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Carter Street Precinct

Report for Goodman Property Services



Infrastructure Budget Cost Estimate Report

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Document information

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The design described in this report is considered to have been finalised.

Signature

Date



Peter Wark
Civil Engineer (Author)

27/03/14



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27/03/14

Notes: The finalisation signatures shown above do not provide evidence of approval to the design. Approval signatures are shown on the title sheet of the design plans.

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Executive Summary

AT&L were engaged by Goodman Property Services (Aust) Pty Ltd to prepare a preliminary budget cost estimate for infrastructure works to support re-development of the Carter Street Precinct within the Sydney Olympic Park Development Area.

AT&L developed a preliminary infrastructure layout for the purposes of preparing the cost estimate based on a supplied masterplan layout from Goodman. The infrastructure layout will be subject to further site investigations and detailed design development as the project progresses.

The infrastructure costs captured in the estimate include:

- General, preliminaries and site management
- Clearing and demolition
- Testing and Investigation
- Erosion and sedimentation control
- Topsoiling and grassing/site stabilisation
- Earthworks (road and site trim only)
- Remediation of general solid waste and hot spots
- Roadworks
- Stormwater drainage
- Concrete works
- Subsoil drainage
- Signage and linemarking
- Miscellaneous works
- Sewer reticulation
- Potable water reticulation and recycled water reticulation
- Internal intersection works
- Electrical, telecommunications, gas and service road
- Landscaping and irrigation
- External intersection upgrades
- Professional services
- Authority construction design and construction fees
- Long service levy

An assumed excavation to basement level across the development lots has been estimated and shown as a separate cost not included in the infrastructure cost.

Due to the preliminary nature of knowledge on the project, a 20% contingency has been adopted for inclusion in the estimate. A summary of the cost estimate is shown below in the following two tables to provide a snapshot of the project costs.

ABOVE THE LINE INFRASTRUCTURE COSTS - EXCLUDES BULK EARTHWORKS TO LOT BASEMENTS						
STAGING REFERENCE	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	ALL STAGES
	268m of 23m road reserve 278m of 18m road reserve	273m of 23m road reserve 273m of 18m road reserve	170m of 20m road reserve	268m of 23m road reserve 100m of 20m road reserve 278m of 18m road reserve	186m of 23m road reserve 260m of 18m road reserve	268m of 23m road reserve 278m of 18m road reserve
SITE AREA (m ²)	57930	36100	46100	79700	59100	278930
DEVELOPABLE AREA (m ²)	46500	22900	42700	64500	51000	227600
ITEM DESCRIPTION	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
GENERAL, PRELIMINARIES AND SITE MANAGEMENT (7.5% of total construction costs)	\$ 3,224,307.91	\$ 1,680,635.84	\$ 2,323,289.16	\$ 3,612,518.18	\$ 2,722,737.18	\$ 13,563,488.27
2.0 CLEARING & DEMOLITION	\$ 3,460,995.78	\$ 2,874,574.55	\$ 3,349,036.10	\$ 7,789,268.50	\$ 1,974,572.40	\$ 19,448,447.33
3.0 TESTING & INVESTIGATION	\$ 11,687.04	\$ 10,645.71	\$ 5,522.69	\$ 14,038.81	\$ 10,006.88	\$ 51,901.12
4.0 EROSION & SEDIMENT CONTROL	\$ 43,447.50	\$ 27,075.00	\$ 34,575.00	\$ 59,775.00	\$ 44,325.00	\$ 209,197.50
5.0 TOPSOILING AND GRASSING / SITE STABILISATION	\$ 115,151.52	\$ 68,580.92	\$ 95,272.68	\$ 156,379.64	\$ 115,453.44	\$ 550,838.20
EARTHWORKS (all quantities measured in bank volume) (includes removal of GSW and removal of Hotspots)	\$ 31,292,272.40	\$ 14,906,915.17	\$ 24,271,325.93	\$ 31,880,735.67	\$ 31,192,336.35	\$ 133,543,585.52
6.0 ROADWORKS	\$ 800,462.50	\$ 717,962.50	\$ 160,103.75	\$ 921,733.50	\$ 422,957.50	\$ 3,023,219.75
8.0 STORMWATER DRAINAGE	\$ 808,520.00	\$ 673,455.00	\$ 670,245.00	\$ 2,197,940.00	\$ 133,207.50	\$ 4,483,367.50
9.0 CONCRETE WORKS	\$ 325,212.00	\$ 338,798.00	\$ 85,483.00	\$ 434,717.00	\$ 191,945.00	\$ 1,376,155.00
10.0 SUBSOIL DRAINAGE	\$ 53,170.00	\$ 47,667.00	\$ 9,935.00	\$ 66,676.00	\$ 34,172.00	\$ 211,620.00
11.0 SIGNAGE & LINEMARKING	\$ 13,747.50	\$ 12,675.00	\$ 3,412.50	\$ 16,009.50	\$ 9,379.50	\$ 55,224.00
12.0 MISCELLANEOUS WORKS	\$ 80,410.00	\$ 37,180.00	\$ 46,310.00	\$ 93,885.00	\$ 95,645.00	\$ 353,430.00
13.0 SEWER RETICULATION	\$ 149,760.00	\$ 435,720.00	\$ 91,008.00	\$ 360,960.00	\$ 214,272.00	\$ 1,251,720.00
14.0 POTABLE WATER RETICULATION and RECYCLED WATER RETICULATION	\$ 1,146,861.00	\$ 447,903.00	\$ 214,589.00	\$ 561,338.00	\$ 620,779.00	\$ 2,991,470.00
15.0 INTERNAL INTERSECTION UPGRADES (SIGNALS)	\$ 350,000.00	\$ -	\$ -	\$ -	\$ -	\$ 350,000.00
16.0 ELECTRICAL, TELECOM, GAS and SERVICE ROAD CROSSINGS	\$ 1,802,795.00	\$ 1,694,580.00	\$ 355,580.00	\$ 1,701,880.00	\$ 1,002,355.00	\$ 6,557,190.00
17.0 LANDSCAPING AND IRRIGATION	\$ 136,279.93	\$ 114,745.95	\$ 84,790.19	\$ 161,572.40	\$ 91,755.86	\$ 589,144.33
18.0 EXTERNAL INTERSECTION UPGRADES	\$ 2,400,000.00	\$ -	\$ 1,500,000.00	\$ 1,750,000.00	\$ 150,000.00	\$ 5,800,000.00
CONSULTANTS, DESIGN, PROJECT MANAGEMENT, AUTHORITY DESIGN AND CONSTRUCTION FEES AND CHARGES, EXCLUDES S94 AND PLANNING CONTRIBUTIONS/LEVIES (15% of total construction costs)	\$ 6,932,262.01	\$ 3,613,367.05	\$ 4,995,071.70	\$ 7,766,914.08	\$ 5,853,884.94	\$ 29,161,499.78
LONG SERVICE LEVY (0.35% of total infrastructure costs)	\$ 186,015.70	\$ 96,958.68	\$ 134,034.42	\$ 208,412.19	\$ 157,079.25	\$ 782,500.24
Sub -Total	\$ 53,333,357.79	\$ 27,799,439.37	\$ 38,429,584.13	\$ 59,754,753.47	\$ 45,036,863.79	\$ 224,353,998.55
20% Contingency on items 1-18,20, 5% Contingency for Item 19	\$ 9,626,832.26	\$ 5,017,882.82	\$ 6,936,656.07	\$ 10,785,913.58	\$ 8,129,290.02	\$ 40,496,574.74
Total Including Contingency	\$ 62,960,190.04	\$ 32,817,322.18	\$ 45,366,240.20	\$ 70,540,667.06	\$ 53,166,153.81	\$ 264,850,573.29

BELOW THE LINE LOT BASEMENT BULK EARTHWORKS							
	STAGING REFERENCE	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	ALL STAGES
ITEM	DESCRIPTION	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
21.0	DEVELOPMENT LOT BASEMENT BULK EARTHWORKS (all quantities measured in bank volume)	\$ 5,679,194.50	\$ 2,806,926.00	\$ 8,055,536.00	\$ 5,802,983.00	\$ 4,816,795.50	\$ 27,161,435.00
	Sub -Total	\$ 5,679,194.50	\$ 2,806,926.00	\$ 8,055,536.00	\$ 5,802,983.00	\$ 4,816,795.50	\$ 27,161,435.00
	20% Contingency for Item 20	\$ 1,135,838.90	\$ 561,385.20	\$ 1,611,107.20	\$ 1,160,596.60	\$ 963,359.10	\$ 5,432,287.00
	Total Including Contingency	\$ 6,815,033.40	\$ 3,368,311.20	\$ 9,666,643.20	\$ 6,963,579.60	\$ 5,780,154.60	\$ 32,593,722.00
	Grand Total Incl Contingency (Above & Below the Line)	\$ 69,775,223.44	\$ 36,185,633.38	\$ 55,032,883.40	\$ 77,504,246.66	\$ 58,946,308.41	\$ 297,444,295.29

1 Introduction

AT&L have been engaged by Goodman Property Services to prepare a preliminary budget cost estimate for infrastructure works to support re-development of the Carter Street Precinct within the Sydney Olympic Park Development Area.

The budget cost estimate has been prepared on the basis of the Goodman Nettleton Tribe Structure Plan, drawings 4359_SK24-31 and 4359_SK41-45, February 2014, and road cross sections from the Draft Carter Street Precinct Strategy Review (8 February 2014). These drawings are attached in Appendix A.

AT&L have used the Structure Plan Layout to prepare a set of drawings for the purposes of infrastructure cost estimating. These drawings are attached in Appendix B.

1.1 Scope of Report

This report seeks to describe the logic and assumptions of the infrastructure budget cost estimate.

The main elements the budget cost estimate are:

- General, preliminaries and site management
- Clearing and demolition
- Testing and Investigation
- Erosion and sedimentation control
- Topsoiling and grassing/site stabilisation
- Earthworks
- Roadworks
- Stormwater drainage
- Concrete works
- Subsoil drainage
- Signage and linemarking
- Miscellaneous works
- Sewer reticulation
- Potable water reticulation and recycled water reticulation
- Internal intersection works
- Electrical, telecommunications , gas and service road
- Landscaping and irrigation
- External intersection upgrades
- Professional services
- Contingency

1.2 Project Location

The site is bounded by Carter Street, Birnie Avenue, Hill Road and Edwin Flack Avenue. The existing Uhrig Avenue is proposed to be retained in its current alignment but will be reconstructed as part of the re-development.

The site generally falls from east to west with a number of benched lots. The existing lots are fully developed consisting of hard stand areas and a mixture of industrial and commercial buildings of varying construction.

There is significant existing utility infrastructure surrounding and within the site and a major drainage trunk stormwater line that drains the site to Haslams Creek to the west.

The M4 Motorway is located to the south west of the site with Parramatta Road running parallel slightly further to the west.

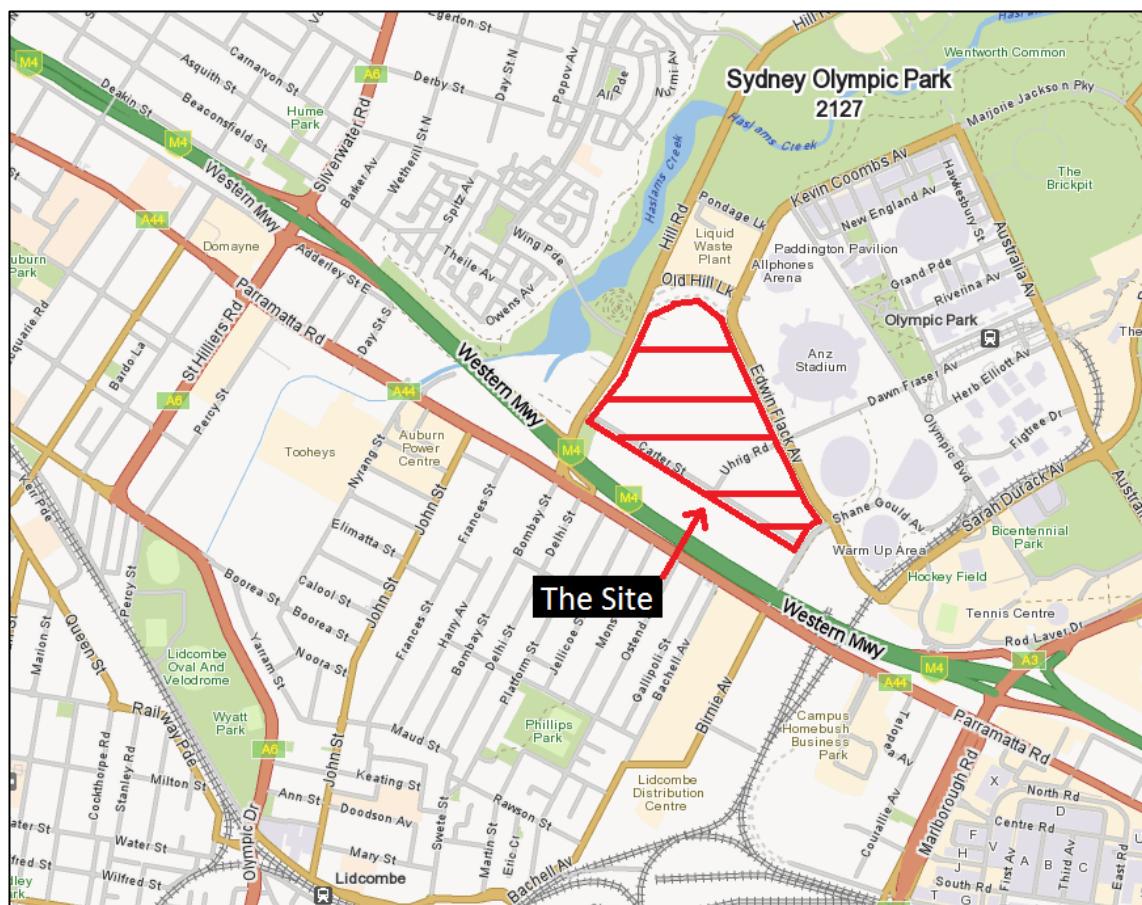


Figure 1 – Locality Plan

1.3 Project Proposal

The redevelopment proposal will see the site developed in mixed land-use development, including residential, retail, employment and open space.

Civil Engineers & Project Managers

The redevelopment is proposed to be undertaken in stages in conjunction with the terms of current site leases.

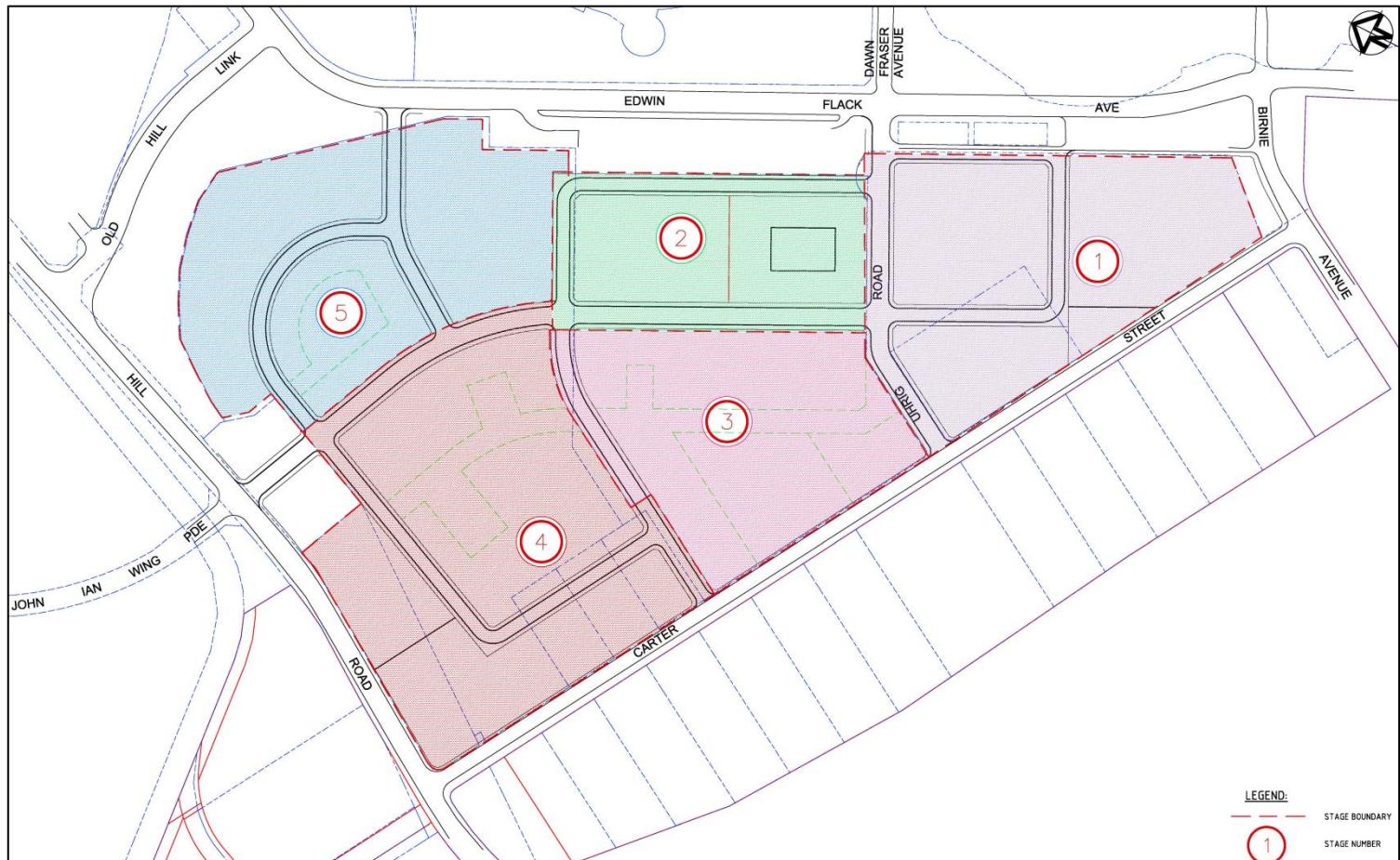


Figure 2 – Redevelopment Stages

2 Site Layout and Design

2.1 Site layout

For costing purposes, AT&L have developed a preliminary site layout in the line with the Goodman NT Structure Plan.

