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Notes:

1. This drawing is to be read in conjunction with all relevant Architects and Engineers Drawings.
2. It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.

Drainage Strategy

Surface Water
 The site is located within flood zone 2 with a medium risk of flooding from rivers or the sea. See separate Flood Risk Assessment.

The existing site is developed with two buildings together with hardstanding areas. The site is used as a builders merchant.

The site area is predominantly impermeable as shown in the aerial photograph and topographical survey. The site has a gentle fall in a northerly direction.

Investigations have been carried out on site to establish how the site currently drains.

The site drains to a 1650mm diam brick combined sewer that runs through the site.

The proposal is to demolish part of the existing warehouse and the timber storage building and construct a new extension on the warehouse and a new canopy over part of the hardstanding area. The extension and canopy are to be formed on areas that are currently surfaced and drained hardstanding areas. So there will be no additional impermeable areas created.

NPPF guidelines require that surface water arising from a developed site should as far as practicable be managed in a sustainable manner to mimic the surface water flows arising from the site prior to development.

The national planning policy guidance sets out the hierarchy of drainage to promote the use of sustainable drainage systems. The aim of the hierarchy is to drain surface water run-off as high up the drainage hierarchy as reasonably practical.

1. Into the ground (Infiltration).
2. A surface water body.
3. To a surface water sewer.
4. To a combined sewer.

Consideration needs to be given to the use of infiltration as a drainage solution. Site investigations have been carried out, which show made ground up to 1.0m deep over deposits of clayey silty sand and gravel with bands of stiff gravelly clay. Borehole percolation tests have been carried out. One of the tests was inconclusive, the other showed a low infiltration rate of 6.97 x10⁻⁶ m/s. We consider infiltration is not viable on the site.

Access to the nearest watercourse is through third party land, and is not viable. Therefore the most suitable drainage option is to drain to Yorkshire Waters sewer in a similar manner to the current arrangement.

Where the drainage is being altered to cater for the demolition and construction of the retail unit, then opportunities to attenuate the flows should be incorporated into any new infrastructure. General guidance for the re-development of brownfield sites is that the post development flows should be reduced by 30% from the current flows, in all storms up to the 1in100 year storm event with an allowance for climate change.

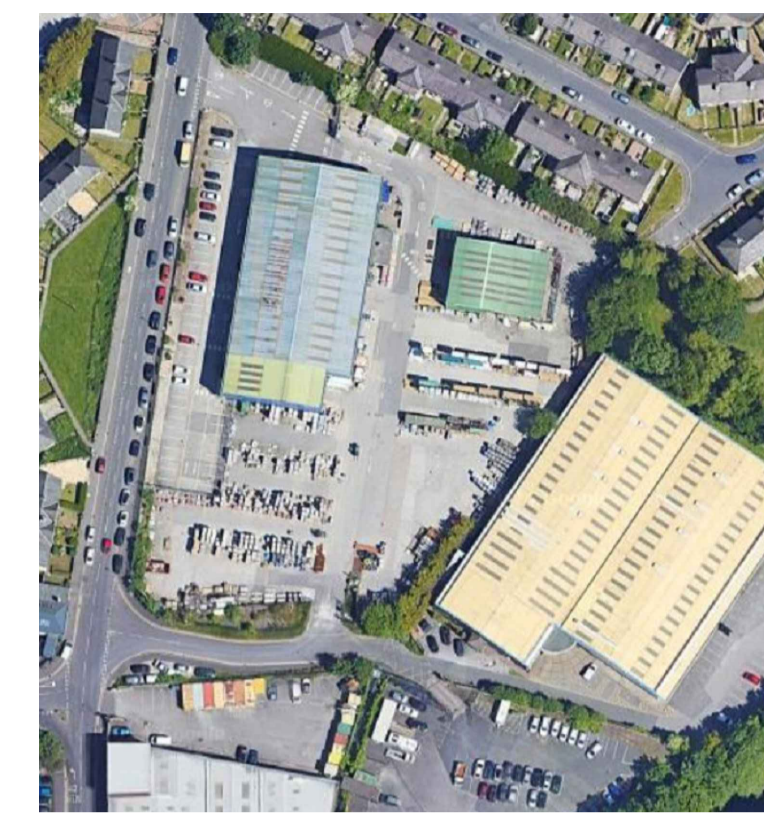
The existing surfaced and drained catchment area within the areas that are being re-developed is 2280m², see existing catchment area plan. Based on a run off rate of 140L/sec/Ha the existing run off rate in a 1in1 year storm event is 31.92L/sec. A 30% reduction would result in an allowable run off rate of 22.34L/sec.

