

Greenhill Industrial Park  
Ruakura East Growth Cell (R3)  
INFRASTRUCTURE TECHNICAL MEMORANDUM



## PROJECT INFORMATION

CLIENT

Greenhill Industrial Park Limited

PROJECT

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Growth Cell (R3)

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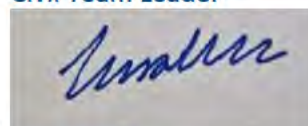
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## Table of Contents

|      |                                           |    |
|------|-------------------------------------------|----|
| 1.   | Introduction .....                        | 6  |
| 1.1. | Background.....                           | 6  |
| 1.2. | Purpose of Report .....                   | 6  |
| 1.3. | Site Description .....                    | 6  |
| 1.4. | Legal Description .....                   | 6  |
| 1.5. | Proposal Summary .....                    | 6  |
| 1.6. | Proposed Development .....                | 7  |
| 2.   | Earthworks & Geotechnical .....           | 9  |
| 2.1. | Geological Setting .....                  | 9  |
| 2.2. | NZGD .....                                | 9  |
| 2.3. | Low Lying Peatland .....                  | 10 |
| 2.4. | Roading Construction .....                | 11 |
| 2.5. | Sediment and Erosion Control.....         | 11 |
| 2.6. | Preliminary Earthworks.....               | 11 |
| 2.7. | Preliminary Earthworks Staging .....      | 11 |
| 3.   | Roading.....                              | 13 |
| 4.   | Three Waters Strategy.....                | 16 |
| 4.1. | Water Sensitive Urban Design (WSUD).....  | 16 |
| 4.2. | Three Waters Strategy .....               | 16 |
| 5.   | Stormwater .....                          | 16 |
| 5.1. | Existing Catchments .....                 | 16 |
| 5.2. | Suggested Outcomes .....                  | 21 |
| 5.3. | Reticulation.....                         | 22 |
| 5.4. | Stormwater Quality and Quantity .....     | 22 |
| 5.5. | Groundwater Recharge.....                 | 22 |
| 5.6. | Rainwater Harvesting/Reuse .....          | 23 |
| 5.7. | Existing Stream Enhancement.....          | 23 |
| 5.8. | Flooding .....                            | 23 |
| 6.   | Wastewater .....                          | 27 |
| 6.1. | Existing Public Infrastructure.....       | 27 |
| 6.2. | Reticulation.....                         | 30 |
| 6.3. | Strategic Wastewater Connections.....     | 30 |
| 6.4. | Alternative Treatment Options .....       | 31 |
| 6.5. | At Source Treatment.....                  | 32 |
| 6.6. | Decentralised Treatment .....             | 32 |
| 6.7. | Proposed Wastewater .....                 | 32 |
| 7.   | Water .....                               | 34 |
| 7.1. | Existing Public Infrastructure.....       | 34 |
| 7.2. | Reticulation and Capacity .....           | 38 |
| 7.3. | Alternative Supply Options .....          | 38 |
| 7.4. | Proposed Water .....                      | 38 |
| 8.   | Services .....                            | 42 |
| 8.1. | Power .....                               | 42 |
| 8.2. | Communications .....                      | 42 |
| 8.3. | Gas .....                                 | 42 |
| 9.   | Conclusions .....                         | 43 |
| 10.  | Limitations .....                         | 44 |
|      | Appendix A – B & A Urban Master Plan..... | 45 |



|                                                          |    |
|----------------------------------------------------------|----|
| Appendix B – Drawings.....                               | 46 |
| Appendix C – Wastewater Calculations.....                | 47 |
| Appendix D – HDGEO Preliminary Geotechnical Report ..... | 48 |

# 1. Introduction

## 1.1. Background

Maven Waikato Ltd have been engaged by Greenhill Industrial Park Development to undertake infrastructure design in support of the Greenhill Industrial Park, Ruakura East Growth Cell (R3) in Ruakura, Hamilton.

## 1.2. Purpose of Report

The purpose of this report is to provide the developer an initial assessment of the earthworks, transportation, and three waters infrastructure to service the proposed industrial development. This report is to be read in conjunction with the associated engineering drawings and calculations

## 1.3. Site Description

The development area is a 180-hectare block of land located within the Waikato District, east of the Hamilton City boundary and the Waikato Expressway.

Most of the site is low lying flat farmland, with some rolling hill contours to the northern portion of the site. The site has Waikato Regional Council managed and maintained artificial drains pass through the site.

## 1.4. Legal Description

The development site is split across multiple parcels of land, and the legal descriptions for these parcels of land are listed in table 1 below:

| Address                      | Lot Description      | Area (Ha) |
|------------------------------|----------------------|-----------|
| 112 Puketaha Road, Rototuna  | Lot 1 DP 515771      | 23.25     |
| 112A Puketaha Road, Rototuna | Lot 2 DP 515771      | 3.31      |
| 154 Puketaha Road, Rototuna  | Lot 1 DPS 15954      | 4.44      |
| 175 Puketaha Road, Rototuna  | Lot 2 DP 307097      | 60.78     |
| 192 Puketaha Road            | Lot 1 DP 307097      | 1.45      |
| 133 Pukeroa Road, Hamilton   | Section 88 SO 572875 | 33.47     |
| 4 Taha Lane, Hamilton        | Lot 1 DP 304594      | 2.57      |
| 257 Greenhill Road, Hamilton | Lot 3 DP 456019      | 51.44     |
| Total Area (Ha)              |                      | 180.71    |

*Table 2: Lot Descriptions*

## 1.5. Proposal Summary

The Greenhill Industrial Park is a proposed industrial development within the wider Ruakura growth area, located to the eastern side of the Waikato Expressway. The proposed Greenhill Industrial Park area is currently located within the Waikato District Council boundaries, however as per Table 3 – Current and future urban growth areas within the Hamilton-Waikato Metropolitan Spatial Plan, there is scope for this area (nominated as part of the Ruakura East block) to be incorporated into the Ruakura growth area, refer to figure 1 for location of proposed site.





Figure 1: Site Location

## 1.6. Proposed Development

The proposed Greenhill Industrial Park development comprises circa 180.71 hectares of proposed industrial development, that also includes an already consented Commercial “Greenhill Expressway Service Area” zone, and some limited Rural Residential lots long both the northern and southern boundaries.

The industrial development of the proposal will comprise multiple industrial allotments of varying size, including less than 2,500m<sup>2</sup> (small lots) to 4,500-6,500m<sup>2</sup> (medium lots) to 6,500-9,000m<sup>2</sup> (medium-large lots), and over 10,000m<sup>2</sup> (large lots), to provide for a range of uses from small-scale manufacturing or workshops to light industrial workshops and warehouses. Refer to figure 2 for Barkers proposed master plan and table 1 below for a composition of the proposed lots



Figure 2: Barkers and Associates High-level Masterplan

| Industrial Area                               |                                             |                 |
|-----------------------------------------------|---------------------------------------------|-----------------|
| Lot Size                                      | Lot Dimensions<br>(preferred width x depth) | Yield           |
| 2,500m <sup>2</sup> or Less (small)           | 30-40m X 50-60m                             | 14 Lots (8.7%)  |
| 4,000 – 6,500m <sup>2</sup> (medium)          | 40-55m X 100-120m                           | 79 Lots (49.0%) |
| 6,500 – 9,000m <sup>2</sup> (medium to large) | 50-70m X 120-160m                           | 46 Lots (28.6%) |
| 1ha and Above (large)                         | 70-100m X 150-300m                          | 22 Lots (13.7%) |
| Total                                         |                                             | 161 Lots        |

Table 1: Proposed Industrial Lot Composition



## 2. Earthworks & Geotechnical

A geotechnical desktop review for the overall Greenhill Industrial Park development area was undertaken by HDGEO in October 2025, refer to Appendix D for the CMW report.

The report identifies the approximate distribution of prevailing landforms and geologies for the local area as identified in the sections below.

Based on the HDGEO report the Greenhill Industrial Park development, the geotechnical conditions are typical of the Waikato and are unlikely to preclude development. The design of the development should be guided by geotechnical assessments as hazards can be avoided or minimised by design if incorporated early.

### 2.1. Geological Setting

The site's contours generally match the mapped geology. Geology maps<sup>4</sup> of the Greenhill site show three distinct geological units:

#### **Hinuera formation**

- the North and west extents are mapped as Late Pleistocene River deposits of the Hinuera Formation,
- the Hinuera Formation is described as 'cross-bedded pumice sand, silt, and gravel with interbedded peat.'
- flat areas, (RLs 36 m to 37 m) align with the Hinuera Formation

#### **Walton Subgroup alluvium**

- the Central north extent is mapped as Walton Subgroup alluvium
- the Walton subgroup is described as 'pumiceous mud, silt, sand and gravel with muddy peat beds; rhyolite pumice, including non-welded ignimbrite, tephra and alluvial pumice deposits'
- the Walton Subgroup, which is typically mantled by several metres of volcanic ash
- the top elevation of the central northern hill extends up to about 55 m RL
- historical images show that swampy, tussocky vegetation overlaps some hills terrain, which will require further investigation to confirm

#### **Holocene Swamp deposits**

- the East and south extents are mapped as Holocene swamp deposits
- Holocene swamp deposits are described as 'soft, dark brown to black, organic mud, muddy peat and woody peat with minor overbank sand, silt and mud'
- areas mapped as Holocene swamp deposits can also present as silt, sand and mud deposits with interbedded and/or lenses of peat. This means that the highly organic deposits can be locally limited across the mapped area. This was confirmed by some existing testing reviewed as part of the desk study
- flat areas, (RLs 36 m to 37 m) align with the Holocene swamp deposits

### 2.2. NZGD

HDGEO reviewed the NZ Geotechnical Database (NZGD) to determine whether ground investigations have been conducted on or near the site. Most of the site has no data available, however, along the western boundary, and in the extreme southwestern corner of the site, there are tests available.

- **Onsite:** Eight hand augers (HAs) have been logged in the southwestern corner of the site. These tests found a mixture of sand, silt, and clay of varied strengths, consistent with the Late Pleistocene River deposits of the Hinuera Formation. Groundwater was recorded in all HAs at between 0.8 m and 1.5 m bgl.
- **Near the site:** Several ground investigations have been completed for the Waikato Expressway along the western boundary of the site, as well as cone penetration tests (CPTs) to the north and south, and a cluster of HAs past the northeast corner. These investigations (hand augers, test pits, boreholes, and CPTs) also found sand, silt, and clay, consistent with the materials found onsite. We see that these materials also vary in strength, generally from loose to medium dense (sand) and very soft to stiff (clay and silt). Groundwater was recorded at between 0.9 m and 2.9 m bgl.

### 2.3. Low Lying Peatland

Future land suitable for development consists of low-lying peat. The peat is a characteristic deposit of the Waikato Basin and is described as consolidated peat and therefore is susceptible to significant ground settlement when it is saturated and subjected to loading.

It is recommended that a geotechnical assessment is undertaken to assess and create a map of any potential peat such as a “Peat Contour Plan” for underground mapping to show depths of indicative Peat soils using surrounding ground investigation results.

#### 2.3.1. Development in Peatland

Where development has underlying peat present, the developers will need to comply with the requirements of the future ICMP for the Kirikiriroa catchment (currently under development, draft revision expected 2025):

- Likely to consist of the following
  - Identify if the underlying peat soils are to be removed or preloaded based on the depth the underlying peat layers.
  - Confirm that this does not change groundwater flows sufficiently to cause any adverse effects this will be determined by the geotechnical engineer.

The ICMP for Kirikiriroa catchment is currently being drafted for consultation and it is currently not available on the Waikato Regional Council (WRC) website.

#### 2.3.2. Earthworks

Where the peat is present, drainage of the peat layers could lead to shrinkage and differential settlement. Groundwater recharge will be required to mitigate against peat shrinkage (see 5.5 Groundwater Recharge).

Peat and any existing over-lying fill material may require undercut and replacement with engineered fill where peat depths are up to 2m (above the water table).

Preload fill material may be suitable in areas where depths of peat are greater than 2m. Specific, underfill drainage, temporary pre-loading, and settlement monitoring, under the direction of a Geotechnical Engineer, will be required to limit post construction ground settlements.

### 2.3.3. Building Foundations

Where development in peat is proposed, pile foundations beyond base of peat or preload to induce ground settlements may be practical. Preload depths of approximately 2m with settlement hold periods of 3 to 6 months are expected based on historical works.

Lightweight buildings may require raft foundations that are designed to accommodate ground settlements. Where development in peat results in high foundation loads (i.e., heavy industrial buildings exceeding preloading weight), piled foundations beyond the base of the peat will likely be required. Foundations for larger structures resulting in high foundation loads typical to the zone, it would require specific design from a Geotechnical Engineer. Specific design (often requiring piling) is typically required in any case even if building foundations were in clay.

### 2.4. Roading Construction

For construction of any new roads, HCC will not accept new roads being built directly over existing peat soils. Where the peat is less than 2m the peat will likely be undercut and removed and approved engineered fill placed. For peat soils greater than 2m in depth, the peat will likely be preloaded to induce ground settlement and the settlement monitored. The expected settlement time is 3 to 6 months based on historical results for surrounding areas.

### 2.5. Sediment and Erosion Control

Sediment and erosion control measures are to be established in accordance with Waikato Regional Council's (WRC) erosion and sediment control guidelines for soil disturbing activities. Erosion and sediment controls should be in place before earthworks commence and checked onsite by the Engineer. Sediment and erosion control drawings will be provided prior to construction.

### 2.6. Preliminary Earthworks

A preliminary earthworks assessment has been undertaken for the Greenhill Industrial Park development. The design terrain was developed based on the master plan layout. The earthworks volumes generated are based on the proposed finished ground level vs existing finished ground level. We have not allowed for undercutting the areas of peat, wetland pond undercutting, road pavement & drainage excavation volumes with this assessment, we anticipate this will further increase the overall cut volume. The preliminary earthworks volumes are summarised in Table 6 below.

| Earthworks Volumes                               |                         |
|--------------------------------------------------|-------------------------|
| Total Cut =                                      | 1,192,272m <sup>3</sup> |
| Total Fill =                                     | 1,130,071m <sup>3</sup> |
| Total Fill with Compaction bulking Factor (1.15) | 1,299,581m <sup>3</sup> |
| Balance (Imported Fill)                          | 107,309m <sup>3</sup>   |

*Table 6: Summary of Earthworks*

Topsoil stripping has not been included with the earthwork's volumes.

### 2.7. Preliminary Earthworks Staging

Due to the size of the proposed development, it is anticipated that the earthworks will be broken into a minimum of three separate "bulk earthworks" stages. The proposed preliminary staged earthworks volumes are summarised in the tables below.



| Stage 1 Earthworks Volumes                          |                       |
|-----------------------------------------------------|-----------------------|
| Total Cut =                                         | 500,140m <sup>3</sup> |
| Total Fill =                                        | 498,340m <sup>3</sup> |
| Total Fill with Compaction<br>bulking Factor (1.15) | 573,091m <sup>3</sup> |
| Balance (Imported Fill)                             | 72,951m <sup>3</sup>  |

*Table 7: Summary of Stage 1 Earthworks*

| Stage 2 Earthworks Volumes                          |                       |
|-----------------------------------------------------|-----------------------|
| Total Cut =                                         | 510,553m <sup>3</sup> |
| Total Fill =                                        | 459,080m <sup>3</sup> |
| Total Fill with Compaction<br>bulking Factor (1.15) | 527,942m <sup>3</sup> |
| Balance (Imported Fill)                             | 17,389m <sup>3</sup>  |

*Table 8: Summary of Stage 2 Earthworks*

| Stage 3 Earthworks Volumes                          |                       |
|-----------------------------------------------------|-----------------------|
| Total Cut =                                         | 181,545m <sup>3</sup> |
| Total Fill =                                        | 172,566m <sup>3</sup> |
| Total Fill with Compaction<br>bulking Factor (1.15) | 198,450m <sup>3</sup> |
| Balance (Imported Fill)                             | 16,905m <sup>3</sup>  |

*Table 9: Summary of Stage 3 Earthworks*

### 3. Roothing

A preliminary roading network design has been undertaken for this proposed development in conjunction with the Transportation Engineer (CKL). A central collector spine road will run north to south, connecting Greenhill Road to Puketaha Road. The remainder of the development will be serviced by approximately six Industrial standard Local roads and approximately eight private ways. Connectivity to the Waikato Expressway will be via the Pardoia Boulevard/Greenhill Road interchange.

The proposed intersection between the collector Road and Greenhill Road will be via a roundabout, which will require a minor realignment of Taha Lane and Greenhill Road. The proposed intersection between the Collector Road and Puketaha Road will be via a standard right turn bay, which will require some minor widening along the southern side of Puketaha Road.

Internal Local Roads will either have standard T-intersections or a roundabout intersection for any four-way intersections. Currently it is proposed to have one standard roundabout intersection and two T-intersections along the Collector Road, and six T-intersections for the Local Road intersections. It is also proposed that there will be four industrial standard cul-de-sacs located within the proposed development.

The proposed roading network will work with all stakeholders to determine the final proposed roading network for this development. However, as the proposed area is located within an area (refer to section 1.2 above) that could potentially be incorporated into the Hamilton City boundaries, the Hamilton City Council district plan requirements have been adopted. The design criteria considered for the local and collector industrial roads are shown in Figure 3 below.

| Transport corridor type <sup>1</sup> | Land use environment <sup>2</sup> | Design speed environment (max desirable) | Legal width (min desirable) <sup>4, 13</sup>                 | Carriageway width <sup>3</sup>      | Movement lane width <sup>14</sup>     | Berm requirements <sup>5</sup>                                                 | Berm requirements <sup>5</sup>                                       |                                                                                       |                                     |                                                                                            | Footpath requirements (min desirable) <sup>12</sup>                                                                                                                                                                                                              | Cycle requirements (absolute minimum)                 | Service corridor (min desirable) <sup>6</sup> |
|--------------------------------------|-----------------------------------|------------------------------------------|--------------------------------------------------------------|-------------------------------------|---------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|
|                                      |                                   |                                          |                                                              |                                     |                                       |                                                                                | On street parking, stormwater management                             | On street parking requirements (min desirable) <sup>11</sup>                          | Stormwater Management (landscaping) | Stormwater Management (landscaping)                                                        |                                                                                                                                                                                                                                                                  |                                                       |                                               |
| Industrial Land Use Environment      |                                   |                                          |                                                              |                                     |                                       |                                                                                |                                                                      |                                                                                       |                                     |                                                                                            |                                                                                                                                                                                                                                                                  |                                                       |                                               |
| Local                                | Industrial                        | 40km/h                                   | 20m                                                          | 9m                                  | 2 @ 4.5m, not marked                  | 6m both sides                                                                  | Recessed parallel parking bays (2.1m) –specific design on both sides | Where parking is not provided –specific design (2.1m wide) on both sides <sup>3</sup> | None                                | 1.5m wide footpath, both sides                                                             | Cycling on road shared in movement lane                                                                                                                                                                                                                          | 1.5m both sides                                       |                                               |
| Collector                            | Industrial                        | 40km/h                                   | 27.8m or 26.5m with bi-directional <sup>15</sup> carriageway | 11m                                 | 2 @ 4.5m, marked plus 2m flush median | 8.4m both sides or 5.6m and 9.9m with bi-directional <sup>15</sup> carriageway | Recessed parallel parking bays (2.1m) –specific design on both sides | Where parking is not provided –specific design (2.1m wide) on both sides <sup>3</sup> | All bus stops to be kerbside        | 1.5m wide footpath, both sides                                                             | 2m off- <sup>16</sup> road, separated from carriageway, both sides, with 0.8m separator from parking <sup>15</sup><br>Or<br>3.5m bi-directional, off- <sup>16</sup> road, separated from carriageway, on one side with 0.8m separator from parking <sup>16</sup> | 2m both sides                                         |                                               |
| Minor Arterial                       | Industrial                        | 60km/h                                   | Specific design <sup>8</sup>                                 | 12m<br>Specific design <sup>8</sup> | 2 @ 4.5m, marked plus 3m flush median | Specific design <sup>8</sup>                                                   | Recessed parallel parking bays (2.1m) –specific design on both sides | Where parking is not provided –specific design (2.1m wide) on both sides <sup>3</sup> | All bus stops to be kerbside        | 2m footpath on both sides                                                                  | Separated cycle lanes on both sides<br>Or bi-directional, off- <sup>16</sup> road, separated from carriageway, on one side (subject to specific design <sup>8, 15, 19</sup> )                                                                                    | 2.5m both sides                                       |                                               |
| Major Arterial                       | Industrial                        | 80km/h                                   | Specific design <sup>8</sup>                                 | Specific design <sup>8</sup>        | 4 @ 3.5m, marked plus 3m solid median | Specific design <sup>8</sup>                                                   | None                                                                 | Specific design <sup>8</sup>                                                          | All bus stops to be recessed        | Separated footpath and cycle facilities (subject to specific design <sup>3, 15, 19</sup> ) | Both sides (subject to specific design <sup>3</sup> )                                                                                                                                                                                                            | Both sides (subject to specific design <sup>3</sup> ) |                                               |

Figure 3 – HCC Road hierarchy



The preliminary roading layout for the Greenhill Industrial Park development includes constructing 4.8km of new local residential roads with a 21.0m wide road corridor and 1.5km industrial central spine road with a 30.0m road corridor. The roading layouts and corridors will be further developed during the detailed design stages. The preliminary road corridors are shown below.

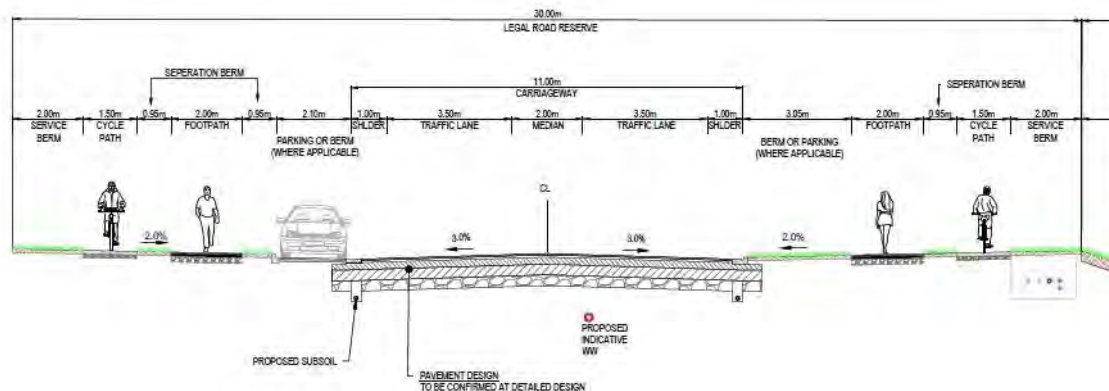


Figure 4 –30.0m wide Industrial Collector Road corridor typical cross section

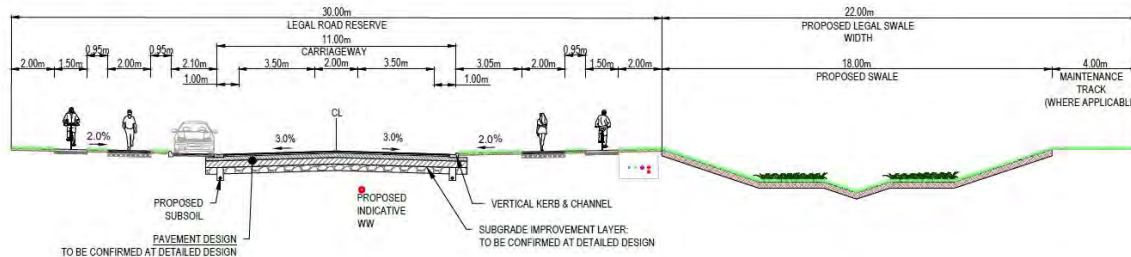


Figure 5 –52.0m wide Industrial Collector Road & SW Swale Corridor Typical cross section

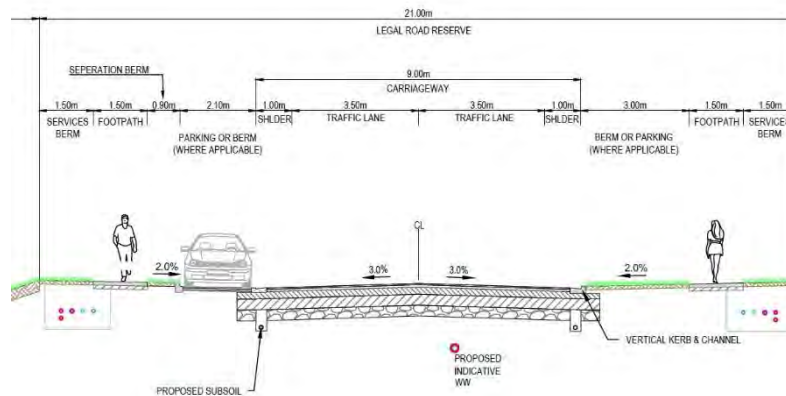


Figure 6 –21.0m wide Industrial Local Road Corridor Typical cross section

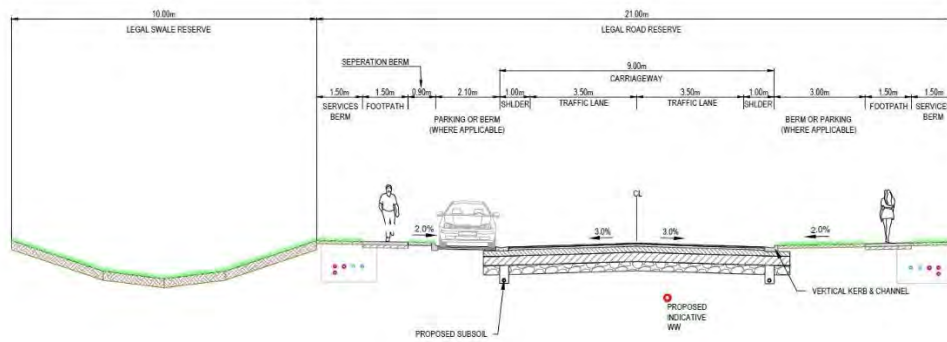


Figure 7 –31.0m wide Industrial Local Road & Swale Corridor Typical cross section

## 4. Three Waters Strategy

Refer to appendix B for the three waters drawings.

### 4.1. Water Sensitive Urban Design (WSUD)

WSUD is a land planning and engineering design approach which integrates the urban water cycle, including stormwater, groundwater and wastewater management and water supply, to minimise environmental degradation and improve aesthetic and recreational outcomes.

The overarching objectives of WSUD are:

- Protect or enhance the environmental, social, and economic values of downstream environments.
- Reduce the frequency, duration, and volume of stormwater runoff to mitigate the risks of nuisance flooding and moderate post-development flows to waterways.
- Reduce demand on potable water supply.
- Improve amenity in the urban environment.

### 4.2. Three Waters Strategy

The Three Waters strategy incorporates WSUD engineering design principles to create a low impact, sustainable development which minimises stormwater and wastewater discharge from site.

The Greenhill Industrial Park Three Waters Strategy implements several key WSUD techniques, including:

- Restrict/ control the quantity of storm water and wastewater discharge.
- Reduce the frequency and severity of flooding in urban areas.
- Improve amenity in the urban environment by introducing waterways and green strips.

## 5. Stormwater

### 5.1. Existing Catchments

The site currently is situated within two different Waikato Regional Council major catchments. Approximately 129.3ha catchment for the western portion of the site forming part of the Central Waikato Catchment, and approximately 51.4ha catchment for the eastern portion situated within the Lower Waikato Catchment. Refer to Figure 8 for more information.



*Figure 8 –Waikato Catchments*

#### 5.1.1. Lower Waikato Catchment

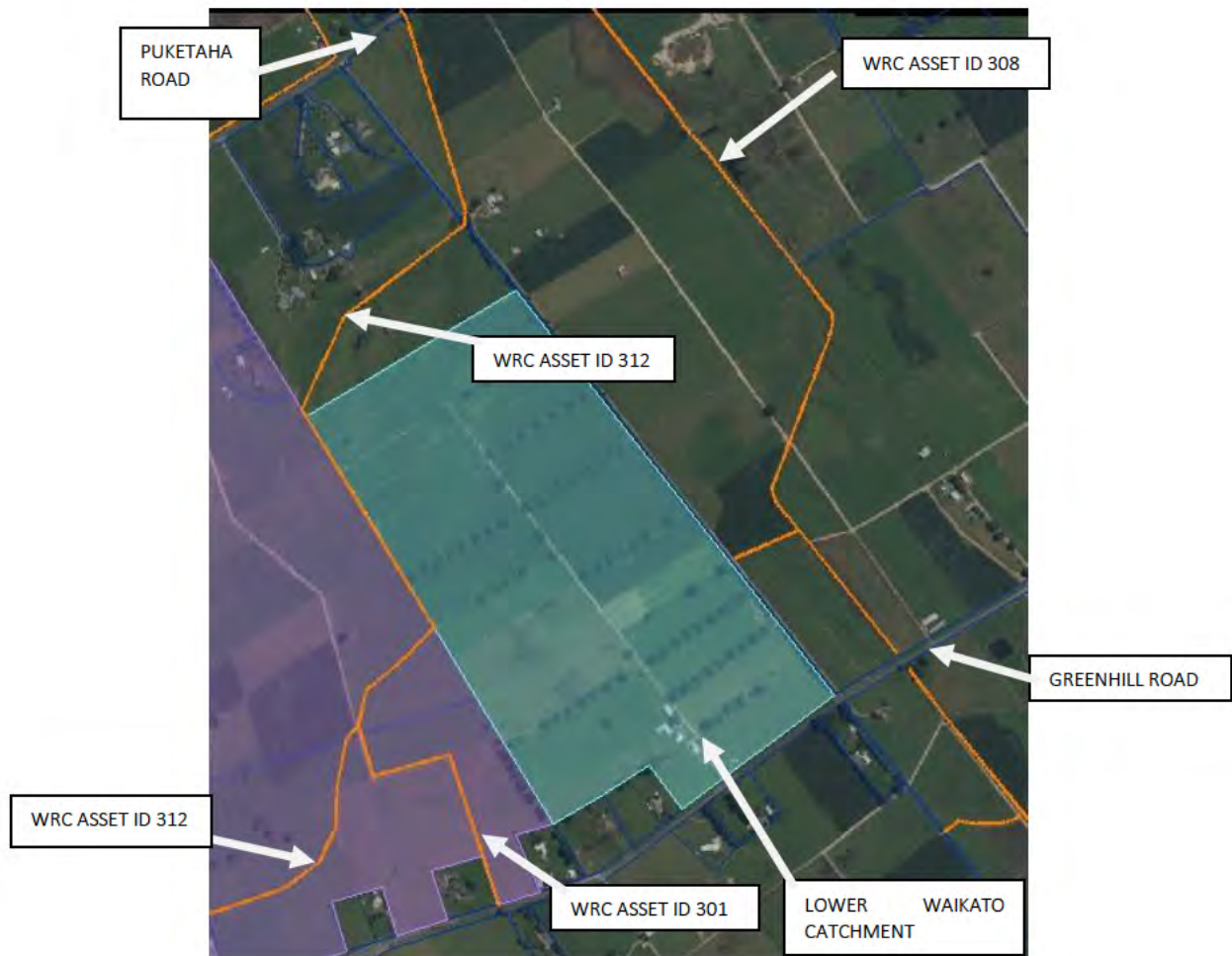
The Lower Waikato Catchment generally falls to the northwest and is drained by a series of drains that are maintained by Waikato Regional Council on behalf of the landowners. Waikato Regional Council categorises the farm drains as artificial drains, and these discharge into the drain Asset ID 308 (S Drain) that discharges via a culvert under Sainsbury Road to the Komakorau Stream (modified) WRC Asset ID 261.

The Komakorau Stream discharges into the Manawara Stream near the SH1 /SH1B interchange, prior to entering the Waikato River.

Table 10, below shows the existing Lots that make up part of the Lower Waikato Catchment area, however the existing site contours have approximately 96.6ha of the Central Waikato Catchment area draining to the northeast to the Lower Waikato Catchment outlet.

| Address                      | Lot Description | Area (Ha) |
|------------------------------|-----------------|-----------|
| 257 Greenhill Road, Hamilton | Lot 3 DP 456019 | 51.44     |
| Total Area (Ha)              |                 | 51.44     |

*Table 10: Summary of Lower Waikato Catchment*



*Figure 9 –Lower Waikato Catchment Overview*





Figure 10 –Internal Lower Waikato Catchments

#### 5.1.2. Central Waikato Catchment

The Central Waikato Catchment portion of the block generally falls to the west along Puketaha Road (Asset ID 76314), or under the Waikato Expressway (via culvert) into WRC drains (Asset ID 74691) discharging via a culvert under Gordonton Road to the HCC gully system, that runs between Gordonton Road and Hukanui Road, that then crosses Wairere Drive and discharges into the Waikato River near the Wairere Drive Bridge to the southwest.

This discharge forms part of the Kirikiriroa Catchment (HCC)

Table 11 below shows the existing Lots that make up part of the Central Waikato Catchment area, however the existing site contours only have approximately 32.70ha of the Central Waikato Catchment area draining to the southwest to the Central Waikato Catchment outlet. The remainder of the catchment drains to the northeast via farm drains/swales and the WRC drain network.

| Address                      | Lot Description      | Area (Ha) |
|------------------------------|----------------------|-----------|
| 112 Puketaha Road, Rototuna  | Lot 1 DP 515771      | 23.25     |
| 112A Puketaha Road, Rototuna | Lot 2 DP 515771      | 3.31      |
| 154 Puketaha Road, Rototuna  | Lot 1 DPS 15954      | 4.44      |
| 175 Puketaha Road, Rototuna  | Lot 2 DP 307097      | 60.78     |
| 192 Puketaha Road            | Lot 1 DP 307097      | 1.45      |
| 133 Pukeroa Road, Hamilton   | Section 88 SO 572875 | 33.47     |
| 4 Taha Lane, Hamilton        | Lot 1 DP 304594      | 2.57      |
| Total Area (Ha)              |                      | 129.27    |
| Total Area (Ha)              |                      | 51.44     |

Table 11: Summary of Central Waikato Catchment



*Figure 11 –Central Waikato Catchment Overview*

The stormwater is currently managed by the existing farm drains and culverts to convey the surface runoff through the site. The site does not sit within an Integrated Catchment Plan (ICMP), however a portion of the site (see above) discharges to the Hamilton City Council Kirikiriroa Catchment. A Stormwater Management Plan for the proposed development has not been undertaken at this time, however a high-level summary of the Stormwater Management Philosophy is provided below. Refer to Appendix B for the stormwater layout drawing.



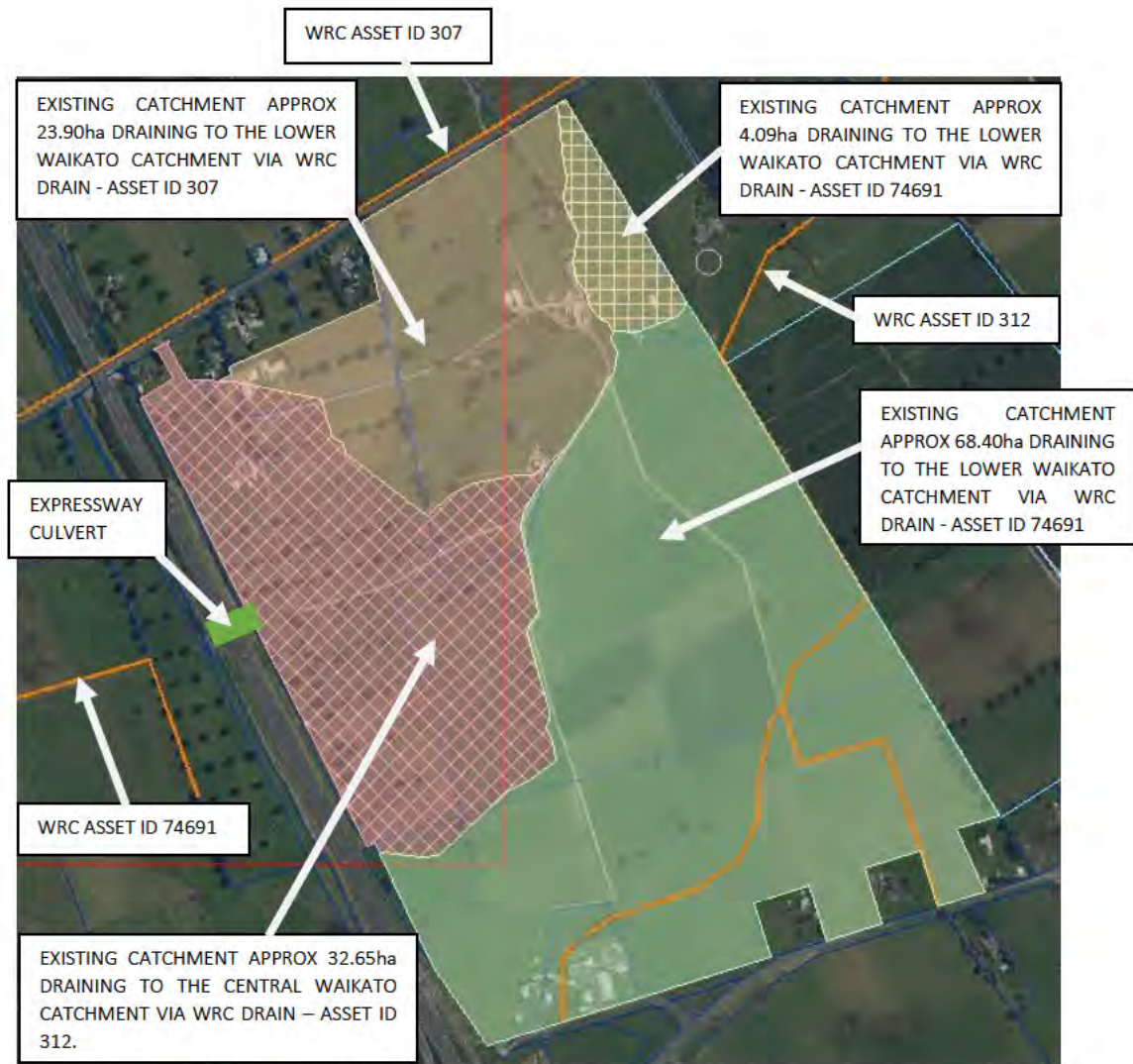


Figure 12 – Internal Central Waikato Catchments

## 5.2. Suggested Outcomes

Proposed objectives of the stormwater strategy are:

- Consideration of future public networks required in support of the study areas.
- Identify existing overland flowpaths.
- Identify existing flood hazards.
- Provide an option-based assessment for water quality treatment in support of the future development of the study areas.
- Consideration and requirement for extended detention in support of the future development of the study areas to avoid any downstream flooding, erosion, and scouring.
- Confirming the need for attenuation of peak flow during storm events up to the 100-year events.
- On-site retention (volume reduction) to ensure pre-development runoff rates and volumes are maintained within catchments and streams.
- Recommendations to guide future plan change application(s) to ensure positive environmental outcomes are achieved.

### 5.3. Reticulation

Existing stormwater infrastructure within Greenhill Industrial Park development is limited to farm/roadside drains and culverts. Development of the Greenhill Industrial Park development will be supported by new public stormwater networks that will discharge into groundwater recharge pits and into the existing and proposed wetlands for primary and secondary water quality treatment. The future public networks would be developed by the developer. The stormwater infrastructure will need to comply with the conditions for resource consent and engineering approval conditions before being vested with HCC. Where possible, the stormwater network will be designed and constructed within the roads.

### 5.4. Stormwater Quality and Quantity

An assessment has been undertaken to establish the best practical design options for the stormwater quality and quantity design in support of the Greenhill Industrial Park development. These options include at source stormwater quality control through the following controls:

- Inert roofing materials for all future buildings.
- Reduction of impervious areas using permeable paving (where possible).
- Lot development supported by approved propriety devices such as raingardens, treepits, stormwater filters, etc.
- Treatment of public roads and right of ways via approved propriety devices (raingardens, swales, stormwater filters etc) as per GD01 design guidelines.
- Sub-catchment wide stormwater quality provision through detention basins and wetlands.
- Planting of riparian areas and protection of any existing bush features within the Greenhill Industrial Park development.
- Use of the treatment train devices (swales and/or amalgamated raingardens and artificial wetlands) to provide storage and attenuation for the required storm events from WQV, ED, 2-year, 10-year and 100-year ARI.
- Second option is to provide storage and attenuation within the existing (rehabilitated) drains in addition to wetlands.

A treatment train is proposed solution which would be in the form of an integrated forebay, amalgamated raingarden and wetland for each catchment. This provides two-step treatment and reduces the amount of maintenance required by creating one location per catchment.

HCC have noted their current preference is for the consolidated/amalgamated raingarden approach. However, roadside raingardens or swales could be used in place of amalgamated raingardens before discharging into wetlands if required.

Proposed preliminary wetland sizing is based on 4% of the attributing catchment areas. The wetland sizing will be further developed as part of the detailed design phase. The wetlands will discharge into the existing/enhanced streams. Refer to Appendix B for the concept stormwater plan, which provides preliminary catchments and wetland locations.

### 5.5. Groundwater Recharge

Soakage and recharge of stormwater into peat will be required to maintain hydrology to prevent dewatering of downstream wetland and streams and to mitigate ground shrinkage. For areas of deep peat, the preference would be to construct wetlands through these areas. Recharge pits should be designed at regular intervals throughout the development to encourage even distribution of groundwater recharge.



Detailed investigations by a suitable qualified Geotechnical Engineer, to determine the suitable recharge treatment measure to be implemented for each area. Recharge treatment measures will need to consider the future infrastructure and buildings in the decision-making process.

### 5.6. Rainwater Harvesting/Reuse

Reusing rainwater can significantly reduce the amount of water supply demand by each business by up to 50%. Decreasing demand on water supply has multiple benefits including meeting Water-Sensitive Urban Design (WSUD) criteria and decreasing each businesses water use. Allowance for water metering is suggested for any future changes to Hamilton water supply requiring a meter box at the boundary.

Rainwater can be harvested and used for a range of different applications; for watering the gardens/green areas or washing the car, for use in the laundry and toilet. Depending on the specific industry proposed on each lot, primary and secondary industrial processes may also be able to incorporate rainwater harvested into their processes. Rainwater is harvested directly off the roof and travels through down pipes to a water tank, which sits either above ground or below.

Rainwater harvesting requires a building consent and would be enforced by a condition of resource consent and consent notice on each title. The use of rainwater reuse and their effects on water supply demand will need to be investigated and confirmed with council. Rainwater reuse options will be further investigated as part of future resource consent applications.

Rainwater harvesting can significantly reduce the amount of water supply demand from each business. Rainwater harvesting will be incorporated where possible into the proposed development during industrial lots construction, depending on the type of industry proposed for each lot.

### 5.7. Existing Stream Enhancement

The proposed wetlands are located adjacent and upstream of a few key existing conveyance channels/drains within the development. This will allow conveyance of flow from the development area into the existing environment. We have investigated the existing drain depths and levels based on available survey data and it appears most existing streams are very shallow. In their current state, this will restrict attenuation and flood storage ability for the adjacent catchment.

Based on the above, an option to address this would be enhancement of the existing drain, which would include realigning and introducing small wetland ponds, providing a large stormwater reserve area located within the existing low-lying areas adjacent to the existing drains to accommodate additional storage and attenuation for the Greenhill Industrial Park development. Altering the drain provides the opportunity to rehabilitate the streams enhancing ecological habitat by providing a more natural meander, wetland areas and planting. This will require further inputs from an Ecologist during the substantive application stage. Proposed enhanced stream locations can be found on the stormwater plan in Appendix B.

### 5.8. Flooding

A Preliminary flood assessment has been carried out for a rural catchment located adjacent to the Greenhill interchange on SH1, northeast of Hamilton western side of the site sits within the Kirikiriroa stream catchment, flowing through the Greenhill drainage areas managed by Waikato Regional Council (WRC). As the existing stream traverses through the eastern portion of the site and discharges north of the development towards Gordonton, through the Puketaha Road Culvert.

