REPORT

Downtown Carpark Site Development

Infrastructure Concept Design Report

Prepared for
Precinct Properties New Zealand Limited
Prepared by
Tonkin & Taylor Ltd
Date
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November 2025	1	For Fast Track Approval Application	A. Frew J. Kim	M. Mills	P. Millar

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Precinct Properties New Zealand Limited	1 PDF copy
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Executive summary

The table below summarises the key infrastructure and flooding considerations:

Key Consideration	Key Outcome
Stormwater	The pre and post development site are both considered fully impervious. The only increase to stormwater flow into the network from the proposed development is from the impact of future climate change. The receiving public stormwater infrastructure is expected to have capacity to accommodate future site development. Treatment of stormwater runoff from the site is not required. It is proposed to split the stormwater flows from the site into two discharge locations. The proposed design has both connection points discharging to an existing 900 mm diameter line on the Lower Hobson and Street / Quay Street corner. This solution is subject to confirmation of pipe capacities from Auckland Council and topographical survey of existing manhole invert levels and pipe gradients. Minor upgrading of the existing 900 mm diameter line to 1050 mm diameter may be required over a length of approximately 20 m if there is insufficient capacity in this line.
Wastewater	The Project will increase wastewater discharge from the site. A capacity assessment of the downstream infrastructure indicates there are a number of pipes in the downstream network that would exceed capacity as a result of the development. Watercare have confirmed that their network modelling shows an increase in surcharging through the network from the corner of Lower Hobson St, along Quay St, together with sea ingress during high tides. Following discussions with Watercare, it was agreed that at the fast-track consenting stage, the infrastructure assessment would include feasible wastewater management options rather than a finalised design. Five wastewater options were developed and presented to Watercare during a series of meetings. Options 3, 4 and 5 are all considered viable options to service wastewater disposal for the Project. The final option will be confirmed during subsequent project/design stages, following ongoing consultation with Watercare, detailed calculations, and further investigations. During the design phase, and subject to further discussions with all stakeholders, other alternative solutions may also be explored.
Water Supply	The peak potable water demand of the Project has been estimated at approximately 6.1 l/s for residential use, 14.2 L/s for commercial use, and a fire flow demand of 58 L/s. Fire hydrant flow and pressure data for the existing water network was not available for consideration in the assessment. However, based on the water mains in the vicinity of the site and the nature of the surrounding CBD, it is reasonable to assume that this adequately services the potable and fire flow demand of the Project site. Two new connections are proposed, one for the potable domestic connection, and another for the commercial and fire supply connections. The domestic connection will branch off the existing 250 mm diameter CLS watermain located on the eastern side of Lower Hobson Street, whereas the commercial and fire supply connection will branch off the existing 175 CI pipe on the northern side of Customs St West. Both the domestic and commercial connection are likely to be 150 mm diameter. These will be confirmed during the detailed design phase.
Dry Services	Based on the information provided by the service utility providers, we conclude that the Project can be suitably serviced either from Lower Hobson Street or Customs Street West.

1 Introduction

1.1 Background and proposed development

Precinct Properties New Zealand Limited (“**Precinct**”) are proposing to undertake the Project at the corner of Lower Hobson Street and Customs Street West in Downtown Auckland and have engaged Tonkin & Taylor Ltd ("**T+T**") to complete a civil infrastructure assessment to support the Fast Track Approval consent application. This report assesses the existing and proposed infrastructure servicing the Project.

The Project site occupies the area confined by Lower Hobson Street and Customs Street West and is shown below in Figure 1.1. The site is approximately 6,442 m^2 in area, with the surrounding ground relatively level at about RL 4.0 m. The site is on land reclaimed in stages from the 1860’s through to the 1920’s by the Auckland Harbour Board. The reclamation fill comprises both materials cut from nearby areas (e.g. Point Britomart), materials dumped from unknown imported sources and dredged materials. Old harbour records identify the location of the graving dock (dry dock) that extended over the north-eastern to south-western corners of the site. According to council records, the graving dock was infilled in 1923, prior to the reclamation of Quay Street (between Princess Wharf and the site).

At the time of writing this report, we understand the development of the Project site will provide a mixed-use precinct, including new public spaces and a new laneway to enhance connectivity within the city centre.

The current concept design proposal includes:

- Three Podium Buildings (P1-P3).
- Two towers of 45 and 55 levels (including podium)[1].
- 4 level shared basement beneath the site footprint.
- Public spaces and new laneways to provide connectivity across the city.

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[1] Based on the site elevations drawings FTA-31-001 and FTA-31-002 prepared by Warren and Mahoney dated 3/10/2025.

Refer to the Warren and Mahoney ground floor plan[2] (03/10/2025) in Appendix B. For a full set of architectural plans, refer to Warren and Mahoney's design documentation submitted as part of the Project application.

Figure 1.1: Downtown Carpark Site (red dotted lined) (Source: Auckland Council GIS)

1.2 Infrastructure assessment process

The list below outlines the various sources of information obtained and how they were used within this report:

- Information obtained from the Auckland Council (AC) GeoMaps[3] mapping service on the public stormwater, wastewater and water supply networks has been used to inform the wet services demand and capacity analysis and identify any relevant features in the network.
- T+T undertook a capacity assessment of the existing wastewater network upstream and downstream of the subject site in accordance with a request from Watercare Services,[4] with the extent of the assessment to the nearest downstream 300 mm diameter pipe. The assessment is based on a relevant discharge rate per floor area for wet and dry retail, offices, and residential, in accordance with the Water and Wastewater Code of Practice for Land Development and Subdivision Chapter 5: Wastewater, Rev 2.2 dated 1/11/2019.

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[2] Downtown Project General Arrangement – Level 00, drawing no. FTA-10-100 Rev C, prepared by Warren and Mahoney dated 03/10/2025.

[3] Sourced from the Auckland Council link https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html, Viewer Release – 3.2.1.1 EXTERNAL (deployed 24 May 2016)

- T+T liaised with Watercare to understand the constraints in the downstream wastewater network. Feedback from Watercare provided on 27 May 2025 identified that the proposed Project flows would cause surcharging in the Quay Street wastewater network. This is summarised in a letter[4] from Auckland Council's Regulatory Engineering team. Further meetings and liaison with Watercare were held to discuss feasibility of discharging wastewater into a different catchment. These discussions are outlined in Section 3.
- Initial feedback from Watercare as outlined in the letter[4] from Auckland Council's Regulatory Engineering Team has indicated that the site should have an adequate source of water supply on the assumption that the fire protection design is FW2, with a recommendation that hydrant testing is undertaken prior to any operation of the consented development activity.
- Initial feedback from Healthy Waters as outlined in the letter[4] from Auckland Council's Regulatory Engineering Team has indicated that there are no concerns with the stormwater servicing proposal, further assessments to be undertaken at detailed design through an Engineering Approval process.
- There is an updated stormwater layout from the recently completed Quay Street upgrading work.
- Information from Dial- B4Udig was reviewed to identify features, limitations, layout, and supply of dry services (communications, power, and gas) to the Project site. This also informed the layout of services along Lower Hobson Street and the area south of the Carpark site.
- Information was obtained from the T+T database which was acquired during the design of the Quay Street upgrade project which encompasses the same geographical area and has informed the wet services analysis.
- The following service providers were contacted: Chorus, Vital (formerly CityLink), Vector and One NZ on the capacity of their existing networks and whether future upgrades were planned in the nearby vicinity.

Infrastructure assessment details for the proposed development are described in Sections 2 - 5.

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[4] "Regulatory Engineering Review – Resource Consent Application - BUN60435935 - 2 Lower Hobson Street, City Centre

2 Stormwater

2.1 Existing stormwater infrastructure

An existing 300 mm diameter public stormwater line connects into the north-west end of the site. All the current stormwater flows from the carpark site appear to discharge into the public network at this point.

The 300 mm diameter stormwater connection drains into the main 1050 mm diameter stormwater network via a series of 300 mm diameter concrete pipes and manholes, connecting to the 1050 mm diameter pipe at manhole ("**MH**") ID 2000374576. This 1050 mm diameter pipe runs northward towards Quay Street, and outlets into the harbour through the Quay Street seawall.

The site 300 mm diameter lateral connection into main network is shown in Figure 2.1.

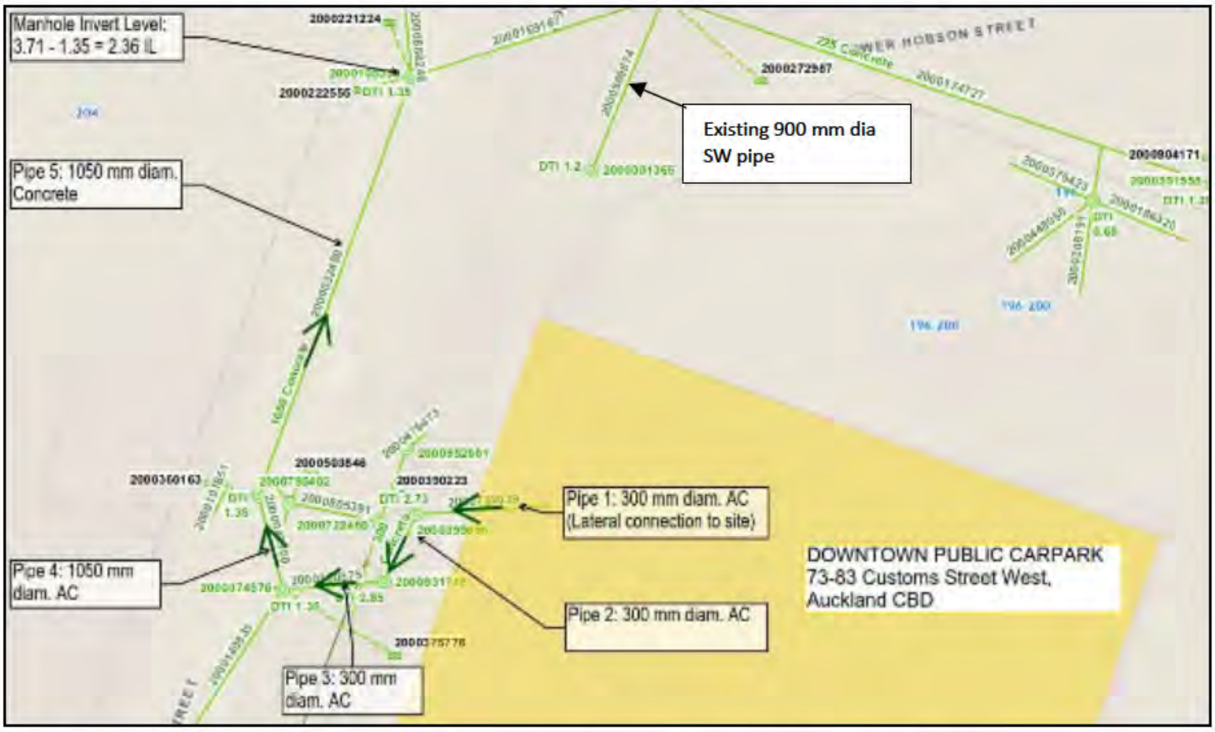

Figure 2.1: Lateral connection from site to stormwater network (Source: Auckland Council GIS)

Other stormwater infrastructure in the vicinity of the site that may provide potential connection points into the site include an existing MH (ID 2000381365) approximately 40 m north of the existing connection point, which connects to an existing 900 mm diameter concrete pipe.

There is also an existing MH (ID 2000805313) approximately 50 m south of the site, which connects to an existing 225 mm diameter earthenware pipe which then saddles onto the 1050 mm diameter pipe discussed above.

For overall plans of the surrounding stormwater network refer to Appendix C.

2.2 Existing runoff assessment

The Project site is currently occupied by a multi-level carpark building that covers the land area of 6,442 m^2. The top of the building is an exposed concrete surfaced carpark level, with small areas as roofed surfaces for enclosed stairwells and lift access. Multiple floor drains connect into 100 mm diameter downpipes, spaced across the level 8 carpark surface, with the vertical downpipes extending down to the basement carpark level. These downpipes discharge into the 300 mm diameter stormwater service connection into the site.

The downpipes from a canopy over the level 3 exit ramp structure to Fanshawe Street (southern side of site) drains directly into the ramps kerb and channel drainage system. Therefore, the canopy area has been excluded from this assessment.

A narrow area exists at ground / street level between the edge of the building and the property boundary. These are noted alongside the western and southern boundary. From google street view images, these surfaces are both paved/concrete and garden areas. Surface runoff from these areas drain directly to the street kerb and channels. For the purposes of estimating the runoff from the site, these surfaces areas have been added to the overall site runoff.

The stormwater runoff from the existing site has been estimated using the rational formula method. This calculation is based on a 1 in 20-year annual recurrence interval (ARI) storm event, in accordance with the New Zealand Building Code - Clause E1.

For the purpose of estimating the existing runoff the existing site has been treated as fully impervious. A runoff off coefficient of 0.9 (for impervious roof surfaces), has been adopted for the entire site. A 10-minute duration has been used in the calculation of stormwater peak flows. The rainfall data were obtained from Auckland Council TP108 20-year ARI daily rainfall depth map.

Stormwater calculations and site plans are included in Appendix C. Peak runoff from the entire Carpark Building site for 1 in 20-year ARI storm event is 151.6 litres/sec as per Table 2.1.

Table 2.1: Existing runoff assessment

Design ARI storm event	Pre-development (L/s)
1 in 20 year	151.6

2.3 Existing capacity assessment

The capacity of the 300 mm diameter stormwater connection into the site is estimated to be 101.4 litres/sec based on an assumed minimum pipe slope of 1.1%. The slope of this pipe and its corresponding capacity will need to be confirmed by survey of the line prior to the detailed design phase. This existing stormwater connection does not currently have adequate capacity for full discharge of the existing peak runoff (151.6 litres/sec) during a 1 in 20-year ARI storm event from the Carpark site.

The capacity of the 1050 mm diameter stormwater pipes downstream of the lateral have been assessed to be 2,375 litres/sec and 680 litres/sec with the site's peak flow contributing to 6.4% and 22.3% of the total capacity of each pipe, respectively.

Refer to existing stormwater calculations in Appendix C.

2.4 Stormwater design flows

Given that the pre and post development site are both considered fully impervious, the only increase to stormwater flow into the network from the proposed development is from the impact of future climate change. The estimated runoff site in a 1 in 20-year ARI storm event is 175 litres/second, which is an increase of 24 litres/second. Initial consultation and a meeting with Healthy Waters on 25/08/23 suggests that there should not be any capacity constraints in the wider stormwater network from the post development flows. This was further verified by the letter[4] from Auckland Council's Regulatory Engineering Team. Figure 2.2 below shows the concept design for the ground floor layout which includes three separate buildings connected by a series of laneways.

Figure 2.2: Proposed ground floor layout (sourced from landscape drawing (L01.003) prepared by Warren and Mahoney dated 3/10/2025)

2.5 Proposed stormwater connections

It is proposed to split the stormwater flows from the site into four discharge locations as shown in Figure 2.3 and the design drawings in Appendix A. This design is subject to final confirmation of pipe capacities from Auckland Council and a survey of existing manhole invert levels and pipe gradients which will be undertaken at developed or detailed design.

The proposed design involves connecting into the existing 900 mm diameter stormwater line on the corner of Lower Hobson Street and Quay Street. A new 300 / 375 mm diameter stormwater line will run adjacent to the site from Customs Street West to Lower Hobson Street, connecting to an existing manhole before discharging into the existing 900 mm diameter stormwater line, refer to Figure 2.3 below. This design avoids having to replace the existing 300 mm stormwater connection that has been identified as having insufficient capacity to take the existing flows.

This design is subject to Auckland Council final confirmation that the existing 900 mm diameter pipe has sufficient capacity, and a topographical survey of existing manhole invert levels and pipe gradients. If the 900 mm diameter pipe does not have sufficient capacity it may need to be upgraded to a 1050 mm diameter pipe, over a length of approximately 20 m length.

Note that this proposed alignment has also been chosen as it will not be affected by any future demolition works associated with the Lower Hobson Street ramp. Refer to drawings 1016043.2000-4100 & 4101 in Appendix A.

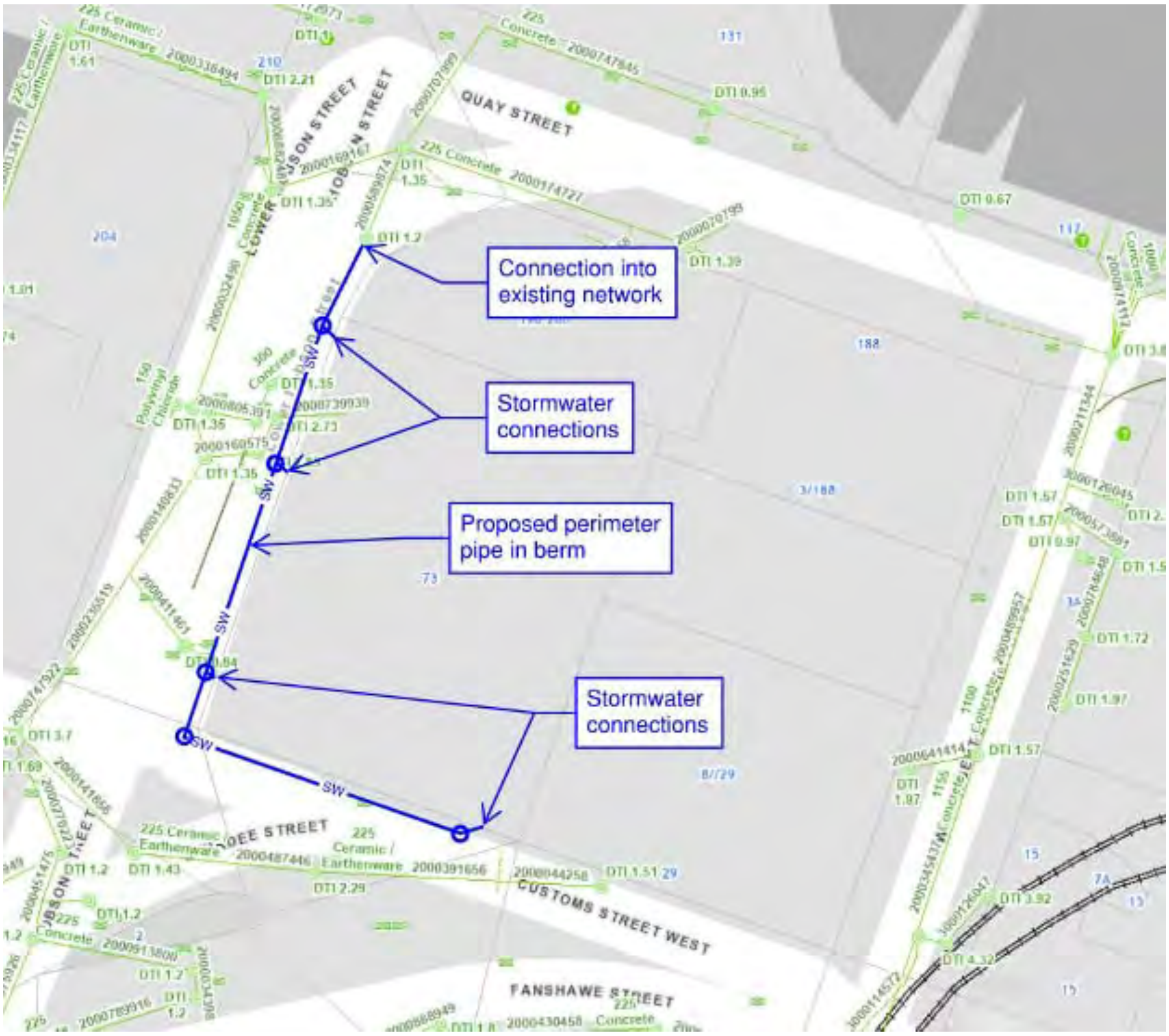

Figure 2.3: Proposed stormwater connections

2.6 Stormwater treatment

Under the Auckland Council Unitary Plan ("**AUP**"), treatment of stormwater runoff from High Contaminant Generating Activities ("**HCGAs**"), which are those land use activities that generate and discharge contaminants at a level where treatment will result in a substantial reduction in contaminant concentration and load. HCGAs are identified as:

- Parking areas and associated accessways that are exposed to rainfall and carry more than 50 vehicles per day[5].
- Building roofing, spouting, and external walls cladding and architectural features (with a surface area greater than 25 m^2) using materials with an:

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[5] Auckland Council (August 2013), Auckland Unitary Plan – Stormwater Management Provisions, Technical Report 2013/035

- Exposed surface or coating of metallic zinc or any alloy containing greater than 10% zinc.
- Exposed surface or coating of metallic copper or any alloy containing greater than 10% copper.
- Exposed treated timber surface or any roof material with a copper-containing or zinc-containing algaecide.

The proposed development does not include any uncovered parking or any of the above mentioned building materials and therefore, treatment of stormwater runoff from the site is not required.

3 Wastewater

3.1 Existing wastewater network

A 225 mm diameter public sewer pipe services the existing Downtown Carpark site and neighbouring properties in Lower Hobson Street. The property is connected to this line via a 150 mm diameter line located at the north-western corner of the site. From here, the wastewater line runs east along Quay Street, past the recent developments at Commercial Bay and Downtown Public Space/Ferry Terminal.

Site plans depicting the wastewater network surrounding the Downtown Carpark site are shown in Figure 3.1 and included in Appendix C.

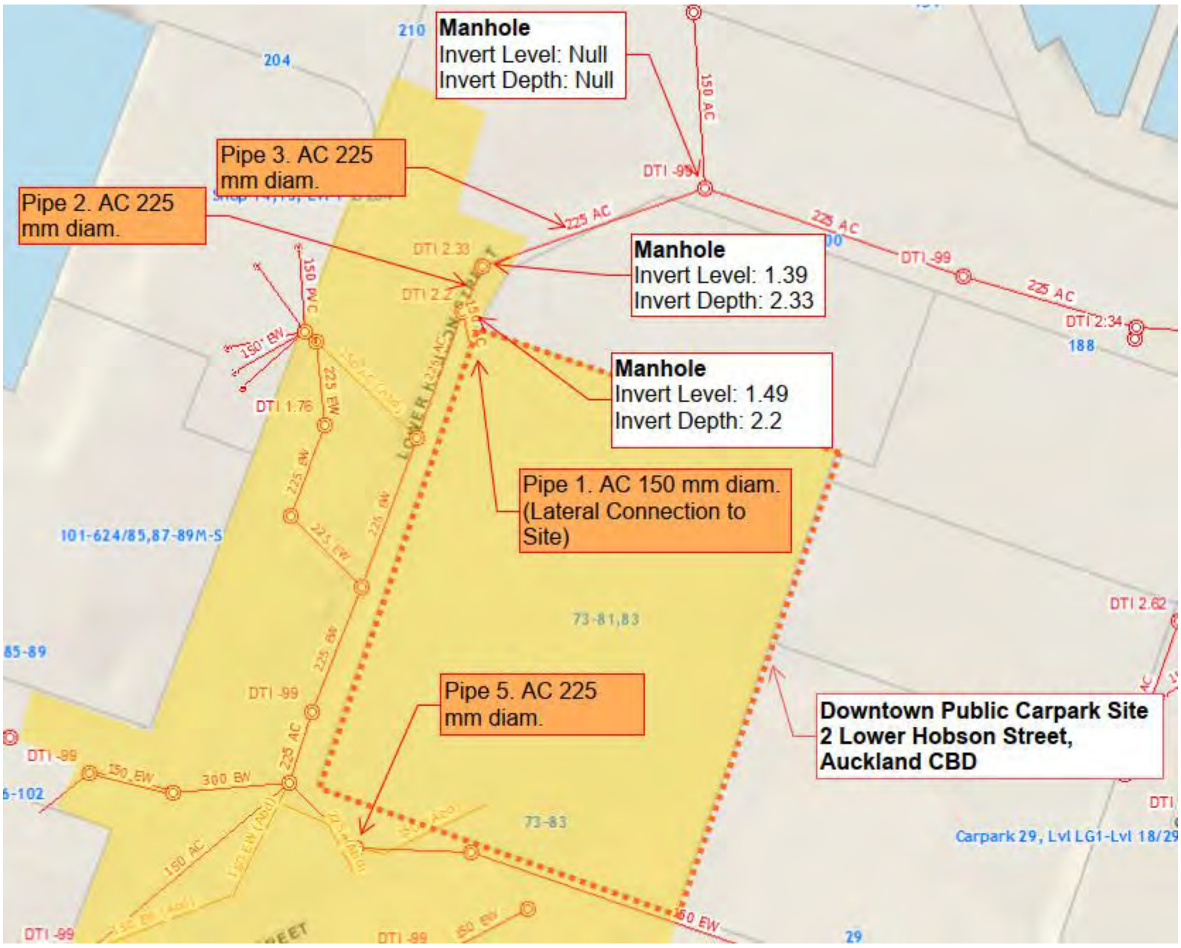

Figure 3.1: Public wastewater network servicing the Downtown Carpark site (Source: Auckland Council GIS)

3.2 Existing wastewater generation

The existing flows from the Project have been estimated according to the design approach outlined in the Watercare Code of Practice for Land Development and Subdivision[6]. Wastewater flows have been estimated based on floor plans of the bar and restaurant businesses, ground floor toilets accessible to the public and carparking administration office spaces housed within the building, sourced from the property file. We have assumed no wastewater generation from the remainder of

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[6] Water and Wastewater Code of Practice for Land Development and Subdivision, Chapter 5: Wastewater, Rev 2.2, 01/11/2019

the ground level and additional levels due to its operation as a carpark. Estimated flows are provided in Table 3.1 and included in Appendix C.

Table 3.1: Estimated wastewater generation flows at the Downtown Public Carpark Site.

Average dry weather flow (l/s)	Peak dry weather flow (l/s)	Peak wet weather flow (l/s)
0.1	0.3	0.9

3.3 Wastewater design flows

Average dry weather wastewater flows for the proposed development have been calculated using the design parameters set out in the Watercare Code of Practice for Land Development and Subdivision. Wastewater flows have been estimated based on the area schedule[7] of the Project site. Estimated wastewater flows for the proposed development, broken down by development area are presented in Table 3.2. The overall pre- and post-development generated flows and the corresponding percentage increase in demand, is summarised in Table 3.3.

Table 3.2: Estimated wastewater flows for the proposed development

Development Areas	Average dry weather flow (l/s)	Peak dry weather flow (l/s)	Peak wet weather flow (l/s)
T1	3.1	6.2	15.6
T2	1.4	4.3	8.0
Base (Basement + Level 00 to Level 07)	1.4	2.7	7.0

Table 3.3: Estimated wastewater generation flows for pre-development compared to post-development

Flow condition	Pre-development (l/s)	Post-development (l/s)
ADWF (l/s)	0.1	5.9
PDWF (l/s)	0.3	13.2
PWWF (l/s)	0.9	30.6

Peaking factors used for dry weather and wet weather flows have been based on the Watercare Code of Practice. These are considered to be very conservative for development of this nature as infiltration of water into the wastewater system will be minimal. This will be discussed further with Watercare during the detailed design phase. The expectation is that the peaking factors will reduce, which will reduce the Peak Wet Weather Flows ("**PWWF**"). The above flow rates will continue to be refined as the design progresses from consent design to subsequent design stages.

Table 3.3 shows that the Project will result in an increase in wastewater flows. Ongoing liaison with Watercare will be critical to identify and implement the most feasible servicing solution, this is further discussed in Section 3.6 below.

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[7] Area schedule provided from Bianca Hurrell (RCP) via email on 19/09/2025, RE: FW: Downtown West - Draft FTA Area Schedule.

3.4 Wastewater capacity assessment

T+T undertook a capacity assessment of the existing wastewater network upstream and downstream of the subject site in accordance with a request from Watercare Services, with the extent of the assessment to the nearest downstream 300 mm diameter pipe. Currently, discharges from the site connect to a public wastewater network on Lower Hobson Street, which continues along Quay Street to Queen Street and beyond.

For the purposes of this assessment, the wastewater network begins approximately 200 metres upstream of the site (manhole A-1) and extends downstream to the nearest 300 mm diameter pipeline (manhole A-15), in accordance with Watercare's request. Refer Figure 3.2.

Figure 3.2: Extent of the wastewater capacity assessment

Our capacity assessment has been undertaking the information available from Auckland Council GIS and Watercare GIS viewer. Where pipe grades were not identified, we have assumed minimum grades for self-cleansing velocity in accordance with Watercare COP.

Based on the PWWF, outlined in Table 3.3, the assessment indicates that several wastewater pipes do not have capacity to take the additional flows generated from the proposed development. Along Quay Street, (between manhole ID A-10 to A15) our assessment indicates that the pipe capacities are exceeded by 150% to 360% of the total pipe capacity. Refer to Appendix C for further calculations.

Watercare's Development Engineer has confirmed[8] that their network modelling shows an increase in surcharging through the network from the corner of Lower Hobson St and Quay St through to manhole 1166196 at the corner of Queen Street and Quay St (refer to Figure 3.3). The majority of the affected section of pipe comprises of 225 mm diameter pipes, with one section of 300 mm adjacent to Queen St before tying into a 375 mm diameter pipe downstream.

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[8] Email from Sarah Wilson (Auckland Council) to Pamela Santos (Barkers), RE: 2 Lower Hobson Street - Watercare / Wastewater Survey and Upgrade Plan Request, dated 27 May 2025 @ 3:44pm. This assessment was based on a flow rate of 23 L/s.

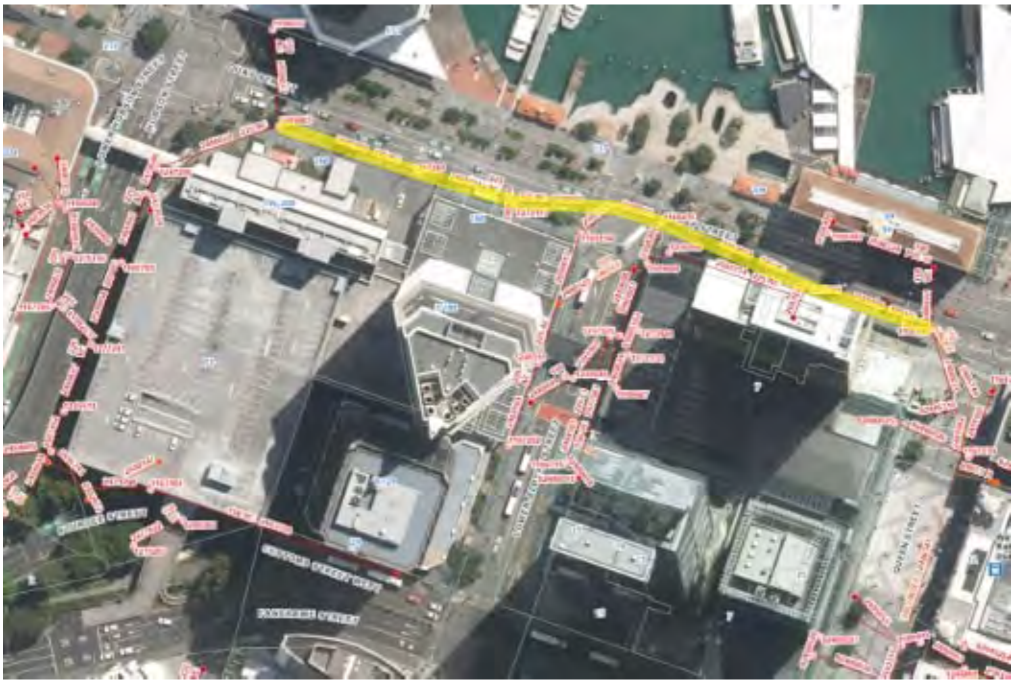

Figure 3.3: Extent of wastewater capacity constraint as advised by Auckland Council and Watercare

Based on the above, discharging wastewater within the same pipe network as the pre-development scenario (i.e. down Quay Street) would require substantial infrastructure upgrades. Watercare have advised that they will accept discharging into a different catchment, given the limited capacity in this CBD catchment. Several options have been investigated and discussed with Watercare, refer Section 3.6 below.

3.5 Watercare engagement

Meetings have been held with Watercare to discuss possible wastewater solutions for the Project, following their initial feedback received on 27 May 2025. Key meetings were held on:

- 12 August 2025
- 29 August 2025
- 22 September 2025
- 3 October 2025

Five options were developed in consultation with Precinct and RCP. These options were pre-circulated to Watercare on 22/09 following two previous meetings 12/08 and 29/08 respectively.

The five options are discussed further in Section 3.6 below.

3.6 Wastewater discharge options

3.6.1 Option 1: Market Place/ Fanshawe Street Pump Station

Option 1(a) Approximately 170 m of new pipe on Customs Street West, to connect to an existing wastewater pipe network at the northern end of Market Place – approximately 2.0 m deep. Watercare noted that subject to their confirmation of capacity, the Market Place reticulation may need to be upgraded to accept the additional flows from the Project therefore, Option b was developed. Refer to Figure 3.4 below.

Option 1(b) Approximately 310 m of new pipe on Sturdee Street, to connect to an existing manhole (1256003) on the corner of Fanshawe Street / Market Place – approximately 7.0 m deep. We understand that AT have major reconstruction works proposed along this section of Sturdee Street as part of the Honson St overbridge demolition works, therefore aligning these works with the AT works would be preferred if feasible, and timelines work out to limit disruption. This network connects to a 300 mm diameter branch sewer connecting into the Fanshawe Street Pump Station. Refer Figure 3.4 below.

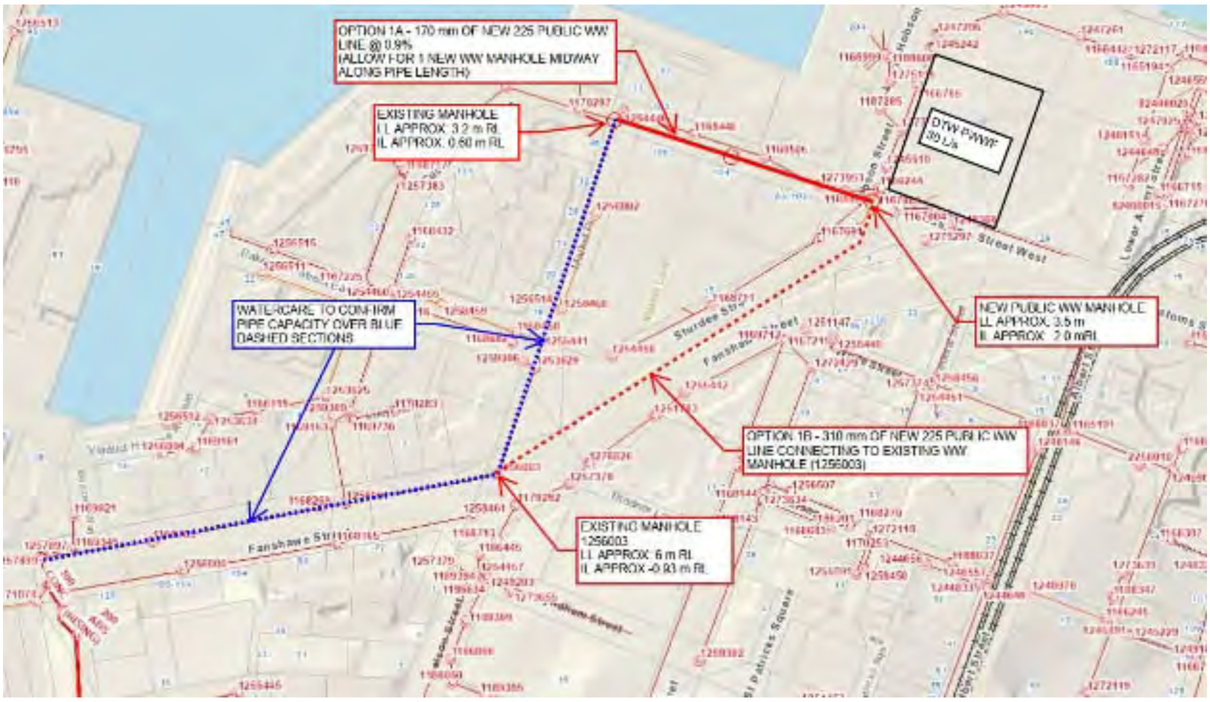

Figure 3.4: Wastewater Option 1 - Market Place/ Customs St East Connection to Fanshawe Street Pump Station

Watercare have advised that the receiving pump station (PS 4 Fanshawe Street) is unlikely to have sufficient capacity to accept additional Project flows. Upgrading the pump station and rising main to the Orakei trunk sewer may therefore be required. Further information and coordination with Watercare is required to confirm the scope of the proposed upgrades. We anticipate that the following details will be required:

- Pump Station Design Standards: Based on AC Geomaps, the pump station was installed in 1992. Confirmation of the minimum design standard for the pump station, and a comparison against current design requirements / standards (ESF-500-STD-202 (DP-06) is required.
- As-Built Documentation: Drawings of the existing wastewater pump station to verify layout, wet well depth, volume and connection points.
- Geotechnical Considerations: Assessment of ground conditions to understand implications of excavation in the area.
- Pump Performance Data: Watercare to provide characteristic curves for the existing system to enable assessment of the pumps against the new flow rates and confirm whether new pumps/upgrades are required. The pumps would need to account for the current 50 l/s flow, approx. 30 L/s flow from the Project and potential futureproofing requirements from Watercare.
- Rising Main Capacity: Evaluation of the existing 300 mm diameter rising main, connecting the pump station to the Orakei trunk main to determine whether an upgrade is necessary.

- Fanshawe Street Network Capacity: A capacity assessment of the wastewater infrastructure along Fanshawe Street to confirm adequacy of existing pipework.

3.6.2 Option 2: Quay Street Duplication

This option proposes installing approximately 45 metres of private wastewater pipe within the laneway and constructing 190 metres of new duplicate wastewater line along the Quay Street carriageway, connecting to the existing wastewater manhole (ID 1166196) as shown in Figure 3.5 below.

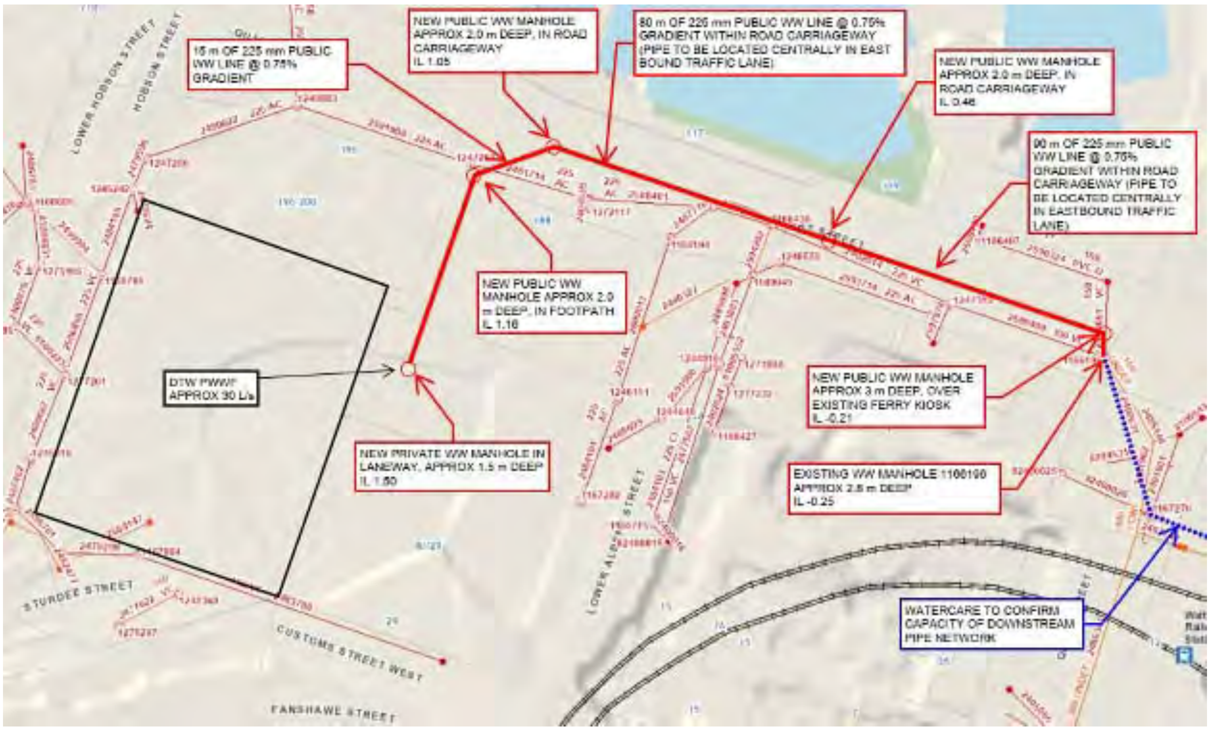

Figure 3.5: Wastewater Option 2- Quay Street duplication

The capacity of the existing downstream wastewater line beyond the Queen Street connection point will need to be verified by Watercare. Through our involvement with other projects in this vicinity, we understand that the Quay St footpath and road corridor is heavily congested with existing underground infrastructure, making the construction of a duplicate gravity-fed pipe highly complex and potentially unfeasible. Liaison will also be required with AT due to potential disruption to vehicular and pedestrian movements and the implications of undertaking works within the recent Quay Street redevelopment.

Upgrading the existing wastewater line on Quay Street was also considered, by way of pipe replacement or pipe bursting; however this would still require significant works within the Quay Street footpath and carriageway, with similar issues around AT approvals. It is also more complex to construct as temporary pumping solutions would be required around sections of work and maintaining existing property connections during the works.

Either option would result in significant traffic disruption on Quay Street as it is anticipated that full lane closures would be required over a 4 – 6 month period.

For the above reasons, this option is unlikely to be feasible and is not considered further.

3.6.3 Option 3: On-site storage and off-peak pumping

This option involves storing wastewater on-site (in tanks within the basement) during peak periods and discharging it gradually into the public network during off-peak times via a controlled pumping system equipped with timers or sensors.

The Watercare Code of Practice does not provided guidelines on storage requirements; however we understand that up to 24hrs of emergency storage may be required by Watercare, and this is what has been allowed for in the design.

Preliminary calculations indicate that approximately 500 m³ of on-site storage (allowing for 24-hour storage would be required). Architectural drawings indicate storage tanks will be located on Level 4 of the basement (refer Figure 3.6 below).

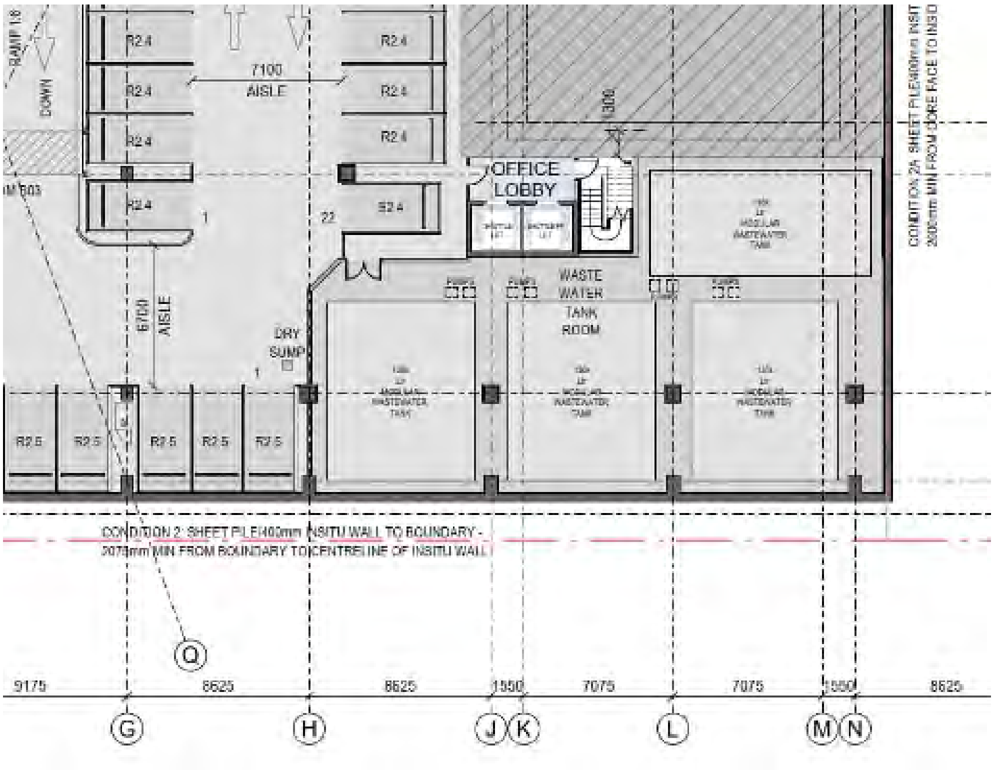

Figure 3.6: Location of wastewater tank storage room (Sourced from Warren and Mahoney Drawing FTA-10-096 Rev C)

A private rising main, designed by the Building Services engineer (NDY), would convey flows to a private receiving manhole near Lower Hobson Street before connecting by gravity to an existing public manhole (refer to WW18 Private Rising Main connection drawing). Operational controls and advice from Watercare on restrictions and periods off-peak when pumping is permitted will be necessary to manage off-peak pumping effectively. Refer to Figure 3.7 below and drawing 1016043.2000-3050 in Appendix A.

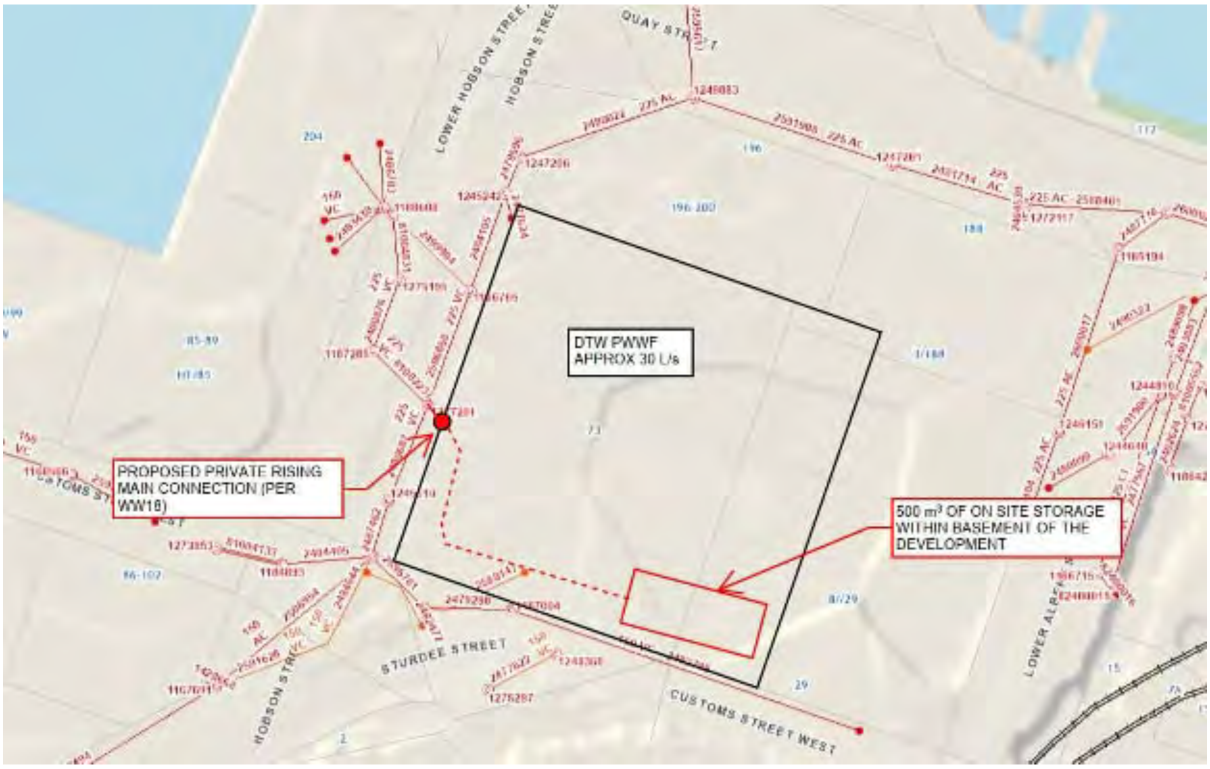

Figure 3.7: Wastewater Option 3 - On-site storage and off-peak pumping

3.6.4 Option 4: New Pump Station

As the existing wastewater network has no spare capacity to accommodate additional flows from the Project, and Watercare advised that there are no plans to upgrade the network in the near future, this option proposes constructing a new public pump station, potentially located within the future redevelopment area on Sturdee Street following the demolition of the Hobson Street overbridge.

The system would include either:

- Option 4(a) - A new public pump station with a 360 metre long rising main connecting to the Nelson Street 300 mm dia. piped network at MH 1189394, which ultimately discharges into the Orakei trunk sewer. We understand the existing 300 mm diameter pipeline on Nelson Street, connects to the Orakei Trunk Sewer via a 25 m dropper. Refer to Figure 3.8 below; or
- If the existing 300 mm dia. pipe on Nelson Street does not have sufficient capacity and it is not feasible to extend the new rising main to the existing dropper, we would revert to Option b below.

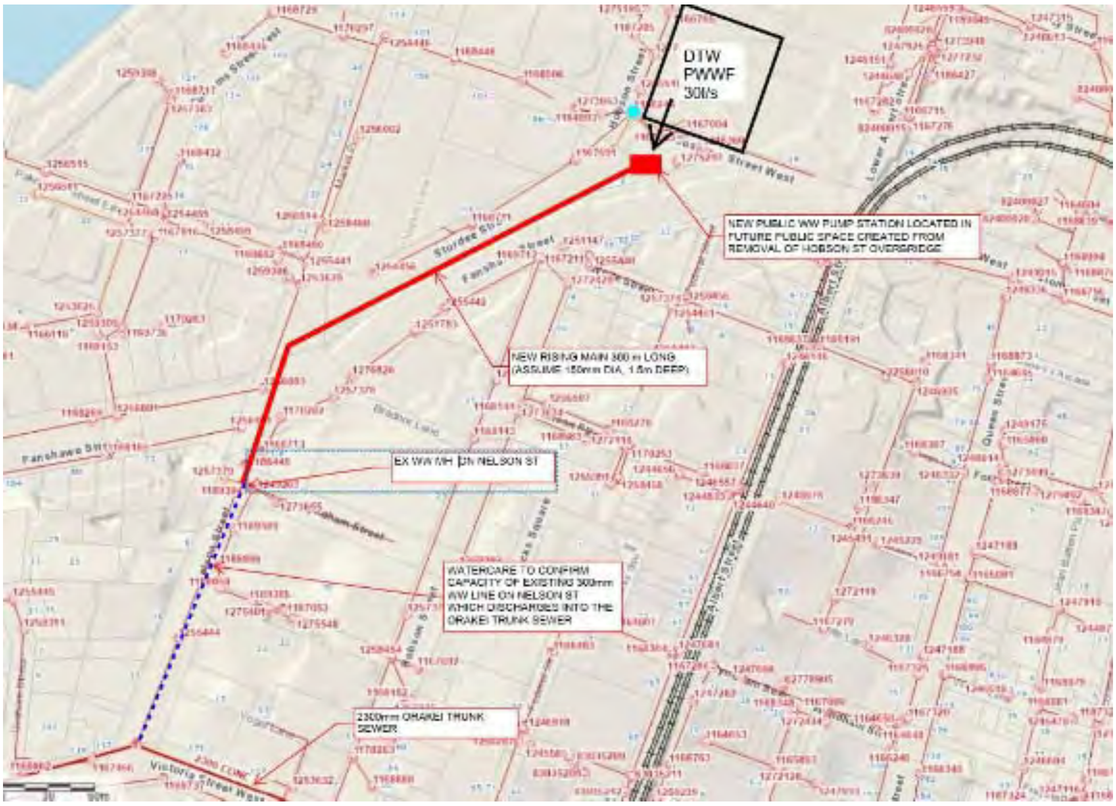

Figure 3.8: Option 4(a) connecting to existing WW line on Nelson street

Option 4(b) - Alternative discharge locations may also be considered if option 4(a) is not feasible. One option could include a new 980 meter long rising main along Fanshawe Street, connecting into the wastewater transmission chamber in Wellesley Street West servicing the Wynyard Quarter branch sewer (GIS ID 4544956) and ultimately connecting into the Orakei Transmission main. Refer to Figure 3.9 below.

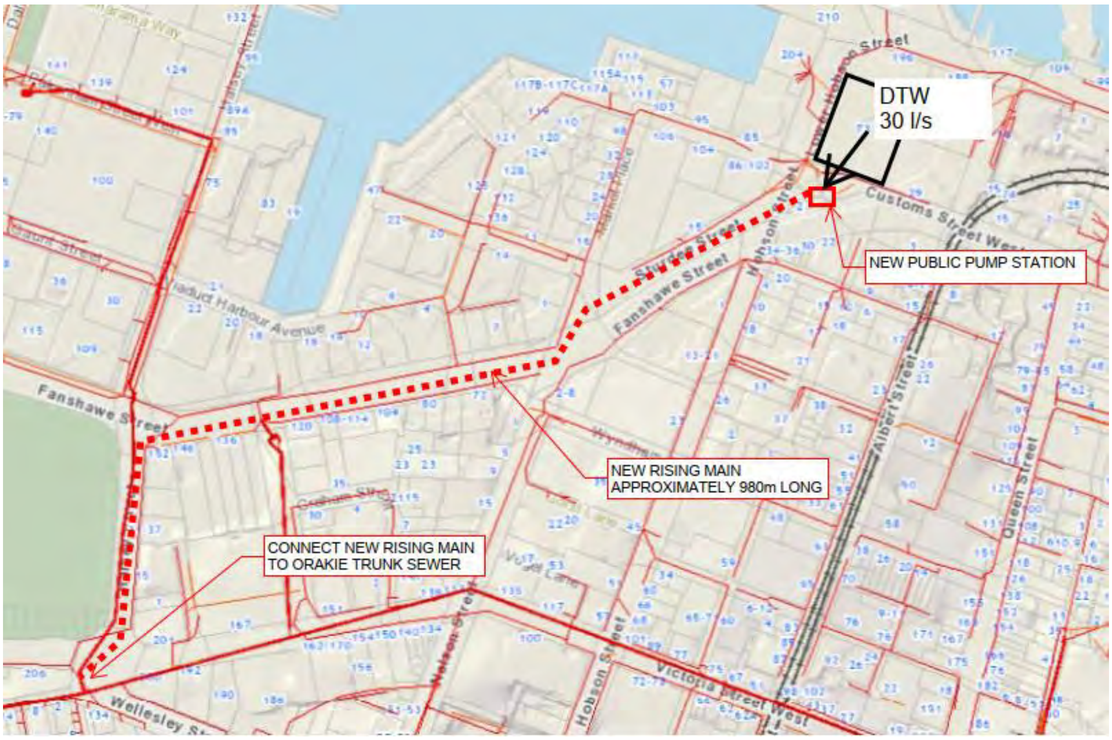

Figure 3.9: Option 4(b) connecting to Orakei Trunk Sewer at Wellesley Street West

These options would involve high capital costs but offer potential for cost-sharing with other developments and provide a collective, long-term solution for future growth in the area. These options are presented in drawing 1016043.2000-3051 & 3052 in Appendix A.

3.6.5 Option 5: Private rising main through Precinct land

This option involves installing a 225 (size to be confirmed during subsequent design stages) metre private wastewater rising main routed through the basements of Precinct-owned buildings and ultimately connecting into the public manhole (GIS ID 5532273) located near the corner of Quay Street and Queen Street, downstream of the identified constrained network on Quay Street, as identified by Watercare. The alignment also includes a 27 metre crossing beneath Lower Albert Street, which would be subject to Auckland Transport, Auckland Council and Watercare approval.

A private pump station in the basement of the Project, with a rising main connecting into a private manhole which discharges via gravity to manhole (GIS ID 5532273) on Lower Queen Street will be required. Further calculations to determine head loss, rising main size and service investigations to confirm the most suitable rising main route will be required at subsequent design stages.

Constructing the rising main below Lower Albert Street will be subject to Engineering Plan Approval ("**EPA**"). AT also advised that an encroachment licence would need to be applied for, and the design must demonstrate compliance with the national code of utility access to transport corridors.

Auckland Transport also indicated that the removal and reinstatement of the footpath along Lower Albert Street would be challenging and they have some reservations regarding this work. If this is the case, another option is to utilise the existing pedestrian overbridge along Lower Albert Street as a pipeline route, encased in a pipe sleeve or alternative to protect the pipeline from damage, UV exposure and allow for maintenance. Refer Figure 3.10 and Figure 3.11 below and drawing 1016043.2000-3053 in Appendix A.

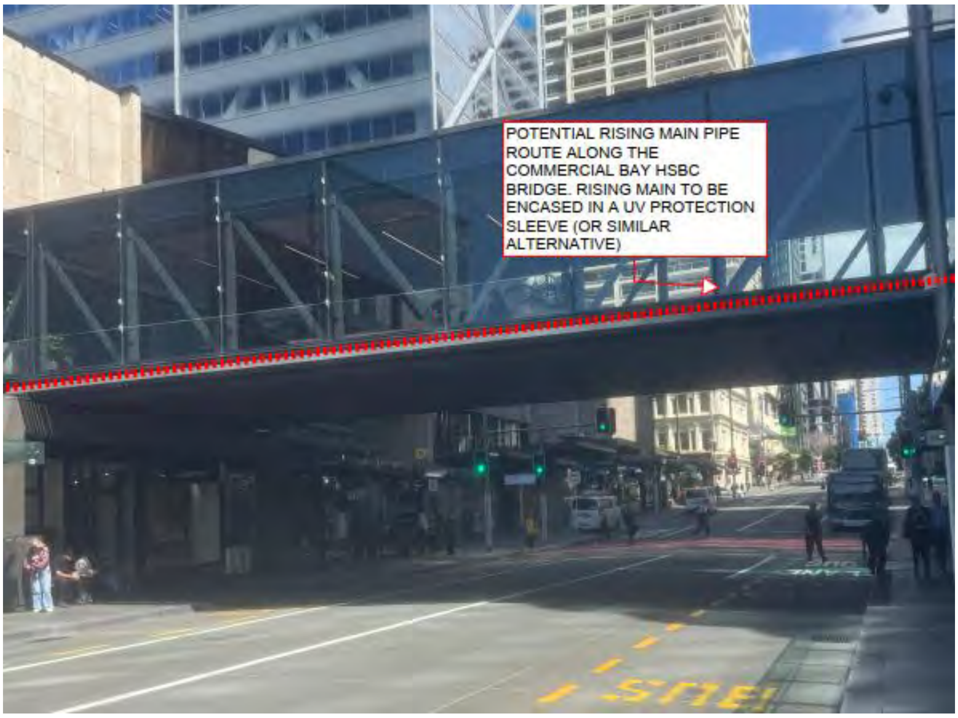

Figure 3.10: Image showing potential rising main pipe route along the pedestrian footbridge above Lower Albert Street.

Figure 3.11: Image showing extents of potential rising main pipe route

3.7 Potential solutions

Through discussions with Watercare (refer to meeting minutes in Appendix E), it was agreed that it was appropriate at the Fast Track consenting stage to include feasible options as part of the infrastructure assessment to address wastewater servicing as opposed to a final design (which is more appropriately finalised and approved at detailed design / EPA stage).

Potential solutions which will be developed further at subsequent design stages are summarised in Table 3.4 below.

Table 3.4: Wastewater Options

Option description	Option to be considered as part of FTAA application	Option summary
Option 1: Market Place / Fanshawe Street Pump Station	N	• Requires confirmation on capacity of Market Place and Fanshawe Street pipe networks to confirm feasibility • Requires advice from Watercare on upgrading requirements for Fanshawe Street pump station to confirm feasibility
Option 2: Quay Street Duplication	N	• High level of construction difficulty within Quay Street due to existing services and traffic disruptions • AT not supporting works within Quay Street
Option 3: On-Site Storage / Off-Peak Pumping	Y	• Considered a viable option that does not add any peak flows to the existing wastewater network • May provide an interim solution until wider network upgrades/capacity is available
Option 4(a): New PS to Nelson Street / Orakei Truck / Main Sewer Option 4(b): New Pump Station to Wellesley Street West / Orakei Truck / Main Sewer	Y	• Provides a feasible option for discharging wastewater from the Project • Provides a collective solution for wastewater discharge from other proposed developments in the area • Potentially high capital costs; however, these may be shared • Can be constructed in conjunction with the proposed AT Sturdee Street urban upgrade works
Option 5: Private line through PCT Land	Y	• Provides a feasible option for discharging wastewater from the Project • Requires AT granting an easement over Lower Albert Street for a private rising main (or alternatively the rising main could run over the existing pedestrian overbridge)

Option 1 may prove to be a viable option; however, at this stage there are several unknowns around existing pipe capacities and the capacity at the Fanshawe Street pump station. For these reasons this option has not be put forward to support the FTAA consent application for disposal of wastewater from the Project. This option may be revisited at later design stages if Watercare advice suggests it is a viable option.

Option 2 is not considered a viable option due to lack of AT support and difficulty of construction in a heavily congested environment.

Options 3, 4 and 5 are all considered viable options to service wastewater disposal for the Project. The final option will be confirmed during subsequent project/design stages, following ongoing consultation with Watercare and other stakeholders, detailed calculations, and further investigations.

During the design phase, and subject to further discussions with all stakeholders, other alternative solutions may also be explored with Watercare which may lead to another option being pursued ahead of the options considered in this report.

4 Water supply

4.1 Existing water supply network

Outside the Project site a 250 mm diameter concrete lined steel (CLS) water main runs along the eastern side of Lower Hobson Street. This connects to a 600 mm diameter concrete lined steel water main in Customs Street West. There is also a 175 mm diameter cast (CI) iron water main running beneath Customs Street West, refer to Figure 4.1 and included in Appendix C. There are several hydrants in close proximity, on both Lower Hobson Street and Customs Street West. Refer to Appendix C. A 100 mm CI lateral at the north-west corner of the Carpark site (installed 17/06/1955 and deemed operational) connects to the 250 mm CLS water main located along Lower Hobson Street. At the south-east corner a 40 mm PE lateral pipe (installed 03/04/2003 and deemed operational) connects the Carpark site to the 175 mm CI water main beneath Customs Street West and connects in close proximity to the carpark offices.

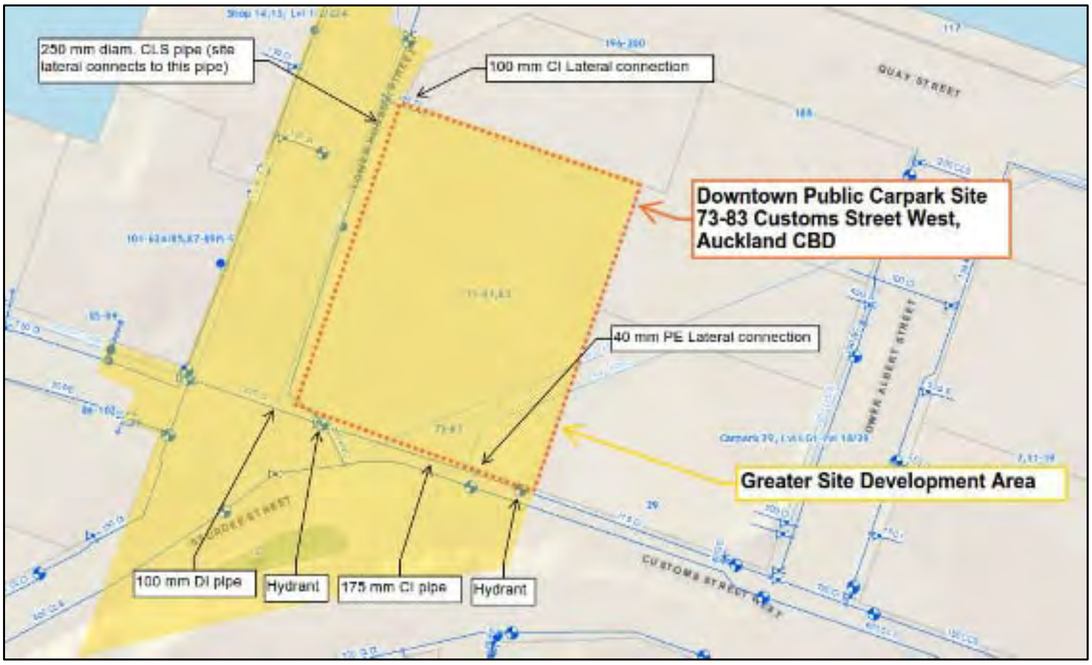

Figure 4.1: Public water supply network near the Downtown Carpark site (Source: Auckland Council GIS)

Two watermains with 560 mm and 40 mm diameter run beneath the Downtown Carpark site, Auckland Council GeoMaps notes these are abandoned.

4.2 Capacity assessment

While at the time of this assessment, no fire hydrant flow and pressure tests have been carried out and no historical testing has been made available to us, it is concluded that the available water supply adequately services the potable and fire flow demand of the Project site because:

- The numerous water mains in the vicinity of the site and the nature of the surrounding CBD district; and
- The letter[5] from Auckland Council's Regulatory Engineering team, that confirmed that the existing water supply network had capacity to service the Project and fire flows on the basis that the building was designed for a FW2 fire classification (which the fire engineers, Jensen Hughes confirmed it will be).

4.3 Potable water supply demand

The peak potable water supply demand flows have been provided by NDY, the hydraulic and fire protection designers for the Project[9].

Residential

NDY have confirmed that the peak residential water supply demand will be 12.1 L/s, based on 160 apartments and an additional 1.5 L/s for amenities and mechanical use. The domestic water supply in this development will also incorporate break tanks, which will significantly reduce the peak flow rates (with an expected reduction of 50% as advised by NDY).

Hotel, commercial, and retail

NDY have confirmed that the peak water supply for commercial use (including the hotel and retail spaces) will be 14.2 L/s, based on 3400 loading units with an additional 4 L/s for mechanical and irrigation uses.

4.4 Fire flow demand

The fire flow demands have been calculated for the building by NDY as 58 L/s.

The peak flow rates will be required to allow the fire brigade to directly boost from the street mains during firefighting. If required, the development can incorporate a priority (pressure sustaining) valve system to shut off the domestic water top-up in case of fire to assist the peak flow of potable water supply to fire protection flow rate.

There are twelve hydrants within 50 m of the vicinity of the Project site, the closest of which are 3 m and 6 m thus showing compliance with the code.

Although no fire hydrant testing has been undertaken at this time, this will be undertaken prior to the completion of developed or detailed design. Additionally, the fire supply has been assessed by NDY (the building services engineers), with reference to sprinkler testing of the adjacent AON building[10].

Refer to Appendix C for relevant Table 1 – Method for determining required water supply classification and Table 2 – Method for determining firefighting water supply, from SNZ PAS 4509:2008 for additional context.

4.5 Proposed water supply connections

Two separate connections are proposed for the potable residential connection, and the commercial and fire supply connections. The residential connection will branch off the existing 250 mm diameter CLS watermain located on the eastern side of Lower Hobson Street, whereas the commercial and fire supply connection will branch off the existing 175 CI pipe on the northern side of Customs Street West.

As above the peak water supply flows for each connection as below:

- 6.1 L/s for the Lower Hobson Street connection, servicing residential use.
- 14.2 L/s + 58 L/s (72.2 L/s total) for the Customs St West connection, servicing commercial and fire protection use respectively. As mentioned above, a priority valve system can be incorporated if needed and this will be confirmed at later stages of design.

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[9] Email titled “DTW – Water Supply Demands” from Hossein Reja (NDY), dated 6 November 2025.

[10] *“Fire Sprinkler System Survey Report – AON Centre, 29 Customs Street, Auckland” by AON Fire Protection, Revision A dated July 2021.*

The location of the connection is subject to change and will be confirmed during detailed design. Refer to Figure 4.2. Both the domestic, and commercial and fire supply connections are likely to be DN150 mm diameter pipes. These will be confirmed during the detailed design phase.

