Claymore Urban Renewal Project

Infrastructure Report

Executive Summary

This is a report by Mott MacDonald Hughes Trueman on the opportunities, constraints and infrastructure associated with the Claymore Estate Renewal Project which has been undertaken for and on behalf of Landcom.

This review of civil infrastructure requirements identifies the constraints, opportunities, risks and other issues associated with the current proposed development option prepared by Aecom (June 2011) and staging plans prepared by Mott MacDonald Hughes Trueman. The staging for the development option makes provision for retention of approximately 140 existing cottages and their services, which will require maintenance of access and service utilities at all times during the progress of the redevelopment works.

This report identifies development constraints and issues which are relevant to the Claymore Urban Renewal Project. The most significant of these include:

- Retention of existing dwellings to be occupied continuously throughout the renewal process will impact on safety, access and servicing arrangements;
- Protection or augmentation of existing trunk services to the estate, new infrastructure and temporary connections to service occupied dwellings;
- Removal and replacement of the majority of existing roads and services due to realignment of roads/lot layout and regrading of levels in accordance with Landcom and Council agreed road design standards and to create safe and desirable stormwater flow paths;
- Isolated areas of uncontrolled or potentially contaminated or unsuitable fill on the site may adversely affect civil/infrastructure works and impact on housing development;
- Earthworks management during development staging requires coordination of cut, fill, stockpile and borrow operations for the entire development to avoid unnecessary additional costs;
- Sequential development taking into account the continuity of road and service connections and thus taking advantage of cost savings from the use of permanent gravity infrastructure rather than through construction of temporary works and lead-ins;
- Construction staging to provide consideration to the management of earthworks so as to minimise the need for double handling of excavated material or exporting surplus and importing deficit material thereby taking advantage of the cost savings which may be achieved by placing excavated material directly into required fill areas as controlled fill material;
- Assessment of the potential soil contamination, spoil locations, volumes and management, thus minimising economic risk;
- Assessment of the Broadband requirements for the area; and
- Discussions with all service authorities to determine any service issues within or surrounding the Claymore Estate.

Contents

1. Introduction

1.1. Scope of Work

The objective of this report is to provide comment on the opportunities, constraints and servicing requirements for the Claymore Urban Renewal Project (CURP) and assist Landcom and Housing New South Wales to determine the infrastructure constraints of re-developing the existing estate. The views expressed herein are advice only and should be treated as such.

Mott MacDonald Hughes Trueman (MMHT) was appointed by Landcom to undertake a review of the civil infrastructure, concepts and requirements for the redevelopment of Housing New South Wales (HNSW) Claymore housing estate. The CURP consists of re-developing the existing Claymore Estate, which comprises 1,096 cottages and townhouses. The proposed option has been developed as part of a consultation process between the stakeholders, HNSW and Landcom and appointed Consultants Aecom (Urban Designers) and Mott MacDonald Hughes Trueman (Infrastructure Consultants). The proposed development option provides the following:

- Demolition and removal of 952 cottages;
- Retention of 140 cottages;
- Proposal of 1250 new lots;
- A commercial/retail Centre; and
- 100 seniors living units.

Following review of the limited and available documentation, MMHT has prepared a Constraints, Opportunities Report for the site which aims to:

- Provide comment on the current option;
- Identify relationship requirements for staging of the works;
- Identify constraints and issues for the total development and individual stages; and
- Identify potential development risk exposure.

2. Existing Site Description

2.1. Existing Development

The Claymore Estate area is a 125 hectare public housing estate in the Campbelltown LGA built during the period 1979-1981 and is located 2 km northwest of Campbelltown CBD. The Claymore Estate adjoins Eagle Vale to the north and west. The Hume Highway bounds the estate to the east. Badgally Road defines the southern side of the estate. The estate consists

of approximately 1,100 cottages and townhouses that are part of a typical style Radburn subdivision layout. Throughout the estate there are a number of parks and reserves these areas together with the extensive watercourse (currently designed as a series of detention basins) located across the northern part of the development provide approximately 29Ha of open space. Please see Appendix A for the existing estate layout.

2.2. Topography and Geology

The site generally grades from the south west to the north with most grades being below 10% however some areas exceed 18%, particularly opposite the intersection of Dobell Road and Gould Road. These areas of steep terrain, make it difficult to provide suitable accessibility without significant earthworks as part of the staged construction.

Existing geological maps outline the area to consist of Blacktown soils over weathered Ashfield shale of Triassic age, isolated pockets of Hawkesbury Sandstone within the creek valleys. Typical characteristics of the soils include low fertility, tendency towards strongly acidic properties and prone to shrinkage and swelling.

Additional on site geotechnical investigations have been undertaken by others to confirm the site specific Geology.

