

Technical Note

Project name **Plot 10A First Street Manchester – S185 Diversion Works**
Project no. **1620007819**
Client **First Street Developments Ltd.**
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Checked by **Simeon Parker**
Approved by **Niall Meyers**

1 Existing Drainage

A review of the United Utilities public sewer records has been undertaken which indicates an existing 600x500 vitrified clay sewer within Hulme Street. CCTV surveys have found that public sewer manhole 7201 is 5.65m deep with an invert level of 27.57m.

The surveys found that this sewer appears to start within Hulme Street adjacent to the Plot 10 site and is therefore different from what is indicated on the sewer records. This sewer collects surface water from the gullies within Hulme Street and connects via a backdrop into the public sewer at manhole 7201.

A 590x680 brick combined public sewer is located within Plot 10 flowing from manhole 7201 to 7203. Sewer record information indicates the invert level of 7203 as 26.75.

The sewer then changes from a brick sewer to a 610mm diameter concrete sewer from manholes 7203 to 7301 with the invert level of 7301 at 26.68m.

The sewer then heads Northeast along River Street within the Plot 10 boundary in a 610mm concrete sewer and connects into manhole 8301 of the site at the corner of River Street and Wilmott Street.

There is a 300mm diameter outfall from manhole 8301 which heads South along Wilmott Street. The sewer records indicate a high level 300mm diameter overflow from the storage tank into the River Medlock although the physical surveys undertaken found that this was no longer in use.

Each of the public sewers have a 6m easement associated with them, refer to Stage 1 within Appendix A for further details & easement locations.

2 S185 Application Diversion Proposals

The proposed S185 application includes the diversion of public sewer drainage network between manhole 7301 and manhole 8301 approximately 10m to the North into River Street, and the diversion of the existing gullies within Hulme Street via a new piped system along the line of the existing public sewer, with a new manhole to be constructed on the public sewer pipework line downstream of manhole 8301.

The proposal consists of a multi-phased approach to the diversion, to allow for the construction of the diversion works. This multi phased approach is visually explained within Appendix A.

Phase one would consist of the River Street works which would allow for the public sewer within Hulme street to remain live during these works. This would allow for the divestment of the public sewer line between manholes 7301 and 8301. Refer to Stage 2 in Appendix A for further details.

Phase two would consist of the Hulme street works which would allow for the public sewer line between 7201 and 7301 to be divested and would divert the flow within Hulme street to a point downstream of 8301. Refer to Stage 3 in Appendix A for further details.

Initial consultation has been made with United Utilities (UU) with regards to the S185 application, confirmation of all documents being received as submitted on 02/11/2022. At the time of writing, the documents have been received by UU & discussions are being held on the strategy.

3 Flood Risk Information

The River Street section of the site is within Flood Zone 2 and has a medium probability of flooding from rivers and the sea. Hydraulic modelling of the River Medlock indicates with the site would not flood in a 1 in 100-year event (with climate change taken into consideration) as the site levels are above the modelled flood levels. It should also be noted that for a 1 in 1,000 year flood event, peak flood depths are modelled to be of a depth no greater than 100mm. The Hulme Street section of the site is within Flood Zone 1 and has a low probability of flooding from rivers and the sea.

The site is sat within the Conurbation Core Critical Drainage Area & sits within the Employment potential development site M0042 as described by Manchester City Councils Strategic Flood Risk Assessment maps.

While the site is identified at being in an area potentially at risk of flooding from reservoirs according to Environment Agency mapping, reservoir failure is a rare and unlikely occurrence, as the infrastructure is regularly inspected by the Environment Agency. The sites are at a low risk of groundwater flooding occurring at the surface, and no other significant sources of flood risk were identified.