Figure 4.2: Proposed water supply connections

5 Dry services assessment

5.1 General

This assessment is based on a review of the following information:

- Dry services plans (power, gas, telecommunications) local to the site, sourced from BeforeUdig.
- Information provided by utility service providers.

The following services and providers were identified in Lower Hobson Street, Customs Street West and the area south of the Downtown Carpark site:

- Chorus – Telecommunications Fibre Optic Cables.
- Vital (formerly CityLink) – Telecommunications.
- Vector – Gas.
- Vector – Electricity Cables.
- One NZ – Telecommunications.

Refer to Appendix D for plans showing the location of dry services within the approximate site development area.

5.2 Existing Telecommunications

The table below summarises the telecommunications services present in each of the streets surrounding the Project site and surrounding area in table below. Service plans have been supplied independently by each service provider, for a compilation of the site plans refer to Appendix D.

Location	Chorus	Vital *(formerly CityLink)*	One NZ	Vector
Lower Hobson Street	✓ (along western side of roadway, laterals cross beneath ramp)	-	✓ (and proposed line at cnr of Quay Street)	✓ (active service at northern end & inactive service along roadway)
Customs Street West	✓	Along Fanshawe Street (outside development area)	✓	✓ (Active service along roadway. Inactive service near intersection with Lower Hobson Street)
Southern section of development area	✓ (several lines cross beneath Lower Hobson Street ramp)	Along Fanshawe Street (outside development area)	Along Fanshawe Street (outside development area)	✓ (Active service line and also outside area along Fanshawe Street)
East of Downtown Carpark site (outside property boundary)	✓	-	✓	✓

Vital (formerly CityLink) has confirmed that no future network developments or upgrades are planned within the site development area. Vital's network is located outside the Project development area. They have provided capacity information on their available services. A main single trench along Fanshawe Street contains 3/1000 mm and 1/50 mm ducts and includes a 96-core fibre optic cable in one duct. A second single trench branching off the main line into Federal Street contains 2/100 mm ducts and within it are 2 x 96-core fibre optic cables. This information is different to that supplied by BeforeUdig. Refer to correspondence included in Appendix D.

One NZ (formerly Vodafone New Zealand) have confirmed available capacity in their network within the vicinity of the development area and do not have any current plans for developing or upgrading the existing network.

Vector will provide feedback on any future upgrades to the existing network once they have reviewed an indicative demand for a proposed development and a timeframe determined.

Chorus does not have any planned works within vicinity of the site development area. They have confirmed that they have sufficient capacity in their network and can provide additional connections if required. We recommend that once final development plans are available that these are provided to Chorus for its review.

5.3 Existing Gas

The BeforeUdig plans received from Vector indicate an MP4 pressure level pipe gas main along Lower Hobson Street which extends into the development area to the south of the Project site and connects to another MP4 line along Quay Street to the north. MP4 pipe gas mains are also present along Customs Street West and outside the development area at the eastern end of Fanshawe Street.

The Project site is currently serviced by a 25 mm diameter PE pipe connection on its southern side to the MP4 gas main along Customs Street West. There are no connections marked to the Project site along Lower Hobson Street.

At this point in the process there is no available information on future upgrades. Vector only will provide feedback on any future upgrades to the existing network once they have reviewed an indicative demand for the proposed development and a timeframe for the development has been determined. Further liaison with Vector will be required during future design stages to confirm their requirements.

5.4 Existing Electricity

Electrical infrastructure in the site development area and nearby vicinity is owned and operated by Vector. The existing power supply infrastructure for the Project site consists of two 11 KV – 6.6 KV underground cables and one 0.4 KV cable. These underground cables run along the western boundary of 2 Lower Hobson Street (at its northern end) and feed into a distribution substation located at 204 Quay Street to the north-west and 196-200 Quay Street to the north (with the exception of 11 KV – 6.6 KV volt cable, which continues alongside the entire length of the site’s western boundary). Alongside the eastern boundary of the 2 Lower Hobson Street site runs two 11 KV – 6.6 KV cables which connect to a distribution station at the HSBC tower site (188 Quay Street).

Two pilot/fibre optic cables run alongside the full length of the existing Downtown Carpark’s western site boundary. The western side of Lower Hobson Street contains one 11 KV – 6.6 KV line which runs the entire length of the roadway. The southern section of the development area (south of the Carpark site) contains several 11 KV – 6.6 KV volt, 0.4 KV and Pilot/Fibre Optic cables. Outside the development area along Fanshawe Street run several 110 KV – 22 KV sub-transmission lines, which are not impacted by the proposed redevelopment.

Vector has advised that the Project site has a 300 Amp supply. Regarding any future upgrades to the network Vector has advised that they will review this development again and provide feedback once an indicative demand and timeframe has been determined. Once the estimated power demand for the proposed development is confirmed, Vector can advise if the existing network can service any increase in power demand from the proposed development. From reviewing the dry services drawings, it appears the area of the site is suitably serviced either from Lower Hobson Street or Customs Street West. This is subject to confirmation with individual service providers.

5.5 Future development of dry services infrastructure

Based on the above information, we conclude that the Project site be suitably serviced either from Lower Hobson Street or Customs Street West.

6 Flooding assessment

Refer to the flood hazard and risk assessment report (submitted as part of the Project resource consent application) which provides flood hazard information, freeboard requirements and a natural hazard risk assessment to support the FTA application.

7 Coastal assessment

Refer to the Coastal Hazard and Risk Assessment Report (submitted as part of the Project resource consent application), which provides coastal hazard information and a hazard risk assessment to support the FTA application.

8 Applicability

This report has been prepared for the exclusive use of our client Precinct Properties New Zealand Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application under the Fast-track Approvals Act 2024 and that an Expert Panel as the consenting authority will use this report for the purpose of assessing that application. We understand and agree that this report will be used by the Expert Panel in undertaking its regulatory functions.

My name is Maurice Mills. I confirm that, in my capacity as reviewer of this report, I have read and abided by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses contained in the Practice Note 2023.

I am a Principal Civil Engineer at Tonkin & Taylor Ltd (T+T), where I specialise in Civil Engineering Infrastructure Design. I have worked at T+T since 2010. Prior to joining T+T, I was a Civil Engineer at AECOM.

I have 35 years' experience in Civil Engineering Infrastructure Design. I am a Member of Engineering New Zealand. I hold the following qualifications: NZCD (Civil).

Recent relevant projects and services that I have been involved with include:

- Downtown Public Space, Auckland Transport 2018 – 2021
- Drury South Crossing, Stevensons, 2018 – present
- Building 5, Fisher and Paykel Healthcare, 2021-2023
- Commercial Bay, Precinct Properties, 2014-2017
- Devonport Marine Square Upgrade, Auckland Council, 2010 - 2014

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report reviewed by:	Authorised for Tonkin & Taylor Ltd by:
[redacted]...	[redacted]................................
Maurice Mills Principal Civil Engineer	Peter Millar Project Director

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Appendix A Concept Plans

DRAWING REGISTER

		DRAWING NUMBER	REV	TITLE
		GENERAL		
1	✓	1016043.2000-0001	2	DRAWING LIST AND LOCALITY PLAN
2	✓	1016043.2000-0010	2	GENERAL NOTES AND LEGENDS
3	✓	1016043.2000-0020	2	OVERALL SERVICES PLAN
4	✓	1016043.2000-0021	2	OVERALL ROADING PLAN
		EARTHWORKS		
5	✓	1016043.2000-1100	1	CUT AND FILL PLAN
		WATER SUPPLY		
6	✓	1016043.2000-2100	2	CONNECTIONS 1 AND 2
7	✓	1016043.2000-2400	2	STANDARD DETAILS
		WASTEWATER		
8	✓	1016043.2000-3050	1	ON-SITE STORAGE / OFF-PEAK PUMPING
9	✓	1016043.2000-3051	1	PUMP STATION AND RISING MAIN TO NELSON ST
10	✓	1016043.2000-3052	1	PUMP STATION AND RISING MAIN TO WELLESLY ST WEST
11	✓	1016043.2000-3053	1	PRIVATE RISING MAIN THROUGH PRECINCT LAND
12	✓	1016043.2000-3400	2	STANDARD DETAILS
		STORMWATER		
13	✓	1016043.2000-4100	2	NETWORK 1 - SHEET 1
14	✓	1016043.2000-4101	2	NETWORK 1 - SHEET 2
15	✓	1016043.2000-4400	2	STANDARD DETAILS
		ROADING		
16	✓	1016043.2000-6100	2	PROPOSED ROADING PLAN - SHEET 1
17	✓	1016043.2000-6101	2	PROPOSED ROADING PLAN - SHEET 2
18	✓	1016043.2000-6200	2	TYPICAL SECTIONS
19	✓	1016043.2000-6400	2	STANDARD DETAILS
	✓	DENOTES DRAWINGS IN THIS ISSUE: 24/10/2025		

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LOCALITY PLAN

SCALE (A1) 1:10000
SCALE (A3) 1:20000

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REV	DESCRIPTION	CAD	CHK	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25
2	FTAA	JXPP	MGM	06.11.25

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

APPROVED — — — — — — — — — — — DATE

DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

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UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE GENERAL
DRAWING LIST AND LOCALITY PLAN
SCALE (A1) 1:10000 **DWG No.** 1016043.2000-0001 **REV** 2

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. AERIAL PHOTO SOURCED FROM LINZ DATA SERVICE, LICENSED BY LINZ FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 22/02/2022.
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4. EXISTING SITE DETAILS AND SURVEY INFORMATION SUPPLIED BY HARRISON GRIERSON 21/06/2023.
5. COORDINATE SYSTEM: MT EDEN 2000. VERTICAL DATUM NZVD 2016.
6. ARCHITECTURAL LAYOUT L00 SHOWN ON PLANS SOURCED FROM WARREN & MAHONEY ARCHITECTS, DATED 04/04/2025. BASEMENT LAYOUT B4 SOURCED FROM WARREN & MAHONEY ARCHITECTS, DATED 23/10/2025

LEGEND - GENERAL

— — — —	SITE BOUNDARY

LEGEND - EXISTING

——— ———	CRL UNDERGROUND ROUTE
—●— — — WW —	WASTEWATER PIPELINE
— — — — W —	WATER PIPELINE
—●— — — SW —	STORMWATER PIPELINE
— — — — CHORUS —	CHORUS LINE
— — — — VODA —	VODAFONE LINE
— — — — VCOMMS —	UNDERGROUND COMMS LINE
— — — — L —	POWER LIGHT LINE
— — — — GAS —	GAS LINE
— — — —UG/LV —	UNDERGROUND LOW VOLTAGE
— — — —UG/MV —	UNDERGROUND 22000 VOLTAGE
— — — — FIBRE —	FIBRE OPTIC LINE
■	CATCHPIT
▥	INSITU PIT
▣	LIGHTPOLE
⦻	WATER HYDRANT
⋈	VALVE
—►	FLOW OF PIPE
———	KERB

LEGEND - PROPOSED SERVICES

—◉— SW —	STORMWATER PIPELINE
—◉— WW —	WASTEWATER PIPELINE
— W —	POTABLE WATER PIPELINE

LEGEND - PROPOSED EXTERNAL PATHS

——0.1——	CONTOUR (MAJOR)
———	CONTOUR (MINOR)
▨	EXTERNAL PATH
▨	KERB

LEGEND - ABANDONED

—✱✱✱✱ WW —	ABANDONED WASTERWATER PIPELINE
—✱✱✱✱ SW —	ABANDONED STORMWATER PIPELINE
—✱✱✱✱ W —	WATER PIPELINE

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1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

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DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS FTAA

PROJECT PHASE PRELIMINARY DESIGN

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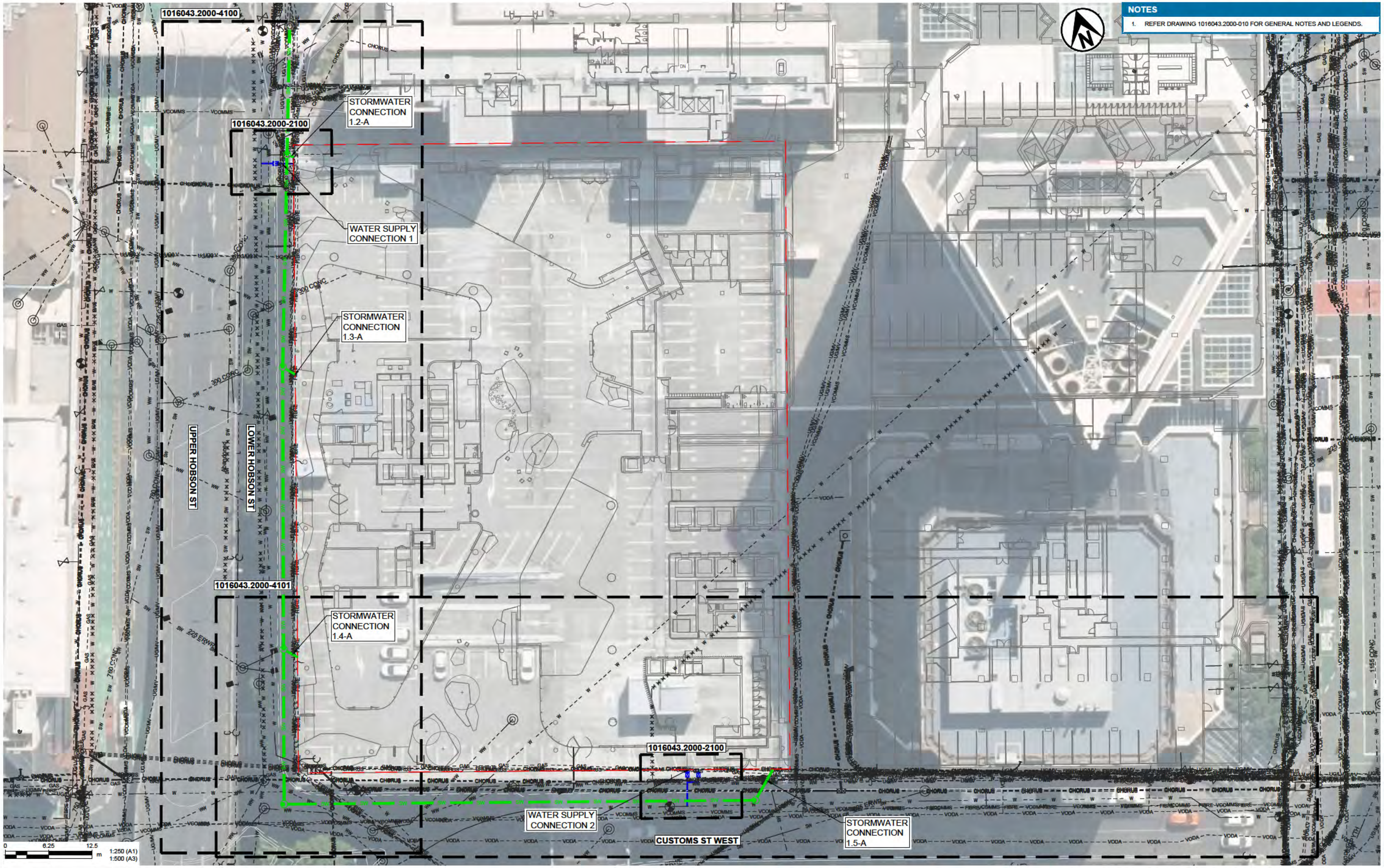
CLIENT PRECINCT PROPERTIES NZ LIMITED
PROJECT DOWNTOWN CARPARK SITE DEVELOPMENT
TITLE GENERAL
GENERAL NOTES AND LEGENDS
SCALE (A1) AS SHOWN **DWG No.** 1016043.2000-0010 **REV** 2

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.



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PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE GENERAL
OVERALL SERVICES PLAN

SCALE (A1) 1:250   DWG No. 1016043.2000-0020   REV 2

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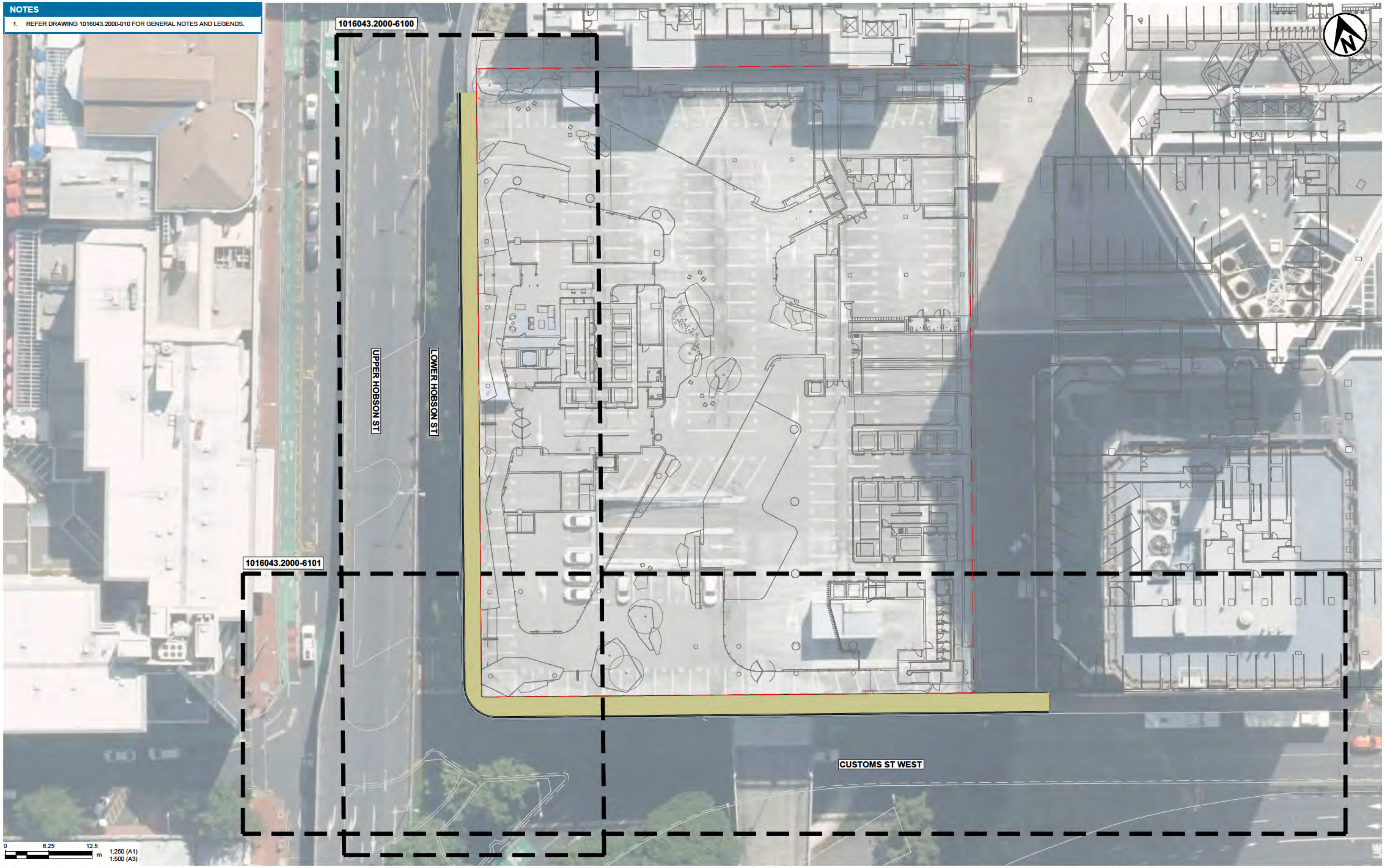
NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.



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APPROVED — DATE

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PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
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OVERALL ROADING PLAN
SCALE (A1) 1:250   DWG No. 1016043.2000-0021   REV 2

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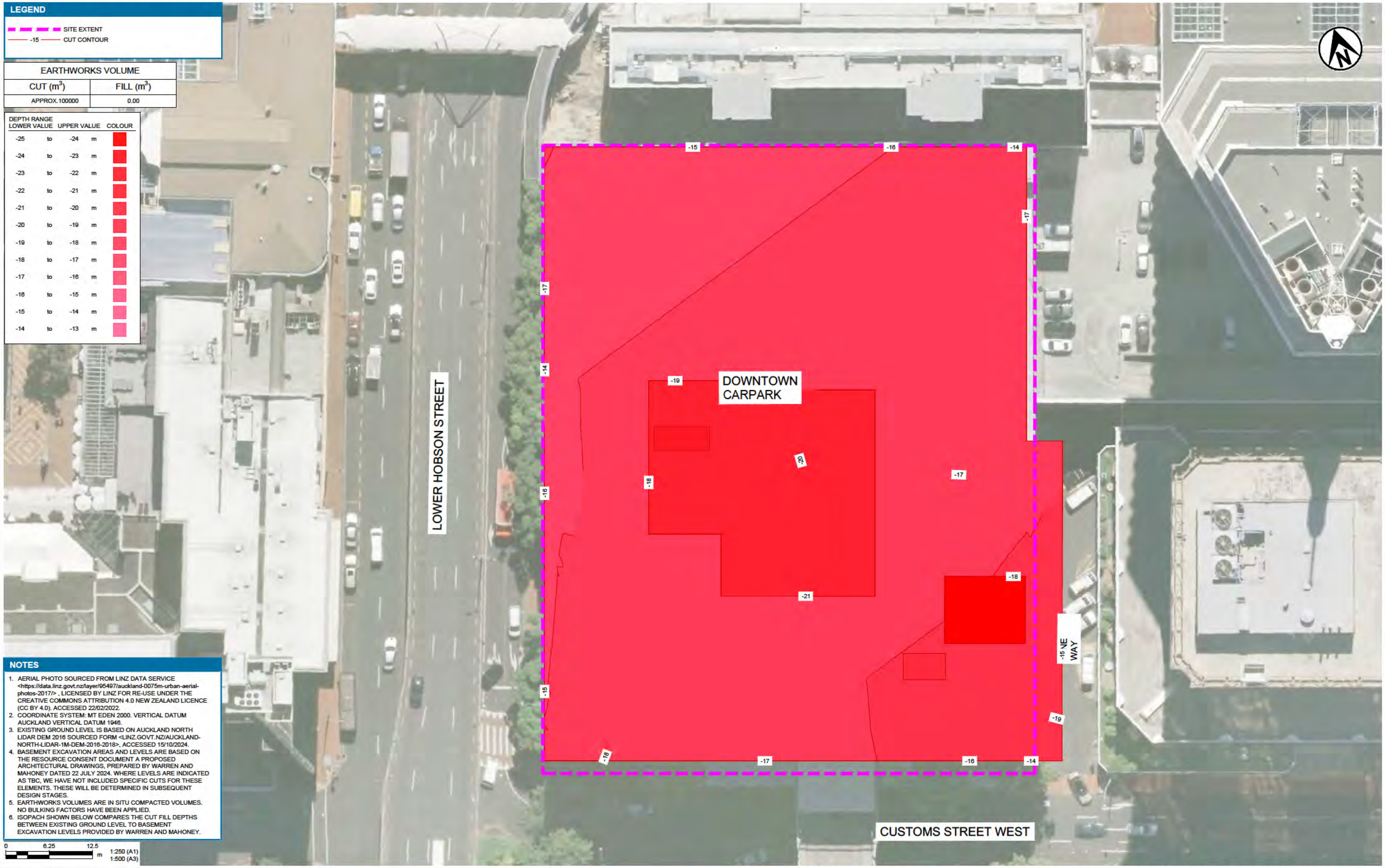

LEGEND

- SITE EXTENT
- -15 CUT CONTOUR

EARTHWORKS VOLUME	
CUT (m^3)	FILL (m^3)
APPROX.100000	0.00

DEPTH RANGE

LOWER VALUE		UPPER VALUE		COLOUR
-25	to	-24	m	🟥
-24	to	-23	m	🟥
-23	to	-22	m	🟥
-22	to	-21	m	🟥
-21	to	-20	m	🟥
-20	to	-19	m	🟥
-19	to	-18	m	🟥
-18	to	-17	m	🟥
-17	to	-16	m	🟥
-16	to	-15	m	🟥
-15	to	-14	m	🟥
-14	to	-13	m	🟥

NOTES

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2. COORDINATE SYSTEM: MT EDEN 2000. VERTICAL DATUM AUCKLAND VERTICAL DATUM 1946.
3. EXISTING GROUND LEVEL IS BASED ON AUCKLAND NORTH LIDAR DEM 2016 SOURCED FORM <LINZ.GOVT.NZ/AUCKLAND-NORTH-LIDAR-1M-DEM-2016-2018>, ACCESSED 15/10/2024.
4. BASEMENT EXCAVATION AREAS AND LEVELS ARE BASED ON THE RESOURCE CONSENT DOCUMENT A PROPOSED ARCHITECTURAL DRAWINGS, PREPARED BY WARREN AND MAHONEY DATED 22 JULY 2024. WHERE LEVELS ARE INDICATED AS TBC, WE HAVE NOT INCLUDED SPECIFIC CUTS FOR THESE ELEMENTS. THESE WILL BE DETERMINED IN SUBSEQUENT DESIGN STAGES.
5. EARTHWORKS VOLUMES ARE IN SITU COMPACTED VOLUMES. NO BULKING FACTORS HAVE BEEN APPLIED.
6. ISOPACH SHOWN BELOW COMPARES THE CUT FILL DEPTHS BETWEEN EXISTING GROUND LEVEL TO BASEMENT EXCAVATION LEVELS PROVIDED BY WARREN AND MAHONEY.

0 6.25 12.5 m
1:250 (A1)
1:500 (A3)

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REV	DESCRIPTION	CAD	CHK	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	MARS	MGM	17.04.25
2	FTAA	JXPP	MGM	06.11.25

DESIGNED	STLP	OCT.24
DRAWN	MARS	NOV.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25
APPROVED		DATE

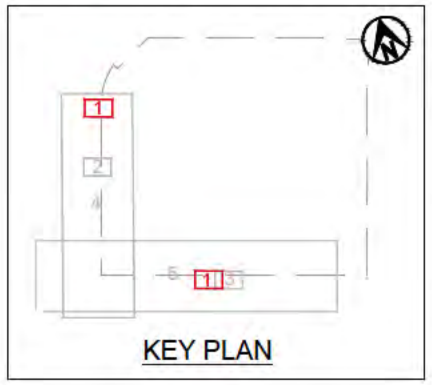
DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

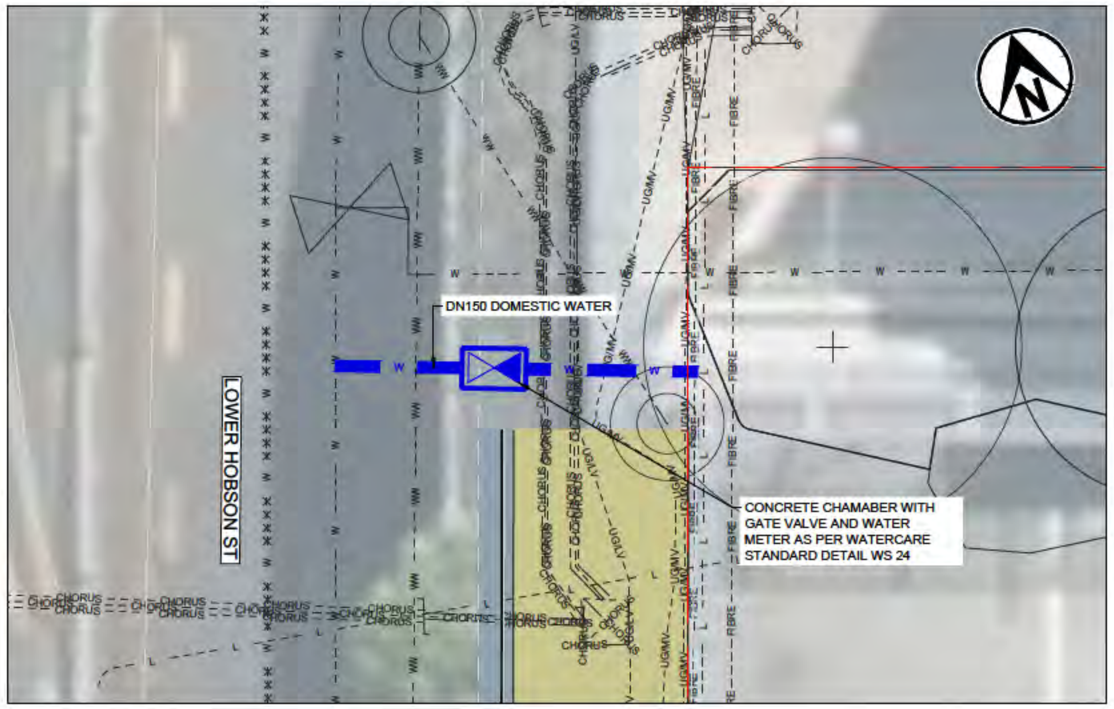
CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE EARTHWORKS
CUT AND FILL PLAN
SCALE (A1) 1:250   DWG No. 1016043.2000-1100   REV 1

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.

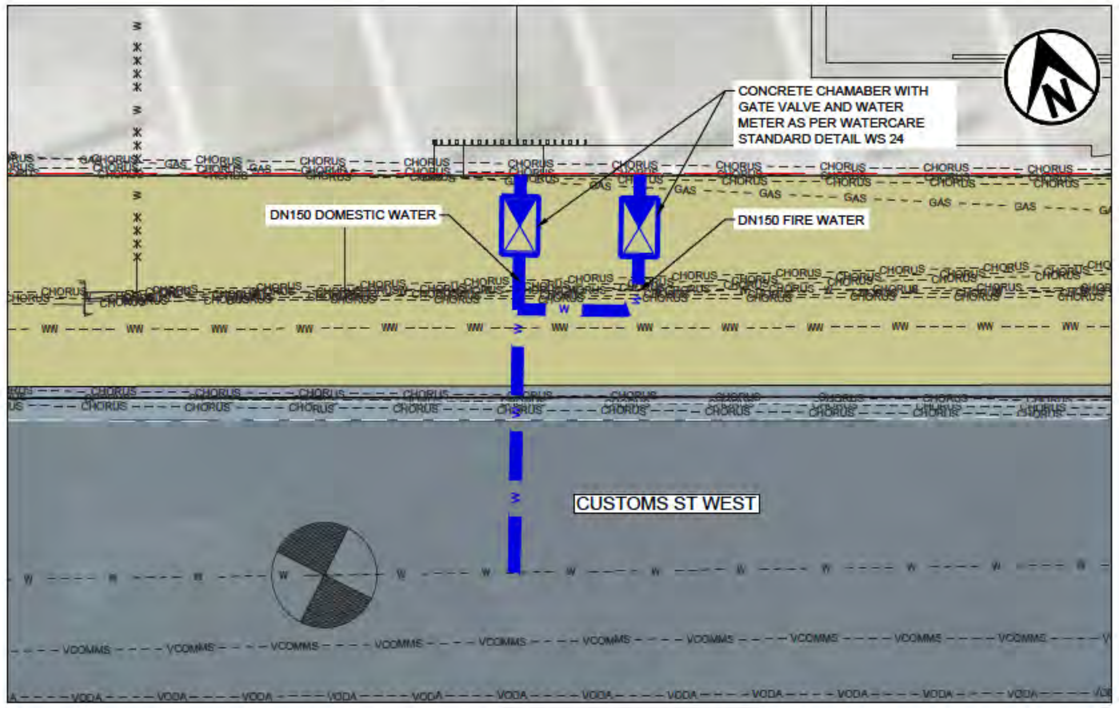


KEY PLAN



PLAN - CONNECTION 1

SCALE (A1) 1:50
SCALE (A3) 1:100



PLAN - CONNECTION 2

SCALE (A1) 1:50
SCALE (A3) 1:100

0 1.25 2.5 m
1:50 (A1)
1:100 (A3)

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS FTAA
PROJECT PHASE PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

CLIENT PRECINCT PROPERTIES NZ LIMITED
PROJECT DOWNTOWN CARPARK SITE DEVELOPMENT
TITLE WATER SUPPLY
CONNECTIONS 1 AND 2
SCALE (A1) 1:50 **DWG No.** 1016043.2000-2100 **REV** 2

AUTHOR	REF	DRAWING #	DRAWING TITLE	REVISION #	REVISION DATE
WATERCARE	WS1	2010069.002D	GENERAL CONSTRUCTION NOTES	D	7/13/2018
WATERCARE	WS2	2010069.001D	TYPICAL TRENCH REINSTATEMENT AND BEDDING DETAILS FOR WATER SUPPLY	D	9/28/2017
WATERCARE	COP-01	-	CHAPTER 6, SECTION 6.3.9 - CLEARANCES	2.4	6/1/2021
WATERCARE	WS3	2010069.003B	TYPICAL WATERMAIN INTERSECTION LAYOUT	B	3/13/2017
WATERCARE	WS6	2010069.005C	BOUNDARY ZONE DETAIL	C	7/13/2018
WATERCARE	WS7	2010069.006B	VALVE AND HYDRANT MARKINGS	B	2/10/2017
WATERCARE	WS12	2010069.027A	HYDRANT DETAIL	A	3/6/2017
WATERCARE	WS24	2010069.022F	FIRE SUPPRESSION SUPPLY AND SEPARATE WATER METER 50 mmØ AND ABOVE	F	9/24/2020
WATERCARE	WS8	2010069.013B	ANCHOR BLOCK DETAILS FOR 90° & 45° BENDS	B	2/10/2017

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REV	DESCRIPTION	CAD	CHK	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25
2	FTAA	JXPP	MGM	06.11.25

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

APPROVED ———————————— DATE

DRAWING STATUS FTAA

PROJECT PHASE PRELIMINARY DESIGN

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CLIENT **PRECINCT PROPERTIES NZ LIMITED**

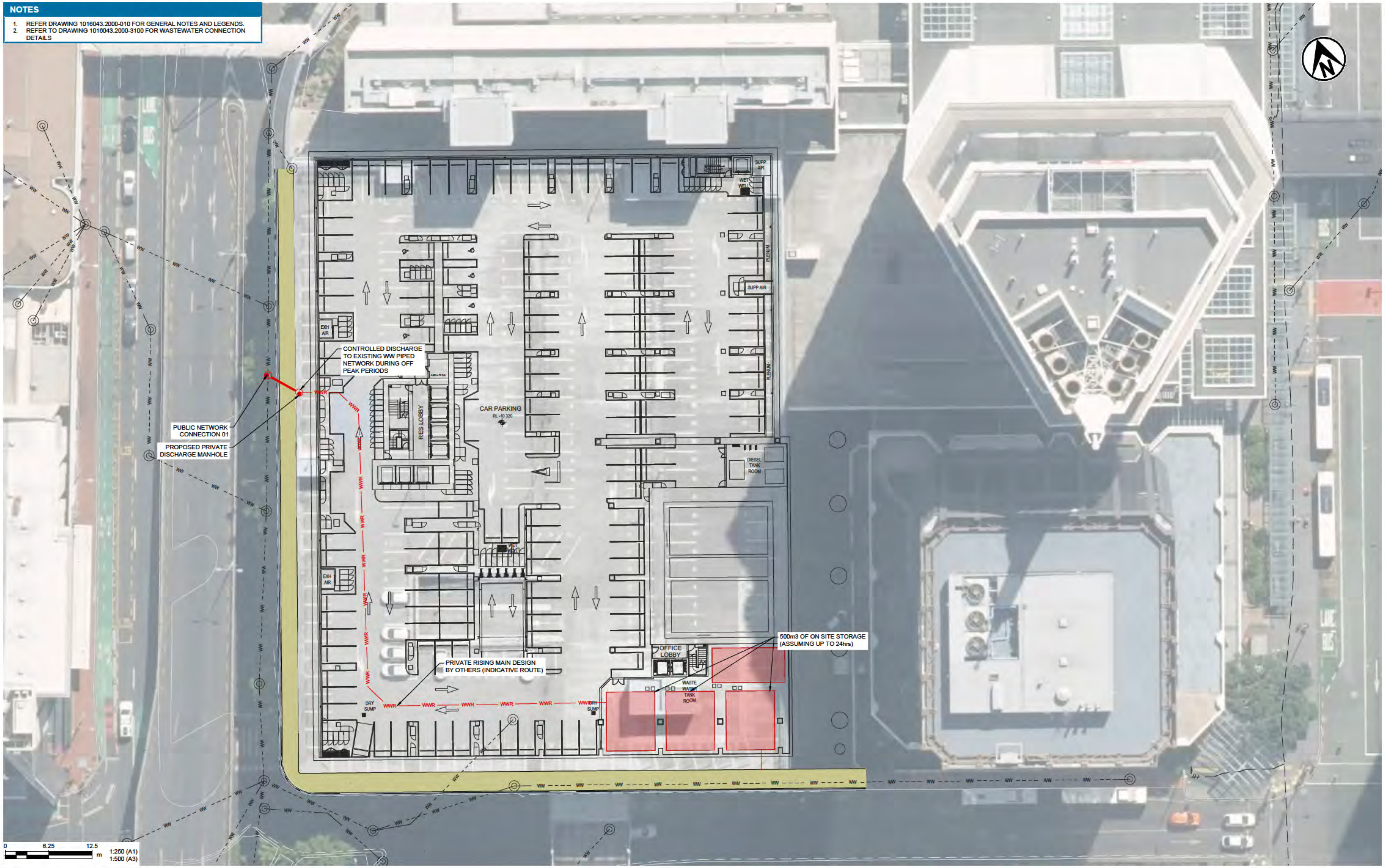
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**

TITLE WATER SUPPLY
STANDARD DETAILS

SCALE (A1) AS SHOWN **DWG No.** 1016043.2000-2400 **REV** 2

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.
2. REFER TO DRAWING 1016043.2000-3100 FOR WASTEWATER CONNECTION DETAILS



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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	FTAA	JXPP	AFRE	06.11.25	— — — — —	— — — — —

DESIGNED AFRE OCT. 25
DRAWN JXPP OCT. 25
DESIGN CHECKED MGM 06.11.25
DRAWING CHECKED MGM 06.11.25

DRAWING STATUS FTAA
PROJECT PHASE PRELIMINARY DESIGN

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CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE WASTEWATER SERVICING OPTION 3
ON-SITE STORAGE / OFF-PEAK PUMPING
SCALE (A1) 1:250   DWG No. 1016043.2000-3050   REV 1

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.
2. REFER TO DRAWING 1016043.2000-3100 FOR WASTEWATER CONNECTION DETAILS

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	FTAA	JXPP	AFRE	06.11.25	— — — — —	— — — — —

DESIGNED	AFRE	OCT. 25
DRAWN	JXPP	OCT. 25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE WASTEWATER SERVICING OPTION 4a
PUMP STATION AND RISING MAIN TO NELSON ST
SCALE (A1) 1:1250 DWG No. 1016043.2000-3051 REV 1

C:\12dSynergy\data\ALBTCAD\1016043.2000 - Preliminary Design_1834\200 WIP\Design\20 Documentation\Drawings\1016043.2000-3052.dwg 2025-Nov-06 5:57:45 pm Plotted By: JXPP

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.
2. REFER TO DRAWING 1016043.2000-3100 FOR WASTEWATER CONNECTION DETAILS

INSET A - CONNECTION TO EXISTING NETWORK

SCALE (A1) 1:400
SCALE (A3) 1:800

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	FTAA	JXPP	AFRE	06.11.25		

DESIGNED	AFRE	OCT. 25
DRAWN	JXPP	OCT. 25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

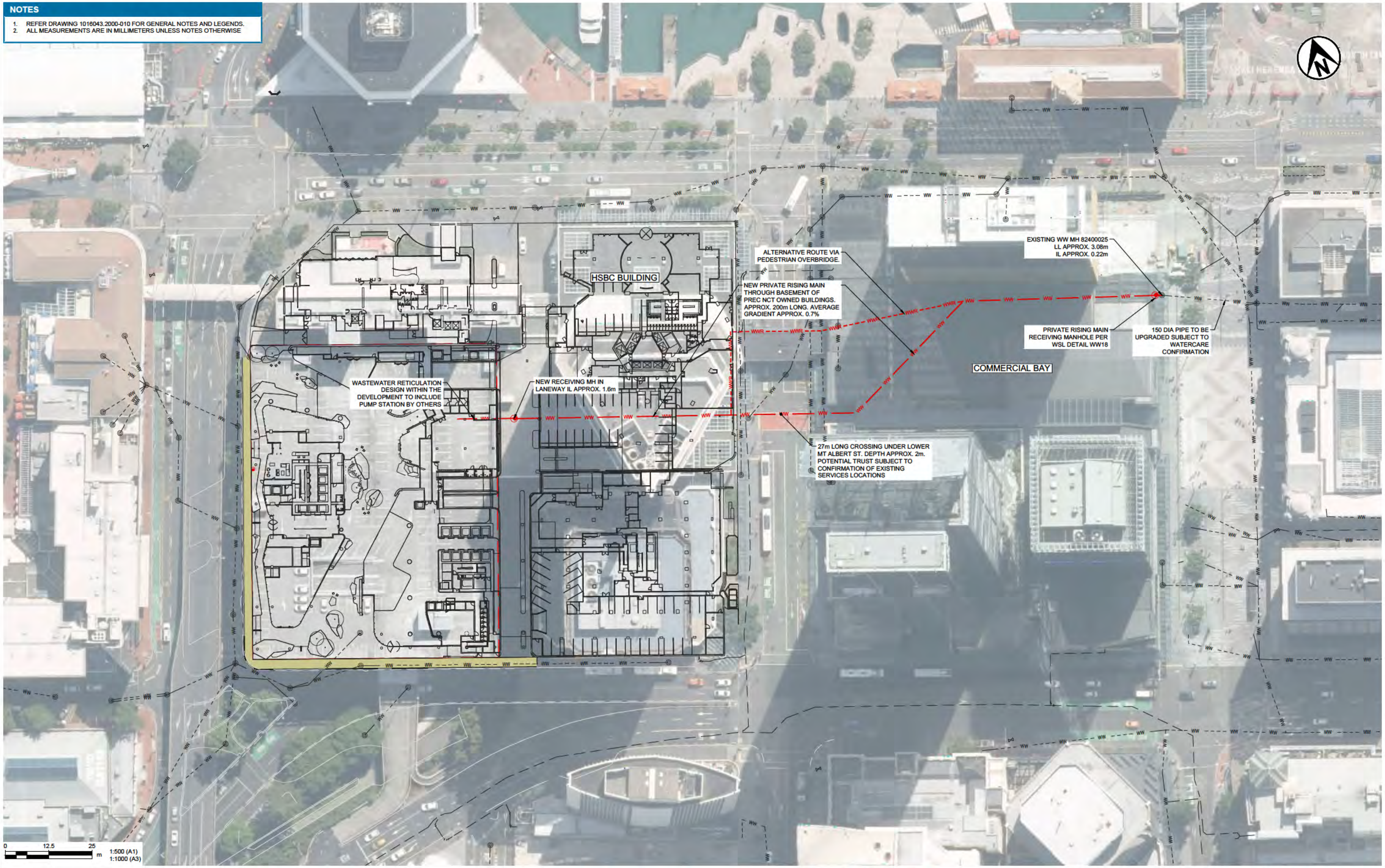
DRAWING STATUS FTAA
PROJECT PHASE PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

CLIENT PRECINCT PROPERTIES NZ LIMITED
PROJECT DOWNTOWN CARPARK SITE DEVELOPMENT
TITLE WASTEWATER SERVICING OPTION 4b
PUMP STATION AND RISING MAIN TO WELLESLY ST WEST
SCALE (A1) 1:2000 **DWG No.** 1016043.2000-3052 **REV** 1

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.
2. ALL MEASUREMENTS ARE IN MILLIMETERS UNLESS NOTES OTHERWISE



ALTERNATIVE ROUTE VIA PEDESTRIAN OVERBRIDGE.

NEW PRIVATE RISING MAIN THROUGH BASEMENT OF PREC NCT OWNED BUILDINGS. APPROX. 200m LONG. AVERAGE GRADIENT APPROX. 0.7%

EXISTING WW MH 82400025
LL APPROX. 3.08m
IL APPROX. 0.22m

PRIVATE RISING MAIN RECEIVING MANHOLE PER WSL DETAIL WW18

150 DIA PIPE TO BE UPGRADED SUBJECT TO WATERCARE CONFIRMATION

WASTEWATER RETICULATION DESIGN WITHIN THE DEVELOPMENT TO INCLUDE PUMP STATION BY OTHERS

NEW RECEIVING MH IN LANEWAY IL APPROX. 1.6m

27m LONG CROSSING UNDER LOWER MT ALBERT ST. DEPTH APPROX. 2m. POTENTIAL TRUST SUBJECT TO CONFIRMATION OF EXISTING SERVICES LOCATIONS

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	FTAA	JXPP	AFRE	06.11.25		

DESIGNED	AFRE	OCT. 25
DRAWN	JXPP	OCT. 25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE WASTEWATER SERVICING OPTION 5
PRIVATE RISING MAIN THROUGH PRECINCT LAND
SCALE (A1) AS SHOWN   DWG No. 1016043.2000-3053   REV 1

AUTHOR	DRAWING #	DRAWING TITLE	REVISION #	REVISION DATE
AUCKLAND TRANSPORT	FP0001	CONCRETE FOOTPATH	C	7/24/2024
AUCKLAND TRANSPORT	FP0002	LONGITUDINAL JOINTS AND STITCHING BAR DETAILS	B	7/24/2024
AUCKLAND TRANSPORT	FP0003	ASPHALT FOOTPATH	B	7/24/2024
AUCKLAND TRANSPORT	FP0004	FOOTPATH CONSTRUCTION - PAVER TYPE	B	7/24/2024
AUCKLAND TRANSPORT	FP0010	TACTILE PAVERS	A	7/24/2024
AUCKLAND TRANSPORT	KC0001	KERB AND CHANNEL - TYPE 1 - 2	B	7/29/2022

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS FTAA

PROJECT PHASE PRELIMINARY DESIGN

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FOR CONSTRUCTION PURPOSES
UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**

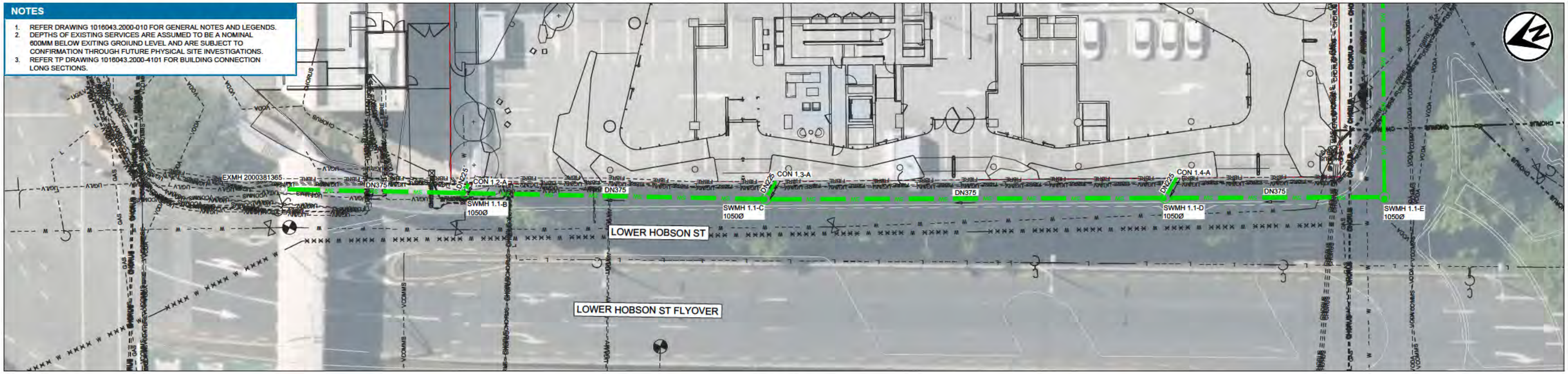
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**

TITLE WASTEWATER
STANDARD DETAILS

SCALE (A1) AS SHOWN   **DWG No.** 1016043.2000-3400   **REV** 2

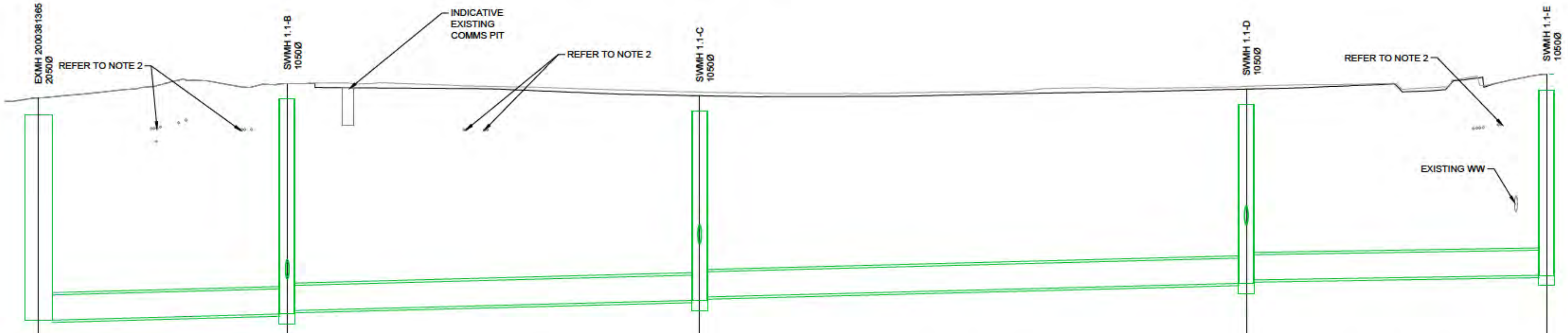
NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.
2. DEPTHS OF EXISTING SERVICES ARE ASSUMED TO BE A NOMINAL 600MM BELOW EXITING GROIUND LEVEL AND ARE SUBJECT TO CONFIRMATION THROUGH FUTURE PHYSICAL SITE INVESTIGATIONS.
3. REFER TP DRAWING 1016043.2000-4101 FOR BUILDING CONNECTION LONG SECTIONS.



PLAN

SCALE (A1) 1:200
SCALE (A3) 1:400



DATUM (mRL)	-1.00								
PIPE INFO		RCRRJ Class 4 DN375 GRADE: 1 in 200 LENGTH: 18.55m		RCRRJ Class 4 DN375 GRADE: 1 in 200 LENGTH: 30.71m		RCRRJ Class 4 DN375 GRADE: 1 in 200 LENGTH: 40.73m		RCRRJ Class 4 DN375 GRADE: 1 in 333 LENGTH: 22.36m	
DESIGN LEVEL	3.21		3.42		3.24		3.34		3.56
EXISTING LEVEL	3.21		3.42		3.29		3.38		3.56
PIPE INVERT LEVEL	0.22 -0.11		-0.01 0.04		0.19 0.24		0.44 0.49		0.56
DEPTH TO PIPE INVERT	2.99 3.31		3.43 3.38		3.05 3.00		2.89 2.84		3.00
CHAINAGE (m)	0.00		18.55		49.26		89.98 16.96 17.17 17.37 17.54 18.77 18.84 18.92 20.32		112.35

LONG SECTION

SCALE (A1) 1:200
SCALE (A3) 1:400

0 5 10 m
1:200 (A1)
1:400 (A3)

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS FTAA

PROJECT PHASE PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED
FOR CONSTRUCTION PURPOSES
UNLESS SIGNED AS APPROVED

CLIENT PRECINCT PROPERTIES NZ LIMITED

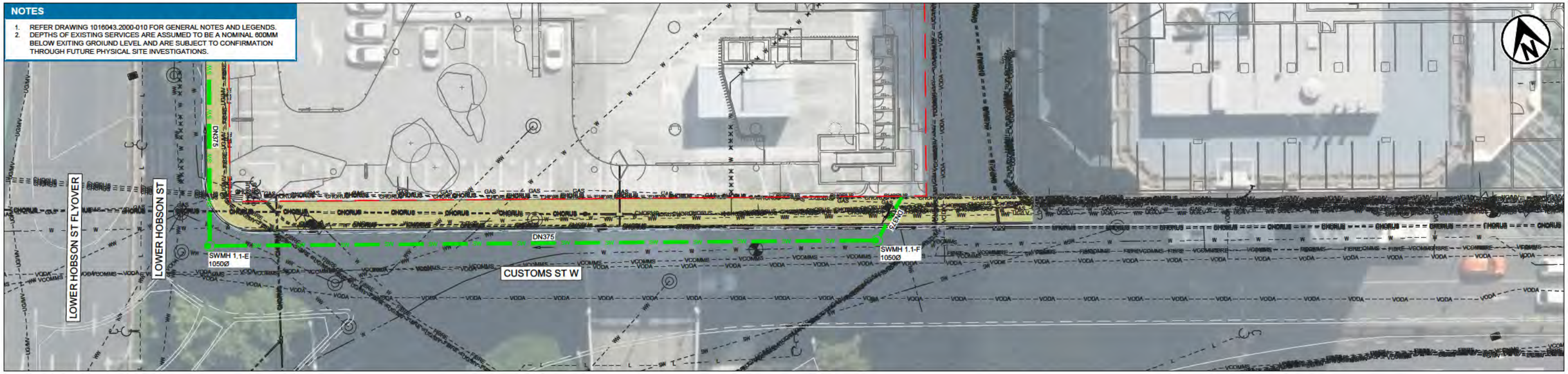
PROJECT DOWNTOWN CARPARK SITE DEVELOPMENT

TITLE STORMWATER
NETWORK 1 - SHEET 1

SCALE (A1) 1:200   **DWG No.** 1016043.2000-4100   **REV** 2

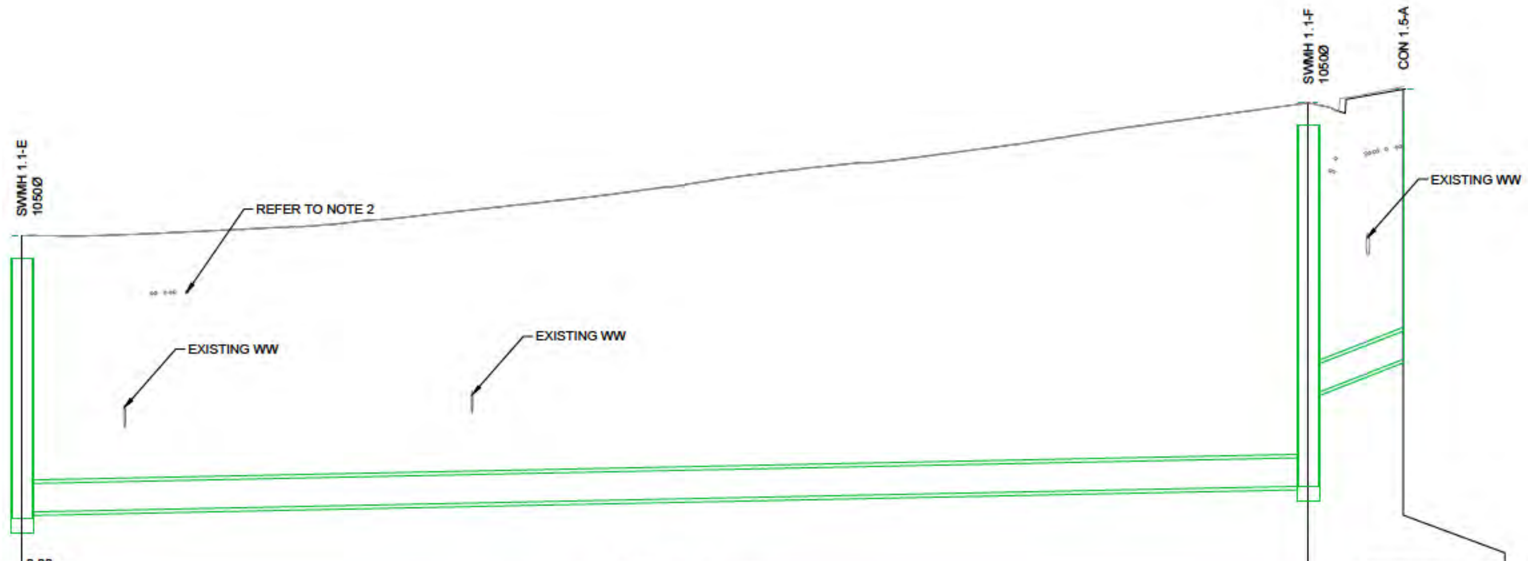
NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.
2. DEPTHS OF EXISTING SERVICES ARE ASSUMED TO BE A NOMINAL 600MM BELOW EXITING GROIUND LEVEL AND ARE SUBJECT TO CONFIRMATION THROUGH FUTURE PHYSICAL SITE INVESTIGATIONS.



PLAN

SCALE (A1) 1:200
SCALE (A3) 1:400



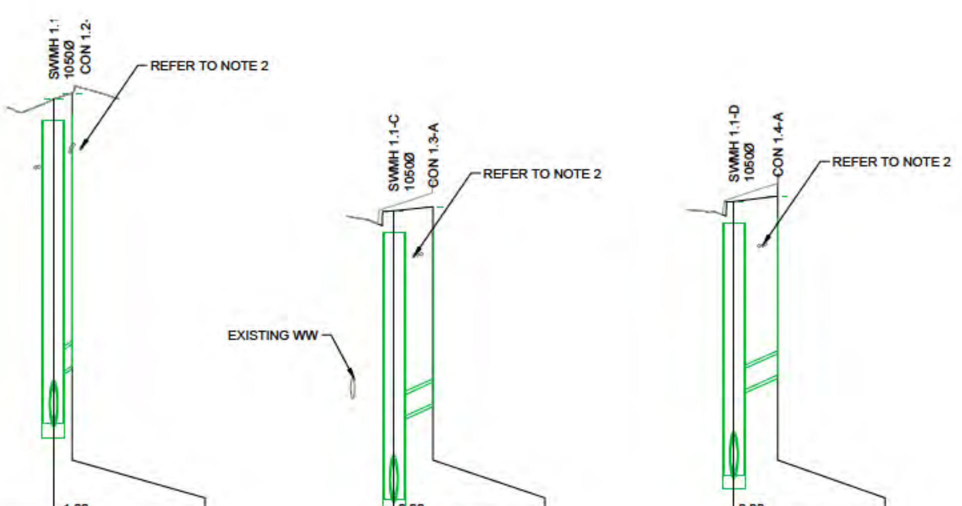
DATUM (mRL)	0.00				
PIPE INFO		RCRRJ Class 4 DN300 GRADE: 1 in 250 LENGTH: 68.09m		RCRRJ Class 4 DN300 GRADE: 1 in 14 LENGTH: 5.03m	
DESIGN LEVEL	3.56		4.96		5.11
EXISTING LEVEL	3.56		4.96		5.14
PIPE INVERT LEVEL	0.56 0.64		0.91 1.90		2.25
DEPTH TO PIPE INVERT	3.00 2.92		4.06 3.06		2.86
CHAINAGE (m)	112.35		180.44		4.96 185.47

LINE 1.5

0 5 10 m 1:200 (A1) 1:400 (A3)

LONG SECTION

SCALE (A1) 1:200
SCALE (A3) 1:400



DATUM (mRL)	-1.00		
PIPE INFO		RCRRJ Class 4 DN225 GRADE: 1 in 16 LENGTH: 0.97m	
DESIGN LEVEL	3.42		3.48
EXISTING LEVEL	3.42		3.48
PIPE INVERT LEVEL	-0.01 0.54		0.60
DEPTH TO PIPE INVERT	3.43 2.88		2.88
CHAINAGE (m)	0.00		0.97

LINE 1.2

DATUM (mRL)	0.00		
PIPE INFO		RCRRJ Class 4 DN225 GRADE: 1 in 15 LENGTH: 2.08m	
DESIGN LEVEL	3.24		3.28
EXISTING LEVEL	3.29		3.28
PIPE INVERT LEVEL	0.19 1.06		1.20
DEPTH TO PIPE INVERT	3.05 2.18		2.08
CHAINAGE (m)	0.00		2.08

LINE 1.3

DATUM (mRL)	0.00		
PIPE INFO		RCRRJ Class 4 DN225 GRADE: 1 in 15 LENGTH: 2.32m	
DESIGN LEVEL	3.34		3.39
EXISTING LEVEL	3.38		3.56
PIPE INVERT LEVEL	0.44 1.34		1.50
DEPTH TO PIPE INVERT	2.89 2.00		1.89
CHAINAGE (m)	0.00		2.32

LINE 1.4

LONG SECTIONS - BUILDING CONNECTIONS

SCALE (A1) 1:200
SCALE (A3) 1:400

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

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CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE STORMWATER
NETWORK 1 - SHEET 2
SCALE (A1) 1:200   DWG No. 1016043.2000-4101   REV 2

AUTHOR	DRAWING #	DRAWING TITLE	REVISION #	REVISION DATE
AUCKLAND COUNCIL	SW01	EMBEDMENT & TRENCHFILL (TYPICAL ARRANGEMENT)	3	1/17/2022
AUCKLAND COUNCIL	SW02	PIPE EMBEDMENTS (STANDARD EMBEDMENT FOR FLEXIBLE PIPES)	3	1/17/2022
AUCKLAND COUNCIL	SW03	PIPE EMBEDMENTS (STANDARD EMBEDMENT FOR CONCRETE PIPES)	4	12/18/2023
AUCKLAND COUNCIL	SW05	STANDARD STORMWATER MANHOLE (SUITABLE FOR UP TO 4.0 m DEPTH TO INVERT)	4	12/18/2023
AUCKLAND COUNCIL	SW09	STORMWATER MANHOLE ACCESS (RECESSED RUNGS AND GENERAL ACCESS RUNGS DETAILS)	3	1/17/2022
AUCKLAND COUNCIL	SW22	STORMWATER PIPE AND MANHOLE CONSTRUCTION CLEARANCE REQUIREMENTS (MANHOLES NEAR WORKS AND WORKS CLOSE TO, OR OVER, PIPES)	3	1/17/2022

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS FTAA
PROJECT PHASE PRELIMINARY DESIGN

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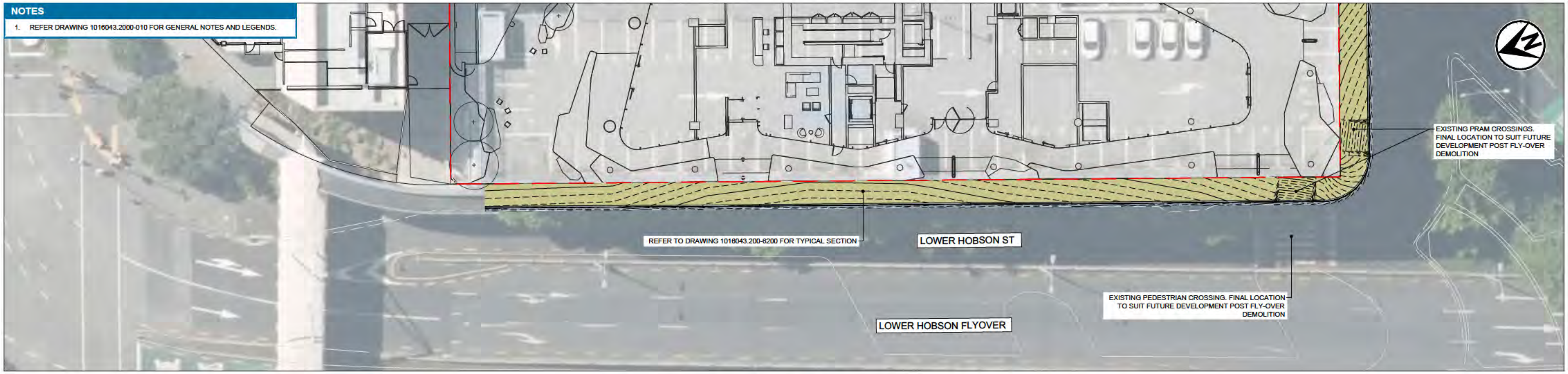
FOR CONSTRUCTION PURPOSES
UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE STORMWATER
STANDARD DETAILS
SCALE (A1) AS SHOWN **DWG No.** 1016043.2000-4400 **REV** 2

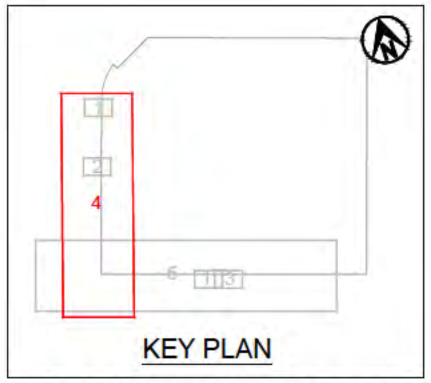
NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.



PLAN - WESTERN SIDE

SCALE (A1) 1:200
SCALE (A3) 1:400



KEY PLAN

0 5 10 m
1:200 (A1)
1:400 (A3)

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

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CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE ROADING
PROPOSED ROADING PLAN - SHEET 1
SCALE (A1) 1:200   DWG No. 1016043.2000-6100   REV 2

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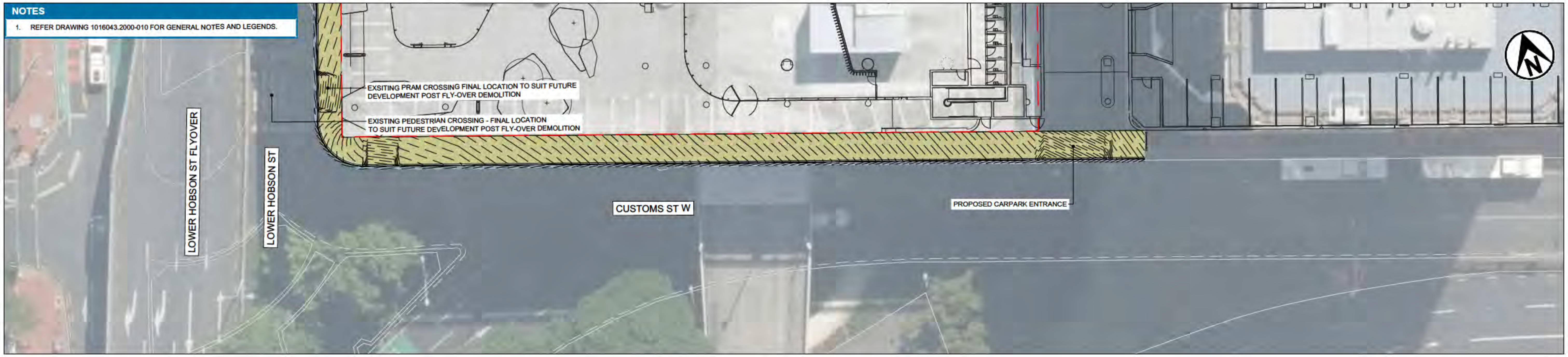
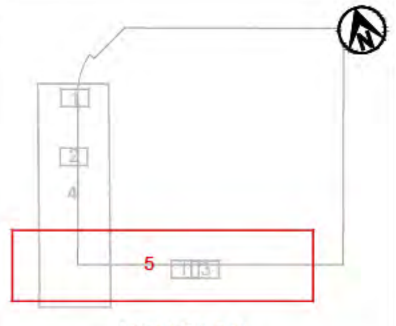
NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.



