

GREENHILL PARK RESIDENTIAL SUBDIVISION

STAGE 13

INFRASTRUCTURE DEVELOPMENT COMPLETION REPORT

WEBB DRIVE & CARRS ROAD, GREENHILL PARK

CHEDWORTH PROPERTIES LTD

Our reference: 19-30378-03

Prepared for Chedworth Properties Limited



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Infrastructure Development Completion Report

1.0 BACKGROUND

1.1 Introduction

This application relates to Greenhill Park Subdivision Stage 13 located along the northern side of Carrs Road, including Carrs Road and Webb Drive.

Works included the following:

- Stage 13 subdivision roading (including Carrs Road and Webb Drive)
- Wastewater reticulation and lot connections
- Stormwater reticulation for roading and lot connections
- Watermain and lot connections
- Associated Streetlights
- Electrical reticulation for subdivision lots and street lighting
- Ultrafast Broadband reticulation
- Gas supply for subdivision development
- Concrete footpath construction
- Landscape planting

On the north side of Carrs Road, Stage 13 development works for 18 residential lots have been carried out under Hamilton City Council Subdivision Resource Consent 011.2018.6632, granted 05 September 2018.

This application is made on behalf of Chedworth Properties Ltd for Works Clearance from Hamilton City Council. Works clearance is sought in order to obtain certification pursuant to Section 224(c) of the Resource Management Act 1991 for Greenhill Park subdivision, Stage 13, LT 558430 A copy of the land transfer plan is included in Appendix 8.

This report addresses the key details associated with the Infrastructure provided.

1.2 Entities Involved with Development

The following companies have been involved with the construction of the Subdivision;

•	Developer:	Chedworth Properties Ltd
•	Consultant Design Engineers:	Beca Consultants
•	Consultant Engineers and Surveyors:	S&L
•	Geotech Engineer	DBCon Engineers
•	Landscape Design	Boffa Miskell
•	Landscape Planting	Native Awa
•	Head Contractor:	Online Contractors 2016 Ltd (OLC)
•	Subcontractors & Suppliers:	
	Civil Materials Supply	Hynds
	Stormwater and Wastewater	West Construction Ltd (WC)
	Drainage	



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Opus/WSP Geotechnical Testing Concrete Supply **Bowers Bros Concrete** Concrete kerbs Waikato Construction Purrfect Paving Carparks Footpaths Purrfect Paving Concrete Cutting Ironman Concrete Cutting Streetlights Ibex Lighting Power Reticulation WEL Networks - (Subcontractors: Northpower and Bayonne) Stevenson Resources, Gleeson Road Materials Supplier Quarry - Huntly Road Surfacing Contractor **Higgins Contractors** Directionz Ltd Road Signs Road Line Marking Linemark Gas First Gas Ultrafast Fibre - (Subcontractor: Telecommunication Civtec)

1.3 Observation of Works

S&L undertook regular inspections of the works as the project progressed and reviewed the contractor's quality assurance measures including test results. The progress of the construction was reviewed formally at weekly site meetings as well as discussions on site with the contractor.

The observation and supervision activities by S&L were undertaken to a level of CM3 (weekly site visits) as described in the IPENZ document "Guidelines on the Briefing and Engagement of Consulting Engineering Services" with additional inspections when required by the nature of the works under construction.

1.4 As-Built Data

A full set of as-built drawings and excel spreadsheets have been appended to this document in Appendix 9 and 10. These include the as built and asset value information required in accordance with the RITS. The as built data has also been included in this application in electronic format and a copy enclosed in final works clearance report for reference.

1.5 CCTV

CCTV inspections have been completed for the wastewater and stormwater lines. The footage has been provided to Hamilton City Council separately.

1.6 Design and Hamilton City Council Development Unit Design Acceptance

The following Approvals have been gained from the HCC Development Unit:



• Greenhill Park Stage 13 was designed by Beca Consultants and approved by HCC Development Unit.

1.7 Amendments to approved plans

Amendments from the approved plans have been made during construction as follows:

Constructed pavements type 'A' and 'Webb Drive Pavement' as per design in Stage 13. No amendments have been made.

2.0 EARTHWORKS

Earthworks have been carried out onsite under the supervision of S&L and DBCon Engineers. DBCon Engineers were engaged as the geotechnical engineer. The DBCon report of stage 13 subdivision earthworks and recommendations for building development is included in Appendix 1, detailing earthworks compliance with HCC RITS and NZ Standards.

3.0 ROADING INFRASTRUCTURE

3.1 Road Construction

Roads have been constructed in general accordance with the pavement shown on the approved engineering plans.

Review of the road construction is as follows:

3.2 Subgrade

The underlying natural soils comprise sandy silts of varying strengths. Significant subgrade improvement works have been carried out as follows:

- Much of the Stage 13 subgrade consists of imported hardfill for the backfill of the stormwater and sanitary sewer underground lines beneath.
- All areas in the road carriageway that have not been backfilled with hard brown rock have been undercut to a minimum depth of 0.5m below subgrade level and replaced with a subgrade improvement layer of compacted hard brown rock.
- Subsoil drains have been laid beneath kerbs discharging into catchpits

Testing of the subgrade improvement layer included proof rolling with no visible weave, stringing by way of GPS survey, and Clegg hammer testing to confirm that a CIV>15 (CBR>15) had been achieved for all roads in Stage 13. Results of the Clegg hammer testing are included in Appendix 2(a).



A GPS survey was undertaken throughout Stage 13 and checked against the design surface. Results are included in Appendices 2(a, b & c), confirming that design pavements depths have generally been achieved to ITS tolerances.

All road subgrades have been tested using clegg hammers, showing that CBR values over 15 have been consistently achieved on all roads. The results from the Subgrade Clegg Hammer testing are summarised below:

·	, , ,	
Carrs Road CH 330 - 580	Range CIV 21 - 65	Min Inferred CBR 31*
	Mean CIV 37	
Webb Drive East Lane CH 590 -	Range CIV 21 - 62	Min Inferred CBR 31*
770	Mean CIV 33	
Webb Drive West Lane CH 530 -	Range CIV 28 – 65	Min Inferred CBR 55*
780	Mean CIV 44	
Webb Drive West lane CH 790 -	Range CIV 28 - 41	Min Inferred CBR 55*
850	Mean CIV 33	

Subgrade Clegg Hammer Results Summary

*Note: CBR = $0.07(CIV)^2$ formula applied in accordance with RITS

3.3 Subbase

Subdivision roading comprises of the following subbase types:

Webb Drive (Webb Drive Pavement)	170mm GAP 65 ex Gleeson Quarry
	Huntly
Carrs Road (Type 'A' Pavement)	200mm GAP 65 ex Gleeson Quarry
	Huntly

QA Supplied for the subbase included in Appendix 2(b) includes the following:

- Material testing sheets
- Stringing
- Compaction testing of the basecourse with Nuclear Densometer
- Clegg Hammer tests

3.4 Basecourse

Subdivision roading comprises of the following basecourse types:

Webb Drive	180mm M4 AP40 Stevensons Tauhei
	modified with 2% cement
Carrs Road (Type 'A' Pavement)	150mm NZTA M/4 AP40 Stevensons
	Tauhei



QA Supplied for the basecourse included in Appendix 2(c) includes the following:

- Material testing sheets
- Stringing
- Compaction testing of the basecourse with Nuclear Densometer
- Clegg Hammer tests
- Benkelman Beam testing

Stringing

Stringing of the basecourse was carried out from kerbs prior to sealing. Results are included in Appendix 2(c) confirming that design pavements depths have generally been achieved to ITS tolerances.

<u>Clegg Hammer</u>

Clegg hammer testing has been undertaken on the subdivision roading basecourse showing compliance with RITS.

Nuclear Densometer

Nuclear densometer testing was carried out by Opus in order to confirm density.

Nuclear Densometer testing has been undertaken in accordance with RITS Section 3.8.2.5 & 3.8.3.4, Table 3-22. Results are included in Appendix 2(c).

The Target MDD for the TNZ M/4 AP40 pavement is 2.18t/m3 as per Opus MDD report (project number: 2-68015.00, lab reference: HA 6290/1_VHMDD).

Results are summarised below:

Basecourse NDM Results Summary

Webb Dr, southbound lane CH	Min 93% of MDD	Mean 98% of MDD
520 - 790	(Target MDD 2.18t/m3)	
Webb Dr, northbound lane CH	Min 94% of MDD	Mean 98% of MDD
520 - 790	(Target MDD 2.18t/m3)	
Carrs Rd, CH 10 - 260	Min 96% of MDD	Mean 100% of MDD
	(Target MDD 2.18t/m3)	
Carrs Rd roundabout	Min 96% of MDD	Mean 100% of MDD
	(Target MDD 2.18t/m3)	

3.5 Benkelman Beam Results



Benkelman beam tests were carried out by Opus on the basecourse surface following surfacing. Results are summarised below:

	Deflection (mm)			
	Maximum	Minimum	%age	Average
	(mm)	(mm)	over	(mm)
			1.8mm	
			(A2)	
Webb Dr southbound lane CH	0.44	0.04	0	0.27
520 - 800				
Webb Dr northbound lane CH	0.59	0.16	0	0.33
520 - 800				
Carrs Rod CH 10 - 260	0.9	0.44	0	0.65
Carrs Rd roundabout	0.86	0.44	0	0.58
Carrs Rd roundabout stub road	0,84	0.70	0	0.77
right				

Basecourse Benkelman Beam Results Summary

Results conform to the maximum and average deflection requirements of Section 3.8.3.5, Table 3-23 of the RITS for A3 (between 10^5 and 10^6 EDA) roads.

3.6 Road Surfacing

A summary of road surfacing details laid by Higgins is listed below:



Road Surfacing Summary

Road	Membrane Seal	Surface
Pavement Type A (Carrs	Grade four water proofing seal	40mm DG10
Rd)	coat Residual Application Rate: 1.0L/m ²	(Ave thickness 46mm)
Webb Drive Pavement	Grade 4 racked in water proofing	50mm AC 14
including roundabout	seal coat Residual rate 2.0 L/ m²	

4.0 WATER INFRASTRUCTURE

4.1 Installation

The water supply reticulation completed by Online Contractors includes the following components:

- 150mm mPVC PN12RRJ principal main
- 63mm PE80 PN12.5 ridermain
- Associated fittings, valves and hydrants
- Residential connections to all lots

Quantities and installation locations are shown on as-built records appended to this document.

4.2 Testing and Disinfection

Online Contractors Ltd carried out all aspects of pressure testing of the supply lines and disinfection prior to livening, in accordance with the ITS and in the presence of HCC.

Testing included the following items:

- Water supply pressure test result
- Water Supply disinfection
- Water Supply E Coli test

The pressure test and the observation of FAC (Free Available Chlorine) was witnessed by HCC's testing officer. The E Coli test samples were collected as part of the testing and the samples have been reviewed by HCC Officer, L. Parkes and passed.

Pressure testing results, pipe laying checklists and Bacto Test results are included in Appendix 3.



5.0 WASTEWATER INFRASTRUCTURE

Supporting quality assurance documentation for Wastewater Infrastructure supplied by the contractor and reviewed by S&L is attached in Appendix 4.

The gravity sewerage system comprises installation of the following components:

- 150mm dia uPVC SN16 wastewater main
- 100mm dia uPVC SN16 sewer laterals and lot connections
- Associated manholes.

Testing and inspection includes the following:

- CCTV inspection which has been supplied separately to Council
- Inspection of Manhole Structures
- Pressure testing of Manhole Structures by West Construction observed by HCC
- Pressure testing of 150mm dia wastewater main by West Construction observed by HCC
- As-builting by West Construction and S&L with final as-builts compiled by S&L.

6.0 STORMWATER INFRASTRUCTURE

6.1 Installation

In accordance with the approved design, stormwater from Stage 13 pipelines discharge into the Area M and L, K & U swales for treatment and conveyance:

- Swale 3B is located on the south side of Popham Rd and flows west.
- Swale 1D is located on the south side of Carrs Road and flows west

The primary system comprises of:

- UPVC & RCRRJ stormwater mains and headwalls
- UPVC laterals and lot connections
- Road catchpits and leads
- Manholes

Observation of the works was undertaken by S&L and includes:

- CCTV inspection which has been supplied separately to Council
- Inspection of all manhole structures, catch pits, outlets and inlets
- As-builting by Online Contractors and S&L Consultants with final as-builts compiled by S&L.

QA and checklists provided by the contractor and reviewed by S&L are included in Appendix 5.



6.2 Secondary flow paths

In accordance with the approved design, the stormwater pipelines from Stage 13 discharges into swale 3B and 1D for treatment and conveyance.

A piped drainage network has been designed to collect runoff from the road and lots with standard sumps. The pipes are designed to convey (without significant surcharge) the 50% AEP flows to the network of swales downstream. Each individual lot is provided with a piped connection to the main drainage system in case on-lot soakage is not appropriate.

In events larger than a 50% AEP, secondary stormwater flows for Stage 13 will flow as described below.

Flow down the western side of Webb Drive shoulders to a low point at road 20/25 intersection, then south across the road berm to spill into Swale 3B that runs along the southern side of Popham Road and flows west.

The eastern side of Webb Drive flows down the road shoulder to the southern side of Pardoa Rd intersection. The overland flow path is over the road berm to the existing open drain and future swale to the east.

The Carrs Road secondary flow path is west down the road shoulder, across the intersection of Carrs Rd/Athier Ave and into swale 1 via the berm overland flow path.

See attached as-built drawing 21879-M-13-SW1 Rev AB in appendix 9 showing the location and direction of stormwater overland flow.

7.0 STREET LIGHTING, STREET MARKING AND SIGNAGE

Streetlights have been designed, supplied and installed by Ibex Lighting Ltd. All quality assurance documentation for the street lights is included in Appendix 7.

Signage has been installed by OLC subcontractor Directionz Ltd in accordance with approved drawings and RITS requirements.

Carriageway paint marking has been completed by OLC subcontractor Linemark Ltd and is in accordance with approved drawings and RITS requirements.

8.0 LANDSCAPING

8.1 Hard Landscaping

There are no hard landscaping works included in stage 13.



8.2 Soft Landscaping

The landscape planting within the road reserves and the stormwater swales has been completed. An inspection by HCC Parks and Open Spaces has been completed.

9.0 NETWORK UTILITIES

Network utilities have been provided as follows.

9.1 Power

Electrical reticulation has been installed by WEL Networks for both street lighting and residential supply.

A WEL Networks works clearance statement is attached in Appendix 7.

9.2 Gas

First Gas has installed reticulation to enable future connection by individual lot owners. A completion Certificate is included in Appendix 7.

9.3 Telecommunications

Ultrafast Fibre has installed reticulation to individual lots. An acceptance letter is included in Appendix 7.

10.0 FINAL INSPECTION

A final inspection has been undertaken and was attended by Hamilton City Council's Development Engineers and associated staff from S&L and Online Contractors.

A separate inspection by Parks and Open Spaces has also been completed.



APPENDIX 1

Earthworks QA Documentation

 DBCon Engineers Report on Subdivision Earthworks & Recommendations for Building Development



Infrastructure Development Completion Report



GREENHILL PARK RESIDENTIAL SUBDIVISION

STAGE 13 Area M, Greenhill Park

HAMILTON

REPORT ON SUBDIVISION EARTHWORKS AND RECOMMENDATIONS FOR BUILDING DEVELOPMENT

Our Ref: DB 171738-AREA-M-S13-01 Prepared for: Chedworth Properties Limited Date: February 2021

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21879-01-M13-EW1
Site Levels Plan
Geotechnical Completion Forms
Checklist 2.2 - Statement of Professional Opinion
Summary of Geotechnical Data for Individual
Lots
Pre-Construction Test Results
BECA Area M Liquefaction Assessment
Summary Plan
Post Construction Test
<u>Results</u> Tests by DBCE
Stormwater Management
On-lot Water Efficiency Measures Lot Levels (Minimum Lot Levels)

1.0 Subdivision Development Earthworks

1.1 Introduction

Stage 13 of Greenhill Park is currently accessed from Pardoa Boulevard. Stage 13 comprises 18 residential lots (numbered 357 to 374). The locations of these lots are shown on attached Cut/Fill Plan, drawing 21879-01-M13-EW1 included in Appendix I.

Bulk earthworks have been completed to re- contour the previously agricultural landscape for Stage 13 of the Greenhill Park Residential Subdivision in Hamilton. Works have been carried out in accordance with Hamilton City Council's (HCC) Subdivision Resource Consent: 011.2018.6632.001 dated: 05/09/2018. Prior to commencement of earthworks, geotechnical investigations were carried out by Beca Ltd (Beca) in 2016 [1].

HCC's Infrastructure Technical Specifications (ITS) set out the minimum standards for design and construction of public infrastructure within Hamilton City. Section 2.1.5 of the *Earthworks and Geotechnical Requirements* of the ITS states that the developer shall appoint a geo-professional to carry out functions as described in NZS 4404[5] Section 2.2.4. ITS Section 2.3.3.1 states that a geotechnical completion report shall be submitted as per NZS 4404 Section 2.6 including a statement of professional opinion on the suitability of land for building construction [4]. The developer has appointed DB Consulting Engineers (DBCE) Ltd as the geo-professional.

To satisfy the requirements of HCC's Resource Consent, the ITS and NZS 4404, this report summarizes the observations and testing undertaken during the development of the stage, discusses the suitability of the ground for the support of the proposed residential buildings and contains recommendations for the disposal of stormwater runoff generated on individual sites.

Included in Appendix I of this report is the proposed subdivision plan comprising the original Lot 605 DP 516275 and the proposed new lots 357-374 for Area M Stage 13. The included earthworks plan shows the cut/fill extent of the earthworks undertaken, test positions, and road and lot locations.

1.2 Earthworks in the Subdivision

The earthworks for Stage 13 of the subdivision development were undertaken between October 2020 and December 2020.

These earthworks comprised:

- 1. The stripping of surface topsoil to expose underlying natural soils
- 2. The placement of filling within lots 357, 358, 359, 360, 367, 368, 369, 370, 371 and 374.
- 3. Backfilling and raising the ground level with new fill to create uniform fill platforms.
- 4. The reinstatement of the surface topsoil cover and subsequent grassing.

The soils encountered during the formation of the site and road subgrades were a mixture of silts, sands and pumiceous gravels, typical of Hinuera formation deposits in this area of Hamilton. These soils were those that had been identified in pre-construction site investigations by the Beca Report.

The filling work was undertaken using these site soils gained from areas of cut on other stages from within the larger Greenhill Subdivision. Filling was undertaken during spring 2020 when drying back of the soils was possible close to optimum moisture contents to achieve near maximum compaction densities.

Upon completion of the earthworks, approximately 200 to 300 mm of topsoil was placed across the sites and the finished surfaces were grassed in accordance with Conditions of the Resource Consent. Areas where an initial grass strike did not take place were regrassed. While the target topsoil depths after the earthworks were to be around 300 mm, no guarantee is implied or given that the topsoil on any part of any lot is 300 mm or less and it is recommended that future owners or designers or builders check topsoil depths when preparing site development plans and cost schedules.

1.3 Earthworks Standards

The earthworks in filling were undertaken using in situ Silty clay, and sandy silts mixtures gained from areas of cut across the larger subdivision and already used for the earlier stages of the development. The standards for the placement of filling, as stated in the earthworks contract documents, were to comply with NZS 4431:1989 "Code of Practice for Earth fill for Residential Development" and the Council ITS. Filling placed to these standards may be considered as good ground in terms of NZS 3604:2011 "Timber Framed Structures."

The compaction of the filling placed was monitored and tested for compaction density using a hand-held shear vane in finer grained silts and Silty CLAY. Adequate strengths would be achieved when an undrained shear strength of 100 kPa or more had been developed in silts and clays. Scala testing was used on non-cohesive sites.

Materials used where the same basic strata as being used for the previous Stages of works, with a high level of consistency based on previous test results.

1.4 Filled Ground

During the placement of filling on the road subgrades and on areas intended for residential development, the contractor, OLC, stripped and removed all topsoil and other surface organic soils. Post construction testing was carried out to confirm the interface between the cut and fill. Filling was placed in discrete layers with compaction applied through sheepsfoot drum rollers and smooth drum rollers.

As most of the filling placed comprised the Silty CLAY and silts identified in the pre subdivision boreholes, testing of the compaction achieved was mostly undertaken

using a handheld shear vane and NDM testing (Nuclear Density Meter).

The results indicate that the construction filling standards have been met. Foundations may therefore be detailed to NZS 3604:2011 where a timber framed subfloor containing shallow piles, bearers and joists is contemplated. Concrete floors designed to NZS3604 can be used on most lots where they are not immediately adjacent to a stormwater swale.

1.5 Areas of Cut

Areas developed in cut are shown on 21879-01-M13-EW1 (Appendix I). In these areas, the ground at formation levels was observed to comprise the same silts and sands that had been used for filling elsewhere and as identified by pre subdivision tests.

1.6 Test Results In Filling Placed

A summary of the tests undertaken by DBCE is present in Appendix IV. The test positions are shown on 21879-01-M13-EW1 and the test results are in Appendix IV.

The shear vane test results show that acceptable soil strengths had been developed in all fill areas tested.

1.7 Test Results in Areas of Cut and Natural Ground

The natural ground at the finished ground surface or under the filling comprised silty sands and sands as had been identified in the pre-subdivision investigation boreholes.

The results of the tests undertaken indicate that "good ground" as defined in NZS3604:2011 is present. No areas that were tested will require any future ground improvement work for buildings supported

1.8 Land Hazards

1.8.1 Land Stability

There are no landform stability issues within Stage 13 of the Greenhill Park Subdivision. The specification from the developer for the site earthworks was that the lots were to be graded as flat as possible with a desirable gradient of 0.5%.

1.8.2 Flooding

The final lot levels have been set based on infrastructure requirements and freeboard from flood levels developed as part of the stormwater design for the larger subdivision. The means of disposal of stormwater runoff from lots in this stage of the subdivision are described in the catchment and overland flow assessments by Beca (interpretive Report Lot Levels Area M). In the report for area M, a 1% AEP flood event is identified for each swale system. The two relevant swales for Stage 13 are Swale 1D (R.L. 38 1% Flood level). A flood level of 38.00 R.L. has been used in assessing the flood risk in stage 13. This equates to minimum lot levels of 38.500m to 40.120m R.L. across the stage (with low being the north end and high being the south end). A list of Lot Levels for Stage 13 is included in Appendix V.

Site grading during house construction must not lower finished levels below the minimum finished ground levels provided without further review of the impacts on flooding. Earthworks must not direct stormwater runoff to adjacent properties, or towards buildings, or create areas of localized ponding. All overland flow is to be towards the road frontage on each section, where falls will direct surface flow towards the north and Swale 1D.

It is the responsibility of the building design professional to ensure that the requirements for mitigation for the hazard of flooding are met by the design prior to submitting to Council for consent. Confirmation of the swale construction and flood levels are excluded from the scope of this report and are to be covered separately with sign-off of infrastructure works.

1.8.3 Liquefaction

The potential for the hazard of liquefaction for Area M of the Greenhill Park Subdivision is discussed in "Greenhill Park Geotechnical Interpretation and Design - Area M" by Beca and dated 13 July 2018. Foundations within 5m of the top of the swales are classed as TC2 like foundations. The liquefaction summary plan is appended to this Completion report. Specifically, the requirements are:

- 0m 1.5m no habitable dwellings to be built within 1.5 m of the swale crest.
- 1.5 5m adopt an enhanced TC2 _like foundation
- Beyond 5m of swale crest no specific requirements to mitigate liquefaction effects.

The Beca report refers to zones adjacent to the swales being in a TC2 type area as is defined in guidelines published by the Ministry of Business, Innovation and Employment (MBIE). MBIE recommends that TC2 type foundations should typically include 'an enhanced foundation slab' as is currently being installed for new houses in Christchurch. Alternatively, MBIE advises that houses may be supported on timber piles and a timber framed subfloor as detailed in NZS 3604 to meet a Type A construction as described in their guidelines. For Stage 13 none of the lots are affected by swale so no specific requirements are needed to mitigate liquefaction.

1.8.4 Expansive Soils

The underlying soil conditions are primarily non-expansive sand strata and shallow slightly expansive silt layers. Zones of fill are encountered across the sites, with deeper fill located in lots 369-371 (backfilling of old drainage ditches). The backfill is typically silty sand and not considered expansive. Overall, Stage 13 is underlain by non or slightly expansive soils. Any soils with a higher expansivity are expected to be limited in extent, and unlikely to result in changing the soil class.

For the purpose of foundation recommendations, Lots 369-371 can be treated as M Class sites. This is indicative of the greater depth of fill under these sites and therefore greater variability in the ground conditions. This is not to say the strata is moderately expansive, but that it may perform with comparable movement.

2.0 Disposal of Stormwater

Greenhill Park has been designed with a swale network to limit peak flows from the subdivision to 80 % of the 1 % AEP pre-development rate, and 90 % of the 10 % and 50 % AEP pre-development rates (Beca Ltd. [2016] Greenhill Park - Stormwater Design, for Chedworth Properties Ltd, 29 June 2016). Area M has been designed to include roadside swales flowing in an approximately east to west direction. Stage 13 includes of swale 1D. The depth of the swales has been designed to accommodate the fall and cover depth required of the piped drainage system. The piped drainage network has been designed to convey the 50 % AEP flows from roads and lots to the swale network, with each lot to be provided with a piped service connection. The stormwater plan is presented in the S&L Drawing 'Stormwater as Built DWGs reported separately.

All lots will require on-site stormwater efficiency measures as per the District Plan requirements (Rule 25.13.4.5 Water Efficiency Measures). These include:

- Detention of stormwater to 80% of pre-development runoff by an appropriate means. This has largely been achieved by the swale network for events greater than the 50 % AEP storm. For the 50 % AEP and smaller events, the stormwater efficiency measures are expected to provide sufficient additional mitigation to achieve this requirement.
- 2. Permeable surfaces protected to achieve at least 20% above the minimum standard of the zone (i.e., 40 % site permeability).
 - a. Sites within the Ruakura Medium Density Residential Zone require a minimum permeability of 20 % (Rule 4.6.5) and are limited to 50 % site coverage (Rule 4.6.6).
- 3. Rainwater tank for non-potable reuse system
- 4. Other equivalent features

Stormwater management must ensure that the rate of stormwater discharge offsite is at or below pre-development rates. Stormwater management measures shall be implemented, as appropriate, in accordance with the following drainage hierarchy:

- 1. Retention for reuse
- 2. Soakage techniques
- 3. Detention and gradual release to a watercourse
- 4. Detention and gradual release to stormwater reticulation.

Section 42 of the Subdivision Resource Consent (SRC) relating to Stages 9-15 state that "Each residential lot shall be provided with a means for disposal of stormwater, with no private stormwater pipes or soakage systems crossing from one lot to another except where covered by an easement"

Section 43 of the SRC states that water efficiency measures for the individual residential lots are to be detailed for each subdivision stage. "Where retention for reuse tanks is proposed they shall be a minimum of 5,000L to ensure they are effective or where the lot is less than 300m2 should be appropriately designed considering the specific site constraints. The required stormwater efficiency measure is to be implemented at the building consent stage and maintained on an on-going basis at the owners' expense".

Section 44 of the SRC requires a consent notice on each title advising of the required water efficiency measures to be implemented and maintained on an ongoing basis.

Section 55 of the SRC states the requirement for lot development to be undertaken in general accordance with the recommendations in the report: Greenhill Park Geotechnical Interpretation and Design – Area M, prepared by Beca Ltd., 13 July 2018.

In the Stage 13 development area, each site is to be tested for soakage capability by the property owners. For those sites that have a sufficient soakage capability, disposal of stormwater is to be undertaken onsite using soakage and/or bioretention systems with overflow to the lot stormwater service connection. Those sites that are not soakage viable are to retain stormwater for reuse by way of a Slimline Rain Tank or other similar type water tank. The size of the tank is to be 5000 litres and the tank is to be plumbed into the house for use as a non-potable water supply including for garden irrigation and in general accordance with the HCC guidelines for the Implementation of Water Efficiency Measures. The Slimline rain tank system is described in Appendix V. This requirement will be advised to purchasers and will be implemented through the building consent process by HCC. A consent notice is to be registered on the certificates of titles for each lot which describes these investigation and design requirements.

Details of the required stormwater measures are included in Appendix V, sourced from the Greenhill Park Design Guidelines.

3.0 Retaining Walls

There are no retaining walls that were constructed by the developer within stage 13.

4.0 Professional Opinion

It has been demonstrated in this Geotechnical Completion Report, that earthworks have been completed and building platforms have been constructed to comply with Council's ITS specifications and the New Zealand Building Code. Recommendations have been provided within the report for the disposal of stormwater from individual lots, for the ongoing development of the lots and for the mitigation of liquefaction risk where applicable.

In accordance with ITS Section 2.3.3.1, a statement of professional opinion is enclosed in Appendix II of this document. This statement is presented in the form of Checklist 2.2 of Council's Development Manual, Volume 4: Quality Systems for Land Development, and is accompanied by a *Summary of Geotechnical Data for Individual Lots* which summarizes the information and recommendations contained in this report.

5.0 Applicability

Recommendations contained in this document are based on data from observations of site earthworks, boreholes, and test results. Inferences about the nature and continuity of subsoils away from these locations are made but cannot be guaranteed.

In all circumstances, if variations in the subsoils occur which differ from those described or are assumed to exist, the site should be inspected by an engineer suitably qualified to make an informed judgement and provide advice on appropriate improvement measures.

This report has been prepared specifically for Stage 13 as shown for Lots: 357-374 DP543207 of Area M Stage 13 within the Greenhill Park Residential Subdivision. No responsibility is accepted by DB Consulting Engineers Ltd for the use of any part of this report for other development sites without their written approval.

DB Consulting Engineers Ltd

Report prepared by Ranjan Ghiloria

Report reviewed by Michael Richardson CPEng 1005467 Geotechnical Engineer

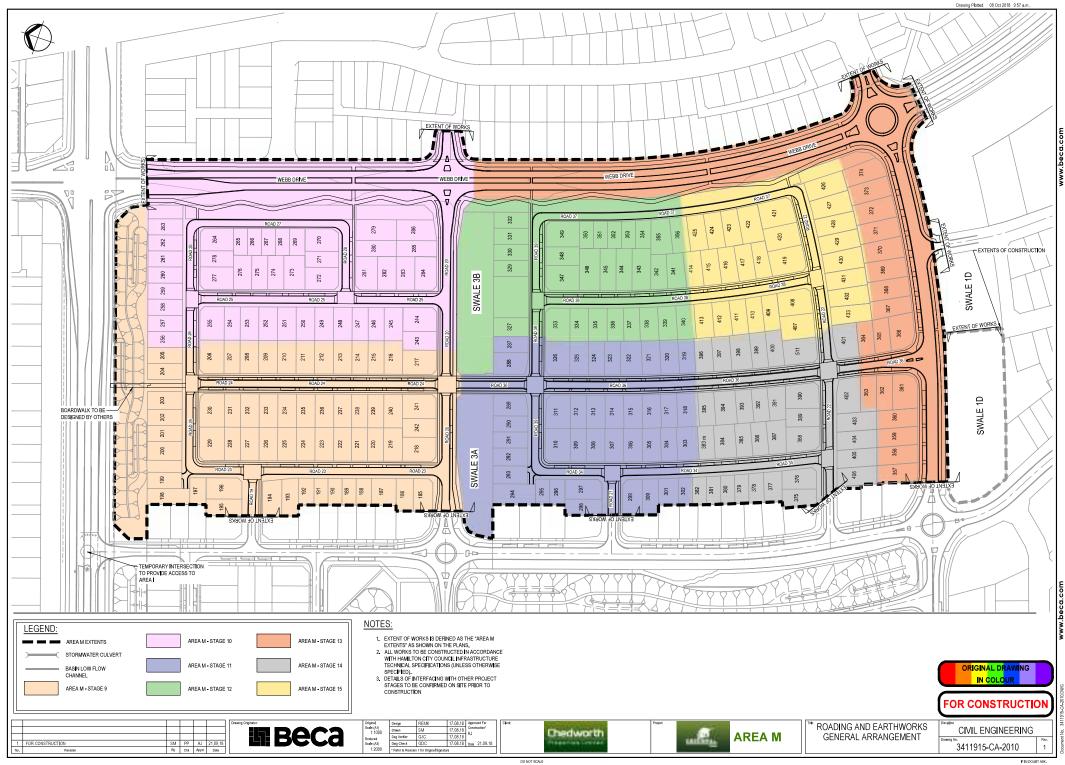
February 2021

References

- [1] Ruakura Land Development LDP Geotechnical Factual Report by Beca, 15 April 2016.
- [2] C. Hughes and K. Read, "Ruakura Development Stage 1 Geotechnical Investigation Liquefaction Potential Detailed Assessment," Opus International Consultants, Ltd., Hamilton, New Zealand, 2014.
- [3] M. Hughes and L. Shuler, "Report on Preliminary Geotechnical Investigation, Ruakura Development, Hamilton," S&L Consultants, Ltd., Tauranga, New Zealand, 2015.
- [4] "Section 2 Earthworks and Geotechnical Requirements," in *Infrastructure Technical Specifications*, Hamilton, New Zealand, Hamilton City Council, 2013.
- [5] "NZS 4404 Land Development and Subdivision Infrastructure," in *New Zealand Standards*, Wellington, New Zealand, Standards New Zealand, 2010.
- [6] "Greenhill Park Geotechnical Interpretation and Design-Area 1" by Beca 28 October 2016.
- [7] "Part 5: Earthquake Actions New Zealand," in *NZS 1170.5:2004 Structural Design Actions*, Standards New Zealand, 2004.
- [8] "Greenhill Park Design Report Area I (Stage 5, 6, 7 & 8) by Beca 20 December 2016
- [9] "Clause B1: Structure," in Acceptable Solutions and Verification Methods For New Zealand Building Code, Wellington, Ministry of Business, Innovation and Employment, 2014.
- [10] "Part A: Technical Guidance," in *Repairing and rebuilding houses affected by the Canterbury earthquakes*, Wellington, Ministry of Business, Innovation and Employment, 2012.
- [11] "Clause E1: Surface Water," in Acceptable Solutions and Verification Methods For New Zealand Building Code, Wellington, Ministry of Business, Innovation and Employment, 2014.
- [12] "Section 4 Stormwater," in *Infrastructure Technical Specifications*, Hamilton, New Zealand, Hamilton City Council, 2015.

Appendix I

<u>Reference Drawings</u> Subdivision Plan Cut/Fill Plan 21879-01-M13-EW1 Site Levels Plan



	Eleva	tions Table	
Number	Minimum Elevation	Maximum Elevation	Color
1	-2.245	-2.000	
2	-2.000	-1.750	
3	-1.750	-1.500	
4	-1.500	-1.250	
5	-1.250	-1.000	
6	-1.000	-0.750	
7	-0.750	-0.500	
8	-0.500	-0.250	
9	-0.250	0.000	
10	0.000	0.250	
11	0.250	0.500	
12	0.500	0.750	
13	0.750	1.000	
14	1.000	1.250	
15	1.250	1.500	
16	1.500	1.750	
17	1.750	2.000	
18	2.000	2.426	

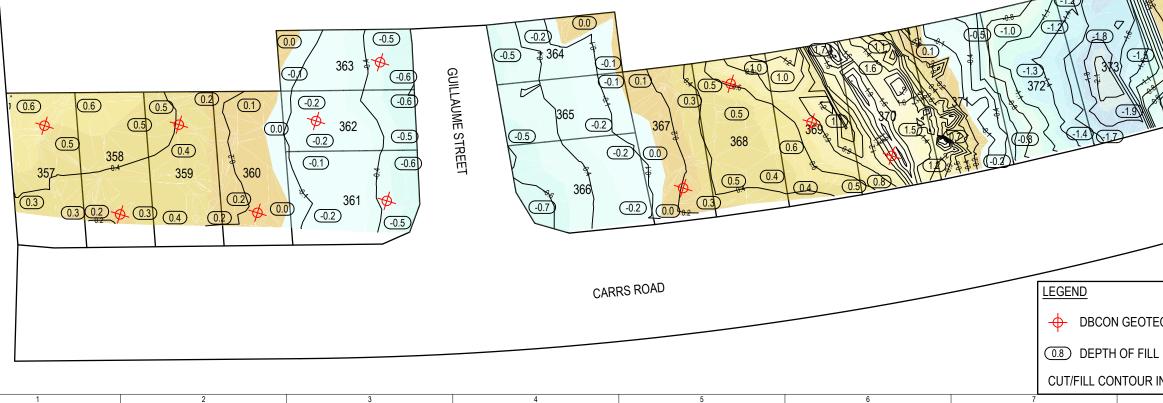
10/02/2021

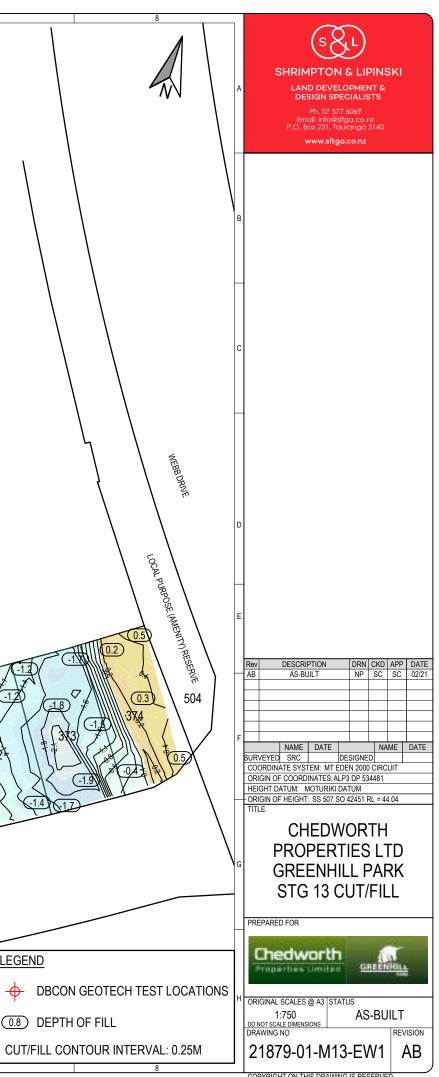
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.CADM - Stage 13 Cut Fill and റ

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Appendix II <u>Geotechnical Completion Forms</u>

Checklist 2.2 - Statement of Professional Opinion Summary of Geotechnical Data for Individual Lots Summary of Geotechnical Data for individual Lots

15

NZS 4404: 2010 SCHEDULE2A (Checklist 2.2)

STATEMENT OF PROFESSIONAL OPINION AS TO SUITABILITY OF LAND FOR BUILDING CONSTRUCTION

Development: Greenhill Park Stage 13 Developer: Chedworth Properties Limited

At Pardoa Boulevard, Chartwell, Hamilton

I, Michael Richardson of DB Consulting Engineers, PO Box 1123, Taupo

Hereby confirm that:

- **1.0** I am a geo-professional as defined in clause **1.2.2** of NZS 4404:2010 and was retained by the developer as the geo- professional on the above development.
- 2.0 The extent of my inspections during construction, and the results of all tests carried out are described in my geotechnical completion report for Greenhill Park Area M Stage 13 dated November 2020 (reference 171738-AREA-M-S13-01)
- 3.0 In my professional opinion, not to be construed as a guarantee, I consider that:
 - a. The completed works give due regard to land slope and foundation stability considerations.
 - b. The site ground affected by engineered certified filling is suitable for the erection thereon of buildings designed according to the report recommendations provided that:
 - i. Lots 369-371 are subject to engineering review of foundations and specific design as required to address the deeper engineered fill in this location. An M Class Waffle slab or similar is expected as an appropriate foundation type for this area.
 - ii. All lots are subject to an engineering inspection during foundation excavations unless of further soils testing is carried out for building consent. Previous stages have not required further soils testing, but Council requirements are in the process of changing. Clarification should be sought from Council as to the the need for site specific soil testing. If in doubt, then 4 additional soils tests per lots should be carried out. We recommend construction supervision from an engineer should be carried out to confirm the shallow ground conditions are in accordance with this report and suitable for NZS3604 foundations for bearing strength.
- 4.0 This professional opinion is furnished to Hamilton City Council and the developer for their purposes alone on the express condition that it will not be relied upon by any other person and does not remove the necessity for the normal inspection of foundation conditions at the time of erection of any dwelling.
- 5.0 This certificate shall be read in conjunction with my geotechnical completion report referred to in clause 2 above and shall not be copied or reproduced except in conjunction with the full geotechnical completion report.

Signed

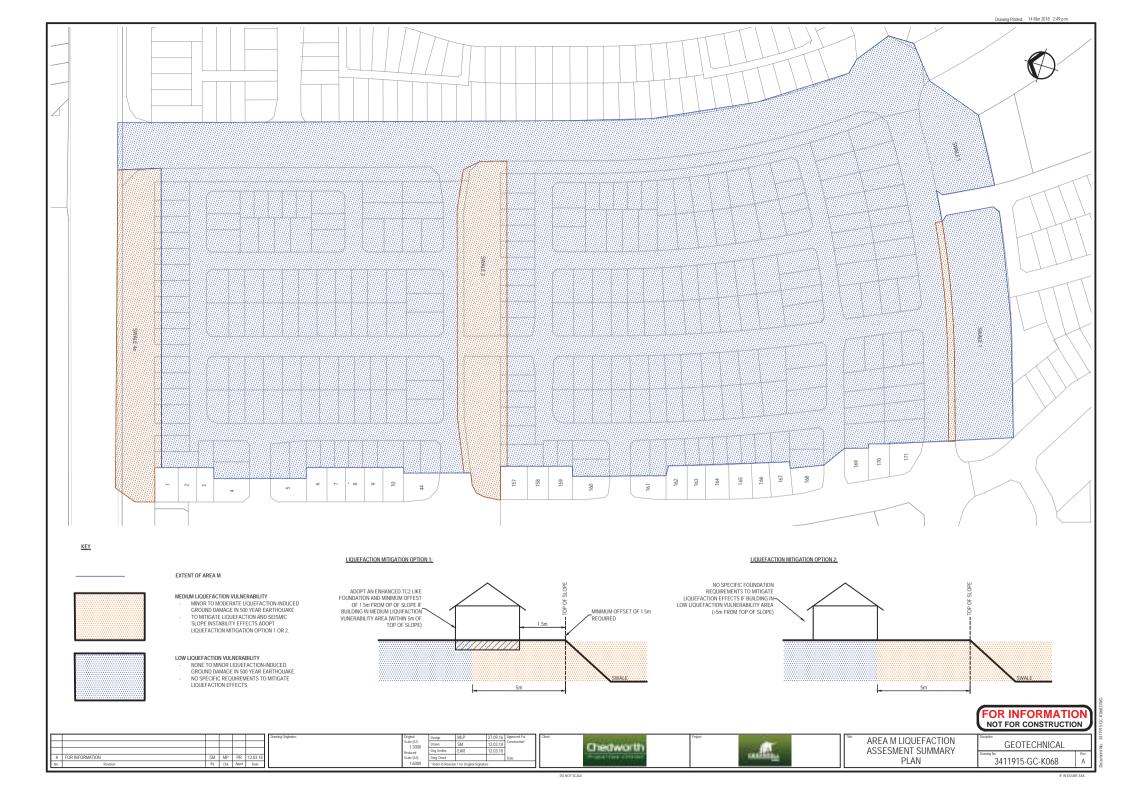
Date: 26 February 2021

Michael Richardson Chartered Professional Engineer (Geotechnical) CPEng 1005467

Summary of Geotechnical Data for Individual Lots

DP No	o: TBC	Address	Greenhill Park, Stage 13, Hamilton									RC No:	11/2018/6632							
			-	Subsurfa	Foundatio	Foundations B S														
		Shear		division Filling	Natural Topography Unworked	opography Topo		Conventional Shallow Foundation to NZS 3604:2011	Specific Design	Building Restriction Line	ecific	S/W Soakage	S/W Reticulated	Designated Building Platform	Minimum Building Platform	Compressible Soils	On-site Effluent Disposal			
Lot No:	Area (m²)	Strength (kPa)	Y/N	Depth (m)	Y/N	Y/N	Depth (mm)	Y/N/NA	Y/N/NA	tion	Design	e	ed	ding	ding	soils	nt	се		Comment
357	500	Note 1	Y	0.3-0.4 ²	N	Y	200 ²	Y	N	N	Υ	Y ⁴	N	N	N	Ν	N	Υ		
358	360	Note 1	Y	0.3-0.4 ²	N	Y	200 ²	Y	N	Ν	Υ	Y^4	Ν	Ν	Ν	Ν	Ν	Υ		
359	360	Note 1	Y	$0.4-0.5^2$	N	Y	200 ²	Y	N	Ν	Υ	Y^4	Ν	Ν	Ν	Ν	Ν	Υ		
360	500	Note 1	Y	$0.1-0.2^2$	Ν	Y	200 ²	Y	N	Ν	Υ	Y^4	Ν	Ν	Ν	Ν	Ν	Υ		
361	450	Note 1	Ν	-	N	Y	200 ²	Y	Ν	Ν	Υ	Y^4	Ν	Ν	Ν	Ν	Ν	Υ		
362	300	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
363	300	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
364	305	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
365	305	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
366	450	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Υ		
367	400	Note 1	Y	$0.2-0.4^2$	N	Y	200 ²	Y	N	Ν	Υ			Ν	Ν	Ν	Ν	Y		
368	450	Note 1	Y	0.5-0.6 ²	N	Y	200 ²	Y	N	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
369	450	Note 1	Y	0.9-1.2 ²	N	Y	200 ²	N	Y	Ν	Υ	Y ⁴		Ν	Ν	Ν	Ν	Y		
370	450	Note 1	Y	1.1-1.9 ²	N	Y	200 ²	N	Y	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
371	435	Note 1	Y	0.1-0.7 ²	N	Y	200 ²	N	Y	Ν	Υ	Y^4		Ν	Ν	Ν	Ν	Y		
372	470	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Y	Y ⁴		Ν	Ν	Ν	Ν	Y		
373	440	Note 1	Ν	-	N	Y	200 ²	Y	N	Ν	Υ	Y ⁴		Ν	Ν	Ν	Ν	Y		
374	425	Note 1	Y	0.2-0.5 ²	N	Y	200 ²	Y	N	Ν	Υ	Y^4	Ν	Ν	Ν	Ν	Ν	Y		
 NOTES: 1) Testing undertaken with Shera vane and NDM (Nuclear Density Meter) 2) This considers approximately 200mm of topsoil removal across all lots prior to subdivision filling. 3) Setback required for properties adjacent swales. TC2 type foundation to be adopted within 1.5m-5m from top of slope, no foundations to be constructed <1.5m from top of slope, No specific engineer design required >5m from top of slope 4) Soakage testing required on individual lots. Ground soakage and stormwater storage devices required 																				

Appendix III	Pre-Construction Assessment (exerts)
	BECA Area M Liquefaction Assessment Summary Plan



Appendix IV <u>Post-Construction Test Results</u>

Completion Testing by DCBE Ltd





Depth

(mm)

Notes:

Į		D	CONSULTING ENGINEERS	Project Name Area M, Stage 13, Gree Hamilton	Job F 171738-ARE		
		D	ENGINEERS	Tested by	Date	Sheet No.	Test Site
				RG	28/01/2021	1	Lot 357
	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16	Soil De	Water Table		
		2	Good Ground	Topsoil			
		10 7 7	Result	SILT with gravels and sand, dense, moist.	light greyish bro	own, medium	
		14 11		Sand with minor silt, coarse dense, moist.	gravels, brown,	dense to very	
_		13 12		EOB at 0.7m Unable to pe	ntrate due to co	oarse gravel.	
_							
_							
	Weather leadi	ng up to te	est was:	= Unable To Penetrate	UTE = Unable 1	o Extract	
			ncountered during testing e converted readings, as per calib	ration Certificate (Values are	undrained she	ar strength)	

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible

Shear Vane Serial No.: 2641 Exp. Date: 02/06/2021



(mm)

Notes:

	D	CON	su	LTI	NG		Project Name Job Area M, Stage 13, Greenhill Park, Hamilton 171738-ARE					
	D	ENG	NE	ER	S	Tested			Date	Sheet No.	Test Site	
							Jessel Lawda	1	28/01/2021	2	Lot 358	
Undrained Shear (kPa)	No of blows /100mm	(E	la Pene Blows/1 6 8	100mn				Soil De	escription		Water Table	
	2			 Go	od Grour	d-Topso	il					
	4 13			— Re	sult	Silt wit	h gravel and sa	and, br	own		-	
	14					EOB	@ 0.4m Unable	e to pe	netrate due to	coarse gravel		
	19										_	
	25					_						
	32 27					_						
	34	, , ,										
						-						
						_						
						_						
					_	_						
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						_						
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						-						
						_						
						-						
						_						
						-						
						1						
						-						
	EC)B = End C)f Bore	hole	UTI	P = Unab	le To Penetrat	te	UTE = Unable 1	o Extract		
Weather leadi Ground water	ng up to te was not ei	est was: ncountered	during	testin]				e undrained she			

Rev2.4

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

		D	CONSULTING	Project Name Area M, Stage 13, Gi Hamiltor		Job Ref. 171738-AREA-M-S13-01	
		D	ENGINEERS	5	Date	Sheet No.	Test Site
				RG	28/01/2021	3	Lot 359
	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16		Description		Water Table
		2 2	Good Ground Results				
		5 7		Silty SAND, gravels, brow	n, dense, moist.		
		6 4		— SAND, with trace gravels,	dense, moist.		
	128/28			Clayey SILT, trace sand,	yellowish brown, v	very stiff, moist.	
		3 5 3 4		 SAND, trace silt, brown, n 	nedium dense, mo	oist.	
		5 4 4 3		— — SAND, medium to coarse —	medium dense, r	noist.	
				EC)B at 2.0m		
_							
				-			
				_			
				-			
		ng up to te was not ei		P = Unable To Penetrate	UTE = Unable		

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

	Project Name Area M, Stage 13, Gree Hamilton	enhill Park,	Job Ref. 171738-AREA-M-S13-0	
	Tested by Jessel Lawda	Date 28/01/2021	Sheet No. 4	Test Site Lot 360
Undrained Shear (kPa)No of blowsScala Penetrometer (Blows/100mm)0246810121416	Soil De	escription		Water Table
1 3 9 Good Ground Results	- Topsoil			_
21+ Refusal	Sand, some silt, dense, ligh	t brown		
	Sand, light brown, gravel			
	Sand, minor clay, light brow	n		
	EOB @ 1.2m unable to pe	netrate due to	coarse gravel	
	-			
	-			
	-			
	-			
	-			
	-			
	-			
	-			
EOB = End Of Borehole UTP Weather leading up to test was:	= Unable To Penetrate	UTE = Unable ⁻	To Extract	

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

					NG	Project Na Area	ime M, Stage 13, Grei Hamilton	enhill Park,	Job Ref. 171738-AREA-M-S13-01	
	D	ENG	IN	IEEF	2S	Tested by		Date	Sheet No.	Test Site
							RG	28/01/2021	5	Lot 361
Undrained Shear (kPa)	No of blows /100mm		Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16 Good				Soil Description			
	2 8 10 8 7 8 7 8 6 6 8 10 11 10 Refusal 				Good ground Result Cool	SAND, tra Silkty SAN SAND, wit dense, mo	D, light brown, der ce silt, yellowish t ID, brown, mediur h gravels, browni ist. 6m Unable to pe	prown, dense, m m dense to dens sh orange, dens	e, moist e to very	
Weather leadii		DB = Enc	l Of B	orehole	UTP	= Unable T	o Penetrate	UTE = Unable 1	Го Extract	
Ground water			ed dur	-	g nor oolik					

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

		CONSULTING	Project Name Area M, Stage 13, Gree Hamilton	enhill Park,	Job 171738-ARE	
	B	CONSULTING ENGINEERS	Tested by Jessel Lawda	Date 28/01/2021	Sheet No. 6	Test Site Lot 362
Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16	Soil De	escription		Water Table
	2 7 7 9 7 8 4 3	Good ground Result	Topsoil Silty SAND, brown EOB @ 0.5m unable to per	netrate due to d	coarse gravel	
Weather lead		DB = End Of Borehole UTP	= Unable To Penetrate	JTE = Unable 1	Fo Extract	

Ground water was not encountered during testing

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible

					Project Name		Job Ref.	
		D	ONSI	ITING	Area M, Stage 13, Gree	enhill Park,	171738-ARE	A-M-S13-01
		B	INGIN	JLTING EERS	Hamilton Tested by	Date	Sheet No.	Test Site
		_		- LIIIO	5			
		-			Jessel Lawda	28/01/2021	7	Lot 363
Depth	Undrained	No of blows		enetrometer s/100mm)	Soil De	escription		Water
(mm)	Shear (kPa)	/100mm	-	8 10 12 14 16		p		Table
100		4		Result	Topsoil			
200		6		Good				_
300		7		Ground	UTP @ 0.3m due to coarse	e gravel		_
400		5						
500		5						
600		14						
700		15 13						
800 900		13			-			
1000		17						
1100								
1200								
1300								
1400								
1500								
1600								
1700								
1800								
1900								
2000								
2100								
2200								
2300								
2400								
2500 2600								
2700								
2800								
2900								
3000								
3100								
3200								
3300								
3400								
3500								
Notes:		EC)B = End Of Bo	rehole UTP	= Unable To Penetrate	UTE = Unable 1	Fo Extract	
1	Weather leading							
2			ncountered durir					
3					ration Certificate. (Values are	e undrained she	ar strength)	
4 5	Shear Vane re Shear Vane S			l values where po xp. Date: 04/02/2				Dou'l 4
о С	SHEAL VALLES		C300 E	λμ. υαιτ. 04/02/2	VZI			Rev2.4



(mm)

Notes:

	D	CONSULTING ENGINEERS	Project Name Area M, Stage 13, Gree Hamilton	enhill Park,	Job 171738-ARE	
	D	ENGINEERS	Tested by Jessel Lawda	Date 28/01/2021	Sheet No. 8	Test Site Lot 364
Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16	Soil De	escription		Water Table
	1 3 2 8	Result Good Ground	- Topsoil			
-	7 5		Sand, minor silt, light/dark bi			
	7 9		EOB @ 0.7m unable to per	netrate due to o	coarse gravel	
	9		-			
Weather leadin Ground water	ng up to te		= Unable To Penetrate	JTE = Unable ⊺	Fo Extract	

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Rev2

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

	D	CONSULTING ENGINEERS	Project Name Area M, Stage 13, Gree Hamilton	nhill Park,	Job Ref. 171738-AREA-M-S13-01		
	D	ENGINEERS	Tested by	Date	Sheet No.	Test Site	
			Jessel Lawda	28/01/2021	9	Lot 365	
Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16	Soil De	scription		Water Table	
Shear (kPa)		0 2 4 6 8 10 12 14 16	Topsoil Sand, some siltt loose, light l EOB at 1.2m, unable to per	brown	coarse gravel	Table	
	ng up to te was not er			JTE = Unable 1			

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

-	n sa s			Project Name		Job Ref.	
	D	CONSU	JLTING EERS	Area M, Stage 13, Gree	enhill Park,	171738-ARE	A-M-S13-01
	DE	ENGIN	EERS	Hamilton Tested by	Date	Sheet No.	Test Site
				5			
				RG	28/01/2021	10	Lot 366
Undrained	No of		enetrometer				Water
Shear (kPa)	blows	-	s/100mm)	Soil De	escription		Table
. ,	/100mm	0 2 4 6	8 10 12 14 16				
	3		Good Ground	Topsoil			
	3		Result				
	6			Sity SAND, light greyish brow	wn medium des	sne moist	
	13			Sity Sitve, light greyish brok	m, mealam de.		
	15						
	10						
	6			SAND, greyish brown, dense	a moist		
	6			Shind, greyish brown, delise	5, IIIUI3I.		
	6						
	13						
	15			EOB at 1.2m Unable to per	netrate due to o	coarse gravel.	
	10						
	10						
	EC)B = End Of Bo	orehole UTP	= Unable To Penetrate	UTE = Unable 1	o Extract	
Weather leading							

Weather leading up to test was: Ground water was not encountered during testing

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

	D	CONSULTING	Project Name Area M, Stage 13, Gr Hamilton		Job Ref. 171738-ARE	A-M-S13-01
L	D	ENGINEERS	Tested by	Date	Sheet No.	Test Site
			Jessel Lawda	28/01/2021	11	Lot 367
Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14		Description		Water Table
	5	Good Groun	d Topsoil			
	2 5	Resu		se gravel		_
	8			·		
	9					
	9					
	4					
	3					
	6					
	7					
	6 5					
	7					
	6					
	7					
	EC	DB = End Of Borehole U	P = Unable To Penetrate	UTE = Unable	Fo Extract	
	r was not e	ncountered during testing	alibration Certificate (Values a			

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

	Project Name Area M, Stage 13, Gree Hamilton	nhill Park,	Job Ref. 171738-AREA-M-S13-01	
	Tested by	Date	Sheet No.	Test Site
	RG	28/01/2021	12	Lot 368
Undrained Shear (kPa) No of blows /100mm Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16		escription		Water Table
4 Result	Topsoil with silt and gravels.			
3 Good 7 J	SILT, some sand, brown, me	edium desne, m	oist.	
180+/ 7	 Clayey SILT, trace sand, bro 	own, very stiff, m	noist.	-
13 153/43				-
	trace garvels			
6 5 3	Silty SAND, brown, medium	dense, moist.		
4 3 3 3 6 4		nish orange, m	oist.	
7	EOB AT 20m			-
	_			
	-			
	-			
	-			
	_			
	-			
	-			
EOB = End Of BoreholeUTFWeather leading up to test was:Ground water was not encountered during testingShear Vane readings are converted readings, as per cal		JTE = Unable 1		

Shear Shear Vane records include Re-moulded values where possible



(mm)

Notes:

	BCONSULTING			G	Project Name Area M, Stage 13, Gree Hamilton	enhill Park,	Job Ref. 171738-AREA-M-S13-01		
	DE	NGI	NEERS	7	Tested by	Date	Sheet No.	Test Site	
					Jessel Lawda	28/01/2021	13	Lot 369	
Undrained Shear (kPa)	o of ows 0mm	(Ble	Penetrometer ows/100mm)		Soil De	escription		Water Table	
			Re	sult	Topsoil				
120+				od ound	Sand, loose, brown				
154/55					Silty clay, brown streaked or	ange			
124/47					UTP @ 1m due to coarse g	ıravel		_	
						,			
Weather leading u Ground water was	p to test			UTP :	= Unable To Penetrate	UTE = Unable 1	To Extract		

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Rev2.

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

	R	CONSULTING	Project Name Area M, Stage 13 Gree Hamilton	nhill Park,		Ref. E A-M-S13-01
		ENGINEERS	Tested by Jessel Lawda	Date 18/02/2021	Sheet No. 19	Test Site Lot 369a
Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16	Soil De	escription		Water Table
		Good Groun	^d - Topsoil with silt, greiysh bro	wn, dry		
165/45		Result	Clay, some silt, brownish ora	ange, moist (FIL	L)	
180+/			 Silty CLAY, brownish orange 	e, (FILL)		
	5 9 5 8		 Silty SAND, brown with trace	e gravel (NATUI	RAL)	-
	7 8 5		Sand trace silt brown moist	(NATURAL)		
	5		EOB @ 2m			-
			_			
			-			
			-			
			-			
			-			
Weather leadi			P = Unable To Penetrate	UTE = Unable 1	Fo Extract	
Ground water was not encountered during testing Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) Shear Vane records include Re-moulded values where possible.						

