quantum of work arising in the P. Way section can be assessed on a universally adoptable basis and the yardstick relating mandays requirement to output is rationally stipulated for each sub-activity.

#### **Activities S (Site-specific):**

For these activities, the quantum of work arising varies from location to location depending on site-specific features of the P.Way section and the yardstick is stipulated generally based on past experience.

**2.11** The details of activities and sub-activities mentioned in MCNTM report under T, R M, & S categories are given as under:

List of activities & sub-activities under T,R,M &S as per MCNTM Report			
PRIMARY MAINTENANCE ACTIVITIES		AUXILIARY MAINTENANCE ACTIVITIES	
Activities 'T' (Affected by Traffic density):	Activities 'R' (Routine: Unaffected by traffic density)	Activities 'M' (Miscellaneous)	Activities 'S' (Site specific)
Machine packed track (non-suburban):	Machine packed track (non-suburban):	Sub-activities:	Sub-activities:

<p><b>T1. Slack attention to</b></p> <p>a. Bad spots</p> <p>b. Low joints, (FP or welded), Glued joints</p> <p>c. SEJ (1 No. per km.)</p> <p>d. Minor curve realignment</p> <p><b>T2. For tie tamper working</b></p> <p>a. Pre-tamping operations</p> <p>b. Along with tamper</p> <p>c. Post tamping operations</p> <p><b>T3. Casual Renewal of</b></p> <p>a. Rails</p> <p>b. Sleepers</p> <p>c. Fasteners (along with re-gauging)</p> <p><b>T4. Repair Welding</b></p> <p><b>ii. Manually packed track (non-suburban):</b></p> <p><b>T1. Through packing</b></p> <p><b>T2. Slack attention to</b></p> <p>a. Bad spots</p> <p>b. Low joints, insulated joints</p> <p>c. Minor curve realignment</p> <p><b>T3. Casual renewal of</b></p> <p>a. Rails</p> <p>b. Sleepers</p> <p>c. Fasteners (includes attention)</p> <p><b>T4. Creep pulling</b></p> <p><b>iii. Machine packed track (high density suburban):</b></p> <p><b>T1. Slack attention to</b></p> <p>a. Bad spots</p> <p>b. Low Joints</p> <p>c. SEJs</p> <p>d. Minor Curve attention</p> <p><b>T2. For Tie tamper working</b></p> <p>a. Pre-tamping attention</p> <p>b. Along with tamper</p> <p>c. Post tamping attention</p> <p><b>T3. Casual renewal of</b></p> <p>a. Rails</p> <p>b. Sleepers</p> <p>c. Fastenings</p> <p><b>T4. Repair welding</b></p>	<p><b>R1.</b> Lubrication of ERCs</p> <p><b>R2.</b> Shallow Screening (1/5 length)</p> <p><b>R3.</b> Loading, leading, unloading</p> <p><b>R4.</b> Overhauling of level crossing</p> <p><b>R5.</b> Watching caution spots &amp; Miscellaneous</p> <p><b>R6.</b> Tree cutting for visibility</p> <p><b>R7.</b> Lubrication of rails in curves</p> <p><b>R8.</b> Accident relief and carcass removal in run-over cases</p> <p><b>R9.</b> Bridge sleeper attention &amp; renewal</p> <p><b>R10.</b> Pre monsoon attention, such as clearing of drains and waterways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges.</p> <p><b>R11.</b> Creep pulling (approaches of bridge, turnout)</p> <p><b>R12.</b> Rectifying damage to L/C posts and gates</p> <p><b>ii. Manually packed track (non-suburban):</b></p> <p><b>R1.</b> Lubrication of rail joints</p> <p><b>R2.</b> Shallow screening (1/5 length)</p> <p><b>R3.</b> Loading, leading, unloading</p> <p><b>R4.</b> Overhauling of level crossings</p> <p><b>R5.</b> Watching caution spots &amp; miscellaneous</p> <p><b>R6.</b> Tree cutting for visibility</p> <p><b>R7.</b> Lubrication of rails in curves</p> <p><b>R8.</b> Accident relief and carcass removal in run-over cases</p> <p><b>R9.</b> Bridge sleeper attention &amp; renewal</p> <p><b>R10.</b> Pre-monsoon attention such as clearing of drains and waterways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges</p> <p><b>R11.</b> Rectifying damage to LC posts and gates</p> <p><b>iii. Machine packed track (high density suburban):</b></p> <p><b>R1.</b> Through packing</p> <p><b>R2.</b> Shallow screening(1/5 length)</p> <p><b>R3.</b> Loading, leading &amp; unloading</p> <p><b>R4.</b> Lubrication of ERCs(Jts.)</p> <p><b>R5.</b> Overhauling of level crossings</p> <p><b>R6.</b> Watching caution spots and look out men</p> <p><b>R7.</b> Tree cutting</p> <p><b>R8.</b> Lubrication of rails in curves</p> <p><b>R9.</b> Bridge sleeper attention &amp; renewal</p> <p><b>R10.</b> Accident relief and carcass removal</p> <p><b>R11.</b> Pre-monsoon attention</p> <p><b>R12.</b> Creep pulling</p> <p><b>R13.</b> Rectifying damage to LCs</p> <p><b>R14.</b> Painting of weld collars</p> <p><b>R15.</b> Emergency attention</p> <p><b>R16.</b> Extra assistance to Keymen &amp; B/Smith</p> <p><b>R17.</b> Extra work in night blocks</p> <p><b>R18.</b> Extra assistance for S&amp;T items</p>	<p><b>M1.</b> Monsoon patrolling</p> <p><b>M2.</b> Hot weather patrolling for LWR track</p> <p><b>M3.</b> Cold weather patrolling for LWR track</p> <p><b>M4.</b> Watching of vulnerable locations</p> <p><b>M5.</b> Gate keeping at Engineering level crossings</p> <p><b>M6.</b> Rest giving for keymen</p> <p><b>M7.</b> Waterman duty (to serve the gang)</p> <p><b>M8.</b> Store watchman duty (at isolated locations of P. Way material store)</p>	<p><b>S1.</b> Tunnel maintenance</p> <p><b>S2.</b> Bridge substructure maintenance</p> <p><b>S3.</b> Long girder bridge maintenance</p> <p><b>S4.</b> Extra workload due to very sharp curves, deep cuttings and steep gradients.</p> <p><b>S5.</b> Maintenance of track on extremely bad formation.</p> <p><b>S6.</b> Look-out man duty (for the safety of gang)</p> <p><b>S7.</b> Fog signal man duty (to assist Traffic Department)</p> <p><b>S8.</b> Filth removal from track (within city limits)</p> <p><b>S9.</b> Security patrolling</p> <p><b>S10.</b> Watching of water level in suburban section (mostly in Mumbai area) during monsoon and stopping of trains as soon as found necessary.</p>
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**2.12** As per MCNTM report, the following track maintenance works can be earmarked for execution through contracts:

**Table –A: List of activities that can be executed through contract system**

S#	Activities
1	Formation treatment works
2	Collection of ballast, training out of ballast by material train, leading ballast stack to track, insertion of ballast in track and profiling.
3	Deep- screening of ballast in track, carrying out manually or by deploying BCM in which case manpower support is provided by contractor.
4	Introduction of sub ballast and ballast layer.
5	Heavy repairs to track including lifting.
6	Complete realignment of curved track.
7	Through renewal of rails, sleepers and fasteners.
8	Complete renewals of points & crossing, SEJs, traps, etc.



9	Resurfacing of machines and switch rails.
10	Loading and unloading of P. Way materials in bulk.
11	Lorrying of P. Way materials for other than casual renewal.
12	Security of materials in a depot which is closed and locked.
13	Painting of rails and weld collars.
14	Painting of bridge girders.
15	Heavy repairs (measurable) to formation, cutting, side drains and catch water drains.
16	Heavy repairs (measurable) to bridges, bridge protection works, river training works and tunnels.
17	Providing/repairing road surface at level crossings, including speed breakers.
18	Removal of major sand breaches.
19	Works arising due to restoration, following breach or accident.
20	Clearing of rank vegetation in platforms and in the vicinity of tracks in coaching and goods yards, repairs depots and workshops of Engineering, Mechanical, Electrical and S&T departments.

**Table –B: List of activities for machine packed track to be maintained departmentally**

<b>Activities under ‘T’ (Affected by traffic density):</b>	
T.1	Slack attention to; a) Bad spot b) Low joints (FP or welded) & Glued joints c) SEJ d) Minor curve alignment.
T.2	For tie tamper working; a) Pre-tamping operations b) Along with tamper c) Post tamping operations.
T.3	Casual renewal of; a) Rails b) Sleepers c) Fasteners along with re-gauging.
T.4	Repair welding.
<b>Activities under ‘R’ (Unaffected by traffic density):</b>	
R. 1	Lubrication of ERCs.
R.2	Shallow Screening (1/5 length)
R.3	Loading, leading, unloading
R.4	Overhauling of level crossing
R.5	Watching caution spots & Miscellaneous
R.6	Tree cutting for visibility
R.7	Lubrication of rails in curves
R.8	Accident relief and carcass removal in run over cases
R.9	Bridge sleeper attention & renewal.
R.10	Pre monsoon attention, such as clearing of drains and water ways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges.
R.11	Creep pulling (Bridge approaches/Turn-out)
R.12	Rectifying damage to L/C posts and gates.
<b>Activities under ‘M’:</b>	
M.1	Monsoon patrolling.
M.2	Hot weather patrolling of LWR track
M.3	Cold weather patrolling of LWR track
M.4	Watching vulnerable locations.
M.5	Gate keeping at level crossings
M.6	Rest giving for Key man
M.7	Waterman duty
M.8	Store-watchman duty at isolated location of P.way material store.
<b>Activities under ‘S’ (Site specific):</b>	
S.1	Tunnel maintenance (Subject to works/bridge staff not being available for this work)
S.2	Bridge sub-structure maintenance (Subject to works/bridge staff not being available)
S.3	Long girder bridge maintenance (No. of bridges each having more than 150m lineal waterway)

S.4	Extra workload due to very sharp curve, deep cuttings and steep gradients.
S.5	Maintenance of track on extremely bad formation. (No. of locations where track needs more than 12 attentions in a year)
S.6	Look-out man duty (for the safety of gang)
S.7	Fog signal man duty to assist Traffic Deptt (Man days utilized in past 3 years for this)
S.8	Filth removal from track (within city limits)
S.9	Security patrolling (Man days utilized in past 3 years for this duty)
S.10	Watching of water level in suburban section (mostly in Mumbai area)

<b>2.13</b>	<b>List of activities being carried out by Engineering deptt. (P.Way) in NGP Division to maintain Railway Track and other associated P. way assets &amp; structures.</b>
<b>S#</b>	<b>Track Works</b>
1	Stretcher Bar/Bracket Renewal
2	Visual Examination of JFP
3	Anti Corrosive Painting Of Liner Seats
4	Anti Corrosive Painting Of Rails
5	Attention To Rain Cuts
6	Attention To Tress-Pass Location
7	Ballasting
8	Bridge Maintenance
9	Bridge Sleeper Attention
10	Bridge Sleeper Removal
11	Casual Fastening Renewal
12	Casual Rail Renewal
13	Casual Sleepers Renewal
14	Check Rail Renewal
15	Cleaning , Dressing ,Boxing Of Ballast
16	Clearance Of Catch Water Drain
17	Clearance Of Rail Flange In Track Circuit Area
18	Clearance Of Side Drain
19	Creep Pulling
20	Curve Greasing
21	Deepscreening
22	Destressing
23	Deweeding Of Track
24	Drilling Of Holes
25	Equalization & Recoument Of Ballast
26	ERC Greasing
27	Gauging Work
28	Glued Joint Renewal
29	Greasing Work Of Tongue Rails, Crossings, SEJs And Fittings
30	Guard Rail Removal / Opening / Renewal
31	Lifting
32	Lubrication Of ERC
33	Lubrication Of Plate Screws
34	Lubrication Of Rail Joints
35	Lubrication Of Rails In Curves
36	Lubrication Of SEJ
37	Lubrication Of Slide Chairs
38	Minor Cess Repair