PLAN - SOUTHERN SIDE

SCALE (A1) 1:200
SCALE (A3) 1:400



KEY PLAN

0 5 10 m
1:200 (A1)
1:400 (A3)

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

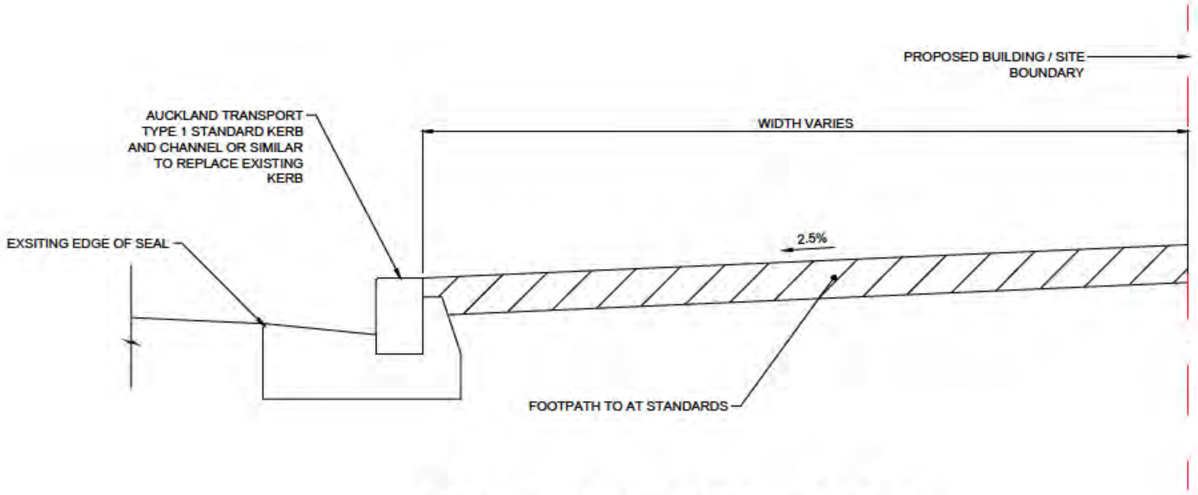
DRAWING STATUS
FTAA
PROJECT PHASE
PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE ROADING
PROPOSED ROADING PLAN - SHEET 2
SCALE (A1) 1:200   DWG No. 1016043.2000-6101   REV 2

NOTES

1. REFER DRAWING 1016043.2000-010 FOR GENERAL NOTES AND LEGENDS.



TYPICAL SECTION - EXTERNAL PATH

SCALE (A1) 1:10
SCALE (A3) 1:20

0 0.25 0.5 m 1:10 (A1) 1:20 (A3)

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REV	DESCRIPTION	CAD	CHK	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25
2	FTAA	JXPP	MGM	06.11.25

APPROVED DATE

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS

PROJECT PHASE
PRELIMINARY DESIGN

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED AS APPROVED

CLIENT **PRECINCT PROPERTIES NZ LIMITED**
PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**
TITLE ROADING
TYPICAL SECTIONS
SCALE (A1) 1:10 DWG No. 1016043.2000-6200 REV 2

AUTHOR	DRAWING #	DRAWING TITLE	REVISION #	REVISION DATE
AUCKLAND TRANSPORT	FP0001	CONCRETE FOOTPATH	C	7/24/2024
AUCKLAND TRANSPORT	FP0002	LONGITUDINAL JOINTS AND STITCHING BAR DETAILS	B	7/24/2024
AUCKLAND TRANSPORT	FP0003	ASPHALT FOOTPATH	B	7/24/2024
AUCKLAND TRANSPORT	FP0004	FOOTPATH CONSTRUCTION - PAVER TYPE	B	7/24/2024
AUCKLAND TRANSPORT	FP0010	TACTILE PAVERS	A	7/24/2024
AUCKLAND TRANSPORT	KC0001	KERB AND CHANNEL - TYPE 1 - 2	B	7/29/2022

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REV	DESCRIPTION	CAD	CHK	DATE	APPROVED	DATE
1	ISSUED FOR 50% PRELIMINARY DESIGN	TECO	MGM	17.04.25		
2	FTAA	JXPP	MGM	06.11.25		

DESIGNED	JXPP	APR.25
DRAWN	TECO	APR.25
DESIGN CHECKED	MGM	06.11.25
DRAWING CHECKED	MGM	06.11.25

DRAWING STATUS FTAA

PROJECT PHASE PRELIMINARY DESIGN

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CLIENT **PRECINCT PROPERTIES NZ LIMITED**

PROJECT **DOWNTOWN CARPARK SITE DEVELOPMENT**

TITLE ROADING
STANDARD DETAILS

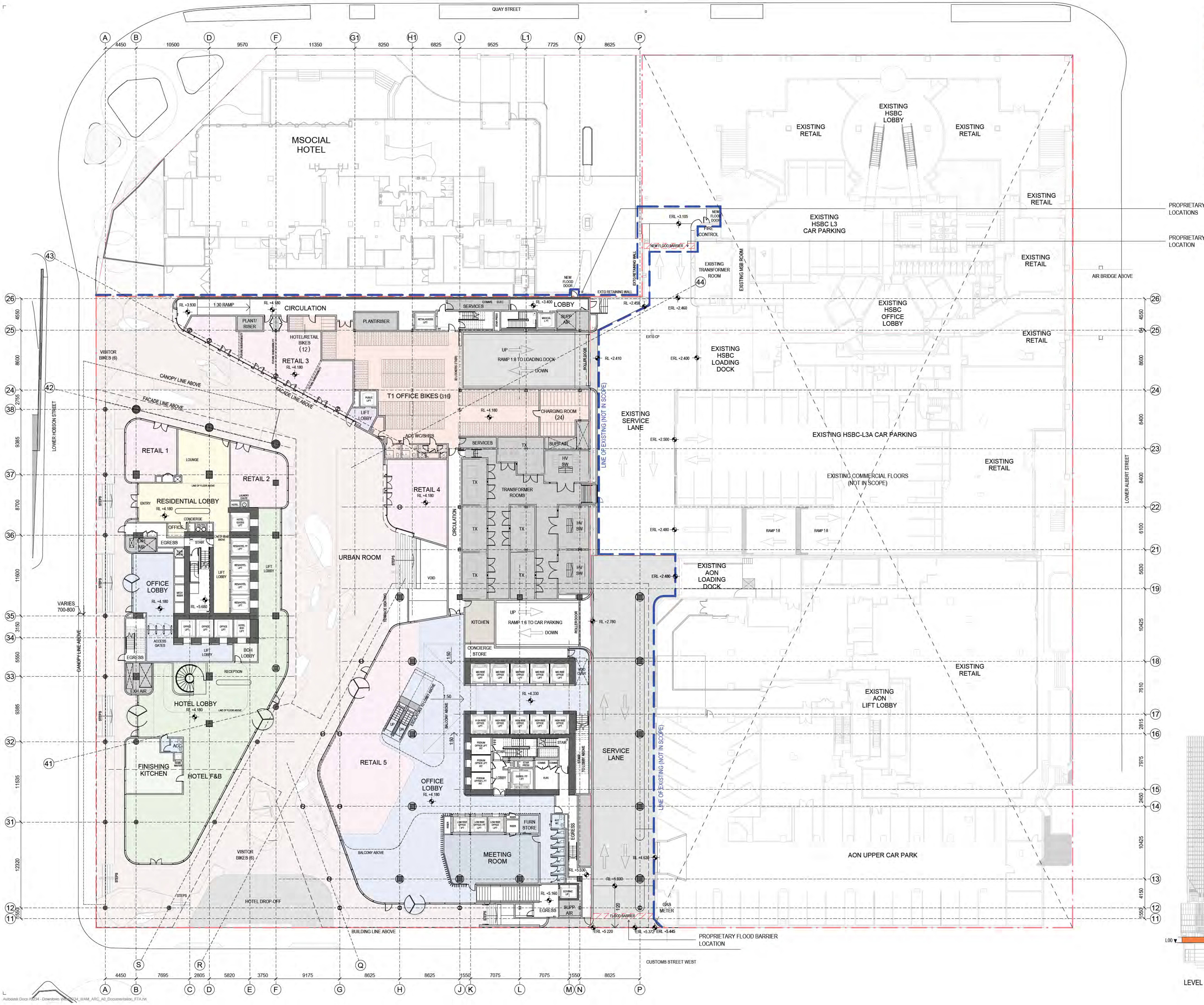
SCALE (A1) AS SHOWN **DWG No.** 1016043.2000-6400 **REV** 2

Appendix B Ground Level Floor Plan

ARCHITECTURAL RELEVANT DRAWINGS LIST

Refer Warren and Mahoney Submission documents for details

Drawing Number	Drawing Title	Revision	Date
FTA-05-001	PROPOSED SITE PLAN	C	3/10/2025
FTA-05-005	MEAN STREET LEVEL PLAN	C	3/10/2025
FTA-10-095	GENERAL ARRANGEMENT -FLOOR PLAN - SUB BASEMENT	C	3/10/2025
FTA-10-096	GENERAL ARRANGEMENT -FLOOR PLAN -BASEMENT 04	C	3/10/2025
FTA-10-097	GENERAL ARRANGEMENT -FLOOR PLAN -BASEMENT 03	C	3/10/2025
FTA-10-098	GENERAL ARRANGEMENT -FLOOR PLAN -BASEMENT 02	C	3/10/2025
FTA-10-099	GENERAL ARRANGEMENT -FLOOR PLAN -BASEMENT 01	C	3/10/2025
FTA-10-100	GENERAL ARRANGEMENT -FLOOR PLAN -LEVEL 00	C	3/10/2025
FTA-10-101	GENERAL ARRANGEMENT -FLOOR PLAN -LEVEL 01	C	3/10/2025
FTA-22-001	TOWER 01 -BUILDING ELEVATIONS	C	3/10/2025
FTA-22-002	TOWER 01 -BUILDING ELEVATIONS	C	3/10/2025
FTA-22-003	TOWER 02 -BUILDING ELEVATIONS	C	3/10/2025
FTA-22-004	TOWER 02 -BUILDING ELEVATIONS	C	3/10/2025
FTA-22-005	PODIUM 03 -BUILDING ELEVATIONS	C	3/10/2025



SPACE LEGEND - BASEMENT/PODIUM

- ▨ BACK OF HOUSE
- ▨ CAR PARK
- ▨ END OF TRIP FACILITIES
- ▨ HOTEL BOH
- ▨ HOTEL LOBBY, AMENITY & F&B
- ▨ OFFICE & MEETING SUITES
- ▨ OFFICE LOBBY
- ▨ PLANT
- ▨ PUBLIC SPACE
- ▨ RESIDENTIAL LOBBY & AMENITY
- ▨ RETAIL - FOOD & BEVERAGE
- ▨ TOILET FACILITIES

OFFICE AND RETAIL FACILITIES

L-00	316
OFFICE BIKE TOTALS:	316

All dimension to be verified on site before producing shop drawings or commencing any work.
Do not scale. The copyright of this drawing remains with Warren and Mahoney Architects New Zealand Ltd.

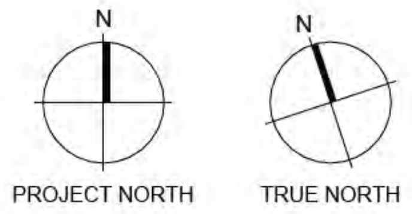
Revisions

A 05/09/25 Draft FTA Issue
B 26/09/25 FTA Issue
C 03/10/25 FTA Issue

Notes

COMMERCIAL IN CONFIDENCE

1. SERVICES EQUIPMENT LAYOUTS ARE INDICATIVE ONLY AND SUBJECT TO FINAL CONFIRMATION - TO BE DEVELOPED/ CONFIRMED.
2. PLACEMENT AND HEIGHTS OF SERVICES TERMINATIONS, MAN SAFE EQUIPMENT, ACCESS EQUIPMENT AND CLEANING/MAINTENANCE EQUIPMENT (NOT CURRENTLY SHOWN) - TO BE DEVELOPED/ CONFIRMED.
3. FINAL PLACEMENT AND HEIGHT OF LIFT OVERRUNS - TO BE DEVELOPED/ CONFIRMED.
4. NEW STRUCTURE SIZES AND LAYOUT ARE INDICATIVE ONLY AND SUBJECT TO FINAL STRUCTURAL DESIGN CONFIRMATION - TO BE DEVELOPED/ CONFIRMED.
5. CHANGES REQUIRED TO EXISTING BUILDING STRUCTURE TO SUIT THE FINAL DESIGN ARE INDICATIVE - TO BE DEVELOPED/ CONFIRMED.



Consultants

RCP
Project Manager
RLB
Quantity Surveyor
HOLMES
Structural Engineer
NDY
Services Engineer
JENSEN HUGHES
Fire Engineer
TONKIN + TAYLOR
Civil Engineer
FLOW
Traffic Engineer
MOTT MACDONALD
Facade Engineer

Client

Precinct

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Registered Architects and Designers
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Project Title

DOWNTOWN WEST

2 LOWER HOBSON STREET,
AUCKLAND CBD, AUCKLAND 1010

Drawing Title

GENERAL ARRANGEMENT - FLOOR PLAN - LEVEL 00

Drawing Status

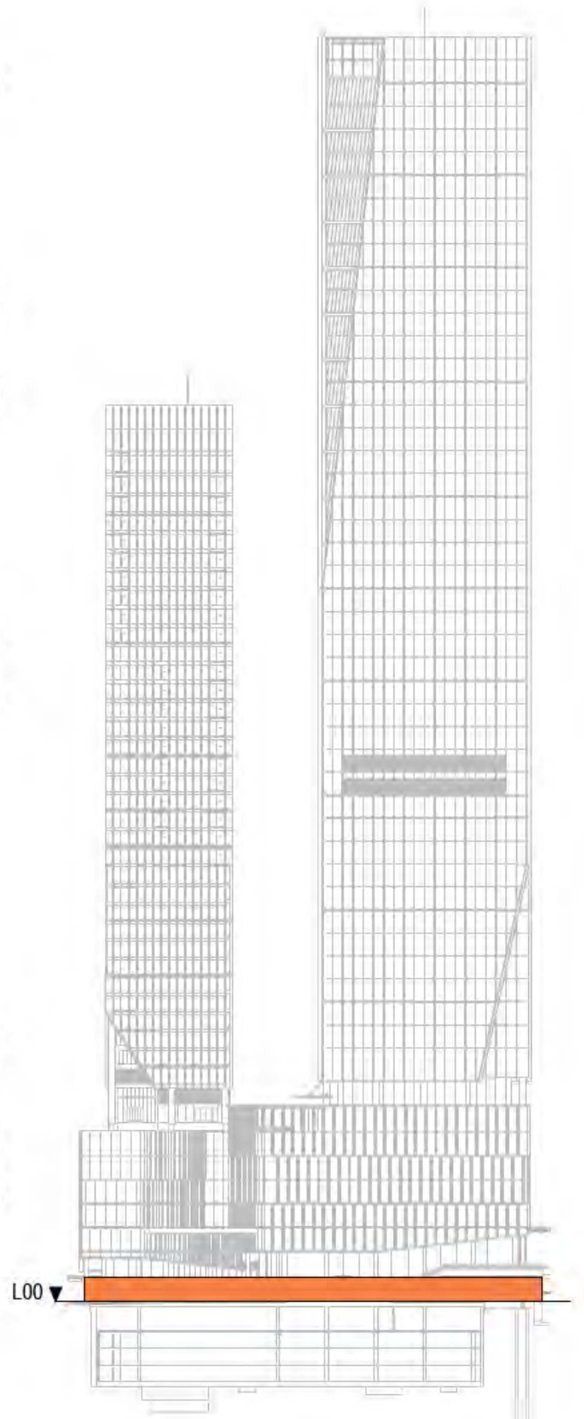
FTA ISSUE

Drawing Details

Scale	1 : 250@ A1
Date	03/10/25
Job No	9234
Drawn	WAM
Checked	WAM

Drawing No — **Revision**

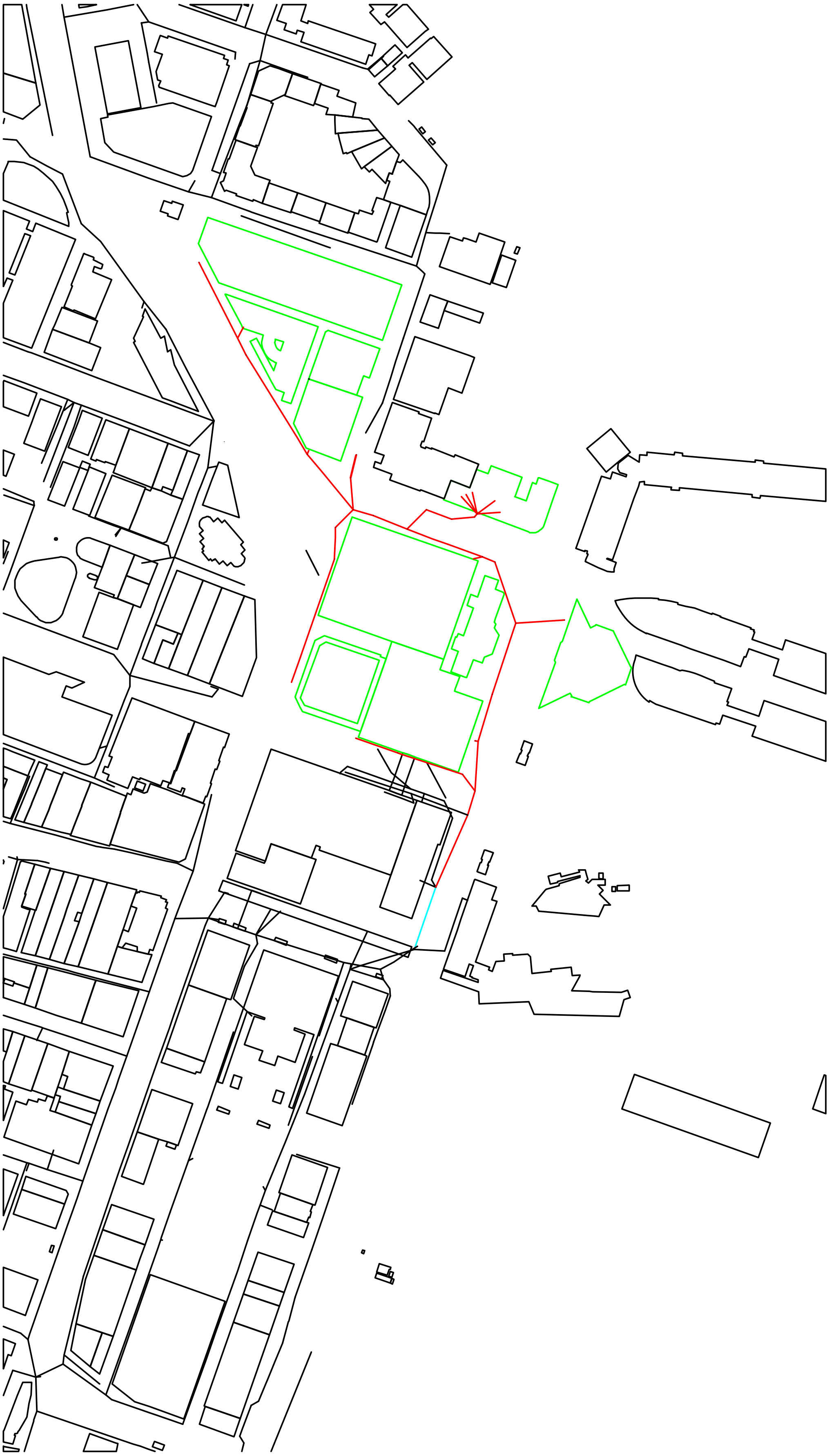
FTA-10-100 Ⓒ



LEVEL KEY - SOUTH ELEVATION

WARREN AND MAHONEY

Appendix C Wet Services Plans and Calculations



Pipe Capacity

⬜ Calculated cell 🟨 Input cell ▨ Key results

Project:	Wastewater Capacity	By:	DAHA	Date:	14/08/2022
Work Package:	Infrastructure Assessment	Checked:	SL	Date:	18/08/2023
Title:	Downtown Carpark				
Location:	Auckland				
Stage #:	Pre-Purchase				

+ Assumptions

1. The Mannings formula specified in E1 Section 3.2 of the Building Code has been used to estimate pipe flow assuming 'full flow' pipe capacity.
2. Pipes with no IL information has an assumed Pipe Slope of 0.01 m/m.
3. Pipes with a negative slope has an assumed Pipe Slope of 0.01 m/m.

+ Design Calculations

Pipe ID	US Invert Level (m)	DS Invert Level (m)	Length of Pipe (m)	Pipe Diameter (mm)	Pipe Material	Mannings (n)	Pipe Area (m^2)	Pipe Slope (m/m)	Pipe Design Flow (l/s)	Pipe Capacity (l/s)	Spare Capacity (m^3/s)	Percentage of capacity used
A-1	0.00	0.00	70.50	150	Vitrified Clay	0.017	0.0177	0.010	2.80	11.65	8.85	24.02%
A-2	0.00	0.00	79.50	150	Concrete	0.013	0.0177	0.010	2.80	15.23	12.43	18.37%
A-3	0.00	0.00	49.00	150	Concrete	0.013	0.0177	0.010	6.71	15.23	8.51	44.09%
B-1	0.00	0.00	16.40	150	Vitrified Clay	0.017	0.0177	0.010	0.00	11.65	11.65	0.00%
B-2	0.00	0.00	21.74	300	Vitrified Clay	0.017	0.0707	0.003	0.00	40.50	40.50	0.00%
B-3	5.54	2.37	88.86	150	Vitrified Clay	0.017	0.0177	0.036	4.68	22.00	17.31	21.29%
B-4	2.06	1.96	21.40	150	Concrete	0.013	0.0177	0.005	4.68	10.41	5.73	44.99%
B-5	1.88	1.84	17.32	225	Concrete	0.013	0.0398	0.002	4.68	21.58	16.89	21.70%
A-4	1.83	1.76	14.00	225	Concrete	0.013	0.0398	0.005	11.40	31.75	20.35	35.90%
A-5	0.00	1.62	25.00	225	Vitrified Clay	0.017	0.0398	0.005	11.40	23.03	11.64	49.48%
C-1	2.38	2.09	15.64	225	Vitrified Clay	0.017	0.0398	0.019	7.20	46.76	39.55	15.40%
C-2	2.07	1.94	18.20	225	Vitrified Clay	0.017	0.0398	0.007	7.20	29.02	21.81	24.82%
C-3	1.90	1.70	18.73	225	Vitrified Clay	0.017	0.0398	0.011	7.20	35.48	28.28	20.30%
A-6	1.57	1.60	29.57	225	Vitrified Clay	0.017	0.0398	0.005	18.60	23.03	4.43	80.75%
A-7	1.51	0.00	25.01	225	Concrete	0.013	0.0398	0.060	18.60	110.32	91.72	16.86%
A-8	1.49	1.44	9.30	225	Concrete	0.013	0.0398	0.005	19.50	32.92	13.42	59.23%
A-9	1.39	1.13	44.10	225	Concrete	0.013	0.0398	0.006	19.50	34.48	14.98	56.56%
D-1	0.00	1.25	32.97	150	Concrete	0.013	0.0177	0.010	4.11	15.23	11.12	27.00%
A-10	0.00	0.00	50.91	225	Concrete	0.013	0.0398	0.005	36.44	30.12	-6.32	120.98%
A-11	1.10	0.00	33.53	225	Concrete	0.013	0.0398	0.033	36.44	81.33	44.89	44.80%
A-12	0.81	0.84	34.03	225	Concrete	0.013	0.0398	0.005	49.01	30.12	-18.89	162.70%
E-1	2.41	1.33	30.09	225	Concrete	0.013	0.0398	0.036	4.68	85.07	80.38	5.51%
E-2	1.19	0.92	46.56	225	Concrete	0.013	0.0398	0.006	4.68	34.19	29.51	13.70%
E-3	0.88	0.85	14.41	225	Concrete	0.013	0.0398	0.002	4.68	20.49	15.81	22.86%
A-13	0.81	0.73	16.99	225	Concrete	0.013	0.0398	0.005	53.69	30.81	-22.88	174.24%
A-14	0.00	0.00	53.67	225	Vitrified Clay	0.017	0.0398	0.005	53.69	23.03	-30.66	233.09%
A-15	0.52	0.35	45.14	300	Vitrified Clay	0.017	0.0707	0.004	53.69	45.38	-8.31	118.31%

+ Link to Pipe Catchment Plan

Pipe catchment plan can be found here:	P:\1016043\1016043.1000\4 Civil Infrastruture\WorkingMaterial\Calculations

Downtown Carpark Redevelopment

Existing Wastewater Flow Calculations

Job No.: 1016043.1000

Computed by: DAHA Date: 11/08/2023

Checked by: SL Date: 17/08/2023

					Peaking Factor						Peaking Factor		Design Wastewater Flow Allowances							
Location	Features	# of Floors	Design Flows (L/p/day)	Occupancy	Self-Cleansing Flow	Peak Design Flow	PDWF (L/s)	PWWF (L/s)	Floor Area (m^2)	Net Floor Area (m^2)	Self-Cleansing Flow	Peak Design Flow	Flow Allowance (L/p/day)	Dry Retail	Office	Wet Retail	Child Day Care	PDWF (L/s)	PWWF (L/s)	Subtotal PWWF (L/s)
106 Customs St	Level 1																			
	Office	1							5350	4280	2	5	65		18547			0.429	1.073	
	Ground Floor																			
	Wet Retail	1							892	713	2	6.7				10700		0.248	0.830	
	Office	1							4458	3567	2	5	65		15456			0.358	0.894	2.797
15-17 Sturdee St	Roof																			
	Car Park	1							1920	1536								0	0	
	Level 1 - 6																			
	Car Park	6							1920	1536								0	0	
	Ground Floor																			
	Car Park	1							1920	1536								0	0	0.000
102 Customs St	Level 1																			
	Office								320	256	2	5	65		1109			0.026	0.064	
	Ground Floor																			
	Leisure Centre	1							1670	1336	2	6.7				20040		0.464	1.554	1.618
104 Customs St	Level 2																			
	Office	1							830	664	2	5	65		2877			0.067	0.167	
	Wet Retail (Culinary School)	1							490	392	2	6.7				5880		0.136	0.456	
	Level 1																			
	Office	1							830	664	2	5	65		2877			0.067	0.167	
	Wet Retail (Culinary School)	1							490	392	2	6.7				5880		0.136	0.456	
	Ground Floor																			
	Office								830	664	2	5	65		2877			0.067	0.167	
	Wet Retail (Culinary School)	1							490	392	2	6.7				5880		0.136	0.456	
	Wet Retail	1							256	205	2	6.7				3072		0.071	0.238	
	Wet Retail	1							208	166	2	6.7				2490		0.058	0.193	2.299
204 Quay St	Levels 1 - 3																			
	Wet Retail	3							5805	4644	2	6.7	65			69660		1.613	5.402	
	Ground Floor																			
	Wet Retail	1							1935	1548	2	6.7	65			23220		0.538	1.801	7.203
131 Quay St	Level 1 - 6																			
	Office	6							14400	11520	2	5	65		49920			1.156	2.889	
	Ground Floor																			
	Wet Retail	1							1070	856	2	6.7				12840		0.297	0.996	
	Dry Retail	1							280	224	2	5	65	291				0.007	0.017	
	Office	1							1050	840	2	5	65		3640			0.084	0.211	4.112
29 Customs St West	Levels 1 - 21																			
	Office	21							39900	31920	2	5	65		138320			3.202	8.005	
	Ground Floor																			
	Wet Retail (Multiple)	1							160	128	2	6.7				1920		0.044	0.149	
	Child Day-Care	1							200	160	2	6.7					1110	0.026	0.086	
	Dry Retail	1							200	160	2	5	65	208				0.005	0.012	
	Wet Retail (Dental)	1							1530	1224	2	5	65			18360		0.425	1.063	
	Basement 1 - 2																			
	Car Park	1							2620	2096								0	0	
	Car Park	1							1747	1397								0	0	
	Dry Retail	1							873	699	2	5	65	908				0.021	0.053	9.367
	Level 2 - 24																			
	Office	23							46000	36800	2	5	65		159467			3.691	9.228	
	Level 1																			

188 Quay St	Wet Retail	1							1050	840	2	6.7				12600		0.292	0.977	
	Wet Retail	1							580	464	2	6.7				6960		0.161	0.540	
	Office	1							2000	1600	2	5	65		6933			0.160	0.401	
	Ground Floor																			
	Wet Retail	1							1050	840	2	6.7				12600		0.292	0.977	
	Wet Retail	1							30	24	2	6.7				360		0.008	0.028	
	Dry Retail	1							100	80	2	5	65	104				0.002	0.006	
	Dry Retail	1							100	80	2	5	65	104				0.002	0.006	
	Dry Retail	1							40	32	2	5	65	42				0.001	0.002	
	Office	1							2000	1600	2	5	65		6933			0.160	0.401	12.567
196 Quay St	Level 6 - 12																			
	Accomodation	6	180	5	3	5	3.779	6.298												
	Level 2 - 6																			
	Accomodation	5	180	5	3	5	3.779	6.298												
	Level 1																			
	Office	1							740	592	2	5	65	770				0.018	0.045	
	Ground Floor																			
	Wet Retail	1							150	120	2	6.7				1800		0.042	0.140	
	Car Park	1							200	160										
	Leisure Centre	1							50	40	2	6.7				600		0.014	0.047	12.826
Downtown Public Carpark	ALL Floors																			
	ALL Floors																	0.300	0.900	
																				0.900
						Total	7.557	12.596									Total	14.822	41.093	
																	Total PDWF (L/s)	22.380		
																	Total PWWF (L/s)	53.689		

Wastewater Design Parameters (Obtained from Watercare CoP)

1. Design flow = 180L/p/d (Table 5.1.1: Residential Design Flows)

2. Occupancy (5No.) - Table 5.1.2 (For high rise apartments four floors or more - use residential rate of 5/dwelling unit.

3. Dry and Wet Peaking Factors of 3 and 5 obtained from table 5.1.1 (for high rise residential (or mixed use) buildings four storeys and above)

4. Peaking factors for commercial dry retail are 3 and 5, and wet retail of 2 and 6.7 obtained from Table 5.1.3

5. Peaking factors for offices are 2 and 5 obtained from Table 5.1.3

Existing Stormwater Assessment

KSASC 7/06/2023 **Checked:** SL
Job 1016043 **Date:** 28/08/2023
Directory P:\1016043\1016043.1000\4 Civil Infrastruture\WorkingMaterial\Infrastructure Assessment report\Calculations
Address Downtown Carpark Site (2 Lower Hobson Street)

Pre-Development

a) Design requirements based on The Auckland Code of Practice for Land Development and Subdivision
Chapter 4: Stormwater
b) For catchments < 50ha runoff using the Rational Method is generally accepted (4.3.5 design criteria - stormwater)
c) The design rainfall event for Primary System within a Commercial and Industrial areas in Auckland CBD to accomodate a 1 in 20 year ARI
(as requested by Healthy Waters)
d) Rainfall intensity has been sourced from Figure A.4 20 Year ARI Daily Rainfall Depth Map
e) Run-off coefficients (C) have been sourced from the New Zealand Building Code- Clause E1 Table 1
f) The catchment composition is based on the Auckland Council GEOMAPS site layout printed 31/08/2021.
g) Surface areas have been calculated in PDF exchange and are shown on plan "Site Catchment Area"

1 **Site Composition**

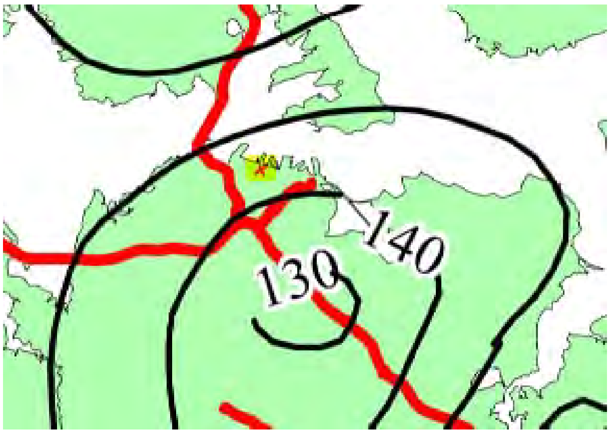
Surface Type	**Downtown Carpark**	
Pre-development	**Area (m^2)**	**C, Run-off Coefficent**
Level 8		
Lift shaft/stairs roof areas	138	0.9
Concrete carparking area	6058	0.9
Ground / Streel level		
Paved/concrete areas	246	0.9
Total Area	**6442**	

2 **Rainfall data**

Figure A.4

20 Year ARI

Daily Rainfall depth = 145mm



3 **Time of Concentration, t_c**
10 minute duration event
t_c = 10 mins

Assumed 10 mins as a small site

4 **Pre-development ouflow: Q_{pre} = C x i x A / 3600**

$i_{1 \text{ in } 10 \text{ year ARI}}$ 97.89 mm/hour

Q pre-1 in 20 year ARI		
Location	**Peak flow rate (litre/sec)**	
Level 8 roof/parking	151.63	*Runoff entering carpark building downpipe system discharging to the public pipe connection to site.*
Ground/ street level	0.00	*Surface runoff directly to kerb and channel along Lower Hobson St and Custom Street West.*
TOTAL	151.63	*Conservatively use as the design peak runoff from the site*

Existing Stormwater Assessment

KSASC	7/06/2023	**Checked:**	MM
Job	1016043	**Date:**	7/06/2023
Directory	P:\1016043\1016043.1000\4 Civil Infrastruture\WorkingMaterial\Infrastructure Assessment report\Calculations		
Address	Downtown Carpark Site (2 Lower Hobson Street)		

These calculations use the existing (pre-developed) sub-catchment assessment of the existing stormwater networks identified below. The results indicate the existing stormwater network has adequate spare capacity to receive additional flows from the existing site.

A summary of the design parameters and assumptions are below:
a) Pipe connections and pipe sizes have assumed based on the New Zealand Building Code Clause E1 Surface Water.
b) The Manning's formula specified in NZBC Clause E1 Surface Water, section 3.2 Hydraulic Design has been used to estimate the pipe flow capacity assuming 'full pipe flow'.
c) The Manning's 'n' value for uPVC is 0.011, and AC and concrete is 0.013, as specified in NZBC Clause E1 Surface Water, Table 3.
d) Pipe length and upstream and downstream invert levels have been taken from Auckland Council GEOMAP data, dated 01/09/2021
e) Pipe ID, pipe slope direction and manhole invert levels shown on plan "Excerpt 1: Stormwater Network Connection"

n Concrete	0.013
n uPVC (smooth wall)	0.011
n AC (smooth wall)	0.013

1. Determining Pipe Capacity

a)300mm diameter pipe connection Lower Hobson Street

Pipe ID	Upstream IL (m)	Downstream IL (m)	Pipe length (m)	Pipe Slope (m/m)	Pipe Dia. (mm)	Pipe Area (m^2)	Mannings (n)	Pipe Capacity (litre/sec)
1. Lateral to site (AC)	*unknown*	1.95	14.64	0.011	300	0.07	0.013	101.4
2. Minor pipe (AC)	0.94	0.85	8.11	0.011	300	0.07	0.013	101.9
3. Minor pipe (AC)	0.82	0.63	10.97	0.017	300	0.07	0.013	127.3
4. Minor pipe (AC)	0.22	0.14	10.57	0.008	1050	0.87	0.013	2375.7
5. Main pipe (Concrete)	0.11	0.08	48.45	0.001	1050	0.87	0.013	679.5

NB: Lateral pipe connection gradient assumed to be 1.1%, given invert levels the pipe network above (1 to 5) is assumed to be tidal.

Based on the available Auckland Council GEOMAPs information, the existing 300 mm diameter pipe connection on Lower Hopson Street, under gravity, provides an estimated flow capacity of **101.4** litres/sec.

b) Check capacity existing of 300mm diameter pipe connection under gravity flow conditions
It is assumed that the vertical downpipes connecting the floor drains on level 8 (top roof level) carparking, all drain directly into the 300 m diameter connection at the upper basement carparking level. Under gravity conditions, the 300 mm diameter receiving stormwater network is undersized for the peak runoff from roof top (level 8) carparking, as noted in the table below

Site peak flow (L/s), 1 in 20 year ARI	Overall SW connection network capacity (L/s)	Criteria, Capacity > Peak flow, OK
151.63	101.4	NOT OK

2. Conclusion:

The 300 mm diameter public stormwater connections to the site on Lower Hobson Street provides only likely connection to the site.

Under gravity conditions, the 300 mm diameter connection is undersized during a 1 in 20 year ARI design storm, and needs to be considered for future development of the site.

Proposed Stormwater Assessment

KSASC	7/06/2023	**Checked:**	**MM**
Job	1016043	**Date:**	7/06/2023
Revised Rev 1:	AFRE		
Date:	5/12/2024		
Directory	P:\1016043\1016043.1000\4 Civil Infrastruture\WorkingMaterial\Infrastructure Assessment report\Calculations		
Address	Downtown Carpark Site (2 Lower Hobson Street)		

Revision:

Rev 1 *Updated calculation to assume total site area is impervious (no change to overall run-off from previous version)*

1 Site Composition

Surface Type	Downtown Carpark	
Pre-development	**Area (m^2)**	**C, Run-off Coefficent**
Roof areas + Imperv areas		
Total site area	6442	0.9
Total Area	**6442**	

2 Rainfall data

HIRDS V4

Coordinate system: WGS84

Longitude: 174.76

Latitude: -36.84

3 Time of Concentration, t_c

10 minute duration event

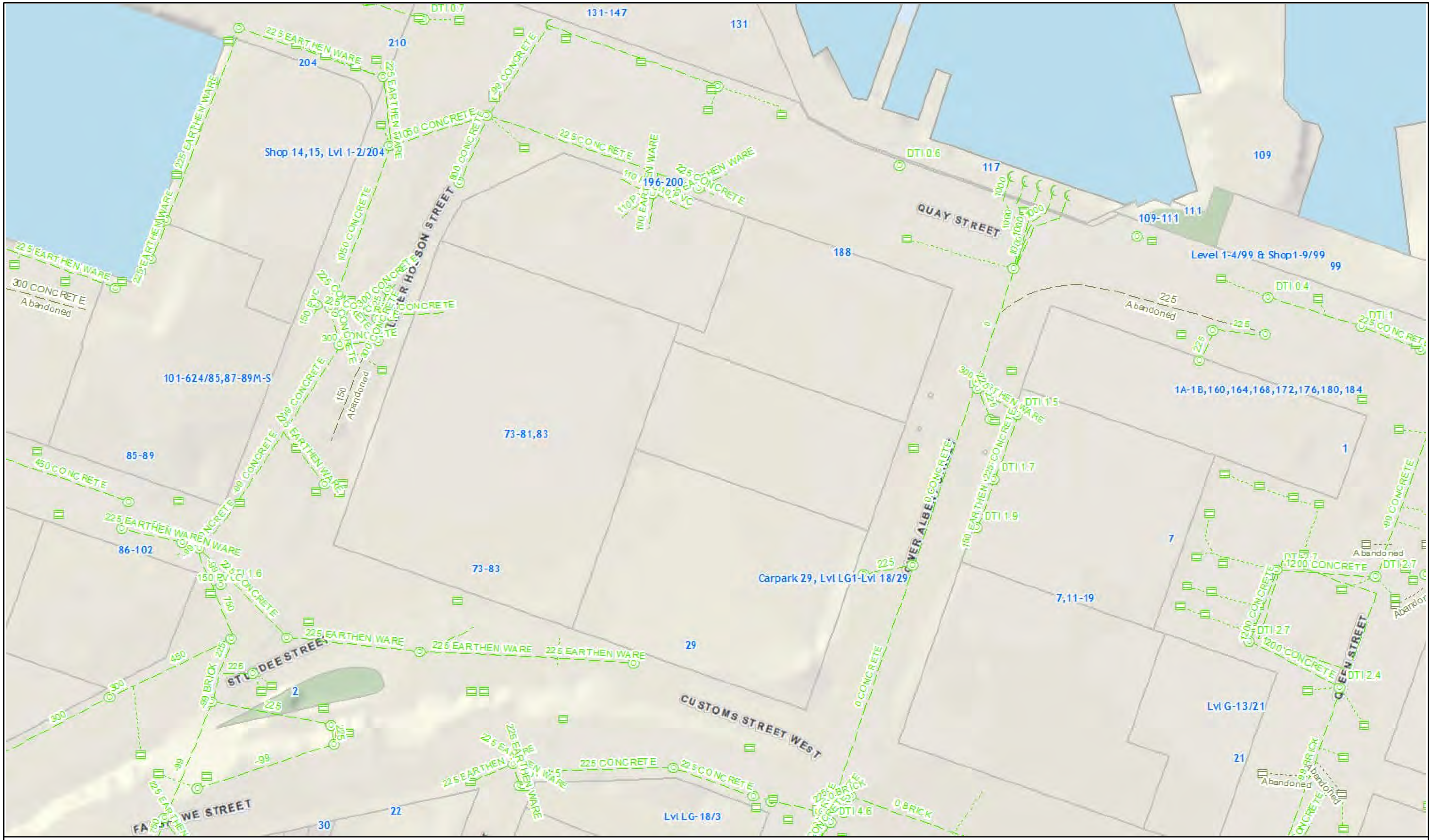
t_c = 10 mins

Assumed 10 mins as a small site

4 Pre-development ouflow: $Q_{pre} = C \times i \times A / 3600$

$i_{1\ in\ 10\ year\ ARI}$ 94 mm/hour

Q pre-1 in 10 year ARI		
Location	**Peak flow rate (litre/sec)**	
Imper area	151.39	*Assumed total site area is impervious*
TOTAL	151.39	*Conservatively use as the design peak runoff from the site*



Downtown Carpark

Created: Thursday, 25 June 2015,8:54:39 a.m.

Scale @ A3 1:1000

Auckland Council
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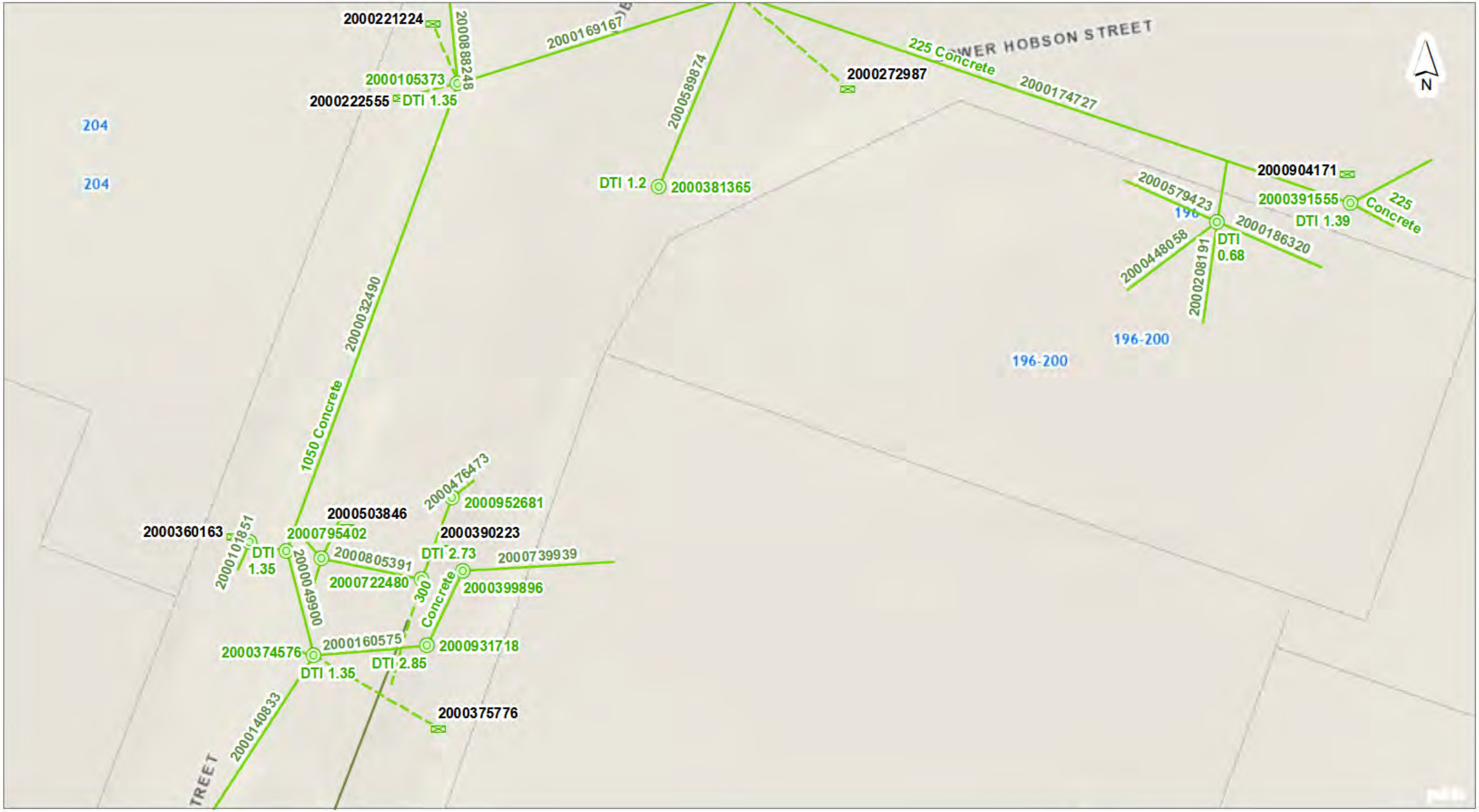
0 6.5 13 19.5
Meters

Scale @ A4
= 1:1,000

Date Printed:
31/08/2021

Auckland Council
Te Kaunihera o Tāmaki Makaurau



0 3.5 7 10.5
Meters

Scale @ A4
= 1:500

Date Printed:
2/09/2021

Auckland Council
Te Kaunihera o Tāmaki Makaurau

HIRDS V4 Intensity-Duration-Frequency Results
Sitename: 2 Lower Hobson Street
Coordinate system: WGS84
Longitude: 174.7642966
Latitude: -36.8434779

HIRDS rainfall data sourced website https://hirds.niwa.co.nz, Date: 07/06/2023

Rainfall intensities (mm/hr) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	59.7	42.6	34.5	23.6	15.6	7.69	4.74	2.84	1.66	1.19	0.939	0.777
2	0.5	64.7	46.2	37.5	25.6	17	8.39	5.18	3.11	1.81	1.31	1.03	0.852
5	0.2	81.7	58.6	47.6	32.6	21.7	10.8	6.68	4.02	2.36	1.7	1.34	1.11
10	0.1	94	67.6	55	37.8	25.2	12.6	7.8	4.71	2.76	2	1.58	1.31
20	0.05	106	76.7	62.5	43	28.8	14.4	8.96	5.42	3.19	2.31	1.82	1.51
30	0.033	114	82.1	67	46.2	31	15.5	9.66	5.85	3.45	2.5	1.97	1.64
40	0.025	119	86	70.2	48.4	32.5	16.3	10.2	6.16	3.63	2.63	2.08	1.73
50	0.02	123	89.1	72.7	50.2	33.7	16.9	10.6	6.41	3.78	2.74	2.17	1.8
60	0.017	127	91.5	74.7	51.6	34.7	17.4	10.9	6.61	3.9	2.83	2.24	1.86
80	0.013	132	95.5	78	53.9	36.3	18.3	11.4	6.93	4.1	2.97	2.35	1.96
100	0.01	136	98.5	80.5	55.7	37.5	18.9	11.8	7.19	4.25	3.08	2.44	2.03
250	0.004	153	111	90.8	63.1	42.6	21.5	13.5	8.24	4.88	3.55	2.81	2.34

Water Supply Assessment

SNAA	21/09/2021	Checked	SL
Job	1018052	Date	23/09/2021
Directory	P:\1018052\WorkingMaterial\Wastewater		
Address	Downtown Carpark Site (73-83 Customs Street West)		

Pre-Development Assessment

The following assessment is undertaken to estimate the existing water demand at 73-83 Custom Street West. The exisiting site comprises an 8 level carpark building, including a restaurant (Monsoon Poon), a bar (Pointers Bar and Grill), two toilets accessible to office/carpark users and offices spaces on ground floor and first floor.

Design requirements are based on Auckland COP for Land Development and Subdivision, Water and Wastewater Code of Practice, Chapter 6: Water dated 01/06/2021, Ver 2.4. Floor areas have been measured from building / property file plans using PDF Exchange, and are considered net floor areas.

1) Potable water demand

Restaurant and Bar footprint taken from floor plans contained in property file (refer to Monsoon Poon and Pointers Bar & Grill floor plans)

Net floor area:	745	m^2	*taken from Property File*
Water design flow allowance:	15	litres/day/m^2	*for Wet Retail from Table 6.1.c*
Average day demand (ADD):	11175	litres/day	
	0.129	litres/sec	*Average day demand in L/s*
<u>Peak day demand</u>			
Peak flow factor	2		*refer 6.3.5.3 Peaking Factor*
Peak day demand:	22350	litres/day	*over a 12 month period*
<u>Peak hourly demand</u>			
Peak flow factor	2.5		*refer 6.3.5.3 Peaking Factor over 24 hour period*
Peak hourly demand:	2328	litres/hr	
	0.65	litres/sec	*Peak hourly demand in L/s*

Office footprints taken from floor plans contained in property file (refer to carpark office space floor plans)

Net floor Area:	231	m^2	*215 m2 (offices) + 16 m2 (2no. toilets) taken from Property File*
Space allowance : 1 person per	15	m^2	*1 person / 15m ^{2} , for dry retail/office from Table 6.1.c*
Kiosk Employees:	2		*30 m2 foor area, taken from Property File, Council correspondence*
No. of persons:	17	people	
water design flow allowance:	65	litres/person/day	*for dry retail/office buildings from Table 6.1.c*
Average day demand (ADD):	1131	litres/day	
	0.013	litres/sec	*Average day demand in L/s*
<u>Peak day demand</u>			
Peak flow factor	2		*refer 6.3.5.3 Peaking Factor, populations < 2000*
Peak day demand:	2262	litres/day	
<u>Peak hourly demand</u>			
Peak flow factor	2.5		*refer 6.3.5.3 Peaking Factor for Peak Hourly Demand*
Peak hourly demand:	236	litres/hr	
	0.07	litres/sec	*Peak hourly demand in L/s*

Total Average day demand:	12306	litres/day
	0.142	litres/sec
Total Peak day demand:	24612	litres/day
	0.285	litres/sec
Total Peak hourly demand:	2564	litres/hr
	0.712	litres/sec

2) Fire Flow demand

We have assumed the retail and office spaces are sprinklered, we have considered the site as a fire classification FW2, in accordance with Determine the fire fighting demand in accordance with SNZ PAS 4509:2008.

Fire flow demand:

Hydrant flow	25	litres/sec	*Table 2, 12.5 L/s from within 135m + other 12.5 L/s from within 270m, for 2 hydrants*
Sprinkler flow	25	litres/sec	*As per Table 2, note 4, assumed Maximum Ordinary Hazard sprinkler system flow*
Total fire fighting flow	50	litres/sec	

3) Town supply capacity

At the time of this assessment, no fire hydrant flow and pressure tests have been carried out to determine the available flow and pressure in the town supply.

<u>Conclusion</u>

In the absence of hydrant flow and pressure tests, based on the numerous water mains in the vicinity of the site and the nature of the surrounding CBD district, it can be assumed that the available water supply system adequately services the existing potable and fire flow demand for the site at 83/73 Custom Street West.

Joohwan Kim

From: Reja, Hossein [redacted]
Sent: Thursday, 6 November 2025 12:40 pm
To: Joohwan Kim; Craigie, Lance
Cc: Peter Millar; Thompson, Peter1; Condello, Damian
Subject: RE: DTW - Water supply demands

Hello Joohwan,

Please see below the calculated Peak Flow Rates based on AS/NZS 3500.1

<u>Residential (Water supply from Lower Hobsons Steet):</u>
Total number of apartments: 160
Minimum potable simultaneous demand = 10.56L/s
Additional flow for amenities and mechanical =1.5 L/s
Peak potable water demand (Domestic only – No Fire Protection): 12.06L/s
The fire supply for development is not part of this connection, and the combined water supply is provided from Customs Street West Connection (combined)
It is important to consider that domestic water supply in this development include break tanks. This will reduce the peak flow rate of <u>domestic water</u> significantly for the connection (expected reduction of 50%).

<u>Hotel, Commercial and retail (Water supply from Customs Street West):</u>
Total loading units: 3,400
PSFR = 10.22L/s
Mechanical and irrigation peak flow rate: 4L/s
Total Domestic peak demand: 14.22L/s
<u>Total Fire Peak Flow Rate: 58L/s</u>
Peak potable water demand (Domestic and Fire Protection simultaneous): 72.22 L/s

It is important to consider that domestic water supply and fire protection in this development include break tanks. This will reduce the peak flow rate of <u>domestic water</u> significantly for development (expected reduction of 50%).
In relation to fire protection, the peak flow rates will be required to allow fire brigade directly boosting from the street mains during firefighting. We can incorporate priority (pressure sustaining) valve system to shut off the domestic water top-up in case of fire to assist the peak flow of potable water supply to fire protection flow rate. In that case, the peak flow for the development will be 58L/s.

I Summary, the expected peak flow rates for the two proposed connections of this development after applying the reduction factors above, will be as follows:
Lower Hobsons Street: 6.1 L/s (50% of domestic peak flow rate to top-up the break tank)
Customs Street West: 58 L/s (does not include domestic water flow rate)

Kind Regards

NDY
A TETRA TECH COMPANY

Hossein Reja
Associate Director

T +61 3 9862 6800 | M +61 439 562 966
E [redacted]

From: Joohwan Kim [redacted]
Sent: Thursday, 6 November 2025 7:27 AM
To: Reja, Hossein [redacted]; Craigie, Lance [redacted]

Downtown Carpark

Created: Thursday, 25 June 2015,8:53:53 a.m.

Scale @ A3 1:1000

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Existing Wastewater Assessment

KSASC	7/06/2023	Checked:	MM
Job	1016043	Date:	7/06/2023
Directory	P:\1016043\1016043.1000\4 Civil Infrastruture\WorkingMaterial\Infrastructure Assessment report\Calculations		
Address	Downtown Carpark Site (2 Lower Hobson Street)		

Pre-Development Assessment

The following assessment is undertaken to estimate the existing wastewater generated at 2 Lower Hobson Street. The exisiting site comprises an 8 level carpark building, including a restaurant (Monsoon Poon), a bar (Pointers Bar and Grill), two toilets accessible to office/carpark users, and offices spaces on ground floor and first floor.

Design requirements are based on Auckland COP for Land Development and Subdivision, Water and Wastewater Code of Practice, Chapter 5: Wastewater dated 01/1/2019, Ver 2.2. Floor areas have been measured from building / property file plans using PDF Exchange, and are considered net floor areas.

2 Lower Hobson Street 8 level carpark building including restaurant, bar, toilets available to public and carparking offices on ground level and first level

Restaurant and Bar footprint taken from floor plans contained in property file (refer to Monsoon Poon and Pointers Bar & Grill floor plans)

Net floor Area:	745	m^2	*taken from Property File*
waste water generation:	15	litres/day/m^2	*for Wet Retail from Table 5.1.3.*
Average dry weather flow (ADWF):	11175	litres/day	
	0.129	litres/sec	*ADWF in L/s*
Peaking Factor - Cleansing	2		*for Wet Retail from Table 5.1.3.*
Peak dry weather flow (PDWF):	0.259	litres/sec	
Peaking Factor - Design	6.7		*for Wet Retail from Table 5.1.3.*
Peak wet weather flow (PWWF):	0.867	litres/sec	

Office footprints taken from floor plans contained in property file (refer to carpark office space floor plans)

Net floor Area:	231	m^2	*215 m^2 (offices) + 16 m^2 (2no. toilets) taken from Property File*
Space: 1 person per	15	m^2	*net floor area for Offices from Table 5.1.3.*
Kiosk Employees:	2		*30 m^2 foor area, taken from Property File, Council correspondence*
Employees:	17	people	
waste water generation:	65	litres/person/day	*for dry retail/offices from Table 5.1.3.*
Average dry weather flow (ADWF):	1131	litres/day	
	0.013	litres/sec	*ADWF in L/s*
Peaking Factor - Cleansing	2		*for dry retail/offices from Table 5.1.3.*
Peak dry weather flow (PDWF):	0.026	litres/sec	
Peaking Factor - Design	5		*for dry retail/offices from Table 5.1.3.*
Peak wet weather flow (PWWF):	0.065	litres/sec	

8 storey carparking areas

Approximate net floor Area:	51683	m^2	*Sum of basement, ground floor, carpark level 1 to 7 floor areas*
wastewater generation	0	litres/m^2/day	*refer to multi storey carparking 5.3.5.1.1, E Mixed use*
Average dry weather flow (ADWF):	0	litres/day	
	0	litres/sec	*ADWF in L/s, considered to be negligible*

Total flow scenarios for Restaurant & Bar, Office footprints, toilets accessible to public, office/carpark users and 8 storey carparking:

Total ADWF:	0.142	l/s
Total PDWF:	0.285	l/s
Total PWWF:	0.932	l/s

Determining Pipe Capacity

To determine the capacity of the existing wastewater lateral connection to site and the downstream receiving section of public wastewater pipe, is based on the following:

a) Existing pipe layout, invert levels, material and sizes are based on information sourced from Auckland Council GEOMAP's data refer to plan "Existing Wastewater Network"

b) The Manning's formula as specified in Watercare Water and Wastewater Code of Practice for Land development and Subdivision Chapter 5: Wastewater, section 5.3.5.2, Hydraulic Design of Pipelines.

c) The Manning's 'n' value for gravity wastewater systems for all pipe materials is taken as 0.013, as per section Table 5.2, Watercare Water and Wastewater Code of Practice.

n All gravity pipe materials	0.013

Pipe ID	Upstream IL (m)	Downstream IL (m)	Pipe length (m)	Pipe Slope (m/m)	Pipe Dia. (mm)	Pipe Area (m^2)	Mannings (n)	PWWF (l/s)
1. Lateral connection (AC)	unknown	unknown	unknown	0.010	150	0.02	0.013	0.93
2. Minor Pipe (AC)	1.49	1.39	9.4	0.011	225	0.04	0.013	0.93
3. Minor Pipe (AC)	unknown	unknown	unknown	0.010	225	0.04	0.013	0.93

NB: If pipe slope cannot be determined, a minimum slope of 1% has been assumed

Downtown Carpark

Created: Thursday, 25 June 2015,8:55:14 a.m.

Scale @ A3 1:1000

Auckland Council

Te Kaunihera o Tāmaki Makaurau

Wastewater Assessment

KSASC	7/06/2023	Checked:	MM
Job	1016043	Date:	7/06/2023
Directory	P:\1016043\1016043.1000\4 Civil Infrastruture\WorkingMaterial\Infrastructure Assessment report\Calculations		
Address	Downtown Carpark Site (2 Lower Hobson Street)		

Pipe ID	Pipe Capacity (l/s)	Spare Capacity (l/s)	Capacity Check	Percentage of total Capacity %
1. Lateral to site (AC)	15.2	14.30	OK	6.1
2. Minor pipe (AC)	46.3	45.38	OK	2.0
3. Minor pipe (AC)	44.9	43.97	OK	2.1

Conclusion:

During a peak wet weather flow (PWWF) from the existing site, 6.1% of the 150mm diameter lateral connection's (pipe #1) capacity is utilised. This is based on the lateral having an assumed 1% gradient.

The PWWF from the site entering the downstream receiving wastewater network (ie. pipes #2 & 3 both sized 225mm diameter) it only utilises 2.0-2.1% of that section of networks total line capacity.

Proposed Wastewater Assessment

Project	Downtown West - Downtown Carpark Redevelopment	Checked:	AFRE
Project No	1016043	Date:	18/10/2024
Directory	P:\1016043\1016043.2000\4. Civil Infrastructure\5. FTA Infra Report\1. Working\Calculations\1. Wast	Rev 1:	EMHJ
Address	Downtown Carpark Redevelopment (2 Lower Hobson Street)	Date:	29/09/2025
Purpose	Concept design calculations to support FTA	Checked:	AFRE
		Date:	6/10/2025

(Green indicates changed sections based on Draft FTA)

Post-Development Assessment

The following assessment is undertaken to estimate the proposed wastewater generated at Downtown West Building (2 Lower Hobson Street). The proposed development consists of 2 towers. The first (T1) consists of 53 levels and is primarily commercial use, and the second (T2) consists of 44 floors and is primarily residential use (levels exclude parapet). The remaining floors are summarised into the Base, which includes the basement levels, and Level 00 to Level 04. Floor areas have been obtained from the Area Schedules provided by RCP via email on Friday 19 September 2025. It is assumed that any floor areas that were not in the GFA Schedule have no wastewater flow because they are primarily basement parkings and plant rooms. It is additionally assumed that all external area is non-productive and does not generate wastewater. The existing wastewater generation is also calculated for the HSBC Building and AON Building.

Design requirements are based on Auckland COP for Land Development and Subdivision, Water and Wastewater Code of Practice, Chapter 5: Wastewater dated 01/1/2019, Ver 2.2.

Link to DTW Area Schedules used for the purpose of these calculations: P:\1016043\1016043.2000\SourceMaterial\RCP\2025.09.19 Area Schedule

Downtown West

T1 — *Assuming no wastewater is generated in plant areas*

Office	62078	m^2	*ref. DTW Area Schedule*	
Occupancy	4139	people	*WW COP Table 5.1.3*	*1 person per 15m^2 net floor area(assume excl. external area)*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*	*for dry retail/offices*
Average dry weather flow (ADWF):	269004	litres/day		
	3.113	litres/sec	*ADWF in L/s*	
T1 Summary:				
Total ADWF:	3.113	l/s		
Total PDWF:	6.227	l/s	*using peaking factor from Table 5.1.3*	
Total PWWF:	15.567	l/s	*using peaking factor from Table 5.1.3*	

T2 — *Assuming no wastewater is generated in plant areas*

Residential	22569	m^2	*ref. DTW Area Schedule*
Rooms with 1-bedroom	44		*ref. DTW Area Schedule*
Rooms with 2-bedroom to 4-bedroom	116		*ref. DTW Area Schedule*
Occupancy	436		*WW COP Table 5.1.2*
Wastewater generation:	180	litres/room/day	*from Table 5.1.1 for residential design*
Average dry weather flow (ADWF):	78480	litres/day	
	0.908	litres/sec	*ADWF in L/s*
Hotel			
Rooms	200		
No. Employees	200		*assuming 1 employee per room - assuming higher end hotel*
Wastewater generation (rooms):	180	litres/room/day	*from Table 5.1.3 for hotels & motels design*
Wastewater generation (staff):	45	litres/staff/day	*from Table 5.1.3 for hotels & motels design*
Average dry weather flow (ADWF):	45000	litres/day	
	0.521	litres/sec	
T2 Summary:			
Total ADWF:	1.429	l/s	
Total PDWF:	4.288	l/s	*WW COP Table 5.1.1*
Total PWWF:	8.031	l/s	*WW COP Table 5.1.1*

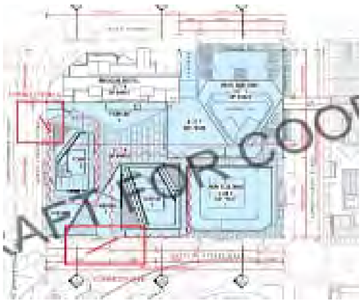
Assuming this comprises P1 - P3, and BMT, additionally assuming all plant, and assigned residential / hotel area is non-productive area (no WW generation) incl. lift and lobby area.

Base

Office	25238	m^2	*ref. DTW Area Schedule*
Occupancy	1683	people	*WW COP Table 5.1.3*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*
Average dry weather flow (ADWF):	109365	litres/day	
	1.266	litres/sec	*ADWF in L/s*
Dry Retail	765.6	m^2	*ref. DTW Area Schedule*
Occupancy	15	people	*1 person per 50m^2 net floor area from Table 5.1.3.*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*
Average dry weather flow (ADWF):	995	litres/day	
	0.012	litres/sec	*ADWF in L/s*
Wet Retail	522		*ref. DTW Area Schedule*
Wastewater generation:	15	litres/day/m^2	*WW COP Table 5.1.3*
Average dry weather flow (ADWF):	7827	litres/day	
	0.091	litres/sec	*ADWF in L/s*
Total ADWF:	1.368	l/s	
Total PDWF:	2.736	l/s	*WW COP Table 5.1.3*
Total PWWF:	6.994	l/s	*WW COP Table 5.1.3*

Conclusion: *The development has up to two proposed connections. The first (connection point 1) includes the flows form T1 and one-third of Base. The second (connection point 2) includes the flows from T2 and two-thirds of the Base. Overall flows shown below:*

Connection 1	
Average dry weather flow (ADWF):	3.57
Peak dry weather flow (PDWF):	7.14
Peak wet weather flow (PWWF):	17.90
Connection Point 2	
Average dry weather flow (ADWF):	2.34
Peak dry weather flow (PDWF):	6.11
Peak wet weather flow (PWWF):	12.69



29.5

HSBC Building

Office	34328	m^2	*ref. GFA RC05-0100*	*removed EOT, WC, and lobby space as non-productive per WSL COP*
Occupancy	2289	people	*WW COP Table 5.1.3*	*1 person per 15 m^2 net floor area*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*	*1 person per 15m2 net floor area(assume excl. external area)*
Average dry weather flow (ADWF):	148755	litres/day		
	1.722	litres/sec	*ADWF in L/s*	

Dry Retail	537	m^2	*ref. RC05-0100 summary tab*	
Occupancy	11	people	*WW COP Table 5.1.3*	*1 person per 50 m^2 net floor area*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*	
Average dry weather flow (ADWF):	698	litres/day		
	0.008	litres/sec	*ADWF in L/s*	
Wet Retail	866	m^2	*ref. GFA RC05-0100 - assumed Level 4 all wet retail, and 50% of Level 3 per knowledge of existing businesses here.*	
Wastewater generation:	15	litres/day/m^2	*WW COP Table 5.1.3*	
Average dry weather flow (ADWF):	12990	litres/day		
	0.150	litres/sec	*ADWF in L/s*	
Light Water Usage	463	m^2	*ref. GFA RC05-0100 EOT & WC*	
Wastewater generation:	4.5	litres/day/m^2	WW COP Table 5.1.4	
Average dry weather flow (ADWF):	2084	litres/day		
	0.024	litres/sec	*ADWF in L/s*	
Total ADWF:	1.904	l/s		
Total PDWF:	3.881	l/s	*WW COP Table 5.1.3*	*WW COP Table 5.1.3*
Total PWWF:	9.818	l/s	*WW COP Table 5.1.3*	*WW COP Table 5.1.4*
AON Building	*Assuming all retail is dry retail.*			
Office	25634	m^2	*ref. GFA RC05-0100*	
Occupancy	1709	people	*WW COP Table 5.1.3*	*1 person per 15 m^2 net floor area*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*	
Average dry weather flow (ADWF):	111081	litres/day		
	1.286	litres/sec	*ADWF in L/s*	
Dry Retail	2327	m^2	*ref. GFA RC05-0100*	*assuming lobby is non-productive area (771 sq m)*
Occupancy	47	people	*WW COP Table 5.1.3*	*1 person per 50 m^2 net floor area*
Wastewater generation:	65	litres/person/day	*WW COP Table 5.1.3*	
Average dry weather flow (ADWF):	3025	litres/day		
	0.035	litres/sec	*ADWF in L/s*	
Total ADWF:	1.321	l/s		
Total PDWF:	2.641	l/s	*WW COP Table 5.1.3*	
Total PWWF:	6.603	l/s	*WW COP Table 5.1.3*	

Downtown West GFA Summary

Summary table below is based on the Downtown West - Downtown Carpark Redevelopment Area Schedule provided by RCP - 19 September 2025.