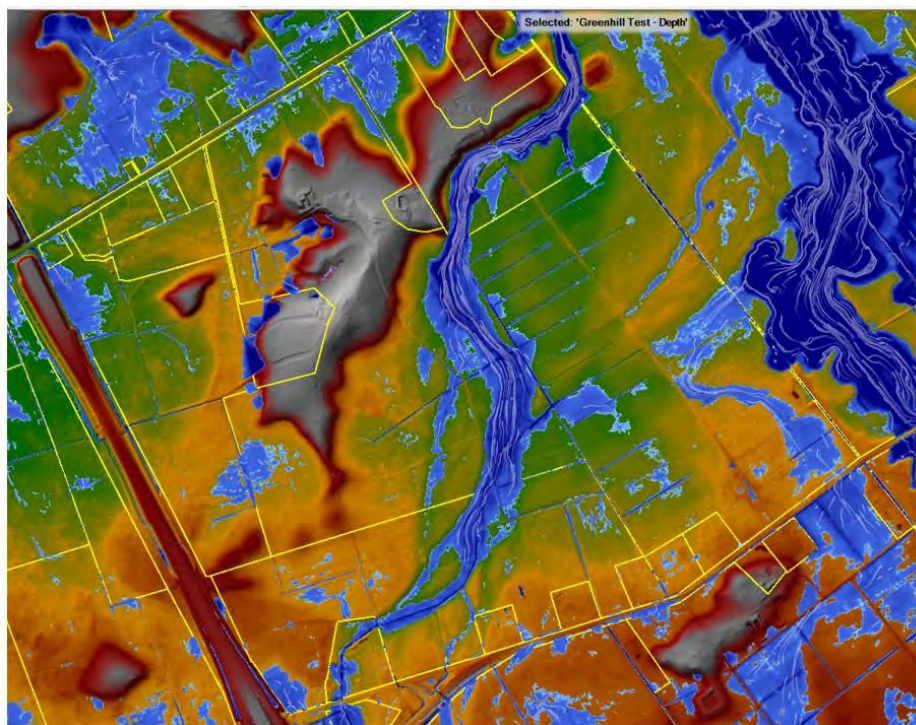
The site generally discharges downstream via natural channels, culverts, and open rural drains and eventually outlets into the Waikato River.

A 2D HEC-RAS model using rain on grid methodology was developed to assess overland flow paths and existing conditions during pre-development and post-development scenarios.

The parameters used in the HEC RAS model are outlined below

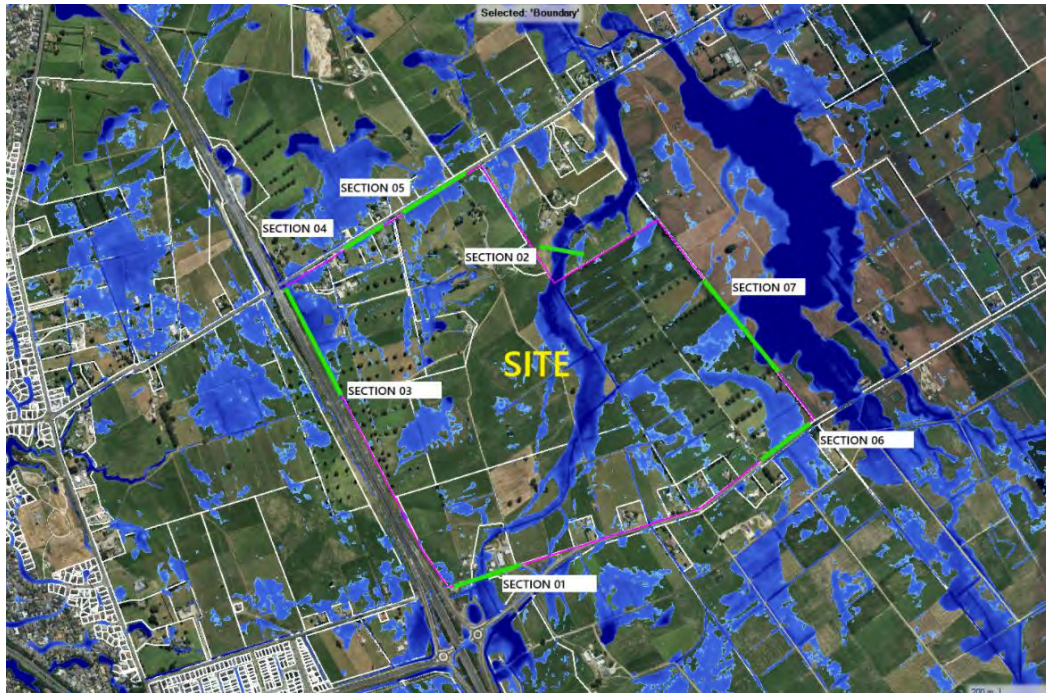
- Rainfall Data Historical: 149mm
- Rainfall Data RCP 8.5 (2081-2100): 182mm
- CN: 74 assuming Soil Class D (Conservative)
- Mannings; Road & Impervious 0.025, farmland and Berm areas 0.05. Note, these will be further developed with more detailed areas with values likely adjusted during the calibration stage.
- Catchment is based on HEC HMS delineation. This was used for establishing the 2D flow area.
- LINZ and survey data and Design surfaces from 12D were used to form pre- and post development terrains.
- Results Min depth shown 100mm

Part of this preliminary, high-level assessment involves analysing the flow of incoming and outgoing flows through the site, as well as the downstream and upstream impacts that the development has on neighbouring areas. 7 sections have been strategically placed in these locations to measure these impacts.



*Figure 13 – Existing Elevation Model*





*Figure 14 – Existing 1% ARI RCP8.5 flood map*

Two preliminary pre-development models were created, one using historical data and the other using climate change-adjusted data (as shown above). Historical data determines the current flood extent, and the climate change-adjusted model will be used to compare with post-development results and assess impacts, as both use the adjusted hydrology data (see below preliminary POST development results).



*Figure 15 – Proposed development 1% ARI RCP8.5 flood map*



Summary table below of the preliminary results from HEC RAS for each of the sections.

|          | Pre - Development |                               | Post-Development |                               |
|----------|-------------------|-------------------------------|------------------|-------------------------------|
| Sections | WSL (m)           | Flow Rate (m <sup>3</sup> /s) | WSL (m)          | Flow Rate (m <sup>3</sup> /s) |
| 1        | 36.5              | 1.83                          | 37               | 1.8                           |
| 2        | 35.7              | 7.5                           | 35.4             | 1.92                          |
| 3        | 35.91             | 0.5                           | 35.88            | 0.34                          |
| 4        | 35.98             | 0.74                          | 35.94            | 0.47                          |
| 5        | 35.99             | 0.85                          | 35.95            | 0.2                           |
| 6        | 37.02             | 5.27                          | 37.25            | 5.21                          |
| 7        | 36.07             | 3.49                          | 36.07            | 0.01                          |

*Table 12: Summary of HEC RAS Flows*

Subject to the future development complying with the above, there will be no adverse downstream effects from the development of Greenhill Industrial Park. Additional investigation and detailed design are required to refine the preferred solution as part of any future resource consent or plan change approval.

## 6. Wastewater

Maven have undertaken a desktop study to identify the most suitable option for wastewater disposal for the Greenhill Industrial Park. Reticulated, decentralised, and at source solutions have been considered. The site is in a rural location and there is no existing gravity reticulation within the site to service the proposed development. A staged approach in developing the proposed infrastructure will likely be adopted, with a preference to connect into the existing wastewater infrastructure where possible. Refer to Appendix B for the concept wastewater layout option drawings.

### 6.1. Existing Public Infrastructure

Hamilton has one centralised wastewater treatment plant in Pukete, that currently treats the wastewater for the entire city. HCC will be spending \$56 million to upgrade the existing plant to provide additional capacity and to upgrade the secondary treatment process at the plant. The upgraded plant will provide for the quality, capacity, and security of Hamilton's wastewater treatment plant for the next 30 years.



*Figure 16 - Pukete Wastewater Treatment Plant (Google Map)*

The existing Hamilton City Council wastewater network has 3 potential connection points that the proposed development could potentially connect to.

- Option A
  - The 1050mmØ Interceptor Wastewater main located on Pardoia Boulevard, Asset ID WWM24051
- Option B
  - The 750mmØ Interceptor Wastewater main located on Pukeroa Road, Asset ID WWM24053
- Option C
  - The 150mmØ Wastewater main located on St James Drive, Asset ID WWK22053

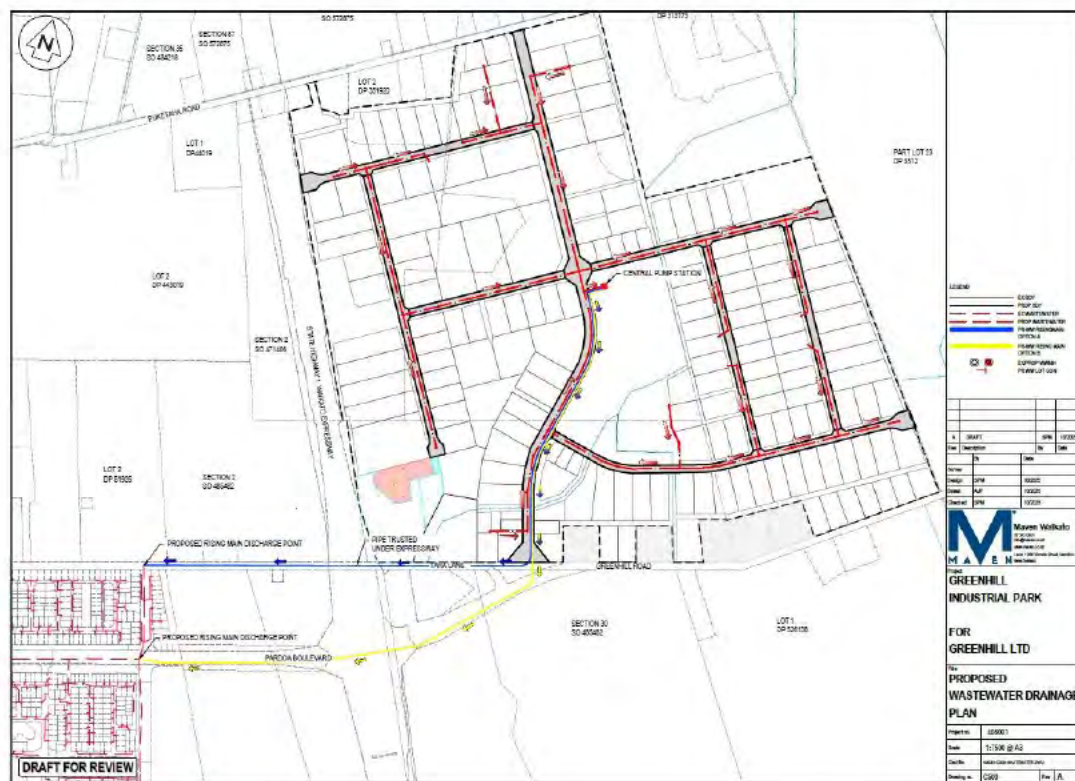


Figure 17 – Concept wastewater plan

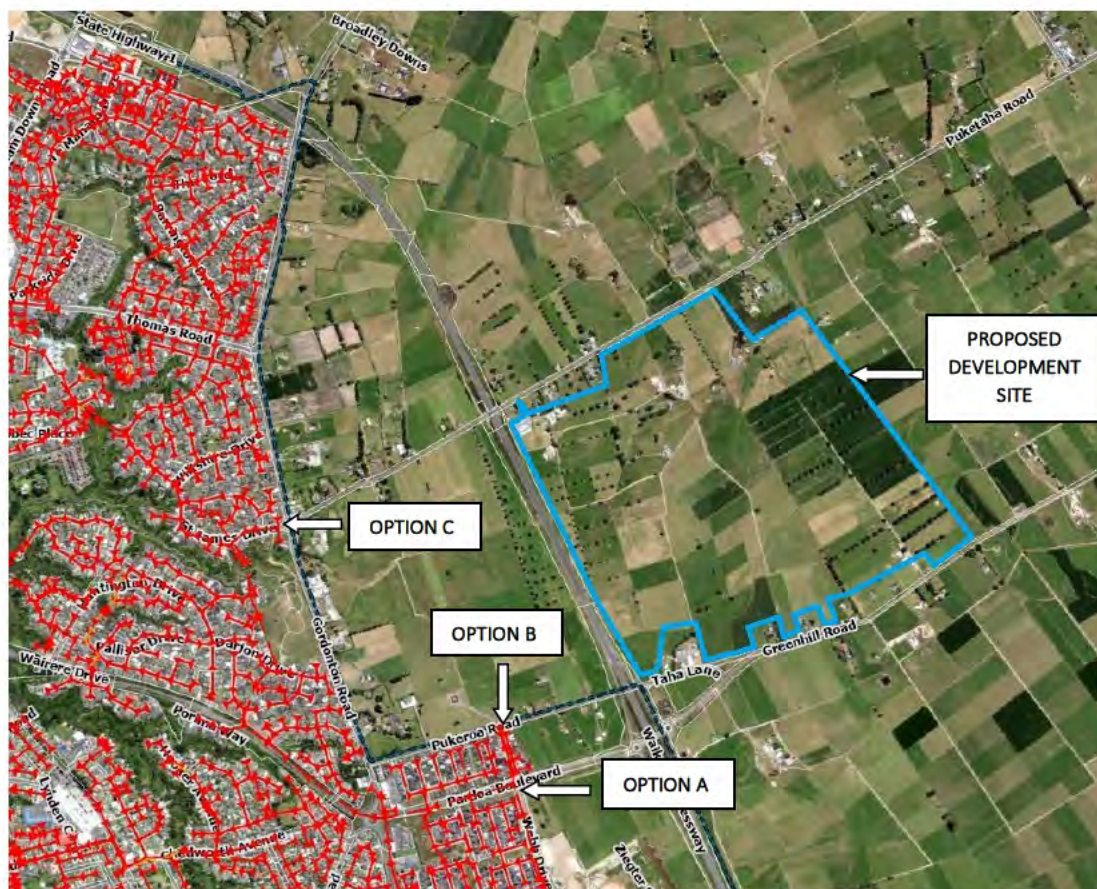


Figure 18 – Existing HCC Wastewater Connection Options





Figure 19 – Existing HCC Wastewater Connection Options A & B



Figure 20 – Existing HCC Wastewater Connection Option C



It is anticipated that as connection Option's A & B connect to interceptor mains sized to accommodate the future R1 & R2 growth cell development, that both these options will have sufficient capacity for the proposed development.

It is anticipated that connection Option C may face potential network capacity constraints that limit the feasibility of this connection point for the full output capacity of the proposed development.

## 6.2. Reticulation

The site topography is generally flat. The Greenhill Industrial Park development would be predominantly serviced by gravity mains that would drain to a central pump station located in the low point of the development. The central pump station will transfer wastewater through the site for discharge to the existing HCC wastewater network at either connection Option A, B or C (as discussed above in section 6.1)

We have not undertaken an in-depth review of the existing network capacity, however connection into the existing reticulation is anticipated to be feasible for Option A & B connection points, as these two options connect to interceptor mains sized to accommodate the future R1 & R2 growth cell development, and that both these options will have sufficient capacity for the proposed development flows. The option C connection point is to a smaller 150mmØ main, and the receiving manhole is located at the upper end of the existing network, raising concerns that this option and associated network infrastructure will have limited capacity for the proposed development flows.

To address the potential wastewater requirement within the future draft ICMP (discussed in section 6.3 below), the proposed central wastewater pumpstation will also have underground storage tanks included to provide additional storage for peak wet weather flows and/or provide emergency storage volume, additionally the proposed pumpstation can be configured to discharge the proposed development flows to the existing HCC network at off peak times.

This wastewater philosophy will need to be confirmed by HCC, and additional network capacity assessments maybe required.

## 6.3. Strategic Wastewater Connections

The site will is within the Hamilton City Council Kirikiriroa Catchment area, see figures 21 & 22 below.

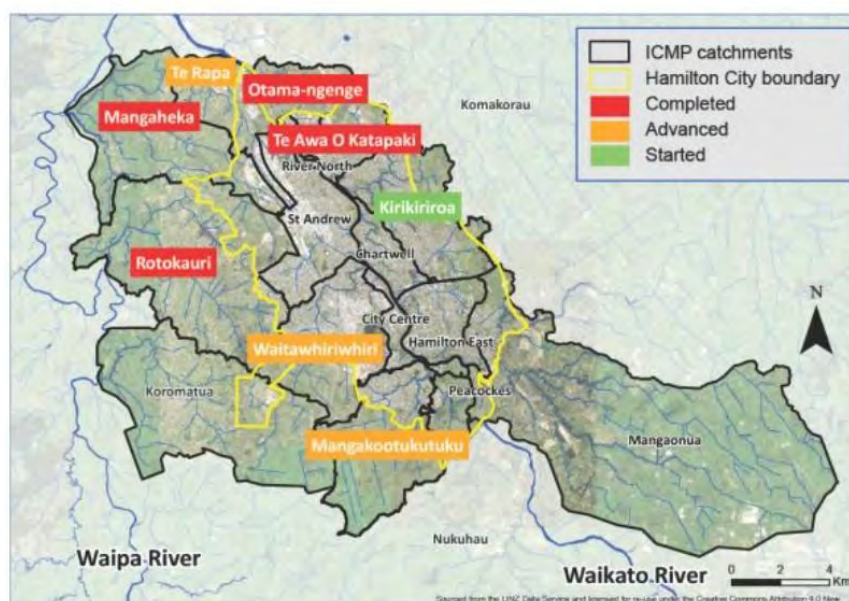


Figure 21 – HCC ICMP Catchments (HCC Website October 2025)



Figure 22 – HCC Kirikiriroa ICMP Catchment (HCC Website October 2025)

HCC is developing a draft ICMP for the Kirikiriroa Catchment (nominal date on HCC website of 2025). The ICMP will summarise infrastructure planned for zoned growth and options for hypothetical growth. The Greenhill Park development falls partially within the extents of this ICMP, and as such will need to comply with the requirements of the ICMP (if adopted) and RITS unless agreed otherwise by Council. No information is currently available for this ICMP; however, it is anticipated that the wastewater management for the Kirikiriroa catchment will be similar to those within the Te Awa O Katapaki & River North ICMP.

- Key Levels of Service (anticipated)
  - Wastewater – no additional wet weather overflows due to development (volume and frequency)
  - Wastewater Management
    - Wastewater management shall incorporate best practice options and be managed so that:
      - Conveyed network volumes are minimised, (e.g. by demand management and management of stormwater infiltration)
      - Dry weather overflows are prevented and wet weather overflows are minimised.

#### 6.4. Alternative Treatment Options

Recognising the issues and constraints around traditional centralised solutions identified above, Maven have considered “at source” and “decentralised” wastewater treatment solutions.



## 6.5. At Source Treatment

At source wastewater treatment solutions have been considered and are a viable option for the proposed development given the overall size of the majority of lots. However, at source treatment solutions may limit the type of industrial activities that can occur, may limit the area of useable area within each lot, after providing for sufficient secondary treatment area.

## 6.6. Decentralised Treatment

Decentralised treatment options have been considered and discarded due to the both the initial investment and ongoing maintenance costs, given that there are both centralised and at source options feasible for this proposed development.

## 6.7. Proposed Wastewater

As discussed in section 6.1 there are 3 potential existing connection points for the proposed development to connect to. Additionally, it is feasible to extend the bulk interceptor main located on Pardoia Boulevard further along Pardoia Boulevard, under the existing expressway and along Greenhill Road to opposite the proposed development Collector Road intersection/roundabout

The proposed central pumpstation would have an approximate finished ground level (GL) 36.0m and an inlet RL of 29.1m, with an approximate depth to invert level of 6.9m. Assuming invert to base of the pumpstation being between 1.0 & 1.5m in depth then a 7.9m to 8.4m pumpstation could service the entire site via gravity.

The proposed gravity mains network would have the following criteria;

- Maximum pipe size = 375mmØ uPVC
  - Min gradient =0.33%
  - Max gradient =0.75%
- Minimum pipe size = 150mmØ uPVC
  - All 150mmØ line to have 1% gradients
- Maximum depth = 7-8m
  - For small, short lengths
- Minimum depth = 1.5m
- Average depth 3.0-4.0m
- All manholes greater than 3.0m in depth to be 1200mmØ

### 6.7.1. Wastewater options:

- Option A – Central Pumpstation, with connection to Pukeroa Road manhole, and internal gravity network.
  - Pros
    - Less services along Pukeroa Road
    - Shortest distance to pump (of the 3 existing connection options)
    - Single Pumpstation
    - Gravity network
    - Allows most range for type of industrial activity for each Lot
  - Cons
    - Rising main thrust under Waikato Expressway Embankment
    - Deep Central Pumpstation
    - Deep wastewater infrastructure
    - High construction costs

- Option B - Central Pumpstation, with connection to Pardoia Boulevard manhole, and internal gravity network.
  - Pros
    - No need to thrust under Waikato Expressway, can mostly open trench rising main.
    - Single Pumpstation
    - Gravity network
    - Allows most range for type of industrial activity for each Lot
  - Cons
    - A lot of services expected under Expressway and along Pardoia Boulevard
    - Deep Central Pumpstation
    - Deep wastewater infrastructure
    - High construction costs
- Option C – Extend existing intercept main (Pardoia Boulevard) to Greenhill Road/Collector Road intersection, Central Pumpstation, with connection to new manhole (Greenhill Road), and internal gravity network.
  - Pros
    - Shortest distance to pump
    - Can provide capacity for future developments
    - Single Pumpstation
    - Gravity network
    - Allows most range for type of industrial activity for each Lot
  - Cons
    - High Cost to extend interceptor main
    - More service clash issues
    - Deep Central Pumpstation
    - Deep wastewater infrastructure
    - High construction costs
- Option D – Onsite “At Source” disposal for each lot
  - Pros
    - Cheapest and simplest option
    - Reduces “load” on council network
  - Cons
    - Limits industry types to “dry Industry “options only
    - Reduces space/area on each Lot for development
    - Higher risk to receiving environmental
    - Potential higher ongoing maintenance costs for each business
      - Dependent on system installed
    - Potential to reduce value/appeal of each lot to potential buyers
- Option E – Decentralized treatment for the proposed development with internal gravity network
  - Pros
    - Reduces “load” on council network
    - Independence on council connections
  - Cons
    - Potentially Limits industry types
    - Reduces number of lots for sale/development
    - High Initial costs

- High ongoing maintenance costs
- Still require gravity network (High construction costs)
- Potential to reduce value/appeal of each lot to potential buyers
- Unlikely to be acceptable to council, given other network connection options are available.

#### 6.7.2. Recommendations:

Option A or Option B would be our two recommended options, both option would allow the site to be fully gravity serviced, and maximize the potential industry for each lot, if the central pumpstation is considered to be too deep we would consider multiple pumpstations within the site.

## 7. Water

Maven have undertaken a desktop study to identify the most suitable option for potable water for the Greenhill Park Industrial Park development. Reticulated and decentralised solutions have been considered. Refer to Appendix B for the proposed water layout drawing.

### 7.1. Existing Public Infrastructure

Hamilton has one centralised water treatment plant located at 1A Waiora Terrace, Fitzroy, Hamilton, that currently treats the water from the Waikato River that provides water supply for Hamilton city.

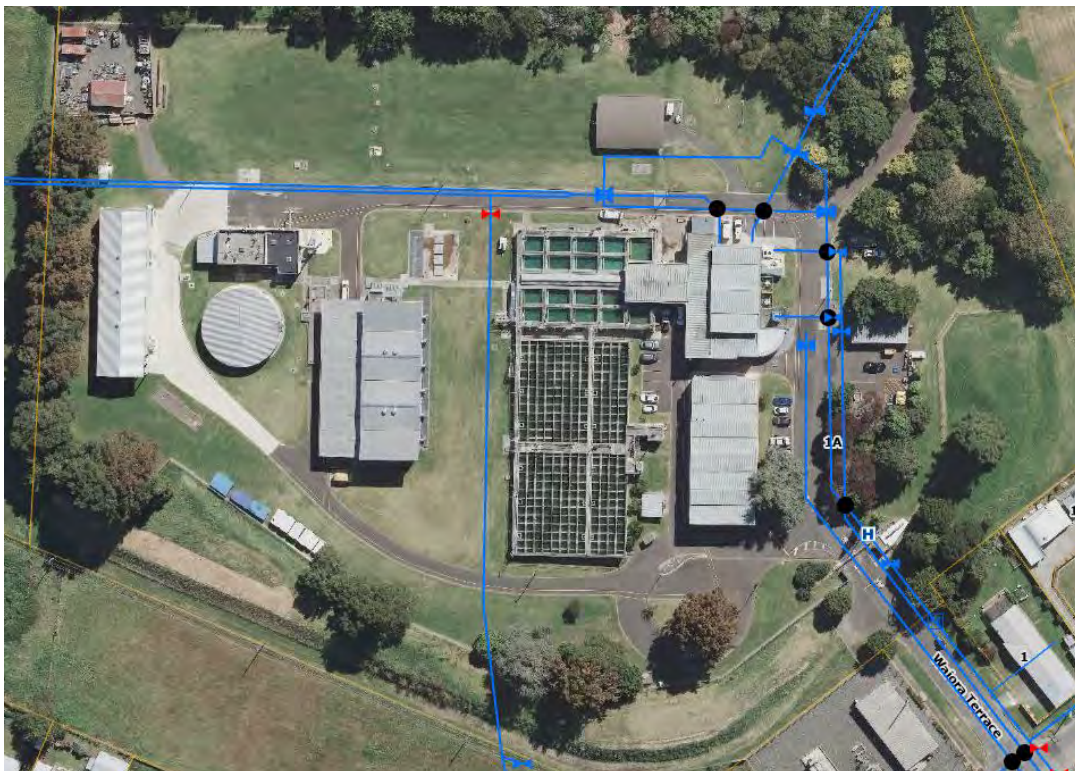


Figure 23 - HCC Water Treatment Plant



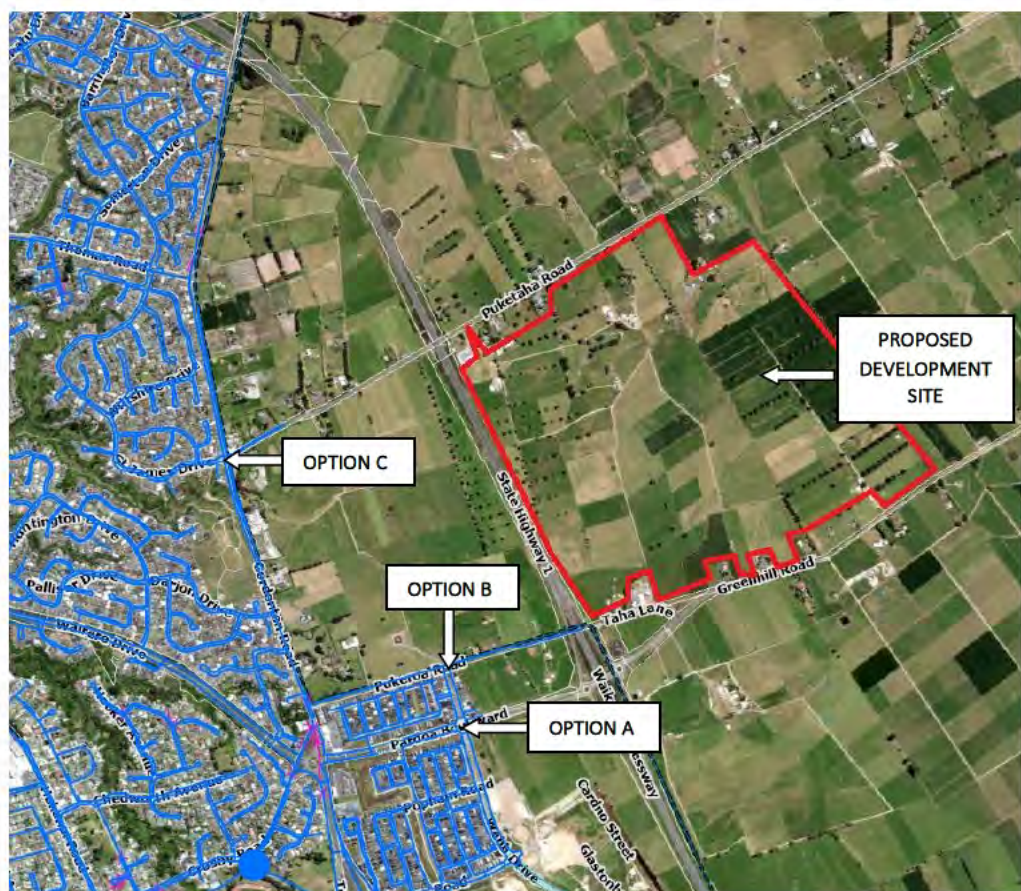
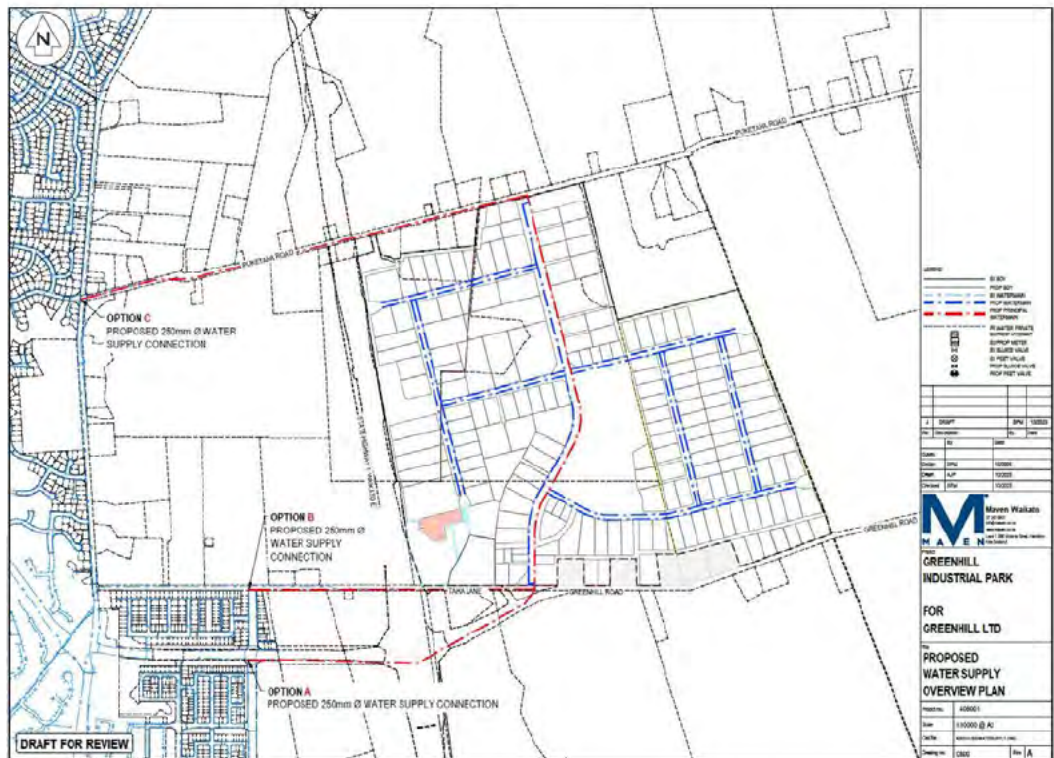
The nearest water reservoir to the Ruakura East Block, is the Ruakura water reservoir. This reservoir is located to the north of the Ruakura Research Centre, off Wairere Drive.



*Figure 24 – Ruakura Water Reservoir*

The existing Hamilton City Council watersupply network has three potential connection points that the proposed development could potentially connect to.

- Option A
  - The 250mmØ Trunk water main located on Pardoia Boulevard, connecting off the existing fire hydrant, Asset ID HYMCHA0008-OPP1
- Option B
  - The 250mmØ Trunk water main located on Webb Drive, connecting off the existing sluice valve, Asset ID WVWEBB0530
- Option C
  - The 250mmØ Trunk water main located on Gordonton Road, connecting off the existing sluice valve, Asset ID WVSTJM0214-3





• Figure 26 – Existing HCC Water Supply Connection Options



Figure 27 – Existing HCC Water Supply Connection Options A & B



Figure 28 – Existing HCC Water Supply Connection Option C



## 7.2. Reticulation and Capacity

Reticulation will be designed to provide the Greenhill Industrial Park development with either.

- suitable means of potable and firefighting supply, or
- suitable means of firefighting supply only.

We have not undertaken an in-depth review of the existing network, however HCC has recently (2020) constructed a new water reservoir and associated water infrastructure to supply the Ruakura growth area (including R2), and as such it is anticipated that there are no capacity issues in the existing Hamilton City infrastructure. The site is currently supplied via Waikato District Council infrastructure, it is anticipated that there is limited capacity in the Waikato District existing water network, and it could not support the entire Greenhill Industrial Park development.

## 7.3. Alternative Supply Options

In addition to the centralised solutions identified above, we have also considered groundwater as a potable water solution.

Whilst centralised approaches offer long term viability for development of the Greenhill Park Industrial development, prohibitive costs and programme to implement capital infrastructure for surrounding areas could delay initial development. If early release of initial stages is desired, then using ground water could enable a transition period for development to occur. In addition to a transition period, groundwater could also provide increased security for water supply to the HCC water supply network water supply.

HCC have previously indicated they do not support decentralised treatment, and it would remain under private ownership.

## 7.4. Proposed Water

The proposed watermain through the industrial areas can either supply both potable and non-potable water supply, or a combination of non-potable and rainwater harvesting and reuse tanks dependent on the final water supply connection option. The potential connections options are discussed below.

Discussions will be held with HCC and/or WDC to determine the final option that ties back into the catchment ICMP, that is currently being drafted for the Kirikiriroa catchment (HCC). There are multiple connection and supply options available dependent on the final version of the ICMP and discussion will be undertaken with Hamilton City Council in the future to support the substantive application process.

### 7.4.1. Water Supply options:

- Option A – For servicing the industrial area, a new 250OD HDPE trunk-main would be constructed from the existing 250mm MPVC trunk-main terminating along Pardoia Boulevard, and extend to the proposed intersection/roundabout with Greenhill Road and the Collector Road, run along the eastern side of the proposed Collector Road and connect to Puketaha Road. Additionally, a 250OD HDPE trunk-main would-be construction from the existing 250mm MPVC trunk main running on the western side of Gordonton Road and extend along the southern side of Puketaha Road to connect to the 250mm OD HDPE main along the eastern side of the Collector road.

A new 180OD HDPE watermain would be constructed along the western side of the Collector Road and connect back into the 250mmØ trunk-main at either end of the Collector Road.

The local roads would have either dual 150mmØ watermain both sides of the road, or a 180mmØ or 150mmØ watermain on either side of the road – depending on demand requirements.

- Pros
    - Allows most range for type of industrial activity for each Lot
    - Allows for full firefighting coverage
    - Allows for full potable water supply
  - Cons
    - High initial infrastructure costs
- Option B – For servicing the industrial area, a new 250OD HDPE trunk-main would be constructed from the existing 250mm uPVC trunk-main terminating on the northern end of Webb Drive and extend to the proposed intersection/roundabout with Greenhill Road and the Collector Road, run along the eastern side of the proposed Collector Road and connect to Puketaha Road. Additionally, a 250OD HDPE trunk-main would-be construction from the existing 250mm MPVC trunk main running on the western side of Gordonton Road and extend along the southern side of Puketaha Road to connect to the 250mm OD HDPE main along the eastern side of the Collector road.

A new 180OD HDPE watermain would be constructed along the western side of the Collector Road and connect back into the 250mmØ trunk-main at either end of the Collector Road.

- Pros
    - Allows most range for type of industrial activity for each Lot
    - Allows for full firefighting coverage
    - Allows for full potable water supply
  - Cons
    - High initial infrastructure costs
- The local roads would have either dual 150mmØ watermain both sides of the road, or a 180mmØ or 150mmØ watermain on either side of the road – depending on demand requirements.
- Option C – Connect to the exiting Waikato District Council (WDC) network, which would provide limited firefighting capacity and onsite rainwater harvesting & reuse tanks on each Lot to provide potable water supply to help offset the network supply
  - Pros
    - Potentially quicker initial development
    - Potentially cheaper infrastructure costs
  - Cons
    - Risk WDC network has either insufficient pressure and/or capacity
    - Could limit size and type of Industry that could utilize the lots
    - Reduces space/area on each Lot for development
    - Potential to reduce value/appeal of each lot to potential buyers

- Option D – Onsite rainwater harvesting & reuse tanks on each Lot to provide potable water supply and firefighting requirements
  - Pros
    - Potentially quicker initial development
    - Potentially cheaper infrastructure costs
    - Rain Harvesting & Reuse tanks could reduce overall network demand
    - Rain Harvesting & Reuse tanks could reduce stormwater peak flows, wetland pond sizes
  - Cons
    - Limits industry types to “dry Industry “options only
    - Reduces space/area on each Lot for development
    - Potential higher costs at building consent
    - Potential higher ongoing maintenance costs for each business
      - Dependent on system installed
    - Potential to reduce value/appeal of each lot to potential buyers
- Option E – Centralised groundwater takes (Bores) and Water Supply Reservoir to provide limited firefighting capacity and onsite rainwater harvesting & reuse tanks on each Lot to provide potable water supply
  - Pros
    - Potentially quicker initial development
    - Potentially cheaper infrastructure costs
    - Rain Harvesting & Reuse tanks could reduce overall network demand
    - Rain Harvesting & Reuse tanks could reduce stormwater peak flows, wetland pond sizes
  - Cons
    - Risk WDC network has either insufficient pressure and/or capacity
    - Requires WRC water take consent
    - Central Reservoir costs could exceed and potential infrastructure cost savings
    - Could limit size and type of Industry that could utilize the lots
    - Reduces space/area on each Lot for development
    - Potential higher ongoing maintenance costs for each business
      - Dependent on system installed
    - Potential to reduce value/appeal of each lot to potential buyers
- Option F – Combination of options 1 or 2 and Onsite rainwater harvesting & reuse tanks
  - Pros
    - Rain Harvesting & Reuse tanks could reduce overall network demand
    - Rain Harvesting & Reuse tanks could reduce stormwater peak flows, wetland pond sizes
    - Allows most range for type of industrial activity for each Lot
    - Allows for full firefighting coverage
    - Allows for full potable water supply
      - Noting that with rain harvesting & reuse tanks, trickle feed options are feasible to manage demand
  - Cons
    - High initial infrastructure costs
    - Reduces space/area on each Lot for development
    - Additional cost to each lot at time of building consent



#### 7.4.2. Recommendations

Option F is the preferred option, as the benefits of the rainwater harvesting tanks outweigh the potential costs, and the connection to the council main (HCC) will future proof the development the most. Either Option A or B connection points are viable and would be dependent on HCC preference.

## 8. Services

### 8.1. Power

Wel Networks are the power service providers within this area. We assume that there is sufficient capacity within the network to accommodate the proposed development. This will need to be investigated further with WEL Networks if the development progresses.

### 8.2. Communications

Tuatahi First Fibre are the fibre service providers within this area. We assume that there is sufficient capacity within the network to accommodate the proposed development. This will need to be investigated further with Tuatahi First Fibre if the development progresses.

### 8.3. Gas

First Gas are the gas service providers within this area. We assume that there is sufficient capacity within the network to accommodate the proposed development. This will need to be investigated further with First Gas if the development progresses.

## 9. Conclusions

Stormwater drainage can be provided for the Greenhill Park Industrial development through wetlands, ground water recharge and swale networks. Overland flow paths will be managed through the development, and it will reduce any potential flooding risks. An overarching stormwater strategy has been developed, and this sets out the high-level, best practice approach for stormwater management within the catchment.

Wastewater drainage can be provided for the Greenhill Park Industrial development through piped networks to central pump station to discharge into the existing HCC wastewater network.

Water supply can be provided for the Greenhill Park Industrial development through water supply networks through the development site and by connecting into the existing water supply network. If the existing network cannot provide sufficient capacity for stages of the development, new water bores will be established at strategic locations and onsite portable water treatment devices will treat the water before entering the public water supply network.

Additional investigation work and detailed reporting for three waters and earthworks will be undertaken at the substantive application stage.



## 10. Limitations

The calculations and assessments included in this report are a 'desktop' analysis and are preliminary in nature based on information available at time of issue. To the best of our knowledge, it represents a reasonable interpretation of available information including the outcomes of the Kirikiriroa ICMP, which status is under development at the time of this issue.

Depending on the outcome of the high-level structure plan, further community; stakeholder engagement; and feasibility investigations, including engineering design and calculations, will be required to determine the suitability of the areas proposed for industrial and residential development.

This report is solely for our clients use for the purpose for which it is intended in accordance with the agreed scope of work. It may not be disclosed to any person other than the client and any use or reliance by any person contrary to the above, to which Maven has not given its prior written consent, is prohibited.

This report must be read in its entirety and no portion of it should be relied on without regard to the limitations and disclaimers set out.

Maven makes no assurances with respect to the accuracy of assumptions and exclusions listed within this report and some may vary significantly due to ongoing stakeholder engagement.

## Appendix A – B & A Urban Master Plan





# Greenhill Industrial Park Masterplan

Consultation Document | Hamilton | December 2025

# B&A

Urban & Environmental

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Kerikeri | Whangārei | Warkworth | Auckland | Tauranga | Cambridge | Hamilton | Napier | Wellington | Nelson | Christchurch | Queenstown | Wānaka



# CONTENTS

|            |                                          |            |                                  |
|------------|------------------------------------------|------------|----------------------------------|
| <b>1.0</b> | <b>Site Context and Analysis</b>         | <b>2.0</b> | <b>Master Plan</b>               |
| 1.1        | Existing Regional and Local Context      | 2.1        | Landscaping Strategy             |
| 1.2        | Planning Context                         | 2.2        | Lot Sizes and Yield Distribution |
| 1.3        | Cultural and Historic Context            | 2.3        | Movement and Connectivity        |
| 1.4        | Ownership and Land Uses                  | 2.4        | Stormwater                       |
| 1.5        | Ecological and Blue-green Network        | 2.5        | Water and Wastewater             |
| 1.6        | Transport and Accessibility              | 2.6        | Staging                          |
| 1.7        | Existing Site Features and Opportunities |            |                                  |



# 1.0 SITE CONTEXT AND ANALYSIS

## 1.1 Existing Regional and Local Context

Greenhill Industrial Park is located adjacent to the eastern side of the Waikato Expressway. The site can be accessed from Puketaha Road to the north and Greenhill Road to the south. The Waikato District and Hamilton City jurisdiction boundary is defined by Gordonton Road, which is located approximately 1 kilometre to the west of the Waikato Expressway. The urban area of Rototuna in Hamilton City is located on the other side of Gordonton Road.

### Proximity to Centres and Residential Areas

Connected by the Waikato Expressway, Greenhill Industrial Park is located within a 20-minute drive of:

- The Hamilton City Centre;
- The Te Rapa Sub-Regional centre;
- The Te Rapa North Industrial area, a 200- hectare sized industrial growth area within Hamilton City; and
- The existing residential areas in Rototuna and Rototuna North, Flagstaff, Fairview Downs, and Chartwell.