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

A state of the second s					Project Name Area M, Stage 13, Gree Hamilton	nhill Park,	Job Ref. 171738-ARE	A-M-S13-01
	DB CONSULTING ENGINEERS				Tested by	Date	Sheet No.	Test Site
					RG	28/01/2021	14	Lot 370
	No of blows Scala Penetrometer (Blows/100mm) /100mm 0 2 4 6 8 10 12 14 16			16	Soil De	escription		Water Table
			Ground		Topsoil with silt.			
l	180+/		Resul		CLAY, some silt, brownish o	range, very stiff	, moist.	
	180+/							
	138/57				Silty CLAY, brownish orange	e, very stiff, mois	st.	
ł					CLAY, some silt, brownish o	range, very stiff	, moist.	
	153/50							
	100/10				Silty CLAY, minor sand, brov	wnish orange, w	ery stiff, moist.	
	128/43			-	EOB at 2.0m			
		EC	DB = End Of Borehole UT	ГР =	Unable To Penetrate	JTE = Unable 1	o Extract	
	Veather leadi	ng up to te	est was:					
S	Ground water was not encountered during testing Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)							
Shear Vane records include Re-moulded values where possible								

Shear Vane records include Re-moulded values where possible



Depth (mm)

Notes:

	D	CONS	ULTING	Project Name Area M, Stage 13 Gr Hamiltor			Ref. E A-M-S13-01
	D	ENGIN	ULTING		Date	Sheet No.	Test Site
20				Jessel Lawda	18/02/2021	20	Lot 370a
Undrained Shear (kPa)	No of blows /100mm	blows (Blows/100mm) Soil Description					Water Table
			Ground Results	Topsoil Silty SAND, gravel, light g	reyish brown (FIL	L)	_
				Silty SAND, trace gravel (FILL)		
180+/				 Silty CLAY, greyish brown 	ı, streaked white, ı	noist, (FILL)	
160/60				 Clay, some silt, brownish	orange, moist (NA	TURAL)	
120/43				EOB @ 2m			-
	ng up to te was not er	ncountered du	ring testing	P = Unable To Penetrate bration Certificate. (Values a	UTE = Unable T		

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



Project Name	Job Ref.		
Area M, Stage 13, Gree Hamilton	171738-ARE	A-M-S13-01	
Tested by	Date	Sheet No.	Test Site
Jessel Lawda	28/01/2021	15	Lot 371

Donth	Undrained	No of		Penetrometer		Mator
Depth (mm)	Undrained	blows	(Blov	(BIOWN/IUUIIIII) NOILUASCRIDTIOD		Water Table
(mm)	Shear (kPa)	/100mm	0 2 4 6	8 10 12 14 16		rable
100		7		Good		
200		7		Ground	Topsoil	
300		. 14		Result	UTP @ 0.3m due to coarse gravel	
400		13				
500		6				
500		0				
600		6				
700		,				
700		6				
800		5			-	
900		6			-	
1000					4	
1100					4	
1200					4	
1300					4	
1400					4	
1500						
1600					1	
1700					1	
1800					1	
1900						
2000						
2100						
2200						
2300						
2400						
2500					1	
2600					1	
2700						
2800					1	
2900					1	
3000					1	
3100						
3200					1	
3300					1	
3400						
3500						
Notes:	We other last "		DB = End Of B	sorehole UTP	= Unable To Penetrate UTE = Unable To Extract	
1	Weather leadi			ring tacting		
2	Ground water				pration Certificate. (Values are undrained shear strength)	
3						
4 5	Shear Vane records include Re-moulded values where possible Shear Vane Serial No.: C365 Exp. Date: 04/02/2021 Rev2.4					
- 0	Shear Vane Serial No.:C365Exp. Date: 04/02/2021Rev2.4					



Depth (mm)

Notes:

	D		Project Name Area M, Stage 13 Gree Hamilton	enhill Park,		Ref. E A-M-S13-01
	D	ENGINEERS	Tested by Jessel Lawda	Date 18/02/2021	Sheet No. 21	Test Site Lot 371a
Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14	Soil De	escription		Water Table
	3 3 6 67 6 4	Good ground Resu	d	ILL)		-
180+/			Silty CLAY, brownish orange	e, moist (NATUF	RAL)	
87/43			Clay, trace silt, brownish ora	ange, moist (NA	TURAL)	
			EOB @ 2m			
			TP = Unable To Penetrate	UTE = Unable 1	To Extract	
Shear Vane re	was not ei eadings are	ncountered during testing	alibration Certificate. (Values are	e undrained shea	ar strength)	

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

		ONS		Project Name Area M, Stage 13, Gre	enhill Park,	Job Ref. 171738-ARE	A-M-S13-01
	B	ENGIN	ULTING	Hamilton Tested by	Date	Sheet No.	Test Site
				RG	28/01/2021	16	Lot 372
Undrained Shear (kPa)	No of blows /100mm	(Blo	Penetrometer ows/100mm) 8 10 12 14 16	Soil D	escription		Water Table
180+/			Ground Result	Topsoil with silt.	orange, very stiff	, moist.	
180+/				CLAY, trace silt, brownish c	range, very stiff,	moist.	
180+/				CLAY, some silt, brownish o stiff, moist.	orange, streaked	l white, very	
180+/				Silty CLAY, light brown, mo very stiff, moist.	ist, streaked whi	te, trace mica,	
				EOB at 2.0m			
Weather leadin Ground water	ng up to te was not er	ncountered du	uring testing	= Unable To Penetrate	UTE = Unable		

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



(mm)

Notes:

				ULTING	Project Name Area M, Stage 13, Gre Hamilton		Job I 171738-ARE	
		D	ENGIN	IEERS	Tested by RG	Date 28/01/2021	Sheet No. 17	Test Site Lot 373
	Undrained Shear (kPa)	No of blows /100mm	Scala Penetrometer (Blows/100mm) 0 2 4 6 8 10 12 14 16			Description		Water Table
	180+/ 			Good Ground	CLAY, some silt, brownish	orange, very stiff	, moist.	
	UTP				CLAY, trcae silt, trace sand dry.	I, trace mica, bro	wnish orange,	
	180+/				CLAY, some silt, brownish	orange, very stiff	, moist.	
	130/28				Silty CLAY, brownish orang 	je, very stiff, moi	st.	
					EOB at 2.0m			
	Weather leading		DB = End Of B	orehole UTP	P = Unable To Penetrate	UTE = Unable ⁻	Fo Extract	
	Ground water			ring testing				

Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength)

Shear Vane records include Re-moulded values where possible



Depth

Undrained

Scala Penetrometer

(Blows/100mm)

Project Name		Job Ref.	
Area M, Stage 13, Gree Hamilton	171738-ARE	A-M-S13-01	
Tested by	Date	Sheet No.	Test Site
Jessel Lawda	28/01/2021	18	Lot 374
Soil De	Water Table		

 Weather leading up to test was: Ground water was not encountered during testing Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) Shear Vane records include Re-moulded values where possible 	(mm)	Shear (kPa)	0 2 4 6 8 10 12 14 16	Soli Description	Table		
200 120+ 0 <td>100</td> <td></td> <td> Good</td> <td>Tancoil</td> <td></td>	100		Good	Tancoil			
400 Image: Constraint of the second seco	200		Ground	Topson			
Solution Solutin Solutin Solutin So	300	120+	Result				
500 120+ 1 <td>400</td> <td></td> <td></td> <td>Silty CLAV minor cand light brown</td> <td></td>	400			Silty CLAV minor cand light brown			
1 1	F00			Sity CLAY, minor sand, light brown			
700 7	500						
100 1	600	120+					
and 00 139//9 1 <th1< th=""> 1 <th1< th=""> <th1< th=""> <th1< th=""> <th1< t<="" td=""><td>700</td><td></td><td></td><td></td><td></td></th1<></th1<></th1<></th1<></th1<>	700						
1000 1001 100 <th< td=""><td></td><td></td><td></td><td>_</td><td></td></th<>				_			
1100 I		139/49		_			
1100 120+ 1 </td <td></td> <td></td> <td></td> <td>_</td> <td></td>				_			
1300 Image: Sector of the				Clayey SILT, trace sand, dark brown streaked white			
1300		120+		_			
120+ 120+ 1 </td <td></td> <td></td> <td></td> <td>_</td> <td></td>				_			
1600		100			_		
1700 Image: Construction of the construc		120+		_			
1800 120+ 1 <th1< th=""> 1 <th1< th=""> <th1< th=""></th1<></th1<></th1<>				 Clavov SILT, light brown, vory stiff, low plasticity			
1900 120+ I </td <td></td> <td></td> <td></td> <td></td> <td></td>							
2000 Image: Construction of the construc		120+		-			
2100		1201		FOB @ 2m	_		
2200 Image: Constraint of the constrai					_		
2300 Image: Construction of the construc				-			
2500 Image: Construct of the	2300			-			
2500	2400			-			
2700 Image: Constraint of the constrai	2500						
2800 Image: Second	2600						
2900 Image: Constraint of the constrai	2700						
3000 Image: Second strength 3100 Image: Second strength 3200 Image: Second strength 3200 Image: Second strength 3200 Image: Second strength 3300 Image: Second strength 3400 Image: Second strength 3500 Image: Second strength Motes: EOB = End Of Borehole UTP = Unable To Penetrate UTE = Unable To Extract 1 Weather leading up to test was: Image: Second strength 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include values where possible				_			
3000 Image: Constraint of the constrai				_			
3200				_			
3200 3300 1 </td <td></td> <td> </td> <td></td> <td>-1</td> <td></td>				-1			
3400 3400				-1			
3500 EOB = End Of Borehole UTP = Unable To Penetrate UTE = Unable To Extract 1 Weather leading up to test was: 2 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible				-1			
Notes: EOB = End Of Borehole UTP = Unable To Penetrate UTE = Unable To Extract 1 Weather leading up to test was: 2 2 Ground water was not encountered during testing 3 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) 4 Shear Vane records include Re-moulded values where possible		┨───┤──		-			
 Weather leading up to test was: Ground water was not encountered during testing Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) Shear Vane records include Re-moulded values where possible 		<u> </u>					
 Ground water was not encountered during testing Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) Shear Vane records include Re-moulded values where possible 	Notes:			P = Unable To Penetrate UTE = Unable To Extract			
 Shear Vane readings are converted readings, as per calibration Certificate. (Values are undrained shear strength) Shear Vane records include Re-moulded values where possible 							
4 Shear Vane records include Re-moulded values where possible				ibration Cartificate. (Values are undrained chear strength)			

Appendix V	Stormwater Management
	On-lot Water Efficiency Measures
	Lot Levels (Minimum Lot Levels)

ON-LOT WATER EFFICIENCY MEASURES

WATER SUPPLY AND WASTEWATER DISPOSAL

The efficiency of taps, showers and toilets contribute to how much water we use. A reduction in the use of potable water by each house directly relates to the amount of wastewater generated (i.e. reduced water use results in reduced wastewater generation). To reduce potable water demand and the amount of wastewater generated, as a minimum, each house is required to install low demand fittings for kitchen, bathroom and laundry facilities.

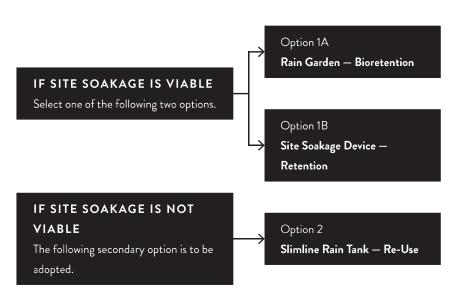
All household fittings are required to have a minimum 3 Star Rating.

STORMWATER DISPOSAL

Each lot is required to adopt an on-lot stormwater efficiency measure to ensure that surface water runoff is appropriately managed.

First, the suitability of the site for soakage needs to be assessed. Soakage is the process of helping stormwater soak into the ground using specially designed soakage devices. Soakage allows for the infiltration of stormwater into the soil which recharges the groundwater table below.

A site infiltration test is mandatory for all lots to confirm the in-situ soils are capable of achieving the minimum percolation rates. Refer to Hamilton City Council 'Three Waters Practice Note HCC 03: Soakage' for guidance on soil testing.



* Other alternative stormwater efficiency options will also be considered subject to approval by Greenhill Park and Hamilton City Council.

The selected option is to be designed by a suitably qualified Engineer and approved by the Hamilton City Council Building Control Unit. Refer to page 33 to 36 of these guidelines for further information of the design requirements for Options 1A, 1B & 2.

Hamilton City Council also encourages the installation of multiple stormwater efficiency options within a property, where practical.

Option 1A RAIN GARDEN - BIORETENTION

Design to provide minimum 'live storage' retention for runoff from a 10mm rainfall event for trafficked hardstand areas.

The following table outlines indicative storage volumes and estimated rain garden areas for a range of lot sizes.

Lot Area (m²)	Live Storage Volume (m³)	Rain Garden Area (m²)
300	0.8	4.1
350	0.9	4.7
400	1.1	5.4
450	1.2	6.1
500	1.4	6.8
550	1.5	7.4

Based on hardstand coverage equal to 30% of total lot area

KEY REQUIREMENTS

- Rain garden to be located to capture runoff from main hardstand areas within the lot (as much as practical).
- Maximum live storage depth to be 300mm (safety requirements to be considered when device is at maximum storage capacity).
- A channel and grate to be installed across vehicle entrance to capture hardstand run off and direct it to rain garden.

- \cdot Rain garden to be integrated with garden design (refer to page 34 for details).
- Overflow to be connected to stormwater connection provided.

FOR MORE INFORMATION

Refer to Hamilton City Council 'Three Waters Practice Note – HCC04 – Bio-retention (Rain Gardens)' for information on typical design requirements.

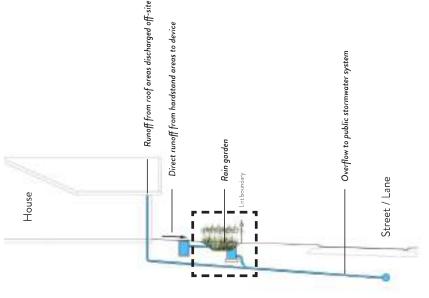


DIAGRAM - 7 Rain Garden - Bioretention

GREENHILL PARK RAIN GARDEN PLANT LIST

Native plants are encouraged, but other exotic plant species which complement your front yard planting design could be used. Deciduous plants should not be used as their leaf-fall can block the outflow.

Botanical Name

The plants selected need to -

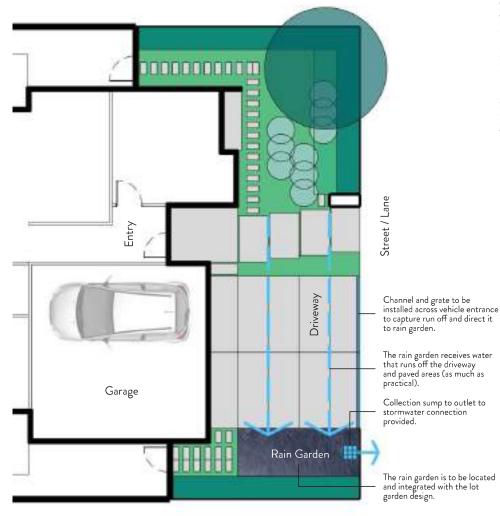
- \cdot Be able to tolerate short periods of inundation and longer dry periods
- Be perennial rather than annual
- \cdot Have deep fibrous root systems and a spreading growth form
- Form a dense, weed-suppressing cover



Apodasmia similis	oioi
Blechnum penna-marina	alpine hard fern
Libertia ixioides	mikoikoi
Carex dipsacea	teasel sedge
Carex secta	purei
Carex virgata	pukio
Dianella nigra	turutu
Libertia grandiflora	mikoikoi
Lobelia angulata	panakenake
Pimelea prostrata	pinatoro

Common Name

All rain garden plants to be a minimum grade of Pb 8 at the time of planting. * Other plant species can be approved at the discretion of the Design Review Panel.





Option 1B SITE SOAKAGE DEVICE - RETENTION

Design to provide minimum 'live storage' retention for runoff from a 10mm rainfall event for roof and trafficked hardstand areas.

The following table outlines indicative storage volumes for a range of lot sizes.

Lot Area (m²)	Live Storage Volume (m³)
300	2.2
350	2.6
400	3.0
450	3.4
500	3.7
550	4.1

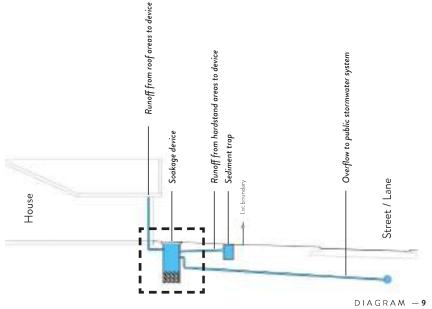
Based on 80% site coverage (roof and hardstand areas)

KEY REQUIREMENTS

- Soakage device(s) to be located to capture runoff from roof downpipes and hardstand areas (as much as practical).
- A channel and grate to be installed across vehicle entrance to capture hardstand run off and direct it to soakage device.
- Soakage device to be integrated with garden design.
- \cdot Overflow to be connected to stormwater connection provided.

FOR MORE INFORMATION

Refer to Hamilton City Council 'Three Waters Practice Note HCC 03: Soakage' for information on typical design requirements.



Site Soakage Device — Retention

Option 2 SLIMLINE RAIN TANK - RE-USE

The slimline rain tank is to be connected to a separate grey-water household re-use system with a minimum capacity of 5,000L.

KEY REQUIREMENTS

- Rain tank to be connected into a fully integrated grey-water re-use system within the main dwelling with connections to toilets, laundry and irrigation systems.
- All roof run-off is to be captured by rain tanks and available for re-use. Run-off from hardstand areas (driveways and paving) can be discharged directly into stormwater connection provided.
- A maximum of two (2) tanks may be used to achieve the required storage and align with downpipe locations.
- \cdot Overflow to be connected to stormwater connection provided.

LOCATION AND INSTALLATION

Slimline rain tanks should be placed in the rear or side yard of the lot as unobtrusively as possible. Care should be taken, where tanks are placed next to the house, to ensure they are placed adjacent to a blank wall and not infront of a window.

COLOUR

The colour of all rain tanks should match the colour of the homes exterior wall cladding adjacent to the tank.

 * Colours that do not match but are complementary to the design and materials of the house can be approved at the discretion of the Design Review Panel.

FOR MORE INFORMATION

Refer to Hamilton City Council 'Three Waters Practice Note – HCC02 – Rainwater Reuse Systems (Rain Tanks)' for information on design requirements.

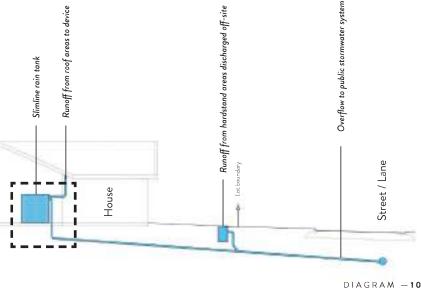
APPROVED RAIN TANK PRODUCTS

Tanksalot® Slimline Tank www.tanksalot.co.nz

ThinTanks[™] NZ Slimline Rainwater Poly Tank www.thintanks.co.nz

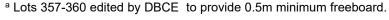
* Other rain tank products will also be considered subject to approval by Greenhill Park.

Note below ground tanks (sealed tanks only) are also considered an appropriate design option and are pre-approved for use on this subdivision.



Slimline Rain Tank - Re-use

Lot	Stage	Minimum Lot Level (mRL)	1% AEP Flood Level (mRL)	Flood Level Reference	Calculated Freeboard (to Lot Level - m
347	12	38.703	36.46	Swale 3B	2.243
348	12	38.700	36.46	Swale 3B	2.240
349	12	38.751	36.46	Swale 3B	2.291
350	12	39.039	36.46	Swale 3B	2.579
351	12	39.109	36.46	Swale 3B	2.649
352	12	39.179	36.46	Swale 3B	2.719
353	12	39.248	36.46	Swale 3B	2.788
354	12	39.317	36.46	Swale 3B	2.857
355	12	39.393	36.46	Swale 3B	2.933
356	12	39.486	36.46	Swale 3B	3.026
357	13	38.500 ª	38.00	Swale 1D	0.500
358	13	38.500 ª	38.00	Swale 1D	0.500
359	13	38.500 ª	38.00	Swale 1D	0.500
360	13	38.500 ª	38.00	Swale 1D	0.500
361	13	38.670	38.00	Swale 1D	0.670
362	13	38.696	38.00	Swale 1D	0.696
363	13	38.925	38.00	Swale 1D	0.925
364	13	38.802	38.00	Swale 1D	0.802
365	13	38.681	38.00	Swale 1D	0.681
366	13	38.610	38.00	Swale 1D	0.610
367	13	39.145	38.00	Swale 1D	1.145
368	13	39.300	38.00	Swale 1D	1.300
369	13	39.448	38.00	Swale 1D	1.448
370	13	39.571	38.00	Swale 1D	1.571
371	13	39.713	38.00	Swale 1D	1.713
372	13	39.845	38.00	Swale 1D	1.845
373	13	39.987	38.00	Swale 1D	1.987
374	13	40.120	36.46	Swale 3B	3.660
375	14	39.017	37.24	Swale 1	1.777
376	14	39.095	37.24	Swale 1	1.855
377	14	39.170	36.40	Swale 3A	2.770
378	14	39.226	36.40	Swale 3A	2.826
379	14	39.174	36.40	Swale 3A	2.774
380	14	39.122	36.40	Swale 3A	2.722
381	14	39.069	36.40	Swale 3A	2.669
382	14	39.016	36.40	Swale 3A	2.616
383	14	39.162	36.40	Swale 3A	2.762
384	14	39.223	36.40	Swale 3A	2.823
385	14	39.305	36.40	Swale 3A	2.905
386	14	39.366	36.40	Swale 3A	2.966
387	14	39.427	36.40	Swale 3A	3.027





APPENDIX 2

Roading QA Documentation

Road Subgrade - 2(a)

- Drawing 21879-M-R3-AB Webb Dr (in lieu of strings)
- Drawing 21879-M-R4-AB Webb Dr (in lieu of strings)
- Drawing 21879-M-R7-AB Carrs Rd (in lieu of strings)
- Clegg Hammer Tests

Road Sub-Base 2(b)

- Sub- Base Strings
- Nuclear Densometer Results
- Benkelman Beam Test Results
- Sub-Base Clegg Hammer Tests
- GAP65 Material Tests

Road Basecourse 2(c)

- Basecourse strings
- Nuclear Densometer Results
- Benkelman Beam Test Results
- TNZ M/4 AP40 Material Tests

Surfacing & RAMM Data 2(d)

- HCC pavement RAMM data
- Surfacing RAMM data



Infrastructure Development Completion Report

APPENDIX 2(a)

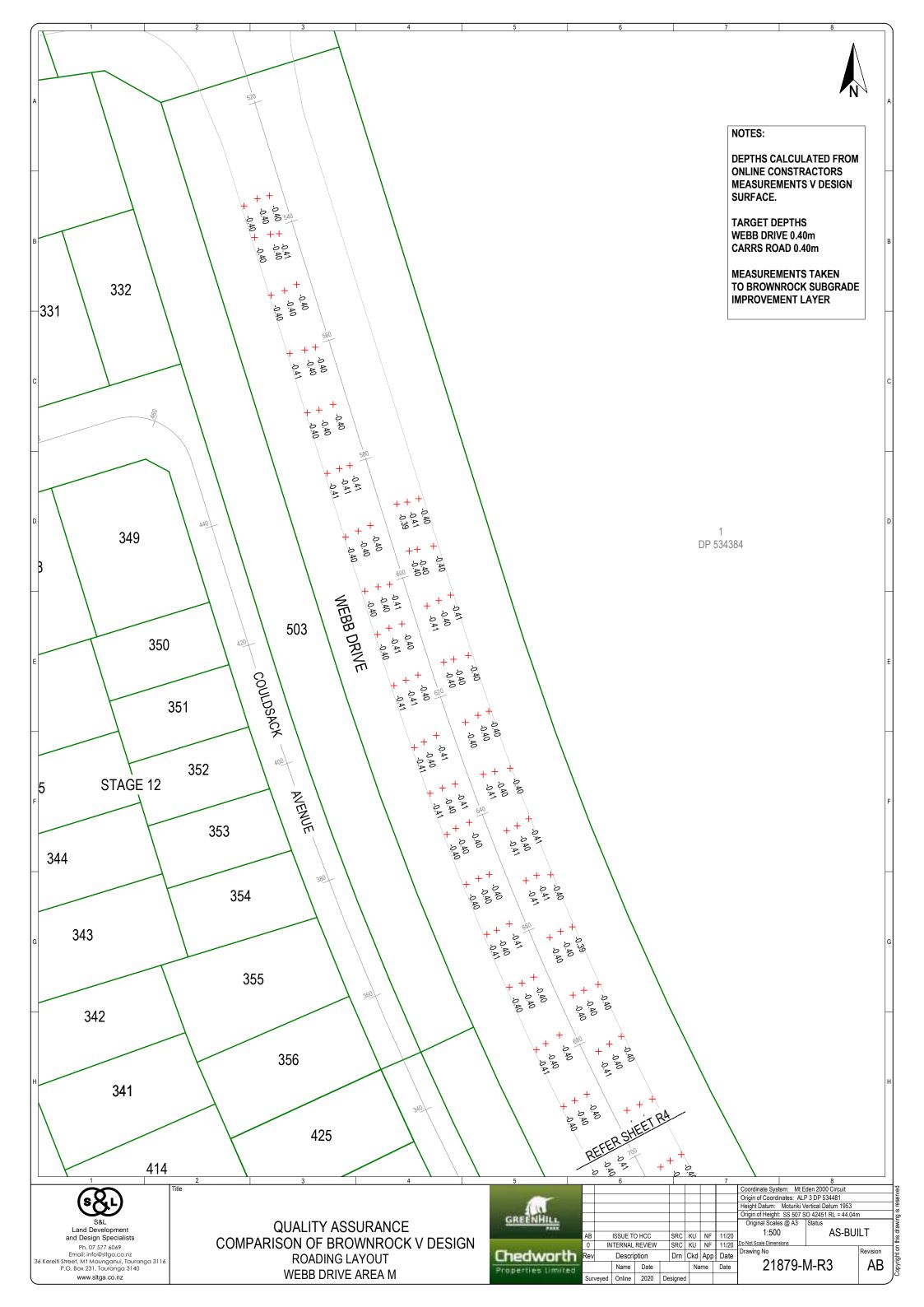
Roading QA Documentation

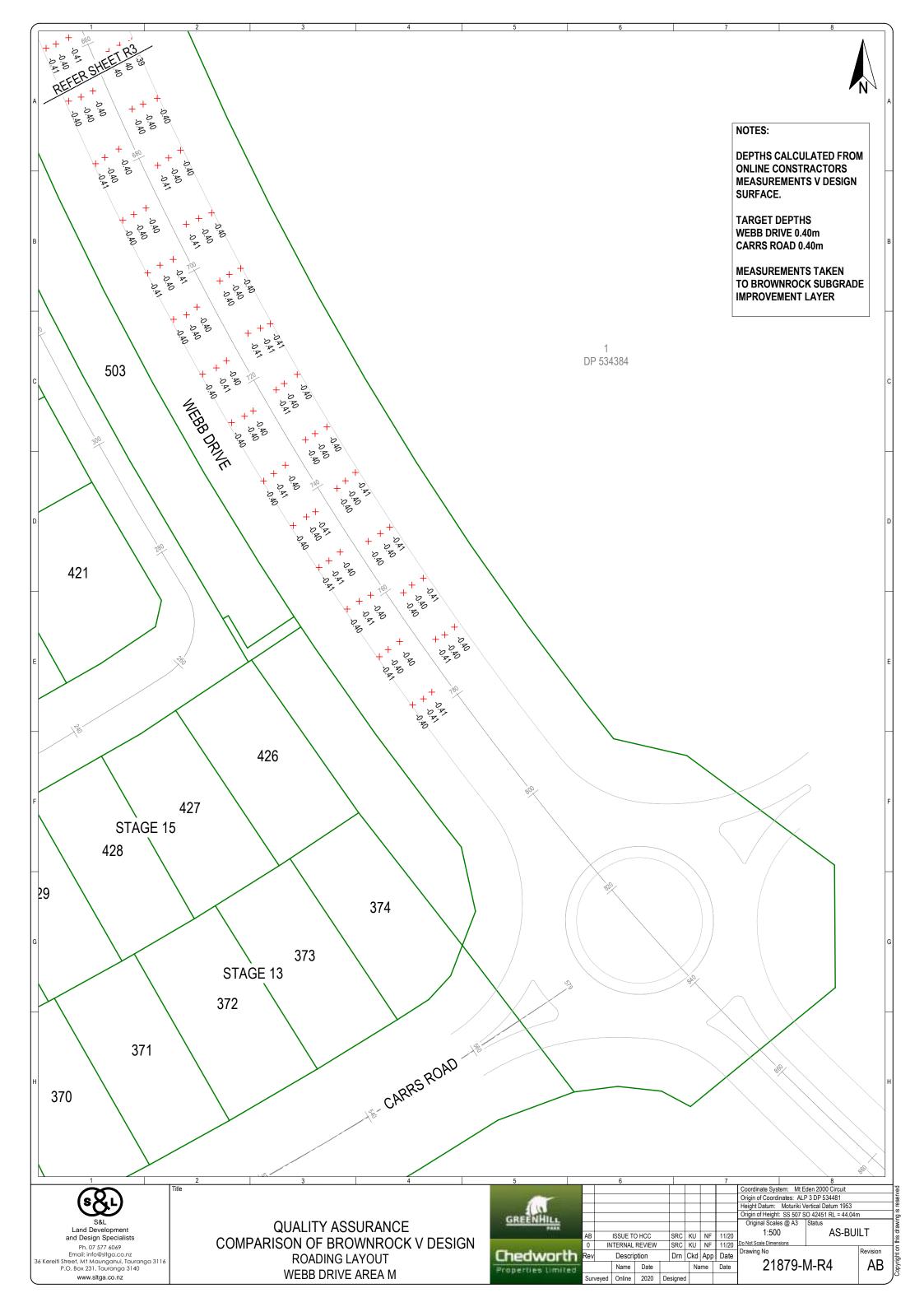
Road Subgrade - 2(a)

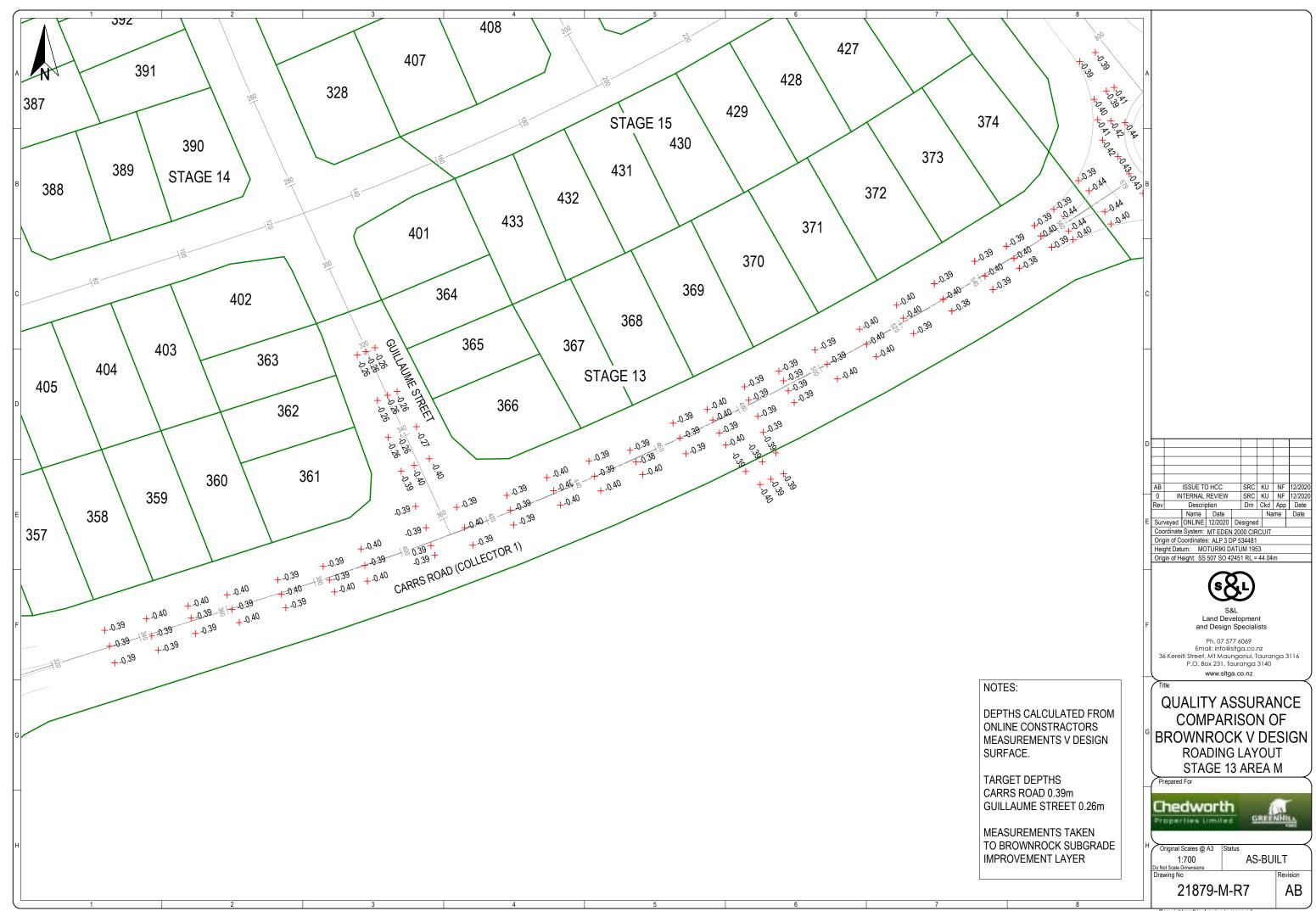
- Drawing 21879-M-R3-AB Webb Dr (in lieu of strings)
- Drawing 21879-M-R4-AB Webb Dr (in lieu of strings)
- Drawing 21879-M-R7-AB Carrs Rd (in lieu of strings)
- Clegg Hammer Tests



Infrastructure Development Completion Report







Copyright on this drawing is reserved



Contract	GF	IP	Job No.	
	Stage 13 C		Date	1/12/2020
, enamage	olugo io e			
laterial	Brown r	ock SIL	Recorded by	Emil Karlssor
Chn	1m from kerb - Left	Centre Line	1m from kerb - Right	Notes
330		35		
340			28	
350	26			
360		38		
370			24	
380	24			
390		29		
400			28	
410	26			
420		43		
430			24	
440	41			
450		54		
460			37	
470	21			
480		52		
490			35	
500	53			
510		65		
520			33	
530	46			
540		30		
550			32	
560	45			
570		25		
580			31	
		1	<u> </u>	



Site/Chainage Webb D East Lane Date 5/11/20 Material Brown rock SIL Im from kerb - 1m from kerb -	Contract	GHP Sta	age 12	Job No.	
Material Brown rock SIL Recorded by Emil Karl Chn 1m from kerb- Left Centre Line 1m from kerb- Right Note 590 62 1m from kerb- Right Note 600 34 1 610 35 34 1 620 48 1 1 630 28 1 1 640 26 1 1 640 26 1 1 660 28 1 1 660 28 1 1 670 28 1 1 680 18 1 1 700 28 1 1 710 28 1 1 720 44 1 1 740 29 1 1 750 33 1 1 1					5/11/2020
Brown rock SIL Chn Im from kerb- Left Centre Line Im from kerb- Right Notes 590 62 1 Notes 600 34 1 1 600 34 1 1 600 34 1 1 1 610 35 34 1 1 620 48 1 <t< th=""><th></th><th></th><th>uot Lulio</th><th></th><th></th></t<>			uot Lulio		
Left Centre Line Right Note: 590 62 34 600 34 600 600 34 600 600 34 610 35 600 600 34 610 35 600 600 34 610 36 610 620 48 610 620 620 48 610 610 26 610 610 610 26 610	laterial	Brown ro	ock SIL	Recorded by	Emii Karissor
Left Centre Line Right Note: 590 62 34 600 34 600 600 34 600 600 34 610 35 600 600 34 610 35 600 600 34 610 36 610 620 48 610 620 620 48 610 620					
600 34 610 35 620 48 630 28 640 26 650 36 660 21 660 21 670 28 680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	Chn		Centre Line		Notes
610 35 48 620 48 630 28 640 26 650 36 660 21 660 21 670 28 680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	590	62			
620 48 630 28 640 26 640 26 650 36 660 21 670 28 680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	600			34	
630 28 26 640 26 650 36 21 660 21 60 670 28 18 680 18 60 700 32 10 710 28 10 720 44 10 730 32 29 750 33 36	610	35			
640 26 650 36 660 21 670 28 680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	620			48	
650 36 21 660 21 670 28 18 680 18 690 26 18 700 32 10 710 28 10 720 44 10 740 29 10 750 33 36	630	28			
660 21 670 28 680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	640			26	
670 28 18 680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	650	36			
680 18 690 26 700 32 710 28 720 44 730 32 740 29 750 33 760 36	660			21	
690 26 32 700 32 32 710 28 44 720 44 44 730 32 29 740 29 44 750 33 36	670	28			
700 32 710 28 720 44 730 32 740 29 750 33 760 36	680			18	
710 28 44 720 44 730 32 740 29 750 33 760 36	690	26			
720 44 730 32 740 29 750 33 760 36	700			32	
730 32 29 740 29 750 33 760 36	710	28			
740 29 750 33 760 36	720			44	
750 33 36 760 36 36	730	32			
760 36	740			29	
	750	33			
770 24	760			36	
	770	24			
I					
Source of conversion: Inferred CBR%=0.07(Impact Value) ² /100	Source of conv	ersion: Inferred CBR%	%=0.07(Impact Va	alue) ^z /100	



Contract	Stage 1	2 GHP	Job No.	
Site/Chainage				3/11/2020
Site/Chainage	ע זע ממשעע	ESI LANG	_Date	
Material	Brown ro	ock SIL	Recorded by	Tyler Mahi
	1m from kerb -		1m from kerb -	
Chn	Left	Centre Line	Right	Notes
530	65			
540			30	
550	57			
560			28	
570	41			
580			38	
590	30			
600			56	
610	40			
620			32	
630	58			
640			44	
650	45			
660			56	
670	36			
680			60	
690	68			
700			42	
710	58			
720			34	
730	32			
740			30	
750	37			
760			40	
770	43			
780			41	
Source of conve	ersion: Inferred CBR%	%=0.07(Impact Va	alue) ⁻ /100	
Remarks				



Contract	GHP Sta	age 13	Job No.	
Site/Chainage	Webb Dr W	lest Lane	Date	1/12/2020
Material	Brownro	ock SIL	Recorded by	Emil Karlssor
Chn	1m from kerb - Left	Centre Line	1m from kerb - Right	Notes
790	39			
800			32	
810	41			
820			32	
830	28			
840			31	
850	29			
_				
Source of conve	ersion: Inferred CBR	%=0.07(Impact Va	alue) ⁻ /100	

APPENDIX 2(b)

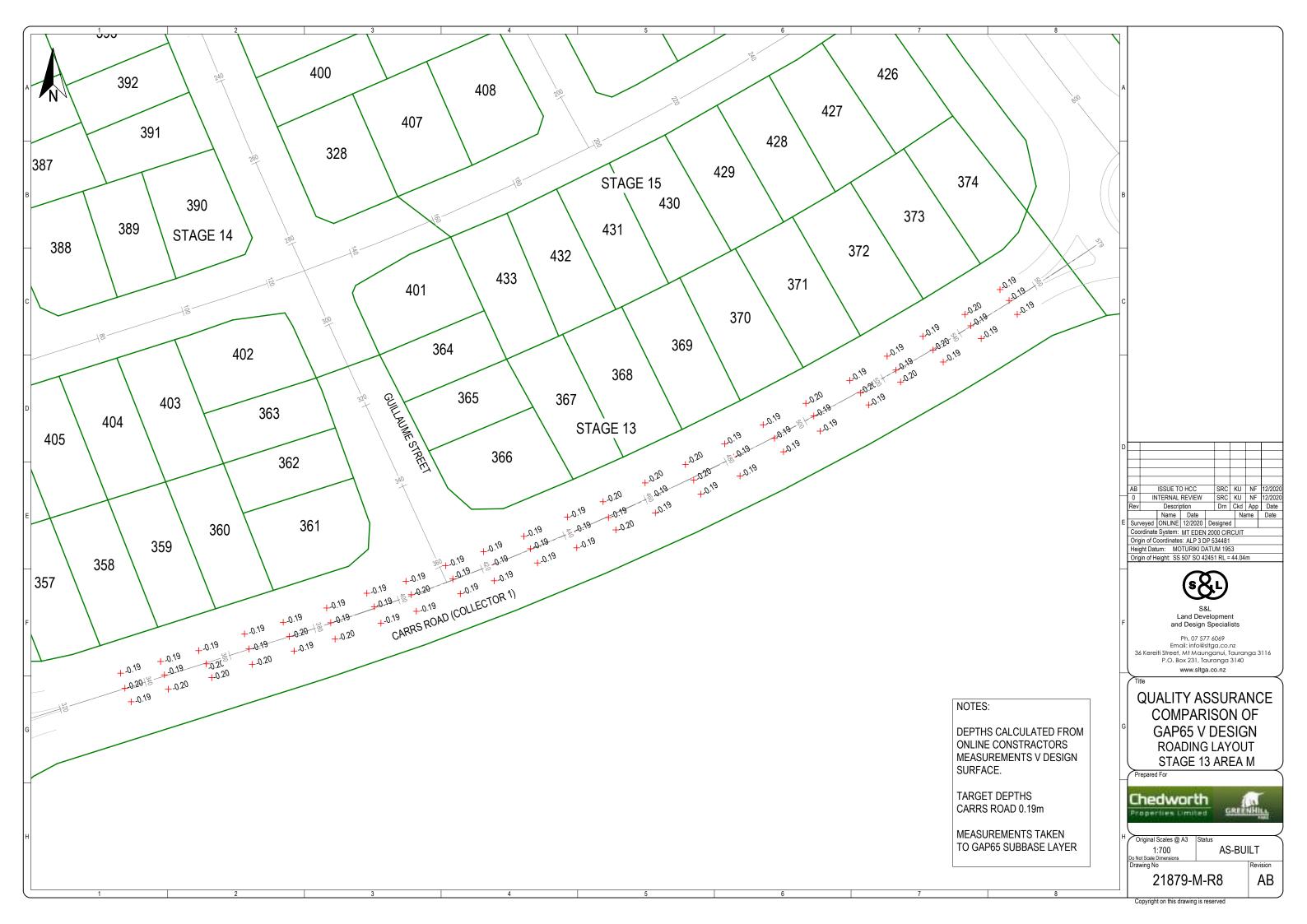
Roading QA Documentation

Road Sub-Base 2(b)

- Sub- Base Strings
- Nuclear Densometer Results
- Benkelman Beam Test Results
- Sub-Base Clegg Hammer Tests
- GAP65 Material Tests

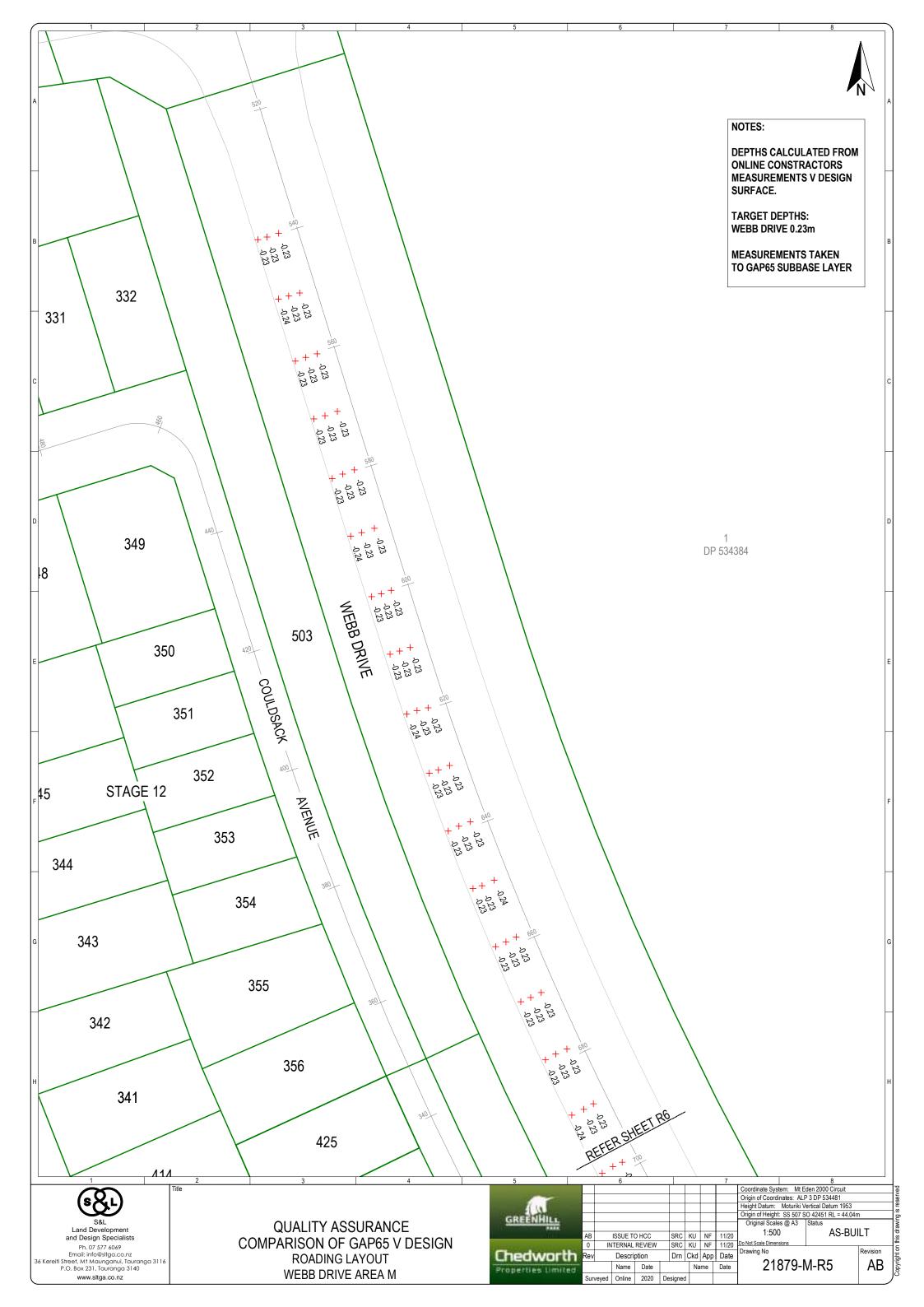


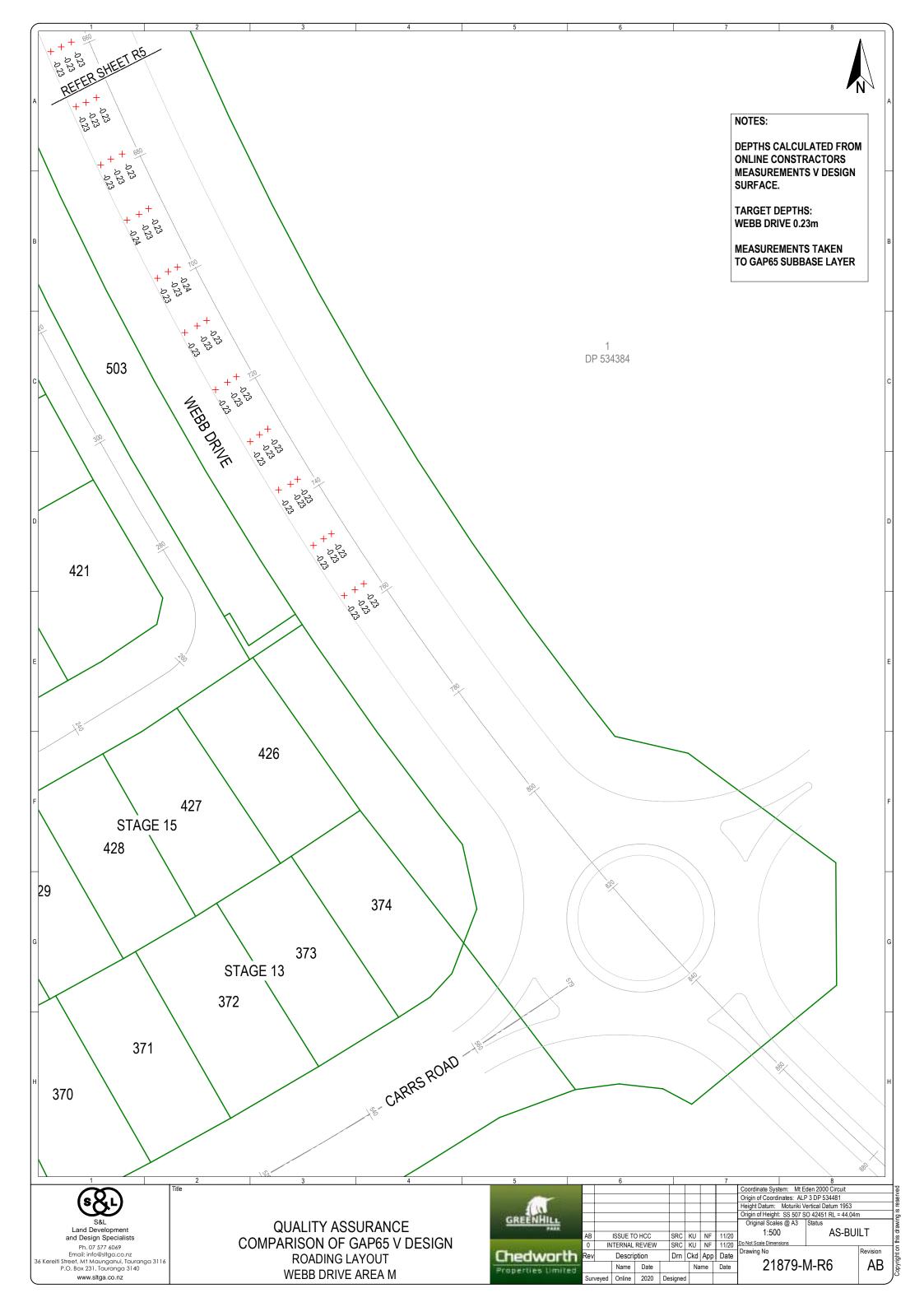
Infrastructure Development Completion Report





Contract	GHP Stage 13		Job No.	
Site/Chainage	Carrs	Road	_Date	4/12/2020
			Recorded by	Emil Karlsson
Material	GAP 65 S	ubbase	_	
Chn	1m from kerb - Left	Centre Line	1m from kerb - Right	Notes
330			38	
340		43		
350	34			
360			45	
370		38		
380	44			
390			44	
400		46	53	
410	47			
420			61	
430		51		
440	55			
450			32	
460		29		
470	44			
480			52	
490		28		
500	31			
510			53	
520		44		
530	50			
540			50	
550		31		
560	34			
570			36	
580		52		
Source of conve	ersion: Inferred CBR	%=0.07(Impact Va	alue) ² /100	







Contract	GHP Sta	ige 13	Job No.	
-	Webb Dr West La			10/11/2020
			Recorded by	Emil Karlsson
laterial	GAP	65		
Chn	1m from kerb - Left	Centre Line	1m from kerb -	Notes
540	46		Right	
550	40		44	
560	32			
570	JL		50	
580	50			
590	~~		45	
600	54			
610	••		51	
620	58			
630			51	
640	59			
650			60	
660	47			
670			54	
680	45			
690			48	
700	52			
710			55	
720	52			
730			48	
740	59			
750			46	
760	46			
Source of conve	ersion: Inferred CBR%	6=0.07(Impact Va	alue) ² /100	



Recorded by	4/12/2020 Emil Karlsson Notes
Material GAP 65 Recorded by	Emil Karlsso
Material GAP 65 Chn 1m from kerb - Left Centre Line 1m from kerb - Right 770 45 45 780 45 1 790 41 35 800 36 35 810 36 1	
Chn 1m from kerb- Left Centre Line 1m from kerb- Right 770 45 45 780 45 1 790 41 35 800 35 35 810 39 1	Notes
Crin Left Centre Line Right 770 45 45 780 45 1 790 41 35 800 36 35 810 39 1 1	Notes
Crin Left Centre Line Right 770 45 45 780 45 1 790 41 35 800 36 35 810 39 1 1	Notes
780 45 790 41 800 35 35 810 36 820 39	
790 41 800 35 810 36 820 39	
800 35 810 36 820 39	
810 36 820 39	
820 39	
830 32	
840 52	
850 44	
Source of conversion: Inferred CBR%=0.07(Impact Value) ² /100	



ntract	GHP Stage 13		_Job No.		
e/Chainage	Webb Dr West Lane CH 540-760		_Date	10/11/2020 Emil Karlsson	
terial			Recorded by		
Chn	1m from kerb - Left	Centre Line	1m from kerb - Right	Notes	
540	46				
550			44		
560	32				
570			50		
580	50				
590			45		
600	54				
610			51		
620	58				
630			51		
640	59				
650			60		
660	47				
670			54		
680	45				
690			48		
700	52				
710			55		
720	52				
730			48		
740	59				
750			46		
760	46				
<i>urce of conve</i>	ersion: Inferred CBR%	%=0.07(Impact Va	alue) ² /100		

BASECOURSE COMPACTION CONTROL TNZ - B2 TEST RESULTS



Project :	Greenhill - Stage 13		
Location : Webb Drive (Northbound La			
Client :	Online Contractors (2016) Limited		
Contractor :	Online Contractors (2016) Limited		
Tested by :	J. Waru-Savage		
Date tested :	10/11/20		

Sample description :	GA
Nuclear densometer no :	335
Solid density (tested) :	2.6
Max dry density (tested) :	2.10
Opt. water content (tested) :	5.0

GAP65 (ex Gleeson Quarry, Huntly)

33576	
2.66	t/m*
2.10	t/mª
5.0	96

Project No :	2-68015.00
Lab Ref No :	HA6559_NDM
Client Ref No :	

The same the second second	11000				Nuclea	ar Densome	eter Test Re	isults	1000				1.0.0	
Test Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Test Position	CH540	CH550	CH560	CH570	CH580	CH590	CH60D	CH610	CH62D	CH630	CH640	CH650	CH660	CH670
Offset	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT
Probe Depth (mm)	B/S	B/S	B/S	8/S	B/S	B/S	B/S	B/S	B/5	B/S	B/5	B/S	B/S	B/5
Wet Density (t/m³)	2.32	2.24	2.27	2.14	2.33	2.20	2.32	2.28	2.28	2.28	2.27	2.32	2.25	2.24
Dry Density (t/m²)	2.21	2.13	2.17	2.05	2.23	2.10	2.19	2,17	2.16	2.16	2,14	2.20	2.13	2.13
Water Content (%)	5.1	5.2	4,6	4,4	4,6	4.5	5.6	4.8	5.5	5.4	5.9	5.1	5.6	4.9
% of MDD	105	101	103	98	106	100	104	104	103	103	102	105	102	102
96 Saturation	67	55	54	40	63	45	70	57	64	62	65	65	60	53

	Oven Corrected Test Results	
Dry Density (t/m³) Water Content (%)		
Water Content (%)	NOT TESTED	
% of MDD	NOTIESTED	
% Saturation		

Test Methods	Notes	
Insitu Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode	MDD from WSP, Hamilton Lab; Report No. HA6290/2_VHMDD (30/09/20)	1
	Offsets based off increasing chainage.	This report may only be reproduced in full

IANZ Approved Signatory

Designation :

Date





All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Page 1 of 2

PF-LAB-037 (11/07/2020)

Date reported :

WSP Hamilton (Fox St) Quality Management Systems Cartified to ISO 9001

11/11/20

4 Fox Street Private Rep 3057 Waikato M

11/11/20

Private Bag 3057, Waikato Mail Centre, 3240, Hamilton, New Zealand

Senior Civil Engineering Technician

BASECOURSE COMPACTION CONTROL TNZ - B2 TEST RESULTS



Project :	Greenhill - Stage 13
Location :	Webb Drive (Northbound Lane)
Client :	Online Contractors (2016) Limited
Contractor :	Online Contractors (2016) Limited
Tested by :	J. Waru-Savage
Date tested :	10/11/20

Sample description :	
Nuclear densometer no :	335
Solid density (tested) :	2.66
Max dry density (tested) :	2.10
Opt, water content (tested) :	5.0

GAP65 (ex Gleeson Quarry, Huntly)

191223
må
mª
5

Project No :	2-68015.00
Lab Ref No :	HA6559_NDM
Client Ref No :	

the second second second second					Nuclea	ar Densome	eter Test Re	sults		-	1000	1 12 - 14	
Test Number	15	16	17	18	19	20	21	22	23				
Test Position	CH680	CH690	CH700	CH710	CH720	CH730	CH740	CH750	CH760				
Offset	RWT	LWT	RWT	LWT	RWT	LWT	RWT	LWT	RWT				
Probe Depth (mm)	B/S	B/S	B/S	B/S	B/S	B/5	B/S	B/S	B/S				
Wet Density (t/m²)	2.28	2.34	2.31	2.26	225	2.26	2.20	2.13	2.22				
Dry Density (t/m³)	2.16	2.22	2.19	2.15	2.15	2.15	2,10	2.02	2.12				
Water Content (96)	5,4	5.4	5.7	4.8	4.9	5.0	5.0	5.2	4.9				
96 of MDD	103	106	104	102	102	102	100	96	101				
96 Saturation	62	72	70	-54	55	56	50	44	51				

	Oven Corrected Test Results	
Dry Density (t/m³) Water Content (%)		
	NOT TESTED	
% of MDD	HOTTESTES	
% Saturation		

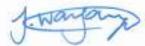
Test Methods	Notes	
Insitu Density NZS 4407 : 2015, Test 4.3 for Backscatter Mode	MDD from WSP, Hamilton Lab: Report No. HA6290/2_VHMDD (30/09/20)	
	Offsets based off increasing chainage.	This report may only be reproduced in full

Senior Civil Engineering Technician

IANZ Approved Signatory

Designation :

Date





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Page 2 of 2

PF-LAB-037 (11/07/2020)

Date reported :

WSP Hamilton (Fox St) Quality Management Systems Certified to ISO 9001

11/11/20

4 Fox Street

11/11/20

Private Bag 3057, Walkato Mali Centre, 3240, Hamilton, New Zealand

GAP65 TEST REPORT

11	5)

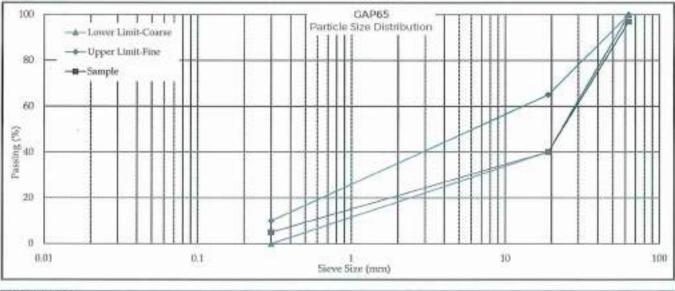
Percentage by Weight Sample | Lower Limit

Quality Assurance
Stockpile
Online Contractors (2016) Limited
C. Robertson (WSP Hamilton Lab)
10/09/2020 @ 10:00am
NZS 4407:2015:2.4.6.3.2
GAP65
Moist
Gleeson Quarry Huntly

Project No :	2-68015.00
Lab Ref No ;	HA6290/2_SA
Client Ref No :	

-		Particle Size Distribution		Crushin	g Resistance	
Sieve Size		Percentage Passir	19	96 Fines @ Spec. Load	2.4	.56
(mm)	Sample	Lower Limit - Coarse	Upper Limit - Fine	Specification	-00	-96
63.0	97	100	100	Crushing Resistance	>130	kN
37.5	62		2.61	Nom Aggregate Size	13.2 - 9.5	mm
19.0	40	40	65	Specified Load	100	kN.
95	30		526		a succession of the second	
4.75	19	*	1.4	Broken Faces C	ontent of Agg	egate ·
2.36	12 9	¥2	(4)	Fraction	Percentar	ae by W
1.18	9			(mm)	Sample	Law
0.600	6	÷.	1.4	65.0 - 37.5		
0.300	5	0	10	37.5 - 19.0	1.4	
0.150	4	-	196.5	19.0 - 9.5	2.40	
0.075	3		0.20	9.5 - 4.75	1.4	
passing the	finest sleve is p	btained by difference				

Plasticity	Index	ClayInd	lex	Sand Equivalent (Washed, Mechanical Shaking)		
Sample CPL	1.1	Sample CI -		Sample SE	30	
Sample PI	-	Specification		Specified	>= 25	



Test Methods Particle Size Distribution Sand Equivalent Crushing Resistance		NZS 4407 2015 Test 3.8.1 NZS 4407 2015 Test 3.6 NZS 4407 2015 Test 3.10	Grading envelope from	n Walkato Local Authority RITS	2018)
Date tested :	14-28/09/20	Sampling is covered by I/	NNZ Accreditation		
Date reported :	30/09/20	This report may only be n	eproduced in full		
IANZ Approved Signa	atory		+GGRED/PRS	All tests reported herein	
Designation : Date :	Senior Civil Ei 30/09/20	ngineering Technician		have been performed in accordance with the laboratory's scope of	
PT-LAB-045 (11/07/2020)		N	- THO LABORA	occreditation	Page1of1

PF-LAB-045 (11/07/2020)

WSP

Hamilton (Fox St) Quality Management Systems Certified to ISO 9001

4 Fox Street

Private Bag 3057, Walkato Mail Centre, 3240, Hamilton, New Zealand

SOLID DENSITY OF AGGREGATE PARTICLES TEST REPORT



2-68015.00 HA6290/2_SD

Client Ref No :

Project:	Quality Assurance	
Location :	Gleeson Quarries, Huntly GAP65	Stockpile
Client:	Online Contractors (2016) Limited	d
Contractor :	9 vo 200-00	
Sampled by:	C Robertson (WSP)	
Date sampled :	10/09/2020 @ 10:00am	
Sampling method :	NZS 4407:2015:2.4.6.3.2	
Sample description :	GAP65	
Sample condition :	Moist	Project No :
Source :	Gleeson Quarries, Huntly	Lab Ref No :

		The second second	
197	fest	Rest	ilts

Sample Solid Density :

2.66 t/m3

Test Method	Notes
NZS 4407: 2015 Test 3.7.2	Material tested - Retained on 4.75mm sieve

Date tested : 15/09/20 Date reported : 16/09/20 Sampling is covered by IANZ Accreditation This report may only be reproduced in full All information supplied by Client

IANZ Approved Signatory

Designation : 5 Date : 10

PE-LAB-004 (03/08/2020)

Senior Civil Engineering Technician 16/09/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Page 1 of 1

WSP

Hamilton (Fox St) Quality Management Systems Certified to ISO 9001 4 Fox Street Private Bag 3057, Weikato Mail Centre, 3240, Hamilton, New Zealand

DRY DENSITY / WATER CONTENT RELATIONSHIP VIBRATING COMPACTION



Project :	Quality Assurance
Location :	Stockpile
Client :	Online Contractors (2016) Limited
Contractor :	
Sampled by :	C. Robertson (WSP Hamilton Lab)
Date sampled :	10/09/2020 @ 10:00am
Sampling method :	NZS 4407:2015:2.4.6.3.2
Sample description :	CAP65
Sample condition :	Moist
Solid density	2.66 t/m ³ (Tested)
Source :	Gleeson Quarry, Huntly

Project No :	2-68015.00
Lab Ref No :	HA6290/2_VHMDD
Client Ref No :	+

Maximum dry densi Optimum water cor		2.10	t/m ³		Natural wa	los contont	4.3	96
	itent	5	96		Fraction te		4.5 <37.5mm	20
iample ID		-134	-67	Nat	67	13.3	200	
Bulk density	1/m ¹	2.102	2.138	2.160	2.206	2,198	2.167	-
Vater content	96	23	3.3	4.3	5.1	6.0	7.2	
Dry density	Ųm*	2.055	2,070	2.070	2.098	2.074	2,021	
Sample condition		Dry/Moist M Dense	Moist Dense	Moist Dense	Wet Dense	Vet/Saturate M Dense	Saturated M Dense	
2.240 2.220 2.200 2.300 2.160 2.160 2.140 2.140 2.120 2.100 2.100 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.100 2.000 2.000 2.100 2.000 2.000 2.100 2.000 2.100 2.0000 2.0000 2.0000 2.000 2.000 2.000 2.000 2.000 2.000		+		Compaction	n Curve		03	mith Curve . Ale Volds . Ale Volds 5 Ale Volde

Water Content %

Test Methods Notes Compaction NZS 4402 :1986 : Test 413 Solid density from report HA6290/2_SD

Date tested : 24/09/20 Date reported : 30/09/20 Sampling is covered by IANZ Accreditation This report may only be reproduced in full

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician Date : 30/09/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-027 (10/07/20)

WSP

Hamilton (Fox 50 Quality Management Systems Certified to ISO 9001 4 Fox Street Private Bag 3057, Walkato Mail Centre, 3240, Hamilton, New Zealand Page 1 of 1

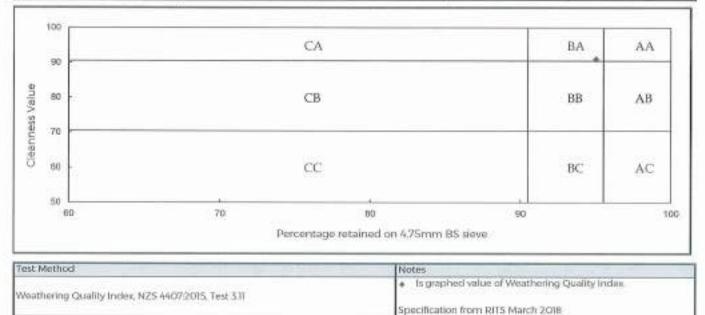
WEATHERING QUALITY OF COARSE AGGREGATE TEST REPORT

Project :	Quality Assurance
Location :	Stockpile
Client:	Online Contractors (2016) Ltd
Contractor:	
Sampled by :	C Robertson (WSP Hamilton Lab)
Date sampled :	10/09/20 @ 10:00am
Sampling method :	NZ5 4407:2015:2.4.6.3.2
Sample description :	GAP65
Sample condition :	Molst
Source :	Gleeson Quarry, Huntly

Project No :	2-68015.00
Lab Ref No :	HA6290/2_WQI
Client Ref No :	

Test Results						
Percentage Retained on 4.75mm BS Sieve After 10 Cycles	: 95					
Cleanness Value After 10 Cycles	: 91					
Weathering Quality Index (see table below)	: BA					

	Percenta			
Cleanness Value	96 - 100	91 - 95	up to 90	Specified
91 - 100	AA	BA	CA	
71 - 90 up to 70	AB AC	BB BC	CB	AA, AB, AC BA, BB, CA
up to ro	~	Div	~~	or CB



Date tested : 30/09/2020 Date reported : 2/10/20 Sampling is covered by IANZ Accreditation This report may only be reproduced in full

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician Date : 2/10/20



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-054 (TI/07/2020)

WSP Hamilton (Fox St) Quality Management Systems Certified to ISO 9001 A Fox Straot Private Bag 3057, Waikato Mail Centre, 3240, Hamilton, New Zealand Robon

Page 1 of 1

APPENDIX 2(c)

Roading QA Documentation

Road Basecourse 2(c)

- Basecourse strings
- Nuclear Densometer Results
- Benkelman Beam Test Results
- TNZ M/4 AP40 Material Tests



Infrastructure Development Completion Report

ONTRACTORS

٢

Orêle Contractors 2018 Ltd PO Box 21187, Rolekas HWWILTON 3256

STRING TEST

Contract Greenhill Stage 13
Sile Webb Drive
Chainage 520 to 800 (Road 20 to Carra Road roundabout)
Material Basecourse Pre-seal

Job No. 19-30378-03
Date 11/02/2021
Recorded by 8. Pserson and Online

Murray Giles and Daniel of HCC present _____

	String target lift 200 Southbour	nm, Tolerance 1N nd lane of dust car		mm I		Northhour	nd lane of dual ca	minoamter
Chn	left	centre	ngeway nght		1	lett	centre	nght
520	210	210	200			200	200	200
540	220	210	200			210	200	200
560	205	200	205			210	210	205
580	200	200	205			210	220	220
600	205	200	205			205	200	205
620	210	205	210			200	205	210
640	205	200	200			205	200	200
660	205	200	210			210	200	200
680	210	200	205			210	205	205
00	200	200	205			210	210	210
720	205	200	200			200	205	210
740	200	200	200			205	200	200
760	210	210	205			200	2005	200
780	205	200	200			210	205	210
200	200	200	210			200	200	205
	1							
			See 1	Confir	med b	y Hee	-	
		Statt	- on coat	to be	ay to		Program	ned.
				6.1	1. Pero	2		
				SEI	Consul-	fants		