**Red highlight indicates plant values.*

BUILDING	Approx Retail Area (sq m)				Approx Plant Area (sq m)		Approx Office Area (sq m)		Residential Area (sq m)										Hotel (sq m)							Total GBA		
	Dry Retail GBA	Wet Retail GBA	Comment	External Retail GBA (Enclosed Roof / Terrace Area)	Plant GBA	External Plant GBA (Enclosed Roof / Terrace Area)	Office GBA	External Office GBA (Enclosed Roof / Terrace Area)	One Bed	Two Bed	Three Bed	Total units	Resi GFA	Residential GBA	Share of GBA common to Resi & Hotel	External Resi GBA (Enclosed Roof / Terrace Area)	Residential GBA	External Resi GBA (Enclosed Roof / Terrace Area)	Standard Room	Junior Suite	Executive Suite	Presidential Suite	Hotel GBA	Share of GBA common to Resi & Hotel	External Hotel GBA (Enclosed Roof / Terrace Area)	Shared GBA	External Shared GBA (Enclosed Roof / Terrace Area)	Total GBA
T1	0	0	-	0	7486	1081	62078	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69564	1081	70645
T2	0	0	-	0	1660	706	0	0	44	81	35	160	16932	22550	19	1121	22569	1121	175	21	3	1	11737	19	0	35966	1827	37793
P1	478	0	*Notes Office Lobby / Meeting Suites / Retail*	0	147	0	15426	360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16051	360	16411
P2	133	0	*Notes Office Lobby / Residential Lobby / Hotel Lobby / Retail*	0	463	0	8673	108	0	0	0	0	0	277	151	0	429	0	0	0	0	0	1629	151	0	11327	108	11435
P3	0	522	*Retail / F+B (assumed all wet)*	0	1,582	635	959	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3063	635	3698
Basement	154	0	*Core / Loading Dock Access*	0	22,189	0	180	0	0	0	0	0	0	156	134	0	291	0	0	0	0	0	974	134	0	23787	0	23787

GFA SCHEDULE - HSBC BUILDING

TABLE 1

SPACE NAME	CATEGORY	BUILDING	LEVEL	AREA	unit	REF
RETAIL	DRY RETAIL	HSBC BUILDING	HSBC L3	537	m²	INCLUDED
CORE	CORE	HSBC BUILDING	HSBC L3	218	m²	INCLUDED
PARKING	CAR PARK	HSBC BUILDING	HSBC L3	933	m²	INCLUDED
PUBLIC OFFICE LOBBY	MISC	HSBC BUILDING	HSBC L3	50	m²	INCLUDED
IRRIGATION CUPBOARD	MISC	HSBC BUILDING	HSBC L3	7	m²	INCLUDED
PARKING	CAR PARK	HSBC BUILDING	HSBC L3	312	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L3	156	m²	INCLUDED
PUBLIC OFFICE LOBBY	MISC	HSBC BUILDING	HSBC L3	22	m²	INCLUDED
FCR	MISC	HSBC BUILDING	HSBC L3	8	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L3	296	m²	INCLUDED
EOT	LIGHT WATER	HSBC BUILDING	HSBC L3	245	m²	INCLUDED
EOT	LIGHT WATER	HSBC BUILDING	HSBC L3	172	m²	INCLUDED
PARKING	CAR PARK	HSBC BUILDING	HSBC L4	1244	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	37	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	80	m²	INCLUDED
ATRIUM	MISC	HSBC BUILDING	HSBC L4	267	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	10	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	67	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	54	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	116	m²	INCLUDED
RETAIL	WET RETAIL	HSBC BUILDING	HSBC L4	50	m²	INCLUDED
WC	LIGHT WATER	HSBC BUILDING	HSBC L4	46	m²	INCLUDED
PARKING	CAR PARK	HSBC BUILDING	HSBC L5	1253	m²	INCLUDED
PARKING	CAR PARK	HSBC BUILDING	HSBC L6	1779	m²	INCLUDED
STORAGE	MISC	HSBC BUILDING	HSBC L6	347	m²	INCLUDED
HSBC CORE	CORE	HSBC BUILDING	HSBC L6	182	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L7A	1033	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L8	1132	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L9	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L10	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L11	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L12	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L13	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L14	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L15	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L16	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L17	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L18	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L19	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L20	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L21	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L22	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L23	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L24	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L25	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L26	1533	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L27	1523	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L28	1523	m²	INCLUDED
OFFICE	OFFICE	HSBC BUILDING	HSBC L29	1523	m²	INCLUDED
TOTAL GFA (calculated)				**42816**	**m²**	
TOTAL GFA (provided)				**42825**	**m²**	
SITE AREA				**4730**	**m²**	

GFA SCHEDULE - AON BUILDING

TABLE 1

SPACE NAME	CATEGORY	BUILDING	LEVEL	AREA	unit	REF
RETAIL	DRY RETAIL	AON BUILDING	AON Arcade	1449	m²	INCLUDED
CAR PARKING	CAR PARK	AON BUILDING	AON Arcade	1053	m²	INCLUDED
RETAIL	DRY RETAIL	AON BUILDING	AON Plaza	771	m²	INCLUDED
LOBBY	DRY RETAIL	AON BUILDING	AON Plaza	181	m²	INCLUDED
RETAIL	DRY RETAIL	AON BUILDING	AON Plaza	107	m²	INCLUDED
CORE	CORE	AON BUILDING	AON Plaza	393	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L1	1713	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L2	1115	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L3	1115	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L4	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L5	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L6	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L7	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L8	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L9	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L10	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L11	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L12	1172	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L13	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L14	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L15	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L16	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L17	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L18	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L19	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L20	1207	m²	INCLUDED
OFFICE	OFFICE	AON BUILDING	AON L21	1207	m²	INCLUDED
TOTAL GFA (calculated)				**29588**	**m²**	
TOTAL GFA (provided)				**29591**	**m²**	
SITE AREA				**3704**	**m²**	

Post-development Pipe Capacity

Assumed values | Calculated cell | Input cell | Key results

Project:	Wastewater Capacity - Post Development	By:	DAHA	Date:	14/08/2022
Work Package:	Infrastructure Assessment	Checked:	SL	Date:	18/08/2023
Title:	Downtown Carpark	Rev 1:	AFRE	Date:	24/01/2025
Location:	Auckland	Rev 2:	EMHJ	Date:	29/09/2025
Stage #:	For Resource Consent	Rev 2 Checked:	AFRE	Date:	6/10/2025

+ Assumptions

1. The Mannings formula specified in E1 Section 3.2 of the Building Code has been used to estimate pipe flow assuming 'full flow' pipe capacity.
2. Pipes with no IL information have adopted a minimum grades for self cleansing in accordance with Watercare COP.
3. Pipes with a negative slope has an assumed Pipe Slope of 0.01 m/m.
4. Pipe levels are based on Watercare GIS information where available - pipes marked "unknown" no information on these levels on GIS.
5. Connection locations based on the PDF provided by NDY "TT civil connections NDY MARKUP 22092025_.pdf"

+ Revisions:

Rev 1 - Updated Commercial bay flows to A-15. Updated US invert and DS invert based on Watercare GIS as at 30/01/2025.

Rev 2 - Connection location for Connection 2 updated based on location provided by Building Services Engineer (NDY) "TT civil connections NDY MARKUP 22092025_.pdf"

+ Design Calculations

Pipe ID	US Invert Level (m)	DS Invert Level (m)	Length of Pipe (m)	Pipe Diameter (mm)	Pipe Material	Mannings (n)	Pipe Area (m^2)	Pipe Slope (m/m)	Pipe Design Flow (l/s)	Pipe Capacity (l/s)	Spare Capacity (m^3/s)	Percentage of capacity used
A-1	unknown	unknown	70.50	150	Vitrified Clay	0.017	0.0177	0.010	2.80	11.65	8.85	24%
A-2	unknown	unknown	79.50	150	Concrete	0.013	0.0177	0.010	2.80	15.23	12.43	18%
A-3	unknown	unknown	49.00	150	Concrete	0.013	0.0177	0.010	5.91	15.23	9.32	39%
B-1	unknown	unknown	16.40	150	Vitrified Clay	0.017	0.0177	0.010	0.81	11.65	10.84	7%
B-2	unknown	unknown	21.74	300	Vitrified Clay	0.017	0.0707	0.003	0.81	40.50	39.69	2%
B-3	5.21	2.04	88.86	150	Vitrified Clay	0.017	0.0177	0.036	17.38	22.00	4.62	79%
B-4	1.73	1.63	21.40	150	Concrete	0.013	0.0177	0.005	17.38	10.41	-6.97	167%
B-5	1.55	1.51	17.32	225	Concrete	0.013	0.0398	0.002	17.38	21.58	4.20	81%
A-4	1.50	1.43	14.00	225	Concrete	0.013	0.0398	0.005	24.09	31.75	7.66	76%
A-5	unknown	1.29	25.00	225	Vitrified Clay	0.017	0.0398	0.005	24.09	23.03	-1.06	105%
C-1	2.05	1.76	15.64	225	Vitrified Clay	0.017	0.0398	0.019	7.20	46.76	39.55	15%
C-2	1.74	1.61	18.20	225	Vitrified Clay	0.017	0.0398	0.007	7.20	29.02	21.81	25%
C-3	1.57	1.37	18.73	225	Vitrified Clay	0.017	0.0398	0.011	7.20	35.48	28.28	20%
A-6	1.24	1.27	29.57	225	Vitrified Clay	0.017	0.0398	0.005	31.29	23.03	-8.26	136%
A-7	1.18	1.16	25.01	225	Concrete	0.013	0.0398	0.001	49.19	12.70	-36.50	387%
A-8	1.16	1.11	9.30	225	Concrete	0.013	0.0398	0.005	49.19	32.92	-16.27	149%
A-9	1.06	0.80	44.10	225	Concrete	0.013	0.0398	0.006	49.19	34.48	-14.72	143%
D-1	unknown	0.92	32.97	150	Concrete	0.013	0.0177	0.008	4.11	13.19	9.08	31%
A-10	unknown	unknown	50.91	225	Concrete	0.013	0.0398	0.005	66.13	30.12	-36.01	220%
A-11	0.77	0.48	33.53	225	Concrete	0.013	0.0398	0.009	66.13	41.76	-24.37	158%
A-12	0.48	0.51	34.03	225	Concrete	0.013	0.0398	0.005	72.41	30.12	-42.29	240%
E-1	2.08	1.00	30.09	225	Concrete	0.013	0.0398	0.036	4.68	85.07	80.38	6%
E-2	0.86	0.59	46.56	225	Concrete	0.013	0.0398	0.006	10.97	34.19	23.23	32%
E-3	0.55	0.52	14.41	225	Concrete	0.013	0.0398	0.002	10.97	20.49	9.52	54%
A-13	0.48	0.40	16.99	225	Concrete	0.013	0.0398	0.005	83.38	30.81	-52.57	271%
A-14	unknown	unknown	53.67	225	Vitrified Clay	0.017	0.0398	0.005	83.38	23.03	-60.35	362%
A-15	0.19	0.02	45.14	300	Vitrified Clay	0.017	0.0707	0.004	90.93	45.38	-45.55	200%

+ Links

Pipe catchment plan can be found here:	P:\1016043\1016043.2000\4. Civil Infrastructure\3. Updated S92 responses
Link to WW connection locations pdf provided by NDY:	P:\1016043\1016043.2000\SourceMaterial\NDY\Revised Connections\TT civil connections NDY MARKUP 22092025_.pdf"

Dowtown West summary of connection locations and estimated PWWF:

	Location	Estimated PWWF (l/s)	Assumed Connection ID	GIS ID
Connection 1	Custom St West	17.90	A-7	852198
Connection 2	Lower Hobson St	12.69	B-3	852189

Post-development Pipe Capacity

🟧 Assumed values ⬜ Calculated cell 🟨 Input cell ⬛ Key results

Project:	Wastewater Capacity - Post Development	By:	DAHA	Date:	14/08/2023
Work Package:	Infrastructure Assessment	Checked:	SL	Date:	18/08/2023
Title:	Downtown Carpark	Rev 1:	AFRE	Date:	24/01/2025
Location:	Auckland	Rev 2:	EMHJ	Date:	29/09/2025
Stage #:	FTAA Consent Design	Rev 2 Checked:	AFRE	Date:	6/10/2025

+ Assumptions

1. The Mannings formula specified in E1 Section 3.2 of the Building Code has been used to estimate pipe flow assuming 'full flow' pipe capacity.
2. Pipes with no IL information have adopted a minimum grades for self cleansing in accordance with Watercare COP.
3. Pipes with a negative slope (highlighted in red), assumed a positive pipe slope at minimum self cleansing grades per WSL COP.
4. Pipe levels are based on Watercare GIS information where available - pipes marked "unknown" no information provided on GIS.
5. Connection locations based on the PDF provided by NDY "TT civil connections NDY MARKUP 22092025_.pdf"

+ Revisions:

Rev 1 - Updated Commercial bay flows to A-15. Updated US invert and DS invert based on Watercare GIS as at 30/01/2025.

Rev 2 - Connection location for Connection 2 updated based on location provided by Building Services Engineer (NDY) "TT civil connections NDY MARKUP 22092025_.pdf"

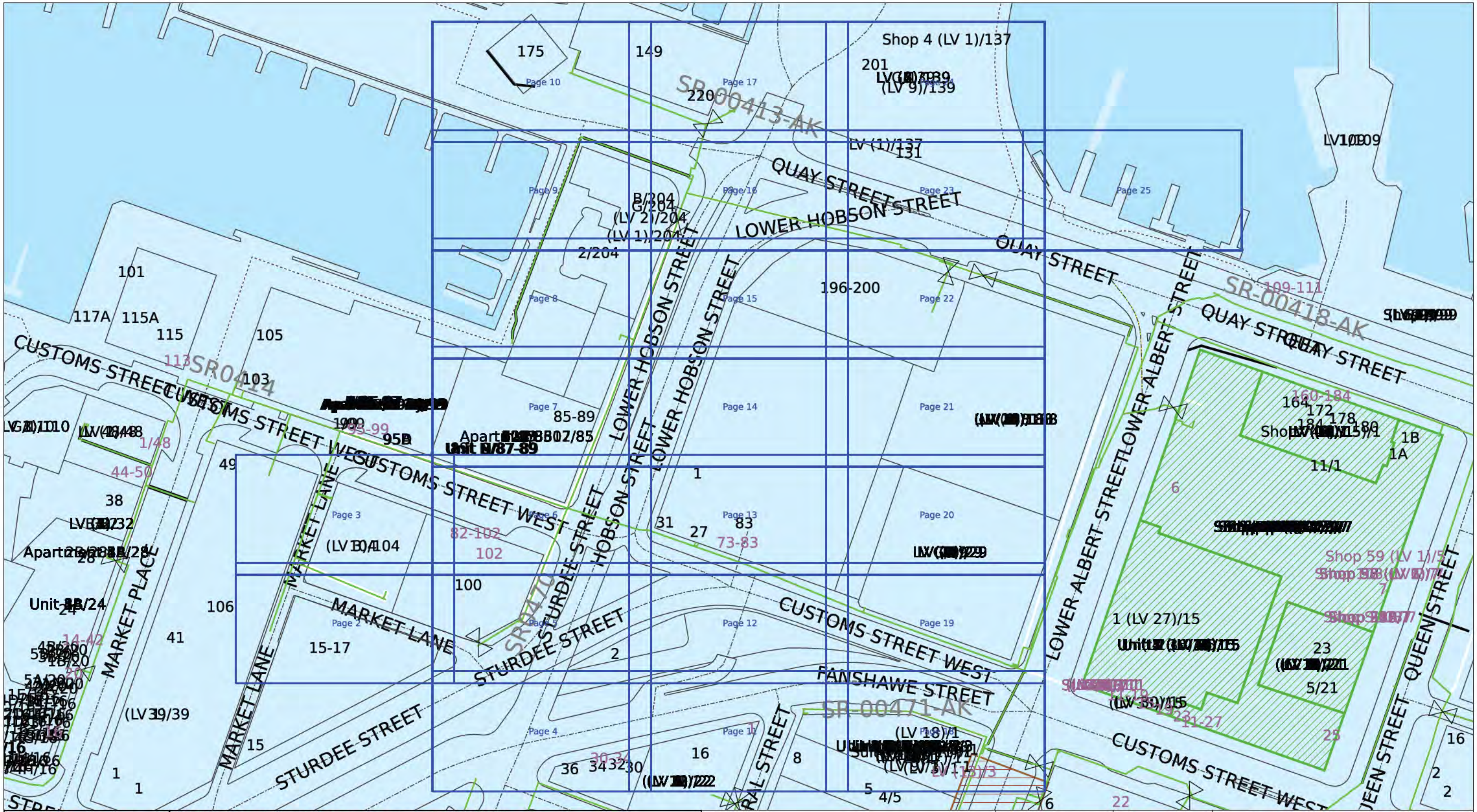
+ Design Calculations

Pipe ID	US Invert Level (m)	DS Invert Level (m)	Length of Pipe (m)	Pipe Diameter (mm)	Pipe Material	Mannings (n)	Pipe Area (m^2)	Pipe Slope (m/m)	Pipe Design Flow (l/s)	Pipe Capacity (l/s)	Spare Capacity (m^3/s)	Percentage of capacity used
852214	unknown	unknown	70.50	150	Vitrified Clay	0.017	0.0177	0.010	2.80	11.65	8.85	24%
852212	unknown	unknown	79.50	150	Concrete	0.013	0.0177	0.010	2.80	15.23	12.43	18%
852191	unknown	unknown	49.00	150	Concrete	0.013	0.0177	0.010	5.91	15.23	9.32	39%
852206	unknown	unknown	16.40	150	Vitrified Clay	0.017	0.0177	0.010	0.81	11.65	10.84	7%
852190	unknown	unknown	21.74	300	Vitrified Clay	0.017	0.0707	0.003	0.81	40.50	39.69	2%
851983	5.21	2.04	88.86	150	Vitrified Clay	0.017	0.0177	0.036	17.38	22.00	4.62	79%
852203	1.73	1.63	21.40	150	Concrete	0.013	0.0177	0.005	17.38	10.41	-6.97	167%
852189	1.55	1.51	17.32	225	Concrete	0.013	0.0398	0.002	17.38	21.58	4.20	81%
844068	1.50	1.43	14.00	225	Concrete	0.013	0.0398	0.005	24.09	31.75	7.66	76%
852205	unknown	1.29	25.00	225	Vitrified Clay	0.017	0.0398	0.005	24.09	23.03	-1.06	105%
832731	2.05	1.76	15.64	225	Vitrified Clay	0.017	0.0398	0.019	7.20	46.76	39.55	15%
837653	1.74	1.61	18.20	225	Vitrified Clay	0.017	0.0398	0.007	7.20	29.02	21.81	25%
852204	1.57	1.37	18.73	225	Vitrified Clay	0.017	0.0398	0.011	7.20	35.48	28.28	20%
832730	1.24	1.27	29.57	225	Vitrified Clay	0.017	0.0398	0.005	31.29	23.03	-8.26	136%
852198	1.18	1.16	25.01	225	Concrete	0.013	0.0398	0.001	49.19	12.70	-36.50	387%
852199	1.16	1.11	9.30	225	Concrete	0.013	0.0398	0.005	49.19	32.92	-16.27	149%
832664	1.06	0.80	44.10	225	Concrete	0.013	0.0398	0.006	49.19	34.48	-14.72	143%
832663	Unknown	0.92	32.97	150	Concrete	0.013	0.0177	0.008	4.11	13.19	9.08	31%
844035	unknown	unknown	50.91	225	Concrete	0.013	0.0398	0.005	66.13	30.12	-36.01	220%
844036	0.77	0.48	33.53	225	Concrete	0.013	0.0398	0.009	66.13	41.76	-24.37	158%
844030	0.48	0.51	34.03	225	Concrete	0.013	0.0398	0.005	72.41	30.12	-42.29	240%
851962	2.08	1.00	30.09	225	Concrete	0.013	0.0398	0.036	4.68	85.07	80.38	6%
844029	0.86	0.59	46.56	225	Concrete	0.013	0.0398	0.006	10.97	34.19	23.23	32%
851972	0.55	0.52	14.41	225	Concrete	0.013	0.0398	0.002	10.97	20.49	9.52	54%
851971	0.48	0.40	16.99	225	Concrete	0.013	0.0398	0.005	83.38	30.81	-52.57	271%
837564	0.00	0.00	53.67	225	Vitrified Clay	0.017	0.0398	0.005	83.38	23.03	-60.35	362%
851842	0.19	0.02	45.14	300	Vitrified Clay	0.017	0.0707	0.004	90.93	45.38	-45.55	200%

+ Links

Pipe catchment plan can be found here:	P:\1016043\1016043.2000\4. Civil Infrastructure\3. Updated S92 responses

Appendix D Dry Services



vector

WARNING! Special conditions apply for high pressure gas pipelines (HP Pipe, IP20, IP10, MP7)

A permit/consent is required for any excavation within 2 metres of this pipeline. A MINIMUM of 3 working days notice is required when applying for a permit/consent. Refer to attached covering letter for additional information.

DISCLAIMER: Whilst care has been taken in the preparation of this plan, Vector Limited and its subsidiaries do not accept any liability for its accuracy and completeness and do not make any representation or warranty, express or implied, in relation to the same. These drawings are not to scale and may not show customer connections or obsolete lines. Works may have occurred in the vicinity which may not be represented in this plan at the date of issue. The information contained in this plan is supplied for reference purposes only; actual dimensions and locations on site may differ from those indicated. Without limiting the foregoing, where plans are more than 28 days old they should not be used; a new plan should be requested from Vector.

Vector reminds you of your responsibilities under the Health and Safety at Work Act 2015, whereby you must establish the location of underground services before commencing excavation.

If you hit an electricity cable or overhead line please call us immediately on 0508 VECTOR (0508 832 867). If you hit any gas pipeline call the Fire Service first on 111. If you hit a gas distribution pipe in the Auckland area call us on 0800 764 764. If you hit a gas pipeline in the rest of the North Island call FIRST GAS on 0800 800 393. If you hit a gas transmission pipeline call FIRST GAS on 0800 734 567. If you hit a communications cable (all areas) call us immediately on 0800 826 436 (select option 1).

Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197176
Request for:	No associated viewport
Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 1 of 25

PIPE COLOUR BY PRESSURE

- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

⚠ WARNING! Live service within this property.

WORK MANAGEMENT

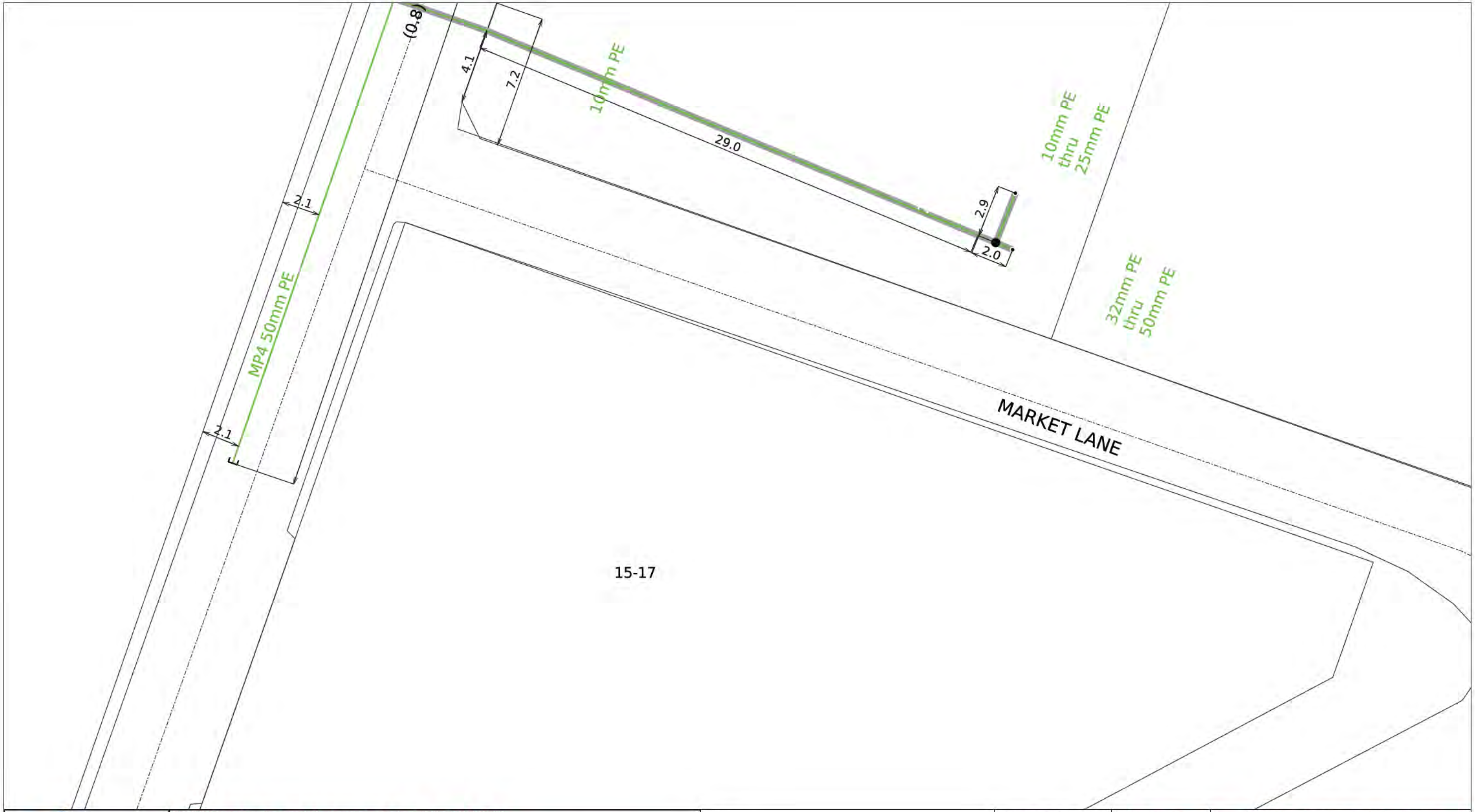
- ▤ In Progress
- ▤ Planned
- ▤ Future Planned

🟥 WARNING! Indication only additional data is required

Transmission Pipeline (ex - NGC)
Please contact Vector - New Plymouth on 0800 734 567 for On-Site Location and Work Permits. A minimum of 48 hours notice is required.

OTHER GAS FEATURES

- Fibre Optic
- ⧓ Closed Valve
- ▶ Gate
- ● Riser
- ⋈ Open Valve
- PRS
- Service Regulator
- ▷ Reducer



vector

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Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197176
Request for:	Scale: 1:200
Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 2 of 25

PIPE COLOUR BY PRESSURE

- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

WARNING!
Live service
within this
property.

WORK MANAGEMENT

- In Progress
- Planned
- Future Planned

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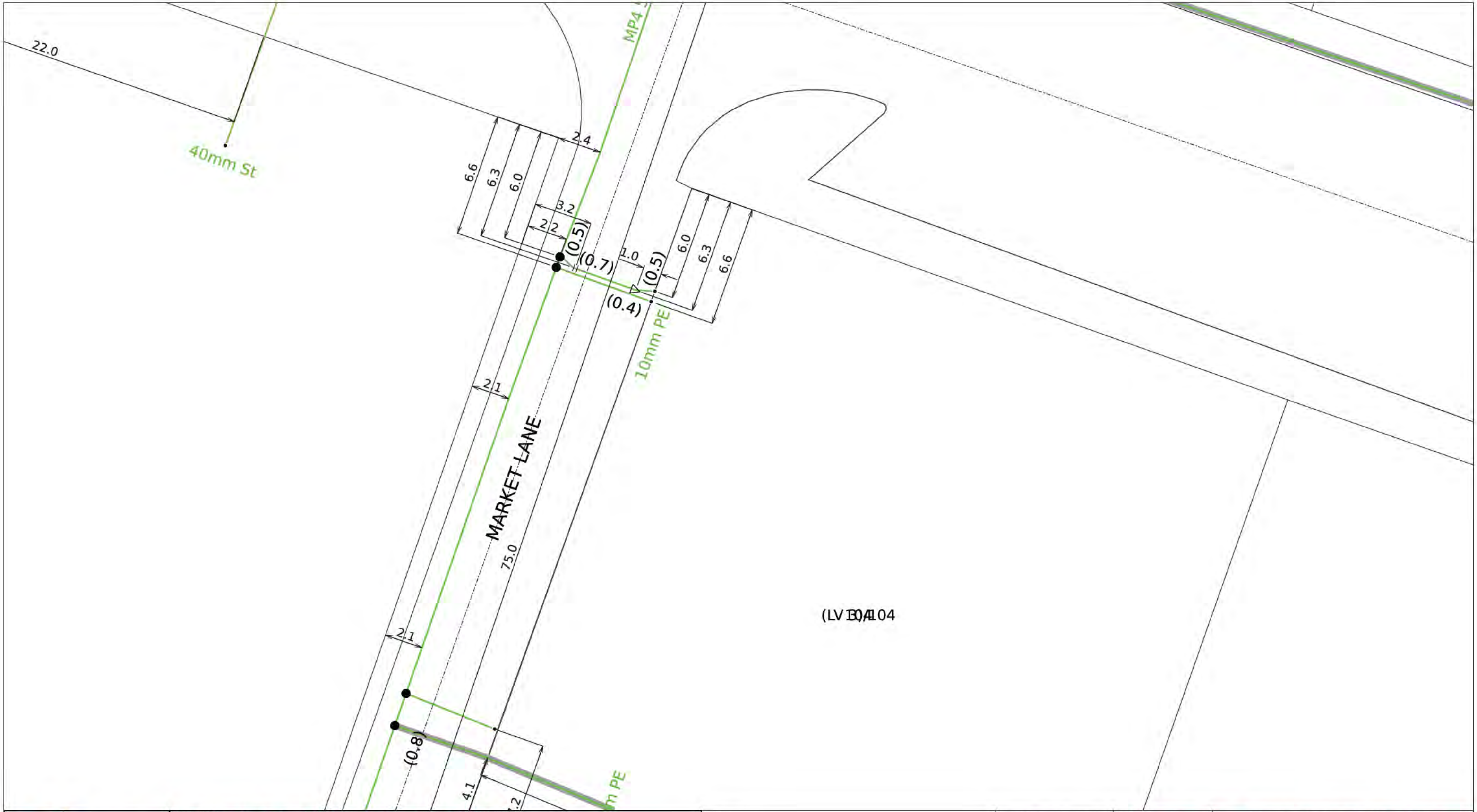
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer



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PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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WORK MANAGEMENT
- ▤ In Progress
- ▤ Planned
- ▤ Future Planned

OTHER GAS FEATURES
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- ⧓ Closed Valve
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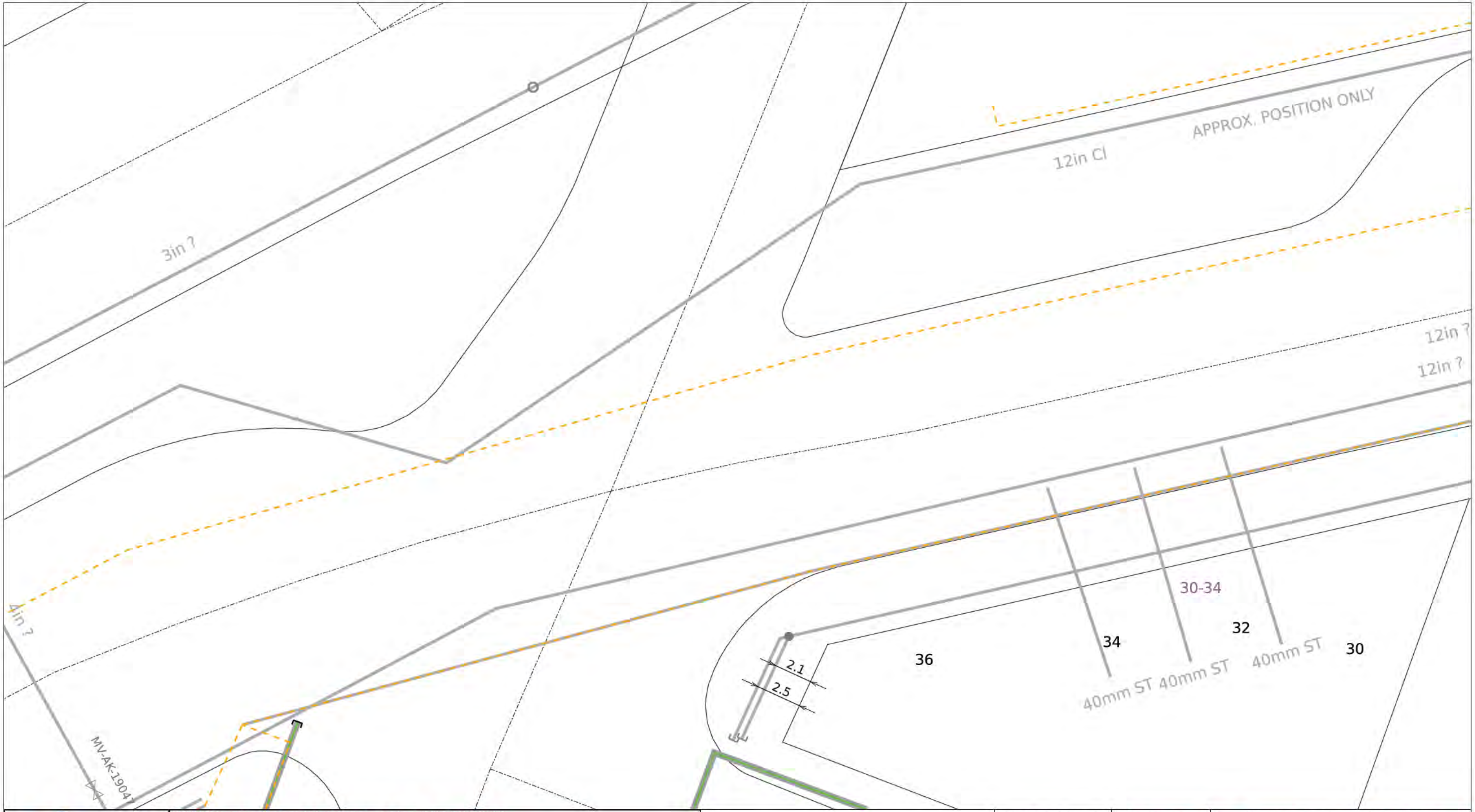

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PIPE COLOUR BY PRESSURE

- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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WORK MANAGEMENT

- In Progress
- Planned
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OTHER GAS FEATURES

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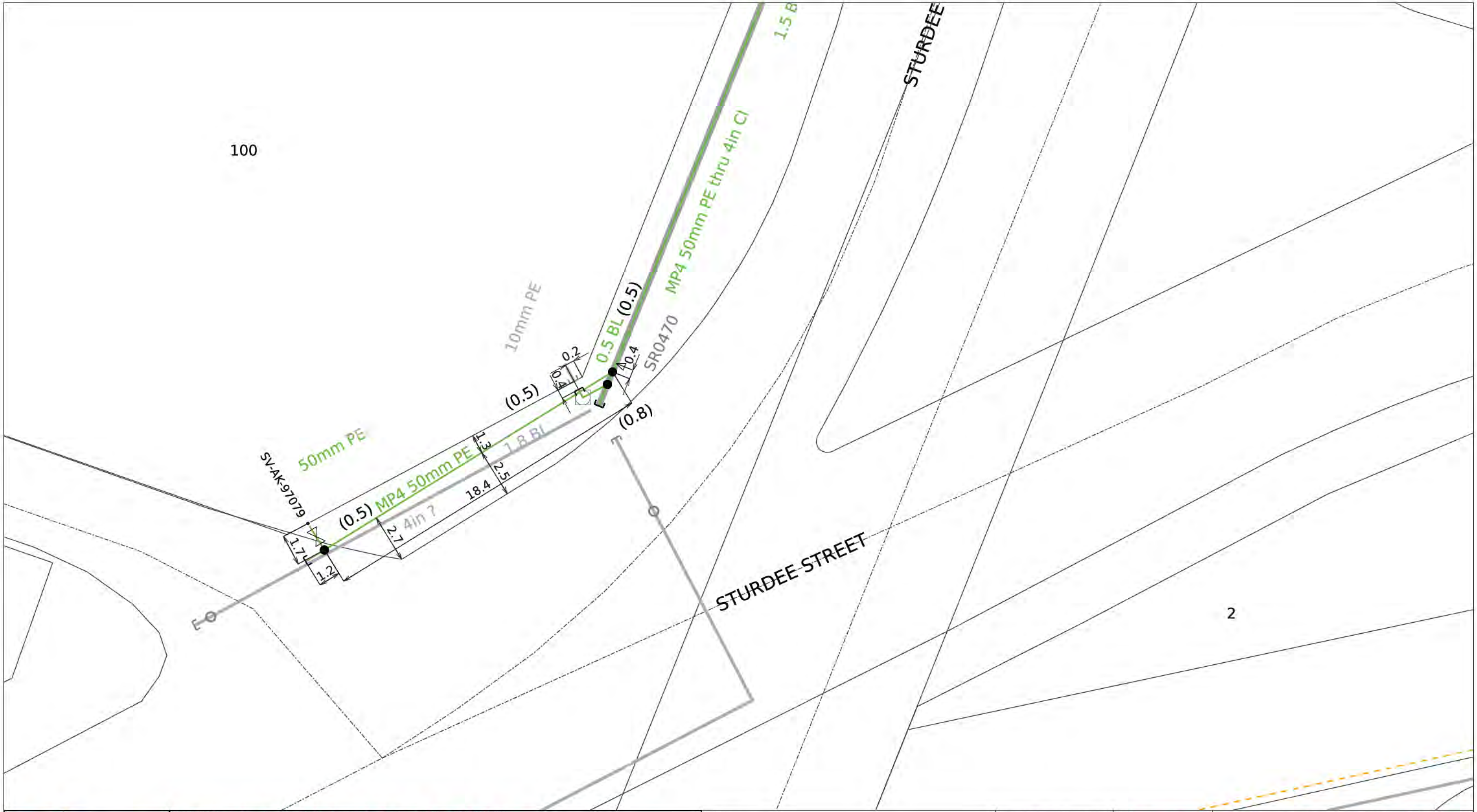

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PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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WORK MANAGEMENT
- ▤ In Progress
- ▤ Planned
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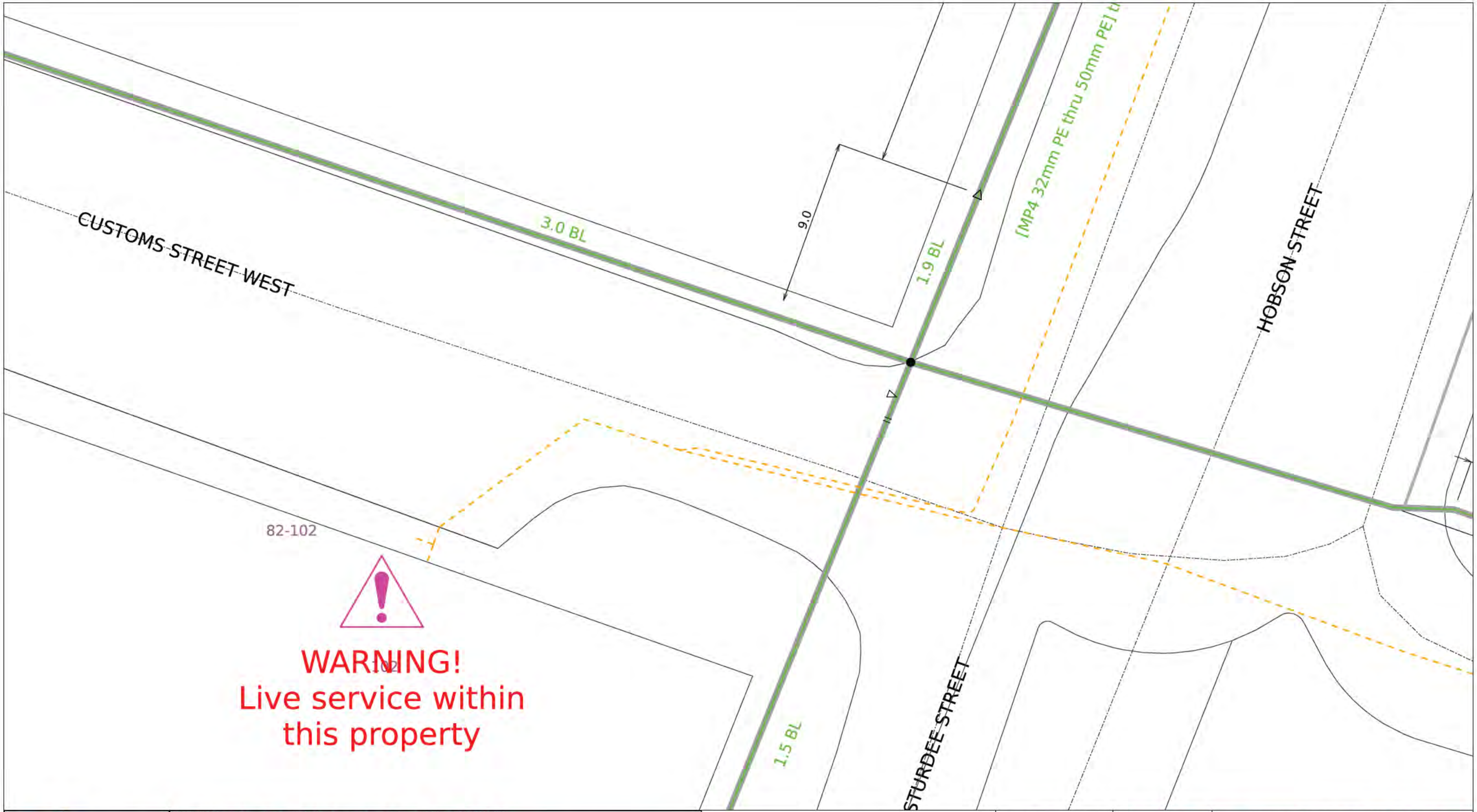

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PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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WORK MANAGEMENT
- In Progress
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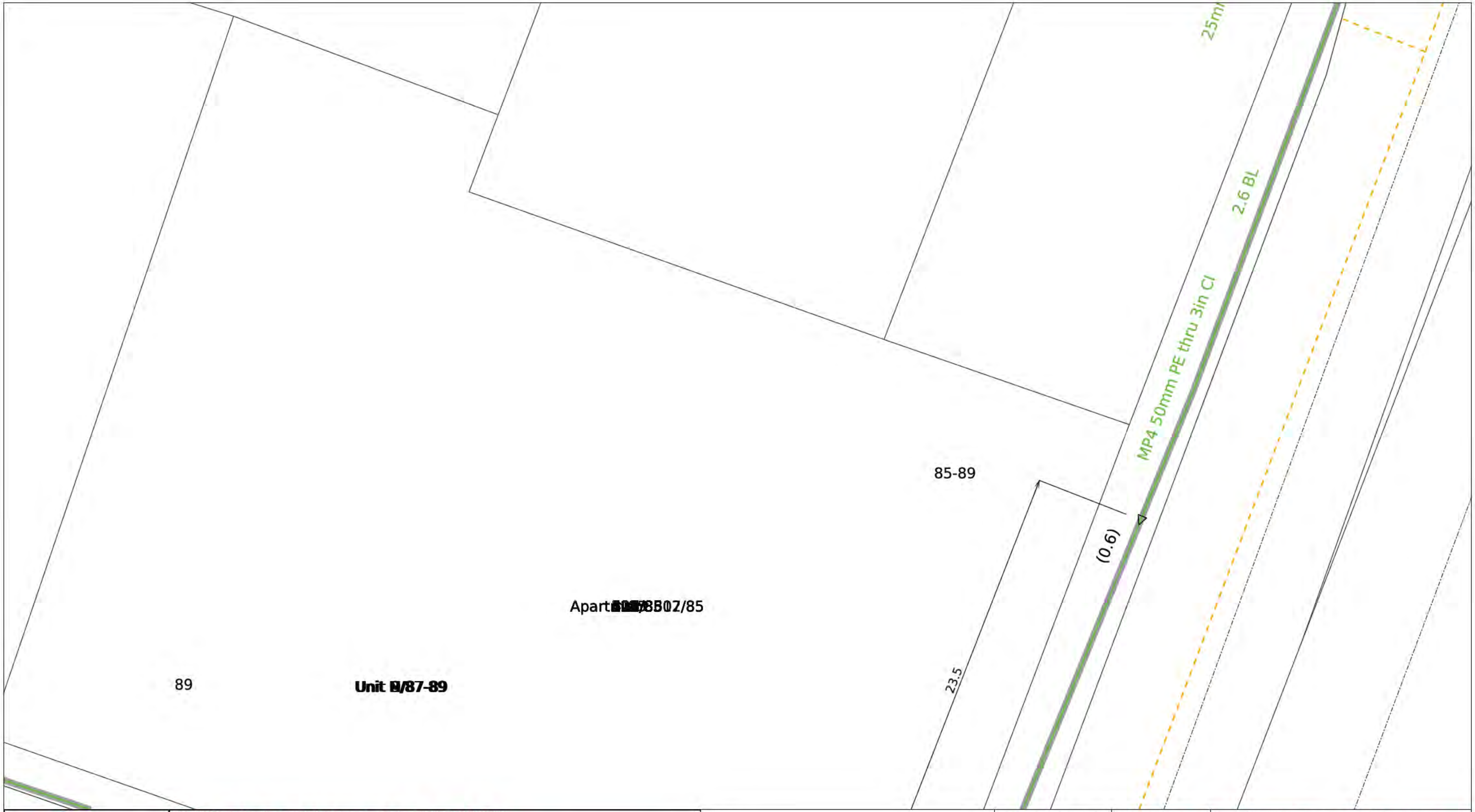

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PIPE COLOUR BY PRESSURE

- LP Pipe
- LPG Pipe
- MP1 Pipe
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WORK MANAGEMENT

- ▤ In Progress
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PIPE COLOUR BY PRESSURE
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- LPG Pipe
- MP1 Pipe
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WORK MANAGEMENT
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PIPE COLOUR BY PRESSURE
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- MP1 Pipe
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WORK MANAGEMENT
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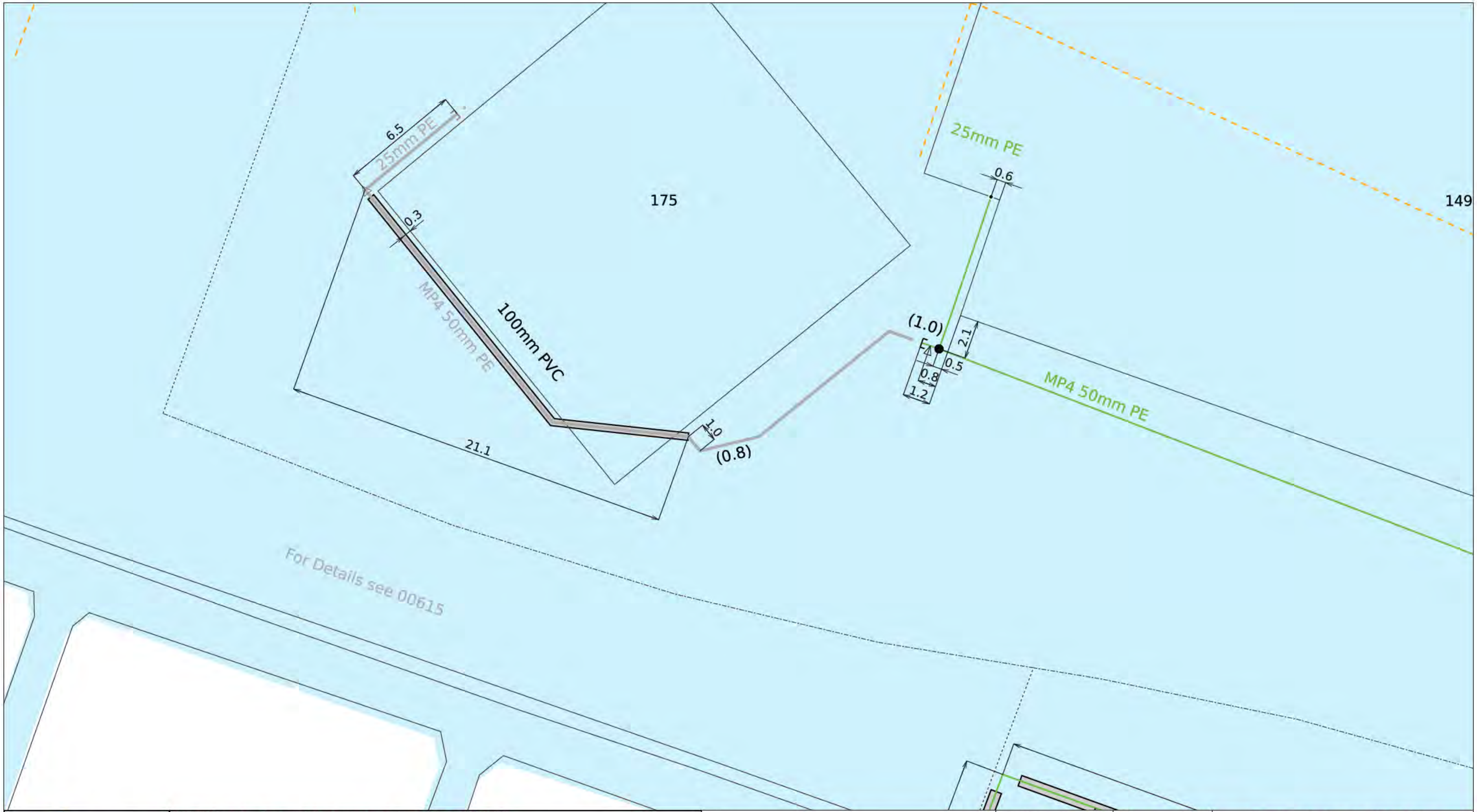

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PIPE COLOUR BY PRESSURE
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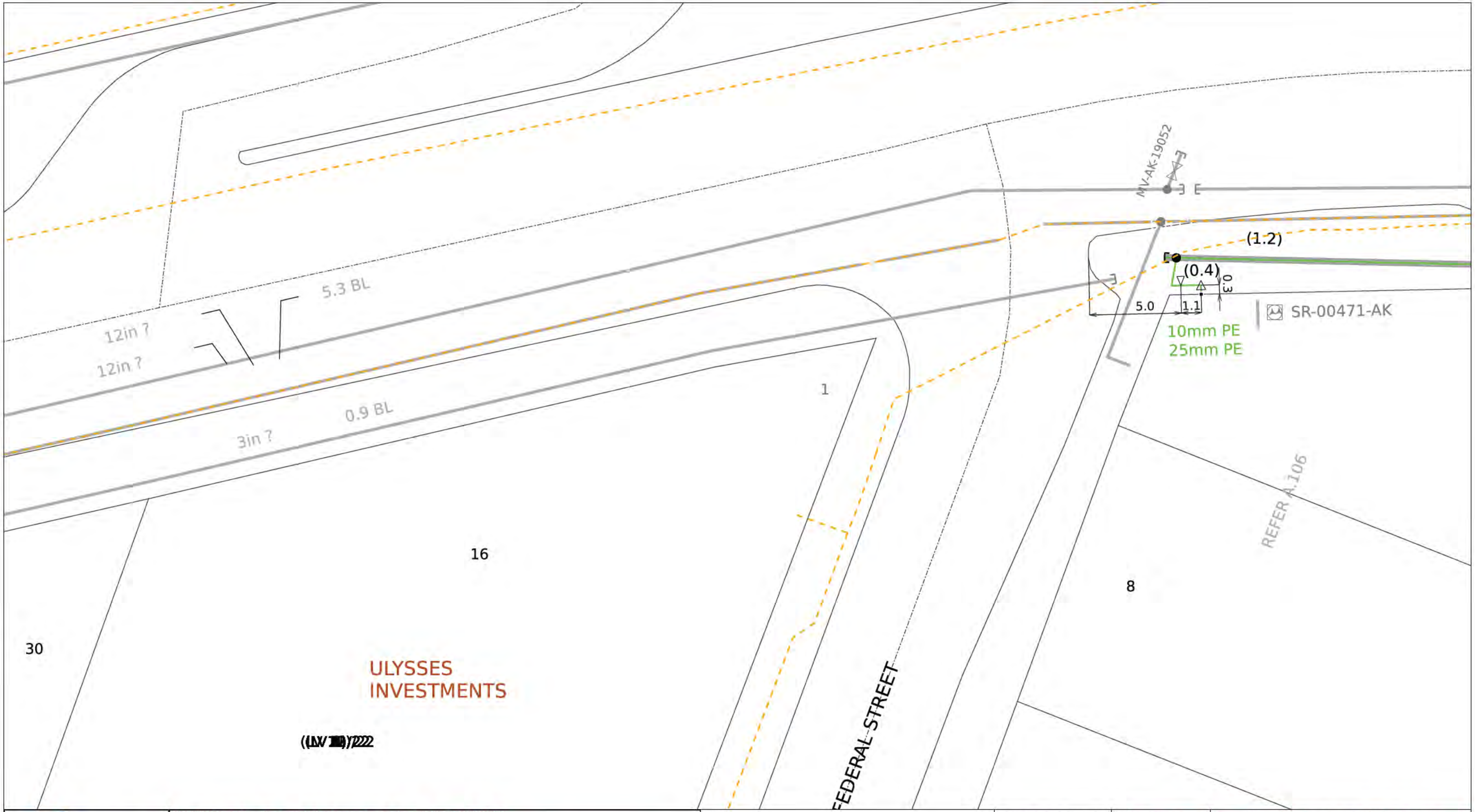

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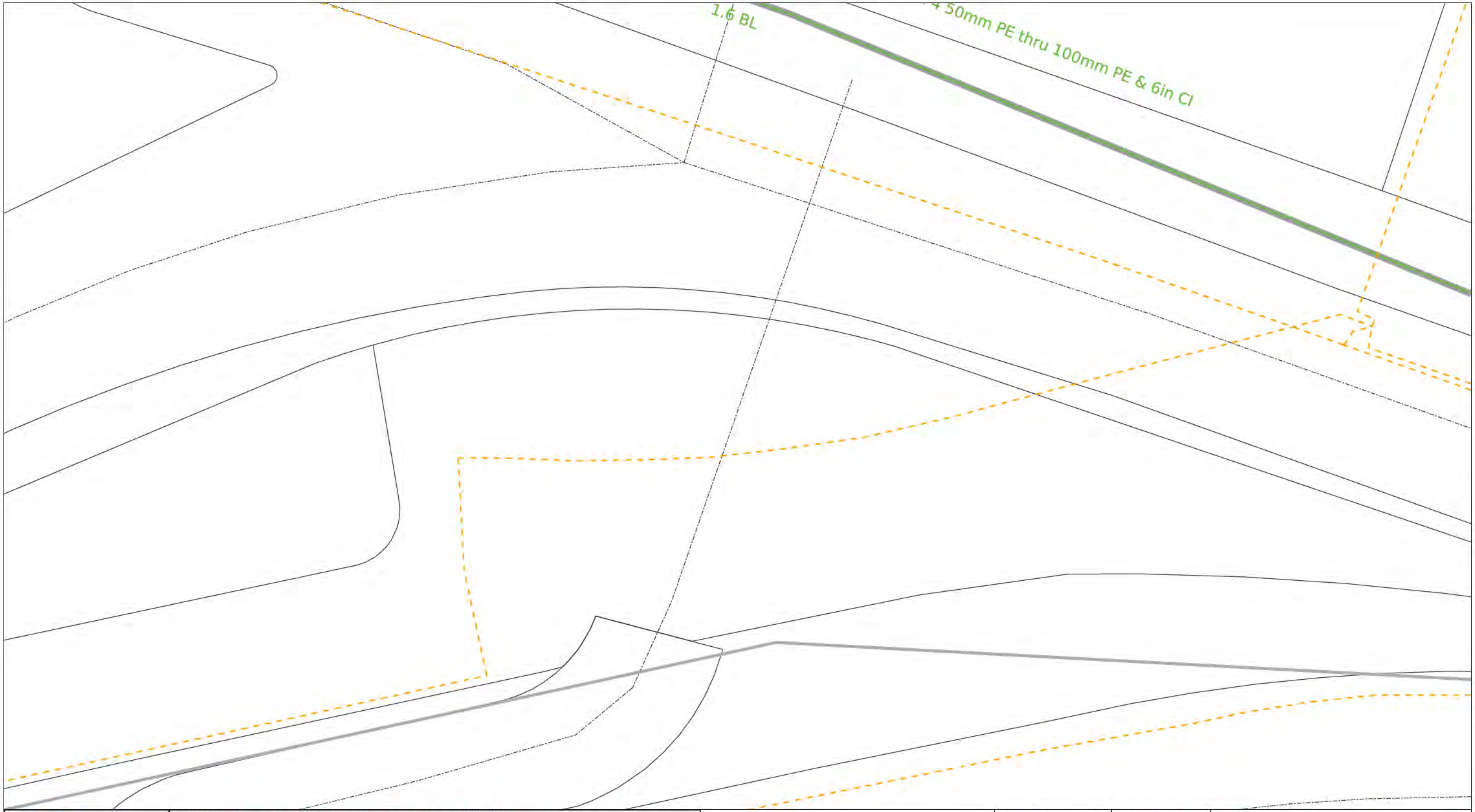

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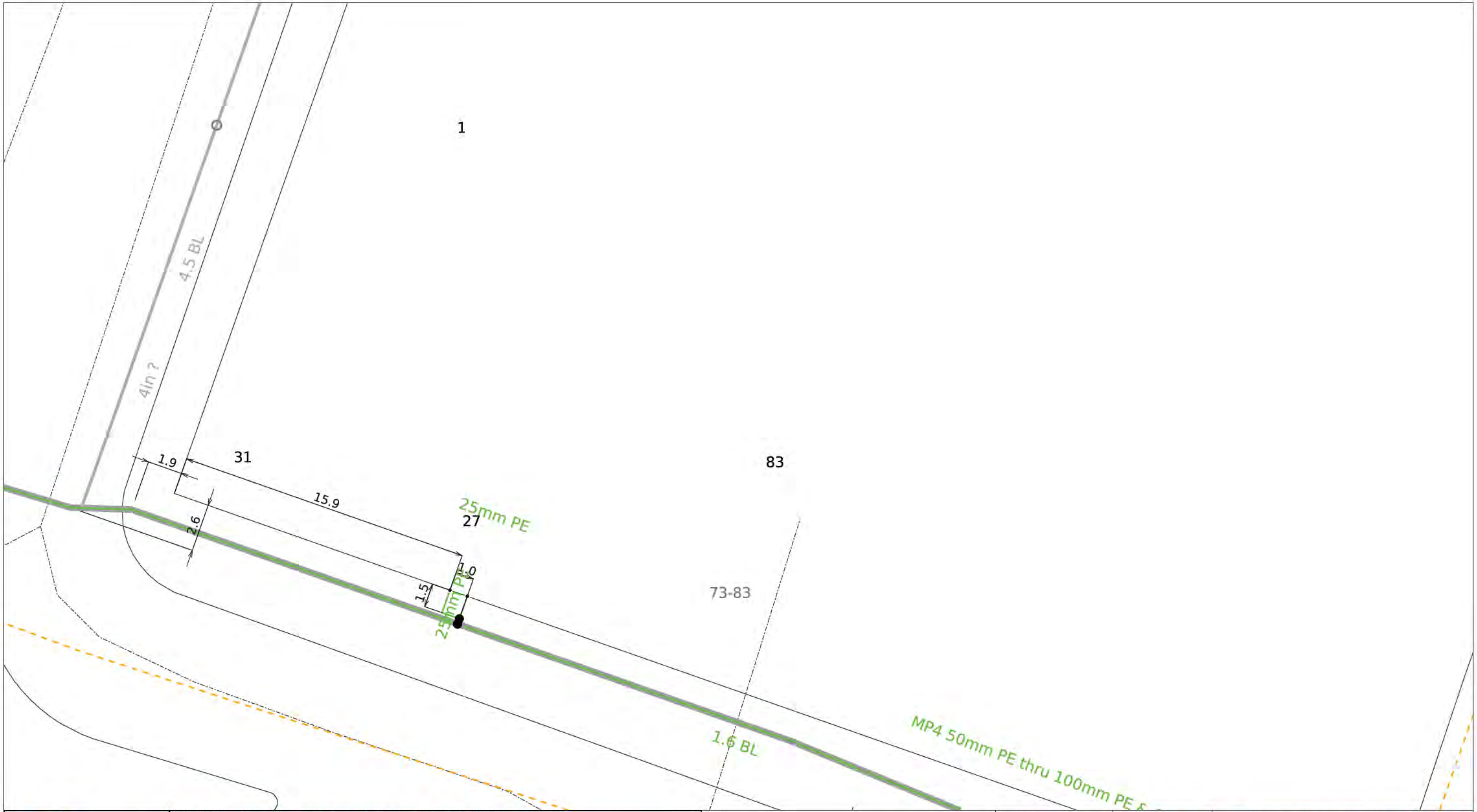
- Service Regulator
- ▷ Reducer



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Title:

Request Title:	
Company Name:	
Usage:	Request ID: 11197176
Request for:	Scale: 1:200
Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 13 of 25

PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

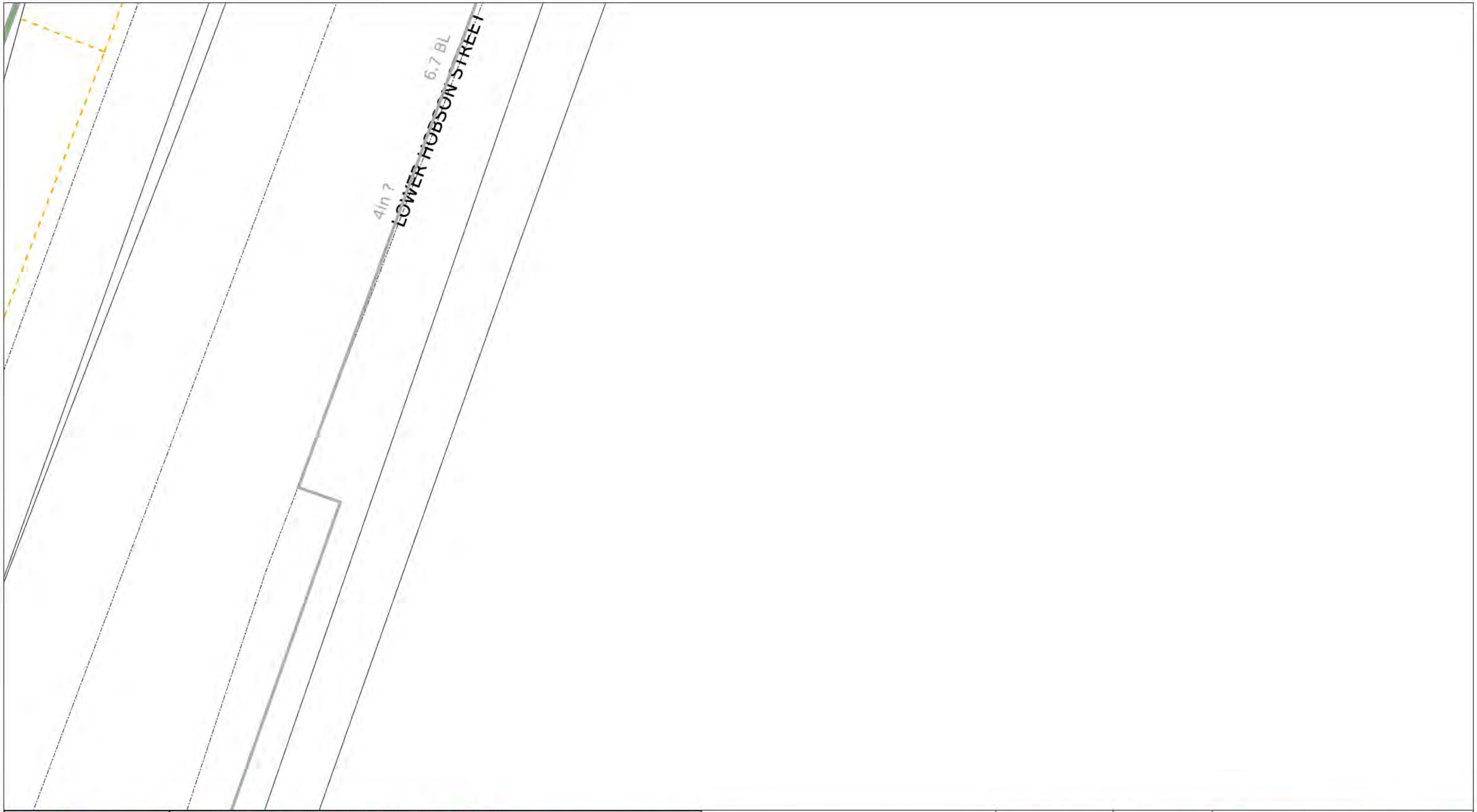
WARNING! Live service within this property.

🟥 WARNING! Indication only additional data is required

Transmission Pipeline (ex - NGC)
Please contact Vector - New Plymouth on 0800 734 567 for On-Site Location and Work Permits. A minimum of 48 hours notice is required.