#### Legend

- |                                                                                                                   |                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
|  Subject Site                  |  School and ECE     |
|  Waikato R2 Growth             |  Retail Shops       |
|  Waikato Expressway / SH 1     |  Cafe / Restaurants |
|  Existing Interchanges         |  Public Playgrounds |
|  Hamilton City Arterial Routes |                                                                                                        |
|  Parks and Open Spaces         |                                                                                                        |
|  Waterbodies                   |                                                                                                        |

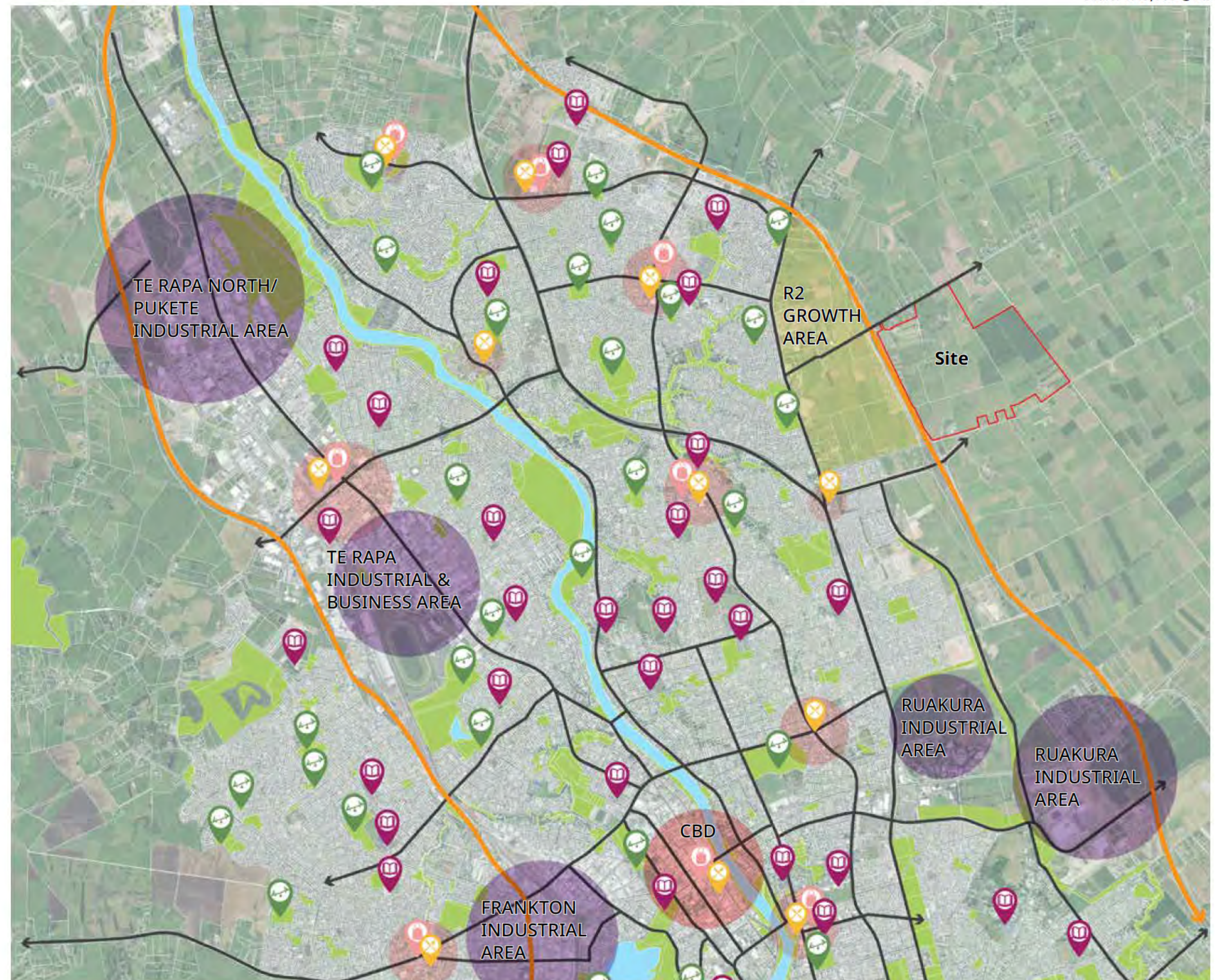


Figure 1 Regional and Local Context Map



## 1.2 Planning Context

The site is zoned General Rural under the Operative Waikato District Plan (Figure 2) and General Rural under the Waikato District Plan – Operative in Part. The area located between the Waikato Expressway and Gordonton Road is an identified urban residential expansion growth cell, referred to as Ruakura 2 or 'R2'.

Future development of the site should carefully consider the planning context under the District Plan, in order to create a cohesive and comprehensive transition from the existing rural environment context into an urban industrial environment context.

The development of the site for industrial activities presents an opportunity to integrate well with the surrounding rural environment, including rural production and rural industry activities. Consideration should also be given to rural lifestyle properties nearby to ensure industrial activities, and their potential effects, can be contained within Greenhill Industrial Park.

### Legend

- Subject Site
- R2 Growth Area (WDC)
- Waikato Expressway / SH
- Hamilton City Arterial Routes
- Existing Interchanges
- WRC Identified Drains
- Regional Flood Hazards Extent
- Zoning Context**
- General Rural Zone
- Rural Lifestyle Zone
- Residential Zone
- Business/Commercial Centres
- City Centre Zone
- Industrial Zones
- Ruakura Industrial Park Zone
- Major Facilities/Other Uses
- Open Spaces and Esplanade

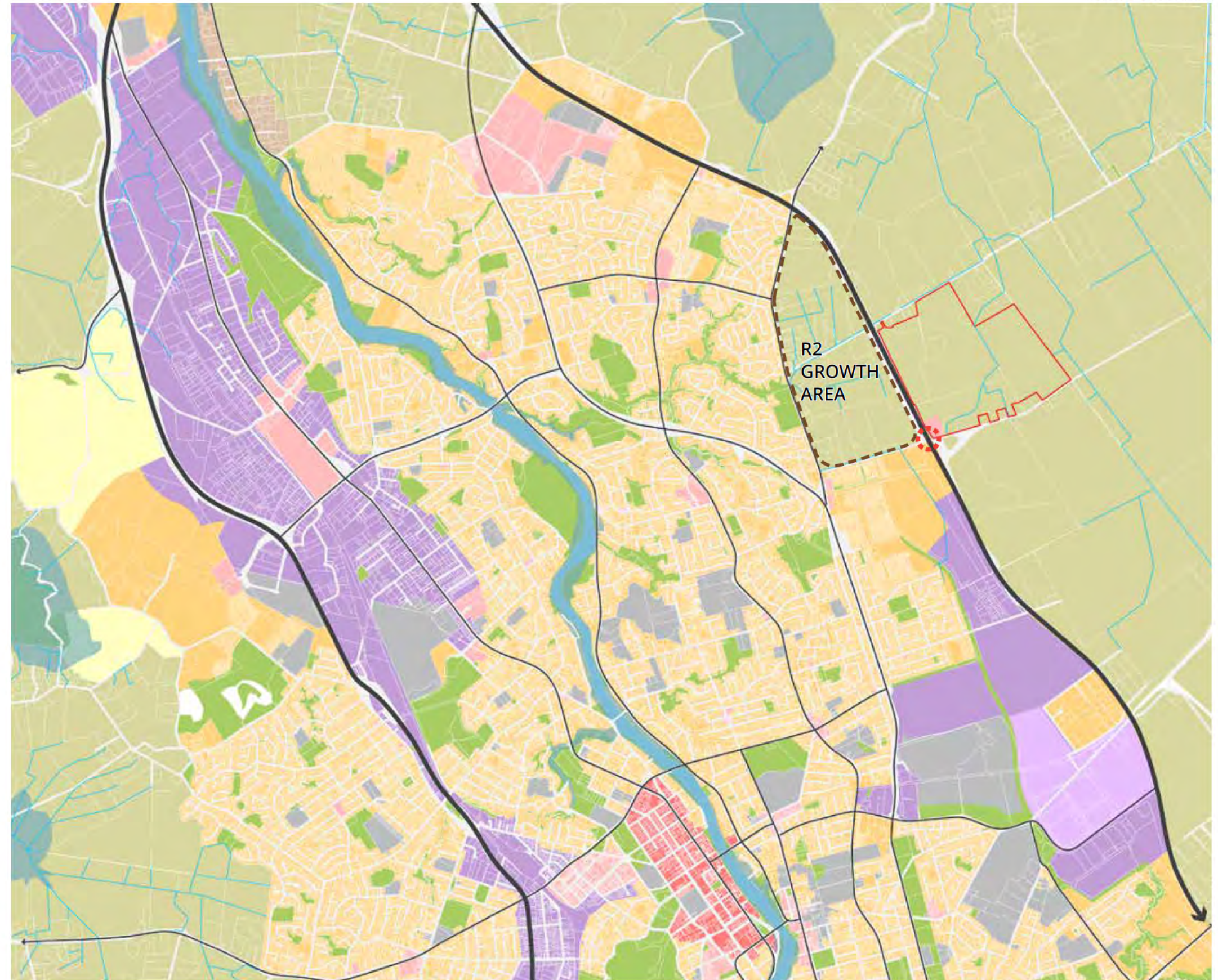


Figure 2 Hamilton City and Waikato District Planning Context



## 1.3 Cultural and Historic Context

The site is of identified cultural and resource management significance to Ngāti Haua, Ngāti Wairere, and Waikato-Tainui.

The Masterplan and the development of Greenhill Industrial Park present an opportunity to embed a cultural narrative that acknowledges and respects the significance of this whenua and the Waikato Te Awa. These opportunities will be identified together with tangata whenua.

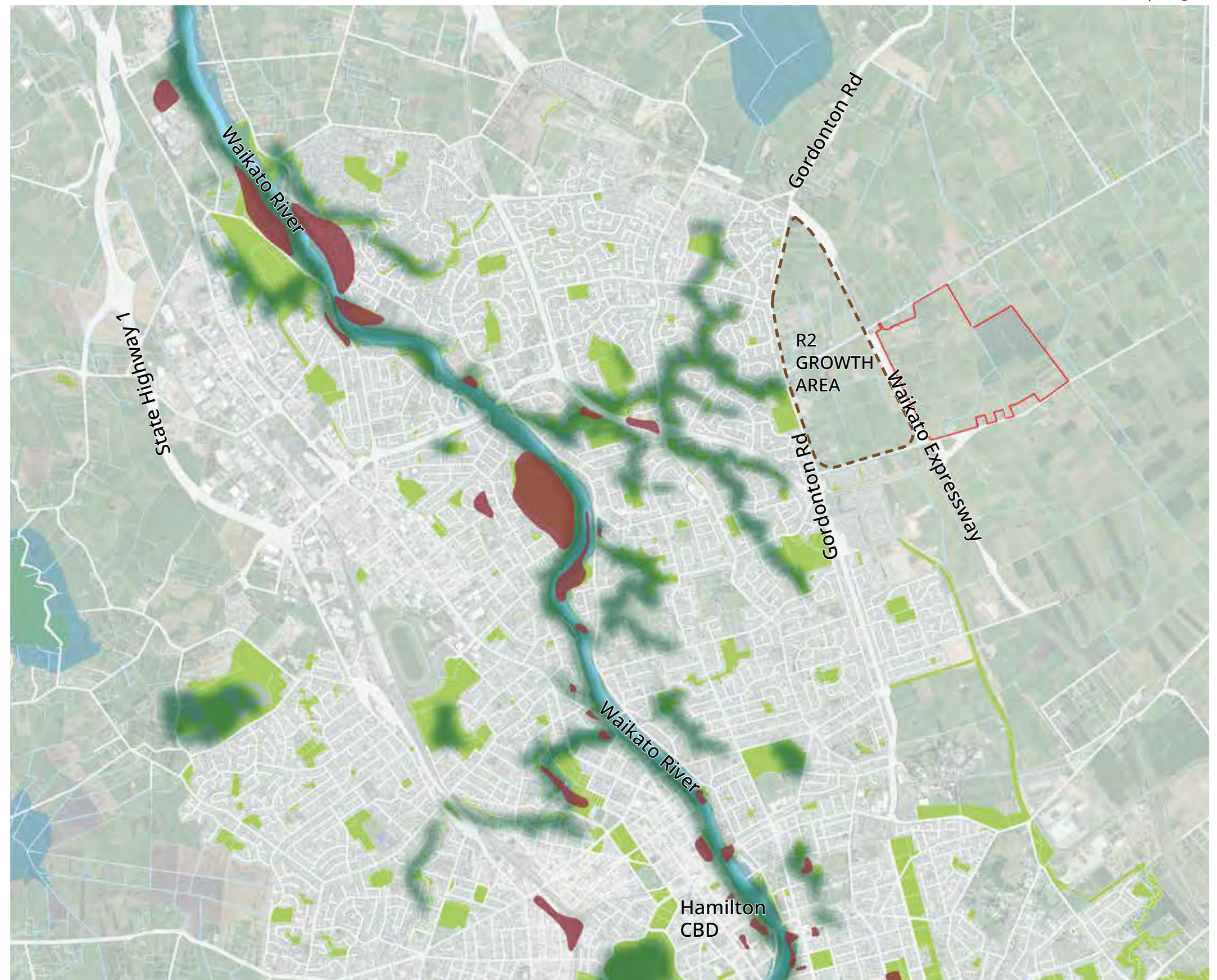


Figure 3 Identified Sites and Areas of Significance to Māori and Archaeological Sites



## 1.4 Ownership and Land Uses



Scale: 1:8,000 @ A3

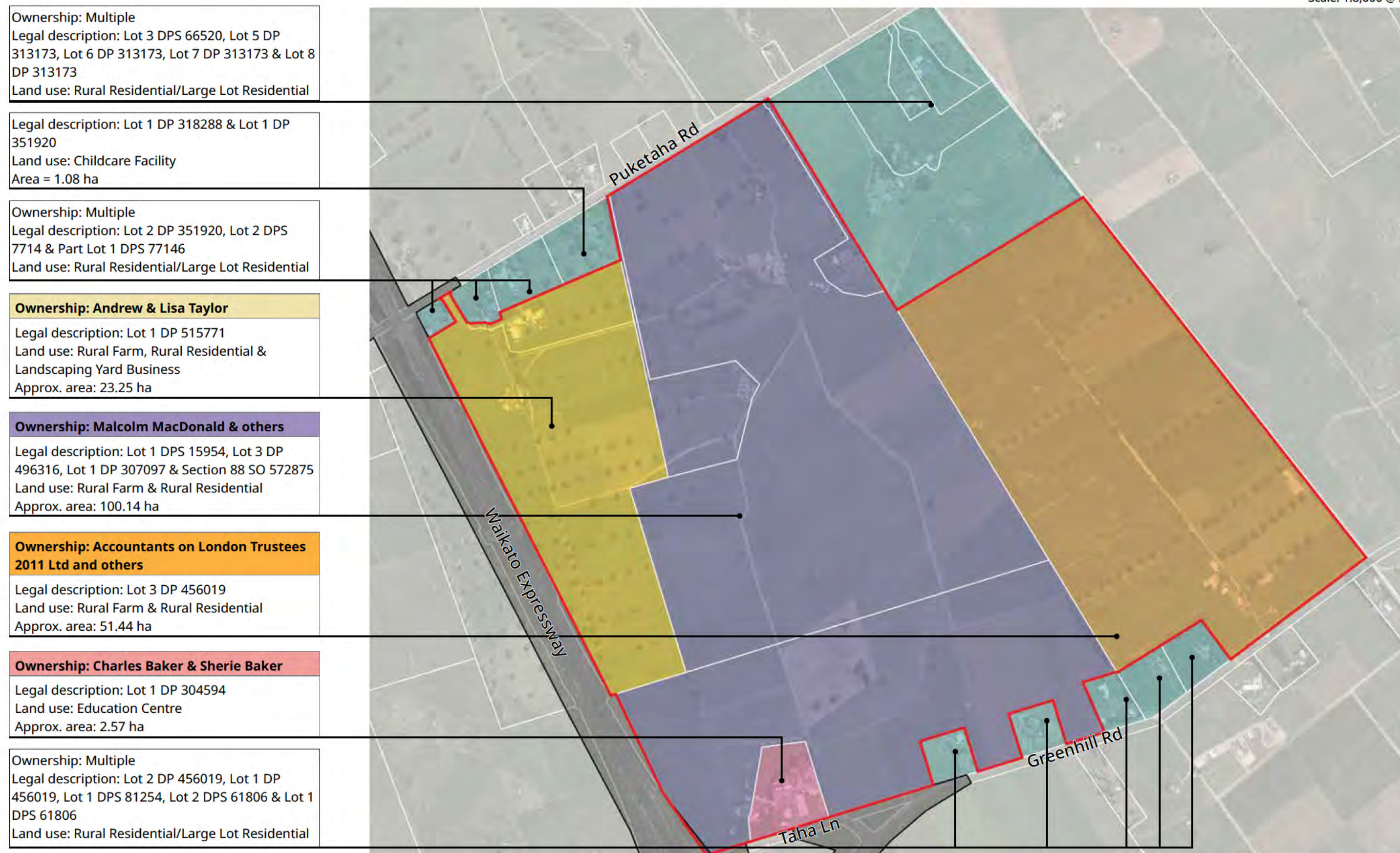


Figure 4 Map showing Existing Ownership



## 1.5 Ecological and Blue-green Network

The Greenhill Industrial Park Masterplan has been designed to integrate with existing natural features where it is practical and feasible. The development **may** result in loss of two indicative natural inland wetlands which are subject to further investigation. Should this occur, there are offsetting opportunities within the site through naturalising the existing stream channel and creating wetlands integrated with planting associated with the stormwater basins to create an overall more resilient and functioning ecosystem. There is approximately 6ha of space available for this purpose, subject to further investigation(s).

Greenhill Industrial Park is also being developed in accordance with water sensitive design principles. These principles aim to protect and enhance the health of the Waikato River which will be the ultimate receiving environment for stormwater runoff and flows.

The green open space area will also incorporate features to manage water quality and quantity.

### Legend

- Site Boundary
- Existing Mature Trees / Shelterbelt
- Existing Modified Watercourse (identified by ecologist)
- Proposed Naturalising Modified Watercourse
- Existing Modified Natural Watercourse (identified by ecologist)
- Waikato Regional Council Drainage
- Existing Potential Wetland (under investigation)
- Area Available for Future Wetland(s) Offsetting
- Existing Artificial Constructed Pond
- Expressway Stormwater Pond

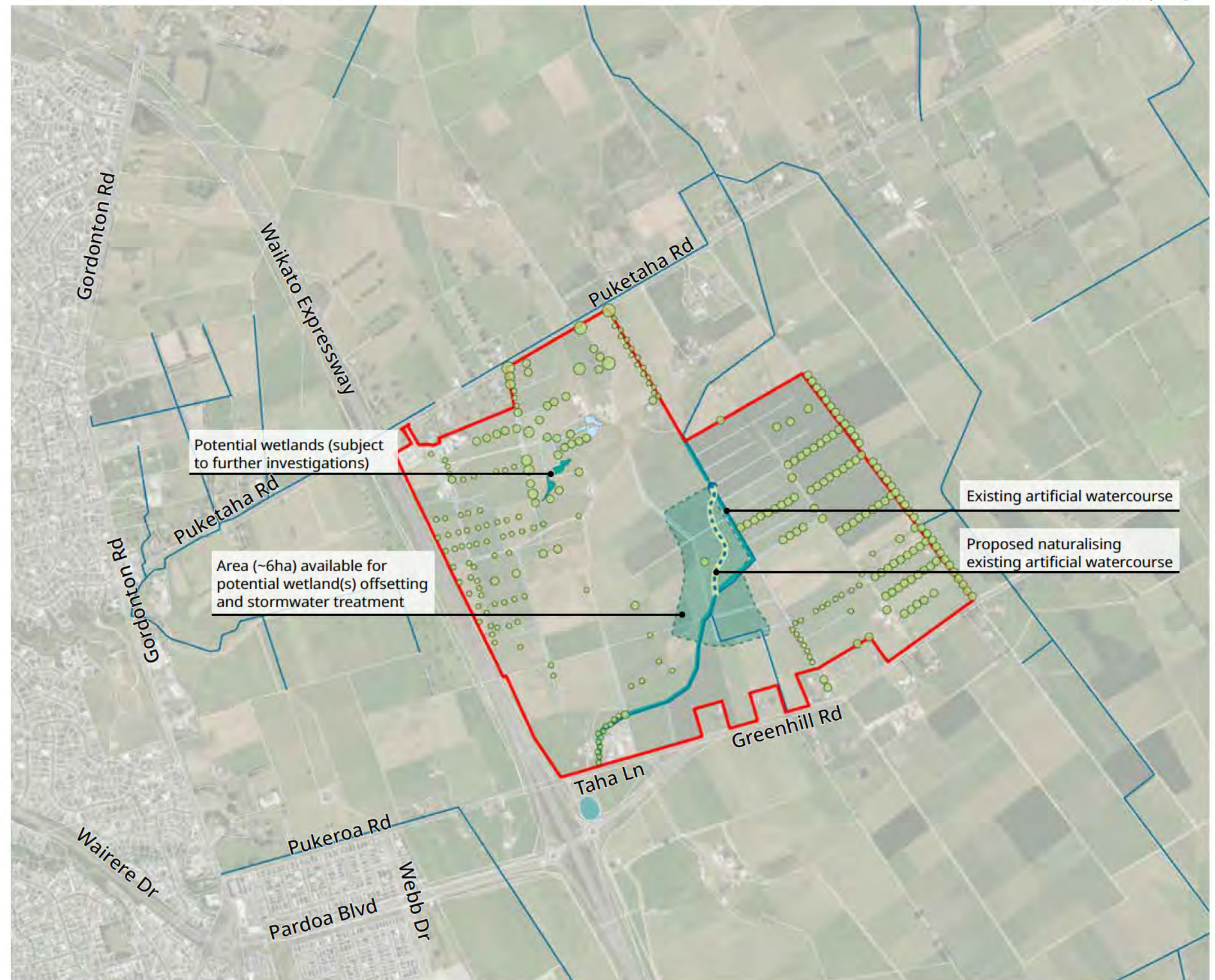


Figure 5 Identified Ecological Features Map



## 1.6 Transport and Accessibility

Greenhill Industrial Park is accessible via Greenhill Road to the south and Puketaha Road to the north. The site is also well positioned to support industrial and logistics activities due to its strategic location directly adjacent to the State Highway 1/Waikato Expressway network and major interchange, providing on and off ramps in both directions, from Greenhill Road and Pardoa Boulevard.

The prime placement offers:

- Direct access to New Zealand's primary north-south transport corridor, enabling efficient freight movement and distribution across the North Island, particularly the upper and central North Island.
- Seamless connectivity to key urban centres such as Hamilton, Auckland, and Tauranga, supporting regional supply chains and workforce mobility.
- Reduced travel times and improved traffic flow for both commercial vehicles and employees, due to the site's proximity to the interchange.
- Enhanced appeal for industrial tenants seeking logistical efficiency and national reach, making the site ideal for warehousing, manufacturing, and distribution operations.

This level of connectivity positions the site as a critical hub for industrial development in the Waikato region.

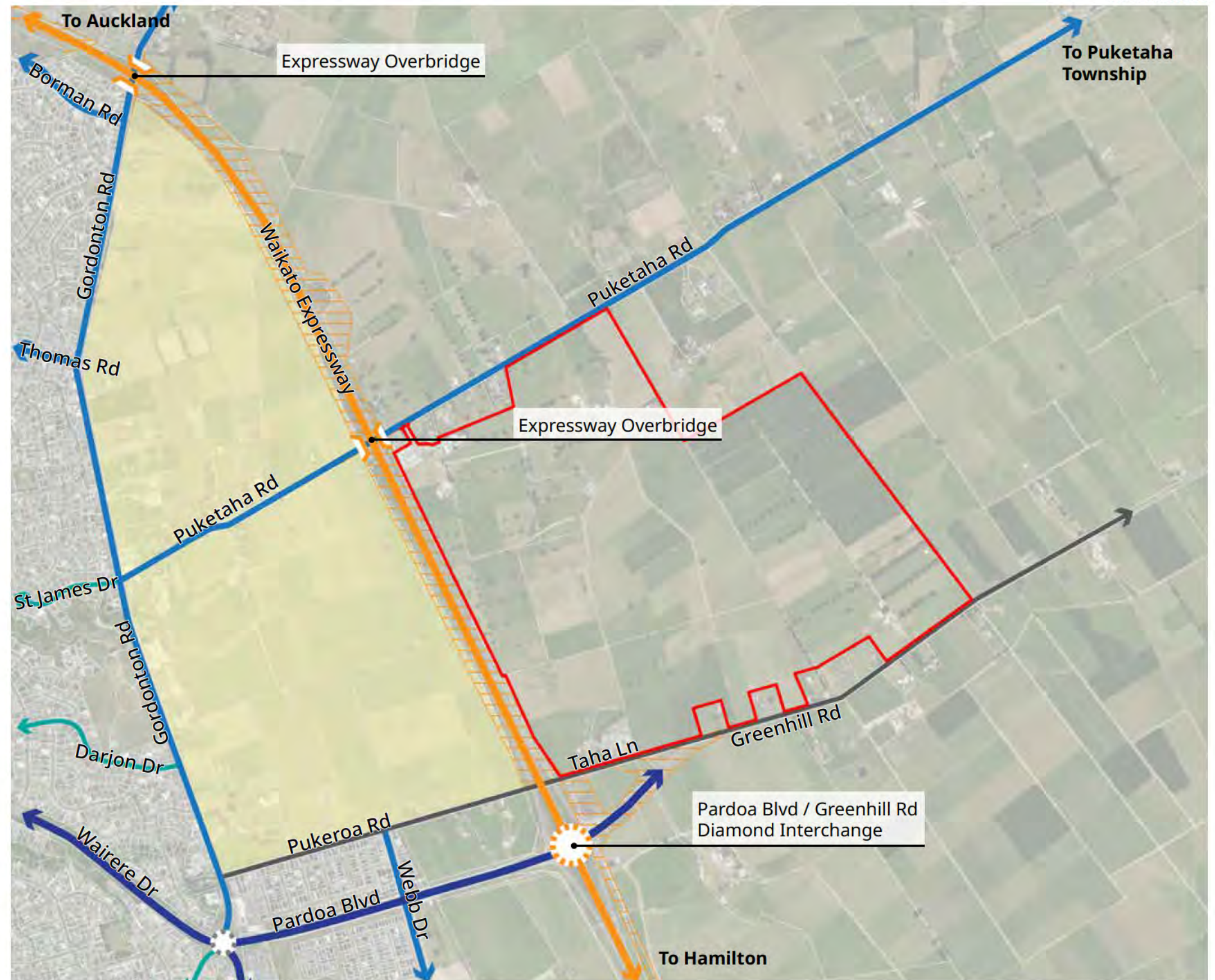


Figure 6 Wider Connectivity and Movement



## 1.7 Existing Site Features and Opportunities

The site has several key features and opportunities identified by stormwater, transport and ecology specialists.

- The Site is located close to Hamilton City's urban area, Ruakura Industrial Park, and the Waikato R2 Growth Area.
- Current land use is predominantly rural, with dairy farming, pasture, and rural lifestyle living, alongside a landscape supplies yard and an existing childcare facility on Puketaha Road.
- The site is irregular in shape, with steep slopes in places requiring tailored design responses.
- Vegetation consists mainly of shelterbelts and mature trees, with limited indigenous vegetation and highly modified watercourses.
- Small areas may qualify as degraded natural wetlands and will require further investigation.
- Access is available from Greenhill Road and Puketaha Road, with direct links to the Waikato Expressway and wider transport network.
- Part of the site is subject to the Expressway Noise Control Overlay and contains overhead powerlines and a radio aerial to be retained. Future development must address these through bulk and location controls, acoustic design, and site planning.

### Legend

- Site Boundary
- <--- Contour and Contour Slope
- Existing Mature Tree
- Regional Council Drains
- Potential Wetland (under investigation)
- <--- Existing Driveways and Vehicle Crossings
- Hard Edge Barrier along Expressway
- Waikato Expressway Designation
- Expressway Noise Control Overlay
- Existing Overhead Power Lines and Corridors
- ✶ Existing Radio Aerial
- Existing Dwelling(s) To Be Retained



Figure 7 Identified Key Site Features and Opportunities



## 2.0 Masterplan

Scale: 1:8,000 @ A3

### Legend

- Site Boundary
- Proposed Industrial Lots (with indicative buildings and on-lot landscaping)
- Proposed Rural Residential Lots
- Proposed Greenhill Expressway Service Area (Extended)
- Proposed Road Swales
- Proposed Landscape Buffer between Rural Residential and Industrial Lots (10-15m)
- Proposed Landscape Buffer along Waikato Expressway (10-15m)
- Proposed Stormwater Ponds & Riparian Areas
- Potential Existing Mature Trees for Retention (pending further investigation)
- Existing Modified Watercourse for Realignment & Renaturalisation
- WWPS Proposed Wastewater Pumpstation
- Existing Radio Aerial for Retention
- Existing Overhead Power Pole and Lines for Retention
- Designation J17 (Requiring Authority - NZTA)
- Expressway Noise Control Areas
- 1 Existing Rural Residential Properties (outside of the Site)
- 2 Existing Childcare
- 3 Potential Access Options to Greenhill Expressway Service Area
- 4 Existing Residential Dwelling to Retain



Figure 8 High-level Masterplan



## 2.1 Landscape Strategy



Scale: 1:8,000 @ A3

**Wetland Restoration:**  
To restore existing wetlands and increase ecological values.

*Carex secta**Cordyline australis*

**Comprehensive Tree Planting:** To increase street amenity and ecological values of the road network.

*Alectryon excelsus**Vitex lucens*

**Enhanced Boundary planting:** To enhance boundary planting alongside existing vegetation.

*Populus sp.**Podocarpus totara*

**Enhanced Boundary planting:** To enhance boundary planting along Waikato Expressway.

*Phormium tenax**Leptospermum scoparium*

**Public Open Spaces:**  
To provide high quality public amenity and open green spaces.



Footpath



Outdoor furniture

**Stream Realignment:**  
To enhance riparian corridor & increase area of native vegetation.

*Coprosma robusta**Pittosporum tenuifolium*

### Legend

Site Boundary

Proposed Industrial Lots

Proposed Rural Residential Lots

Proposed Greenhill Expressway Service Area

Proposed Road Swales

Proposed Landscape Buffer between Rural Residential and Industrial Lots (10-15m)

Proposed Landscape Buffer along Waikato Expressway (10-15m)

Proposed Stormwater Ponds & Riparian Areas

Potential Existing Mature Trees for Retention (pending further investigation)

Existing Modified Watercourse for Realignment & Renaturalisation

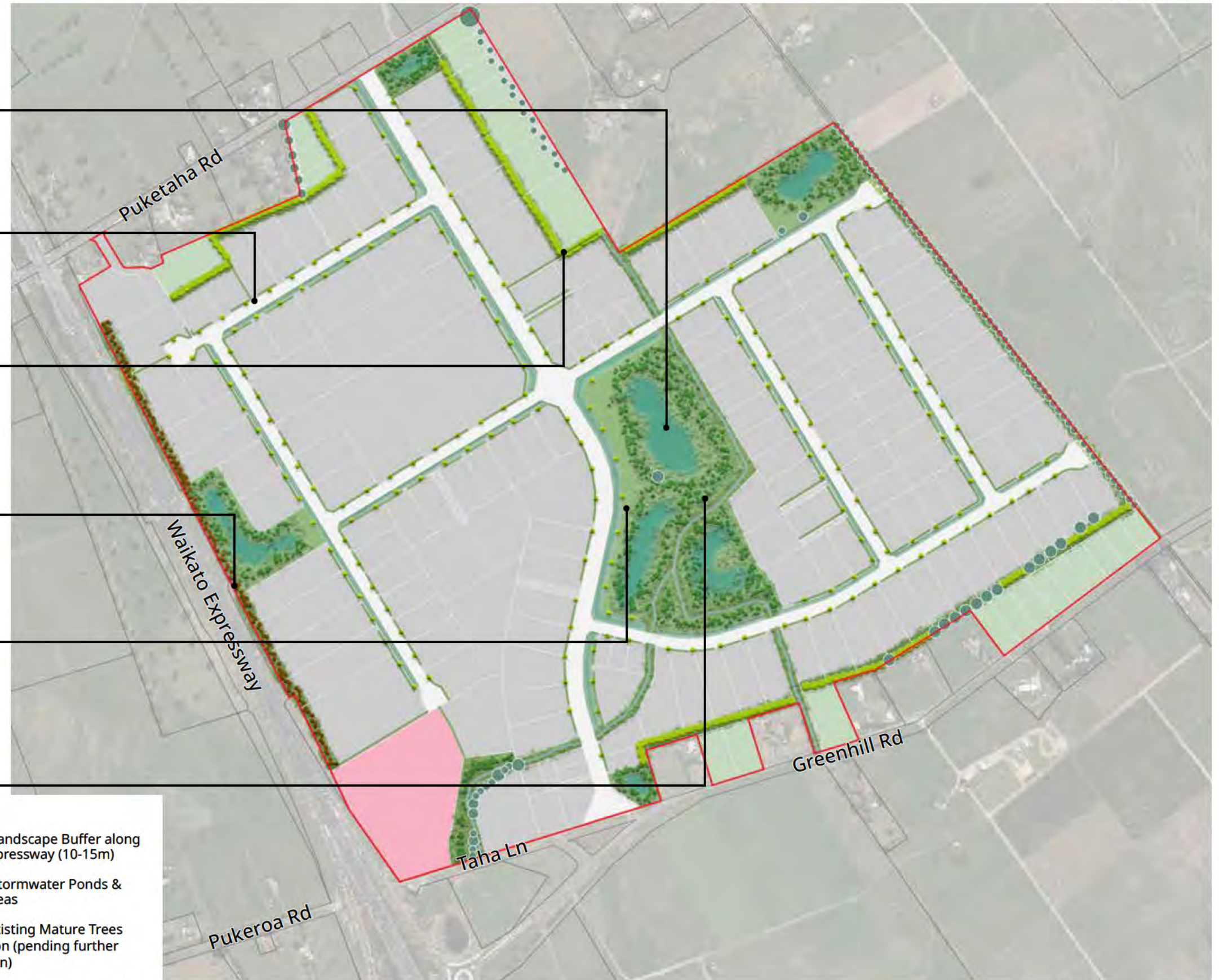


Figure 9 High-level Landscaping Masterplan



## 2.2 Lot Sizes and Yield Distribution

| <b>Industrial</b>                                                                    |                |
|--------------------------------------------------------------------------------------|----------------|
| Lot size and Dimensions                                                              | Yield (%)      |
| 2,500m <sup>2</sup> and less<br><i>Preferred width x depth:<br/>30-40m x 50-60m</i>  | 14 (8.7%)      |
| 4,000 - 6,500m <sup>2</sup><br><i>Preferred width x depth:<br/>40-55m x 100-120m</i> | 79 (49.0%)     |
| 6,500 - 9,000m <sup>2</sup><br><i>Preferred width x depth:<br/>50-70m x 120-160m</i> | 46 (28.6%)     |
| 1ha and above<br><i>Preferred width x depth:<br/>70-100m x 150-300m</i>              | 22 (13.7%)     |
| <b>Total</b>                                                                         | <b>161</b>     |
| <b>Greenhill Expressway Service Area</b>                                             |                |
| ODP Zoned                                                                            | 3.20 ha        |
| Extended Area                                                                        | 1.76 ha        |
| <b>Total</b>                                                                         | <b>4.96 ha</b> |
| <b>Rural Residential (incl. existing lots)</b>                                       |                |
| Between 2,500m <sup>2</sup> - 5,000m <sup>2</sup>                                    | 25             |
| <b>Total</b>                                                                         | <b>25</b>      |

### Legend

- Site Boundary
- Existing Residential Dwellings to Retain
- 1 Proposed Industrial Collector Road
- 2 Proposed Industrial Local Road
- 3 Proposed Stormwater Ponds and Riparian Areas
- 4 Existing Regional Council Drains for Realignment & Renaturalisation



Figure 10 Land Uses and Densities

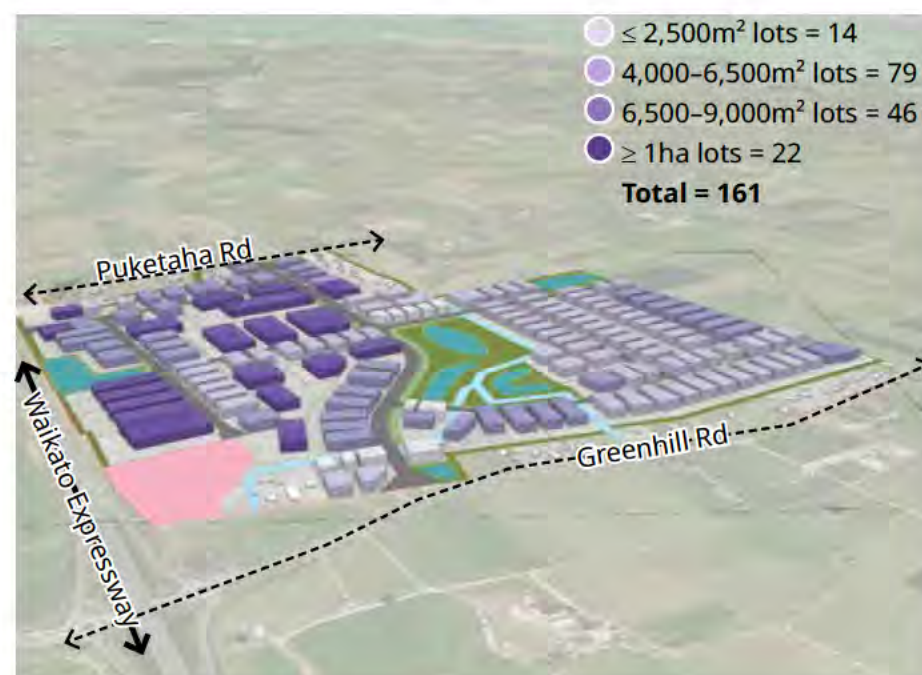


## Design Vision & Outcomes

The masterplan for the site has been carefully designed to provide a range of lot sizes that respond to market demand for industrial uses, urban design best practice, and the site's context.

Across all lot sizes, the width and depth parameters have been set to achieve the outcomes below:

- Efficient industrial typologies to enable a variety of building forms and industrial uses.
- Optimised access and circulation for well-functioning access arrangements.
- Functional streetscape with clear street frontage, improving passive surveillance, business visibility and a coherent built form along key roads.
- Integrated 10-15m buffers and interface treatments, especially critical near sensitive land uses such as rural edges or residential zones.
- The lot layout and size allow for reconfiguration or amalgamation of lots (especially in the 1 ha+ range), supporting future tenant changes and flexibility in subdivision staging.



## Built Form and Site Layout Assumptions

For the purposes of illustrating realistic scale and bulk for this industrial proposal, the Ruakura Industrial zone standards under Hamilton Operative District Plan are used as a baseline; however, it is acknowledged that 75% coverage materially overstates practical outcomes. In practice, once we accommodate the other standards, the achievable building footprint typically sits well below the 75% cap.

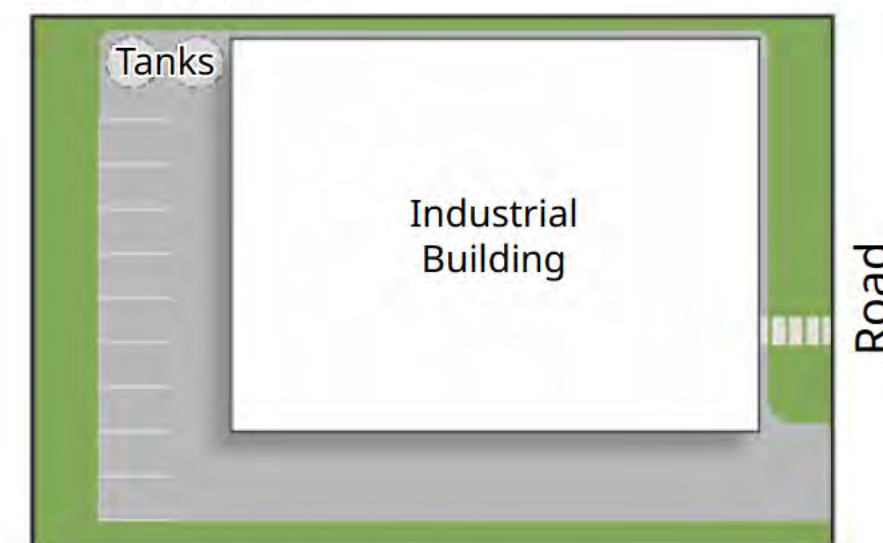
Accordingly, the following indicative standards have been applied to test built form and prepare the diagrams/envelopes. These will better reflect market-typical industrial operations, truck movement geometry and required amenity outcomes.

- **Indicative site coverage** (*These ranges reflect typical yard/marshalling needs, parking supply, and landscape requirements*)
  - $\leq 2,500\text{m}^2$  = 45–60%;
  - 4,000–6,500m<sup>2</sup> = 40–50%;
  - 6,500–9,000m<sup>2</sup> = 35–50%;
  - $\geq 1\text{ha}$  = 30–50%
- **Front setbacks**
  - Local and collector roads = min 5m
  - Arterial and expressway = min 15m
- **On-lot landscaping**
  - Overall target = 10–20% of total site area
  - Front yard hardstand limited to  $\leq 50\%$  of the front setback area
  - Consolidated landscaping at edges and entries
- **Access lanes and parking**
  - Side truck lanes = 9–10m preferred ( $\geq 7.5\text{m}$  constrained)
  - Ancillary office = 1 parking space/40–60m<sup>2</sup> GFA
  - Warehouse and other industrial uses = 1 parking space/300–500 m<sup>2</sup> GFA

## Built Form Testing Precedents

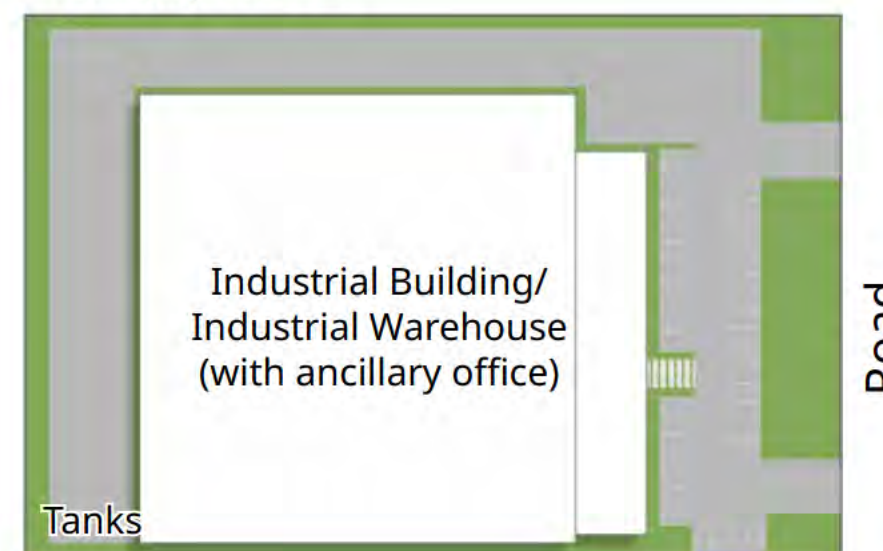
Typical Layout for  $\leq 2,500\text{m}^2$  lots

- Lot size = 2,400m<sup>2</sup> (40m x 60m)
- Building size = 1,200m<sup>2</sup> (30m x 40m)
- Front setback = 5m
- Landscaping area = ~15% of the site
- Single access = 7m
- Parking spaces = 9



Typical Layout for  $\geq 1\text{ha}$  lots

- Lot size = 15,000m<sup>2</sup> (100m x 150m)
- Building size = 7,200m<sup>2</sup> (80m x 90m)
- Front setback = 35m
- Landscaping area = ~20% of the site
- Dual accesses = 10m
- Parking spaces = 35+





## 2.3 Movement and Connectivity

Figure 11 identifies the indicative movement network that will provide connections within the site and to the surrounding transport network. The road layout has been designed to follow the natural topography of the site.

The internal Greenhill Industrial Park movement network has been designed to create a safe and functional transport environment that is fit for purpose to support future industrial activities.

A north-south collector road is proposed to connect Puketaha Road and Greenhill Road and a series of local roads will facilitate movement within Greenhill Industrial Park.

The roading and block layout has been designed to prioritise flexibility and variety in lots that can accommodate industrial activities, in terms of their shape, size, and orientation to have appropriate frontage.