39	Overhauling Of LC
40	Overhauling/Shallow Screening
41	P & C Attention/Overhauling
42	Points Xing/SEJ Renewal
43	Post Tamping Operation
44	Pre Block Activities
45	Pre Monsoon Operation
46	Pretamping Operation
47	Providing Joggled Fish Plate
48	Providing Wooden Block Below Welding Joints/Joints
49	Rail Carrying
50	Rail Cutting
51	Rail Painting Work.
52	Realignment Of Curve
53	Reconditioning of Tounge Rail/ Stock Rail / Crossings
54	Recoupment Of Fittings & Fastenings
55	Slack Attention Insulated Joints
56	Slack Attention Bad Spots
57	Slack Attention In T/Outs
58	Slack Attention Minor Curve Realignment
59	Slack Attention SEJ
60	Slack Attention To Joints
61	Sleeper Carrying
62	Squaring / Spacing Adjustment Of Sleepers
63	Switch /SEJ Changing
64	TFR
65	Through Packing/Attention
66	Through Sleeper Renewal
67	Toe Load Measurement Of ERC
68	TRR
69	Tunnel Maintenance
70	Unloading Of Ballast From Dmt
71	Weld Collars Painting
72	With Keyman For F/P O&G
<b>S#</b>	<b>Miscellaneous Works</b>
1	Fixing /correcting of Road Sign Board at LEVEL CROSSING
2	Accident Relief
3	Alongwith Tamper
4	Assisting In Office Work
5	Attending Trolley Refuge
6	Attention of Bridge approach
7	Attention of Level crossing approach
8	Boundary Post Fixing
9	Caracass Removal/Watching Dead Body
10	Cess Repair
11	Chamfering of holes
12	Check Rail Cleaning
13	Court Witness On Duty
14	Dak Courier
15	Departmental Exam

16	Dmt Train Working
17	Earth Work
18	Emergency Attention
19	Encroachment Removal
20	Erection of SEJ Pillars
21	Erection Of Caution Board
22	Filth Removal From Track / RAG PICKING
23	Fog Signalman Duty
24	Grass Cutting In Track / Jungle Clearance
25	Injured On Duty
26	LC Census
27	LC Road Surface Improvement
28	Loading Leading Unloading Of P Way Material
29	Material Chasing
30	Material Stacking/Collection
31	Monsoon Precaution
32	Monsoon Relief Work
33	On Debit Sheet To Other Dipo
34	On Establishment Duty
35	On Gatekeeping Duty
36	On Helper Duty On Vehicle
37	On Keyman Duty
38	On Mate Duty
39	On Trolley Duty
40	On USFD Work
41	On Vehicle Driver Duty
42	Other Miscellaneous Works
43	Painting Of Board (LWR, Curve, Jurisdiction Etc.)
44	Painting Of Gang Beat/ Level Xing/Fog Post/Fm/Curve/Ohe Mast
45	Patrolling-Cold Weather
46	Patrolling-Hot Weather
47	Patrolling-Monsoon
48	Patrolling-Security
49	Periodical Medical Examination
50	Rail Dolly/Diplorry Work
51	Rectifying Damage To LC Posts / Boom And Gates
52	Sparing To Other Dept Works
53	Special Casual Leave
54	Stock Verification
55	Store Watchman Duty
56	Track Consolidation
57	Track MC Work
58	Training/IC/RC
59	Tree Cutting / Trimming For Visibility
60	Tree plantation
61	Trolly Refuge Repair Work
62	Wasted Due To No Block
63	Watching Caution Spots
64	Watching Vulnerable Locations
65	Watchman

66	Waterman Duty
67	White washing on sleeper ends
68	With Artisan
69	With Keyman
70	With Welding Team
71	Wooden Block Below Welding Joints
72	Work Site Protection
73	Working With Contract Labour As Spl.Work

## 2.14 Percentage Breakup of the activities :

As described above the activities being carried out in Engineering Department by means of Departmental Staff and through Contractual Agency, the Percentage breakup of the work execution taken in account of two sample P. way Units (namely SSE/ P. Way Unit/ Dongargarh (DGG) and SSE/ P.way Unit / Gondia) of Nagpur Division.

<b>2.14.1 Percentage Breakup of P. Way Work execution under the jurisdiction of SSE/ P.Way Unit/ DGG/NGP Div.</b>			
<b>S#</b>	<b>Activities</b>	<b>%-age Break up of P. Way works</b>	
		<b>Departmental</b>	<b>Contractual</b>
1	Attention to bad spots	100%	00%
2	Attention to low joints	100%	00%
3	Attention to SEJ	100%	00%
4	Attention to minor curve realignment	100%	00%
5	Pretamping operations	60%	40%
6	Along with tamper	00%	00%
7	Post tamping operations	60%	40%
8	Casual renewal of rails	00%	00%
9	Casual renewal of sleepers	00%	00%
10	Renewal of fasteners (along with regauging)	50%	50%
11	Repair Welding	00%	00%
12	Lubrication of ERC	50%	50%
13	Shallow screening	50%	50%
14	Loading, leading, unloading	50%	50%
15	Overhauling of level crossing	70%	30%
16	Watching caution spots and misc.	100%	00%
17	Tree cutting for visibility	100%	00%
18	Lubrication of rails in curves	100%	00%
19	Accident relief and carcass removal in run over case	100%	00%
20	Bridge sleeper attention and renewal	100%	00%
21	Pre-monsoon attention such as cleaning of drains and water ways, cess repair, deweeding of track and attention to cuttings and trolley refuges	100%	00%
22	Creep pulling (approaches of bridge and turnout)	00%	00%
23	Rectifying damage to LC posts and gates	100%	00%
24	Monsoon patrolling	100%	00%
25	Hot weather Patrolling	100%	00%
26	Cold weather Patrolling	100%	00%
27	Vulnerable location	100%	00%
28	Waterman duty	100%	00%
29	Site store chowkidar	100%	00%
30	Gate Keeping at Level crossing	100%	00%
31	Tunnel maintenance	N/A	N/A
32	Bridge structure maintenance	100%	00%
33	Long girder maintenance	100%	00%
34	Extra for very sharp curve	100%	00%

35	Extra for very bad formation	100%	00%
36	Look outman duty	100%	00%
37	Fog signalman duty	100%	00%
38	Filth removal	100%	00%
39	Security Patrolling	100%	00%
40	Painting & Writing work	100%	00%

