

Yard Remodeling of Manoharpur and Posoita Yard Its Challenges

By

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Synopsis

Manoharpur and Posoita Yard are important yards of Howrah-Nagpur-Mumbai Group 'A' mainline route. While 3rd line is sanctioned between MOU-PST (11 km stretch), yard remodeling is also included along the project. It will help to standardise non-standard assets, increase line capacity and remove PSR in cross-over imposed since inception. As terrain is already a difficult one, it is a major challenge to yard remodeling and SSI implementation in a continuous period exceeding 90 days. A whole to part and subsequently part to whole approach has to follow for successful completion of the project.

1.0 Introduction

Manoharpur and Posoita Yard are important yards of Howrah-Nagpur-Mumbai Group 'A' mainline route and are important yards of Chakradharpur Division, South Eastern Railway. Manoharpur yard extends over a stretch of 2 km and comprises 2 main lines (up and down main line), 2 (up and down loop line) 2 no Goods lines and 1 non-signalled line (at raised levels with a Hump) and. It consists of over 31 turnouts. It has Interlocking of Std III. Comparatively, Posoita yard is simple yard having 2 main lines (up and down main line), 2 (up and down loop line) and one loading siding line. It consists of 18 turnouts having standard Class III interlocking. Both the yards have gradient of 1 in 100 and some portion of turnouts in 2 degree curve. In MOU yard east cabin down mainline point Permanent speed restriction of 70 kmph had been imposed on account of engineering department since inception due to less super elevation in transition portion of curve. In Posoita yard down mainline west cabin, one PSR of 90 kmph had been imposed on same due to less superelevation on points and crossing (1.5 degree curve).

2.0 Scope of the work

Due to increase in traffic from 30 GMT to 55 GMT since last 10 years as well as increase in passenger, freight traffic proportionately, long demand for 3rd line was there. A third line project was sanctioned having different phases and given to RVNL for concept to commissioning. In Phase -I, RVNL is to commission MOU-PST 3rd line (11 km line) including major yard remodeling of Manoharpur, Posoita yard in a time-bound manner. In Manoharpur yard, total 18 point & x-ings (1 in 12 and 1 in 8.5) have to be inserted including new 10 cross-overs between existing line and 3rd line.

In Posoita yard, 16 point & x-ings (1 in 12 and 1 in 8.5) have to be inserted including 8 cross-overs between existing line and 3rd line.

3.0 What the work will provide?

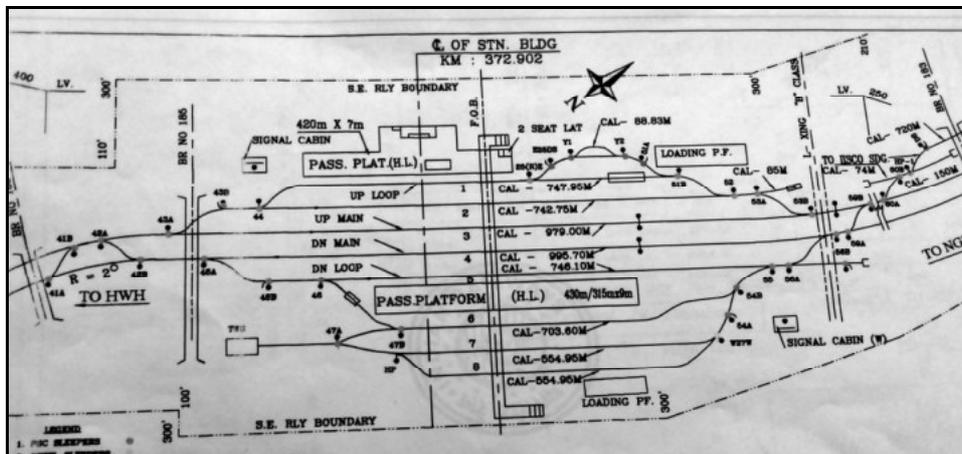
a) It connects the electric operation and vehicle detection system on all main, loop and siding lines so that lines connected through track circuiting on passenger lines will improve safety and reliability of engine reversal without hampering any other operation movement and without occupying any platform.

- b) It will be possible to receive and despatch trains through all the three lines as it will connect all loop lines via crossover which is not there in earlier yard plan It will reduce all operation of traffic movement minimizing time delay in side despatch.
- c) Increase the capacity of simultaneous receive and despatch of traffic by providing x-over between every mainline and loop line in every cabin. It will give more maintenance time in future.
- d) Increase in platform length will accommodate all 24 coaches in all the loop line in Manoharpur and Posoita yard.
- d) Work of yard remodeling also done simultaneously connectivity between siding line and loop line, which can be used for providing watering, reversal, stabling ODCs. e) It will remove all hand operated point-crossings and non-standard assets.
- f). Direct reception and despatch from main line to third line.
- g) Inserting cross-over in different location between two existing line after dismantling the old one will relax speed restriction on account of engineering department in MOU yard.