3. Proposed Works

Landcom and the Housing New South Wales (HNSW) aim to renew and upgrade the suburb of Claymore by replacing components of the public housing stock.

A review of these constraints and opportunities will better assist the stakeholders to understand the estate's development potential.

3.1. Internal Works

The CURP works relate to environmental, social, amenity and engineering aspects of modifying an existing social housing area to a revitalised residential estate.

The proposed option intends to demolish 952 existing cottages. In addition to the demolition of dwellings, the proposed option intends to embellish a number of existing dwellings to assist in their long term retention. These cottage works shall enable a mix of retained dwellings across the proposed option.

Following the demolition of the dwellings and undertaken as part of the subdivision works there would also be demolition and removal of the existing infrastructure, being road pavements, pipe systems, underground services and utilities and vegetation that cannot be retained during the redevelopment process.

As with all developments the renewal process contains a number of fundamental tasks associated with the program of works. This project with its mix of redevelopment and dwelling retention does however have some requirements in addition to the standard tasks required during a typical development. These site specific requirements include temporary connections, contamination remediation and watercourse / detention basin embellishment.

The road and drainage works along with the servicing facilities will require a thorough assessment of the potential opportunities for retention of services and the required lead-in works for subsequent stages. Based on the proposed option, it appears that retention of the road, drainage and services varies with each stage of the development, with some stages having no retained cottages allowing removal of all redundant services.

Some of the open space and dual use facilities (open space and stormwater management) will also require extensive works due to the need for relocation and embellishment.

3.2. Estate Major Works

The estate major works anticipated to be required during the renewal of the Claymore Estate include a number of new parks and reserves and existing parks requiring embellishment. The below list is not exhaustive, however it should provide a good indication of the works opportunity. The facilities to be provided are:

- Provision of new parks and reserves;
- Embellishment of parks and open space;

- Embellishment of the riparian corridor along the northern boundary of the site (pending DECCW advice regarding the retention of the existing watercourse and its current function as online storage detention);
- Upgrade of intersections with Badgally Road;
- Provision of retail and commercial land fronting Badgally Road; and
- Provision of a sound wall/bund along the M5.

3.3. Staging

It is proposed to develop the site over a series of stages. The proposed option has been broken up into 11 stages. Stage 3 within the option being further divided in two sub-stages (3a and 3b).

The stages have been developed with consideration of marketing, physical, economic and tenant relocation constraints. The present staging generally reflects the requirement for construction of lower staging prior to upper catchment staging, however priority is given to the need to relocate existing tenants, where the first two stages have been chosen to reduce the number of relocations and provide an enhanced entrance to the development (with the stages fronting Badgally Rd being built upfront). A number of the constraints relating to the present sequencing of the stages and potential issues are listed below:

- Staging of the relocation of residents and the demolition of HNSW estate;
- Minimising the disruption to the existing services and thus the residents, within the precincts with cottages/ townhouses being retained;
- Service provisions and the reduction in lead-ins and temporary connections;
- The management of increased or concentrated stormwater flows upon downstream stages have been considered, as the development has existing detention basins within the watercourse, It is considered the overland flows and discharges will be dealt with adequately. Details of the water cycle process are discussed in the Mott MacDonald Hughes Trueman Claymore Water Cycle Report;
- The management of the earthworks between stages that require substantial cutting will be required to be identified and areas within other stages identified for stockpiling during construction. The sequence of staging may need to be adjusted based on identification of this information as part of the future detailed design. A preliminary design has been undertaken for the site to determine the required earthworks and retaining walls for the stages to achieve acceptable road grades (at no greater than Campbelltown City Council's absolute maximum grade of 16%) and generally provide building pads on lots with a 2% crossfall and 4% longitudinal fall;
- Potential impacts of possible contaminated material being located during a Detailed Contamination Site Assessment or during construction;
- Marketing of the redeveloped housing estate and the future residential and commercial lots; and
- Relocation of existing tenants capped at approximately 100 per stage to provide an achievable decanting goal for HNSW.

3.4. Traffic and Transport

A comprehensive Traffic and Transport assessment has been undertaken by others to analyse the proposed road system for suitability and safety. Components that are addressed include:

- Road capacity or traffic related environmental implications.
- Traffic flows and speeds to be reviewed to determine detail design development. These include the use of traffic calming devices such as roundabouts, central blister islands, narrowing treatments and raised intersections.
- Site access and servicing, particularly in relation to the opportunity for development of future commercial areas adjacent to Badgally Road.
- Pedestrian and cyclists provisions for on and off road cycleways.
- Bus services and on street parking.