Strigs



Online Contractors 2018 Ltd PO Box. 21187, Robotuna IKAMILTON 3256

CONSTRUCTION DIMENSIONS

Contract	GHP				Job No.				
Site	Carrs Road				Date	17/02/	021		
Stage	Stage 13				orded by	Bikal Baniya			
Material		TNZ 40 Sub	Subgrade 1	grade TNZ F/1 tolerance mm					
					Subbase 1	INZ B/2 tolerance	-25 mm	<u>5</u> mm	
String Hit	200	mm			Baseco	ourse TNZ B/2 tol	-6 mm	<u>15 mm</u>	
					stringline level		-		
Chn.	Edge 6m	Left 4m	2m	Left 0m	ntre Right Om	2m	Right 4m	Edge 6m	
570	255			250	245			245	
Sec.				and all a	19 August 19				
550	245			240	235			240	
530	245			245	235			240	
510	240			235	235			240	
480	245			240	235			235	
460	240			240	240			240	
440	245			250	240			245	
410	240			240	235			245	
380	245			235	240			240	
360	240			240	235			245	
340	240			235	235			245	
320	240			235	240			240	
	1								
								1	



Online Contractors 2016 Ltd PO Box 21187, Rotoluna HAMILTON 3256

CONSTRUCTION DIMENSIONS

Contract		GHP			Job No.			
Sito		Webb Drive Round	About		Date	17/02/	021	
Stage		Stage 13/ Webb	Drive	R	ecorded by	Bilal B	aniya	
Material		TNZ 40			Subgrad	e TNZ F)1 tolerance	-20 mm	0 mm
					Subbase	TNZ B/2 tolerance	-25 mm	5 mm
String Rft	200	mm			Base	course YNZ B/2 tol.	-5 mm	15 mm
				Depth below	v stringline level			
	Edge	Left		Left	Centre Right	1	Right	Edge
Chn,	6m	4m	2m	Om	ûm	2m	4m	Sm
SW Cnr	250		-Shiur	No.	245			255
SE Cnr	250			240				245
NE Cnr	260				245			245
NW Cnr	265			250				245
-								
-								
-								
					-			
					-			
					-			
					-			
					-			
					-	1		



Contract		SHP	Job No.	
Site/Chainage	Stage 13	Carrs Road	Date	18/02/021
Material	7	NZ 40	Recorded by	Bikal Baniya
Chn	1m from korb - Left	Centre Line	1m from kerb - Right	Notes
320			60	
330		64		
340	67			
350			67	
360		60		
370	83			
380			71	
390		69		
400	71			
410			77	
420		75		
430	80			
440			71	
450		86		
460	81			
470			77	
480		69		
. 490	79			
500			75	
510		71		
520	80			
530			73	
540		69		
550	78			
560			63	
570		75		

Project: Corrent/Lissage 13 Sumplia description: Samplia description: Carrent (28) Stabilised Basecoure Sumplia description: Carrent (28) Stabilised Basecoure Sumplia description: Location: Work Dorive South During (2014) Sumplia description: Werk compacted Werk compacted Location: Contractors (2015) Uniter derror (28) Stabilised Basecoure South During (2015) Werk compacted Location: Contractors (2015) Uniter derror (28) Stabilised Basecoure South During (2015) Werk compacted Location: Contractors (2015) Uniter derror (2015) Werk compacted Location: Contractors (2015) Uniter derror (2015) Werk compacted Location: Contractors (2015) Werk compacted Merk compacted Content resolution: Content resolution: 200 200 200 200 Content resolution: Content resolution: 200 200 200 200 200 Content resolution: Content resolution: 200 200 200 200 200 200 Content resolution: Content resolution: 200 200 200 200 200 200 200 200 Content resolution: 200 200 200 200 200 200 200 200	LINIT	PLATEAU DENSITY TEST RESULTS	Y TEST RE	SULTS								-	
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Online Contractors (2016) Ltd Plateau dy density (concreted) 218 Vm ³ Deglect No: 2-600500 C Tati & C Entorn * Gaint Ref No: * Madada PD QVOZ/I * Optimer Contractors (2016) Ltd * Deglect No: * Adadada PD QVOZ/I * Optimer Contractors (2016) Ltd * Deglect No: * Adadada PD QVOZ/I * Optimer Contractors (2016) Ltd * Optimer Contractors (2016) rest * Optimer Contractors (2016) rest > Optimer Contractors (2016) res >	Pasitian :	Southbound	d, Run I			Nuclear de	nsometer n	Ξ.	33576				
Cirait & C Eroun * Maximum dry density report: ZIB Vm ³ Lab Ref No:: HabBGE_PO Qu/Q2ZI • Optimum water content: 70 % 3b Ref No:: HabBGE_PO Two <u>VID VID VID Static Static </u>	Client :	Online Cont	tractors (2)	016) Ltd		Plateau dry	/ density (co	prrected);	2.18	t/m³	Project N		0
Qq/02/21 * Optimum water content: 70 % Client Rarkuis: The initial of the ininitial of the initial of the initial of the initial of th	Tested by :	C Tait & C B	ITOWIN			" Maximum	n dry density	/ report:	2.18	t/m ²	Lab Ref N		Q
Nuclear Demonstrati Tists Results Nuclear Demonstrati Tists Results Nuclear Demonstrati Tists Results 0(h) 217 218 210 224 220 222 223 224 20 223 234 201 2015 212 201 201 201 201 201 201 201 201 201 201 201 201 201 201 201 201 201	Date tested :	04/02/21				* Optimum	water cont	cent:	7.0	8	Client Re	f No :	
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Wulling (hill) VID (b) VID (b) VID (b) VID (b) Static (c) Static Static (c) Static (c)	Roller Passes	4	9	83	2	4	83	12	9		_		
NIM 217 218 224 220 223 232 239 230 <td>Compaction Type</td> <td>NID</td> <td>VIb</td> <td>Vib</td> <td>VIb</td> <td>Static</td> <td>Static</td> <td>Static</td> <td>Static</td> <td>-</td> <td></td> <td></td> <td></td>	Compaction Type	NID	VIb	Vib	VIb	Static	Static	Static	Static	-			
(Mi) 199 2.01 2.06 2.03 2.04 2.10 2.10 2.10 2.00 2.01 2.00 2.01 2.00 2.01 2.00 2.01 2.00 2.01 2.00 2.01 2.00 2.01 2.00 2.01 <th2< td=""><td>Wet Density (trim²)</td><td>217</td><td>2.18</td><td>224</td><td>220</td><td>222</td><td>229</td><td>232</td><td>229</td><td></td><td></td><td></td><td></td></th2<>	Wet Density (trim ²)	217	2.18	224	220	222	229	232	229				
nt (bil) 68 87 85 89 89 89 89 89 89 80 <	Dry Density (t/m ²)	661	201	2.06	2.03	2,04	2.11	2.14	210				
cell 91 92 95 94 97 98 96 1 1 thin 2.03 2.04 2.10 2.07 2.08 2.13 2.14 1	Water Content (%)	8,8	8.7	85	5.0	6.8	8.6	8.3	6,8				
Over Corrected Test Results Orth/l 203 204 215 218 214 ort 1 203 6.9 6.5 6.9 6.1 2.14 stand Nick skarp 2015 2.13 2.14 1 stand Nick skarp 3015 154 2.14 1 stand Nick skarp 3015 Test 4.3 2.14 1 stand Add7 2.015 Test 3.3 2.14 1 stand Add7 2.015 Test 3.3 2.14 1 stand Add7 2.015 Test 3.3 2.14 1 stand Add7 2.015 Test 4.3 2.14 1/4 stand Add7 2.015 Test 4.4 1 1/4 stand Add7 2.015 Test 4.4 1 1/4 stand Add7 2.015 Test 1.4 1/4 Stand Div Div Div Div Div Stand Div Div Div Div Div Div Moliciture correction from tactor (%1.2.2.0.0) Div Div Div Div Moliciture correction from tactor (%1.2.2.0	% of MDD target	61	92	56	93	64	61	98	96		-		
Um ¹ 2.03 2.04 2.10 2.07 2.08 2.15 2.18 2.14 Descention nc (Nal) 8.3 6.9 6.5 6.5 6.5 6.5 6.9 0.0 98						Over	n Corrected	100	lts				
nt (Nil) E.B E.7 E.5 E.9 E.6 E.3 E.9 E.0 Distribution Distribution <thdistribution< th=""> <thdistribution< th=""></thdistribution<></thdistribution<>	Dry Dansity (t/m ³)	2.03	2.04	210	2.07	2.08	215						
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di Oglo Ziti Date i Contraction from reuser a com alle Drum Raller urated for Vibratory & Static passes Wild report invisione correction from report. HA6566 WC Noisture correction from report. HA6566 WC NDM Vs Oven correction from report. HA666 WC NDM Vs Oven correction from refer from report. HA666 WC NDM Vs Ove	Insitu Density -NZS 44	07 : 2015. Test 4	3 for Backto	atter Made	One forwar	d / back matic	an = 2 roller po	nated		12			
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Moisture correction from report. HA6868_WC NDM Vs Oven correction factor (%) : 2.0 Distribution	7T Twin Steel Drum Bo	ller used for VIb	ratory & Stat	ic passes						20	1	,	
d: 09/02/21 This report may only be reproduced in full IANZ Approved Signatory IANZ Approved Signatory IANZ Approved Signatory Designation : Senior Guid Engineering Technicion California (Technicion California	NDM vs Oven Moisture	correction from	1 report = HAA	5868_WC	NDM VS O	ven correction	1 factor (%) 1;	2.0		00			
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Fox Street Private Bag 3057, Walkato Mail Centre, 3240, Website www.wsp.com/hz Uncomp. Nau Zadand	Date reported :	12/20/60		Designatic Date :	Ë	Senior Cur	Engineerin	ig Technic	lan		No.	test results indicated as no occredited are outside the scope of the laboratory's occreditation	322C - 1
Ron (Fox St) Private Bag 3057, Walkato Mail Centre, 3240, Unmilian Mail Centre, 3240,	LHF 21626 (12/20)										VG LABORT		Lio Leged
	WSP Hamilton (Fox St)					4 Fox Street Private Bag 30	(57, Walkato M	fail Centre, 3	240,		Talephane +64 7 BS/ Website www.wsp.c	5.2870 om/hz	

WATER CONTENT TEST REPORT

Project:	Greenhill - Stage 13
Location :	Webb Drive (South of Popham)
Position :	Southbound, Run 1
Client:	Online Contractors (2016) Ltd
Sampled by:	G Tait & C Brown
Date sampled :	04/02/21
Sampling method :	As received
Sample description :	Cement (2%) Stabilised Basecourse
Sample condition :	Moist
Sample source :	Run 1, Southbound

Project No :	2-68015.00
Lab Ref No :	HA6868_WC
Client Ref No :	

112

	Test Re	esults	
Sample No. 1 2 3 4 5	NDM Water Content (%) 8.6 8.3 9.5 8.7 8.8	Oven	Difference (%) 1.5 1.8 2.1 2.4 2.2 2.0
		Average	2.0
		1 March 1997	
Test Methods NZS 4407: 2015, Test 3.1		Notes	compaction, with samples

04/02/21 Date tested : Date reported : 09/02/21 Sampling is not covered by IANZ Accreditation. Results apply only to sample tested. This report may only be reproduced in full

IANZ Approved Signatory

Designation : Senior Civil Engineering Technician

Date : 09/02/21



Test results indicated as not accredited are outside the scope of the loboratory's accreditation

LHF 2104 (8/20)

WSP Hamilton (Fox 5t) Quality Management Systems Certified to ISO 9001

4 Fox Street Private Bag 3057, Waikato Mail Centre, 3240, Hamilton, New Zealand

Page 1 of 1

WSP Hemiliton (Fox St) Cuality Management Systems Centified to ISO 9001	Date reported : ps:1/va-037 (N/07/2020)	Instru Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode Water Content: NZS 4407. 2015, Test 3.1 for aggregates	Test Methods	96 Saturation	% of MDD	Water Content (%)	Dry Density (t/m ²)		96 Saturation	% of MDD	Water Content (%)	Dry Density (t/m ²)	Wet Density (t/m ²)	Probe Depth (mm)	Offset	Test Position	These Minneshop	Date tested :	Tested by :	Contractor :	Client:	Location:		T	BASECO
Systems Cartille	10/02/21	2015, Test & 3 fo 2015, Test 3.1 fo		38	96	37	214		53	97	57	210	2.22	B/S	RWT	CH520		09/02/21	C.Brown, G.Tait	Online Contractors (2016) Ltd	Online Contractors	Webb Drive, Southbound		TNZ - B2 TEST RESULTS	BASECOURSE COMPACTION CONTROL
1		r Beckscetter N of aggregates		50	66	4,8	215		\$	72	6,8	2.11	226	S/8	LWIT	CH530			Tait	tractors (20	tractors (20	Southbox	1 1 1 1 1	ST RESULT	PACTION C
	IANZ Approv Designation - Date :	Viade		42	97	43	2,12		95	96	5.3	2,08	2.21	B/S	RWT	CH540	M			016) Ltd	(2016) Ltd	und Lane		S	ONTROL
	IANZ Approved Signatory Designation : Seni Date : 10/0			52	97	5 U	212		66	95	7,5	2.08	2.23	B/S	LWT	CH550									
4 Fox Street Private Bag 3057, Waikato Mail Centre, 3240.	atory Senior Civ 10/02/21	Max diy den Water Conte	Notes	47	100	43	2.17	Ove	62	86	63	213	227	S/B	RWT	CH560	Nuclea		Opt wate	Max dry o	Solid den	Nuclear o			
057, Weikero	tory Senior Civil Engineering Technician 10/02/21	Max dry density from : WSP Hamilton Lab. Repo Water Content from report HA6868_WC. FEB21		43	66	Ę.	216	Oven Corrected Test Results	58	97	63	212	225	B/S	LWT	CH570	Nuclear Densonneter Test		Opt. water content (tested)	Max dry density (tested) :	Solid density (tested) :	Nuclear densometer			
Mail Centre,	ing Techni	rt Hatmilton L		45	66	4,4	215	d Test Res	60	97	6,4	211	2.24	B/S	RWT	CH580			(tested) :	sted) :	d) :	er no :			
3240.	olan	ob Report ID C FEB21		y y	96	55	210	ults	\$	95	7.5	2.06	2.22	BIS	LWT	CH590	Results		55	2.18	2.72	33576	Theshilles		
		NUS Report ID: HA6289/VHMDD:AUG20 WC: FEB21		43	96	43	213		57	96	6.3	2.09	2.23	Bis	RWT	04600	P		忠	t/m²	t/m²	0 11/240	1 121320		
Taleph Websi	ausa h	IMDD AUG20		5	36	43	2.06		48	93	61	2.02	215	B/S	LWT	CH610	AL A								
Talaphona +54 7 855 2870 Website www.wsp.com/nz	A CREDING			5	104	41	226		74	102	61	2.22	236	S/8	RWT	CH620	1	Client Ref No +	Lab Ref No :	Project No :					
5 2870 om/nz	All tests reported hen have been performer accordance with the accreditation	may only be		-58	97	3.9	2.12		52	26	5.9	208	220	BAS	LWT	CH630	15	f No+	0:	0;					
	All tests reported herein have been performed in accordance with the laboratory's scope of accreditation	This report may only be reproduced in full		43	99	3.9	216		8	72	59	2.12	2.24	5/G	RWT	CH640	510		HA68838_NDM	2-68015.00					-
	Page 1 of 3	2		47	101	4.1	220		63	66	6,1	216	229	E/S	LWT	CH650	M.		NDM	0					

		56 2870 .com/nz	Telephone +647 856 2870 Website www.wsp.com/riz	Teleph Websi		3240,	Mali Centre,	997, Walkato	4 Fox Street Private Bag 3057, Walkato Mali Centre Lanctine New Texture				WSP Hamilton (Fex St)	WSP Hamilton (Fox St)
Page 2 of 3	All tasts reported herein have been performed in accordance with the laboratory's scope of accreditation	Al tasts reported here have been performed accordance with the laboration's scope of accreditation	A CHARDER PROPERTY OF	onues To		cían	ng Techni	tory UBuu Senior Civil Engineering Technician 10/02/21	story Senior Civi 10/02/21	oved Signs	IANZ Approved Signatory Designation : Seni Date : 10/0		10/02/21	Date reported : PF-LAB-037 00/07/20201
Ē	This report may only be reproduced in full	t may only be		(MDD AGOS	VC: FEB21	AC FEB21	t HA6868_W	Max ony density from : WSP Hamilton Lab. Repo Water Content from report HA6868_WC FEB21	Max ory dens Water Conte		ode	aggrogates	7: 2015, Test 4.3 for 7: 2015, Test 3.1 for	Instru Density : NZS 4407: 2015, Test 4.5 for Backscatter Mode Water Centent: NZS 4407: 2015, Test 3.1 for aggregates
					1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				Notes					Test Methods
-1 11	40	ť	i i	ŧ	4	đ	00	40	00	£	07	20	40	96 Saturation
10	99	10F	103	100	103	101	36	99	101	98	96	102	102	% of MDD
42	42	¢.	42	£	3,4	£	3.0	4,4	4,6	4.2	51	4.6	3.7	Water Content (96)
2.21	2.17	2.21	2.24	218	224	220	214	215	220	213	2.09	2.22	223	Dry Density (t/m ³)
						sults	Test Re	Oven Corrected	Ove					
66	60	70	70	6	62	64	46	6	69	56	43	74	¢2	96 Saturation
99	99	99	101	98	101	66	96	76	66	96	46	99	100	% of MDD
62	6N	6.5	62	2	5,4	2	5.0	6,4	6,6	6.2	51	6.9	5.7	Water Content (%)
216	2.13	2.17	2.19	214	220	216	2.10	2.11	216	2.09	205	217	2.19	Dry Density (t/m ²)
2.30	2.26	12,31	2.33	2.27	2.32	2.30	221	225	2.30	222	216	2.32	23	Wet Density (t/m ³)
B/S	B/S	B/S	B/S	B/S	BVS	B/S	B/S	EVS	S/B	B/S	85	B/S	B/S	Probe Depth (mm)
LWT	RWT	-	RWT	LMUT	RWT	LWIT	RWT	LWIT	RWT	EWT	RWT	LWT	RWT	Offset
CH790	CH7B0	0	CH760	CH750	CH740	CH730	CH720	CH7I0	CH700	CH690	CH680	CH670	CH660	Test Position
28	27	26	25	24	23	22		20	Q	38C	17	16	35	Test Number
						Results		Nuclear Densometer Test	Nuclea					
													N. N	
		af No:	Client Ref No :										09/02/21	Date tested :
NDM	HA5883a_NDM	No:	Lab Ref No :		8	5.5	(tested) :	Opt. water content (tested) :	Opt. wate				C.Brown, G.Tait	Tested by :
100	2-68015.00	No:	Project No :		URY	2.18	sted):	Max dry density (tested) :	Max dry d		16) Ltd	actors (20)	Online Contractors (2016) Ltd	Contractor :
					t/m3	2.72	10 A	Solid density (tested) :	Solid dens		16) Ltd	actors (20)	Online Contractors (2016)	Client:
						33576	r no :	Nuclear densometer no :	Nuclear d		nd Lane	Southbou	Webb Drive, Southbound	Location :
					Stabilised TNZ40	Stabilise		Sample description :	Sample d			ge 13	Creenhill Stage 13	Project :
												RESULTS	TNZ - B2 TEST RESULTS	
											UNIROL	ACTION CO	BASECOURSE COMPACTION CONTROL	BASEC

WSP Hamilton (Fox St) Quality Manadement Systems Certified to ISO 9001	Date reported : To/C	Insitu Density : NZS 4407 : 2015, Test 4.3 for Backsostter Mode Water Contant: NZS 4407: 2015, Test 3.1 for aggregates	Test Methods	96 Saturation	% of MDD	Water Content (%)	Dry Density (t/m ³)		96 Saturation	96 of MDD	Water Content (%)	Dry Density (t/m?)	Wet Density (b/m ²)	Depth (mm)		Test Position		Date tested : 09/			n	Project : Gre	TNZ	BASECOURS
one Centified to ISO 9001	IANZ Approved Signatory Designation : Sen Date : 10/0	Test 4,3 for Backeostter Mode (Test 3.1 for aggregates		38	100	53	2.17		\$	86	55	213	2.25	S/8	RWT	CHBOO		09/02/21		Online Contractors (2016) Ltd	Webb Drive, Southbound Lane	Greenhill Stage 13	TNZ - B2 TEST RESULTS	BASECOURSE COMPACTION CONTROL
4 Fox Street Private Bag 3057, Walkato Mail Centre, 3240, Hamilton, New Zealand	d Signatory Senior Civil Engineering Technician 10/02/21	Mask dry density from : WSP Hamilton Lab. Report ID: HA6289/1_VHMDD AUC20 Water Content from report HA6868_WC FE821	Notes					Oven Corrected Test Results	-								Nuclear Densometer Test	Chine Andrew Constraints in Incommends	Out mater content (tested)	Nex dry density (tested) :	Nuclear densometer no :	Sample description :		
1 3240		VC FE821						SU Its									Test Results			2.12 VIII 2.18 UIII	33576	Stabilised TNZ40		
Telephone +64 7 856 2870 Website www.wsp.com/nz	A tests report how been per accordance w accordance w accordance w																	Client Ref No :	- Daf No.	Droiget No -				
	All tests reported herein have been performed in accordance with the laboratory's scope of accreditation Page 3 of 3	This report may only be reproduced in full																and an and a second second		2-6801500			117	

Max dry density from - WSP Hamilton Lab, Report JD: HA6289/1_VHMDG SeP20 Water Content from report HA6868_WC: FEB21
Ł
88
53
2.14
68
15
7.3
0
272
LWAT
CH590
60
Results
8
2.18 Vm²
Stabilised TNZ40

WSP Hamilton (Fox St)	Date reported :	Insitu Density : NZS 4407 ; 2015, Test 4.3 for Backscatter Mode Water Content: NZS 4407: 2015, Test 3.1 for apgregates	Test Methods	% saturation	% of MDD	Water Content (%)	Dry Density (t/m²)		% Saturation	% of MDD	Water Content (96)	Dry Density (t/m²)	Wet Density (t/m?)	Probe Depth (mm)	Offset	Test Position	Take Ali Impos		Date tested :	Tested by :	Contractor :	Client:	Location :			BASECO
	11/02/21	7: 2015, Test 4.3 fc 7: 2015, Test 3.1 f		41	76	52	2,11		62	95	7.2	2.07	222	S/B	RWT	CH660	12		11/02/21	C.Brown	Online Contractors (2016) Ltd	Online Contractors (2016) Ltd	Webb Drive Northbound Lane	Deserved 11 0	TNZ - B2 TEST RESULTS	BASECOURSE COMPACTION CONTROL
		or aggregates		0C	66	un be	2,16		71	76	7.3	2,12	228	B/S	LWT	CH670	31				tractors (20	tractors (20	Northbou	12172	ST RESULTS	PACTION C
	IANZ Approv Designation : Date :	Aode		ų	86	52	213		65	96	7.2	2.09	2.24	B/5	RWT	CH680	21				016) Ltd	016) Ltd	nd Lane			ONTROL
	IANZ Approved Signatory Designation : Sem Date : 11/0			70	96	5,5	210		65	95	7,6	2.06	222	B/S	LWT	CH690	181									
4 Fox Street Private Bag 3057, Waikato Mail Centre, 3240,	atory Senior Civ TI/02/21	Max dry den Water Conte	Notes	70	100	5.5	217	Ove	72	98	73	213	2.29	B/S	RWT	CH700	0ľ	Nuclea		Opt. wate	Max dry d	Solid den	Nuclear d	Canala A		
057, Waikato	tory Senior Civil Engineering Technician 11/02/21	Max dry density from : WSP Hamilton Lab. Repo Water Content from report HA6868_WC. FEB21		4	96	4,9	210	Oven Corrected	59	94	6.9	2.06	2.20	B/S	LWIT	01710	20	Nuclear Densometer Test		Opt. water content (tested) :	Max dry density (tested) :	Solid density (tested) :	Nuclear densometer no i	a station		
Mail Centre, 3	ng Technic	r HA6868_W		g	104	4.6	2.26	Test Re	79	102	6.6	2.22	236	B/S	RWT	CH720		100 C		tested):	sted) :	-	1001			
1240,	lan	C FEEZI		10	100	53	2.19	sults	75	99	73	215	230	B/S	LWT	CH730	22	Results		ហ ហ	218	272	33576	Stabilicard TN740		
		Leb. Report ID: HA6289/LVHMDD SEP20		20	100	55	219		777	99	7.5	2.15	2.31	B/5	RWT	CH740	23			8	Vm	1 Mil	0 000000	H TN740		
Telaph Webs7	Autor A	(MDD SEP20			102	5,1	2.23		BC	100	7.7	219	235	B/S	LWT	CH750	24									
Telephone +64/7 856 2670 Website www.wsp.com/hz	The second	This report			100	49	218		0H	98	6.9	213	2.28	8/S	RWT	CH760	25		Client Ret No:	Lab Ref No :	Project No ::					
6 2670 om/hz	All tests reported herein have been performed in accordance with the laboratory's scope of accorditation	mey only be		00	98	63	214		1 11	96	8.3	210	2.28	B/S	LWL	CH770	26		NO:	0	01					
	arted herein with the scope of n	This report may only be reproduced in full		00	102	5,4	222		a	ODE	7,4	218	2.34	B/S	RWT	CH780	27			HA6899_NDM	2-68015.00					
	Page 2 of 3	2		40	100	6.0	217		61	100	8,0	213	2.3	Bis	LWL	CH790	28			DM					-	

BASECO	BASECOURSE COMPACTION CONTROL TNZ - B2 TEST RESULTS				121
Project : Location : Client :	Greenhill Stage 13 Webb Drive Northbound Lane Online Contractors (2016) Ltd	Sample description : Nuclear densometer no : Solid density (tested) :	Stabilised TNZ40 33576 2.72 t/m²		
Contractor: Tested by:	Online Contractors (2016) Ltd C.Brown	Max dry density (tested) : Opt. water content (tested) :	2.18 t/m ³ 5.5 %	Project No : Lab Ref No ;	2-68015.00 HA6899_NDM
Date tested :	TI/02/21			Client Ref No :	0:
		Nuclear Densometer Test Results	esults		-
Test Number	29				
Test Position	CH800				
Offset	RWT				
Probe Depth (mm)	B/S				
Wet Density (t/m ³)	2.28				
Dry Density (t/m³)	211				
Water Content (%)	83				
96 of MDD	97				
W Saturation	ìò				
		Oven Corrected Test Results	lts		
Dry Density (t/m²)	2,15				
Water Content (%)	6,1				
% of MDD	86				
% Saturation	52				
Test Mathods		Notes			
Insitu Density : NZS 4400	Insity Density : NZS 4407 : 2015, Test 4.3 for Backscatter Mode	Max dry density from / WSP Hamilton Lab. Report ID: H46289/]_/VHMDD SEP20 Water Content from report HA8868, WC, FEB21	ab. Report ID: HA6289/I_VHMDD C. FEB21	-	his report may only be reproduced in full
Weter Content: NZS 440	Weller Content. NZS 4407: 2015, Test 31 for aggregates			L	
	IANZ Appro	IANZ Approved Signatory	1	ACCANEDITES A	All tests reported herein tonue base neuflormed in
Date reported :	Designation : 11/02/21 Date :	Senior Civil Engineering Technician 11/02/21		o to a	accordance with the laboratory's scope of accreditation
P≓-(AB-037 (II)/07/2020]					
WSP		4 Fox Street		Telephone +64 7 856 2870	008
Hamilton (Fox St) Quality Managemei	Hamilton (Fox St) Quality Management Systems Cartified to ISO 9001	Private Beg 3057, Waikato Mail Centre, 3240, Hamilton, New Zealand		Website www.wsp.com/nz	inz

WSP Hamilton (Fox St) Quality Management Systems Certified to ISO 9001	Date reported : 14/02/21	Institu Density : NZS 4407 : 2015, Test 4.5 for Backscatter Mode	Test Methods	Dry Density (t/m³) Water Content (%) % of MDD % Saturation		% Saturation	% of MDD	Water Content (%)	Dev Daneity (VMP)	Probe Depth (mm)		Test Position		Date tested : 14/0	8		Project : Gre	BASECOURSE COMPACTION CONTROL TNZ - B2 TEST RESULTS	
ms Certified to	2/21	Test 4.3 for Ba				52	100	4.7	077	B/S	RWT	CHIO		14/02/21	Online Contractors (2016) Ltd	Carrs Road Online Contractors (2016) Ltd	Greenhill stage 13	NURSE COMPACTION CO TNZ - B2 TEST RESULTS	
1006 051		ckscatter M				50	101	4.3	220	B/S	LWT	CH20	8		ctors (20	ctors (20	51.8	RESULTS	
	IANZ Approv Designation : Date :	ode				45	99	4.4	216	BVS	ρ	CH30	a		16) Ltd	16) Ltd		ONTROL	
	IANZ Approved Signatory Designation : Sen Date : 14/0					5	100	4.6	219	B/S	0	CH40							
4 Fox Street Drivate Bag 3057, Walke Hamilton, New Zesland	atory Senior Ci 14/02/21	Max dry de CHO = Edge	Notes		2	55	100	5.0	218	B/S	LWT	CHSO	Nucle	Opr wat	Max dry	Nuclear Solid de	Sample		
4 Fox Street Private Bag 3057, Walkato Malil Centre, 3240, Hamilton, New Zesland	All Engineering Technic	Max dry density fram: WSP Hamilton Lab. Report ID: HA6289(_VHMDD SEP20 CH0 = Edge of Asphalt on existing Cans Rd atory Senior Civil Engineering Technicion 14/02/21	nsity fram : W to of Asphalt o		NOT		50	101	4.4	219	B/S	1	CH60	ear Denson	er conten	Max dry density (tested) :	Nuclear densometer no : Solid density (tested) : Max drv density (tested) :	Sample description :	
			rsp Hamilton rn existing Car		NOT TESTED		54	201	42	225	B/S	RWT	CH70	Nuclear Densometer Test R	Optimater constent (tested) :	tested) :	ter no : ed) :	ō	
5240,	cian	Lab. Report ID rs Rd				46	66	4	217	B/S	LWT	CHBO	esults	č		33576 2.72	Basecou		
		2.21 2.12 4.4 42 42	B/S	2	CH90		ł	2 MHZ	ťm,	Basecourse (TNZ40)									
Telepi Webs	onusat To	HMDD SEPZC				47	100	4.3	218	B/S	RWT	CHIOD	X				0		
Telephone +64 7 856 2870 Website www.wsp.com/nz	A DOWNERS		-			55	IOL	47	220	5/8	LWT	CHIIO	-	Client Ref No :	Project No :				
6 2870 :om/nz	All tests reported here have been performed accordance with the laboratory's scope of accreditation	may only be				47	99	4.5	216	3 3 JA	5	CHIZO		f No :	101				
	All tests reported herein have been performed in accordance with the laboratory's scope of accreditation	This report may only be reproduced in full				53	101	4.6	220	BVS	RW/T	CHISO	(P.)		2-58015.00			1	
	Page 1 of 2	n Pill				56	101	4.8	2.21	BAS	LWT	CH140	-	MON	00			-	

	56 2870 com/hz	Telephone +64,7 856 2870 Website www.wsp.com/hz	Talaphe Websib		\$240,	vlaš Centre, 3	4 Fox Street Privste Bag 3057, Waikato Maš Centre, 3240, Hamilton, New Zeoland	4 Fox Street Privste Bag 3 Hamilton, No			d to ISO 9001	nt Systems Certifie	WSP Hamilton (Fox 5t) Quality Management Systems Certified to ISO 9001
Page 2 of 2													PF-LAB-037 [R/07/2020]
appe of	accordance with the laboratory's scope of accreditation	SOF PART	O LABOARIO RA		bían	ng Technic	Seniar CiWl Engineering Technician 14/02/21	Senior Clv 14/02/21		Designation : Date :		14/02/21	Date reported :
ted herein rformed in	All tests reported herein have been performed in	Biria	PCCATDITED		ł	Ser	8	atory	IANZ Approved Signatory	IANZ Appi			
This report may only be reproduced in full	t may only be re	This repor	MOD SEP20	Max dry density from : WSP Hamilton Lab. Report ID: HA6289/I_VHMDD SEP20 CH0 = Edge of Asphalt on existing Cans pd	ab. Report ID. ; Rd	P Hamilton L existing Cars	Max dry density from : WSP Hamilton Lab. R CH0 = Edge of Asphalt on existing Cans Rd	Max dry den CHD = Edge		ode	Backscatter N	7: 2015, Tast 4.3 for	Insitu Density (NZS 4407 ; 2015, Tast 4.3 for Backscatter Mode
								Notes					Tast Methods
													% Saturation
						-0100	NCI II						% of MDD
							NOT TESTED						Dry Density (t/m³) Water Content (%)
					lts	Test Res	Oven Corrected Test Resu	Ove					
-	co	10	70	55	50	42	57	57	37	47	45	48	% Saturation
	16	ius	e e	ODI	98	97	104	102	66	101	100	100	% of MDD
	57	6.0	50	4.8	4,9	4.5	4.2	4,7	3.6	41	4.2	4.4	Water Content (%)
	2.11	224	236	2.19	214	211	226	222	215	220	217	2.18	Dry Density (t/m ³)
	225	238	2.27	229	2.25	2.21	236	233	223	229	227	CC C	Prope Develor (trimin)
	B/S	B/S	BVS	B/S	B/S	B/S	B/S	EAN1	P/s	LWI	RWG	0%	Offset
	CH260	CH250	CH240	CH230	CH220	CH210	CH200	CH190	CHIBO	CH170	CH160	CH150	Test Position
	+	25	24	23	22	21	20	61	36	77	16	15	Test Number
		10 miles			asults.	ter Test R	Nuclear Densometer Test Results	Nuclea					
	of No :	Client Ref No :	7									14/02/21	Date tested :
MON_BCIRDWH		Lab Het No :		8	55	tested) :	Opt. water content (tested) :	Opt wate				C,Brown	Tested by :
2-08015.00		Project No :		OTT	218	;ted) :	Max dry density (tested) :	Max dry d		16) Ltd	ractors (20	Online Contractors (2016) Ltd	Contractor :
1 00010 00				ULL S	2.72		Solid density (tested) :	Solid den		16) Ltd	ractors (20	Online Contractors (2016) Ltd	Client :
					33576	rno:	Nuclear densometer no :	Nuclear d				Carrs Road	Location :
				Basecourse (TNZ40)	Basecour	07.0	Sample description :	Sample d			ge 13	Greenhill stage 13	Project :
											FRESULTS	TNZ - B2 TEST RESULTS	
										ONTROL	ACTION CO	BASECOURSE COMPACTION CONTROL	BASECO

	7 856 2870 sp.com/h2	Telephone +64.7 856 2870 Website www.wsp.com/hz		3240,	Mail Centre,	4 Fox Street Private Bag 3057, Welkato Mail Centre, Userstitive Navi Tootond	4 Fox Street Private Bag 3			WSP Hamilton (Fox St)		WSP Hamilton (Fox St)
accreditation proveditation Page 1 of 1	-	We LABOR PROPE		ician	ing Techn	Senior Civil Engineering Technician 15/02/21	Senior Ci 15/02/21	0	Designation - Date :		15/02/21	Date reported : ==aa_;
All tests reported herein have been performed in	Al tests re have been	ACKED ITES			ŝ	CUP.	atory	oved Sign	IANZ Approved Signatory			
This report may only be reproduced in full	ort may only b		Max dry density from , WSP Hamiston Lab. Report IU: HA6269/LyHMOD SEP20 Water Centant from report HA6666_WC FEB21 CHD = Centreline of Carris Road, tested clockwise This report replaces report HA69/3b_NDM, dated %/2/21	VC. FEB21 I clockwise I DM, dated 3	rt HA6866_V Road, tested t HA69135_3	Max dry density from , WSP Hamiston Lab, Report IU: HA Water Centant from report HA6868_WC FEB21 CHD = Centreline of Carris Road, tested clockwise This report replaces report HA6913b_NDM, dated %(2/2)	Max dry der Weter Conte CHO = Cente This report r		ode	Backscatter N aggregates	7: 2015, Test 4.3 for 27: 2015, Test 3.1 fo	Insitu Density : NZS 4407: 2015, Tast 4.3 for Backscatter Mode Water Content: NZS 4407: 2015. Test 3.1 for aggregates
							Notes					Test Methods
	-							-	20	40	40	UNDERFORMED OF
				55	D Ş	2 2	100	10	86	100	101	96 of MDD
			-	4,0	5,8	4,6	3.4	4,0	5.0	42	42	Water Content (%)
				22	2.26	2.19	218	220	214	218	2.20	Dry Density (t/m ²)
				sults	Test Re	Oven Corrected	OV					
			-	16	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	10	¥	70	90	60	₫ ‡	96 Saturation
				100	201	h i	00	3 16	20	90	88	95 of MDD
				0.0	0.0	0.0	0,4	0.0	0.7	62	6.2	Water Content (%)
	-			2.17	222	214	214	215	210	214	215	Dry Density (t/m²)
				2.31	2.35	229	2.25	228	225	2.28	2.29	Wet Density (t/m ³)
				B/S	B/S	B/S	B/S	B/S	B/S	B/S	B/S	Probe Depth (mm)
				RWT	LWL	RWT	LWIT	RWT	LWT	RWT	LWT	Offset
				CH70	CH60	CHEO	CH40	CH30	CH20	CHIO	CH0	Test Position
				00	7	0	S	4	CAI	N	-	Test Number
				lesults	eter Test F	Nuclear Densometer Test Results	Nucle					
	Client Her No :	Client									14/02/21	Date tested :
H WIN OCIROAH	I NO:	LED HET NO :	28	ប្រ	(tested) :	Opt. water content (tested)	Opt. wate				C.Brown	Tested by :
2-68015.00	C NO T	Project No	UTT	218	sted) :	Max dry density (tested) :	Max dry o		16) Ltd	ractors (20	Online Contractors (2016) Ltd	Contractor :
1 1 2 2 1 2 2				2.72	4) ±	Salid density (tested) :	Solid den		16) Ltd	ractors (20	Online Contractors (2016) Ltd	Client :
			33576	33576	sr no :	Nuclear densometer no :	Nuclear o		Ę	ge 15 Roundabo	Creenhill stage 15 Carrs Road, Roundabout	Project : Location :
1			170740	Tto billion						1		
										RESULTS	TNZ - BZ TEST RESULTS	
									UNTROL	ACTION C	BASECOURSE COMPACTION CONTROL	BASECO



Project : Location :	Greenhill Stage 13 Carrs Road
Client : Contractor : Test method : Pavement type :	Online Contractors (2016) Ltd Online Contractors (2016) Ltd TNZ T/1 1977 Basecourse (TNZ 40)
Pavement temp "C :	
Weight on rear axle:	8.3 tonnes
Tested by:	C.Brown, G.Tait

Project No :	2-68015.00
Lab Ref No :	HA6913a
Client Ref :	

			Test	Results
Location		Deflecti	ons (mm)	Comments
Metres	Left Outer	Centre	Right Outer	Commenta
10			0.64	CHO = Edge of Asphalt on existing Carrs Rd
20	0.76			The first state and the second states are second states and states are
30		0.60		
40		0,66		Plant in the way
50	0.56			
60		0.90		
70			0.60	
80	0.70			
90		0.66		
100	111000		0.58	
TIO	0.58			
120		0.87	2.5000000	
130			Q.54	
140	0.64			
150		0.60	10000	
160			0.72	
170	0.64			
180		0.76	100000	
190	1.103836		0.20	
200	0.56	100000		
210		0.70	1000	
220			0.64	
230	0.64	14.44		
240		D.64		
250	0.50		0.44	
260	0.50			
		0	.76	90 Percentile calculated for all data in columns I to

Deflection Statistical Analysis (for all deflections)

Minimum (mm) 0.44 Maximum (mm): 0,90 Average (mm): 0.65

Note: Results in italics have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ 1/1977).

		This report may only be reproduce	d in full	
Date tested :	14/02/2021			
Date reported :	14/02/2021			
IANZ Approved Sig	gnatory	201	*GGREDITEO	All tests reported h
Designation : Date :	Seniar Civil El 14/02/2021	ngineering Technician		accordence with th laboratory's scope accreditation
			AG TYPOWA	

PE LAB-066 (1)(07/2020)

WSP Hamilton (Rox St) Quality Management Systems Certified to ISO 9001

& Fox Street Private Bag 3057, Walkato Mall Centre, 3240, Hamilton, New Zealand niaian ned in ha har.

Page 1

	TEST REPORT
Project : Location :	Greenhill Stage 13 Carrs Road, Roundabout
Client : Contractor : Test method :	Online Contractors (2016) Ltd Online Contractors (2016) Ltd TNZ T/I 1977
Pavement type : Pavement temp *C :	Stabilised (TNZ 40)
Weight on rear axle:	8.3 tonnes
Tested by:	C.Brown, G.Tait

Project No :	2-68015.00
Lab Ref No :	HA6913b_R
Client Ref :	

115

			Test Results
Location	Deflections (mm)		Comments
Metres	Left Outer	Right Outer	
0	0.50		CH0 = Centroline of Carrs Rd, tested clockwise
10		0.50	
20	0.55		
30		0.60	
40	0.86	210-21X	
50		O.64	
60	0.50	1.2.02	
70		Q.44	
- 1			
	0	71	90 Percentile calculated for all data in columns 1 to

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.86 Minimum (mm): 0.44 Average (mm): 0.58

Note: Results in Italics have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/) 1977).

1Brau

This report replaces report HA6913b_NDM, dated 14/2/21

This report may only be reproduced in full

Date tested : Date reported : 14/02/2021 14/02/2021

IANZ Approved Signatory

Designation : Date : Senior Civil Engineering Technician 15/02/2021



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-066 (TV07/2020)

WSP Hamilton (Fox St) Quality Management Systems Certified to ISO 9007 4 Fox Street Private Bag 3057, Walkato Mail Centre, 3240, Hamilton, New Zealand

Page 1

Project : Location :	Greenhill Stage 13 Side stub (RHS)
Client :	Online Contractors (2016) Ltd
Contractor :	Online Contractors (2016) Ltd
Test method :	TNZ T/1 1977
Pavement type :	Basecourse (TNZ 40)
Pavement temp "C :	
Weight on rear axle:	8.3 tonnes
Tested by -	C.Brown, G.Tait

Project No :	2-68015.00
Lab Ref No :	HA6913c
Client Ref :	

115

			Test Results
tocation Metres		Deflections (mm)	Comments
	Left Outer	Right Outer	A REAL PROPERTY AND A REAL
231321	0.84	112201200000000000000000000000000000000	CHO = Centreline of Carrs Rd
		0.83	90 Percentile calculated for all data in columns 1 to

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.84 Minimum (mm): 0.70 Average (mm): 0.77

Note: Results in Italics have a difference between Intermediate and Final readings that are greater than 3 (refer TN2.1/) 19771.

This report may only be reproduced in full

Date tested : Date reported : 14/02/2021

IANZ Approved Signatory

Designation : Date :

Senior Civil Engineering Technician 14/02/2021



All tests reported humin have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-066 (11307/2020)

WSP Hamilton (Fox St) Quality Management Systems Certified to ISO 8007 4 Fox Street Private Bag 3057, Weikato Mail Centre, 3240, Hamilton, New Zeeland Page1



Project:	Greenhill, Stage 13
Location -	Webb Drive, Southbound Lane
Client :	Online Contractors (2016) Limited
Contractor :	Online Contractors (2016) Limited
Test method :	TNZ T/1 1977
Pavement type :	Stabilised TNZ40
Pavement temp "C :	1. 1 . 1.
Weight on rear axle:	8.3 tonnes
Tested by :	C.Brown, G.Tait

Project No :	2-68015.00	
Lab Ref No :	HA6883a	
Client Ref :		

Test Results			
Location		Defloctions (mm)	Comments
Methrens	Left WT	Right WT	Commenter
520	0.32		
530		0.10	
540	0.40		
550		0.30	
560	0.04	2.45.1728	
570		0.30	
580	0.10	204302	
590		0.36	
600	0.10	0.85245	
610		0.36	
620	0.44	5.6328	
630		0.30	
640	0.10	10965	
650		0.32	
660	0.32		
670		0.32	
680	0.16		
690		0.30	
700	0.28		
710		0.40	
720	0.30	2000	
730		0.40	
740	0.20	7.2225	
750		0.26	
760	0.30	72,222	
770		0.34	
780	0.20	1011510	
790		0.20	
800	0.20		
	0	A	90 Percentile calculated for all data in columns 1 to

Deflection Statistical Analysis (for all deflections)

Minimum (mm) : 0.04 Average (mm): 0.27

Note: Results in italics have a difference between intermediate and Final readings that are greater than 3 (refer TNZ T/) 1977).

This report may only be reproduced in full

Date tested : Date reported : 9/02/2021 10/02/2021

IANZ Approved Signatory

Maximum (mm): 0.44

main

Designation : Date : Senior Civil Engineering Technician 10/02/2021



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-066 (0/07/2020)

WSP Hamilton (Fox St) Quality Management Systems Certified to ISO 9001 4 First Street

Private Bag 3057, Walkato Mail Centre, 3240, Hamilton, New Zealand Page 1

Telephone +64 7 856 2870

Website www.wsp.com/nz

BENKELMAN BEAM	
TEST REPORT	÷



Project :	Greenhill, Stage 13
Location :	Webb Drive, Northbound Lane
Client:	Online Contractors (2016) Limited
Contractor :	Online Contractors (2016) Limited
Test method :	TNZ T/1 1977
Pavement type :	Stabilised TNZ40
Pavement temp °C :	-
Weight on rear axle:	8.3 tonnes
Tested by :	C.Brown, G.Talt

Project No :	2-68015.00
Lab Ref No :	HA6883b_R
Client Ref :	

Test Results			
Location		Deflections (mm)	Comments
Metres	Left WT	RightWT	Comments
540	0.24		
550		Q.44	
560	0.40	1000	
570		0.48	
580	0.36		
590		0.44	
600	0.32	24607	
610		0.20	
620	0.30	111100-15	
630		0.22	
640	0.44	UP 11 C mill	
650		0.30	
660	0.44		
670		0.30	
680	0.40		
690		0.16	
700	0.40		
710		0.34	
720	0.30		
730		0.16	
740	0.59		
750		0.20	
760	0.16		
	D	44	90 Percentile calculated for all data in columns 1 to

Deflection Statistical Analysis (for all deflections)

Maximum (mm): 0.59 Minimum (mm) : 0.16 Average (mm): 0.33

Note: Results in italics have a difference between Intermediate and Final readings that are greater than 3 (refer TNZ T/I 1977).

Note: This report replaces report HA6883b dated 10/2/21.

This report may only be reproduced in full

Date tested : Date reported : 9/02/2021 10/02/2021

20

IANZ Approved Signatory

Designation : Date : Senior Civil Engineering Technician 10/02/2021



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-066 (1V07/2020)

WSP Hemilton (Fox SI) Quality Management Systems Certified to ISO 9001 4 Fox Street

Private Bag 3057, Walkato Mall Centre, 3240, Hamilton, New Zealand

Page 1

Telephone +64 7 856 2870

Webste www.wsp.com/hz

Surfacing & RAMM Data 2(d)

- HCC pavement RAMM data
- Surfacing RAMM data



Infrastructure Development Completion Report

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ъ	22
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	50
	-

F3.7 RAMM ASPHALT DATA

(to be completed for each seal layer on each road section)

Road No / Name	Carrs Rd		0
Start m	CH320	Start Description	end of seal
End m	CH580	End Description	prior to roundabout
Width	ŝ		
Contractor		Online Contractors 2016 Ltd	
Date of Work			
Asphalt Type (circle one)	ne)	AC / OGPA / SMA / Other	e,
Grading (e.g. M/10 DG10)	310)	0100	
Area Surfaced (m ^a)		2400	
Average thickness (mm)	m)	46 mm .	
Laying Temperature (°C) Tack Coat Residual Apolication Rate	°C) Application Rate	14900.	
(L/m²)	upplication reas	1.0 L/m2	
Additional Notes (e.g. Weather, Temp, Polymer Modification)	Weather, Temp,	Dhy .	
		1	



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I

F3.8 RAMM CHIPSEAL DATA

(to be completed for each seal layer on each road section)

Road No / Name	Carrs Rd		
Start m	CH320	Start Description and of seal	end of seal
Endm	CH560	End Description	prior to roundabout
Width	E6		
Contractor		Online Contractors 2016 Ltd	
Date of Work			
Seal Type (circle one)	(1	1 Coat / Racked in Chipseal / 2 Coat / Other.	/ 2 Coat / Other.
Seal Reason		Waterproofing First Coat / S	Waterproofing First Coat / Second Coat / Asphalt Membrane
Area Sealed (m ²)		2400	
Chip Grading (e.g. 3/5)	5)	vignade 4	
Binder Type (e.g. B180/200)	80/200)	CRS2 - Emulsion.	Ssion .
Chip Source Company	Λ _Γ	J. 40007.	
Chip Source Quarry Total Volume of Binder Used (Hot) (Litres)	inder Used (Hot)	910 DI	
Temperature of Binder (*C)	er (°C)	30.0	
Residual Binder Rate (L/m²)	("L/m") e	1.01/02	
Cutter (e.g. 3 pph Kero) Other Additives with concentrations (e.g. Polymer modification RS1, 3%)	ro) th concentrations ation RS1, 3%)	1	
Sealing Notes (e.g. Weather, Temp)	Veather, Temp)	(1	

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Regional Infrastructure Technical Specifications

SHARED SERVICES

UPDATED MAY 2018

F3.7 RAMM ASPHALT DATA

(to be completed for each seal layer on each road section)

Greenhill Park Stage 13	13
Webb Dr Ind	Including Roundorbout.
CH520	Ð
CH860	End Description to roundabout south side
5.3m each lane	
0.	Online Contractors 2016 Ltd
	06-03-21
5	AC OGPA / SMA / Other
G10)	ACIA
	4107
(mr	50 mm
(°C) Application Rate	149°C
. Weather, Temp,	Day.
	Subdivision Greenhill Park Stage Road No / Name Viebb Dr (//C Start m CH520 (//C End m CH520 (//C Width 5.3m each tane (//C Voration 5.3m each tane (//C Contractor (//C (//C Date of Work 5.3m each tane (//C Asphalt Type (circle one) (//C (//C Grading (e.g. M/10 DG10) (//C (//C Area Surfaced (m²) (//C (//C Average thickness (mm) (//C (//m²) Additional Notes (e.g. Weather, Temp, Polymer Modification) (//m²)

٥.



F3.8 RAMM CHIPSEAL DATA

(to be completed for each seal layer on each road section)

Road No / Name	Webb Dr		
Start m	CH520	Start Description	end of seal
End m	CH860	End Description	End Description to roundabout southside
Width	5.3m each lane	1	
Contractor	0	Online Contractors 2016 Ltd	
Date of Work			
Seal Type (circle one)		1 Coat Racked in Chipseal /2 Coat / Other.	1)2 Coat / Other.
Seal Reason	5	Vaterproofing First Coat / S	Waterproofing First Coat / Second Coat / Asphalt Membrane
Area Sealed (m ²)		9107 m2	
Chip Grading (e.g. 3/5)	(S)	usade 4	
Binder Type (e.g. B180/200)	80/200)	CBS2 Emulying	· (101/5
Chip Source Company		J. 54000.	8
Chip Source Quarry Total Volume of Binder Used (Hot) (Litres)	inder Used (Hot)	S624.7	
Temperature of Binder (°C)	er (°C)	300 .	
Residual Binder Rate (L/m ^a)	s (L/m²)	2.01/m2	
Cutter (e.g. 3 pph Kero) Other Additives with concentrations (e.g. Polymer modification RS1, 3%)	tro) th concentrations cation RS1, 3%)	١	
Sealing Notes (e.g. Weather, Temp)	Veather, Temp)		
Surfacing Chip PSV (Surfacing Chip PSV testing form attached	Ē	

Regional Infrastructure Technical Specifications

SHARED SERVICES

Page 184 of 601

F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Subdivision	FREENHILL	PARK -	STAGE	13
Road No / Name	ARRS RO	A-D		
Start m	330	Start Description	ATHIER	AVENUE
End m	580	End Description	NEBB DRI	VE ROUNDABOUT
Width	9m			
Basecourse				
Date Completed	18-2-21			
Thickness	150 mm			
Grading	TNZ M/4 A	1740		
Quarry	STEVENSONS			
Sub-Base				
Date Completed	4-12-	2020		
Thickness	200 mm			
Grading	GAP65			22
Quarry	GLEESON	(HUNTLY)		
Undercut / Imported Subg	grade (If Required)			
Whole Site (Yes Y No			
Length	250 m			
Width	9.5m			
Depth	0.5m			
Backfill Material	HARD BROW	N Rock		
Subgrade CBR Without Stabilisation	15			
Material				
Stabilised?	No / Cement / Lime	8		
% Stabilising Agent		0		
Stabilised Depth				
Stabilised CBR				



F3.9 RAMM PAVEMENT DATA

(to be completed for each road section)

Subdivision	GREENHILL	PARK -	STACE	13	
– Road No / Name	WEBB DEN	Warner with the second	-mor	12	
ACHOVALA.	voiceante	exponentiation terro cons	P. c. c.		
Start m	540	Start Description			
End m	850	End Description		ROAD	ROWDABOUT
Width 5	SOUTHBOUND	5 5m NORT	HEOUND		
Basecourse					
Date Completed	11-2-202	1			
Thickness	180 mm	2% CEMENT			
Grading	TNZ MA	AP40			
Quarry	STEVEN SONS .				
Sub-Base					
Date Completed	10=11-2	620			
Thickness	170mm				
Grading	GAP 65				
Quarry	GLEESON ((HUNTLY)			
Undercut / Imported S	ubgrade (If Required)				
Whole Site	(Yes) No				
Length	310 m				
Width	5.5m SouthBo	NUND & 5.5.	NORTHBON	UND	
Depth	0.5m				
Backfill Material	HARD BROWN	Rock			
Subgrade CBR Witho Stabilisation	ut 15				
Material					
Stabilised?	No ' Cement Lime	12			
% Stabilising Agent					
Stabilised Depth					
Stabilised CBR					



APPENDIX 3

Water Construction QA Documentation

- Pipe Laying Checklists F6.2
- Final Inspection Checklist F6.3
- Laboratory Water Test Results
- Pressure Test Results



Infrastructure Development Completion Report

WATER SUPPLY PIPE LAYING CHECKLIST

Waikato Local Authority =

SITE ADDRESS: GREENHILL PARK STARE 13

O

NAME OF DEVELOPER: ONLING CONFRACTOR

NAME OF QUALIFIED WATER SERVICE PERSON:

TE RUCH SHEEHAN

Location: Pipe length FROM	HETT EQS	EDS			
(Intersection to Intersection and side)	WEB3 AR	WERE DR			
то	ENABOUT	RMARan			
	Tick if earlistactory.	Tick # setsfactory	Tick If satisfactory	Tick # autofactory	Tick If antisticity
Pipe size, pressure rating, material, acceptable products checked (attach photo of manufacturer's stamp on pipe)	250	150			in particular
Foundation support attached	N/M	NA			
Dynamic cone penetrometer (DCP) results available	MA	~/A			
If under-cutting required, note metreage and DCP:	NA	~/4			
Bedding type and backfill material (DCP results for road crossings and driveways attached?) YES NO	SANO	9470D			
Valves and hydrants not in carriageway	1	1			
Alignment and cover	1	1			
All service connections in place (Table of water meter and backflow preventor numbers with corresponding lot numbers attached?) YES NO	wjæ	N/4			
Connections and Toby Box correctly located horizontally and vertically (as per standard drawings)	1	1			
Hydrants and valves positioned correctly (as per standard drawings)	1	1			
Thrust blocks installed	1	1			
Pipelines flushed	1	1			
As-built measurements taken prior to backfill	1	1			
Pressure test witnessed and passed by Council representative	1	1			

	Tick if satisfactory	Tick # satisfactory	Tick If satisfactory	Tick if satisfactory	Tick # satisfactory
Bacto sample taken and passed by Council representative PRIOR to connection to the live Council main	1	1			
Connection to live main by Council (unless specifically approved)	1	1			

Main left charged at FAC level of _____ ppm

57

11-03-21 Date signed

HOPPOR Developer/Contractor's name (please print)

DAN

Developer/Contractor's signature

Council Representative's name (please print)

Council Representative's signature

Date signed

Waikato Local Authority SHARED SERVICES WATER SUPPLY PIPE LAYING CHECKLIST

SITE ADDRESS: GREENITILL MARL STARE 13

NAME OF DEVELOPER.

ONLINE CONNECTORS

NAME OF QUALIFIED WATER SERVICE PERSON:

TE Ruc, streeman

	NT+	41-14			
Location: Pipe length FROM (Intersection to Intersection and side)	ers 2 canens	Pas			
то	Worka Quinsour	RNARDA			
	Tick if solislariory	Tick If satisfactory	Tick P satisfactory	Tick 7 satisfactory	Tick F satisfactory
Pipe size, pressure rating, material, acceptable products checked (attach photo of manufacturer's stamp on pipe)	150	200		2-3-	
Foundation support attached	NIA	MA			
Dynamic cone penetrometer (DCP) results available	MA	~10			
If under-cutting required, note metreage and DCP:	MA	NIA			
Bedding type and backfill material (DCP results for road crossings and driveways attached?) YES NO	CAMO	94~0			
Valves and hydrants not in carriageway	/	1			
Alignment and cover	1	1			
All service connections in place (Table of water meter and backflow preventor numbers with corresponding lot numbers attached?) YES NO	1	/			
Connections and Toby Box correctly located horizontally and vertically (as per standard drawings)	/	1			
Hydrants and valves positioned correctly (as per standard drawings)	1	/			
Thrust blocks installed	1	1			
Pipelines flushed	1	1			
As-built measurements taken prior to backfill	1	1			
Pressure test witnessed and passed by Council representative	1	1			

	Tick If satisfactory	Tick if satisfactory	Tick # satisfactory	Tick if satisfactory	Tick if satisfactory
Bacto sample taken and passed by Council representative PRIOR to connection to the live Council main	/	/			
Connection to live main by Council (unless specifically approved)	1	1			

Main left charged at FAC level of _____ ppm

A CONTRACTOR OF A

DAN HOPPER

Developer/Contractor's name (please print) Developer/Contractor's signature

Date signed

Council Representative's name (please print) Council Representative's signature

Date signed

Waikato Local Authority

WATER SUPPLY FINAL INSPECTION CHECKLIST

DEVELOPER/CONTRACTOR

CONFINETORS NO

SITE/LOCATION GREENHIL PARK STALE 13

SUB ____/____

CONTRACT NO

De	veloper to verify checklist prior to meeting	Developer Check	Council Rep Check
1.	All lines flushed out	1	
2.	All backfilling complete and reinstated	1	
З.	Water Supply Design Confirmation form completed	1	
4.	Water Supply Pipe Laying Checklist completed	1	
5.	Final as-built plans attached for site inspection	1	
6.	Connected to existing supply by Council (refer Water Supply Pipe Laying Checklist)	1	
Sit	e Meeting:		
1.	Valves and hydrants correctly marked (Refer standard drawings for indicator posts)	1	
2.	FH pavement markers in place	1	
з.	Fire hydrant lids painted	1	
4.	Valve and FH boxes installed correctly (Refer standard drawings)	1	
5.	All valves checked on/off	1	
6.	Remedial work required? Yes (please list)	No	

Developer/Contractor's name (please print)

5 Developer/Contractor's signature

1/-o 3-2-1 Date signed

Council Representative's name (please print) Council Representative's signature

Date signed

Sample ID	Sample Type	Site	Date Sampled	Date Received	Parameter Name	Result	Units	Lab	Status
2021000845	Hamilton Reticulation Maintenance	150 Greenhill west	16/02/2021		Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	e
2021000845	Hamilton Reticulation Maintenance	150 Greenhill west	16/02/2021	16/02/2021	Temperature On Arrival	17.1	₅C	HCC Laboratory	е
2021000845	Hamilton Reticulation Maintenance	150 Greenhill west	16/02/2021	16/02/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	е
2021000845	Hamilton Reticulation Maintenance	150 Greenhill west	16/02/2021	16/02/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	е
2021000845	Hamilton Reticulation Maintenance	150 Greenhill west	16/02/2021	16/02/2021	Time Sampled (client)	06:30		Client	е
2021000845	Hamilton Reticulation Maintenance	150 Greenhill west	16/02/2021	16/02/2021	Sampler (client)	Lance Parkes		Client	e
2021000846	Hamilton Reticulation Maintenance	150 Greenhill North	16/02/2021	16/02/2021	Heterotrophic Plate Count 35°C	5	cfu/mL	HCC Laboratory	е
2021000846	Hamilton Reticulation Maintenance	150 Greenhill North	16/02/2021	16/02/2021	Temperature On Arrival	16.8	₅C	HCC Laboratory	е
2021000846	Hamilton Reticulation Maintenance	150 Greenhill North	16/02/2021	16/02/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	e
2021000846	Hamilton Reticulation Maintenance	150 Greenhill North	16/02/2021	16/02/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	e
2021000846	Hamilton Reticulation Maintenance	150 Greenhill North	16/02/2021	16/02/2021	Time Sampled (client)	06:35		Client	e
2021000846	Hamilton Reticulation Maintenance	150 Greenhill North	16/02/2021	16/02/2021	Sampler (client)	Lance Parkes		Client	e
2021000847	Hamilton Reticulation Maintenance	150 Greenhill East	16/02/2021	16/02/2021	Heterotrophic Plate Count 35°C	<1	cfu/mL	HCC Laboratory	e
2021000847	Hamilton Reticulation Maintenance	150 Greenhill East	16/02/2021	16/02/2021	Temperature On Arrival	17.7	₅C	HCC Laboratory	e
2021000847	Hamilton Reticulation Maintenance	150 Greenhill East	16/02/2021	16/02/2021	E.coli Enumerated	<1	MPN/100mL	HCC Laboratory	e
2021000847	Hamilton Reticulation Maintenance	150 Greenhill East	16/02/2021	16/02/2021	Total Coliforms Enumerated	<1	MPN/100mL	HCC Laboratory	e
2021000847	Hamilton Reticulation Maintenance	150 Greenhill East	16/02/2021	16/02/2021	Time Sampled (client)	06:45		Client	e
2021000847	Hamilton Reticulation Maintenance	150 Greenhill East	16/02/2021	16/02/2021	Sampler (client)	Lance Parkes		Client	е

Test Certificate

Date	4 Feb 2021	
Project Name	Greenhill	
Plan No.	Stage 15, 14 x 13	
Contractor	Online.	
Contractors Rep	Tyler Maihi	
HCC Officer	M. Gibs.	

