

Stratton Road, Winchester

September 2014

Drainage Improvement/Maintenance Options Following Trial Holes and Associated Works 19/8-22/8/14 incl.

General Summary

Works to locate services in six locations and carry out identified drainage improvements were carried out by Lockhams Construction Ltd under the supervision of RPF Associates from 19th to 22nd August 2014.

Conditions were fine and generally dry throughout. Appropriate traffic management was put in place by the contractor in accordance with their quote and all works were carried out satisfactorily. There were no health and safety incidents during the works and all reinstatements in verges, footways and carriageway areas were carried out to a satisfactory standard.

Drainage Improvements

The new drainage pipe linking to the gully just uphill from the entrance to Waverley, Struts and St Philips was installed which should assist in collect surface water run off from the macadam formed channel on the north side of Sleepers Hill into the existing gully pot and then into the existing piped section and channel further east. Just before the junction with Airlie Road the existing kerb inlet gully has been replaced with a more efficient conventional road gully with a standard grating in the carriageway to intercept more surface water run-off before it reaches the public highway at Airlie Road.

Note: it was found that there was no soakaway sited behind the existing gully but a brick chamber under the footway with an outlet pipe leading towards Airlie Road. No soakaway was located on Sleepers Hill so it is assumed that this drainage links to the existing adopted drainage system. The chamber found was cleaned of detritus/silt etc as part of the works.

Trial Holes Summary

Trial Hole (TH) No	Location/Description	Comments
1	Located on the north side of Sleepers Hill adjacent to Landseer. Trial hole was dug across the verge 1.00m deep and 0.60m wide and this exposed existing water main and BT duct at 0.90m and 1.30m back from the edge of carriageway and 0.50m cover within the verge. The grassed/lawn covering to the verge was removed carefully and laid to one side and carefully replaced after backfilling and compacting of excavated material had been completed.	No electricity cable found - assumed to be further back (north) in verge area (as per TH 2). Only possible area that could be utilised for a soakaway would be the 0.70m width adjacent to the carriageway edge. However this conflicts with existing posts sited in the verge to prevent parking on this verge so landowner would presumably object to removal of these posts to suit drainage provision underneath.
2	Located on the north side of Sleepers Hill just east of Westacre. Trial hole was dug across the verge 0.80m deep and 0.60m wide and this exposed existing BT ducting 0.90m back from the carriageway edge with 0.30m cover. A further 0.25m further into the verge was an electricity cable with 0.50m cover with a protective board laid over it. Undisturbed hard compacted chalky ground found to front of trench for about 700mm depth approx. Verge was backfilled and compacted on completion.	No water main found (on C2 plans), assumed to be further back (north). Only possible area that could be utilised for a soakaway would be the 0.80m (approx) width available adjacent to the carriageway edge.

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Trial Hole (TH) No	Location/Description	Comments
3	Located on the north side of Sleepers Hill approximately 20m west of Waverly, Struts and St Philips. Trial hole was dug across the verge 1.50m long, 0.80m deep and 0.60m wide and this exposed existing an electricity cable 0.90m from the carriageway edge with 0.50m cover. A further 0.40m in an existing water main was found with 0.45m cover. Undisturbed hard compacted chalky ground found to front of trench for about 0.80m depth approx. Verge was backfilled and compacted on completion.	Only possible area that could be utilised for a soakaway would be the 0.80m (approx) width available adjacent to the carriageway edge.
4	Located on the south side of Sleepers Hill 5m east of Pellinore. Trial hole was dug across the verge 1.50m long, 0.50m deep and 0.45m wide and this exposed existing LV electricity cabling 0.50m behind the kerb line with only 0.30m cover. Within the rear 0.50m width of trench were a number of trees roots ranging from 25-50mm diameter.	Soakaway not possible to be located here due to insufficient space available. BT apparatus likely in the verge (deeper than hole excavated?) but electricity cable location confirmed services so no further depth excavated.
5	Located on the south side of Sleepers Hill 10m west of Folly Cottage/Eldon. Trial hole was dug across the verge 1.40m long, 0.60m deep and 0.45m wide and this exposed existing LV electricity cabling 0.6m behind the kerb line with only 0.30m cover. BT apparatus was found 0.90m behind the kerb with 0.35m cover. Within the rear 500mm width of trench were a number of trees roots ranging from 25-50mm diameter.	Trial hole revealed soakaway not possible in the space available.
6	Located on the south side of Sleepers Hill just opposite Boscawen. Trial hole was dug across the verge 1.00m long, 0.30m deep and 0.45m wide and this exposed a mass of tree roots spread across the exposed hole ranging from 25-75mm diameter.	Trial hole revealed soakaway not possible in the space available.

Conclusions

The two drainage improvements installed as part of this scheme which comprise of:

- The replacing of an existing kerb inlet gully with a conventional grated gully near the junction with Airlie Road to improve collection of surface water run-off in that area.
- Installation of a 100mm dia ductile iron pipe from the formed macadam channel for 8m to link this to the existing gully west of the junction with the driveway to Waverley to gather in surface water run-off from the channel before it spills over the carriageway towards the south side of Sleepers Hill.

These measured combined will assist in reducing the flow of water running down the north and south edges of Sleepers Hill.

The trial holes have served their purpose and have revealed the existing services thought to be present and shown on existing C2 plans provided from service companies to RPF Associates when the initial improvements were carried out to Sleepers Hill in 2011. The locations of the services leave very few opportunities to site soakaways in any space left between the edge of carriageway and the mains/cables found. Only narrow sections are available and even if the narrow rubble or aquacell type units (similar looking to plastic milk crates) were used to provide a drainage solution its effectiveness will be reduced by the narrow surface width available. It would, therefore, perhaps be worth considering alternative cost effective measures to try and reduce the water running down the carriageway side channels in Sleepers Hill.

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A simple measure to consider, for example, would be to provide grips in the verge areas uphill from Waverley driveway. These grips consist of simple shallow trenches say 0.3m wide at regular intervals from the formed macadam channel into the verge, say 0.5-0.75m long, and would give run-off a chance to disperse into the soiled and overgrown verge areas more effectively. The underlying sub-strata is chalk and this would enable some of the run-off to filtrate into this chalk and disperse. This would only be possible where the verge areas are unkept and would not be appropriate in the more manicured verge areas. This would not be possible on the south side as it's kerbed with a raised path behind but it could help further uphill on the north side. Grips are a fairly crude solution but are widely used throughout rural areas of the UK to get water from the carriageway off into the verges and any adjacent ditches.

This measure could be done relatively inexpensively compared with the cost of formal soakaways which would not be very efficient, would cost thousands of pounds to construct and could not be sited in suitable locations on the south side due to existing underground services. These grips would, however, require regular cleaning out of detritus say 3-4 times a year to maintain some form of efficiency but this is easily done with a spade/shovel and doesn't take long.

Recommendations

Consider construct the grips in the verge areas as noted above. This could be done relatively inexpensively, possibly for under £1,000 using a contractor already working locally on another scheme.



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TH5



TH6

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