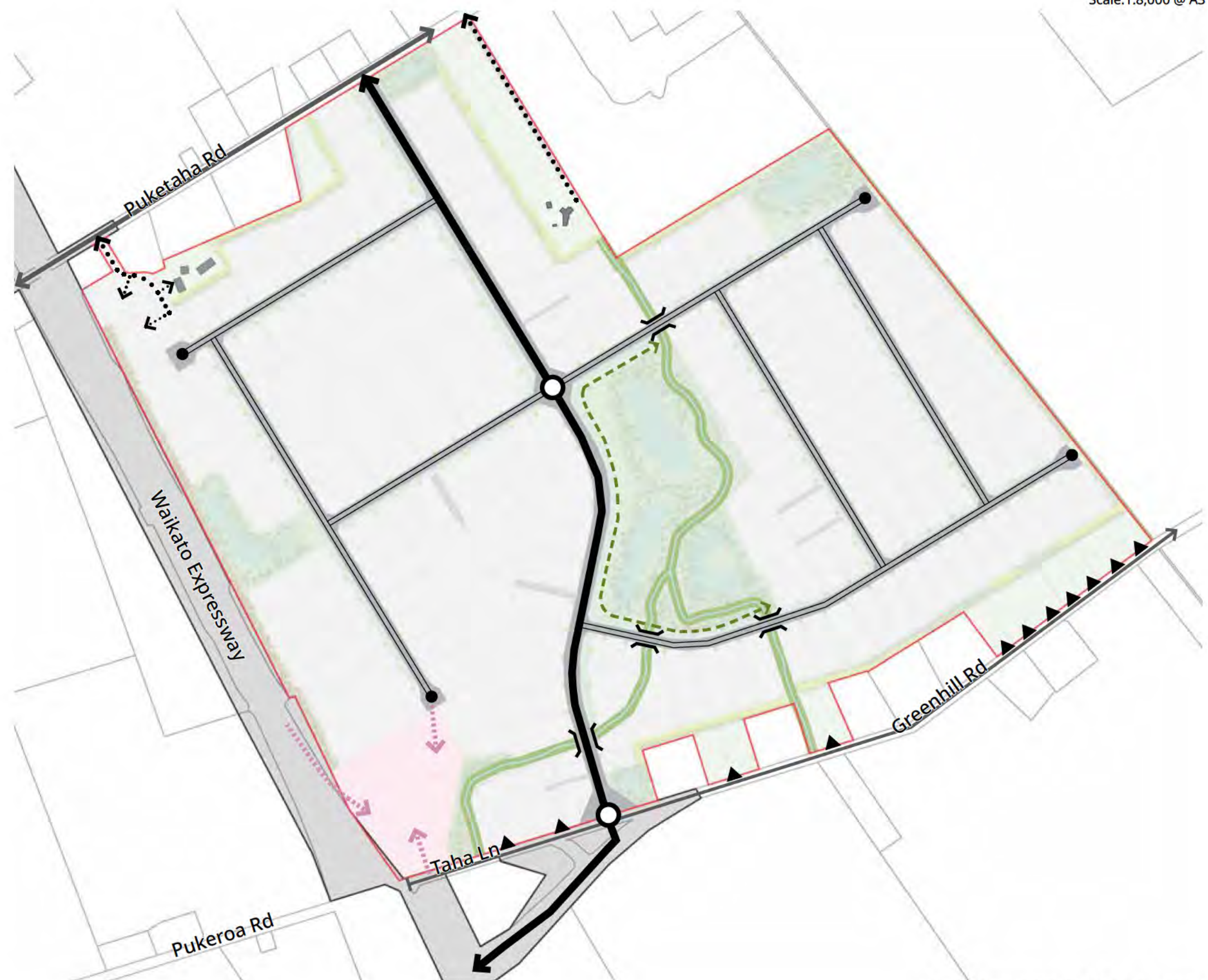


Figure 11 Movement Network and Roading Hierarchy



## 2.4 Stormwater

Stormwater runoff within Greenhill Park will be managed to ensure that runoff from all areas such as roading, berms, driveways, ROWs & industrial lots, does not create flooding or ponding within the proposed development and downstream of Greenhill Park, while maintaining conveyance of upper catchment flows through the proposed development.

The key stormwater management feature within Greenhill Park is an existing southwest-northwest centrally placed Waikato Regional Council drain that is to be retained and enhanced into a central Greenway corridor. Existing catchment areas are to be retained and enhanced. All runoff from the site will be directed into a total of seven stormwater ponds via roadside swales which will provide both conveyance and initial treatment. The majority of the ponds will discharge into the central Greenway corridor, with the remainder discharging into adjacent existing stormwater drains and/or channel at a controlled rate which reflects existing discharge rates. The objective of the proposed stormwater management approach is to ensure that stormwater flows from the site are improved from the pre-development levels. The central greenway also acts as a conveyance channel and has the secondary function of allowing for additional flood attenuation.

Furthermore, the proposed stormwater ponds will also combine within the ponds stormwater treatment bio-retention which protects the quality of the discharge from the proposed urbanised areas. This will be designed with planting established post-construction allowing treatment of the stormwater while also allowing habitats to be formed for ecology.



Figure 12 Proposed Stormwater Network



## 2.5 Water and Wastewater

### Water

Potable Water supply options are still being explored which will likely include a combination of supply from the existing public network and multiple private bores. The water treatment plant is also proposed as part of Greenhill Park to ensure that any water sourced from the bore for use as potable water will be treated to the required drinking water standards.

Any proposed water bores across the site which will also be utilised during the construction phase of the project. This will aid in reducing dust in the drier months when bulk earthworks and civil work is being undertaken.

### Wastewater

Wastewater for Greenhill Park options are being explored to cater for the developed land via connection to the public network which includes a central wastewater pumpstation or via on-lot treatment and disposal.

If the central wastewater pumpstation option is adopted, within the industrial areas of the development gravity wastewater will be conveyed via underground piping which will then be pumped to the public network.

If the on-lot treatment & disposal option becomes the only option, the minimum Lot size would need to be assessed to allow sufficient area for disposal fields, and consent notices would need to be applied to limit the type of industrial activity associated with those lots.

The wastewater infrastructure approach has been designed to priorities the health of land and water, as well as that of future residents.



Figure 13 Proposed Water and Wastewater Infrastructure



## 2.6 Staging

The development will be delivered through a carefully planned, staged approach that is closely aligned with infrastructure provision, particularly stormwater management, earthworks, and transport infrastructure.

Figure 14 shows the proposed staging for the development and the associated bulk earthworks, with the key development milestones and associated infrastructure triggers for each stage also outlined below.

### Stage 1:

- 25 industrial & 13 rural residential lots
- Primary access via Greenhill Road
- Construction of Stormwater Ponds A and B, with Pond C identified as a reserve area for associated earthworks

### Stage 2:

- 39 industrial lots
- Construction of Stormwater Pond E

### Stage 3:

- 25 industrial lots
- Construction of Stormwater Pond C

### Stage 4:

- 21 industrial lots & Waikato Expressway Service Area
- Construction of Stormwater Pond D

### Stage 5:

- 29 industrial lots
- Construction of Stormwater Pond F

### Stage 6:

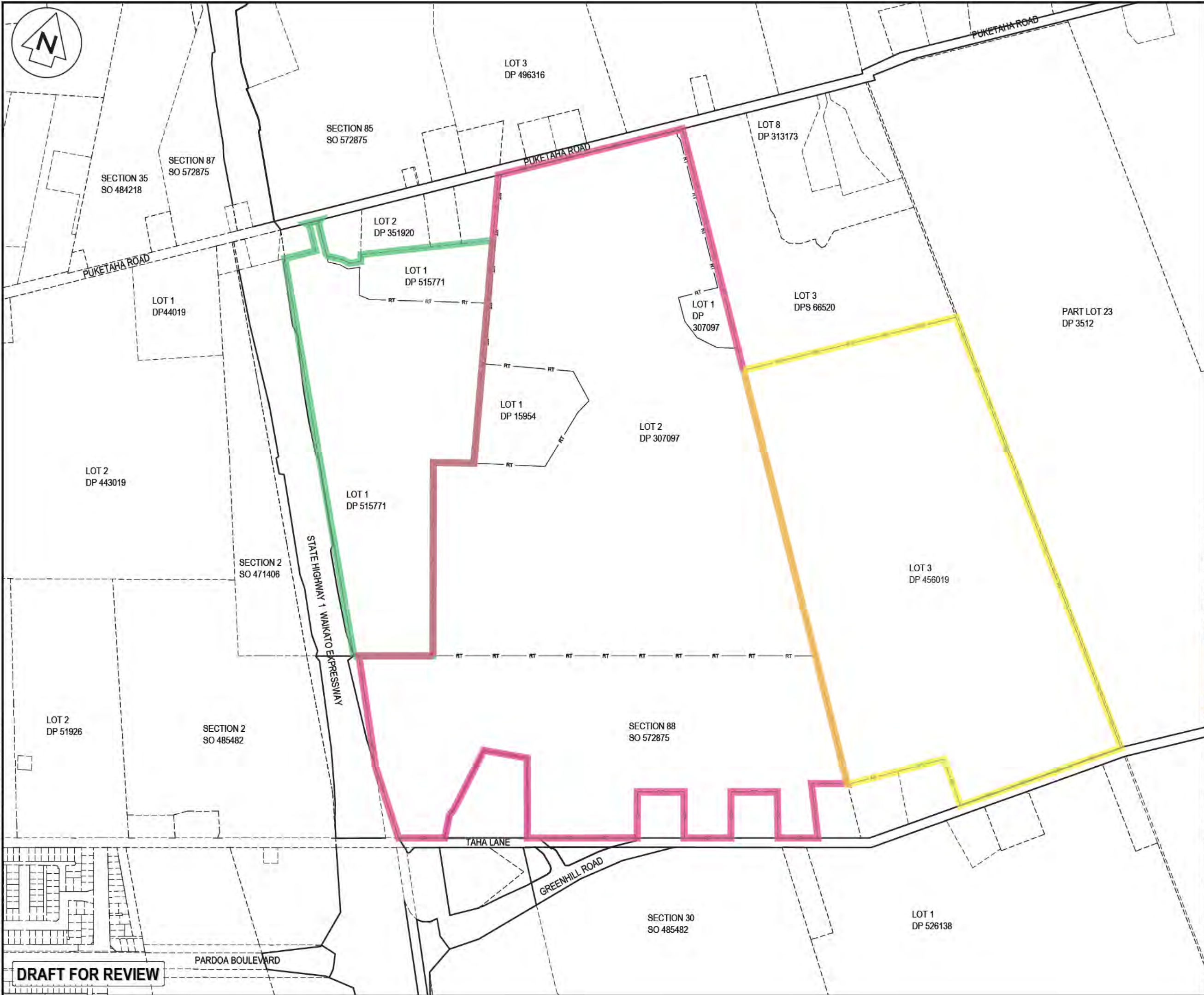
- 22 industrial & 12 rural residential lots
- Primary access via Puketaha Road
- Construction of Stormwater Pond G



Figure 14 Proposed Staging

## Appendix B – Drawings





|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
|         |             |     |         |
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL INDUSTRIAL PARK**  
  
**FOR GREENHILL LTD**

Title  
**PROPOSED LAND OWNERSHIP PLAN**

|             |                         |     |   |
|-------------|-------------------------|-----|---|
| Project no. | 408001                  |     |   |
| Scale       | 1:7500 @ A3             |     |   |
| Cad file    | 408001-C100-CONCEPT.DWG |     |   |
| Drawing no. | C100                    | Rev | B |









SECTION 85  
SO 572875

LOT 2  
DP 351920

10,402m<sup>2</sup>

16,006m<sup>2</sup>

13,615m<sup>2</sup>

5210m<sup>2</sup>

7084m<sup>2</sup>

7072m<sup>2</sup>

7685m<sup>2</sup>

7183m<sup>2</sup>

7015m<sup>2</sup>

13671m<sup>2</sup>

6877m<sup>2</sup>

4568m<sup>2</sup>

4081m<sup>2</sup>

6698m<sup>2</sup>

6768

6897m<sup>2</sup>

LEGEND

|   |                 |
|---|-----------------|
| — | EX BDY          |
| — | PR BDY          |
| — | EX EASEMENT     |
| — | RT              |
| — | REFERENCE TITLE |
| — | PR EASEMENT     |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | SJP         |     | 10/2025 |
| Checked |             |     |         |

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Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
SCHEME  
SHEET 1 OF 9**

|             |                        |
|-------------|------------------------|
| Project no. | 408001                 |
| Scale       | 1:2000 @ A3            |
| Cad file    | 408001-C150-SCHEME.DWG |
| Drawing no. | C150-1                 |
| Rev         | B                      |

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DATE: 27/01/25 FILE PATH: I:\MAVEN\HAM\_TOWN\_PROJECT\HARDWARE\GREENHILL INDUSTRIAL PARK\TOWN\SCHEMES\SCHEMATIC.DWG





LOT 8  
DP 313173



LEGEND

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| — | PR B'DY         |
| — | EX EASEMENT     |
| — | RT              |
| — | RT              |
| — | REFERENCE TITLE |
| — | PR EASEMENT     |

|         |             |     |         |
|---------|-------------|-----|---------|
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| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | SJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
SCHEME  
SHEET 2 OF 9**

|             |                        |     |   |
|-------------|------------------------|-----|---|
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| Drawing no. | C150-2                 |     |   |

**DRAFT FOR REVIEW**

DATE: 27/04/25 FILE PATH: I:\MAVEN\HAMILTON PROJECTS\GREENHILL INDUSTRIAL PARK\DRAWING\SCHEMATIC\SCHEM.DWG





PART LOT 23  
DP 3512

DRAFT FOR REVIEW

LEGEND

|             |                 |
|-------------|-----------------|
| —           | EX BDY          |
| —           | PR BDY          |
| —           | EX EASEMENT     |
| — RT — RT — | REFERENCE TITLE |
| - - - - -   | PR EASEMENT     |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
| B       | DRAFT       | SPM     | 02/2026 |
| A       | DRAFT       | SPM     | 07/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | SJP         | 10/2025 |         |
| Checked |             |         |         |

M

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New Zealand

Project

**GREENHILL  
INDUSTRIAL PARK**

**FOR  
GREENHILL LTD**

Title

**PROPOSED  
SCHEME  
SHEET 3 OF 9**

|             |                        |     |   |
|-------------|------------------------|-----|---|
| Project no. | 408001                 |     |   |
| Scale       | 1:2000 @ A3            |     |   |
| Cad file    | 408001-C150-SCHEME.DWG |     |   |
| Drawing no. | C150-3                 | Rev | B |



SECTION 2  
SO 471406

STATE HIGHWAY 1 WAIKATO EXPRESSWAY

DRAFT FOR REVIEW

DATE: 23/07/2025 FILE PATH: T:\MAVEN\HAMILTON PROJECTS\408001 - GREENHILL INDUSTRIAL PARK\DRAWING\SCHEMATIC.DWG

9972m<sup>2</sup>

6640m<sup>2</sup>

8391m<sup>2</sup>

7837m<sup>2</sup>

7512m<sup>2</sup>

7439m<sup>2</sup>

11,251m<sup>2</sup>

11,498m<sup>2</sup>

11,749m<sup>2</sup>

15507m<sup>2</sup>

7502m<sup>2</sup>

7000m<sup>2</sup>

7070m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

19838m<sup>2</sup>

19893m<sup>2</sup>

5184m<sup>2</sup>

5184m<sup>2</sup>

13,032m<sup>2</sup>

LEGEND

|   |                 |
|---|-----------------|
| — | EX BDY          |
| — | PR BDY          |
| — | EX EASEMENT     |
| — | RT              |
| — | RT              |
| — | REFERENCE TITLE |
| — | PR EASEMENT     |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | SJP         |     | 10/2025 |
| Checked |             |     |         |



Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
SCHEME  
SHEET 4 OF 9**

|             |                        |
|-------------|------------------------|
| Project no. | 408001                 |
| Scale       | 1:2000 @ A3            |
| Cad file    | 408001-C150-SCHEME.DWG |
| Drawing no. | C150-4                 |
| Rev         | B                      |





| LEGEND |             |                 |  |
|--------|-------------|-----------------|--|
| —      | EX BDY      |                 |  |
| —      | PR BDY      |                 |  |
| —      | EX EASEMENT |                 |  |
| —      | RT          | REFERENCE TITLE |  |
| —      | PR EASEMENT |                 |  |

|     |             |     |         |
|-----|-------------|-----|---------|
| B   | DRAFT       | SPM | 02/2026 |
| A   | DRAFT       | SPM | 07/2025 |
| Rev | Description | By  | Date    |
|     |             | By  | Date    |
|     | Survey      |     |         |
|     | Design      | SPM | 10/2025 |
|     | Drawn       | SJP | 10/2025 |
|     | Checked     |     |         |



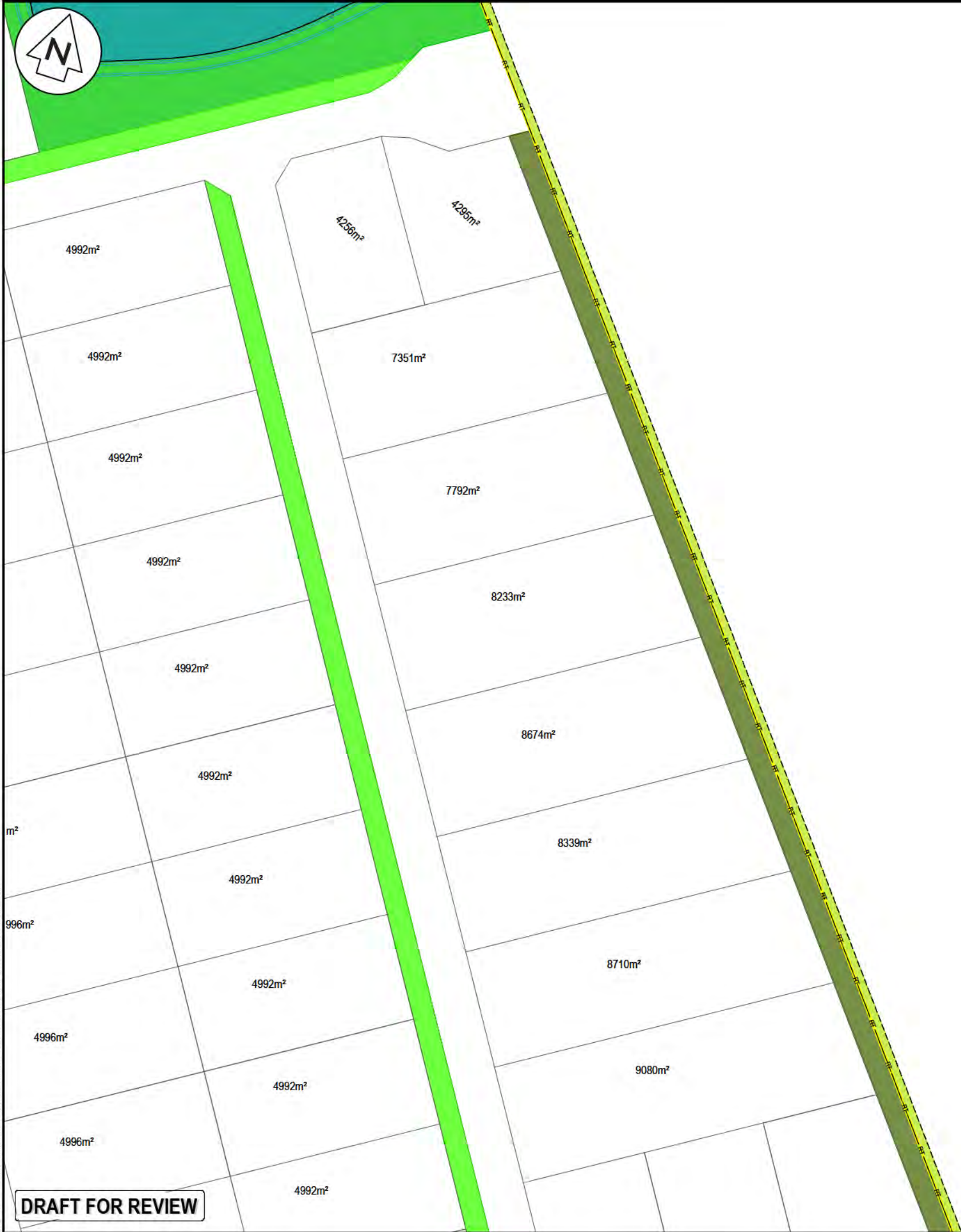
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Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
SCHEME  
SHEET 5 OF 9**

|             |                        |     |   |
|-------------|------------------------|-----|---|
| Project no. | 408001                 |     |   |
| Scale       | 1:2000 @ A3            |     |   |
| Cad file    | 408001-C150-SCHEME.DWG |     |   |
| Drawing no. | C150-5                 | Rev | B |





DRAFT FOR REVIEW

LEGEND

|     |                 |
|-----|-----------------|
| --- | EX BDY          |
| --- | PR BDY          |
| --- | EX EASEMENT     |
| --- | RT              |
| --- | RT              |
| --- | REFERENCE TITLE |
| --- | PR EASEMENT     |

|         |             |         |         |
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| B       | DRAFT       | SPM     | 02/2026 |
| A       | DRAFT       | SPM     | 07/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | SJP         | 10/2025 |         |
| Checked |             |         |         |



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**GREENHILL  
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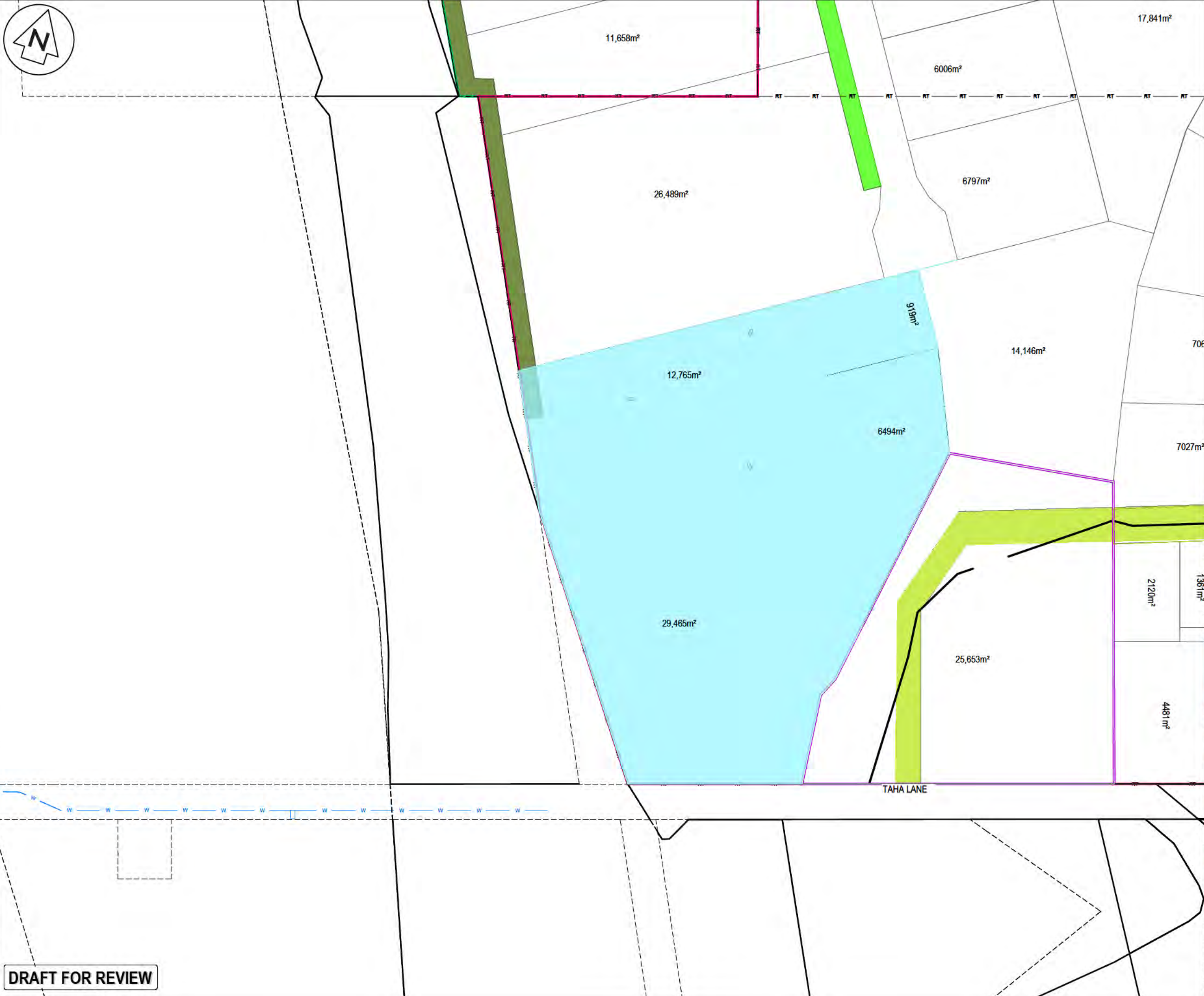
FOR  
**GREENHILL LTD**

Title

**PROPOSED  
SCHEME  
SHEET 6 OF 9**

|             |                        |     |   |
|-------------|------------------------|-----|---|
| Project no. | 408001                 |     |   |
| Scale       | 1:2000 @ A3            |     |   |
| Cad file    | 408001-C150-SCHEME.DWG |     |   |
| Drawing no. | C150-6                 | Rev | B |





| LEGEND |    |          |           |       |
|--------|----|----------|-----------|-------|
|        | EX | BDY      |           |       |
|        | PR | BDY      |           |       |
|        | EX | EASEMENT |           |       |
|        | RT |          | REFERENCE | TITLE |
|        | PR | EASEMENT |           |       |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | SJP         |     | 10/2025 |
| Checked |             |     |         |



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**FOR GREENHILL LTD**

Title  
**PROPOSED SCHEME SHEET 7 OF 9**

|             |                        |     |   |
|-------------|------------------------|-----|---|
| Project no. | 408001                 | Rev | B |
| Scale       | 1:2000 @ A3            |     |   |
| Cad file    | 408001-C150-SCHEME.DWG |     |   |
| Drawing no. | C150-7                 | Rev | B |

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LEGEND

- EX BDY
- PR BDY
- EX EASEMENT
- RT
- RT
- REFERENCE TITLE
- PR EASEMENT

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | SJP         |     | 10/2025 |
| Checked |             |     |         |

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Project  
**GREENHILL INDUSTRIAL PARK**

**FOR GREENHILL LTD**

Title  
**PROPOSED SCHEME SHEET 8 OF 9**

|             |                        |     |   |
|-------------|------------------------|-----|---|
| Project no. | 408001                 |     |   |
| Scale       | 1:2000 @ A3            |     |   |
| Cad file    | 408001-C150-SCHEME.DWG |     |   |
| Drawing no. | C150-8                 | Rev | B |

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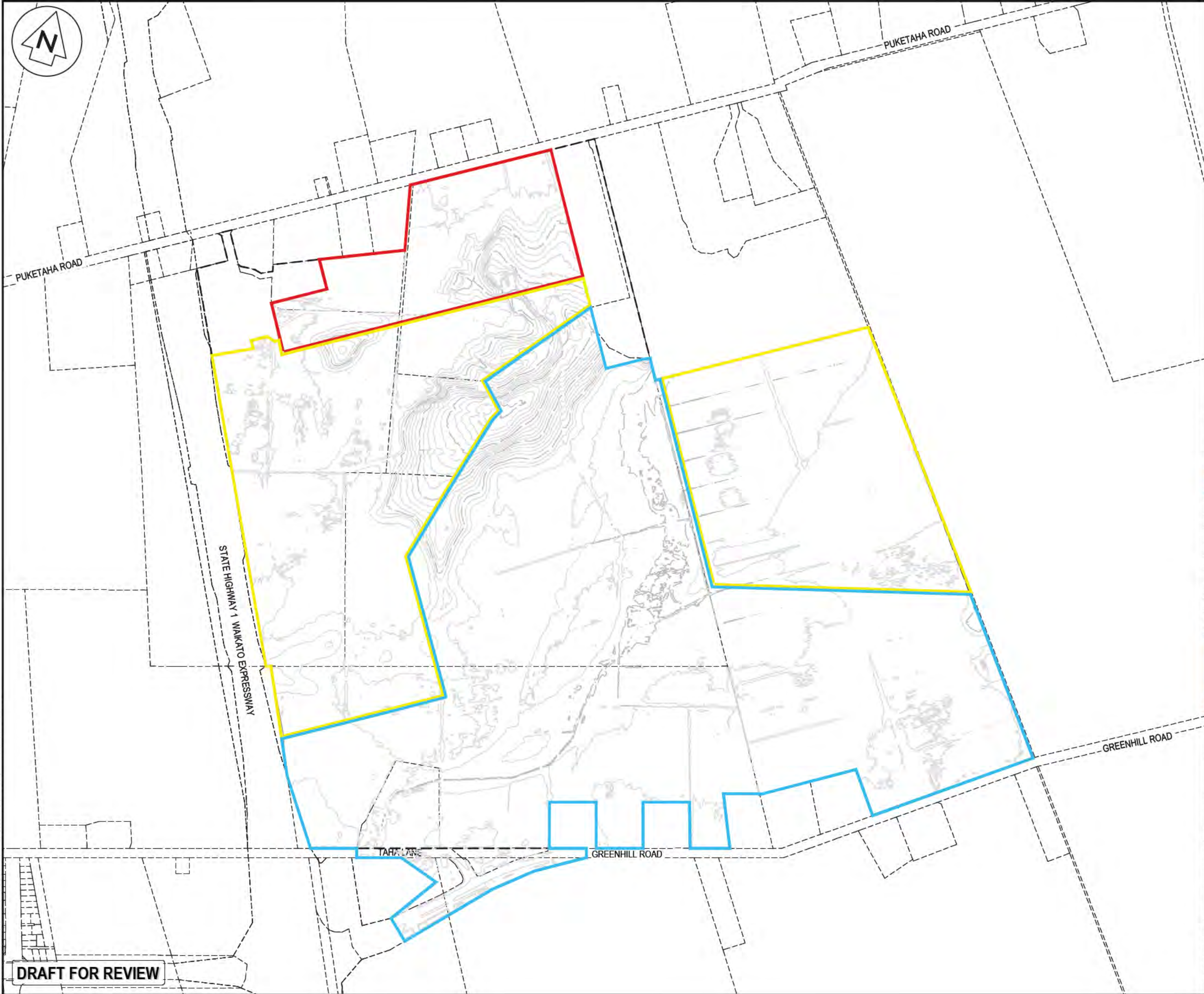




**DRAFT FOR REVIEW**

|                                                                                                                                                                                                                                                                                        |                        |                 |          |
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| LEGEND                                                                                                                                                                                                                                                                                 |                        | EX BDY          |          |
|                                                                                                                                                                                                                                                                                        |                        | PR BDY          |          |
|                                                                                                                                                                                                                                                                                        |                        | EX EASEMENT     |          |
| RT                                                                                                                                                                                                                                                                                     | RT                     | REFERENCE TITLE |          |
|                                                                                                                                                                                                                                                                                        |                        | PR EASEMENT     |          |
|                                                                                                                                                                                                                                                                                        |                        |                 |          |
| B                                                                                                                                                                                                                                                                                      | DRAFT                  | SPM             | 02/2026  |
| A                                                                                                                                                                                                                                                                                      | DRAFT                  | SPM             | 07/2025  |
| Rev                                                                                                                                                                                                                                                                                    | Description            | By              | Date     |
|                                                                                                                                                                                                                                                                                        | By                     | Date            |          |
| Survey                                                                                                                                                                                                                                                                                 |                        |                 |          |
| Design                                                                                                                                                                                                                                                                                 | SPM                    | 10/2025         |          |
| Drawn                                                                                                                                                                                                                                                                                  | SJP                    | 10/2025         |          |
| Checked                                                                                                                                                                                                                                                                                |                        |                 |          |
|  <div data-bbox="2706 1371 2864 1480"> <p><b>Maven Waikato</b><br/> 07 242 0601<br/> info@maven.co.nz<br/> www.maven.co.nz<br/> Level 1 286 Victoria Street, Hamilton<br/> New Zealand</p> </div> |                        |                 |          |
| Project<br><b>GREENHILL<br/> INDUSTRIAL PARK</b><br><br><b>FOR<br/> GREENHILL LTD</b>                                                                                                                                                                                                  |                        |                 |          |
| Title<br><b>PROPOSED<br/> SCHEME<br/> SHEET 9 OF 9</b>                                                                                                                                                                                                                                 |                        |                 |          |
| Project no.                                                                                                                                                                                                                                                                            | 408001                 |                 |          |
| Scale                                                                                                                                                                                                                                                                                  | 1:2000 @ A3            |                 |          |
| Cad file                                                                                                                                                                                                                                                                               | 408001-C150-SCHEME.DWG |                 |          |
| Drawing no.                                                                                                                                                                                                                                                                            | C150-9                 | Rev             | <b>B</b> |





| Legend |                  |  |  |
|--------|------------------|--|--|
| ---    | EX BDY           |  |  |
| ---    | EX MAJOR CONTOUR |  |  |
| ---    | EX MINOR CONTOUR |  |  |
| ---    | PR EXTENT WORK   |  |  |
| ---    | PR STAGE 1 EW    |  |  |
| ---    | PR STAGE 2 EW    |  |  |
| ---    | PR STAGE 3 EW    |  |  |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 10/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
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**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
OVERVIEW PLAN**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:7500 @ A3                |
| Cad file    | 408001-C200-EARTHWORKS.DWG |
| Drawing no. | C200                       |
| Rev         | B                          |

**DRAFT FOR REVIEW**

DATE: 1/10/24 FILE PATH: F:\MAVEN\HAMILTON\PROJECTS\408001 - GREENHILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG





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|        |                  |
|--------|------------------|
| Legend |                  |
|        | EX BDY           |
|        | EX MAJOR CONTOUR |
|        | EX MINOR CONTOUR |
|        | PR EXTENT WORK   |
|        | PR STAGE 1 EW    |
|        | PR STAGE 2 EW    |
|        | PR STAGE 3 EW    |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



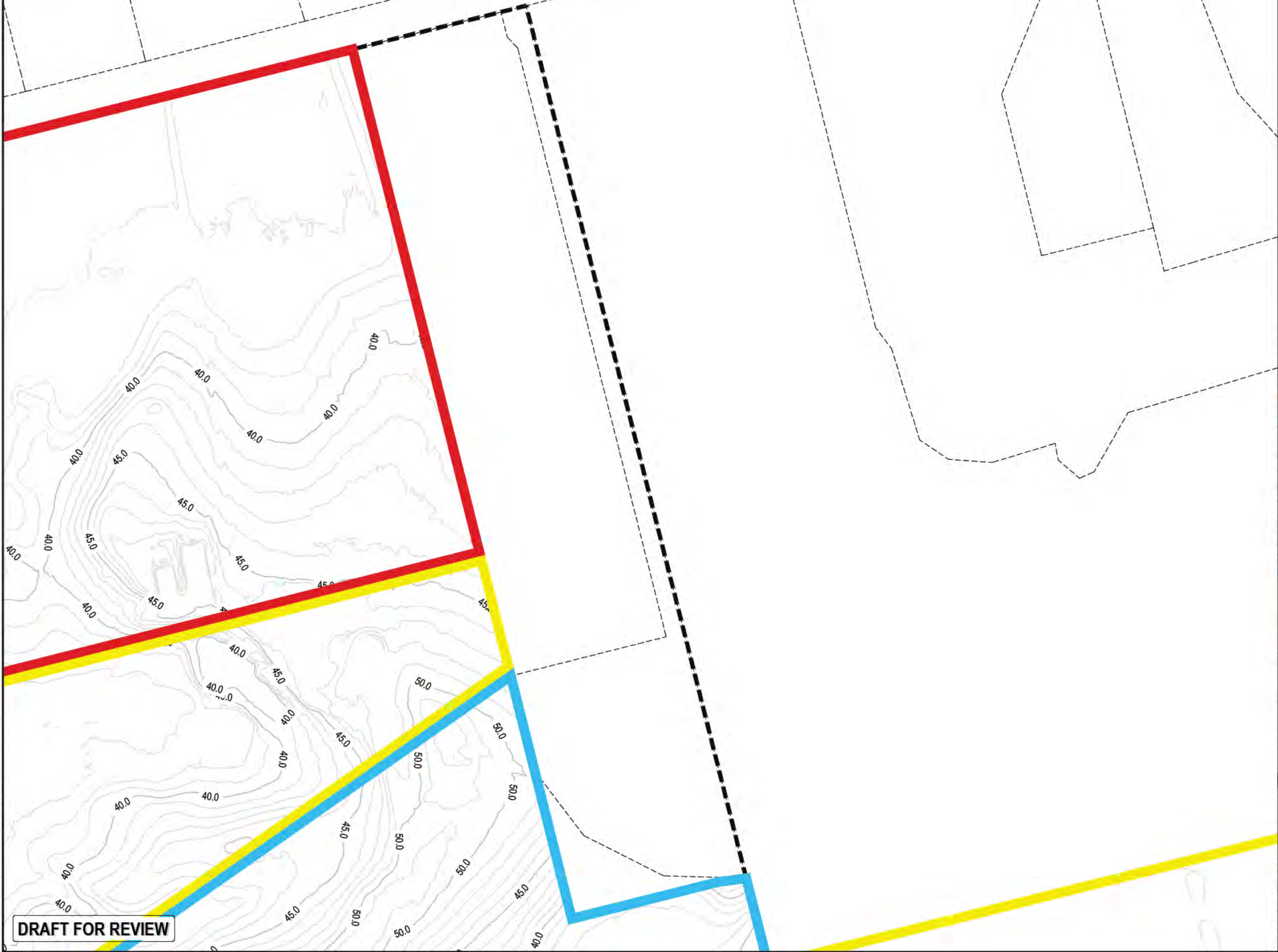
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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOURS  
SHEET 1 OF 9**

|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |          |
| Drawing no. | C200-1                     | Rev | <b>B</b> |

DATE: 11/09/25 FILE PATH: I:\MAVEN\HAMILTON\PROJECTS\408001 GREENHILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG



Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
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| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

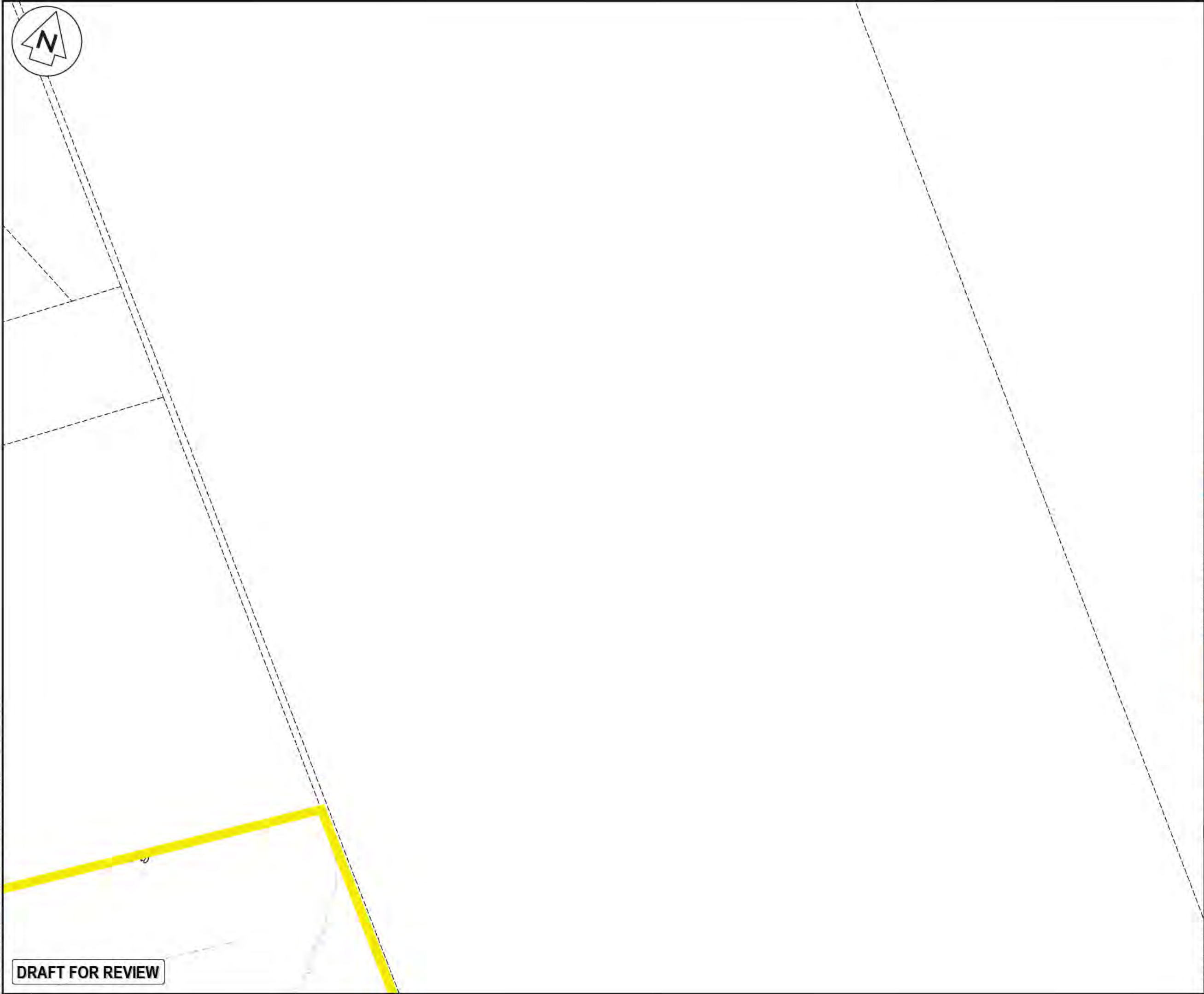
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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOURS  
SHEET 2 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C200-2                     | Rev | B |





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Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 08/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
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Project  
**GREEN HILL  
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**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
SHEET 3 OF 9**

|             |                             |     |   |
|-------------|-----------------------------|-----|---|
| Project no. | 408001                      |     |   |
| Scale       | 1:2000 @ A3                 |     |   |
| Cad file    | 408001-C200-EARTH-WORKS.DWG |     |   |
| Drawing no. | C200-3                      | Rev | B |



STATE HIGHWAY 1 WAIKATO EXPRESSWAY

- Legend
- EX BDY
  - EX MAJOR CONTOUR
  - EX MINOR CONTOUR
  - PR EXTENT WORK
  - PR STAGE 1 EW
  - PR STAGE 2 EW
  - PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
|         |             |     |         |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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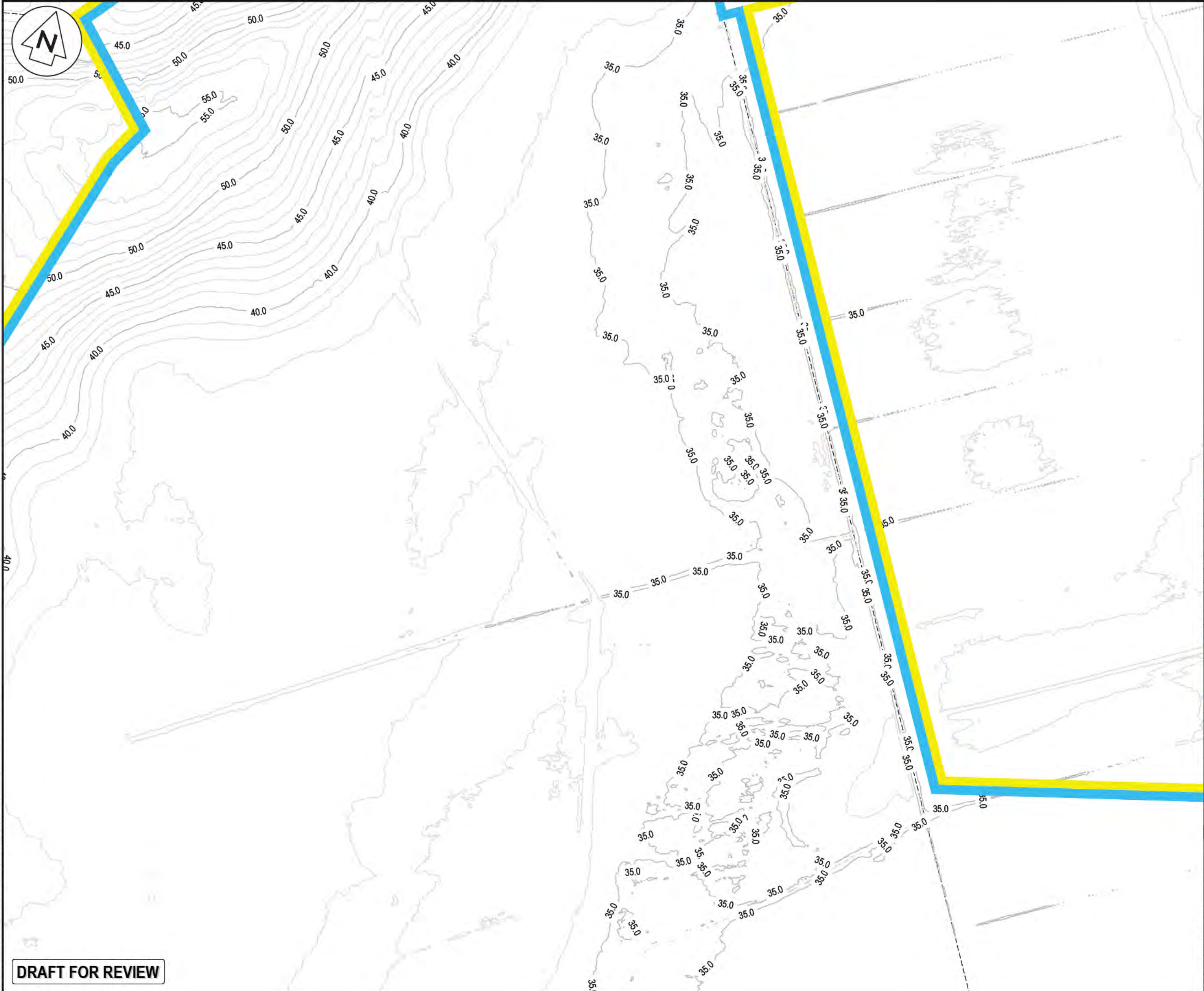
Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
SHEET 4 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C200-EARTHWORKS.DWG |
| Drawing no. | C200-4                     |
| Rev         | B                          |