The layout provides for road and utility infrastructure to support each stage of the re-development.

The layout incorporated the road hierarchy as described in the structure plan and drew on elements outlined in the Carter Street draft DCP. Where appropriate, the DCP has been adjusted to suit the structure plan proposal. This applies to infrastructure for drainage, water quality, foot and shared paths and external intersection upgrades.

In developing a layout for utility services, AT&L utilised a report prepared by Building Engineering Services (BSE) (20110471, January 2013). This report was prepared on an earlier structure plan and therefore interpolation and adjustment of the BSE layout was required to adapt a utility scheme for the current structure plan.

2.2 Design

The proposed infrastructure has been developed on preliminary and conceptual levels and utilises assumptions on the design of the infrastructure elements as no detailed design has been undertaken at this stage.

The make-up of elements such as stormwater drainage, pavement, earthworks and utilities are largely based on experience of delivery of infrastructure on a number of projects undertaken by Goodman Property Services.

The layout of the infrastructure and assumptions regarding the costing of the works is described in the following section.

3 Staging

The staging for the project is based on the Goodman NT Structure Plan staging which has been developed in consideration of the existing tenancy arrangements and lease terms across the precinct.

The staging of road and associated utilities infrastructure is broadly as follows:

Stage	Internal Roads	External Intersections
1	<ul style="list-style-type: none"> Reconstruct full extent of Uhrig road and Road No. 8a and 8b 	<ul style="list-style-type: none"> Upgrade the intersection of Carter Street and Uhrig Road with Signalised Intersection Upgrade the intersection of Edwin Flack Ave and Uhrig Road with Signalised intersection Upgrade the intersection of Birnie Ave and Access road (no signals, left in left out only) Upgrade the intersection of Carter Street and Birnie Avenue with Signalised intersection
2	<ul style="list-style-type: none"> Construct Road No 1 between Uhrig road and road No. 3 	<ul style="list-style-type: none"> Upgrade the intersection of Carter Street and Hill Road with Signalised intersection
3	<ul style="list-style-type: none"> Construct Road No. 3 from Road No. 1 west to the eastern side of the intersection with Road No. 5. This allows for the existing 3 x 1500 dia. trunk stormwater line pit to be maintained until the new trunk stormwater line system is constructed in Stage 4 	
4	<ul style="list-style-type: none"> Construct Road No. 1 from Road No. 3 north to Hill Road Construct Road No. 3 from Road No. 5 to Carter Street including construction of new 3 x 1800 trunk stormwater line junction pit. Construct full extent of Road No. 5 	<ul style="list-style-type: none"> Upgrade the intersection of Carter Street and Road 3 with Signalised Intersection Upgrade the intersection of Hill Road and Road 1 with Signalised intersection
5	<ul style="list-style-type: none"> Construct full extent of Road No. 4 and Road No.6 	<ul style="list-style-type: none"> Upgrade the intersection of Edwin Flack Ave and Road 4 (no signals, left in left out only)

4 Proposed Infrastructure and Costing Assumptions

4.1 General, Preliminaries and Site Management

The general, preliminaries and site management costs have been estimated as 7.5% of the total construction cost.

Costs included in this item are:

- Site establishment, maintenance and de-mobilisation
- Survey
- Insurances
- Traffic management
- Utility investigations
- Noise and dust monitoring

4.2 Demolition

The site will require demolition of:

- Hard stand areas;
- Warehouse sheds – steel frames, metal roofs and walls;
- Office and commercial buildings up to four stories – steel frames with block and brick construction.

The cost rate adopted for building demolition of \$100/m² to cater for the mix of structures across the site.

A cost rate of \$30/m² has been adopted for demolition of hard stand areas.

It has been assumed that demolition will occur on a stage by stage basis and that the cleared lot will require a minimal covering of topsoil and hydro-mulching to stabilize the ground until earthworks commence.

No allowance for management and disposal of hazardous building materials has been included.

4.3 Earthworks

For the purposes of costing, a preliminary grading of the road network was undertaken. The grading assumed all new roads to connect to the surrounding

roads at the existing level. The roads were then graded to allow drainage across the site generally from east to west which resulted in a large length of roads being at or close to existing ground level.

During detailed design, there would be further refinement of the road grading to better suit building access for the site.

In accordance with the development staging the earthworks for each stage would be undertaken in isolation.

In assessing site earthworks volumes it was assumed that building lots bounded by roads would include two basement level car parks with 3m floor to floor height each (total 6m). The lowest basement floor level was assumed to be 6m lower than the highest road surface level on the road perimeter of that lot. In some cases this resulted in adjoining roads abutting basement car park structure. For Stage 1 and 3 this required a step in lower basement level to be incorporated.

The resulting basement levels were then used to calculate site cut and fill. The site filling is negligible with a significant quantity of cut. A cost was then applied to the cut volume on the assumption this material would be stockpiled and then disposed off site.

The total bulk earthworks for the development is identified as a separate cost as it is considered to be part of the on lot build costs and not part of the infrastructure cost.

In addition, a preliminary site assessment was undertaken by WSP Environment and Energy (ref: 00037445.01 25/06/2013), which indicated that the material below the existing surface would be classified as General Solid Waste.

Due to the investigations being at an early stage, the WSP report does not specifically identify the physical characteristics of the GSW. In lieu of better information, it was assumed the GSW would be of a density of 1.8T/m³ for the purposes of estimating disposal costs. A cost rate of \$150/T to cover GSW land fill disposal was adopted and then converted to a cubic metre rate.

For the purpose of costing, it was then assumed the first 2m of existing material excavated below building lots would attract an extra over cost for disposal as GSW. Material below 2m deep was assumed to be classified as Virgin Excavated Natural material (VENM).

Where roads were located, it was assumed that the first 1m of cut material would attract an extra over cost for disposal as GSW. This would then require the re-filing of road footprints to before road pavements are constructed.

In addition to the above, an allowance has been included for contamination hot spots across the site as identified in the report by WSP Environmental and Energy (ref: 00037445.01 dated 19 April 2014). The excavation and disposal off site of the contaminated material has been included within the infrastructure cost for the development.

Other assumptions:

- stockpiled topsoil which cannot be re-spread into the verges will be tipped
- Chemical dust application to bulked pads to last for approx. 6 months

4.4 Roads

4.4.1 Road Cross Sections

The proposed road network follows the Goodman NT Structure Plan.

The road hierarchy is reflected in the typical road cross section for each and adopts dimension taken from the NSW Department of Planning & Infrastructure Carter Street Urban Activation Precinct - Transport Impact Assessment.

The road network consists of:

- 23.0m road reserve - 4.0m wide verges, on road cycle ways (1.5m), off road shared path (2.5m), footpath (1.5m), landscaped strips, parking lanes(2.5m) and carriageway (7.0m)
- 20.0m road reserve - 4.0m wide verges, on road cycle ways (1.5m), off road shared path (2.5m), footpath (1.5m), landscaped strips, parking lanes (2.5m) and carriageway (7.0m)
- 18.0m road reserve - 4.0m wide verges, footpath (1.5m), landscaped strips, parking lanes(2.5m) and carriageway (6.0m)

4.4.2 Pavement

The road pavement adopted consisted of a granular pavement ranging in depth from 450mm to 700mm, with 50mm asphaltic topping. Pavement designs have been assumed only and will be subject to final projected traffic loadings and quality of site foundation sub-grade material.

4.4.3 Concrete Works

Footpaths and shared paths are assumed to be 100mm plain reinforced concrete with nominal bedding course. No allowances for coloured or architectural finishes have been included. The cost estimate for paths is inclusive of standard kerb ramps and jointing.

Kerbs are assumed to be 150mm type SA throughout the development.

No allowance has been made for traffic calming thresholds. Mid-block pedestrian refuges have been assumed to be provided on Uhrig Road, Road No. 1 and Road No. 3.

4.5 Stormwater Drainage and Water Quality

4.5.1 On Site Detention

On site detention is assumed to be included as an “on lot” cost and not to be provided within the overall site infrastructure.

4.5.2 Pit, Pipe and Trunk Stormwater Drainage

The drainage system is assumed to receive on lot post OSD and road pavement flows and pipe sizing has been estimated to cater for this. Kerb inlet pits have been assumed at 60m centres along all roads.

Stage 1 catchment is assumed to drain to the existing road drainage system in Uhrig Road and in turn flows to Carter Street. It has been assumed the existing piped system in Uhrig Road can be maintained for future use.

The Stage 2 catchment will ultimately drain to a new piped system to be constructed in Road No. 3 as part of Stage 3 works. An allowance has been included for the temporary connection of Stage 2 to the existing 3 x 1500 dia. trunk stormwater line culvert at the western end of Road No. 3.

The eastern side of Stage 3 is assumed to drain to the section of bio-retention swale to be constructed within Stage which in turn will be temporarily connected to the existing 3 x 1500 dia. trunk stormwater line.

The western side of the Stage 3 will drain via a proprietary water quality device to either the existing 3 x 1500 dia. trunk stormwater line or to the existing road drainage system in Carter Street.

Stage 4 will include the diversion and upgrading of the 3 x 1500mm dia. trunk stormwater line to a 3 x 1800mm trunk stormwater line. The adopted alignment assumes the 3 x 1800mm dia. trunk stormwater line can be constructed below Road No 5. The eastern side of Stage 4 will drain via the bio-swale to the trunk stormwater line. The western side of Stage 4 will drain via proprietary water quality devices to the trunk stormwater line.

Stage 5 new piped system will drain via the Stage 4 piped system via the bio-swale to the trunk stormwater line.

Other assumptions:

- Excavation for drainage assumed to be 2 x the diameter of the pipe wide, by 3 x the height of the pipe high
- The stormwater has been designed to suit the proposed road grading and flows generally across the site from east to west
- No drainage calculations have been carried out and all pipe sizes have been estimated
- The southern portion of the site connects to the existing stormwater in Uhrig Road

4.5.3 Subsoil Drainage

Allowance has been made to install subsoil drainage lines under kerb lines where no longitudinal pipe is installed within internal roads. Where subsoil drainage is provided flushing points at 40m centres have been allowed for.

4.5.4 Water Quality

Bio Swales

The assumed layout incorporates a 20m wide green corridor to be constructed within Stage 3 and 4 as shown in the Goodman NT Structure Plan. It is envisaged that catchments to the east of the swale will drain via the bio swale and discharge into the new trunk stormwater line. Assuming a 20/80% ratio for pervious /impervious catchment area of approximately 14 Ha draining to the swale, a bio swale filter area of 1400 sq. m has been assumed.

Allowance has been made for the bio-swale filter area to run the full length of the 20m wide green corridor. The cost assumes the bio swale will contain a trunk drainage pipe and pits, subsoil pipe and connectors, filter material, landscaping and turf.

The DoP Draft DCP suggests a bio-retention swale be incorporated to within roads running east west on the site. The current Goodman NT Structure Plan does not include this within the layout and accordingly, cost for these bio-swales have not been included.

It is noted the Draft DCP suggest the major bio-swale (north south) should be aligned parallel and directly beside Road No. 1. The current Goodman NT structure plan does not allow for this and accordingly, the cost is based on the 20m green corridor that runs through the Stage 3 and 4 developable lot areas.

Proprietary Water Quality Devices

For areas of the site that cannot drain to the proposed bio-swales it is assumed proprietary devices will be required to manage water quality. Allowance has been for devices to be installed in the following stages:

- Stage 1 and 2 - the major site bio-swale will not be constructed until Stage 3 which means these areas will require water quality treatment in the interim period.
- Stage 3 - the western side of Stage 3 will not drain to the major bio-swale
- Stage 4 – to service the catchment on the western side of the major bio-swale that grades towards Carter Street.

4.6 Utilities

General

The BSE reports notes that there are existing electrical, water, gas, telecommunications and sewer mains servicing the existing site.

It is envisaged that augmentation or upgrading of lead in services may be required and if so, the cost of these works will be recoverable and accordingly, these costs have been excluded from the cost estimate.

Further investigation into the capacity of the existing surrounding service mains is required to determine whether this is the case.

Provision for utility road crossing has been assumed to occur at 50m intervals on all internal roads.

Electrical

The cost estimate assumes new electrical reticulation will be installed throughout the development.

High Voltage

It is assumed that sufficient HV conduits to service subsequent stages will be installed within the Stage under construction. This means that in Stage 1 HV conduits sufficient to serve stages 2 to 5 will be installed in Stage 1 road verges but HV feeder cables will only be installed to service Stage 1 at that time.

The number of HV conduits installed will be progressively less for each subsequent stage. The cabling length will increase to provide a loop feeder for each subsequent stage of the development.

HV supply is assumed to originate from zone substation at the corner of Carter Street and Birnie Avenue. An allowance has been made to upgrade the breakers at the zone substation in Stages 2 and 4.

Low Voltage

The layout for costing assumes low voltage supply for street lighting will be installed in a single conduit with pits on one side of each internal road with road crossing to supply lights on the opposite side of the road. The LV reticulation is assumed to originate from existing network within adjacent roads.

Street Lighting

The layout for costing assumes steel standard street lights will be installed on both sides of each road alternating at approximately 40m centres. An allowance for additional lighting at street intersections has also been included.

Potable and Recycled Water Supply

It is assumed that all potable water services will be constructed in ductile iron cement lined pipes and that recycled water services will be constructed in uPVC pipes.

The estimated sizing of the supply pipes has been interpolated from the BSE report and rationalised for the Structure Plan proposed staging.

In general the layout allows for potable water reticulation to be aligned on the opposite side of the road to the recycled water reticulation. Connection via road crossings will be made to service adjacent lots.

Sewer

Generally, sewer reticulation has been assumed as being gravity services flowing to existing Sydney Water sewer on the western side of the site in Carter Street.

An allowance has been made for the installation of a sewer pump station to service and rising main connecting into Uhrig Road as no connection will be available to the ultimate sewer main to be installed in Stage 3.

Sewer reticulation in Stages 1 & 2 generally connects to the existing system in Uhrig Road, with minor connections in the southern corner to the existing system in Carter Street

Stage 3 connects to the existing system in Carter Street.

Stages 4 & 5 connect to the existing system in Hill Road.

Telecommunications

NBN Co. will service the development with the pit and conduit infrastructure cost to be borne by the development. It is assumed NBN will be aligned on both sides of each internal road with road crossings to service lots/buildings on the opposite side of the road.

Gas

Jemena has existing gas main services located in Carter Street and Hill Road that are available to connect services. It has been assumed new gas reticulation will be required to service the development. An allowance has been made to install a 100mm dia. PE main on one side of each of the internal roads with road crossings to service lots on the opposite side of the road.

4.7 Consultants Design/ Project Management, Authority Design and Construction Fees

An allowance for consultant design and project management costs has been included in the cost estimate to cover costs for:

- Project management
- Authority approvals and negotiations
- Engineering design and documentation
- Planning services
- Infrastructure tender and construction management

Authorities design and construction fees include:

- Design approval and monopoly fees
- Authority inspection and connection fees

The above fees have been estimated as 15% of the total infrastructure construction cost.

Being professional services, a nominal 5% contingency has been applied to these costs.

This item excludes all planning contributions and levies i.e. Section 94 contributions, SEPP levies etc..

4.8 Long Service Levy

All construction works attract a mandatory Long Service Levy which has been included in the infrastructure cost estimate, calculated at 0.35% of the total infrastructure construction cost.

5 Preparation of Cost Estimate

The infrastructure cost estimate is attached in Appendix C of this report.

The cost estimate has been provided in 2014 dollars.

5.1 Cost Rates

The cost rates adopted within the estimate are based on average tender rates for infrastructure projects of a similar nature. Where cost rates have been adopted from broad acre industrial developments these have been factored up to allow for construction within a highly urban environment as is the case for Carter Street.

5.2 Quantity Take off

The quantity take off was conducted using the AT&L Drawing 12-113 Sheet PC01 to PC18, Issue P1.

5.3 Contingency

Contingency has been included within the estimate to cater for unidentified issues that may arise with the development.

In terms of survey, geotechnical, environmental investigations and with respect to the level of knowledge for development engineering design is at a very strategic and preliminary stage.