3.5. Water Cycle Management

A report has been undertaken by MMHT to determine the development's water cycle management opportunities and constraints. The assessment evaluates all levels of storm intensity from low flows created during minor storm events through to the Probable Maximum Flood (PMF). Similarly, impacts on water cycle management from the individual dwelling to the entire estate have been considered. Other aspects considered as part of the report include:

- Opportunity for rainwater re-use. Typical BASIX certificates should be incorporated into the water cycle management for future individual dwellings.
- The water cycle management proposal will incorporate a number of detention basins and overland flow paths. RAFTS modelling demonstrates that the developed scenario's peak flows for Council's flood planning level do not exceed those of the existing situation. Detention opportunities within the northern water course and proposed new reserves will be investigated with embellishment provided if required.
- Water quality has been assessed through the use of the MUSIC water quality model. The use of vegetative filter strips, infiltration swales and Gross Pollutant Traps have been incorporated into the proposed open space facilities. The proposed treatment train of facilities has been designed to ensure that the pollutant removal rate meet statutory requirements.

3.6. Services

3.6.1. Water

A 600mm diameter trunk main traverses the Hume Highway from Woodbine which services the northern portion of the estate and Eagle Vale. A 300mm diameter pipe lies within Gidley Crescent Norman Crescent and Dobell Road, these mains service the existing development. Smaller diameter mains traverse the site, the internal mains will be retained where possible but some re-locations maybe unavoidable

It is intended to retain as much of the major external mains network as possible, these however may require adjustment particularly where proposed roads bisect them, where existing roads are re-aligned or where proposed lots are placed over them. The majority of the water mains along retained roads such as Dobell Rd, Gidley Cres and Norman Cres may be retained.

A Feasibility Application to Sydney Water (SWC) has been initiated for the proposed development. This should determine the required works for potable water reticulation and determination of main tap locations and/or augmentation of existing network. Additional pumps or pump upgrades may be required to service the increased load generated by the development. At this stage no additional lead in works have been predicted but this is dependent on Sydney Water Modelling.

3.6.2. Sewer

A 300mm diameter sewerage trunk main crosses the Hume Highway from the Woodbine suburb. The sewer trunk main lies within a concrete encased crossing and enters on the eastern boundary of the Claymore Estate. This main drains through the Eastern portion of the site through varying pipe diameters before discharging into the main trunk sewer (450 dia.) located in the Northern Watercourse.

In addition a 225mm diameter sewer trunk main drains the western portion of the site which lies within stage 3b of the development and connects into the existing 400mm diameter main within the northern watercourse (which develops into a 525mm diameter main downstream of the site; within Eaglevale).

The trunk line within the watercourse also services portions of Eaglevale to the East and North of the site. It is recommended that this trunk line remain in operation given the amount of external dwellings to the site that must remain serviced throughout the development of Claymore.

A large portion of the existing sewer reticulation network does not suit the proposed layout and may require augmentation, with consideration given to the retained cottages to maintain uninterrupted service.

There is an existing 300mm diameter main downstream of a 400mm main in Stage 8, it is likely that this will have to be upgraded as part of the development (to be confirmed within SWC feasibility.

A demand analysis (Feasibility Application) has been carried out in conjunction with Sydney Water to determine whether augmentation of downstream mains is required. Upsizing of the mains may be minimised or avoided if loading on these mains is determined not to increase from the existing estate. Preliminary investigation of the existing main capacities was undertaken by MMHT, where the proposed demand was approximated based on Sydney Water standards. No apparent upfront upsizing is anticipated for the internal reticulation throughout the site due to the development of upstream catchments prior to the construction of downstream sewer lines; however this will need to be confirmed by Sydney Water. Upsizing of the existing 525mm diameter main external to the site may be required pending comments from Sydney Water.

Lengths of the existing main may require concrete encasement when in close proximity to the proposed dwellings or under roads. Adjustments of internal reticulation will be required to suit the proposed layout, which may require temporary connections for the retained cottages onsite.

3.6.3. Electrical

The existing Claymore Estate is predominantly serviced by underground electrical reticulation. Where possible existing ducts and cable routes will be maintained within roads that are to be retained. It is anticipated that all other existing ducting, cabling and pillars through proposed lots will be removed. Kiosk sub-stations may be able to be retained and upgraded dependant on location.

A significant amount of underground high voltage reticulation is incorporated along Dobell Rd and Gidley Cres, which the majority of these roads are being retained. Relocation of the high voltage cabling will be required within stage 3a, beneath the retail zone (to align with the new Gidley Cres intersection with Badgally Rd) and to match the new alignment of Gidley Cres (to become Glenroy Rd) in the north-east corner of stage 3a. In addition there is an existing underground high voltage line traversing from south to north between Norman Cres in Stage 7 and between Dobell Rd and Norman Cres in Stage 1, it is likely that the cable will be adjusted to suit the proposed layout (an approximately 115m segment of the line in Stage 7 will be located within the existing Dimeny Park which is to be retained).