WORK MANAGEMENT
- In Progress
- Planned
- Future Planned

OTHER GAS FEATURES
- Fibre Optic
- Closed Valve
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer



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Customer Contact:	Printed by:
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PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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WORK MANAGEMENT
- ▤ In Progress
- ▤ Planned
- ▤ Future Planned

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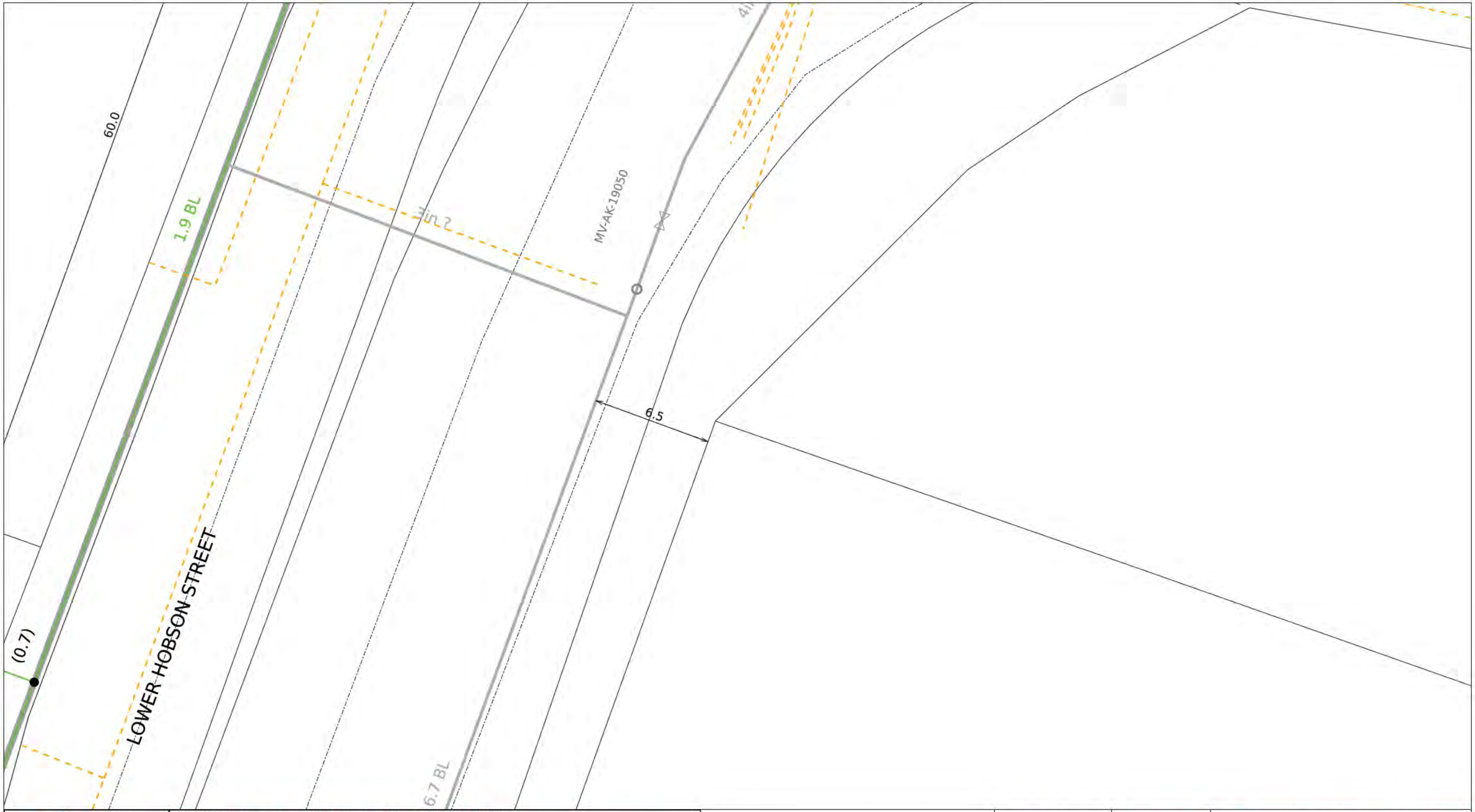
OTHER GAS FEATURES
- Fibre Optic
- ⋈ Closed Valve
- ▶ Gate
- ● Riser
- ⊠ Open Valve
- ■ PRS
- ○ Service Regulator
- ▷ Reducer



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Customer Contact:	Printed by:
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Client Reference:	Page: 15 of 25

PIPE COLOUR BY PRESSURE

🟪	LP Pipe
▬	LPG Pipe
🟩	MP1 Pipe
🟩	MP2 Pipe
🟩	MP4 Pipe
🟦	MP7 Pipe
🟦	IP10 Pipe
🟦	IP20 Pipe
🟥	HP Pipe
▬	0 kPa

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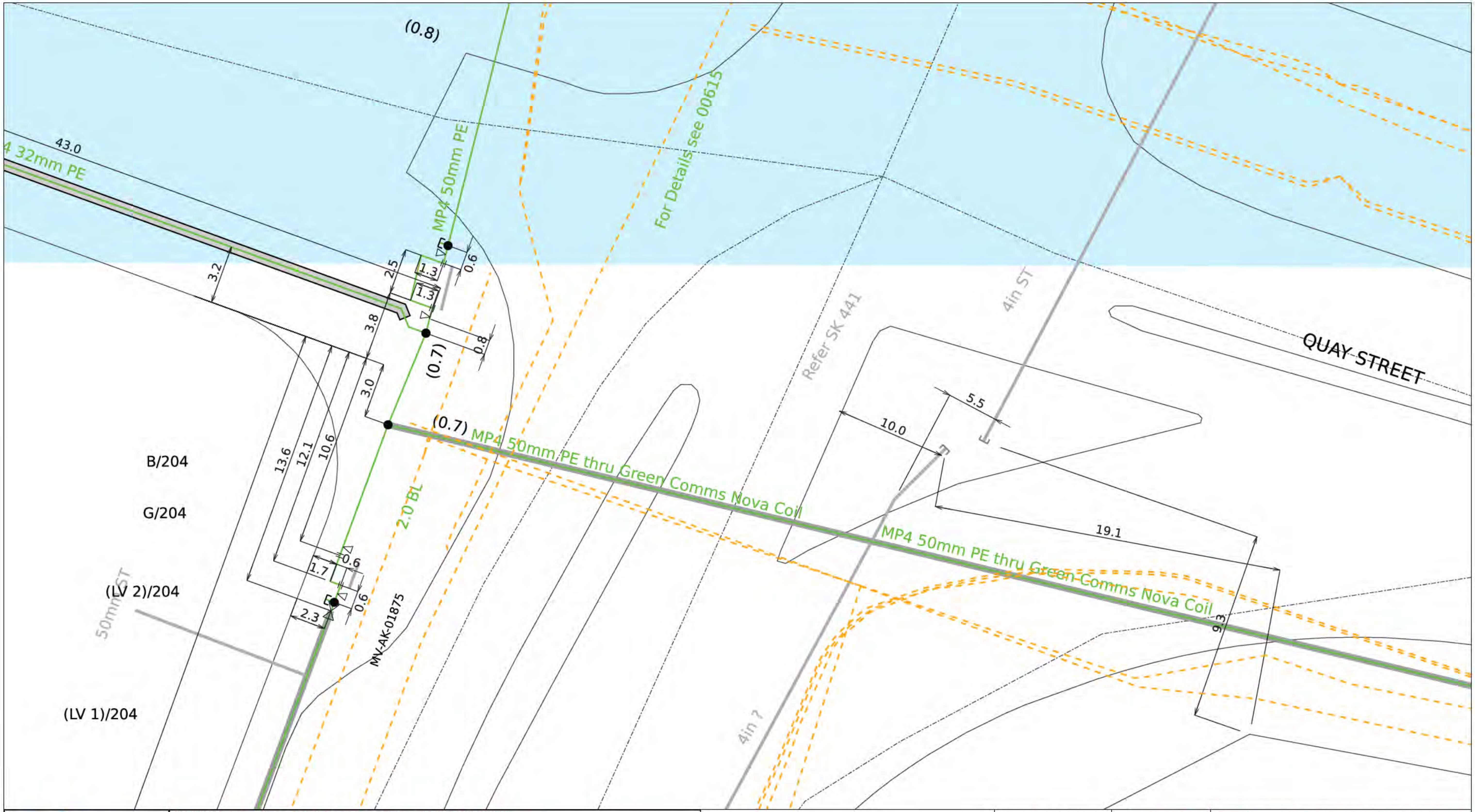
WORK MANAGEMENT

▤	In Progress
▤	Planned
▤	Future Planned

OTHER GAS FEATURES

— — —	Fibre Optic
⧓	Closed Valve
▶	Gate
●	Riser
⊠	Open Valve
■	PRS
○	Service Regulator
▷	Reducer



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Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 16 of 25

PIPE COLOUR BY PRESSURE
LP Pipe
LPG Pipe
MP1 Pipe
MP2 Pipe
MP4 Pipe
MP7 Pipe
IP10 Pipe
IP20 Pipe
HP Pipe
0 kPa

WARNING!
Live service within this property.

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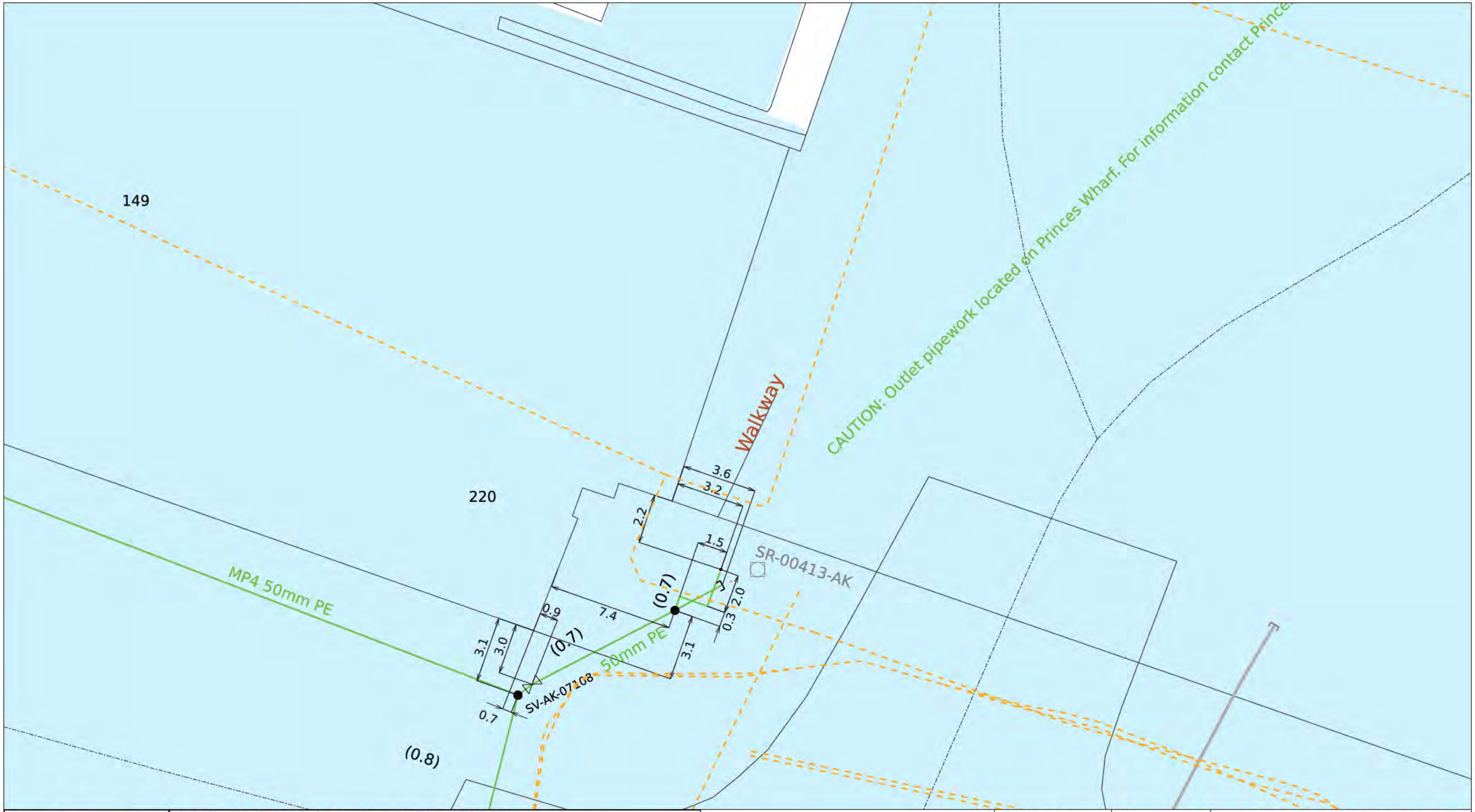
WORK MANAGEMENT
In Progress
Planned
Future Planned

OTHER GAS FEATURES
Fibre Optic
Closed Valve
Gate
Riser
Open Valve
PRS
Service Regulator
Reducer



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Client Reference:	Page: 17 of 25

PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

⚠ WARNING! Live service within this property.

WORK MANAGEMENT
- In Progress
- Planned
- Future Planned

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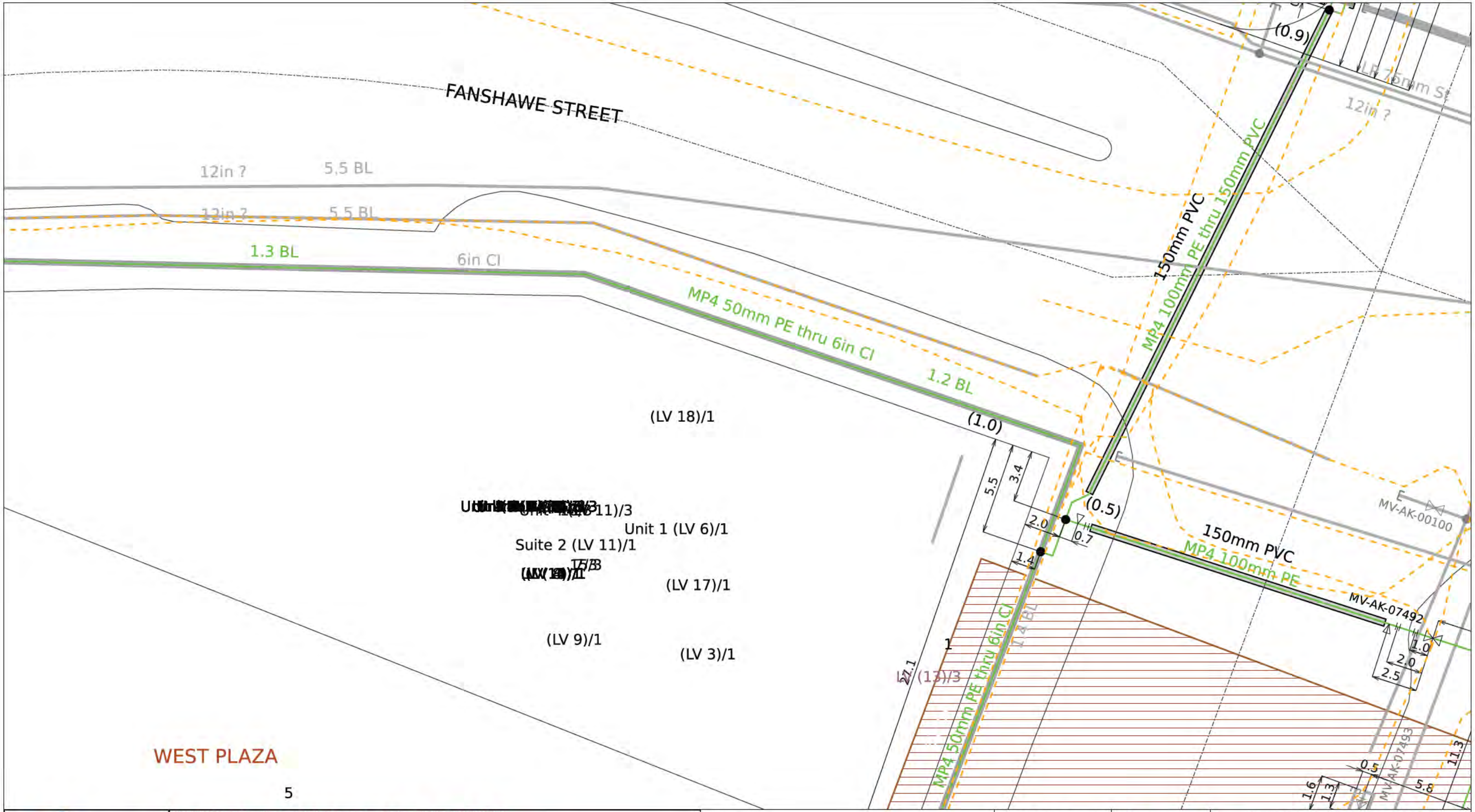
OTHER GAS FEATURES
- Fibre Optic
- Closed Valve
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer



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Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 18 of 25

PIPE COLOUR BY PRESSURE

- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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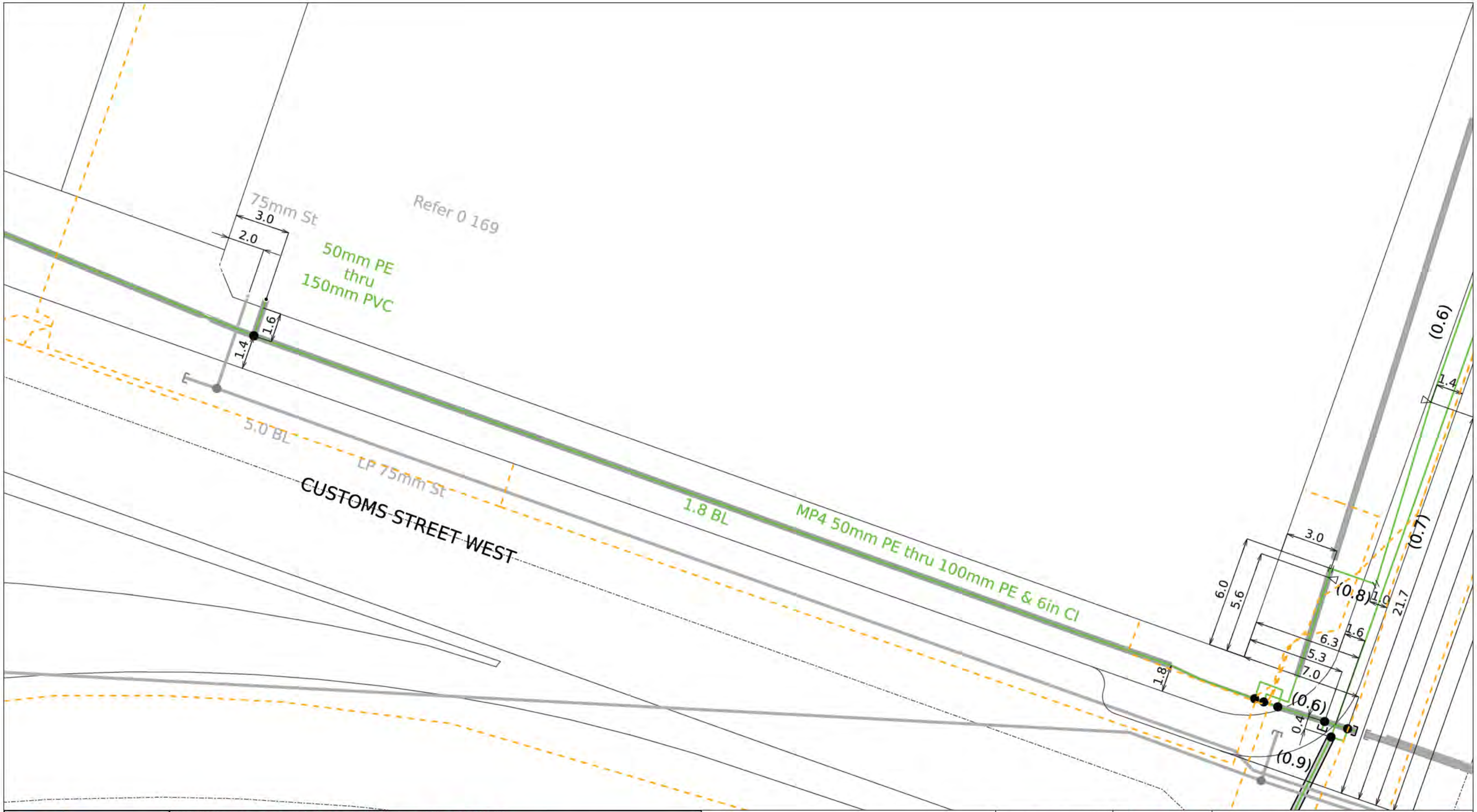
WORK MANAGEMENT

- In Progress
- Planned
- Future Planned

OTHER GAS FEATURES

- Fibre Optic
- Closed Valve
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer



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Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 19 of 25

PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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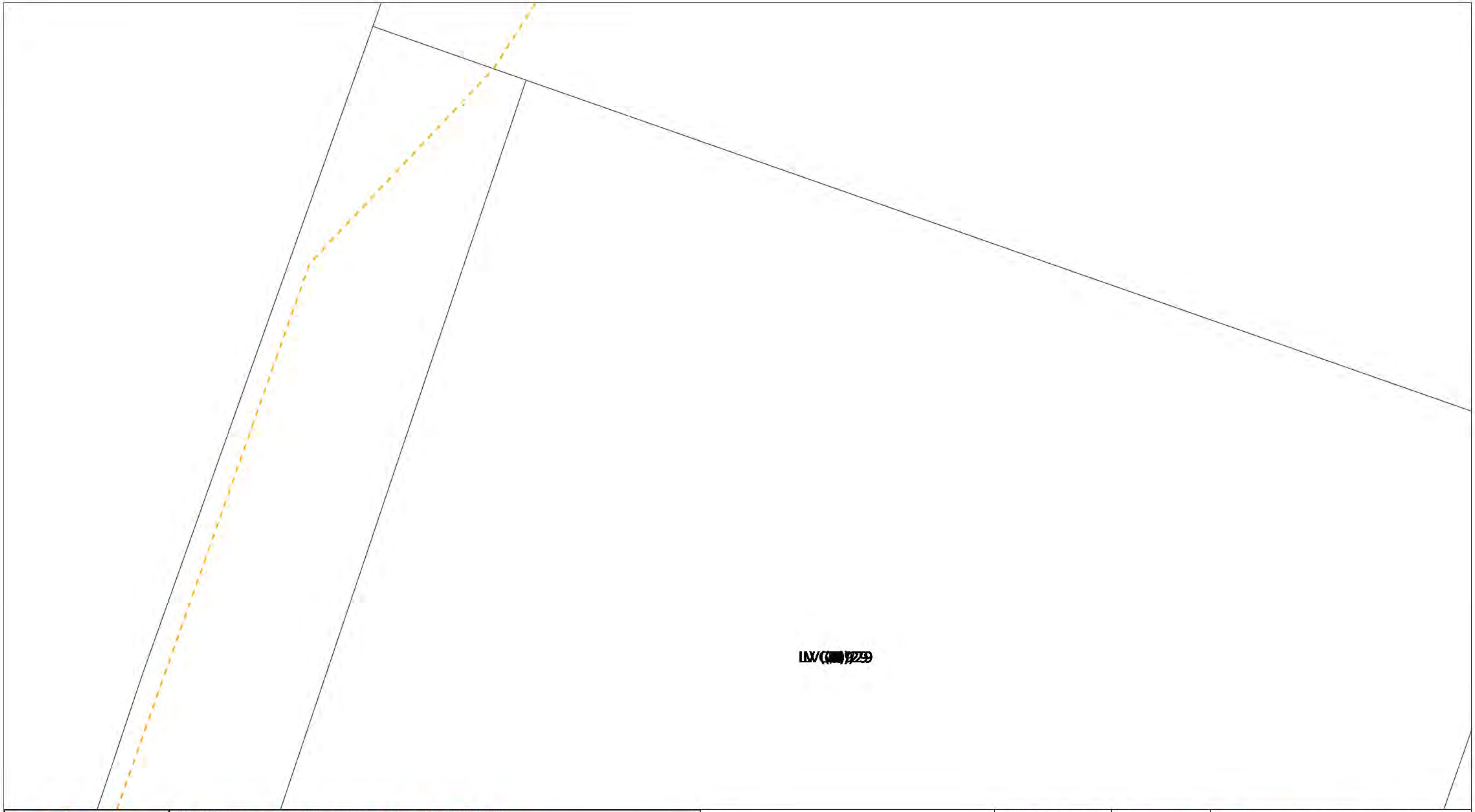
WORK MANAGEMENT
- ▤ In Progress
- ▤ Planned
- ▤ Future Planned

OTHER GAS FEATURES
- Fibre Optic
- ⧓ Closed Valve
- ▶ Gate
- ● Riser
- ⧖ Open Valve
- ■ PRS
- ○ Service Regulator
- ▷ Reducer



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PIPE COLOUR BY PRESSURE

- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

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WORK MANAGEMENT

- In Progress
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OTHER GAS FEATURES

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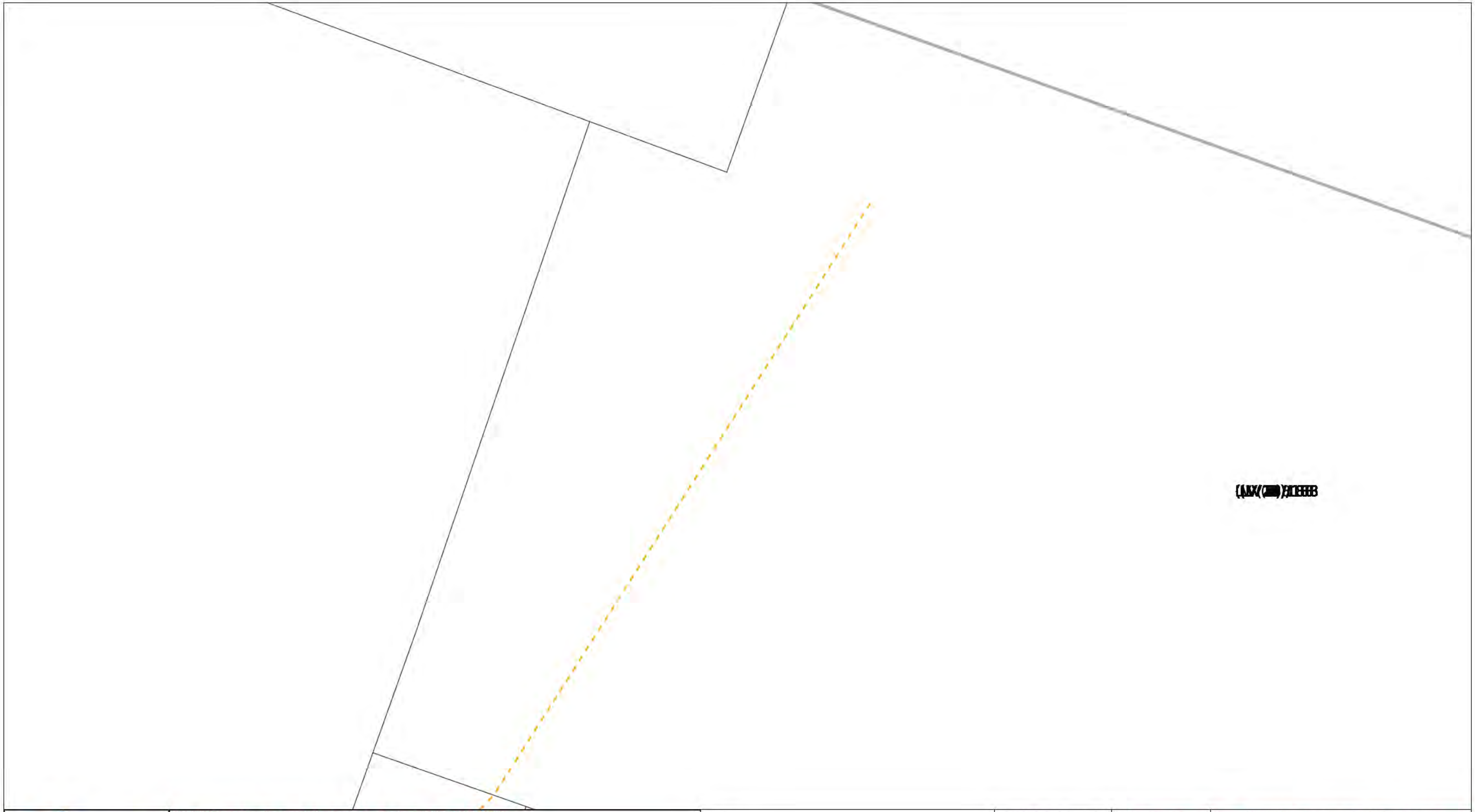
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer



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PIPE COLOUR BY PRESSURE
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- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
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WORK MANAGEMENT
- In Progress
- Planned
- Future Planned

OTHER GAS FEATURES
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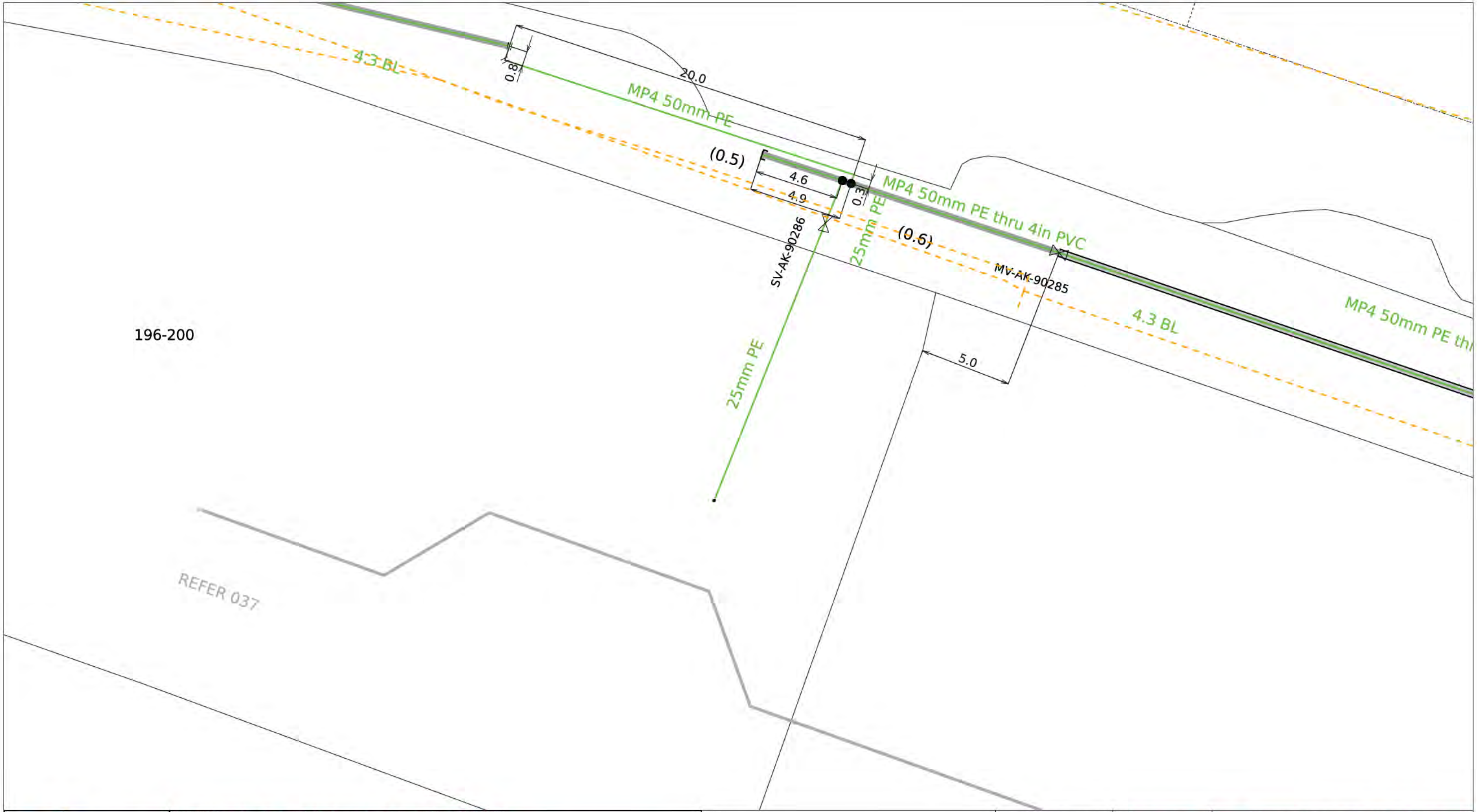

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PIPE COLOUR BY PRESSURE
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- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
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WARNING!
Live service
within this
property.

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WORK MANAGEMENT
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OTHER GAS FEATURES
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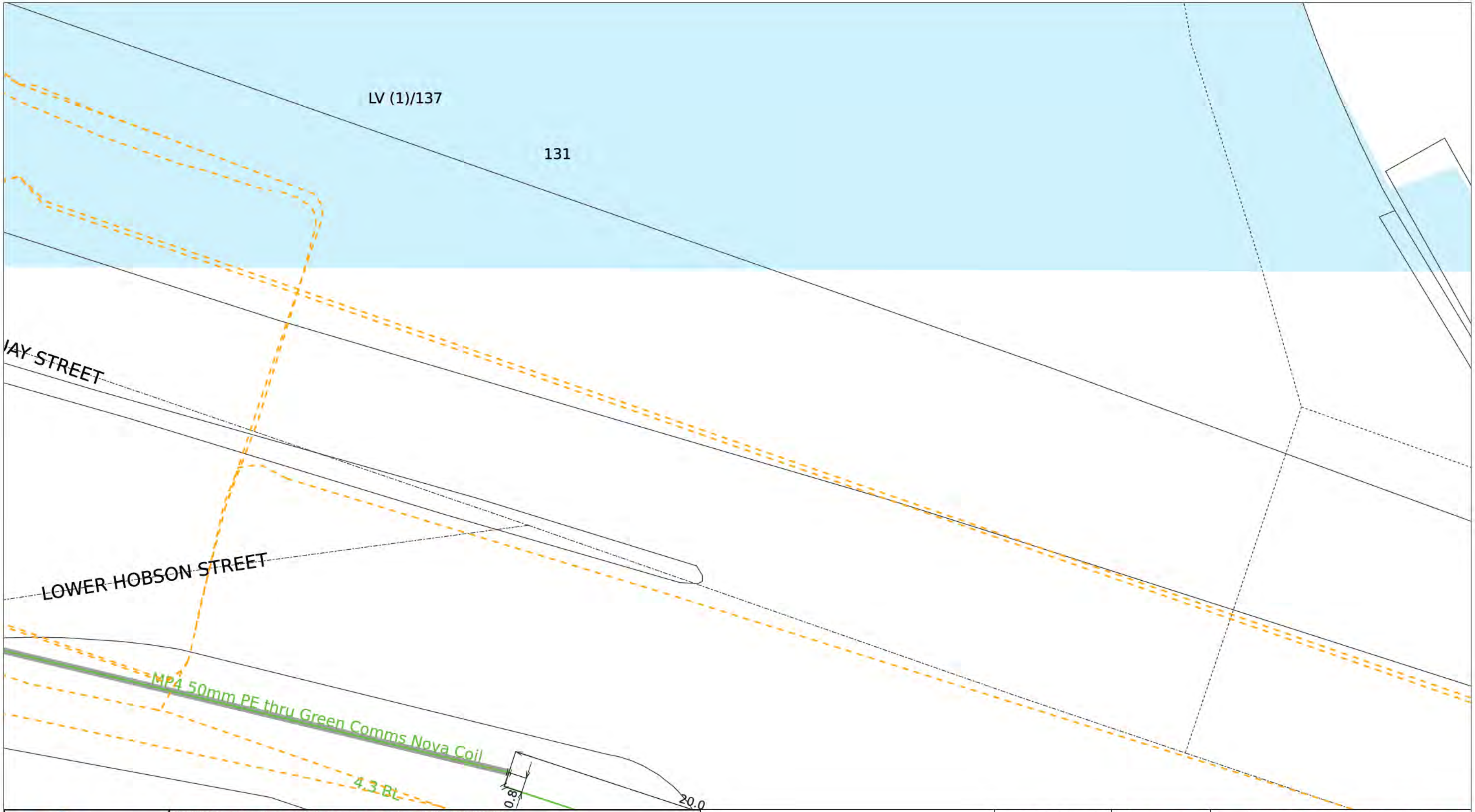

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PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
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- IP10 Pipe
- IP20 Pipe
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WORK MANAGEMENT
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- ● Riser
- ⋈ Closed Valve
- ⋈ Open Valve
- ■ PRS
- ○ Service Regulator
- ▷ Reducer

WARNING! Special conditions apply for high pressure gas pipelines (HP Pipe, IP20, IP10, MP7)

A permit/consent is required for any excavation within 2 metres of this pipeline. A MINIMUM of 3 working days notice is required when applying for a permit/consent. Refer to attached covering letter for additional information.

DISCLAIMER: Whilst care has been taken in the preparation of this plan, Vector Limited and its subsidiaries do not accept any liability for its accuracy and completeness and do not make any representation or warranty, express or implied, in relation to the same. These drawings are not to scale and may not show customer connections or obsolete lines. Works may have occurred in the vicinity which may not be represented in this plan at the date of issue. The information contained in this plan is supplied for reference purposes only; actual dimensions and locations on site may differ from those indicated. Without limiting the foregoing, where plans are more than 28 days old they should not be used; a new plan should be requested from Vector.

Vector reminds you of your responsibilities under the Health and Safety at Work Act 2015, whereby you must establish the location of underground services before commencing excavation.

If you hit an electricity cable or overhead line please call us immediately on 0508 VECTOR (0508 832 867). If you hit any gas pipeline call the Fire Service first on 111. If you hit a gas distribution pipe in the Auckland area call us on 0800 764 764. If you hit a gas pipeline in the rest of the North Island call FIRST GAS on 0800 800 393. If you hit a gas transmission pipeline call FIRST GAS on 0800 734 567. If you hit a communications cable (all areas) call us immediately on 0800 826 438 (select option 1).

Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197176
Request for:	Scale: 1:200
Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 24 of 25

PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

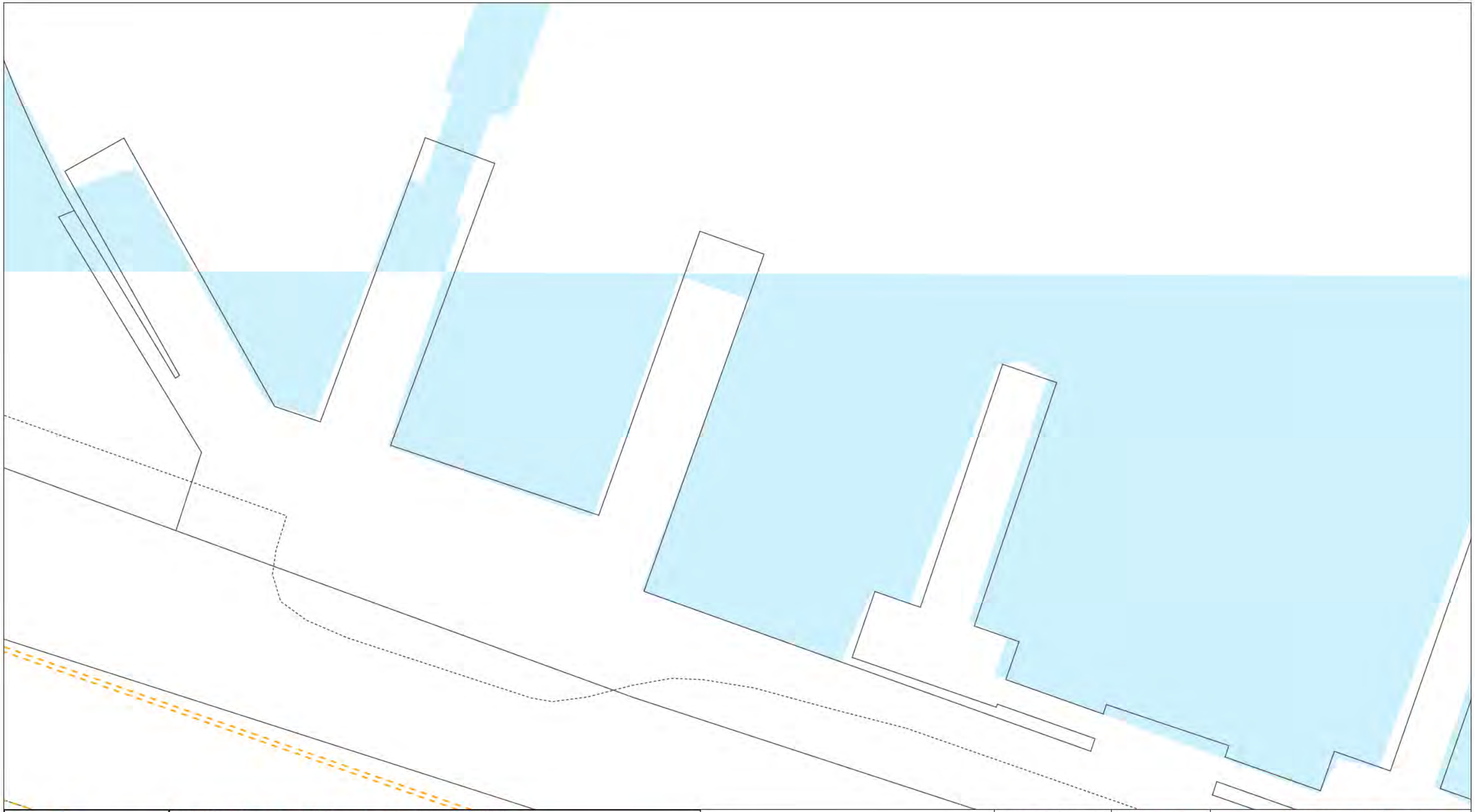
WARNING! Live service within this property.

WARNING! Indication only additional data is required

Transmission Pipeline (ex - NGC)
Please contact Vector - New Plymouth on 0800 734 567 for On-Site Location and Work Permits. A minimum of 48 hours notice is required.

WORK MANAGEMENT
- In Progress
- Planned
- Future Planned

OTHER GAS FEATURES
- Fibre Optic
- Closed Valve
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer



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Title:

Request Title:	
Company Name:	
Usage:	Request ID: 11197176
Request for:	Scale: 1:200
Customer Contact:	Printed by:
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 25 of 25

PIPE COLOUR BY PRESSURE
- LP Pipe
- LPG Pipe
- MP1 Pipe
- MP2 Pipe
- MP4 Pipe
- MP7 Pipe
- IP10 Pipe
- IP20 Pipe
- HP Pipe
- 0 kPa

WARNING!
Live service
within this
property.

🟥 WARNING! Indication only additional data is required
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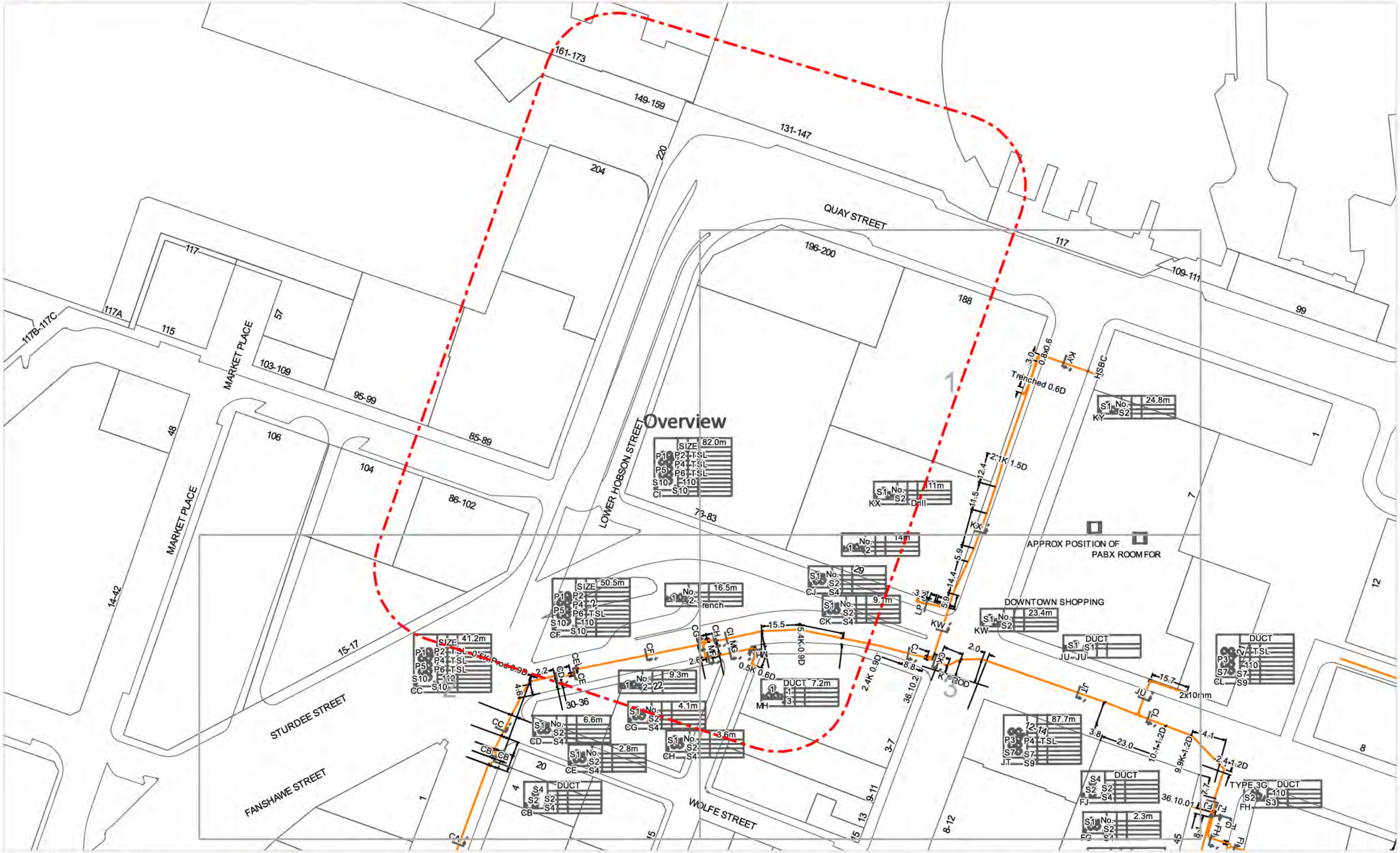
WORK MANAGEMENT
- In Progress
- Planned
- Future Planned

OTHER GAS FEATURES
- Fibre Optic
- Closed Valve
- Gate
- Riser
- Open Valve
- PRS
- Service Regulator
- Reducer

Sequence No: 11197172
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010

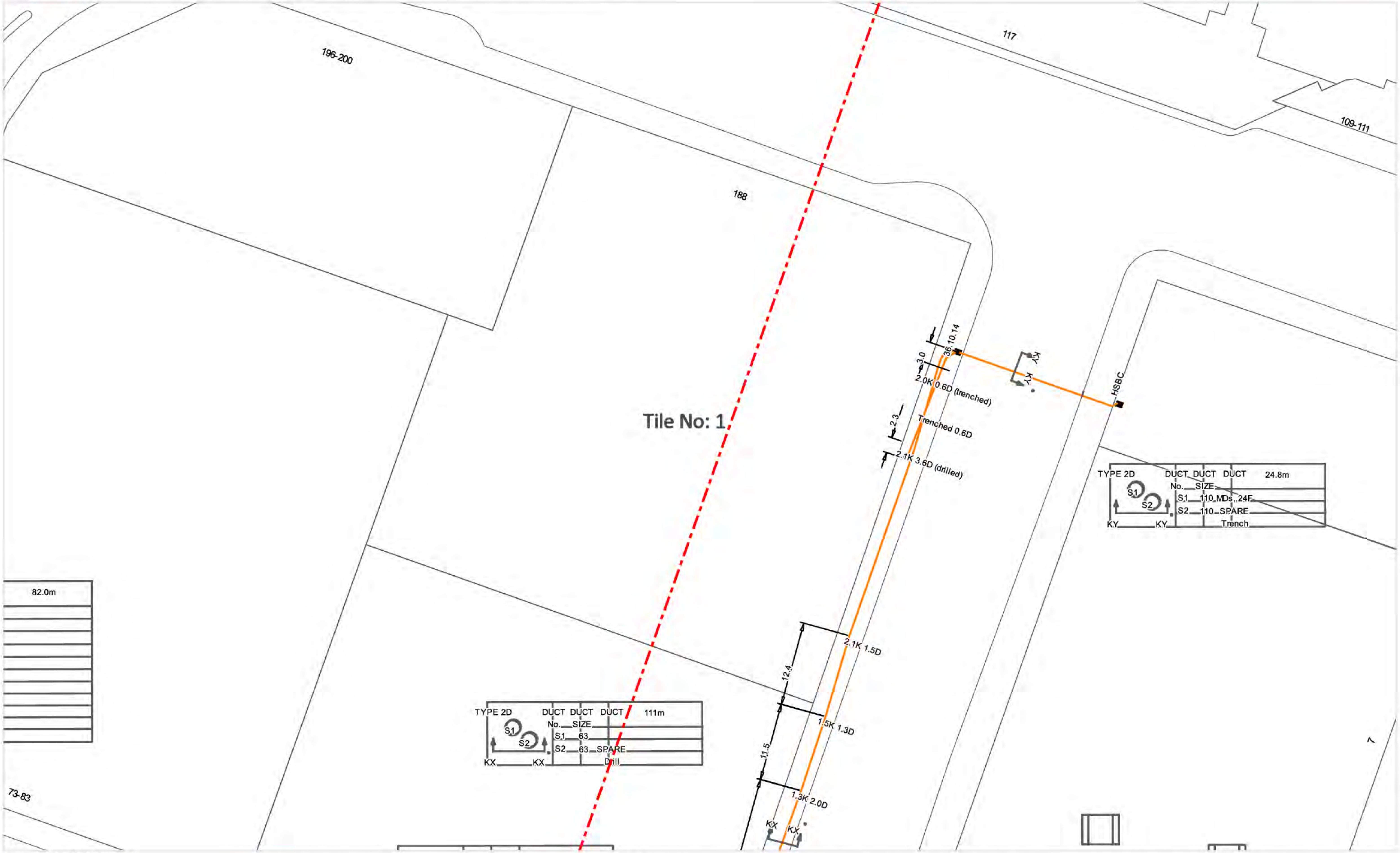


Legend | Scale: 1:1390 (A3)

🟧	CityLink Underground Route
🟦	3rd Party Underground Route

N

Sequence No: 11197172
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010



Legend | Scale: 1:500 (A3)

🟧	CityLink Underground Route
🟦	3rd Party Underground Route

N

CITYLINK

Sequence No: 11197172
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010

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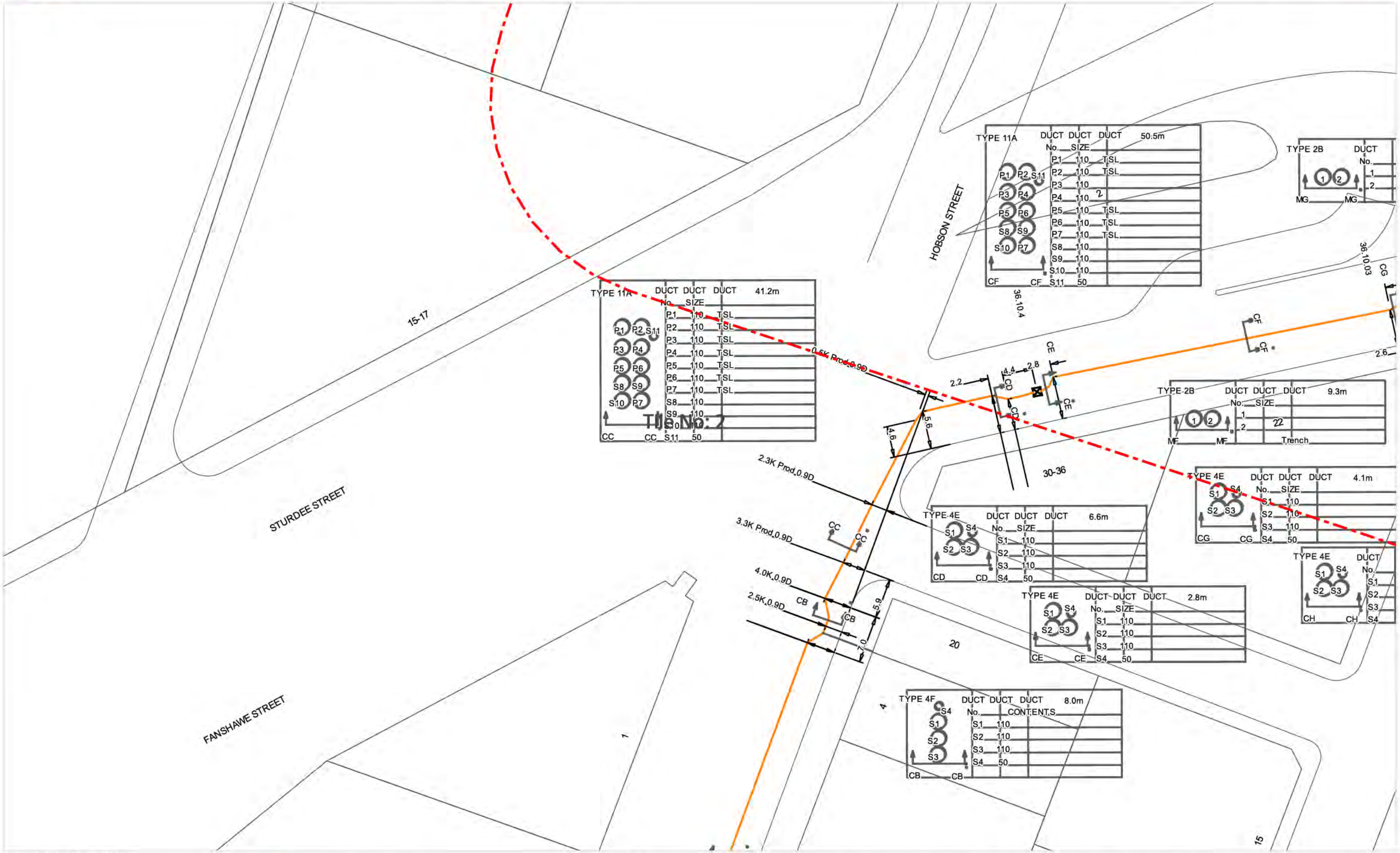

Legend | Scale: 1:500 (A3)

🟧	CityLink Underground Route
🟦	3rd Party Underground Route

N

CITYLINK

Sequence No: 11197172
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010

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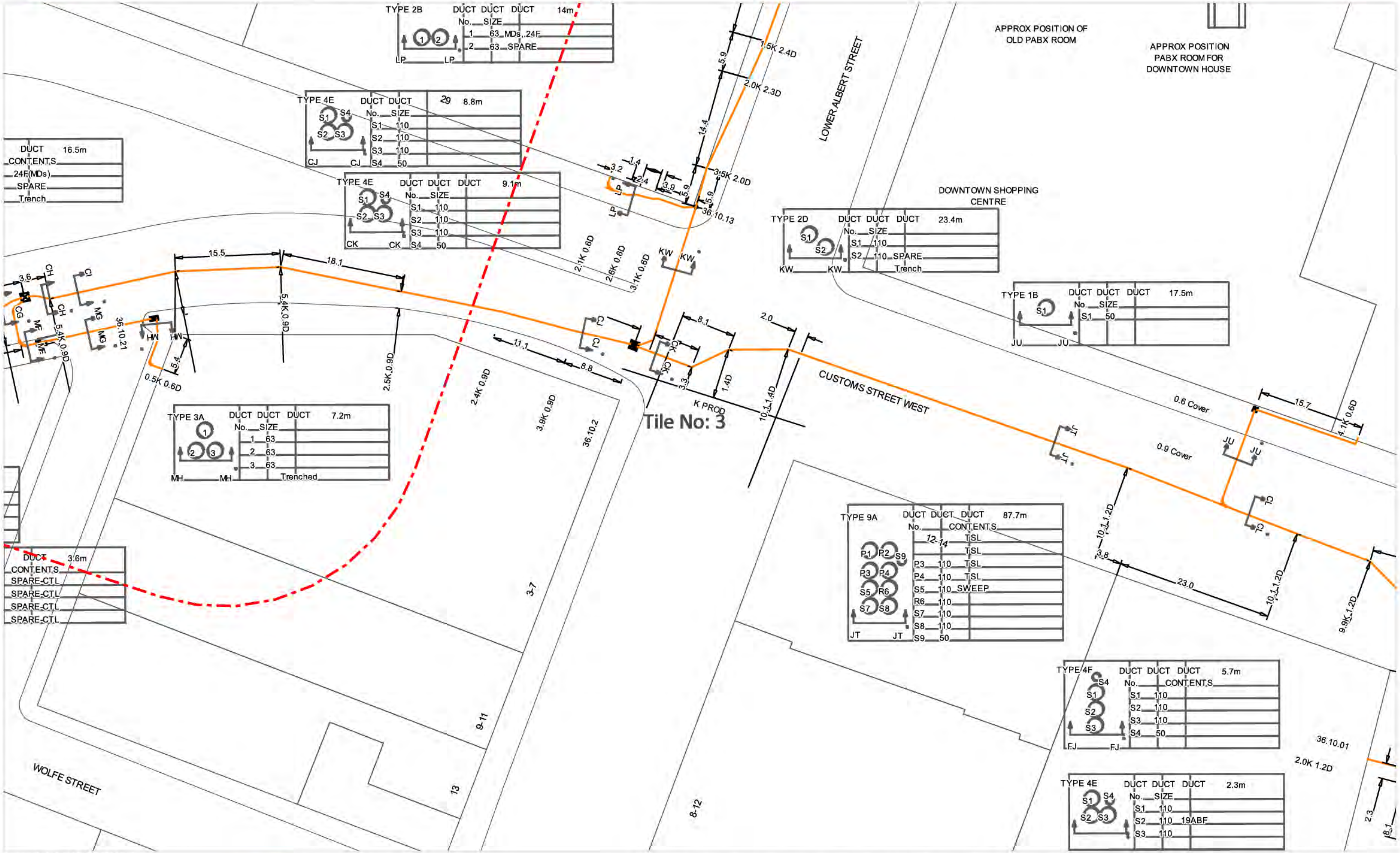

Legend | Scale: 1:500 (A3)

🟧	CityLink Underground Route
🟦	3rd Party Underground Route

N

Sequence No: 11197173
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010

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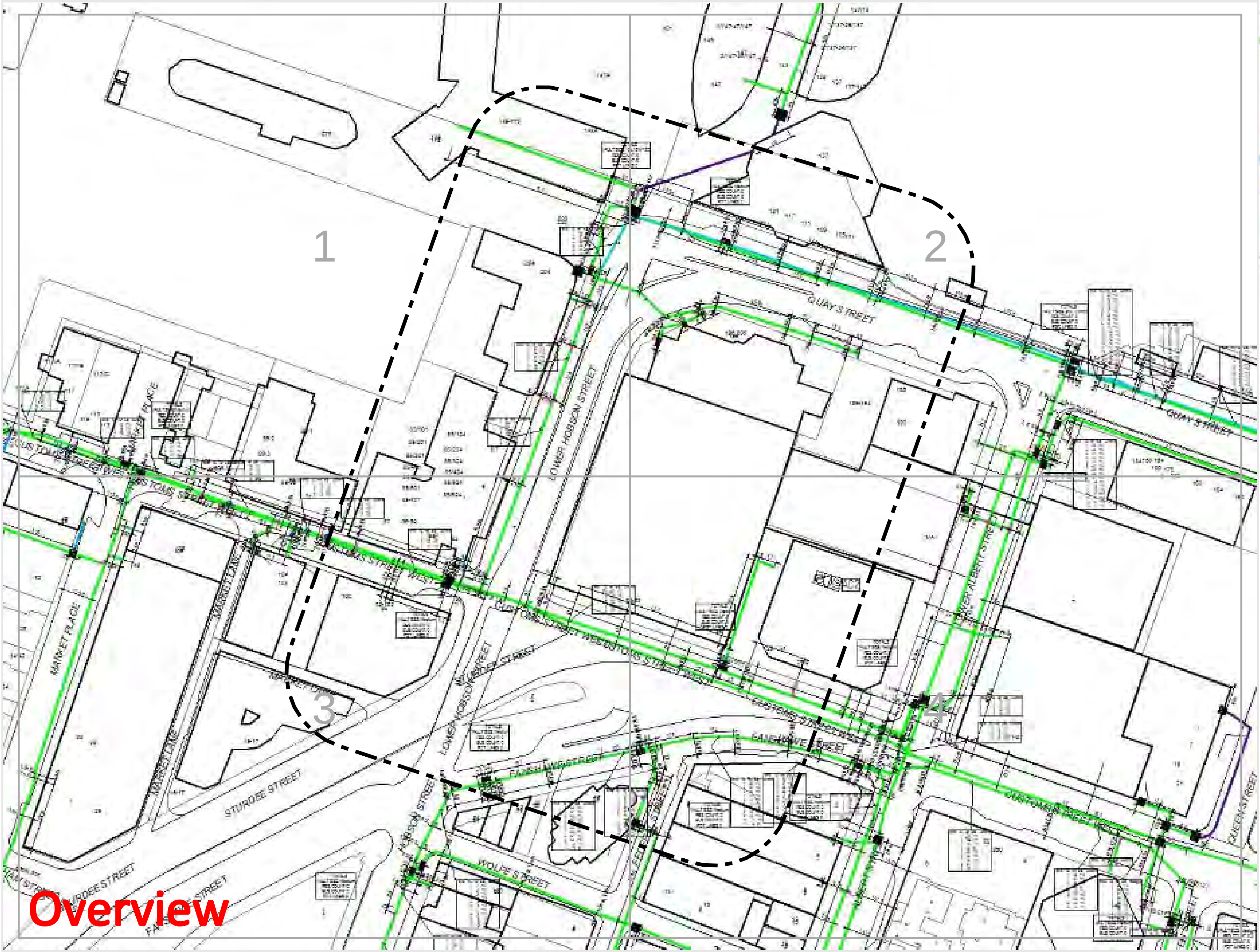

Legend

🟩	Existing Vodafone network cables, marked as: "Vodafone" "ex Clear" "ex Saturn, ex TelstraSaturn" "ex TelstraClear or TCL"
🟦	Proposed, or 'as stated'
🟪	Infrastructure owned by others

Abbreviations Key

ES/EOS	Edge of Seal
PP	Power Pole: Circle with line centre line
F/L	Fence line: Yellow line with dashed black line

N

Scale: 1:2050
Expires: 27 Apr 2023

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Sequence No: 11197173
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010

Legend

🟩 Existing Vodafone network cables, marked as:
"Vodafone"
"ex Clear"
"ex Saturn, ex TelstraSaturn"
"ex TelstraClear or TCL"

🟦 Proposed, or 'as stated'

🟪 Infrastructure owned by others

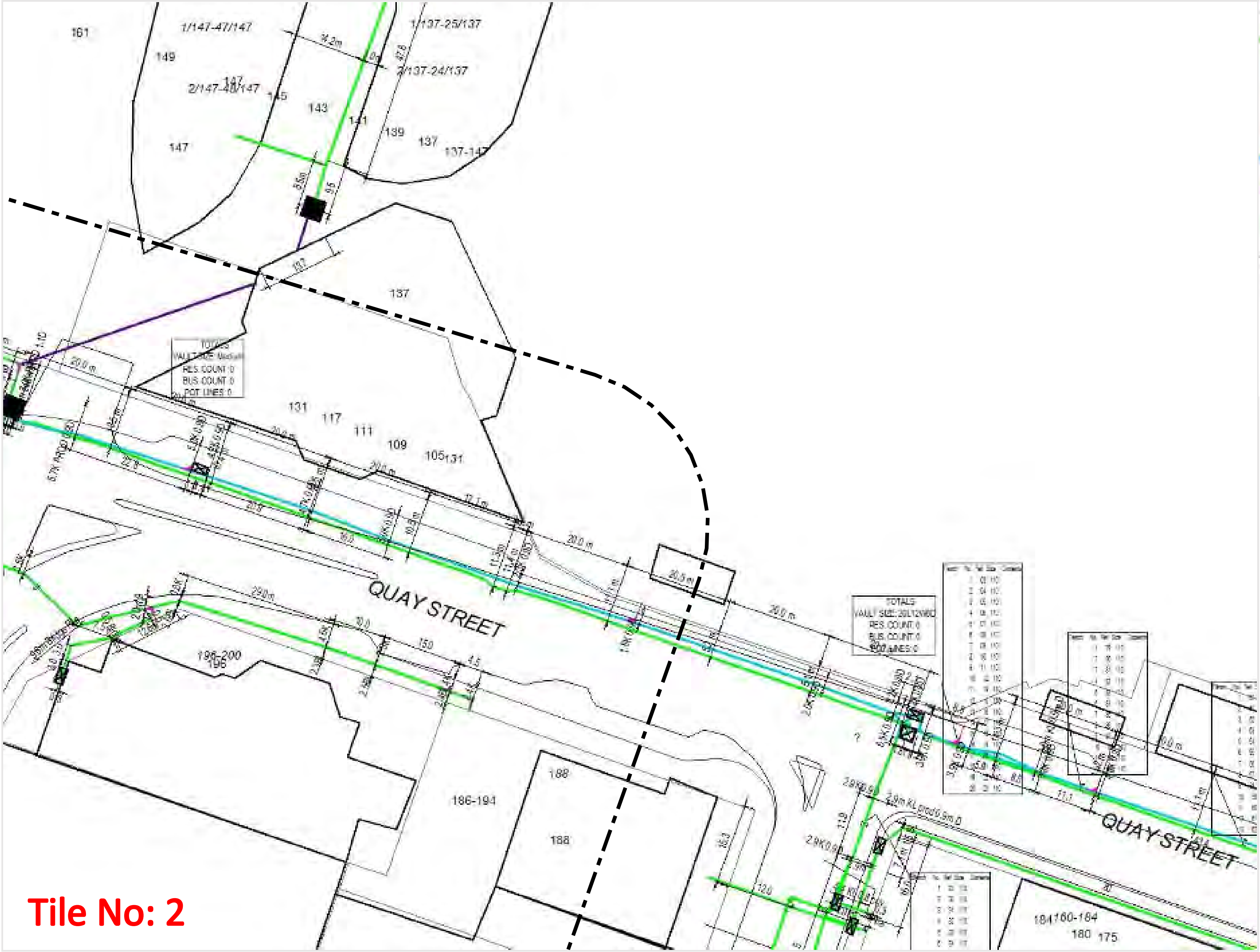
Abbreviations Key

ES/EOS	Edge of Seal
PP	Power Pole: Circle with line centre line
F/L	Fence line: Yellow line with dashed black line

N

Scale: 1:1000
Expires: 27 Apr 2023

Sequence No: 11197173
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010



Tile No: 2

Legend

- 🟩 Existing Vodafone network cables, marked as:
  - "Vodafone"
  - "ex Clear"
  - "ex Saturn, ex TelstraSaturn"
  - "ex TelstraClear or TCL"
- 🟦 Proposed, or 'as stated'
- 🟪 Infrastructure owned by others

Abbreviations Key

ES/EOS	Edge of Seal
PP	Power Pole: Circle with line centre line
F/L	Fence line: Yellow line with dashed black line

Scale: 1:1000
Expires: 27 Apr 2023

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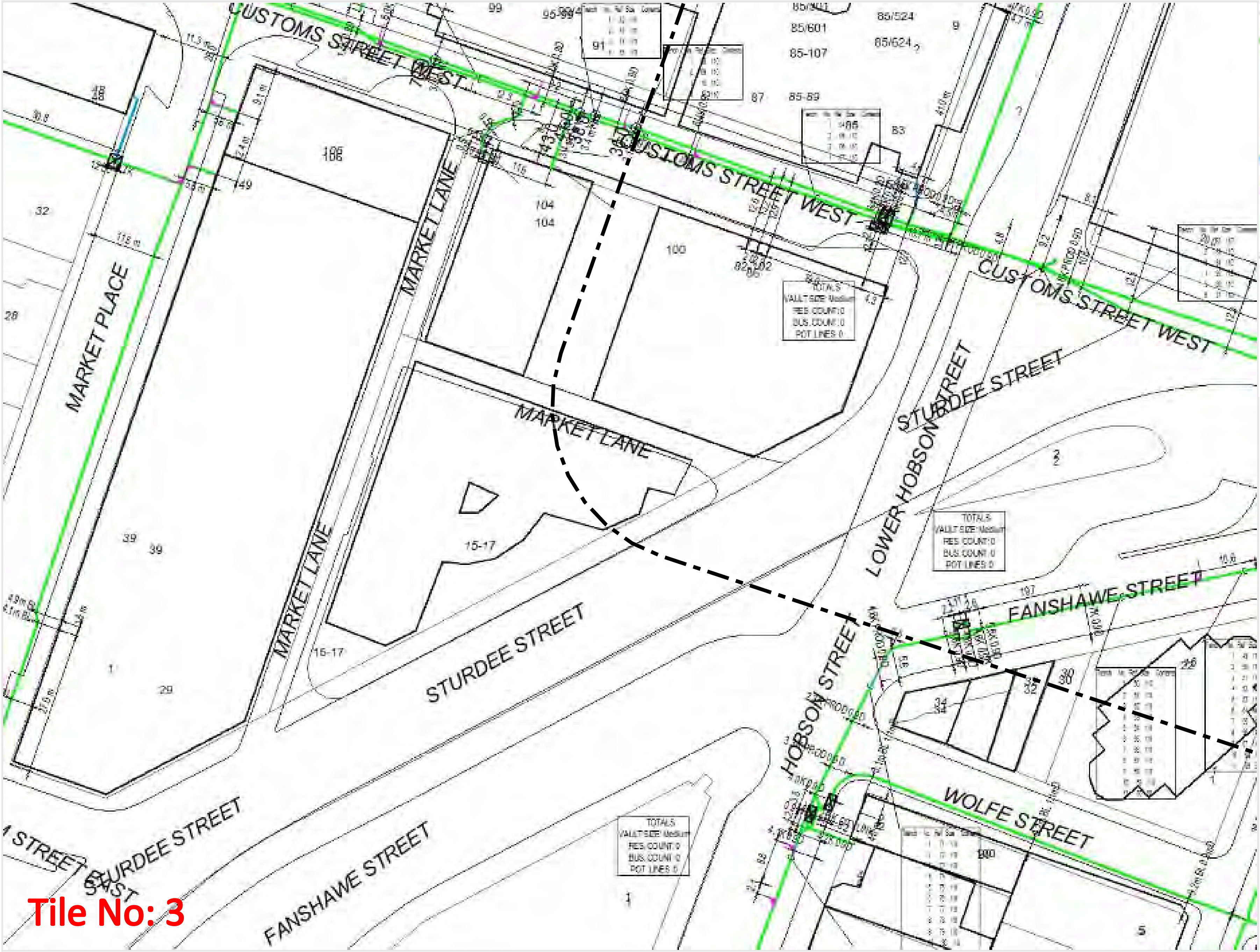
Sequence No: 11197173
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010