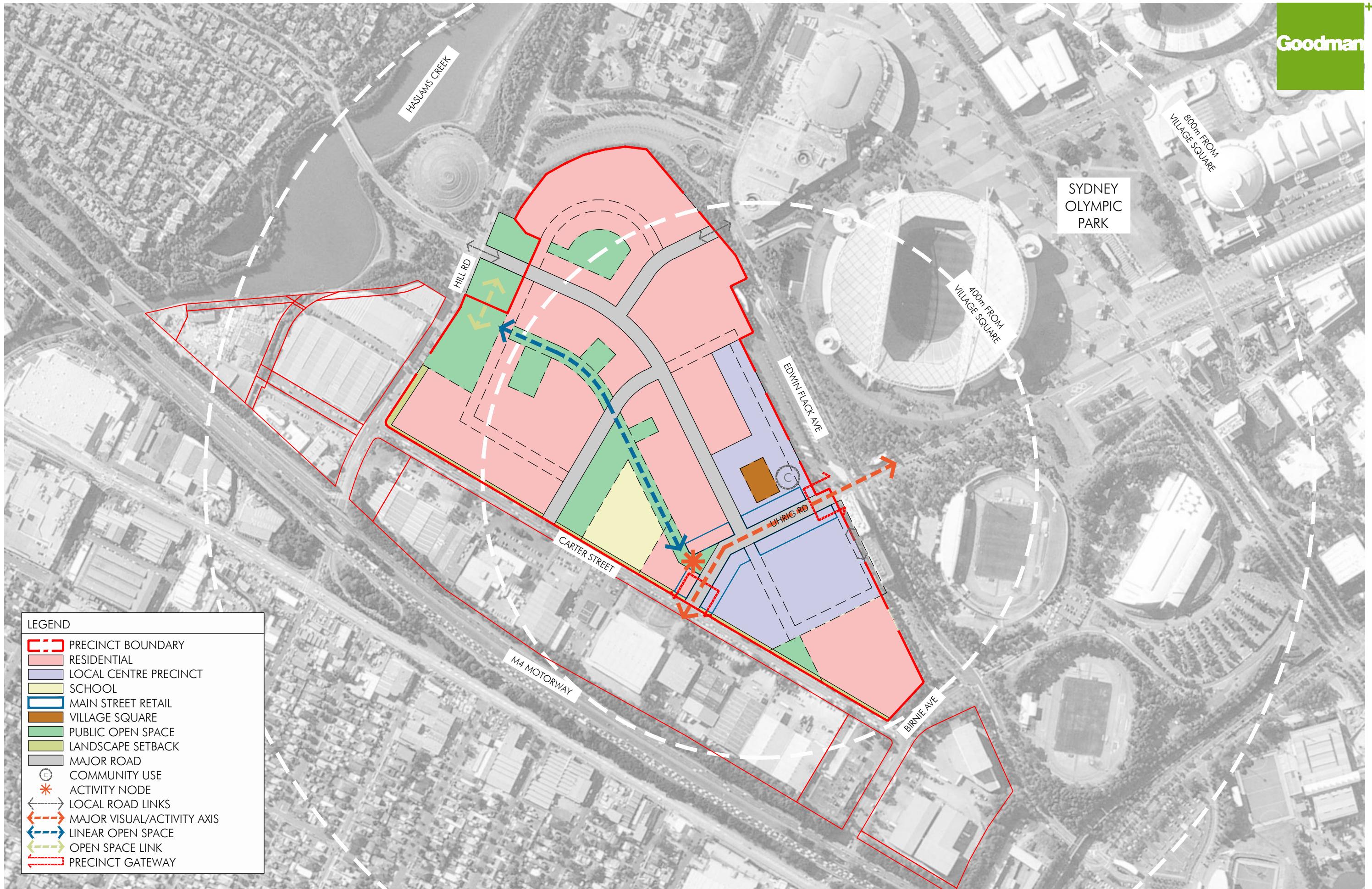
Given this level of uncertainty and without any formal conceptual or detailed design it is appropriate that a contingency level of 20% has been adopted.

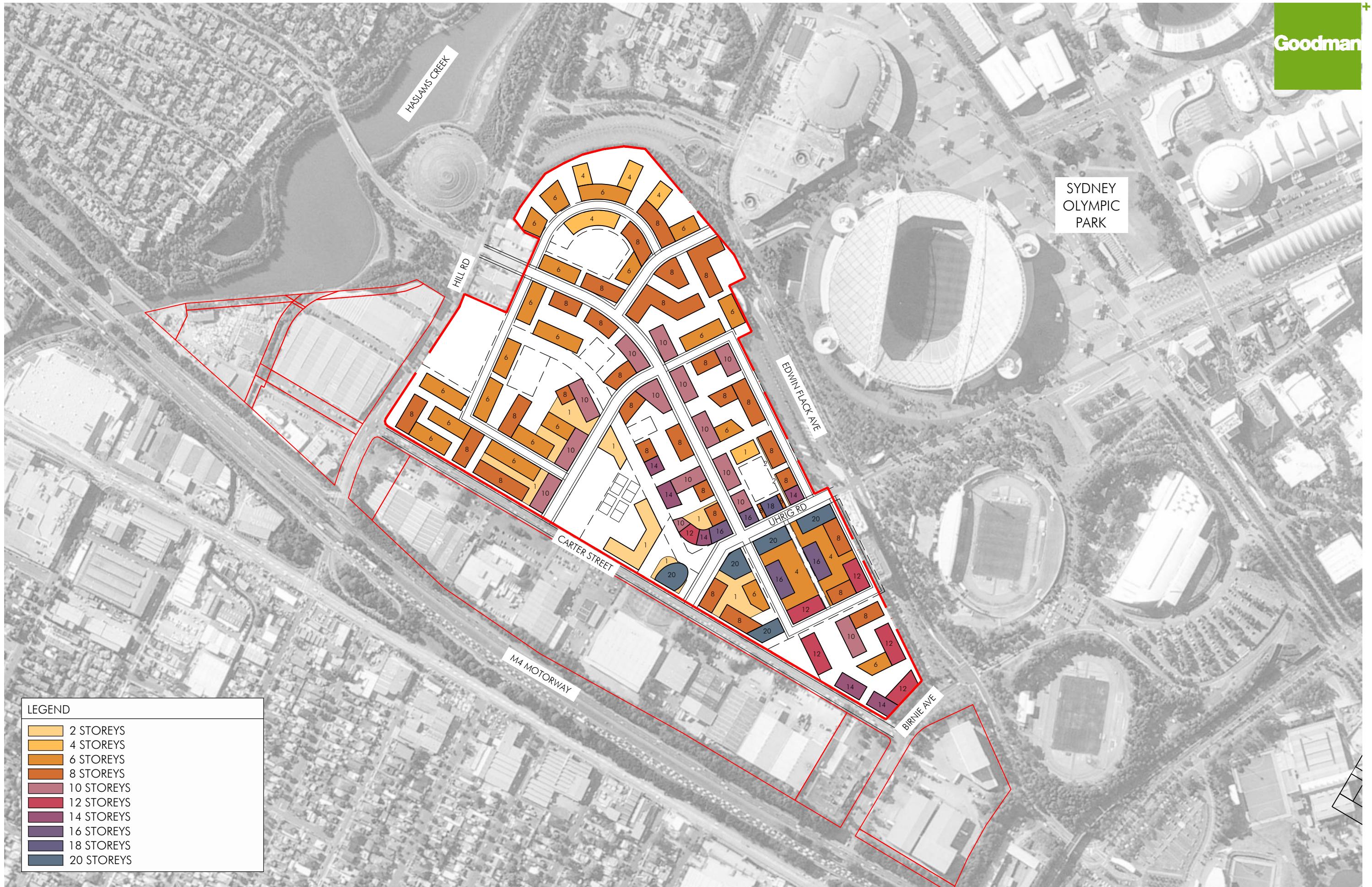
As investigation and design are progressed there is potential that the contingency level can be reviewed and reduced if deemed appropriate.

Appendix A

Goodman NT Structure Plan

Civil Engineers & Project Managers





Appendix B

AT&L Infrastructure Costing Drawings

Civil Engineers & Project Managers

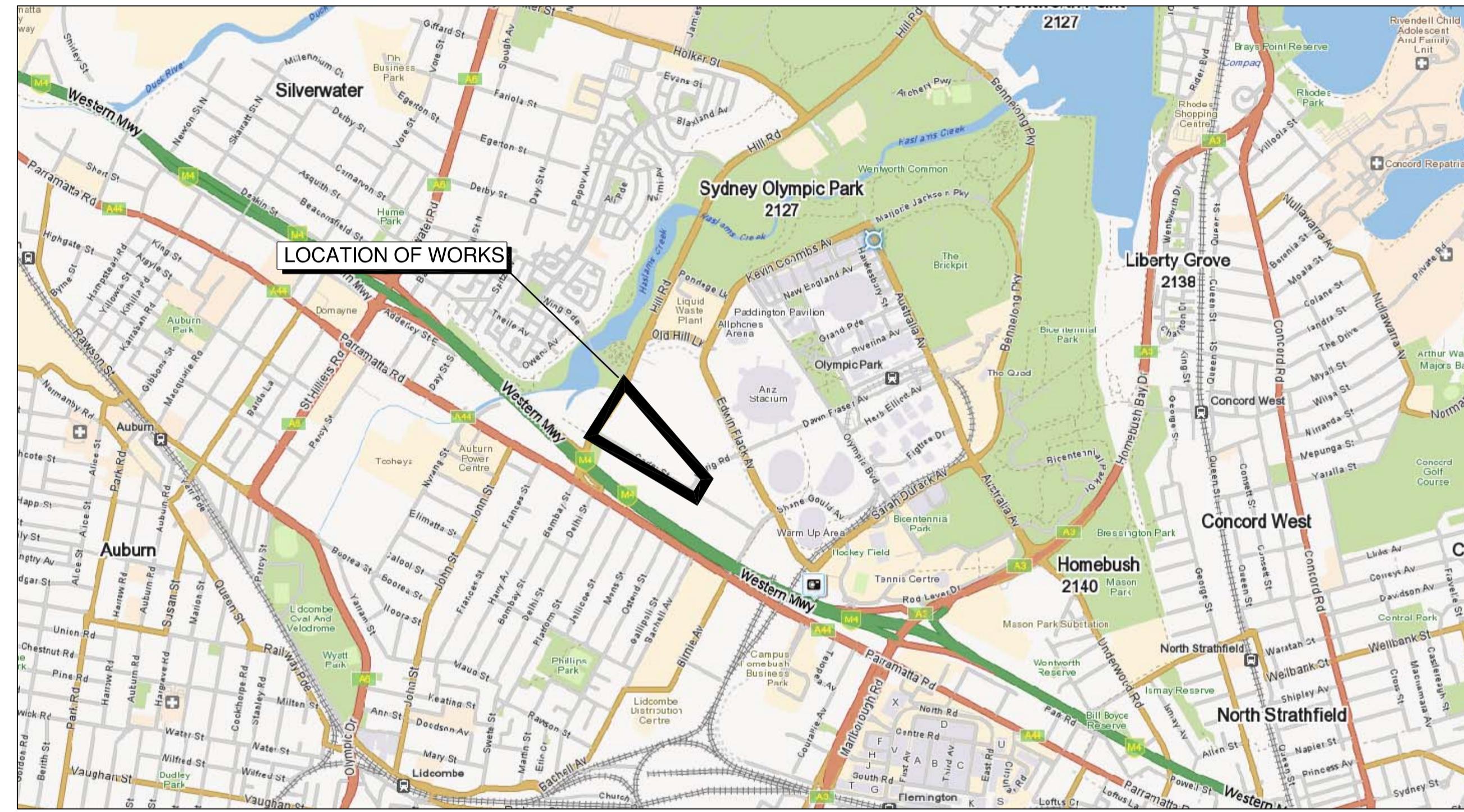
CARTER STREET PRECINCT

REDEVELOPMENT

BUDGET ESTIMATE ISSUE

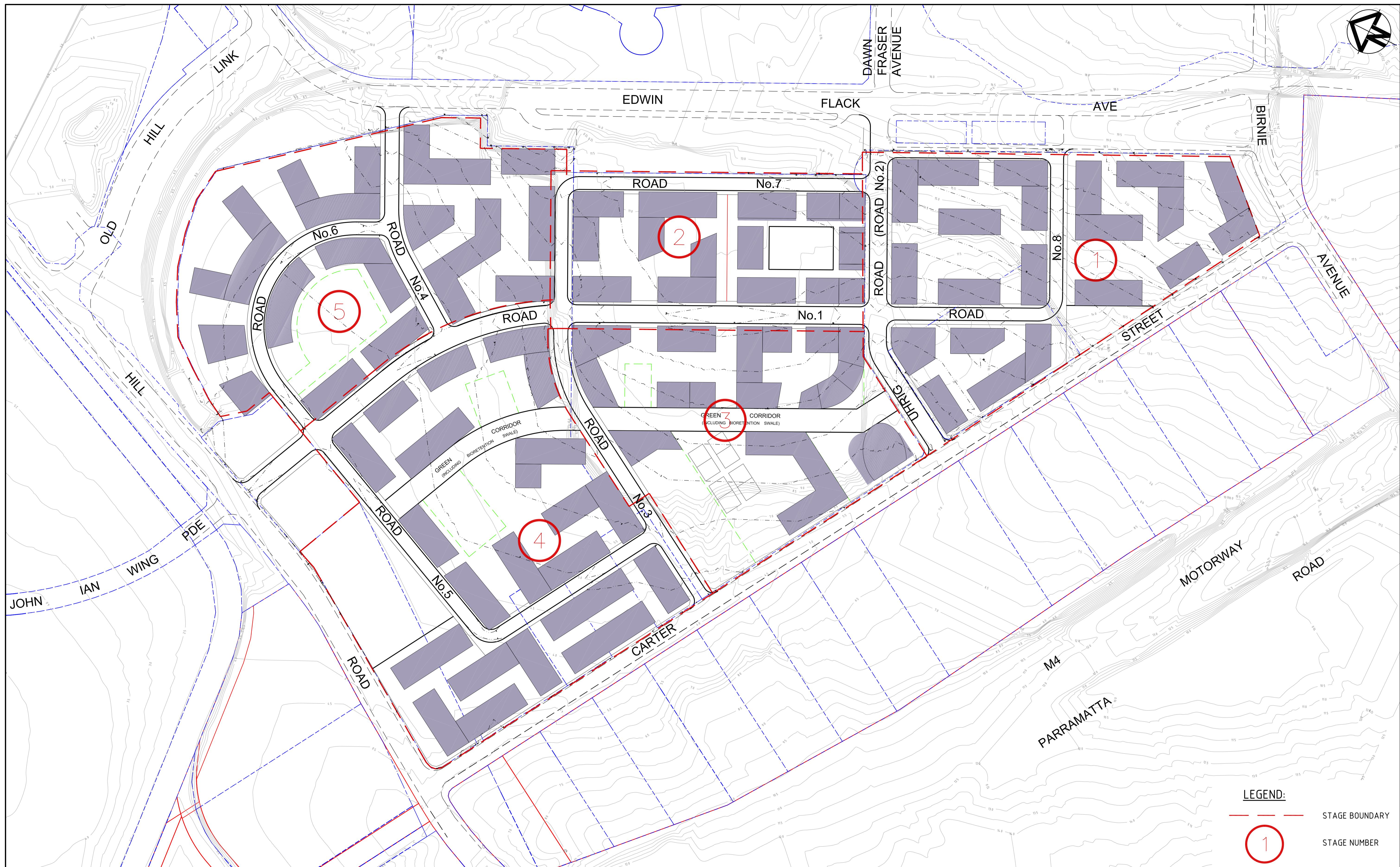
DRAWING LIST

- PC00 COVER SHEET AND LOCALITY PLAN
- PC01 OVERALL CIVIL MASTERPLAN
- PC02 OVERALL CIVIL STAGING PLAN
- PC03 TYPICAL ROAD CROSS SECTIONS
- PC04 EARTHWORKS DIAGRAM
- PC11 ROADWORKS AND STORMWATER DRAINAGE PLAN SHEET 1
- PC12 ROADWORKS AND STORMWATER DRAINAGE PLAN SHEET 2
- PC13 ROADWORKS AND STORMWATER DRAINAGE PLAN SHEET 3
- PC14 ROADWORKS AND STORMWATER DRAINAGE PLAN SHEET 4
- PC15 ROADWORKS AND STORMWATER DRAINAGE PLAN SHEET 5
- PC16 ROADWORKS AND STORMWATER DRAINAGE PLAN SHEET 6
- PC17 BULK EARTHWORKS PLAN
- PC18 BULK EARTHWORKS SECTIONS