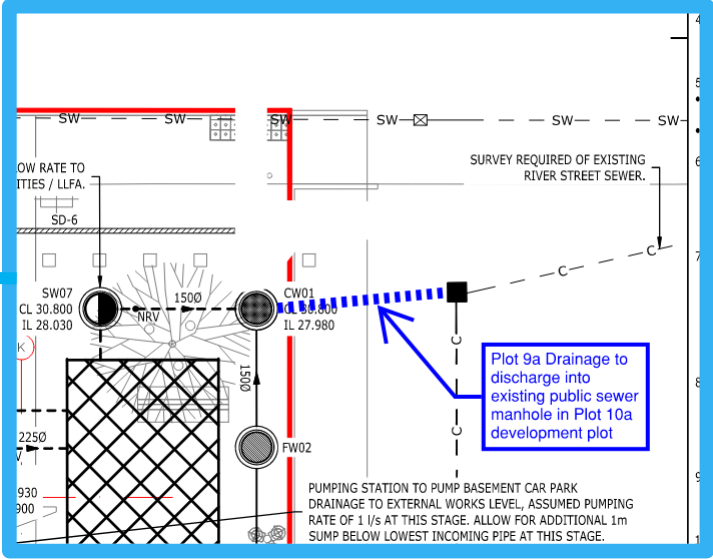
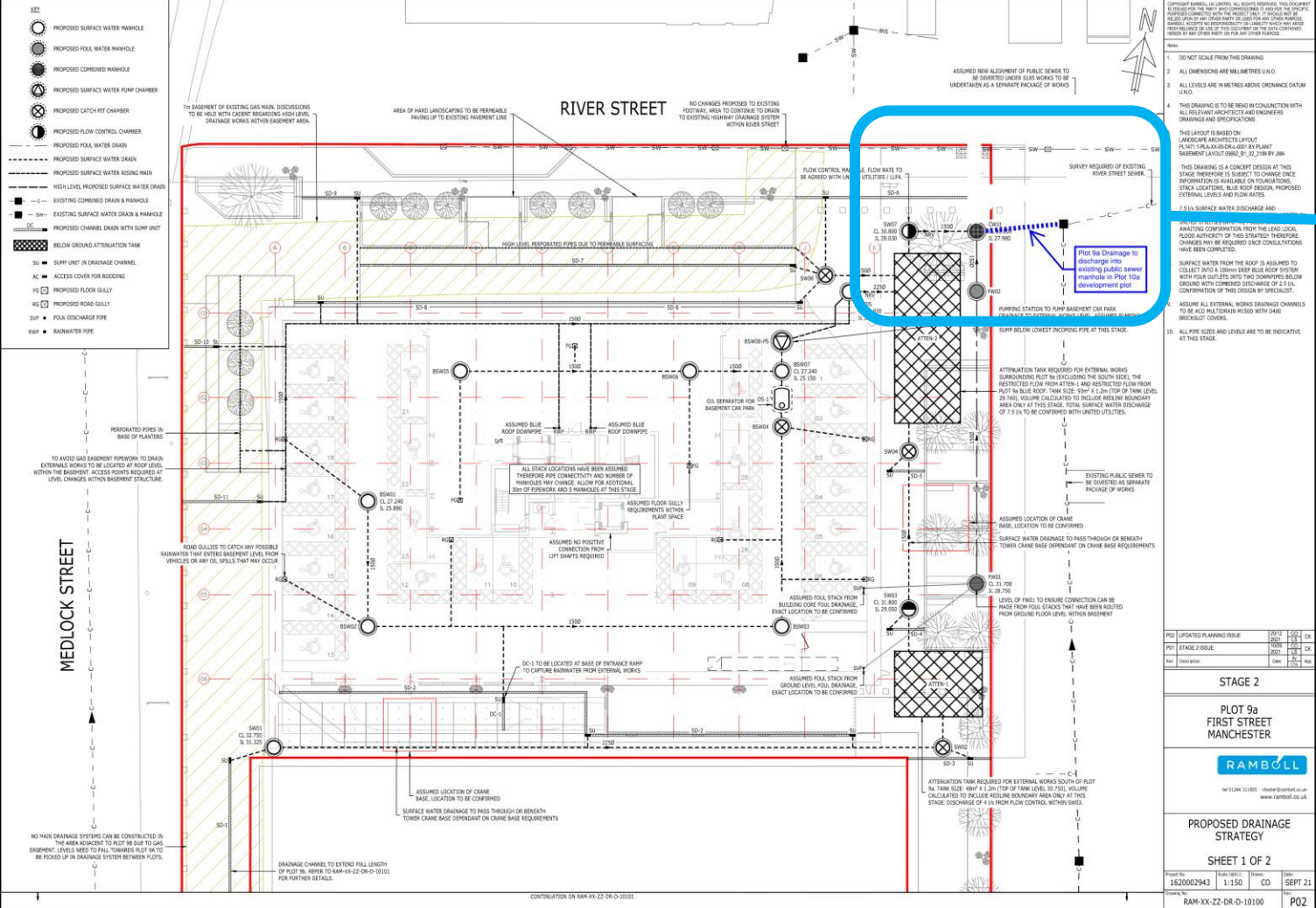
To manage the risk of fluvial flooding (albeit only likely in an extreme fluvial event), the contractor should be cognisant of flood warnings and alerts during the construction period. If flooding is predicted, all excavations should be evacuated, and plant /construction materials relocated to an area of Flood Zone 1 i.e., further west along River Street.