Legend

🟩 Existing Vodafone network cables, marked as:
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"ex Clear"
"ex Saturn, ex TelstraSaturn"
"ex TelstraClear or TCL"

🟦 Proposed, or 'as stated'

🟪 Infrastructure owned by others

Abbreviations Key

ES/EOS	Edge of Seal
PP	Power Pole: Circle with line centre line
F/L	Fence line: Yellow line with dashed black line

N

Scale: 1:1000
Expires: 27 Apr 2023

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Sequence No: 11197173
Job No: 2186124
Location: Hobson St, Auckland Central, Auckland 1010

Legend

🟩	Existing Vodafone network cables, marked as: "Vodafone" "ex Clear" "ex Saturn, ex TelstraSaturn" "ex TelstraClear or TCL"
🟦	Proposed, or 'as stated'
🟪	Infrastructure owned by others

Abbreviations Key

ES/EOS	Edge of Seal
PP	Power Pole: Circle with line centre line
F/L	Fence line: Yellow line with dashed black line

N

Scale: 1:1000
Expires: 27 Apr 2023

Watercare
An Auckland Council Organisation

Sequence No: 11197174
Job No: 2186124
Location: Hobson St

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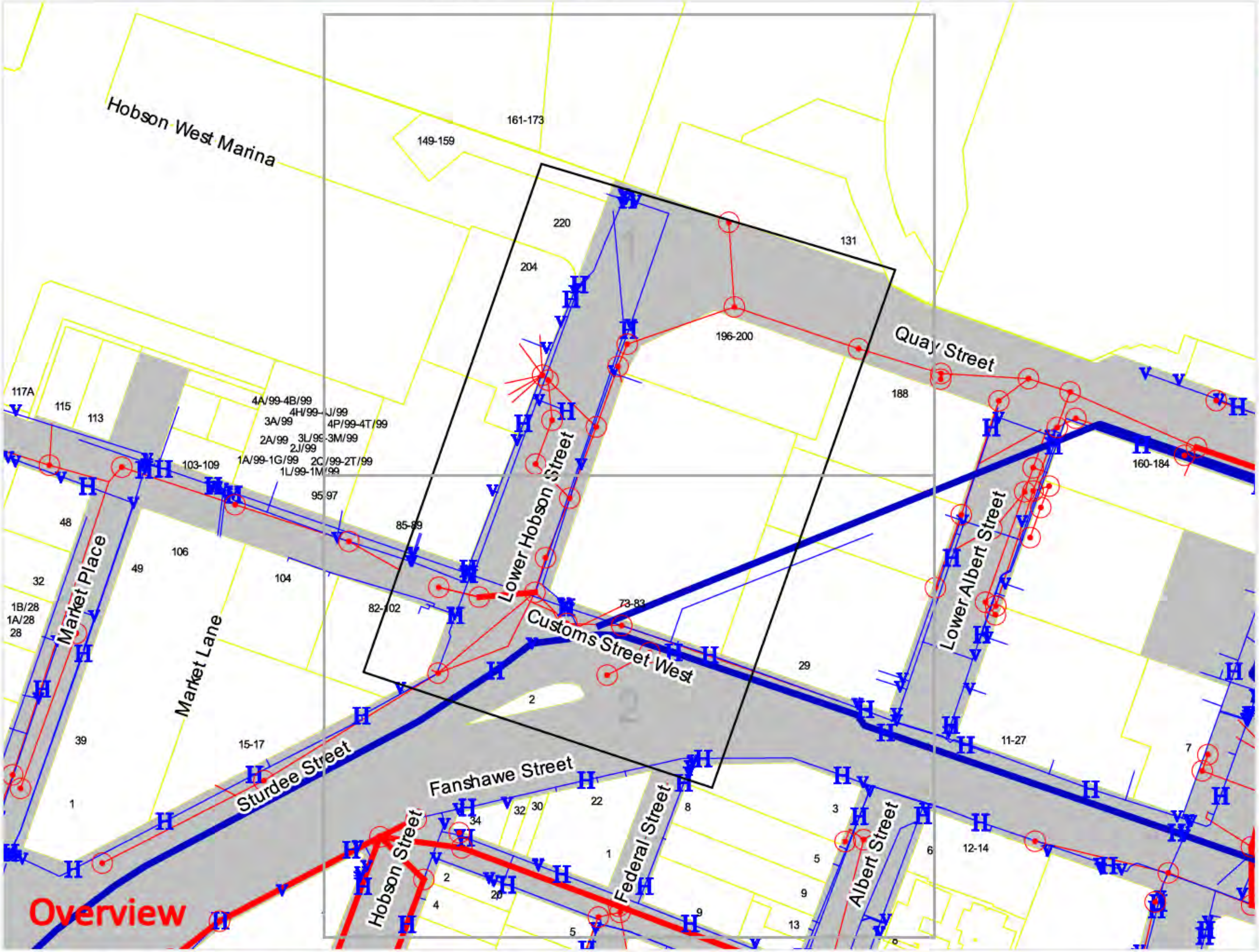

Legend

━ Waste Water
━ Water
━ Electrical/Cathodic Protection
V Valve
H Hydrant
M Water Meter
⊙ Manhole

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N

Scale: 1:2050
Expires: 27 Apr 2023

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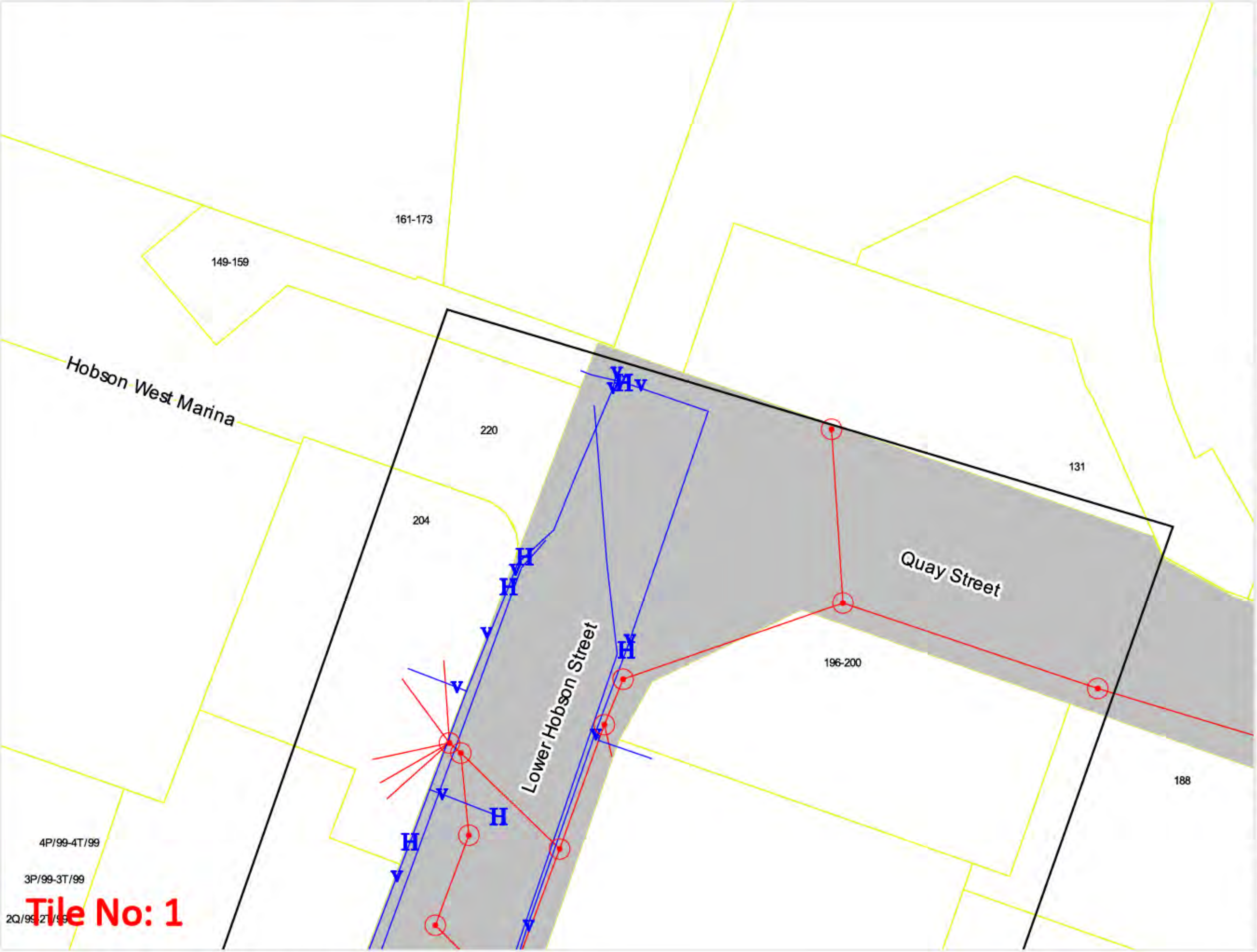
Sequence No: 11197174
Job No: 2186124
Location: Hobson St



Legend

- 🟥 Waste Water
- 🟦 Water
- 🟩 Electrical/Cathodic Protection
- V Valve
- H Hydrant
- M Water Meter
- ⊙ Manhole

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N

Scale: 1:1000
Expires: 27 Apr 2023

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Watercare
An Auckland Council Organisation

Sequence No: 11197174
Job No: 2186124
Location: Hobson St

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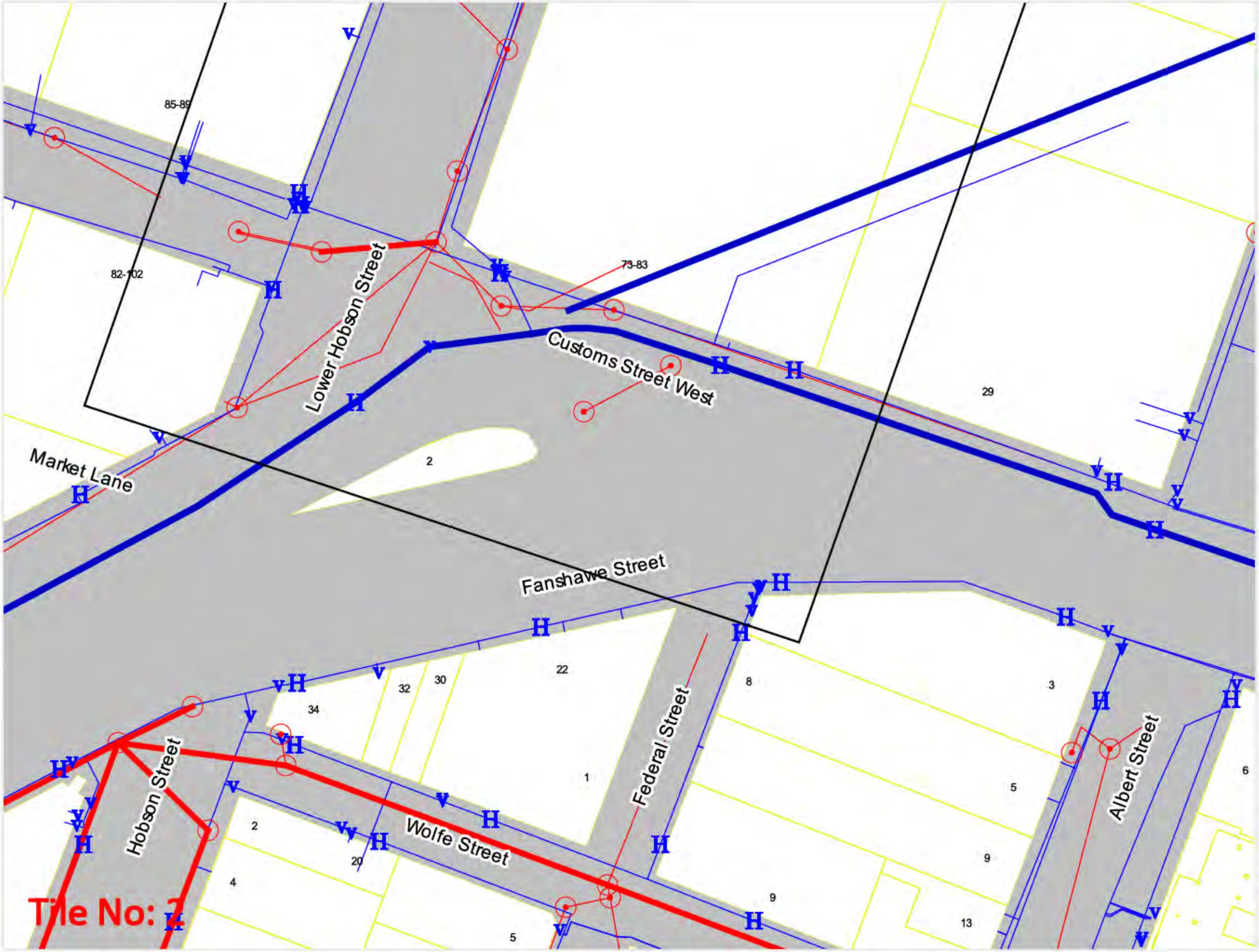

Legend

🟥	Waste Water
🟦	Water
🟩	Electrical/Cathodic Protection
V	Valve
H	Hydrant
M	Water Meter
⊙	Manhole

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N

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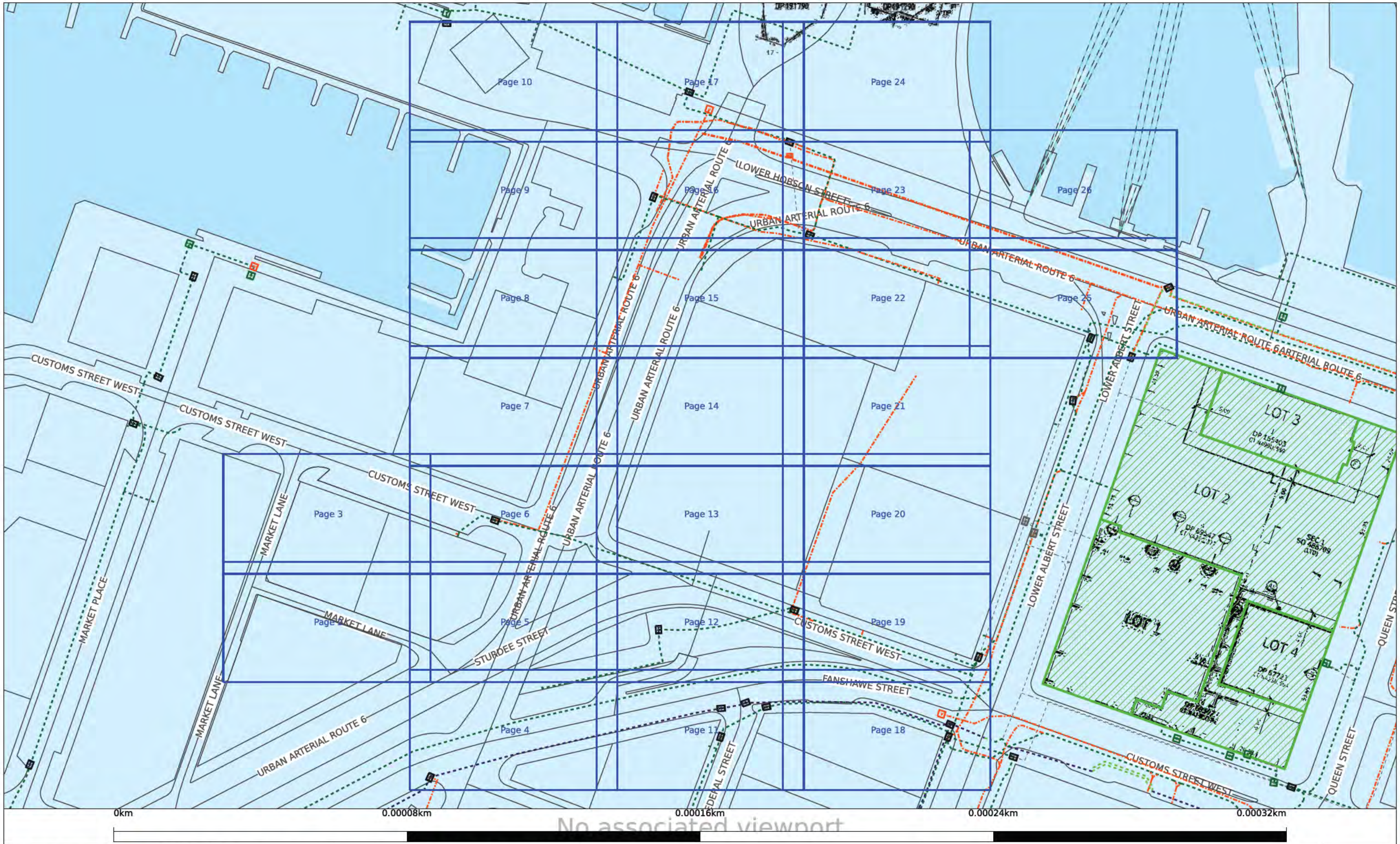

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Vector communications

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In the event of damage to equipment please remain clear of the area and immediately phone:

Electricity	- 0508 VECTOR (0508 832 867)
Gas	- Auckland area call us on 0800 764 764. If you hit a gas pipeline in the rest of the North Island call FIRST GAS on 0800 800 393. If you hit a gas transmission pipeline call FIRST GAS on 0800 734 567

Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
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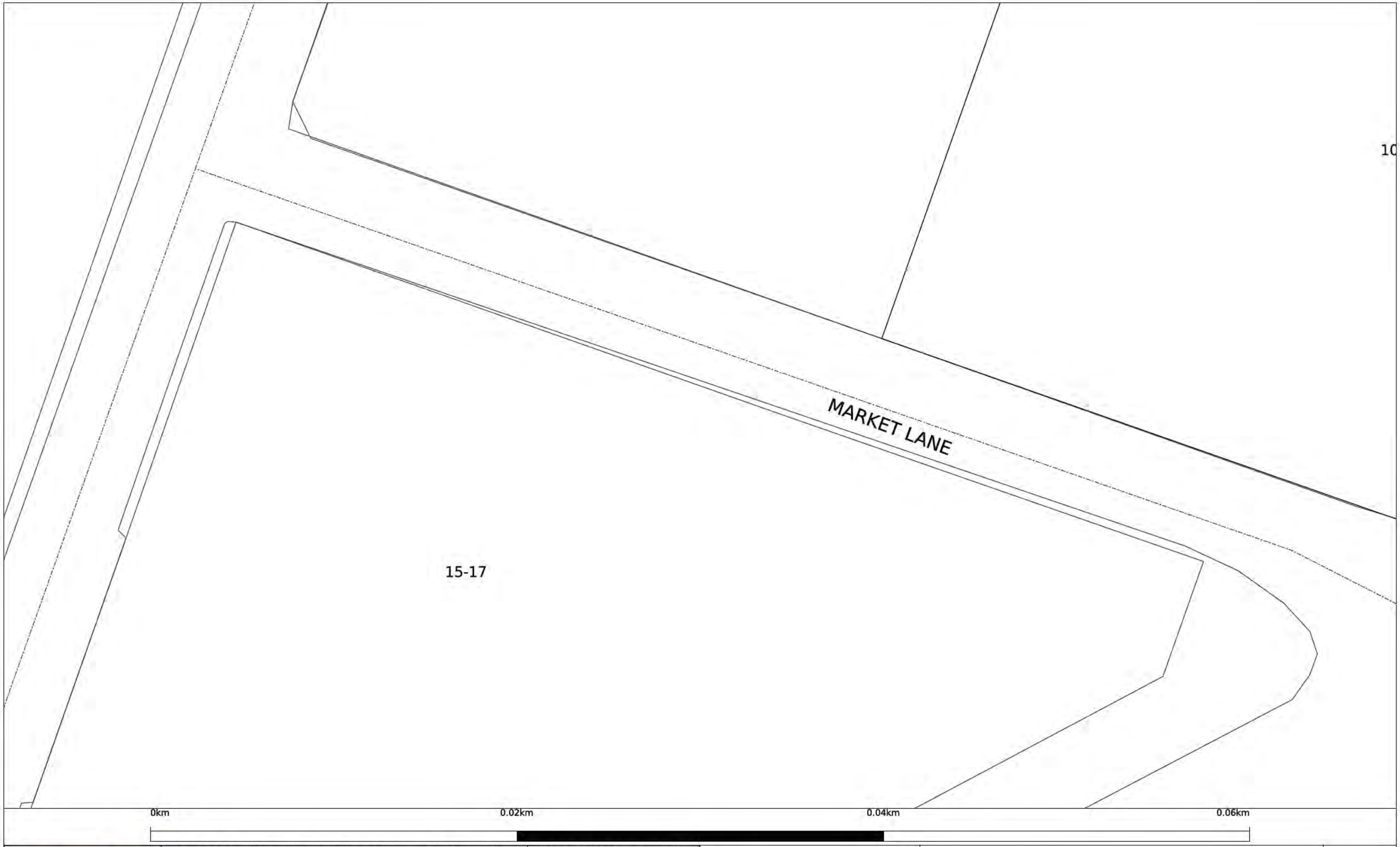
No associated viewport



Vector communications

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Communication Cable - 0800 826 436

Title:

Company Name:

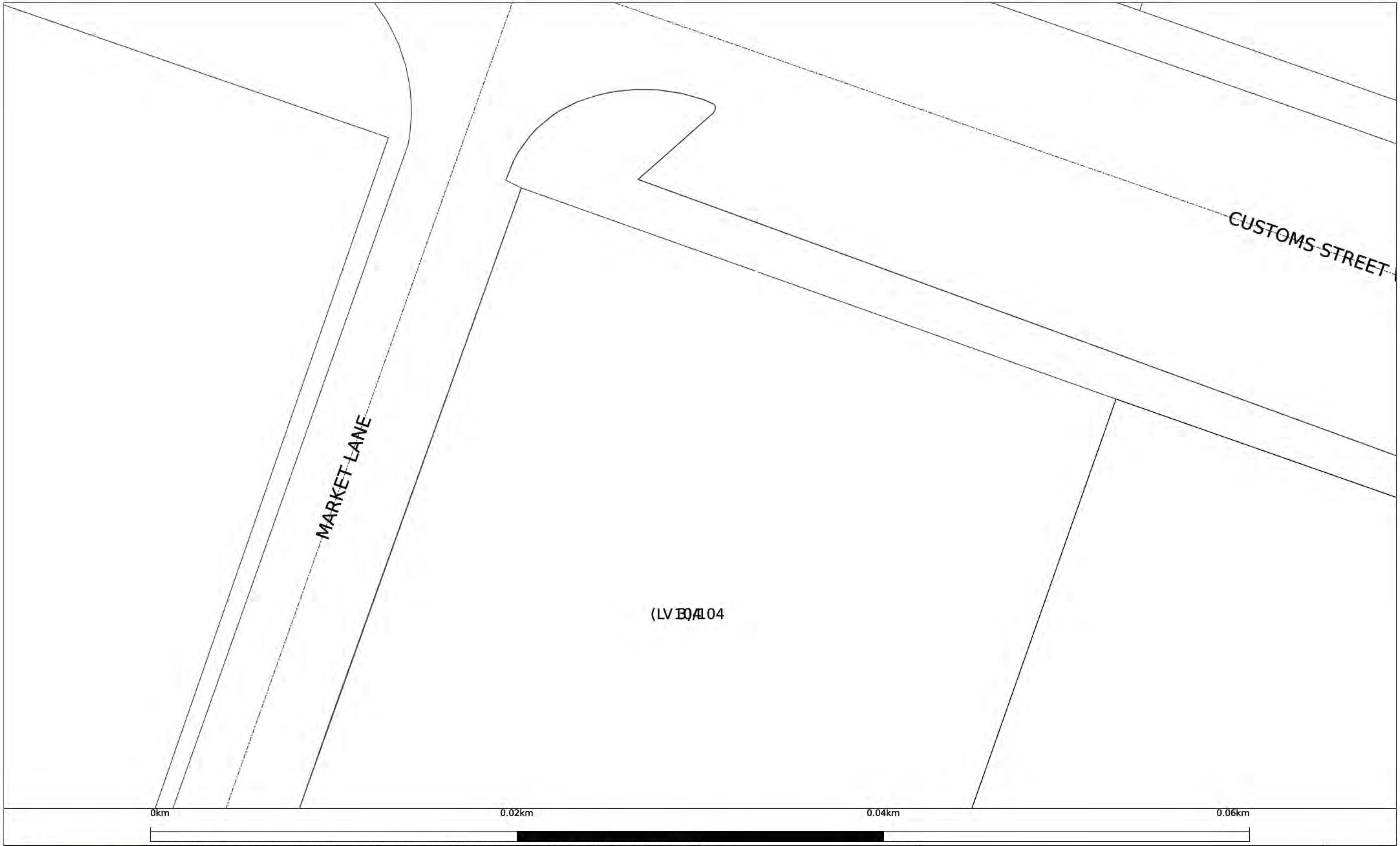
Customer Contact:

Output: Page 2	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

---- Underground Route,Route Act. - Trench



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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 3

Scale: 1:200

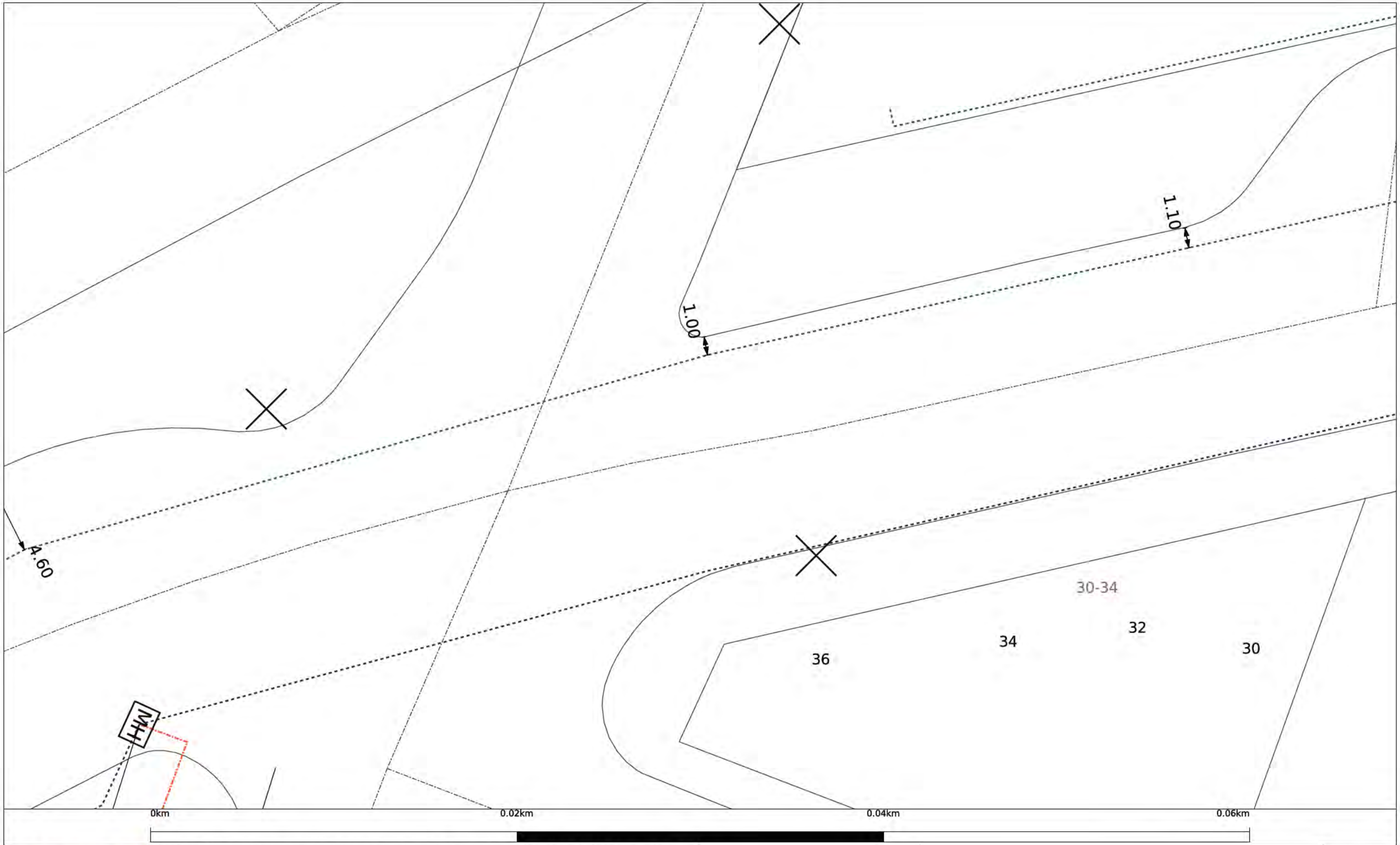
Printed by: sw-cloud-user

Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

---- Underground Route,Route Act. - Trench



Vector communications

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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 4

Scale: 1:200

Printed by: sw-cloud-user

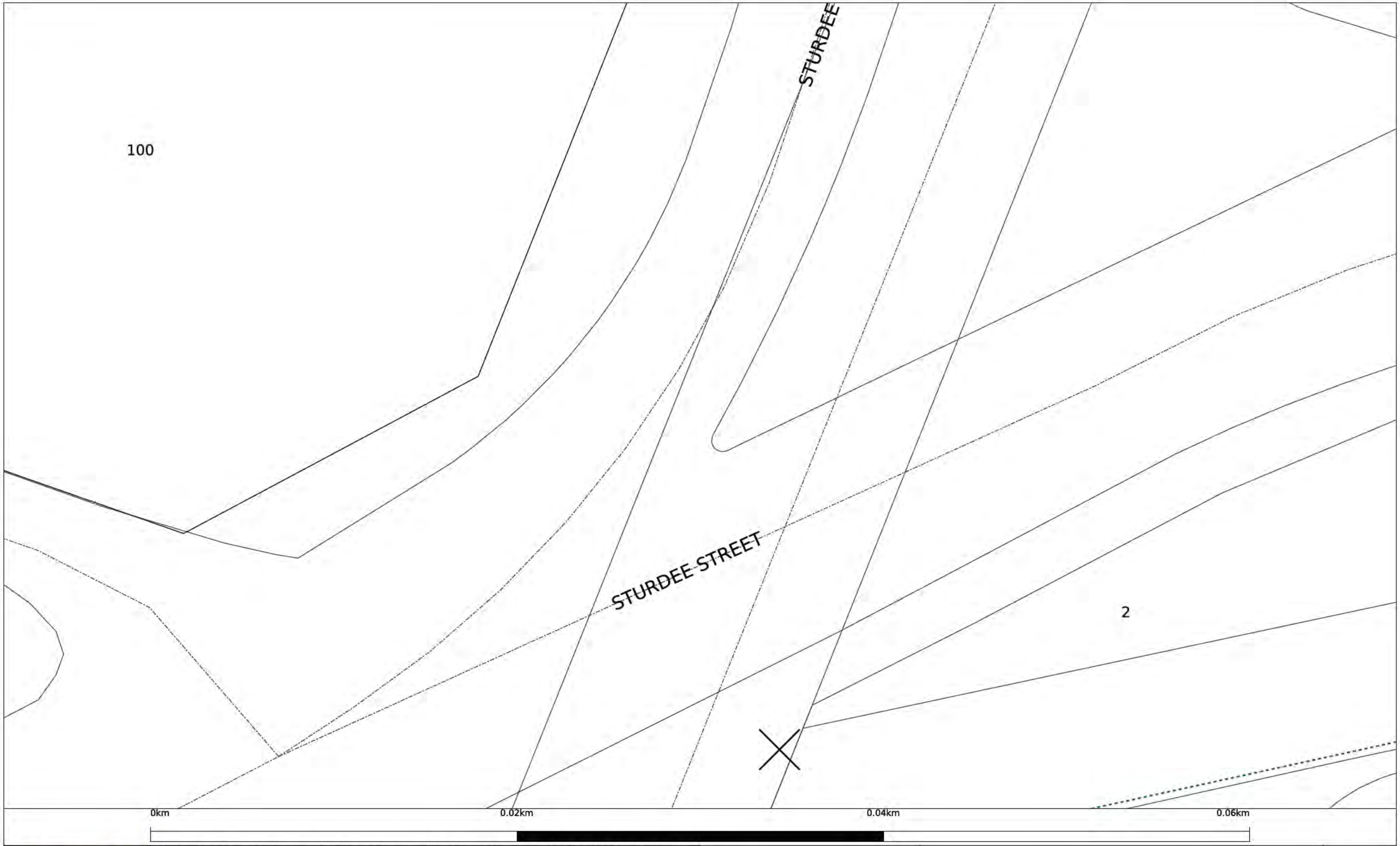
Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- ✕ Pole.Location Inact., T02
- - - - Underground Route.Route Act. - Gas Standby Main
- - - - Underground Route.Route Act. - Trench
- -·-·- Underground Route.Route Inact. - Installed In-Place
- MH Underground Utility Box.Location Act., T03

N
W
E
S



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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 5

Scale: 1:200

Printed by: sw-cloud-user

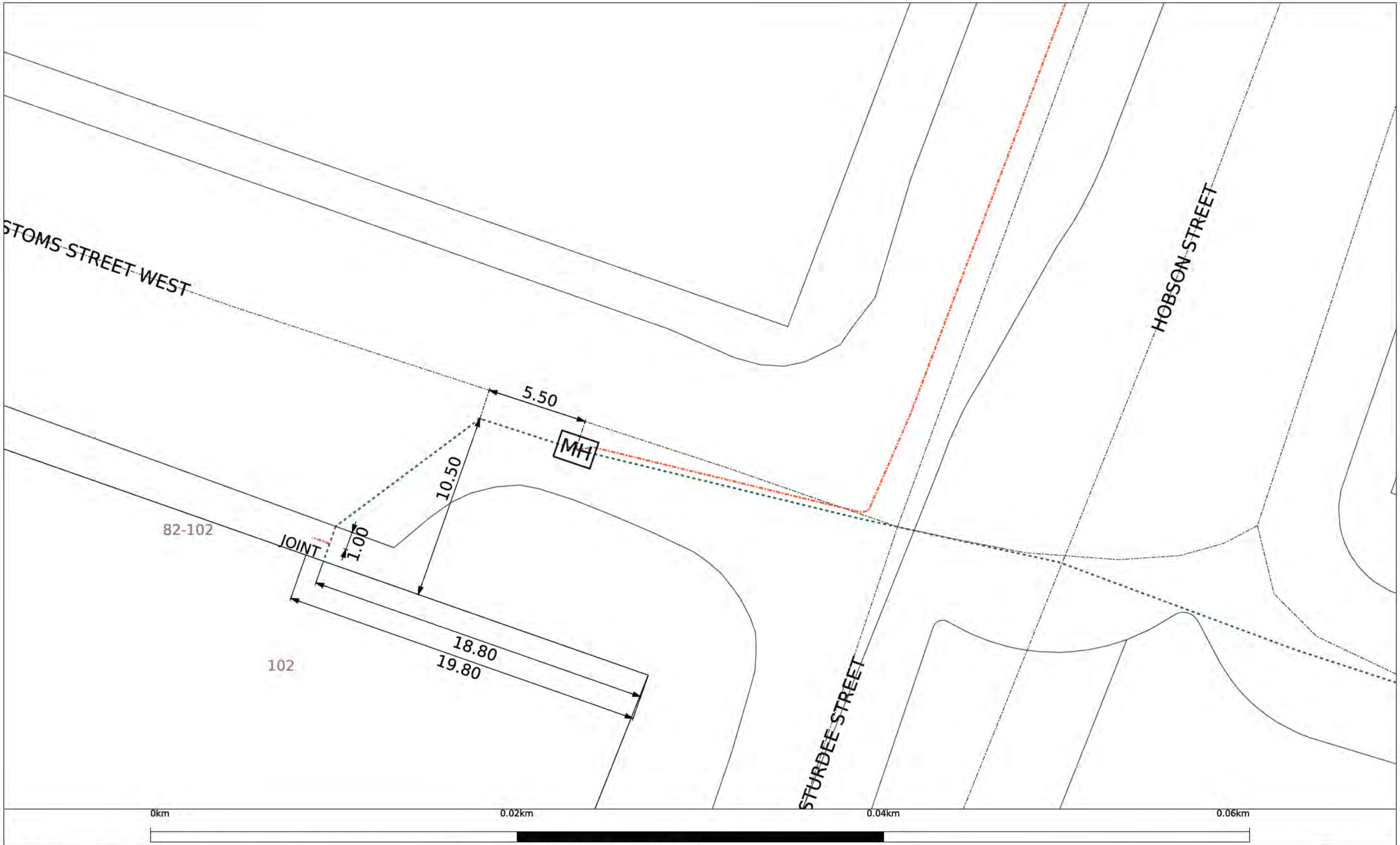
Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

✕ Pole.Location Inact., T02

---- Underground Route.Route Act. - Trench



Vector communications

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Communication Cable - 0800 826 436

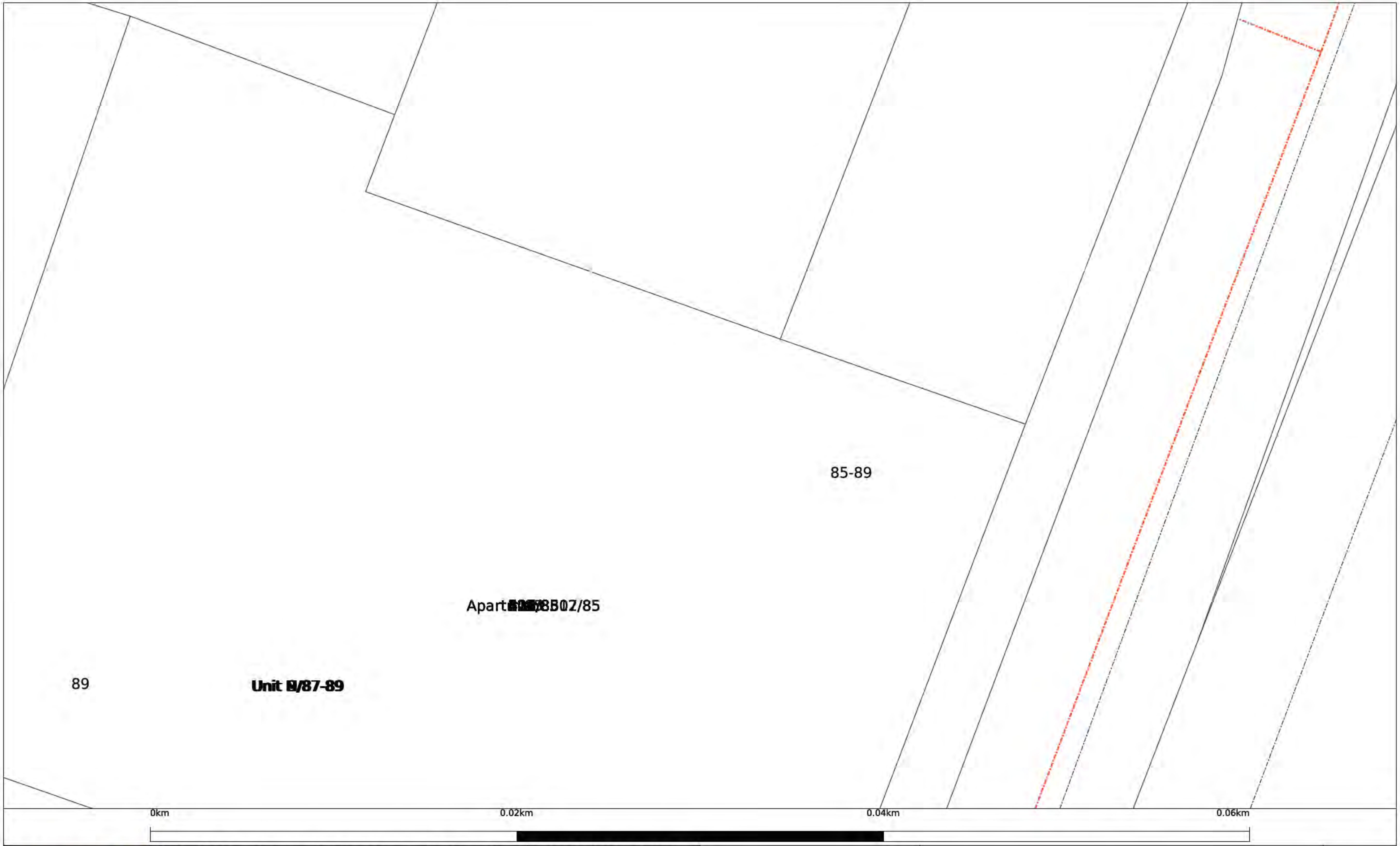
Title:	
Company Name:	
Customer Contact:	
Output: Page 6	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

■ ■ ■	Underground Route.Route Act. - Trench
▬·▬·	Underground Route.Route Inact. - Installed In-Place
MH	Underground Utility Box.Location Act., T03

N
W E
S



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In the event of damage to equipment please remain clear of the area and immediately phone:

Electricity - 0508 VECTOR (0508 832 867)

Gas - Auckland area call us on 0800 764 764. If you hit a gas pipeline in the rest of the North Island call FIRST GAS on 0800 800 393. If you hit a gas transmission pipeline call FIRST GAS on 0800 734 567

Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 7	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- - - Underground Route.Route Inact. - Installed In-Place

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Communication Cable - 0800 826 436

Title:

Company Name:

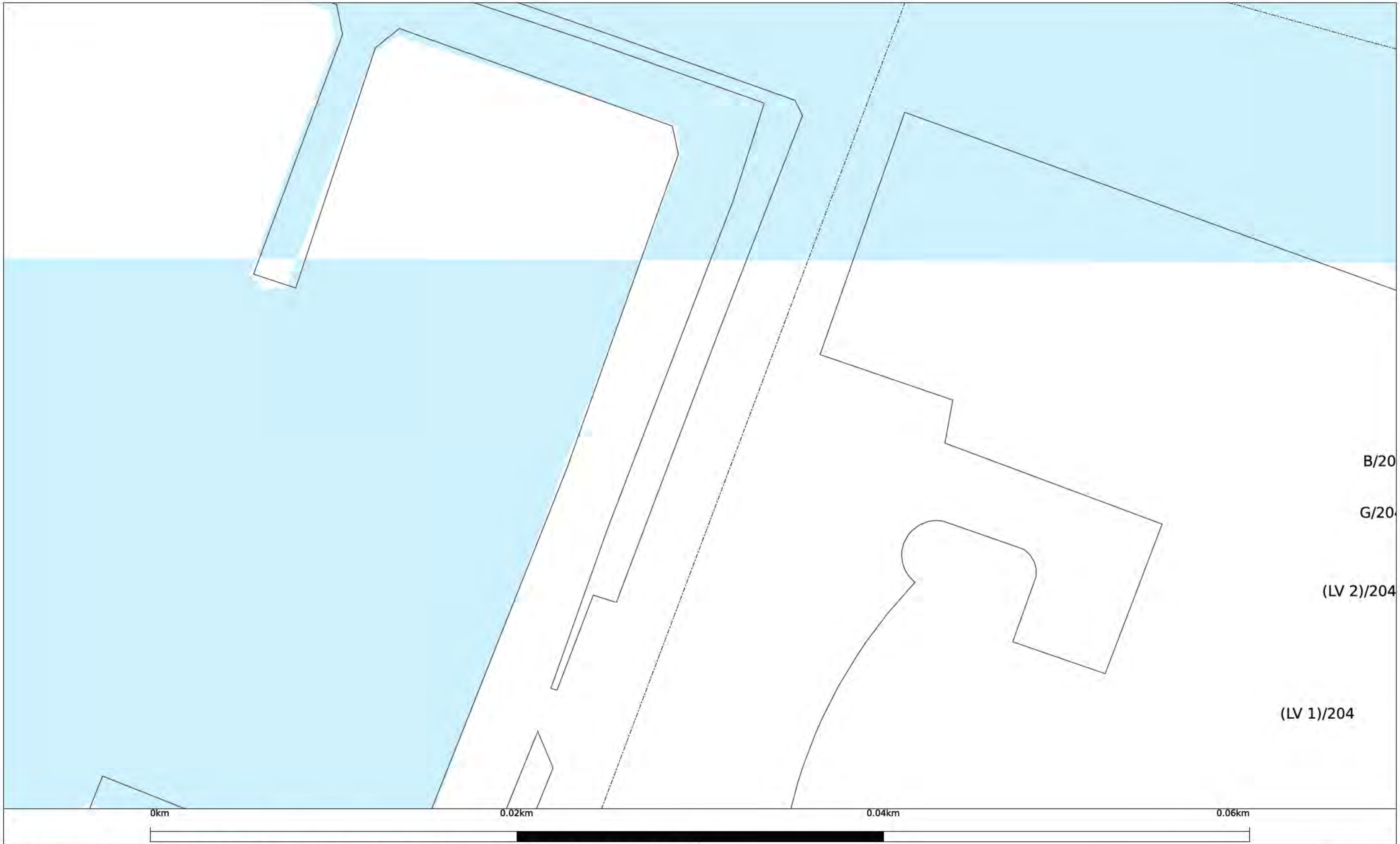
Customer Contact:

Output: Page 8	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- - - Underground Route.Route Act. - Trench
-·-·- Underground Route.Route Inact. - Installed In-Place



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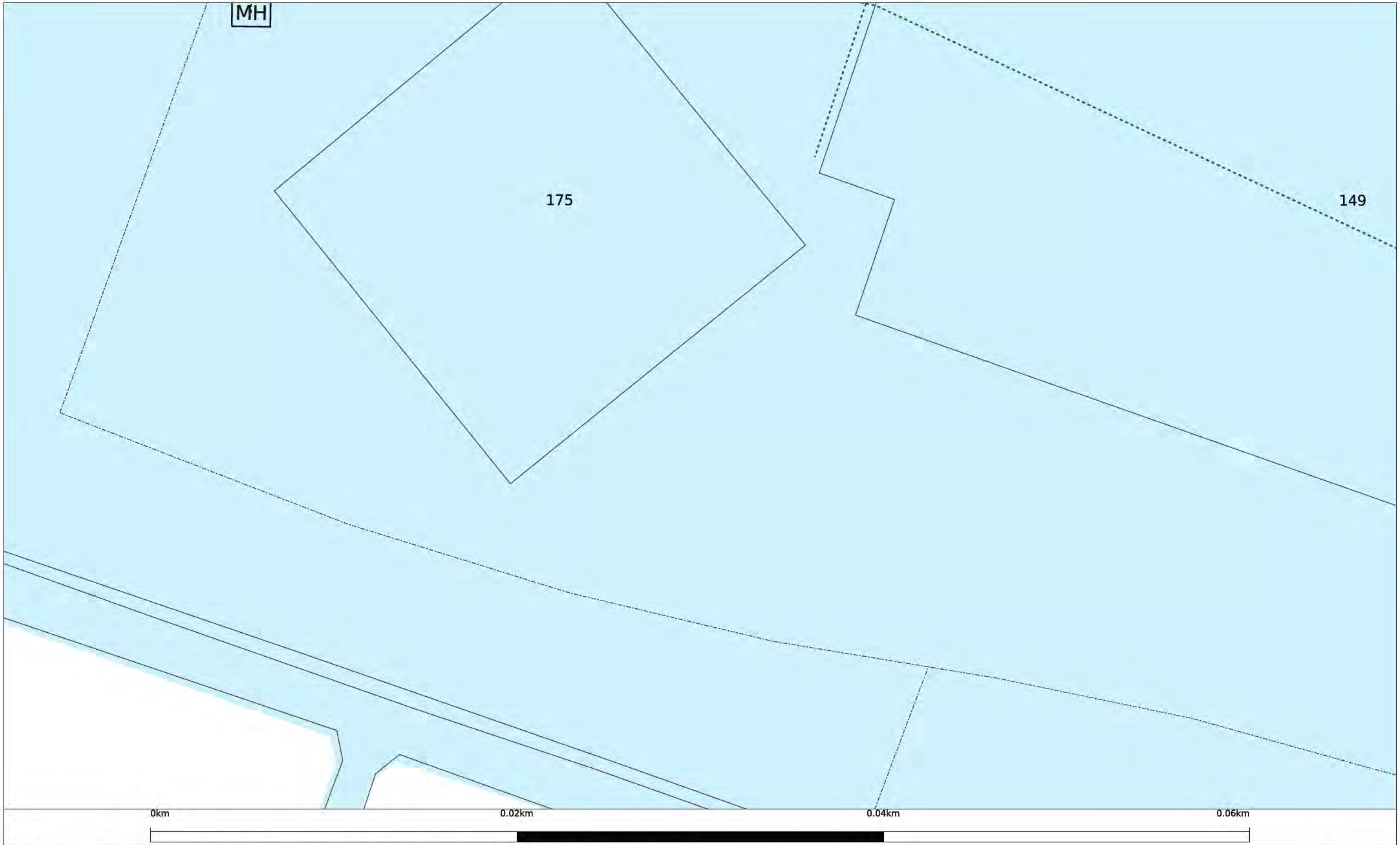
Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 9	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

---- Underground Route.Route Act. - Trench



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Electricity	- 0508 VECTOR (0508 832 867)
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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 10

Scale: 1:200

Printed by: sw-cloud-user

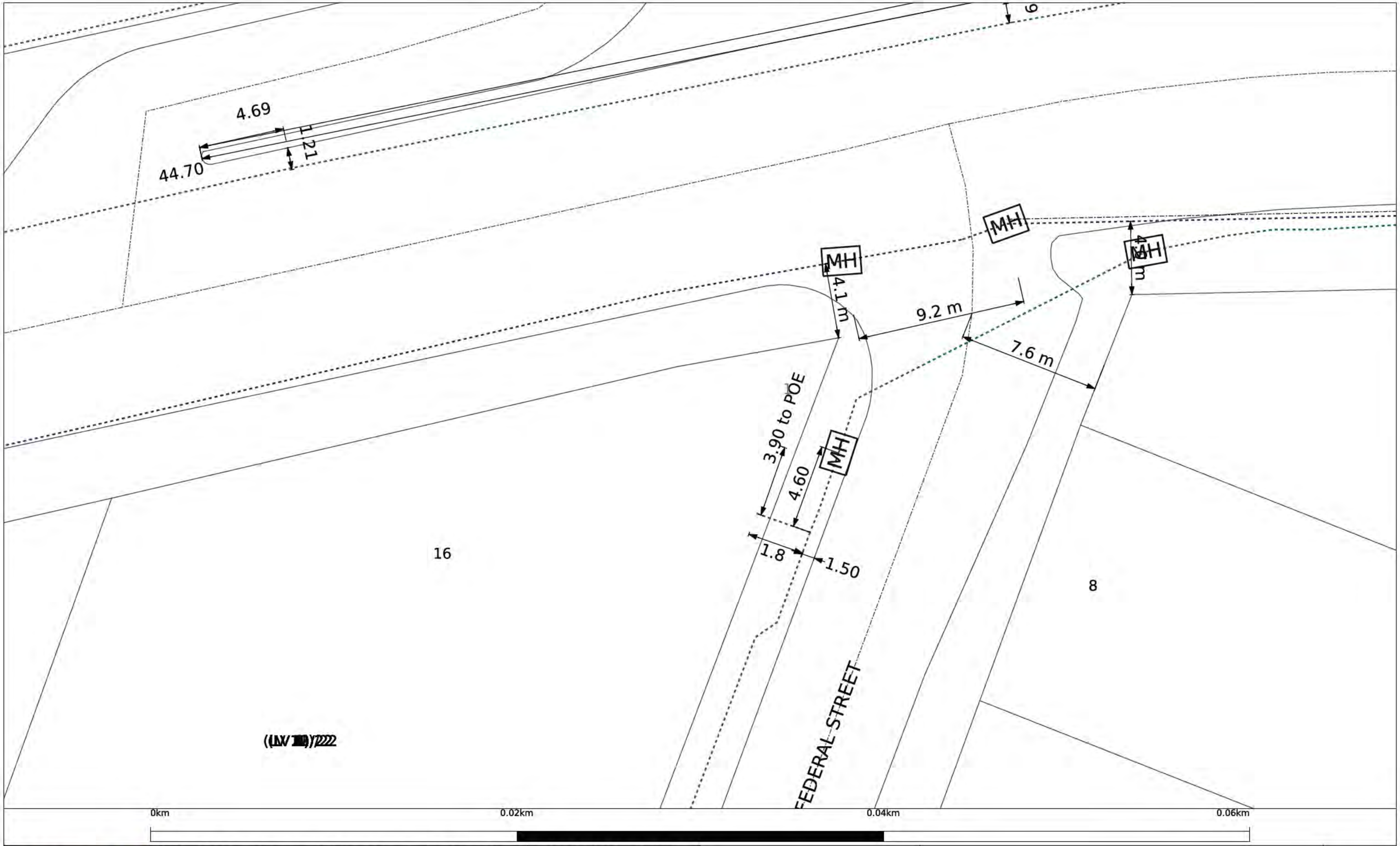
Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- - - - Underground Route.Route Act. - Trench

MH Underground Utility Box.Location Act., T03



![Vector communications]

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Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 11	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

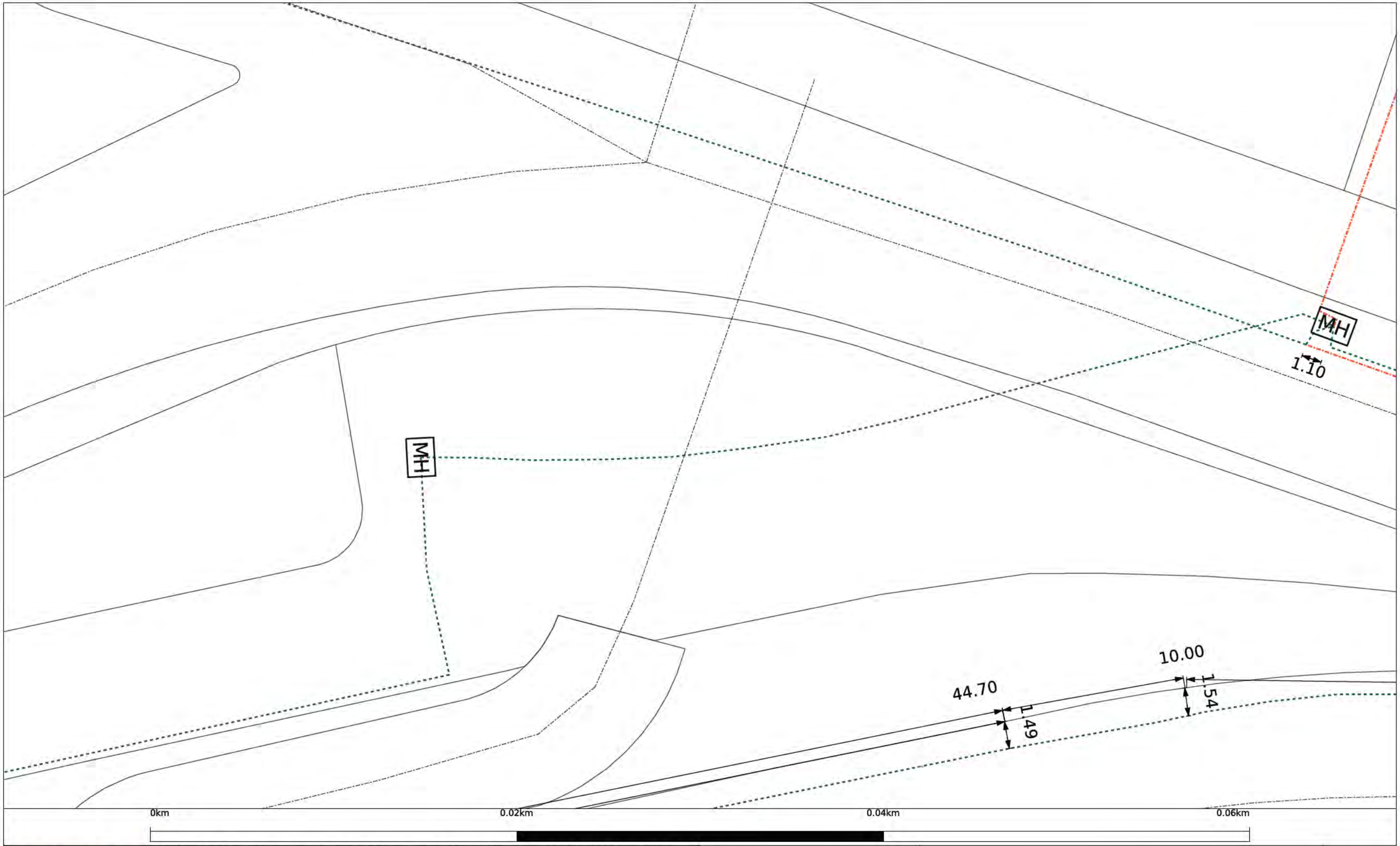
Legend

Strand & Structure [Gis]

---- Underground Route.Route Act. - Gas Standby Main

---- Underground Route.Route Act. - Trench

MH Underground Utility Box.Location Act., T03



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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 12

Scale: 1:200

Printed by: sw-cloud-user

Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

■ ■ ■	Underground Route.Route Act. - Trench
▬ ▬	Underground Route.Route Inact. - Installed In-Place
MH	Underground Utility Box.Location Act., T03

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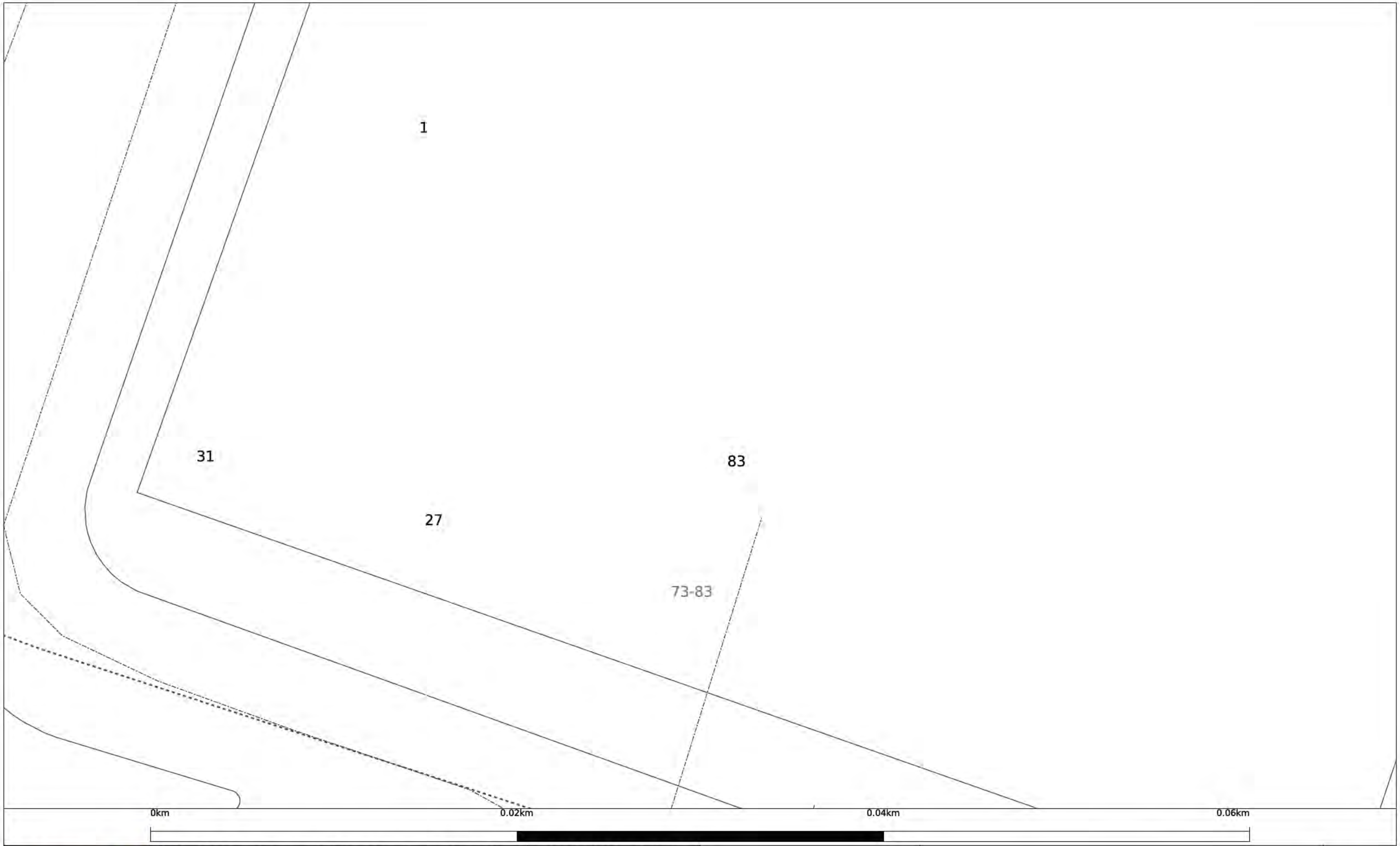

Vector communications

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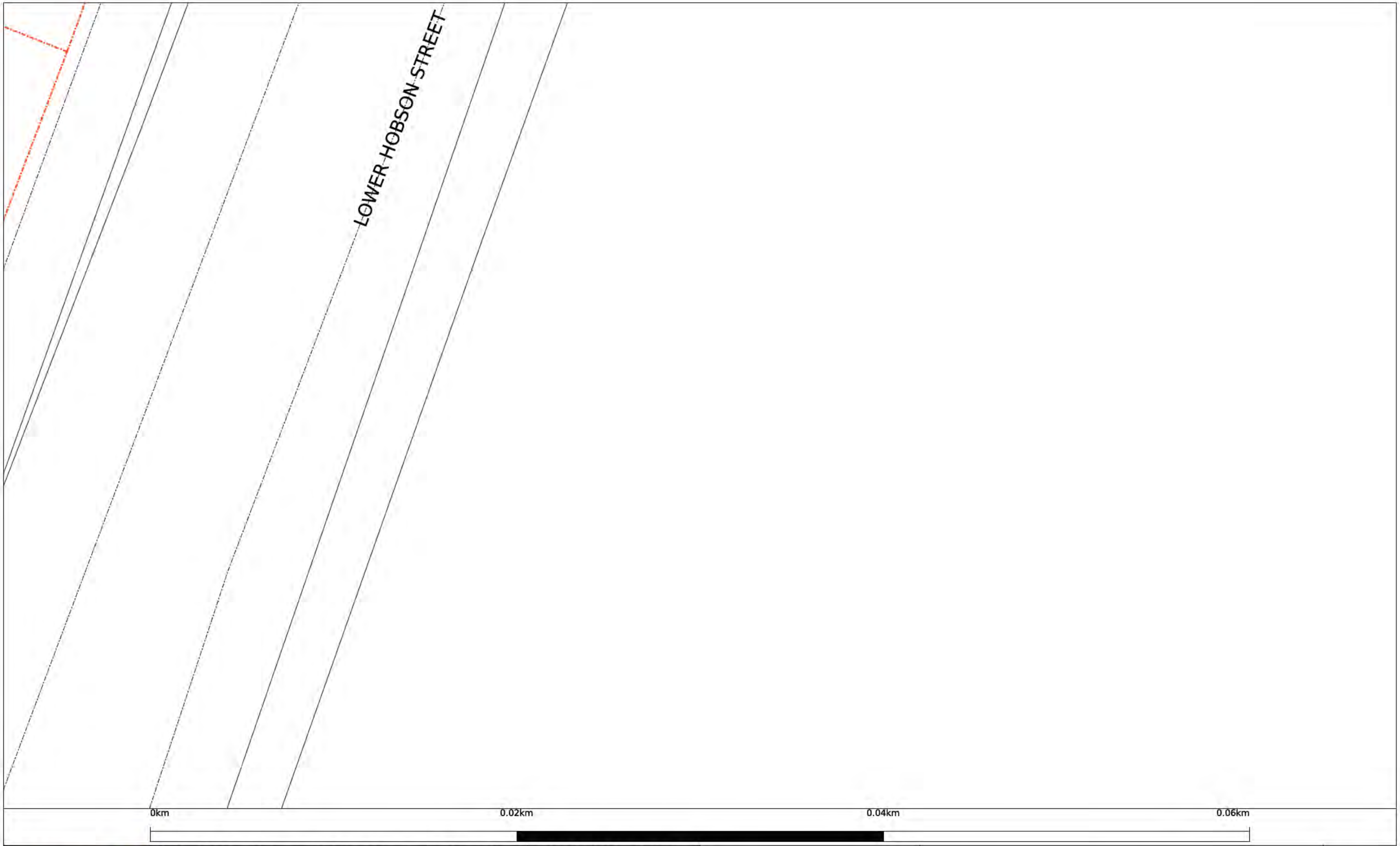
Communication Cable - 0800 826 436

Title:
Company Name:
Customer Contact:
Output: Page 13
Scale: 1:200
Printed by: sw-cloud-user
Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- - - - Underground Route.Route Act. - Trench
-·-·- Underground Route.Route Inact. - Installed In-Place



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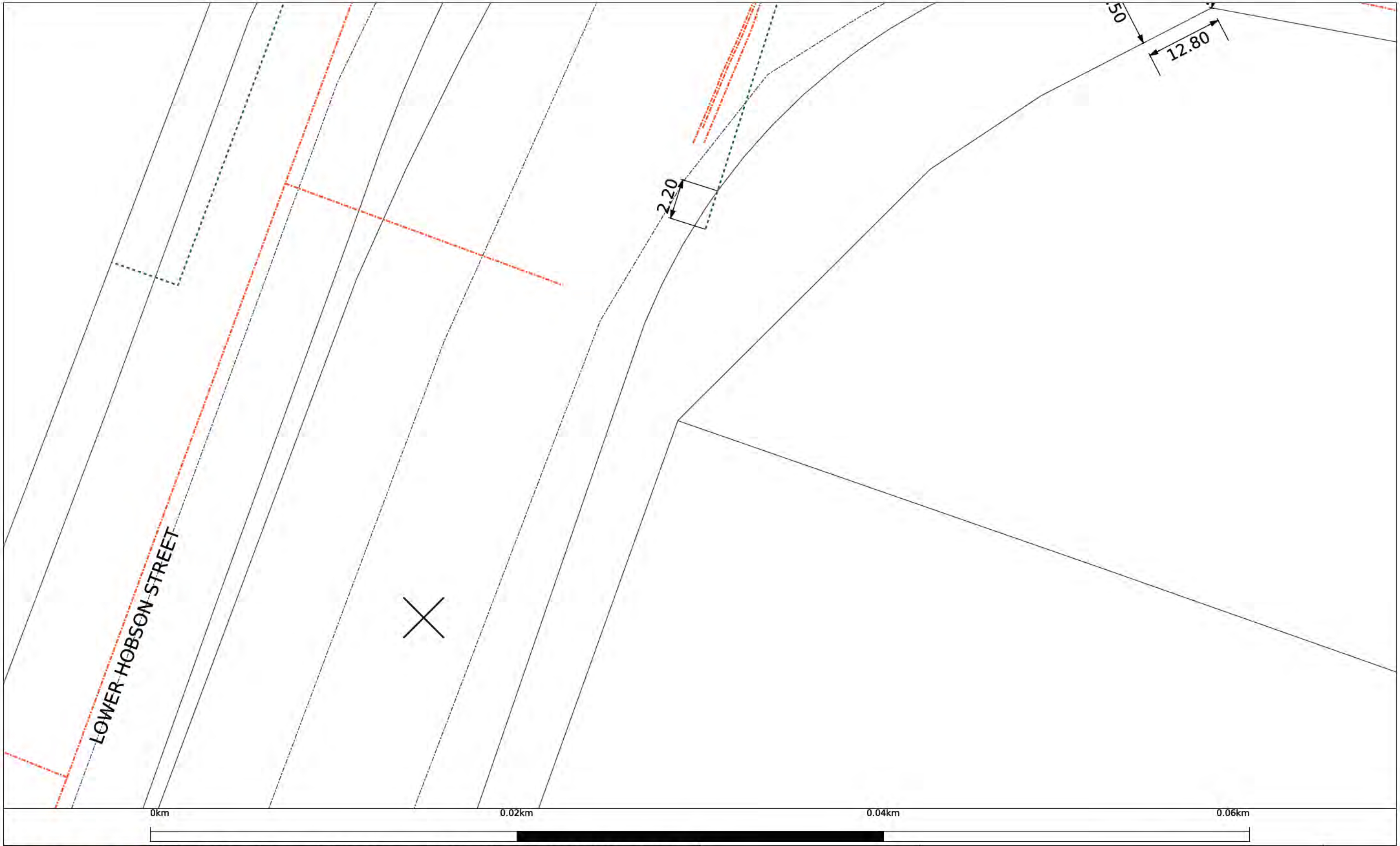
Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 14	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