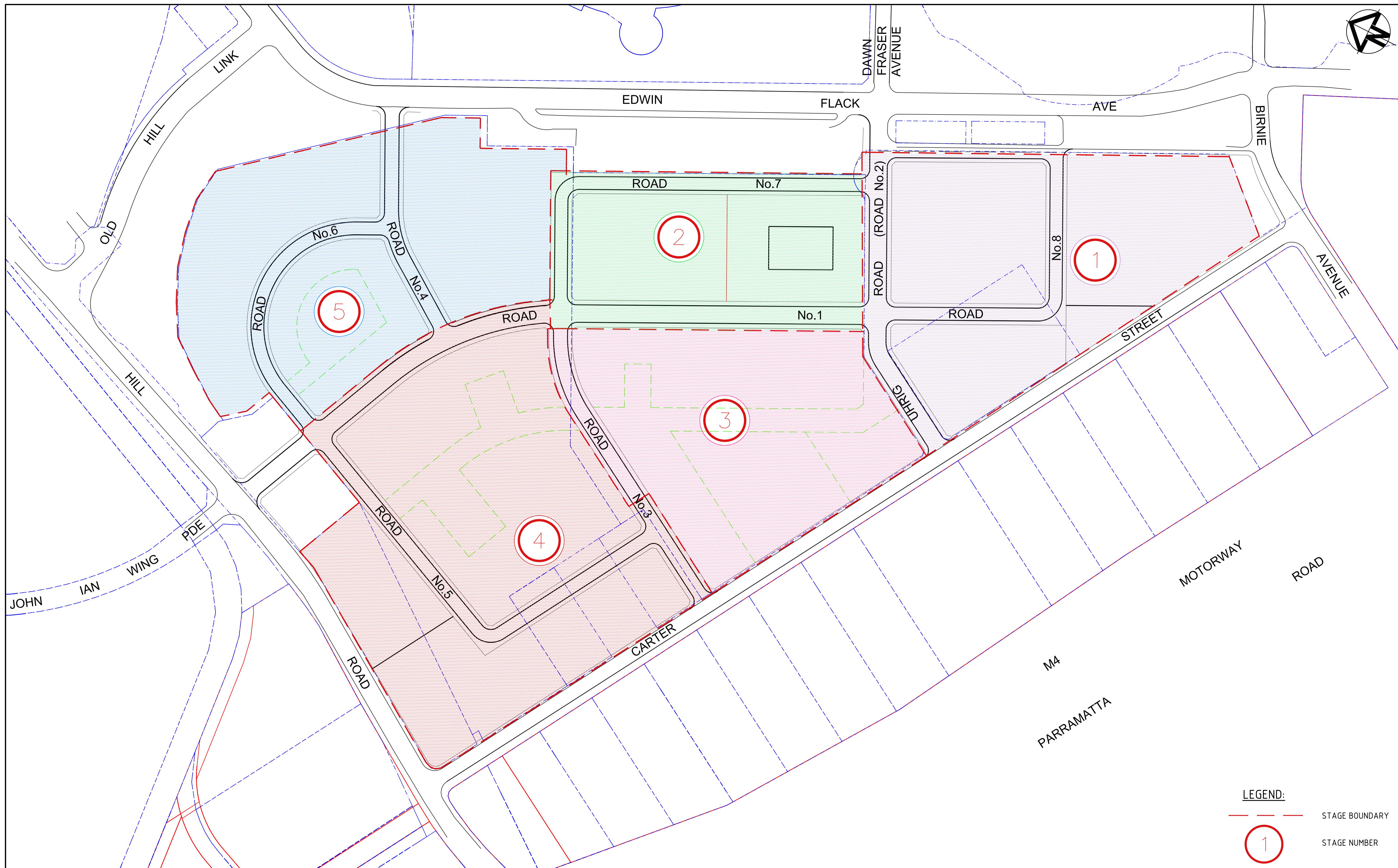


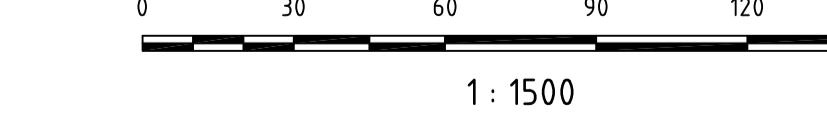
LOCALITY PLAN
N.T.S

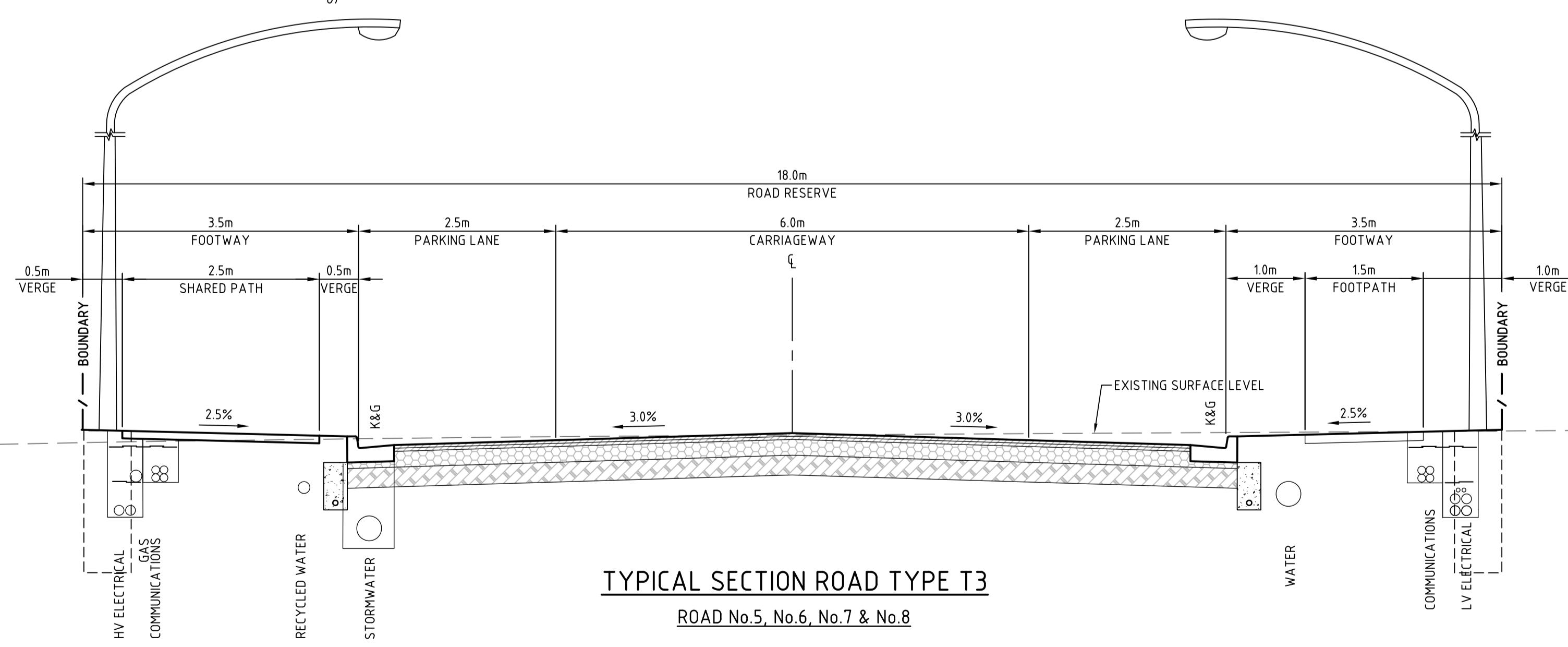
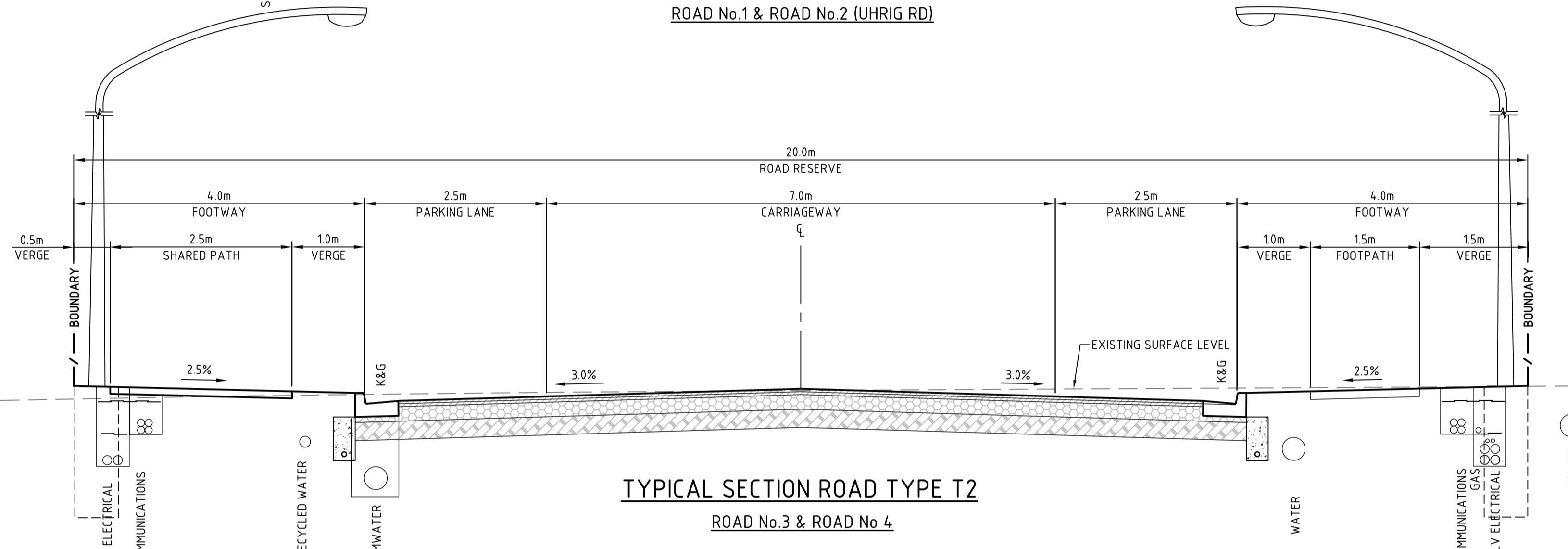
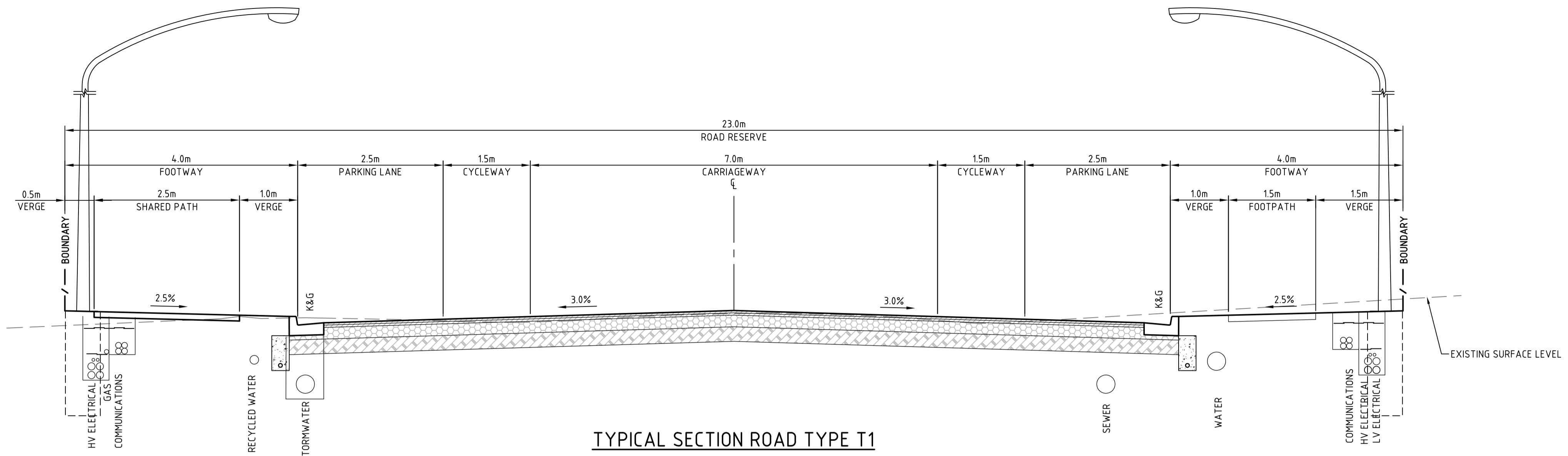
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Title COVER SHEET AND LOCALITY PLAN						Status FOR COSTING NOT TO BE USED FOR CONSTRUCTION A1			
							Drawing No.	Project No.	Issue
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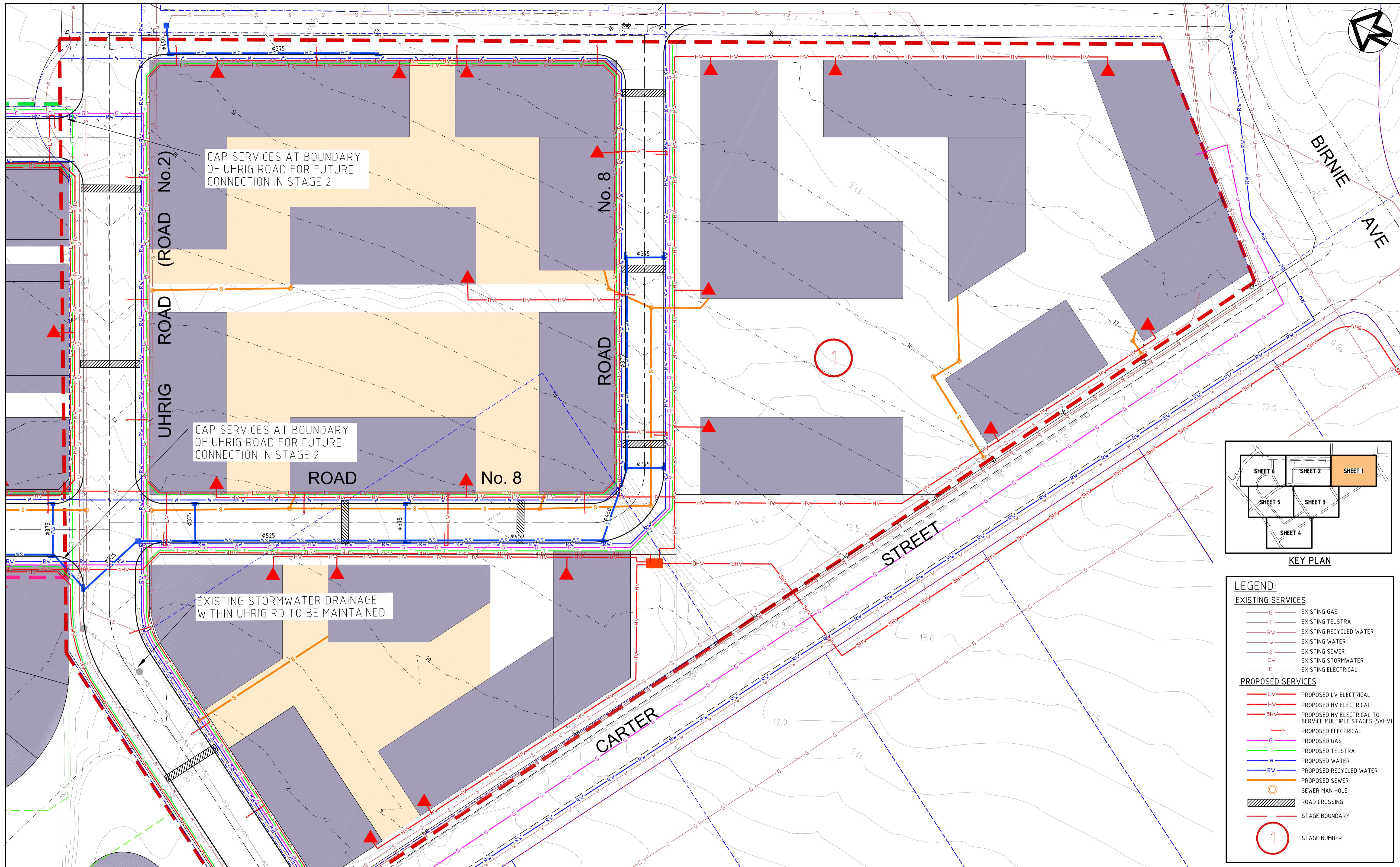
