

Task. :

To change defective nut & bolt on cable band six bolter at PP18 north east side span. .
Defective bolt was bolt No 2. established in group on bolt-scope 2. and bolt “D“ as per
cable band bolt diagram.

This is an account of all information recorded.

Personnel. Present.

Operation began at approx 10.00 am. Personnel & equipment taken by access cradle
under the supervision of spencers.

At approx 10.30. ESM. Asked for de-tensioning of defective nut on bolt No 2. bolt “D“
as per cable band bolt diagram.

One ½ to ¾ turn achieved. Observation then made. Tried to release protective cap on live
side of nut on bolt No 2. bolt “D“ as per cable band bolt diagram. Cap would not release.

At approx 10.32. ESM. Requested another ¼ of a turn. This was achieved. Nut would
still not release.

At approx 10.34. ESM. Requested another ¼ of a turn. This was achieved. Nut released.
And bolt loosened.

At approx 10.35. bolt No 2. bolt “D“ as per cable band bolt diagram was removed & new
bolt fitted. New bolt information. (bolt no **RAC. 0148**. nut no 1. short threaded end. **RACN
0147**. nut no 2. **RACN. 0043**.)

At approx 10.45. Discussion took place in relation to bolt threaded length on live side of
new bolt. Measurements of all six bolts in group were taken .The shortest length recorded
was on bolt No no 7. bolt “F“ as per cable band bolt diagram. This measurement was
recorded at 55mm. Therefore ESM instructed that the length of thread be set at 53mm on
the live side of new bolt bolt No 2. bolt “D“ as per cable band bolt diagram.

A slight gap was observed on washers on live side of new bolt when hand tightened.
Revolutionary alignment was made. ESM. Asked D. Wilkinson to take vertical alignment
of washers using spirit level. This was recorded at 0.2 degrees. D. Wilkinson satisfied.

At approx 11.09. Temperature recorded at 15c . Hydra tight personnel applied torque
wrench RSL 6. and bolt No 2. bolt “D“ as per cable band bolt diagram.
was tightened up. To an Applied pressure 15,225. psi.

At approx 11.10. FETA. Personnel applied Bolt-scope to bolt No 2. bolt “D“ as per cable
band bolt diagram. bolt torqued up to an applied load of 329 Kn . elongation recorded at
.82mm

At approx 11.11. FETA. Personnel applied Bolt-scope to bolt No 2. bolt “D” as per cable band bolt diagram. bolt torqued up to an applied load of 491 Kn .elongation recorded at 1.229mm.

At approx 11.12. FETA. Personnel applied Bolt-scope to bolt No 2. bolt “D” as per cable band bolt diagram. bolt torqued up to an applied load of 748 Kn .elongation recorded at 1.87mm.

At approx 11.13. FETA. Personnel applied Bolt-scope to bolt No 2. bolt “D” as per cable band bolt diagram. bolt torqued up to an applied load of 760 Kn .elongation recorded at 1.90mm.

At approx 11.09. Temperature recorded at 15c . Hydra tight personnel applied torque wrench RSL 6. and bolt No 3. bolt “A” as per cable band bolt diagram. To de-tension Pressure taken up in increments as requested by ESM. Pressures recorded at 15,000psi, 17,000psi, 19,000psi & 20,000psi, nut would not de-tension.ESM decided that no higher pressure would be applied . therefore bolt was not de- tensioned & re- tensioned. **No information recorded through pressure stages.** Load reading taken at approx 780 Kn.at 20000 psi.

At approx 11.35. Hydra tight personnel applied torque wrench RSL 6. and bolt No 5. bolt “C” as per cable band bolt diagram. To de-tension Pressure taken up in increments as requested by ESM. Pressures recorded at 15,000psi, 17,000psi, 19,000psi. **Nut de-tensioned at 19.000psi.** As ESM requested bolt was re-tensioned pressure taken up to 5,000 psi. then pressure was released An “L” REF. was taken tis was recorded at 649.38. temperature recorded at 14.2c. Pressure increased to 15,000 psi. information recorded as load 738 Kn. then pressure was released. Pressure increased to 18,000 psi. information recorded as load 939 Kn. then pressure was released. Bolt was allowed to relax and a final load reading was recorded at 815Kn. Elongation recorded at 2.025mm.

At approx 11.50. Hydra tight personnel applied torque wrench RSL 6. and bolt No 6. bolt “E” as per cable band bolt diagram. To de-tension Pressure taken up in increments as requested by ESM. Pressures recorded at 15,000psi, 17,000psi, 19,000psi. **Nut de-tensioned at 20.000psi.** As ESM requested bolt was re-tensioned pressure taken up to 5,000 psi. then pressure was released An “L” REF. was taken tis was recorded at 649.867. temperature recorded at 14.2c. Pressure increased to 15,000 psi. information recorded as load 658 Kn. then pressure was released. Pressure increased to 18,000 psi. information recorded as load 936 Kn. then pressure was released. Bolt was allowed to relax and a final load reading was recorded at 846Kn. Elongation recorded at 1.905mm.

At ESM request no information would be taken or recorded on bolt No 7. bolt "F" as per cable band bolt diagram.

At ESM request no information would be taken or recorded on bolt No 4. bolt "B" as per cable band bolt diagram.

It was briefly discussed that information recorded possibly could be slightly in-accurate.

Bolt- scope was calibrated on Monday 20th of april 2009 by ChrisDavies from Hydra-tight.

At approx 12.40.the the temporary cable bolts were de-tensioned at a pressure recorded at between 16,000 & 17,000psi. all PS 2 tensioners & associated equipment removed & stored on Gantry No.1.

At approx 13.00. All FETA. Personnel transported to cycle track.

All information recorded to my knowledge as given at time of works.

Bridge Inspector.