The Environment Agency flood warning page, which shows current and upcoming warnings, can be found at the following link <https://check-for-flooding.service.gov.uk/alerts-and-warnings>

4 Appendix A

First St - Plot 9a, 10a and 10b drainage phasing

Stage 1 – Drainage solution for Plot 9a in isolation

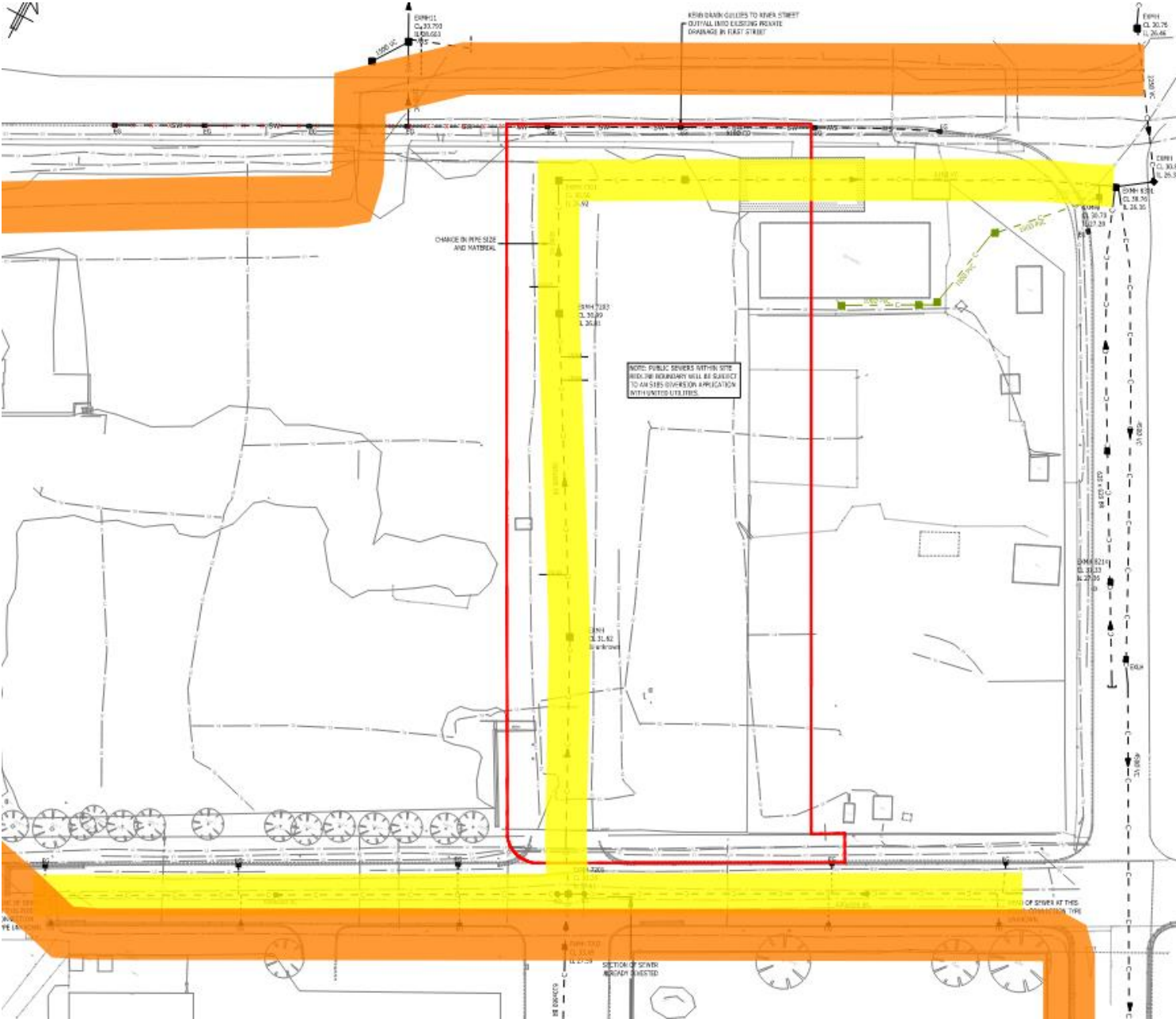


Dealing with Plot 9a in isolation the Plot 9a drainage system would discharge directly into the existing public sewer manhole in the north west corner of Plot 10a. Therefore, for this solution there would be no requirement for surveys or diversion works.