Water Reticulation

Pressure Test - Water

171-PSI

or 1200kPa

1

for 15mins

Test Name	PN Rating	Pipe Size	Start	Finish	Length	Result
PT.	16.	1500- 63-	10.45	11.00	600m	Pass

	n N
Signature HCC Test Official	MS
Signature Contractor Representative	Ra



APPENDIX 4

Wastewater Construction and QA Records

- Wastewater Pipe Laying Checklist F5.2
- Wastewater Manhole Checklist F5.3
- Wastewater trench Backfill Summary Checklist F5.4
- Wastewater Final Inspection Checklist F5.6
- Pressure Test Results
- CCTV submission email



F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s): 21879-M-1	3-	SOI	ų.							
Name of certified drainlayer: 2mm Million	H	5	N	+	+	3	~	Ē	0	2
Location: Pipe length (MH To MH)	T	to 6	51	10 5	2	10 5	5	to	18	toto

Pipe Laying Checks

Trench Safety (d) Shield (e) Batter (f) Other		D D D			200
Pipe size, quality, manufacturer, on acceptable products list	8	B	æ	8	8
- Surveyors name Online					
Foundation support attached - Dynamic cone penetrometer (DCP) results - if under cutting required, note metreage and DCP results.			DD	99	
Record daily level check and confirm on grade	Ø	0	B	B	E
Bedding type and surround material: 40/20 - Pitsand	9	Ø	Ø	0	5
Bulk Backfill material: Brown Rah	ø	B	Ø	Ð	8-
Bulk backfill compaction (DCP results from pipe to ground level attached)	P	₽∕	9	Ð	-B-
Alignment - control points identified	G	Ð	·B·	8	0
Pressure test witnessed and passed by Council representative.	0	0			Ø

Service connections

All service connections in place, taped, and staked	ď	ø	0		
As-built measurements taken, GPS located	Ø	B	0	Ø	
CCTV pipe inspection data and comments supplied		B	Ø	Ø	

West Construction

16/12/20

Developer/Contractor



F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s): 21879	-M.	-17	3-	S	>1						
Name of certified drainlayer: Dave	Mille	57	-	2	۲	2	+	2	Æ	2	د
Location: Pipe length (MH To MH)		\$	to 🌮	13	to 5	19.	to 🛀	5	to or		tog

Pipe Laying Checks

		D D D		000
P	P		4	5
D		D		Ø J
	e e	D D	C C	e l
D	8	P	0	B
G-	0	0	₽	0-
Ø	-8	ø	•	R
ø	₽⁄	-	Ø	5
Ø	Ø	D⁄	P	
ø	œ	G		9

Service connections

All service connections in place, taped, and staked	œ	0	₽∕	B	9
As-built measurements taken, GPS located		I		D	e
CCTV pipe inspection data and comments supplied	ø	T		Ø	Ð

West Construction

16/12/20

Developer/Contractor



F5.2 WASTEWATER PIPE LAYING CHECKLIST

Engineering plan number(s): 21879-M	-13	-5	01					
Name of certified drainlayer: 200 Million	2	T.	2	no	2	2	- 14	-
Location: Pipe length (MH To MH)	2	to to	10	STA	105	2	21.1	tot

Pipe Laying Checks

Trench Safety		B	Ø	e	T
(d) Shield	D	e/	8		B
(e) Batter (f) Other					
Pipe size, quality, manufacturer, on acceptable products list	ø	5	ø	P	ø
- Surveyors name <u>Chive</u> - Set out checked	Ø	2	99	44	
 Foundation support attached Dynamic cone penetrometer (DCP) results if under cutting required, note metreage and DCP results. 	BB		A A	R C	00
Record daily level check and confirm on grade	9	B	0	D	2
Bedding type and surround material: 40/20 - PHSand	ø	. @	B	0	Ø
Bulk Backfill material: Brown Rock	G	G	e	· 🖬	0
Bulk backfill compaction (DCP results from pipe to ground level attached)	9	•	9	-	Br
Alignment – control points identified	R	B	P	B	D'
Pressure test witnessed and passed by Council representative.	G	8	0	9	0

Service connections

All service connections in place, taped, and staked			B	d
As-built measurements taken, GPS located		-	D	4
CCTV pipe inspection data and comments supplied	B	8		

West Construction

Developer/Contractor

Date

16/12/20



F5.3 WASTEWATER MANHOLE CHECKLIST

Name of certified drainlayer:	Maller				
Location: Pipe length (MH To MH)	18.5	18.4	18.31	18A1	18.2
Manhole Construction Checklist	MH num	ber			
Manhole size, quality, manufacturer on acceptable materials list	5	-	9	G	9
Set out /orientation	ď	o	Ø	æ	0
Sealing strip between risers	b		d	ď	B
Benching Height Alignment and cross section Half pipe lining (wastewater only) Step recesses (if applicable) Flexible joints Cutting and plastering of connections Access details per drawings (e.g. manhole cover sited over steps). Step irons including epoxy to outside recesses					
Bedding type and surround	B		Ø	G	
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached		Ø	Ø	ď	Q
No debris in pipelines	Ø				
Pipe invert fall through manhole	Ø	Ø	ď	đ	
Pressure test witnessed and passed by Council representative.			D	Ø	6

West Construction

16/12/20

Developer/Contractor

Date



F5.3 WASTEWATER MANHOLE CHECKLIST

Name of certified drainlayer: Zove	Mille	n			
Location: Pipe length (MH To MH)	18.1	19.2	19.1	19.41	20.2
Manhole Construction Checklist	MH num	per			
Manhole size, quality, manufacturer on acceptable materials list	Ø	đ	V	Ø	ø
Set out /orientation	۵	e	ľ		D
Sealing strip between risers	ø	Ø		D⁄	
Benching	1				_
Height	0			1	
 Alignment and cross section 		Ø			0
 Half pipe lining (wastewater only) 	0		0	D	9
 Step recesses (if applicable) 					
Flexible joints			V	G	0
Cutting and plastering of connections	Ø		Ø		D
Access details per drawings (e.g. manhole cover sited over steps).	d	Ø		0	Ø
Step irons including epoxy to outside recesses	B			đ	Ø
Bedding type and surround	ď	o	Ø	۵	e
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached				ø	d
No debris in pipelines				Ø	C
Pipe invert fail through manhole	Ø		B	٥	Ø
Pressure test witnessed and passed by Council representative.	B	Ø		₽∕	9

West Construction

16/12/20

Developer/Contractor

Date



F5.3 WASTEWATER MANHOLE CHECKLIST

Name of certified drainlayer: 2and	Millille	1				
Location: Pipe length (MH To MH)	201	21.3	21.2	21.1	22.2	22
Manhole Construction Checklist	MH num	ber	International In			
Manhole size, quality, manufacturer on acceptable materials list	8	Ø	Ð	P	œ	-
Set out /orientation	G	D	D	D	6	-
Sealing strip between risers	B	Ø		D/	P	1-
 Benching Height Alignment and cross section Half pipe lining (wastewater only) Step recesses (if applicable) 					9990	111
Flexible joints			B	D/	G	-
Cutting and plastering of connections	B		2	B		1-
Access details per drawings (e.g. manhole cover sited over steps).	Ø	0	₽	0	D-	-
Step irons including epoxy to outside recesses	B			0	0	-
Bedding type and surround	Q		0	0	0	
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	Ø	·ð	B	Q	ø	-
No debris in pipelines		đ	D	ø	D/	
Pipe invert fall through manhole		er	Ø	Ø	C/	1
Pressure test witnessed and passed by Council representative.	đ	۵V	۵	Ø	đ	~

West Construction

16/12/20

Developer/Contractor

Date



Technician Carrying out Tests:	West Construction
Location:	Greashill Park 13,14,15
Plan No(s):	21872-M-13-SOL
From MH	22.2-22.1
Acceptance Criteria:	
Tests by:	West Construction

(attached)

Analysis of Results

Trench backfill completed satisfactorily

10

Trench backfill requires remedial work as follows:

٠

West Construction

Developer/Contractor

16/12 20



Technician Carrying out Tests:	West CorEtadon
Location:	Greening Park 13,14,15
Plan No(s):	21879-M-13-Sol
From MH	19.2-20.2-21.3-21.2-21.1-20.1
Acceptance Criteria:	CBR716
Tests by:	West Construction

(attached)

Analysis of Results

Trench backfill completed satisfactorily

10

.

Trench backfill requires remedial work as follows:

West Construction

Developer/Contractor

16/12/20



Technician Carrying out Tests:	West Construction
Location:	Greenhill Park 13,14,15
Plan No(s):	21879-M-13-SOL
From MH	FET, 18.5, 18.4, 18.3, 18.2, 18.1, 18A1
Acceptance Criteria:	CBR716
Tests by:	West Construction

(attached)

Analysis of Results

Trench backfill completed satisfactorily

10

Trench backfill requires remedial work as follows:

٠

West Construction

Developer/Contractor

16/12/20



Technician Carrying out Tests:	West Construction
Location:	Greenhill 13,14,15
Plan No(s):	21879-M-13-SOL
From MH	18.2-19.2.1741-19.1
Acceptance Criteria:	CBRTIL
Tests by:	West Construction

(attached)

Analysis of Results

Trench backfill completed satisfactorily

or

.

Trench backfill requires remedial work as follows:

West Construction

Developer/Contractor

16/12/20



CHECKLIST F4.6 STORMWATER PIPE NETWORK - FINAL INSPECTION

Da	De	ភ	4	ω	Ņ	.+	SIT	თ	Ċ1	4	ω	р	-	De	PR	SUB	De	Sit
21	Certhadian	Remedial work required?	Overland flow to and from adjoining properties not affected	Works on third party land completed to satisfaction of owner	Inspect all manholes and catchpits	Inspect all lines	SITE MEETING	Final as-built and operational plans attached for site inspection	All backfilling complete and tidied up	All manholes checked (eg.infiltration, plastering)	All required CCTV inspections carried out, reviewed and any re- work completed.	All lines flushed out	All relevant stormwater checklists completed	Developer to verify checklist prior to meeting:	PRE-MEETING TASKS	B/ Contract No:	Developer/Contractor: West (enstruction	Site/Location: Greentuil Poule Stoge's
Date	Council	se list)	ected	owner 🗆	0	0		nspection	R	R	and any re-	٩	Q	Developer Check		No:		ye's 13,14,15
			•	0	0	0		0	0	0	0			Council Rep Check				



Page 375 of 691

F5.6 CHECKLIST WASTEWATER PIPE NETWORK - FINAL INSPECTION

19	18	17.	16.	15.	14	13	Sit	12	11.	10.	9	,co	7.	'n	De	SUB	De	Sit
Overland flow to and from adjoining properties not affected	 Wastewater pumping station data complete and test results (Form F5.7) attached 	17. Works on third party land completed to satisfaction of owner	Secondary flowpaths and detention ponds	Inspect SW inlet and outlet structures	Inspect all manholes and catchpits	Inspect all lines	Site Meeting	Final as-built and operational plans attached for site inspection	Pressure test completed and witnessed	All backfilling complete and tidled up	All manholes checked (eg.inflitration, plastering)	All required CCTV inspections work completed.	All lines flushed out	All checklists completed (add form numbers)	Developer to verify checklist prior to meeting:	B/	Developer/Contractor: W2St Construction	Site/Location: Greenin Pork Stages
ning properties not affected	ta complete and test results	leted to satisfaction of owner	tion ponds	ctures	pits			ans attached for site inspection	Itnessed	ed up	ation, plastering)	All required CCTV inspections carried out, reviewed and any re- work completed.		orm numbers)	r to meeting:	Contract No:	Construction	Pork Stages
0	0	0	0	0	0	0			R	Q	R	9	٩	Q	Developer Check			13, 14, 15
0	D	0	0	0	0	0			0	0		0	0	0	Council Rep Check			

West Cospickion 9/3/21

Council

20. Remedial work required?

Yes (please list)

I No

Developer

Regional Infrastructure Technical Specifications

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TESTED BY:

West Construction

PROJECT NAME :

Greenhill Park Stages 13,14,15

Sewer Chainage	C/L Trench	(CIV VALUES)	Remarks			
FEI WWMH1.9	1ST LIFT					
10	24	21	BROWN ROCK 1M TEST			
20	26	19	BROWN ROCK 1M TEST			
SSMH18.5						
10	21	17	BROWN ROCK 1M TEST			
20	23	22	BROWN ROCK 1M TEST			
30	27	29	BROWN ROCK 1M TEST			
40	29	24	BROWN ROCK 1M TEST			
50	22	21	BROWN ROCK 1M TEST			
60	24	27	BROWN ROCK 1M TEST			
70	24	20	BROWN ROCK 1M TEST			
80		23	BROWN ROCK 1M TEST			
	26	23	BROWN ROCK IN 1631.			
SSMH18.4						
10	27	24	BROWN ROCK 1M TESTS			
20	21	25	BROWN ROCK 1M TESTS			
30	24	20	BROWN ROCK 1M TESTS			
40	21	18	BROWN ROCK 1M TESTS			
50	27	24	BROWN ROCK 1M TEST			
60	20	22	BROWN ROCK 1M TESTS			
SSMH18.3						
10	22	18	BROWN ROCK 1M TESTS			
20	21	22	BROWN ROCK 1M TESTS			
30	27	20	BROWN ROCK 1M TESTS			
40	25	27	BROWN ROCK 1M TESTS			
50	29	23	BROWN ROCK 1M TESTS			
60	19	22	BROWN ROCK 1M TESTS			
70	21	26	BROWN ROCK 1M TESTS			
SSMH18.2						
10	20	24	BROWN ROCK 1M TESTS			
20	22	19	BROWN ROCK 1M TESTS			
30	24	29	BROWN ROCK 1M TESTS			
40	21	26	BROWN ROCK 1M TESTS			
50	21		BROWN ROCK 1M TEST			
60	23		BROWN ROCK 1M TESTS			
70	25		BROWN ROCK 1M TESTS			
80	21		BROWN ROCK 1M TEST			
SSMH18.1						
SSMH18.3						
10	23	21	BROWN ROCK 1M TEST			
20	27	26	BROWN ROCK 1M TESTS			
30	21	25	BROWN ROCK 1M TEST			
40	24		BROWN ROCK 1M TESTS			
50	29		BROWN ROCK 1M TEST			
	29		BROWN ROCK 1M TEST			
60	24		BROWN ROCK IN IESI.			
SSMH18.A1						
SSMH18.2						
10	22	19	BROWN ROCK 1M TEST			
20	24	22	BROWN ROCK 1M TESTS			

ESTED BY:	West Construction		
ROJECT NAME :	Greenhill Park Stages 13,14,15		
30	21	24	BROWN ROCK 1M TESTS
40	29	26	BROWN ROCK 1M TESTS
50	24	25	BROWN ROCK 1M TESTS
60	27	30	BROWN ROCK 1M TESTS
SSMH19.2			
10	29	22	BROWN ROCK 1M TESTS
20	24	26	BROWN ROCK 1M TESTS
30	25	23	BROWN ROCK 1M TESTS
40	26	24	BROWN ROCK 1M TESTS
50	24		BROWN ROCK 1M TESTS
60	21		BROWN ROCK 1M TESTS
70	26		BROWN ROCK 1M TESTS
80	28		BROWN ROCK 1M TESTS
90	24		BROWN ROCK 1M TESTS
SSMH19.1			
SSMH19.2			
10	22		BROWN ROCK 1M TESTS
SSMH19.A1			
SSMH18.2			
10	21	26	BROWN ROCK 1M TESTS
20	23	22	BROWN ROCK 1M TESTS
30	24	24	BROWN ROCK 1M TESTS
40	27	36	BROWN ROCK 1M TESTS
50	19	25	BROWN ROCK 1M TESTS
60	21	24	BROWN ROCK 1M TESTS
SSMH20.2			
10	19	23	BROWN ROCK 1M TESTS
20	20	24	BROWN ROCK 1M TESTS
30	24	21	BROWN ROCK 1M TESTS
40	26	22	BROWN ROCK 1M TESTS
50	22		BROWN ROCK 1M TESTS
60	23		BROWN ROCK 1M TESTS
70	20		BROWN ROCK 1M TESTS
80	21		BROWN ROCK 1M TESTS
SSMH20.1			
SSMH20.2			
10	25	19	BROWN ROCK 1M TESTS
20	23	18	BROWN ROCK 1M TESTS
30	23	26	BROWN ROCK 1M TESTS
40	26	20	BROWN ROCK 1M TESTS
SSMH21.3			
10	20	25	BROWN ROCK 1M TESTS
20	20	23	BROWN ROCK 1M TESTS
SSMH21.2	<u>۲</u>		
10	24	21	BROWN ROCK 1M TESTS
20	25	23	BROWN ROCK 1M TESTS
30	23	25	BROWN ROCK 1M TESTS
40	23	22	BROWN ROCK 1M TESTS
50	29	<u>_</u>	BROWN ROCK 1M TESTS
60	23		BROWN ROCK 1M TESTS

TESTED BY:	West Construction	
PROJECT NAME :	Greenhill Park Stages 13,14,15	
70	25	BROWN ROCK 1M TESTS
SSMH21.1		

HCC WW testing Report

HCC WW testing Report

Complete

Score	0% Failed items	0	Actions 0
Location			Greenhill area M Stages 13, 14, 15, Chartwell, Hamilton 3281, New Zealand (-37.7490854, 175.2960279)
Conducted on			16th Nov, 2020 11:22 AM NZDT
Test type			Wastewater pressure test
			MH pressure test -
Pipe type			100mm - SN16 - uPVC
			150mm - SN16 - uPVC
MH # tested			WWMH's 19.1, 19a.1, 19.2, 18a.1, 18.1, 18.2, 18.3, 18.4, 18.5, 20.1, 20.2, 21.1, 21.2, 21.3.
MH # to MH #			WWMH's 19a.1 to 19.2 to 19.1, 19.2 to 18.2 to 18.1, 18.2 to 18.3 to 18a.1, 18.2 to 20.2 to 20.1, 20.2 to 21.3 to 21.2 to 21.1, 18.3 to 18.4 to 18.5 to interceptor.
Tested by			
Matt from Wests Constructi 16th Nov, 2020 11:52 AM N			
Inspector/Auditor			Lance Parkes
Comments WWMH's tested - WWMH's 1	19.1, 19a.1, 19.2, 18a.1, 18.1, 18.2, 1	18.3, 18.4, 18.5,	20.1, 20.2, 21.1, 21.2, 21.3.

WW main tested - WWMH's 19a.1 to 19.2 to 19.1, 19.2 to 18.2 to 18.1, 18.2 to 18.3 to 18a.1, 18.2 to 20.2 to 20.1, 20.2 to 20.1, 20.2 to 20.1, 20.2 to 21.3 to 21.2 to 21.1, 18.3 to 18.4 to 18.5 to interceptor.

Photos

Pass/Fail

Pass

Barry Pearson

From:	Barry Pearson (Shrimpton and Lipinski Limited Partnership (HQ - Tauranga)) bpearson@sltga.co.nz>
Sent:	Wednesday, 10 March 2021 4:36 PM
To:	Lance Parkes (Hamilton City Council (Hamilton))
Subject:	Document Issue No. 7 - 19-30378-03 - Greenhill Park - Area M Stage 13, 14 and 15
Attachments:	19-30378-03 - Greenhill Park - Area M Stage 13, 14 and 15 - Issue 7.pdf

19-30378-03 - Greenhill Park - Area M Stage 13, 14 and 15 Issue 7

Issued by: Barry Pearson (Shrimpton and Lipinski Limited Partnership) On: 10 Mar 2021

Good afternoon

See attached Greenhill Park Stage 13 stormwater (SW) and wastewater (SS and WW) CCTV for review

Note that we intent to submit our Greenhill Park stage 13 engineering completion report to HCC approx. 12th March 2021.

Access has already been given to Martyn Smith and Murray Giles of Hamilton City Council.

Regards

Access the documents for this issue

Recipients:

Lance Parkes (Hamilton City Council (Hamilton))

BARRY PEARSON



36 Kereiti Street, Tauranga 3110 PO Box 231, Tauranga 3140 07 577 6069 bpearson@sltga.co.nz www.sltga.co.nz

APPENDIX 5

Stormwater Construction and QA Records

- Stormwater Pipe Laying Checklist F4.11 F5.2
- Stormwater Manhole Checklist F4.12 F5.3
- Trench Backfill Compaction Test Summary F4.13
- Stormwater Backfill Compaction Test Results
- Stormwater Catchpit Checklist F4.14
- Stormwater Final Inspection Checklist F4.6
- CCTV submission email



Infrastructure Development Completion Report

F4.2 STORMWATER PIPE LAYING CHECKLIST

Engineering plan number(s):	10									
Name of certified drainlayer:	to	S	S	t	t	1		_		2
Location: Pipe length (MH To MH)	3	to S	5	to	5	to 🖭	5	to g	É	to

Pipe Laying Checks

Ø				
•	P	Ø	B	G
8	8	8	BB	60
99	2	8	0	6
Ø	Ø	Ø	B	Ø
ø	B	đ	ø	Ø
ø		-	4	G
	P	9	B	Q
Ð				



Service connections

All service connections in place, taped, and staked	B	Ø	đ	ď	
As-built measurements taken, GPS located		Ø	0	B	ø
CCTV pipe inspection data and comments supplied		ø	ø	Ø	ø

Wast Construction

Developer/Contractor

14/2/20

F4.2 STORMWATER PIPE LAYING CHECKLIST

Engineering plan number(s):							
Name of certified drainlayer:	b - t - b - 5						
Location: Pipe length (MH To MH)	a 500 570 00 120 00 50						

Pipe Laying Checks

Trench Safety					
(a) Shield (b) Batter					
(c) Other	-				<u> </u>
Pipe size, quality, manufacturer, on acceptable products list	æ	ø	Ø	T	
- Surveyors name Online		28	8	8	
Foundation support attached		-			
 Dynamic cone penetrometer (DCP) results if under cutting required, note metreage and DCP results. 		0	0	0	
Record daily level check and confirm on grade	Ø	Ø	B		
Bedding type and surround material: 40/2 = -Send	G	đ	ø	ъ	
Bulk Backfill material: Brown Roch	~		D	5	
Bulk backfill compaction (DCP results from pipe to ground level attached)	e	ø	P		
Alignment – control points identified	Ø	B	Ø	P	
Pressure test witnessed and passed by Council representative.					



Service connections

All service connections in place, taped, and staked		B	Ø	B	
As-built measurements taken, GPS located		đ	P	5	
CCTV pipe inspection data and comments supplied	5		6	ď	

Was Constaction

Developer/Contractor

14/12/20

F4.3 STORMWATER MANHOLE CHECKLIST

Engineering Plan Num	ber(s)				
Name of certified drain	layer:				
Location: Pipe length (MH To MH)	Outlet 15	19,5	19.4	19,1	20.1
Manhole Construction Checklist	MH number				
Manhole size, quality, manufacturer on acceptable materials list	Ø	Þ	ø	ø	Ø
Set out /orientation	Ø	6	6	6	Ø
Sealing strip between risers	Ø	6	d	C	Ø
 Benching Height alignment and cross section half pipe lining (wastewater only) Step recesses (if applicable) 	6060	dd o (ත්ර	a do c	6600
Flexible joints	Ø	9	ø	ø	Ø
Cutting and plastering of connections		ď	б	б	D
Access details per drawings (e.g. manhole cover sited over steps).			ď		Ø
Step irons including epoxy to outside recesses	6	ø	Ø	٥	Ø
Bedding type and surround	D,	Ø	Ø	Ø	Ø
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	6	ď	ď	ø	
No debris in pipelines	Ø	d		Ø	Ø
Pipe invert fall through manhole	9		D/	9	

West Consultin

Developer/Contractor

14/12/20 ,

Date



F4.3 STORMWATER MANHOLE CHECKLIST

Engineering Plan Numbe	r(s)				
Name of certified drainla	yer:				
Location: Pipe length (MH To MH)	15.1	21.2	21.1	22.2	22.1
Manhole Construction Checklist	MH number				
Manhole size, quality, manufacturer on acceptable materials list	D'	D'	Ø	ø	Ø
Set out /orientation	ø	ø	đ	Ģ	б
Sealing strip between risers	Ø		6		D
 Benching Height alignment and cross section half pipe lining (wastewater only) Step recesses (if applicable) 	8900	døći	800	øøo	ØØOO
Flexible joints	Ø		Ø	Ø	D
Cutting and plastering of connections	ø	Ø	Q/	B	Ø
Access details per drawings (e.g. manhole cover sited over steps).	Ø	a	ø	,a	ø
Step irons including epoxy to outside recesses	Ø	C	đ	Ø	ø
Bedding type and surround	Ø	P	Ø	Ø	đ
Bulk backfill compaction - Dynamic Cone Penetrometer (DCP) results attached	Q	ø	Ø	ø	ø
No debris in pipelines	B	Ø	Ø	Ø	đ
Pipe invert fall through manhole	٥		G	Ø	0

Wart Construction

Developer/Contractor

14/12/20



(attach individual test reports)

Technician Carrying out Tests Wast Construction Location: Greenhill Park Stage 13, 14, 15 Plan No(s): 21879-M-13-501 From MH 19.4-22.2-22.1 to MH Acceptance Criteria: (BR)16 Tests by: West Construction (attached)

Analysis of Results

Trench backfill completed satisfactorily or as follows:

Trench backfill requires remedial work

West Costruter

Developer/Contractor

Date 14/1/20

Waikato Local Authority SHARED SERVICES

(attach individual test reports)

Technicia WeS	in + (orstruction	Carrying		out		Tests
Location:	Greenhiv	forke !	Stage	13-14	-15	
Plan No(s	1:21879-	M-13	-S01			
From MH	15.2-1	5.1	_ to MH			
Acceptan	ce Criteria: (BR	715				
Tests by:	West-lask	aller				(attached)
	Analysis of Results					
Tree as follow	nch backfill completed s	satisfactorily	<u>or</u> 🗖 Tre	anch backfill	requires remedia	l work

West Costantion

Developer/Contractor

14/12/20 Date

Walkato Local Authority SHARED SERVICES

(attach individual test reports)

Technician Tests Carrying out West Constandion 2011 Location: Greenhill Park Stage 13,14,15 Plan No(s): 21879-M-13-501 From MH 19.1-21.2-21.1 to MH Acceptance Criteria: CBR >16

Tests by: Wet Cantractor

Analysis of Results

as follows:

Trench backfill completed satisfactorily or Trench backfill requires remedial work

- Con Stauther

Developer/Contractor

Date 14/12/20



(attached)

Page 374 of 601

(attach individual test reports)

Technician Carrying out Tests vest Construction 2011 Location: Greenhill Pale Stage 13, 14, 15 Plan No(s): 21877-M-13-SOL From MH 19.4-19.1-20.1 to MH Acceptance Criteria: CBR > 16 Tests by: Ubst Contraction (attached)

Analysis of Results

Trench backfill completed satisfactorily or as follows:

Trench backfill requires remedial work

West Constantion

Developer/Contractor

Date 14/12/20

F4.5 STORMWATER CATCHPIT CHECKLIST

Location:	117	118	119	114	115
		Cat	tchpit Num	ber	

Catchpit Construction Checklist

Catchpit, type, size, quality, accepted material checked		B	G	B	-0
Set out /orientation			2	P	₽
Location checked	Ø	Ø	Ø	-	P
Depth of sump below outlet correct	Ø	Ø	G	-	Ø
Cutting and plastering of outlet connection	B	٢	Ø	0	Ŗ
Floating debris baffle installed correctly	đ	Ø	đ	Ø	0
Backfill compaction around pit checked	6	đ			đ
Seating and plastering of surround and grate to sump barrel	e			P	ď
All silt and debris removed from sump	Ø	9	□/	9/	Ð

West Construction

Developer/Contractor

14/12/20



F4.5 STORMWATER CATCHPIT CHECKLIST

Location:	107	108	087	101	109
		Cat	chnit Nur	hor	

Catchpit Number

Catchpit Construction Checklist

Catchpit , type, size, quality, accepted material checked	C	P	Ø	ø	ø
Set out /orientation	e	Ø	đ		6
Location checked			Ø		Ø
Depth of sump below outlet correct	d		D	₽∕	Ø
Cutting and plastering of outlet connection	б	Ø	Ø		Ø
Floating debris baffle installed correctly	Ø	d	Ø	٢	Ø
Backfill compaction around pit checked			Ø	Ø	₽
Seating and plastering of surround and grate to sump barrel	đ	Ø	ø	ď	P
All silt and debris removed from sump	6	P/			9

West Collaction

Developer/Contractor

14/12/20-



F4.5 STORMWATER CATCHPIT CHECKLIST

Location:	116	112	113)11	110
		Cat	tchpit Num	iber	

Catchpit Construction Checklist

Catchpit , type, size, quality, accepted material checked	B	Ø	R	Ø	P
Set out /orientation		ø	Ø	Ø	٢
Location checked				Ø	ſ
Depth of sump below outlet correct	Ø		C	P	Ø
Cutting and plastering of outlet connection		D I		Ø	
Floating debris baffle installed correctly	Ø	D2	0		ď
Backfill compaction around pit checked	Ø		Ø	C2	Q
Seating and plastering of surround and grate to sump barrel	P		Ø	5	đ
All silt and debris removed from sump	Ø	₽∕	Ø	Ø	

West Costruction

Developer/Contractor

14/12/20







Chainage	C/L Trench(CIV VALUES)	Remarks
SWMH 19.5	1ST LIFT	
10	NA	BERM
20	NA	BERM
30	21	BROWN ROCK 1M TEST
40 SWMH 19.4	23	BROWN ROCK 1M TEST
10	19	BROWN ROCK 1M TEST
20	23	BROWN ROCK 1M TES
		BROWN ROCK 1M TES
30	21 25	BROWN ROCK 1M TES
40		BROWN ROCK 1M TES
50	26	BROWN ROCK 1M TES
60	24	BROWN ROCK 1M TES
70	21	BROWIN ROCK INTES
SWMH 22.2		
10	25	BROWN ROCK 1M TEST
20	26	BROWN ROCK 1M TEST
30	24	BROWN ROCK 1M TES
40	17	BROWN ROCK 1M TEST
50	24	BROWN ROCK 1M TEST
SWMH 22.1		
SWMH 19.4		
10	19	BROWN ROCK 1M TEST
20	20	BROWN ROCK 1M TEST
30	23	BROWN ROCK 1M TEST
40	24	BROWN ROCK 1M TES
50	29	BROWN ROCK 1M TES
60	27	BROWN ROCK 1M TES
70	23	BROWN ROCK 1M TES
SWMH 19.1		
10	24	BROWN ROCK 1M TEST
20	29 27	BROWN ROCK 1M TEST BROWN ROCK 1M TEST
40	27	BROWN ROCK 1M TES
50	23	BROWN ROCK 1M TES
60	24 28	BROWN ROCK 1M TES
70	21	BROWN ROCK 1M TES
SWMH 21.2		
10	30	BROWN ROCK 1M TEST
20	25	BROWN ROCK 1M TES
30	26	BROWN ROCK 1M TES
40	20	BROWN ROCK 1M TES
40 SWMH 21.1		
SWMH 19.1 10	27	BROWN ROCK 1M TEST
		BROWN ROCK 1M TES
20	29	BROWN ROCK 1M TES
30	<u>19</u> 24	BROWN ROCK 1M TES
40		
50	23	BROWN ROCK 1M TES
60	24	BROWN ROCK 1M TEST
70	22	BROWN ROCK 1M TEST
80 SWMH20.1	24	BROWN ROCK 1M TES
SWMH15.2EX 20	21	BROWN ROCK 1M TES
30	23	BROWN ROCK 1M TES
40	23	BROWN ROCK 1M TES
50	24 21	BROWN ROCK 1M TES
50	<u> </u>	BROWN ROCK IN TEST

CHECKLIST F4.6 STORMWATER PIPE NETWORK - FINAL INSPECTION

Da	De	ភ	4	ω	Ņ	.+	SIT	თ	Ċ1	4	ω	р	-	De	PR	SUB	De	Sit
21	Certhadian	Remedial work required?	Overland flow to and from adjoining properties not affected	Works on third party land completed to satisfaction of owner	Inspect all manholes and catchpits	Inspect all lines	SITE MEETING	Final as-built and operational plans attached for site inspection	All backfilling complete and tidied up	All manholes checked (eg.infiltration, plastering)	All required CCTV inspections carried out, reviewed and any re- work completed.	All lines flushed out	All relevant stormwater checklists completed	Developer to verify checklist prior to meeting:	PRE-MEETING TASKS	B/ Contract No:	Developer/Contractor: West (enstruction	Site/Location: Greentuil Poule Stoge's
Date	Council	se list)	ected	owner 🗆	0	0		nspection	R	R	and any re-	٩	Q	Developer Check		No:		ye's 13,14,15
			•	0	0	0		0	0	0	0			Council Rep Check				



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F5.6 CHECKLIST WASTEWATER PIPE NETWORK - FINAL INSPECTION

19	18	17.	16.	15.	14	13	Sit	12	11.	10.	9	,co	7.	'n	De	SUB	De	Sit
Overland flow to and from adjoining properties not affected	 Wastewater pumping station data complete and test results (Form F5.7) attached 	17. Works on third party land completed to satisfaction of owner	Secondary flowpaths and detention ponds	Inspect SW inlet and outlet structures	Inspect all manholes and catchpits	Inspect all lines	Site Meeting	Final as-built and operational plans attached for site inspection	Pressure test completed and witnessed	All backfilling complete and tidled up	All manholes checked (eg.inflitration, plastering)	All required CCTV inspections work completed.	All lines flushed out	All checklists completed (add form numbers)	Developer to verify checklist prior to meeting:	B/	Developer/Contractor: W2St Construction	Site/Location: Greenin Pork Stages
ning properties not affected	ta complete and test results	leted to satisfaction of owner	tion ponds	ctures	pits			ans attached for site inspection	Itnessed	ed up	ation, plastering)	All required CCTV inspections carried out, reviewed and any re- work completed.		orm numbers)	r to meeting:	Contract No:	Construction	Pour Stages
0	0	0	0	0	0	0			R	Q	R	9	٩	Q	Developer Check			13, 14, 15
0	D	0	0	0	0	0			0	0		0	0	0	Council Rep Check			

West Cospection 1/3/21

Council

20. Remedial work required?

Yes (please list)

I No

Developer

Regional Infrastructure Technical Specifications

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APPENDIX 6

Landscaping Certifications

 Landscaping final inspection form requested from HCC



Infrastructure Development Completion Report

APPENDIX 7

Network Utilities Certifications

- Ultrafast Fibre Completion Letter
- First Gas Completion Letter
- Street Light Product Warranty
- WEL Completion Letter
- Street light Suppliers Declaration of Conformity
- Streetlight Producer Statement
- Streetlight COC & ROI Certificates
- HCC Form Street Light RAMM Data



Infrastructure Development Completion Report



8th of March 2021

0800 342 735 info@ultrafast.co.rz

ultrafastfibre.co.nz

ACCEPTANCE BY ULTRAFAST FIBRE LIMITED AS TELECOMMUNICATIONS OPERATOR

Subdivision: Greenhill Park Ruakura Residential Stage 13 (18 Lots), Lot 702, DP 534481, Chartwell, Hamilton.

- Ultrafast Fibre Limited (UFF) confirms that UFF will be the telecommunications operator of the telecommunications reticulation in the proposed public roads for the Ruakura Residential Stage 13 [Greenhill Park] Hamilton, Subdivision by Chedworth Properties Ltd. (the "Subdivision") Lot 702, DP 534481, to provide network connections to Lot 357 through to Lot 374, in the Subdivision (the "Reticulation").
- 2. The Reticulation is now installed in accordance with:
 - (a) the requirements and standards set by the Hamilton City Council and advised to UFF via the Council's website; and
 - (b) the requirements of the Telecommunications Act 2001 and all other applicable laws, regulations and codes (as amended).
- 3. The Reticulation has been installed by Broadspectrum Limited to UFF's satisfaction, for the specific subdivision lots detailed on the "final" Scheme Plan as attached, with UFF remaining the owner, operator and maintainer of the Reticulation.
- 4. The attached "final" Scheme Plan must match your submission to the Hamilton City Council and must have the UFF stamp of 'Approval' accompanied by sign-off. Any additional lots created after initial deployment of multi-duct/fibre infrastructure will be chargeable.
- 5. One or more retail service providers will be available to supply telecommunications services over the completed Reticulation when service is available, provided that UFF shall not be responsible if the retail service provider's offer to supply such telecommunications services or the number of such providers varies from time to time.

SIGNED for and on behalf of ULTRAFAST FIBRE LIMITED by:

Signature:

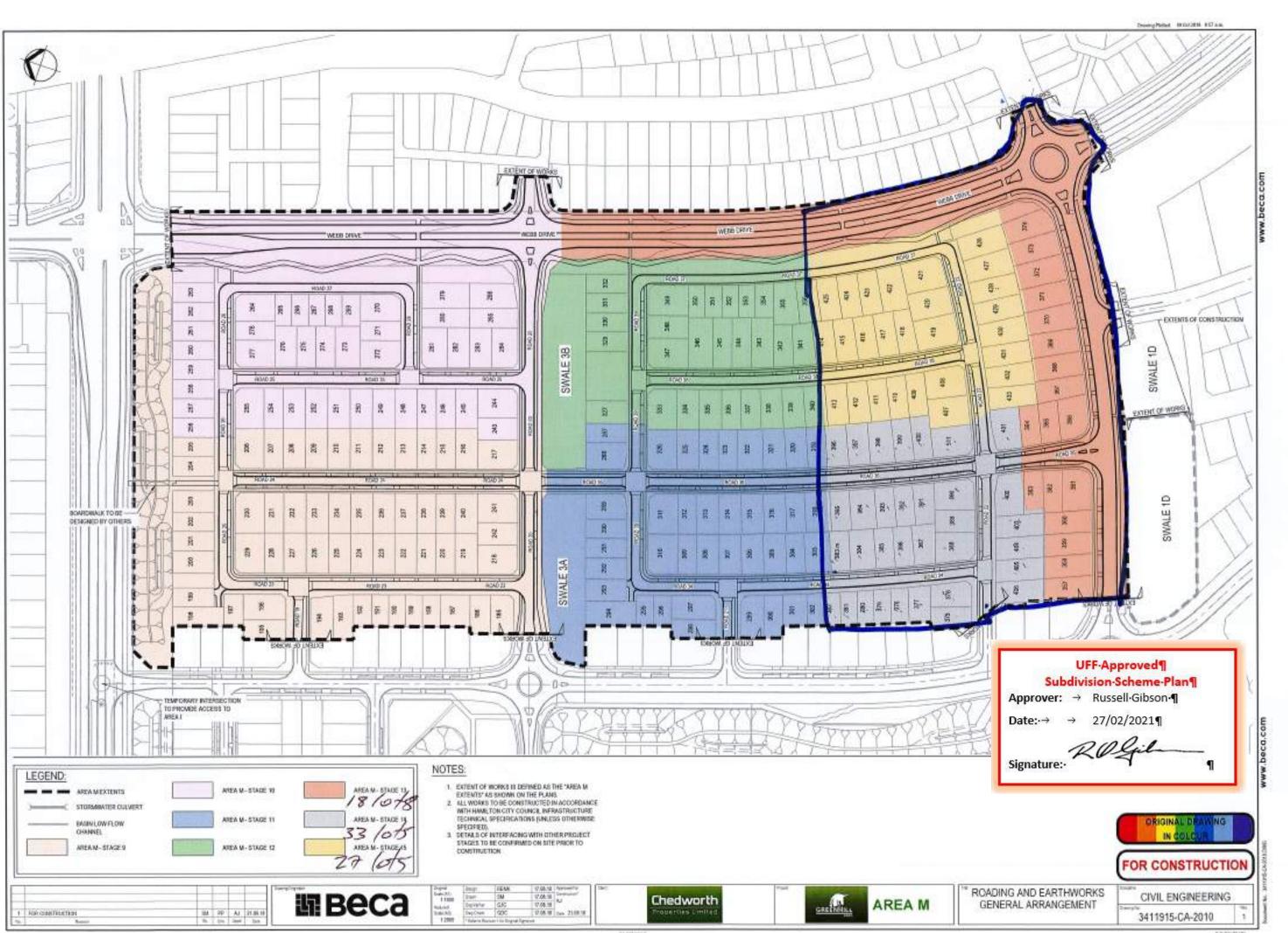
Name:

Russell Gibson

Date:

8th of March 2021





Firstgas

Completion Certificate

То:	Chedworth Properties Limited
From:	Paul Bird
Cc:	Barry Pearson
Date:	4 March 2021

SUBJECT: Greenhill Park Subdivision – Stage 13 (First Gas Distribution Network)



MESSAGE:

This Completion Certificate confirms that the First Gas Distribution Network installed at the above-mentioned development, has been laid, tested and commissioned in accordance with First Gas Technical Standards and relevant Gas Regulations.

Regards

Paul Bird Distribution Accounts Manager - New Developments Firstgas First Gas | Level 6, Resimac House| 45 Johnston St | Wellington | 6011 DDI 04 979 5367 | M 027 531 0060 | <u>firstgas.co.nz</u>

Confidential



IBEX 10 Year Limited Warranty – Project Warranty

Date: 04-03-2021

Project: Greenhill Park, Stage 13

Ref: 7137-01

Issued To: Chedworth Properties Limited

Transfer Provision: Hamilton City Council

a) This limited warranty is provided by Ibex International limited ("Ibex") in relation to the following products;

Luminaire – Vizulo Mini Stork Optic 20 (5 year warranty)

Column - 8m Tapered column with 'Milford' Outreach (10yr Warranty Black paint Finish)

10m Octagonal column with 2m curved Outreach (10yr Warranty Black paint Finish)

b) Ibex warrants to the purchaser that it will deliver the product in new condition in the product's factory packaging. Further, the product will be free of defects in materials and/or workmanship for the warranty period stated.

c) Ibex has sole discretion as to whether any warranty claim shall be valid considering all factors including (without limitation) the operating conditions the product has endured and the overall performance of the product. this warranty is only valid when proof of purchase can be provided and if the product has been operating within New Zealand

d) The warranty period commences from the date of Ibex's invoice or the product's delivery date whichever is the earlier.

e) If Ibex determines that a warranty claim is valid, Ibex will at its sole discretion either refund the purchase price of the product, refund the current market cost of an alternative product, repair the product or replace the product. In case of the repair or replacement the replacement product may not necessary be an identical product but an improved version due to ongoing technological developments and/or supply of original components currently available.
f) Ibex reserve the right to recondition/refurbish any article that is subject to a warranty claim or replace parts with new or used parts in satisfaction of this warranty.

2 - Warranty Exclusions

a) This warranty excludes any costs incurred by the purchaser including (without limitation) equipment hire, labour charges, accommodation charges, transport charges and travel charges.b) This warranty does not apply to loss or damages to the product caused by one or more of the following:

• Negligence and/or incorrect handling of the product by the buyer, installer, service agent or any other party acting on behalf or for the buyer;

Improper installation;

Improper handling;

• the product not being installed or maintained as set out in the installation instruction guide for the product;

• Acts of nature , fire , vandalism;

- Civil disturbances;
- Damages caused by fall or collision
- Installation or operation under environmental conditions beyond the manufacturer's
- recommendations;
- Power surges;
- Electrical supply fluctuations or faults;



• Mechanical failures as a result of actions not considered by Ibex to be within the normal operating conditions of the product;

Improper service and/or maintenance work carried out by someone not considered by the Ibex as an approved service agent/facilitator; and/or

• any other situation and/or event or circumstance deemed by Ibex as sufficient to render this warranty void.

c) Notwithstanding any other provision of this warranty or any statute or rule of law, to the greatest extent possible lbex shall have no liability for any costs, damages or other losses directly or indirectly attributable to failure of the product. Further, lbex shall have no liability for any costs incurred by any party for any maintenance or remedial work.

3 - Product performance

a) Ibex retains the sole discretion to determine whether a product is defective.

b) This warranty shall apply only to the malfunction of products due to defects in material and or workmanship exceeding nominal failure rates. Unless otherwise stipulated in the product and application specifications provided by Ibex, the nominal failure rate for electronic operating devices and components such as LED's shall be set at 0.2% per 1000 operating hours. Furthermore a decrease in luminous flux of up to 0.6% per 1,000 operating hours and colour shift as per the LED Module /chip suppliers technical data information shall be considered normal and is not covered by this warranty.

c) In the event that LED modules/Chips are replaced, lighting properties may vary from the original product.

4 - Warranty Transfers

this warranty may not be transferred to any entity without either the express written consent of Ibex or this being explicitly stated in the cover notes of this document. Ibex may withhold such consent at its sole and absolute discretion.

5 - Warranty Terms and Conditions

a) In the event where a warranty is claimed on a product which is not faulty, Ibex reserves the right to seek compensation from the entity claiming on the warranty for all costs that have been incurred by Ibex including (without limitation) travel, accommodation, costs of access equipment, and third party service agents' costs.

b) The warranty terms are those specified in wiring in this warranty document only.

c) Ibex's warranty is a back-to-base warranty. Ibex shall bear no responsibility of any charges incurred by any entity for transport of the product to Ibex and/or from Ibex to the warranty claimant.

d) Labour and Service charge incurred by Ibex in repairing / refurbishing any product are not covered in this warranty.

e) The warranty shall be void if the product has been tampered with or parts replaced by personnel that have not be previously authorised by Ibex in writing.

Ibex reserves the right to modify this warranty at any time without prior notification and the new warranty terms shall be valid for all orders placed with the Ibex on or after the new issue date, from the date that the new warranty terms are posted on Ibex's website.

ion of Conformity (in accordance with ISO/IEC 17050-1)
92777035194 ex International Ltd. D BOX 9077 Greerton Juranga 42
 We declare that the items described are Electrically Safe as required in the Electricity (Safety) Regulations 2010 Regulation 80. MINI STORK (V) 13.8KLM 20LED OPTIC20 3000K S-CAP BLACK
tion described above is in conformity with the requirements of the following
tle Edition / Date of Issue sential Safety Requirements For Electrical Equipment 2009/AMD 1
ex International Ltd. Juranga Kingsley Holt Supply Chain & Innovation Manager

Supplier's Declar	ration of Conformity (in accordance with 1	SO/IEC 17050-1)
Number: Issuer's Name: Issuer's Address:	2692777036320 Ibex International Ltd. PO BOX 9077 Greerton Tauranga 3142	
Object of the Declara	tion: We declare that the items described are Electrically Electricity (Safety) Regulations 2010 Regulation 80. MINI STORK (V) - 7.8KLM 9LED OPTIC20 3000K S-CA	
The Object of the Decl documents:	aration described above is in conformity with the require	ements of the following
Document Number: AS/NZS 3820 Additional information	Title Essential Safety Requirements For Electrical Equipment n	Edition / Date of Issue 2009/AMD 1
Signed for and on	Ibex International Ltd.	
behalf of: Date: 4/03/2021	Tauranga Kingsley Holt Kingsley Holt Supply Chain & Innovation Manager	

Supplier's Decla	ration of Conformity (in accordance with 1	SO/IEC 17050-1)
Number: Issuer's Name: Issuer's Address:	2692777036368 Ibex International Ltd. PO BOX 9077 Greerton Tauranga 3142	
Object of the Declara	tion: We declare that the items described are Electrically Electricity (Safety) Regulations 2010 Regulation 80. MINI STORK (V) - 9350LM 20LED OPTIC20 77W 3000	
The Object of the Decl documents:	aration described above is in conformity with the require	ements of the following
Document Number: AS/NZS 3820 Additional information	Title Essential Safety Requirements For Electrical Equipment n	Edition / Date of Issue 2009/AMD 1
Signed for and on behalf of: Date: 4/03/2021	Ibex International Ltd. Tauranga Kingsley Holt Supply Chain & Innovation Manager	



6 October 2020

Ref: 7137

PRODUCER STATEMENT FOR STREET LIGHTING

Project: Greenhill Park Area M Stage 13

Location: Carrs Road Hamilton

The lighting for this Project has been designed to comply with the New Zealand standard AS/NZS1158.3.1.2020 for PR4 and PR5 using Perfectlite and AGI32 lighting design software and in conjunction with the Hamilton City Council and RITS Code of Practice requirements

Product The P Category luminaires are Mini Stork 4 LED Optic P, 3000K, and the lighting columns and outreach arms are manufactured from steel which is hot dipped galvanised after fabrication and then coated with a 10 year warranty paint finish

The V Category luminaires are Mini Stork 9 LED Optic 20, 3000K and Mini Stork 20 LED Optic 20, 3000k, and the lighting columns and outreach arms are manufactured from steel which is hot dipped galvanised after fabrication and then coated with a 10 year warranty paint finish.

Lifetime The luminaire have an economic life of 15-20 years where normal maintenance is carried out. The pole and outreach have an economic life of 40 years.

Yours Faithfully IBEX INTERNATIONAL LIMITED

MERRITT STRICKETT Account Manager - Roadway M +64 21 220 1291 T +64 9 915 1083 merritts@ibexlighting.com IBEXLIGHTING.COM



DESIGN CERTIFICATE

INFRASTRUCTURE/ LAND DEVELOPMENT

ISSUED BY: Merritt C Strickett. TO: Chedworth Properties Ltd TO BE SUPPLIED TO: Hamilton City Council IN RESPECT OF: Greenhill Park Stage 13, Hamilton AT: Carrs Road, Hamilton Merritt C Strickett has been engaged by Chedworth Properties Ltd To provide Street Lighting Design to AS/NZS1158 Standard and to Hamilton City Councils Code of Practice and RITS code of practice.

in respect of the infrastructure/land development described above.

Drawing references - REF 7137

I Merritt C Strickett have the qualifications and experience relevant to this project as set out herein and have designed the subject works and confirm that the design is to current good engineering practice, and that it satisfies all relevant Resource Consent conditions, relevant TA requirements, and applicable codes and standards. My company holds professional indemnity insurance in the sum of \$5,000,000.00

Qualifications and experience

NZIHT Workshop, 32 years' experience in Street lighting design. Efficient Road Lighting Resource Workshop.

ae

Date: 6 October 2020

Aame of Electrical vorker: None & email: Name and registration of person(s) supervise Certificate of Comp ype of work:	Yeti Mar	signed to be used by licensed are safe to be connected to Area M - Stage 1	C1579 / d electrical workers to certify to the <u>specified system of electric</u> 9 to 15 Greenhill P 0 Registration/Practisin 0 licence number:	ark Hamilton #	lations under Part 1 or
ocation Details: Contact Details: Name and address) Hame of Electrical worker: Phone & email: Hame and registration of person(s) supervise Certificate of Comp ype of work:	Yeti Mar	n Area M - Stage ! tyn	9 to 15 Greenhill P	ark Hamilton #	107
Name and address) Name of Electrical Norker: None & email: Name and registration of person(s) supervise Certificate of Comp ype of work:	Yeti Mar	tyn	Registration/Practisio		
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lame and registration f person(s) supervise certificate of Comp ype of work:	number	rtmartyn@hotmail.com		-	
f person(s) supervise certificate of Comp ype of work:	number				
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	phone	Addition	Alteration	New work	
he prescribed electric	cal work is:	Low risk	General	High-risk (Specify	d:
	or electrical cos	Part 1 of AS/NZS de of practice were red	uired: 🔳 No 🗌 Yes	xZS 3000 s (specify):	
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pecify type of supply	system: 230V	Mains MEN			
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All 🔝 Parts (spec	Construction of the second				
he work relies on ma			Yes	No No	
		ng name, date and version. A ctronic format, eg internet li	ilso attach a copy of manufactu nk l	uner's instructions to this cert	ificate.
A DECEMPTOR OF A DECE	and the second se	Stork Little Brokher LED street larvin			
he work has been do	me in accordan	nce with a certified des	sign: 🔳 Yes	No No	
[김희금 이 가슴이 남옷이 가슴 배가지 않는 것]	1996 (The Park 1997) - The		attach a copy of the certified of	design to this certificate.	
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or provide reference to rea		and version OR EESS registra ctronic format, eg Internet li	ation. Also attach a copy of the nk.)	SDoC to this certificate.	
Identify: SDuC alacted Link:					
	n satisfactorily te	ested in accordance with	the Electricity (Safety) Reg	gulations 2010	lo Yes
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CONTRACTOR AND DUCTOR AND	et Column v	with LED Head		Polarity (Independent earth):	
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	rd, Main Ea	irth and Earth Sta			TOO . 141
nstall MEN Boa		irth and Earth Sta		Earth Continuity:	0.1 Ohms
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This Electrical Safety Certificate also confirms that the electrical work complies with the building code for the purposes of Section 19(1)(e) of the Building Act 2004.

	EFERENCE/CERTI	NIMELCO	electrical workers to certify th	at installations or Part Instal	
Location Details:		on Area M - Stage 9		and the second of the second	109
Contact Details: (Name and address)					
Name of Electrical worker:	Yeti Ma	artyn	Registration/Practisin licence number:	^e E257490	
Phone & email:		yetimartyn@hotmail.com			
Vame and registration of person(s) supervis					
Certificate of Con Type of work: The prescribed electr	nan an an an ann an an Na taonn an Ann an Ann	Addition	Alteration General	 New work High-risk (Speak 	đ.
	or electrical of	Part 1 of AS/NZS 3 ode of practice were req	uired: 🔳 No 🗌 Yes	ZS 3000 (specify):]
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This Electrical Safety Centificate also confirms that the electrical work complies with the building code for the purposes of Section 19(1)(e) of the Building Act 2034.

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			I electrical workers to certify that the specified system of electrical		lations under Part 1 or
Location Details:	Subdivisi	on Area M - Stage S	9 to 15 Greenhill Par	k Hamilton #	110
Contact Details: (Name and address)					
Name of Electrical	Yeti Ma	artvn	Registration/Practising	E257490	
worker:	- Tota ma		licence number:	The second second	
Phone & email:		yefmartyn@hotmail.com			
Name and registration of person(s) supervis					
Certificate of Con	npliance	102		A 10	
Type of work: The prescribed electr	rical work is:	Addition	General	 New work High-risk (Specify 	d:
Means of compliance	n-:	Part 1 of AS/NZS	3000 🔳 Part 2 of AS/NZ	\$ 3000	
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		bed electrical work unde			
Contains fittings that	t are safe to o	onnect to a power supply	y? 🔳 Yes 🕻	No.	
Specify type of supp	Present and Present and Presents	to be a second		28 Geor	
The installation has	an earthing sy	stem that is correctly rat	ted (where applicable) [Yes	No
Parts of the installat	ion to which t	this certificate relates that	it are safe to connect to a	power supply?	
All 🗌 Parts (sp	ecify)		1000		
The work relies on n	nanufacturers	instructions:	Yes [No	
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This Electrical Safety Certificate also confirms that the electrical work complete with the building code for the purposes of Section 19(1)(e) of the Building Act 2004.

		FERENCE/CERTIFICATE	ID No.: NWELCO	0C1579 4-	CTRICAL SAFETY CER	
Name of Electrical worker: Yeti Martyn Registration/Practising licence number: E257490 Phone & email: ystimuchyn@homal.com E257490 Name and registration number of person(s) supervised: Certificate of Compliance Phyle of work: New work Citize of Compliance: Part 1 of AS/NZS 3000 Part 2 of AS/NZS 3000 Part 2 of AS/NZS 3000 Additional Standards or electrical code of part 2 of AS/NZS 3000 Part 2 of AS/NZS 3000 Part 2 of AS/NZS 3000 Additional Standards or electrical code of part 2 of AS/NZS 3000 Part 2 of AS/NZS 3000 Part 2 of AS/NZS 3000 Contains fittings that are safe to connect to a power supply? Yes No Specify type of supply system; (ZSW Mans MEIN Parts of the installation to which this correctly rated (where applicable) Yes No Parts of the installation to which this correctly rated (where applicable) Yes No No Parts of the installation to which this correctly rated (where applicable) Yes No No Parts of the installation to which this correctly rated (where applicable) Yes No No Parts of the installation to which this correctly rated (where applicable) Yes No No Parts of the installation to which this correctly	Location Details:	Subdivision A	rea M - Stage !	9 to 15 Greenhil	I Park Hamilton	#1//
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signature: Customer copy – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED FOR A MINIMUM OF 7 YEARS	signature:		Issue Date:			

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This Bectrical Safety Centricate also confirms that the electrical work complies with the building code for the purposes of Section 19(1)(e) of the Building Act 2004.

	LECTRICAL	CERTIFICATE OF CON	IPLIANCE & ELECTRI	ICAL SAFETY CERT	IFICATE
		NWELCO	C1579 5		
	LEFERENCE/CERTI	HEATE ID NO.:		at installations or Part instal	lations under Part 1 or
		1000 are safe to be connected to t			
Location Details:	Subdivisi	ion Area M - Stage 9	to 15 Greenhill Pa	rk Hamilton #	12
Contact Details: (Name and address)					
Name of Electrical	Voti M	ortun	Registration/Practising	⁸ E257490	
worker:	Yeti M	anyn	licence number:	E237490	
Phone & email:		ye5martyn@hotmail.com			
Name and registration of person(s) supervise					
Certificate of Con	npliance	200233		NYEAN RO	
Type of work: The prescribed elect	rical work is:	Addition	Alteration General	 New work High-risk (specified) 	v).
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This Electrical Safety Certificate also confirms that the electrical work complies with the building code for the purposes of Socian 19(1)(e) of the Building Act 2004.

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Contact Details: (Name and address)					
Name of Electrical worker:	Yeti Ma	artyn	Registration/Practising licence number:	E257490	
Phone & email:		yetimartyn@hotmail.com			
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of person(s) supervise	A CONTRACTOR OF				
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This Electrical Salety Contificate also confirms that the electrical work complies with the building code for the purposes of Section 19(1)(e) of the Building Act 2004

	FERENCE/CERTIF s form has been o	CERTIFICATE OF CON FICATE ID No.: NWELCO designed to be used by licensed 00 are safe to be connected to	C1579 S	y that installations or Part insta	
Location Details:	Subdivisio	on Area M - Stage 9	to 15 Greenhill I	Park Hamilton #	115
Contact Details: (Name and address)					
Name of Electrical worker:	Yeti Ma	artyn	Registration/Practic licence number:	E257490	
Phone & email:		yelimarlynghotmail.com			
Name and registration of person(s) supervise	Construction of the second				
Certificate of Com	pliance	And	10 (24 (24 (24 (24 (24 (24 (24 (24 (24 (24	1127557 I. W.	
Type of work: The prescribed electri	cal work is:	Addition	Alteration General	 New work High-risk (speci 	(v):
deans of compliance:		Part 1 of AS/NZS 3	3000 🔳 Part 2 of AS	/NZS 3000	
dditional Standards	or electrical c	ode of practice were req	uired: 🔳 No 🗌 Y	es (specify):	
ate or range of date:	s that prescrib	bed electrical work under	and the second se		
온 것이 가지 않는 것이 해야 했다.	12 12 0 0 Percent	onnect to a power supply	/? 🔳 Yes	No No	
pecify type of supply	y system: 230	V Mains MEN			
he installation has a	n earthing sys	stem that is correctly rat	ed (where applicable)	🔳 Yes 🗋	No
arts of the installation	on to which th	his certificate relates tha	t are safe to connect t	to a power supply?	
📕 All 🗌 Parts (spe	cify)			2	
he work relies on ma			Yes	No No	14411114
		ding name, date and version. A		cturer's instructions to this cer	tilicate.
and the second		electronic format, eg Internet lin LU Slok Litle Brother LED savet lunin	the second s		
Link:					
		ance with a certified desi	The second se	No No	
		g name, date and version. Also		d design to this certificate.	
and wanted over the first state of the locate of the second state		electronic format, eg Internet lin	ik.)		
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	Supplier Deck	aration of Conformity (SI	DoC): 🔳 Yes	No No	
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	adëy accessible e	electronic format, eg Internet lin	1k.)		
Identify: SDoC attented Link:					
and the second se	n satisfactorily	tested in accordance with	the Electricity (Safety) R	egulations 2010	No Yes
Description of Work					provide values)
Install New Stre	et Column	with LED Head		Polarity	
		Earth and Earth Stal	ke Cad Welded	(Independent earth): Insulation resistance:	200+ M Ohms
		unin und Editin Old		Earth Continuity:	0.1 Ohms
				Bonding:	0.1 Ohms
Connection - L		lation by others	Mains Cable, Mains Installation by others.		
Connection - L Mains Cable, M	ains Instal	lation by others.		Fault Loop Impedance	Ohms
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Connection - L Mains Cable, M Livened by othe	ains Instal Irs.			Other (specify): to which this Certificate is correct.	
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This Electrical Safety Certificate also confirms that the electrical work complias with the building code for the purposes of Section 19(1)(e) of the Building Act 2004.

	EFERENCE/CERTIF	NIMEL CO	electrical workers to certify th	at instaliations or Part instal	
Location Details:	Subdivisio	on Area M - Stage 9) to 15 Greenhill Pa	ark Hamilton #	116
Contact Details: (Name and address)					
Name of Electrical worker:	Yeti Ma	artyn	Registration/Practisin licence number:	^e E257490	
Phone & email:		yetimartyn@hotmail.com			
Name and registratio of person(s) supervis	1				
Certificate of Com	pliance	Dettail of Status	111110 O	100 CO	
Type of work: The prescribed electr		Addition	Alteration General	New work High-risk (specif	vì:
Means of compliance		Part 1 of AS/NZS 3	3000 🔳 Part 2 of AS/N	25 3000	
The second se		ode of practice were req	And Annual	(specify):	
		bed electrical work under			
Contains fittings that	t are safe to co	nnect to a power supply	? 🔳 Yes	No No	
Specify type of suppl	ly system: 230	V Mains MEN			
The installation has a	an earthing sys	stem that is correctly rate	ed (where applicable)	Yes	No
Parts of the installati	ion to which the	his certificate relates that	t are safe to connect to a	a power supply?	
🔳 All 🗌 Parts (spe	ecify)				
The work relies on m	nanufacturers	instructions:	Yes	No No	
If yes—identify the instruc	tion manual Inclu	ding name, date and version. A	so attach a copy of manufactu	rer's instructions to this cert	lificate.
		lectronic format, eg internet lin Lij Stok Ullie Broher LED sheet laniv			
	lone in accord	ance with a certified desi	ign: 🔳 Yes	No No	
			the second s		
If yes - identify the certific	ed design including	g name, date and version. Also a	attach a copy of the certified de	esign to this certificate.	
	The second state of the se	g name, date and version. Also a dectronic format, eg internet lin		esign to this certificate.	
(Or provide reference to m Identify: Cutiliad design after	eadily accessible e	lectronic format, eg internet lin		esign to this certificate.	
(Or provide reference to n Identify: Conflict design alto Unk:	eadily accessible e what Readway Lighting	Sectronic format, eg Internat lin 3 Man duving.	sk.)		
(Or provide reference to n Identify: Catiliat design also Unic: The work relies on a	eadily accessible e which Readway Lighting Supplier Deck	lectronic format, eg internat lin Max dowing aration of Conformity (SE	ik) DoC): III Yes	No No	
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Contact Details: (Name and address)					
Name of Electrical worker:	Yeti M	artyn	Registration/Practising licence number:	E257490	
Phone & email:		yetimartyn@hotmail.com			
Name and registration of person(s) supervise					
Certificate of Cor	npliance	3 <u>866</u> 0 - 95	1991 - 51 - 55	2400 00	
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This Electrical Safety Certificate also confirms that the electrical work complies with the Ituiking code for the purposes of Section 19(1)(e) of the Building Act 2004.

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This Electrical Safety Certificate also confirms that the electrical work complies with the building code for the purposes of Section 19(1)(e) of the Building Act 2004.

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Name of Electrical worker:	Yeti M	artyn	Registration licence num		E257490	7	
Phone & email:	9 <u>7</u> - 1	yetimartyn@hotmail.com					
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This Electrical Safety Cartificate also confirms that the electrical work complies with the building code for the purposes of Section 19(3)(e) of the Building Act 200

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This Electrical Safety Certificate also confirms that the electrical work complies with the building code for the purposes of Section 15(1)(e) of the Building Act 2004.