<b>2.14.2</b>	<b>Percentage Breakup of P. Way Work execution under the jurisdiction of SSE/ P.Way Unit/ Gondia/NGP Div.</b>		
<b>S#</b>	<b>Activities</b>	<b>Percentage Break up of P. Way works</b>	
		<b>Departmental</b>	<b>Contractual</b>
1	Attention to bad spots	80%	20%
2	Attention to low joints	100%	00%
3	Attention to SEJ	100%	00%
4	Attention to minor curve realignment	100%	00%
5	Pretamping operations	10%	
6	Along with tamper	100%	00%
7	Post tamping operations	10%	90%
8	Casual renewal of rails	90%	10%
9	Casual renewal of sleepers	50%	50%
10	Renewal of fasteners (along with regauging)	30%	70%
11	Repair Welding	70%	30%
12	Lubrication of ERC	10%	90%
13	Shallow screening	50%	50%
14	Loading, leading, unloading	50%	50%
15	Overhauling of level crossing	50%	50%
16	Watching caution spots and misc.	100%	00%
17	Tree cutting for visibility	100%	00%
18	Lubrication of rails in curves	100%	00%
19	Accident relief and carcass removal in run over case	100%	00%
20	Bridge sleeper attention and renewal	30%	70%
21	Premonsoon attention such as cleaning of drains and water ways, cess repair, dweeding of track and attention to cuttings and trolley refuges	90%	10
22	Creep pulling (approaches of bridge and turnout)	100%	00%
23	Rectifying damage to LC posts and gates	100%	00%
24	Monsoon patrolling	100%	00%
25	Hot weather Patrolling	100%	00%
26	Cold weather Patrolling	100%	00%
27	Vulnerable location	100%	00%
28	Waterman duty	100%	00%
29	Site store chowkidar	100%	00%
30	Gate Keeping at Level crossing	100%	00%
31	Tunnel maintenance	00%	00%
32	Bridge structure maintenance	00%	00%
33	Long girder maintenance	00%	00%
34	Extra for very sharp curve	100%	00%
35	Extra for very bad formation	100%	00%
36	Look outman duty	100%	00%
37	Fog signalman duty	100%	00%
38	Filth removal	100%	00%
39	Security Patrolling	100%	00%

40	Painting & Writing work	100%	00%
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## 2.15 Average %-Break-Up of P. Way Work.:

Average %-age of P. way Work being executed under the jurisdiction of above mentioned two P. way Units (SSE/ P. Way Units/DGG & SSE/ P. way Units/G) of Nagpur division is as under:

S#	Activities	Departmental	Contractual
1	Attention to bad spots	85	15
2	Attention to low joints	100	00
3	Attention to SEJ	100	00
4	Attention to minor curve realignment	100	00
5	Pretamping operations	35	65
6	Along with tamper	100	00
7	Post tamping operations	35	65
8	Casual renewal of rails	80	20
9	Casual renewal of sleepers	70	30
10	Renewal of fasteners (along with regauging)	35	65
11	Repair Welding	10	90
12	Lubrication of ERC	50	50
13	Shallow screening	35	65
14	Loading, leading, unloading	30	70
15	Overhauling of level crossing	50	50
16	Watching caution spots and misc.	100	00
17	Tree cutting for visibility	100	00
18	Lubrication of rails in curves	100	00
19	Accident relief and carcass removal in run over case	100	00
20	Bridge sleeper attention and renewal	90	10
21	Premonsoon attention such as cleaning of drains and water ways, cess repair, deweeding of track and attention to cuttings and trolley refuges	90	10
22	Creep pulling (approaches of bridge and turnout)	50	50
23	Rectifying damage to LC posts and gates	100	00
24	Monsoon patrolling	100	00
25	Hot weather Patrolling	100	00
26	Cold weather Patrolling	100	00
27	Vulnerable location	100	00
28	Waterman duty	100	00
29	Site store chowkidar	100	00
30	Gate Keeping at Level crossing	100	00
31	Tunnel maintenance	00	00
32	Bridge structure maintenance	100	00
33	Long girder maintenance	100	00
34	Extra for very sharp curve	100	00
35	Extra for very bad formation	100	00
36	Look outman duty	100	00
37	Fog signalman duty	100	00
38	Filth removal	100	00
39	Security Patrolling	100	00
40	Painting & Writing work	90	10

2.16 Details of DTMs/Gangs operated under the above mentioned two P. way Units of NGP Division:							
DTMs under SSE/ P. Way Units/DGG/NGP Div.				DTMs under SSE/ P. Way Units/G/NGP Div			
S#	Name/No. of DTM	Jurisdiction (KM)	No. of Staff deployed	S#	Name/No. of DTM	Jurisdiction	No. of Staff deployed
1	DTM-7	7.25	1+2+27=30	1	DTM-21	988/0-993/25	1+2+30=33
2	DTM-8	6.5	1+2+27=30	2	DTM-22	993/25-1000/11	1+2+28=31
3	DTM-9	6.5	1+2+27=30	3	DTM-23	1000/11-1003/15	3+3+57=63
4	DTM-10	6.25	1+2+27=30	4	DTM-24	1003/15-1009/25	1+2+28=31
5	DTM-11	Yard	1+1+24=26	5	DTM-25	1009/25-1019/3	1+3+33=37
6	DTM-12	6.75	2+2+30=34	6	DTM-26	1019/3-1025/15	1+2+25=28
7	DTM-13	7	1+2+27=30	7	-		
8	MP	39	13	8	-		

**2.17 Field Observation of 02 DTM/Gangs functioning under SSE/P.Way Units/ DGG & SSE/P.Way Units/ G respectively over Nagpur Divn.**

**2.17.1 Sectional data of sample gangs:**

Sectional data of 02 Sample DTMs namely DTM-13 under SSE/P. Way./ DGG & DTM-25 under (SSE/P. Way/G) as provided by respective SSEs In Charge may be summarized as under:

Items	DTM/13 (SSE/P. Way Unit/DGG)	DTM/25 (SSE/P. Way/G)
Division	NGP	NGP
Track Maintenance	Manually & Machine	Mechanised
Jurisdiction	939/39-946/0	1009/25-1019/3
Gang length	6.25 Km	(6.50Km+6.50Km)
TKM (M/L)	6.25 Km	12Km
RYL	1.8 km	6Km
Poor visibility	UP - 71.57 DN - 42.53	-
LWR length	1) 6 km UP 2) 6 Km DN	UP Line-6. 30Km DN Line-6.30Km
No. of curves	UP-07; DN-10	02(01 UP + 01 DN)
Degree of curve	1/2° to 6°	02.9 <sup>0</sup>
Length of curve	260 mtr, 271 mtr, 536 mtr, 250mtr, 454 mtr, 449 mtr, 630mtr 474mtr, 278 mtr & 439 mtr	2.52Km
Girder bridge	Nil	Nil
Length of G/Bridges	Nil	Nil
Station yard	BTL Yard	Nil
L/C Gate	LC No. 480, 479	02Engg
Distressing Temp.	42°	42 <sup>0</sup> C
Rail Temperature	51°	58 <sup>0</sup> C
Stationary Patrolling	1) Monsoon 2) Cold weather 3) Hot Weather	1) Monsoon 2) Cold weather 3) Hot Weather



### **CHAPTER-III**

#### **3.0 CRITICAL ANALYSIS & RECOMMENDATIONS :-**

**3.1** The actual staff strength of SSE (P. Way) units over Nagpur Division is **3779** as against the sanctioned strength of **4280** along with vacancies of **501** as on 01.04.2018. The requirement of P. Way staff (Trackman) has been assessed based on the present workload (Yearly work progress of last one year), in view of mechanization of track, provision of outsourcing of some activities of P. Way, applying Benchmarking norms and discussion held with Supervisors & staff. As major works of P. Way are being carried out under Zonal contract and repair works like attention to bad spots, lubrication of rails, patrolling duty, attending accident relief/run over cases etc. are attended by P. Way staff. Thus, the workload of SSE(P. Way) units has reduced and as such the present review of workload of P-Way units /NGP Div. has been undertaken.

In view of above facts, the assessment of need base requirement of Gang Strength (Trackman) for SSE(P.Way) units over Nagpur Division has been assessed as under:

#### **3.2 First Method (Based on Yearly Work Progress of Sample DTM /Gangs):**

**Assessment of requirement of Gang Strength (Trackman) for SSE(P. Way) Units/NGP Div. as per existing work load (Based on Yearly Work Progress) :-**

The yearly work progress of 02 sample DTM gangs (DTM/13/DGG & DTM/25/G) of SSE(P. Way) units (Dongargarh & Gondia) under ADEN/DGG/G of last one year (April'17 - March'18) as provided by SSE is critically analysed for assessment of requirement of Track Maintainer and are summarized as under:

**Table: A**

**Summary of Yearly work progress of DTM/13/DGG for last one year (01.04.17 to 31.03.18):**

Type of Activity	Total Mandays utilized
Activities Affected By Traffic Density(T)	872
Routine Activities Unaffected By Traffic Density(R)	589
Site-Specific Activities (S)	41
Auxiliary Maintenance Activities (M)	867
Unaccounted (other than T,R,M,S activities)	5562
Yearly utilization for total activities (T+R+M+S+ unaccounted)	7931
Avg. Trackman utilized per day	26

➤ Avg. Trackman utilized for track maintenance per day is (7931 man days/309 wkg. days) = 26.

**Table: B**

**Summary of Yearly progress for last one year (01.04.14 to 31.03.15) of Gang/25/G:**

Type of Activity	Total Mandays utilized
Activities Affected By Traffic Density(T)	1992
Routine Activities Unaffected By Traffic Density(R)	3551
Site-Specific Activities (S)	74
Auxiliary Maintenance Activities (M)	1921
Unaccounted (other than T,R,M,S activities)	2385
Yearly utilization for total activities (T+R+M+S+ Unaccounted)	9923
Avg. Trackman utilized per day	32

➤ Avg. Trackman utilized for track maintenance per day is 9923 mandays/309 working days = 32.

## **Critical Analysis:-**

During the field observation it is revealed that-

### **A. DTM/13(SSE/P-Way/DGG):**

- I. Out of 30 Trackmen on roll, 1 is working as Mate and 2 are working as keyman. Average Trackman on leave/sick/absent per day is 4.
- II. Average Trackman being utilized as Patrolman per day is 4.
- III. Average Trackman found engaged with track maintenance activities per day is 26.
- IV. During last one year, the gang worked for 309 days and 7931 Trackman days are engaged in that period.
- V. Slack attention to bad spots, attention to Points and crossing & SEJ are the main activities. Dewedding of track and cold weather patrolling are other major activity in that period.

### **B. GANG/25 (SSE/P-Way/G):**

- I. Out of 37 Trackmen on roll, 1 is working as Mate and 3 are working as keyman and average absent/sick/leave per day is 1.
- II. Average Trackman found engaged with track maintenance activities per day is 17.
- III. During last one year, the gang worked for 309 days and 9923 Trackman days are engaged in that period. (Gang worked on rest days, but CR taken individually)
- IV. Attention to bad spots, attention to Points and crossing & SEJ are the main activities. Monsoon, Hot and Cold weather patrolling, Diplorry work are other important activities during this period.

As per existing work load of above two sample DTMs, Average Track Maintainer utilized for track maintenance per day per DTM (on average calculation of 02 sample DTM gang) is  $(7931+9923) \text{ mandays} / (309+309) \text{ working days} = 28.89$  say 29 (including Mate/Keyman).

The total DTM gangs in NGP division is 136. After applying the same principle for entire NGP division, the total requirement of Trackman comes to  $136 \times 29 = 3944$ .

In addition to it, the avg. requirement of Trackman for each store gang for dealing store/office related activities will be 07. The requirement of Track Maintainer for store gang in 17 P-Way units will be  $07 \times 17 = 119$ .

The present deployment of Trackman for Works unit is 34 which is sufficient.

The total requirement of trackman for DTM gangs, store gangs & Works unit over Nagpur division will be  $= 3944 + 119 + 34 = 4097$ .

The sanctioned cadre of Track maintainer category over Nagpur Division is 4280.

So, total reduction in sanction cadre of Trackman of Nagpur division will be  $4280 - 4097 = 183$ .