------	Underground Route.Route Inact. - Installed In-Place



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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 15 | **Scale: 1:200**

Printed by: sw-cloud-user | **Date printed: 29/03/2023**

Legend

Strand & Structure [Gis]

✕ Pole.Location Inact., T02

- - - Underground Route.Route Act. - Trench

▬ Underground Route.Route Inact. - Installed In-Place

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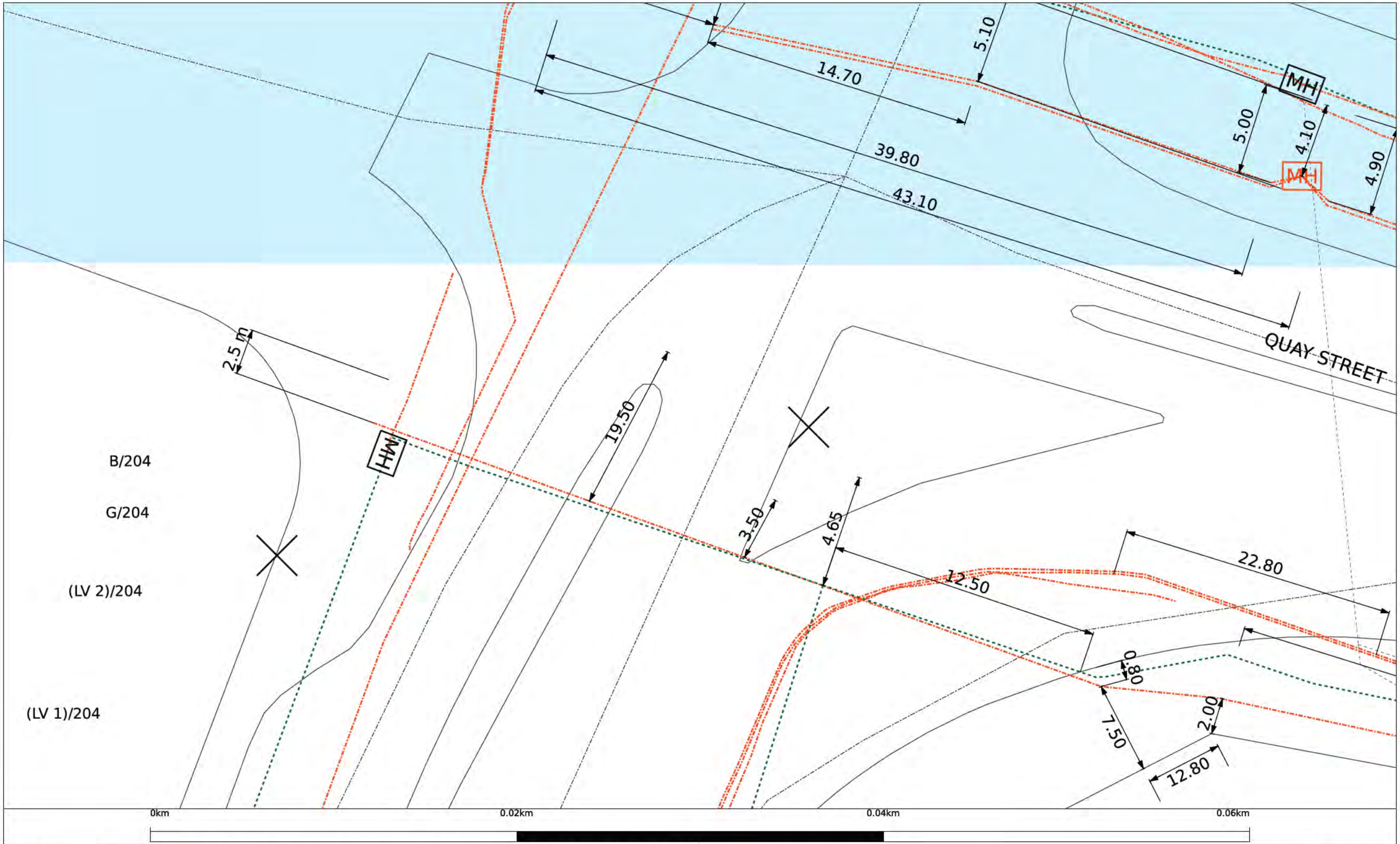

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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 16	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- ✕ Pole.Location Inact., T02
- – – – Underground Route.Route Aband.
- ▪ ▪ ▪ Underground Route.Route Act. - Trench
- ▬ ▬ ▬ Underground Route.Route Inact. - Installed In-Place
- MH Underground Utility Box.Location Act., T03
- MH Underground Utility Box.Location Inact., T03 - Installed In-Place

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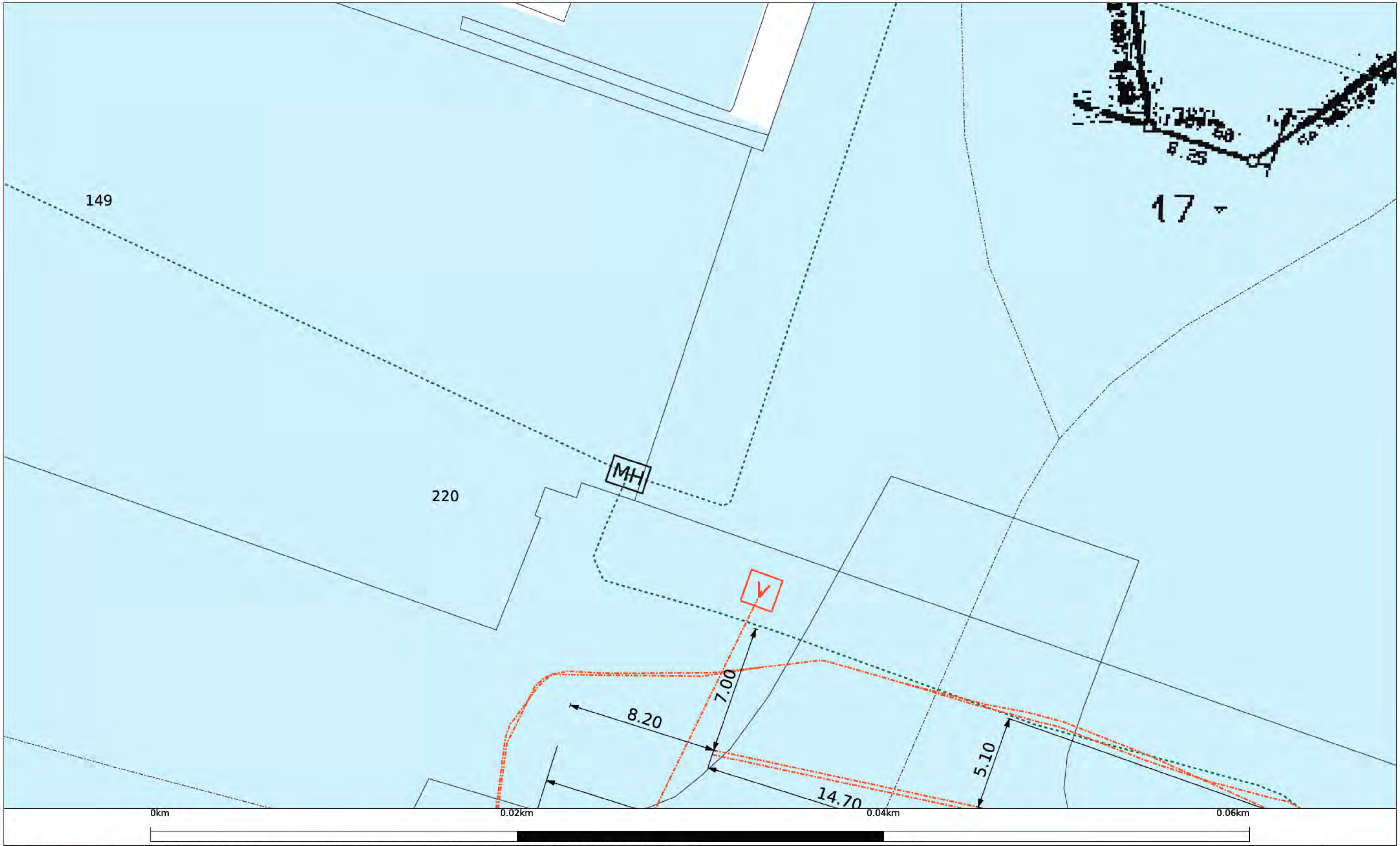

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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 17

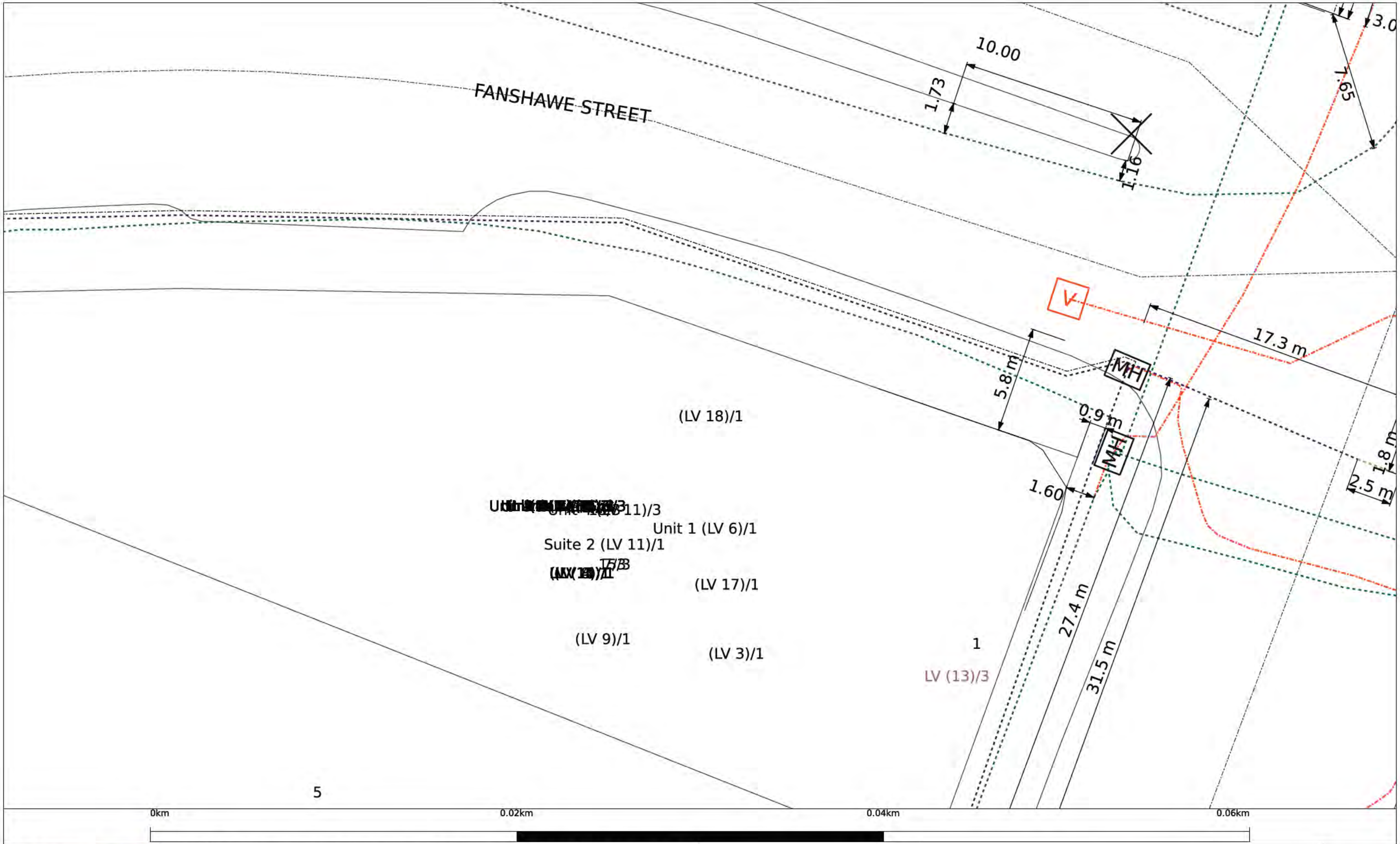
Scale: 1:200

Printed by: sw-cloud-user

Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- - - Underground Route.Route Act. - Trench
-·-· Underground Route.Route Inact. - Installed In-Place
MH Underground Utility Box.Location Act., T03
V Underground Utility Box.Location Inact., T02 - Installed In-Place



Vector communications

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Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 18	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- ✕ Pole.Location Inact., T02
- Underground Route.Route Act. - Gas Standby Main
- Underground Route.Route Act. - PVC
- Underground Route.Route Act. - Trench
- Underground Route.Route Inact. - Installed In-Place
- Underground Utility Box.Location Act., T03
- Underground Utility Box.Location Inact., T02 - Installed In-Place

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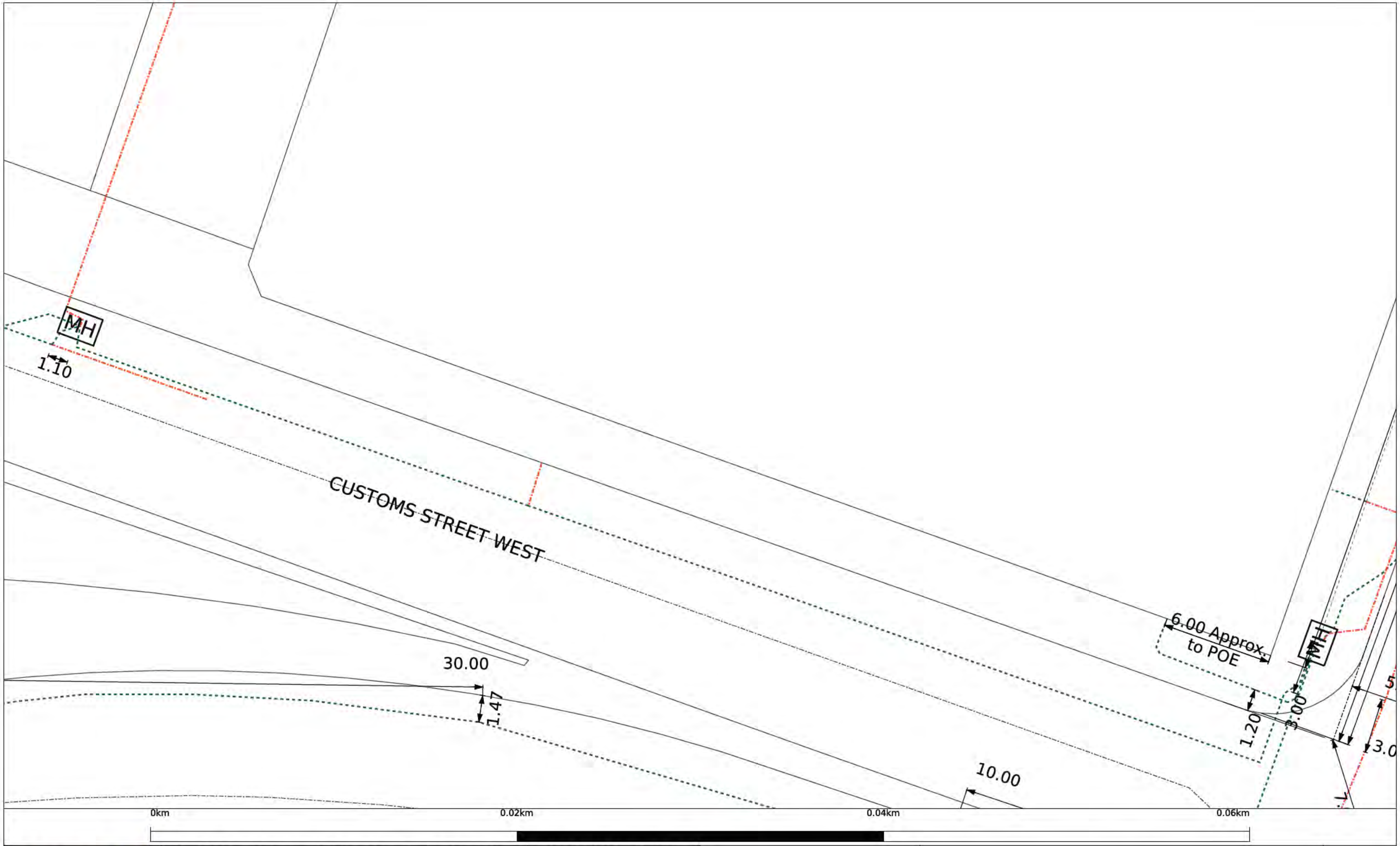

Vector communications

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Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 19	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- – – – Underground Route.Route Aband.
- ▬ ▬ ▬ Underground Route.Route Act. - Trench
- ‐‐‐‐ Underground Route.Route Inact. - Installed In-Place
- MH Underground Utility Box.Location Act., T03

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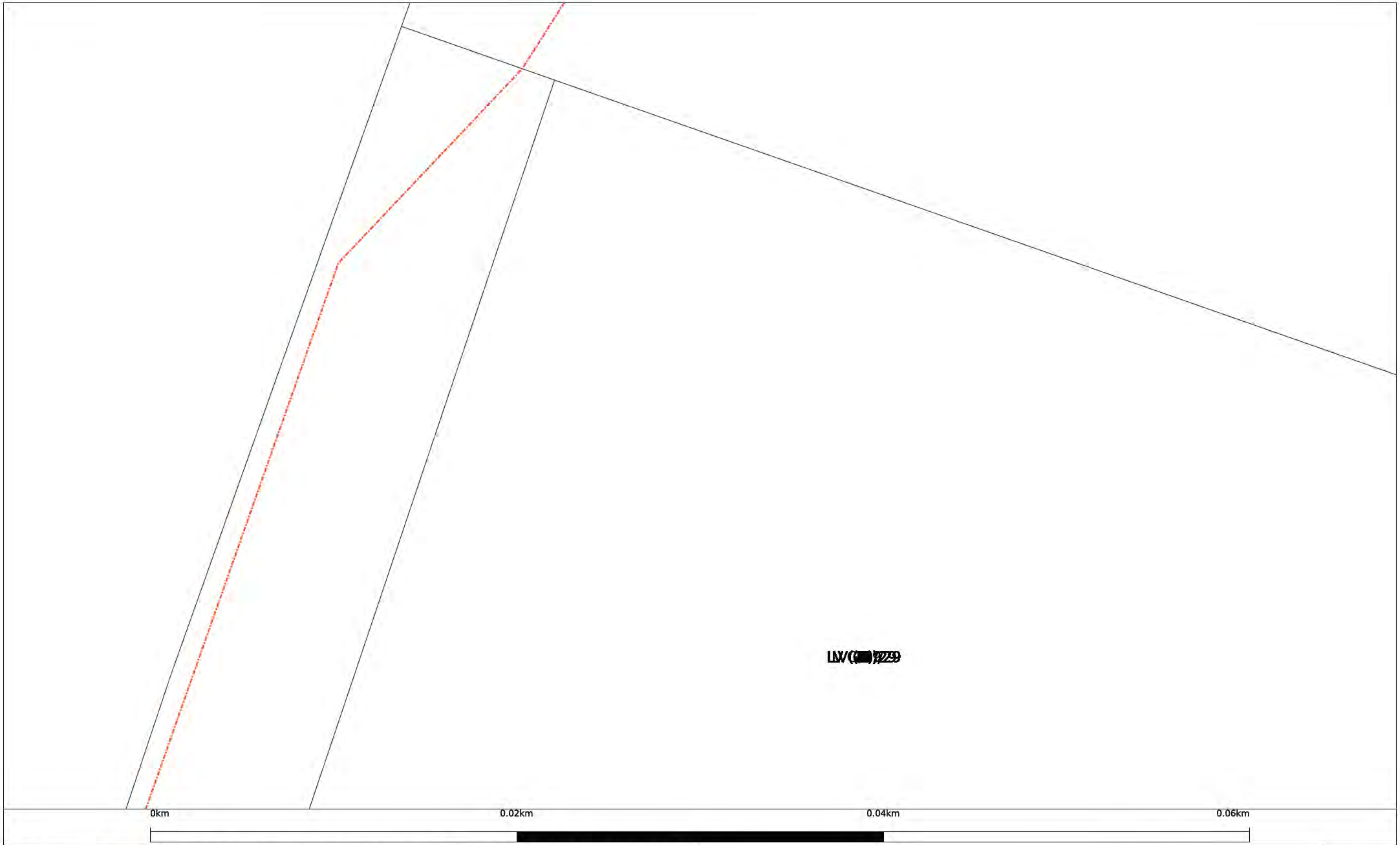

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Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 20	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- - - Underground Route.Route Aband.

- - - Underground Route.Route Act. - Trench

▬ Underground Route.Route Inact. - Installed In-Place

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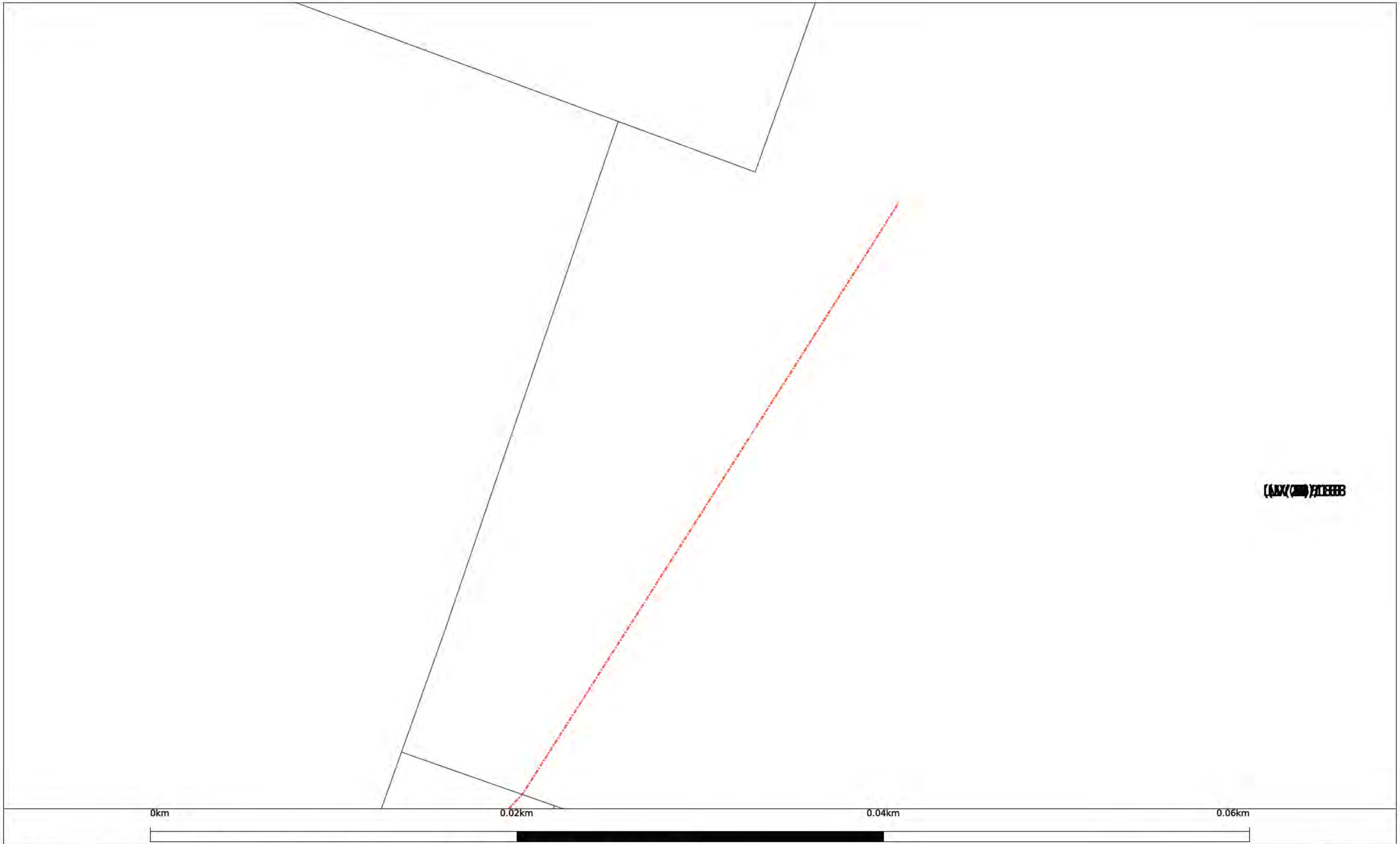

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Communication Cable - 0800 826 436

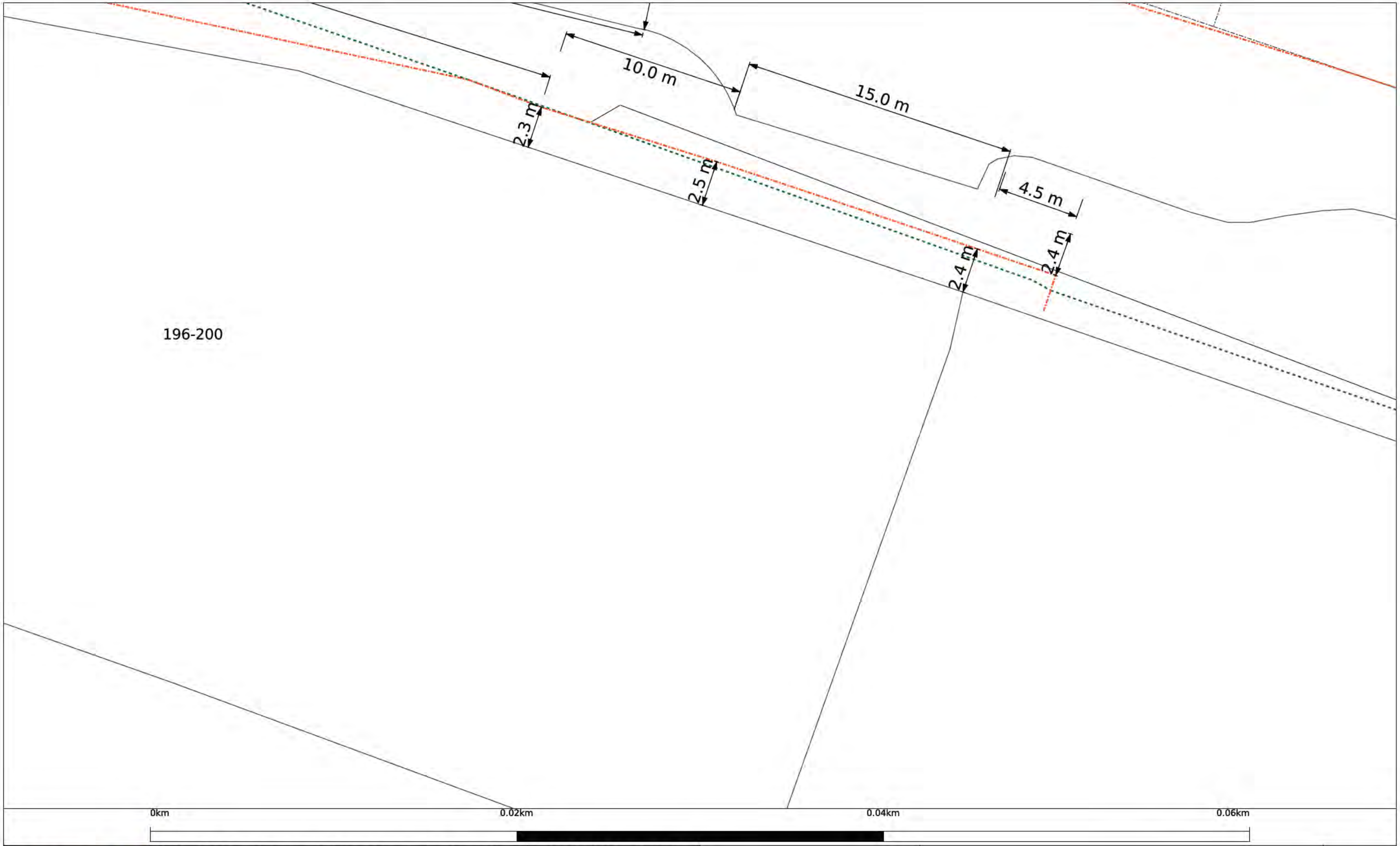
Title:	
Company Name:	
Customer Contact:	
Output: Page 21	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

- - - - Underground Route.Route Act. - Trench

-·-·-· Underground Route.Route Inact. - Installed In-Place



Vector communications

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In the event of damage to equipment please remain clear of the area and immediately phone:

Electricity - 0508 VECTOR (0508 832 867)

Gas - Auckland area call us on 0800 764 764. If you hit a gas pipeline in the rest of the North Island call FIRST GAS on 0800 800 393. If you hit a gas transmission pipeline call FIRST GAS on 0800 734 567

Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 22

Scale: 1:200

Printed by: sw-cloud-user

Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- - - - Underground Route.Route Act. - Trench
-·-·- Underground Route.Route Inact. - Installed In-Place

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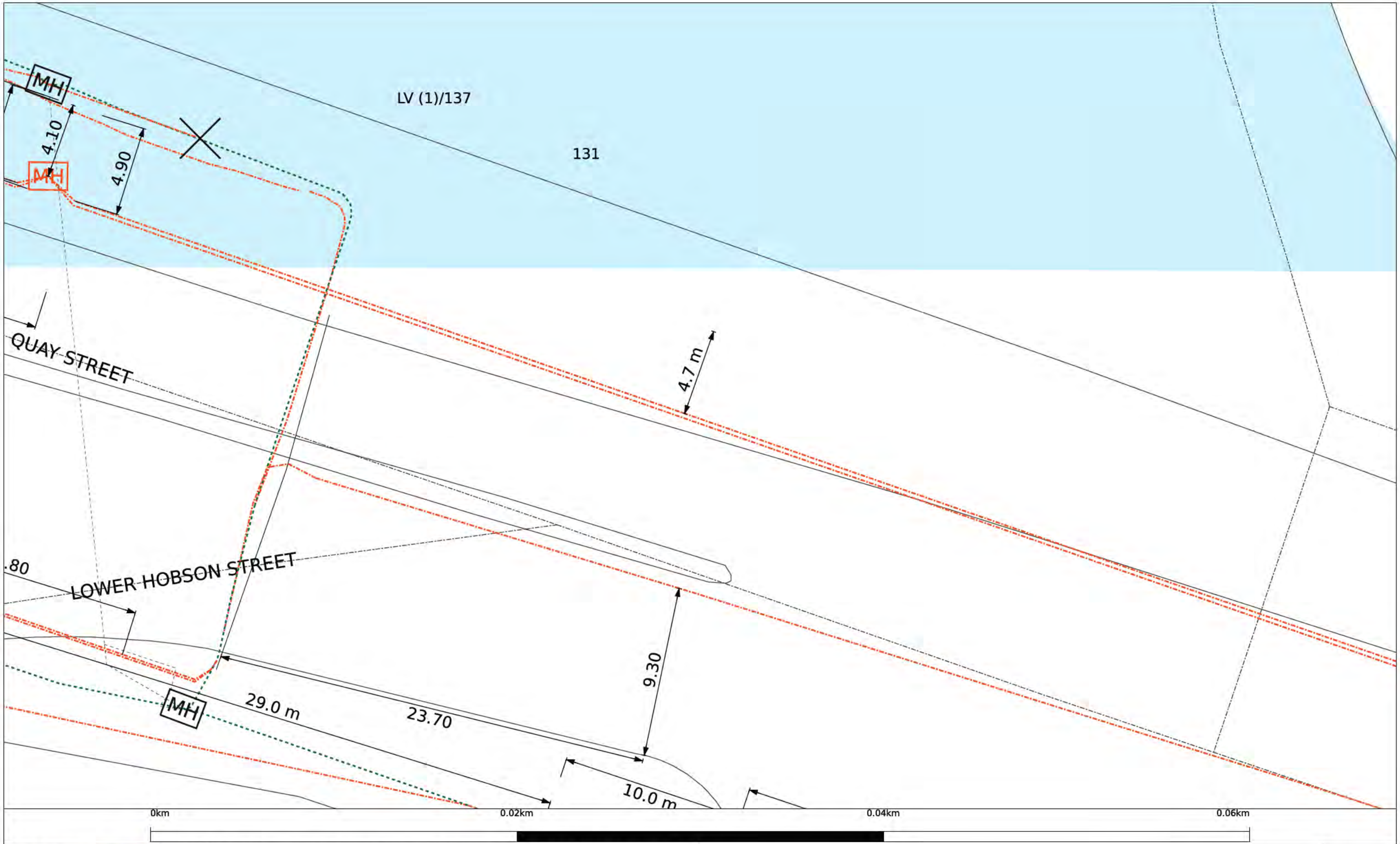

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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 23	**Scale: 1:200**
Printed by: sw-cloud-user	**Date printed: 29/03/2023**

Legend

Strand & Structure [Gis]

✕	Pole.Location Inact., T02
- - -	Underground Route.Route Aband.
▪ ▪ ▪	Underground Route.Route Act. - Trench
▬	Underground Route.Route Inact. - Installed In-Place
■	Underground Utility Box.Location Act., T03
🟥	Underground Utility Box.Location Inact., T03 - Installed In-Place

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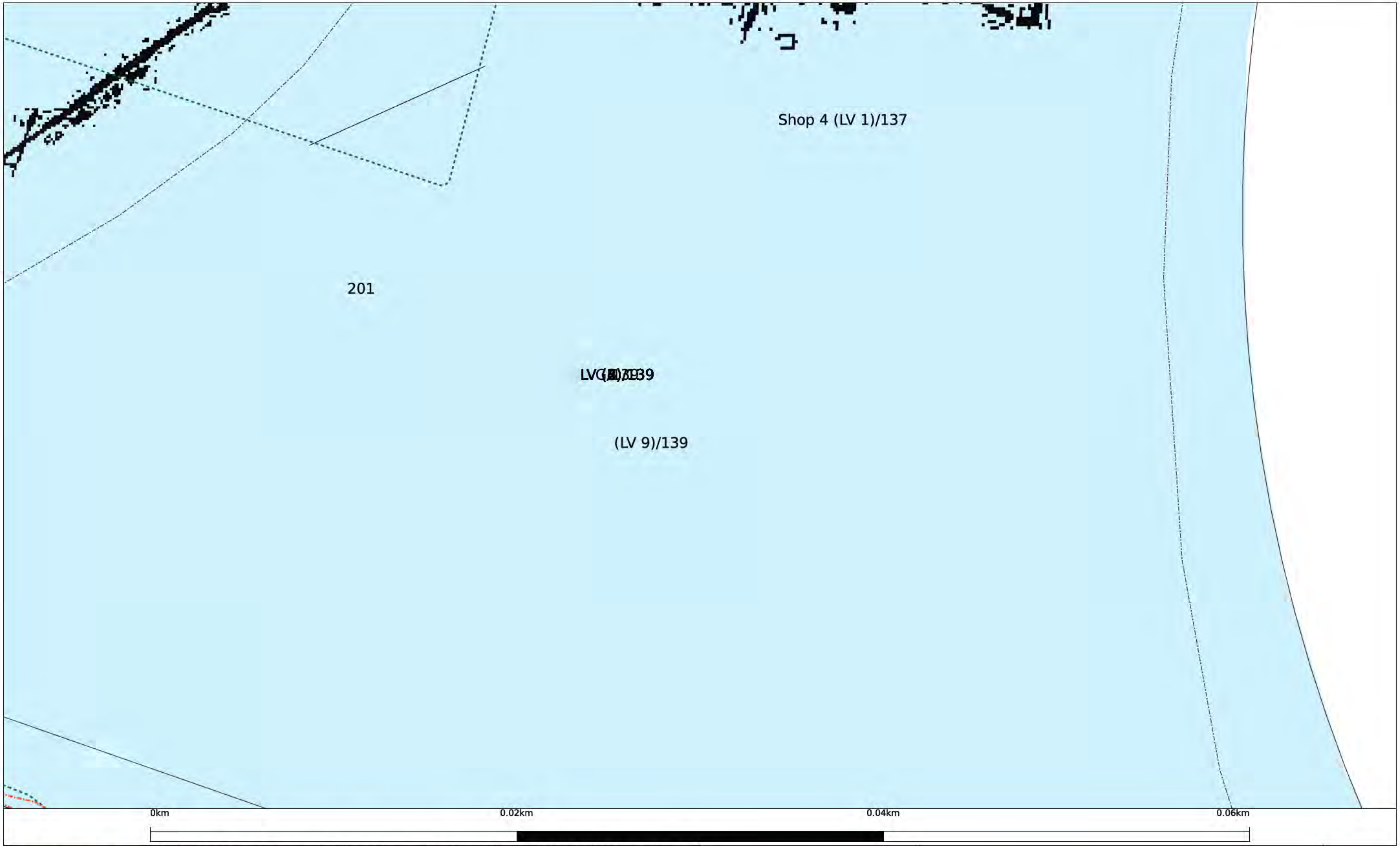

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Gas - Auckland area call us on 0800 764 764. If you hit a gas pipeline in the rest of the North Island call FIRST GAS on 0800 800 393. If you hit a gas transmission pipeline call FIRST GAS on 0800 734 567

Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 24	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- - - - Underground Route.Route Act. - Trench
-·-·-· Underground Route.Route Inact. - Installed In-Place

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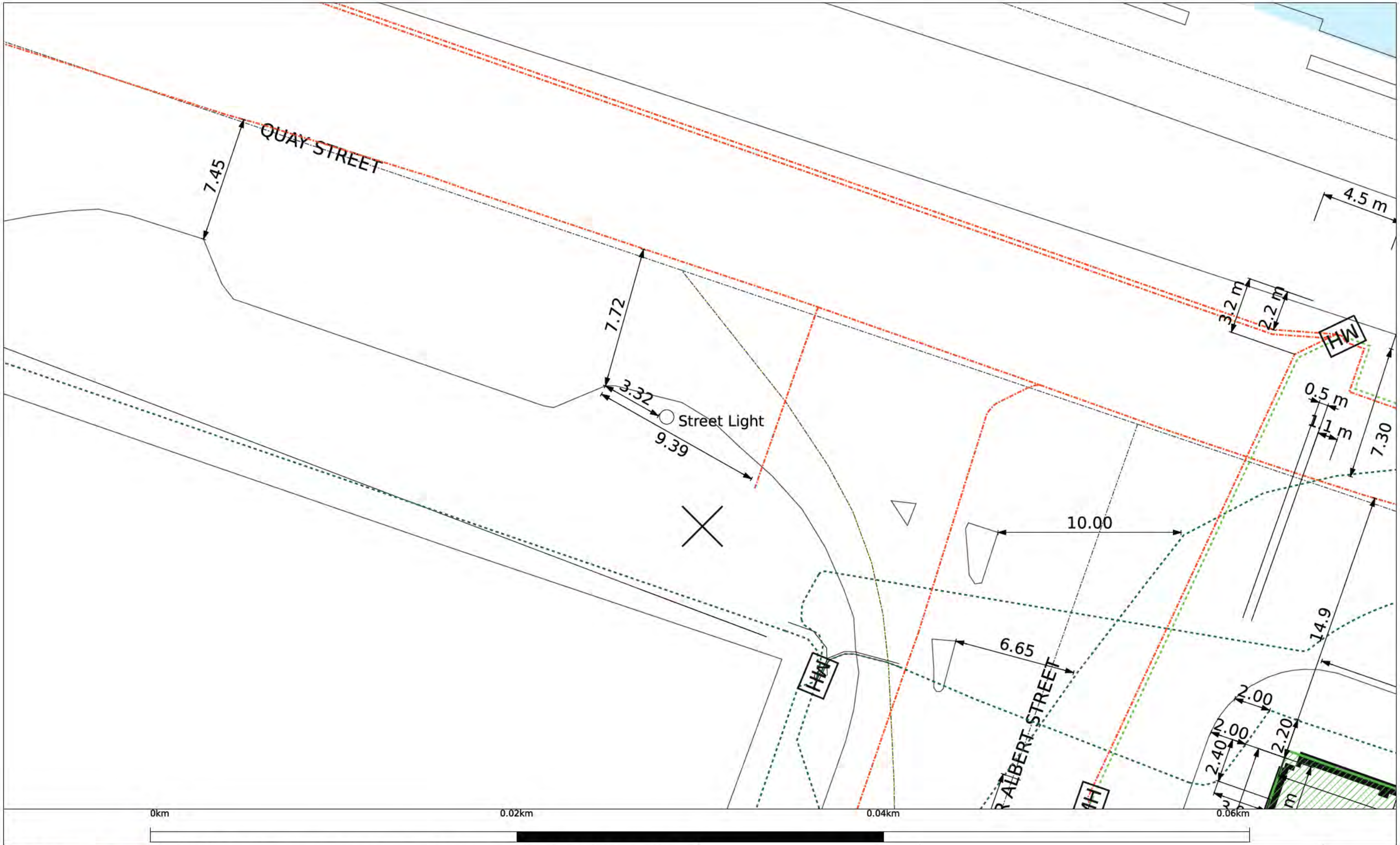

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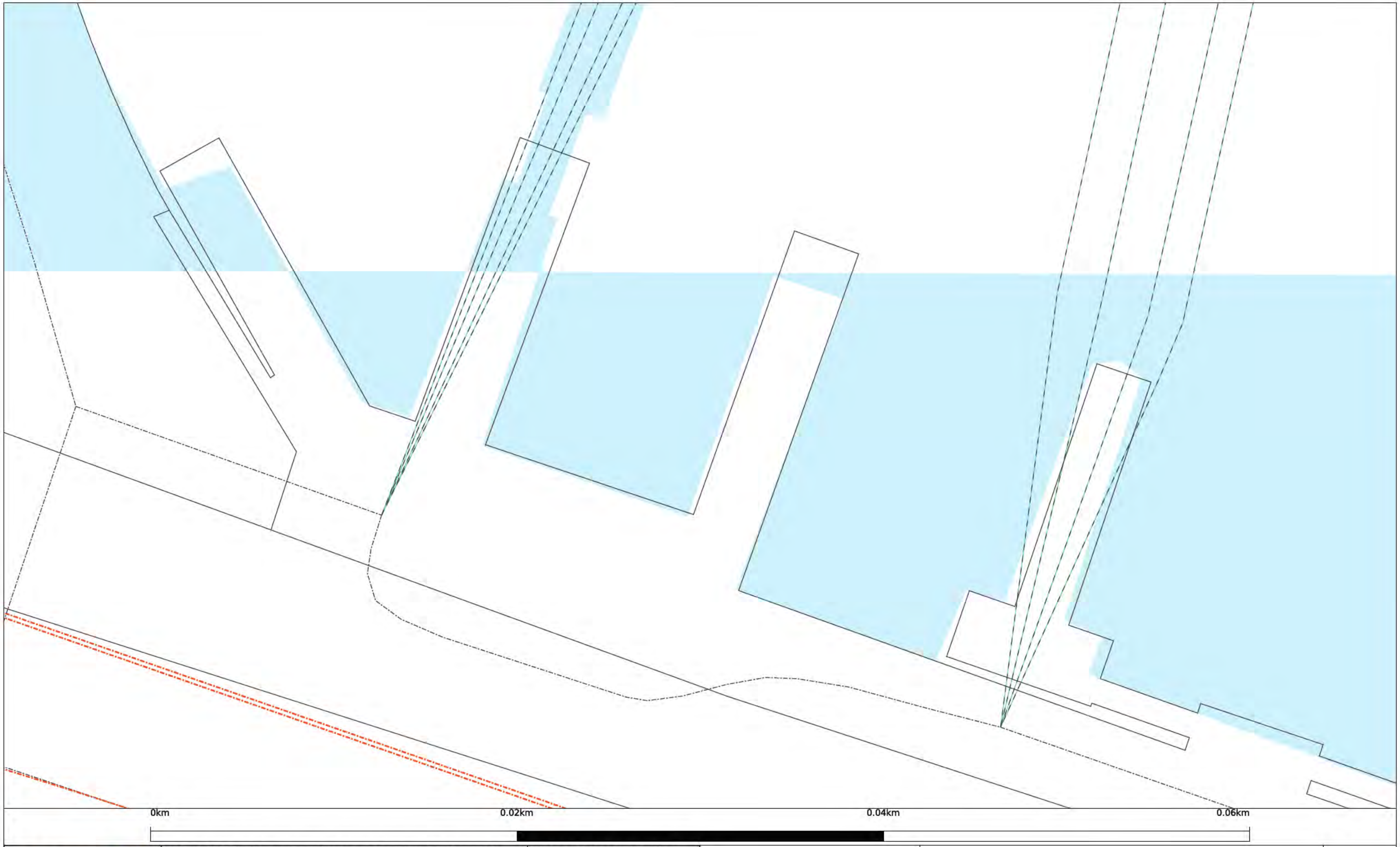
Communication Cable - 0800 826 436

Title:	
Company Name:	
Customer Contact:	
Output: Page 25	Scale: 1:200
Printed by: sw-cloud-user	Date printed: 29/03/2023

Legend

Strand & Structure [Gis]
- ✕ Pole.Location Inact., T02
- Underground Route.Route Aband.
- Underground Route.Route Act. - PVC
- Underground Route.Route Act. - Trench
- Underground Route.Route Inact. - Installed In-Place
- MH Underground Utility Box.Location Act., T03



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Communication Cable - 0800 826 436

Title:

Company Name:

Customer Contact:

Output: Page 26

Scale: 1:200

Printed by: sw-cloud-user

Date printed: 29/03/2023

Legend

Strand & Structure [Gis]

-------- Underground Route.Route Inact. - Installed In-Place

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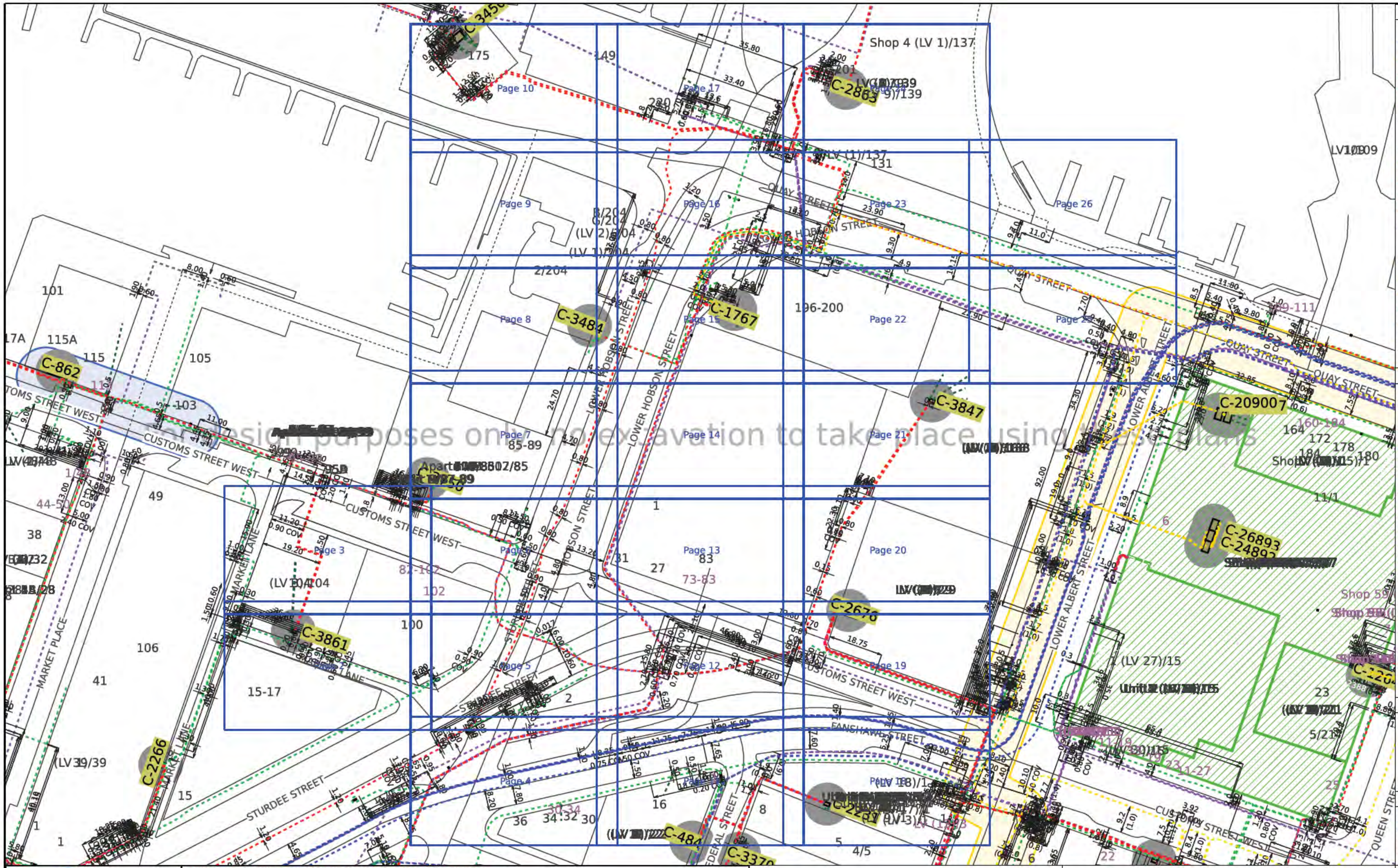

CABLE COLOUR CODE

CABLES IN USE

- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE

- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

JOINTS & SEALING ENDS

- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES ○ ○ ○ ○ ○
- LAMP
- CESSPIT
- MANHOLE
- F H FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150
200 250 300

WORK MANAGEMENT

- IN PROGRESS
- FUTURE PLANNED
- PLANNED

22kV, 33kV, 110kV SUB TRANSMISSION CABLES-SPECIAL CONDITIONS APPLY:
Vector Limited provides a free standover service that requires 2 working days notice. Hand digging is required when excavating within 1 metre of the cable. Replacement trench backfill material must be the same as that removed and it must be replaced to the same level of compaction. Refer to attached covering letter for additional information.

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Request Title:	
Company Name:	
Usage:	Request ID: 11197175
Request for:	No associated viewport
Customer Contact:	Printed by: sw-cloud-user
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 1 of 26

A3 ELECTRICITY OBSTRUCTION PLAN

N
W No associated viewport E
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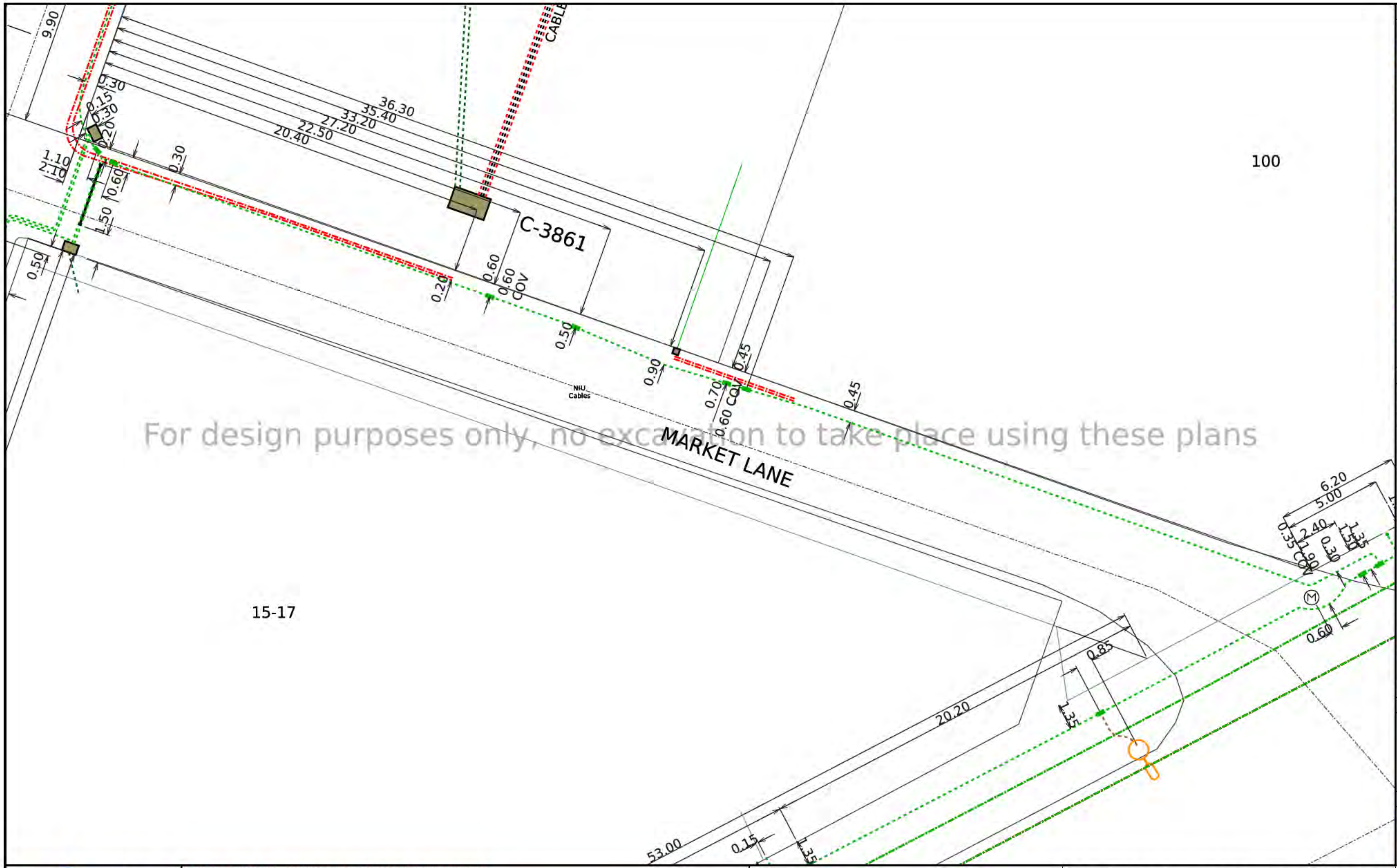

CABLE COLOUR CODE

CABLES IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

JOINTS & SEALING ENDS
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- MANHOLE
- FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

22kV, 33kV, 110kV SUB TRANSMISSION CABLES-SPECIAL CONDITIONS APPLY:

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A3 ELECTRICITY OBSTRUCTION PLAN

Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197175
Request for:	Scale: 1:200
Customer Contact:	Printed by: sw-cloud-user
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 2 of 26

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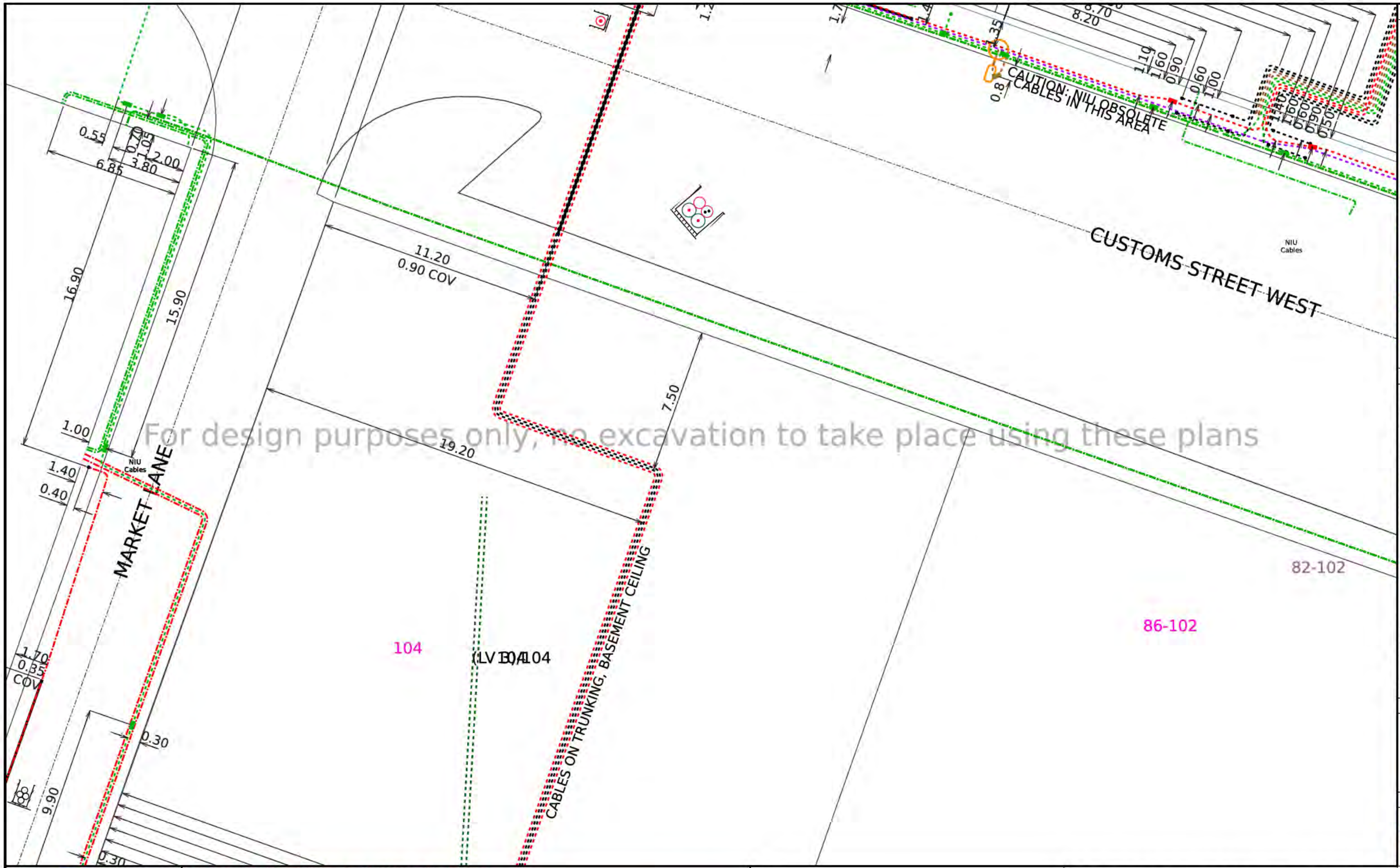

CABLE COLOUR CODE

CABLES IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

JOINTS & SEALING ENDS
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- Ⓜ MANHOLE
- F H FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

22kV, 33kV, 110kV SUB TRANSMISSION CABLES-SPECIAL CONDITIONS APPLY:

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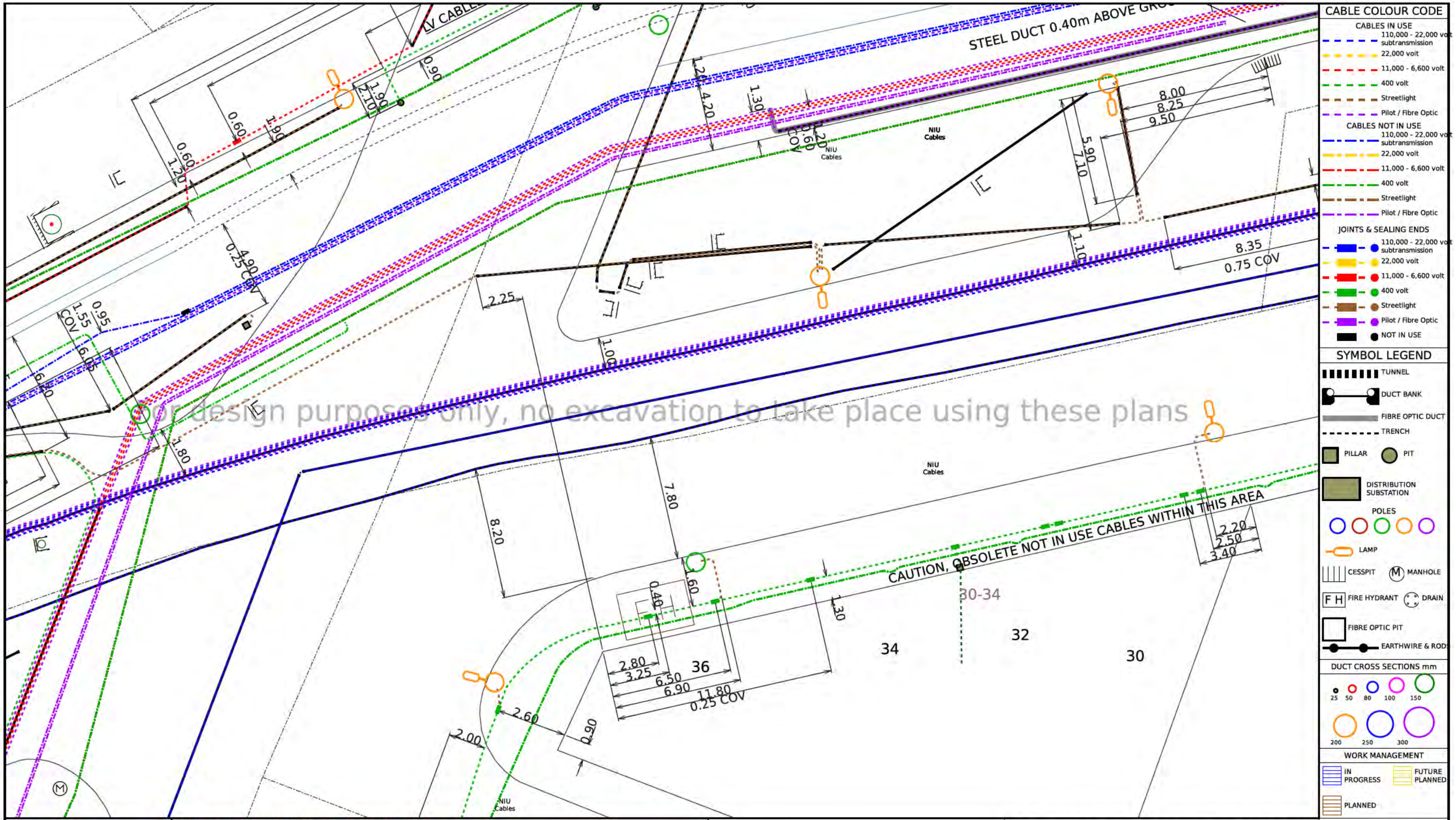
Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197175
Request for:	Scale: 1:200
Customer Contact:	Printed by: sw-cloud-user
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 3 of 26

A3 ELECTRICITY OBSTRUCTION PLAN



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Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197175
Request for:	Scale: 1:200
Customer Contact:	Printed by: sw-cloud-user
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 4 of 26

A3 ELECTRICITY OBSTRUCTION PLAN

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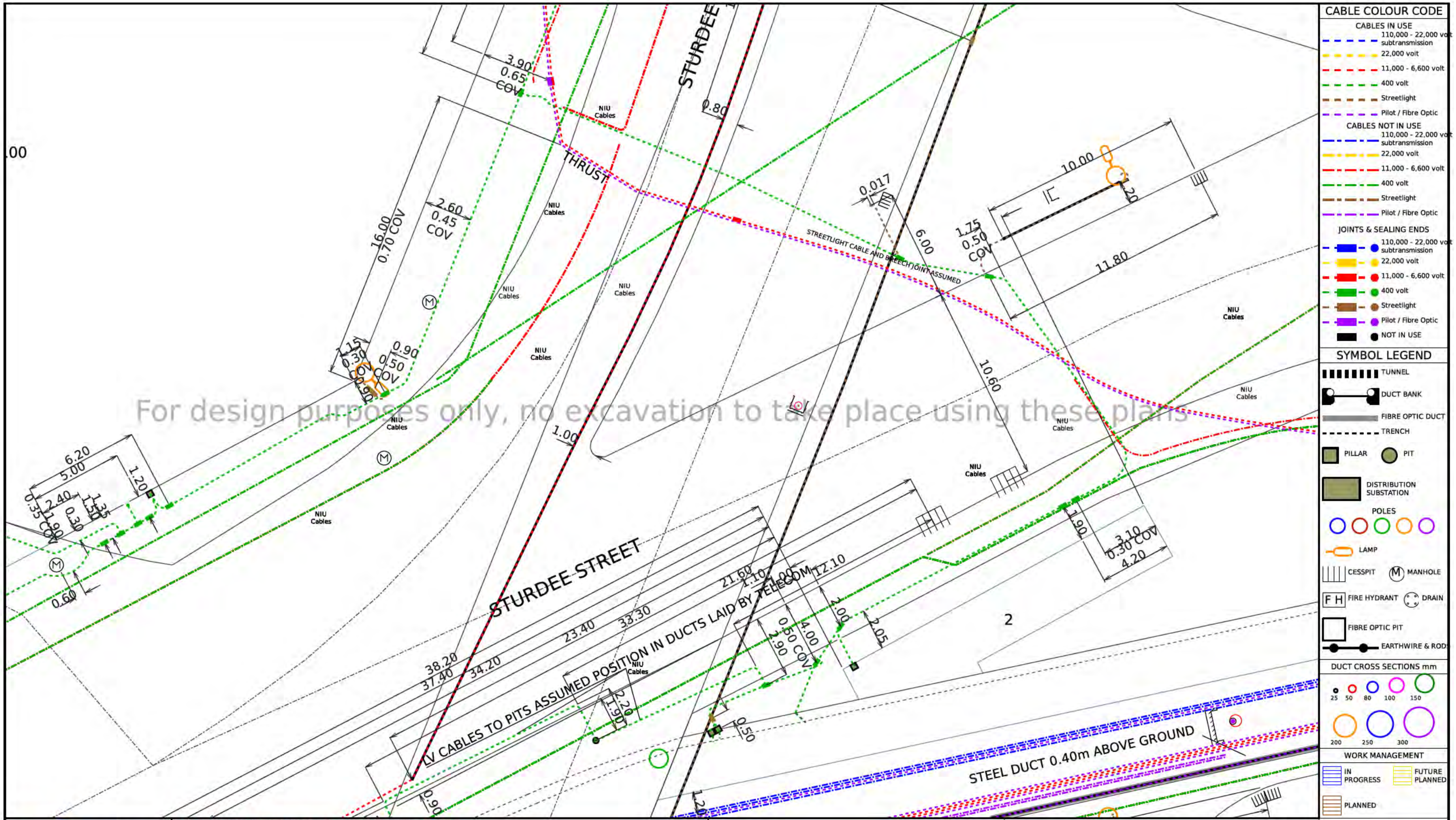

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Title:

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Company Name:	
Usage:	Request ID: 11197175
Request for:	Scale: 1:200
Customer Contact:	Printed by: sw-cloud-user
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Client Reference:	Page: 5 of 26

A3 ELECTRICITY OBSTRUCTION PLAN

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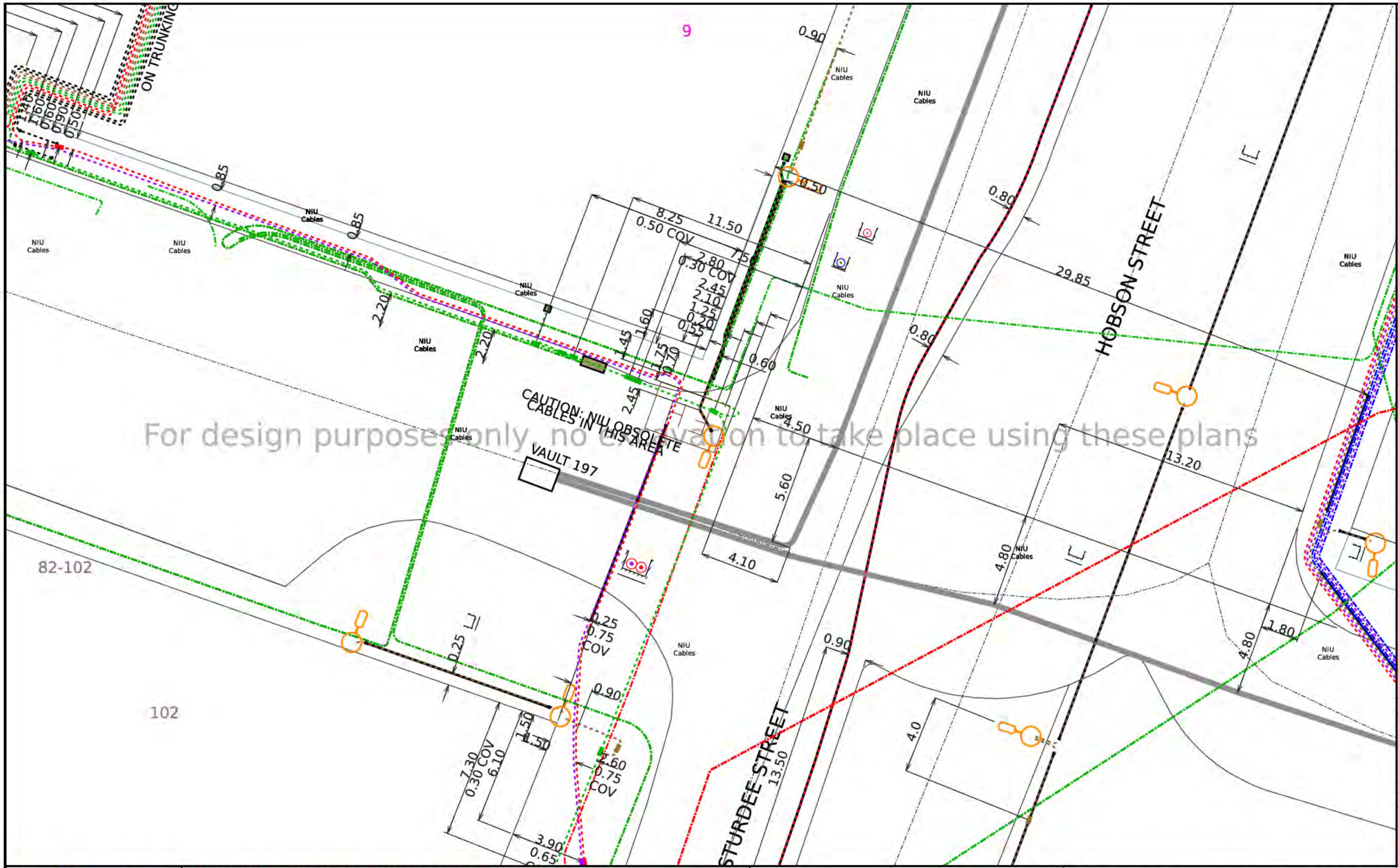

CABLE COLOUR CODE

CABLES IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE
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- 400 volt
- Streetlight
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JOINTS & SEALING ENDS
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- MANHOLE
- FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

22kV, 33kV, 110kV SUB TRANSMISSION CABLES-SPECIAL CONDITIONS APPLY:

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Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197175
Request for:	Scale: 1:200
Customer Contact:	Printed by: sw-cloud-user
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 6 of 26

A3 ELECTRICITY OBSTRUCTION PLAN

CABLE COLOUR CODE

CABLES IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
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CABLES NOT IN USE
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- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- MANHOLE
- FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

22kV, 33kV, 110kV SUB TRANSMISSION CABLES-SPECIAL CONDITIONS APPLY:

Vector Limited provides a free standover service that requires 2 working days notice. Hand digging is required when excavating within 1 metre of the cable. Replacement trench backfill material must be the same as that removed and it must be replaced to the same level of compaction. Refer to attached covering letter for additional information.