The flows can be attenuated to this level using a Hydro-brake Optimum MD-SHE-0208-2230-1200-2230 control device (See microdrainage calculations) Underground storage would be provided using a cellular crate tank, measuring 10m x 4.5m x 1.2m deep to cater for the 1in100 year storm event with a 30% allowance for climate change.

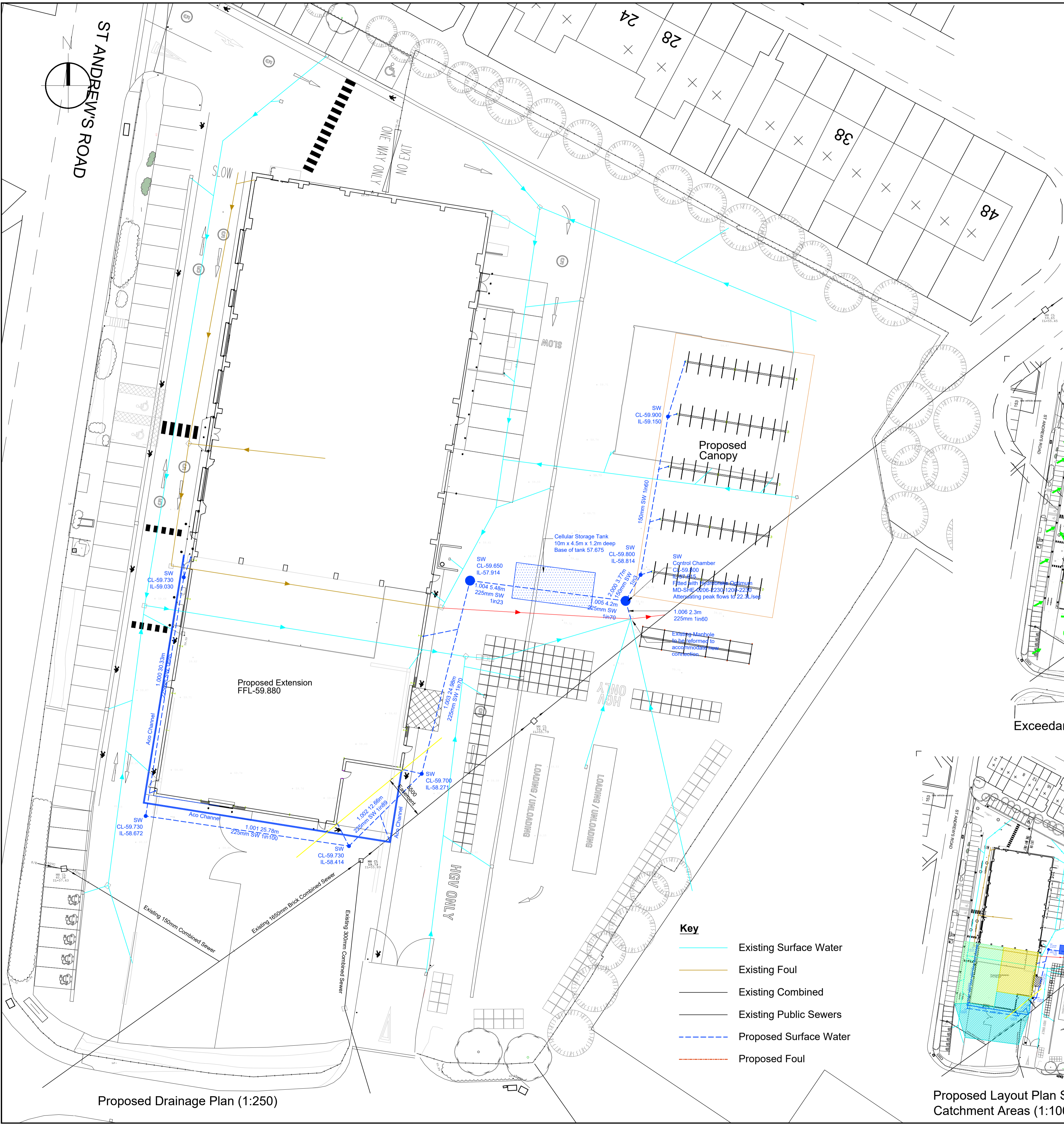
This will ensure the proposed development has a beneficial impact on the downstream infrastructure.