Additional kiosks may be required to service the additional lots generated, seniors living and retail centre. A demand analysis of the existing capacity will need to be undertaken during the detailed design phase. A number of kiosks have been identified as having possible retention with the proposed layout, however some existing kiosks, for example those within the existing retail zone may need relocating to suit the proposed layout.

Lodgement of an application with Integral Energy with development population and loadings has been established to determine the suitability of Integral Energy's Regional capacity. It is anticipated that no additional lead in works will be required to service the site.

3.6.4. Telecommunications

The existing Claymore Estate's telecommunications network consists of reticulated services. As with electrical, existing telecom ducts and cabling should be retained where possible but they will need to be removed where it does not follow proposed road alignments.

The main connection point for Telstra is from Badgally Rd in stage 3a. It is likely that this main will be relocated to suit the new Glenroy Rd alignment. This poses a significant impact on the site as this is the only connection point for the Claymore estate which must be maintained during construction. Construction of a new feeder will be required with switch over and decommissioning of the existing feeder.

No other major constraints for telecommunications have been identified, however, at present the developer is required to install a pit and conduit network to cater for the National Broadband Network (NBN) rollout, which will be required throughout the estate to provide

provision for each property to connect to the network and act as the main telecommunications pit and pipe system.

Future long term and additional provision of Telstra or Optus services for the area will need to be reviewed with the service providers, with extent of provision to be negotiated.

An Intent to Develop application (ITD) has been lodged with Telstra to determine the loading requirements and likely upgrades for the area (if any) to cater for the increase in demand. At this stage it is believed that no major upgrades would be required to cater for the additional load generated and the development would be serviced by NBN.

3.6.5. Gas

Existing gas mains are located at the boundaries of the Claymore Estate, the gas mains within the major road service corridors will be used to service the development, these are located in;

- Dobell Road
- Badgally Road
- Boyd Street
- Gould Road

Jemena have identified that the existing mains around the development have sufficient capacity to service the site. A pressure reduction station would be installed at the corner of Badgally Road (where the gas pressure runs at 1050kPa) and Dobell Road with an interconnection from the 110mm main at Badgally Road near Daplyn Way to ensure security of supply. The site would be reticulated with a pressure of 210Kpa.

3.6.6. Road Hierarchy

The proposed road hierarchy for the site has been developed to provide an integrated system of distribution networks and to improve the amenity of the existing site. A number of existing roads have been retained and incorporated where possible, and embellishment of these roads included as part of the subdivision works.

A network of minor collector roads will traverse the site connecting Badgally Rd to Dobell Rd and will provide access to key traffic areas such as new/existing parks and the proposed retail centre. A cycle route is to be provided along these minor collector roads and along Dobell Rd. A more detailed analysis of these systems is incorporated in the Traffic report by others.

The following road types and carriageway widths have been proposed for the site details of the road hierarchy have been included in Appendix B:

- Minor Collector: 18.2m Reserve, 11m Carriageway;
- Local Street: 14.8m Reserve, 7.6m Carriageway;
- Cul-de-sac: 13.2m Reserve, 6m Carriageway; and
- Laneway: 8m Reserve, 6m Carriageway.

Appendix A: Existing Estate Layout

LEGEND

(light green)	RESERVES ORIGINALLY INTENDED TO BE DEDICATED
(white)	DEDICATED RESERVE
(purple)	NON DEDICATED OPEN SPACE

A1 SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
A	ISSUED FOR INFORMATION	14.06.11	GL	GL	*	

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Plan Scale 1:3000 @ A1

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Project: CLAYMORE URBAN RENEWAL PROJECT

Drawing Title: EXISTING ESTATE PLAN

Client: LANDCOM

Architect/Project Manager: AECOM

Drawing No.: 09P700-SKC270

Sheet 1 Of 1

Rev A

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Appendix B: Concept Plans

SERVICES LEGEND

- EXISTING WATER MINOR (ø100-ø150)
- EXISTING WATER MAJOR (ø225-ø600)
- STAGE BOUNDARY
- COTTAGE TO REMAIN

REALIGNMENT OF EXISTING WATER MAIN TO SUIT NEW LOT LAYOUT.

EXISTING RETICULATION AT LOCAL ACCESS STREETS TYPICALLY WILL BE DECOMMISSIONED AND REMOVED TO SUIT NEW LOT LAYOUT. RETAIN WHEREVER POSSIBLE.

EXISTING ø600 MAIN TO BE RETAINED. EASEMENT TO BE CREATED OVER.

WORKS TO BE STAGED TO ALLOW RETAINED HOUSES TO MAINTAIN LIVE SERVICES DURING CONSTRUCTION (TYP)

POTABLE WATER RETICULATION TO BE CONSTRUCTED AT ALL NEW ROADS IN ORDER TO PROVIDE FRONTAGE FOR EACH LOT (TYP)

INTERCEPT EXISTING ø300 POTABLE WATER AND CONTINUE ALONG NEW ROAD ALIGNMENT.