DRAFT FOR REVIEW





DRAFT FOR REVIEW

- Legend
- EX BDY
  - EX MAJOR CONTOUR
  - EX MINOR CONTOUR
  - PR EXTENT WORK
  - PR STAGE 1 EW
  - PR STAGE 2 EW
  - PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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Project  
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**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
SHEET 5 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C200-EARTHWORKS.DWG |
| Drawing no. | C200-5                     |
| Rev         | B                          |



DRAFT FOR REVIEW

Legend

|       |                  |
|-------|------------------|
| ---   | EX BDY           |
| - - - | EX MAJOR CONTOUR |
| - . - | EX MINOR CONTOUR |
| ---   | PR EXTENT WORK   |
| ---   | PR STAGE 1 EW    |
| ---   | PR STAGE 2 EW    |
| ---   | PR STAGE 3 EW    |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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Project  
**GREEN HILL  
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**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
SHEET 6 OF 9**

|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |          |
| Drawing no. | C200-6                     | Rev | <b>B</b> |





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|        |                  |
|--------|------------------|
| Legend |                  |
|        | EX BDY           |
|        | EX MAJOR CONTOUR |
|        | EX MINOR CONTOUR |
|        | PR EXTENT WORK   |
|        | PR STAGE 1 EW    |
|        | PR STAGE 2 EW    |
|        | PR STAGE 3 EW    |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
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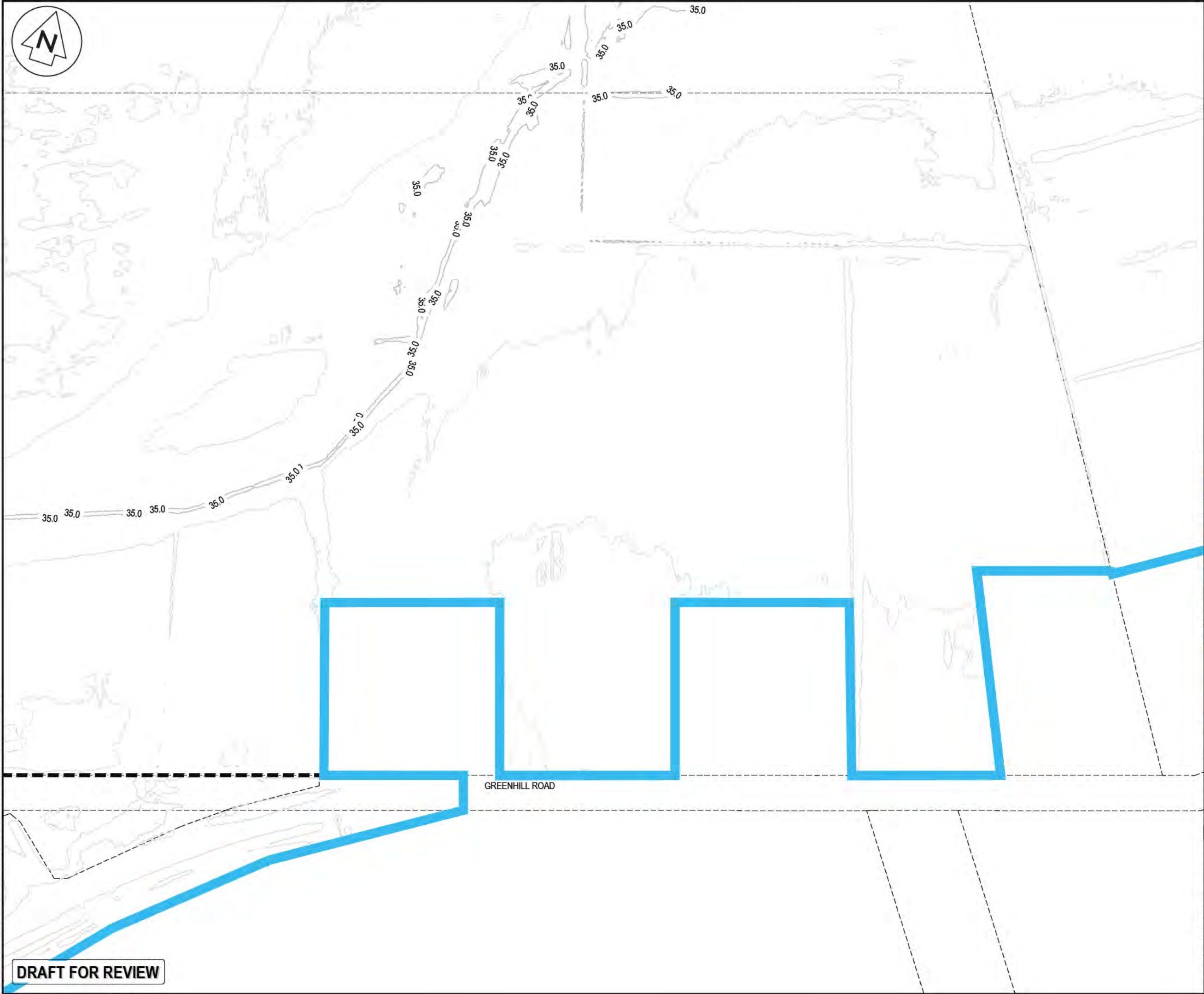
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GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
SHEET 7 OF 9**

|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |          |
| Drawing no. | C200-7                     | Rev | <b>B</b> |

DATE: 11/09/25 FILE PATH: I:\MAVEN\HAMILTON\PROJECTS\408001 - GREENHILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG



Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**

**FOR  
GREENHILL LTD**

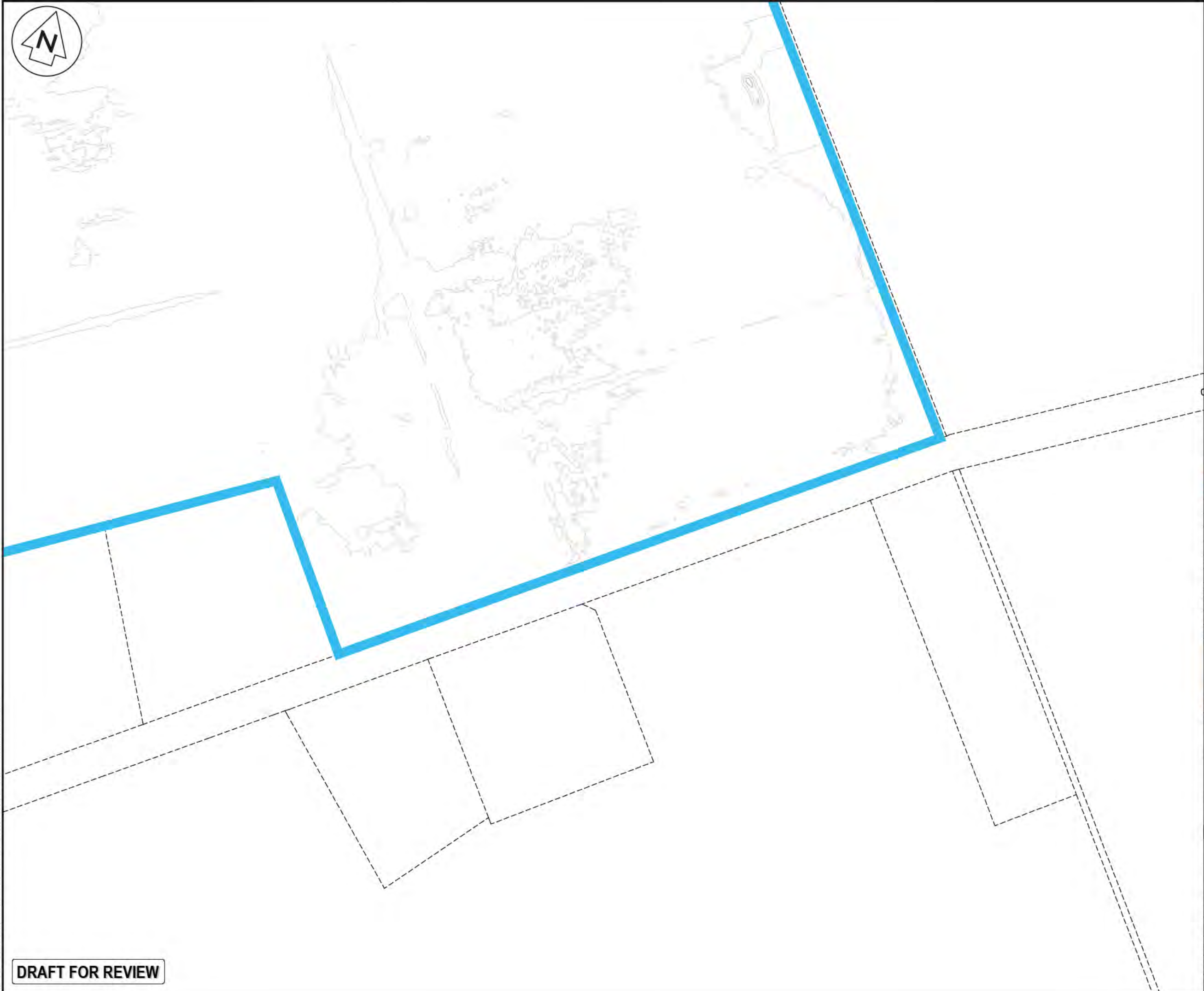
Title  
**EXISTING  
CONTOUR  
SHEET 8 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C200-8                     | Rev | B |

**DRAFT FOR REVIEW**

DATE: 1/10/24 FILE PATH: P:\Maven\HAMILTON\PROJECTS\408001 - GREENHILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG





Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 08/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
| Checked |             |         |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**

**FOR  
GREENHILL LTD**

Title  
**EXISTING  
CONTOUR  
SHEET 9 OF 9**

|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |          |
| Drawing no. | C200-9                     | Rev | <b>B</b> |

**DRAFT FOR REVIEW**





PUKETAHA ROAD

PUKETAHA ROAD

STATE HIGHWAY 1 WAKATO EXPRESSWAY

TARA LANE

GREENHILL ROAD

GREENHILL ROAD

Legend

- EX BDY
- EX MAJOR CONTOUR
- EX MINOR CONTOUR
- PR EXTENT WORK
- PR STAGE 1 EW
- PR STAGE 2 EW
- PR STAGE 3 EW

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 10/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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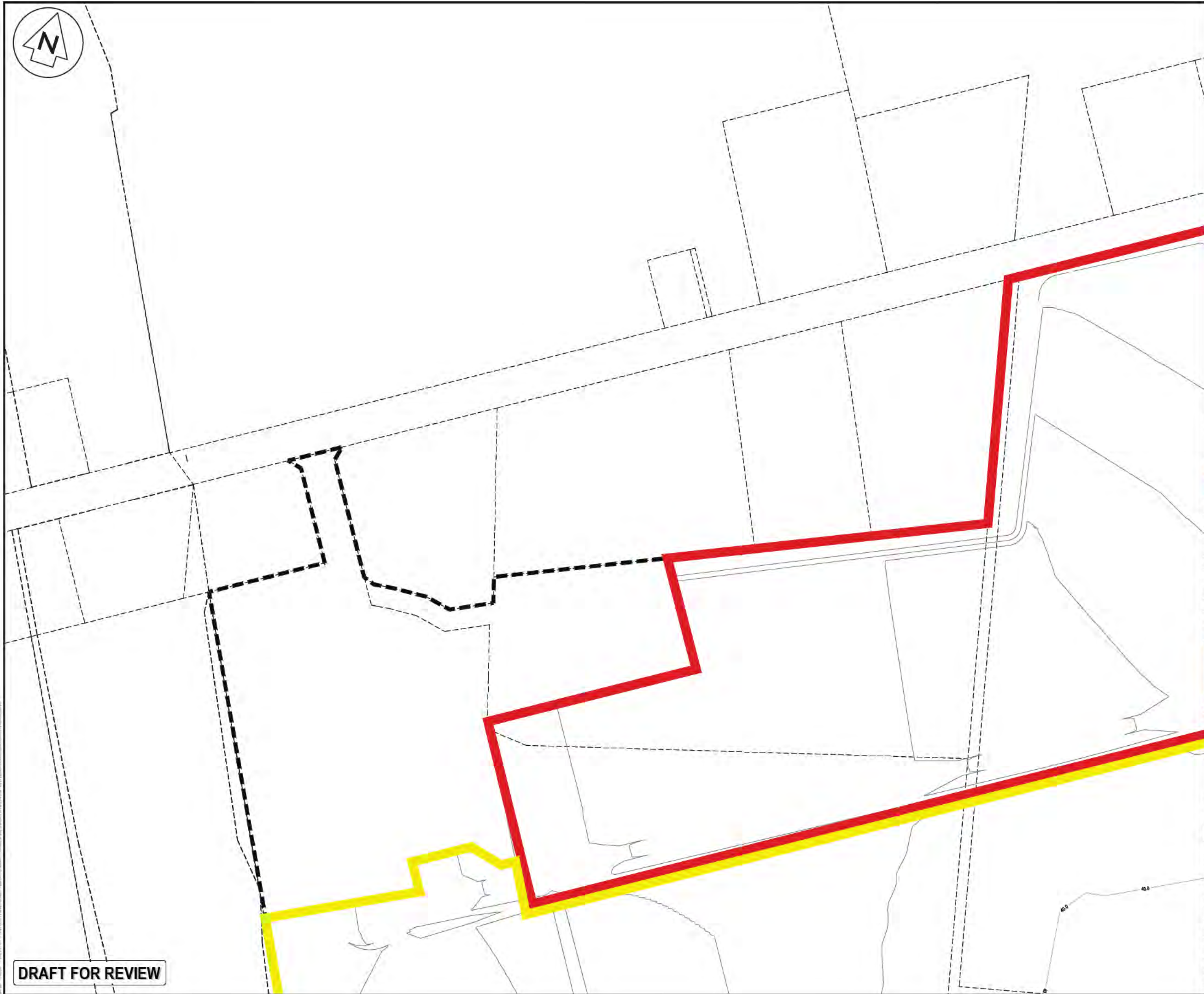
Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOUR  
OVERVIEW PLAN**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:7500 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C210                       | Rev | B |

DRAFT FOR REVIEW





Legend

- EX BDY
- EX MAJOR CONTOUR
- EX MINOR CONTOUR
- PR EXTENT WORK
- PR STAGE 1 EW
- PR STAGE 2 EW
- PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOURS  
SHEET 1 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-1                     | Rev | B |

DRAFT FOR REVIEW



Legend

- EX BDY
- EX MAJOR CONTOUR
- EX MINOR CONTOUR
- PR EXTENT WORK
- PR STAGE 1 EW
- PR STAGE 2 EW
- PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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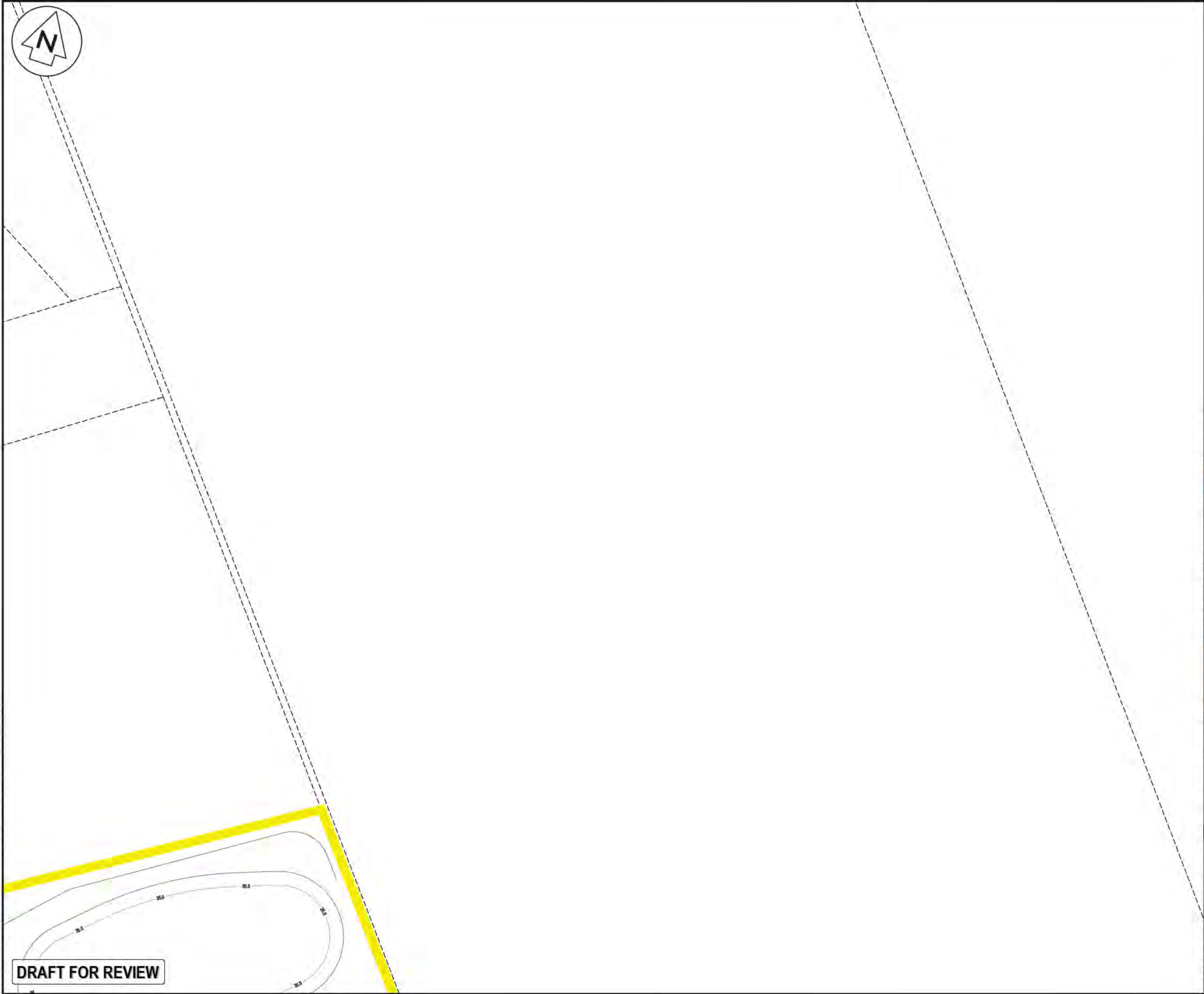
Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOURS  
SHEET 2 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-2                     | Rev | B |

DRAFT FOR REVIEW





Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
|         |             |         |         |
| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 08/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
| Checked |             |         |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOUR  
SHEET 3 OF 9**

|             |                             |     |   |
|-------------|-----------------------------|-----|---|
| Project no. | 408001                      |     |   |
| Scale       | 1:2000 @ A3                 |     |   |
| Cad file    | 408001-C210-EARTH-WORKS.DWG |     |   |
| Drawing no. | C210-3                      | Rev | B |



STATE HIGHWAY 1 WAIKATO EXPRESSWAY

Legend

- EX BDY
- EX MAJOR CONTOUR
- EX MINOR CONTOUR
- PR EXTENT WORK
- PR STAGE 1 EW
- PR STAGE 2 EW
- PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOUR  
SHEET 4 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-4                     | Rev | B |

DRAFT FOR REVIEW





| Legend |                  |  |  |
|--------|------------------|--|--|
| ---    | EX BDY           |  |  |
| ---    | EX MAJOR CONTOUR |  |  |
| ---    | EX MINOR CONTOUR |  |  |
| ---    | PR EXTENT WORK   |  |  |
| ---    | PR STAGE 1 EW    |  |  |
| ---    | PR STAGE 2 EW    |  |  |
| ---    | PR STAGE 3 EW    |  |  |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



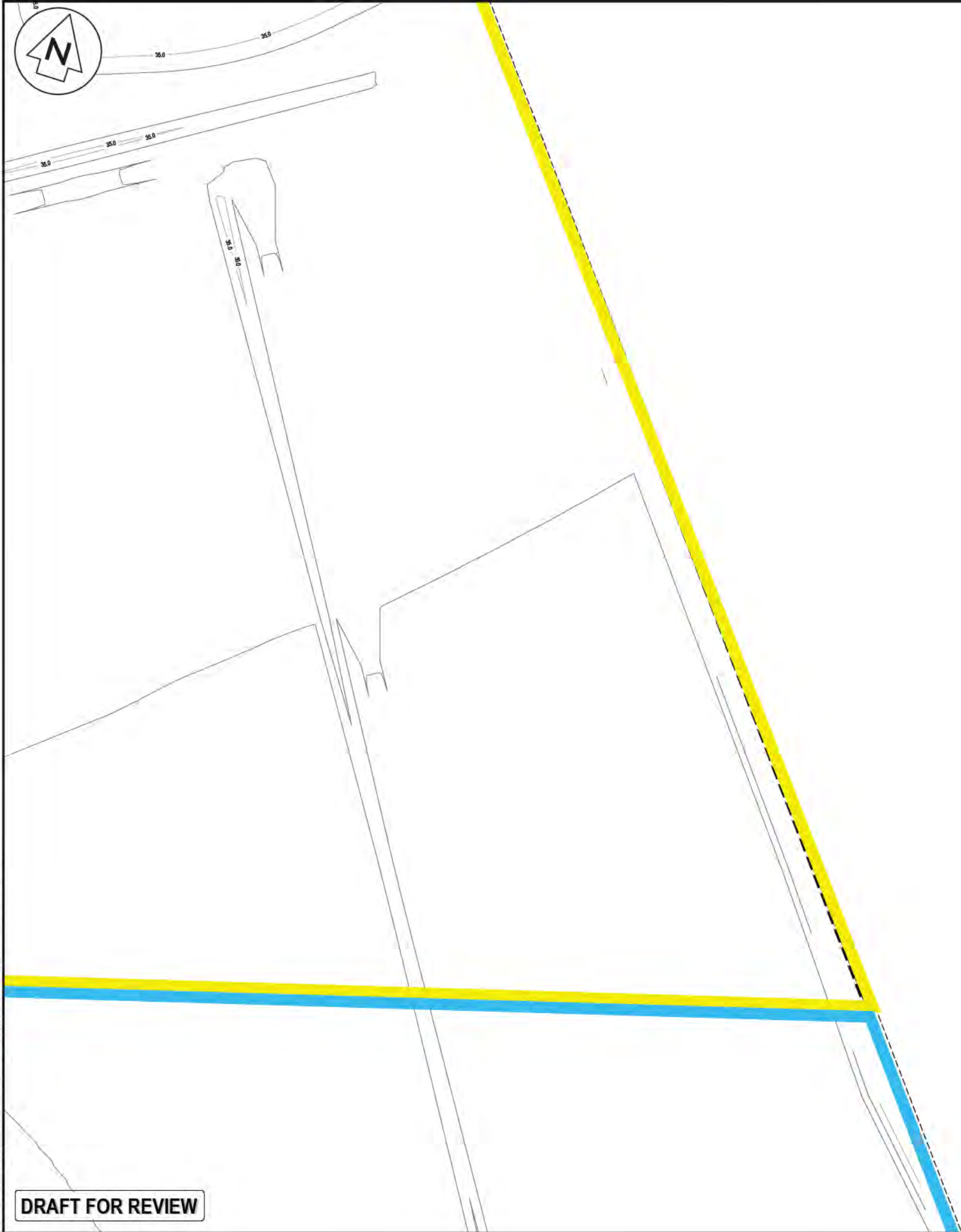
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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOUR  
SHEET 5 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-5                     | Rev | B |

**DRAFT FOR REVIEW**



Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 08/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
| Checked |             |         |         |

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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOUR  
SHEET 6 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-6                     | Rev | B |

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Legend

- EX BDY
- EX MAJOR CONTOUR
- EX MINOR CONTOUR
- PR EXTENT WORK
- PR STAGE 1 EW
- PR STAGE 2 EW
- PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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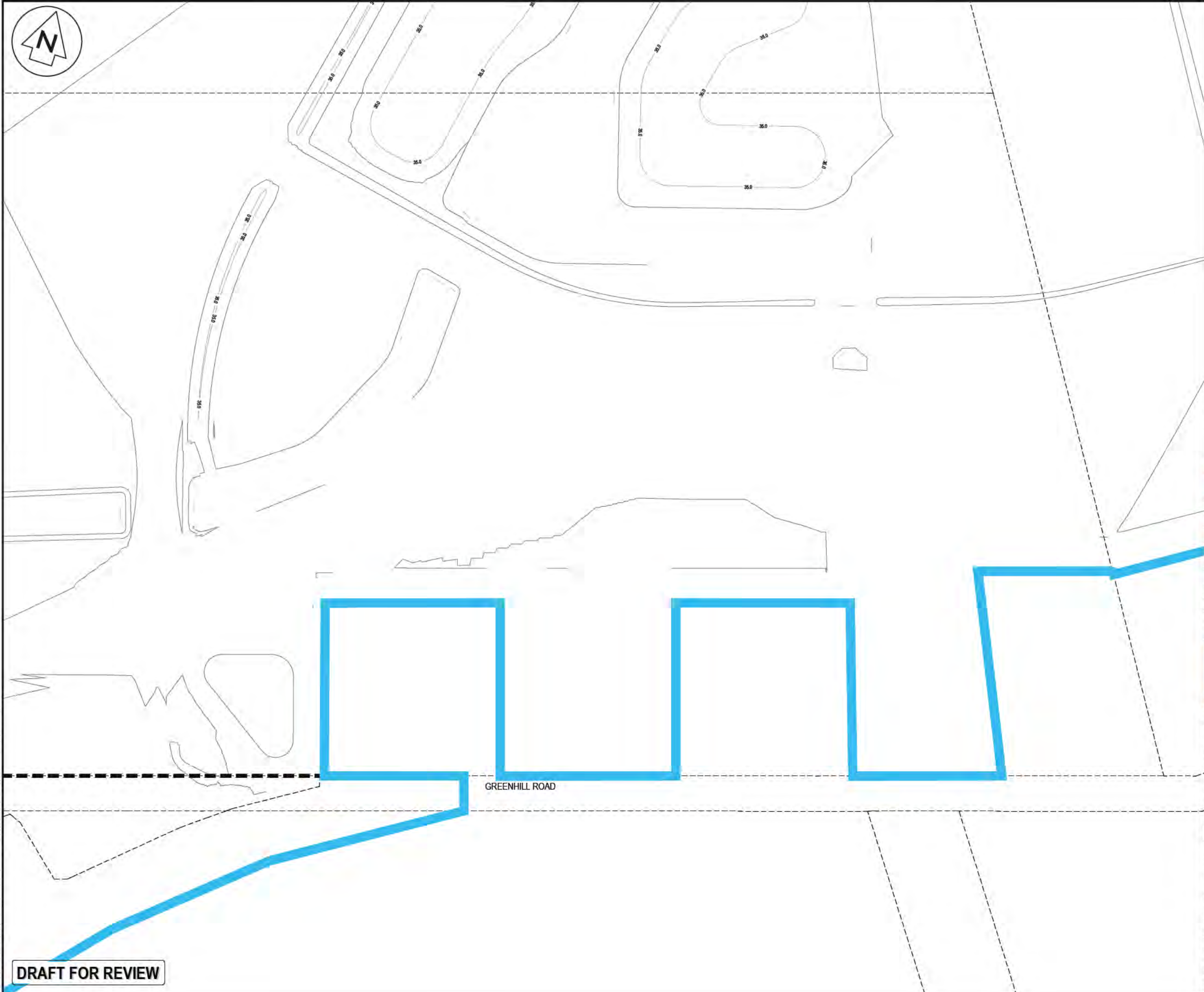
New Zealand

Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CONTOUR  
SHEET 7 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-7                     | Rev | B |

DRAFT FOR REVIEW



Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | EX MAJOR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |
| --- | PR STAGE 1 EW    |
| --- | PR STAGE 2 EW    |
| --- | PR STAGE 3 EW    |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 06/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

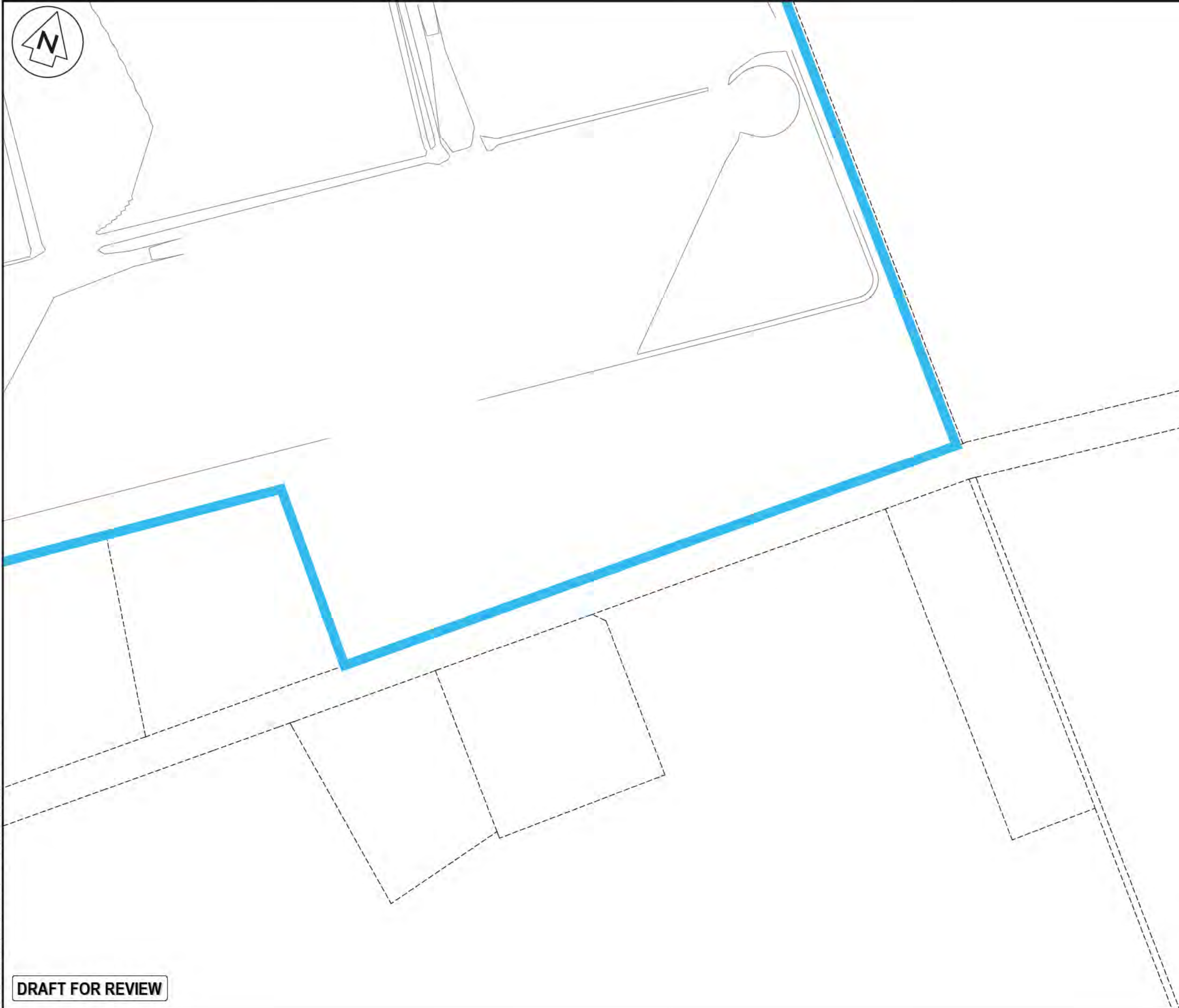
Title  
**PROPOSED  
CONTOUR  
SHEET 8 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C210-EARTHWORKS.DWG |     |   |
| Drawing no. | C210-8                     | Rev | B |

**DRAFT FOR REVIEW**

DATE: 14/05/25 TIME: 10:11 T: MAVEN\HAMILTON\PROJECTS\408001-GREENHILL INDUSTRIAL PARK\DWG\CAD\408001-C210-EARTHWORKS.DWG





EX BDY  
EX MAJOR CONTOUR  
EX MINOR CONTOUR  
PR EXTENT WORK  
PR STAGE 1 EW  
PR STAGE 2 EW  
PR STAGE 3 EW

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Title

**PROPOSED  
CONTOUR  
SHEET 9 OF 9**

|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |          |
| Drawing no. | C210-9                     | Rev | <b>B</b> |





EARTH WORKS (SURFACE EGL COMPARISON WITH SURFACE PGL )

|             |                |
|-------------|----------------|
| STAGE 1     |                |
| CUT VOLUME  | -500,140.608m³ |
| FILL VOLUME | 4983,340.18m³  |
| NET FILL    | -1800.428m³    |

|             |                |
|-------------|----------------|
| STAGE 2     |                |
| CUT VOLUME  | -493,835.585m³ |
| FILL VOLUME | 280,939.816m³  |
| NET FILL    | -212,895.769m³ |

|             |               |
|-------------|---------------|
| STAGE 3     |               |
| CUT VOLUME  | -181545.374m³ |
| FILL VOLUME | 172,566.763m³ |
| NET FILL    | -8978.611m³   |

NOTE: NO ALLOWANCE FOR SERVICES TRENCHES, VOLUMES ARE UNFACTORED AND IN SITU

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
  2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
  3. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.
  4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
  5. SEDIMENT CONTROL SHALL BE INSTALLED AND OPERATIONAL BEFORE EARTHWORKS START ONSITE IN ACCORDANCE WITH COUNCIL STANDARDS.
  6. CONTRACTOR SHALL PROVIDE ASBUILT OF WORKING SEDIMENT CONTROL DEVICES AND CONFIRMATION OF POND/DECENT VOLUMES TO ENGINEER.
  7. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            |       |
| FILL           |       |

- Legend
- EX BDY
  - PR MA OR CONTOUR
  - EX MINOR CONTOUR
  - PR EXTENT WORK
  - PR STAGE 1 EW
  - PR STAGE 2 EW
  - PR STAGE 3 EW

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 10/2025 |
| Rev     | Description | By  | Date    |
|         |             |     |         |
|         |             |     |         |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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|             |                            |                                        |          |
|-------------|----------------------------|----------------------------------------|----------|
| Project     |                            | <b>GREEN HILL INDUSTRIAL PARK</b>      |          |
|             |                            | <b>FOR GREENHILL LTD</b>               |          |
| Title       |                            | <b>PROPOSED CUT/FILL OVERVIEW PLAN</b> |          |
| Project no. | 408001                     |                                        |          |
| Scale       | 1:7500 @ A3                |                                        |          |
| Cad file    | 408001-C200-EARTHWORKS.DWG |                                        |          |
| Drawing no. | C220                       | Rev                                    | <b>B</b> |

DATE: 10/2025 FILE PATH: P:\MAVEN\HAMILTON\PROJECTS\408001 - GREEN HILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG

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- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
  2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
  3. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.
  4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
  5. SEDIMENT CONTROL SHALL BE INSTALLED AND OPERATIONAL BEFORE EARTHWORKS START ONSITE IN ACCORDANCE WITH COUNCIL STANDARDS.
  6. CONTRACTOR SHALL PROVIDE ASBUILT OF WORKING SEDIMENT CONTROL DEVICES AND CONFIRMATION OF POND/DECENT VOLUMES TO ENGINEER.
  7. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

- Legend
- EX BDY
  - PR MA OR CONTOUR
  - EX MINOR CONTOUR
  - PR EXTENT WORK

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            | CUT   |
| FILL           | FILL  |

|     |             |     |         |
|-----|-------------|-----|---------|
|     |             |     |         |
| B   | DRAFT       | SPM | 01/2026 |
| A   | DRAFT       | SPM | 08/2025 |
| Rev | Description | By  | Date    |
|     | Survey      |     |         |
|     | Design      | SPM | 10/2025 |
|     | Drawn       | AJP | 10/2025 |
|     | Checked     |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CUT/FILL  
SHEET 1 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C200-EARTHWORKS.DWG |
| Drawing no. | C220-1                     |
| Rev         | B                          |

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DATE: 10/2025 FILE PATH: I:\MAVEN\HAMILTON\PROJECTS\408001 - GREENHILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG





- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
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  7. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | PR MA OR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            | Red   |
| FILL           | Green |

| B       | DRAFT       | SPM | 01/2026 |
|---------|-------------|-----|---------|
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CUT/FILL  
SHEET 2 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C220-2                     | Rev | B |

DRAFT FOR REVIEW

DATE: 10/25 FILE PATH: I:\Maven\Hamilton\Projects\408001 - GREENHILL INDUSTRIAL PARK\DWG\CAD\C200-EARTHWORKS.DWG





DRAFT FOR REVIEW

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
  2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
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Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | PR MA OR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            |       |
| FILL           |       |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
|         |             |         |         |
| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 08/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
| Checked |             |         |         |

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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CUT/FILL  
SHEET 3 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C220-3                     | Rev | B |





STATE HIGHWAY 1 WAIKATO EXPRESSWAY

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
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  7. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

Legend

--- EX BDY  
--- PR MA OR CONTOUR  
--- EX MINOR CONTOUR  
--- PR EXTENT WORK

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            |       |
| FILL           |       |

|     |             |     |         |
|-----|-------------|-----|---------|
|     |             |     |         |
| B   | DRAFT       | SPM | 01/2026 |
| A   | DRAFT       | SPM | 08/2025 |
| Rev | Description | By  | Date    |
|     |             | By  | Date    |
|     | Survey      |     |         |
|     | Design      | SPM | 10/2025 |
|     | Drawn       | AJP | 10/2025 |
|     | Checked     |     |         |



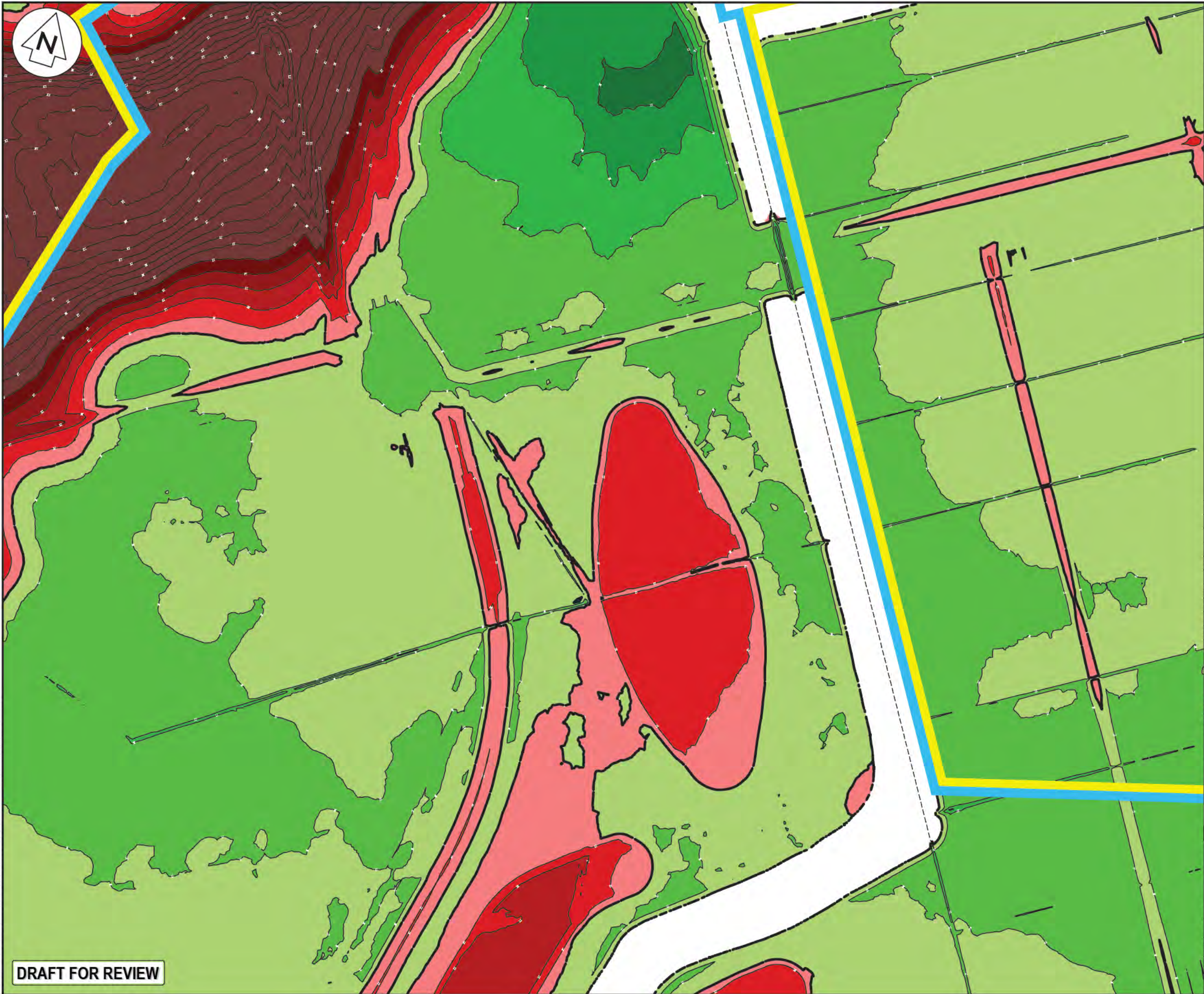
Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CUT/FILL  
SHEET 4 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C200-EARTHWORKS.DWG |
| Drawing no. | C220-4                     |
| Rev         | B                          |

DRAFT FOR REVIEW





- NOTES
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  7. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | PR MA OR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            | Red   |
| FILL           | Green |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