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	s an earthing system that is to show as using which and			Yes	No
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ROS) of High-Risk (ROS) of High-Risk Prescribed Electrical Work

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/(//		Number:			
$\underline{\nabla}$	Nationwired green	hi l l			
Essuer (Inspector)	detalls:				
Name of inspector:	Gavin Bodey		Registration	¢: 1250728	
Email Address:	gavir @bodeyspark	co nz	Telephone	021 428 820	3
Location of Instat	lation:				
ocation details	Greenhill park supd	vision, Area M, Street ight	133, stage 9-15		
location Type:	E Comestic E Educational	📃 Nor-Domostic Accomm		📘 li dustrial 📝 Misceikreous (otne	🖂 Carninero
Certifying Electric		te of Compliance (CoC) det			')
Name of Electric al			Registration	¢: L257490	
worke (s)			_	FW121000	
CoC details;	Nation wirod 15831			📋 CoC(s) att	ached
What was inspected ow installation, No		N board, Naw Main Neutre t	·		ույց
What was inspected low installation, No ystem.Bonding of	t. w Streetight with M E I Pole and caluret door. 	N board, Naw Main Neutre t	· · · · · · · · · · · · · · · · · · ·		
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Signature (

Date: 10/03/21

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RCH) of High-Aisk (RCH) of High-Aisk Prescribed Electrical Work

1851 Shant to the Electricity (Safety) Regulations 2030)

A	Reference/Record N	lumber:				_
<u>(</u>	Nationwired greenh					
Issuer (inspector)	details					
Name of inspector;	Gavin Bodey		Registratio	n#: 125	0728	
Email: Addiese	gavin@bodeyspark.ci	3 MZ	- Telephone.	C2	1 428 820	
Location of Instal	llation:		-			
Location details:	Greenhill park subdiv	leron, Area M, Streetlight	134 stage 9-16	5		
Location Type:	Comestic	Non-Correstic Accommo	cation	industra	il.	Commercial
	Educational	E Healthcare		🖌 Miscella	necus (other)	
Cert fying Electri	cal Work and Certificate	of Compliance (CoC) deta	lls:			
Name of Kentrical worker(s):	Yeti Martyn		Registratio	n#: E2	57490	
				εv	V1210D0	
CoC details:	Nationwired 15832			: 🖸	CoC(s) at tacks	ð
				:		
Certifying Electri What was inspected	cal Work and CoC detail	5:				
	w Streellight with M.E.N. Pole and capitel door.	board New Vain Neulral b	ar and circuit pro	lection, New	Main Earlhing	;
Specify the regulati AS/NZS3000 part 2		lard(s), or identidy the certified	J design, followed	when car yin	g out the inspec	clion:
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n Balan Matsubb an arrear a

RCI) of Inspection (RCI) of High-Risk Prescribed Flectrical Work

(Prosumit to the Filencially (Solety) togethetions 2006)

A	Reference/Record	Number:			
<u>(</u>	Nationwired green				
issuer (inspector)) details:				
Name of inspector	Gavin Bodey		Registration #-	1250728	
Froat Arbicess	yavn@podcyspark.		Telep\$ione:	021 428 520	
Location of Insta	lation:				
Coconion details:	Greenhill park subdi	vision, Area M, Streetlight 1;	35. stage 9-15		
Location Type:	Domestic bdt.carional	 Nor-Dornestic Accommoda Healthcare 		Mustrial 🔤 Con Niscellanecus (cifrer)	urierd's
Certifying Electric	cal Work and Certificat	te of Compliance (CoC) details			ļ
Name of Elecancel worker[s]:	Yeti Mariyn		Registration #:	E257490 EW121000	
Coll details:	Nationwired 15833			CoC(s) attached	
Specify the regulati AS/NZS3000 part 2		derd(s), or identify the cortified d	esign, followed when (arrying out the inspection	
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High voltage instal	 O': Part 2 (54(2)(μ)() Lation 64(2)(μ)(i) Mal'on 64(2)(μ)(ii)	Photoko 38% system = 6A(2)(a Hezakious area = 6A(2)(a) Animal sturoung or rueat cond	-	,; Ekstricel nædicaliarea – 6A) ∑: Maris wor≷ + 6A(2)(h)	2(9)141
Declaration					
thezeby cars ⁱ inin the ciscelllarico on which	t the work described ab: The work law been duri	we has been done <i>in Ag<mark>artin</mark>um</i> wis land will be / <u>worke</u> when e	ordanin with the reg novered, electrically	ulations; and the more Mappin / vale	рыт

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Signature ME146 YE 64/17

Date 10/03/21

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Signature

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Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Porsound to the Electricity (Safety) Regulations 2030)

Date 10/03/21

A	Reference/Record	Number:			
⑳	Nationwized green:				
issuer (inspector)) deteals				
Name of Enspector:	Gavin Bodey		Registration #	1250728	
Email Address	gavn@bodeyspark.c	:0.n z	Telephone:	C21 428 820	
Locotion of Insta	llation:				
Location details:	Greenhill park subdi-	vsion, Area M, Streetlight 130). stage 9-15		
Location Type	🗌 formestic	🛄 Non- Xamestic Accommodate	cn [ndust/al	Commercial
	Ecucational	🛄 Healthcare		Misrellaaeous (other)	
Certifying Electri	ical Work and Contificat	• of Compliance (CoC) details:			
Name of Electrical	Yeli Mariyn		Registration #	E257490	
worker(s):				EW121000	ĺ
CoC details:	Nationwired 15634	,		: CoC(s) attach	ed .
Specify the regulat AS/NZS3000 part 2		nand(s), on identify the certified de	 siga, fallawed wh	en carrying cut the inspe	i ction.
What are the result Samhing and bondin polanty M 5 C Jimo < 5 Ohr M 5 N, link	ng visual nk	кер			
Hìgh Risk Catego				1 1 1 1 2 1 1	e a feid da si
🛄 Figl koltage i ista	200 Part 2 = GA(2)(a)(i) (Lation = GA(2)(a)(ii) re ation = GA(2)(a)(ii) scribe:	i Photovoltaic system GA(2)(a)() Harandous area GA(2)(a)(v)) Anional stunning of meal condi	-	🚰 Hecthod modioa 🖗 Moins work - 64	1. area - 54(21/2)(4) 424(6)
Decteration					
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		ard, inghtighted in reaktion (a venevi «techava	any sole	

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Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Pursuant to due Becarency (Safety) Begalations 39(0)

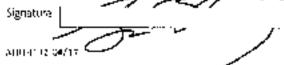
\mathbf{A}	Defense the second				
/Ø\	Reference/Record J Nationwired greenit				
issuer (inspector)					
Name of Inspector	,		Registration #	1250728	
Emal: Address	yavන@bodeyspark.c	io.nz	Telephone:	021 426 620	
Location of Instal	llation:				
Location details:	Greenhill park subdiv	/sion, Area M, Streetlight 13/	. stage 9⊣15		
Location Type:	Damestar	🔛 Non-Domestic Accommodati	on [ncustrel	📋 Carranierci
	🔄 Educational	-leathcare	۲	/iscellaneous (other)	
Certifying Electric	cal Work and Certificat	e of Compliance (CoC) details:			
Name of Electrical worker(st:	Yeti Martyn		Registration #	E257490	
	• • • • • • • • • • • • • • • • • • • •			EW121000	
CoC details:	Nationwired 15835			: CoC(s) atsach	ed
			i		
VS/NZS 3000 part 2 What are the result Refining and bordin	a of the inspection;				
xolarity 4 EC inci < 5 Ohm 4 EN ink	r HRPA #00593111	/26			
High Risk Catago	197				
Nut to AS/IN7S 30	00 Part 2 - 64(7)(a)() Lation - 64(2)(a)(i) e ation - 64(2)(a)(in)	 Knonovoltaid system – 64(21(a)) Hazardous area – (64(2)(b)) An coal sourcing or creat rough 		First freat medic.	al area – 64(2)(a)(o) MZ((b)
Declaration					
nereby confirm the ostatlation on which Note: Strikesartory	h the work bas been done	ve has been done to / pet in a n to • is, and with be / <u>nor in</u> , when et ardz highlighted in red alrows (lwerec, electrically	sale.	nallarian i part
agnatime:			Eal	^{te:} 10/03/21	

Record of Inspection (EO:) of High-Risk Prescribed Electrical Work

(Persuances the Electricity (Safety) Regular and 2016)

A	Reference/Record	Number-				
∕⊘∖	Nationwired greet		:			
issuer (inspector)) details:					
Name of Inspector				Reg stration #:	1250726	
Email Address	gavin @bodeyspark	. 00. HZ	<u> </u>	- Nigabone	021 423 820	
Eccetion of Insta	-					
Location details;		l Visión, A/aa M, Streetlig	-rl 138. s	stage 9-15		
Location Type:	Domestic Holicational	Non-Correctic Account		_	ndustrial Misrellaneous (olber)	ji Commercial
Certifying Electri	ical Work and Certifica	ate of Compliance (CoC) d	etalls:			
Name of Electrica. worker(s):	Yeli Martyn			Registration #:	E257490 EW121000	
Coll details:	Nationwited 15835					had
Specify the regulati AS/NZ53000 part 2		ncard(s), or identity the certi	lied desig	n, followed whan	carrying out the . r.sp	ect on
What are the result Earthing and bonds palarity M.E.C. imp < 5 Cim M.E.N. link	ng visual ak	 3M2O				
High Risk Catego	¢'y;					
High voltage insta	000 Part 2 – 6A(2)(x)(i) Nation – 6A(2)(a)(ii) eration – 6A(2)(a)(ii) autibe:	 Phonovoltait system – 6 Hazardoux area = 6A(2) Animal stanning or mea 	k)(v)		🔲 Cectrical medin 🛃 Maros work – (ud area - 55(2));(v) (4(2)(b)
Declarátion				••••		
hereby confirm the station of which	d the work descripted at 2 the work has been do	iove has been done in / and ne is, and will be / <mark>pp/ ha</mark> , w	⊷accord ∾en enjiv	ance with the re ened, electrically	galations, and the m visate.	stall give / parl

(Note: Strike out or deleter the inepolicies/perior drough lighted in reduborie)



Date: 10/03/21

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and a second second second

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

Brucsvanato the Decision y (Spicely) Regulations 2010;

KA	Reference/Record	Number;			
<u></u>	Nation-wred green!	hill			
Issuer (Inspector)	details				
Name of Inspector	Gawn Bodey		Registration (*· 1250728	
Emeil Address:	gav'n@bodcyspatk.c		Telephone.	021 428 820	
Location of Instal	llation:	 			
Location details:	Greenhilf park subda	vision, Area M, Streetligh	n 139, stage 9-15		
Location Typa	Comestic Boucational	Non-Cornestic Accomm Healthcare		¹¹¹ Industria. Z Miscelleneous (alter)	Camment
Certifying Electri	cat Work and Certificat	te of Compliance (CoC) de	talls:		
Namekt Electrical worker(s):	Yeti Martyn		Registration a	E257490 EW121000	
CoC details:	Nationwired 15837			: 🗍 CeC (s) Attac	hed
What was inspected law installation. Ne		ils: I. board, New Main Neuiral	bar and circuit prote:	dion. New Main Earth	ng
What was inspected leavinstallation. Ne system Bonding of Specify the regulat	ut av Streellight with M.E.N Pole and cabinet door on(s) and comparison stan	i, board, New Main Neuiral			
What was inspected New installation. Ne System Bonding of	ut av Streellight with M.E.N Pole and cabinet door on(s) and comparison stan on(s) and comparison stan on(s) and comparison stan on(s) and comparison stan	l. board, New Main Nouiral .daid(s), or identify the cartifi			
What was inspected law installation. Ne system Bonding of Specify the regular (S/NZS 30:00 part 2 What are the result artiung and bondin olar ty (LE G imp < 5 Ohm (LE, N. link)	ut av Straellight with M.E.N Pole and cabinet door on(s) and comparison stan sof the inspection. In	l. board, New Main Nouiral .daid(s), or identify the cartifi			
What was inspected law installation. Ne system Bonding of Specify the regular S/NZS 3000 part 2 What are the result S/NZS 3000 part 2 What are the result straining and bondin startly AE G imp < 5 Ohn AE N. link . High Risk Categor Not to AS/NZS 30 High voltage instal	ut av Streeli ght with M.E.N Pole and cabinet door on(s) and comparison stan on(s) and compariso	l. board, New Main Nouiral .daid(s), or identify the cartifi	ed design, followed wi		véctium réctium

(Note, Strike out or delets, the inspalic object and highlighted a; red above)

Signature MILLING DAVID 4

Exten 30/03/21

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Pursuant to the Electricity (Safety) Regulations 2010)

A	Reference/Record	Number:			
\bigotimes	Nationw red green				
Issuer (Inspector)	details:				
Name of inspector,	Gavin Bodey		Registration	¢. 1250728	
Email: Address	gavin@bodeyspark	.co rz	i) alephone	021 128 82¢	·
Location of Instal	llation:				
Location details:	Greenhië park subd	livision, Arca M. Streetligh	rl 109stage 9-16		
Location Type:	Сотекк	Nan-Domestic Actorna	indation .	🗋 Industria.	Commencial
	Educational	Healthcare	-	🕐 Mscellaneous (other)	
Certifying Electri	cal Work and Certifica	ite of Compliance (CoC) de	tails:		
Name of Electrical workeris].	Yeti Mariyn		Registration	8. E257490	:
WOIKEIISI.				E.W121000	i
CoC details:	Nationwired 15792 S	treellight 109	_	CoC(s) attach	нес
				l.	
Spacify the regulati AS/NZS3000 part 2 What are the result Earlbing and condr colarity M.E.C. imp <.5 Olini V.E.N. ilnk.	s of the inspection: Ng v sual ak	indard(s), or identify the certain	ed design, followed w	hen taraying out the 'rsp	
					:
⊢ign volrags iosral	00 Part 2 – 644(2)(a)() Nation – 64(2)(a)(i) Cration – <mark>64(2)(a)(ii)</mark>	Shotovoitaid system = (M Shotovoitaid system = (M Shotoal strictures of most Animal strictures of most	16;	☐ Electrical medic √ Mains work - C	ələrcə – 574(2)(a)(7) 4(2)(6)
Declaration	· · ····-	·			
Thereby confirm that	t the work described all a the work bas been ce	axe has bren done is / getic nets, and will be / <u>net ha</u> , wh	Connordance with the	a regulations, and the mi	alestine/port
		reis, and this ber <u>erine</u> , wh eards highlighteti in reaviow		and State	
Signature		· · · · ·		Date: 10/03/21	
MPLITA RAVIE					

M3141.22 04/17

ROU) of Hispection (ROU) of High-Risk Prescribed Electrical Work

(Porstrangue (ing Sectricity (assau)) Regular may 2010)

A	Reference/Record	Number				-
∕⊗∖	Nationwized green					
Issuer [Inspector]) details					
Nameefinspector			R	egistration #:	1250725	
Hmall Address	gav:n@bodeyspark.	со.пz	Ti	Hephone.	021 428 820	
Location of Insta	llation:		·			
Location details:	Greenbill park subdi	ivision, Area M, Stre	eilight 110sla	ge 9-15		
Location Type:	Domestic	Non-Domestic A	-		dustnäl	Commercel
	Educational	Liea theare		Z 🖻	face Aaneous (other)	
Certifying Electri	cal Work and Certifica	te of Compliance (Co	C] details;			
Name of Bectrical worke:(s):	Yeti Martyo		R,	egistration #:	E257490	•
	·				≦W121000	:
CoC details:	Nationwired 157923 S	ireelighi 10			🗌 CoC(s) steach	eđ
Certifying Electri	cal Work and CoC deta	lls:				
System Banding of	ew Streetlight with M.E.F Fole and capinol door Fole and companion star	 .				-
What are the result Earthing and bondy solaety M.E.C. imp < 5 Clim M.E.N. link	ig visual ok,					
High Risk Categor		•••• L -			_	
🔄 Notito AS/NZS 30 🔲 Sligh voltage Jostal	CO Part 2 6A(2)(a)(i) Nation 6A(2)(35)	 Photovo tak: syste Hazardous area - i 			- 🛄 Fectsical medica - 📝 Maria work – W	al area - 6A/21(a)[4] - stories
	station – 64/21(a)(ili)	Animal stuncing o		g SA(2);k;	gej mans wink - (v	stellisi
Uther – please des	ulle:					
Declaration						
hereby cenfirm that	t the work described abo h the work has been der	we has been done in / is is, and will be / <u>aast</u>	anti- accordan Se, when enliven	cerwith the rega equelectrically :	ulations: and the ing safe.	n Kasina (part
(Note Strike out or o	leistathe inage it ability					
Signature				Dat	9: 10/03/21	

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Pursuant to the Electritics (Safety) Regulations 2000)

	Reference/Recor	od klaunak ov		_ •	
<i>1</i> 0	Nationwired gree				
Issuer (inspector)					
Name of Inspector:			Registration 4	¥ 1250728	
Email Address:		·····	- Tetephone		
	gavin@bodeyspar	K.CO.HZ		021 428 820	
Location of Insta					
location details:		civision, Area M, Streetlight	-		
Location Type:	Domest c	Nan-Conevic Accommo	cation [Industria.	Commercial
	Ecucational	- Healthcare		Macellaneous (other)	
Certifying Electri	icel Work and Certific	ate of Compliance (CoC) deta	ils:		
Name of Electrical worker(s):			Registration 4	¢. E25749D	
	· ···· · ·		:	EW121000	
CoC details:	Nationwired 15/94 S	itreellight >'*	_	CoCis) attach	hed
Specify the regulati AS/NZS3000 gam 2		andard(s), or ideal by the certifies	i design, followed wi	 hen carrying out the lesp	ection
What are the result Earthing and bondin polarity	 ts of the inspection. Ag visual ok	· ·			
M E C. imp < 5 Ohr M E N, imk	нкие #03583	72018			
		2010			
High Risk Catego	in/:				
Notice AS/NZS 30 High vollage insta	200 Part 2 – 55(2)(a)(i) Hatlori – (s4(2)(a)(ii) Heration – 64(2)(a)(iii)	Photovalizic system - CA (2 HazarCous area – GA(2)(a)) An mail stunning or meat το	ζ	{ Dectrikatmede ፼ Mainswork 0	railance - SA(2)(a)(vi) SA(2)(b)
Declaration	· · · · · · · · · · · · · · · · · · ·				
hereby confirm the	at the work described a	ibove has been dong in / <u>artim</u> a	iccordance with the	t regulations, and the 🖮	nulation /port
		one is, and will be / <u>not be</u> twhen p ords highlighted in reakbore)		aoy 520.	
Sepature I	11/1	/		Date: countries	

Sgnature

Dater	10/03/21							
		•	•	•	•	•	٠	•

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Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Persuadi to the Flocaritity (Safety) Regulations 3010)

A	Reierance/Record	Number:				
<u>(</u>)	Nationwired green	hi.l				
Issuer (Inspector)	detalls					
Name of inspector:				Registration #:	1250728	
Email Addross:	gevin@pooeyspark			Telephone:	021 428 820	
Location of Insta			:	-		
location details.		Nous Area M. Chardin				
	_	vlsiun, Area M, Streetlig —	_	•		.—
Location Type:	Domestic	Non-Domestic Aucon	noitebonis		Industrial	Commercial
Contraine Proved	🔄 ždura: opal	Healthcare		K I	Miscellaneous (sther)	
		te of Compliance (CoC) d	leteils:			
Nome of Electrical worker(s)	Yeli Martyn			Registration #:	L257490	
					EW121000	
GeC details:	Nationwine 15795 Str	eetighi 112			🔄 CoC(s) at tech	ed
Certifying Electri	cal Work and CoC data	lls;				
New Installation, Na System Banding of	ew Streetlight with M F M Pole and cabinet door.	V coard, New Main Neutra	al bərənə	circuit protechol	n, ¥ew Mair, Earthrij	9
\$pecify fire regulati AS/NZS 3000 part 2		idardijs), or identify the cert	if æd desigr	, followed when	carryang out the inspe	
What are the result Earthing and contra colenty M.F.C. imp < 5 Ohn M.E.N. Sirk.	ið viana, ok	onc				
High Risk Categor	'y:					
High voltage instal	$e_{\rm extine} = 6\Lambda(2)[a](iii)$	 Phalowaliak system = 6 Hezordous area = 54(2) Animal sturking or me. 	(2))2	ing 64(?)/c]	📄 Recifical medica 🖉 Maris work – öv	a area - 60/2/(a)(ví) V2)11:
Decimiention			•			,

kernby confirm that the work described above has been done in Amerika accordance with the regulations; and the work lass been core is, and will be Amerika when enlivened, electrically safe.

(Note: Stake cat or deleta the moonly aligned in red above)

Signatures MB1132 00/17

Date: 10/03/21

M20132-04/17 ⁶

Record of Inspection (ROI) of Higb-Risk Prescribed Electrical Work

(Prostant to the Repairing (Salacy) Regulations (1010)

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فلغش سريد

A	Reference/Record	Number:			
<u>(</u>	Nationwired greeni				
Issuer (Inspector)) details:				
Name of Inspector:	Gavin Bodey		Registration #	1250728	:
Email Address:	gavin@bodayspark.c	:0.az	Telephone:	021 428 820	
Location of Insta	llation;				
Location details.	Greenhi I park subdr	vision, Area M, Streetlight 11	3 slage 9-15		
Location Type	Domestic	Non Domestic Accommoda	ticn .	Incustrial	Commercia.
	Educational	Evalthcare		Miscellaneous (other)	
Certifying Electri	col Work and Certificat	e of Compliance (CoC) details	:		·
Name of Electrical worker(s)	Yeli Martyn	· · · · · · · · · · · · · · · · · · ·	Registration #:	E257490	
		· · · · · ·		EW121000	
CoC details:	Nationwired 15795 Stri	ethght 113		📋 Cof (s) astached	
Certifying Electri	cal Work and CoC deta	lts:			
Woat was inspected	¢				
	ew Streetlight with MIE N Pole and capinot door	l, board, New Main Neutral tar ;	and circuit protecti	on, New Main Earlhing	
Specify the regulatil AS/NZS 3000 part 2		dard(s), or identify the certified d	esign, followed when	n carrying out the impecti	iurt
ocanaza solon par, z					
What are the result Bathing and brinds					
poler ty M.C.C. imp < 5.Chr	n				
M.E.N. IIOK .	HRPA #3069377	4958			
High Risk Catego				(7)	6. 191 N A
	ICO Part 2 = GA(2)(5)() Ilation = CA(2)(6)(ii)	 Photovoltak system – EA(2)(a) Hazardous area – SA(2)(a)(v) 	jiwi	📄 🔛 Herrical medical a 🚺 Mains work – 64(7	
🦳 Manis paratel gen	eration – ƏA(2)(2)(ii)	Animal stunning or meat cond	litioning (A(2)K)		
Dther – please des	sorite.				
Declaration					
I neseby coloring that wistelletion on which	t the work described abo h the work has been don	we has been done <i>ur / <mark>petric</mark>acu</i> r is land <i>will be / <u>por fa</u>, when e</i>	esdance with the re alivened, electricall	egulations: and the insta ly safe	<u>дайга / рэл</u> г
		ords bigningbred in (Ad Abave)			
Signature:		·	")ate: 10/03/21	

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Persuani to the Flee Heavy (Safety) Segulations 2010)

A	Reference/Record Nun	ъ				
<u>ZØ</u> S	Nationwired greenh-II					
Issuet (Inspector)						• • •
Nome of Inspector:						
			Registratio		50728	
Email Address	gavin@bodeyspark.co.n 	2] Telephone:	02	1 426 820	
Location of Insta	lletion:					
Location details:	Sreenhill park supdovisio	n, Area M. Streetligh	n 114 stage 9-15			
Location Type-	Domestic :	Non-Domestic Account	nodetxan	🗍 Iod.otra	l.	Commercial
	folgationa	Healthcare		🝸 Mistella	necus (pilher)	_
Certifying Electri	cal Work and Cerlificate of	Compliance (CoC) des	talls:			
Name of Electrical	Yeli Martyn		Registration	•≠: Ę2	57490	
worker(s)				E۷	V121000	
CoC details:	Nationwired 16797 Streetig		_		CoC(s) attached	
				· · ·	enels) erleriner	,
Cartifying Electri	cal Work and CoC details;			-		
Specify the organist AS/NZS30(4) part 2	ບະເ(s) ຜາປ companion standard	(s), or (dentity the cert fo	ed design, fallowed :	when carryin	giour flie inspeci	 (lok
What are the result Bathing and bondir polarity MIFC imp <.5 Ohn M.E.N. ink	ng visuel ok,					
High Risk Catego	-					
📃 High voltage instal	00 Rom 2 = 64(2)(6)(0 lation = 64(2)(6)(0) tration = 64(2)(4)(7); entre:	Photovoltaik system – GA Héxarobus area – CA(2)(x) Aofrect stunning or read	8)	$ \mathbf{V} \rangle$	Sletifica, medical (Malus work – 64()	
Declaration						
héreby confirm (na al tali aragina da al bi	t the work described above h.	as usen tone is / arris	accordance with t	te regulation	e; and the brac	hation / part
	n Che work has been done 's, a letern flue in a coloreal bern ris l			ically safe		

Signature:

Date: 10/03/21

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Parament to the Sistericity (spisoy) Equiptions 2010)

A	B. 6				e sourcey (our boy)	
ION -	Reference/Recer Nationwred gree		1			
			l			
Issuer (Inspector)						
Name of Inspector	r			Registration #:		
Emial, Address	gavin@bodeyspar	k.co.nz	1	Telephone.	021 428 820	
Location of Insta	llation:					
Location details:	Greenhill park sub	division, Atea M, Str	reetlight 107s	lage 9-15		
Location Type:	🗌 Domestic 🔄 Silcustional	☐ Non-Correstia ☐ Heathcare	Accommenter		industrial Miscellaneous (other)	Commercia
Certifying Rectri	cal Work and Certific	ate of Conspilance (C	loC) details;			
Name of Herrical worker(s):	Yeu Martyn			Registration #:	E25749D EVV121000	
CoC details:	Nationwred 15791 S	ireellight 107			: CoC(s) attach	ied
Specify the regulation ASINZS 3000 part 2		 endard(s), or identify th	e certified desig	n, followed whe	n tanying out the msp	ection:
What are the result Earthing and bandur polarity M.E.C. implists Ofter M.E.N. link	ng visual ok.	387н				<u> </u>
High Rick Category						<u> </u>
ligh voltage instal	CC Part 2 6A(2)(a)() Hation – 6A(2)(a)(i) Station – 6A(2)(a)(ii)	│ Photovoltaki syst □ Hatanrousiarea - ○ Animal storrung	-0A(2)%(14)) Hertokal nyocic 🖌 Mars work – 6	al omo 66/2(la)(4) 6(2)(b)
Declaration						
Thereby confirm that	I the work described a Tabe work like been do	õova has been do to <i>in</i> ooxi is land oo <i>ll de / <u>oot</u></i>	/ <u>part in</u> arrowd <u>Ee</u> , when ertw	ance with their ened, electrical	egolations: and the res ly safe	, dataga /part
	leiere nie kraien huseka					

Signature

A1914132 04/17

Date (19/03/21

Record of Inspection (ROI) of Migh-Risk Prescribed Electrical Work

(Puzzerant to the Receivicity (Salesty) Regulations 2016)

A	Roference/Reco	rd Number:			
<u>(</u>)	Nationwised grea				
ksuer [inspector]	detalls:				
Name of Inspector.	Cavin Bodey		Registration #:	1250728	
Emeil Address	gavin@bodeyspar	¥ 00.11Z	Telephone:	021 428 820	
Location of Insta			·		
Location data is:	Greenhill park sub	división, Area M, Streat	lient 43 stage 9-15		
Location Type:		Non-Domestic Acce		ไวเริ่มราก่อ	Commercia
	E Educational	- Healthcare		Miscelleneous (other)	
Certifying Electri	cal Work and Certific	ate of Compilance (CoC)	details:		
Name of Bectrical worker(s);	Yebi Martyn		Registration #:	₹2574\$Q	
1123 CF (14))				EW121000	
CoC details:	Nationwired 15836			; CoC(s] attack	ed
			;		
AS/NZS3000 per: 2 What are the result anhing and consir salarity	s of the inspection Of install ax,	andantijs), or identify the cer	tillied design, foevved when	n cærryning own the wisp:	 tilion:
WECImp≺€Ohn MEN link	יי ארפא אסטנאיז:	13015			
Mgh Risk Catego	ry:				
Light voltage insta	00 Рас. 2— SA(Zila)() lation — (IA(Z(р))*) station — SA(Z)(р)(л) scribt	Photovoltaki system - Hacardous arco - 666 Animal stonning or m		☐ Fectoral means	al arca = 5.4(2)(a)(v 4(2)(5)
Declaration			· · · · ·		
Foreby confirm that	é die work described a a Tre work has beer de	ikove kas been done in / 4 one is land withite / <u>400 ka</u> ,	•	Bulations; and the dor vicate	yCains /par
		one is ann san de s <u>an a</u> g. 7 01ds highlighted in red ab		γ tale.	
signatures 🗸			n	de salación	

^{/are:} 12/03/21

ROG of High-Risk (ROG of High-Risk) (ROG of High-Risk) Prescribed Electrical Work

(Puzsuant to the Serrabby (Salary) Regulations 2010)

KA -	Reference/Record Nun	nber:		
	Nationwired greenhil:			
issuer [inspector]				
Name of inspector.	Gavin Bodey		Registration #	1250/28
Email Address:	ງອາຫາ @bodcyspa tk.co.n	z	Lelephone:	C21 428 820
Location of Insta	lation:			
Location details:	Greenhill park subdivisio	in, Area M, Sireefight 320	stage 9-15	
Location Type.	Comestic	Non-Domestic Accommodatio	ı ا	industrial 📃 Commerce
	Education al	lieathcare	\mathbf{V}	Mistellaneous (ather)
Certifying Electri	cal Work and Cartificate of	Compliance [CoC) details;		
Name of Electrical worker(s):	Yeti Martyo		Registration #	E257490
workerjaj.	· · ···· · ····			EW121000
CoC details:	Nationwired 15839		:	CoC(s) attacned
AS/NZS3000 peril 2 What are the result Earthing and concir go arity	s of the inspection;			
NEC cip≤5Ohn NEN ink	: HRPA ¥005835650Z			
🛄 High vollage insta	00 Port 2 – SA(2)(a)(i) Lation – GA(2)(a)(ii)) Photovoltaic system – 64(2)(a)(iv) Hacardous area – 64(2)(a)(iv)) Animal stuming or meat conditio	r) Electrical medinal area 6A(2)(n)(v) ∳: Mains ∞ork 6A(2)(b)
Declaration				······
Fhereby confirm tha iosradiation on which	t the work described above h h the work has been done is, <i>Me<u>re</u>t the ma<u>unit</u>-abjoctoruls.</i>	and will be fact he, when only	dance with the reg vened, dectrically	gulations; and the installation / part safe
Signature.		/	Ja	^{te} 10/03/23

MB34132 04/17

Record of Inspection (ROF) of High-Risk Prescribed Electrical Work

(Pursuant to the electricity (Sefety) Registrations 2014)

A	Reference/Record	Niadobuzi			
	Nationwred greent				
Issuer (Inspector)					
Name of Inspector:			Registration #	1250726	
Email Address:	gavin@bodeyspark.:	:0.1 z	- Telephane:	621428820	
Location of Instal			-		
Location details:		vision, Area M, Street.ight108	atene 0-16		
Location Type:] Dorrestk	Non-Domest's Accommodatio	-	Industrial	Commercial
200000000000000	Clucational	Healthcare		Miscellanecus (other)	
Certifying Electric	cal Work and Certificat	e of Compliance (CoC) detaas:			
Name of Electrical	Yeti Martyn		Registration #	E257490	
worker(s):		• •		EW121000	
CoC details	Nationwired 158310			CoC(s) attach	ned .
Specify the regulation of the second se		dard(s), or identify the certified des	ign, followed who	n carrying out the insp	ection
Allban and son socials	e of the largestar				
What are the result Farihing and bondin polacity M.F.C. impisition M.E.N. lins.	rq visual eX.	D7T			
High Risk Catego	ry:				
== Vet to AVINZY AU == Vet to AVINZY AU == Vigh voltage instal	6:0 Рат 2 — 64(2)(яК)) Ilatron — 64(2)(а)() Grafich — 64(2)(а)())	Phorowalla c system - 6A(2)(a)(Hazaroous area - 6A(2)(a)(Animal stumning or mest conditional stumping or mest conditional study of the s		📙 Bectrica medic 🏹 Planswork – 6	23:2194 - 64(2)(a)(v) v4(2)(1)
		we has been done in / a - the a cco in it, and will be / <u>act be</u> , when go			nalis<u>ilan</u>/pat
(Note: Strike out or a	houde the insertion	ords highlighted in red above)			
Signature:				Care: 10/03/21	

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Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Emistration the Plet (ricity (Safecy) Regressions 2010)

Issuer (inspector) details: Name of inspector: Gavin @b Email Address: gavin @b Locotion of installation: Locotion of installation: Location details: Greenhii Location details: Greenhii Location Type Domestical Costion Type Domestical Certifying Electrical Work at worker(s): Marts CoC details: Nationwork Coc details: Nationwork Coc details: Nationwork Coc details: Nationwork System. Bording of Polo and to AS/NZS 3000 part 2 Specify the regulation(s) and colored and part 2 What are the results of the uspectation of the usp	bodeyspark o il park subd v stk		 · Eegistration Telephone.	*: <u>250728</u> 021 428 820	
Name of Inspector: Gavin B: Email Address: gavin@b Locotion of Installation: Location: Location of Installation: Creenhii Location details: Greenhii Location Type Dome: District details: Greenhii Location Type Dome: Contifying Electrical Work at the worker(s): Mart worker(s): Cod details: Nationworker System: Bording of Polo and to a system: Bording of Polo and to a synX2S 2000 part 2 What are the results of the way to a synX2S 2000 part 2 What are the results of the way to a synX2S 2000 part 2	bodeyspark o il park subd v stk		Telephone.		
Email Address: gavin@b Location of Installation: Location of Installation: Location Type Dome: Costifying Electrical Work a Name of Electrical Work a Name of Electrical Ye's Mark worker(s): CoC details: Nationwork Costifying Electrical Work a What was inspected: New Instal-alion, New Streetlig System. Bording of Polo and co AS/NZS 2000 part 2 What are the results of the usp Sanhing and brinding visue: ox solarity A E G imp < 5 Ohm	bodeyspark o il park subd v stk		Telephone.		
Location of installation: Location details: Greenhii Location Type Domes It costion Type Domes It cost Contifying Electrical Work at worker(s): Name of Electrical Work at worker(s): Nationworker Cool details: Nationwork at worker(s): Specify the regulation(s) and cool and cool at solution of Polic	ii park subdiv stk			021 428 820	
Location details: Greenhii Location Type Dome: Icocation Type Dome: Icocat Count Count Name of Electrical Work a Name of Electrical Yel: Martworker(s): Cool details: Nationwork Cool details: Nationwork What was inspected: Nationwork System. Bording of Polo and ta System. Bording of Polo and ta System. Bording of Polo and ta System. Bording of Polo and ta What are the results of the way folgoing and bonding visue: ox solarity Solarity AF Collimp < 5 Ohm	stk Lional	vision Area M, Streeilig			
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Worker(s): CoC details: Nationwo Cortifying Electrical Work a What was inspected: New Instal-alion, New Streetlig System. Bording of Polo and co Specify the regulation(s) and co SPACIFY the regulation (s) and co SPACIFY the regulat	ind Certificat	e of Compliance (CoC) de			
CoC details: Nationwin Cortifying Restrical Work a What was inspected: New Instal-alion. New Streeding System. Bonding of Polo and ca Specify the regulation(s) and co SPACIFY the regulation(s) and co SANZS 3000 part 2 What are the results of the use Sanhing and brinding visue: ox olarity A E G imp < 5 Ohm	tyn		Registration	* €257490	
Contifying Restrical Work a What was inspected: New Instal-alion. New Streetlig System. Bonding of Polo and ca Specify the regulation(s) and co SPACIFY the regulation (s) and co SPACIFY th			· ¦	EW121000	
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ia∩hing and brinding visue: ok olarity A E C, inspi≤ 5 Ohm	Ampeniain stand	dard(s), or identify the centif	 ied design, foxlowed w	bea carrying out the inspi	eution:
					· .
High Sisk Category:					
Not to AS/NZS 3200 Part 7 - 6 High voltage installation - 64(2 Mains parallel generation - 640		Photovoltaic system - 64 Harandous area - 64(2)(a Animal scenergion real) (v)	🔚 Hertrical medic 🝸 Mains work – 6a	
_j Cther – please describe: 		·			
Declaration hereby confirm that the works					

(Note: Stake out or deleter) be mensionable words highlighted in red above.)

Signature: M313171 04/37 4

Cale: 10/03/21

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Pursional to you Electricity (Stately) Regulations 3010)

A	Reference/Record	Number			
/@\	Natonwirod green				
Issuer (Inspector)					
Name of Inspector:			Registration #:	1250728	
ärr sil Address:	gevin@bcdeyapark.		Telephone	621 423 820	
Location of Insta		54.11£		621 42.9 (.20	
Location details.					
		vision, Area M, Sireellight 1	-		_
Location Type	Econestic	🗌 Non Damestic Accommod	=	hdustrial	: Commercia
-	Educational	Heat ware		Piscellaneous (other)	
		te of Compliance (CoC) detail	5;		
Name of Electrical worker[s]	Yell Martyn		Registration #	E257490	
		· · · · · · · ·		EVV121000	
CoC det aix	Nationwrited 167914 5	inentlight 122		📃 CeC(\$) attach	ed
Specify the regulation AS/NZS:3000 part 2		derd(s), or identify the cartified (design, followed when	carrying out the inspo	stan:
What are the result Ealthing and Sonor polarity MIEC imp < SiOhr MIEN, 11k	ng visual ok,	 200			
High Risk Catego	rys				
🔄 High voltage instal	COC Post 2 = GA12χa)() Dation → SA(2)(a)(i) eration = GA(2)(a)(ii) wates	 Photovoltais system - SA(7); Hazardous a ea - 6/(2)iái(v) Animal siumping or meaticat 		[™]] Dect ical meck. ✔ Mains work – to	
Declaration					
hereby confirm the	t the work described ab-	eve has been durie to / <u>not in</u>.	cordance with the rep	sulations, and the ms	enter / part
esstadiotéen un which	b the work has been don	ic is, and will be / <u>ant ba</u> , when nothing!(lighted in restations.)	onlivened, eleritricially	sale	·

Signature:

1000 3000 2011	Date	10/03/21
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Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

IPu/Subri to the Slocartory (Salisty) Regulations 2010

A	Reference/Record	Number:			
<u>(@)</u>	Nalionw (ed green				
Issuer (Inspector)) details:		-		
Name of Inspector:			Registration #:	1250728	
Email Address:	çavin@bodeyspark.	.corz	Telephone:	021 428 820	
Location of Insta			!		
Location details		ivision, Area M, Streetligh)	115 shipp 6,15		
Location Type	Daraestic	Extension of the second sec	-	Industria	
	[] Iducational	- Hoolthcare		Miscelareous (other)	Consteru
Cartifying Elactri		te of Compliance (CoC) data			
Name of Electrical worker(s)			Registration #:	E257490	
CoC details.	Nal or wired 15798 St		-	EW121000	
	Hardrwiter f. free vij	64790 C		: CoC(6) at (&	hed
S/NZS3000 part 2	s of the Inspection og visueliok,	nda :d(s), or identify the certified	I design, followed whe	n (ar tying out live us)	
I.E.N link	HRPA #0059370)Z4X			
High voltage instal	СС Рат: 2 – 644(2)(а)() Lation – 64(2)(ב)(л) eration – 64(2)(а)(10	Hazardovical: system – 64(2) Hazardovical: en – 64(2)(k)(- Animal shurring or meat co)	Pecinosi and Z Mains wo≪	irəl area – GA(2)(8)(e CA(2)(6)
Declaration					·····
arsonicy a modificant (the	the work described ab	ove ‼as been done <i>m /</i> :	contlands with the a	egulations; and the s	Στες ζ <u>ααίλε‼αν.</u>
		no is, and whili be / <u>ant lea,</u> when Knids hishlighted in radiobuse.)		iy sare.	
Kuatrus.		·····	:	^{teler} 10/03/21	
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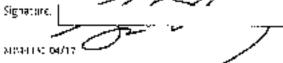
n e i stene etcaj overaniji

Record of Inspection (ROI) of High-Risk Prescribed Electrical Work

(Purstaul to the Receivity (Safety) (equilations 2010)

A	Reference/Record N	umþór;				
(\underline{w})	Nalionwred greenh	II				
lswer (Mspector)	detráls					
Name of Enspector	Gavin Bodey		Registrali	ien \$	I250728	
Hijal Address	gavin@bodayspark.cr		Telephon	e:	021 428 820	
Exection of Instal	lation:					
Location details:	Greenhill park sabdiv	sion. Area M, Streetlig	pht 116 stage 9-1	5		
Location Type:	Domestic	Non-Domestic Accor	rmodation	0	dustrial	📜 Commercia
	Stucational	Heathcare		7 4	iscellaneous (other)	
Certifying Electri-	cel Work and Certificate	of Compliance (CoC) a	letalts;			
Name of Electocal worker(s):	Yeti Mariyn		Registrati	0n #:	£25749D	
worker(sj.	· · · · · · · · · · · · · · · · · · ·				FW12100D	
Coff details:	Nationwired 15799 Stree	elligit 11\$			CoC (s) at each	red
				:	—	
What was inspected low installation, Ne	eal Work and CoC detail t: w Streetlight with M.E.N. Pole and cabine; deer		al tar end circuit pr	olection.	New Main Earthin	ġ
What was inspected level installation, Ne ystem, Bonding of Specify the regulati	t: IN Streetlight with M.E.N. Pole and cabine; door on(s) and companion stand	board New Main Neutr				
What was inspective level installation, Ne system, Bonding of Specify the regulati S/NZS 3003 part 2 What are the result entring and bondin planity 1.5 C. line < 5 Ohr	t: W Streetlight with M.E.N. Pole and cabine; door cn(s) and companion stand s of the inspection; ig visual ok.	board New Main Neurr aud(s), or identify the cert				
What was inspective lew installation, Ne system, Bonding of Specify the regulati S/NZS 3003 part 2 What are the result shing and bondin plarity 1.5 C. the < 5 Ohm (F N, the	t: W Streetlight with M.E.N. Pole and cohine; door cn(s) and companion stand s of the inspection; ig visual ok. HRPA #00593772	board New Main Neurr aud(s), or identify the cert				
What was inspected New Installation, Ne System Bonding of	t: W Streetlight with M.E.N. Pole and companion stand co(s) and companion stand s of the inspection; ig visual ok. HR PA #00593772 Ye CC Part 2 SA(7)(x)(i) lation - GA(2)(a)(i) yat on SA(2)(a)(i)	board New Main Neurr aud(s), or identify the cert	ified sesign, followe 		ν Τγι ής αιτ the impo	ection
What was inspective view installation, Ne System, Bonding of Specify the regulati S/NZS 3003 part 2 What are the result softing and bondin planity MEC, included bondin planity MEC, included bondin softing and bonding (Figh Risk Categor (Figh Risk Categor (Figh Risk Categor (Figh Risk Categor) (Figh Risk Categor) (Figh Risk Categor)	t: W Streetlight with M.E.N. Pole and companion stand co(s) and companion stand s of the inspection; ig visual ok. HR PA #00593772 Ye CC Part 2 SA(7)(x)(i) lation - GA(2)(a)(i) yat on SA(2)(a)(i)	Board New Main Neurr and(s), or identify the cert (K 	ified sesign, followe 		Pocicical media	ection

(Note: Stoke not or deterative inconstructions and highlighten in rediations)



Date: 10/03/21

Record of Inspection (ROI) of High-Risk Prescribed Bectrical Work

(Sta sound for the Occaricity (Safety) degulations 2010).

~						
KA	Reference/Record	i Number:				
డ్రు	Nationwired greet	nhil:				
Issuer (Inspector)) details:					
None of Inspector:	Gavin Bodey		Rej	ustration ⊄:	250726	
Email Addrass	gavin@bodeyspark	.co 12	Tel	ephone:	021 428 820	
Location of Insta	llation:					
Location details	Greenbill park subo	livision, Area M, Streetli	oht 117 stad	e 9-15		
Location Type:	Comestie		- *		dustral	Commential
	Educational	lealthtare			iscellaneous (ather)	
Certifying Electri	cal Work and Certilics	te of Compliance (CoC)	detalls:			
Name of Electrical	Yeti Martyn		Reg	estration #:	F257490	
worker[s];			1		EVv121000	
CoC details	Nationwined 15799 St	reellight 117		:	CoC(s) attacks	ed
Certifying Electri	cal Work and CoC det	ails:				
Specify the regulation AS/NZS000 part 2	on(s) and comparison sta	ndard(s), or identity the cert	ilfied design, fo	t.cwod when co	of Cyling and the inspe	
What are the result	•		•			
Earthing and bond a polarity						
MEC imp <.50nn M.E.N link	HRPA ≠005837	SHac				
High Risk Categor	-y:					
	GD Part 2 – 6A(2)(a)(1)	- Phatavohaic system –	6A(Zlia)iv)		Electrical medica	
High voltage instat		🔜 Havardous area - 66(2			🔀 Mains wor& - 64	{2)IE}
L., Mains paralle, gene Other + picave des	vation 6A(2)(a)(a) crite	Ana) a: Slorring or na	a: conditioning	6A(2)(5)		
Declaration Elsen-by confirm that	t the work described ab	uve nav oren done in / per	- accordance	e se tia the root	lations: and the ite l	distant wat
lostali <i>atien</i> on which	i The work has been do	ne is, and will be I <u>ap the</u> N	vneh enlivana	d, electrically s	มัย มัย	
	and the manufacture	with highlighted in red also	svelj			
Nyrahire	-12	<u> </u>		Date	* 10/03/21	
N 31 1 132 047 17	<u>)</u> -					

Board

Record of Enspection (ROI) of High-Risk Prescribed Electrical Work

(Pursuant to the Electricity (Safety) Legislations 2010;

A	Refurence/Record	Number:				
<u>(</u>)	Nationwired green:	nill				
Issuer (Inspector)	details					
Name of Inspector:	Gavin Bodey		:	Registrațion #	1250728	
Email Address	gavin@bodsyspark.c	o.nz	!	Telephone:	021 428 820	
Location of Insta	llation:					
Location cetails	Greenhill park aubdit	vision, Area M, Street	light 113 :	slæge Ø-15		
Cocation Type.	🛄 Dornestik 🔄 Educational	Nor-Domestic Acco	armodefior		ioustrel Ascellaneous (other)	🗌 Commercial
Certifying Electri	cal Work and Certificat	e of Compliance (CoC)	details:			
Name of Electrical worker(s)	Yeli Martyn		. !	Registration #.	E257490 EW121000	
CoC details.	Nalionwized 157910 S	Ireetlight 116		:	🔄 CoC(s) attach	æd
Specify the regulation AS/NZ63000 part 2	on(s) and companion star	dand(s), on identify the ce	-tified desig	in, followed when a	carrying out the insp	ectian:
What are the result Earthing and bondir polarity M.E.C. mp <.6 Ohr M.E.N. ink	ng visual ok,	F4F				
Hìgh Risk Catago						
Not to ASIN7S FC	200 Part 7 = 0A(2)(a()) Jaclon = 6A(2)(a)(r) eration = 6A(2)(2)(rij)	Phortwollaid System Havandoos area - 6A Arima, Xunning or n	(2)(a)(d		E Bectrica invedio Mains work - o	a, ercə — 64(2)(a)(v) A (2)(h) — — —
Declaration						
thereby confirm the vistaliation on which	it the work described and If the work has been don	یند/ we has been done in e is, and will be / <u>per ba</u>	when anly	lance with the reg sense, sinctrically	plations, and the π sale	nation, /part
	teletythe magazarilyt T				te 10/00/21	

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Record of Inspection (ROI) of High-Risk Prescribed Electrical Wark

(Previous to the electricity (Safety) Regulations 2010)

A	Reference/Recor	d Number;				
<u>(</u>	Nationwided gree					
Issuer (Inspector)) detail s;					
Name of Inspector	Gavin Bodey		Registran	an #: 2:	50726	
Email Address	gavin@bodeyspark		Telephson	• n2	1 428 820	
Location of Insta	llation:					
Location deta.ls;	Greenhill park sub-	d vision, Area M, Street	Jight 119 stega 9-1	5		
Location Type:	🔲 Domestik	Non-Domestic Acc		🔄 Incustri	a !	Commerce
	🗍 Esurational	Sealthcare		🖌 Miscela	neous (other)	
		ate of Compliance (CoC)	dotalls;			
Name of Electrica. worker(s)	Yeli Mariyn		Registrati	cn #. E2	2574\$0	
CoC details	-		J	Ev	V121000	
CDC Betails	Nationwhed 157912	Streedight 119			CoC(s) attached	
Specify the regulati AS/NZS3000 part 2 What are the result Earthing one bondin palarity		andersi(s), or identify the ca	ntifled design, tollower		gouthe rapersion	
M.EC impik.50th MEN link .) H∺IYA #035838	ISXON				
High Risk ⊂ategor						
Not to AS/NZS 30 High voltage instal	COPart 2 - 64(2)(a)(1) Lation - 64(2)(2)(1) Plation - 64(2)(2)(1)	- Fhoto-oftak system - Hazardous area – öA - Animel shano nglor n			Sleutrical medical area Mains work – 6A(Z)(b)	647(9)(2)
Declaration						
us (al <i>ialion</i> gri which	h tao wark has beer du	bove has been dona in 7 11 me istant will be 7 <u>000 he</u> porol highlighten in red st	when enliver #clining	the regulation trickedy safe.		<u>'oo / p</u> art

(to be completed for each change in streetlight type)

Subdivision and stage/Contract	GREENILL	PARK	AREA M	STAGE 13
Number of street lights of this type	6			
General				
Date Installed	10/3/21			
Control Type	Network Streetlight Fe	ed / Photocell	/ Other:	
Origin of Power Supply	Streetlight Circuit Me	tered Power S	upply	
Light				
Manufacturer	VIZULO			
Model	MINI STOR	K.		
Total Power Consumption (W)	2 × 58.1 =	116.21	N	
Light Height (m)	10			
Tilt Angle (" Degrees)	00			
Outreach				
Outreach Type	Curved / Mitre / Other I	Decorative:		
Outreach Distance (m)	Zm			
Pole				
Manufacturer	CSP			
Туре	Octagonal) Circular /	Power / Othe	er Decorative:	
Pole Height (m)	(OM			
Material (Galvanised Steel) / Ste	sel / Other:		
Coating	N/A Painted Powe	ier Coated		
Colour (if coated)	BLACK	15		
Mounting	Frangible ground plant) Shear Base		

Manufacturer's Warranty documents for Poles, Lights and Coatings attached.

Shown on as-built drawings.



Regional Infrastructure Technical Specifications

(to be completed for each change in streetlight type)

Subdivision and stage/Contract	GREENHILL	PARK	AREA M	STAGE 13
Number of street lights of this type	_4_			
General				
Date Installed	10/3/21			
Control Type	Nelwork Streetlight Fe	ed / Photocel	/ Other:	
Origin of Power Supply	Streetlight Circuit) Mi	etered Power S	upply	
Light				
Manufacturer	VIZULO			
Model	MINI STOP	LK.		
Total Power Consumption (W)	84 W			
Light Height (m)	IOm			
Tilt Angle (º Degrees)	00			
Outreach				
Outreach Type	Curved Mitre / Other	Decorative:		
Outreach Distance (m)	2m			
Pole				
Manufacturer	CSP			
Туре	Octagonal) Circular	Power / Oth	er Decorative:	
Pole Height (m)	(0 m			
Material	Galvanised Steel St	eel / Other		
Coating	N/A / Painted / Pow	der Costed		
Colour (if coated)	BLACK			
Mounting	Frangible ground plan	Shear Base		

Manufacturer's Warranty documents for Poles, Lights and Coatings attached.

Shown on as-built drawings.

Page 188 of 601



Regional Inhistricture Technical Specifications

(to be completed for each change in streetlight type)

Subdivision and stage/Contract	GREENHILL PARK AREAM STAGE 13
Number of street lights of this type	4
General	
Date Installed	10/3/21
Control Type	Network Streetlight Feed / Photocell / Other.
Origin of Power Supply	Streetlight Circuit Metered Power Supply
Light	
Manufacturer	VIZULO
Model	MINE STORK
Total Power Consumption (W)	77.5W
Light Height (m)	10
Tilt Angle (" Degrees)	O°
Outreach	
Outreach Type	Curved) Mitre / Other Decorative:
Outreach Distance (m)	Zm
Pole	
Manufacturer	CSP
Туре	Octagonal)/ Circular / Power / Other Decorative:
Pole Height (m)	(Om
Material (Galvanised Steel / Steel / Other:
Coating	N/A (Painted) Powder Coated
Colour (if coated)	BLACK
Mounting	Frangible ground plant) / Shear Base

Manufacturer's Warranty documents for Poles, Lights and Coatings attached.

Shown on as-built drawings.

Page 166 of 601



Regional Intrastructure Technical Specifications

(to be completed for each change in streetlight type)

Subdivision and stage/Contract	GREENILL	PARK	AREA M	STAGE 13
Number of street lights of this type	2			
General				
Date Installed	10/3/21			
Control Type	Network Streetlight Fe	eed / Photocel	I / Other:	
Origin of Power Supply	Streetlight Circuit / M	etered Power S	upply	
Light				
Manufacturer	VIZULO			
Model	MINI STO	RK		
Total Power Consumption (W)	131.7 × 2	2 = 26	3-4W	
Light Height (m)	10m			
Tilt Angle (° Degrees)	0°			
Outreach				
Outreach Type (Curved) Mitre / Other	Decorative:		
Outreach Distance (m)	2m			
Pole				
Manufacturer	CSP '			
Туре	Octagonal / Circular	/ Power / Oth	er Decorative:	
Pole Height (m)	IOm		_	
Material	Galvanised Steel)/ S	teel / Other:		
Coating	N/A / Painted / Pow	der Coated		
Colour (if coated)	BLACK	155		
Mounting	Frangible ground plan) Shear Base		

Manufacturer's Warranty documents for Poles, Lights and Coatings attached.

Shown on as-built drawings.





Regional Infrastructure Technical Specifications

(to be completed for each change in streetlight type)

Subdivision and stage/Contract	GREENHILL	PARK	AREA M	STAGE 13
Number of street lights of this type	E			
General				
Date Installed	10/3/21			
Control Type (Network Streetlight Fee	d / Photocel	/ Other:	
Origin of Power Supply	Streetlight Circuit / Me	tered Power S	upply	
Light				
Manufacturer	VIZULO			
Model	MINI STORK			
Total Power Consumption (W)	77.2W			
Light Height (m)	8m			
Tilt Angle (° Degrees)	0°			
Outreach				
Outreach Type	Curved / Mitre / Other D	ecorative:	MILFORD	
Outreach Distance (m)	Im			
Pole				
Manufacturer	IBEX LIGHT	ING		
Туре	Octagonal Circular Power / Other Decorative			
Pole Height (m)	8m			
Material	Galvanised Steel / Other			
Coating	N/A (Painled) Powder Coated			
Colour (if coated)	BLACK			
Mounting (Frangible ground plant	/ Shear Base		

D Manufacturer's Warranty documents for Poles, Lights and Coatings attached.

□ Shown on as-built drawings.

APPENDIX 8

Miscellaneous Check Lists and Producer Statements

- Subdivision Works Clearance Application Form
- Subdivision Certification Application Form
- Contractor Producer Statement Form
- Land Transfer Plan LT 558430
- Schedule of Engineering Value
- Developers Tax Invoice
- Consultant Certification Statement Form
- Asbuilt Statement Form



Infrastructure Development Completion Report



Subdivision Works Clearance Application Form

Agent details (where an agent is applying on behalf of the consent holder)				
Agent name:				
Agent company:				
Postal address:				
Telephone:				
Email:				
Subject Site				
Site address:				
Legal description:				
Resource consent number:		Date cons	sent issued:	
Stage (if applicable):		No. of lots (excluding r	roads/reserves):	
		-		
Clearances required				
Certification required:	Engineering	Landscaping	Other (please specify)	
Fees and payment				
You will be charged for the t site visits. Refer to Fees and		-	king engineering works clearance <u>nilton.govt.nz</u> for costs.	

Payment of fees is due upon invoice which will be issued at s224c subdivision certification stage.

Agent declaration

As a registered professional surveyor/planner, I confirm that:

- I am satisfied that the engineering and landscaping physical works have been completed in accordance with the Resource Consent
- I accept that my application may be returned if there are outstanding agreements relating to development contribution remissions or valuation of land, or if all information required for works clearance is not submitted

Planning Guidance

Hamilton City Council Phone: 07 838 6699

Questions?

Send

Send applications to <u>subdivision@hcc.govt.nz</u>, drop off via the duty planner at the Municipal Building Garden Place, between 8am – 4.45pm, Monday to Friday or post to Planning Guidance Subdivisions, Hamilton City Council, Private Bag 3010, Hamilton 3240.

Documentation to provide:

- The attached checklist
- All required information listed in the checklist

OFFICE USE ONLY

O Documentation saved to TRIM

Authority updated

 \bigcirc Acknowledgement sent

Planning Guidance

Hamilton City Council Phone: 07 838 6699

Questions?

Works Clearance Checklist

PART A - QA DOCUMENTATION:

a. General

	Received	Date
Easements required		
Consent notices required		
Power, telecommunication, gas connections certification		
Contractor Certificate		
Producer Statement		

b. Parks

C Landscaping Plans Accepted	Date:		
		Approved by	Date
Final Inspection Checklist			

c. Roading

 Engineering Plans Accepted 	Date:			
		Approved by	,	Date
Subgrade Compaction/Relative Height				
Subbase Compaction/Relative Height				
Basecourse Compaction/Relative Height				
Penetrometer Results				
Clegg Hammer Results				
Benkelman Beam Results				

d. Stormwater

Lingineering Flans Accepter	\bigcirc	Engineering	Plans	Accepted
-----------------------------	------------	-------------	-------	----------

Date:

	Approved By	Date
Wetlands and Ponds Management Checklist		
Wetlands and Ponds Inspection Checklist		
Pipe Laying Checklist		
Manhole Checklist		
Trench Backfill Compaction Test		
Catchpit Checklist		
Final Inspection Checklist		
Stormwater device Operations and Maintenance Manual supplied		

Planning Guidance

Hamilton City Council Phone: 07 838 6699 For general planning guidance enquiries, contact the duty planner weekdays 8am – 4.45pm Email: planning.guidance@hcc.govt.nz

Questions?

e. Wastewater

Engineering Plans Accepted Date:		
	Approved By	Date
Pipe Laying Checklist		
Manhole Checklist		
Trench Backfill Compaction Test		
Final Inspection Pipe Network		
Pumping Station Check Forms		
Pressure Test Results		

f. Water

 Engineering Plans Accepted 	Date:		
Form/Process		Approved By	Date
Pipe Laying Checklist			
Final Inspection Checklist			
Pressure Test Results			
Bacteriological Test Results			

Planning Guidance

Hamilton City Council Phone: 07 838 6699

Questions?

PART B - ASBUILT DATA:

a. Roading

Data	Received	Checked
RAMM data		
Streetlight Data		
Asbuilt Plans		
DXF Files		

b. Stormwater

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

c. Wastewater

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

d. Water

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

e. Parks

Data	Received	Checked
Datasheets		
Asbuilt Plans		
DXF Files		

f. Finance

Data	Received	Checked
GST Values		
Land Values		
Asset Quantities		

Planning Guidance

Hamilton City Council Phone: 07 838 6699

Questions?

PART C – CONDITIONS/BONDS:

Documentation	Received	Checked
Engineering conditions attached and completed		
Bond requested and quote attached		

Planning Guidance

Hamilton City Council Phone: 07 838 6699

Questions?



Subdivision Certification Application Form

Agent details (where a	Agent details (where an agent is applying on behalf of the consent holder)				
Agent name:					
Agent company:					
Postal address:					
Telephone:					
Email:					
Preferred means of contact:	: O Ma	il 🔷 Email	OPhone		
Consent holder nam	าย				
Consent holder name:					
Postal address:					
Telephone:					
Email:					
Debtor details (for inv	oicing)				
Debtor is:	⊖ Agent ⊖ Ow	ner Other (pleas	se specify)		
Debtor's Name:					
Debtor 3 Name.					
Postal address:					
Postal address:					
Postal address:					
Postal address: Subject Site					
Postal address: Subject Site Site address:		Stage Numl	ber:		
Postal address: Subject Site Site address: Legal description: Resource consent number:		Stage Numl	ber:		
Postal address: Subject Site Site address: Legal description: Resource consent number: Certification require					
Postal address: Subject Site Site address: Legal description: Resource consent number:	○ s223 ○ s22		ber:		
Postal address: Subject Site Site address: Legal description: Resource consent number: Certification require					

Planning Guidance

Hamilton City Council Phone: 07 838 6699 For general planning guidance enquiries, contact the duty planner weekdays 8am – 4.45pm Email: planning.guidance@hcc.govt.nz

Questions?

Condition(s) of consent requirements

As a registered professional surveyor/planner, I confirm that:

- 1. For larger/complex consents, I have attended a pre-application meeting with Hamilton City Council staff to review my draft s224c application.
- 2. I hereby attach all information required to satisfy Hamilton City Council that all conditions specified in the subdivision consent referenced above (in terms of certification required) have been met.
- 3. I accept that where it is found that not all information required under clause 2 above is provided, this application shall be returned to the address for re-lodgement.
- 4. Where an engineering or similar professionally prepared plan and supporting information (such as landscaping or ecological plan) has to be approved by council, I have attached written evidence of such approval.
- 5. Where evidence of completion and approval of all physical works is required (e.g. construction of services, landscape planting). I have attached written evidence of such approval.
- 6. The required Landonline electronic certification documentation have been prepared and submitted to Hamilton City Council for approval.

Acceptance

I confirm that all of the above have been satisfied.

Name:

Date:

Send

Send applications to <u>subdivision@hcc.govt.nz</u>, drop off via the duty planner at the Municipal Building Garden Place, between 8am – 4.45pm, Monday to Friday or post to **Planning Guidance Subdivisions**, **Hamilton City Council, Private Bag 3010, Hamilton 3240**.

Remember to attach:

Conditions of subdivision consent documentation

Questions?

Works clearance certificate

Planning Guidance

Hamilton City Council Phone: 07 838 6699

NZS 3910:2013 Conditions of contract for building and civil engineering construction

SCHEDULE 6 – FORM OF PRODUCER STATEMENT - CONSTRUCTION

ISSUED BY	ONLINE CONTRACTORS 2016 LTD
то	CHEDWORTH PROPERTIES LTD
IN RESPECT OF	GREENHILL PARK STAGE 13 INCLUDING: SUBDIVISION CIVIL WORKS,
	ROADING AND EARTHWORKS
AT	GREENHILL PARK, HAMILTON

ONLINE CONTRACTORS 2016 LTD has contracted to CHEDWORTH PROPERTIES LTD to carry out and complete certain building works in accordance with a Contract titled GREENHILL PARK STAGE 13.

I Daniel Hopper a duly authorised representative of ONLINE CONTRACTORS 2016 LTD believe on reasonable grounds that ONLINE CONTRACTORS 2016 LTD as carried out and completed:

🗹 All

Part only as specified in the attached particulars of the contract works in accordance with the Contract.

Dan Hopper

8th March 2021

Signature of Authorised Agent on behalf of

Date

ONLINE CONTRACTORS 2016 LTD PO BOX 21187 ROTOTUNA HAMILTON 3256

Hamilton City Development Manual				
Volume 4 : Quality Systems for Land Development	Part 9 — Appendices			
Authorised by : Design Services Manager				

APPENDIX 4 ii)

PRODUCER STATEMENT — CONSTRUCTION

CONTRACTOR'S CERTIFICATE UPON COMPLETION OF SUBDIVISIONAL WORK

Online Contractors 2016 Ltd	
	(Contractor)
TO: Chedworth Properties Ltd	
	(Principal)
	itorial Authority)
IN RESPECT OF : Greenhill Park Stage 13	
	n of subdivisional work)
AT :	
	(Address)
Online Contractors 2016 Ltd ha	s contracted to
(Contractor)	(Principal)
	rk in accordance with a contract, titled Contract No
	· · · · · ·
Dan Hopper I a duly authoris	Online Contractors 2016 Ltd
(Duly Authorised Agent)	(Contractor)
hereby certify thatOnlne Contractors 2016 Ltd	
has carried out and completed the subdivisional accordance with the contract.	works, other than those outstanding works listed below, in
Dan Hopper	8th March 2021
(Signature of Authorised Agent on behalf of)	
Online Contractors 2016 Ltd	
(Contractor)	
PO Box 21187, Rototuna, Hamilton	
(Address)	
Outstanding Works road signs installation at the Webb Drive/Carrs Rd rou Tactile paver installation	undabout





Title Plan - LT 558430

Survey Number	UU 558430
Surveyor Reference	21879 Greenhill Park Stays 13
Surveyor	Scott Rudney Carley
Survey Firm	Shompton and Lipinski Lomited Parmership
Surveyor Declaration	

Survey Details.