**Hence, it is recommended that 183 identified surplus vacant posts of Track Maintainer should be surrendered from Engineering Department of Nagpur Division.**

### 3.3 **Second Method (In view of proposed outsourcing):**

#### **Assessment of requirement of Mandays for selected activities in view of proposed outsourcing:**

As per MCNTM report, 34 track maintenance activities/sub-activities(details given in Para 2.12-B) have been identified which are maintained by Track Maintainers. As per existing practice, these gang activities in the field are maintained through either departmental resources or through contracts or a combination thereof, depending upon the situation. Activities which are intensive in nature and require more man days like; shallow screening, welding, loading/unloading, pre tamping, post tamping, LC overhauling, etc. are mostly executed through contracts. Activities like; slack picking, casual renewal, ballast dressing, jungle cleaning, drain cleaning, rail lubrication, bridge attention, patrolling, store watchman, etc. are being maintained by Trackman.

Moreover, while going through the daily work progress of sample DTMs, it is observed that, average 50 % of available man days are being utilized for De-weeding of Track, Shallow Screening & side drain cleaning, Filth removal which indicates that a major part of the Manpower is involved in these activities which can be outsourced up to 80% to achieve better progress rate and economy.

### 3.4 **In view of above, the assessment of need based requirement of Track maintainers over Nagpur division is as under**

#### **3.4.1 Percentage Breakup of Departmental & Contractual work For Gang/13/DGG**

Srl	Activity	Deptt	Contract
1	Slack attention to;		
a	Bad spot	100%	00%
b	Low joints (FP/welded/Glued joints	100%	00%
c	SEJ	100%	00%
d	Minor curve alignment	100%	00%
2	For tie tamper working;		
a	Pre-tamping operations	60%	40%
b	Along with tamper	100%	00%
c	Post tamping operations.	60%	40%
3	Casual renewal of ;		
a	Rails	100%	00%
b	Sleepers	100%	00%
c	Fasteners along with re-gauging.	50%	50%
4	Repair welding	100%	00%
5	Lubrication of ERC	50%	50%
6	Shallow Screening	50%	50%
7	Loading, leading, unloading	50%	50%
8	Overhauling of level crossing	70%	30%
9	Watching caution spot & Misc.	100%	00%
10	Tree cutting for visibility	100%	00%
11	Lubrication of rails in curves	100%	00%
12	Accident relief and carcass removal in run over cases	100%	00%
13	Bridge sleeper attention & renewal.	100%	00%
14	Creep pulling(approaches of bridge/turnout	-	
15	Pre monsoon attention, such as clearing of drains, water ways, cess repairs, de-weeding of track, attention to cuttings and trolly refuges.	100%	00%
16	Rectifying damages to L/C posts& gates.	100%	00%
17	Monsoon patrolling	100%	00%
18	Hot weather patrolling of LWR track	100%	00%
19	Cold weather patrolling of LWR track	100%	00%
20	Watching vulnerable locations	100%	00%
21	Gate keeping at level crossings (Excluded)	100%	00%
22	Rest giving for Key man	100%	00%
23	Waterman duty	100%	00%

24	Store-watchman duty at isolated location of P.way material store.	100%	00%
25	Tunnel maintenance (Subject to works/bridge staff not being available for this work)	NA	
26	Bridge sub-structure maintenance(Subject to works/bridge staff not being available for this work)	100%	00%
27	Long girder bridge maintenance (No. of bridges each having more than 150m lineal waterway)	100%	00%
28	Extra workload due to very sharp curve, deep cuttings and steep gradients.	100%	00%
29	Maintenance of track on extremely bad formation.(No. of locations where track needs more than 12 attentions in a year)	100%	00%
30	Look out man duty (For gang safety)	100%	00%
31	Fog signal man duty to assist Traffic Deptt(Man days utilized in past 3 years for this)	100%	00%
32	Filth removal from track (within city limits)	100%	00%
33	Security patrolling (Man days utilized in past 3 years for this duty)	100%	00%
34	Watching of water level in suburban section (mostly in Mumbai area)	100%	00%

### 3.4.2 Percentage Breakup of Departmental & Contractual work For Gang/25/G

S#	Activity	Deptt	Contract
1	Slack attention to;		
a	Bad spot	80%	20%
b	Low joints (FP/welded/Glued joints	100%	Nil
c	SEJ	100%	Nil
d	Minor curve alignment	100%	00%
2	For tie tamper working;		
a	Pre-tamping operations	10%	90%
b	Along with tamper	100%	Nil
c	Post tamping operations.	10%	90%
3	Casual renewal of ;		
a	Rails	90%	10%
b	Sleepers	50%	50%
c	Fasteners along with re-gauging.	30%	70%
4	Repair welding	70%	30%
5	Lubrication of ERC	30%	70%
6	Shallow Screening	10%	90%
7	Loading, leading, unloading	50%	50%
8	Overhauling of level crossing	50%	50%
9	Watching caution spot & Misc.	100%	Nil
10	Tree cutting for visibility	100%	Nil
11	Lubrication of rails in curves	100%	Nil
12	Accident relief and carcass removal in run over cases	100%	Nil
13	Bridge sleeper attention & renewal.		
14	Creep pulling(approaches of bridge/turnout	NA	NA
15	Pre monsoon attention, such as clearing of drains, water ways, cess repairs, de-weeding of track, attention to cuttings and trolly refuges.	30%	70%
16	Rectifying damages to L/C posts& gates.	100%	Nil
17	Monsoon patrolling	100%	Nil
18	Hot weather patrolling of LWR track	100%	Nil
19	Cold weather patrolling of LWR track	100%	Nil
20	Watching vulnerable locations	100%	Nil
21	Gate keeping at level crossings (Excluded)	100%	Nil
22	Rest giving for Key man	100%	Nil
23	Waterman duty	100%	Nil
24	Store-watchman duty at isolated location of P.way material store.	100%	Nil
25	Tunnel maintenance (Subject to works/bridge staff not being available for this work)	Nil	Nil
26	Bridge sub-structure maintenance(Subject to works/bridge staff not being	Nil	Nil

	available for this work)		
27	Long girder bridge maintenance (No. of bridges each having more than 150m lineal waterway)	Nil	Nil
28	Extra workload due to very sharp curve, deep cuttings and steep gradients.	Nil	Nil
29	Maintenance of track on extremely bad formation.(No. of locations where track needs more than 12 attentions in a year)	Nil	Nil
30	Look out man duty (For gang safety)	100%	Nil
31	Fog signal man duty to assist Traffic Deptt(Man days utilized in past 3 years for this)	100%	Nil
32	Filth removal from track (within city limits)	100%	Nil
33	Security patrolling (Man days utilized in past 3 years for this duty)	100%	Nil
34	Watching of water level in suburban section (mostly in Mumbai area)		

**Note:** The departmental and contractual percentage of three gangs is bifurcated as per; data furnished by sectional SSE(P-Way), which is an approximate calculation.