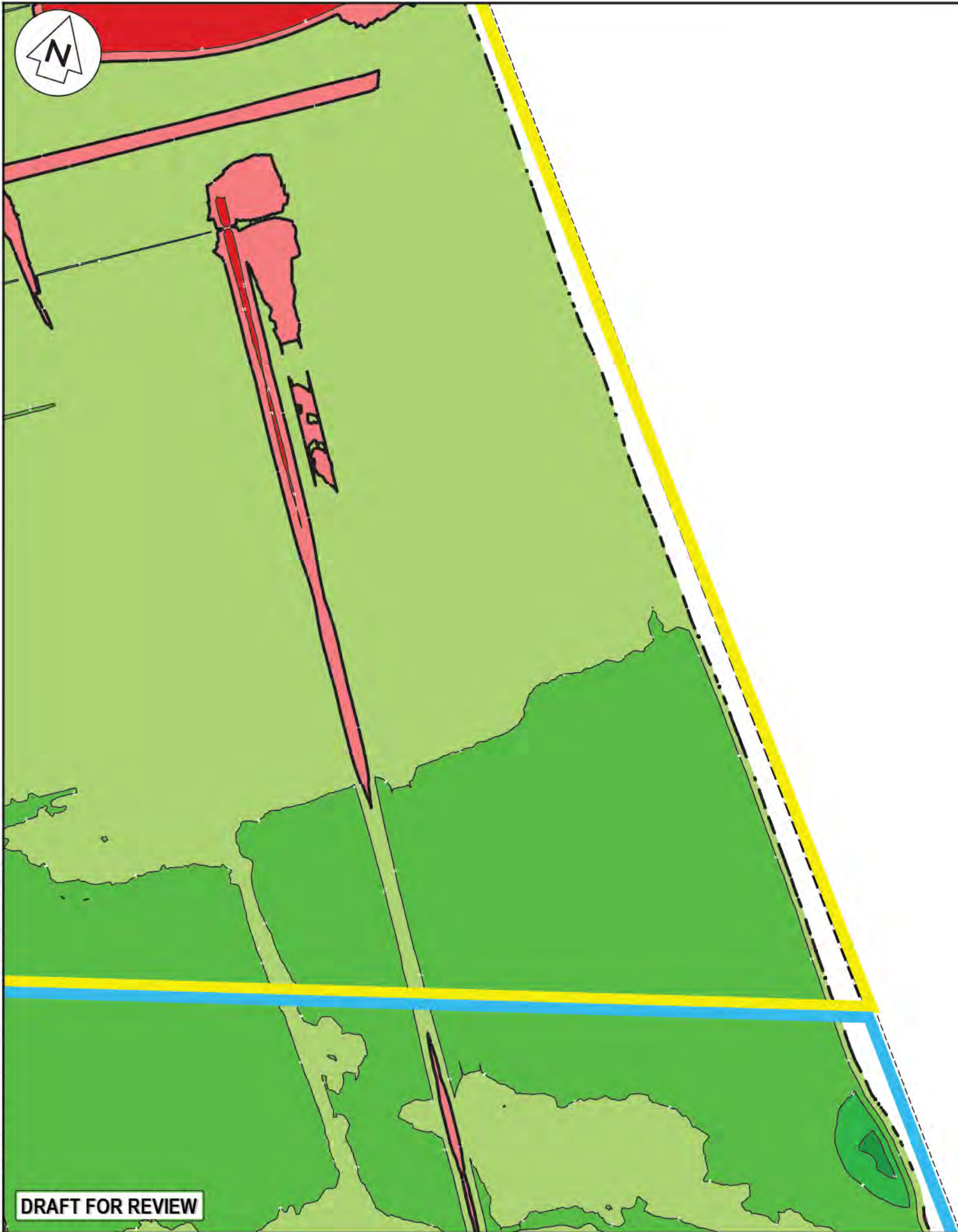
Title  
**PROPOSED  
CUT/FILL  
SHEET 5 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C200-EARTHWORKS.DWG |
| Drawing no. | C220-5                     |
| Rev         | B                          |

DRAFT FOR REVIEW

DATE: 10/25 FILE PATH: P:\MAVEN\HAMILTON\PROJECTS\408001 - GREEN HILL INDUSTRIAL PARK\DRAWINGS\C200-EARTHWORKS.DWG





- NOTES
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Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | PR MA OR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            |       |
| FILL           |       |

| B       | DRAFT       | SPM | 01/2026 |
|---------|-------------|-----|---------|
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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New Zealand

Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CUT/FILL  
SHEET 6 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C220-6                     | Rev | B |





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Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | PR MA OR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            |       |
| FILL           |       |

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|         |             |     |         |
|         |             |     |         |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 08/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

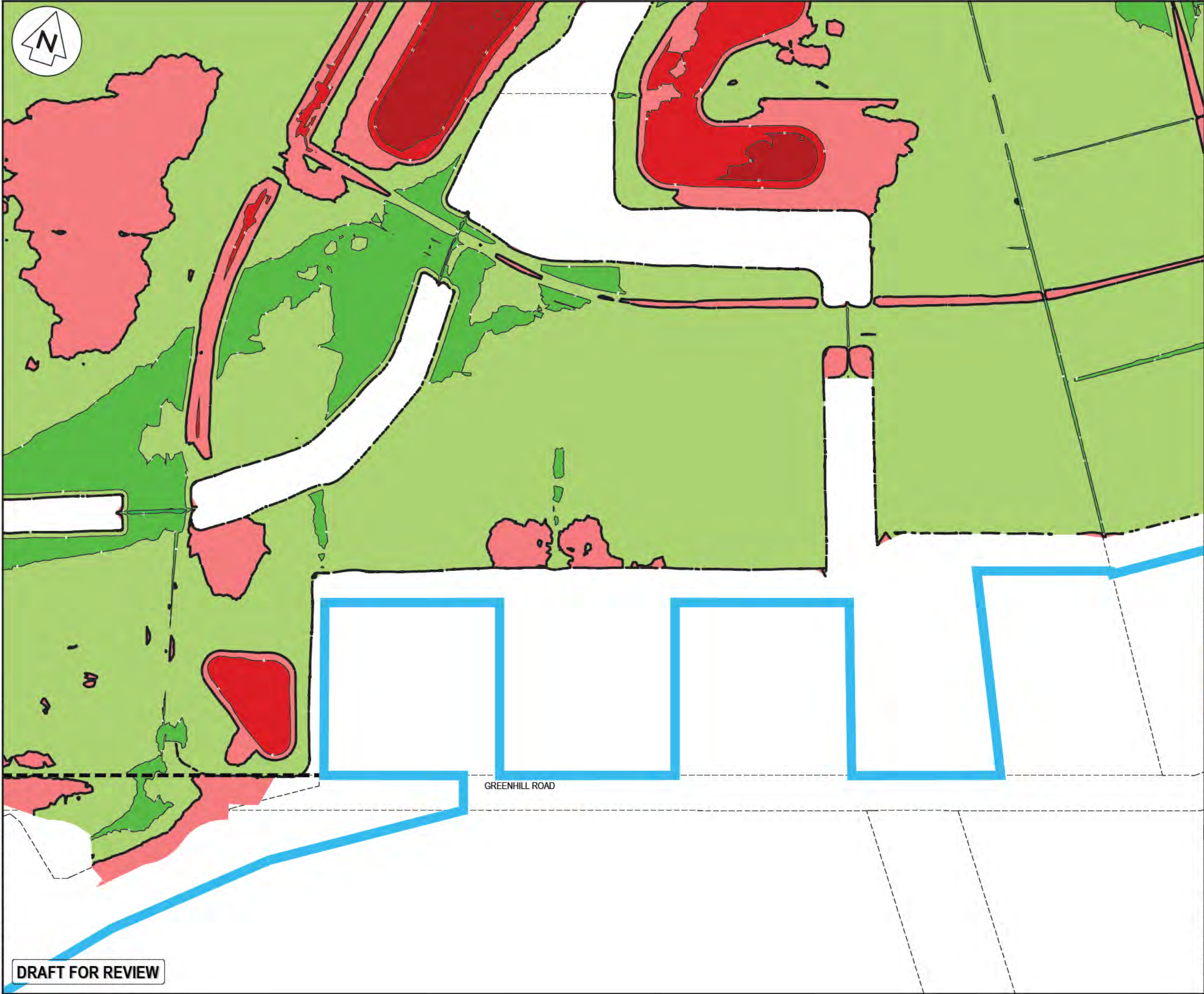
Title  
**PROPOSED  
CUT/FILL  
SHEET 7 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C220-7                     | Rev | B |

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DATE: 10/2025 FILE PATH: I:\MAVEN\HAMILTON\INDUSTRIAL PARK\DRAWINGS\4000\408001\GREENHILL INDUSTRIAL PARK\DRAWINGS\4000\408001-C200-EARTHWORKS.DWG





- NOTES
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Legend

|     |                  |
|-----|------------------|
| --- | EX BDY           |
| --- | PR MA OR CONTOUR |
| --- | EX MINOR CONTOUR |
| --- | PR EXTENT WORK   |

| Cut/Fill Table | Color |
|----------------|-------|
| CUT            | Red   |
| FILL           | Green |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| A       | DRAFT       | SPM | 08/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



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Project  
**GREEN HILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
CUT/FILL  
SHEET 8 OF 9**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:2000 @ A3                |     |   |
| Cad file    | 408001-C200-EARTHWORKS.DWG |     |   |
| Drawing no. | C220-8                     | Rev | B |

DRAFT FOR REVIEW





- | NOTES |                                                                                                                                |
|-------|--------------------------------------------------------------------------------------------------------------------------------|
| 1.    | ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.                                                                 |
| 2.    | IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.                          |
| 3.    | THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.                                                  |
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| 7.    | SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.                                                                                |

Legend

EX BDY  
 PR MA OR CONTOUR  
 EX MINOR CONTOUR  
 PR EXTENT WORK

| Cut/Fill Table | Color                                                                               |
|----------------|-------------------------------------------------------------------------------------|
| CUT            |  |
| FILL           |  |

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| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 08/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
| Checked |             |         |         |



Project  
**GREEN HILL  
INDUSTRIAL PARK**

FOR  
GREENHILL LTD

Title  
**PROPOSED  
CUT/FILL  
SHEET 9 OF 9**

|             |                             |     |          |
|-------------|-----------------------------|-----|----------|
| Project no. | 408001                      |     |          |
| Scale       | 1:2000 @ A3                 |     |          |
| Cad file    | 408001-C200-EARTH-WORKS.DWG |     |          |
| Drawing no. | C220-9                      | Rev | <b>B</b> |

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LEGEND  
--- EX BDY  
--- PROP BDY

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 10/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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|                                             |                         |     |   |
|---------------------------------------------|-------------------------|-----|---|
| Project<br><b>GREENHILL INDUSTRIAL PARK</b> |                         |     |   |
| FOR<br><b>GREENHILL LTD</b>                 |                         |     |   |
| Title<br><b>PROPOSED ROADING PLAN</b>       |                         |     |   |
| Project no.                                 | 408001                  |     |   |
| Scale                                       | 1:7500@A3               |     |   |
| Cad file                                    | 408001-C300-ROADING.DWG |     |   |
| Drawing no.                                 | C300                    | Rev | A |

**DRAFT FOR REVIEW** PARDOA BOULEVARD





SECTION 85  
SO 572875

LOT 1  
DPS 77066

LOT 1  
DPS 45430

LOT 2  
DPS 77146

LOT 2  
DP 351920

LOT 2  
DP 351920

LOT 1  
DP 351920

LOT 1  
DP 318288

LOT 1  
DPS 516428

LOT 1  
DPS 45430

LOT 3  
DP 496316

LOT 2  
DP 496316

LOT 1  
DPS 11563

#### LEGEND

|                  |                   |
|------------------|-------------------|
| CENTER LINE 1    | WC100R (30m)      |
| CENTER LINE 2    | WC100R            |
| NO STOPPING LINE | Y1100R1x1         |
| CONTINUITY LINE  | W1100R1x3         |
| LIMIT LINE       | WC300R            |
| EX BDY           | EX BDY            |
| AC               | PROP BDY          |
| CB               | AC PAVING         |
| CEA              | BRUSHED CONCRETE  |
| DC               | EXPOSED CONCRETE  |
| K&C              | DISH CHANNEL      |
| K&N              | KERB AND CHANNEL  |
| WS               | KERB AND NIB      |
|                  | WHEEL STOP        |
|                  | PROP SWCP SINGLE  |
|                  | PROP STREET LIGHT |
|                  | PROP STREET SIGN  |
|                  | ROAD NAME SIGN    |
|                  | TACTILE PAVERS    |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             |     |         |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |

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Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 1 OF 9**

|             |                         |
|-------------|-------------------------|
| Project no. | 408001                  |
| Scale       | 1:2000 @ A3             |
| Cad file    | 408001-C300-ROADING.DWG |
| Drawing no. | C300-1                  |
| Rev         | A                       |

DRAFT FOR REVIEW





| LEGEND            |                   |
|-------------------|-------------------|
| CENTER LINE 1     | WC100R (30m)      |
| CENTER LINE 2     | WC100R            |
| NO STOPPING LINE  | Y1100R1x1         |
| CONTINUITY LINE   | W1100R1x3         |
| LIMIT LINE        | WC300R            |
| EX BDY            | EX BDY            |
| AC                | AC PAVING         |
| CB                | BRUSHED CONCRETE  |
| CEA               | EXPOSED CONCRETE  |
| DC                | DISH CHANNEL      |
| K&C               | KERB AND CHANNEL  |
| K&N               | KERB AND NIB      |
| WS                | WHEEL STOP        |
| PROP SWCP SINGLE  | PROP SWCP SINGLE  |
| PROP STREET LIGHT | PROP STREET LIGHT |
| PROP STREET SIGN  | PROP STREET SIGN  |
| ROAD NAME SIGN    | ROAD NAME SIGN    |
| TACTILE PAVERS    | TACTILE PAVERS    |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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Project  
**GREENHILL  
INDUSTRIAL PARK**

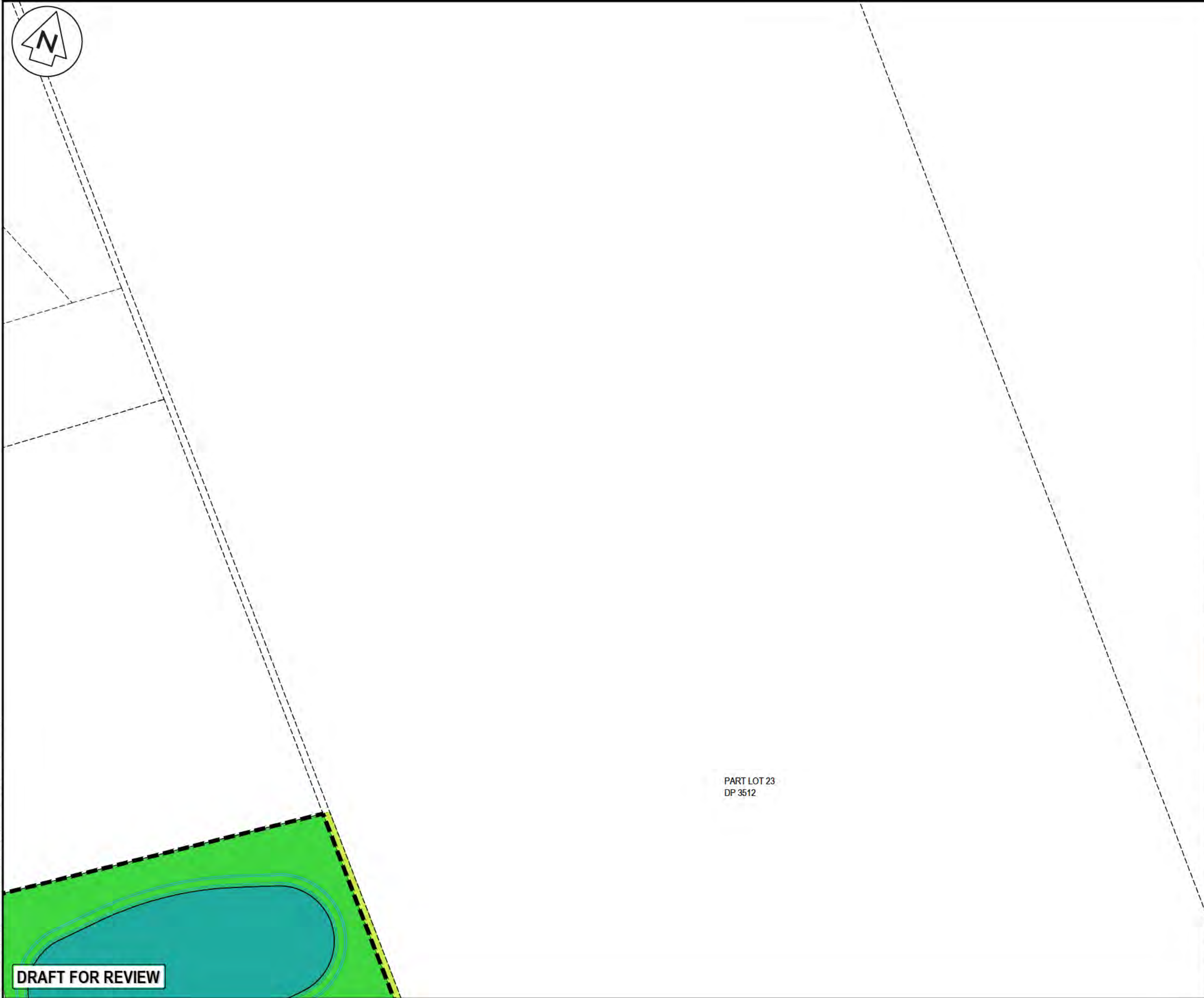
FOR  
**GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 2 OF 9**

|             |                         |
|-------------|-------------------------|
| Project no. | 408001                  |
| Scale       | 1:2000 @ A3             |
| Cad file    | 408001-C300-ROADING.DWG |
| Drawing no. | C300-2                  |
| Rev         | A                       |

DRAFT FOR REVIEW





PART LOT 23  
DP 3512

| LEGEND           |                   |
|------------------|-------------------|
| CENTER LINE 1    | WC100R (30m)      |
| CENTER LINE 2    | WC100R            |
| NO STOPPING LINE | Y1100R1x1         |
| CONTINUITY LINE  | W1100R1x3         |
| LIMIT LINE       | WC300R            |
| ---              | EX BDY            |
| ---              | PROP BDY          |
| AC               | AC PAVING         |
| CB               | BRUSHED CONCRETE  |
| CEA              | EXPOSED CONCRETE  |
| DC               | DISH CHANNEL      |
| K&C              | KERB AND CHANNEL  |
| K&N              | KERB AND NIB      |
| WS               | WHEEL STOP        |
|                  | PROP SWCP SINGLE  |
|                  | PROP STREET LIGHT |
|                  | PROP STREET SIGN  |
|                  | ROAD NAME SIGN    |
|                  | TACTILE PAVERS    |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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Project  
**GREENHILL  
INDUSTRIAL PARK**

FOR  
**GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 3 OF 9**

|             |                         |     |   |
|-------------|-------------------------|-----|---|
| Project no. | 408001                  |     |   |
| Scale       | 1:2000 @ A3             |     |   |
| Cad file    | 408001-C300-ROADING.DWG |     |   |
| Drawing no. | C300-3                  | Rev | A |





SECTION 2  
SO 471406

STATE HIGHWAY 1 WAIKATO EXPRESSWAY

DRAFT FOR REVIEW

LEGEND

|                  |                   |
|------------------|-------------------|
| CENTER LINE 1    | WC100R (30m)      |
| CENTER LINE 2    | WC100R            |
| NO STOPPING LINE | Y1100R1x1         |
| CONTINUITY LINE  | W1100R1x3         |
| LIMIT LINE       | WC300R            |
| EX BDY           | EX BDY            |
| AC               | PROP BDY          |
| CB               | AC PAVING         |
| CEA              | BRUSHED CONCRETE  |
| DC               | EXPOSED CONCRETE  |
| K&C              | DISH CHANNEL      |
| K&N              | KERB AND CHANNEL  |
| WS               | KERB AND NIB      |
| WS               | WHEEL STOP        |
| WS               | PROP SWCP SINGLE  |
| WS               | PROP STREET LIGHT |
| WS               | PROP STREET SIGN  |
| WS               | ROAD NAME SIGN    |
| WS               | TACTILE PAVERS    |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
FOR  
**GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 4 OF 9**

|             |                         |
|-------------|-------------------------|
| Project no. | 408001                  |
| Scale       | 1:2000 @ A3             |
| Cad file    | 408001-C300-ROADING.DWG |
| Drawing no. | C300-4                  |
| Rev         | A                       |





| LEGEND           |                   |
|------------------|-------------------|
| CENTER LINE 1    | WC100R (30m)      |
| CENTER LINE 2    | WC100R            |
| NO STOPPING LINE | Y1100R1x1         |
| CONTINUITY LINE  | W1100R1x3         |
| LIMIT LINE       | WC300R            |
| ---              | EX BDY            |
| ---              | PROP BDY          |
| AC               | AC PAVING         |
| CB               | BRUSHED CONCRETE  |
| CEA              | EXPOSED CONCRETE  |
| DC               | DISH CHANNEL      |
| K&C              | KERB AND CHANNEL  |
| K&N              | KERB AND NIB      |
| WS               | WHEEL STOP        |
|                  | PROP SWCP SINGLE  |
|                  | PROP STREET LIGHT |
|                  | ROAD NAME SIGN    |
|                  | TACTILE PAVERS    |

| B       | DRAFT       | SPM | 02/2026 |
|---------|-------------|-----|---------|
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             |     |         |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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Project  
**GREENHILL  
INDUSTRIAL PARK**

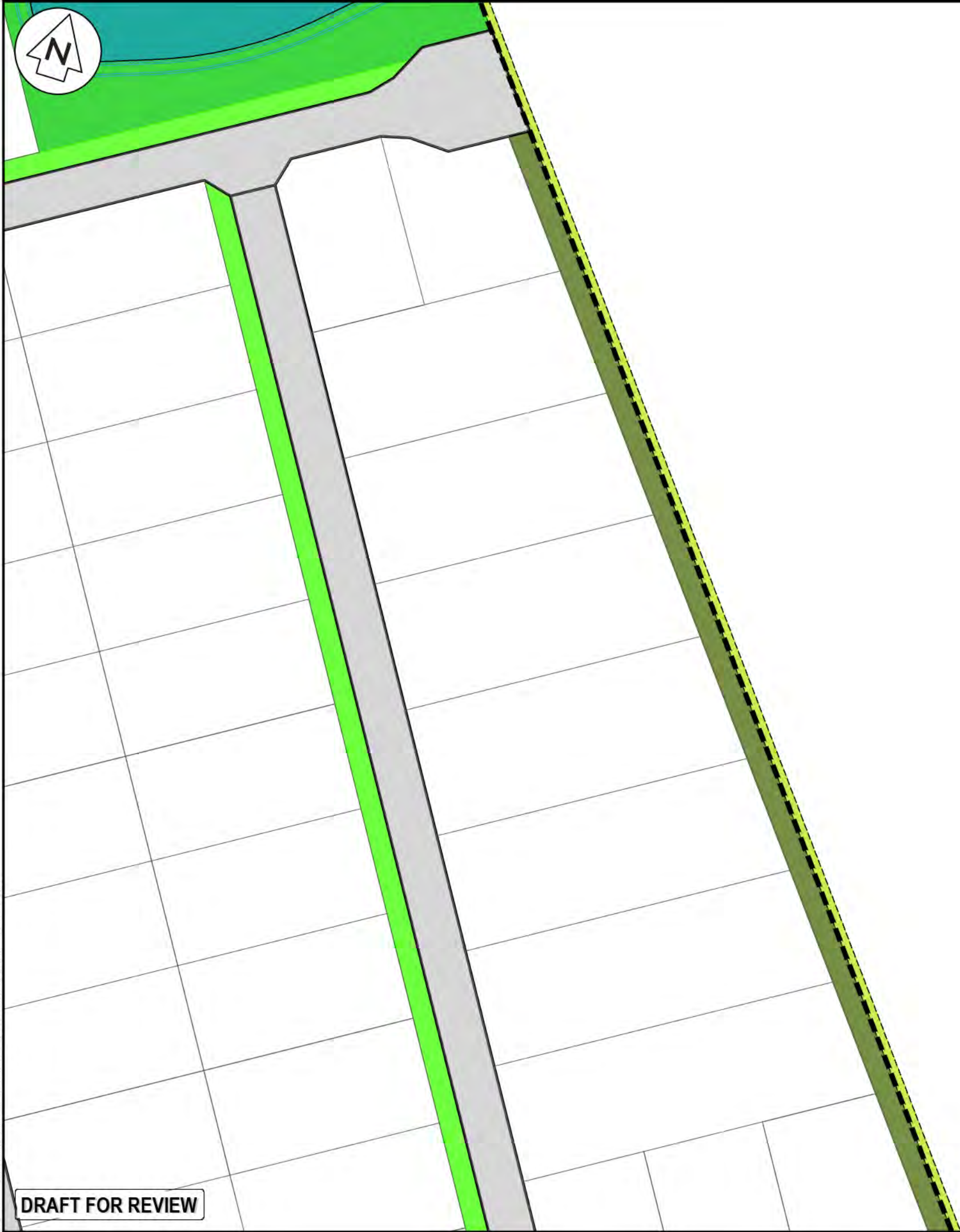
FOR  
**GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 5 OF 9**

|             |                         |     |   |
|-------------|-------------------------|-----|---|
| Project no. | 408001                  |     |   |
| Scale       | 1:2000 @ A3             |     |   |
| Cad file    | 408001-C300-ROADING.DWG |     |   |
| Drawing no. | C300-5                  | Rev | A |

DRAFT FOR REVIEW





LEGEND

|                  |                   |
|------------------|-------------------|
| CENTER LINE 1    | WC100R (30m)      |
| CENTER LINE 2    | WC100R            |
| NO STOPPING LINE | Y1100R1x1         |
| CONTINUITY LINE  | W1100R1x3         |
| LIMIT LINE       | WC300R            |
| ---              | EX BDY            |
| ---              | PROP BDY          |
| AC               | AC PAVING         |
| CB               | BRUSHED CONCRETE  |
| CEA              | EXPOSED CONCRETE  |
| DC               | DISH CHANNEL      |
| K&C              | KERB AND CHANNEL  |
| K&N              | KERB AND NIB      |
| WS               | WHEEL STOP        |
|                  | PROP SWCP SINGLE  |
|                  | PROP STREET LIGHT |
|                  | PROP STREET SIGN  |
|                  | ROAD NAME SIGN    |
|                  | TACTILE PAVERS    |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
| B       | DRAFT       | SPM     | 02/2026 |
| A       | DRAFT       | SPM     | 07/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 10/2025 |         |
| Drawn   | AJP         | 10/2025 |         |
| Checked | SPM         | 10/2025 |         |



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Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 6 OF 9**

|             |                         |     |   |
|-------------|-------------------------|-----|---|
| Project no. | 408001                  |     |   |
| Scale       | 1:2000 @ A3             |     |   |
| Cad file    | 408001-C300-ROADING.DWG |     |   |
| Drawing no. | C300-6                  | Rev | A |





LEGEND

|                  |                  |
|------------------|------------------|
| CENTER LINE 1    | WC100R (30m)     |
| CENTER LINE 2    | WC100R           |
| NO STOPPING LINE | Y1100R1x1        |
| CONTINUITY LINE  | W1100R1x3        |
| LIMIT LINE       | WC300R           |
| EX BDY           | EX BDY           |
| AC               | AC PAVING        |
| CB               | BRUSHED CONCRETE |
| CEA              | EXPOSED CONCRETE |
| DC               | DISH CHANNEL     |
| K&C              | KERB AND CHANNEL |
| K&N              | KERB AND NIB     |
| WS               | WHEEL STOP       |
|                  | PROP SWCP SINGLE |
|                  | PROP STREET SIGN |
|                  | ROAD NAME SIGN   |
|                  | TACTILE PAVERS   |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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Project  
**GREENHILL INDUSTRIAL PARK**  
  
FOR  
**GREENHILL LTD**

Title  
**PROPOSED ROADING SHEET 7 OF 9**

|             |                         |
|-------------|-------------------------|
| Project no. | 408001                  |
| Scale       | 1:2000 @ A3             |
| Cad file    | 408001-C300-ROADING.DWG |
| Drawing no. | C300-7                  |
| Rev         | A                       |

DRAFT FOR REVIEW

DATE: 27/01/25 FILE: D:\K:\T\MAVEN\HAMILTON\INDUSTRIAL PARK\1000\INDUSTRIAL PARK\1000\INDUSTRIAL PARK\1000\INDUSTRIAL PARK.DWG





| LEGEND           |                   |
|------------------|-------------------|
| CENTER LINE 1    | WC100R (30m)      |
| CENTER LINE 2    | WC100R            |
| NO STOPPING LINE | Y1100R1x1         |
| CONTINUITY LINE  | W1100R1x3         |
| LIMIT LINE       | WC300R            |
| ---              | EX BDY            |
| ---              | PROP BDY          |
| AC               | AC PAVING         |
| CB               | BRUSHED CONCRETE  |
| CEA              | EXPOSED CONCRETE  |
| DC               | DISH CHANNEL      |
| K&C              | KERB AND CHANNEL  |
| K&N              | KERB AND NIB      |
| WS               | WHEEL STOP        |
| ---              | PROP SWCP SINGLE  |
| ---              | PROP STREET LIGHT |
| ---              | PROP STREET SIGN  |
| ---              | ROAD NAME SIGN    |
| ---              | TACTILE PAVERS    |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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Project  
**GREENHILL INDUSTRIAL PARK**  
  
**FOR GREENHILL LTD**

Title  
**PROPOSED ROADING SHEET 8 OF 9**

|             |                         |     |   |
|-------------|-------------------------|-----|---|
| Project no. | 408001                  |     |   |
| Scale       | 1:2000 @ A3             |     |   |
| Cad file    | 408001-C300-ROADING.DWG |     |   |
| Drawing no. | C300-8                  | Rev | A |





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| LEGEND            |                   |
|-------------------|-------------------|
| CENTER LINE 1     | WC100R (30m)      |
| CENTER LINE 2     | WC100R            |
| NO STOPPING LINE  | Y1100R1x1         |
| CONTINUITY LINE   | W1100R1x3         |
| LIMIT LINE        | WC300R            |
| EX BDY            | EX BDY            |
| AC                | AC PAVING         |
| CB                | BRUSHED CONCRETE  |
| CEA               | EXPOSED CONCRETE  |
| DC                | DISH CHANNEL      |
| K&C               | KERB AND CHANNEL  |
| K&N               | KERB AND NIB      |
| WS                | WHEEL STOP        |
| PROP SWCP SINGLE  | PROP SWCP SINGLE  |
| PROP STREET LIGHT | PROP STREET LIGHT |
| ROAD NAME SIGN    | ROAD NAME SIGN    |
| TACTILE PAVERS    | TACTILE PAVERS    |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 02/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



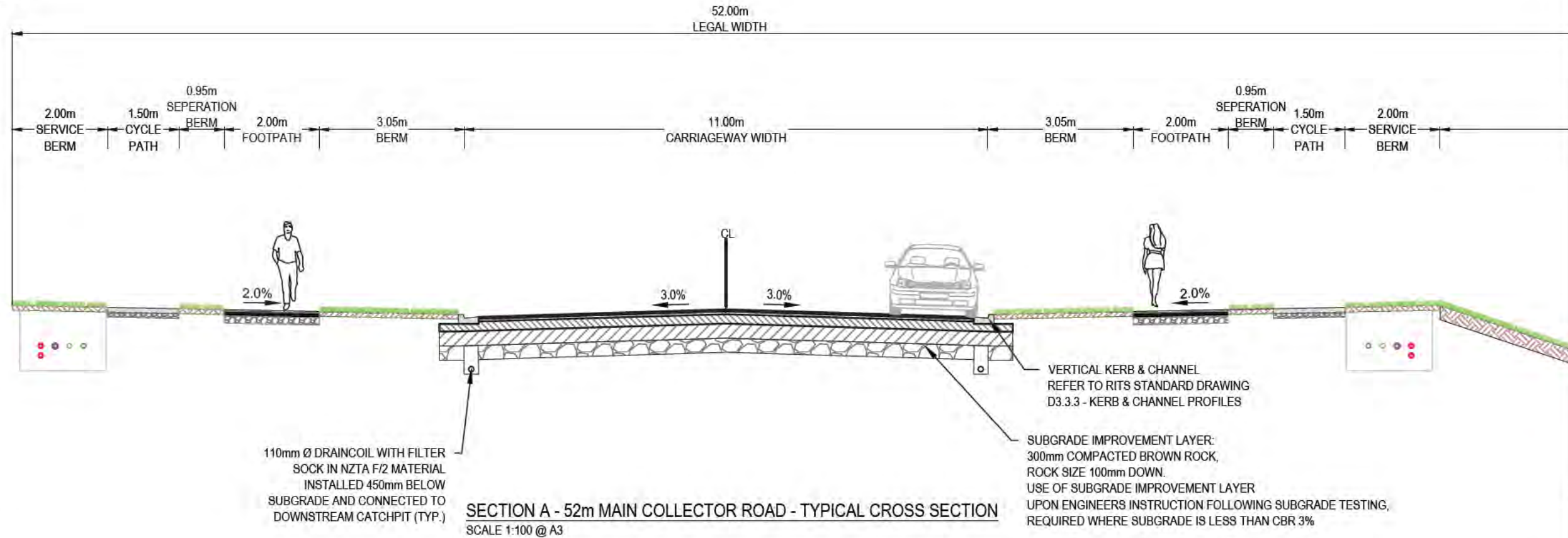
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Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
ROADING  
SHEET 9 OF 9**

|             |                         |     |   |
|-------------|-------------------------|-----|---|
| Project no. | 408001                  |     |   |
| Scale       | 1:2000 @ A3             |     |   |
| Cad file    | 408001-C300-ROADING.DWG |     |   |
| Drawing no. | C300-9                  | Rev | A |





LEGEND  
--- EX GROUND LEVEL  
--- PR GROUND LEVEL

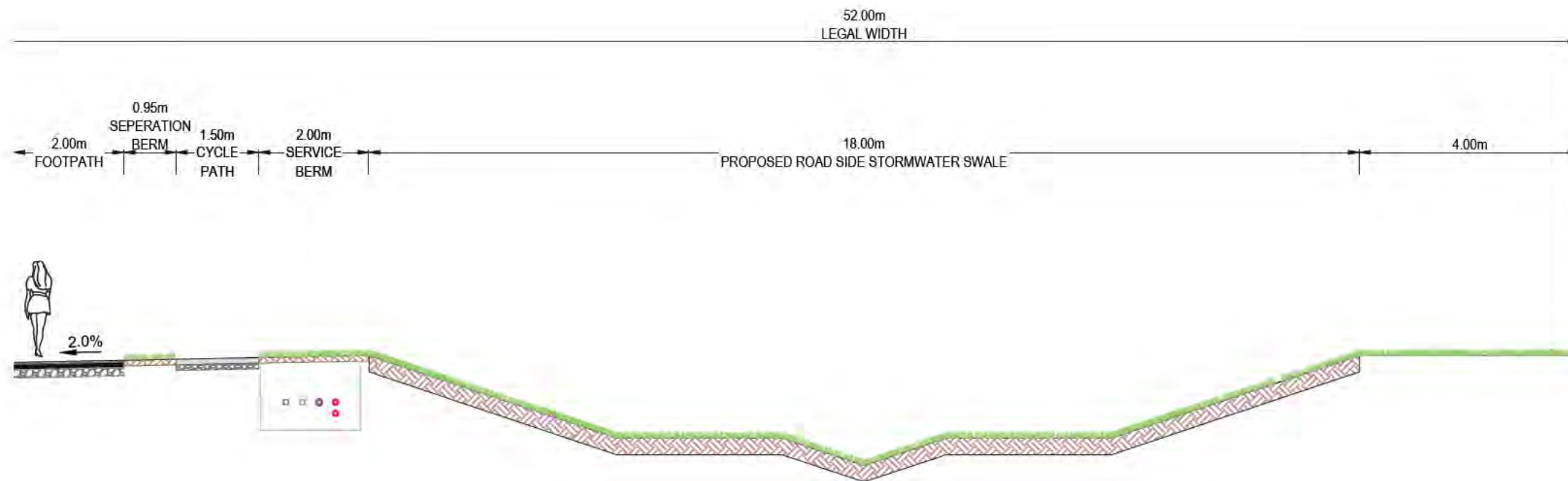
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| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             |     |         |
|         |             |     |         |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
| Checked |             |     |         |



Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
FOR  
**GREENHILL LTD**

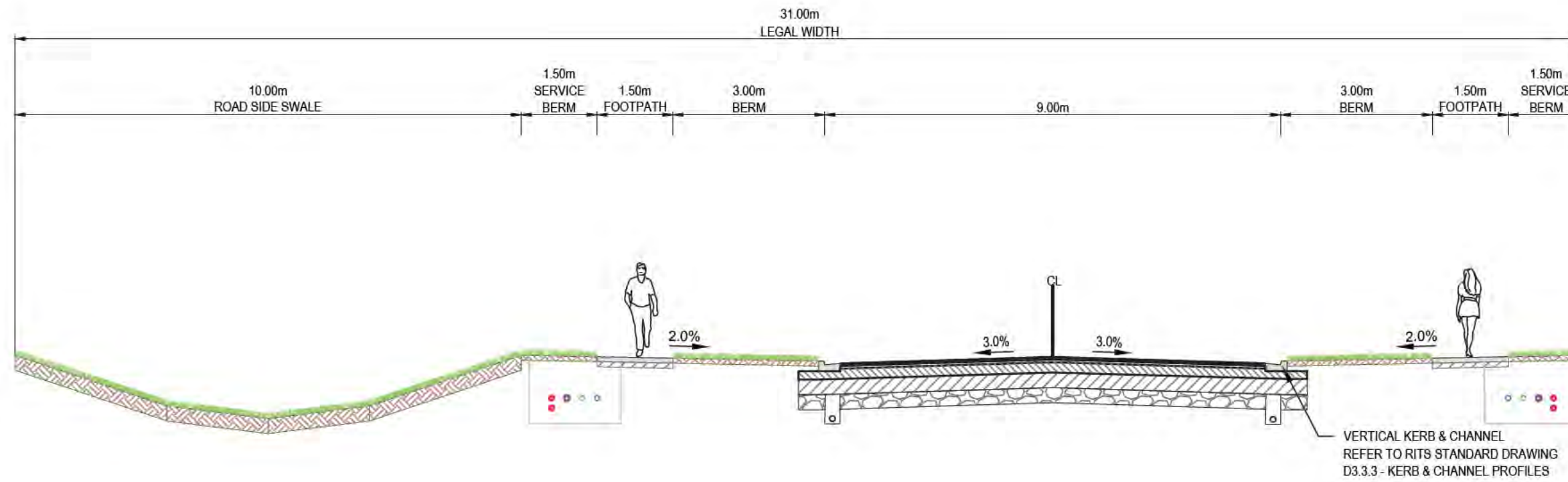
Title  
**PROPOSED  
ROADING TYPICAL  
SECTIONS SHEET 1 OF 2**

|             |            |
|-------------|------------|
| Project no. | 408001     |
| Scale       | 1:100 @ A3 |
| Cad file    | C300.DWG   |
| Drawing no. | C340       |
| Rev         | A          |



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SECTION B - 31m LOCAL ROAD - TYPICAL CROSS SECTION  
SCALE 1:100 @ A3

LEGEND  
--- EX GROUND LEVEL  
--- PR GROUND LEVEL

|         |             |     |         |
|---------|-------------|-----|---------|
|         |             |     |         |
|         |             |     |         |
|         |             |     |         |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             |     |         |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
| Checked |             |     |         |



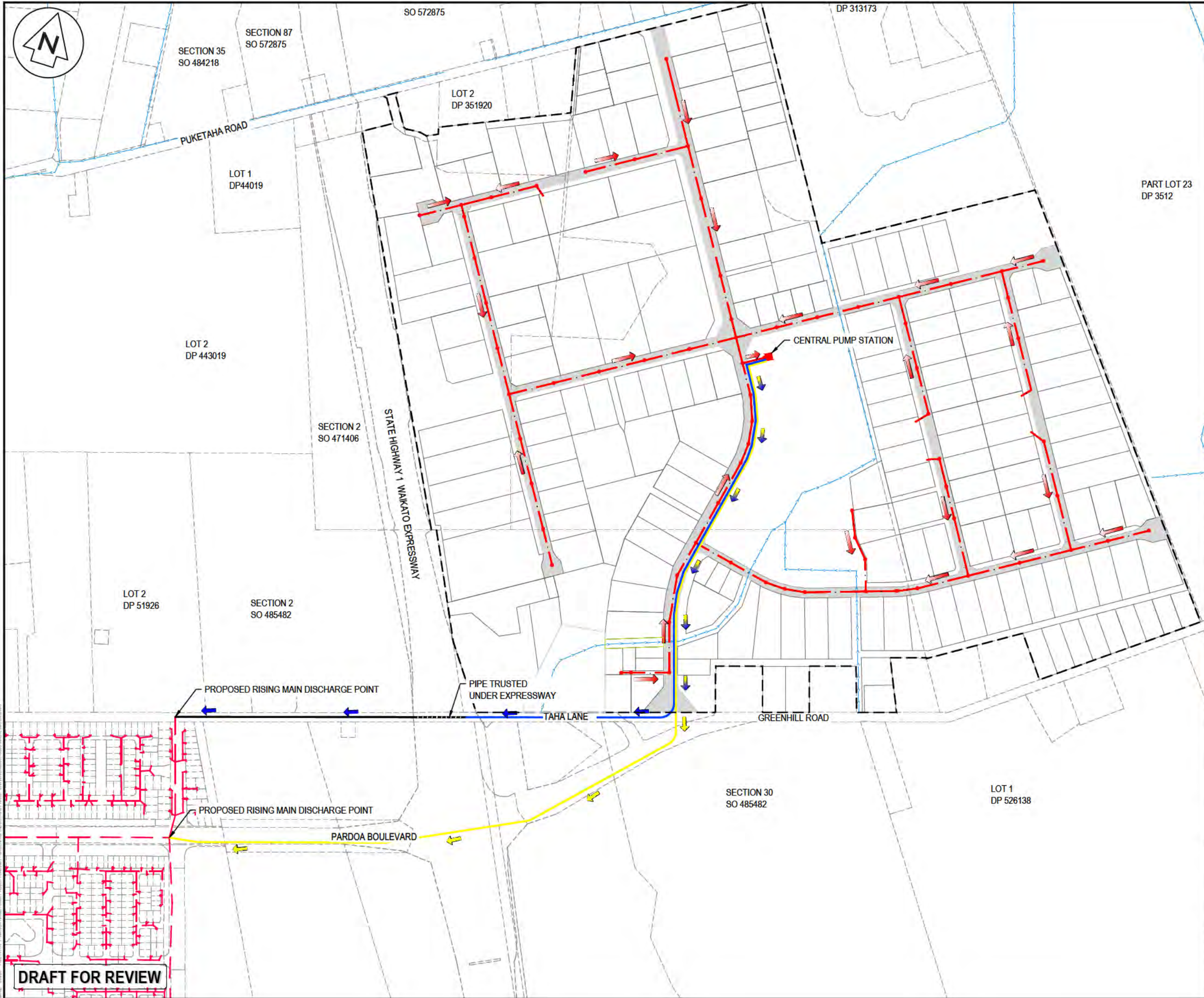
Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
ROADING TYPICAL  
SECTIONS SHEET 2 OF 2**

|             |            |
|-------------|------------|
| Project no. | 408001     |
| Scale       | 1:100 @ A3 |
| Cad file    | C300.DWG   |
| Drawing no. | C340-1     |
| Rev         | A          |

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**LEGEND**

- EX BDY
- PROP LOT BDY
- PROP BDY
- EX WASTEWATER
- PROP WASTEWATER
- PR-WW RISING MAIN OPTION B
- PR-WW RISING MAIN OPTION A
- EX/PROP WWMH
- PR WW LOT CON

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 10/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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Project  
**GREENHILL INDUSTRIAL PARK**  
  
**FOR GREENHILL LTD**

Title  
**PROPOSED WASTEWATER DRAINAGE PLAN**

|             |                            |     |   |
|-------------|----------------------------|-----|---|
| Project no. | 408001                     |     |   |
| Scale       | 1:7500 @ A3                |     |   |
| Cad file    | 408001-C500-WASTEWATER.DWG |     |   |
| Drawing no. | C500                       | Rev | B |

**DRAFT FOR REVIEW**





SECTION 85  
SO 572875

LOT 2  
DP 351920

LOT 1  
DP 515771

LEGEND

- EX BDY
- PROP LOT BDY
- PROP BDY
- EX WASTEWATER
- PROP WASTEWATER
- PR-WW RISING MAIN OPTION B
- PR-WW RISING MAIN OPTION A
- EX/PROP WWMH
- PR WW LOT CON

|     |             |     |         |
|-----|-------------|-----|---------|
| B   | DRAFT       | SPM | 01/2026 |
| A   | DRAFT       | SPM | 07/2025 |
| Rev | Description | By  | Date    |
|     | Survey      |     |         |
|     | Design      | SPM | 07/2025 |
|     | Drawn       | AJP | 10/2025 |
|     | Checked     |     |         |