Dataset Description, Loss 357-374, 504, 602, 603 and 706 Being a Subdivision of Los 705 DP 548058 Ininated Status South Vackland CLS- A Land District Survey Class Submitted Date Survey Approval Date Deposit Date

Territorial Authorities

Hantiaon City

Comprised In

RT940132

Createst Parcels

Parcels	Parcel Intent	Атеа	RT Reference
Lot 357 Deposited Plan 558(30)	Fee Simple Tale	110416115	980784
Lot VS Deposited Plan SSAM	Lee Sumple Fille	0.0418 Ha	980785
Let 359 Deposited Plan 558430	Fee Simple Tale	11/0417715	980786
Lot 46D Deposited Plan \$\$84.90	hee Simple Title	0.0417 Ha	980787
Lor 301 Deposited Plan 558430	Fee Simple T the	0.0461 Ha	980788
Lot 362 Deposited Plan 258430	hee Simple Title	0.021511a	980789
Lot 363 Deposited Plan 558430	Fee Simple Title	0.0319 Ha	980790
Lot 364 Deposited Plan 558430	hee Simple Tale	HOREHS	980791
Lot 365 Deposited Plan 558430	Fee Simple Title	0.0.208 Ha	980792
Lot 366 Deposited Plan 558130	Fee Simple Tule	11.0452115	980793
Lot 367 Deposited Plan \$\$\$430	hee Sumple, File	0.0403 Ha	980794
Lot 368 Deposited P an 558430	Fee Simple Title	0.0450.05	980795
Lot 369 Deposited Plan \$58430	the Simple Title	0.0450 Ha	980796
Lot 370 Deposited Page 558430	Fee Simple T fle	0.0462 Ha	980797
Lot 371 Deposited Plan 558430	Fee Simple Tule	0.0452 Ha	980798
1 of 372 Deposited Pair 558430	Fee Simple Title	0.0486445	980799
Lot 373 Deposited Plan 558 (30)	Fee Simple Tale	0.0454.05	980800
Lot 374 Deposited Pan 558430	Lee Simple File	0.0425 Ha	980804
Lot 501 Deposited Plan 558130	Vesting on Deposit for Local Purpose Reserve	11 1 441 115	980802
Lot 602 Deposited Plan 558430	Vesting on Deposit for Road	ERMIT	
Ect 603 Deposited P an 558430	Vesting on Deposit for Road	0.6433.05	





Title Plan - LT 558430

Created Parcels

Parcels

Lot 706 Deposited Plan 558430 Area A Deposited Plan 558430

Total Area

Parcel Intent Fee Simple Title Losement Area 19730115

RT Reference 980803

5 5961114



Land Registration District

South Auckland

Territorial Authority (the Council)

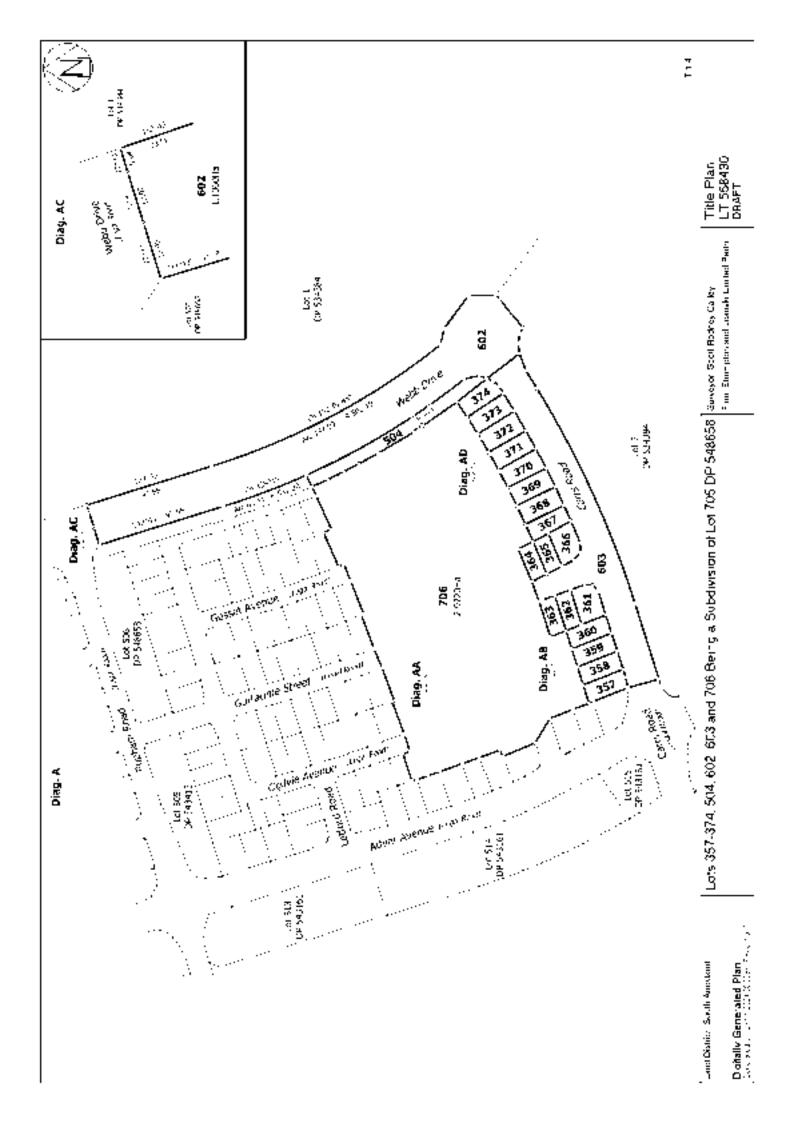
Homilton City Council

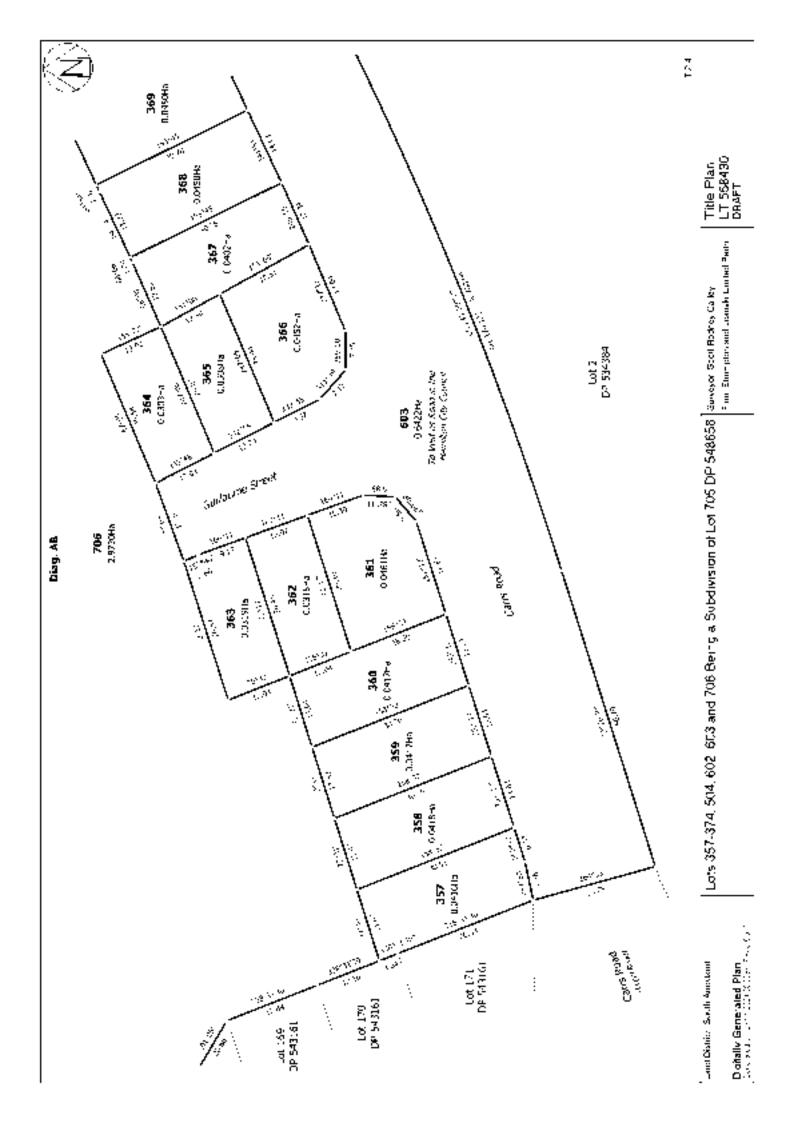
S&L File: 21879 - Stage 13

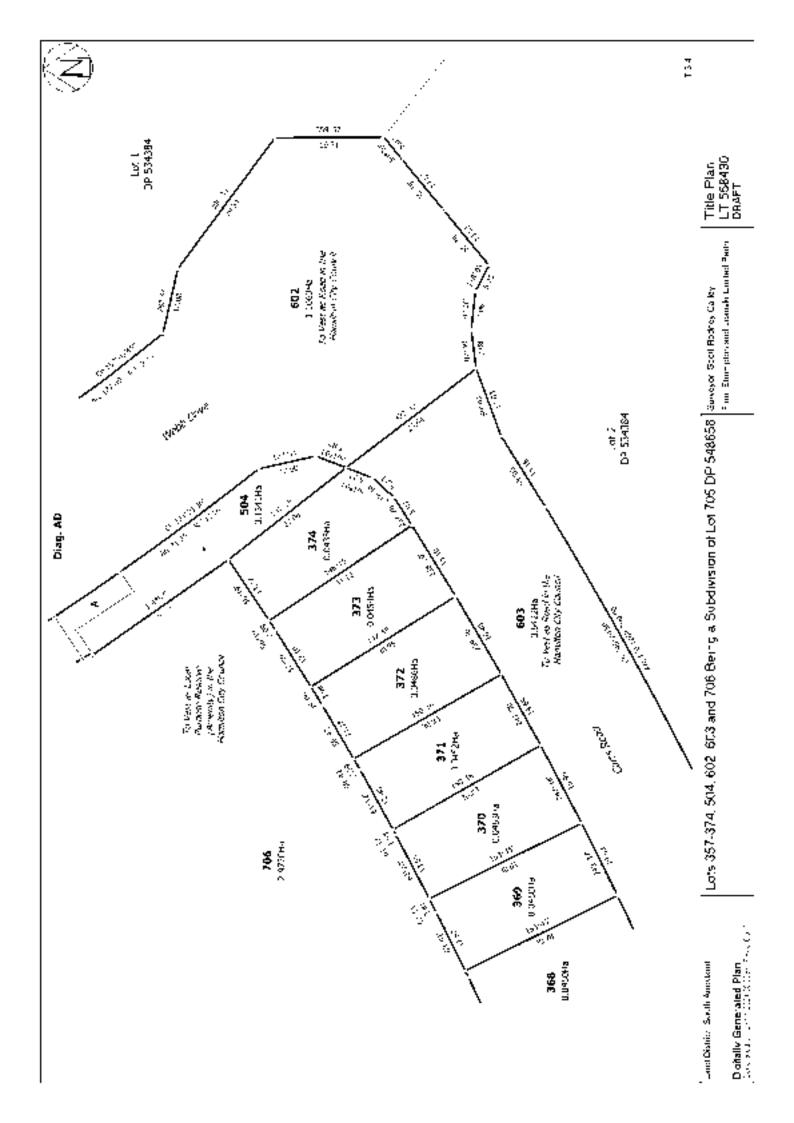
Pion Number

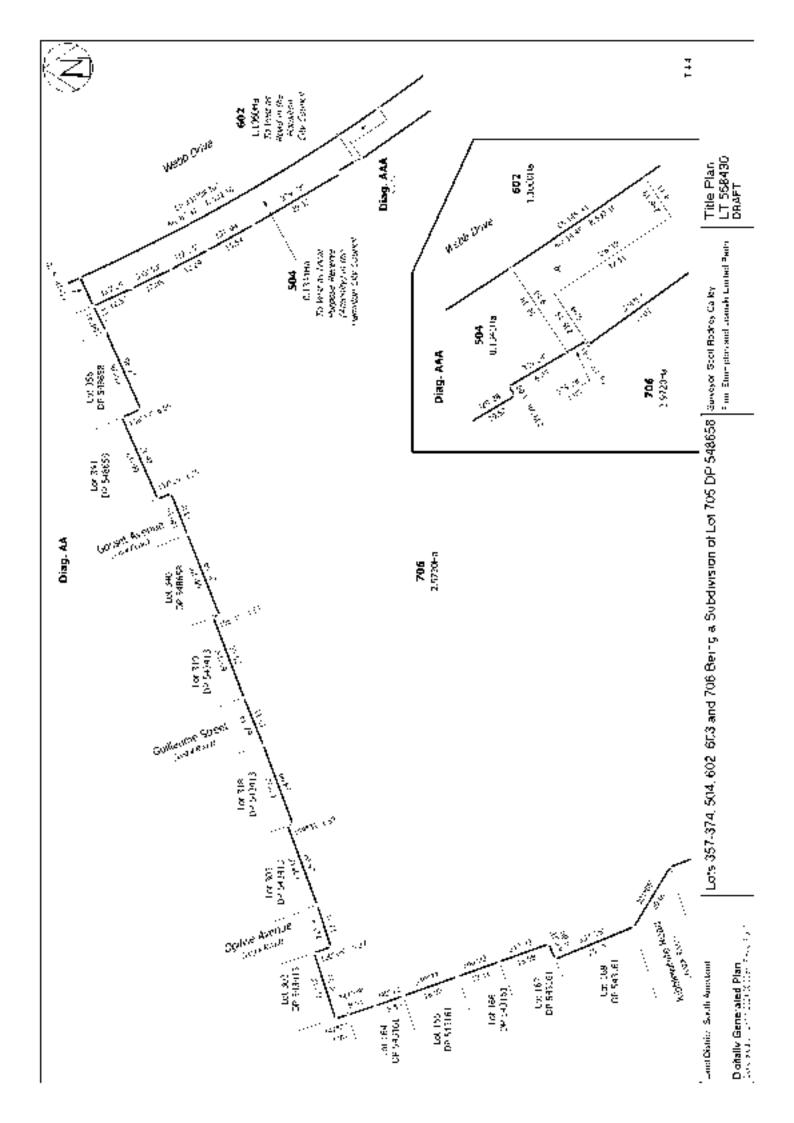
DP 558430

Memorandum of Easements in Gross				
Purpose	Shown	Burdened Land	Grantee	
Right to Convey Electricity Telecommunications	Α	Let 504	WEL Network Limited	









SCHEDULE OF LAND AND ASSETS TO VEST IN COUNCIL

Hamilton City Council will use these values to record the assets once ownership has transferred following approval of s224c certification.

GENERAL DETAILS

Subdivision name	e:			
This informatior	n is certified as bei	ng true and c	orrect	
Completed by:	Land owner	Agent	Other (please specify) _	
Name:				
Signature:	Barry Pearson			_ Date signed:

SEND

Email this to subdivision@hcc.govt.nz. Alternatively, if you are attending a works clearance pre-application meeting, please bring this completed form with you.

SUMMARY OF LAND AND ASSETS TO VEST IN COUNCIL (excluding GST)

ASSET TYPE		COST/VALUE	REMOVE COUNCIL'S CONTRIBUTION	TOTAL VESTED
Land	(A)			
Water supply	(B)			
Wastewater	(C)			
Stormwater	(D)			
Roading	(E)			
Parks	(F)			
Other	(G)			
TOTAL (excluding GST)				



PLANNING GUIDANCE

SCHEDULE OF LAND AND ASSETS TO VEST IN COUNCIL

LAND, WATER SUPPLY, WASTEWATER AND STORMWATER (All values are to be exclusive of GST)

LAND (A)	DPS	MEASURE (AREA M2)	COST/VALUE	COUNCIL'S CONTRIBUTION
Roading				
Recreation reserve				
Local purpose reserve				
Other - please specify		· · ·		
		TOTAL		
		TOTAL VESTED		

WATER SUPPLY (B)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Mains	Metres		
Ridermains	Metres		
Services	No.		
Hydrants	No.		
Sluice and peat values	No.		
Other - please specify	· · ·	·	·

TOTAL	
TOTAL VESTED	

WASTEWATER (C)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Mains	Metres		
Manholes	No.		
Connections	No.		
Other - please specify	· · ·		
	TOTAL		
	TOTAL VESTED		

STORMWATER (D)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Mains	Metres		
Manholes	No.		
Connections	No.		
Outfalls (inlet/outlet structures)	No.		
Wetland/rain garden planting	Area (m²)		
Other - please specify	I	I	
	TOTAL		

TOTAL VESTED





SCHEDULE OF LAND AND ASSETS TO VEST IN COUNCIL

ROADING, PARKS AND OTHER (All values are to be exclusive of GST)

ROADING (E)	MEASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Pavement	Area (m²)		
Surfacing	Area (m²)		
Kerb and channel (full height)	Metres		
Berms	Area (m²)		
Footpaths (inc. walkways & cycleways)	Area (m²)		
Vehicle crossings (excl. residential)	Area (m²)		
Road drainage (catchpits & leads)	No.		
Street lighting	No.		
Signage	No.		
Subsoil drains	Metres		
Tactile pavers	No.		
Parking and bus bays	Area (m²)		
Sundries (bridges/culverts/walls/etc)	No.		
Other - please specify			
	ΤΟΤΑΙ		

IUTAL		
TOTAL	ESTED	

PARKS (F)	MEA	SURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Bollards	No.			
Landscaping (trees, shrubs)	Area (m²)			
Paths	Area (m²)			
Fencing	Metres			
Play equipment	No.			
Seats/benches/tables	No.			
Other - please specify	· · ·			

TOTAL	
TOTAL VESTED	

OTHER (G)	ME	ASURE	COST/VALUE	COUNCIL'S CONTRIBUTION
Buildings	No.			
Other - please specify				
	TOTAL			
	TOTAL VES	TED		



PLANNING GUIDANCE

Hamilton City Development Man	ual
Volume 4 : Quality Systems for Land Development	Part 9 — Appendices
Authorised by : Design Services Manager	

APPENDIX 4 i)

CERTIFICATION UPON COMPLETION OF ROADS, PIPELINES AND OTHER SERVICES

	(suitably qualified professional				
Chadwadh (,			
O: Chedworth P	roperties Limited				
	(Development Owner)				
O BE SUPPLIED TO	Hamilton City Council				
	(Territorial Authority)				
N RESPECT OF	Greenhill Park - Stage 13				
	(Description of Development Proj				
Popham Roa	d, Greenhill Park, Hamilton, New Zealand				
MP			******		

March 199	(Address)				
5 & L	has been engaged by .	Chedworth Pro	perties	limited	
(Survey Firm,		(Develop			
o provide construct	tion observation, review and certification serv	ices in respect	of the	above o	levelooment
그 사람 영어는 그 가지 않는 것 같아요. 이 것 같아.	the specification and shown on the drawings n				
Ham	ulton City Council	umbered statis	-s-on	2000 10 04	11315-6/12
ipproved by	(Territorial Authority)				•••••••
have sighted the	Hamilton City Council	consent and o	onditio	ns of con	sent to the
	(Territorial Authority)				
Development and th	e approved specification and drawings.				
As an independent p appropriate to the e the course of the w BELIEVE ON REASO	e approved specification and drawings. rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf vorks and the contractor's certification upon o NABLE GROUNDS that the works, other than coordance with the above consent and sound er	ormation suppl completion of t those outstandi ngineering prac	ied by he wo ng wo tice.	the contr rks (copy	actor during attached) I
As an independent p appropriate to the e the course of the w BELIEVE ON REASO been completed in a	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf orks and the contractor's certification upon o NABLE GROUNDS that the works, other than coordance with the above consent and sound er	ormation suppl completion of t those outstandi ngineering prac 5/3/202	ied by he wo ng wo tice.	the contr rks (copy rks listed	actor during attached) I below, have
As an independent p appropriate to the e the course of the w BELIEVE ON REASO been completed in a (Signature)	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon o NABLE GROUNDS that the works, other than coordance with the above consent and sound er definition of the state of the sound er definition o	ormation suppl completion of t those outstandi ngineering prac 5/3/202	ied by he wo ng wo tice.	the contr rks (copy rks listed	actor during attached) I below, have
As an independent p appropriate to the e he course of the w BELIEVE ON REASO been completed in a (Signature CMEngNZ, CPEng	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon o NABLE GROUNDS that the works, other than coordance with the above consent and sound er definition of the state of the sound er definition o	ormation suppl completion of t those outstand ngineering prac 5/3/202 ite	ied by he wo ng wo tice.	the contr rks (copy rks listed	actor during attached) I below, have
As an independent p appropriate to the e he course of the w BELIEVE ON REASO been completed in a (Signature CMEngNZ, CPEng	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon o NABLE GROUNDS that the works, other than coordance with the above consent and sound er <i>Coordance with the above consent and sound er</i> <i>Coordance with the above consent and so</i>	ormation suppl completion of t those outstand ngineering prac 5/3/202 te	ied by he wo ng wo tice.	the contr rks (copy rks listed NZIS	actor during attached) I below, have
As an independent p oppropriate to the e he course of the w BELIEVE ON REASO been completed in a (Signature CMEngNZ, CPEng (Profe	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon o NABLE GROUNDS that the works, other than coordance with the above consent and sound er <i>Coordance with the above consent and sound er</i> <i>Coordance with the above consent and so</i>	ormation suppl completion of t those outstand ngineering prac 5/3/202 ite	ied by he wo ng wo tice.	the contr rks (copy rks listed	actor during attached) I below, have
As an independent p appropriate to the e the course of the w BELIEVE ON REASO been completed in a (Signature CMEngNZ, CPEng (Profe	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon of NABLE GROUNDS that the works, other than coordance with the above consent and sound er <i>Location Da</i> switably qualified Professional) a Memb ssional Qualifications) ount Maunganui	ormation suppl completion of t those outstand ngineering prac 5/3/202 te	ied by he wo ng wo tice. 1	the contr rks (copy rks listed NZIS	actor during attached) I below, have
As an independent p appropriate to the e the course of the w BELIEVE ON REASO been completed in a (Signature) (Signature) CMEngNZ, CPEng (Prote 36 Kereiti Street, Mi	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon of NABLE GROUNDS that the works, other than coordance with the above consent and sound er <i>Location Da</i> switably qualified Professional) a Memb ssional Qualifications) ount Maunganui	ormation suppl completion of t those outstandi ngineering prac te	ied by he wo ng wo tice. 1	the contr rks (copy rks listed NZIS	actor during attached) I below, have
As an independent p appropriate to the e the course of the w BELIEVE ON REASO been completed in a (Signature CMEngNZ, CPEng (Prote 36 Kereiti Street, Mi Outstanding Works	rofessional, I or personnel under my control, ha ngagement and based upon these reviews, inf rorks and the contractor's certification upon of NABLE GROUNDS that the works, other than coordance with the above consent and sound er <i>Location Da</i> switably qualified Professional) a Memb ssional Qualifications) ount Maunganui	ormation suppl completion of t those outstand ngineering prac 5/3/202 ter CSNZ er CSNZ ACENZ CPEng	ied by he wo ng wo tice. 1	the contr rks (copy rks listed NZIS	actor during attached) I below, have

Hamilton City Develop	ment Manual
Volume 4 : Quality Systems for Land Development	Part 9 — Appendices
Authorised by : Design Services Manager	

APPENDIX 4 iii)

HAMILTON CITY COUNCIL

CERTIFICATE FOR AS-BUILT DRAWINGS

Greenhill Park - Stage 13 DEVELOPMENT

I, <u>Barry Pearson</u>, Chartered Professional Engineer/Surveyor, hereby certify that all of the information shown on the "as built" drawings and spreadsheets is correct as to location (x, y and z co-ordinates), size, materials. This applies to the following "as built" drawings:

Drawing No.	Title
21879-M-13-WW1-Rev AB	Stage 13 Wastewater Asbuilt Plan
21879-M-13-W1 Rev AB	Stage 13 Water Reticulation Asbuilt Plan
21879-M-13-SW1 Rev AB	Stage 13 Stormwater Asbuilt Plan
21879-M-13-RD1-Rev AB	Stage 13 Roading Asbuilt Plan

Barry Pearson

Chartered Professional Engineer/Surveyor

12/3/2021

Date

Strategic Development Unit Works Clearance Checklist

Note: Please refer to the Regional Infrastructure Technical Specifications for testing requirements and guidelines.

Consent Ref: 11.2018.6632

Site Address: Webb Drive, Greenhill Park

New Street Name: Stage 13 – Greenhill Park

Development Engineer:

Documentation	Completed	Date	Notes				
General							
GST register for all vested asset (PG L4 and PG L5)							
Upsize contribution documentation	N/A						
WEL completion certificate	Y	Not received	To be provided				
Gas completion certificate (where necessary)	Y	4/3/2021	Attached				
UFF completion certificate	Y	8/3/2021	Attached				
Roading							
Completion Certificate (PS4 or similar)	Y	Various	Similar Attached				
Subgrade							
 Stringing (relative shape and height) 	Y	1/12/2020	Attached				
 Compaction (natural subgrade – Scala, SIL sand- Scala, SIL brown rock – Clegg) 	Y	4/1/2020	Attached				
Subbase							
 Stringing (relative shape and height) 	Ŷ	4/12/20 Carrs Rd. 10/11/20 Webb Dr	Attached				
- Compaction (clegg)	Y	4/12/20 Carrs Rd. 10/11/20 Webb Dr	Attached				
- Nuclear densometer (NDMS)	Y	4/12/20 Carrs Rd. 10/11/20 Webb Dr	Attached				

Basecourse			
	Y	17-2-21	Attached
 Stringing (relative shape 		Carrs Rd	
and height)		11/2/2021	
		Webb Dr	
	Y	Carrs Rd	Attached
 Compaction (clegg) 		18-2-21	
	Y	14/2/21	Attached
 Nuclear densometer 		Carrs Rd.	
(NDMS)		10/2/21	
		Webb Dr	
	Y	14/2/2021	Attached
 Benkelman beam test 		Carrs Rd.	
		9/2/21	
		Webb Dr	
	Y	11/2/2021	Attached
RAMM Pavement		Webb Dr	
		18-2-2021	
		Carrs Rd	
	Y	6/3/2021	Attached
RAMM Surfacing		0, 3, 2021	, littlened
Streetlight			
		12/3/2021	Attached
Asbuilt Plan			
RAMM Streetlight	Y	12/3/2021	Attached
	Y	Not received	To be provided
Copy of approved application for			
new connection			
	Y	12/3/2021	Attached
Producer Statement			
CoC on ECC signed by sythemized	Y	20-2-2021 &	Attached
CoC or ESC signed by authorised		9/3/2021	
person	Y	Not received	To be provided
Asbuilt in format approved by WEL		Not received	To be provided
	Y	Not received	To be provided
Confirmation of practical completion			
or 224c sign off			
	Y	Not received	To be provided
WEL Networks approval sheet			
(Written confirmation from WEL for			
the acceptance of all underground			
cabling and circuitry)			
	Y	4/3/2020	Attached
Manufacturer's Warranty			
Documents			
Road Drainage			
	Y	12/3/2021	Attached
Asbuilt plan (subsoil/catchpit/leads			
Conservations flows and t	Y	12/3/2021	Attached
Secondary flow path			

Signage and Marking Asbuilt Plan	Y	12/3/2021	Attached
Water			•
Water as-built plan	Y	12/3/2021	Attached
Data Sheet	Y	12/3/2021	Attached
Pressure test certificate	Y	4/2/2021	Attached
DXF (if >2 lots)	N/A		
Bacteriological test result	Y	18/2/2021	Attached
Hydrant test (where necessary)	N/A		
RITS checklists			
 F6.1 Water reticulation design confirmation, 	N/A		Beca design
 F6.2 Water reticulation pipe laying checklist, 	Y	11/3/2021	Attached
 F6.3 Water reticulation final inspection checklist 	Y	11/3/2021	Attached
Wastewater			
Wastewater as-built plan	Y		Attached
Data sheet	Y	12/3/21	Attached
DXF (if >2 lots)	Y	06/11/2020	Attached
CCTV investigation	Y	10/3/2021	Submission email attached
Pipe Pressure test	Y	16/10/2020	Attached
Manhole pressure test	Y	16/10/2020	Attached
Trench backfill	Y	9/3/2021	Attached
RITS checklist			
 F5.1 wastewater design confirmation, 	N/A		Beca design
 F5.2 Wastewater pipe laying checklist, 	Y	16/12/2020	Attached
 F5.3 Wastewater manhole checklist, 	Y	16/12/2020	Attached
 F5.4 Wastewater trench backfill test summary, 	Y	16/12/2020	Attached

	V	0/2/2021	Attached
 F5.6 Wastewater pipe network- final inspection checklist, 	Y	9/3/2021	Attached
 F5.7 Pump station control programming checklist 	N/A		
Stormwater	•		
Stormwater as-built plan	Υ	06/11/2020	Attached
Data sheet	Y	06/11/2020	Attached
DXF (if >2 lots)	Y	06/11/2020	Attached
Wetland as-built plan (see RITS for minimum details required)	N/A		
Completed planting plan (confirmation that plants are in accordance with the accepted plan)	Y	06/11/2020	Attached
Proprietary device completion certificate	N/A		
Final operation and maintenance manual	N/A		
CCTV investigation	Y	10/3/2021	Submission email attached.
Trench backfill	Y	9/3/2021	Attached
RITS checklist			
 F4.1 Stormwater design checklist, 	N/A		Beca design
 F4.2 Stormwater pipe laying checklist, 	Y	14/12/2020	Attached
 F4.3 Stormwater manhole checklist, 	Y	14/12/2020	Attached
 F4.4 Stormwater trench backfill compaction test summary, 	Y	14/12/2020	Attached
 F4.5 Stormwater catchpit checklist, 	Y	14/12/2020	Attached
 F4.6 Stormwater pipe network final inspection checklist, 	Y	9/3/0221	Attached

	N/A		
- F4.7 Wetland construction			
inspection checklist,			
	N/A		
- F4.8 Wetland and	N/A		
inspection/Sign off checklist			
	N/A		
- Final Operation and			
Maintenance Manual			
	N/A		
 Final Water Impact 			
Assessment			
	As Built plan	12-3-2021	Sign off to be supplied from
Parks and Open Spaces Street			НСС
trees/planting sign off			
Bond			
	N/A		
Quote	,		
			To be supplied from HCC
Signed bond form			To be supplied nominee
	N/A		
Other:			

APPENDIX 9

As Built Drawings

- 21879-M-13-WW1-Rev AB Stage 13 Wastewater Asbuilt Plan
- 21879-M-13-W1 Rev AB Stage 13 Water Reticulation Asbuilt Plan
- 21879-M-13-SW1 Rev AB Stage 13 Stormwater Asbuilt Plan
- 21879-M-13-RD1-Rev AB Stage 13 Roading Asbuilt Plan
- H18006_130 to H18006_ 600 Lanscape As Built drawings by Boffa Miskell – stage 13

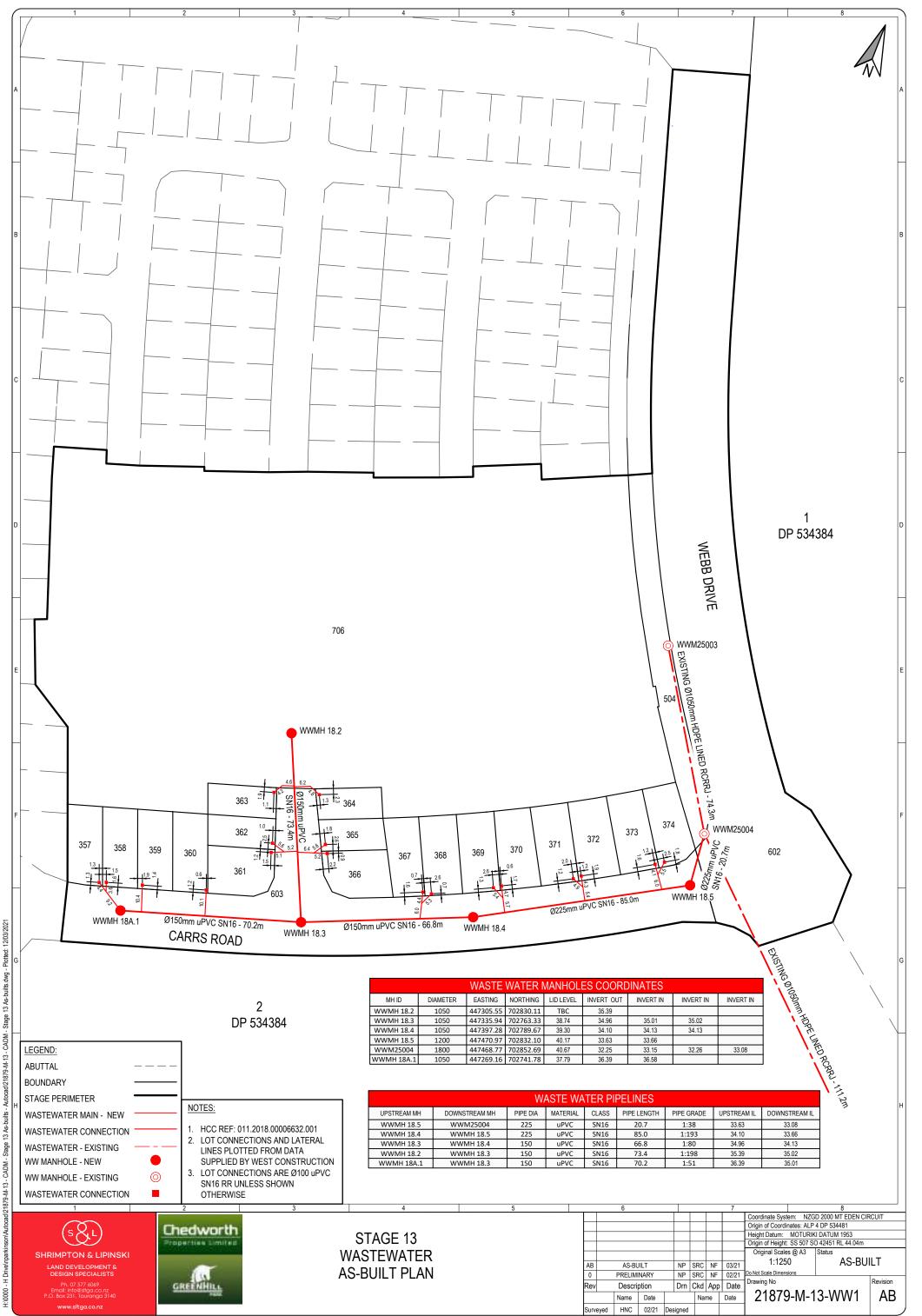
APPENDIX 10

Asset Spreadsheets – Hard copy

- Water asset sheets
- Wastewater asset sheets
- Stormwater asset sheets



Infrastructure Development Completion Report



WWMH 18.3	1050	447335.94	702763.33	38.74	34.96	35.01	35.02	
WWMH 18.4	1050	447397.28	702789.67	39.30	34.10	34.13	34.13	
WWMH 18.5	1200	447470.97	702832.10	40.17	33.63	33.66		
WWM25004	1800	447468.77	702852.69	40.67	32.25	33.15	32.26	33.0
WWMH 18A.1	1050	447269.16	702741.78	37.79	36.39	36.58		



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은 BOUNDARY					_	SV2	447459.4	-	702921.23 702833.61		FH2	447399.96	702975.68	
						SV3 SV4	447460.4		702833.61	_	FH3	447451.13	702886.15	
						SV5	447378.		702789.89		FH4	447405.39	702802.63	
						SV6	447380.3		702788.87		FH5	447425.41	702983.23	Н
						SV7 SV8	447387.3	-	702772.34	_	FH6	447382.49	703107.23	- "
						SV8 SV9	447395.0		702776.15	_				-
	IN	NOTES:				SV10	447471.9	-	702818.60					
tage						SV11	447374.3	-	703134.89					
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VALVE - EXISTING	\bowtie	2. WATERMAINS PLO DATA SUPPLIED B				SV13 SV14	447536.		702871.33	_				
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GENERAL NOTES

ALL SET OUT MUST BE CHECKED AND APPROVED BY THE LANDSCAPE ARCHITECT ON SITE.

THE CONTRACTOR SHALL REQUEST, AND HAVE UNDERTAKEN, AN INSPECTION OF ALL SET OUT PRIOR TO ANY CONCRETE BEING PLACED OR PAVING LAID.

THE CONTRACTOR SHALL REQUEST, AND HAVE UNDERTAKEN, AN INSPECTION OF THE SET OUT OF ALL CONTROL JOINTS PRIOR TO COMMENCING SAW CUTTING.

All drawings shall be read in conjunction with the landscape specifications.

Drawings not to be scaled, use dimensioned measurements only.

SITE FURNITURE NOTES

All timber to have a graffiti guard applied in accordance with the manufacturers specifications.

SOFT LANDSCAPE NOTES

All grass areas to be finished 25mm higher than adjoining surface to allow for settlement.

All trees to be inspected and approved by the Landscape Architect prior to delivery to site.

Planting numbers are indicative. Contractor to ensure sufficient stock to achieve the specified planting densities.

All areas of open space planting, amenity planting and berm planting to be mulched in accordance with the specifications and drawings.

Refer to specifications for requirements on the preparation of planting and grass areas.

PLANTING

PLANT LAYOUT

PLANT SPECIES UP TO 0.5M HIGH AT MATURITY The Contractor shall ensure the planting pit is setback 0.6m (minimum) from the edge of all footpaths and road edges.

PLANT SPECIES 0.5M HIGH OR GREATER AT MATURITY The Contractor shall ensure the planting pit is setback 1m (minimum) from the edge of all footpaths and road edges.

PAVING

P01 TIMBER DECK

Surface finish: Pinus radiata (H5) timber decking. All timber decking shall be butt-jointed. Surface fixing: Securely fix decking at each joist with 2 x 304 (or better) stainless steel countersunk timber screws. Ensure all screws are aligned straight. Finish: Resene Furniture and Decking Oil or equal. Refer Data Sheet D503. Compaction of subbase to be inspected by Engineer prior to commencement of decking.

P03 INSITU CONCRETE PAVING Surface finish: U5 soft bristled broom finish in general accordance with NZS 3114, ensure the aggregate is not exposed. Aggregate: 13mm Greywacke. Oxide: 8% Black 330 Oxide. All concrete finishes shall be in accordance with NZS 3114:1987. Control joints: 5mm wide, formed by sawcutting in accordance with the drawings and specifications. All insitu concrete paving to include control joints, construction joints and expansion joints in accordance with the drawings and

specifications to Engineer's approval. Compaction of subbase to be inspected by Engineer prior to commencement of paving.

P04 INSITU CONCRETE MOWING STRIP Note width varies. Surface finish: U5 soft bristled broom finish in general accordance with NZS 3114, ensure the aggregate is not exposed. Aggregate: 13mm Greywacke. Oxide: 8% Black 330 Oxide. All concrete finishes shall be in accordance with NZS 3114:1987. Control joints: 5mm wide, formed by sawcutting in accordance with the drawings and specifications. All insitu concrete paving to include control joints, construction joints and expansion joints in accordance with the drawings and specifications to Engineer's approval. Compaction of subbase to be inspected by Engineer prior to commencement of naving.

SITE FURNITURE, SPECIAL FEATURES AND STRUCTURES

S01 SEAT

Type: Santa & Cole Trapecio Seat. Manufacturer: Fel Group Street Furniture NZ. Contact: Jordan Manfield <jordan@felgroup.co.nz> Size: L 4000mm with back. Material: Laminated pine, galvanised mild steel frame. Finish: Resene Furniture and Decking Oil or equal. Refer Data Sheet D503. Graffiti guard: Graffiti-Guard™ Shearcote Plus. Fixing: Surface mount to timber decking. Sub surface mount into concrete paving. Installation: In accordance with manufacturer's instructions. Mowing strip: P04 insitu concrete mowing strip 6100 x 1510nm (minimum 350nm concrete all round seat). Maintenance: Reapply Resene Furniture and Decking Oil and Graffiti-Guard™ Shearcote Plus every 2 years in accordance with the manufacturer's instructions.

S02 LITTER BIN Type: Milford Bin. Manufacturer: Fel Group Street Furniture NZ. Contact: Jordan Manfield <jordan@felgroup.co.nz> Size: 100 Litre. Material: Eucalyptus saligna timber slats with brass fixings, polished stainless steel lid and lock. Finish: Resene Furniture and Decking Oil or equal. Refer Data Sheet D503. Graffiti guard: Graffiti-Guard™ Shearcote Plus. Fixing: Plant mounted. Installation: In accordance with manufacturer's instructions.

S03 BOLLARD Type: HCC RITS D7.7 Timber Bollard. Installed at 1.5m centres maximum. No chain

S04 REMOVABLE LOCKABLE BOLLARD Type: Removable lockable bollard to match HCC RITS D7.7 Timber Bollard. Installed at 1.5m centres maximum. No chain.

KEY

FITNESS TRAIL

STATION 6 EQUIPMENT

FT12 HORIZONTAL LADDER Type: Proludic Wooden Trim Trail JPS21S Horizontal Ladder Supplied and installed by: Playco Equipment Limited. Contact: David Morrison <david@playco.co.nz>

FT13 CLIMBING LADDER Type: Proludic Wooden Trim Trail JPS22 Climbing Ladder Supplied and installed by: Playco Equipment Limited. Contact: David Morrison <david@playco.co.nz>

SURFACES

PL01 ARTIFICIAL TURF Type: Urban Windsor. 15mm sand infill. Supplied and installed by: Lawn & Turf Contracting Limited. Contact: Mike Glasson <office@lawnandturf.co.nz>

PL02 BASE COURSE PREPARATION Type: 100mm GAP20. Hidden H5 Pinus radiata edge board for fixing of artificial turf. Supplied and installed by: Lawn & Turf Contracting Limited. Contact: Mike Glasson <office@lawnandturf.co.nz>

PL03 SUB SURFACE DRAINAGE Type: C110mm perforated HDPE coil drain with filter sock. Trench: 300 x 300mm, backfill with 20/40 drainage chip. Allow to connect the coil drain to the stormwater system. All works shall comply with the NZ Building Code, NZ Drainage and Plumbing Act 1978 and all relevant Local Authority by-laws and regulations. All plumbing and drainage work shall be undertaken by a plumber

or drain layer, registered under the Building Act 2003.

PL04 PROPLAY PAD Type: 25mm thickness for a fall height up to 1.6m. Supplied and installed by: Lawn & Turf Contracting Limited. Contact: Mike Glasson <fifice@lawnandturf.co.nz>

PL09 INSITU CONCRETE EDGE RESTRAINT 200mm wide x 200mm deep 20MPa edge restraint. Surface finish: US soft bristled broom finish in general accordance with NZS 3114, ensure the aggregate is not exposed. Aggregate: 13mm Greywacke. Oxide: 8% Black 330 Oxide. All concrete finishes shall be in accordance with NZS 3114:1987. Lay edging true and straight to grade, alignment and level. Edge restraint shall be finished flush with the adjacent lawn surface.

NOTES CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.
 REV DATE
 DESCRIPTION

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 02.07.19
 ISSUED FOR CONSTRUCTION

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 12.03.21
 AS BUILT

CLIENT Chedworth Properties Ltd GF CONSULTANTS S & L Consultants Beca Kendelier Lighting GEN AS BUILT

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GREENHILL PARK AREA M STAGE 13

GENERAL ARRANGEMENT KEY SHEET AND NOTES Design ARo Drawn ARo Check MHu Appv'd

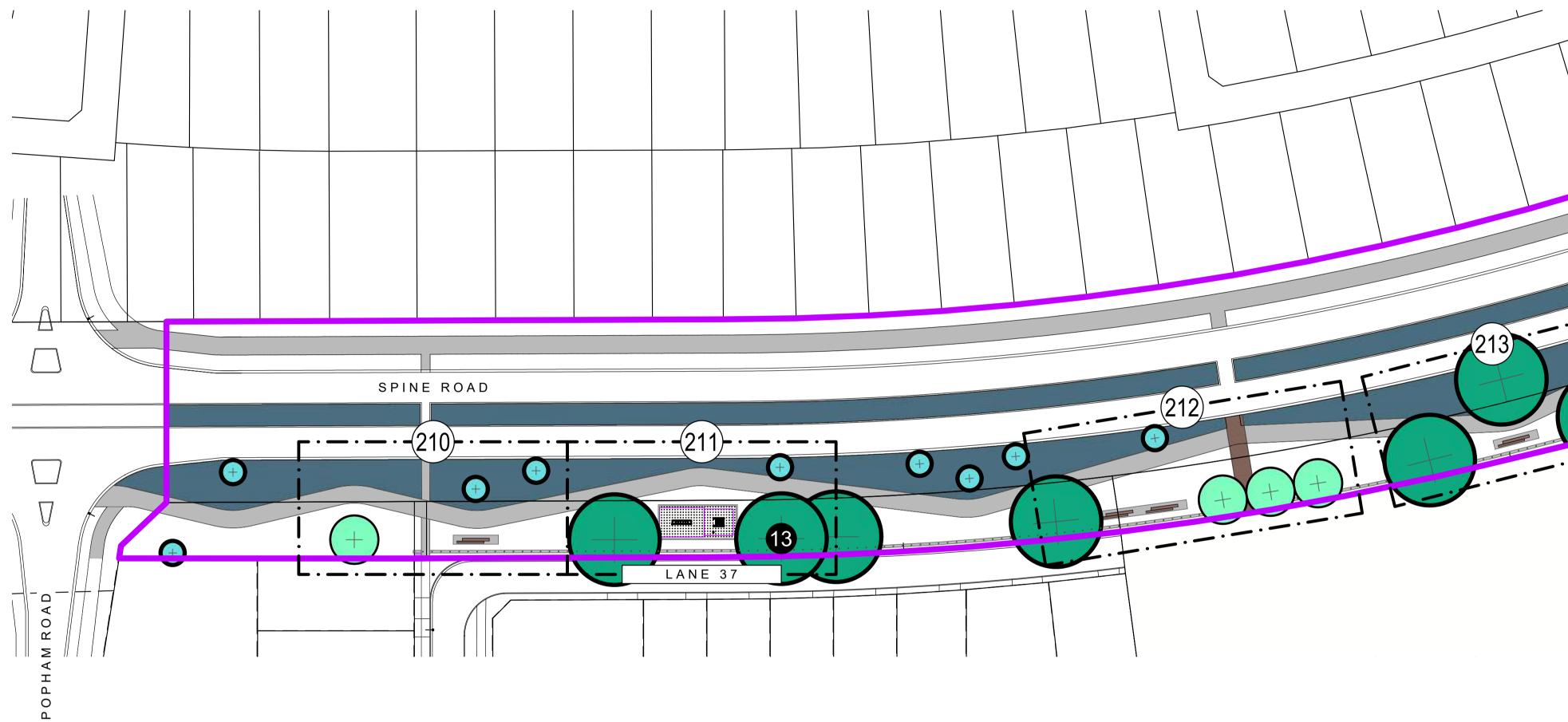
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DRAWING NO.

H18006_130

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NOTES

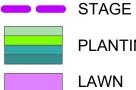
CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE REFER TO DRAWING NUMBER Level 3, SouthBloc PRIOR TO COMMENCING WORK;

> CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING STAGE 13 THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

www.boffamiskell.co.nz FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

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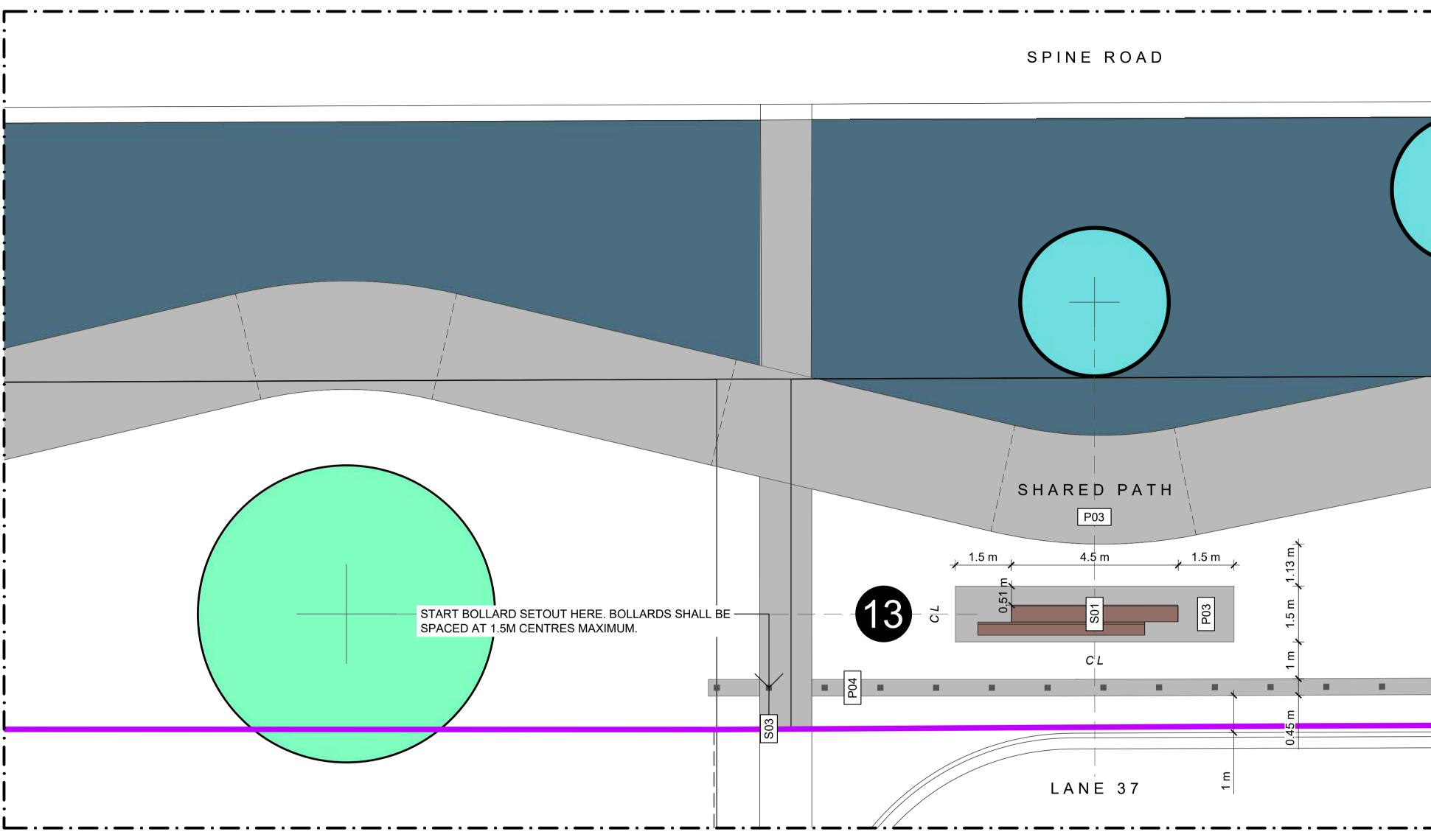


PLANTING

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REENHILL PARK REA M	Design ARo Drawn ARo Check MHu Appv'd	Scale 1:500 @ A1 1:1000 @ A3	Date 02.07.19
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NOTES

ALL SET OUT MUST BE CHECKED AND APPROVED BY THE LANDSCAPE

THE CONTRACTOR SHALL REQUEST, AND HAVE UNDERTAKEN, AN INSP OUT PRIOR TO ANY CONCRETE BEING PLACED OR PAVING LAID.

THE CONTRACTOR SHALL REQUEST, AND HAVE UNDERTAKEN, AN INSP OUT OF ALL CONTROL JOINTS PRIOR TO COMMENCING SAW CUTTING.



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NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE Level 3, SouthBloc PRIOR TO COMMENCING WORK;

> CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

www.boffamiskell.co.nz FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

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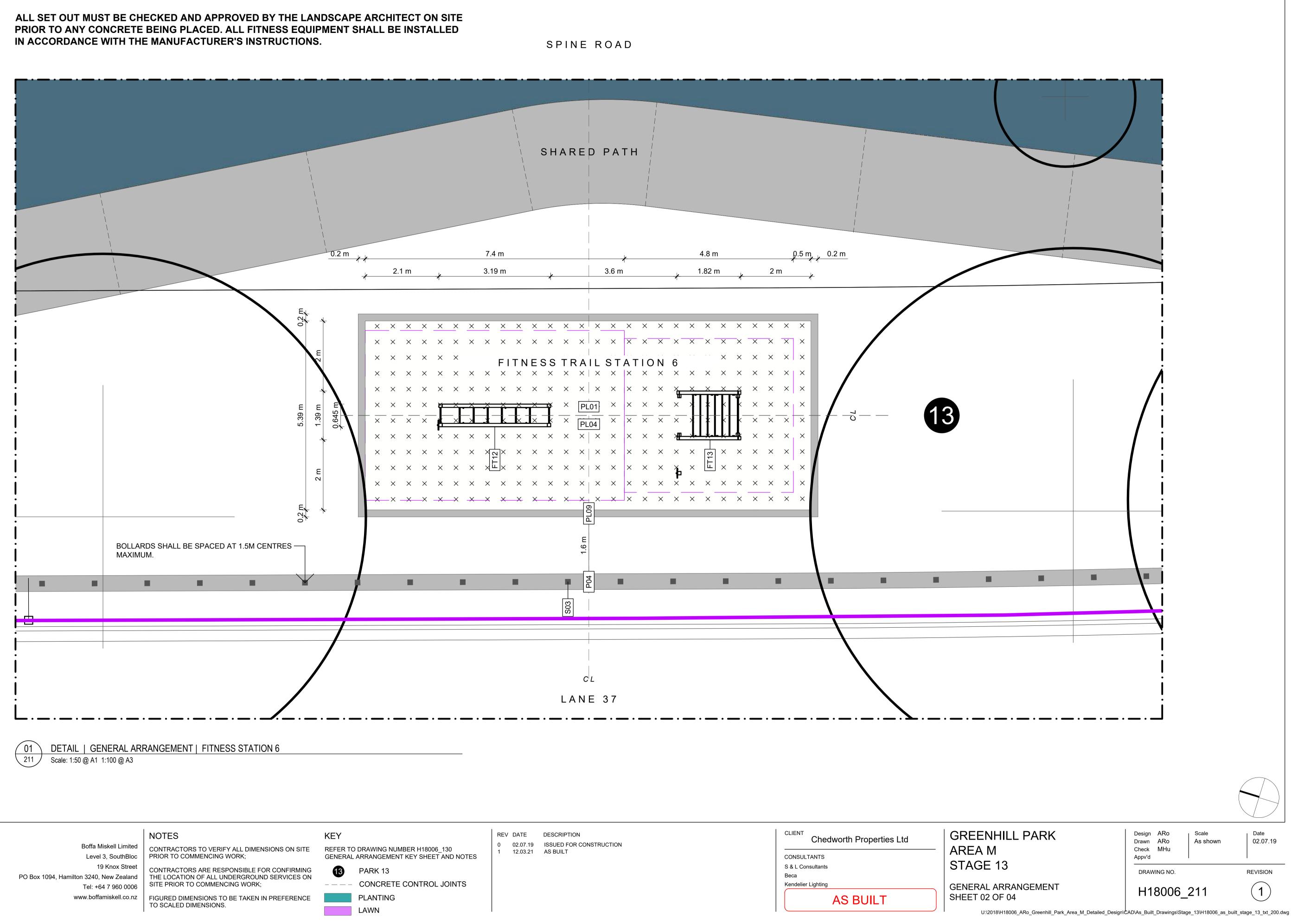
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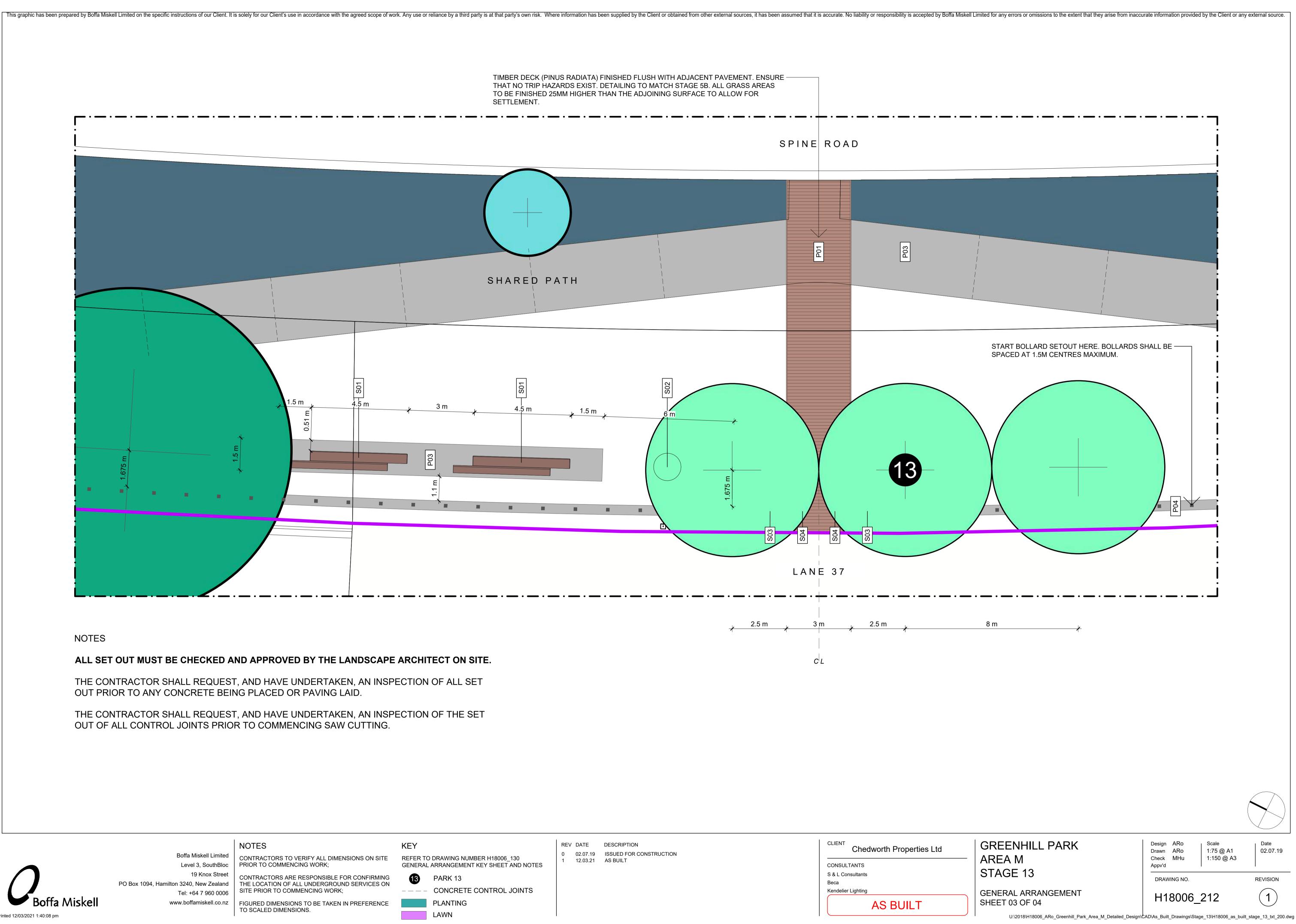
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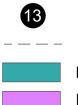


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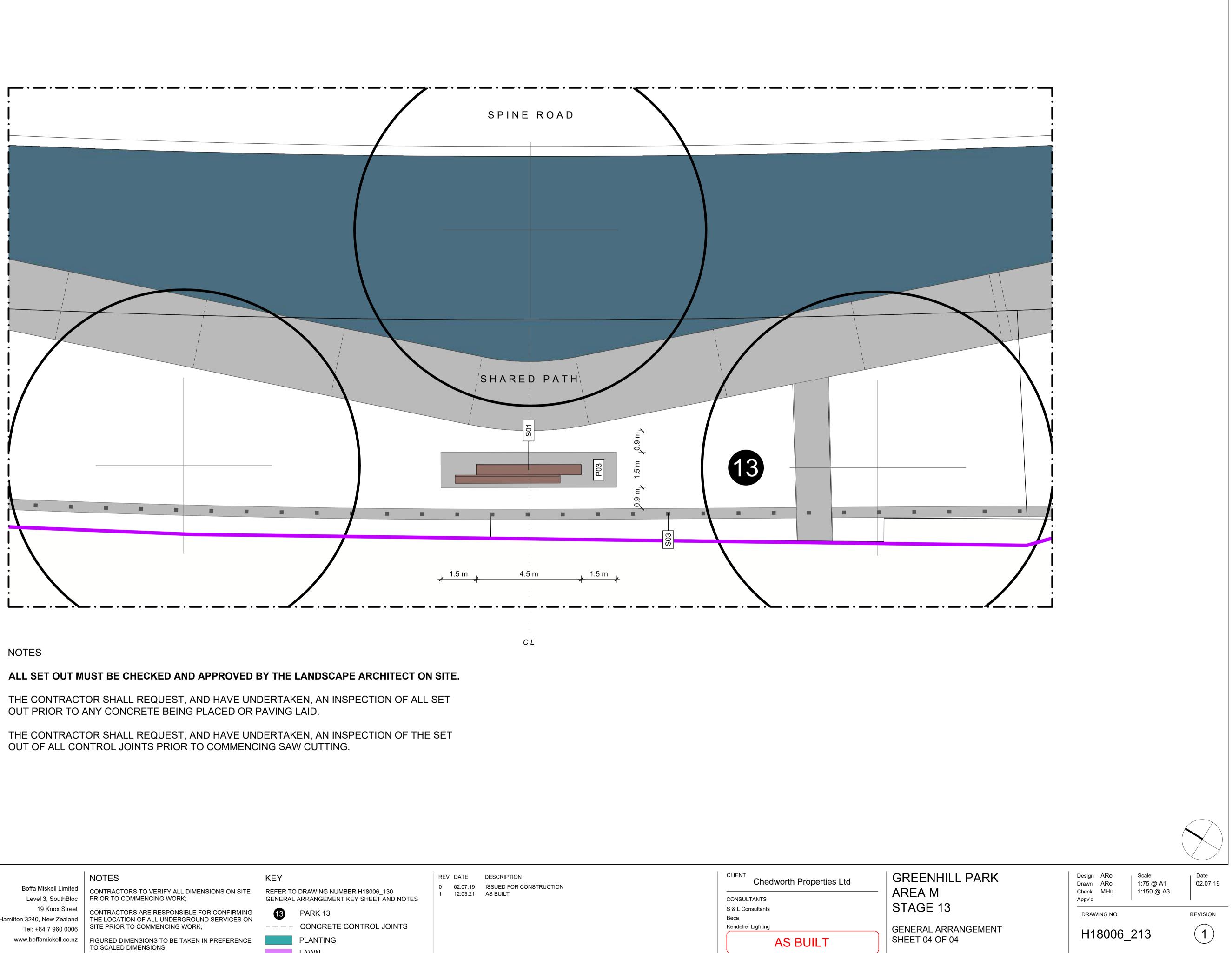
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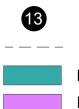
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PO Box 1094, Hamilton 3240, New Zealand



LAWN

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			S & L Consultants	S
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ONTROL JOINTS			Kendelier Lighting	_ GE
			AS BUILT	SF

GENERAL NOTES

All drawings shall be read in conjunction with the landscape specifications.

Drawings not to be scaled, use dimensioned measurements only.

Setout to be checked and approved by the Landscape Architect on site.

SOFT LANDSCAPE NOTES

All trees to be inspected and approved by the Landscape Architect prior to delivery to site.

Planting numbers are indicative. Contractor to ensure sufficient stock to achieve the specified planting densities.

All areas of amenity planting and berm planting to be mulched in accordance with the specifications and drawings.

Refer to specifications for requirements on the preparation of planting and grass areas.

PLANT LAYOUT

PLANT SPECIES UP TO 0.5M HIGH AT MATURITY

The Contractor shall ensure the planting pit is setback 0.45m (minimum) from the edge of all footpaths and road edges.

PLANT SPECIES 0.5M HIGH OR GREATER AT MATURITY

The Contractor shall ensure the planting pit is setback 1m (minimum) from the edge of all footpaths and road edges.