### 3.5 Trackman Requirement:

Divisions have calculated the Trackman requirement on manpower software. Keeping in view the calculated required strength, the trackman requirement is calculated below.

<b>3.5.1 A. Trackman requirement as per present work execution percentage of contracts:</b>					
S#	Activities	Man days requirement per annum (As per field study)		Present parentage of outsourced	
		DTM/13/DGG	DTM/25/G	DTM/13/DGG	DTM/25/G
1	Shallow Screening	95	180	50%	80%
2	Flith Removal	36	52	0%	0%
3	Painting of rails and Engg. boards	00	47	50%	50%
4	De-wedding of track & clearing of drain	201	330	0%	70%
5	Over hauling of L/C	8	43	30%	70%
6	Pre and Post tamping work	50	150	40%	80%
7	Loading, leading & un-loading	67	174	50%	50%
<b>Total</b>		<b>362</b>	<b>796</b>		

<b>3.5.2 B.Trackman requirement as per proposed 70% work execution by contracts</b>						
S#	Activities	Man days requirement per annum (As per field study)		Reduction in man days as per proposed 70% of work execution in contract (Approx)		
		DTM/13/DGG	DTM/25/G	DTM/13/DGG	DTM/25/G	Total
1	Shallow Screening	95	180	76 (70%)	199(70%)	275
2	Flith removal	36	52	7 (80%)	11(80%)	18
3	Painting of rails and Engg. boards	00	47	00 (80%)	42 (80%)	42
4	De-wedding of track & clearing of drain	201	330	41 (80%)	297 (80%)	338
5	Over hauling of L/C	8	43	5 (70%)	39 (70%)	44
6	Pre and Post tamping work	50	150	35 (70%)	165 (70%)	200
7	Loading, leading & un-loading	67	174	47 (80%)	122 (80%)	169
<b>Total</b>		<b>362</b>	<b>976</b>	<b>211</b>	<b>875</b>	<b>1086</b>

During field study it has been noted that, a major percentage of this activity is being executed through contracts. The work study report proposed 70% and 80 % of the activity is considered for outsourcing as mentioned above and rest percentage of work through departmental staff. This 20 % departmental staff with technical knowledge can work along with contract labour.

After outsourcing of the above activities, the average Trackman reduction per gang is,  $(1086\text{mandays}/309\text{days})/2 = 1.75$ .

***The total no. of DTMs in NGP division is = 136 .***

***After applying the same principle to NGP division as a whole, the total reduction in Trackman requirement is  $136 \times 1.75 = 238$ .***

The present deployment of Trackman for Works unit is 34 which is sufficient.

Thus, the net reduction in sanctioned strength of Track Maintainer category of Engineering Department/NGP Div. will be  $238-34 = 204$ .

### **3.6 Application of Benchmarking norms:-**

Benchmarking offers us a solution for reduction and redistribution of staff and it is a very handy tool for rightsizing the staff strength on Indian Railways. It is a continuous process of comparing different units and identifying which one is the best in the business and then learning how this excellence was achieved and setting out to improve the efficiency of those units, which were left behind. If this concept is implemented it will definitely bring a large reduction in the cost hence making a significant contribution in improving the efficiency of various units of the Railways.

After introduction of Track machines, many of the manual activities have been reduced considerably and the efficiency of each staff has also been increased.

AS per Railway Board's instructions, the manpower is to be brought down at the level of IRABM (Indian Railway Average Bench Marking).

As per latest Benchmarking of Manpower Productivity Ratios Report of Dec.-2017 issued by the Director (E&R) / Railway Board:-

**Current Benchmark:- Bhavanagar Division (BVP) of WR at 0.73 Men per ETKM.**

**Current IR Average Benchmark :- 1.41 Men per ETKM.**

**Total On Roll staff of P-Way/NGP Div. : 4105.**

**ETKM of NGP Div.: 2076**

Thus, the total requirement of Track Maintainer for P-Way units over NGP Div. on applying latest Benchmark is worked out as under:

$$\begin{aligned} \text{Requirement of Track maintainer} &= \\ \text{Current IR Average Benchmark} \times \text{ETKM of NGP Div.} &= 1.41 \times 2076 = 2928 \text{ staff.} \end{aligned}$$

As per IRBM as mentioned above, 2928 staff are required for dealing with the present workload of P-Way units in Nagpur Division. However, keeping a lenient view, the Work Study team opine that 1152 more Track Maintainer are proposed in view of Gauge conversion of NG into BG and future workload.

The sanctioned cadre of Track maintainer category over Nagpur Division is 4280.

*Therefore, total requirement (Approx) of Track Maintainer for P-Way units in Nagpur Division comes to 4080 (2928+1152) against sanctioned of 4280.*

*Hence, 200 vacant posts of Track Maintainer are found surplus and should be surrendered from Engineering Department of Nagpur Division.*

### **3.7 RECOMMENDATIONS & SUGGESTIONS:**

#### **RECOMMENDATIONS:**

Work Study team has adopted two Methods for assessment of requirement of Gang Strength (Trackman) in Engineering (P. Way) department over Nagpur Division which are as under:

##### **3.7.1 First Method (In view of existing work load):**

Considering the existing work load, it is recommended that as per details given in Para 3.2, the requirement of Track Maintainer comes to 4097 against sanction of 4280 staff.