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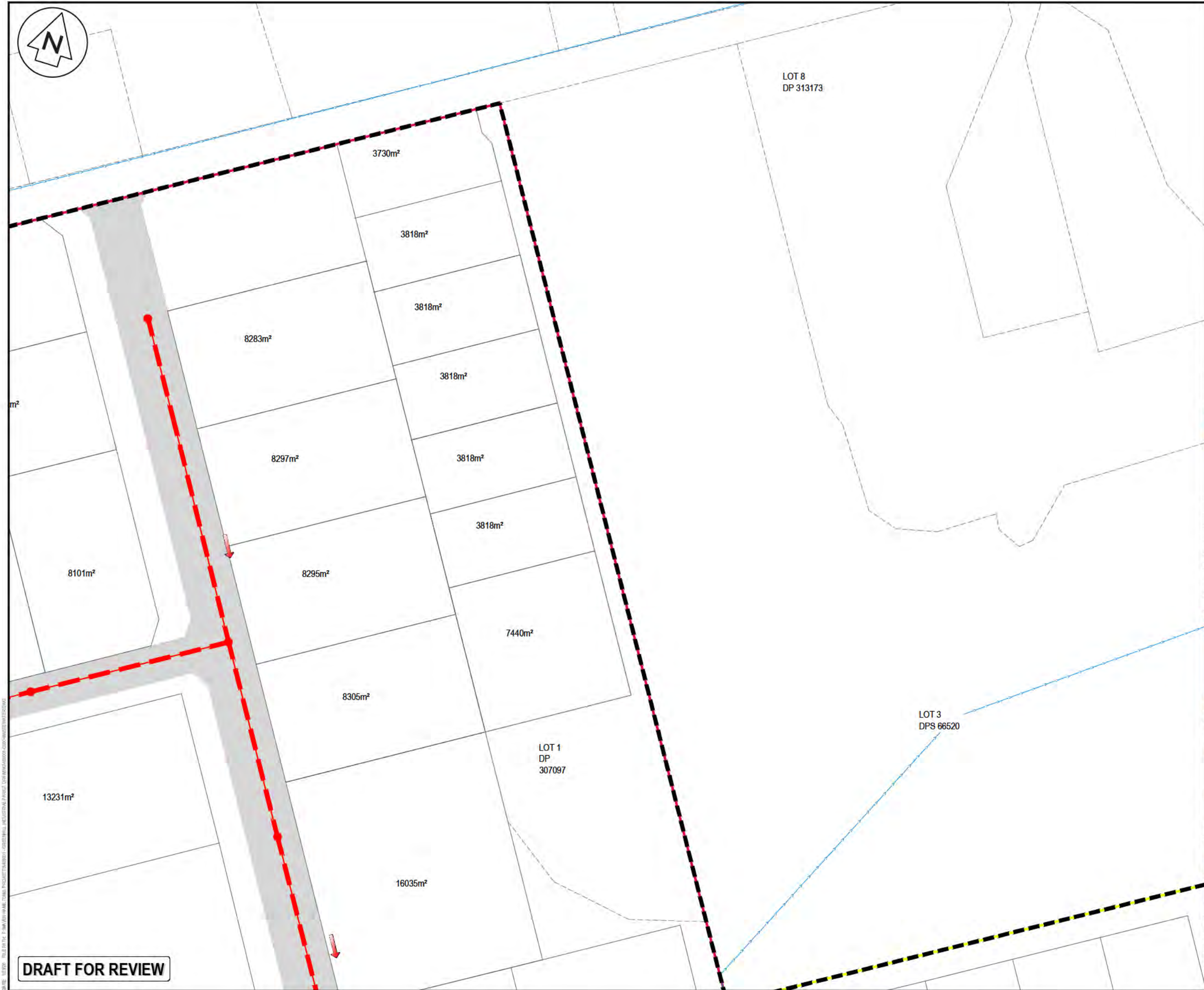
Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
WASTEWATER DRAINAGE  
SHEET 1 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C500-WASTEWATER.DWG |
| Drawing no. | C500-1                     |
| Rev         | B                          |

DRAFT FOR REVIEW





LEGEND

- EX BDY
- PROP LOT BDY
- PROP BDY
- EX WASTEWATER
- PROP WASTEWATER
- PR-WW RISING MAIN OPTION B
- PR-WW RISING MAIN OPTION A
- EX/PROP WWMH
- PR WW LOT CON

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
WASTEWATER DRAINAGE  
SHEET 2 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C500-WASTEWATER.DWG |
| Drawing no. | C500-2                     |
| Rev         | B                          |

DRAFT FOR REVIEW





**DRAFT FOR REVIEW**

|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C500-WASTEWATER.DWG |     |          |
| Drawing no. | C500-3                     | Rev | <b>B</b> |





STATE HIGHWAY 1 WAIKATO EXPRESSWAY

SECTION 2  
SO 471406

DRAFT FOR REVIEW

DATE: 10/2025 FILE PATH: P:\Maven\Waikato\Projects\Greenhill Industrial Park\DWG\WWS004\004-WASTEWATER.DWG

9972m<sup>2</sup>

6640m<sup>2</sup>

8391m<sup>2</sup>

7837m<sup>2</sup>

7512m<sup>2</sup>

LOT 1  
DP 515771

7439m<sup>2</sup>

15507m<sup>2</sup>

7502m<sup>2</sup>

7000m<sup>2</sup>

7070m<sup>2</sup>

19893m<sup>2</sup>

19838m<sup>2</sup>

30089m<sup>2</sup>

5000m<sup>2</sup>

5184m<sup>2</sup>

5184m<sup>2</sup>

11,251m<sup>2</sup>

5000m<sup>2</sup>

13,032m<sup>2</sup>

11,498m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

11,749m<sup>2</sup>

5000m<sup>2</sup>

LEGEND

|  |                               |
|--|-------------------------------|
|  | EX BDY                        |
|  | PROP LOT BDY                  |
|  | PROP BDY                      |
|  | EX WASTEWATER                 |
|  | PROP WASTEWATER               |
|  | PR-WW RISING MAIN<br>OPTION B |
|  | PR-WW RISING MAIN<br>OPTION A |
|  | EX/PROP WWMH                  |
|  | PR WW LOT CON                 |

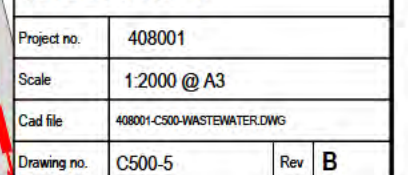
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| A   | DRAFT       | SPM | 07/2025 |
| Rev | Description | By  | Date    |
|     | Survey      |     |         |
|     | Design      | SPM | 07/2025 |
|     | Drawn       | AJP | 10/2025 |
|     | Checked     |     |         |



Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
FOR  
**GREENHILL LTD**  
  
Title  
**PROPOSED  
WASTEWATER DRAINAGE  
SHEET 4 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C500-WASTEWATER.DWG |
| Drawing no. | C500-4                     |
| Rev         | B                          |









LEGEND

- EX BDY
- PROP LOT BDY
- PROP BDY
- EX WASTEWATER
- PROP WASTEWATER
- PR-WW RISING MAIN OPTION B
- PR-WW RISING MAIN OPTION A
- EX/PROP WWMH
- PR WW LOT CON

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         |             | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |



Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
WASTEWATER DRAINAGE  
SHEET 6 OF 9**

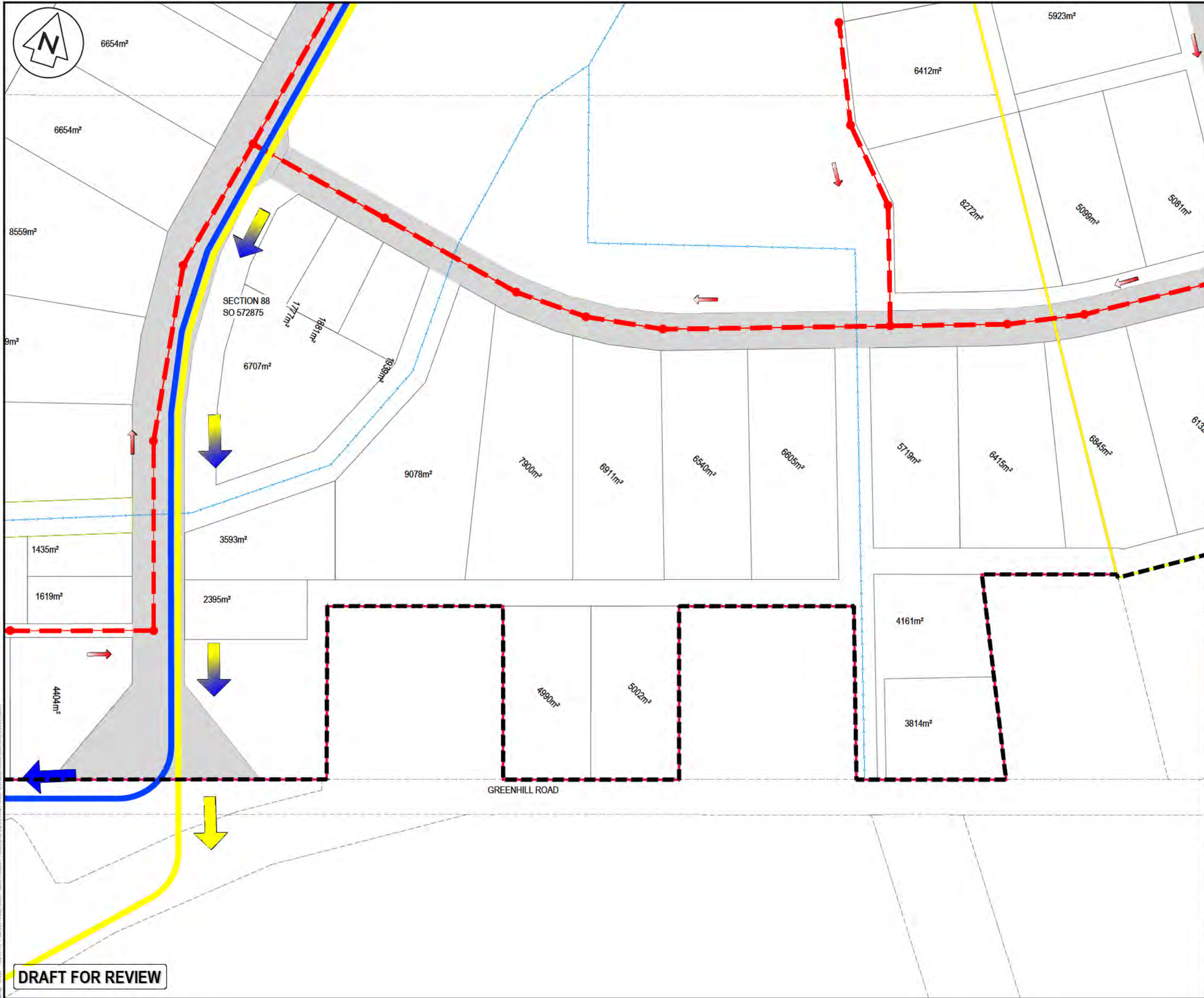
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| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C500-WASTEWATER.DWG |
| Drawing no. | C500-6                     |
| Rev         | B                          |





|             |                            |     |          |
|-------------|----------------------------|-----|----------|
| Project no. | 408001                     |     |          |
| Scale       | 1:2000 @ A3                |     |          |
| Cad file    | 408001-C500-WASTEWATER.DWG |     |          |
| Drawing no. | C500-7                     | Rev | <b>B</b> |





- LEGEND
- EX BDY
  - PROP LOT BDY
  - PROP BDY
  - EX WASTEWATER
  - PROP WASTEWATER
  - PR-WW RISING MAIN OPTION B
  - PR-WW RISING MAIN OPTION A
  - EX/PROP WWMH
  - PR WW LOT CON

|     |             |     |         |
|-----|-------------|-----|---------|
| B   | DRAFT       | SPM | 01/2026 |
| A   | DRAFT       | SPM | 07/2025 |
| Rev | Description | By  | Date    |
|     | Survey      |     |         |
|     | Design      | SPM | 07/2025 |
|     | Drawn       | AJP | 10/2025 |
|     | Checked     |     |         |

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Project  
**GREENHILL INDUSTRIAL PARK**  
  
FOR  
**GREENHILL LTD**

Title  
**PROPOSED WASTEWATER DRAINAGE SHEET 8 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C500-WASTEWATER.DWG |
| Drawing no. | C500-8                     |
| Rev         | B                          |





| LEGEND |                   |  |  |
|--------|-------------------|--|--|
| ---    | EX BDY            |  |  |
| ---    | PROP LOT BDY      |  |  |
| ---    | PROP BDY          |  |  |
| ---    | EX WASTEWATER     |  |  |
| ---    | PROP WASTEWATER   |  |  |
| ---    | PR-WW RISING MAIN |  |  |
| ---    | OPTION B          |  |  |
| ---    | PR-WW RISING MAIN |  |  |
| ---    | OPTION A          |  |  |
| ---    | EX/PROP WWMH      |  |  |
| ---    | PR WW LOT CON     |  |  |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked |             |     |         |

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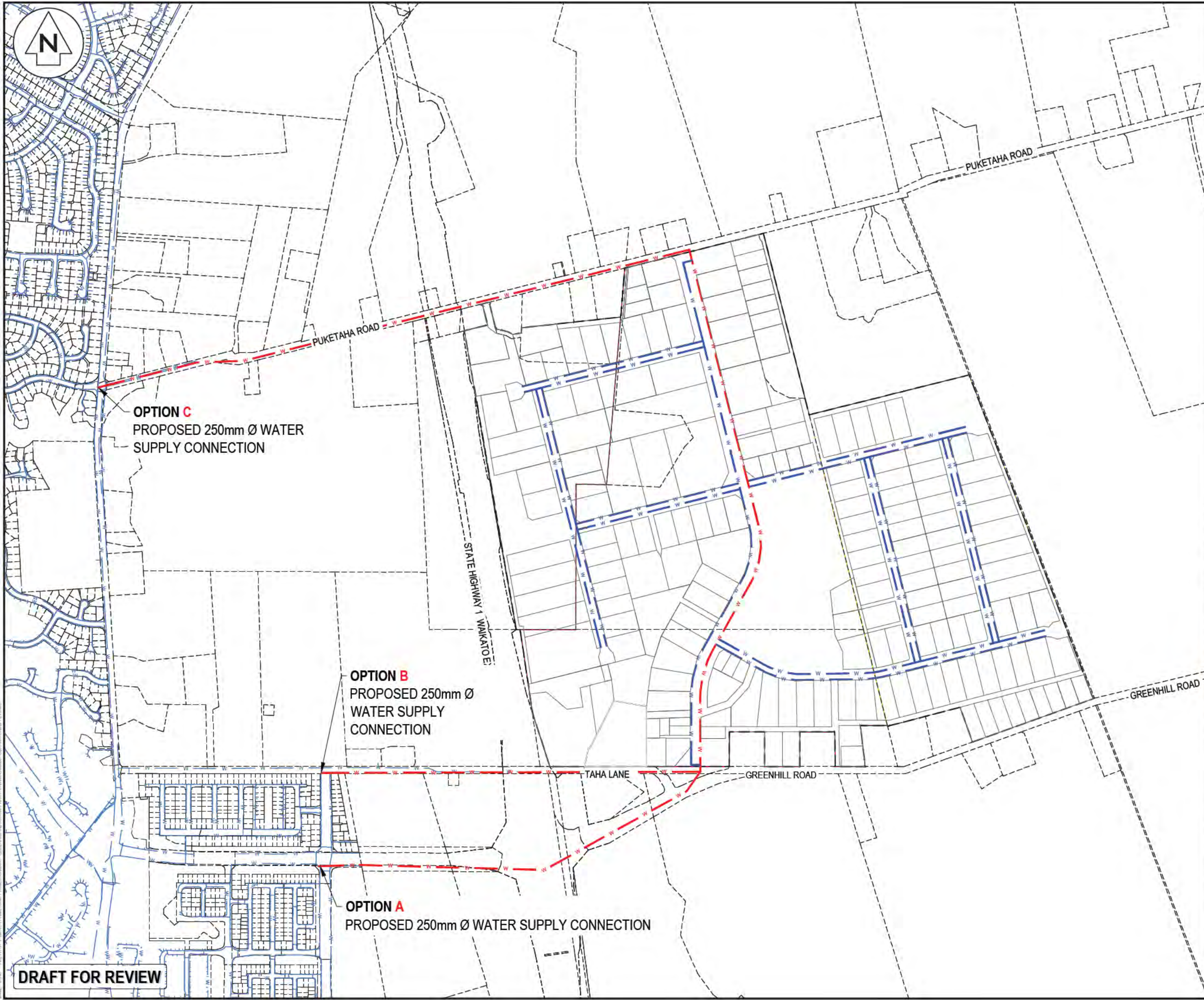
Project  
**GREENHILL  
INDUSTRIAL PARK**  
  
**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
WASTEWATER DRAINAGE  
SHEET 9 OF 9**

|             |                            |
|-------------|----------------------------|
| Project no. | 408001                     |
| Scale       | 1:2000 @ A3                |
| Cad file    | 408001-C500-WASTEWATER.DWG |
| Drawing no. | C500-9                     |
| Rev         | B                          |

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LEGEND

|               |                          |
|---------------|--------------------------|
| —             | EX BDY                   |
| - - -         | PROP BDY                 |
| — W —         | EX WATERMAIN             |
| - - - W - - - | PROP WATERMAIN           |
| - - - W - - - | PROP PRINCIPAL WATERMAIN |
| - - - W - - - | PR WATER PRIVATE         |
| ⊞             | EX/PROP HYDRANT          |
| ⊞             | EX/PROP METER            |
| ⊞             | EX SLUICE VALVE          |
| ⊞             | EX PEET VALVE            |
| ⊞             | PROP SLUICE VALVE        |
| ⊞             | PROP PEET VALVE          |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 10/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 10/2025 |
| Drawn   | AJP         |     | 10/2025 |
| Checked | SPM         |     | 10/2025 |



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|-----------------------------------------------------|-----------------------------|-----|---|
| Project<br><b>GREENHILL INDUSTRIAL PARK</b>         |                             |     |   |
| FOR<br><b>GREENHILL LTD</b>                         |                             |     |   |
| Title<br><b>PROPOSED WATER SUPPLY OVERVIEW PLAN</b> |                             |     |   |
| Project no.                                         | 408001                      |     |   |
| Scale                                               | 1:10000 @ A3                |     |   |
| Cad file                                            | 408001-C600-WATERSUPPLY.DWG |     |   |
| Drawing no.                                         | C600                        | Rev | B |

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SECTION 85  
SO 572875

LOT 2  
DP 351920

LOT 1  
DP 515771

13,615m<sup>2</sup>

10,402m<sup>2</sup>

16,006m<sup>2</sup>

5210m<sup>2</sup>

7084m<sup>2</sup>

7072m<sup>2</sup>

7689m<sup>2</sup>

7183m<sup>2</sup>

7015m<sup>2</sup>

13671m<sup>2</sup>

6877m<sup>2</sup>

6897m<sup>2</sup>

4568m<sup>2</sup>

4568m<sup>2</sup>

4081m<sup>2</sup>

6698m<sup>2</sup>

#### LEGEND

|  |                          |
|--|--------------------------|
|  | EX BDY                   |
|  | PROP BDY                 |
|  | EX WATERMAIN             |
|  | PROP WATERMAIN           |
|  | PROP PRINCIPAL WATERMAIN |
|  | PR WATER PRIVATE         |
|  | EX/PROP HYDRANT          |
|  | EX/PROP METER            |
|  | EX SLUICE VALVE          |
|  | EX PEET VALVE            |
|  | PROP SLUICE VALVE        |
|  | PROP PEET VALVE          |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
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| Drawn   | AJP         |     | 07/2025 |
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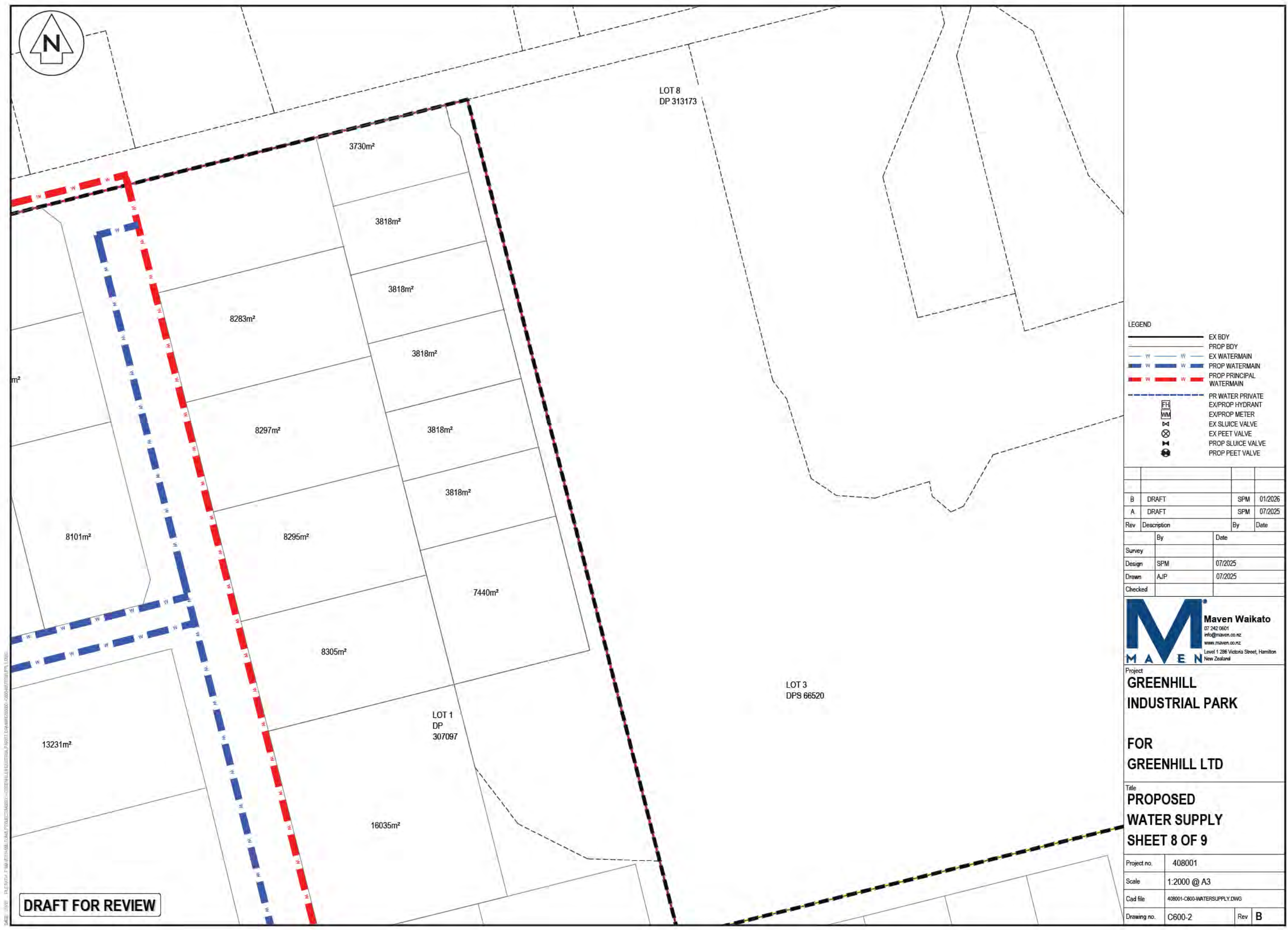
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|-------------|------------------------------------|-----|---|
| Project     | GREENHILL INDUSTRIAL PARK          |     |   |
|             | FOR GREENHILL LTD                  |     |   |
| Title       | PROPOSED WATER SUPPLY SHEET 8 OF 9 |     |   |
| Project no. | 408001                             |     |   |
| Scale       | 1:2000 @ A3                        |     |   |
| Cad file    | 408001-C600-WATERSUPPLY.DWG        |     |   |
| Drawing no. | C600-1                             | Rev | B |

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DATE: 10/07/2025 FILE: D:\M\GREENHILL\PROJECTS\GREENHILL INDUSTRIAL PARK\DWG\C600-WATERSUPPLY.DWG





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LEGEND

|  |                          |
|--|--------------------------|
|  | EX BDY                   |
|  | PROP BDY                 |
|  | EX WATERMAIN             |
|  | PROP WATERMAIN           |
|  | PROP PRINCIPAL WATERMAIN |
|  | PR WATER PRIVATE         |
|  | EX/PROP HYDRANT          |
|  | EX/PROP METER            |
|  | EX SLUICE VALVE          |
|  | EX PEET VALVE            |
|  | PROP SLUICE VALVE        |
|  | PROP PEET VALVE          |

|         |             |         |         |
|---------|-------------|---------|---------|
|         |             |         |         |
| B       | DRAFT       | SPM     | 01/2026 |
| A       | DRAFT       | SPM     | 07/2025 |
| Rev     | Description | By      | Date    |
|         | By          | Date    |         |
| Survey  |             |         |         |
| Design  | SPM         | 07/2025 |         |
| Drawn   | AJP         | 07/2025 |         |
| Checked |             |         |         |



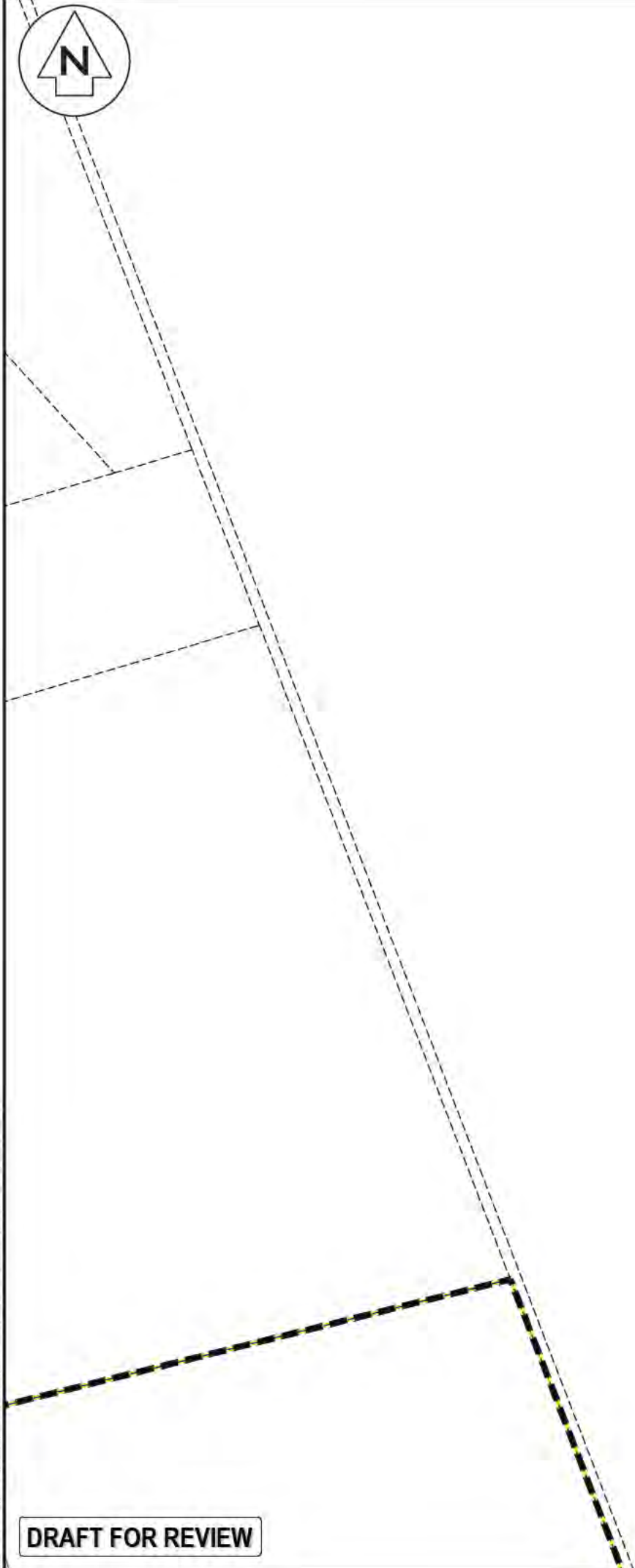
Project  
**GREENHILL  
INDUSTRIAL PARK**

**FOR  
GREENHILL LTD**

Title  
**PROPOSED  
WATER SUPPLY  
SHEET 8 OF 9**

|             |                             |     |          |
|-------------|-----------------------------|-----|----------|
| Project no. | 408001                      |     |          |
| Scale       | 1:2000 @ A3                 |     |          |
| Cad file    | 408001-C600-WATERSUPPLY.DWG |     |          |
| Drawing no. | C600-2                      | Rev | <b>B</b> |





PART LOT 23  
DP 3512

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| LEGEND |                          |
|--------|--------------------------|
|        | EX BDY                   |
|        | PROP BDY                 |
|        | EX WATERMAIN             |
|        | PROP WATERMAIN           |
|        | PROP PRINCIPAL WATERMAIN |
|        | PR WATER PRIVATE         |
|        | EX/PROP HYDRANT          |
|        | EX/PROP METER            |
|        | EX SLUICE VALVE          |
|        | EX PEET VALVE            |
|        | PROP SLUICE VALVE        |
|        | PROP PEET VALVE          |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
| Checked |             |     |         |



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Project  
**GREENHILL  
INDUSTRIAL PARK**

FOR  
**GREENHILL LTD**

Title  
**PROPOSED  
WATER SUPPLY  
SHEET 8 OF 9**

|             |                             |     |          |
|-------------|-----------------------------|-----|----------|
| Project no. | 408001                      |     |          |
| Scale       | 1:2000 @ A3                 |     |          |
| Cad file    | 408001-C600-WATERSUPPLY.DWG |     |          |
| Drawing no. | C600-3                      | Rev | <b>B</b> |





DATE: 1/1/25 FILE: D:\M\GREENHILL\INDUSTRIAL PARK\DWG\C600-WATERSUPPLY.DWG

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STATE HIGHWAY 1 WAIKATO EXPRESSWAY

9972m<sup>2</sup>

6640m<sup>2</sup>

8391m<sup>2</sup>

7837m<sup>2</sup>

7512m<sup>2</sup>

LOT 1  
DP 515771

7439m<sup>2</sup>

15507m<sup>2</sup>

7502m<sup>2</sup>

7000m<sup>2</sup>

7070m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

5000m<sup>2</sup>

19893m<sup>2</sup>

19838m<sup>2</sup>

11,251m<sup>2</sup>

11,498m<sup>2</sup>

11,749m<sup>2</sup>

5184m<sup>2</sup>

5184m<sup>2</sup>

13,032m<sup>2</sup>

30089m<sup>2</sup>

#### LEGEND

|  |                          |
|--|--------------------------|
|  | EX BDY                   |
|  | PROP BDY                 |
|  | EX WATERMAIN             |
|  | PROP WATERMAIN           |
|  | PROP PRINCIPAL WATERMAIN |
|  | PR WATER PRIVATE         |
|  | EX/PROP HYDRANT          |
|  | EX/PROP METER            |
|  | EX SLUICE VALVE          |
|  | EX PEET VALVE            |
|  | PROP SLUICE VALVE        |
|  | PROP PEET VALVE          |

|         |             |     |         |
|---------|-------------|-----|---------|
| Rev     | Description | By  | Date    |
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
| Checked |             |     |         |

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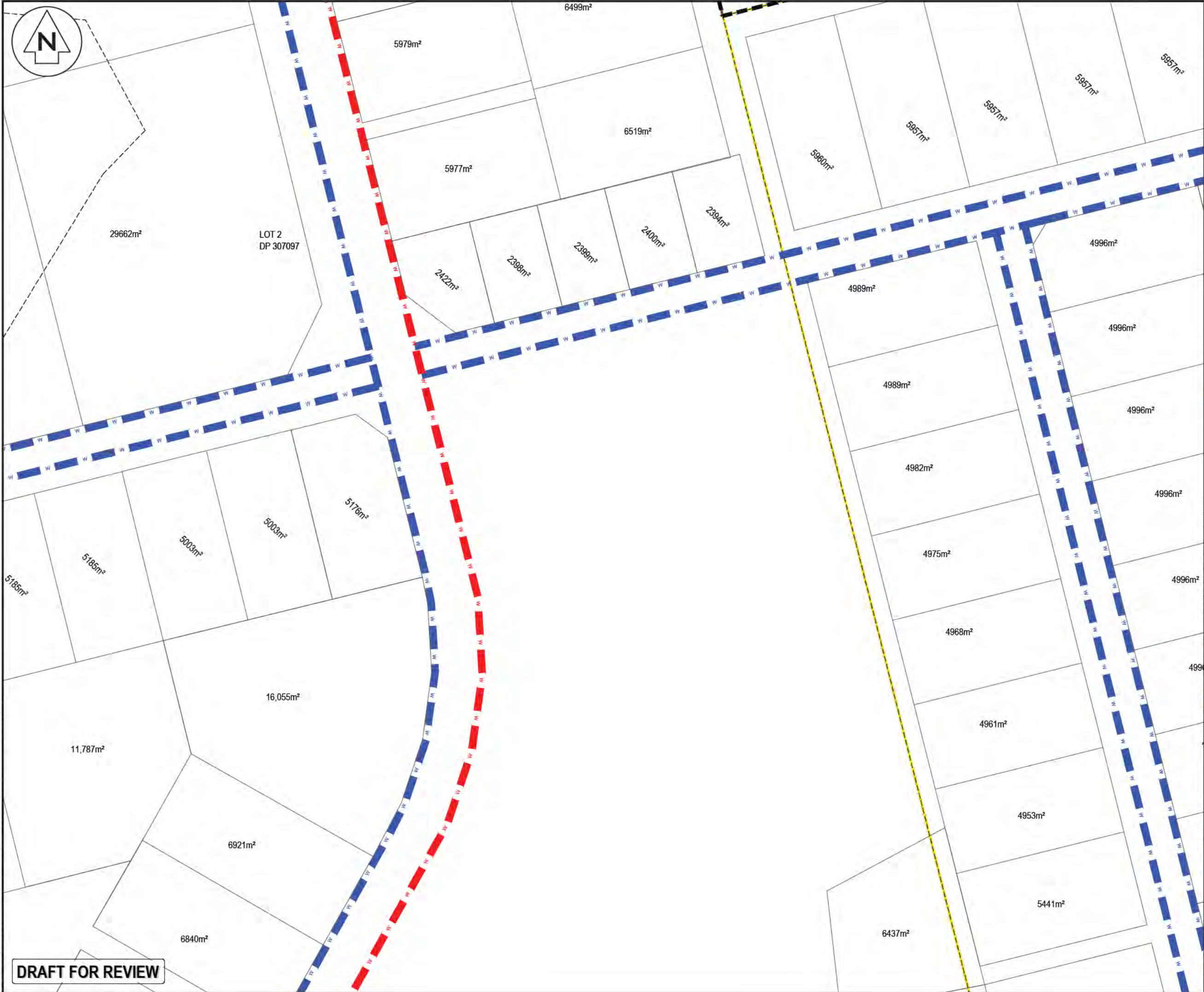
Project  
**GREENHILL  
INDUSTRIAL PARK**

FOR  
**GREENHILL LTD**

Title  
**PROPOSED  
WATER SUPPLY  
SHEET 8 OF 9**

|             |                             |     |   |
|-------------|-----------------------------|-----|---|
| Project no. | 408001                      |     |   |
| Scale       | 1:2000 @ A3                 |     |   |
| Cad file    | 408001-C600-WATERSUPPLY.DWG |     |   |
| Drawing no. | C600-4                      | Rev | B |





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| LEGEND |                   |  |                          |
|--------|-------------------|--|--------------------------|
|        | EX BDY            |  | EX WATERMAIN             |
|        | PROP BDY          |  | PROP WATERMAIN           |
|        | EX WATERMAIN      |  | PROP WATERMAIN           |
|        | PROP WATERMAIN    |  | PROP PRINCIPAL WATERMAIN |
|        | PR WATER PRIVATE  |  | PR WATER PRIVATE         |
|        | EX/PROP HYDRANT   |  | EX/PROP HYDRANT          |
|        | EX/PROP METER     |  | EX/PROP METER            |
|        | EX SLUICE VALVE   |  | EX SLUICE VALVE          |
|        | EX PEET VALVE     |  | EX PEET VALVE            |
|        | PROP SLUICE VALVE |  | PROP SLUICE VALVE        |
|        | PROP PEET VALVE   |  | PROP PEET VALVE          |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
| Checked |             |     |         |



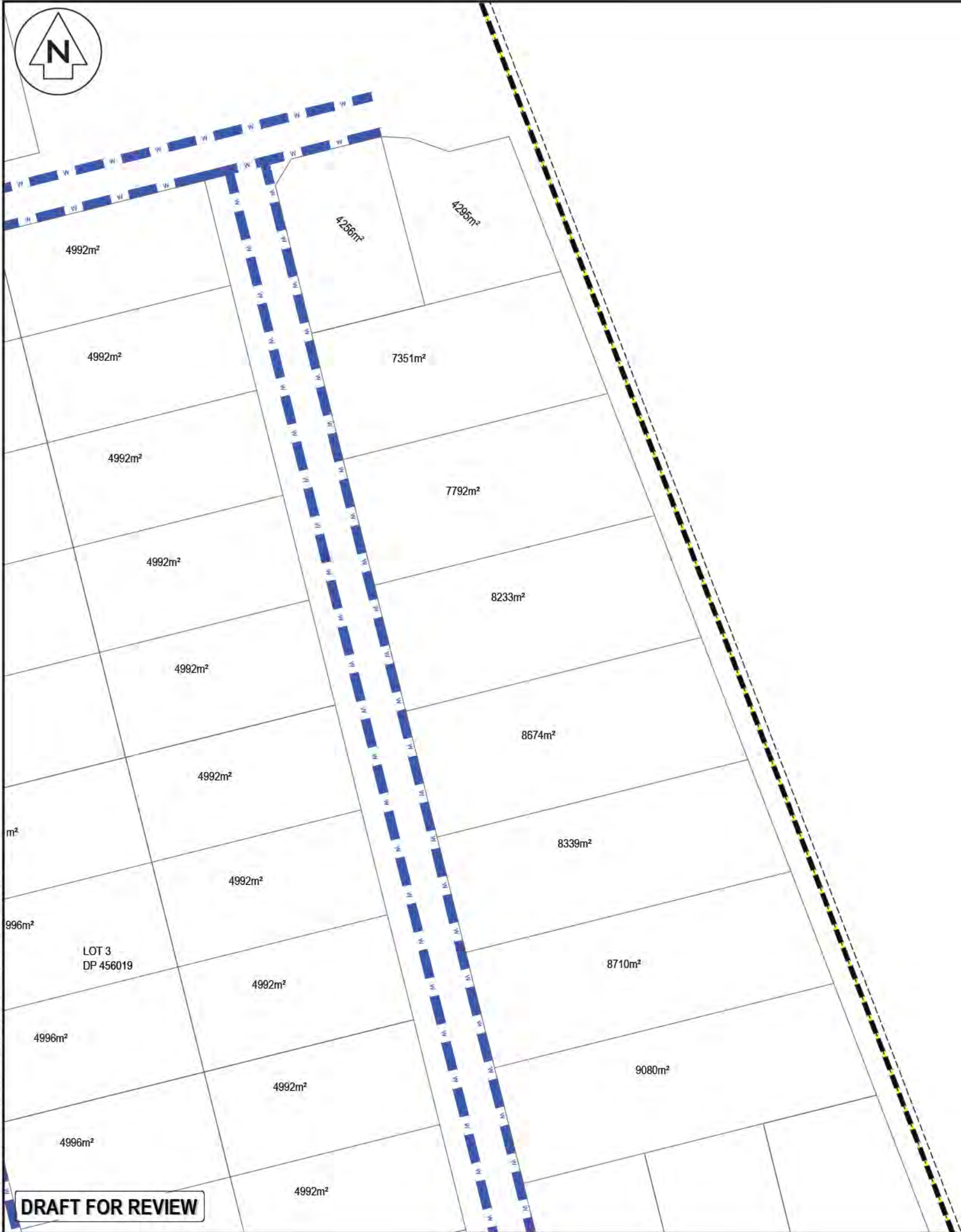
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Project  
**GREENHILL INDUSTRIAL PARK**  
  
**FOR GREENHILL LTD**

Title  
**PROPOSED WATER SUPPLY SHEET 8 OF 9**

|             |                             |     |          |
|-------------|-----------------------------|-----|----------|
| Project no. | 408001                      |     |          |
| Scale       | 1:2000 @ A3                 |     |          |
| Cad file    | 408001-C600-WATERSUPPLY.DWG |     |          |
| Drawing no. | C600-5                      | Rev | <b>B</b> |





| LEGEND |                          |
|--------|--------------------------|
|        | EX BDY                   |
|        | PROP BDY                 |
|        | EX WATERMAIN             |
|        | PROP WATERMAIN           |
|        | PROP PRINCIPAL WATERMAIN |
|        | PR WATER PRIVATE         |
|        | EX/PROP HYDRANT          |
|        | EX/PROP METER            |
|        | EX SLUICE VALVE          |
|        | EX PEET VALVE            |
|        | PROP SLUICE VALVE        |
|        | PROP PEET VALVE          |

|         |             |     |         |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
|         | Survey      |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
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FOR  
**GREENHILL LTD**

Title  
**PROPOSED WATER SUPPLY SHEET 8 OF 9**

|             |                             |     |          |
|-------------|-----------------------------|-----|----------|
| Project no. | 408001                      |     |          |
| Scale       | 1:2000 @ A3                 |     |          |
| Cad file    | 408001-C600-WATERSUPPLY.DWG |     |          |
| Drawing no. | C600-6                      | Rev | <b>B</b> |





11,658m<sup>2</sup>

17,841m<sup>2</sup>

6006m<sup>2</sup>

6797m<sup>2</sup>

26,489m<sup>2</sup>

919m<sup>2</sup>

14,146m<sup>2</sup>

706

| LEGEND |                          |  |                   |
|--------|--------------------------|--|-------------------|
|        | EX BDY                   |  | PR WATER PRIVATE  |
|        | PROP BDY                 |  | EX/PROP HYDRANT   |
|        | EX WATERMAIN             |  | EX/PROP METER     |
|        | PROP WATERMAIN           |  | EX SLUICE VALVE   |
|        | PROP PRINCIPAL WATERMAIN |  | EX PEET VALVE     |
|        |                          |  | PROP SLUICE VALVE |
|        |                          |  | PROP PEET VALVE   |

7027m<sup>2</sup>

6494m<sup>2</sup>

12,765m<sup>2</sup>

29,465m<sup>2</sup>

25,653m<sup>2</sup>

2120m<sup>2</sup>

4481m<sup>2</sup>

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Project  
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FOR  
**GREENHILL LTD**