Planting Schedule

Spine Road

Botanical Name

Specimen Trees

Fagus sylvabca Knightia excelsa

Berm Planting

Carex dipsacea Carex testacea Libertia grandiftora Libertia ixioides Lomandra tanika Phormium 'Pepe'

Planting Area Mulch

Collector Road

Botanical Name

Specimen Trees Fagus sylvatica -

Quercus robur

Barm Planting

Carex dipsacea Phormium 'Pepe'

Planting Area Mulch

Recreation Reser

Botanical Name

Specimen Trees

Fagus syivatica

Magnolia soulangeana x Itliff Prunus yedoensis 'Awanui'

Boffa Miskell Printed 12/03/2021 1:44:36 pm

Boffa Miskell Limited Level 3, SouthBloc 19 Knox Street PO Box 1094, Hamilton 3240, New Zealand Tel: +64 7 960 0006

NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK;

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

www.boffamiskell.co.nz FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

le	I			
	Common Name	Size	Centres (m)	Quantity
	european beech	100-190L	As shown	1
	rewarewa	100-180L	As shown	17
	teasel sedge	11	05	1.930
	orange sedge	12	0.5	586
	mikorkor New Zealand ms	12	05	2,108
	mikoikoi, New Zealand iris	12	05	635
	tanika	11	0.75	697
	flax cultivar	12	0.5	266
				2,810 m2
				281 m3
	Common Name	Size	Centres (m)	Quantity
				quantity
	european baech	100-180L	As shown	2
	english oak	100-180L	As shown	5
	teasel sedge	11	05	385
	flax cultivar	fL	0.5	137
				275 m2
	-			27.5 m3
rve				
	Common Name	Size	Centres (m)	Quantity
	european beech	100-180L	As shown	8
fora 'Genie'	magnoba	100-180L	As shown	1
	flowening cherry	100-180L	As shown	5

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REVDATEDESCRIPTION002.07.19ISSUED FOR CONSTRUCTION131.07.20PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN212.03.21AS BUILT	CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants Beca Kendelier Lighting ASBUILT	GREENHILL PARK AREA M STAGE 13 PLANTING SCHEDULE GENERAL ARRANGEMENT NOTES U:\2018\H18006_ARo_Greenhill_Park_Area_M_Deta
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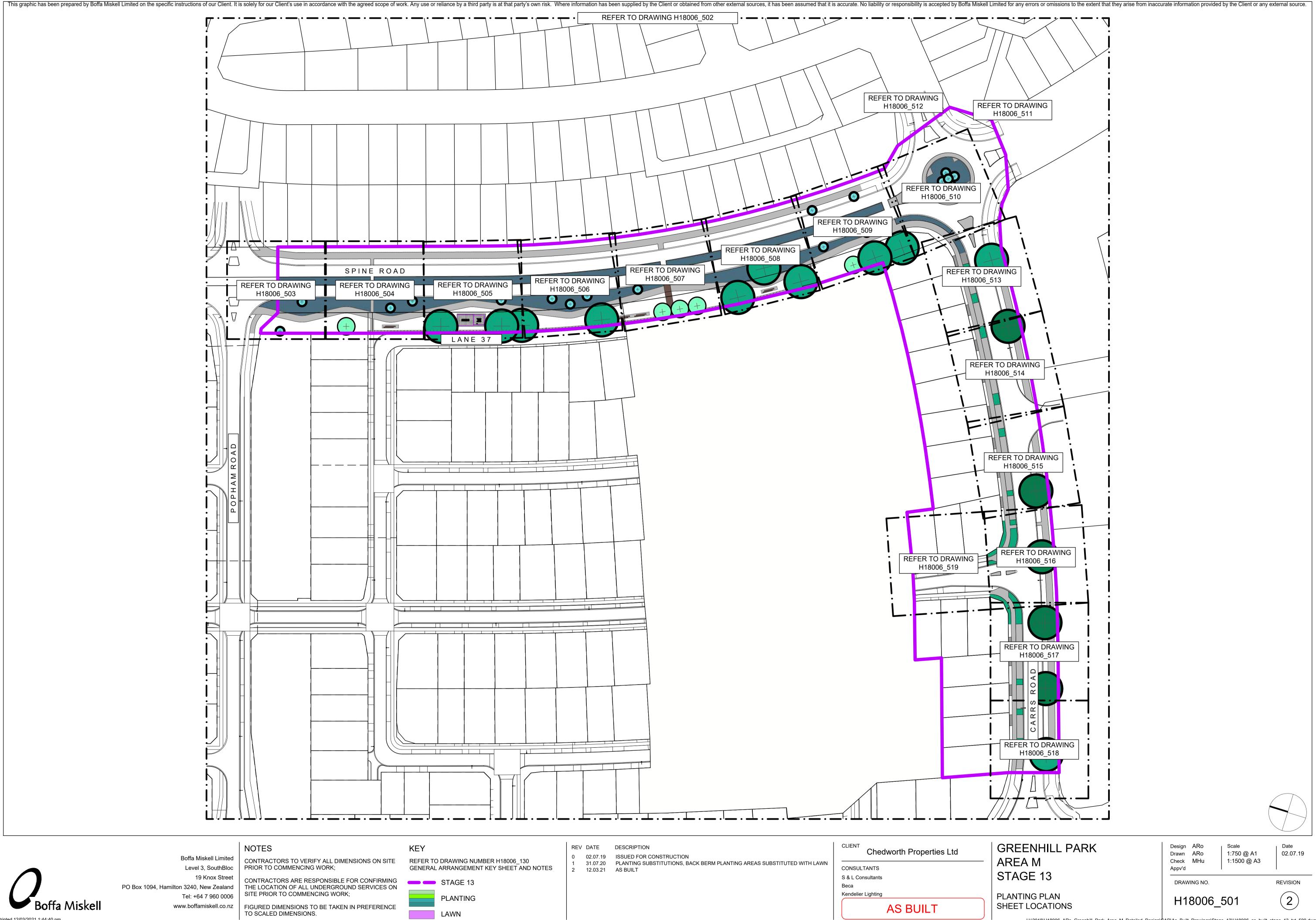
Scale NTS

Date 02.07.19

DRAWING NO. H18006_500 REVISION



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Key

+	Y
-	

Fagus sylvatica (european beech)

Knightia excelsa (rewarewa)

SPINE ROAD

Berm Planting

Lawn

COLLECTOR ROAD (CARRS ROAD)

Fagus sylvatica (european beech)

Quercus robur (english oak)

Berm Planting

l awn

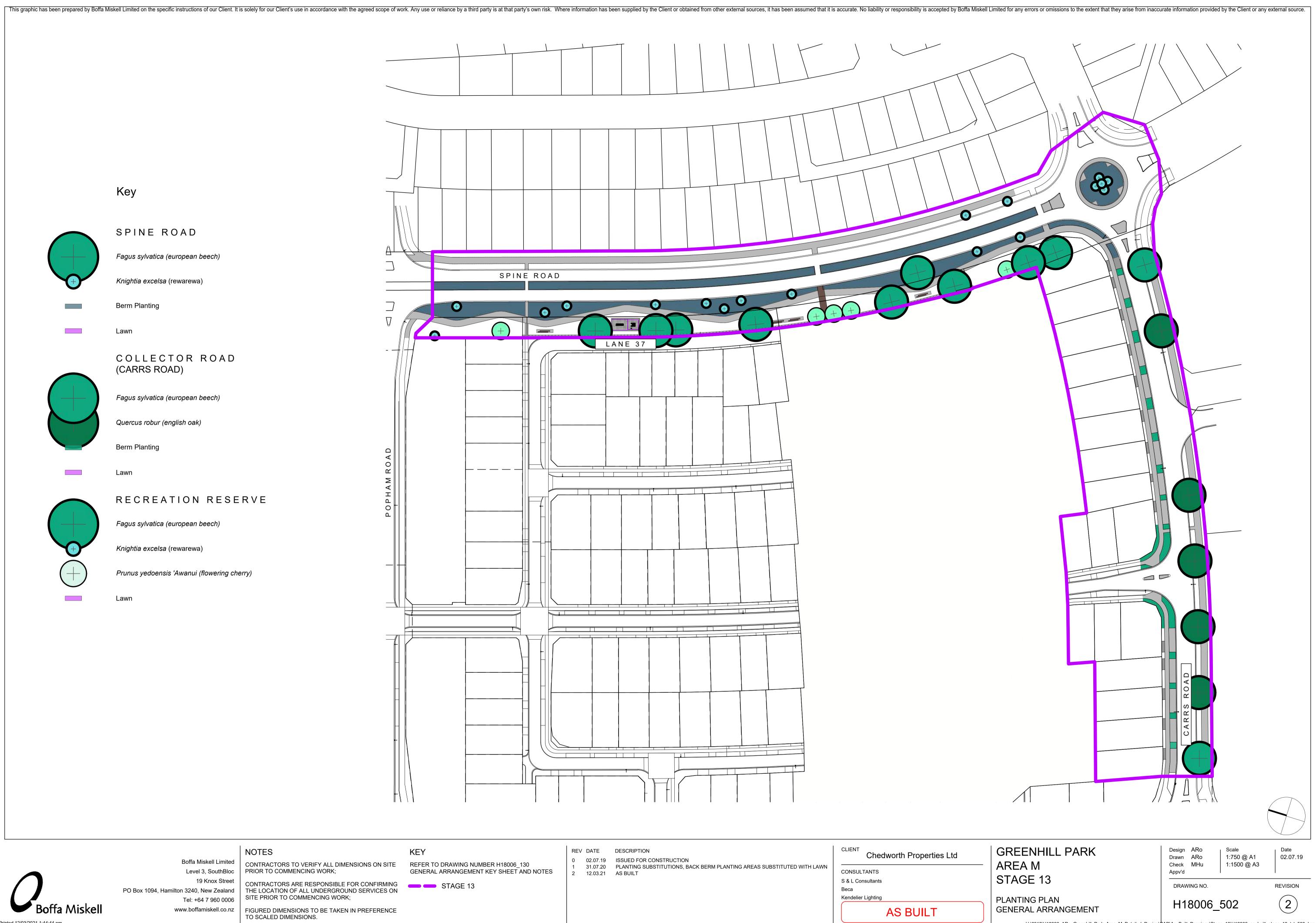


Fagus sylvatica (european beech)

Knightia excelsa (rewarewa)

Prunus yedoensis 'Awanui (flowering cherry)

Lawn



NOTES



CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING - STAGE 13 THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

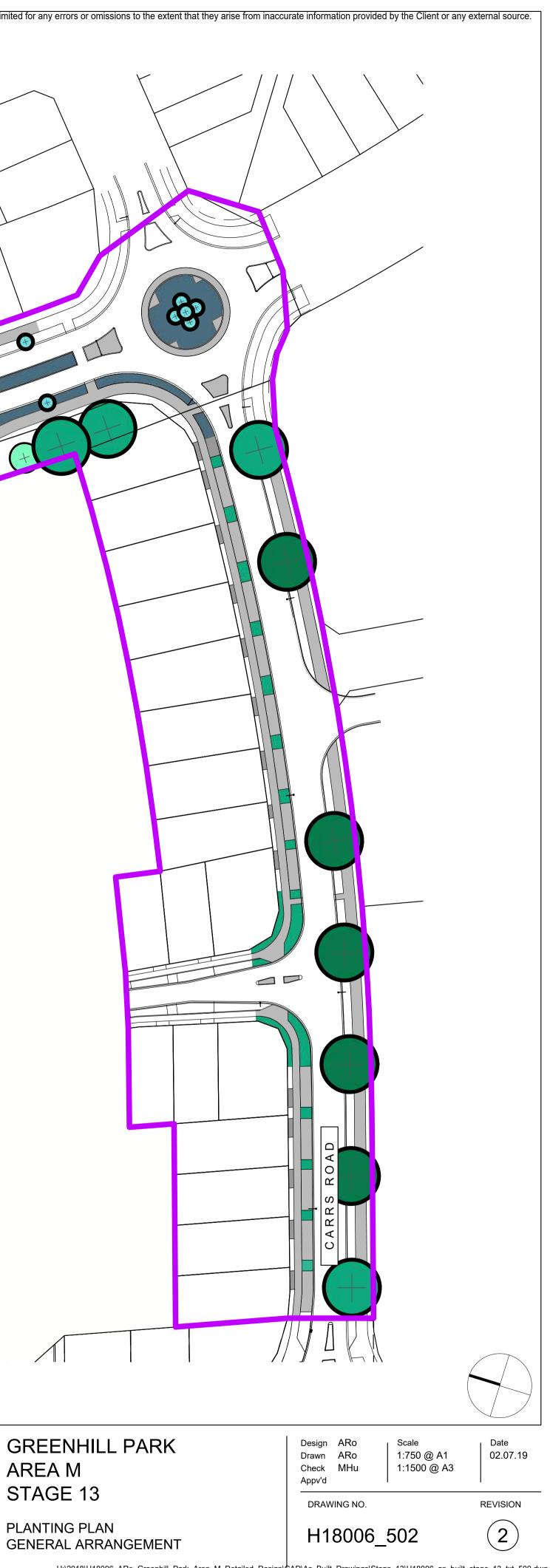
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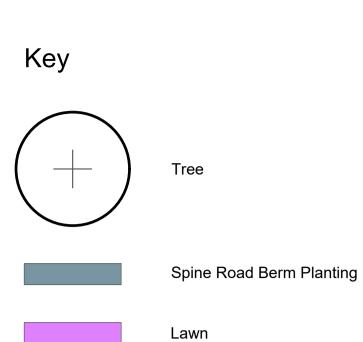


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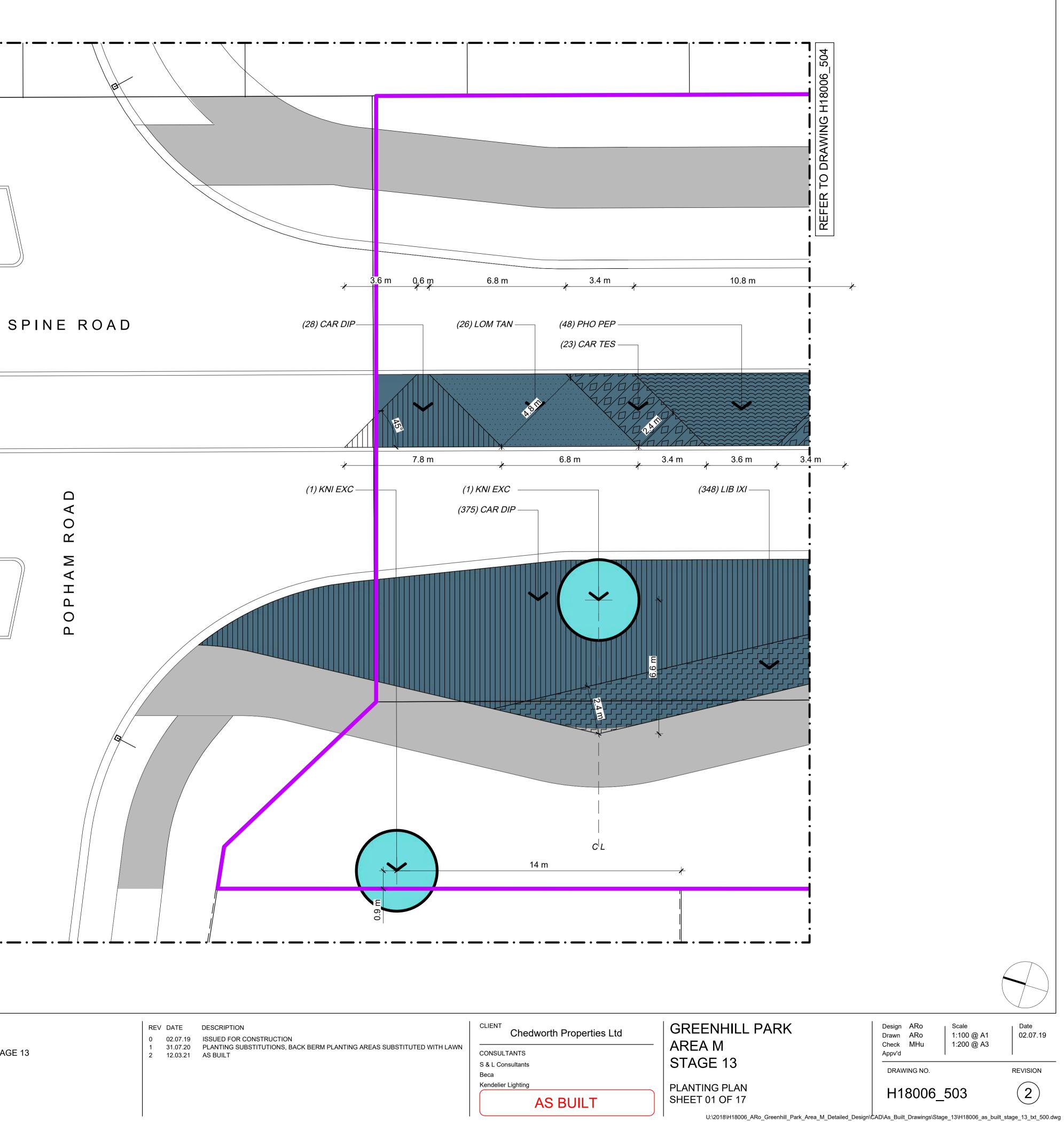
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AIE .	DESCRIPTION
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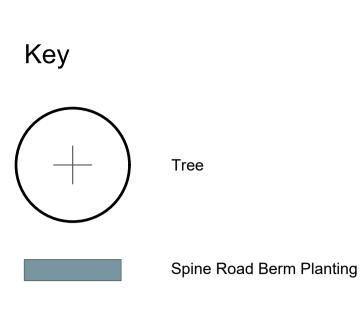
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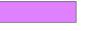
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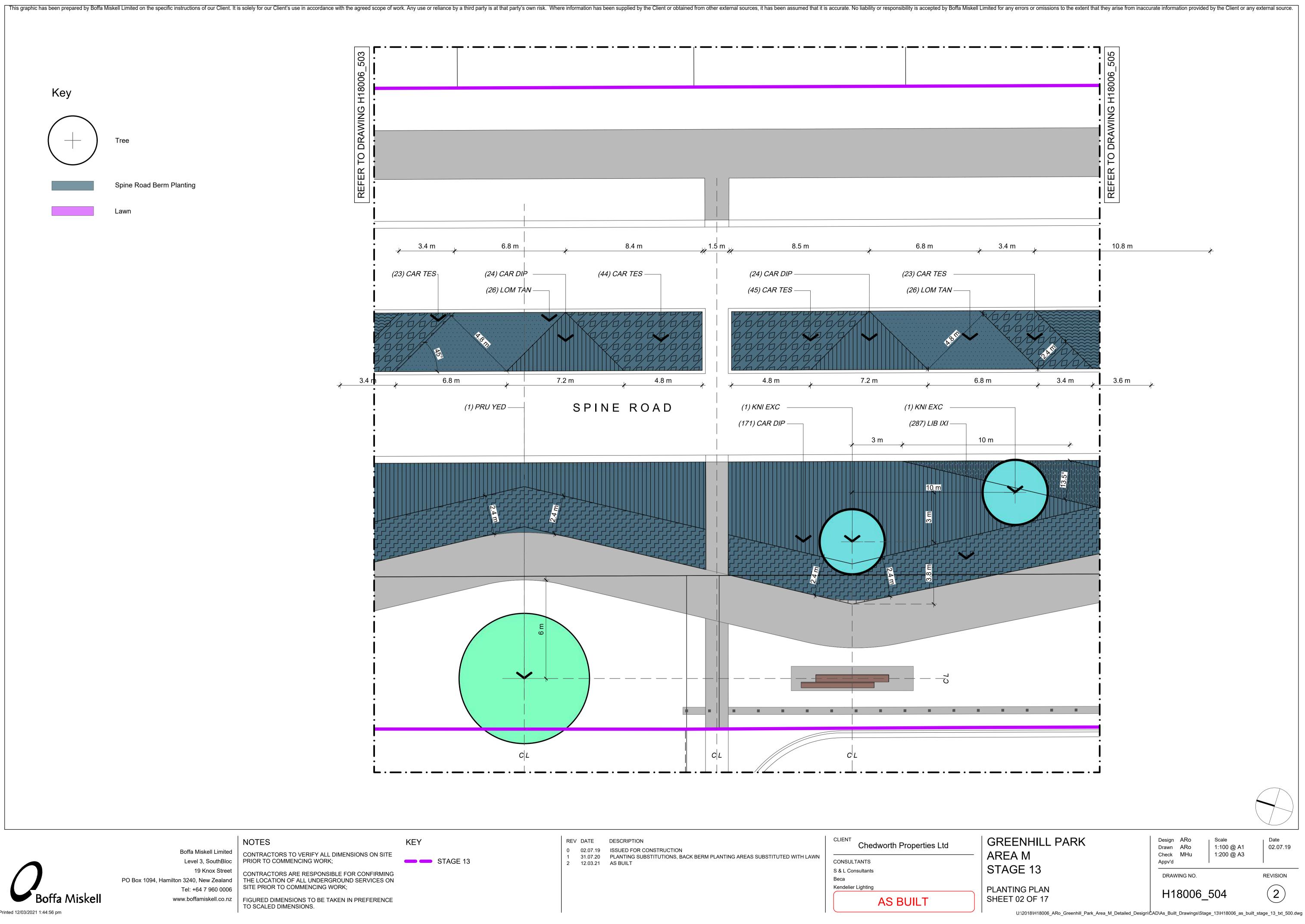
KEY



REV DA	ATE	DESCRIPTION	CLIENT Chedworth Properties Ltd
0 02.	2.07.19	ISSUED FOR CONSTRUCTION	
	1.07.20	PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN	CONSULTANTS
2 12.	2.03.21	AS BUILT	
			S & L Consultants
			Веса
			Kendelier Lighting
			AS BUILT









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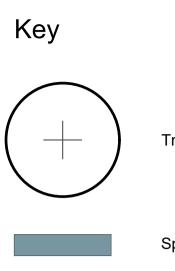
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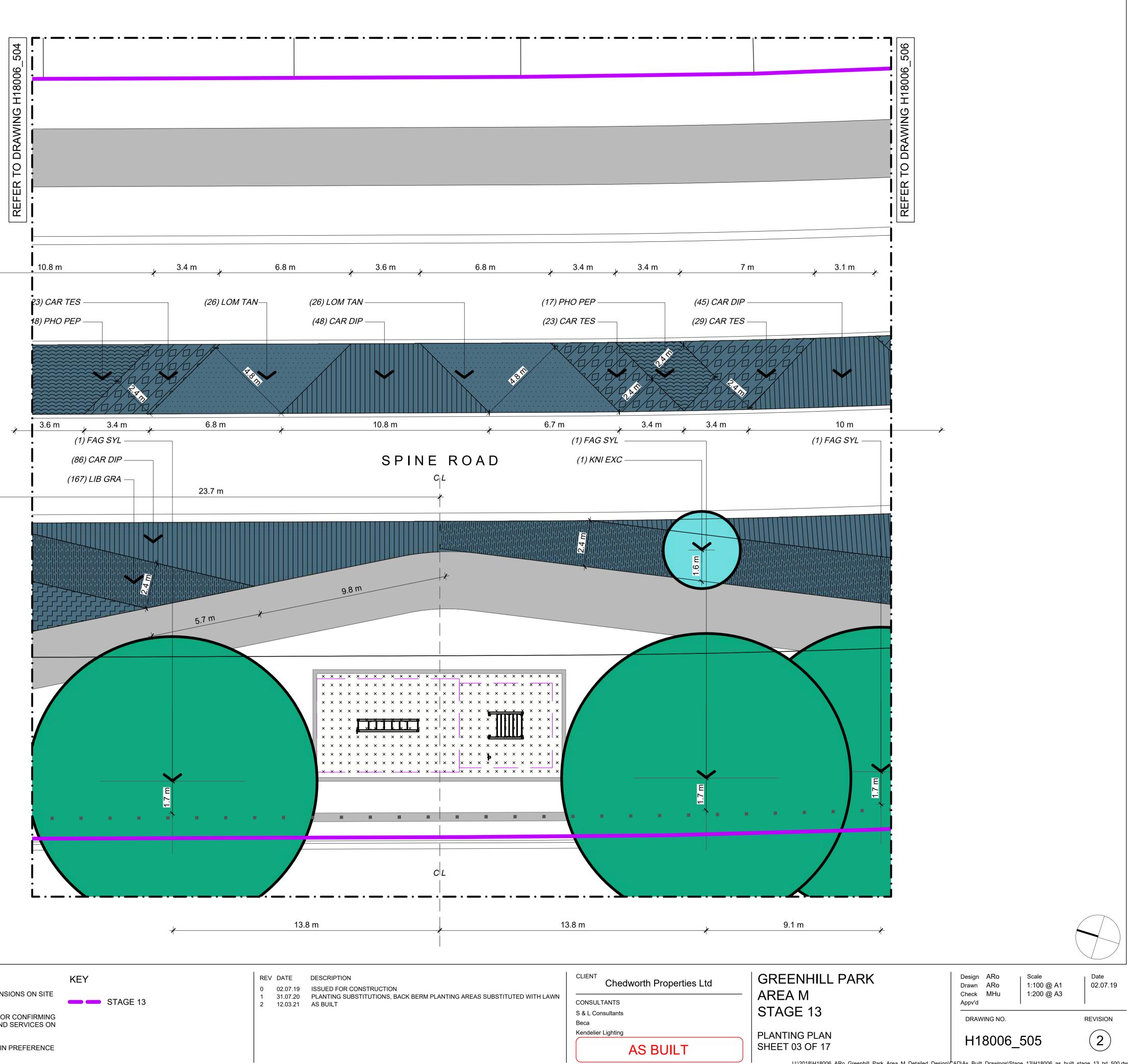
REV D	DATE)2.07.19	DESCRIPTION ISSUED FOR CONSTRUCTION	Chedworth Properties Ltd
-	31.07.20 12.03.21	PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN AS BUILT	CONSULTANTS S & L Consultants Beca Kendelier Lighting
			AS BUILT



Tree

Spine Road Berm Planting

Lawn





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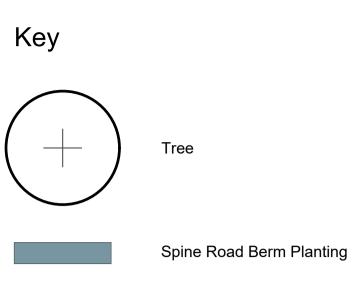
www.boffamiskell.co.nz FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

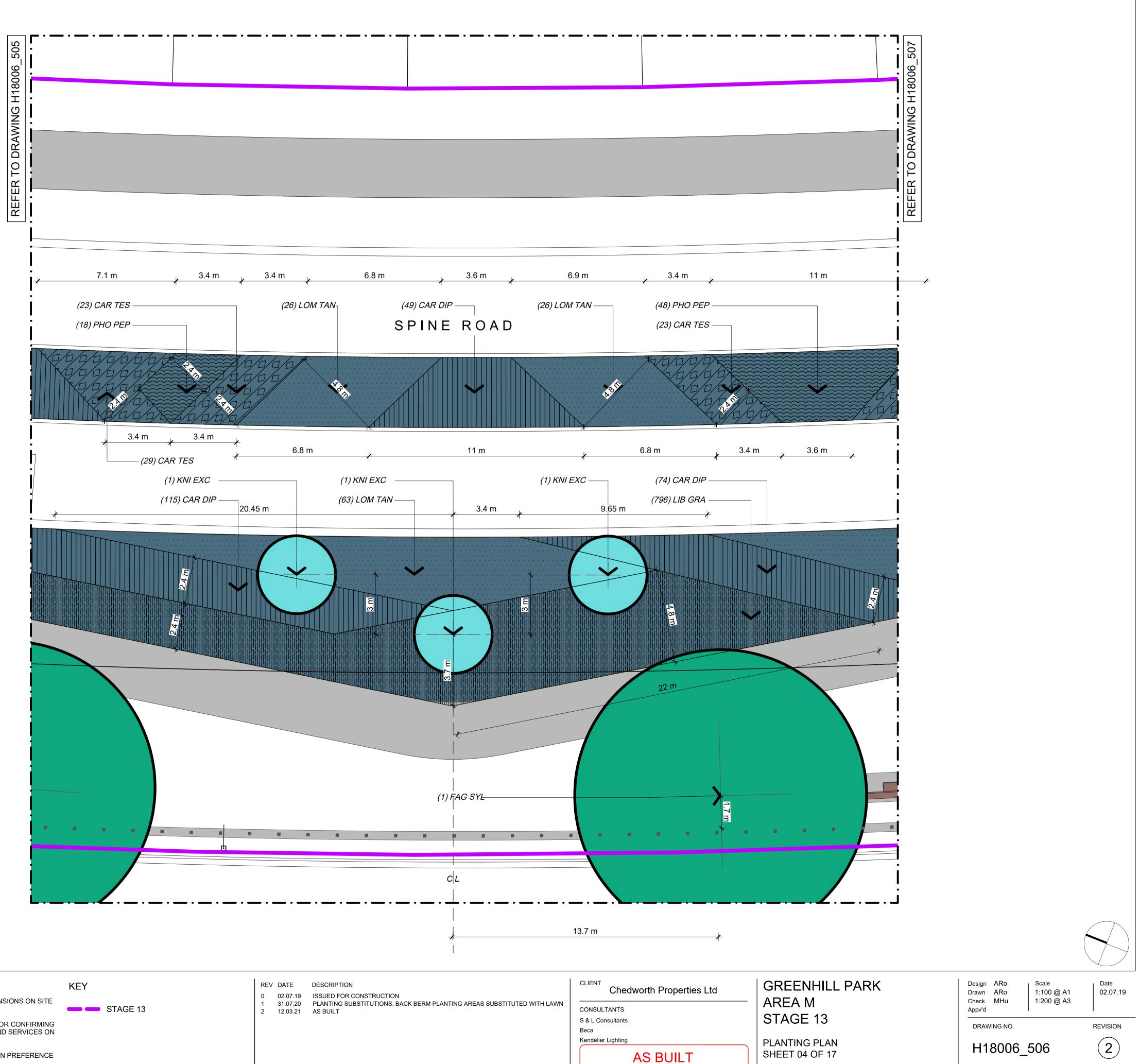
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	Chedworth Propert
M PLANTING AREAS SUBSTITUTED WITH LAWN	CONSULTANTS
	S & L Consultants
	Beca
	Kendelier Lighting









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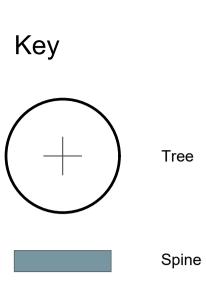
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Spine Road Berm Planting

506 H18006 REFER TO DRAWING 3.3 m + 6.7 m 3.3 m (1) KNI EXC —

KEY



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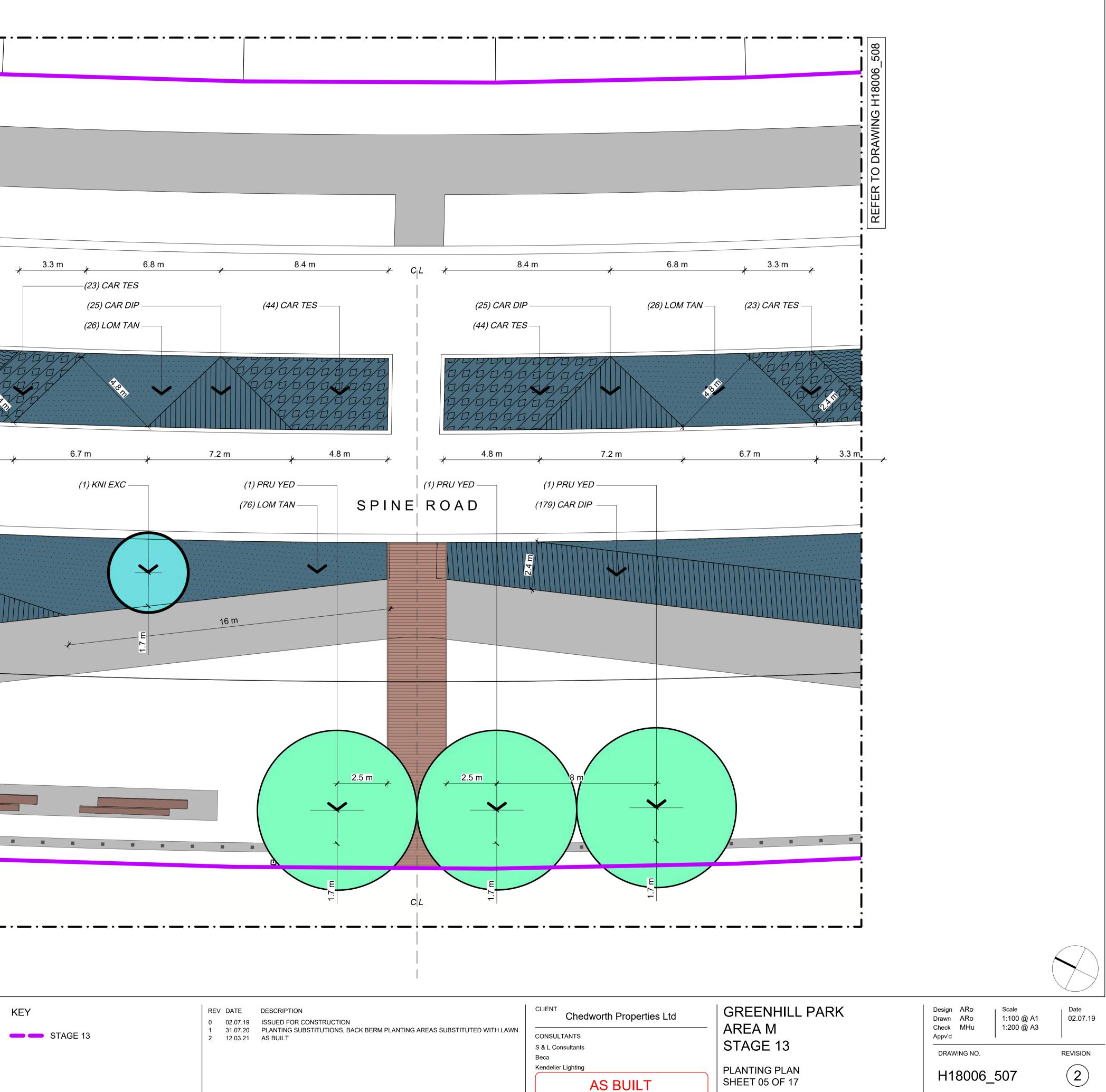
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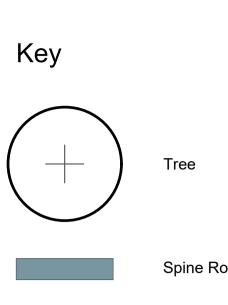
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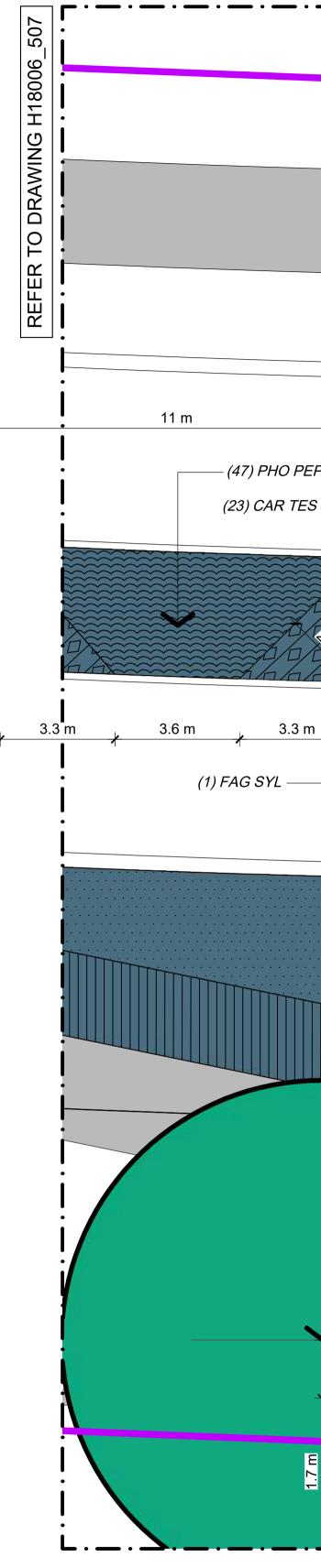
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					20
					000
Kev	ŭ				μ





Spine Road Berm Planting

Lawn



6.7 m

(246) LOM TAN —

KEY



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 *	 14.8 m	14.8 m
REV DATE 0 02.07.19 1 31.07.20 2 12.03.21	PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH I	LAWN CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants Beca Kendelier Lighting PL SH

	3.3 m	6.7 m3.	6 m 6.7	7 m 3.3 m	→ 3.3 m	*
EP	(26) LOM TAN —	(48) CAR DIP ——	(26) LOM T	AN (17) PHO PEP		(13) LOM
				(23) CAR TES —		(29) CAR
····	7 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7					
				× 1/1/1		
				A BIN		
						7/1/1/1
		· · · · · · · · · · · · · · · · · · ·				

SPINE ROAD

(1) FAG SYL -

6.7 m

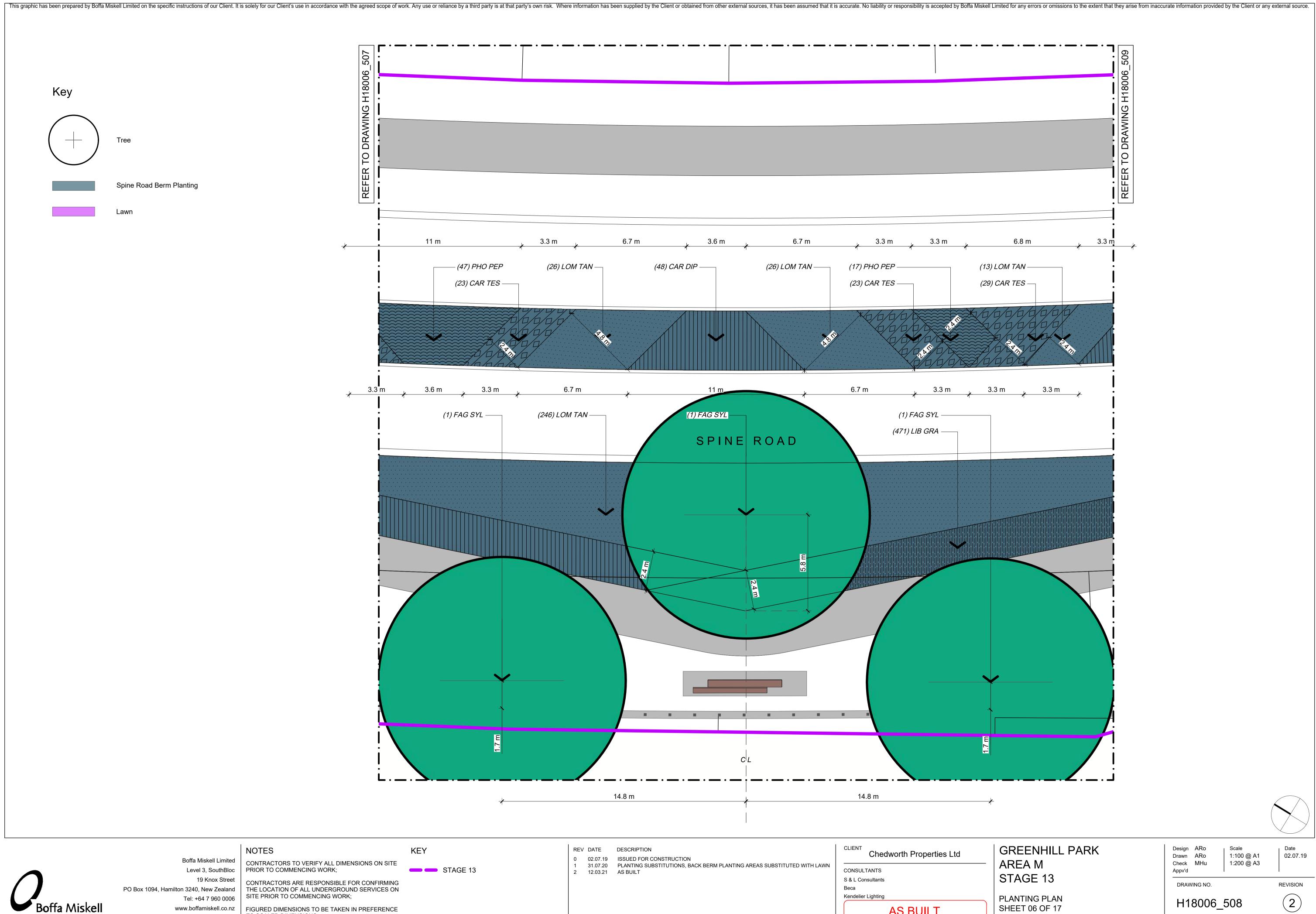
3.3 m

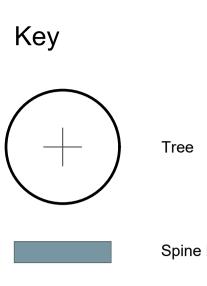
(1) FAG SYL –

(471) LIB GRA —

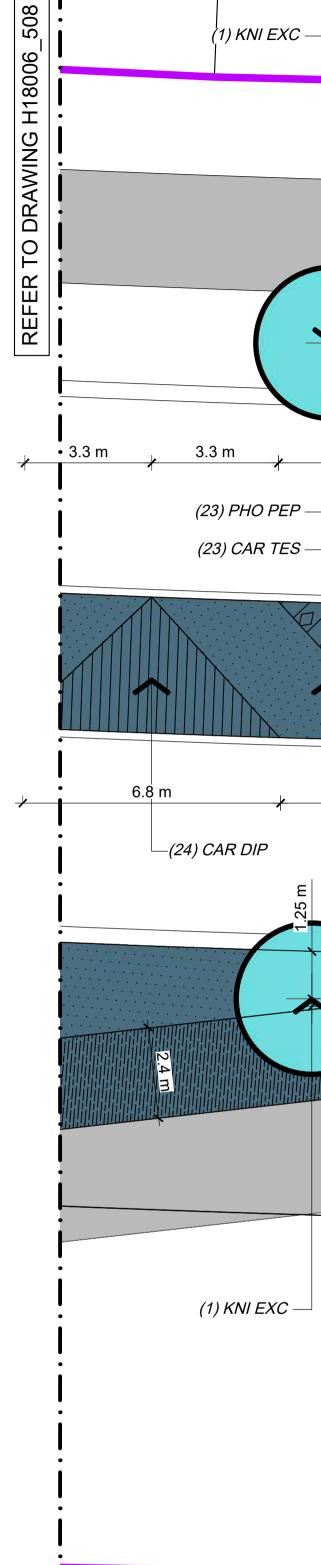
3.3 m

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Spine Road Berm Planting



KEY



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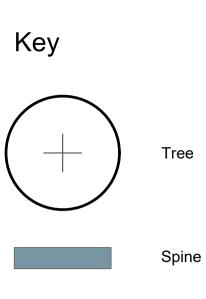
STAGE 13

•	 . . .	<u> </u>	• · — · — · — ·		· — · — · — · — ·	
				(1) KNI EXC ———		
	_					
3.	3 m 6.	8 m 🖌	5 m		17.1 m	*
		(46) CAR TES		(115) CAR DIP ——		SPI
1	1/1/1/					
		70/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/				
3.	.3 m 3.3 m	₹	i m	2		
	(13) LOM TAN	V		(1) KNI EXC	<i>(81) CAR DIP</i>	(1) FAG S
6		20).7 m		←)	11 m
ĦŪ			<u>II HIINI HI</u>			
				7 10.4 m	<u>2.7 m</u>	13.2 m
					Ε	
					<mark>3.2 m</mark>	
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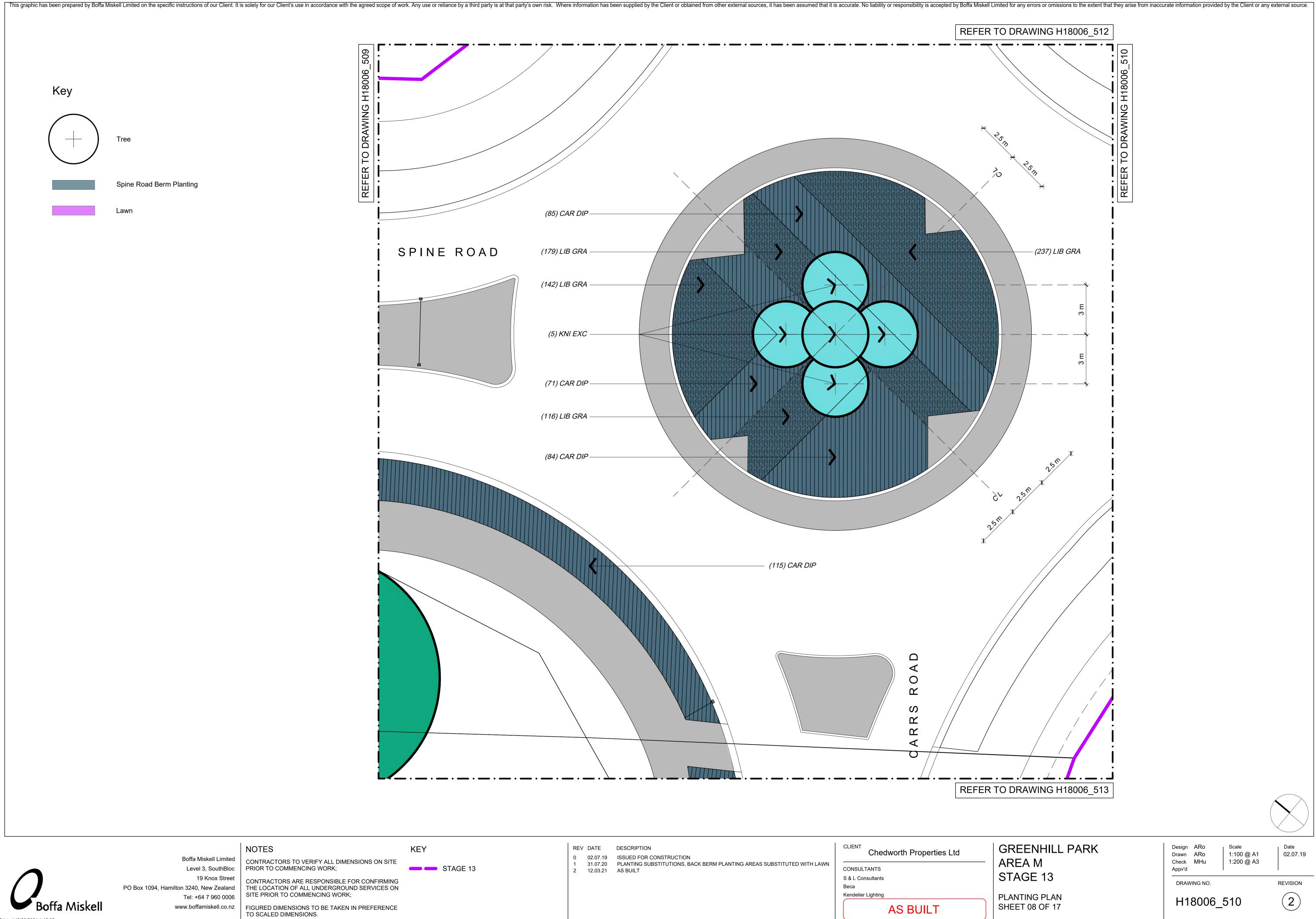
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REV	DATE	DESCRIPTION	CLIENT Chedworth Properties Ltd
0	02.07.19	ISSUED FOR CONSTRUCTION	
1	31.07.20	PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN	
2	12.03.21	AS BUILT	CONSULTANTS
			S & L Consultants
			Веса
			Kendelier Lighting
			AS BUILT





Spine Road Berm Planting





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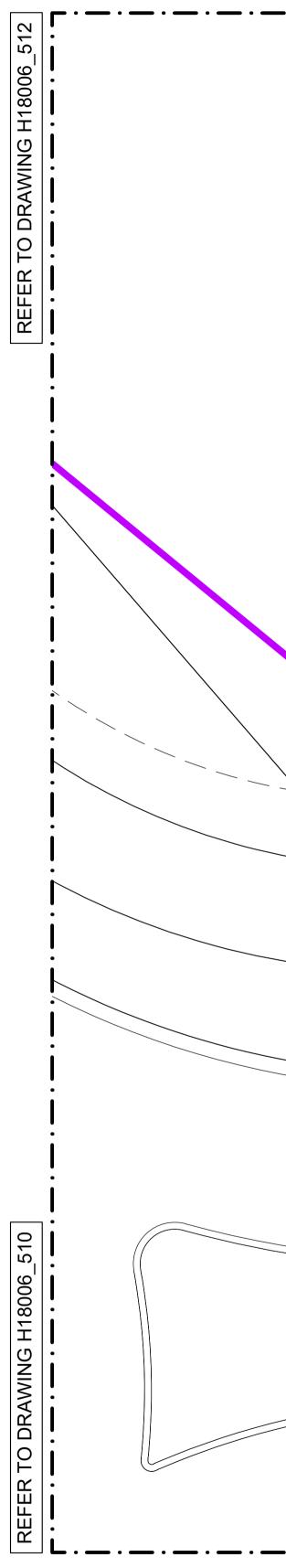
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R 0	EV DATE 02.07.19	DESCRIPTION ISSUED FOR CONSTRUCTION	CLIENT Chedworth Properties Ltd	
1	31.07.20 12.03.21	20 PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN	CONSULTANTS S & L Consultants Beca	
			AS BUILT	PLANTI SHEET



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KEY



	SPINE ROAD				
REV DATE 0 02.07.19 1 31.07.20 2 12.03.21	PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN	CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants Beca Kendelier Lighting AS BUILT	GREENHILL PARK AREA M STAGE 13 PLANTING PLAN SHEET 09 OF 17 U:\2018\H18006_ARo_Greenhill_Park_Area	Check MHu 1:200 @ A3 Appv'd	Date 02.07.19 REVISION 2 ge_13_txt_500.dwg

SPINE ROAD			
REV DATE DESCRIPTION 0 02.07.19 ISSUED FOR CONSTRUCTION 1 31.07.20 PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN 2 12.03.21 AS BUILT	CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants Beca Kendelier Lighting AS BUILT	GREENHILL PARK AREA M STAGE 13 PLANTING PLAN SHEET 09 OF 17	Design ARo Drawn ARo Check MHu Appv'd DRAWING NO. H18006_511 Chesign\CAD\As_Built_Drawings\Stage_13\H18006_as_built_stage_13_txt_50

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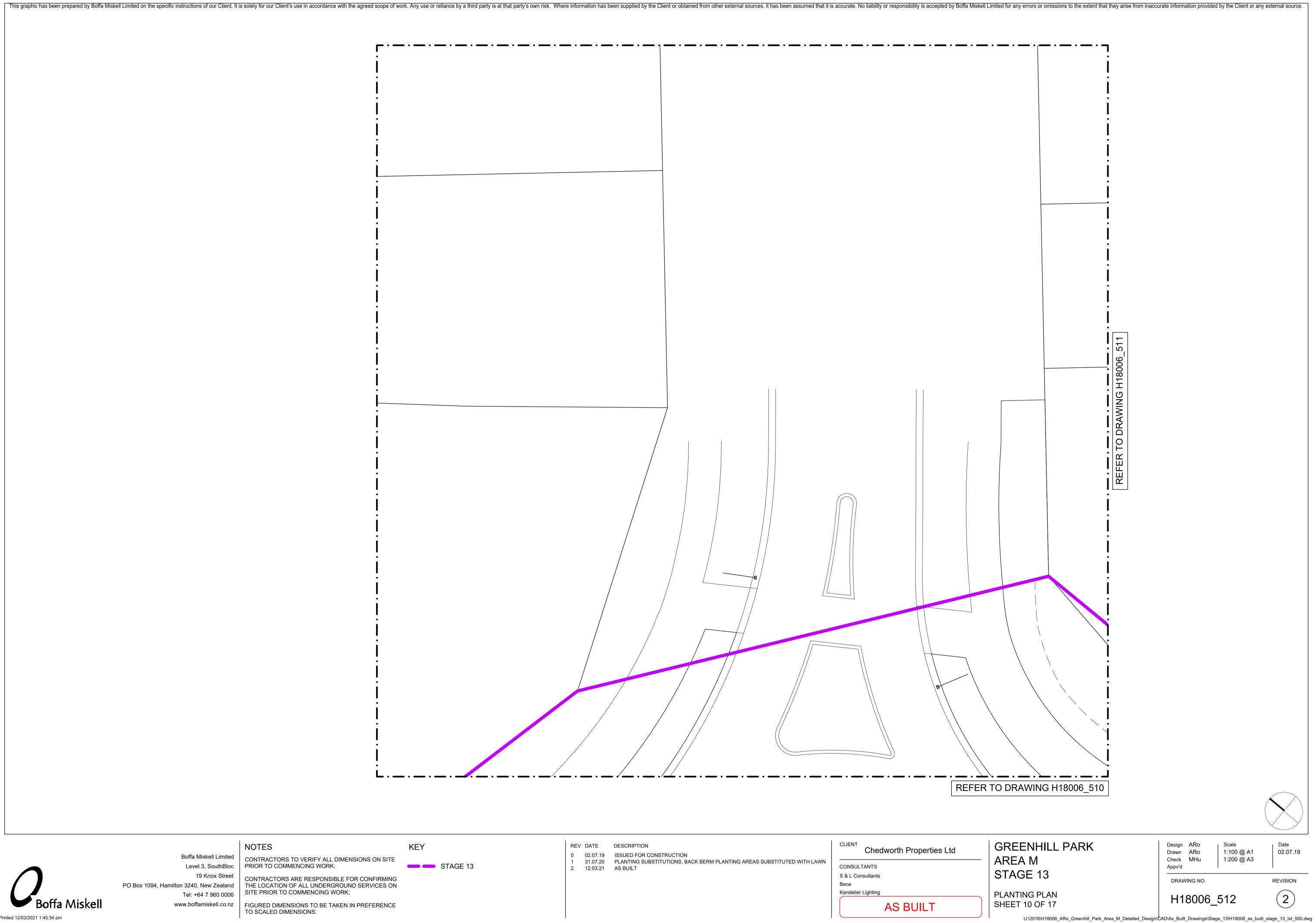
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KEY





	DESCRIPTION ISSUED FOR CONSTRUCTION	CLIENT Chedworth Properties Ltd	GREE AREA STAG
	PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN AS BUILT	CONSULTANTS S & L Consultants Beca	
		AS BUILT	PLANTI SHEET

Key	
$\left(+\right)$	Tree
	Spine Road Berm Planting
	Collector Road Berm Planting



Boffa Miskell Limited 19 Knox Street

NOTES

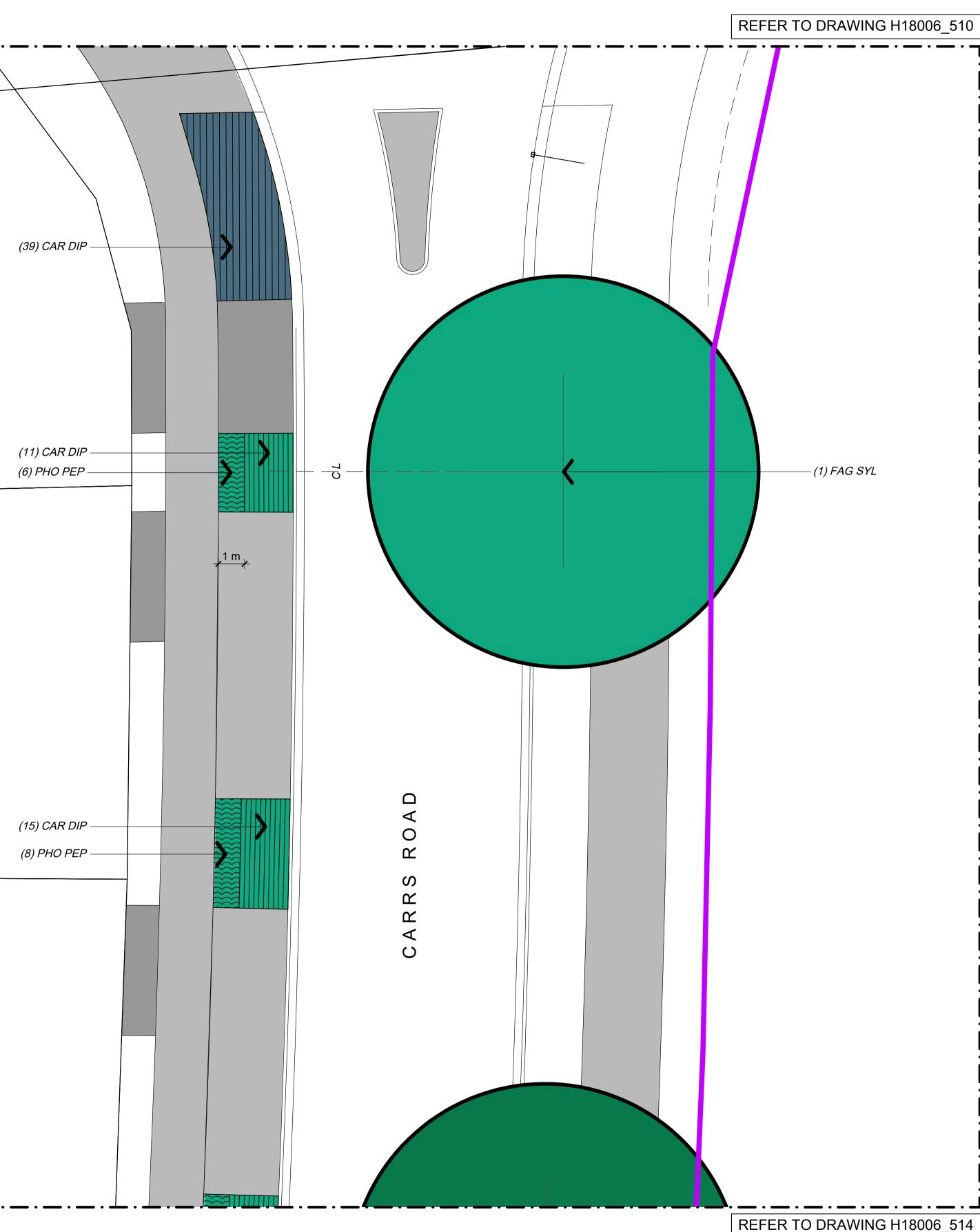
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STAGE 13



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				(1) FAG SYL		
		CARRS ROAD				
02.07.1 31.07.2	9 ISSUED FOR CONSTRUCTION 20 PLANTING SUBSTITUTIONS, B/	ACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN	CLIENT Chedworth Properties Ltd CONSULTANTS	EFER TO DRAWING H18006_514	Design ARo Scale Drawn ARo 1:100 @ A1 Check MHu 1:200 @ A3 Appv'd	Date 02.07.19
	9 ISSUED FOR CONSTRUCTION 20 PLANTING SUBSTITUTIONS, B/	ACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN	Chedworth Properties Ltd	AREA M STAGE 13 PLANTING PLAN SHEET 11 OF 17	Drawn ARo 1:100 @ A1 Check MHu 1:200 @ A3	REVISION

		
Key		(
$\left(+\right)$	Tree	(1
	Collector Road Berm Planting	
	Lawn	

KEY



Boffa Miskell Limited

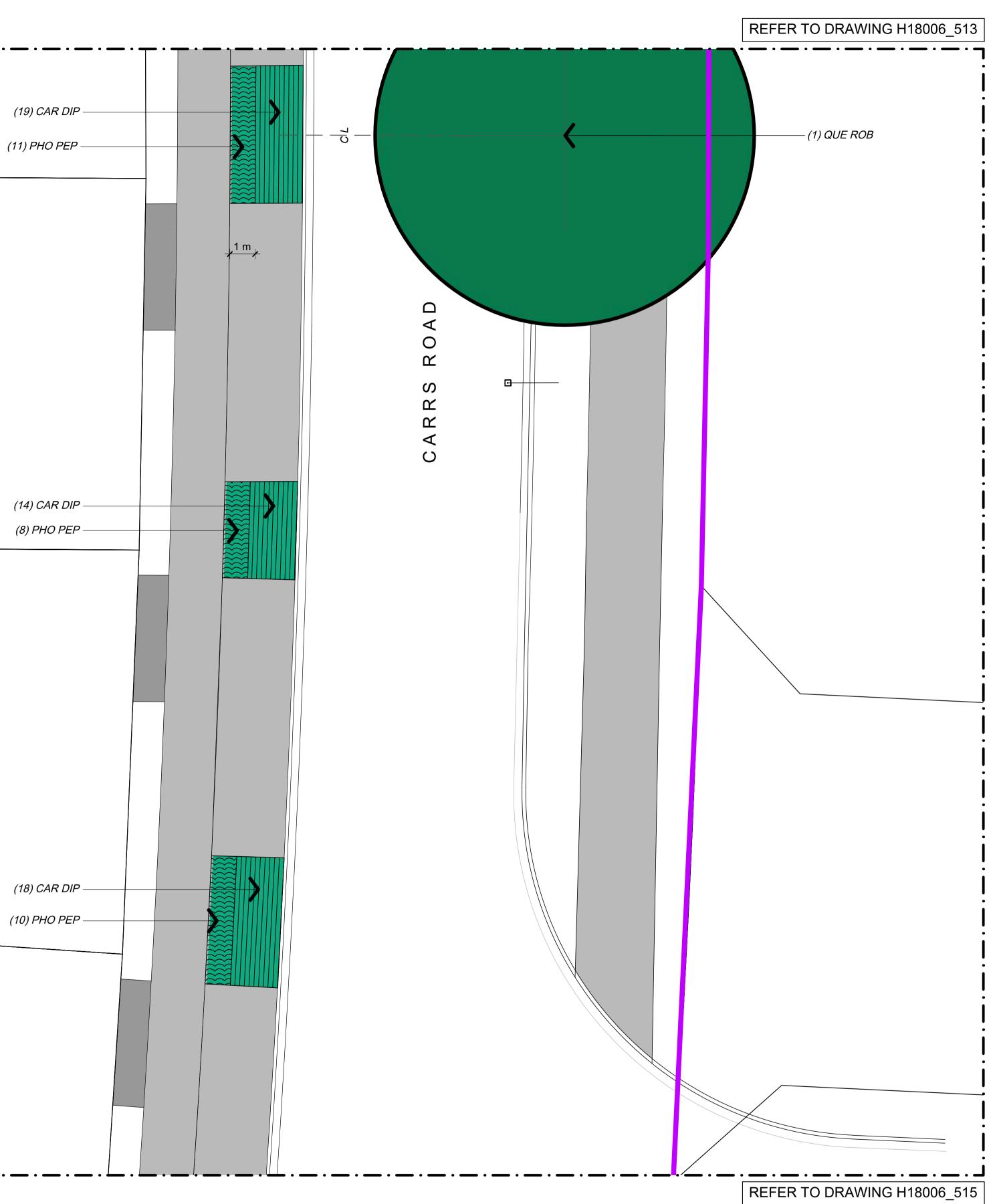
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PRIOR TO COMMENCING WORK;

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STAGE 13



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CARS ROAD		-(1) QUE ROB	
EV DATE DESCRIPTION 02.07.19 ISSUED FOR CONSTRUCTION 31.07.20 PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN 12.03.21 AS BUILT	CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants Beca Kendelier Lighting AS BUILT	TO DRAWING H18006_515 GREENHILL PARK AREA M STAGE 13 PLANTING PLAN SHEET 12 OF 17	Design ARo Drawn ARo Check MHu Appvd Drawing NO. REVISION H18006_514 2

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Key			
(+)	Tree		
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	Collector Road Berm Planting	· ·	
	Lawn	İ	



Boffa Miskell Limited 19 Knox StreetCONTRACTORS ARE RESPONSIBLE FOR CONFIRMINGPO Box 1094, Hamilton 3240, New ZealandTHE LOCATION OF ALL UNDERGROUND SERVICES ON

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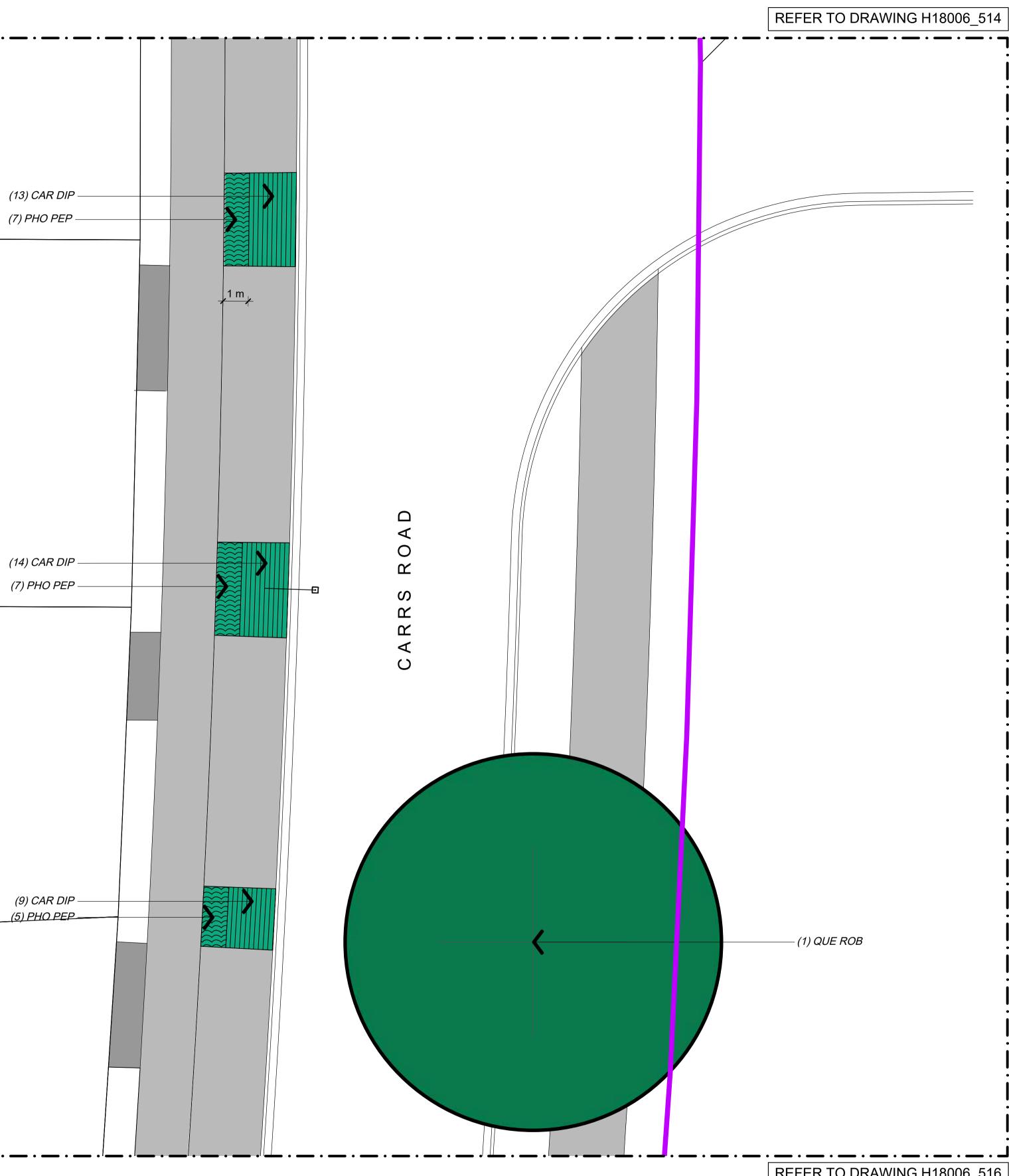
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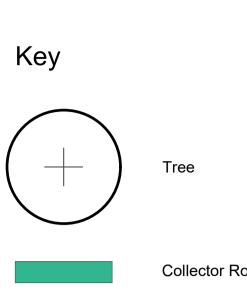
STAGE 13



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	CARS ROAD		(1) QUE ROB		
REVDATEDESCRIPTION002.07.19ISSUED FOR CONSTRUCTION131.07.20PLANTING SUBSTITUTIONS, BACK B212.03.21AS BUILT	ERM PLANTING AREAS SUBSTITUTED WITH LAWN	CLIENT Chedworth Properties Lt CONSULTANTS S & L Consultants Beca Kendelier Lighting AS BUILT	AREA M STAGE 13 PLANTING PLAN SHEET 13 OF 17	Design ARo Scale Drawn ARo 1:100 @ A Check MHu 1:200 @ A Appv'd DRAWING NO. H18006_515 rk_Area_M_Detailed_Design\CAD\As_Built_Drawings\Stage_13\H18006_as	REVISION

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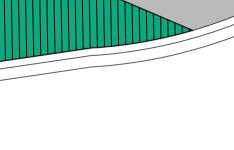


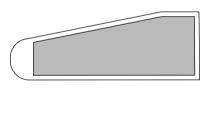
Collector Road Berm Planting

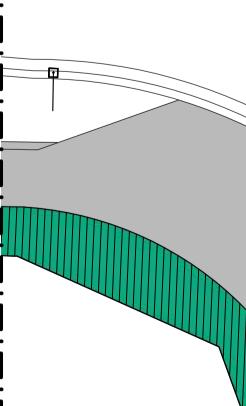
Lawn



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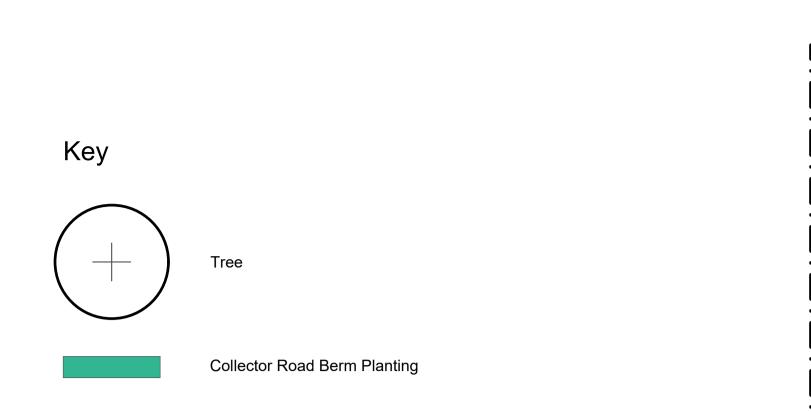
 PO Box 1094, Hamilton 3240, New Zealand
 THE LOCATION OF ALL UNDERGROUND SERVICES ON

 Tel: +64 7 960 0006 SITE PRIOR TO COMMENCING WORK;

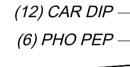
www.boffamiskell.co.nz FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.