First St - Plot 9a, 10a and 10b drainage phasing

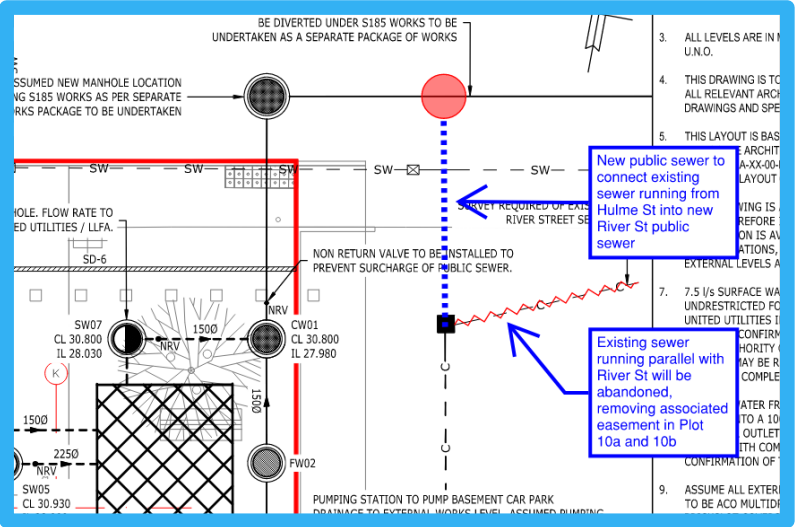
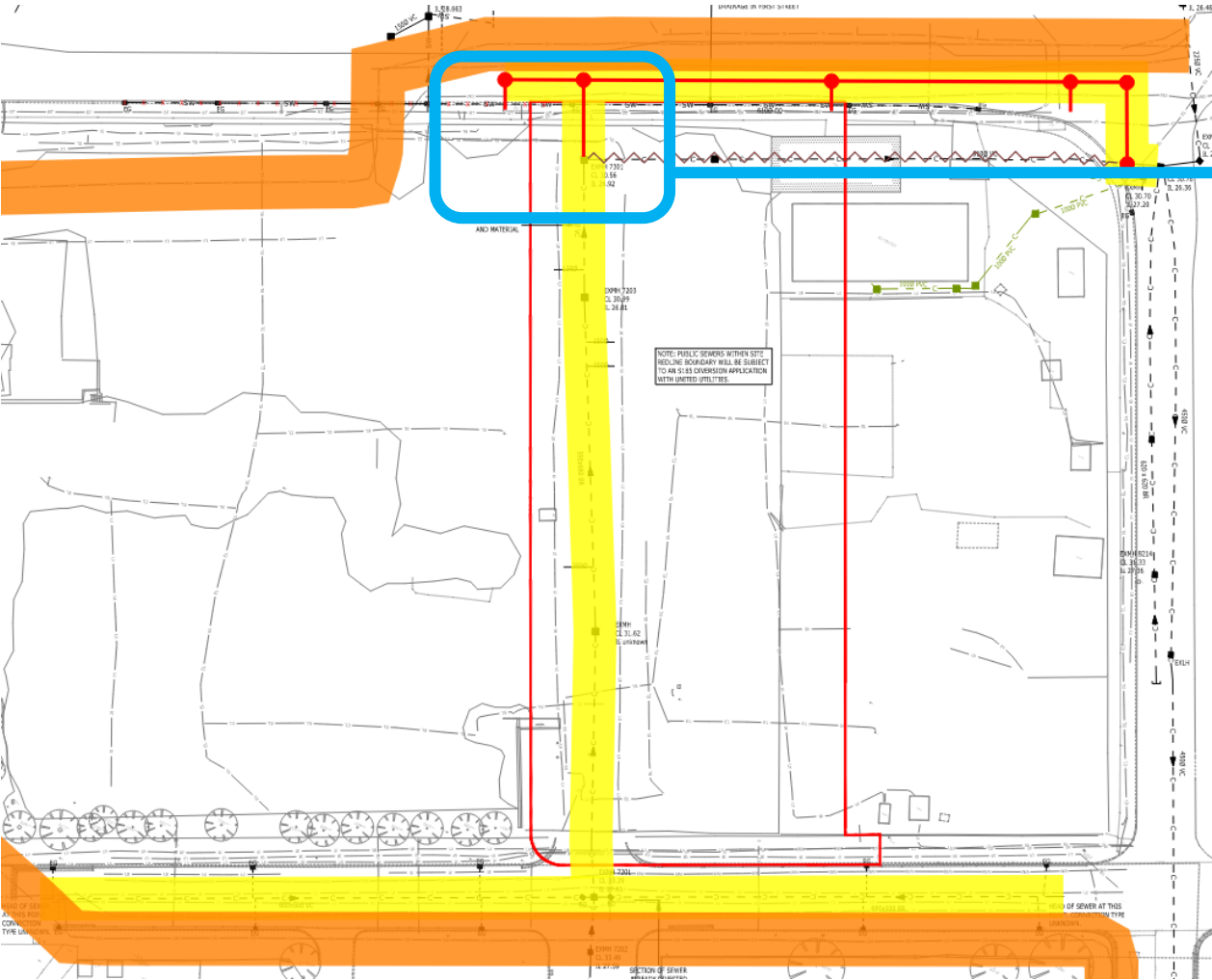
Stage 1 – Easements