*Thus 183 identified surplus vacant posts of Track Maintainer should be surrendered from Engineering Department of Nagpur Division.*

**OR**

##### **3.7.2 Second Method (In view of proposed outsourcing):**

After implementation of proposed outsourcing of selected activities as per details given in Para 3.5.2, 204 vacant posts of Trackman are found surplus, should be surrendered from the sanctioned cadre of Trackman category of Engineering department of Nagpur Division.

**OR**

##### **3.7.3 Third Method (As per Benchmarking Norms ):**

After implementation of Benchmarking Norms as per details given in Para 3.6, 200 vacant posts of Track Maintainer are found surplus and should be surrendered from Engineering Department(P.Way) of Nagpur Division.

##### **3.7.4 Conclusion:**

As the Productivity has acquired a new and broader meaning in the light of highly competitive economic environment, increasing educational levels and degradation of physical environment creating pressure on the limited available resources, a positive attitude has been applied in evolving the requirement of staff vis-à-vis quantum of work in total and followed a feasible solution to the administration as well as to the employees. To be relevant, the output dimension of the productivity equation needs to be stressed more than before, because improvement in the use of resources alone may not give the desired competitive advantage.

*Thus, on being summarised all the above facts and considering the feasibility of the report, either of above three recommendations may be implemented.*

**3.7.5** The vacant post of SSE/JE in Supervisors category, Artisan category, Track Maintainer category should be filled up for better monitoring of contractual and departmental civil engineering works.

#### **SUGGESTIONS:**

**3.7.6** Traffic Block is very crucial issue for maintenance of tracks; it was informed that due to lack of coordination between departments it is very tough task to get the block approved. Coordination between departments needs to be increased for blocks as and when required.

**3.7.7** To Minimize the absenteeism all efforts such as motivation, interaction with the staff should be made



## **CHAPTER-IV**

### **4.0 FINANCIAL EVALUATION & RESULTS:-**

#### **Savings due to surrender of either 183 or 204 identified surplus posts :-**

##### **1. Savings due to surrender of 183 identified surplus posts :-**

Design.	Level (in average)	Scale	No. of Post to be surrendered	Mean pay	Cost per Month per staff (Mean Basic pay+ D.A. @ 07%)	Total cost per month (in ₹)	Total cost per year (in ₹)
Track Maintainer	L-1	18000- 56900	183	37450	40072	7333176	87998112
<b>TOTAL</b>							<b>87998112</b>

##### **2. Savings due to surrender of 204 identified surplus posts :-**

Design.	Level (in average)	Scale	No. of Post to be surrendered	Mean pay	Cost per Month per staff (Mean Basic pay+ D.A. @ 07%)	Total cost per month (in ₹)	Total cost per year (in ₹)
Track Maintainer	L-1	18000- 56900	204	37450	40072	8174688	98096256
<b>TOTAL</b>							<b>98096256</b>

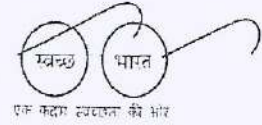
Thus, total recurring savings to the tune of Rs. **87,99,8112 say Rs. 880 lakh** by **implementing the First Method**

Whereas, total recurring savings to the tune of Rs. **98,09,6256 say Rs. 981 lakh** by **implementing the Second Method** can be achieved due to surrender of **183** posts and **204** posts respectively from SSE/P.WAY/Units over Nagpur division and surrender Memorandum may be issued by Sr. DPO/NGP/SECR accordingly by implementing either of the methods.





दक्षिण पूर्व मध्य रेलवे  
SOUTH EAST CENTRAL RAILWAY  
मंडल कार्यालय Divisional Office  
कार्मिक विभाग Personnel Department  
किंग्सवे नागपुर, Kingsway, Nagpur - 440001.



Office Order No. NPB/559/2018, Dated 29.05.2018

Approval of the Competent Authority i.e. DRM/NGP is hereby communicated for surrender of the following 192 posts in Engineering Department of Nagpur Division for creation of additional 314 NG posts for Track Machine Organisation in SECR.

Srl. No.	Category	Pay Matrix Level (7 <sup>th</sup> CPC)	Station	No. of posts	Annual Money Value
1.	Track Maintainer-IV	Level - 1	SSE/PW/KP	18	9,23,25,888
			SSE/PW/TAR	17	
			SSE/PW/BRD	17	
			SSE/PW/TMR	19	
			SSE/PW/G	19	
			SSE/PW/AGN	17	
			SSE/PW/DGG	17	
			SSE/PW/RJN	17	
			SSE/PW/NAB	17	
			SSE/PW/CAF	17	
			SSE/PW/BTC	17	
			Total	192	

Note: - 1. This has the vetting of Sr.DFM/NGP.

2. Surrender Money Value of 192 posts of Track Maintainer-IV comes to Rs.9, 23, 25,888/-. However as advised by CTE/BSP vide letter No. SECR/HQ/ENGG/TM/Creation of post/2017/1364, dated 20.04.2018 and vetted by Sr.DFM/NGP vide letter No. NGP/A/cs/Fin /surrender /creation/Engg/B-182, dated 18.05.2018 the surrendered money value of 192 posts of track maintainer IV amounting to Rs. 9, 21, 71,843/- will be credited in the HQ Engg. Vacancy Bank for creation of additional 314 NG posts for Track Machine Organisation in SECR.
3. Remaining money value of Rs. 1, 54,045/- will be credited to Divisional vacancy bank of Engg. Department of Nagpur Division.

(S.S. Pounikar)  
Divl. Personnel Officer,  
For Sr.Divl. Personnel Officer,  
S.E.C Railway, Nagpur

No. P/NGP/MPP/2014/08,

Dated 29.05.2018

Copy forwarded for information and necessary action to :-

- 1) SDGM/SECR/BSP, PCE/SECR/BSP, PFA&CAO/SECR/BSP, PCPO/SECR/BSP.
- 2) OS (G) for kind information of DRM & ADRM/NGP.
- 3) Sr DFM/NGP, Sr.DEN (Co)/NGP.
- 4) ADEN/TMR, G, DGG, NIR, AEN/Track/NGP.
- 5) SSE/PW/KP, TAR, BRD, TMR, G, AGN, DGG, RJN, NAB, CAF & BTC.
- 6) Ch.OS(Cadre & Engg. Bills)/ Sr.DPO's Office NGP.
- 7) Office Order file.

For Sr.Divl. Personnel Officer