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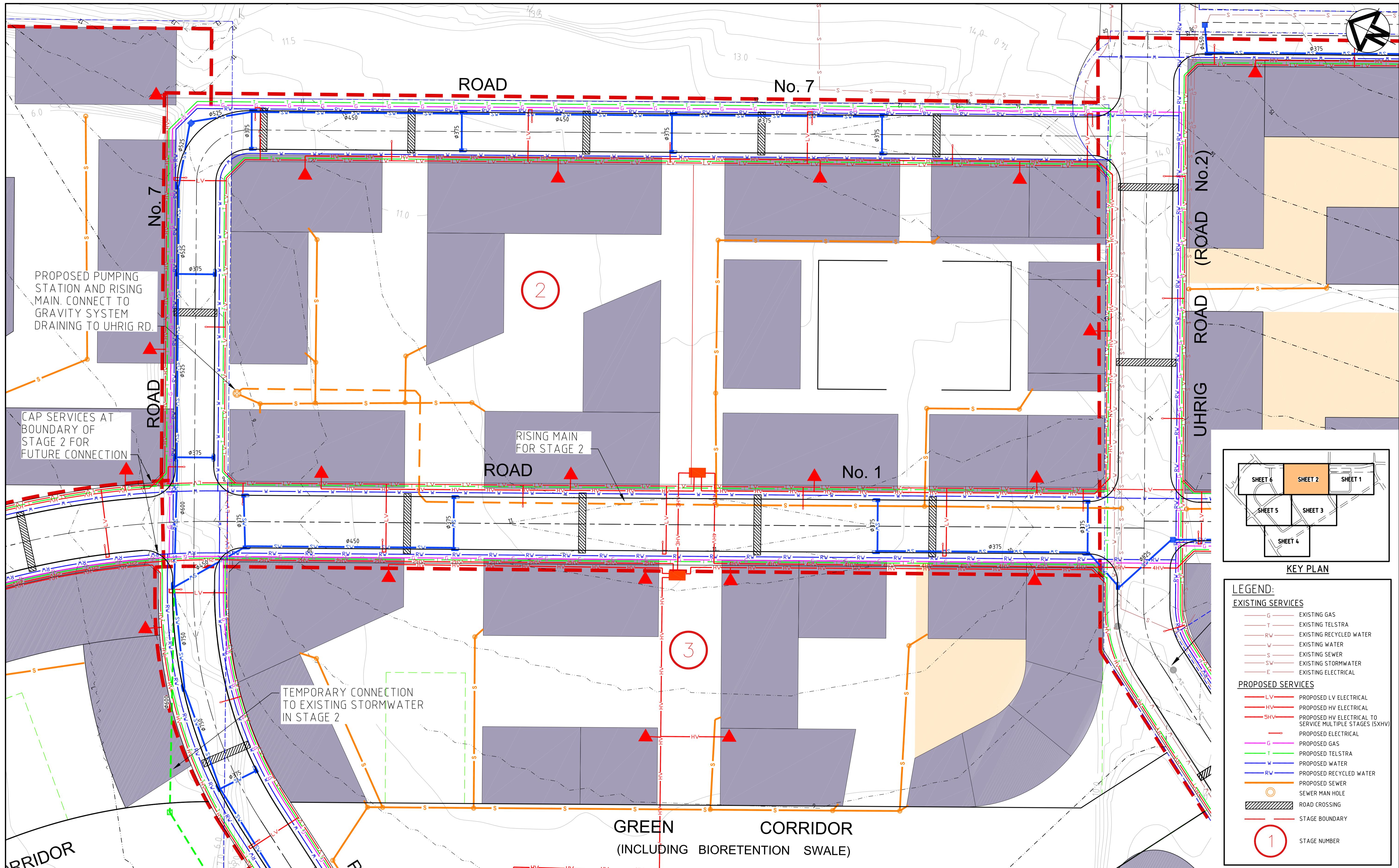
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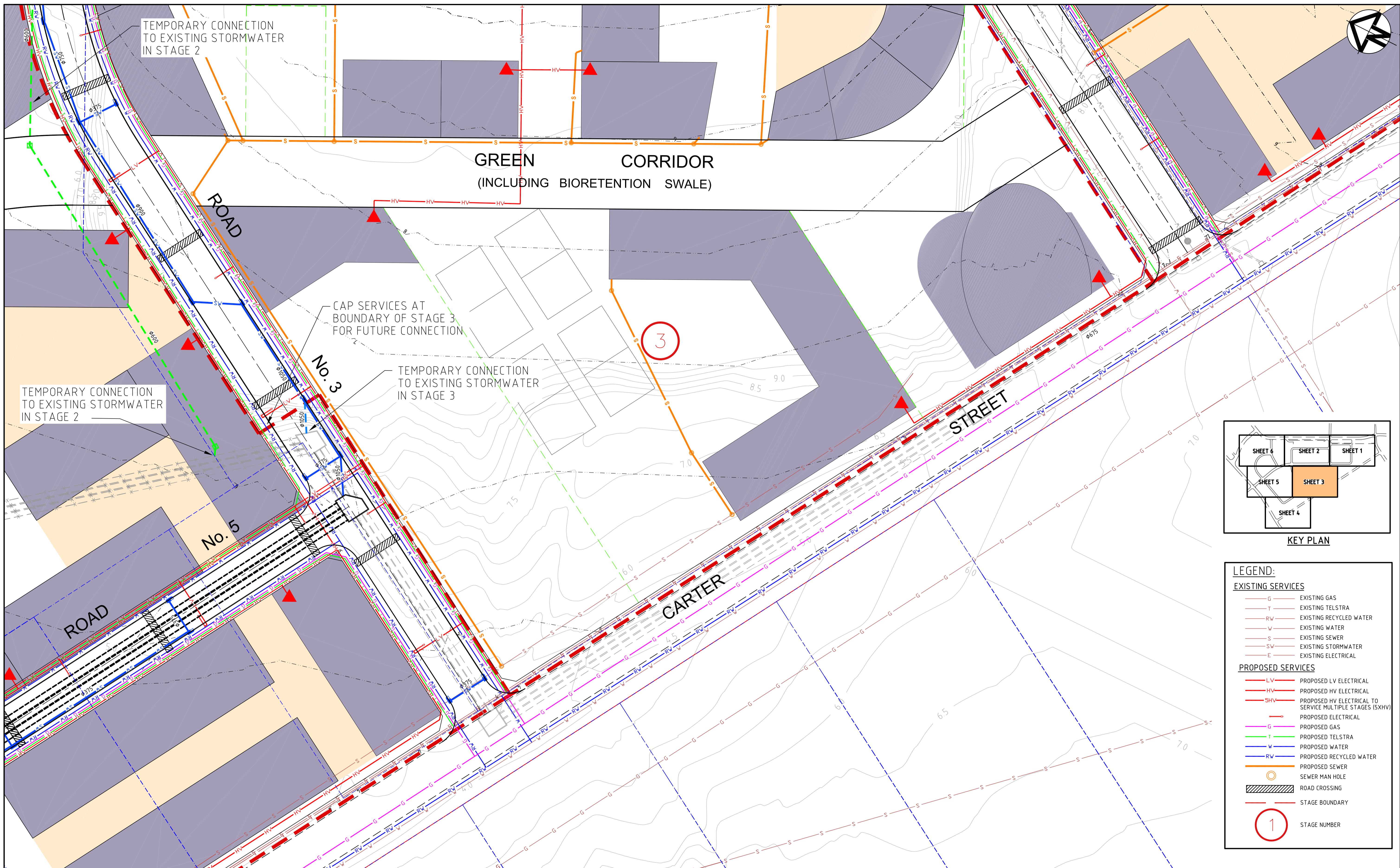
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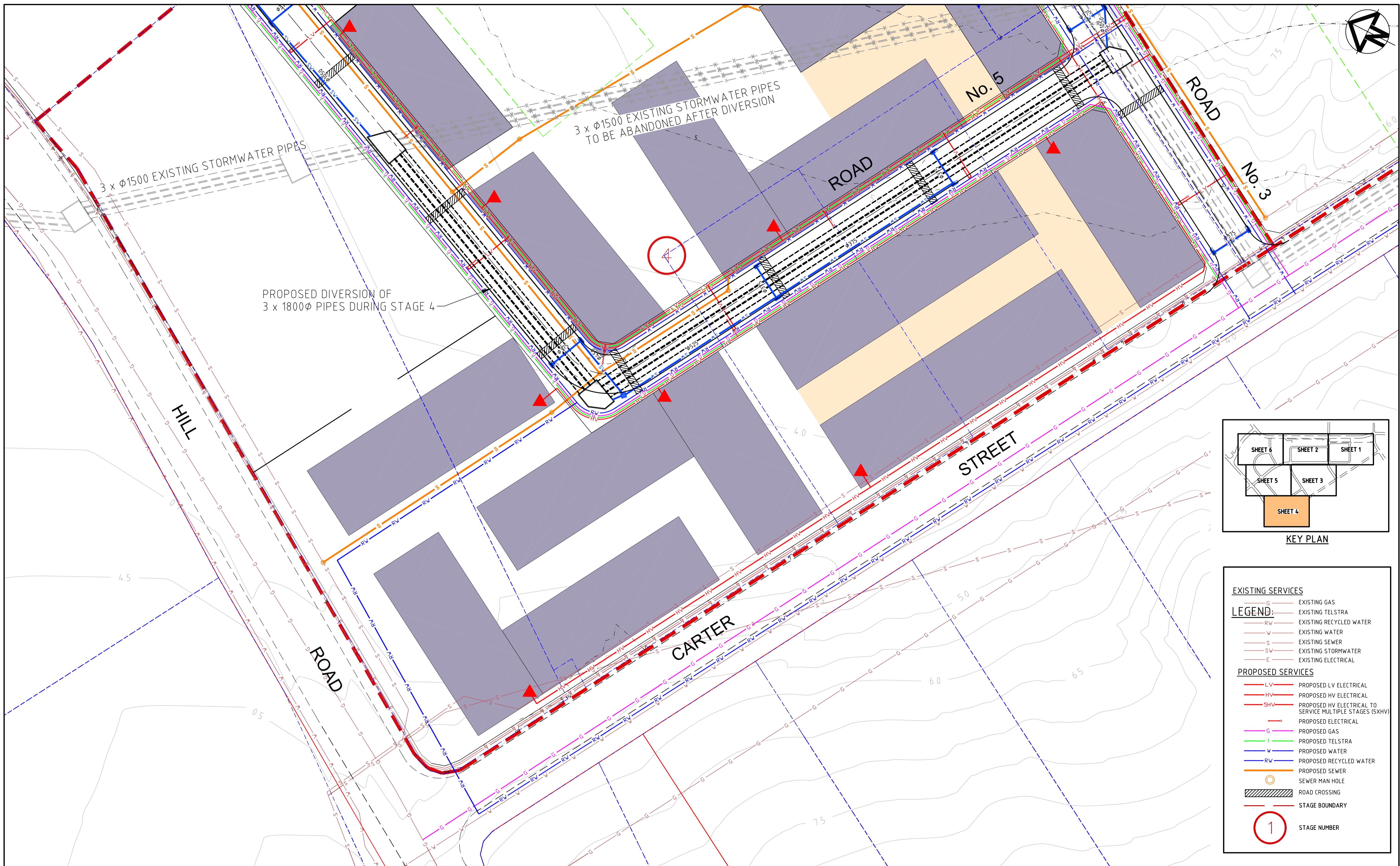
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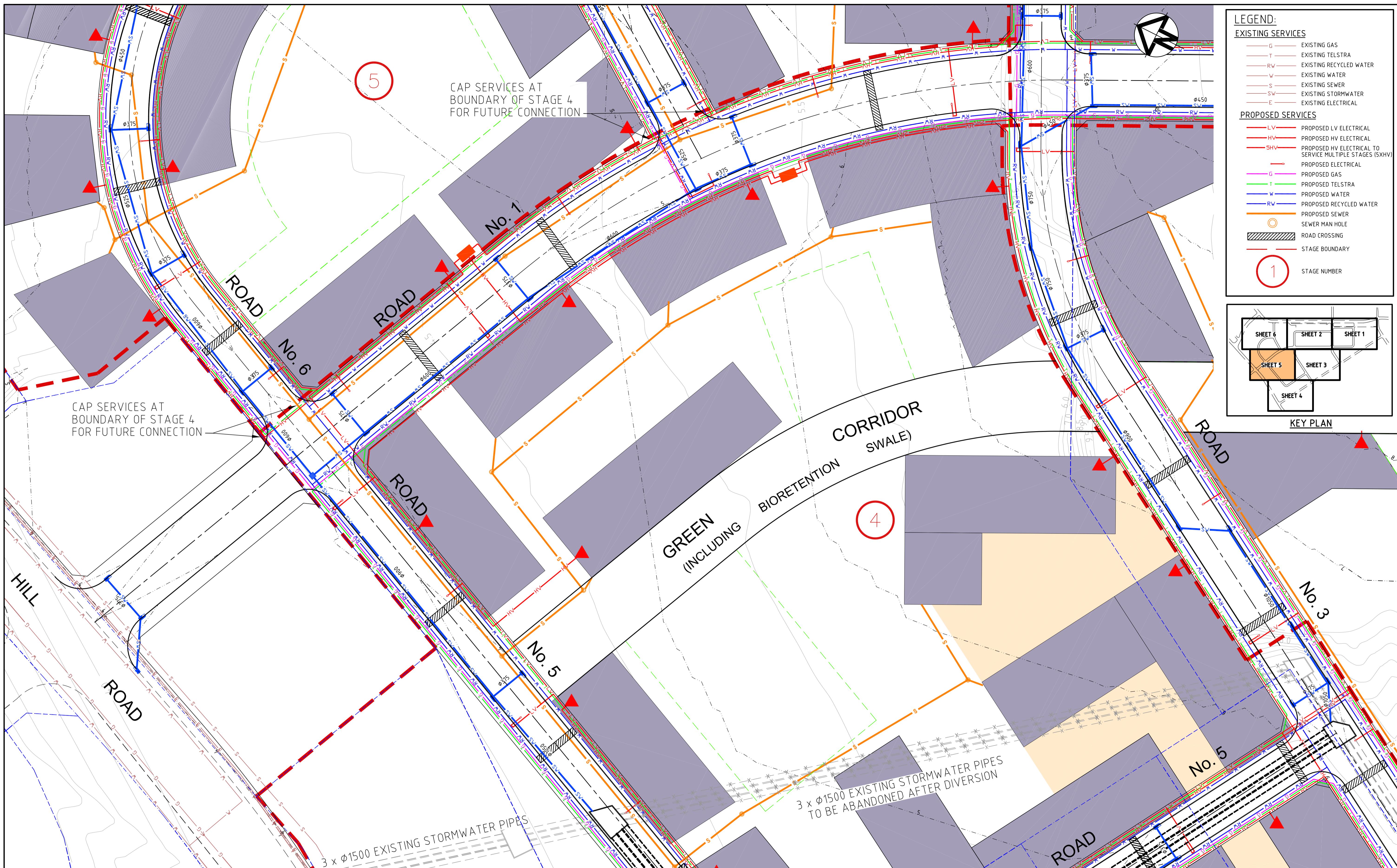
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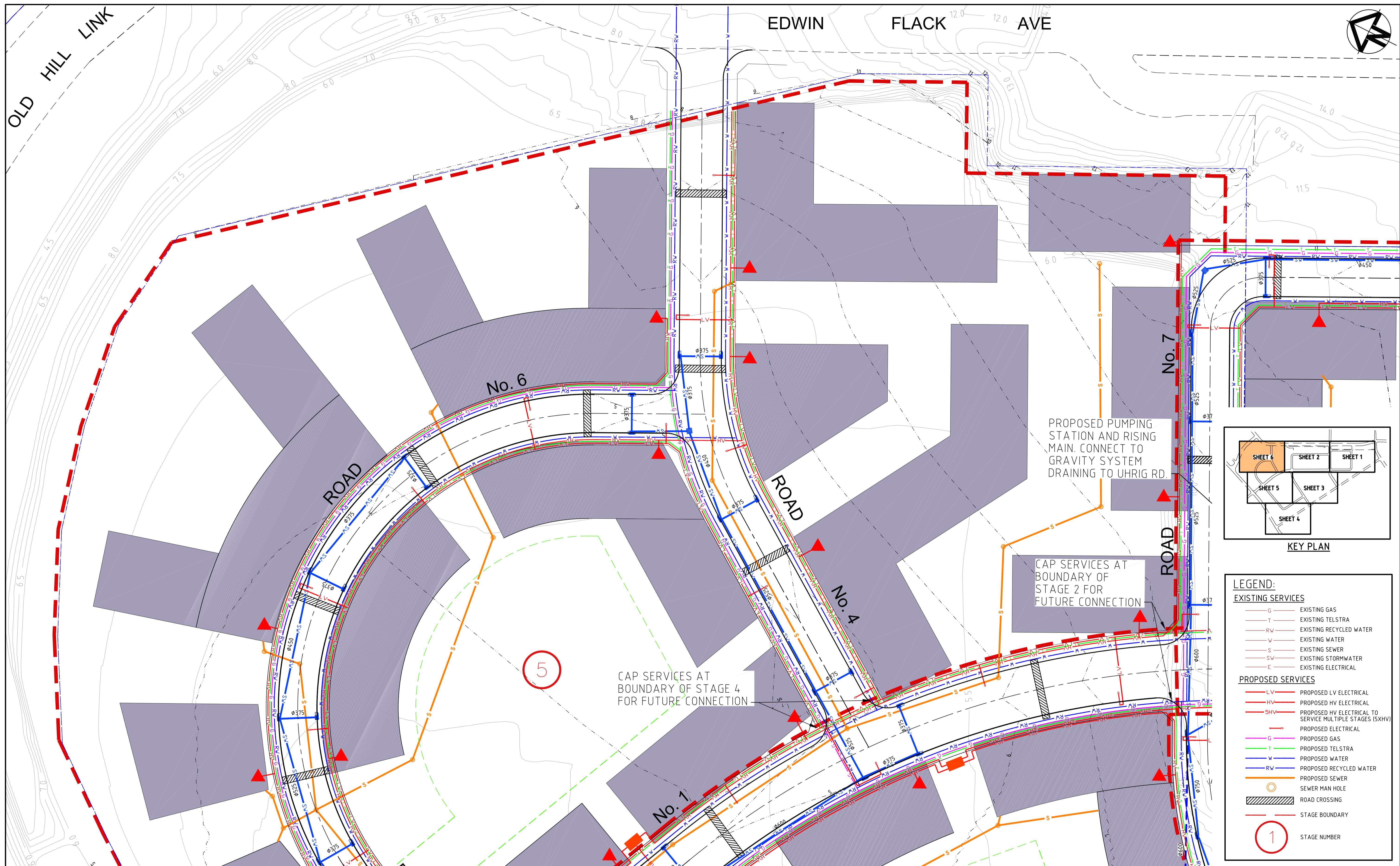