Yellow shaded areas denotes assumed 6m easement associated with the existing public sewer running through Plot 10a, Plot 10b and Hulme Street



First St - Plot 9a, 10a and 10b drainage phasing

Stage 2 – Divert public sewer into River St and connect Plot 9a into new sewer

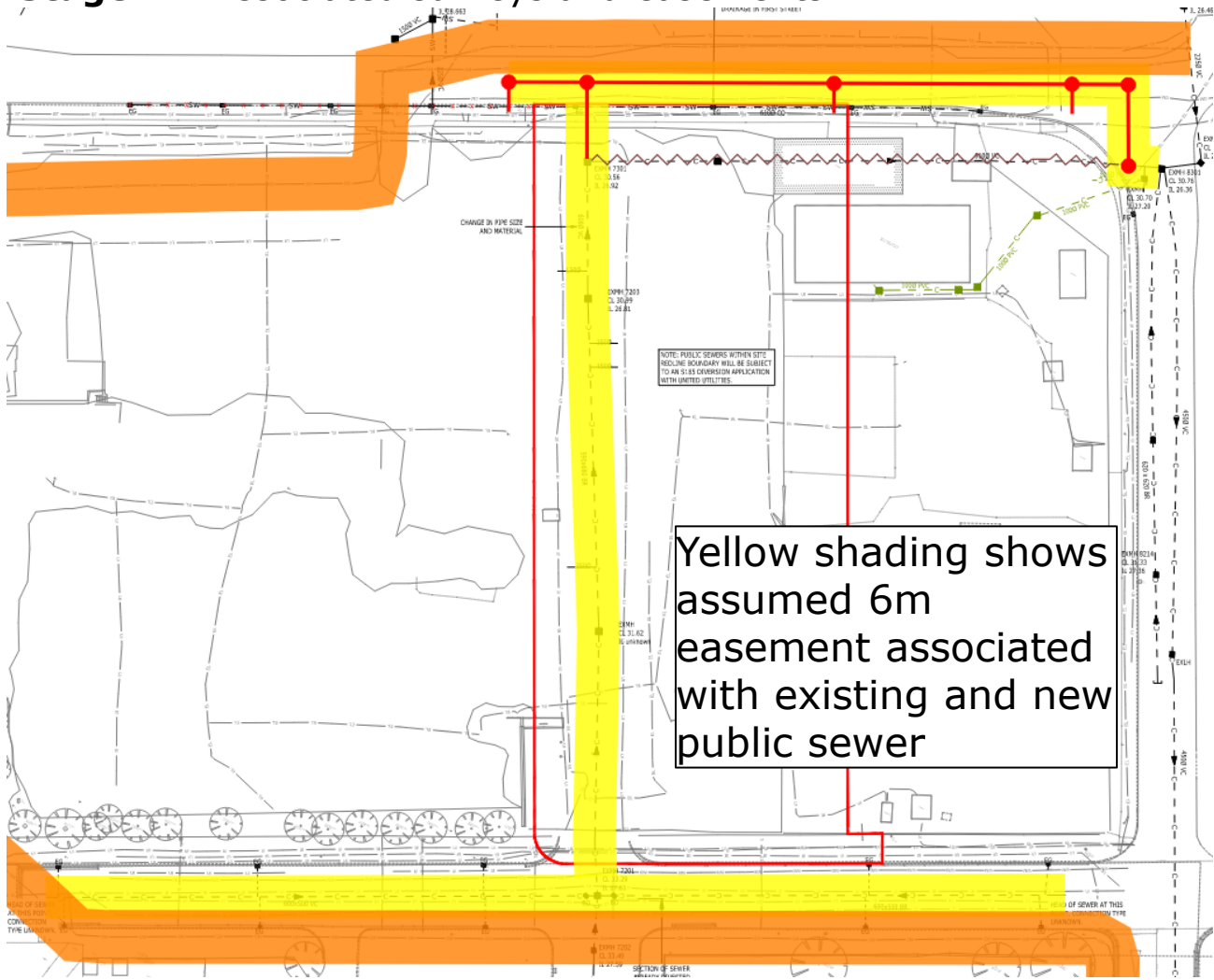