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Title:	
Request Title:	
Company Name:	
Usage:	Request ID: 11197175
Request for:	Scale: 1:200
Customer Contact:	Printed by: sw-cloud-user
Phone:	Date printed: 29. March 2023
Client Reference:	Page: 7 of 26

A3 ELECTRICITY OBSTRUCTION PLAN

N
W E
S

CABLE COLOUR CODE

CABLES IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

JOINTS & SEALING ENDS
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- MANHOLE
- FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150
200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

vector

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A3 ELECTRICITY OBSTRUCTION PLAN

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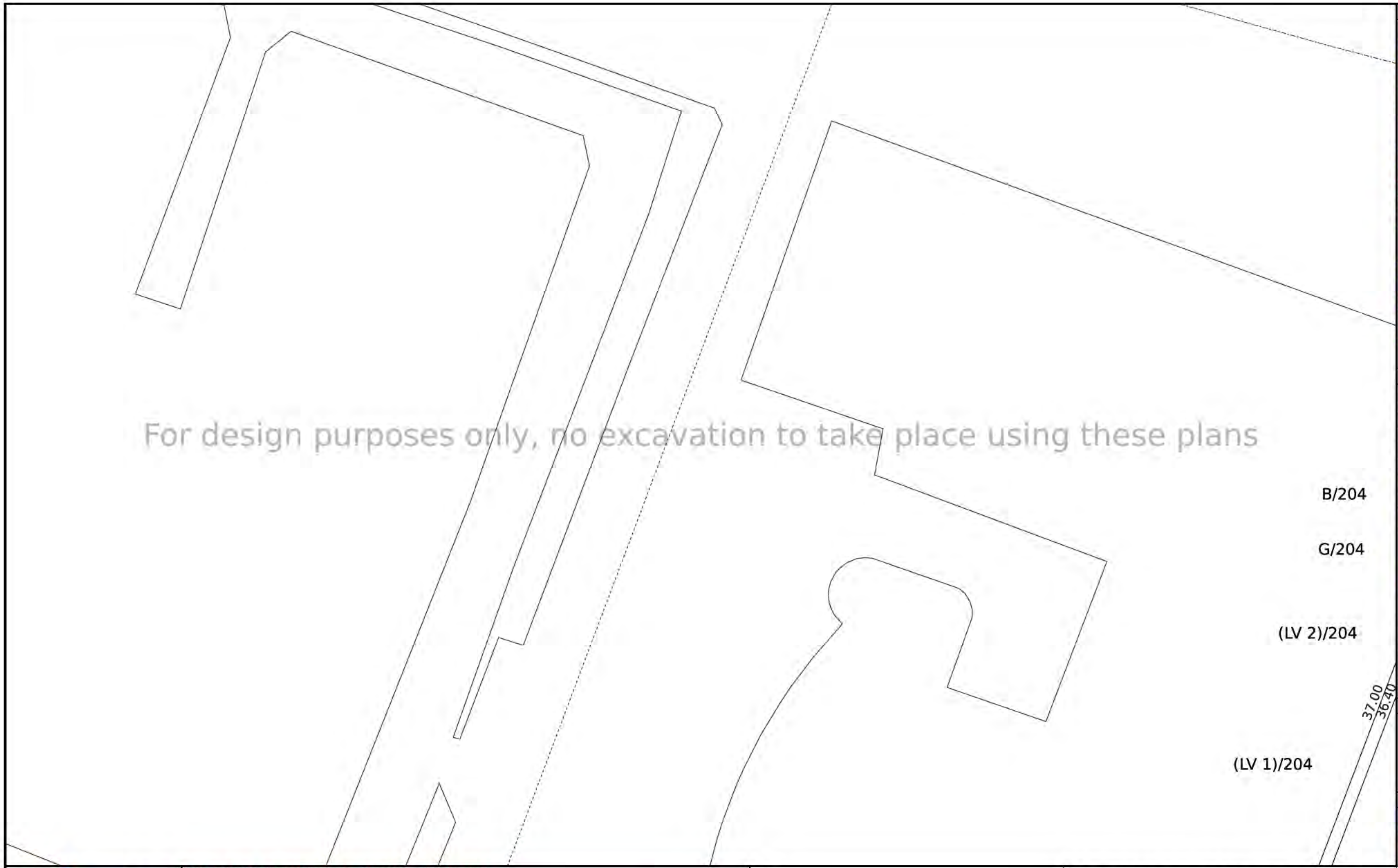

CABLE COLOUR CODE

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- 22,000 volt
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- DRAIN
- ☐ FIBRE OPTIC PIT
- EARTHWIRE & ROD

DUCT CROSS SECTIONS mm

25 50 80 100 150
200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
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vector

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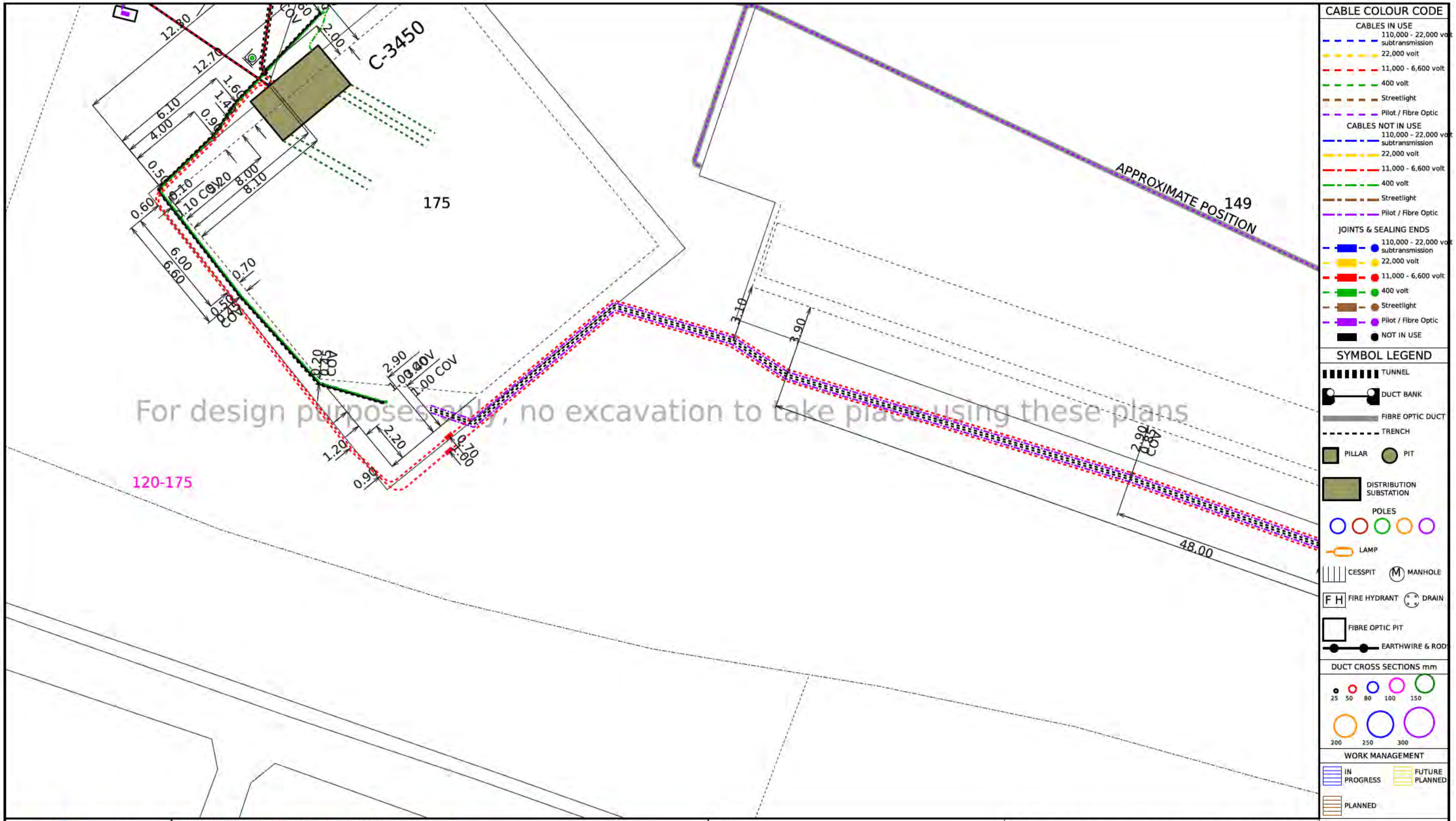
A3 ELECTRICITY OBSTRUCTION PLAN



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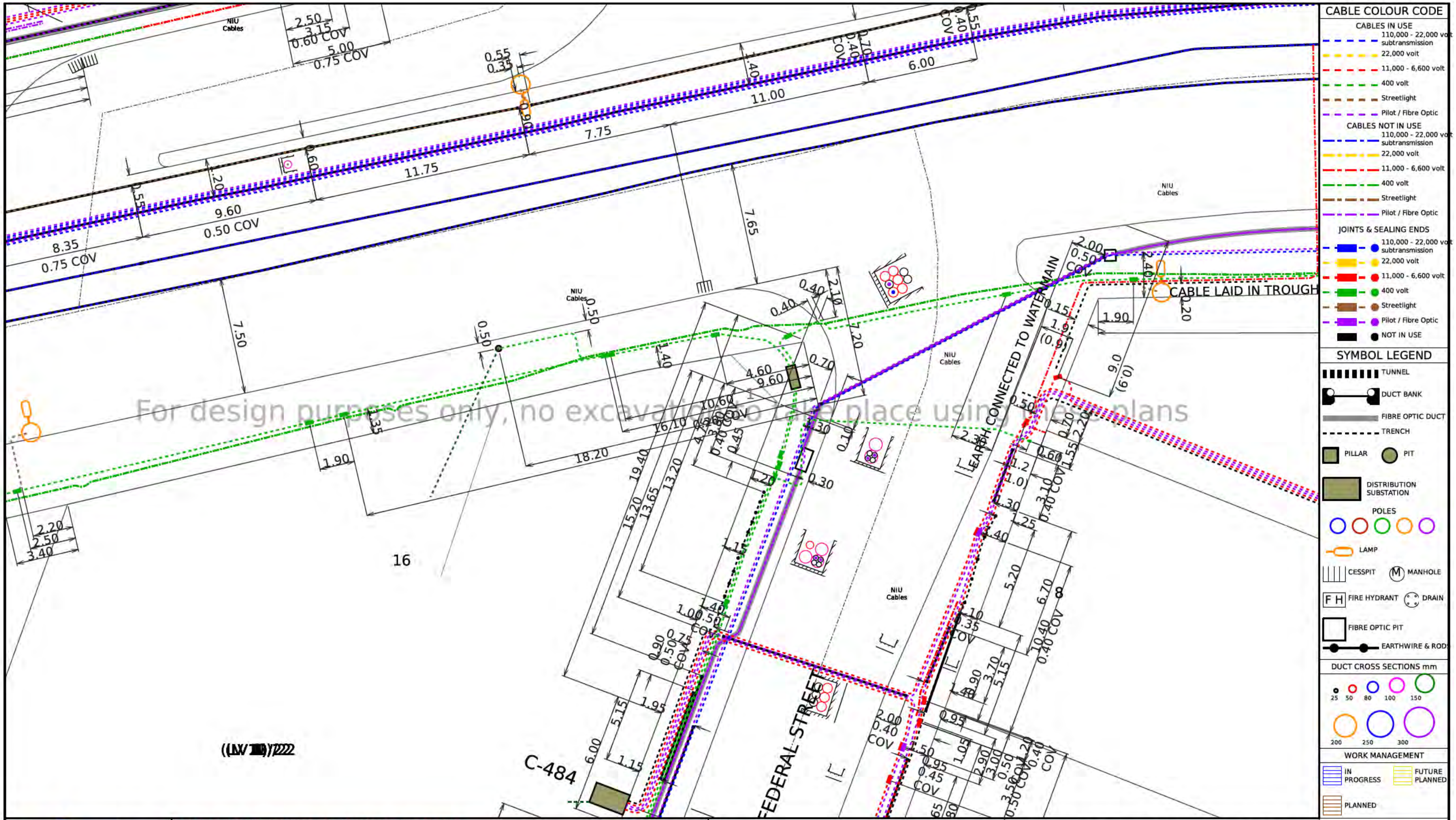
A3 ELECTRICITY OBSTRUCTION PLAN



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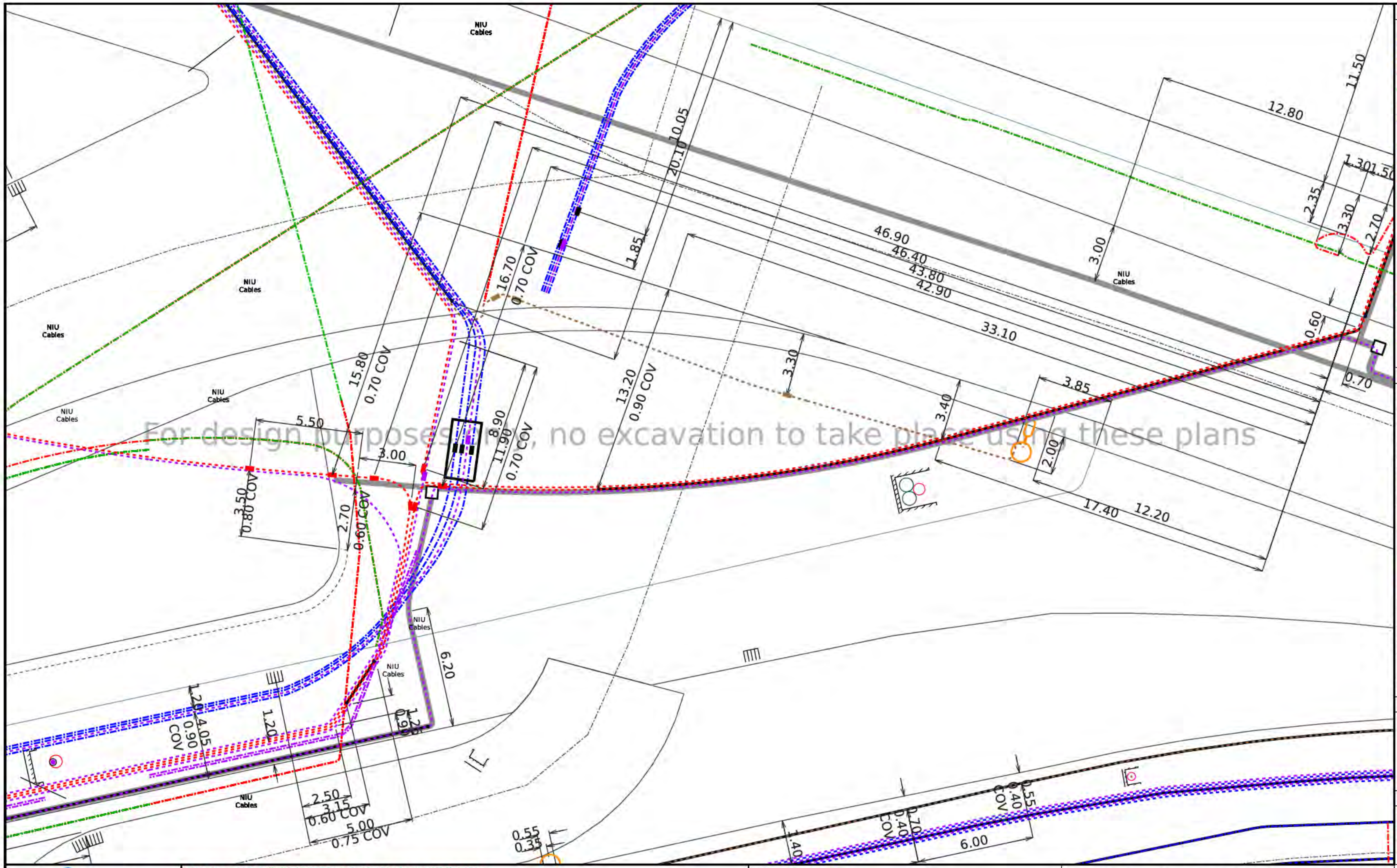

CABLE COLOUR CODE

CABLES IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

JOINTS & SEALING ENDS
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND
- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- M MANHOLE
- F H FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm
25 50 80 100 150
200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

vector

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A3 ELECTRICITY OBSTRUCTION PLAN

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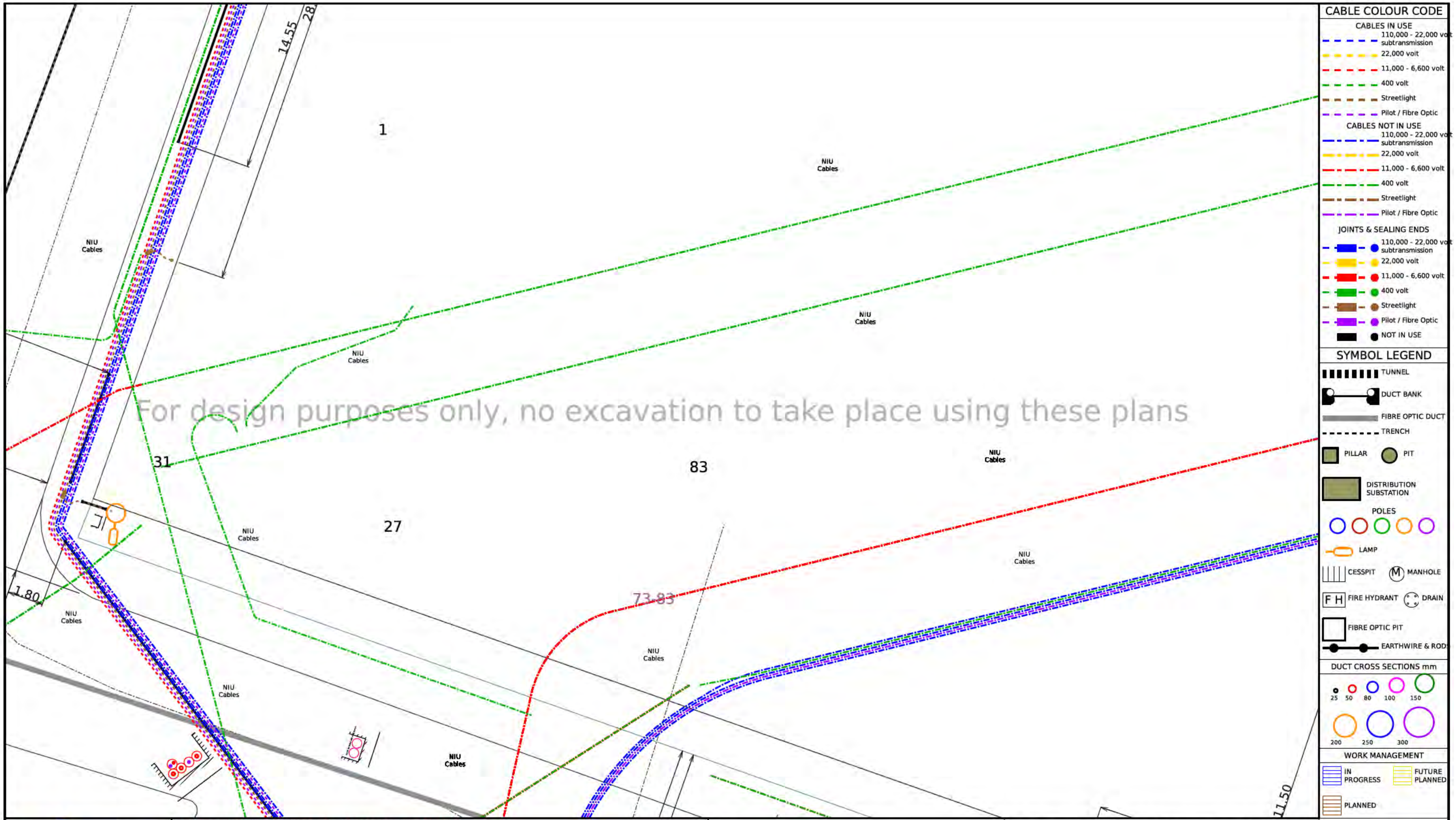

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A3 ELECTRICITY OBSTRUCTION PLAN

N
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CABLE COLOUR CODE

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- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

CABLES NOT IN USE
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

JOINTS & SEALING ENDS
- 110,000 - 22,000 volt subtransmission
- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- Ⓜ MANHOLE
- F H FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

vector

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A3 ELECTRICITY OBSTRUCTION PLAN

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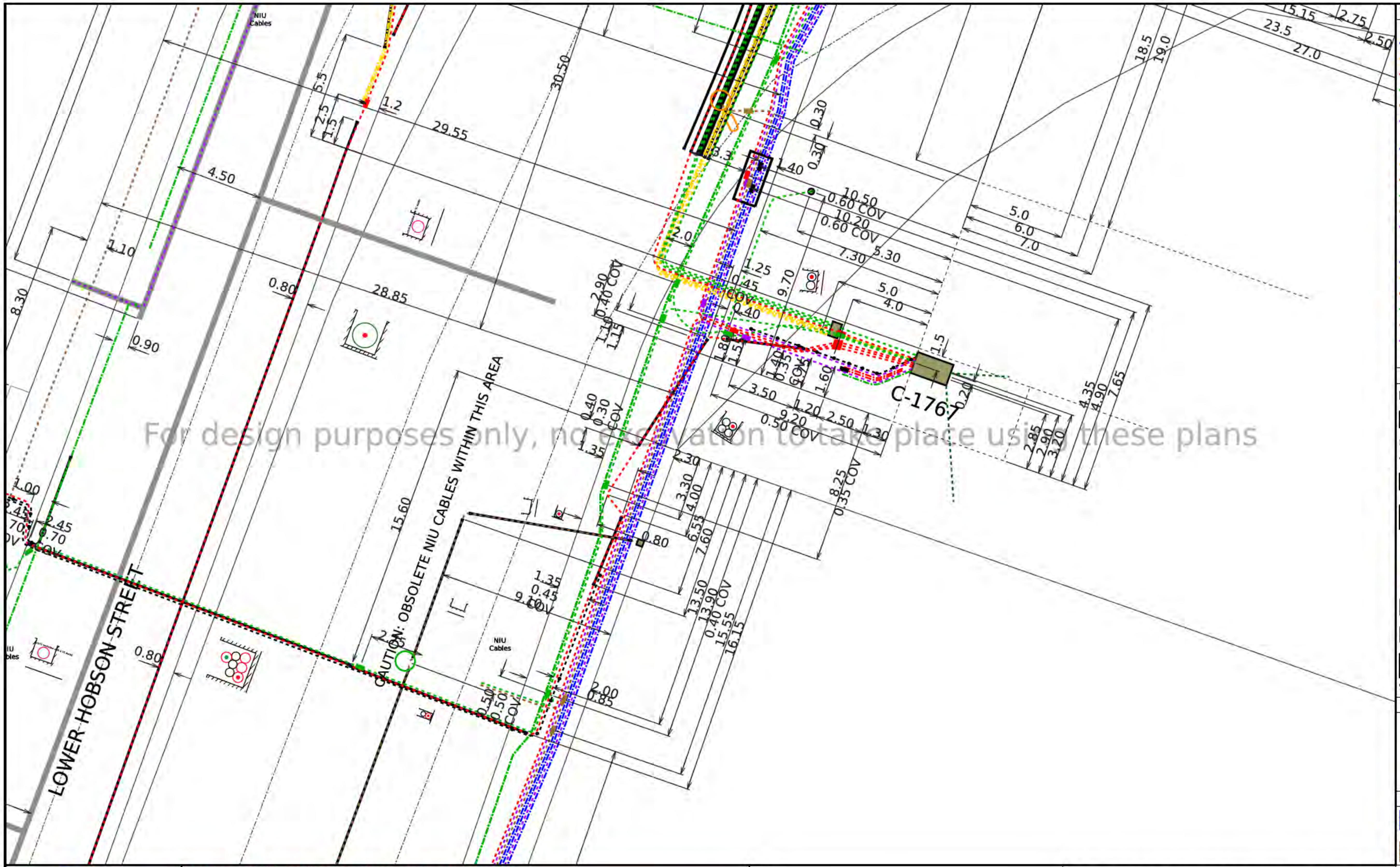

CABLE COLOUR CODE

CABLES IN USE

🟦	110,000 - 22,000 volt subtransmission
🟨	22,000 volt
🟥	11,000 - 6,600 volt
🟩	400 volt
🟫	Streetlight
🟪	Pilot / Fibre Optic

CABLES NOT IN USE

🟦	110,000 - 22,000 volt subtransmission
🟨	22,000 volt
🟥	11,000 - 6,600 volt
🟩	400 volt
🟫	Streetlight
🟪	Pilot / Fibre Optic

JOINTS & SEALING ENDS

🟦 ●	110,000 - 22,000 volt subtransmission
🟨 ●	22,000 volt
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🟩 ●	400 volt
🟫 ●	Streetlight
🟪 ●	Pilot / Fibre Optic
■ ●	NOT IN USE

SYMBOL LEGEND

TUNNEL

DUCT BANK

FIBRE OPTIC DUCT

TRENCH

PILLAR

PIT

DISTRIBUTION SUBSTATION

POLES

LAMP

CESSPIT

MANHOLE

F H FIRE HYDRANT

DRAIN

FIBRE OPTIC PIT

EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT

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vector

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A3 ELECTRICITY OBSTRUCTION PLAN

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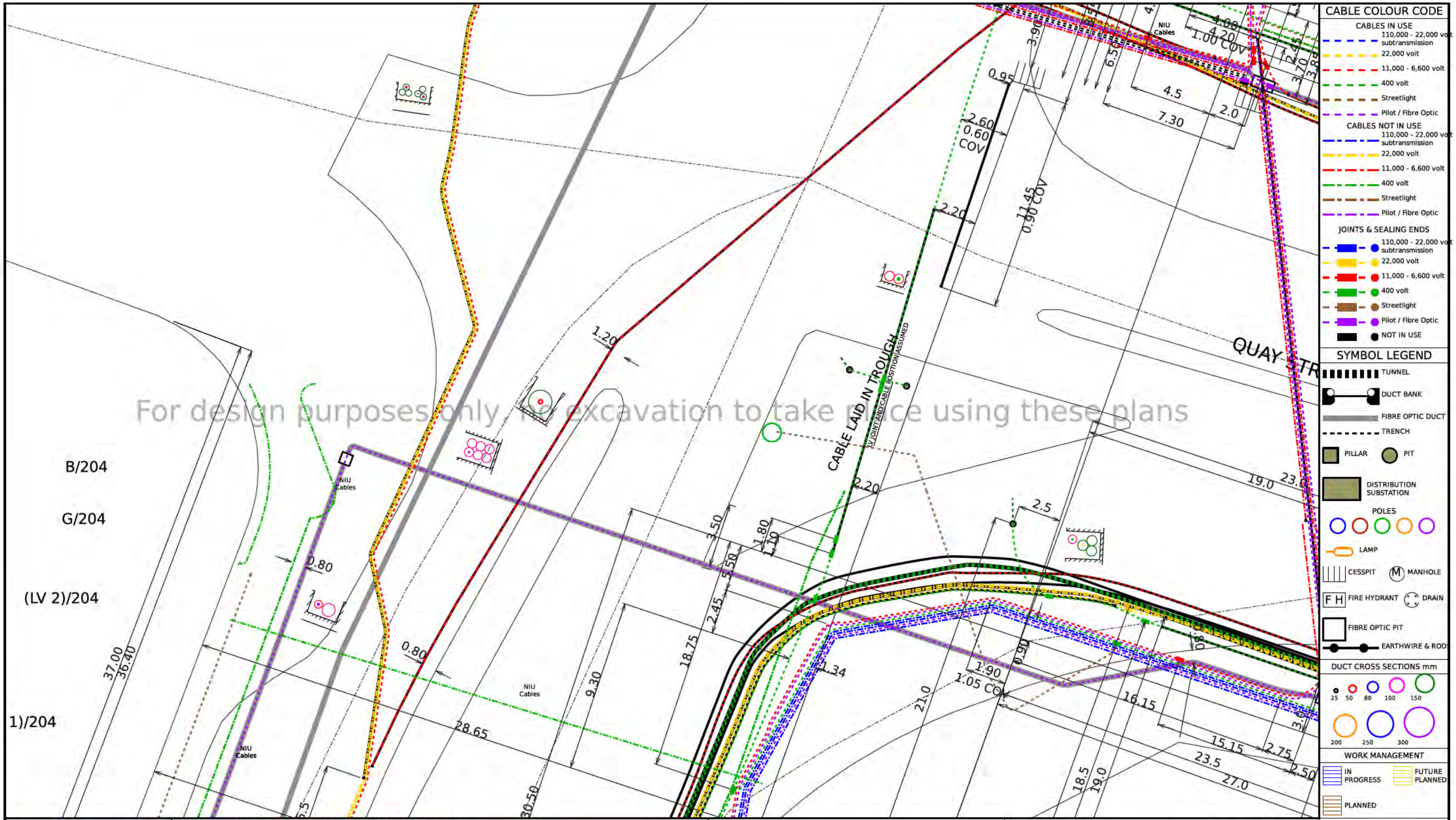

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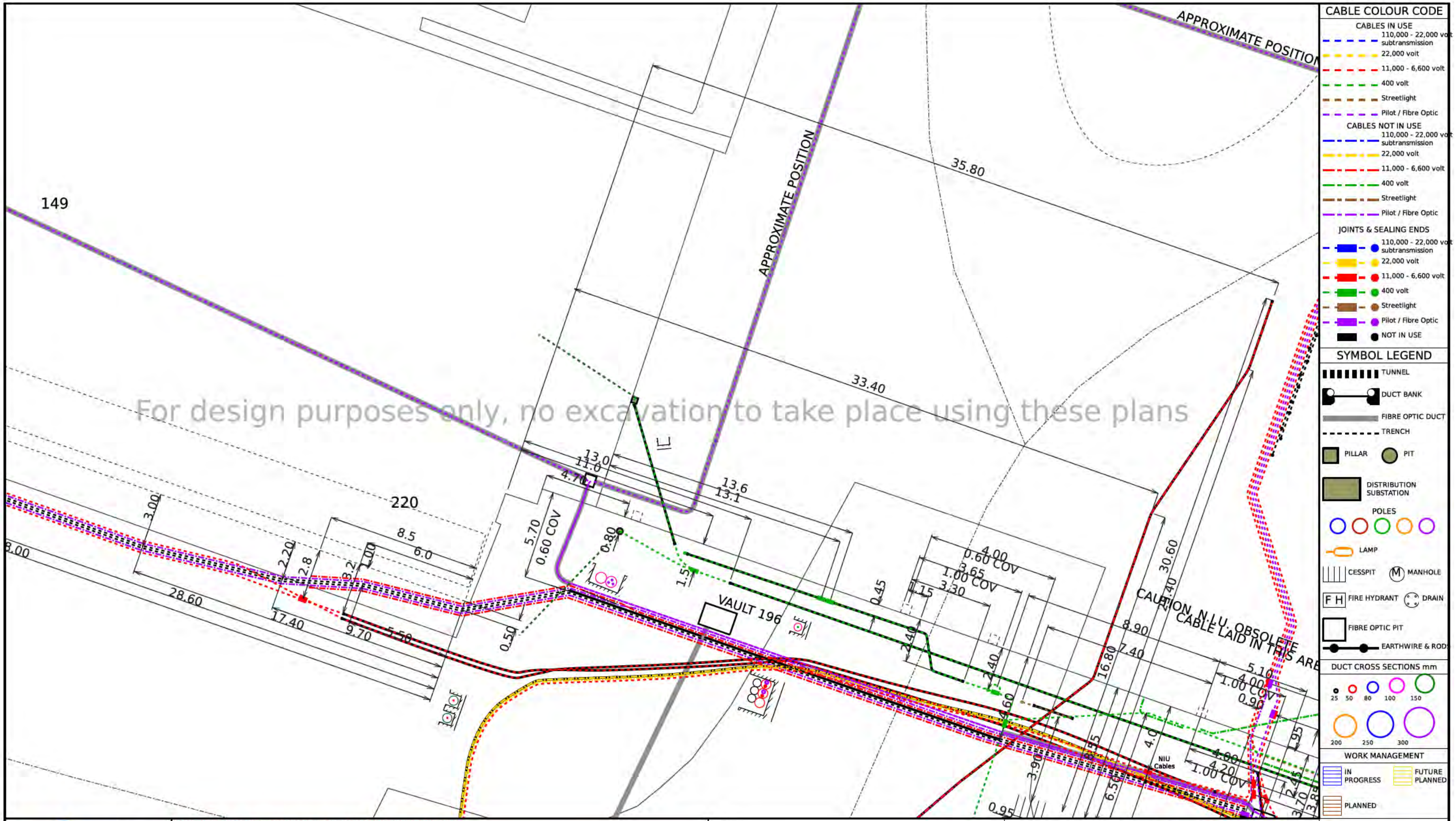

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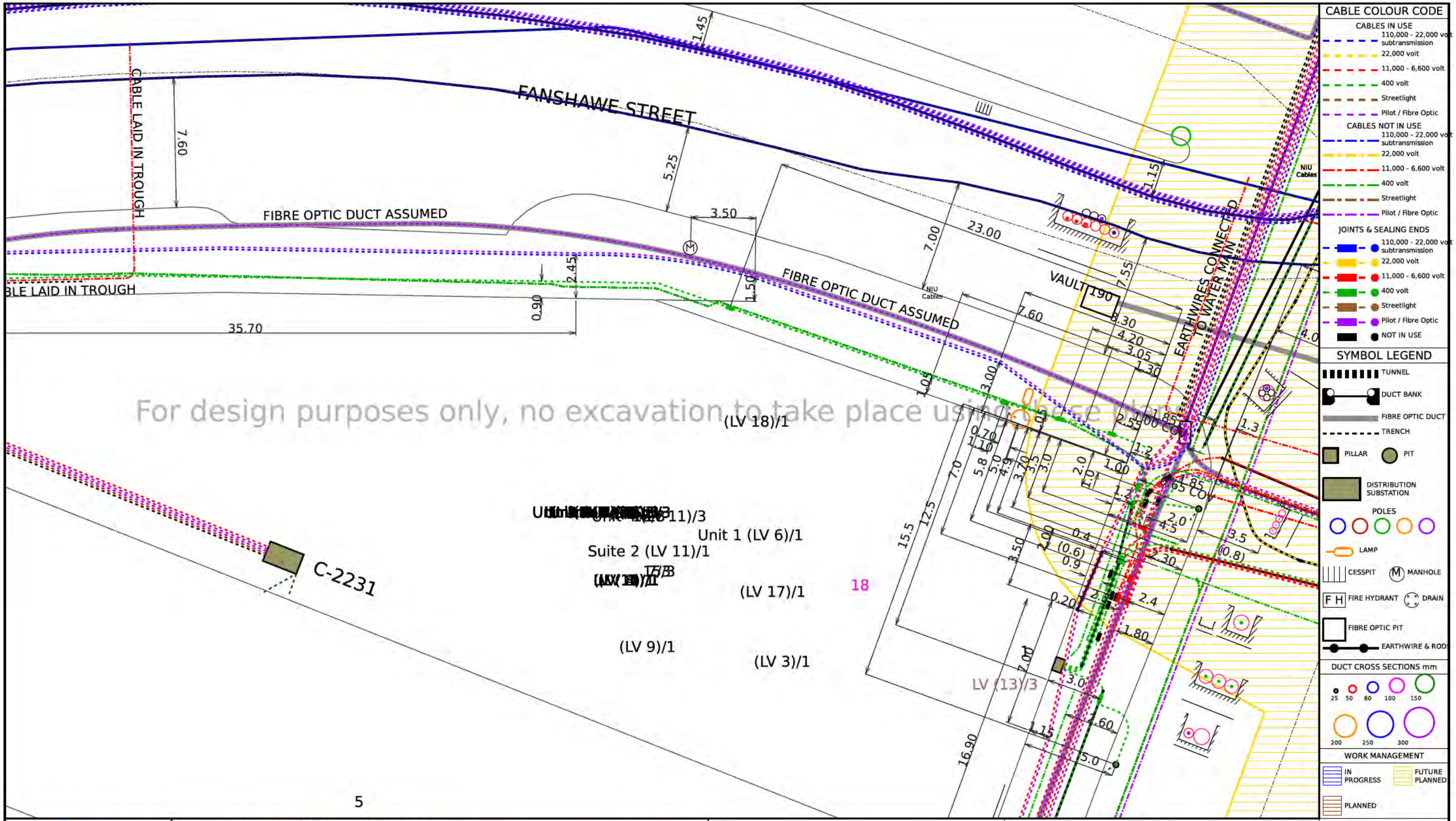
A3 ELECTRICITY OBSTRUCTION PLAN



vector

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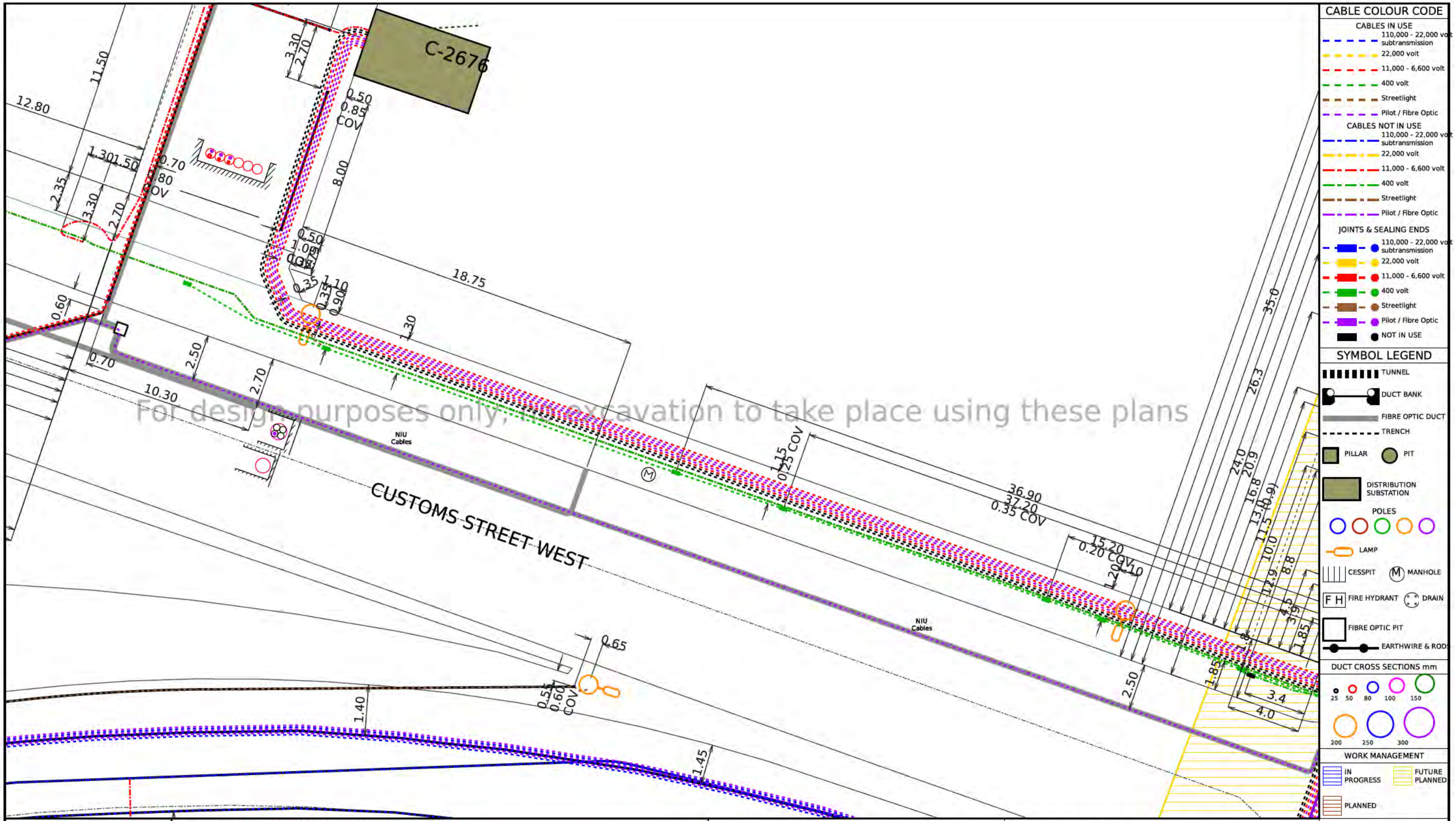

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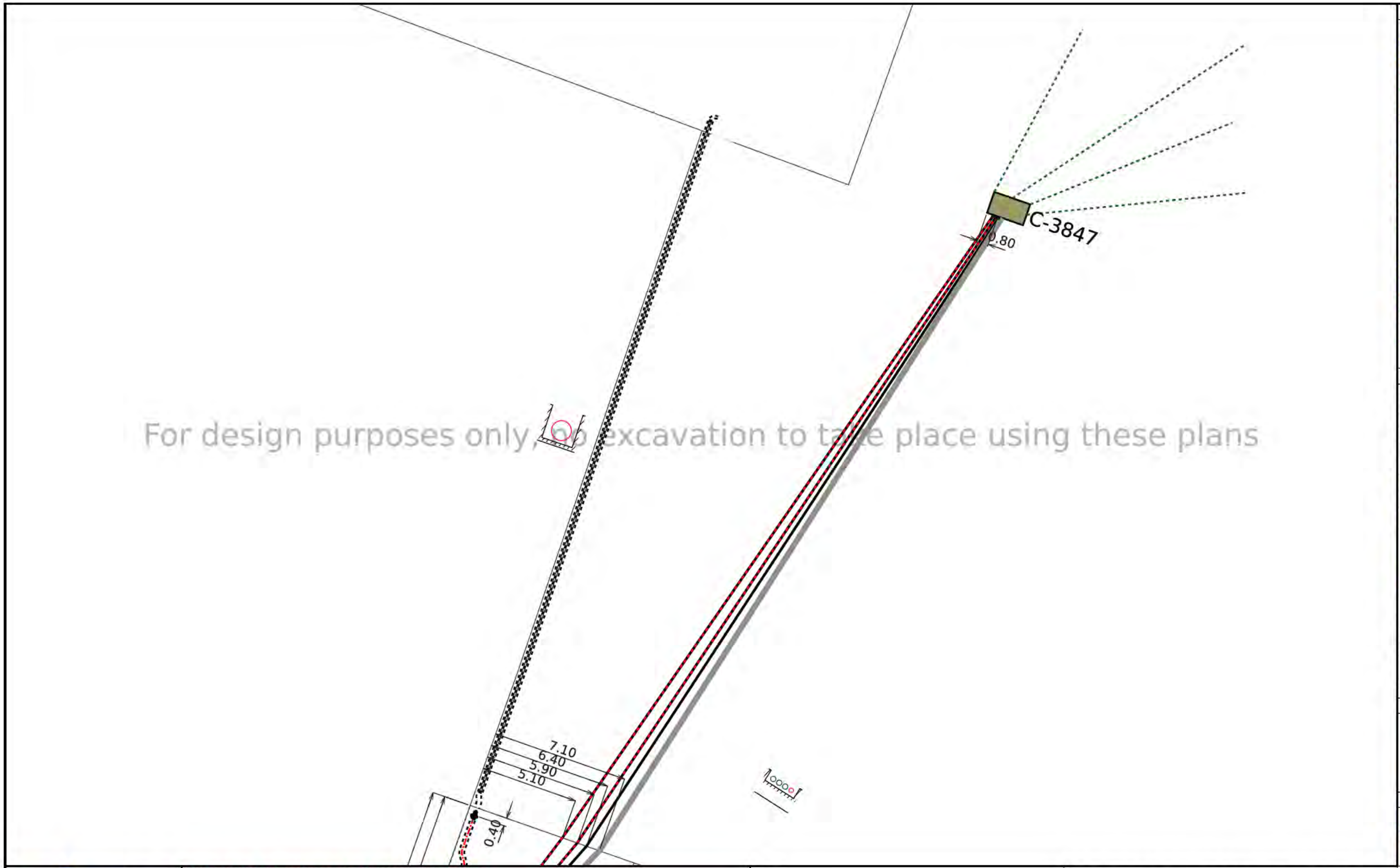

CABLE COLOUR CODE

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- 22,000 volt
- 11,000 - 6,600 volt
- 400 volt
- Streetlight
- Pilot / Fibre Optic

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JOINTS & SEALING ENDS
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- 400 volt
- Streetlight
- Pilot / Fibre Optic
- NOT IN USE

SYMBOL LEGEND

- TUNNEL
- DUCT BANK
- FIBRE OPTIC DUCT
- TRENCH
- PILLAR
- PIT
- DISTRIBUTION SUBSTATION
- POLES
- LAMP
- CESSPIT
- MANHOLE
- F H FIRE HYDRANT
- DRAIN
- FIBRE OPTIC PIT
- EARTHWIRE & RODS

DUCT CROSS SECTIONS mm

25 50 80 100 150

200 250 300

WORK MANAGEMENT
- IN PROGRESS
- FUTURE PLANNED
- PLANNED

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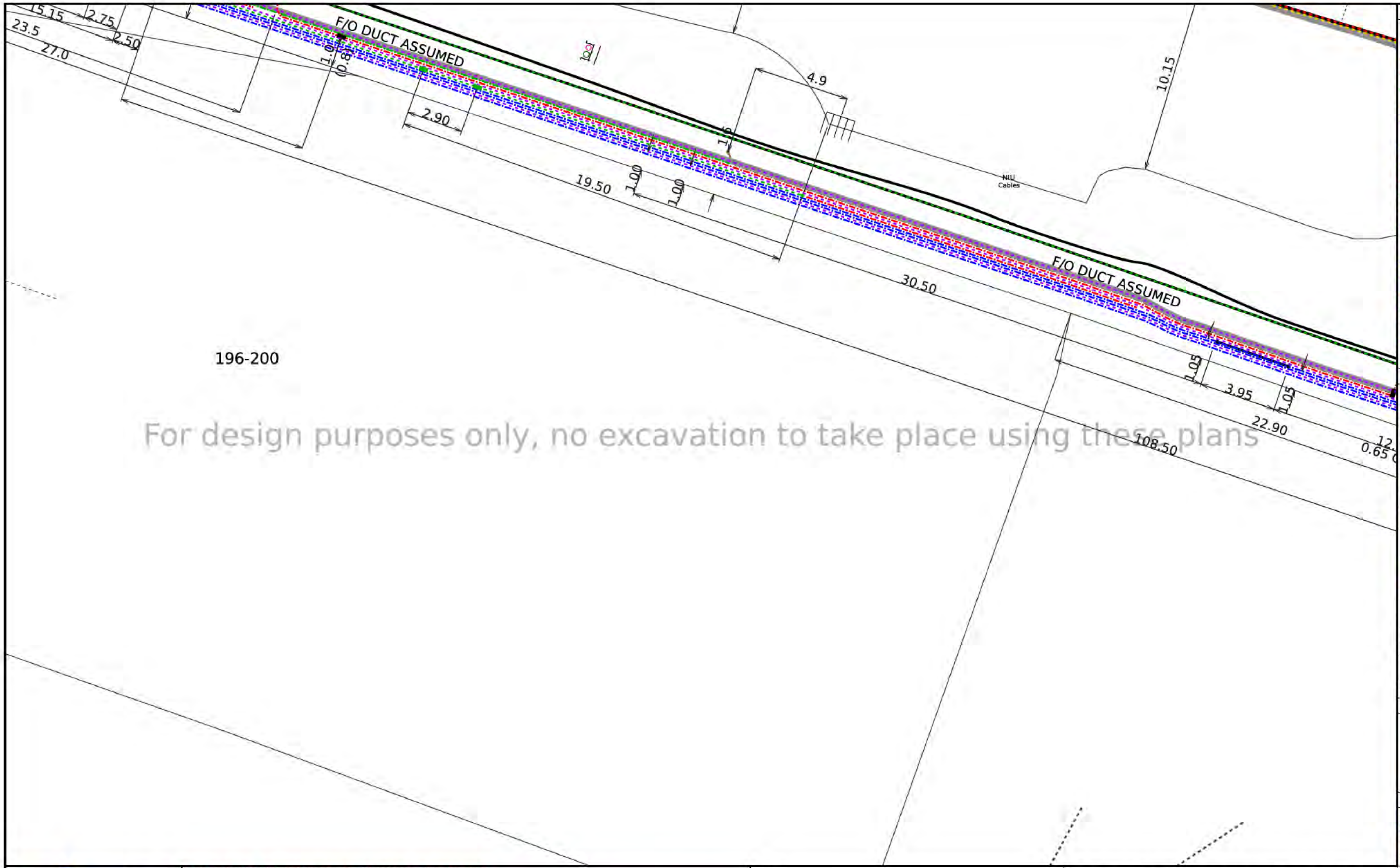

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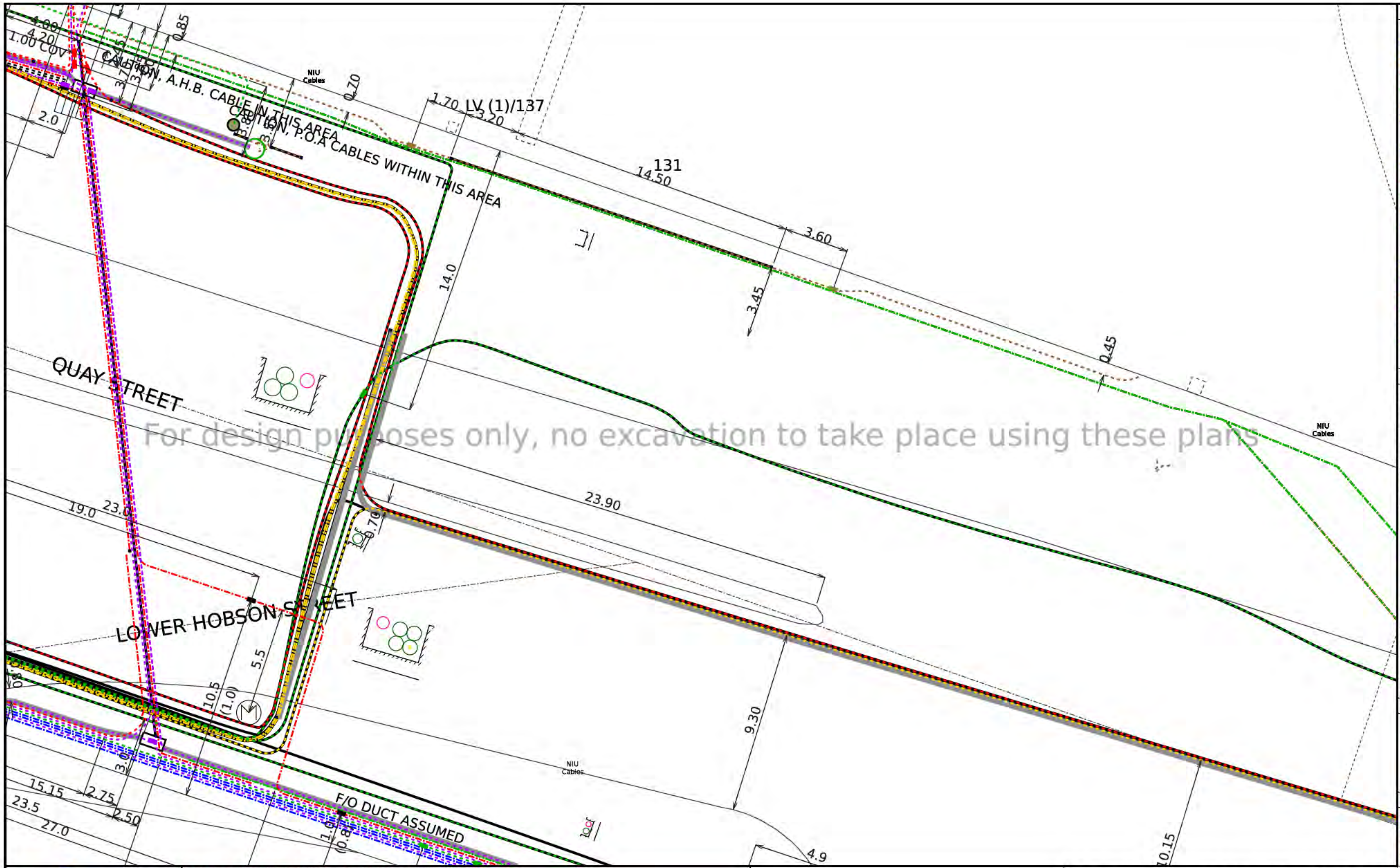

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DUCT CROSS SECTIONS mm

25 50 80 100 150

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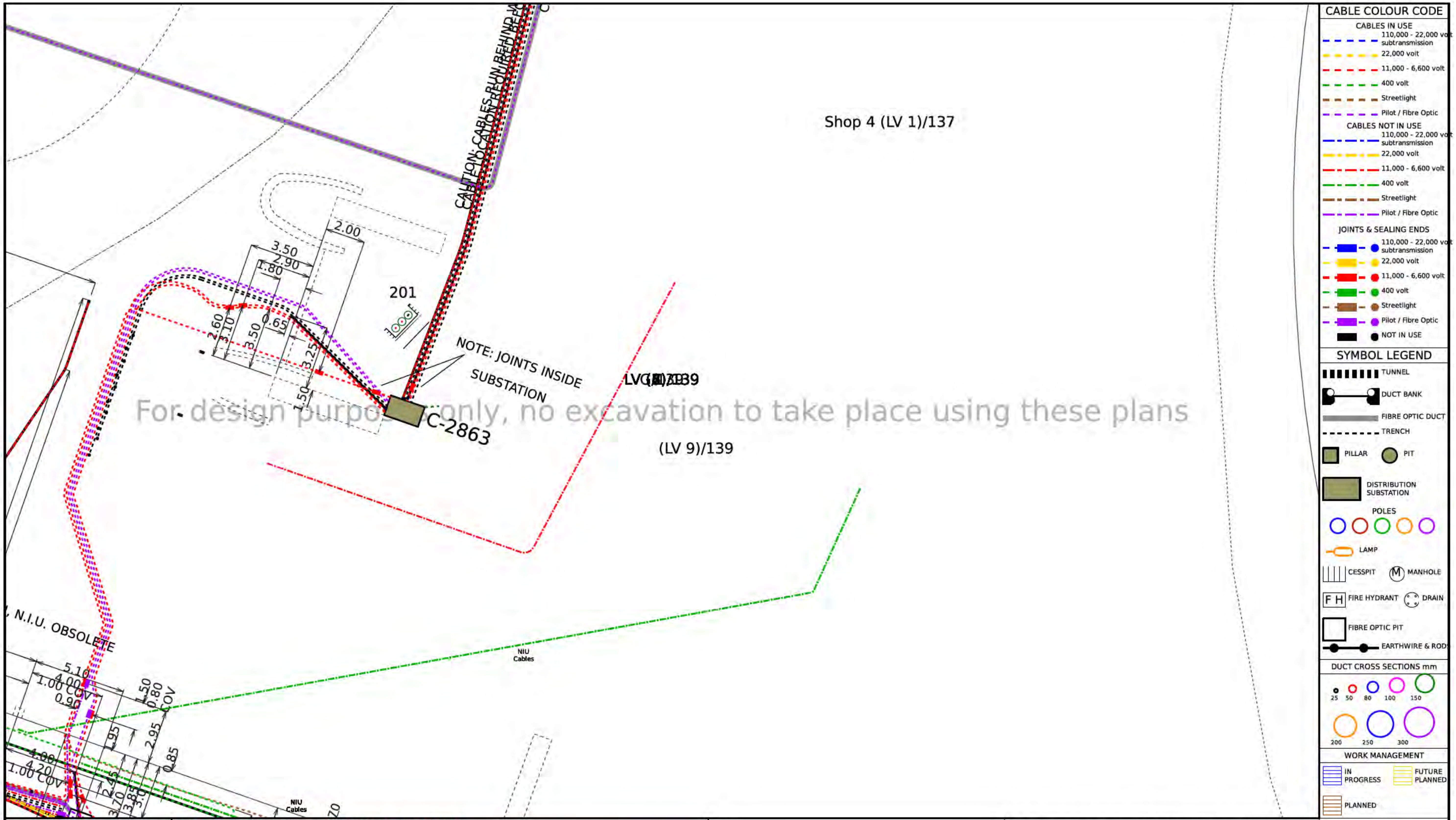

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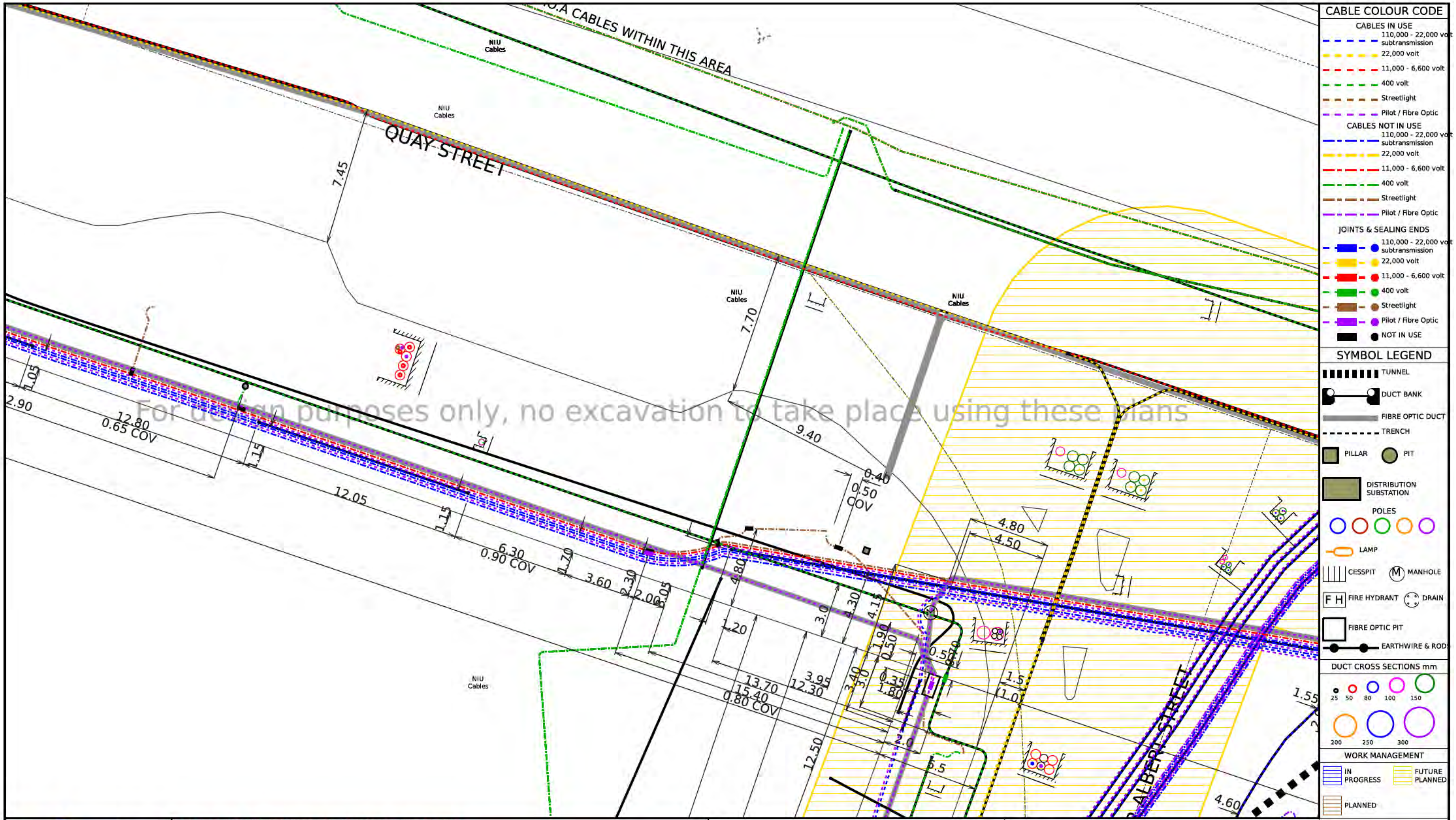

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A3 ELECTRICITY OBSTRUCTION PLAN

Appendix E Watercare Meeting Minutes

Project:	Date:	Location:
Downtown Carpark Redevelopment	03.10.2025	Teams meeting

Attendees

Name	Company	Name	Company
Oliver MacKinnon	Watercare	Anna Jennings	Watercare
Maria Utting	Watercare	Martin Ball	Watercare
Iain Purdie	Precinct Properties	Peter Millar	Tonkin & Taylor
Maurice Mills	Tonkin & Taylor	Kari Cook	Barker & Associates
Matthew Lory	RCP	Bianca Hurrell	RCP

Minutes

Item	Description
1	Precinct have developed 5 x options to address wastewater from the development – Options were pre-circulated 22/09 following two previous meetings 12/08 and 29/08 respectively.
2	Noted that previous discussions were at 23l/s, now working with 30l/s. ***Action:*** Watercare to revalidate the constraints assessment within the existing network.
3	Peaking factor to be confirmed. ***Action:*** Watercare is reviewing their requirements and will confirm the timing of the review (for high-rise developments).
4	**Option 1a: Market Place / Customs St. East Connection** • Watercare noted concern as it relates to the viability of construction upgrades required for the pump station. Current capacity is ~50l/s, with an upgraded requirement to 80l/s. Need to assese what can be accommodated within the wet well and what is needed for additional storage on site. • Requirement is likely to upgrade the rising main & pumping capacity and storage volume. • Potentially a "halfway house" solution where the additional storage capacity is used to mitigate the peaks from the PCT development.
	Actions: • Assess the viability of the pump station upgrade. T&T proposed one of their team having a look at the viability of PS upgrade; suggest this is a proactive approach to keep moving. • Identify constraints around the expansion of the site – RCP can review buildability constraints. • Watercare to review network capacity (Market Place, existing RM capacity, PS capacity) to confirm expected extent of works.
5	**Option 3: Quay Street Duplication** • Based on the option of a duplicate line, rather than upgrading the existing line. • Pipe bursting considered as an option for the existing line, but may requires significant excavation still at lateral connection points. • Watercare noted this was their preferred option – Precinct outlined the sensitivity of AT around the protective nature of the Quay St carriageway and bus services. Acknowledged that this constraint may be material.
6	**Option 4: On-Site Storage / Off-Peak Pumping**
	Watercare would consider this a permanent solution and would not be supportive of the option.

Item	Description
7	**New Pump Station (to Nelson Street / Orakei Trunk Main Sewer**
	• There is unlikely capacity for future flow (+30l/s) at the discharge point (based on initial Watercare review). It would need to be taken right through to Orakei Trunk / Main Sewer. • Access to Orakei Truck / Main Sewer (At 25m deep), practically difficult. Other connection point (i.e., existing drop structure); this will require some detailed consideration by T&T/Watercare.
	Actions • Review discharge location and capacity. • Detailed consideration of the Orakei Trunk / Main Sewer connection point. • Options for hybrid RM to a point, then upgrade of existing gravity sewer to utilise existing connection / drop structure into Orakei Trunk / Main Sewer. T&T to lead this study to develop options for presentation to Watercare.
8	**Private line through PCT Land**
	• Private line across Lower Albert Street. Watercare did not have an issue with the proposal, noting this is a matter for agreement with AT *re.* private line crossing public road reserve.
	Actions • Revalidation of the discharge location capacity by Watercare. • RCP to connect with AT re. private line crossing public road reserve.
9	**Fast Track Approvals Act**
	Noted that Precinct will be lodging the consent application 07 November 2025.
	Watercare agreed that it was appropriate at the consenting stage to include options as part of the infrastructure assessment to address wastewater in lieu of a final design (which is more appropriately provided at the detailed design / EPA stage). ***Action:*** Barker and Associates will draft a proposed condition of consent for review and endorsement by Watercare prior to lodgement.

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