EXISTING ø300CICL MAIN TO BE DIVERTED AROUND NEW BUILDING

EXISTING POTABLE RETICULATION BENEATH ROADS TO BE RETAINED WHEREVER POSSIBLE.

EXISTING RETICULATION AT LOCAL ACCESS STREETS TYPICALLY WILL BE DECOMMISSIONED AND REMOVED TO SUIT NEW LOT LAYOUT. RETAIN WHEREVER POSSIBLE.

POTABLE WATER RETICULATION TO BE CONSTRUCTED AT ALL NEW ROADS IN ORDER TO PROVIDE FRONTAGE FOR EACH LOT (TYP)

POTABLE WATER RETICULATION TO BE CONSTRUCTED AT ALL NEW ROADS IN ORDER TO PROVIDE FRONTAGE FOR EACH LOT (TYP)

REALIGNMENT OF EXISTING ø200 MAIN TO SUIT NEW LOT / ROAD LAYOUT

INTERCEPT EXISTING ø200 POTABLE WATER AND CONTINUE ALONG NEW ROAD ALIGNMENT.

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C	FINAL ISSUE	15.06.11	AMP	GL	X	CA
B	DRAFT ISSUE	14.06.11	AMP	GL	X	
A	ISSUED FOR INFORMATION	29.04.11	AMP	GL	X	

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Client: LANDCOM
Architect/Project Manager: AECOM

Drawing Title: EXISTING WATER PLAN
Drawing No.: 09P700-SKC220
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Rev: C