Extract of the Plot 9a drawing which shows the connection from Plot 9a into the new sewer.

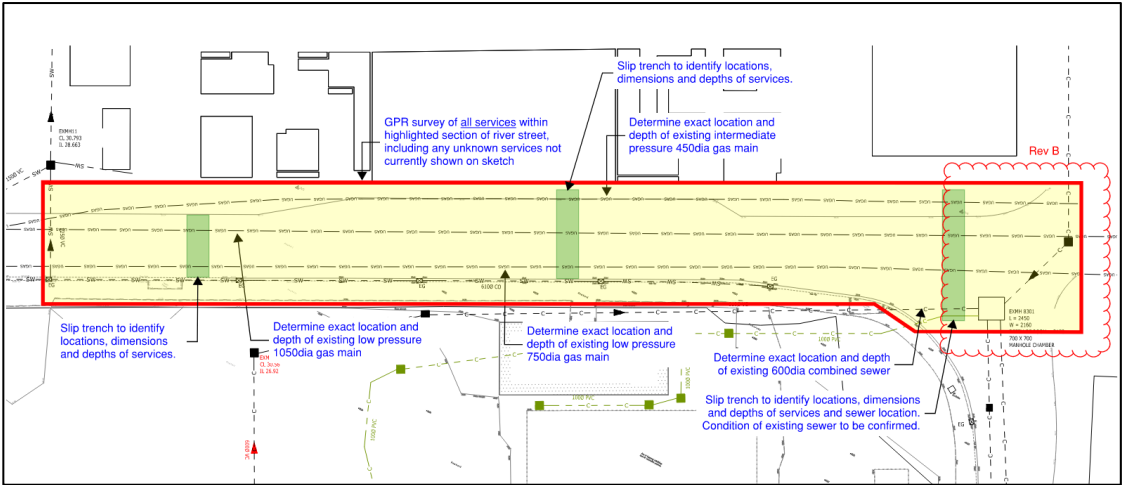
Diversion of the public sewer running west to east parallel with River St will remove the associated easement in Plot 10a and 10b on the North side, the easement within Plot 10a will remain during this stage.