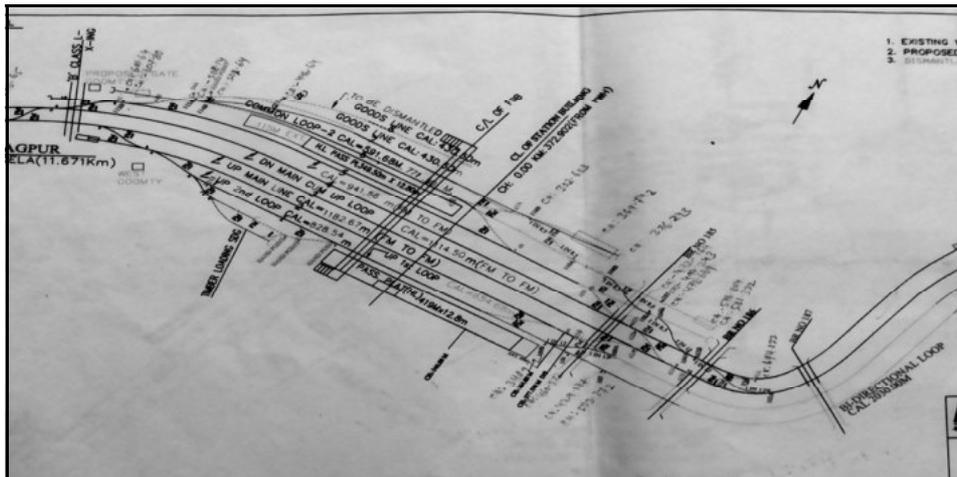
4.0 Yard Remodeling

Manoharpur yard mainly consists of 4 major lines (2 joint main line and 2 loop lines).the yard lies in curve in east side.

4.1 Manoharpur Yard

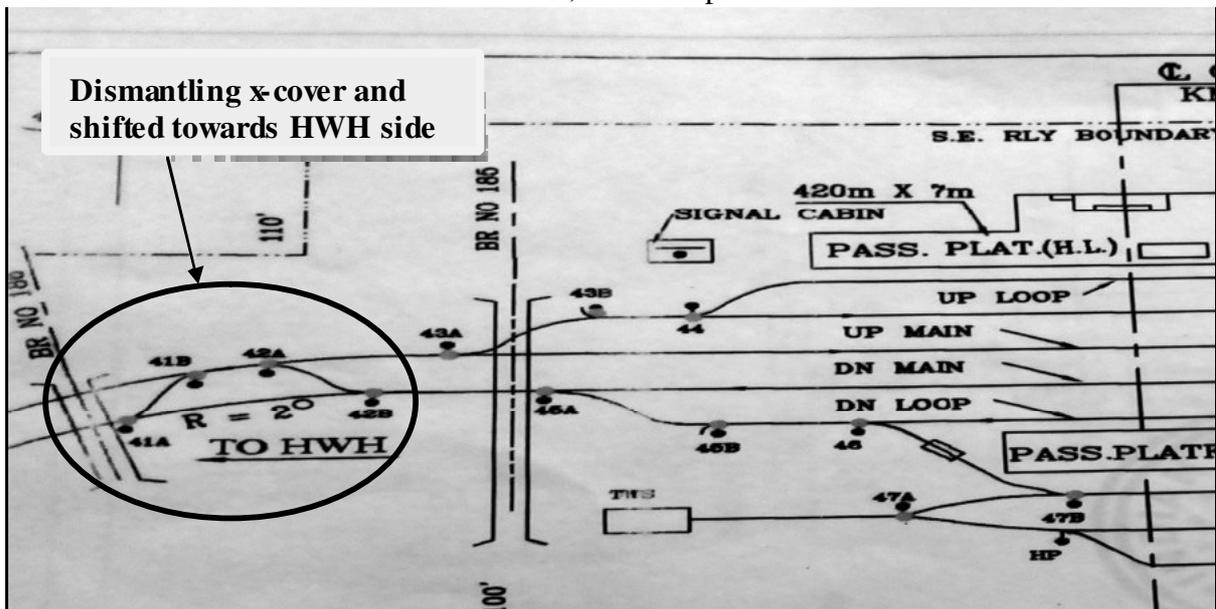


Existing Manoharpur station Yard plan



Manoharpur station Yard plan after yard remodeling

After remodeling, it will be possible to movement of traffic from up line to down line and 3rd line efficiently with simultaneous reception and despatch of traffic. In east cabin, xover between point no 42A and 42B having inherent problem of less super elevation in xover portion It lies in the transition portion of the curve .So it has PSR 70 kmph since last 30 years and causes big trouble in day-to-day maintenance. After yard remodeling, x-over will be shifted towards 100m towards east side. Now, it will help to remove PSR after NI.