Foul Drainage

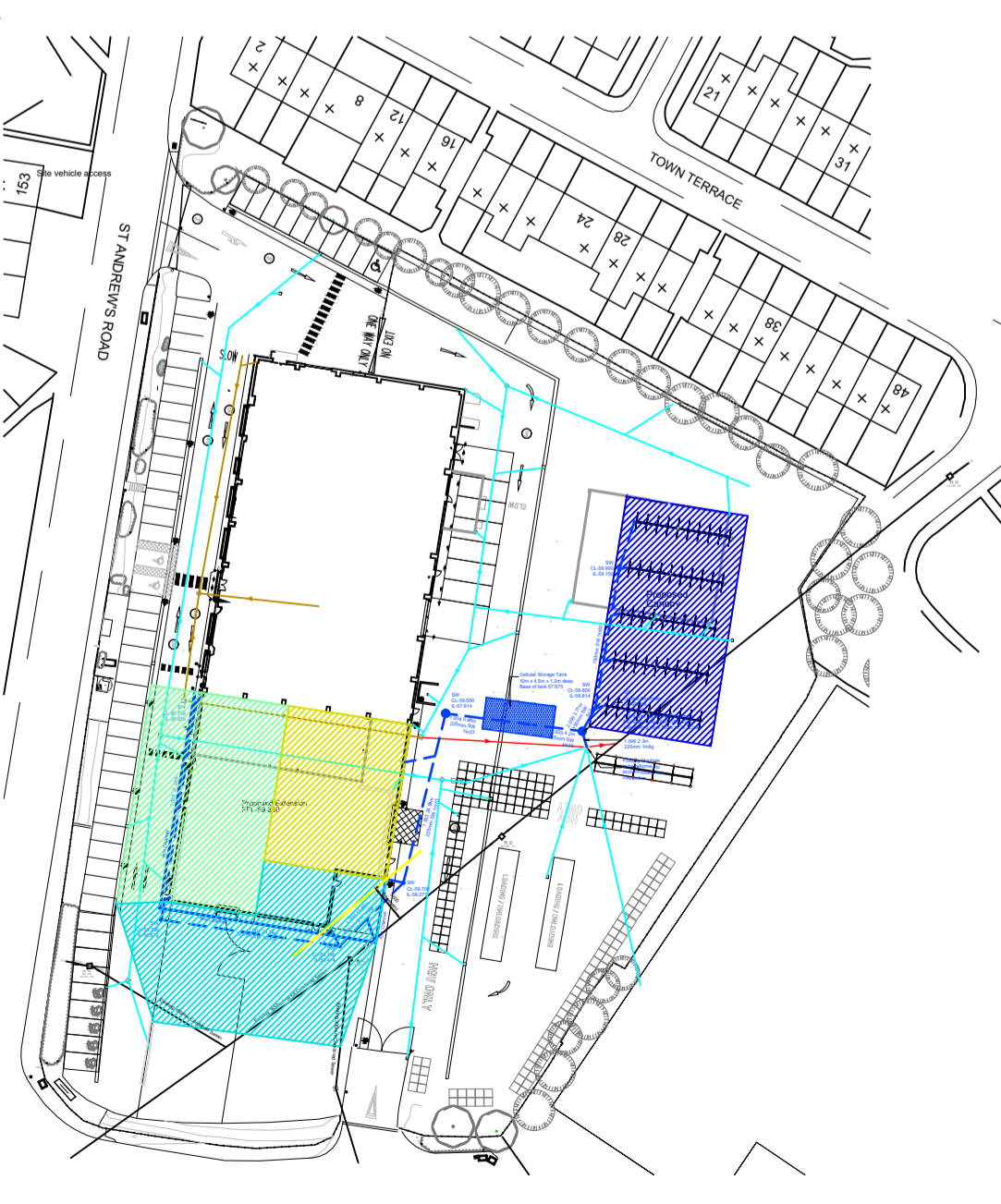
The foul drainage will run in a separate network and connect into the existing foul drainage on the site, which outfalls into Yorkshire Waters combined sewer.



Aerial View



Exceedance Flow Routes (1:1000)



Proposed Layout Plan Showing Catchment Areas (1:1000)

- Key**
- Existing Surface Water
 - Existing Foul
 - Existing Combined
 - Existing Public Sewers
 - Proposed Surface Water
 - Proposed Foul

- Catchment Area Pipe 1.000 609m²
- Catchment Area Pipe 1.002 691m²
- Catchment Area Pipe 1.003 396m²
- Catchment Area Pipe 2.000 586m²

Proposed Drainage Plan (1:250)

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| No. | Revision | Date | Drawn |
| Status Approval | | | |
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| Client Stark Building Materials Ltd | | | |
| Project Jewsons, St Andrews Road Huddersfield | | | |
| Drawing title Proposed Drainage Plan | | | |
| Drawn PB | Chkd | Date Dec 2024 | Scale var |
| Sheet Size A1 | Drawing No. 24399-DR-C-0102 | Revision | |

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