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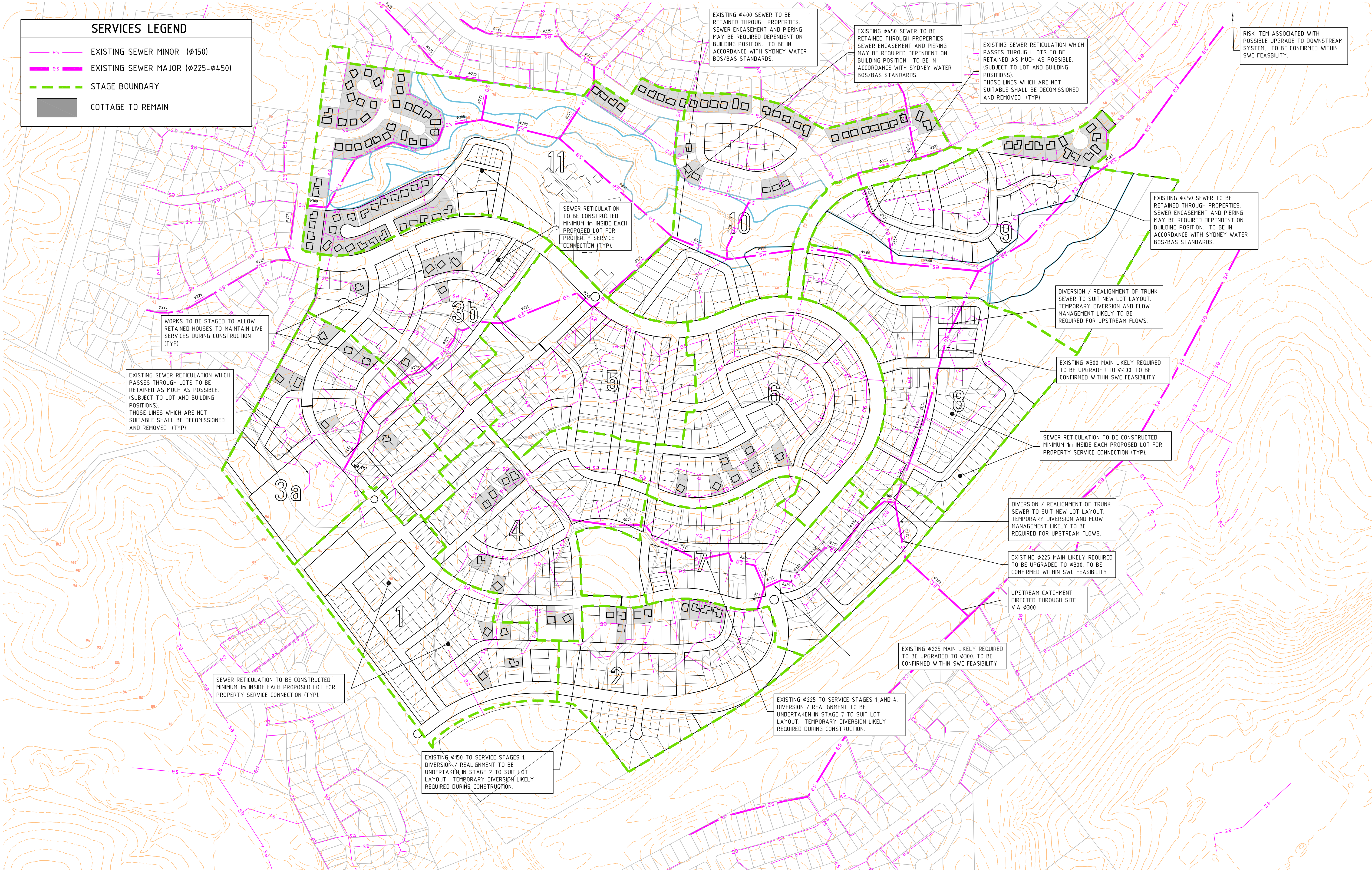
SERVICES LEGEND
EXISTING SEWER MINOR (Ø150)
EXISTING SEWER MAJOR (Ø225-Ø450)
STAGE BOUNDARY
COTTAGE TO REMAIN
EXISTING Ø400 SEWER TO BE RETAINED THROUGH PROPERTIES. SEWER ENCASEMENT AND PIERING MAY BE REQUIRED DEPENDENT ON BUILDING POSITION. TO BE IN ACCORDANCE WITH SYDNEY WATER BOS/BAS STANDARDS.
EXISTING Ø450 SEWER TO BE RETAINED THROUGH PROPERTIES. SEWER ENCASEMENT AND PIERING MAY BE REQUIRED DEPENDENT ON BUILDING POSITION. TO BE IN ACCORDANCE WITH SYDNEY WATER BOS/BAS STANDARDS.
EXISTING SEWER RETICULATION WHICH PASSES THROUGH LOTS TO BE RETAINED AS MUCH AS POSSIBLE. (SUBJECT TO LOT AND BUILDING POSITIONS). THOSE LINES WHICH ARE NOT SUITABLE SHALL BE DECOMISSIONED AND REMOVED (TYP)
RISK ITEM ASSOCIATED WITH POSSIBLE UPGRADE TO DOWNSTREAM SYSTEM, TO BE CONFIRMED WITHIN SWC FEASBILITY.
SEWER RETICULATION TO BE CONSTRUCTED MINIMUM 1m INSIDE EACH PROPOSED LOT FOR PROPERTY SERVICE CONNECTION (TYP).
EXISTING Ø450 SEWER TO BE RETAINED THROUGH PROPERTIES. SEWER ENCASEMENT AND PIERING MAY BE REQUIRED DEPENDENT ON BUILDING POSITION. TO BE IN ACCORDANCE WITH SYDNEY WATER BOS/BAS STANDARDS.
WORKS TO BE STAGED TO ALLOW RETAINED HOUSES TO MAINTAIN LIVE SERVICES DURING CONSTRUCTION (TYP)
DIVERSION / REALIGNMENT OF TRUNK SEWER TO SUIT NEW LOT LAYOUT. TEMPORARY DIVERSION AND FLOW MANAGEMENT LIKELY TO BE REQUIRED FOR UPSTREAM FLOWS.
EXISTING SEWER RETICULATION WHICH PASSES THROUGH LOTS TO BE RETAINED AS MUCH AS POSSIBLE. (SUBJECT TO LOT AND BUILDING POSITIONS). THOSE LINES WHICH ARE NOT SUITABLE SHALL BE DECOMISSIONED AND REMOVED (TYP)
EXISTING Ø300 MAIN LIKELY REQUIRED TO BE UPGRADED TO Ø400. TO BE CONFIRMED WITHIN SWC FEASIBILITY
SEWER RETICULATION TO BE CONSTRUCTED MINIMUM 1m INSIDE EACH PROPOSED LOT FOR PROPERTY SERVICE CONNECTION (TYP).
DIVERSION / REALIGNMENT OF TRUNK SEWER TO SUIT NEW LOT LAYOUT. TEMPORARY DIVERSION AND FLOW MANAGEMENT LIKELY TO BE REQUIRED FOR UPSTREAM FLOWS.
EXISTING Ø225 MAIN LIKELY REQUIRED TO BE UPGRADED TO Ø300. TO BE CONFIRMED WITHIN SWC FEASIBILITY
UPSTREAM CATCHMENT DIRECTED THROUGH SITE VIA Ø300
EXISTING Ø225 MAIN LIKELY REQUIRED TO BE UPGRADED TO Ø300. TO BE CONFIRMED WITHIN SWC FEASIBILITY
SEWER RETICULATION TO BE CONSTRUCTED MINIMUM 1m INSIDE EACH PROPOSED LOT FOR PROPERTY SERVICE CONNECTION (TYP).
EXISTING Ø225 TO SERVICE STAGES 1 AND 4. DIVERSION / REALIGNMENT TO BE UNDERTAKEN IN STAGE 7 TO SUIT LOT LAYOUT. TEMPORARY DIVERSION LIKELY REQUIRED DURING CONSTRUCTION.
EXISTING Ø150 TO SERVICE STAGES 1. DIVERSION / REALIGNMENT TO BE UNDERTAKEN IN STAGE 2 TO SUIT LOT LAYOUT. TEMPORARY DIVERSION LIKELY REQUIRED DURING CONSTRUCTION.
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3a
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Project
CLAYMORE URBAN RENEWAL PROJECT