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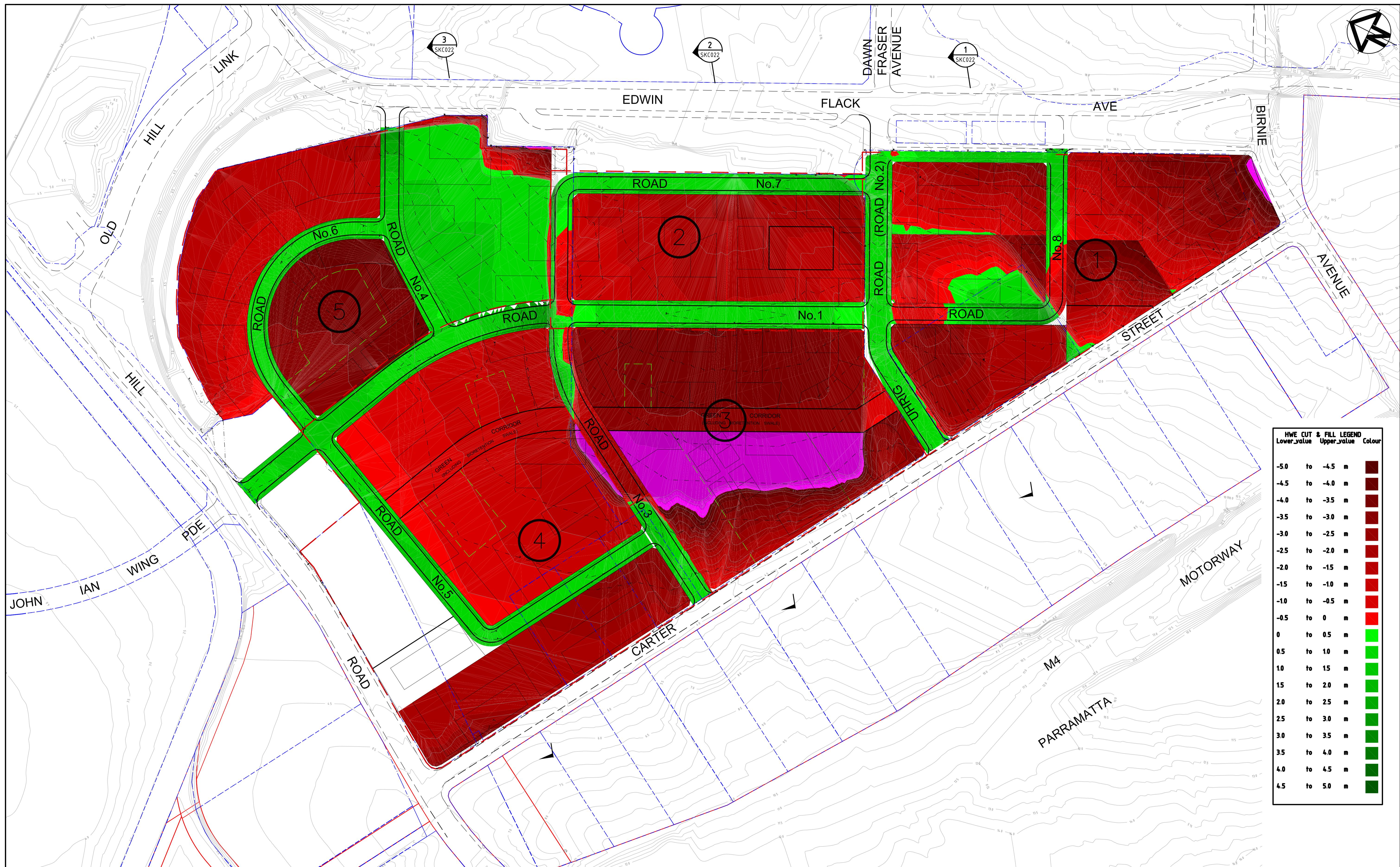
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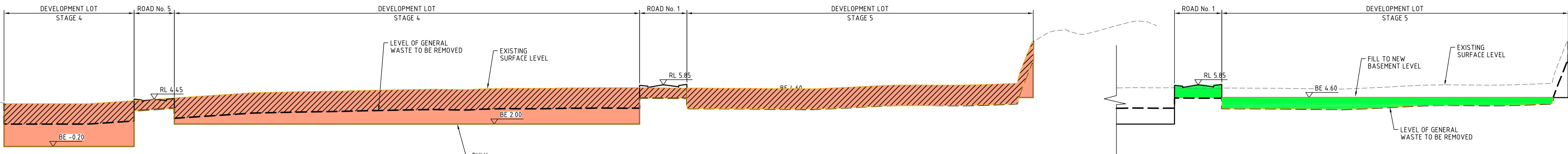
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			AHD						at&l		
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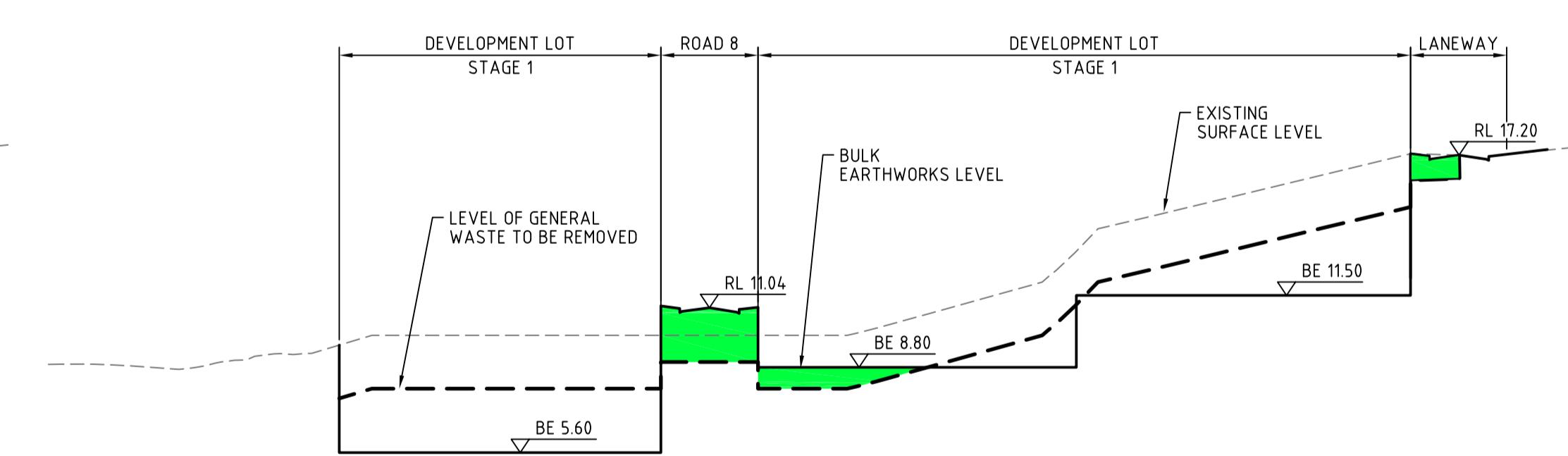
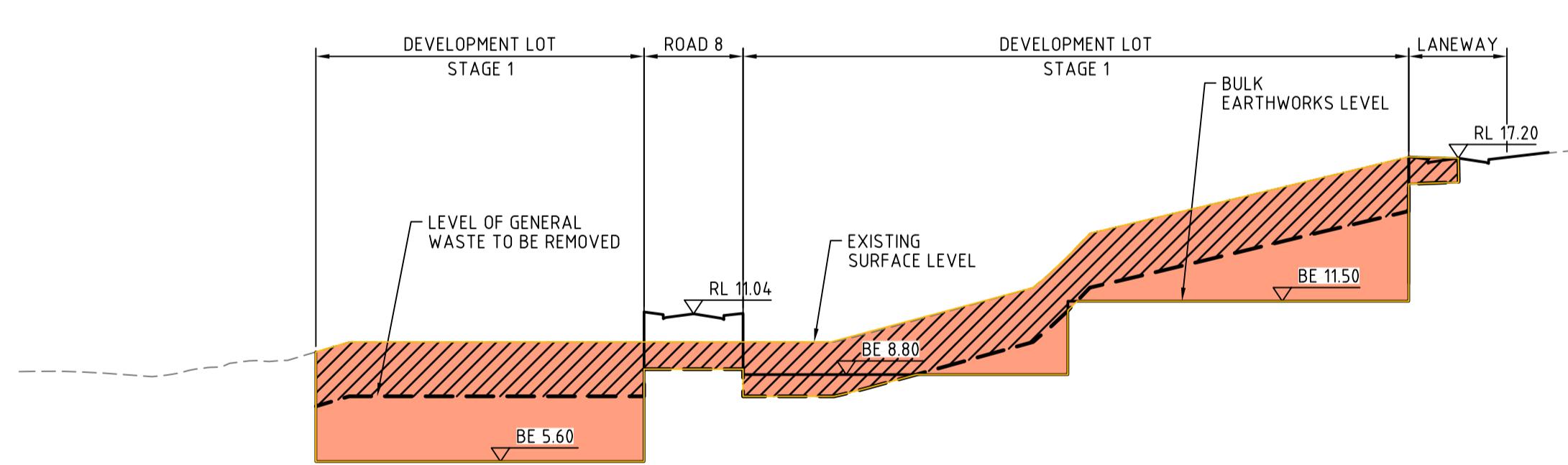
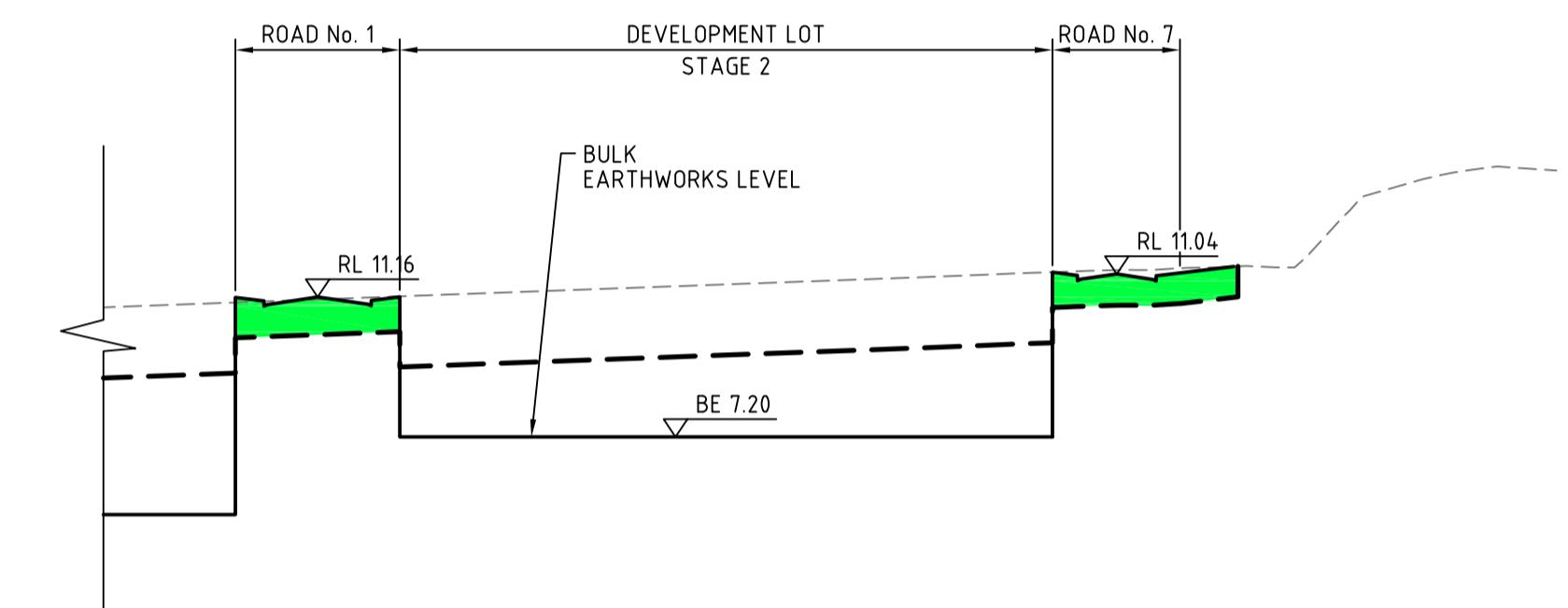
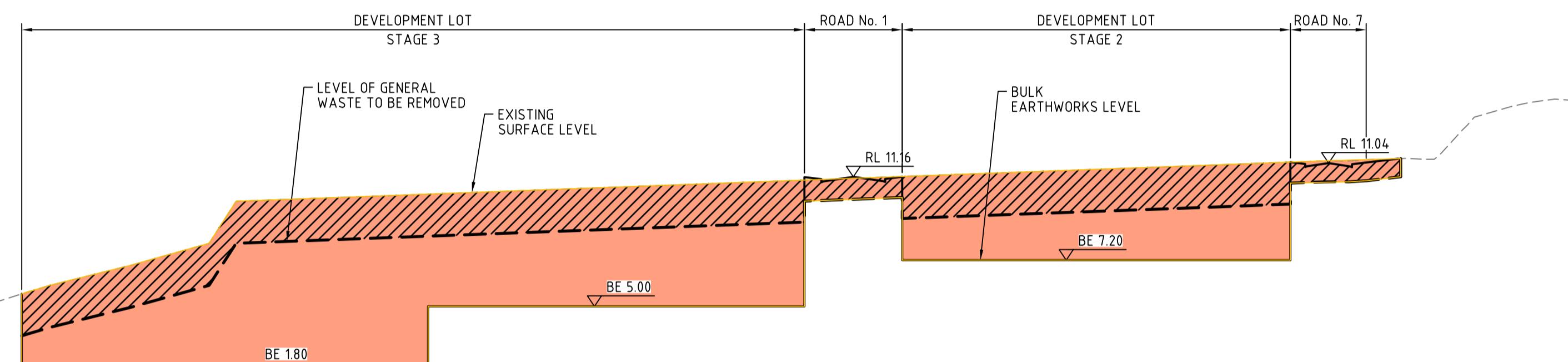


