



Project Name : Burndell Road, Yapton

Job No : 18-070

Note Title : Drainage Note

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Checked : LP

Approved : LH

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1.0 INTRODUCTION

1.1.1 This note has been prepared for Vistry Caterham to support the design change required to the means in which surface water is discharged to the north eastern part of the site.

1.1.2 This note aims to explain the background to the scheme, the outfall complications encountered on site during the construction process, and the design modifications carried out to enable surface water to be discharged to the existing ditch.

2.0 DESIGN DEVELOPMENT

2.1 *Background*

2.1.1 The surface water drainage scheme was designed to provide a number of catchments / outfalls to the site. The catchment / outfall discussed as part of this report is the northern catchment which includes the link road and discharges to the north eastern ditch at the site's boundary.

2.1.2 It was originally intended for this catchment to drain via gravity from the head of the run, near the sites access, before being conveyed east, across the top of the site and to the outfall located at the existing ditch on the north eastern boundary.



2.2 Build Programme

2.2.1 Due to the location that access to the site was gained, the building of sewers commenced at the site's access towards the north-western corner of the site and progressed from north to south along the link road. Once the initial site access works were completed, the sewers were constructed from west to east, starting with the head of the drainage runs and working towards the existing ditch / outfall.

2.3 Topographical Survey

2.3.1 On construction of the outfall to the ditch located at the north-east corner of the site which serves the northern catchment, it was noted on site that the headwall appeared to be significantly lower than the invert of the existing ditch. Initially it was thought this may be due to a buildup of sediment, however after further investigation it was identified as being built in natural ground.

2.3.2 The surveyor was contacted to review topographical survey provided and it was established that the survey was completed with a datum error for the eastern ditch levels, resulting in incorrect levels being recorded for the ditch invert levels. This led to the design being completed with information suggesting that the ditch was lower than it actually was.

2.4 Design Alterations

2.4.1 Due to the level difference between the currently constructed surface water sewer system and the physical / correct invert level of the ditch a gravity connection was no longer achievable, due to the now surcharged outfall.

2.4.2 In order to accommodate the level difference, a surface water pump station was determined to be the most suitable option to enable the built sewer to remain and a headwall / outlet pipe to be set at or above the existing ditch invert level. This would allow the as-built sewer to discharge at the lower invert level, before the surface water would be pumped up to a level reflecting the true invert level of the ditch.

2.4.3 Discussions were held with Southern Water initially who advised that they would require a large pump station which could not be accommodated within the current site layout due to offset distances required for wet wells and its close proximity to residential dwellings.

2.4.4 Once it was deemed that Southern Water's requirements were unable to be met, subsequent discussions were held with ICOSA.



2.5 *Reviews with ICOSA*

2.5.1 The site / layout and space available was reviewed between the site's pump station designer and ICOSA and it was agreed that a surface water pump station arrangement could be provided to ICOSA adoptable standards, whilst also meeting the space constraints imposed by the site layout.

2.5.2 A final layout has been agreed with ICOSA and the redesign of the site's outfall for this system has been carried out and modified to suit.

2.6 *Adoption*

2.6.1 As a development can only have one adopting authority maintaining mains sewers, the entirety of the proposed foul and surface water sewer adoption and maintenance responsibilities are being put forward to ICOSA, rather than Southern Water as was the original intent.

2.6.2 Discussions with ICOSA are well progressed with the Technical Approval for the site's foul and surface water sewers, including the surface water pump station, now imminent for approval. The NAV agreement is also well underway.

2.7 *Maintenance*

2.7.1 The systems put forward to ICOSA for adoption will be maintained in accordance with their requirements / regimes and any remaining private areas will be maintained by a management company as per the original scheme.

3.0 CONCLUSION

3.1.1 This report provides details for the northern drainage system and provides the reasoning for the modifications made in order to achieve an outfall solution once site works had commenced.

3.1.2 Details have been provided relating to the alterations made to the design as well as the change in adoption authority from Southern Water to ICOSA. The system still achieves an outfall to the existing ditch as per the principles of the original strategy.

3.1.3 The adoption process with ICOSA is well underway with technical approval imminent.

3.1.4 This report concludes that a surface water discharge solution for the site is still provided, with the principles of the discharge and outfall broadly in line with the original proposals.