Manoharpur East Cabin

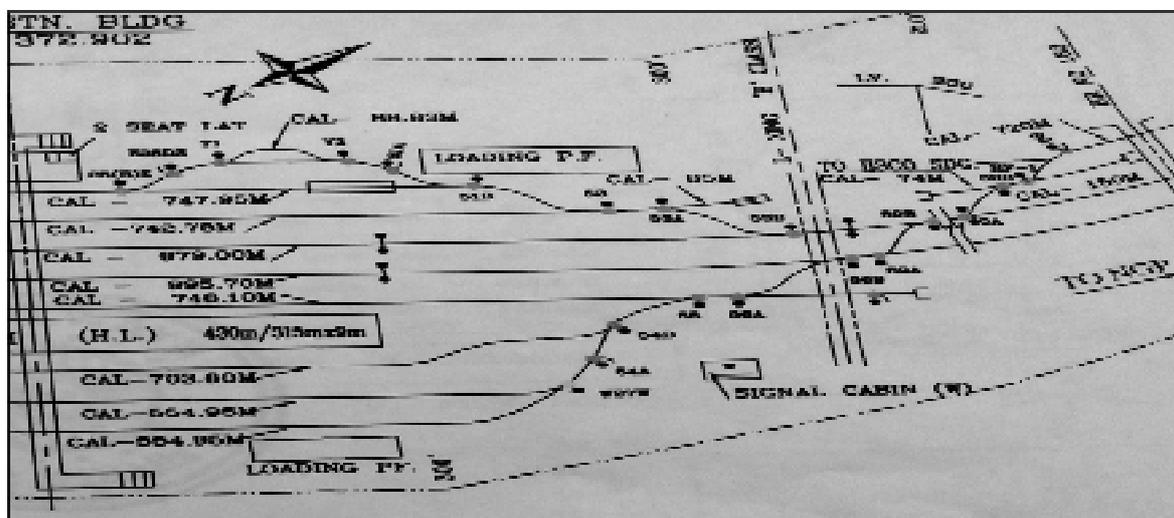


Manoharpur East cabin after yard remodeling

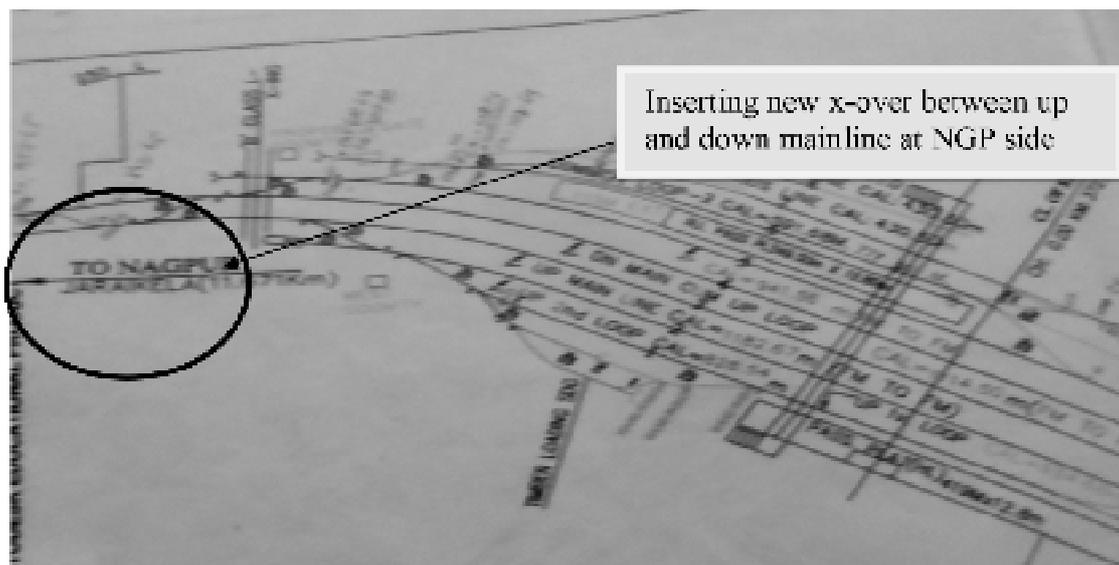
Manoharpur east cabin lies in 2 degree curve. After commissioning, total 7 x-over will be at cabin. Earlier, no connection was there between lines no 7 and 6 in east side. Now, inserting new x-over it will allow movement between the same It will provide bi direction loop line from which will be connected through x-over between 102A-102B to newly constructed 3rd line.

Manoharpur East Cabin

Cross-over between	Between Point No.	Type	Track Centre (m)	Cross-over length calculated by Layout Calculation Software (m)
I.P main line & DN main loop line	103A-103B (Dismantling 42A-42B)	Curved Parallel Track	4.9	92.739
Mid main line & Proposed 3rd line	101A-101B	Curved Parallel Track	5.3	97.512
Proposed 3rd line & Bi-directional loop line	102A-102B	Curved Parallel Track	5.6	73.627



Manoharpur West Cabin



Manoharpur West cabin after yard remodeling

At present, there is no x-over between down main line and up main line at west cabin. Yard remodeling will provide new x-over between point 122A-122B in straight line track.