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Issue	Description	Date								
Status FOR COSTING NOT TO BE USED FOR CONSTRUCTION A1										
								Drawing No.	Project No.	
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								Issue	P2	



SECTION 3a SKC021

1:1000 H 1:200 V



BULK EXCAVATION

FILL TO BE LEVEL

LEGEND		
	GENERAL SOLID WASTE	
	BULK EXCAVATION	
	FILL TO BE LEVEL	

			Bar Scales	THIS DRAWING CANNOT BE COPIED OR REPRODUCED IN ANY FORM OR USED FOR ANY OTHER PURPOSE OTHER THAN THAT ORIGINALLY INTENDED WITHOUT THE WRITTEN PERMISSION OF AT&L	Client	Scales	Project		Civil Engineers and Project Managers	
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Appendix C

Cost Estimate

Civil Engineers & Project Managers

Carter St - Civil Works - Cost Estimate

Date 26/03/2014

Rev 1



ABOVE THE LINE INFRASTRUCTURE COSTS - EXCLUDES BULK EARTHWORKS TO LOT BASEMENTS						
STAGING REFERENCE	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	ALL STAGES
	268m of 23m road reserve 278m of 18m road reserve	273m of 23m road reserve 273m of 18m road reserve	170m of 20m road reserve	268m of 23m road reserve 100m of 20m road reserve 278m of 18m road reserve	186m of 23m road reserve 260m of 18m road reserve	268m of 23m road reserve 278m of 18m road reserve
SITE AREA (m2)	57930	36100	46100	79700	59100	278930
DEVELOPABLE AREA (m2)	46500	22900	42700	64500	51000	227600
ITEM DESCRIPTION	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
GENERAL, PRELIMINARIES AND SITE MANAGEMENT						
1.0 (7.5% of total construction costs)	\$ 3,224,307.91	\$ 1,680,635.84	\$ 2,323,289.16	\$ 3,612,518.18	\$ 2,722,737.18	\$ 13,563,488.27
2.0 CLEARING & DEMOLITION	\$ 3,460,995.78	\$ 2,874,574.55	\$ 3,349,036.10	\$ 7,789,268.50	\$ 1,974,572.40	\$ 19,448,447.33
3.0 TESTING & INVESTIGATION	\$ 11,687.04	\$ 10,645.71	\$ 5,522.69	\$ 14,038.81	\$ 10,006.88	\$ 51,901.12
4.0 EROSION & SEDIMENT CONTROL	\$ 43,447.50	\$ 27,075.00	\$ 34,575.00	\$ 59,775.00	\$ 44,325.00	\$ 209,197.50
5.0 TOPSOILING AND GRASSING / SITE STABILISATION	\$ 115,151.52	\$ 68,580.92	\$ 95,272.68	\$ 156,379.64	\$ 115,453.44	\$ 550,838.20
EARTHWORKS						
(all quantities measured in bank volume) (includes removal of GSW and removal of Hotspots)						
6.0 ROADWORKS	\$ 31,292,272.40	\$ 14,906,915.17	\$ 24,271,325.93	\$ 31,880,735.67	\$ 31,192,336.35	\$ 133,543,585.52
7.0 STORMWATER DRAINAGE	\$ 800,462.50	\$ 717,962.50	\$ 160,103.75	\$ 921,733.50	\$ 422,957.50	\$ 3,023,219.75
8.0 CONCRETE WORKS	\$ 808,520.00	\$ 673,455.00	\$ 670,245.00	\$ 2,197,940.00	\$ 133,207.50	\$ 4,483,367.50
9.0 SUBSOIL DRAINAGE	\$ 325,212.00	\$ 338,798.00	\$ 85,483.00	\$ 434,717.00	\$ 191,945.00	\$ 1,376,155.00
10.0 MISCELLANEOUS WORKS	\$ 53,170.00	\$ 47,667.00	\$ 9,935.00	\$ 66,676.00	\$ 34,172.00	\$ 211,620.00
11.0 LANDSCAPING AND IRRIGATION	\$ 13,747.50	\$ 12,675.00	\$ 3,412.50	\$ 16,009.50	\$ 9,379.50	\$ 55,224.00
12.0 INTERNAL INTERSECTION UPGRADES (SIGNALS)	\$ 80,410.00	\$ 37,180.00	\$ 46,310.00	\$ 93,885.00	\$ 95,645.00	\$ 353,430.00
13.0 EXTERNAL INTERSECTION UPGRADES	\$ 149,760.00	\$ 435,720.00	\$ 91,008.00	\$ 360,960.00	\$ 214,272.00	\$ 1,251,720.00
14.0 ELECTRICAL , TELECOM , GAS and SERVICE ROAD CROSSINGS	\$ 1,146,861.00	\$ 447,903.00	\$ 214,589.00	\$ 561,338.00	\$ 620,779.00	\$ 2,991,470.00
15.0 LONG SERVICE LEVY	\$ 186,015.70	\$ 96,958.68	\$ 134,034.42	\$ 208,412.19	\$ 157,079.25	\$ 782,500.24
Sub -Total	\$ 53,333,357.79	\$ 27,799,439.37	\$ 38,429,584.13	\$ 59,754,753.47	\$ 45,036,863.79	\$ 224,353,998.55
20% Contingency on items 1-18,20, 5% Contingency for Item 19	\$ 9,626,832.26	\$ 5,017,882.82	\$ 6,936,656.07	\$ 10,785,913.58	\$ 8,129,290.02	\$ 40,496,574.74
Total Including Contingency	\$ 62,960,190.04	\$ 32,817,322.18	\$ 45,366,240.20	\$ 70,540,667.06	\$ 53,166,153.81	\$ 264,850,573.29

Carter St - Civil Works - Cost Estimate

Date 26/03/2014

Rev 1



BELOW THE LINE LOT BASEMENT BULK EARTHWORKS							
ITEM DESCRIPTION	STAGING REFERENCE	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	ALL STAGES
		AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
DEVELOPMENT LOT BASEMENT BULK EARTHWORKS (all quantities measured 21.0 in bank volume)		\$ 5,679,194.50	\$ 2,806,926.00	\$ 8,055,536.00	\$ 5,802,983.00	\$ 4,816,795.50	\$ 27,161,435.00
Sub -Total	Sub -Total	\$ 5,679,194.50	\$ 2,806,926.00	\$ 8,055,536.00	\$ 5,802,983.00	\$ 4,816,795.50	\$ 27,161,435.00
20% Contingency for Item 20		\$ 1,135,838.90	\$ 561,385.20	\$ 1,611,107.20	\$ 1,160,596.60	\$ 963,359.10	\$ 5,432,287.00
Total Including Contingency	Total Including Contingency	\$ 6,815,033.40	\$ 3,368,311.20	\$ 9,666,643.20	\$ 6,963,579.60	\$ 5,780,154.60	\$ 32,593,722.00
Grand Total Incl Contingency (Above & Below the Line)	Grand Total Incl Contingency (Above & Below the Line)	\$ 69,775,223.44	\$ 36,185,633.38	\$ 55,032,883.40	\$ 77,504,246.66	\$ 58,946,308.41	\$ 297,444,295.29

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT	Stage 1		Stage 2		Stage 3		Stage 4		Stage 5								
						Total Site Area (m ²)		57930		Stage 2		46100		Stage 3		79700						
						Developable Area (m ²)		46500		36100		22900		42700		64500						
1.0	GENERAL, PRELIMINARIES AND SITE MANAGEMENT (7.5% of total construction costs)																					
1.1	<i>Site Establishment, Maintenance and Dis-establishment</i>																					
1.1.1	Establishment on site of all plant, materials & resources, including notice boards, project signs, site offices, site facilities, superintendent onsite facilities, connection & maintenance of site facilities and superintendent site facilities, construction and maintenance of site access tracks, dilapidation reports etc.	item	0.075	\$ 42,990,772.16	\$ 3,224,307.91	item	0.075	\$ 22,408,477.80	\$ 1,680,635.84	item	0.075	\$ 30,977,188.84	\$ 2,323,289.16	item	0.075	\$ 48,166,909.02	\$ 3,612,518.18					
1.1.2	Site security, temporary fencing and gates for the duration of the works. Note the contractor shall be required to provide fencing as required to safely separate works within this contract from all other onsite building works.	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.1.3	Maintain site for duration of Defects Liability Period	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.1.4	Site decommissioning including the removal from site of and payment of tipping fees for all rubbish, debris and spoil. Removal of any remaining materials and temporary installations.	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.2	<i>Survey</i>																					
1.2.1	Survey & setout of all construction works including all services	item	1	\$ -	item	1	\$ -	item	1	\$ -	item	1	\$ -	item	1	\$ -	item	1	\$ -			
1.2.2	Establishment of survey control stations	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.2.3	Work as executed survey to council and service authority requirements (including roads, stormwater, sewer, potable water)	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.2.4	Progressive WAE Survey during works of Road pavements for subbase, base and asphalt levels.	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.3	<i>Insurances</i>																					
1.3.1	Payment of Insurances required under the contract	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.3.2	Long service fee levy - to be paid by Goodman																					
1.4	<i>Traffic Management</i>																					
1.4.1	Preparation and submission of traffic management plans including liaison with relevant authorities. Provision & maintenance of all traffic control devices, linemarking & signage.	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.4.2	Removal of temporary traffic management devices.	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.5	<i>Existing Services</i>																					
1.5.1	Survey & locate existing services prior to the commencement of work. Includes conducting services searches and potholing of existing service crossings.	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc					
1.6	<i>Noise and Dust Monitoring</i>																					
						Total	\$ 3,224,307.91	Total	\$ 1,680,635.84	Total	\$ 2,323,289.16	Total	\$ 3,612,518.18	Total	\$ 2,722,737.18							
2.0	CLEARING & DEMOLITION																					
2.1	Demolish existing buildings (assume no hazardous material)	m2	23490	\$ 100.00	\$ 2,349,000.00	m2	22620	\$ 100.00	\$ 2,262,000.00	m2	26230	\$ 100.00	\$ 2,623,000.00	m2	57010	\$ 100.00	\$ 5,701,000.00	m2	6849	\$ 100.00	\$ 684,900.00	
2.2	Demolish hardstand areas	m2	27904	\$ 30.00	\$ 837,120.00	m2	13165	\$ 30.00	\$ 394,950.00	m2	15630	\$ 30.00	\$ 468,900.00	m2	28350	\$ 30.00	\$ 850,500.00	m2	36990	\$ 30.00	\$ 1,109,700.00	
2.3	Remove all buildings and hardstand rubble from site	item	3186120	\$ 0.07	\$ 219,842.28	item	2656950	\$ 0.07	\$ 183,329.55	item	3091900	\$ 0.07	\$ 213,341.10	item	6551500	\$ 0.07	\$ 452,053.50	item	1794600	\$ 0.07	\$ 123,827.40	
2.4	Following demolition, stabilise exposed areas with hydromulch	m2	57930	\$ 0.75	\$ 43,447.50	m2	36100	\$ 0.75	\$ 27,075.00	m2	46100	\$ 0.75	\$ 34,575.00	m2	79700	\$ 0.75	\$ 59,775.00	m2	59100	\$ 0.75	\$ 44,325.00	
2.5	Clearing and grubbing including mulching of trees and removal of all excess waste offsite	m2	57930	\$ 0.20	\$ 11,586.00	m2	36100	\$ 0.20	\$ 7,220.00	m2	46100	\$ 0.20	\$ 9,220.00	m2	79700	\$ 0.20	\$ 15,940.00	m2	59100	\$ 0.20	\$ 11,820.00	
2.6	Demolish and remove redundant 3x1500 dia stormwater line																					
2.6.1	Pipes																	Total	\$ 880	\$ 800.00	\$ 704,000.00	
2.6.2	Pits																	each	1	\$ 6,000.00	\$ 6,000.00	
						Total	\$ 3,460,995.78	Total	\$ 2,874,574.55	Total	\$ 3,349,036.10	Total	\$ 7,789,268.50	Total	\$ 1,974,572.40							
3.0	TESTING & INVESTIGATION																					
3.1	Prepare and implement Inspection and Testing Plan	item	1	\$ 5,000.00	\$ 5,000.00	item	1	\$ 5,000.00	\$ 5,000.00	item	1	\$ 5,000.00	\$ 5,000.00	item	1	\$ 5,000.00	\$ 5,000.00	item	1	\$ 5,000.00	\$ 5,000.00	
3.2	Compaction testing of pavement layers, trench backfill and pipe bedding to specifications including council and authority requirements	item	1	n/a	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc	item	1	inc	inc	
3.3	Testing of imported fill, roadbase, asphalt and concrete to specifications including council and authority requirements	m3	15,525	\$ 0.25	\$ 3,881.36	m3	13,338	\$ 0.25	\$ 3,334.42	m3	1,005	\$ 0.25	\$ 251.19	m3	20,992	\$ 0.25	\$ 5,248.06	m3	11,271	\$ 0.25	\$ 2,817.63	
3.4	Level 1 testing (GITA) overview of Earthworks Filling	m3	11,223	\$ 0.25	\$ 2,805.68	m3	9,245	\$ 0.25	\$ 2,311.29	m3	1,086	\$ 0.25	\$ 271.50	m3	15,163	\$ 0.25	\$ 3,790.75	m3	8,757	\$ 0.25	\$ 2,189.25	
						Total	\$ 11,687.04	Total	\$ 10,645.71	Total	\$ 5,522.69	Total	\$ 14,038.81	Total	\$ 10,006.88							
4.0	EROSION & SEDIMENT CONTROL																					
4.1	Provide all erosion and sedimentation control in accordance with contract EPA and council requirements, including earthworks for any temporary basin structures	m2	57,930	\$ 0.75	\$ 43,447.50	m2	36,100	\$ 0.75	\$ 27,075.00	m2	46,100	\$ 0.75	\$ 34,575.00	m2	79,700	\$ 0.75	\$ 59,775.00	m2	59,100	\$ 0.75	\$ 44,325.00	
4.2	Operate and maintain all erosion and sedimentation control for duration of Defects Liability Period	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc	item	1	inc	inc	
4.3	Decommission erosion and sedimentation control, clean up and removal from site of all silt materials and stabilisation of all disturbed areas including sediment basins & silt fencing	item	1	inc	item	1	inc	item	1	inc	item	1	inc	item	1	inc	inc	item	1	inc	inc	
						Total	\$ 43,447.50	Total	\$ 27,075.00	Total	\$ 34,575.00	Total	\$ 59,775.00	Total	\$ 44,325.00							
5.0	TOPSOILING AND GRASSING / SITE STABILISATION																					

ITEM	DESCRIPTION	Stage 1			Stage 2			Stage 3			Stage 4			Stage 5							
		UNIT	QUANTITY	RATE	57930			36100			46100			79700							
					46500			22900			42700			64500							
8.0	STORMWATER DRAINAGE				UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	
Stormwater RC pipes																					
Excavate for all classes of material (not including extra-over for rock, refer provisional item 16.1), dispose of trench material in fill areas, supply all materials, bed, lay, joint and backfill rubber ring jointed reinforced concrete stormwater drainage pipes, including excavation for associated pits, GPT's and other drainage structures																					
8.1	375mm dia - Class 2	m	172	\$ 160.00	\$ 27,520.00	m	221	\$ 160.00	\$ 35,360.00	m	11	\$ 160.00	\$ 1,760.00	m	209	\$ 160.00	\$ 33,360.00	m	172	\$ 160.00	\$ 27,440.00
8.1.2	450mm dia - Class 2	m	96	\$ 185.00	\$ 17,760.00	m	199	\$ 185.00	\$ 36,815.00	m	-	\$ 185.00	\$ -	m	19	\$ 185.00	\$ 3,515.00	m	68	\$ 185.00	\$ 12,487.50
8.1.3	525mm dia - Class 2	m	94	\$ 210.00	\$ 19,740.00	m	109	\$ 210.00	\$ 22,890.00	m	-	\$ 210.00	\$ -	m	73	\$ 210.00	\$ 15,330.00	m	102	\$ 210.00	\$ 21,420.00
8.1.4	600mm dia - Class 2	m	-	\$ 240.00	\$ -	m	36	\$ 240.00	\$ 8,640.00	m	-	\$ 240.00	\$ -	m	156	\$ 240.00	\$ 37,440.00	m	49	\$ 240.00	\$ 11,760.00
8.1.5	750mm dia - Class 2	m	-	\$ 280.00	\$ -	m	-	\$ 280.00	\$ -	m	58	\$ 280.00	\$ 16,240.00	m	-	\$ 280.00	\$ -	m	-	\$ 280.00	\$ -
8.1.6	825mm dia - Class 2	m	-	\$ 320.00	\$ -	m	-	\$ 320.00	\$ -	m	60	\$ 360.00	\$ 21,420.00	m	80	\$ 360.00	\$ 28,800.00	m	-	\$ 320.00	\$ -
8.1.7	900mm dia - Class 2	m	-	\$ 360.00	\$ -	m	-	\$ 360.00	\$ -	m	41	\$ 450.00	\$ 18,225.00	m	77	\$ 450.00	\$ 34,650.00	m	-	\$ 450.00	\$ -
8.1.8	1050mm dia - Class 2	m	-	\$ 450.00	\$ -	m	-	\$ 450.00	\$ -	m	-	\$ 450.00	\$ -	m	-	\$ 450.00	\$ -	m	-	\$ 450.00	\$ -
8.1.9	1200mm dia - Class 2	m	-	\$ 530.00	\$ -	m	-	\$ 530.00	\$ -	m	-	\$ 530.00	\$ -	m	-	\$ 530.00	\$ -	m	-	\$ 530.00	\$ -
8.1.10	1350mm dia - Class 2	m	-	\$ 650.00	\$ -	m	-	\$ 650.00	\$ -	m	-	\$ 650.00	\$ -	m	-	\$ 650.00	\$ -	m	-	\$ 650.00	\$ -
8.1.11	1800mm dia - Class 2	m	-	\$ 1,000.00	\$ -	m	-	\$ 1,000.00	\$ -	m	-	\$ 1,000.00	\$ -	m	-	\$ 1,400.00	\$ -	m	-	\$ 1,000.00	\$ -
8.1.12	1800mm x3 dia - Class 2	m	-	\$ 2,550.00	\$ -	m	-	\$ 2,550.00	\$ -	m	-	\$ 2,550.00	\$ -	m	257	\$ 3,570.00	\$ 915,705.00	m	-	\$ 2,550.00	\$ -
8.1.13	Backfill with granular material to Council specifications	m3	-	inc	m3	-	inc	m3	-	inc	m3	-	inc	m3	-	inc	m3	-	inc		
8.1.14	Dispose of spoil on site (refer item 6.1.2)	m3	-	n/a	m3	-	n/a	m3	-	n/a	m3	-	n/a	m3	-	n/a	m3	-	n/a		
Drainage Structures																					
8.3.1	375mm dia kerb inlet pit - to Council Standards	each	9	\$ 2,800.00	\$ 25,200.00	each	12	\$ 2,800.00	\$ 33,600.00	each	1	\$ 2,800.00	\$ 2,800.00	each	15	\$ 2,800.00	\$ 42,000.00	each	14	\$ 2,800.00	\$ 39,200.00
8.3.2	450mm dia kerb inlet pit - to Council Standards	each	2	\$ 3,000.00	\$ 6,000.00	each	3	\$ 3,000.00	\$ 9,000.00	each	-	\$ 3,000.00	\$ -	each	1	\$ 3,000.00	\$ 3,000.00	each	1	\$ 3,200.00	\$ 3,200.00
8.3.3	525mm dia kerb inlet pit - to Council Standards	each	3	\$ 3,200.00	\$ 9,600.00	each	3	\$ 3,200.00	\$ 9,600.00	each	-	\$ 3,200.00	\$ -	each	1	\$ 3,400.00	\$ 10,200.00	each	2	\$ 3,400.00	\$ 6,800.00
8.3.5	750mm dia kerb inlet pit - to Council Standards	each	-	\$ 3,700.00	\$ -	each	-	\$ 3,700.00	\$ -	each	1	\$ 3,700.00	\$ 3,700.00	each	-	\$ 3,700.00	\$ -	each	-	\$ 4,000.00	\$ -
8.3.6	825mm dia kerb inlet pit - to Council Standards	each	-	\$ 4,000.00	\$ -	each	-	\$ 4,000.00	\$ -	each	-	\$ 4,000.00	\$ -	each	-	\$ 4,000.00	\$ -	each	-	\$ 4,200.00	\$ -
8.3.7	900mm dia kerb inlet pit - to Council Standards	each	-	\$ 4,200.00	\$ -	each	-	\$ 4,200.00	\$ -	each	2	\$ 4,200.00	\$ 8,400.00	each	-	\$ 4,200.00	\$ -	each	-	\$ 4,200.00	\$ -
8.3.8	1050mm dia kerb inlet pit - to Council Standards	each	-	\$ 4,700.00	\$ -	each	-	\$ 4,700.00	\$ -	each	2	\$ 4,700.00	\$ 9,400.00	each	1	\$ 4,700.00	\$ 4,700.00	each	-	\$ 4,700.00	\$ -
8.3.9	1200mm dia kerb inlet pit - to Council Standards	each	-	\$ 5,000.00	\$ -	each	-	\$ 5,000.00	\$ -	each	-	\$ 5,000.00	\$ -	each	-	\$ 5,000.00	\$ -	each	-	\$ 5,000.00	\$ -
8.3.10	1350mm dia kerb inlet pit - to Council Standards	each	-	\$ 5,700.00	\$ -	each	-	\$ 5,700.00	\$ -	each	-	\$ 5,700.00	\$ -	each	-	\$ 5,700.00	\$ -	each	-	\$ 6,200.00	\$ -
8.3.11	1500mm dia kerb inlet pit - to Council Standards	each	-	\$ 6,200.00	\$ -	each	-	\$ 6,200.00	\$ -	each	-	\$ 6,200.00	\$ -	each	-	\$ 6,200.00	\$ -	each	-	\$ 6,200.00	\$ -
8.3.12	375 junction pit - to Council Standards	each	-	\$ 2,000.00	\$ -	each	-	\$ 2,000.00	\$ -	each	-	\$ 2,000.00	\$ -	each	-	\$ 2,000.00	\$ -	each	-	\$ 2,000.00	\$ -
8.3.13	450 junction pit - to Council Standards	each	1	\$ 2,500.00	\$ 2,500.00	each	-	\$ 2,500.00	\$ -	each	-	\$ 2,500.00	\$ -	each	-	\$ 2,500.00	\$ -	each	1	\$ 2,500.00	\$ 2,500.00
8.3.14	525 junction pit - to Council Standards	each	1	\$ 2,700.00	\$ 2,700.00	each	1	\$ 2,700.00	\$ 2,700.00	each	-	\$ 2,700.00	\$ -	each	1	\$ 2,700.00	\$ 2,700.00	each	2	\$ 2,700.00	\$ 5,400.00
8.3.15	600 junction pit - to Council Standards	each	-	\$ 3,900.00	\$ -	each	-	\$ 3,900.00	\$ -	each	-	\$ 3,900.00	\$ -	each	-	\$ 3,900.00	\$ -	each	-	\$ 3,900.00	\$ -
8.3.16	750 junction pit - to Council Standards	each	-	\$ 3,200.00	\$ -	each	-	\$ 3,200.00	\$ -	each	-	\$ 3,200.00	\$ -	each	-	\$ 3,200.00	\$ -	each	-	\$ 3,200.00	\$ -
8.3.17	825 junction pit - to Council Standards	each	-	\$ 3,500.00	\$ -	each	-	\$ 3,500.00	\$ -	each	-	\$ 3,500.00	\$ -	each	-	\$ 3,500.00	\$ -	each	-	\$ 3,500.00	\$ -
8.3.18	900 junction pit - to Council Standards	each	-	\$ 3,700.00	\$ -	each	-	\$ 3,700.00	\$ -	each	-	\$ 3,700.00	\$ -	each	1	\$ 3,700.00	\$ 3,700.00	each	-	\$ 3,700.00	\$ -
8.3.19	1050 junction pit - to Council Standards	each	-	\$																	