First St - Plot 9a, 10a and 10b drainage phasing

Stage 2 – Associated surveys and easements



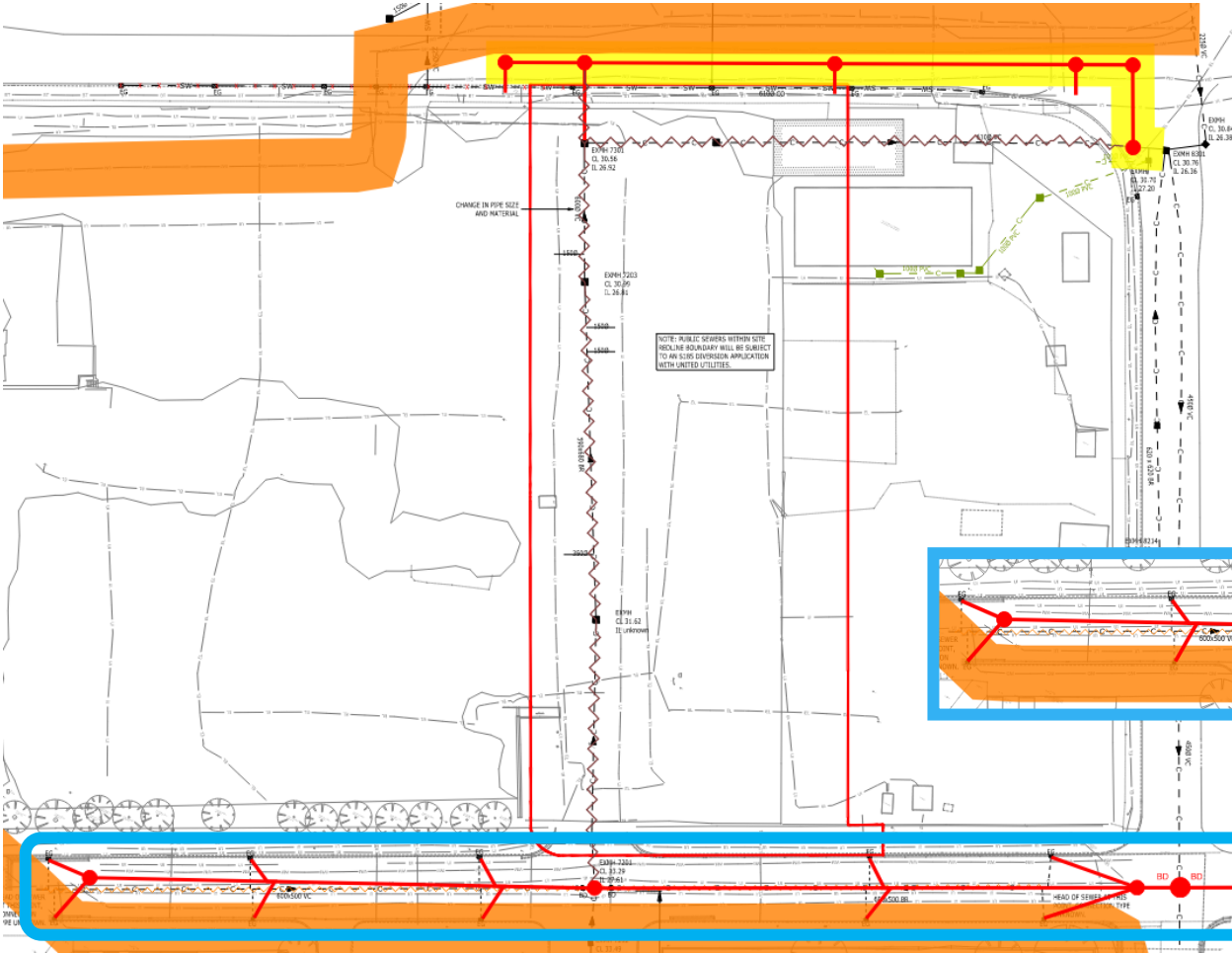
Yellow shading shows assumed 6m easement associated with existing and new public sewer



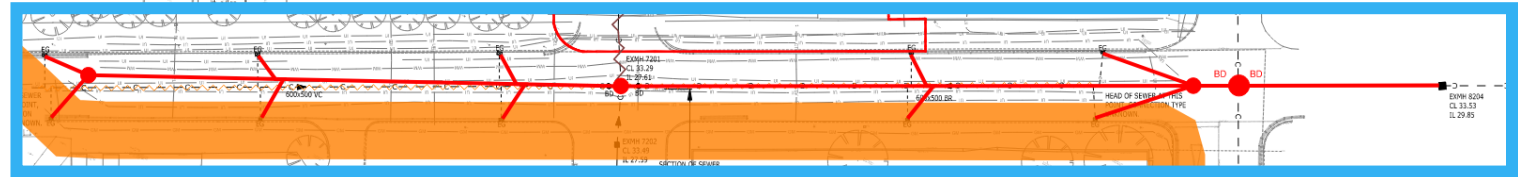
The above plan shows the extent of the surveys undertaken for the diversion of the existing sewer into River St. Red perimeter was the extent of the GPRS survey and the three green shaded areas were the slit trenches dug to determine position of existing gas mains, these were found to be in the locations expected. A camera survey of the main chamber at the corner of Wilmott St and River St was also undertaken.