Title  
**PROPOSED WATER SUPPLY SHEET 8 OF 9**

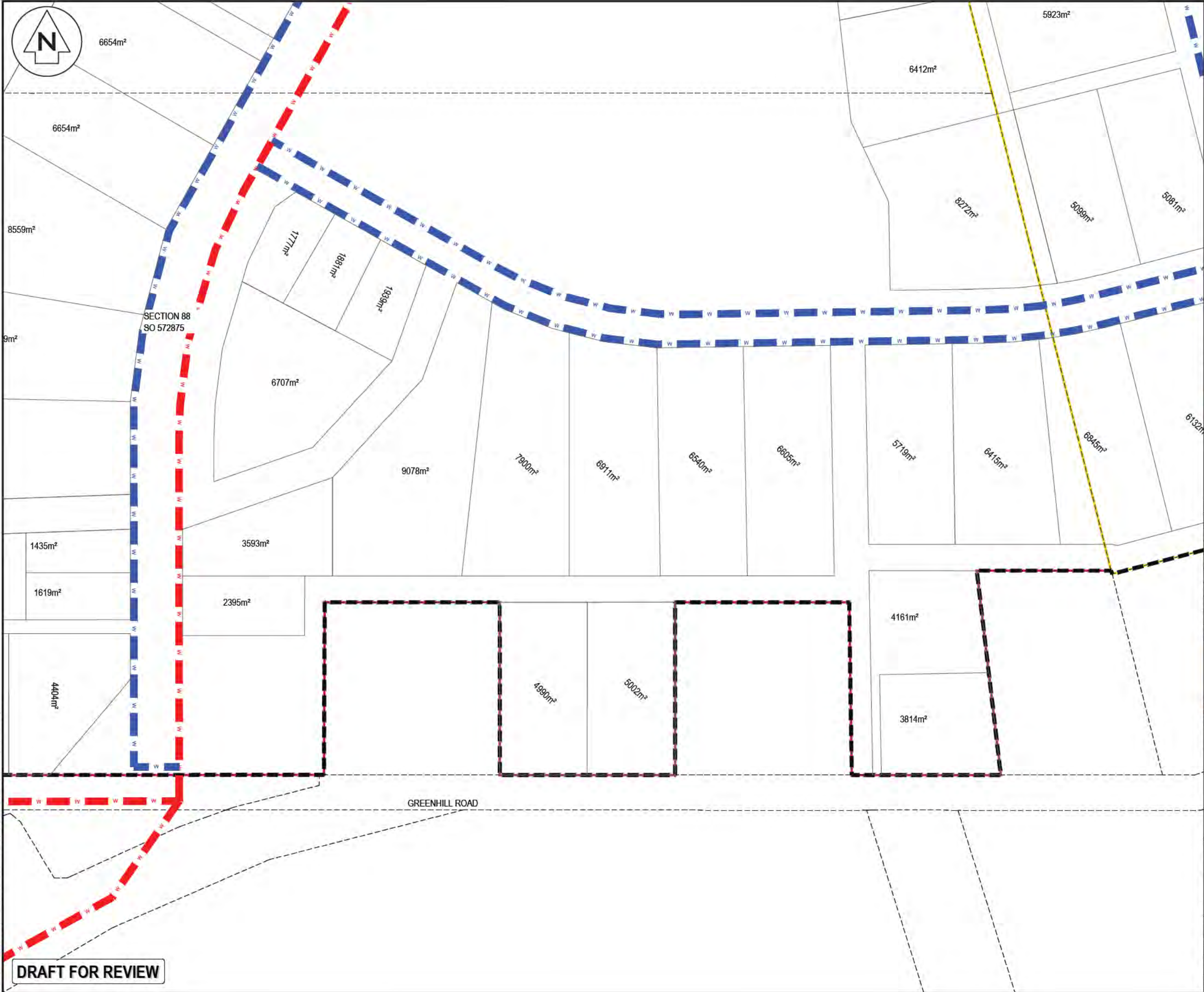
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| Scale       | 1:2000 @ A3                 |
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| Drawing no. | C600-7                      |
| Rev         | B                           |

EXISTING WS

TAHA LANE

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| LEGEND |                          |
|--------|--------------------------|
|        | EX BDY                   |
|        | PROP BDY                 |
|        | EX WATERMAIN             |
|        | PROP WATERMAIN           |
|        | PROP PRINCIPAL WATERMAIN |
|        | PR WATER PRIVATE         |
|        | EX/PROP HYDRANT          |
|        | EX/PROP METER            |
|        | EX SLUICE VALVE          |
|        | EX PEET VALVE            |
|        | PROP SLUICE VALVE        |
|        | PROP PEET VALVE          |

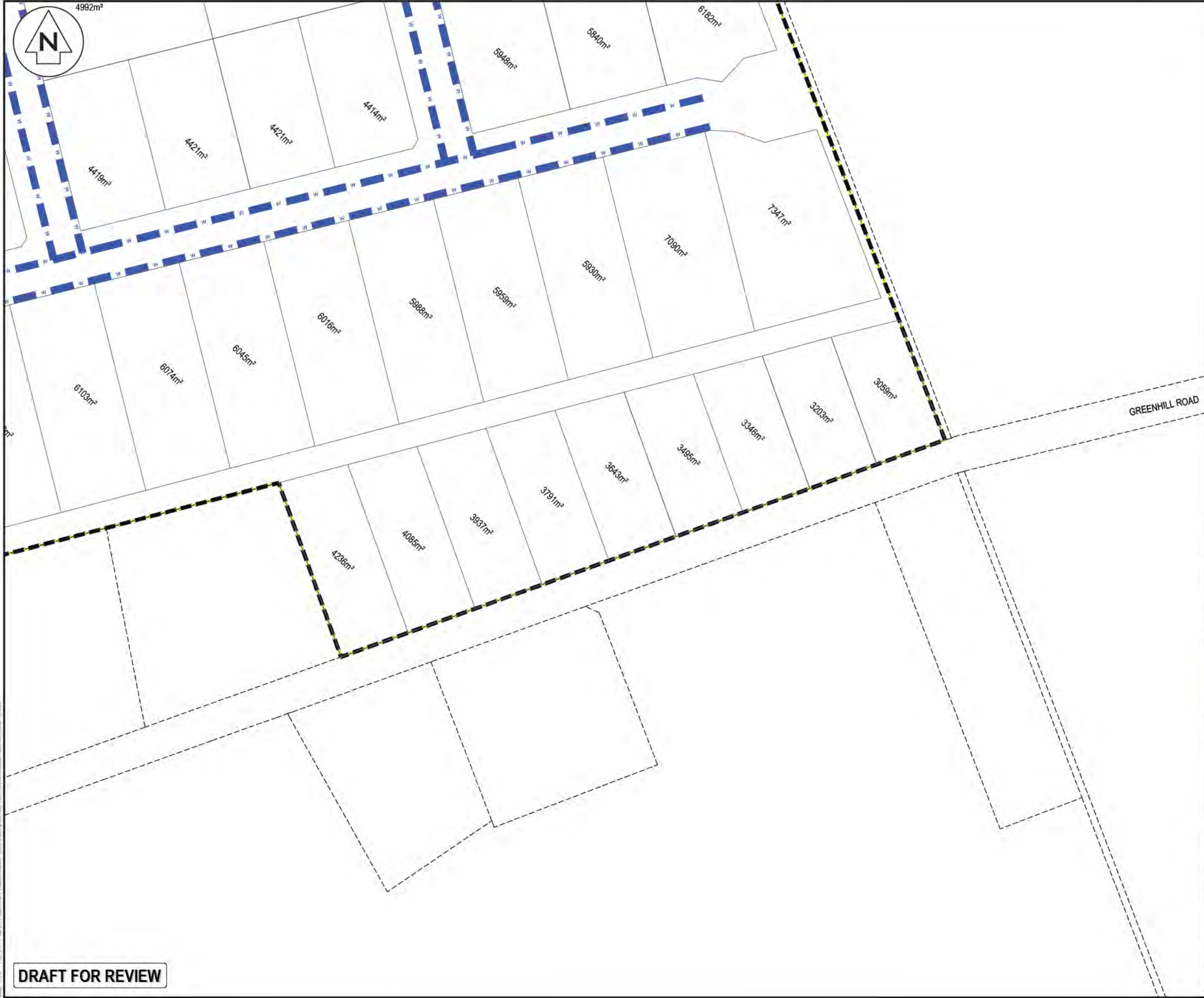
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| A       | DRAFT       | SPM | 07/2025 |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
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|----------------------------------------------------|-----------------------------|-----|----------|
| Project<br><b>GREENHILL INDUSTRIAL PARK</b>        |                             |     |          |
| FOR<br><b>GREENHILL LTD</b>                        |                             |     |          |
| Title<br><b>PROPOSED WATER SUPPLY SHEET 8 OF 9</b> |                             |     |          |
| Project no.                                        | 408001                      |     |          |
| Scale                                              | 1:2000 @ A3                 |     |          |
| Cad file                                           | 408001-C600-WATERSUPPLY.DWG |     |          |
| Drawing no.                                        | C600-8                      | Rev | <b>B</b> |





| LEGEND                   |                          |
|--------------------------|--------------------------|
| EX BDY                   | EX BDY                   |
| PROP BDY                 | PROP BDY                 |
| EX WATERMAIN             | EX WATERMAIN             |
| PROP WATERMAIN           | PROP WATERMAIN           |
| PROP PRINCIPAL WATERMAIN | PROP PRINCIPAL WATERMAIN |
| PR WATER PRIVATE         | PR WATER PRIVATE         |
| EX/PROP HYDRANT          | EX/PROP HYDRANT          |
| EX/PROP METER            | EX/PROP METER            |
| EX SLUICE VALVE          | EX SLUICE VALVE          |
| EX PEET VALVE            | EX PEET VALVE            |
| PROP SLUICE VALVE        | PROP SLUICE VALVE        |
| PROP PEET VALVE          | PROP PEET VALVE          |

| Rev     | Description | By  | Date    |
|---------|-------------|-----|---------|
| B       | DRAFT       | SPM | 01/2026 |
| A       | DRAFT       | SPM | 07/2025 |
| Rev     | Description | By  | Date    |
| Survey  |             |     |         |
| Design  | SPM         |     | 07/2025 |
| Drawn   | AJP         |     | 07/2025 |
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|-------------|-----------------------------|-------------------------------------------|----------|
| Project     |                             | <b>GREENHILL INDUSTRIAL PARK</b>          |          |
|             |                             | <b>FOR GREENHILL LTD</b>                  |          |
| Title       |                             | <b>PROPOSED WATER SUPPLY SHEET 9 OF 9</b> |          |
| Project no. | 408001                      |                                           |          |
| Scale       | 1:2000 @ A3                 |                                           |          |
| Cad file    | 408001-C600-WATERSUPPLY.DWG |                                           |          |
| Drawing no. | C600-9                      | Rev                                       | <b>B</b> |

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## Appendix C – Wastewater Calculations



|                                                                                                                                                                                                                                                                                                                                  |      |                  |         |                      |          |               |          |          |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------|---------|----------------------|----------|---------------|----------|----------|-------|
| <div><div>M</div><div>MAVEN</div></div>                                                                                                                                                                                                                                                                                          |      | MAVEN ASSOCIATES |         | Job Number<br>483001 |          | Sheet<br>2    |          | Rev<br>A |       |
| Job Title<br>Greenhill Industrial Park                                                                                                                                                                                                                                                                                           |      | Author<br>SPA    |         | Date<br>7-Oct        |          | Checked<br>TH |          |          |       |
| Calc Title<br>Wastewater Capacity Check                                                                                                                                                                                                                                                                                          |      |                  |         |                      |          |               |          |          |       |
| Population Equivalent: = 45 People/hectare ( Table 5-3 RITS)<br>Surface Water Ingress Allowance = 16500 Litres/hectare per day<br>Infiltration Allowance = 2250 Litres/hectare per day<br>PWWF = 6.9 Peaking Factir (Table 5-2 RITS)<br>Domestic Average Daily Flow = 200 Litres/persopn/day<br>ks for uPVC = 0.6 Table 5-4 RITS |      |                  |         |                      |          |               |          |          |       |
| Section                                                                                                                                                                                                                                                                                                                          | Pipe | Area             | PD Flow | PWW Flow             | Pipe dia | Gradient      | Capacity | Velocity | Check |
| Letter                                                                                                                                                                                                                                                                                                                           | size | ha               | l/s     | l/s                  | m        | %             | l/s      | m/s      |       |
| K1 - E4                                                                                                                                                                                                                                                                                                                          | 225  | 3.675            | 2.74    | 3.44                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| E6 - E4                                                                                                                                                                                                                                                                                                                          | 225  | 3.98             | 2.96    | 3.72                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| E4 - D5                                                                                                                                                                                                                                                                                                                          | 225  | 14.535           | 10.83   | 13.60                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| D9 - D5                                                                                                                                                                                                                                                                                                                          | 225  | 17.43            | 12.98   | 16.31                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| D5 - C1                                                                                                                                                                                                                                                                                                                          | 300  | 45.335           | 33.77   | 42.42                | 0.3      | 0.33          | 64.27    | 0.91     | OK    |
|                                                                                                                                                                                                                                                                                                                                  |      |                  |         |                      |          |               |          |          |       |
| Section                                                                                                                                                                                                                                                                                                                          | Pipe | Area             | PD Flow | PWW Flow             | Pipe dia | Gradient      | Capacity | Velocity | Check |
| Letter                                                                                                                                                                                                                                                                                                                           | size | ha               | l/s     | l/s                  | m        | %             | l/s      | m/s      |       |
| J1 - G1                                                                                                                                                                                                                                                                                                                          | 225  | 1.955            | 1.46    | 1.83                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| G2 - G1                                                                                                                                                                                                                                                                                                                          | 225  | 1.935            | 1.44    | 1.81                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| G1 - F4                                                                                                                                                                                                                                                                                                                          | 225  | 7.555            | 5.63    | 7.07                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| F6 - F5                                                                                                                                                                                                                                                                                                                          | 225  | 1.335            | 0.99    | 1.25                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| F5 - F4                                                                                                                                                                                                                                                                                                                          | 225  | 2.635            | 1.96    | 2.47                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| F4 - C1                                                                                                                                                                                                                                                                                                                          | 225  | 22.76            | 16.95   | 21.30                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
|                                                                                                                                                                                                                                                                                                                                  |      |                  |         |                      |          |               |          |          |       |
| Section                                                                                                                                                                                                                                                                                                                          | Pipe | Area             | PD Flow | PWW Flow             | Pipe dia | Gradient      | Capacity | Velocity | Check |
| Letter                                                                                                                                                                                                                                                                                                                           | size | ha               | l/s     | l/s                  | m        | %             | l/s      | m/s      |       |
| M3 - C7                                                                                                                                                                                                                                                                                                                          | 225  | 6.005            | 4.47    | 5.62                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| L3 - C5                                                                                                                                                                                                                                                                                                                          | 225  | 5.985            | 4.46    | 5.60                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| C8 - C7                                                                                                                                                                                                                                                                                                                          | 225  | 0.855            | 0.64    | 0.80                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| C7 - C5                                                                                                                                                                                                                                                                                                                          | 225  | 14.035           | 10.45   | 13.13                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| C5 - C1                                                                                                                                                                                                                                                                                                                          | 225  | 15.825           | 11.79   | 14.81                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| C1 -A2                                                                                                                                                                                                                                                                                                                           | 375  | 83.92            | 62.50   | 78.53                | 0.375    | 0.33          | 115.62   | 1.05     | OK    |
|                                                                                                                                                                                                                                                                                                                                  |      |                  |         |                      |          |               |          |          |       |
| Section                                                                                                                                                                                                                                                                                                                          | Pipe | Area             | PD Flow | PWW Flow             | Pipe dia | Gradient      | Capacity | Velocity | Check |
| Letter                                                                                                                                                                                                                                                                                                                           | size | ha               | l/s     | l/s                  | m        | 0.375         | l/s      | m/s      |       |
| N2 - B10                                                                                                                                                                                                                                                                                                                         | 225  | 4.615            | 3.44    | 4.32                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| O3 - B8                                                                                                                                                                                                                                                                                                                          | 225  | 5.125            | 3.82    | 4.80                 | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| B12 - B10                                                                                                                                                                                                                                                                                                                        | 225  | 3.84             | 2.86    | 3.59                 | 0.225    | 0.50          | 37.06    | 0.93     | OK    |
| B10 - B8                                                                                                                                                                                                                                                                                                                         | 225  | 13.235           | 9.86    | 12.38                | 0.225    | 0.50          | 37.06    | 0.93     | OK    |
| B8 - B5                                                                                                                                                                                                                                                                                                                          | 225  | 23.33            | 17.38   | 21.83                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| B5 - B2                                                                                                                                                                                                                                                                                                                          | 225  | 27.035           | 20.14   | 25.30                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |
| B2 - A8                                                                                                                                                                                                                                                                                                                          | 225  | 27.595           | 20.55   | 25.82                | 0.225    | 0.33          | 30.10    | 0.76     | OK    |



| <b>Section</b> | <b>Pipe</b> | <b>Area</b> | <b>PD Flow</b> | <b>PWW Flow</b> | <b>Pipe dia</b> | <b>Gradient</b> | <b>Capacity</b> | <b>Velocity</b> | <b>Check</b> |
|----------------|-------------|-------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|
| <i>Letter</i>  | <i>Size</i> | <i>ha</i>   | <i>l/s</i>     | <i>l/s</i>      | <i>m</i>        | <i>%</i>        | <i>l/s</i>      | <i>m/s</i>      |              |
| A12 - A11      | 225         | 2.215       | 1.65           | 2.07            | 0.225           | 0.33            | 30.10           | 0.76            | OK           |
| A11 - A8       | 225         | 5.815       | 4.33           | 5.44            | 0.225           | 0.33            | 30.10           | 0.76            | OK           |
| A8 - A2        | 300         | 11.25       | 8.38           | 10.53           | 0.3             | 0.30            | 61.27           | 0.87            | OK           |
| A2 - A1        | 375         | 95.17       | 70.88          | 89.06           | 0.375           | 0.30            | 110.23          | 1.00            | OK           |

Downstream pipe network has adequate capacity to accommodate the development.



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## Appendix D – HDGEO Preliminary Geotechnical Report





# GREENHILL INDUSTRIAL PARK

## PRELIMINARY GEOTECHNICAL REPORT

PROJECT NO: HD3783  
GREENHILL INDUSTRIAL PARK  
CONSORTIUM  
REFERENCE: PGR 01  
21 OCTOBER 2025

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## Executive summary

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We have been engaged by Barker and Associates, on behalf of the Greenhill Industrial Park Consortium (the Client), to undertake a preliminary geotechnical assessment based on a desk study for the site located at 133 Greenhill Road, Puketaha. This report is intended to be submitted to Waikato District Council in support of the Fast-track Approvals Act (FTAA) referral application to allow for further subdivision and building development across the five titles at 133 Greenhill Road. The assessment is high level and will need to be confirmed with site testing and further assessment if the referral is successful.

## Site description

The site is characterised by flat plains (RLs 26 m to 37 m) and a central northern hill rising to 55 m RL. The land is mostly greenfields, with a few houses along the site boundary. The site is accessed from Puketaha Road and Greenhill Road, with the Waikato Expressway to the west.

## Our scope included:

- a desktop study of the site, including historical aerial images, geology maps, contour maps, and the New Zealand Geotechnical Database (NZGD)
- a natural hazards assessment in accordance with section 106 of the Resource Management Act
- high level earthworks assessment
- preliminary foundations recommendations

## Our key findings were:

- there are investigations available on NZGD along the western boundary of the site (Waikato Expressway). The investigations show soils in low lying areas around the site consistent with the mapped Hinuera Formation
- based on the expected geology, natural hazards on the site are likely to include:
  - liquefaction
  - static settlement
  - slope instability
  - low bearing
- our preliminary liquefaction assessment indicates a high hazard is likely on the plains areas
- our high-level slope assessment indicates a generally low risk of instability, with steeper slopes likely to be modified by earthworks
- settlement is likely to be a hazard in the low-lying areas. Mitigation is likely to be required

## Next steps include:

- investigate the site, focussing on areas of higher potential hazards. These include wet or swampy areas, Plains Terrain with high groundwater and liquefaction hazard, earthwork material suitability, and sensitive soils
- detailed assessment of liquefaction hazard across the site, settlement potential of soft soils, groundwater depth and drawdown potential
- input into the detailed design of the development to limit exposure to the identified hazards, and to mitigate them where possible
- reporting to support consenting
- earthwork specifications and detailed design of geotechnical elements
- observation during construction to validate assumptions and confirm work meets specifications



## Contents

|                                                                 |   |
|-----------------------------------------------------------------|---|
| Executive summary .....                                         | i |
| Introduction .....                                              | 1 |
| Desk study .....                                                | 2 |
| Geotechnical assessment.....                                    | 4 |
| Geotechnical recommendations.....                               | 6 |
| Limitations .....                                               | 7 |
| Appendix A – Proposed plans .....                               | A |
| Appendix B – Historic Aerial imagery.....                       | B |
| Appendix C – Potential Uncharacterised fill location plan ..... | C |
| Appendix D – Slope grades and suspected swamp areas .....       | D |
| Appendix E – Draft Earthworks Cut to fill plan .....            | E |

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| Version no. | Prepared by     | Description         | Dated    |
|-------------|-----------------|---------------------|----------|
| Draft       | Cailem Whitburn | Draft report issued | 09/10/25 |
| Final       | Cailem Whitburn | Final report issued | 04/11/25 |

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## Introduction

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We have been engaged by Barker and Associates, on behalf of the Greenhill Industrial Park Consortium (the Client), to undertake a preliminary geotechnical assessment for the site located at 133 Greenhill Road, Puketaha. This report is intended to support a Fast-track Approvals Act (FTAA) referral application to allow for further subdivision and building development across the five titles at 133 Greenhill Road. The assessment is a high level, desk-based assessment of likely natural hazards, and will need to be confirmed with site testing and further assessment if the referral is successful.

## Scope

Our scope was limited to a desk-based assessment. The Assessment included:

- a desktop study of historical aerial images, geology maps, contour maps, and the New Zealand Geotechnical Database (NZGD)
- a natural hazards assessment broadly following s106 of the Resource Management Act
- preliminary qualitative assessments of liquefaction, settlement and slope instability
- high level earthworks discussion
- suitability discussion and recommendations for further assessment

## Site description

Greenhill Industrial Park is of irregular shape and approximately 180 hectares. It is situated within the Waikato District, adjacent to the eastern side of the Waikato Expressway. The site is accessed from Puketaha Road to the north and Greenhill Road to the south. The Waikato District and Hamilton City jurisdiction boundary is defined by Gordonton Road, which is located approximately 1 kilometre to the west of the Waikato Expressway. Currently, the site is predominantly greenfields, with a small number of residential dwellings situated along the northern and southern boundaries.

The bulk of the site is flat, with reduced levels (RLs) typically between 36 m and 37 m relative to the local datum<sup>1</sup>. However, the central northern portion of the site rises to an elevation of up to 55 m RL. This elevation change is characterised by gentle slopes of around 10 degrees, but there are also distinct sections where the ground becomes steeper, with slopes between approximately 25 and 35 degrees.

## Proposed development

The Greenhill Industrial Park Consortium plan to subdivide the site for primarily industrial use, with some residential lots and a general service area connected through private roads. Road swales, landscape buffers, stormwater riparian areas, and stormwater ponds are also. We understand that the client intends to cut the elevated portion of the site down and use the material as fill across the rest of the site. High level plans are included in Appendix A.

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<sup>1</sup> NZVD2021 [EPSG: 7839]



## Desk study

We completed a desktop study of the site to identify features of interest. The desktop study consisted of a review of recent and historical aerial imagery<sup>2,3</sup>, geology maps, and surrounding NZGD testing.

## Aerial photography

We reviewed images from 1952, 1963, 1979, 1991, 2008, 2016, and 2025 (attached in Appendix B for reference). Key findings from each image are presented in Table 1.

Table 1: Summary table for historical imagery.

| Date | Observations                                                                                                                                                                                                                                                                                                                                                                                                  |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1952 | <ul style="list-style-type: none"><li>• The site is predominantly rural, with open paddocks and minimal built development.</li><li>• Few structures are visible, and the landscape is mostly agricultural.</li><li>• Swampy, tussocky vegetation is visible generally within the central area of the site.</li></ul>                                                                                          |
| 1963 | <ul style="list-style-type: none"><li>• The area remains largely unchanged, with continued agricultural use.</li><li>• Some minor changes in field boundaries and vegetation are visible.</li><li>• Tussocky vegetation is still visible across the central extent of the site.</li></ul>                                                                                                                     |
| 1979 | <ul style="list-style-type: none"><li>• The site and surrounding area show gradual intensification of land use.</li><li>• More field boundaries and small structures appear, but the site itself remains undeveloped.</li><li>• Tussocky vegetation is no longer visible, potentially due to modification of the area for farming.</li></ul>                                                                  |
| 1991 | <ul style="list-style-type: none"><li>• There is a noticeable increase of vegetation planted within the southeast corner of the site.</li><li>• Off-site development begins to increase, with more structures visible to the north and east.</li><li>• Potential uncharacterised fill is visible within the central western area of the site*</li></ul>                                                       |
| 2008 | <ul style="list-style-type: none"><li>• The site is still undeveloped, but surrounding areas show increased residential and rural development.</li><li>• Tree rows and shelterbelts are well established across the east and west site boundaries.</li><li>• Potential uncharacterised fill is visible onsite near the southern boundary.</li></ul>                                                           |
| 2016 | <ul style="list-style-type: none"><li>• The site remains largely unchanged, with continued agricultural use.</li><li>• Surrounding development continues, with more dwellings and infrastructure visible.</li></ul>                                                                                                                                                                                           |
| 2025 | <ul style="list-style-type: none"><li>• The most recent imagery shows a slight increase in built development onsite.</li><li>• The development of the Waikato Expressway adjacent to the site is visible.</li><li>• Four potential uncharacterised fill areas are visible. Three of these are located near the southern boundary and the other is further towards the southeast corner of the site.</li></ul> |

\* See Appendix C for potential uncharacterised fill location plan.

<sup>2</sup> Sourced from <http://retrolens.nz> and licensed by LINZ CC-BY 3.0. Accessed 13/06/2025.

<sup>3</sup> Google earth Pro. Accessed 13/06/2025.

## Geological setting

The site's contours generally match the mapped geology. Geology maps<sup>4</sup> of the Greenhill site show three distinct geological units:

### Hinuera formation

- the North and west extents are mapped as Late Pleistocene River deposits of the Hinuera Formation,
- the Hinuera Formation is described as 'cross-bedded pumice sand, silt, and gravel with interbedded peat.'
- flat areas, (RLs 36 m to 37 m) align with the Hinuera Formation

### Walton Subgroup alluvium

- the Central north extent is mapped as Walton Subgroup alluvium
- the Walton subgroup is described as 'pumiceous mud, silt, sand and gravel with muddy peat beds; rhyolite pumice, including non-welded ignimbrite, tephra and alluvial pumice deposits'
- the Walton Subgroup, which is typically mantled by several metres of volcanic ash
- the top elevation of the central northern hill extends up to about 55 m RL
- historical images show that swampy, tussocky vegetation overlaps some hills terrain, which will require further investigation to confirm

### Holocene Swamp deposits

- the East and south extents are mapped as Holocene swamp deposits
- Holocene swamp deposits are described as 'soft, dark brown to black, organic mud, muddy peat and woody peat with minor overbank sand, silt and mud'
- areas mapped as Holocene swamp deposits can also present as silt, sand and mud deposits with interbedded and/or lenses of peat. This means that the highly organic deposits can be locally limited across the mapped area. This was confirmed by some existing testing reviewed as part of the desk study
- flat areas, (RLs 36 m to 37 m) align with the Holocene swamp deposits
- a plan showing slope grades and the suspected swamp areas are provided in Appendix D

## NZGD

We have reviewed the NZ Geotechnical Database (NZGD) to determine whether ground investigations have been conducted on or near the site. Most of the site has no data available, however, along the western boundary, and in the extreme southwestern corner of the site, there are tests available.

- **Onsite:** Eight hand augers (HAs) have been logged in the southwestern corner of the site. These tests found a mixture of sand, silt, and clay of varied strengths, consistent with the Late Pleistocene River deposits of the Hinuera Formation. Groundwater was recorded in all HAs at between 0.8 m and 1.5 m bgl.
- **Near the site:** Several ground investigations have been completed for the Waikato Expressway along the western boundary of the site, as well as cone penetration tests (CPTs) to the north and south, and a cluster of HAs past the northeast corner. These investigations (hand augers, test

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<sup>4</sup> 1:250,000 Geological Map of New Zealand (QMAP) New Zealand Geology Web Map. GNS, 2013. <http://data.cri.nz/geology/>. Accessed 13/06/2025.



pits, boreholes, and CPTs) also found sand, silt, and clay, consistent with the materials found onsite. We see that these materials also vary in strength, generally from loose to medium dense (sand) and very soft to stiff (clay and silt). Groundwater was recorded at between 0.9 m and 2.9 m bgl.

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## Geotechnical assessment

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### Natural hazards

We have assessed the following natural hazards, as per Section 106 of the Resource Management Act.

- **earthquake and liquefaction:** the site subsoil class is D 'deep or soft soils.' Design peak ground acceleration for the 1 in 500-year average recurrence interval earthquake event is 0.25 g<sup>5</sup>. Earthquake induced liquefaction is likely to occur in a large earthquake (see 'Liquefaction' section below)
- **active faults:** the Waikato Regional Hazards Portal<sup>6</sup> indicates an active fault (Kerepehi fault) is located approximately 37 km east of the site running roughly northwest to southeast. As the site is greater than 20 metres from the fault<sup>7</sup>, the risk of damage from fault rupture is very low.
- **volcanic, geothermal or sedimentary activity:** the site is located approximately 20 km southeast of the closest volcanic vent, with the last eruption 1.8 million years ago. The closest active volcano is Rotorua, approximately 90 km southeast, therefore the risk from volcanic hazards is very low. The site is not near any known sources of geothermal or sedimentary activity.
- **flooding:** the site is not mapped within any flood areas<sup>6</sup>, so we anticipate the risk of flooding at the site is Low.
- **subsidence:** the risk of the site to subsidence is possible (see 'Subsidence' section below).
- **landslips, slope instability, and erosion:** aerial imagery show no obvious signs of instability across the site, and our assessment is that the risk of landslips, slope instability, or erosion at the site is low (refer to 'Slope stability' section below).
- **expansive soils:** the natural soil at the site is likely to be classed from A to M, non-expansive to moderately expansive soils (refer to 'Expansive soils' section below).

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<sup>5</sup> Ministry of Business innovation and Employment (MBIE) / New Zealand Geotechnical Society (NZGS). Module 1: Overview of the guidelines. Dated November 2021.

<sup>6</sup> Waikato Regional Hazards Portal. Accessed 13 August 2025. Sourced from:

<https://www.waikatoregion.govt.nz/services/regional-hazards-and-emergency-management/regional-hazards-portal/>

<sup>7</sup> Ministry for the Environment. Planning for Development of Land on or close to Active Faults. July 2023

Table 2 - Natural hazards risk matrix.

| Risk assessment matrix |            | Likelihood                                                                                                                      |                     |                                   |        |             |
|------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|--------|-------------|
|                        |            | Very unlikely                                                                                                                   | Unlikely            | Possible                          | Likely | Very likely |
| Potential Consequences | Severe     |                                                                                                                                 |                     |                                   |        |             |
|                        | Major      |                                                                                                                                 |                     |                                   |        |             |
|                        | Moderate   | - Earthquake                                                                                                                    |                     | - Liquefaction                    |        |             |
|                        | Minor      | - Volcanic, geothermal or sedimentation activity<br>- Flooding<br>- Erosion<br>- Landslips/slope instability<br>- Active faults | - Lateral spreading | - Expansive soils<br>- Subsidence |        |             |
|                        | Negligible |                                                                                                                                 |                     |                                   |        |             |

## Liquefaction

We have undertaken a qualitative liquefaction assessment for the site. We have reviewed the CPTs undertaken near the site, and the geology maps.

### *Hills Terrain liquefaction hazard*

The Hills Terrain, in the northern central part of the site, is expected to be underlain by strong cohesive deposits of the Hamilton Ash and Walton Subgroup. These deposits are not susceptible to liquefaction and the hazard in this area is negligible.

### *Plains Terrain liquefaction hazard*

The flat areas of the site, the 'Plains Terrain' are mapped as being underlain by alluvium and swamp deposits. The nearby NZGD investigation data matches the geology maps, and so we expect the plains terrain to be underlain by primarily silt and sand material. The historic aerial imagery and the nearby testing indicate the groundwater is shallow on the plains. These conditions: susceptible soil types and high groundwater, mean that the liquefaction hazard is likely to be high.

### *Lateral spreading*

Given the expected high liquefaction hazard on the Plains Terrain, any free faces, such as drains, stormwater ponds, or other excavations, could create a free face towards which lateral spreading could occur. The detailed design will need to consider lateral spreading and mitigation measures may be needed.

## Slope stability

We have assessed the risk of global or large-scale slope instability across the site as 'unlikely'. This is based on aerial photography, publicly available contour data, and our knowledge of the area. Aerial images dating back to 1952 show minimal change to the geomorphology across the site. We did not observe any indication of instability in these images. We understand that earthworks are intended to cut down the Hills Terrain and fill on the Plains Terrain. This will further ease average grades and improve stability. Any steps or steep slopes proposed will need specific assessment and may need retaining walls.



## Settlement

The geology maps and historic aerial photography indicate that swampy areas are likely to be present. These areas tend to have soft, loose, or organic soils that can be susceptible to consolidation settlement on loading. Loading from fill placed, or from building and surcharge loads can trigger settlement.

Mitigation measures may be needed to reduce the expected settlement. Mitigation options could include undercutting near surface poor soils, preloading with settlement monitoring, or ground improvement.

## Expansive soils

Investigations completed near the site (from NZGD) encounter soils of moderate plasticity. These soils have the potential to change in volume ('shrink and swell') in response to moisture content changes, typically with a seasonal periodicity if close to the surface. These typically include volcanic ash soils such as clay.

Based on this observation, the geology maps, and the typical clay minerology of Waikato soils, we expect the surface soils across the development to range between Class A and Class M, non-expansive to moderately expansive. These classes are typical in the Waikato and Class S to M soils can be easily mitigated in building design.

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## Geotechnical recommendations

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While there are likely to be natural hazards present on the site, they are typical of the Waikato and are unlikely to preclude development. Given the likely hazards, careful investigation, assessment, and design should be undertaken. The design of the development should be guided by geotechnical assessment as hazards can be avoided or minimised by design if incorporated early. Our geotechnical recommendations are outlined below.

## Earthworks

Draft cut to fill plans provided by the client (provided in Appendix E) anticipate significant cuts and fill across the site to ease the grades between the Hills Terrain and the plains and to form level building platforms. We expect the cut materials will vary with cut depth. The volcanic ash is likely to be suitable earthworks material. Deeper materials can be sensitive and difficult to earthwork. Investigation will be needed to confirm material types and depths and to guide the earthworks design.

Locations of potential uncharacterised fill will require investigation to confirm the underlying materials. If these materials are uncharacterised fill as anticipated, they will need to be excavated and replaced with engineered fill. Environmental guidance should be followed throughout the excavation and disposal process.

Excavation, preparation of subgrade, and backfill should be performed in accordance with geotechnical recommendations that will follow the detailed investigation and with the applicable portions of the New Zealand Standard 4431:2022<sup>8</sup>. All earthworks should be performed under the observations and testing of HD Geo.

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<sup>8</sup> NZS 4431:2022: Engineered fill construction for lightweight structures.

## Next steps

We have identified potential natural hazards on the site. These should not preclude development as they are standard for this geology in the Waikato region however, they should be defined by investigation and assessment and should be avoided or mitigated through the design of the development where possible. Where hazards remain, they can be mitigated through careful engineering design. We recommend further geotechnical input to inform a substantive application, including:

- investigate the site, focussing on areas of higher potential hazards. These include, wet or swampy areas, Plains Terrain with high groundwater and liquefaction hazard, earthwork material suitability and sensitive soils
- detailed assessment of liquefaction hazard across the site, settlement potential of soft soils, groundwater depth and drawdown potential
- input into the detailed design of the development to limit exposure to the identified hazards, and to mitigate them where possible
- reporting to support consenting
- earthwork specifications and detailed design of geotechnical elements
- observation during construction to validate assumptions and confirm work meets specifications

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## Limitations

This report has been prepared for our client, Greenhill Industrial Park Consortium, for the purpose detailed above and may not be relied on by any other party or for any other purpose. This report contains a high-level assessment based on our desktop study of the site to support the Fast-track Approvals Act (FTAA) referral application to allow for further subdivision and building development.

Further testing and assessment are required for detailed design for the site. Inferences about the conditions at the site have been made based on nearby testing and our understanding of the geological environment in which the site lies. The deposits in this area are by nature highly variable both vertically and laterally. We recommend that HD Geo is engaged to provide input into the design of the development and to undertake further testing, assessment and design. For continuity and to confirm ground conditions, geotechnical observation will also be required during site construction works.



# APPENDIX A – PROPOSED PLANS

## 2.0 Masterplan



Scale: 1:8,000 @ A3

### Legend

- Site Boundary
- Proposed Industrial Lots (with indicative buildings and on-lot landscaping)
- Proposed Rural Residential Lots
- Proposed Greenhill Expressway Service Area (Extended)
- Proposed Road Swales
- Proposed Landscape Buffer between Rural Residential and Industrial Lots (10-15m)
- Proposed Landscape Buffer along Waikato Expressway (10-15m)
- Proposed Stormwater Ponds & Riparian Areas
- Potential Existing Mature Trees for Retention (pending further investigation)
- Existing Modified Watercourse for Realignment & Renaturalisation
- WWPS Proposed Wastewater Pumpstation
- Existing Radio Aerial for Retention
- Existing Overhead Power Pole and Lines for Retention
- Designation J17 (Requiring Authority - NZTA)
- Expressway Noise Control Areas
- 1 Existing Rural Residential Properties (outside of the Site)
- 2 Existing Childcare
- 3 Potential Access Options to Greenhill Expressway Service Area
- 4 Existing Residential Dwelling to Retain



Figure 8 High level Masterplan



## Legend

Site outline

Scale: 1:8 000 @ A3



lots (with indicative  
indscaping)  
Initial Lots  
Expressway Service Area  
Buffer between Rural  
Rural Lots (10-15m)  
Buffer along Waikato  
Ponds & Riparian Areas  
Fire Trees for Retention  
(Mitigation)  
Access for  
Realisation  
Pumpstation  
Fire Retention  
Power Pole and Lines for  
Ring Authority - NZTA  
Control Areas  
Local Properties (outside



CLIENT

Greenhill Industrial Park Consortium

TITLE

HD3783 - Greenhill Industrial Park (R3  
Fast Track)  
Site Location Plan

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5. Site Masterplan overlay sourced from client.

Project Number

HD3783

Drawing Reference

HD3783-101-R0

Drawn By

CW

Date

04/11/2025

Reviewed By

MM

Date

04/11/2025

SCALE

1:10,000

0

400

800 m



## APPENDIX B – HISTORIC AERIAL IMAGERY



# Legend

 Site boundary

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## CLIENT

Greenhill Industrial Park Consortium

## TITLE

Greenhill Industrial Park  
Historic aerial images - 1952

## Project Number

HD3783

## Drawing Reference

HD3783-102a

## Drawn By

MM

## Date

30/09/25

## Reviewed By

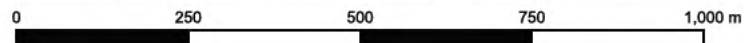
PG

## Date

30/09/25

## SCALE

1:11,000



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# Legend

 Site boundary



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|                                                    |                                      |                                                                                     |                      |                       |                      |
|----------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------|----------------------|-----------------------|----------------------|
| CLIENT<br><br>Greenhill Industrial Park Consortium |                                      | TITLE<br><br>Greenhill Industrial Park<br><br>Historic aerial images - 1963         |                      |                       |                      |
| Project Number<br><br>HD3783                       | Drawing Reference<br><br>HD3783-102b | Drawn By<br><br>MM                                                                  | Date<br><br>30/09/25 | Reviewed By<br><br>PG | Date<br><br>30/09/25 |
| SCALE<br><br>1:11,000                              |                                      | <div><div>0</div><div>250</div><div>500</div><div>750</div><div>1,000 m</div></div> |                      |                       |                      |

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# Legend

 Site boundary



|                                                                                     |                                      |                    |                                                                             |                       |                      |
|-------------------------------------------------------------------------------------|--------------------------------------|--------------------|-----------------------------------------------------------------------------|-----------------------|----------------------|
| CLIENT<br><br>Greenhill Industrial Park Consortium                                  |                                      |                    | TITLE<br><br>Greenhill Industrial Park<br><br>Historic aerial images - 1979 |                       |                      |
| Project Number<br><br>HD3783                                                        | Drawing Reference<br><br>HD3783-102c | Drawn By<br><br>MM | Date<br><br>30/09/25                                                        | Reviewed By<br><br>PG | Date<br><br>30/09/25 |
| SCALE<br><br>1:11,000                                                               |                                      |                    |                                                                             |                       |                      |
| <div><div>0</div><div>250</div><div>500</div><div>750</div><div>1,000 m</div></div> |                                      |                    |                                                                             |                       |                      |

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# Legend

 Site boundary



|                                                                                    |                                      |                   |                       |                                                            |             |                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------|--------------------------------------|-------------------|-----------------------|------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | CLIENT                               |                   |                       | TITLE                                                      |             |                                                                                                                                                                                                                                                                                                                                                    |
|                                                                                    | Greenhill Industrial Park Consortium |                   |                       | Greenhill Industrial Park<br>Historic aerial images - 1991 |             |                                                                                                                                                                                                                                                                                                                                                    |
|                                                                                    | Project Number                       | Drawing Reference | Drawn By              | Date                                                       | Reviewed By | Date                                                                                                                                                                                                                                                                                                                                               |
|                                                                                    | HD3783                               | HD3783-102d       | MM                    | 30/09/25                                                   | PG          | 30/09/25                                                                                                                                                                                                                                                                                                                                           |
| SCALE                                                                              |                                      |                   | 0 250 500 750 1,000 m |                                                            |             |                                                                                                                                                                                                                                                                                                                                                    |
| 1:11,000                                                                           |                                      |                   |                       |                                                            |             |                                                                                                                                                                                                                                                                                                                                                    |
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**Legend**

Site boundary



|                                      |                                                  |                                                            |          |             |          |
|--------------------------------------|--------------------------------------------------|------------------------------------------------------------|----------|-------------|----------|
| CLIENT                               |                                                  | TITLE                                                      |          |             |          |
| Greenhill Industrial Park Consortium |                                                  | Greenhill Industrial Park<br>Historic aerial images - 2008 |          |             |          |
| Project Number                       | Drawing Reference                                | Drawn By                                                   | Date     | Reviewed By | Date     |
| HD3783                               | HD3783-102e                                      | MM                                                         | 30/09/25 | PG          | 30/09/25 |
| SCALE                                | <div>02505007501,000 m</div> <div>1:11,000</div> |                                                            |          |             |          |

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## Legend

 Site boundary



### CLIENT

Greenhill Industrial Park Consortium

### TITLE

Greenhill Industrial Park  
Historic aerial images - 2016

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Project Number

HD3783

Drawing Reference

HD3783-102f

Drawn By

MM

Date

30/09/25

Reviewed By

PG

Date

30/09/25

SCALE

1:11,000

0

250

500

750

1,000 m







Site boundary

|                                                                                    |                                      |                                                                                      |          |                                                            |             |          |                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------|----------|------------------------------------------------------------|-------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | CLIENT                               |                                                                                      |          | TITLE                                                      |             |          | <b>GENERAL NOTES AND DISCLAIMER</b><br>1. Coordinates are in NZTM.<br>2. Imagery and cadastral information sourced from LINZ. Crown copyright reserved.<br>3. Areas and dimensions are approximate only, any use or reliance on this plan is at the users risk.<br>4. Contour information sourced from LINZ, or local council GIS databases. Crown copyright reserved. |
|                                                                                    | Greenhill Industrial Park Consortium |                                                                                      |          | Greenhill Industrial Park<br>Historic aerial images - 2025 |             |          |                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                    | Project Number                       | Drawing Reference                                                                    | Drawn By | Date                                                       | Reviewed By | Date     |                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                    | HD3783                               | HD3783-102g                                                                          | MM       | 30/09/25                                                   | PG          | 30/09/25 |                                                                                                                                                                                                                                                                                                                                                                        |
| SCALE                                                                              |                                      | 0 250 500 750 1,000 m                                                                |          |                                                            |             |          |                                                                                                                                                                                                                                                                                                                                                                        |
| 1:11,000                                                                           |                                      |  |          |                                                            |             |          |                                                                                                                                                                                                                                                                                                                                                                        |

# APPENDIX C – POTENTIAL UNCHARACTERISED FILL LOCATION PLAN





## **APPENDIX D – SLOPE GRADES AND SUSPECTED SWAMP AREAS**





# APPENDIX E – DRAFT EARTHWORKS CUT TO FILL PLAN