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5										
						57930	36100	46100	79700	59100										
						Developable Area (m ²)	46500	22900	42700	64500										
14.0 POTABLE WATER RETICULATION and RECYCLED WATER RETICULATION																				
14.1 Internal DN100 Potable Watermain																				
14.1.1 Site Establishment	item			inc																
14.1.2 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.1.2.1 DN100mm dia main	m	87	\$ 90.00	\$ 7,848.00	m	125	\$ 90.00	\$ 11,214.00	m	35	\$ 90.00	\$ 3,150.00	m	152	\$ 90.00	\$ 13,680.00	m	94	\$ 90.00	\$ 8,442.00
14.1.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, associated with DCL bends/fitting, joints and testing, thrust blocks and gradient anchors etc.	m	87	\$ 135.00	\$ 11,772.00	m	125	\$ 135.00	\$ 16,821.00	m	35	\$ 135.00	\$ 4,725.00	m	152	\$ 135.00	\$ 20,520.00	m	94	\$ 135.00	\$ 12,663.00
14.1 Internal DN150 Potable Watermain				inc																
14.1.1 Site Establishment	item			inc																
14.1.2 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.1.2.1 DN150mm dia main	m	174	\$ 105.00	\$ 18,312.00	m	249	\$ 105.00	\$ 26,166.00	m	70	\$ 105.00	\$ 7,350.00	m	304	\$ 105.00	\$ 31,920.00	m	188	\$ 105.00	\$ 19,698.00
14.1.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, associated with DCL bends/fitting, joints and testing, thrust blocks and gradient anchors etc.	m	174	\$ 150.00	\$ 26,160.00	m	249	\$ 150.00	\$ 37,380.00	m	70	\$ 150.00	\$ 10,500.00	m	304	\$ 150.00	\$ 45,600.00	m	188	\$ 150.00	\$ 28,140.00
14.1 Internal DN200 Potable Watermain				inc																
14.1.1 Site Establishment	item			inc																
14.1.2 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.1.2.1 DN200mm dia main	m	174	\$ 130.00	\$ 22,672.00	m	249	\$ 130.00	\$ 32,396.00	m	70	\$ 130.00	\$ 9,100.00	m	304	\$ 130.00	\$ 39,520.00	m	188	\$ 130.00	\$ 24,388.00
14.1.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, associated with DCL bends/fitting, joints and testing, thrust blocks and gradient anchors etc.	m	174	\$ 180.00	\$ 31,392.00	m	249	\$ 180.00	\$ 44,856.00	m	70	\$ 180.00	\$ 12,600.00	m	304	\$ 180.00	\$ 54,720.00	m	188	\$ 180.00	\$ 33,768.00
14.2 Internal Recycled Watermain				inc																
14.2.2 Site Establishment	item			inc																
14.2.2.1 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.2.2.2 DN100mm dia main	m	134.00	\$ 90.00	\$ 12,060.00	m	141.00	\$ 90.00	\$ 12,690.00	m	33.20	\$ 90.00	\$ 2,988.00	m	181.40	\$ 90.00	\$ 16,326.00	m	532.00	\$ 90.00	\$ 47,880.00
14.2.2.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, joints and testing, thrust blocks and gradient anchors	m	134.00	\$ 120.00	\$ 16,080.00	m	141.00	\$ 120.00	\$ 16,920.00	m	33.20	\$ 120.00	\$ 3,984.00	m	181.40	\$ 120.00	\$ 21,768.00	m	532.00	\$ 120.00	\$ 63,840.00
14.2 Internal Recycled Watermain				inc																
14.2.2 Site Establishment	item			inc																
14.2.2.1 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.2.2.2 DN150mm dia main	m	268.00	\$ 105.00	\$ 28,140.00	m	282.00	\$ 105.00	\$ 29,610.00	m	66.40	\$ 105.00	\$ 6,972.00	m	362.80	\$ 105.00	\$ 38,094.00	m	532.00	\$ 105.00	\$ 55,860.00
14.2.2.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, joints and testing, thrust blocks and gradient anchors	m	268.00	\$ 135.00	\$ 36,180.00	m	282.00	\$ 135.00	\$ 38,070.00	m	66.40	\$ 135.00	\$ 8,964.00	m	362.80	\$ 135.00	\$ 48,978.00	m	532.00	\$ 135.00	\$ 71,820.00
14.2 Internal Recycled Watermain				inc																
14.2.2 Site Establishment	item			inc																
14.2.2.1 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.2.2.2 DN200mm dia main	m	268.00	\$ 130.00	\$ 34,840.00	m	282.00	\$ 130.00	\$ 36,660.00	m	66.40	\$ 130.00	\$ 8,632.00	m	362.80	\$ 130.00	\$ 47,164.00	m	532.00	\$ 130.00	\$ 69,160.00
14.2.2.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, joints and testing, thrust blocks and gradient anchors	m	268.00	\$ 160.00	\$ 42,880.00	m	282.00	\$ 160.00	\$ 45,120.00	m	66.40	\$ 160.00	\$ 10,624.00	m	362.80	\$ 160.00	\$ 58,048.00	m	532.00	\$ 160.00	\$ 85,120.00
14.2 Recycled Watermain - Within Carter St Pavement				inc																
14.2.2 Site Establishment	item			inc																
14.2.2.1 Excavation: Clear route, excavate and backfill in trenches as specified, including excavation in rock, disposal of spoil onsite, restoration of surfaces (if required) for pipeline of:																				
14.2.2.2 DN250mm dia main	m	1,005.00	\$ 180.00	\$ 180,900.00	m	\$	120.00	\$ -	m	\$	120.00	\$ -	m	\$	120.00	\$ -	m	\$	120.00	\$ -
14.2.2.3 Pipework: Supply, lay, joint and sand surround watermain, complete, including all specials, joints and testing, thrust blocks and gradient anchors	m	1,005.00	\$ 225.00	\$ 226,125.00	m	-	\$ 150.00	\$ -	m	-	\$ 150.00	\$ -	m	-	\$ 150.00	\$ -	m	-	\$ 150.00	\$ -
14.2.2.4 250mm dia oPVC Class PN16 pipes	m	1,005.00	\$ 300.00	\$ 301,500.00	m	-	\$ 150.00	\$ -	m	-	\$ 150.00	\$ -	m	-	\$ 150.00	\$ -	m	-	\$ 150.00	\$ -
14.2.2.5 Road restoration																				
14.3 Sydney Water Connections, fees and charges	item	1.00	\$ 150,000.00	\$ 150,000.00	item	1.00	\$ 100,000.00	\$ 100,000.00	item	1.00	\$ 125,000.00	\$ 125,000.00	item	1.00	\$ 125,000.00	\$ 125,000.00	item	1.00	\$ 100,000.00	\$ 100,000.00
				Total \$ 1,146,861.00				Total \$ 447,903.00				Total \$ 214,589.00			Total \$ 561,338.00				Total \$ 620,779.00	
15.0 INTERNAL INTERSECTION UPGRADES (SIGNALS)																				
15.1 Provide Traffic signals at intersection of Uhrig Road and Road No. 1	item	1	\$ 350,000.00	\$ 350,000.00																
				Total \$ 350,000.00				Total \$ -				Total \$ -			Total \$ -			Total \$ -		

ITEM	DESCRIPTION	Stage 1				Stage 2				Stage 3				Stage 4				Stage 5				
		UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	UNIT	QUANTITY	RATE	AMOUNT	
16.0	ELECTRICAL, TELECOM, GAS and SERVICE ROAD CROSSINGS																					
16.1	Road Crossings and ducting																					
	Supply and install service road crossings and ducts as required	m	139	\$ 180.00	\$ 25,020.00	m	153	\$ 180.00	\$ 27,540.00	m	46	\$ 180.00	\$ 8,280.00	m	186	\$ 180.00	\$ 33,480.00	m	118	\$ 180.00	\$ 21,240.00	
16.2	Supply and Install Electrical and Street Lighting Works:																					
16.2.1	LV	m	750	\$ 250.00	\$ 187,500.00	m	889	\$ 250.00	\$ 222,250.00	m	211	\$ 250.00	\$ 52,750.00	m	936	\$ 250.00	\$ 233,875.00	m	583	\$ 250.00	\$ 145,625.00	
16.2.2	HV	m	1,150	\$ 350.00	\$ 402,325.00	m	1,175	\$ 350.00	\$ 411,250.00	m	154	\$ 350.00	\$ 53,900.00	m	1,294	\$ 350.00	\$ 452,725.00	m	1,151	\$ 350.00	\$ 402,850.00	
16.2.3	2HV	m	5	\$ 450.00	\$ -	m	149	\$ 450.00	\$ 66,825.00	m	65	\$ 450.00	\$ 29,250.00	m	5	\$ 450.00	\$ -	m	5	\$ 450.00	\$ -	
16.2.4	3HV	m	5	\$ 550.00	\$ -	m	31	\$ 550.00	\$ 17,050.00	m	5	\$ 550.00	\$ -	m	5	\$ 550.00	\$ -	m	5	\$ 550.00	\$ -	
16.2.5	4HV	m	5	\$ 650.00	\$ -	m	137	\$ 650.00	\$ 88,725.00	m	5	\$ 650.00	\$ -	m	5	\$ 650.00	\$ -	m	5	\$ 650.00	\$ -	
16.2.6	5HV	m	173	\$ 750.00	\$ 129,750.00	m	5	\$ 750.00	\$ -	m	5	\$ 750.00	\$ -	m	5	\$ 750.00	\$ -	m	5	\$ 750.00	\$ -	
16.2.7	Conforming to Work Cover, EPA and other legislative requirements			inc				inc									inc					inc
16.2.8	Works as detailed:			inc				inc									inc					inc
16.2.9	Excavate new trench and install conduits as per the ducted schedule on the certified drawing.			inc				inc									inc					inc
16.2.10	Supply and install 16sq.mm 1C Cu PVC/PVC cable			inc				inc									inc					inc
16.2.11	Supply and install 240sq.mm AL 4C XLPE/PVC cable			inc				inc									inc					inc
16.2.12	Protection tape			inc				inc									inc					inc
16.2.13	Install LV Pillar - major			inc				inc									inc					inc
16.2.14	Supply and install new street light ragsbolts and footings			inc				inc									inc					inc
16.2.15	LV Major pillar termination - double switch			inc				inc									inc					inc
16.2.16	Column termination 2 x 16mm ²			inc				inc									inc					inc
16.2.17	Connection into existing pillar			inc				inc									inc					inc
16.2.18	Apply for low voltage isolation with Electrical Authority			inc				inc									inc					inc
16.2.19	Commission new street lights			inc				inc									inc					inc
16.2.20	Kiosk for each stage for local power NOT on lot power (assume no feeder)	item	1	\$ 100,000.00	\$ 100,000.00	item	1	\$ 100,000.00	\$ 100,000.00	item	1	\$ 100,000.00	\$ 100,000.00	item	1	\$ 100,000.00	\$ 100,000.00	item	1	\$ 100,000.00	\$ 100,000.00	
16.2.21	Supply and install 7.5m high, street light columns with 3m outreaches	each	28	\$ 8,000.00	\$ 224,000.00	each	21	\$ 8,000.00	\$ 168,000.00	each	5	\$ 8,000.00	\$ 40,000.00	each	31	\$ 8,000.00	\$ 248,000.00	each	16	\$ 8,000.00	\$ 128,000.00	
16.4	Supply and install Telecommunication pit and pipe in allocated location within the verge	m	1,181	\$ 120.00	\$ 141,720.00	m	1,272	\$ 120.00	\$ 152,640.00	m	325	\$ 120.00	\$ 39,000.00	m	1,435	\$ 120.00	\$ 172,200.00	m	877	\$ 120.00	\$ 105,240.00	
16.5	Supply and install 110mm poly gas main	m	535	\$ 200.00	\$ 107,000.00	m	702	\$ 200.00	\$ 140,300.00	m	162	\$ 200.00	\$ 32,400.00	m	808	\$ 200.00	\$ 161,600.00	m	497	\$ 200.00	\$ 99,400.00	
16.6	Supply and install 110mm poly gas main (within Carter St Road Pavement)	m	916	\$ 230.00	\$ 210,680.00	m	916.00	\$ 300.00	\$ 274,800.00													
16.6.1	Road restoration																					
16.7	Zone substation breakers	item	-	\$ 300,000.00	\$ -	item	1.00	\$ 300,000.00	\$ 300,000.00	item	-	\$ 300,000.00	\$ -	item	1.00	\$ 300,000.00	\$ 300,000.00	item	-	\$ 300,000.00	\$ -	
			Total	\$ 1,802,795.00			Total	\$ 1,694,580.00			Total	\$ 355,580.00			Total	\$ 1,701,880.00			Total	\$ 1,002,355.00		