First St - Plot 9a, 10a and 10b drainage phasing

Stage 3 – To free Plot 10a from the easement associated with the public sewer running north from Hulme St to River St, divert public sewer in Hulme St to allow the abandonment of the public sewer running through Plot 10a



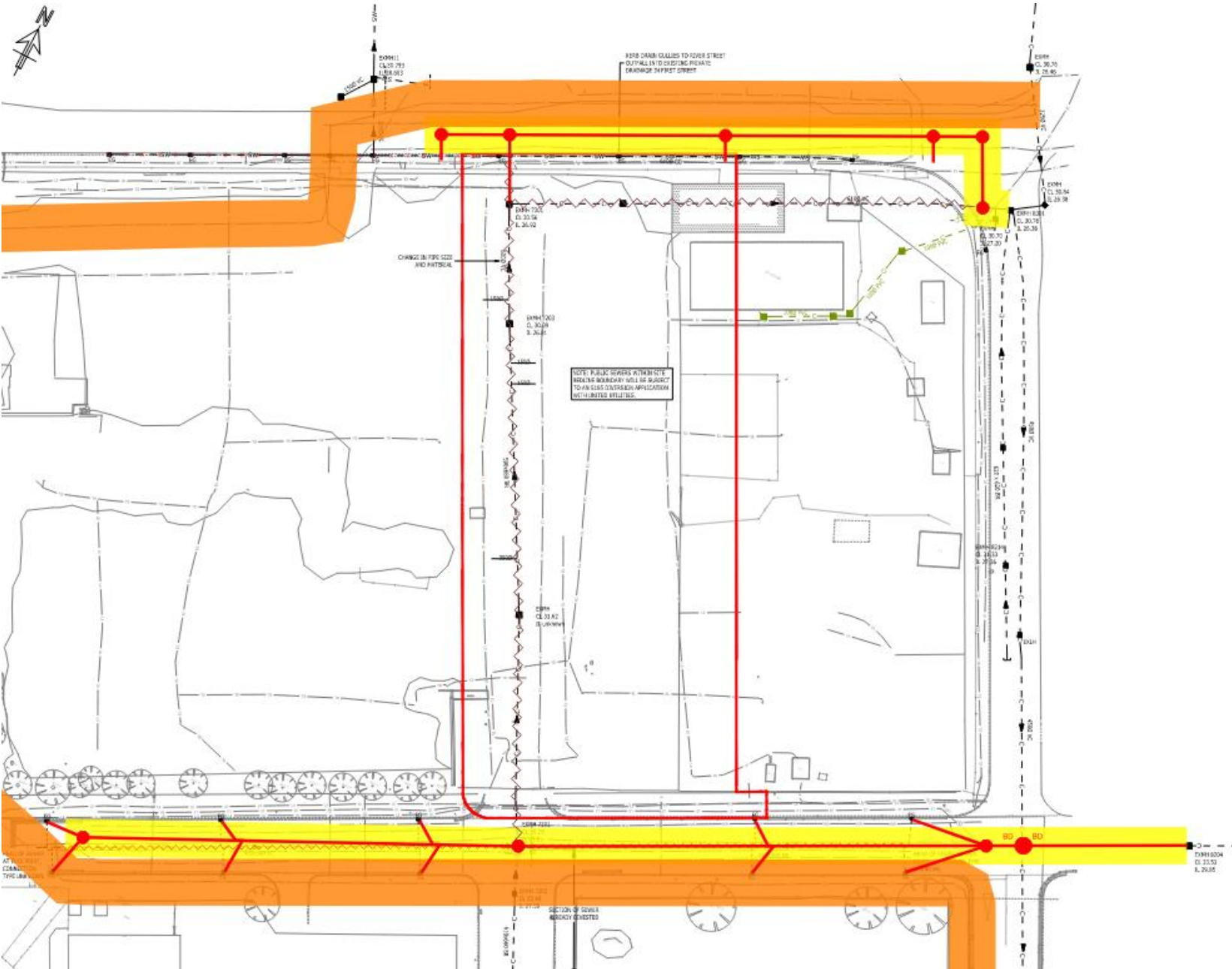
The public sewer running along Hulme St is diverted and laid to fall towards Wilmott St. This will enable the abandonment of the public sewer running north through Plot 10a.



First St - Plot 9a, 10a and 10b drainage phasing

Stage 3 – Associated easements

Yellow shading shows assumed 6m easement associated with existing and new public sewer



Bright ideas.
Sustainable change.

First St - Plot 9a, 10a and 10b drainage phasing

Stage 3 – Associated surveys

To enable the diversion the following surveys are required.

A number of slit trenches were dug to confirm service locations & CCTV of existing public sewer within Willmott St were carried out.

CCTV of the existing public sewers within Hulme Street was not possible as sewers are inaccessible & in disrepair.

Further survey required of EXMH 8204 to confirm outflow direction to the East and remove diversion requirement.