Drawing Title
EXISTING SEWER PLAN

Client
LANDCOM

Architect/Project Manager
AECOM

Drawing No.
09P700-SKC230

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Of

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C

Date : 15-6-11 Time : 5:55pm Plotted By : lee55905

SERVICES LEGEND

- EXISTING TELECOMMUNICATION
- STAGE BOUNDARY
- COTTAGE TO REMAIN

STAGE 3B: TELSTRA CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED ROAD LAYOUT. POSSIBLE ADJUSTMENT TO SUIT PROPOSED GLENROY RD ALIGNMENT.

MINOR TELSTRA RETICULATION WITHIN THE REDUNDANT ACCESSWAYS ARE TO BE REMOVED IN THE PROPSOED DEVELOPMENT.

EXISTING TELSRA RETICULATION BENEATH PROPOSED ROADS TO BE RETAINED WHEREVER POSSIBLE.

EXISTING LEAD IN MAIN FOR THE CLAYMORE ESTATE IS VIA A SINGLE CONNECTION TO THE TELSTRA SERVICE WITHIN BADGALLY RD. THIS EXISTING LEAD IN IS BENEATH THE PROPOSED RETAIL CENTRE AND MAY REQUIRE RELOCATION TO THE PROPOSED GLENROY RD ALIGNMENT. TEMPORARY WORKS WOULD ALSO BE REQUIRED TO MAINTAIN CONNECTION TO THE ESTATE DURING CONSTRUCTION.

STAGE 4: THE EXISTING TELSTRA CONFIGURATION ALONG NORMAN CRES DOES NOT SUIT THE PROPOSED ROAD LAYOUT. ADJUSTMENT OF THE TELSTRA ASSETS IN THIS AREA MAY BE REQUIRED. TEMPORARY TELSTRA CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED ROAD LAYOUT. POSSIBLE ADJUSTMENT TO SUIT PROPOSED GLENROY RD ALIGNMENT.

STAGE 2: PROVISION TO BE MADE FOR VEHICLES TO ACCESS THE EXISTING TELSTRA TOWER WITHIN THE M5 ROAD RESERVE.

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Project: CLAYMORE URBAN RENEWAL PROJECT
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Drawing Title: EXISTING TELECOMMUNICATION PLAN
Drawing No.: 09P700-SKC240
Sheet: Of
Rev: C

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SERVICES LEGEND

- eeHV — EXISTING HIGH VOLTAGE CONDUCTOR
- STAGE BOUNDARY
- COTTAGE TO REMAIN

EXISTING KIOSKS

STAGE 3B: EXISTING KIOSK MAY BE RETAINED DEPENDING ON PROPOSED BUILDING LAYOUT.

STAGE 3B: EXISITNG HV CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED ROAD LAYOUT. POSSIBLE ADJUSTMENT TO SUIT PROPOSED GLENROY RD ALIGNMENT.

STAGE 3A: EXISITNG HV CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED LAYOUT OF THE RETAIL CENTRE. POSSIBLE ADJUSTMENT TO SUIT PROPOSED GLENROY RD ALIGNMENT.

STAGE 4: EXISITNG HV CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED LAYOUT. EXISTING KIOSK MAY BE RETAINED DEPENDING ON PROPOSED BUILDING LAYOUT.

STAGE 1: EXISITNG HV CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED LAYOUT

STAGE 6: EXISTING KIOSK MAY BE RETAINED DEPENDING ON PROPOSED BUILDING LAYOUT.

STAGE 8: EXISTING KIOSK MAY BE RETAINED DEPENDING ON PROPOSED BUILDING LAYOUT.

STAGE 6: EXISTING KIOSK MAY BE RETAINED DEPENDING ON PROPOSED BUILDING LAYOUT.

STAGE 7: EXISITNG HV CABLE MAY NEED TO BE RELOCATED TO SUIT THE PROPOSED LOT LAYOUT.

STAGE 7: EXISITNG HV CABLE TO BE RETAINED WITHIN DIMENY PARK

PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
C	FINAL ISSUE	15.06.11	AMP	GL	X	CA
B	DRAFT ISSUE	14.06.11	AMP	GL	X	
A	ISSUED FOR INFORMATION	29.04.11	AMP	GL	X	

* Drawing Status Warning: Unless there is an authorised Hughes Trueman signature at *, this drawing is not authorised for issue.

