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CASE STUDY

Gibbets Lane – Plain Line Track Refurbishment Works

LOCATION: Gibbets Lane, Frimley Line
CLIENT: Network Rail
DATE COMPLETED: February 2020



Introduction

Network Rail (NR) Principal Contractor, Global Rail Construction Limited (GRCL), were contracted by NR Wessex Works Delivery Track for a £200k Plain Line Refurbishment of Gibbets Lane on the Frimley Line.

Global Rail Construction engaged with supply chain partner, KGJ Price, in order to support Network Rail to deliver this track package of works on the Wessex Route.

During CP6, Global Rail Construction has also successfully supported Works Delivery in both Wessex and the South East with discrete work banks which have included re-sleepering, S&C refurb works and rerailing.

Scope of Works

Gibbets Lane is located on the Frimley Line between Bagshot and Camberley between 33m 1754yds to 34m 247yds. The existing track being a twin track layout, made up of flat-bottom CWR on concrete sleepers and although the geometry was in good condition, there were several wet bed areas that had materialised and needed removing. In addition to the scope, a number of spot sleeper replacements were required at the wet bed sites, requiring stressing of the tracks 90m either side of the stated mileages.

A vertical and horizontal design had also been produced, to lift out a small slack that existed on both the up and down roads. GRCL as part of their works will correct the cant to 0mm throughout. The largest design lift will be 40mm at HC1780 on the UP and 24mm on the Down respectively and will be removed by tamping the track.

The works were to be undertaken in Core and ROTR Possessions with 3rd rail isolations in place, as RRV plant, Trains and Tampers will be used. Camberley Level crossing will also be closed to road traffic during core possessions as identified by the client.

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Deliverables

Global Rail Construction planned to complete the Plain Line refurbishments over weekends 47 and 48. The work consists of removing wet beds site on both the Up and the Down with works on each road taking place thought both weekends.

During week 47, the team worked on successfully removing 3 isolated wet bed sites on the Up Frimley between:

- 33mile 1754 yards to 34mile 0015yards with 14no. sleepers renewed
- 34mile 0062 yards to 34mile 0082 yards including 12No sleeper renewals
- 34mile 0214 yards to 34mile 0347 yards with 19No sleeper renewals

GRCL removed and replaced the EG47 sleepers throughout the site mileage with the new sleepers, which were grouped together to maintain continuity of type throughout the location of the works. All wet bed areas were then renewed with a minimum of 250mm of new ballast under the sleeper bottoms and all contaminated ballast was also removed and disposed offsite. All beds were then replenished to remove all existing wet beds with the specified site meterage.

During Week 48, GRCL completed one larger wet bed removal on the Down Frimley between

- 34mile 178 yards to 34mile 0231yards with 25no. sleepers renewed

GRCL removed and replaced the EG47 sleepers throughout the site mileage with the new sleepers, which were grouped together to maintain continuity of type throughout the location of the works. All wet bed areas were then renewed with a minimum of 250mm of new ballast under the sleeper bottoms and all contaminated ballast was also removed and disposed offsite. All beds were then replenished to remove all existing wet beds with the specified site meterage.

Specifically, tasks included:

Wet Bed Removal and Sleeper Replacement

1. Setting up site lighting
2. Burning in to CWR track
3. Cutting rail with rail saws
4. Removal/Installation by RRV's of the 3rd rail off the "pots" and placing in the Cess of the Up line. Blocks used to support the rail
5. Manual unclipping/Clipping up of rails
6. RRV's splicing rails on the Up line strapped to the 6ft of the Dn line and installed on to sleepers after sleepers have been replaced.
7. Sleepers removed/installed by RRV with 7 sleeper bailer and hydraulic sleeper grab.
8. Digging Bug used to load spoil into train wagons and empty ballast wagons directly into the dig.
9. RRV used to remove sleepers from the 3 sites
10. Triple Wacker use for ballast compaction
11. Bottom ballast to be sprayed up for sleepers to be installed
12. RRV Bug to unload the new sleepers on the train using a hydraulic sleeper grab and RRV to install "existing" sleepers from the trailers
13. Top stone to be taken from the train by the Bug and placed in the sites
14. Track manually marked up by Engineer for Tamping works

Welding and Stressing

1. Unclipping/Clipping of rails manually either side of the ballast sites
2. Placing the rails on to rollers (Vortok Type)
3. Installing/removing Stressing equipment
4. Welding and grinding rail joints.
5. Replacement of sleeper pads, clips and insulators - pad scrapers to be used to free any pads from the bottom of the rails

Tamping

1. The Tamper accesses/egresses the worksite under the ES instructions
2. Tamper staff briefed and sign in/out with COSS
3. Tamper moved to from site at walking pace
4. Trace pass undertaken - 1st pass
5. 2nd pass to get track to design line and levels
6. Engineer to check behind tamper to ensure correct track alignment
7. Follow up tamping passes may be completed as required

S&T Works for Renewing Sleepers

1. The affected Signalling will be signed out with the signaller by the SMTH Tester Isolation of affected signalling Equipment.
2. The site manager will be informed that the signalling is isolated and disconnected
3. Confirm wheels free testing time
4. Confirm all P-Way works are complete
5. After works ensure wheels free
6. Test
7. Sign signalling back in with Signaller
8. Complete all relevant paperwork for hand back
9. Inform Engineer/Supervisor that all testing is complete
10. Upon completion of works the Engineer/ Supervisor will instruct the labour to leave site

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Benefits

The project demonstrated the ability of Global Rail Construction Limited and KGJ Price to rapidly mobilise, in challenging timescales in order to deliver a professional, quality and well executed project in collaboration with the Network Rail teams.

Global Rail Construction were responsible for the management of the works, providing safety documentation, hour by hour programmes and inspection and test plans for the works. All surveying and marking out of the works was completed and the team supported logistics for plant and materials deliveries.

As part of its wider multi-disciplinary capabilities, GRCL also planned all the disconnections and reconnections for the E&P along with the S&T and provided all required materials. We also provided all the access management staff.

The project was delivered on time and handed back to traffic at line speed and the feedback from the client was extremely positive.