CARS ROAD		3		
REV DATE DESCRIPTION 0 02:07.19 ISSUED FOR CONSTRUCTION 1 10:200 PLANTING SAEAS SUBSTITUTED WITH LAWN 2 12:03:21 AS BUILT	CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants Beca	R TO DRAWING H18006_517 GREENHILL PARK AREA M STAGE 13	Design ARo Scale Drawn ARo 1:100 @ A1 Check MHu 1:200 @ A3 Appv'd DRAWING NO.	Date 02.07.19 REVISION
	Kendelier Lighting AS BUILT	PLANTING PLAN SHEET 14 OF 17 U:\2018\H18006_ARo_Greenhill_Park_Are	H18006_516 a_M_Detailed_Design\CAD\As_Built_Drawings\Stage_13\H18006_as_built_	2 _stage_13_txt_500.dwg







(10) CAR DIP – (5) PHO PEP —

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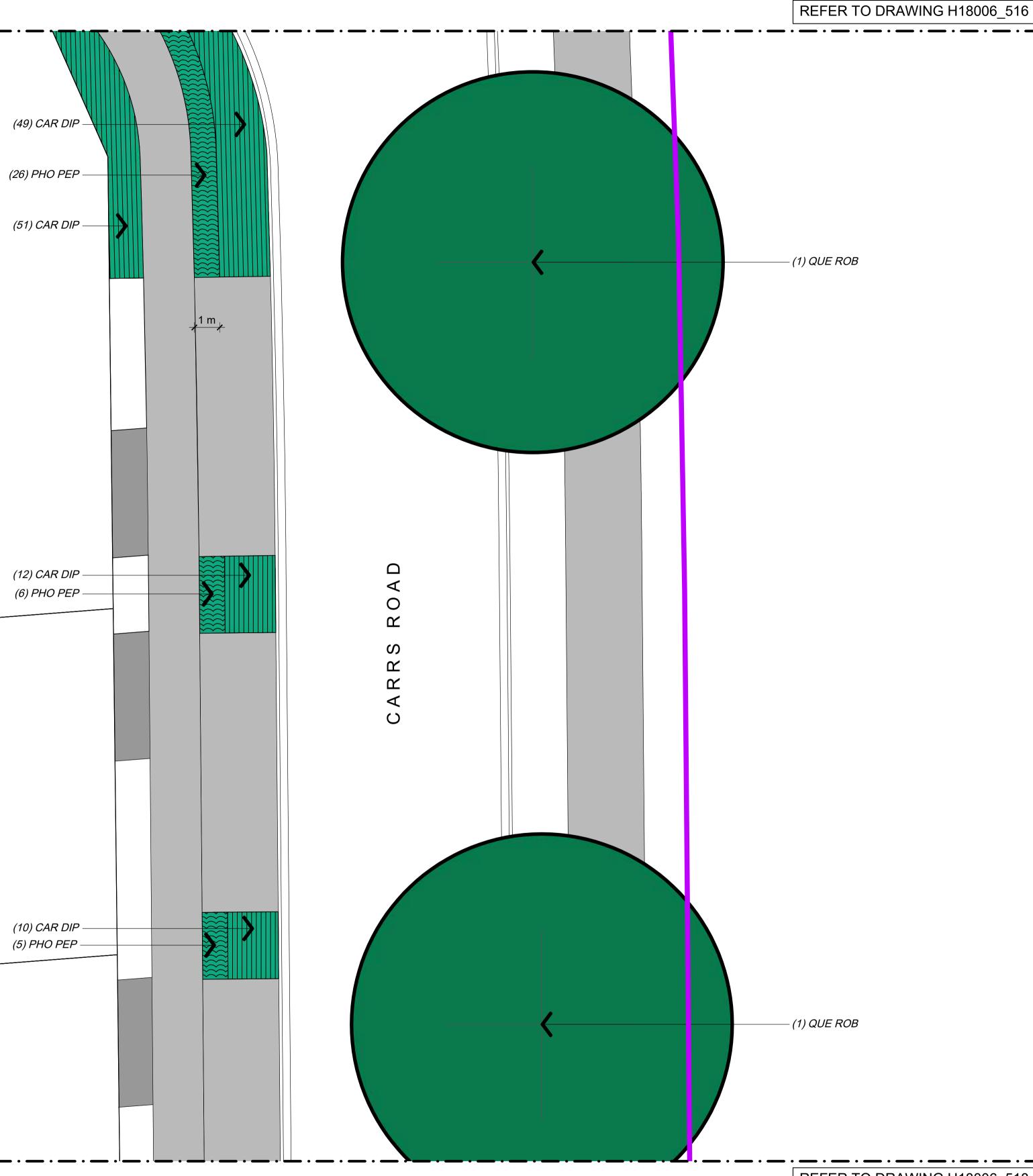
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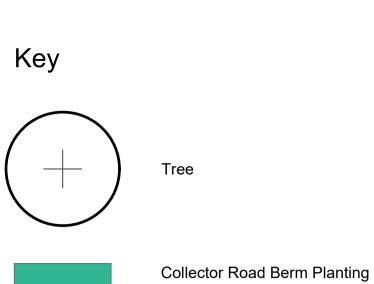


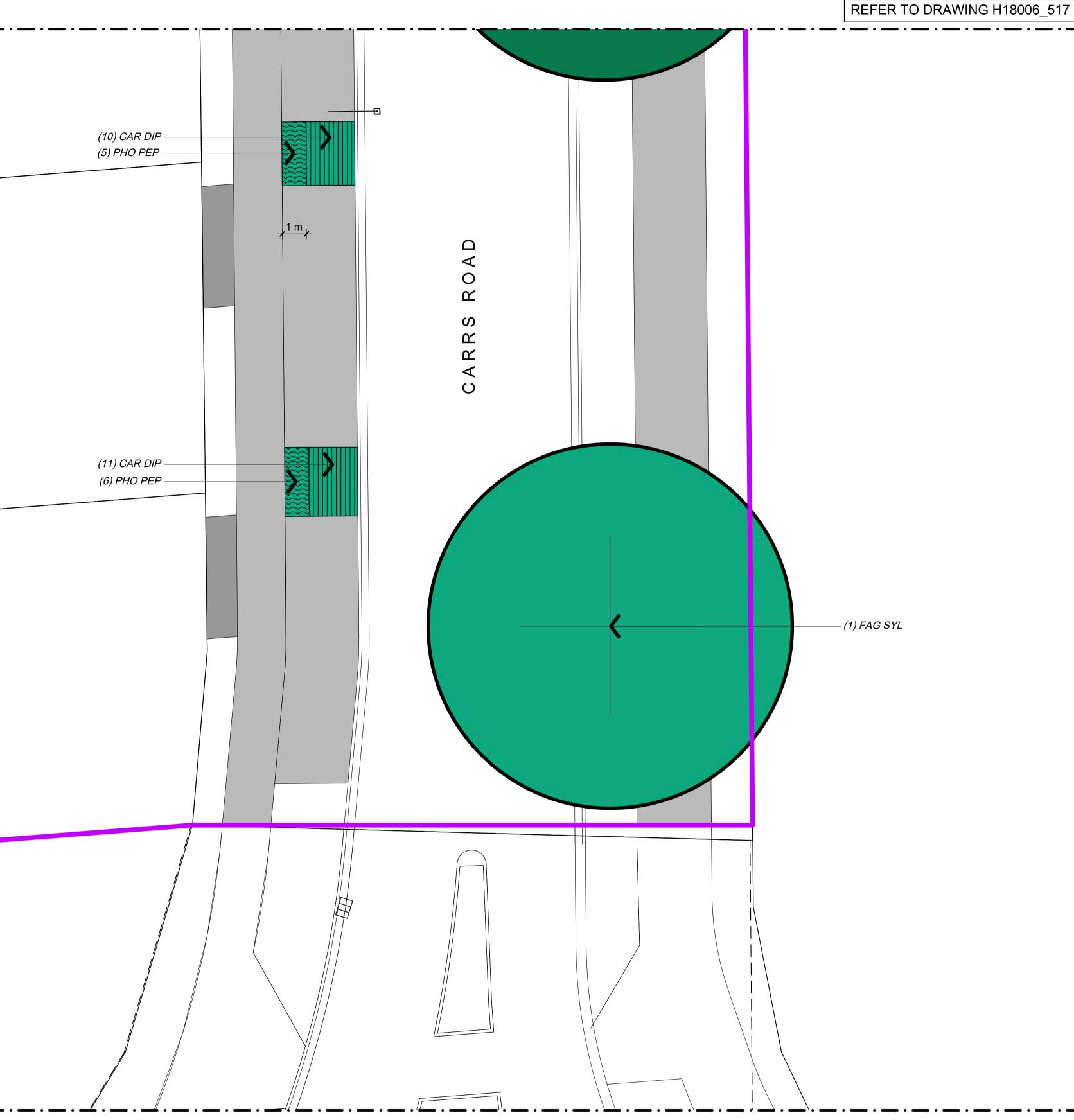


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(1) QUE ROB		
- (1) QUE ROB		
REFER TO DRAWING H18006_518		
td GREENHILL PARK AREA M	Design ARo Scale Drawn ARo 1:100 @ A1 Check MHu 1:200 @ A3 Appv'd	Date 02.07.19
PLANTING PLAN SHEET 15 OF 17 U:\2018\H18006_ARo_Greenhill_Park_Area_M_Detailed_Design	DRAWING NO. H18006_517	REVISION

	(1) QUE ROB	
CARRS ROAD		
	(1) QUE ROB	
	REFER TO DRAWING H	118006_518
REVDATEDESCRIPTION002.07.19ISSUED FOR CONSTRUCTION131.07.20PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN212.03.21AS BUILT	CLIENT Chedworth Properties Ltd GREENHILI CONSULTANTS S & L Consultants AREA M Beca STAGE 13 STAGE 13 Kendelier Lighting PLANTING PLAN SHEET 15 OF 17 U:2018/H18000 U:2018/H18000 D:2018/H18000	Check MHu 1:200 @ A3 Check MHu 1:200 @ A3 DRAWING NO. REVISION H18006 517





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🛑 🛑 STAGE 13

	CARS ROAD			——— (1) FAG SYL			
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REV DATE DESCRIPTION 0 02.07.19 ISSUED FOR CC 1 31.07.20 PLANTING SUBS 2 12.03.21 AS BUILT	DNSTRUCTION STITUTIONS, BACK BERM PLANTING AI	REAS SUBSTITUTED WITH LAWN	CLIENT Chedworth Prope CONSULTANTS S & L Consultants Beca Kendelier Lighting AS BUIL		GREENHILL PARK AREA M STAGE 13 PLANTING PLAN SHEET 16 OF 17	Design ARo Drawn ARo Check MHu Appv'd DRAWING NO. H18006_ ea_M_Detailed_Design\CAD\As_Built_Drawings\Stage	\bigcirc

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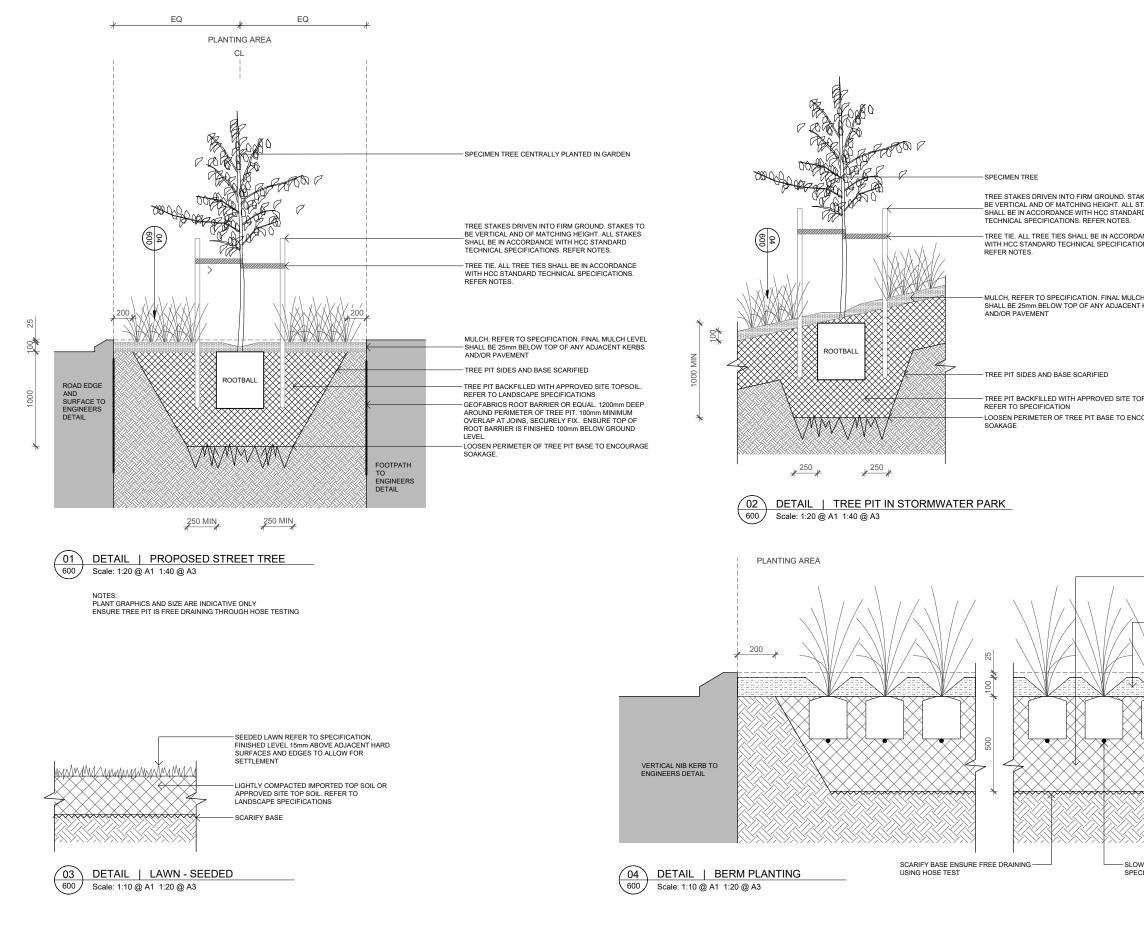
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🛑 🛑 STAGE 13



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LOCAL ACCESS ROAD 3	6			
REV DATE DESCRIPTION 0 02.07.19 ISSUED FOR CONSTRUCTION 1 31.07.20 PLANTING SUBSTITUTIONS, BACK BERM PLANTING AREAS SUBSTITUTED WITH LAWN 2 12.03.21 AS BUILT	CLIENT Chedworth Properties Ltd CONSULTANTS S & L Consultants	GREENHILL PARK AREA M STAGE 13	Design ARo Scale Drawn ARo 1:100 @ A1 Check MHu 1:200 @ A3 Appv'd	Date 02.07.19
	Beca Kendelier Lighting AS BUILT	PLANTING PLAN SHEET 17 OF 17	DRAWING NO. H18006_519	REVISION 2 age_13_txt_500.dwg



REV DATE DESCRIPTION

08.08.18 ISSUED FOR CONSTRUCTION 31.05.19 AS BUILT CLIENT

Beca

CONSULTANTS S&L Consultants

Kendelier Lighting

Chedworth Properties

AS BUILT

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CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK; CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

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FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

NOTES

r any errors or omissions	to the extent that I	they arise from inaccurate information provided by the Client or any external source.
	NOTEO	
	NOTES	
		PHICS AND SIZE ARE INDICATIVE ONLY EE PIT IS FREE DRAINING THROUGH HOSE
	TREE STAK	ES AND TIES
	ALL TREE S	TAKES AND TIES SHALL BE IN ACCORDANCE
	WITH THE F	SPECIFICATIONS:
AKES TO STAKES RD	RADIATA ST	MM X 50MM X 1.8M HIGH ROUGH SAWN H4 PINUS 'AKES WITH AT LEAST ONE-THIRD OF THEIR '0MM) IN THE GROUND AND AT LEAST 1M ABOVE 'VEL.
ANCE ONS.	ROOT BALL	ALL BE OFFSET AT LEAST 400MM FROM THE
	THE FLEXIB	IK AND NO MORE THAN 500MM. LE TREE TIES SHALL BE MADE OF BIO LE HESSIAN AND SHALL BE FIXED TO THE
H LEVEL	STAKES ON	THE OUTER FACE WITH A MINIMUM OF FOUR
KERBS		I A SQUARE PATTERN. IES SHALL BE POSITIONED ONE-THIRD OF THE
		THE TREE. RY BAMBOO STAKES SHALL BE REMOVED FROM AND ASSOCIATED PLASTIC TIES ALSO
	REIVIOVED.	
OPSOIL.		
COURAGE		
PLANTING		
		500mm DEEP LAYER OF IMPORTED
		OR APPROVED SITE TOP SOIL. REFER TO LANDSCAPE SPECIFICATIONS
+ // / -		MULCH, REFER TO SPECIFICATION.
/ / / /		FINAL MULCH LEVEL SHALL BE 25mm BELOW TOP OF ANY
M/L	200	ADJACENT KERBS AND/OR PAVEMENT
\\ /		
	XXXX	
1 1	V /X / /X / /X	

FOOTPATH TO ENGINEERS

SLOW RELEASE FERTILISER TO EACH PLANT. REFER TO LANDSCAPE SPECIFICATIONS

GREENHILL PARK AREA M	Design ARo Scale Drawn ARo As shown Check MHu Appv'd	Date 08.08.18
PLANTING DETAILS - SHEET 01	DRAWING NO. H18006_600	REVISION
U:\2018\H18006_ARo_Greenhill_Park_Area_M_Deta	lled_Design\CAD\As_Built_Drawings\H18006_as_b	uilt_all_stages_600.dwg

APPENDIX 10

Asset Spreadsheets

- Water asset sheets
- Wastewater asset sheets
- Stormwater asset sheets



Infrastructure Development Completion Report

As Built Datashe	eet (to accon	npany As Built Pla	ans)										Waikato Regional ITS
STORMWATE	R MANHOL	.ES											Form Version 1 - July 2017
Developer/Contracto	or:		Chedworth Properties Ltd / Online Co	ntractors	Prepared by:	:	S & L						
Development/Subdiv	/ision/Job:		Greenhill Park	-	Date:		Mar-21						
Stage:			Stage 13	-									
				_	(North Rim)			(Centre)	(Centre)				
Pian ID	Manhole ID	Property ID (Lot No. or Address)	Street Name	Street Type	Lid Level (m)	Invert Level (m)	MH Width/Diam (mm)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	SWMH 9.5	LOT 359	CARRS	ROAD	37.93	36.91	1050	447278.58	702740.86	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWMH 19.1	LOT 706	N/A	N/A	TBC	37.27	1200	447305.16	702835.08	Ν	Dec-20	\$4,601	LID LEVEL TO BE PROVIDED IN STAGE 14 AREA M
21879-M-13-SW1	SWMH 19.4	LOT 366	CARRS	ROAD	38.76	36.57	1500	447339.00	702761.45	Ν	Dec-20	\$5,101	
21879-M-13-SW1	SWMH 19.5	LOT 2 DP 534384	N/A	N/A	36.56	35.41	1050	447314.32	702729.71	Ν	Dec-20	\$4,125	
21879-M-13-SW1	SWMH 22.1	LOT 373	CARRS	ROAD	39.91	38.39	1050	447455.90	702818.80	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWMH 22.2	LOT 369	CARRS	ROAD	39.41	37.71	1050	447405.31	702791.67	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWMH SP 3.1	LOT 602	WEBB	DRIVE	39.95	38.69	1050	447446.83	702932.16	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWMH SP 3.2	LOT 602	WEBB	DRIVE	39.56	38.26	1050	447421.79	702980.63	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWMH SP 3.3	LOT 602	WEBB	DRIVE	39.18	37.81	1050	447400.98	703032.69	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWMH SP 3.4	LOT 602	WEBB	DRIVE	38.79	37.50	1050	447384.80	703084.71	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWM25001	LOT 602	WEBB	DRIVE	38.66	37.21	1050	447373.87	703120.54	E	Dec-19	N/A	EXISTING MH FROM STAGE 10 (S&L Ref SWMH SP 3.5)
21879-M-13-SW1	SWMH SP 4.2	LOT 504	WEBB	DRIVE	40.15	38.59	1050	447428.70	702911.14	Ν	Dec-20	\$4,301	
21879-M-13-SW1	SWM25005	LOT 504	WEBB	DRIVE	39.75	38.13	1050	447407.60	702946.78	E	Aug-20	N/A	EXISTING MH FROM STAGE 12 (S&L Ref SWMH SP 4.3)
21879-M-13-SW1	SWM25006	LOT 503 DP 548658	WEBB	DRIVE	39.37	37.52	1050	447381.34	703000.72	E	Aug-20	N/A	EXISTING MH FROM STAGE 12 (S&L Ref SWMH SP 4.5)
21879-M-13-SW1	SWM25007	LOT 503 DP 548658	WEBB	DRIVE	38.94	37.00	1050	447368.36	703046.36	E	Aug-20	N/A	EXISTING MH FROM STAGE 12 (S&L Ref SWMH SP 4.6)
21879-M-13-SW1	SWM25008	LOT 503 DP 548658	WEBB	DRIVE	38.60	36.65	1050	447357.90	703079.80	E	Aug-20	N/A	EXISTING MH FROM STAGE 12 (S&L Ref SWMH SP 4.7)
21879-M-13-SW1	SWM25004	LOT 503 DP 548658	WEBB	DRIVE	38.40	36.21	1050	447342.00	703122.13	E	Dec-19	N/A	EXISTING MH FROM STAGE 10 (S&L Ref SWMH SP 4.8)
21879-M-13-SW1	SWN24075	LOT 171 DP 543161	CARRS	ROAD	37.88	36.55	1050	447235.21	702729.92	E	Dec-19	N/A	EXISTING MH FROM STAGE 8B (S&L Ref SWMH 9.4)

As Built Datasheet (t		As Built Plans	5)												Waikato Regional ITS
STORMWATER PI	PELINES														Form Version 1 - July 2017
Developer/Contractor:			Chedworth Properties Ltd / Online	e Contractors	Prepared by:	S & L									
Development/Subdivision/	/Job:		Greenhill Park	_	Date:	Mar-21									
Stage:			Stage 13	_											
Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	: Street Name	Street Type	Physical Location (where necessary)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Material	Joint Type	Invert Level Upstr (m)	Invert Level Dwnstr (m)	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	SWMH 19.5	SWOUT 15	N/A	N/A	RESERVE	675	4.5	RC	RR	35.41	35.29	Ν	Dec-20	\$2,121	
21879-M-13-SW1	SWMH 19.4	SWMH 19.5	CARRS	ROAD	RESERVE/ROADWAY	675	40.2	RC	RR	36.57	35.41	N	Dec-20	\$18,948	
21879-M-13-SW1	SWMH 19.1	SWMH 19.4	GUILLAUME	STREET	ROADWAY	600	81.0	RC	RR	37.27	36.63	N	Dec-20	\$34,795	
21879-M-13-SW1	SWMH 22.2	SWMH 19.4	CARRS	ROAD	ROADWAY	375	72.9	RC	RR	37.71	36.89	N	Dec-20	\$23,471	
21879-M-13-SW1	SWMH 22.1	SWMH 22.2	CARRS	ROAD	ROADWAY	300	57.4	uPVC	SN16	38.39	37.74	N	Dec-20	\$17,780	
21879-M-13-SW1	SWMH SP 4.2	SWM25005	N/A	N/A	RESERVE	300	41.4	uPVC	SN16	38.59	38.19	Ν	Dec-20	\$12,825	
21879-M-13-SW1	SWMH SP 3.4	SWM25001	WEBB	DRIVE	BERM	375	37.5	RC	RR	37.50	37.25	Ν	Dec-20	\$12,074	
21879-M-13-SW1	SWMH SP 3.3	SWMH SP 3.4	WEBB	DRIVE	BERM	300	54.5	uPVC	SN16	37.81	37.52	Ν	Dec-20	\$16,882	
21879-M-13-SW1	SWMH SP 3.2	SWMH SP 3.3	WEBB	DRIVE	BERM	300	56.1	uPVC	SN16	38.26	37.91	Ν	Dec-20	\$17,378	
21879-M-13-SW1	SWMH SP 3.1	SWMH SP 3.2	WEBB	DRIVE	BERM	300	54.6	uPVC	SN16	38.69	38.33	Ν	Dec-20	\$16,913	
21879-M-13-SW1	SWMH 9.5	SWN24075	CARRS	ROAD	ROADWAY	300	44.7	uPVC	SN16	36.91	36.65	Ν	Dec-20	\$13,847	

As Built Datashee STORMWATER																		Waikato Regional ITS Form Version 1 - July 2017
Developer/Contractor:	:		Chedworth Propertie	s Ltd / Online Contractors		Prepared by:	S & L											
Development/Subdivis	sion/Job:		Greenhill Park		-	Date:	Mar-21			-								
Stage:			Stage 13		-					_								
Pian ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Invert Level At Private End (m) OR Depth (m)	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Distance from front (FB) or back (BB) boundary (m)	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	SWMH 9.5	SWN24075	LOT 357	CARRS	ROAD	BERM	100	13.2	uPVC SN16	1.2	447254.90	702748.26	3.9RB	1.5FB	Ν	Dec-20	\$1,040	
21879-M-13-SW1	SWMH 9.5	SWN24075	LOT 358	CARRS	ROAD	BERM	100	13.4	uPVC SN16	1.2	447268.63	702751.92	3.4RB	0.8FB	Ν	Dec-20	\$1,054	
21879-M-13-SW1	-	SWMH 9.5	LOT 359	CARRS	ROAD	BERM	100	5.5	uPVC SN16	1.2	447283.21	702757.18	1.5RB	1.4FB	Ν	Dec-20	\$515	
21879-M-13-SW1	-	SWMH 9.5	LOT 360	CARRS	ROAD	BERM	100/150	20.9	uPVC SN16	1.2	447289.14	702758.98	4.7LB	1.3FB	Ν	Dec-20	\$1,671	PIPE SIZE: 8.1m = 100mm; 12.8m = 150mm
21879-M-13-SW1	SWMH 19.1	SWMH 19.4	LOT 361	GUILLAUME	STREET	BERM	100	12.5	uPVC SN16	1.2	447317.27	702778.95	6.8RB	1.3FB	Ν	Dec-20	\$993	
21879-M-13-SW1	SWMH 19.1	SWMH 19.4	LOT 362	GUILLAUME	STREET	BERM	100/150	11.3	uPVC SN16	1.2	447310.92	702795.69	0.9RB	1.6FB	Ν	Dec-20	\$968	PIPE SIZE: 5.5m = 100mm; 5.8m = 150mm
21879-M-13-SW1	SWMH 19.1	SWMH 19.4	LOT 363	GUILLAUME	STREET	BERM	100	5.5	uPVC SN16	1.2	447310.86	702798.74	2.0LB	0.6FB	Ν	Dec-20	\$515	
21879-M-13-SW1	SWMH 19.1	SWMH 19.4	LOT 364	GUILLAUME	STREET	BERM	100	4.6	uPVC SN16	1.2	447327.58	702805.04	2.1RB	1.0FB	Ν	Dec-20	\$454	
21879-M-13-SW1	SWMH 19.1	SWMH 19.4	LOT 365	GUILLAUME	STREET	BERM	100/150	9.6	uPVC SN16	1.2	447329.47	702802.39	1.1LB	1.5FB	Ν	Dec-20	\$843	PIPE SIZE: 3.7m = 100mm; 5.9m = 150mm
21879-M-13-SW1	SWMH 22.2	SWMH 19.4	LOT 366	CARRS	ROAD	BERM	100/150	11.9	uPVC SN16	1.2	447363.66	702785.79	1.6RB	1.1FB	Ν	Dec-20	\$1,012	PIPE SIZE: 4.7m = 100mm; 7.2m = 150mm
21879-M-13-SW1	SWMH 22.2	SWMH 19.4	LOT 367	CARRS	ROAD	BERM	100	7.5	uPVC SN16	1.2	447368.82	702787.95	4.0LB	1.0FB	Ν	Dec-20	\$652	
21879-M-13-SW1	SWMH 22.2	SWMH 19.4	LOT 368	CARRS	ROAD	BERM	100/150	12.1	uPVC SN16	1.2	447388.30	702797.20	1.4RB	1.3FB	Ν	Dec-20	\$1,026	PIPE SIZE: 4.5m = 100mm; 7.6m = 150mm
21879-M-13-SW1	SWMH 22.2	SWMH 19.4	LOT 369	CARRS	ROAD	BERM	100	6.1	uPVC SN16	1.2	447392.22	702798.71	2.7LB	0.9FB	Ν	Dec-20	\$556	
21879-M-13-SW1	SWMH 22.1	SWMH 22.2	LOT 370	CARRS	ROAD	BERM	100/150	12.6	uPVC SN16	1.2	447415.51	702811.37	1.3RB	1.6FB	Ν	Dec-20	\$1,063	PIPE SIZE: 4.2m = 100mm; 8.4m = 150mm
21879-M-13-SW1	SWMH 22.1	SWMH 22.2	LOT 371	CARRS	ROAD	BERM	100	5.3	uPVC SN16	1.2	447418.78	702812.82	2.3LB	1.3FB	Ν	Dec-20	\$501	
21879-M-13-SW1	SWMH 22.1	SWMH 22.2	LOT 372	CARRS	ROAD	BERM	100/150	13.3	uPVC SN16	1.2	447442.25	702826.44	1.6RB	1.5FB	Ν	Dec-20	\$1,114	PIPE SIZE: 4.5m = 100mm; 8.8m = 150mm
21879-M-13-SW1	SWMH 22.1	SWMH 22.2	LOT 373	CARRS	ROAD	BERM	100	5.0	uPVC SN16	1.2	447445.14	702827.70	1.5LB	1.1FB	Ν	Dec-20	\$481	
21879-M-13-SW1	-	SWMH 22.1	LOT 374	CARRS	ROAD	BERM	100	17.5	uPVC SN16	1.2	447459.62	702835.93	3.1LB	0.4FB	Ν	Dec-20	\$1,334	

As Built Datashe	et (to acco	mpany As Built F	Plans)									Waikato Regional ITS
STORMWATE	R CATCHI	PITS										Form Version 1 - July 2017
Developer/Contracto	r:		Chedworth Properties Ltd / Online Co	ontractors	Prepared by:		S & L					
Development/Subdiv	ision/Job:		Greenhill Park	_	Date:		Mar-21		-			
Stage:			Stage 13		-				-			
Plan ID	Catchpit ID	Property ID (Lot No. or Address)	Street Name	Street Type	Catchpit Type	Grate Level (m)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	CP 057	LOT 359	CARRS	ROAD	SINGLE SUMP	37.86	447282.29	702739.44	N	Dec-20	\$2,071	
21879-M-13-SW1	CP 058	LOT 359	CARRS	ROAD	SINGLE SUMP	37.89	447280.92	702747.97	Ν	Dec-20	\$2,071	
21879-M-13-SW1	CP 114	LOT 373	CARRS	ROAD	SINGLE SUMP	39.83	447455.97	702825.50	Ν	Dec-20	\$2,071	
21879-M-13-SW1	CP 115	LOT 373	CARRS	ROAD	SINGLE SUMP	39.79	447459.57	702817.62	N	Dec-20	\$2,071	
21879-M-13-SW1	CP 116	LOT 370	CARRS	ROAD	SINGLE SUMP	39.31	447405.81	702797.04	Ν	Dec-20	\$2,071	
21879-M-13-SW1	CP 117	LOT 370	CARRS	ROAD	SINGLE SUMP	39.30	447411.93	702789.02	Ν	Dec-20	\$2,071	
21879-M-13-SW1	CP 118	LOT 366	CARRS	ROAD	SINGLE SUMP	38.80	447348.77	702771.49	N	Dec-20	\$2,071	
21879-M-13-SW1	CP 119	LOT 366	CARRS	ROAD	SINGLE SUMP	38.75	447348.80	702762.23	N	Dec-20	\$2,071	
21879-M-13-SW1	CP SP 09	LOT 602	WEBB	DRIVE	SINGLE SUMP	39.53	447420.55	702979.06	N	Dec-20	\$2,071	
21879-M-13-SW1	CP SP 10	LOT 602	WEBB	DRIVE	SINGLE SUMP	39.13	447399.69	703031.37	N	Dec-20	\$2,071	
21879-M-13-SW1	CP SP 11	LOT 602	WEBB	DRIVE	SINGLE SUMP	38.75	447383.53	703083.47	Ν	Dec-20	\$2,071	
21879-M-13-SW1	CP SP 18	LOT 602	WEBB	DRIVE	SINGLE SUMP	39.72	447418.53	702950.90	N	Dec-20	\$2,071	
21879-M-13-SW1	CP SP 19	LOT 602	WEBB	DRIVE	SINGLE SUMP	39.33	447396.15	702999.97	N	Dec-20	\$2,071	
21879-M-13-SW1	CP SP 20	LOT 602	WEBB	DRIVE	SINGLE SUMP	38.99	447380.10	703046.89	N	Dec-20	\$2,071	
21879-M-13-SW1	DCP 113	LOT 366	GUILLAUME	STREET	DOUBLE SUMP	38.30	447333.83	702779.46	N	Dec-20	\$2,848	
21879-M-13-SW1	DCP SP 08	LOT 602	WEBB	DRIVE	DOUBLE SUMP	39.94	447446.31	702929.80	N	Dec-20	\$2,848	
21879-M-13-SW1	DCP SP 17	LOT 602	WEBB	DRIVE	DOUBLE SUMP	39.94	447438.45	702915.71	N	Dec-20	\$2,848	
21879-M-13-SW1	DCP SP 21	LOT 602	WEBB	DRIVE	DOUBLE SUMP	38.45	447357.97	703117.66	N	Dec-20	\$2,848	

As Built Datasheet (to accompany As Built Plans) STORMWATER CATCHPIT LEADS

Waikato Regional ITS Form Version 1 - July 2017

STORWWATER CATCHEL	LADS		
Developer/Contractor:	Chedworth Properties Ltd / Online Contractors	Prepared by:	S & L
Development/Subdivision/Job:	Greenhill Park	Date:	Mar-21
Stage:	Stage 13		

Plan ID	Catchpit ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Catchpit Lead Pipe Diam (mm)	Catchpit Lead Pipe Length (m)	Catchpit Lead Pipe Material	Invert Level at Dwnstrm end	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	CP 057	SWMH 9.5	LOT 359	CARRS	ROAD	ROADWAY	225	4.0	uPVC SN16	36.96	N	Dec-20	\$930	
21879-M-13-SW1	CP 058	SWMH 9.5	LOT 359	CARRS	ROAD	ROADWAY	225	7.5	uPVC SN16	36.94	Ν	Dec-20	\$1,744	
21879-M-13-SW1	CP 114	SWMH 22.1	LOT 373	CARRS	ROAD	ROADWAY	225	6.7	uPVC SN16	38.80	Ν	Dec-20	\$1,558	
21879-M-13-SW1	CP 115	SWMH 22.1	LOT 373	CARRS	ROAD	ROADWAY	225	3.9	uPVC SN16	38.65	Ν	Dec-20	\$907	
21879-M-13-SW1	CP 116	SWMH 22.2	LOT 370	CARRS	ROAD	ROADWAY	225	5.4	uPVC SN16	38.05	Ν	Dec-20	\$1,256	
21879-M-13-SW1	CP 117	SWMH 22.2	LOT 370	CARRS	ROAD	ROADWAY	225	7.1	uPVC SN16	38.06	Ν	Dec-20	\$1,651	
21879-M-13-SW1	CP 118	SWMH 19.4	LOT 366	CARRS	ROAD	ROADWAY	225	14.0	uPVC SN16	37.52	Ν	Dec-20	\$3,256	
21879-M-13-SW1	CP 119	SWMH 19.4	LOT 366	CARRS	ROAD	ROADWAY	225	9.8	uPVC SN16	37.30	Ν	Dec-20	\$2,279	
21879-M-13-SW1	CP SP 09	SWMH SP 3.2	LOT 602	WEBB	DRIVE	BERM	225	2.0	uPVC SN16	38.50	Ν	Dec-20	\$465	
21879-M-13-SW1	CP SP 10	SWMH SP 3.3	LOT 602	WEBB	DRIVE	BERM	225	1.8	uPVC SN16	38.12	Ν	Dec-20	\$419	
21879-M-13-SW1	CP SP 11	SWMH SP 3.4	LOT 602	WEBB	DRIVE	BERM	225	1.8	uPVC SN16	37.62	Ν	Dec-20	\$419	
21879-M-13-SW1	CP SP 18	SWM25005	LOT 602	WEBB	DRIVE	BERM	225	11.7	uPVC SN16	38.36	Ν	Dec-20	\$2,721	
21879-M-13-SW1	CP SP 19	SWM25006	LOT 602	WEBB	DRIVE	BERM	225	14.8	uPVC SN16	37.89	Ν	Dec-20	\$3,442	
21879-M-13-SW1	CP SP 20	SWM25007	LOT 602	WEBB	DRIVE	BERM	225	11.7	uPVC SN16	37.33	Ν	Dec-20	\$2,721	
21879-M-13-SW1	DCP 113	SWMH 19.4	LOT 366	GUILLAUME	STREET	ROADWAY	300	3.7	uPVC SN16	36.63	Ν	Dec-20	\$972	
21879-M-13-SW1	DCP SP 08	SWMH SP 3.1	LOT 602	WEBB	DRIVE	BERM	300	2.4	uPVC SN16	38.70	Ν	Dec-20	\$630	
21879-M-13-SW1	DCP SP 17	SWMH SP 4.2	LOT 602	WEBB	DRIVE	BERM	300	10.8	uPVC SN16	38.71	Ν	Dec-20	\$2,836	
21879-M-13-SW1	DCP SP 21	SWM25004	LOT 602	WEBB	DRIVE	BERM	300	16.6	uPVC SN16	36.34	Ν	Dec-20	\$4,359	

As Built Datashe	et (to accomp	any As Built F	Plans)											Waikato Regional ITS
STORMWATE	R OUTLETS													Form Version 1 - July 2017
Developer/Contracto	. .			Chedworth Properties Ltd / Online C	ontractora	Propored by:	5.8.1							
Development/Subdiv				Greenhill Park	_		Mar-21							
-	ISION/JOD:					Date:	Mar-21							
Stage:				Stage 12		_								
											•			
Plan ID	Outlet ID	Upstr MH/ Asset ID	Property ID (Lot No. or Address)	. Street Name	Street Type	Structure Type	Structure Material	Discharges To	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	SWOUT15	SWMH 19.5	LOT 2 DP 534384	N/A	N/A	WINGWALL	RC	SWALE DRAIN	447310.10	702728.11	N	Dec-20	\$2,091	

s Built Datasheet (TORMWATER S																	Waikato Regional ITS Form Version 1 - July 201
eveloper/Contractor: evelopment/Subdivisior		Chedworth Properties Ltd / Online Greenhill Park	e Contractor		Prepared b Date:	y:	S & L Mar-21		-								ronn teision ri- yuy 20
age:		Stage 13		-													
Plan ID	Dwnstr Asset ID	Street Name	Street Type	Physical Location (where necessary)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Material	Invert Level Upstr (m)	Invert Level Dwnstr (m)	Easting Coordinate Inlet	Northing Coordinate Inlet	Easting Coordinate Outlet	Northing Coordinate Outlet	Service Status	Install Date	Asset Value	Comments
21879-M-13-SW1	DCP 053	CARRS	ROAD	BERM	100	36.9	NOVA	37.13	36.77					N	Dec-20	\$1,884	EXISTING CATCHPIT
21879-M-13-SW1	DCP 054	CARRS	ROAD	BERM	100	36.4	NOVA	37.14	36.77					N	Dec-20	\$1,859	EXISTING CATCHPIT
21879-M-13-SW1	CP 057	CARRS	ROAD	BERM	100	69.4	NOVA	38.02	37.11					N	Dec-20	\$3,544	
21879-M-13-SW1	CP 058	CARRS	ROAD	BERM	100	54.7	NOVA	37.57	37.14					N	Dec-20	\$2,793	
21879-M-13-SW1	CP 114	CARRS	ROAD	BERM	100	37.1	NOVA	39.78	39.08					N	Dec-20	\$1,894	
21879-M-13-SW1	CP 115	CARRS	ROAD	BERM	100	40.8	NOVA	39.68	39.04					N	Dec-20	\$2,083	
21879-M-13-SW1	CP 116	CARRS	ROAD	BERM	100	57.1	NOVA	39.08	38.56					N	Dec-20	\$2,916	
21879-M-13-SW1	CP 117	CARRS	ROAD	BERM	100	54.7	NOVA	39.06	38.55					N	Dec-20	\$2,793	
21879-M-13-SW1	CP 118	CARRS	ROAD	BERM	100	61.4	NOVA	38.57	38.05					N	Dec-20	\$3,135	
21879-M-13-SW1	CP 119	CARRS	ROAD	BERM	100	59.8	NOVA	38.44	38.00					N	Dec-20	\$3,053	
21879-M-13-SW1	CP SP 09	WEBB	DRIVE	BERM	100	54.3	NOVA	39.20	38.78					N	Dec-20	\$2,773	
21879-M-13-SW1	CP SP 10	WEBB	DRIVE	BERM	100	174.7	NOVA	39.35	38.38					N	Dec-20	\$8,920	
21879-M-13-SW1	CP SP 11	WEBB	DRIVE	BERM	100	53.7	NOVA	38.42	38.00					N	Dec-20	\$2,742	
21879-M-13-SW1	CP SP 18	WEBB	DRIVE	BERM	100	150.9	NOVA	39.85	38.97					N	Dec-20	\$7,705	
21879-M-13-SW1	CP SP 19	WEBB	DRIVE	BERM	100	53.1	NOVA	38.98	38.58					N	Dec-20	\$2,711	
21879-M-13-SW1	CP SP 20	WEBB	DRIVE	BERM	100	156.8	NOVA	39.13	38.24					N	Dec-20	\$8,006	
21879-M-13-SW1	DCP 113	GUILLAUME	STREET	BERM	100	51.2	NOVA	38.03	37.55					N	Dec-20	\$2,614	
21879-M-13-SW1	DCP SP 08	WEBB	DRIVE	BERM	100	161.4	NOVA	39.87	39.19					N	Dec-20	\$8,241	
21879-M-13-SW1	DCP SP 17	WEBB	DRIVE	BERM	100	72.7	NOVA	39.78	39.19					N	Dec-20	\$3,712	
21879-M-13-SW1	DCP SP 21	WEBB	DRIVE	BERM	100	72.8	NOVA	38.26	37.70					N	Dec-20	\$3,717	
21879-M-13-SW1	DCP SP 12	WEBB	DRIVE	BERM	100	44.7	NOVA	37.97	37.61					N	Dec-20	\$2,282	EXISTING CATCHPIT

		pany As Built Pla	ns)										Waikato Regional ITS
WASTEWATE	R MANHOLE	ES											Form Version 1 - July 201
Developer/Contracto	r:		Chedworth Properties Ltd / Online	Contractors		Prepared by:	S & L						
Development/Subdiv	ision/Job:		Greenhill Park			Date:	Mar-21		-				
Stage:			Stage 13										
					(North Rim)			(Centre)	(Centre)				
Plan ID	Manhole ID	Property ID (Lot No. or Address)	Street Name	Street Type	Lid Level (m)	Invert Level (m)	MH Width/Diam (mm)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
21879-M-13-WW1	WWMH 18.2	LOT 706	N/A	N/A	TBC	35.39	1050	447305.55	702830.11	Ν	Nov-20	\$6,281	Lid Level to be provided in Stage 14 Area M
21879-M-13-WW1	WWMH 18.3	LOT 361	CARRS	ROAD	38.74	34.96	1050	447335.94	702763.33	Ν	Nov-20	\$7,194	
21879-M-13-WW1	WWMH 18.4	LOT 369	CARRS	ROAD	39.30	34.10	1050	447397.28	702789.67	Ν	Nov-20	\$11,949	
21879-M-13-WW1	WWMH 18.5	LOT 374	CARRS	ROAD	40.17	33.63	1200	447470.97	702832.10	Ν	Nov-20	\$17,219	
21879-M-13-WW1	WWMH 18A.1	LOT 358	CARRS	ROAD	37.79	36.39	1050	447269.16	702741.78	Ν	Nov-20	\$4,648	
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As Built Datasheet (t WASTEWATER PI		As Built Plans	5)												Waikato Regional ITS Form Version 1 - July 201
Developer/Contractor: Development/Subdivision/	-		Chedworth Properties Lto Greenhill Park	I / Online Cont	ractors	Prepared by: Date:	S & L Mar-21		-						
Stage:			Stage 13	_		but.			-						
Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Street Name	Street Type	Physical Location (where necessary)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Material	Joint Type	Invert Level Upstr (m)	Invert Level Dwnstr (m)	Service Status	Install Date	Asset Value	Comments
21879-M-13-WW1	WWMH 18.5	WWM25004	CARRS	ROAD	ROADWAY	225	20.7	uPVC SN16	RR	33.63	33.08	Ν	Nov-20	\$14,535	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	CARRS	ROAD	ROADWAY	225	85.0	uPVC SN16	RR	34.10	33.66	Ν	Nov-20	\$50,150	
21879-M-13-WW1	WWMH 18.3	WWMH 18.4	CARRS	ROAD	ROADWAY	150	66.8	uPVC SN16	RR	34.96	34.13	N	Nov-20	\$24,426	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	GUILLAUME	STREET	ROADWAY/PRIVATE PROPERTY	150	73.4	uPVC SN16	RR	35.39	35.02	N	Nov-20	\$19,438	
21879-M-13-WW1	WWMH 18A.1	WWMH 18.3	CARRS	ROAD	ROADWAY	150	70.2	uPVC SN16	RR	36.39	35.01	Ν	Nov-20	\$14,734	

As Built Datasheet (to accompany As Built Plans) WASTEWATER CONNECTION/SERVICE LINE

Waikato Regional ITS Form Version 1 - July 2017

Developer/Contractor:	Chedworth Properties Ltd / Online Contractors	Prepared by:	S&L
Development/Subdivision/Job:	Greenhill Park	Date:	Mar-21
Stage:	Stage 13		

Plan ID	Upstr MH/ Asset ID	Dwnstr MH/ Asset ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Invert Level At Private End (m) OR Depth (m)	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Distance from front (FB) or back (BB) boundary (m)	Service Status	Install Date	Asset Value	Comments
21879-M-13-WW1	-	WWMH 18A.1	LOT 357	CARRS	ROAD	BERM	100	13.6	uPVC SN16	1.2	447257.47	702748.87	1.3RB	1.3FB	Ν	Nov-20	\$1,054	
21879-M-13-WW1	-	WWMH 18A.1	LOT 358	CARRS	ROAD	BERM	100	3.6	uPVC SN16	1.2	447260.02	702749.95	1.5LB	1.6FB	Ν	Nov-20	\$279	
21879-M-13-WW1	WWMH 18A.1	WWMH 18.3	LOT 359	CARRS	ROAD	BERM	100	10.4	uPVC SN16	1.2	447273.45	702754.09	1.9LB	1.4FB	Ν	Nov-20	\$806	
21879-M-13-WW1	WWMH 18A.1	WWMH 18.3	LOT 360	CARRS	ROAD	BERM	100	10.1	uPVC SN16	1.2	447297.13	702761.45	0.6RB	1.2FB	Ν	Nov-20	\$783	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	LOT 361	GUILLAUME	STREET	BERM	100	10.3	uPVC SN16	1.2	447315.20	702784.20	1.2RB	1.5FB	Ν	Nov-20	\$799	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	LOT 362	GUILLAUME	STREET	BERM	100	5.6	uPVC SN16	1.2	447314.38	702787.75	2.5LB	1.0FB	Ν	Nov-20	\$434	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	LOT 363	GUILLAUME	STREET	BERM	100	8.8	uPVC SN16	1.2	447307.66	702806.26	1.9RB	1.0FB	Ν	Nov-20	\$682	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	LOT 364	GUILLAUME	STREET	BERM	100	11.0	uPVC SN16	1.2	447324.32	702811.91	2.3LB	1.3FB	Ν	Nov-20	\$852	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	LOT 365	GUILLAUME	STREET	BERM	100	5.6	uPVC SN16	1.2	447333.64	702794.84	2.6RB	1.8FB	Ν	Nov-20	\$434	
21879-M-13-WW1	WWMH 18.2	WWMH 18.3	LOT 366	GUILLAUME	STREET	BERM	100	11.6	uPVC SN16	1.2	447335.61	702791.82	0.9LB	2.2FB	Ν	Nov-20	\$899	
21879-M-13-WW1	WWMH 18.3	WWMH 18.4	LOT 367	CARRS	ROAD	BERM	100	10.4	uPVC SN16	1.2	447375.57	702791.57	0.7RB	1.6FB	Ν	Nov-20	\$806	
21879-M-13-WW1	WWMH 18.3	WWMH 18.4	LOT 368	CARRS	ROAD	BERM	100	5.3	uPVC SN16	1.2	447378.92	702792.15	2.6LB	0.7FB	Ν	Nov-20	\$411	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	LOT 369	CARRS	ROAD	BERM	100	5.4	uPVC SN16	1.2	447400.40	702803.19	2.6RB	1.3FB	Ν	Nov-20	\$419	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	LOT 370	CARRS	ROAD	BERM	100	10.4	uPVC SN16	1.2	447403.00	702804.99	0.6LB	1.7FB	Ν	Nov-20	\$806	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	LOT 371	CARRS	ROAD	BERM	100	4.9	uPVC SN16	1.2	447427.94	702817.79	2.0RB	1.2FB	Ν	Nov-20	\$380	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	LOT 372	CARRS	ROAD	BERM	100	9.7	uPVC SN16	1.2	447430.38	702819.94	1.2LB	1.9FB	Ν	Nov-20	\$752	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	LOT 373	CARRS	ROAD	BERM	100	10.1	uPVC SN16	1.2	447455.34	702834.66	1.2RB	1.6FB	Ν	Nov-20	\$783	
21879-M-13-WW1	WWMH 18.4	WWMH 18.5	LOT 374	CARRS	ROAD	BERM	100	5.5	uPVC SN16	1.2	447458.44	702836.78	2.5LB	1.8FB	Ν	Nov-20	\$426	

As Built Datashee	As Built Datasheet (to accompany As Built Plans) Waikato Regional IT												
WATER HYDRA	NTS												Form Version 1 - July 2017
Developer/Contractor:				Chedworth Properties Ltd / Online	S & L								
Development/Subdivis	ion/Job:			Greenhill Park	_	Date:	Mar-21						
Stage:				Stage 13	_								
Plan ID	Hydrant ID	Pipe ID	Property ID (Lot No. or Address)	Street Name	Street Type	Hydrant Size (mm)	Physical Location (where necessary)	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
21879-M-13-W1	FH1	RM9	LOT 602	WEBB	DRIVE	250	BERM	447355.64	703104.69	N	Jan-21	\$2,750	
21879-M-13-W1	FH2	RM9	LOT 602	WEBB	DRIVE	250	FOOTPATH	447399.96	702975.68	Ν	Jan-21	\$2,750	
21879-M-13-W1	FH3	RM9	LOT 602	WEBB	DRIVE	250	FOOTPATH	447451.13	702886.15	Ν	Jan-21	\$2,750	
21879-M-13-W1	FH4	RM3	LOT 370	CARRS	ROAD	150	FOOTPATH	447405.39	702802.63	Ν	Jan-21	\$2,750	
21879-M-13-W1	FH5	RM8	LOT 602	WEBB	DRIVE	150	BERM	447425.41	702983.23	Ν	Jan-21	\$2,750	
21879-M-13-W1	FH6	RM8	LOT 602	WEBB	DRIVE	150	BERM	447382.49	703107.23	N	Jan-21	\$2,750	
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As Built Datasheet (to	accompany As	s Built Plans)								Waikato Regional ITS
WATER PIPELINES										Form Version 1 - July 2017
Developer/Contractor:		Chedworth Prope	erties Ltd / Online C	Contractors		Prepared by:	S & L			
Development/Subdivision/Jo	Greenhill Park		_		Date:	Mar-21		-		
Stage:	Stage 13		-					-		
Plan ID	Pipe ID	Pipe Diameter (mm)	Pipe Length (m)	Laying Depth (m)	Pipe Material	Joint Type	Service Status	Install Date	Asset Value	Comments
21879-M-13-W1	RM1	150	81.0	1.2	PVC-M PN12	RRJ	N	Jan-21	\$4,131	
21879-M-13-W1	RM2	150	41.1	1.2	PVC-M PN12	RRJ	N	Jan-21	\$2,096	
21879-M-13-W1	RM3	150	93.1	1.2	PVC-M PN12	RRJ	Ν	Jan-21	\$4,748	
21879-M-13-W1	RM4	150	18.0	1.2	PVC-M PN12	RRJ	Ν	Jan-21	\$918	
21879-M-13-W1	RM5	150	5.2	1.2	PVC-M PN12	RRJ	Ν	Jan-21	\$265	
21879-M-13-W1	RM6	150	71.7	1.2	PVC-M PN12	RRJ	N	Jan-21	\$3,657	
21879-M-13-W1	RM7	150	110.7	1.2	PVC-M PN12	RRJ	N	Jan-21	\$5,646	
21879-M-13-W1	RM8	150	230.9	1.2	PVC-M PN12	RRJ	Ν	Jan-21	\$11,776	
21879-M-13-W1	RM9	250	306.3	1.2	PVC-M PN12	RRJ	Ν	Jan-21	\$26,036	
21879-M-13-W1	RM10	250	144.2	1.2	PVC-M PN12	RRJ	Ν	Jan-21	\$12,257	
21879-M-13-W1	RM11	250	9.3	1.2	PVC-M PN12	RRJ	N	Jan-21	\$791	
21879-M-13-W1	RM12	250	107.5	1.2	PVC-M PN12	RRJ	N	Jan-21	\$9,138	
21879-M-13-W1	RM13	250	50.3	1.2	PVC-M PN12	RRJ	N	Jan-21	\$4,276	

	As Built Datasheet (to accompany As Built Plans) Waikato Regional ITS															
WATER CONNECTION/SERVICE LINE Form Version 1 - July 2017																
Developer/Contractor:			Chedworth Properties Ltd / On	Prepared by: S & L												
Development/Subdivision/Job:		Greenhill Park				Date:		Mar-21								
Stage:			Stage 13													
Plan ID	Pipe ID	Property ID (Lot No. or Address)	Street Name	Street Type	Physical Location (where necessary)	Service Pipe Diam (mm)	Service Pipe Length (m)	Service Pipe Material	Easting Coordinate	Northing Coordinate	Distance from left (LB) or right (RB) boundary (m)	Meter Installed (Y/N)	Service Status	Install Date	Asset Value	Comments
21879-M-13-W1	RM1	LOT 357	CARRS	ROAD	BERM	25	3.4	MDPE	447247.62	702744.64	1.6LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM1	LOT 358	CARRS	ROAD	BERM	25	3.5	MDPE	447260.17	702747.85	0.8LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM1	LOT 359	CARRS	ROAD	BERM	25	3.4	MDPE	447272.98	702751.88	0.6LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM1	LOT 360	CARRS	ROAD	BERM	25	0.8	MDPE	447286.21	702756.13	0.9LB	Ν	N	Jan-21	\$705	
21879-M-13-W1	RM1	LOT 361	CARRS	ROAD	BERM	25	1.2	MDPE	447313.84	702765.52	16.4LB	Ν	N	Jan-21	\$705	
		LOT 362														TO BE PROVIDED WITH STAGE 14 ASBUILTS
		LOT 363														TO BE PROVIDED WITH STAGE 14 ASBUILTS
		LOT 364														TO BE PROVIDED WITH STAGE 14 ASBUILTS
		LOT 365														TO BE PROVIDED WITH STAGE 14 ASBUILTS
21879-M-13-W1	RM2	LOT 366	CARRS	ROAD	BERM	25	0.9	MDPE	447350.92	702778.73	16.2RB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM2	LOT 367	CARRS	ROAD	BERM	25	1.1	MDPE	447366.88	702785.60	1.2LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM2	LOT 368	CARRS	ROAD	BERM	25	0.8	MDPE	447377.70	702790.24	0.6LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM3	LOT 369	CARRS	ROAD	BERM	25	1.0	MDPE	447391.30	702796.71	1.0LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM3	LOT 370	CARRS	ROAD	BERM	25	0.9	MDPE	447404.23	702803.11	0.8LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM3	LOT 371	CARRS	ROAD	BERM	25	1.0	MDPE	447418.61	702810.67	1.1LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM3	LOT 372	CARRS	ROAD	BERM	25	1.0	MDPE	447431.32	702817.75	0.9LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM3	LOT 373	CARRS	ROAD	BERM	25	1.1	MDPE	447445.59	702826.20	1.1LB	Ν	Ν	Jan-21	\$705	
21879-M-13-W1	RM9	LOT 374	CARRS	ROAD	BERM	25	2.2	MDPE	447466.70	702841.66	4.3RB	Ν	N	Jan-21	\$705	

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As Built Datasheet (to accompai	ny As Built	Plans)										Waikato Regional ITS
WATER VALVES													Form Version 1 - July 201
Developer/Contractor:				Chedworth Properties Ltd / Onlir	ne Contractors		Prepared by:	S	& L				
Development/Subdivision	/Job:			Greenhill Park			Date:		r-21	-			
Stage:				Stage 13	_					-			
Plan ID	Valve ID	Pipe ID	Property ID (Lot No. or Address)	r Street Name	Street Type	Valve Size (mm)	Valve Manufacturer	Easting Coordinate	Northing Coordinate	Service Status	Install Date	Asset Value	Comments
21879-M-13-W1	SV1	RM9	LOT 602	WEBB	DRIVE	250	HAWLE	447356.04	703103.45	N	Jan-21	\$3,350	
21879-M-13-W1	SV2	RM8	LOT 602	WEBB	DRIVE	150	HAWLE	447459.46	702921.23	N	Jan-21	\$2,200	
21879-M-13-W1	SV3	RM12	LOT 374	CARRS	ROAD	250	HAWLE	447460.40	702833.61	Ν	Jan-21	\$3,350	
21879-M-13-W1	SV4	RM9	LOT 374	CARRS	ROAD	250	HAWLE	447459.27	702833.43	Ν	Jan-21	\$3,350	
21879-M-13-W1	SV5	RM2	LOT 368	CARRS	ROAD	150	HAWLE	447378.79	702789.89	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV6	RM3	LOT 368	CARRS	ROAD	150	HAWLE	447380.15	702788.87	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV7	RM10	LOT 603	CARRS	ROAD	250	HAWLE	447387.15	702772.34	Ν	Jan-21	\$3,350	
21879-M-13-W1	SV8	RM11	LOT 603	CARRS	ROAD	250	HAWLE	447395.67	702776.15	Ν	Jan-21	\$3,350	
21879-M-13-W1	SV9	RM5	LOT 603	CARRS	ROAD	150	HAWLE	447396.45	702775.43	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV10	RM12	LOT 603	CARRS	ROAD	250	HAWLE	447471.96	702818.60	Ν	Jan-21	\$3,350	
21879-M-13-W1	SV11	RM8	LOT 602	WEBB	DRIVE	150	HAWLE	447374.78	703134.89	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV12	RM7	LOT 602	N/A	N/A	150	HAWLE	447529.31	702884.47	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV13	RM7	LOT 1 DP 534384	N/A	N/A	150	HAWLE	447536.12	702871.33	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV14	RM6	LOT 1 DP 534384	N/A	N/A	150	HAWLE	447538.23	702870.49	Ν	Jan-21	\$2,200	
21879-M-13-W1	SV15	RM6	LOT 1 DP 534384	N/A	N/A	150	HAWLE	447529.64	702834.50	Ν	Jan-21	\$2,200	