This Drawing may have been prepared using COLOUR, and may be incomplete if copied to BLACK & WHITE

20 0 50 100 200
Plan Scale 1:3000 @ A1

North

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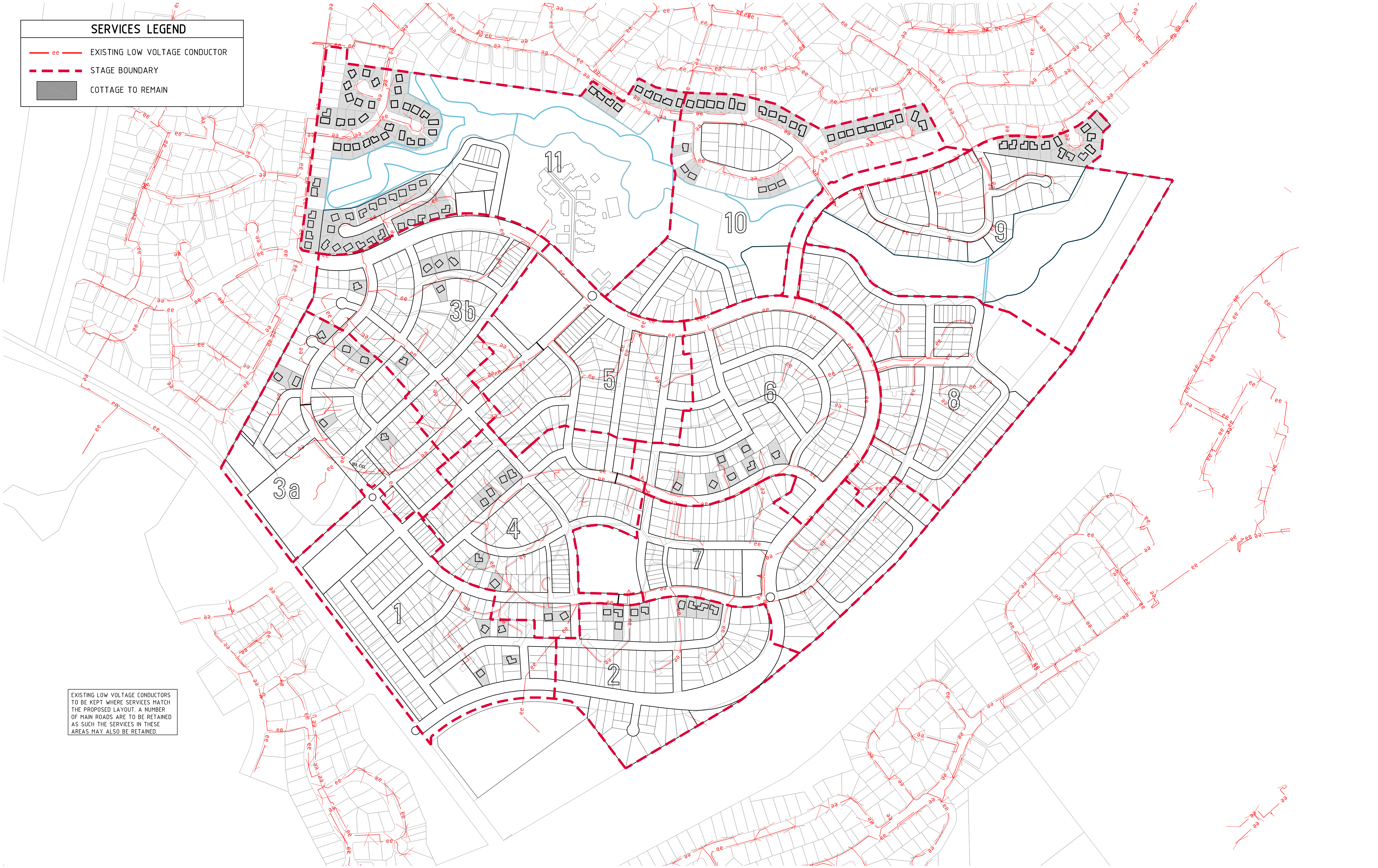
Project: CLAYMORE URBAN RENEWAL PROJECT
Client: LANDCOM
Architect/Project Manager: AECOM

Drawing Title: EXISTING ELECTRICITY HIGH VOLTAGE PLAN
Drawing No.: 09P700-SKC250
Sheet: Of
Rev: C

A1 SHEET 300mm 200mm 100mm 0

Date: 15-6-11 Time: 5:56pm Plotted By: ia65905 Filename: P:\Parramatta\Projects\09P700\CAD\CIV\ACAD\Sketches\09P700-SKC226-SKC260 - EXISTING SERVICES PLAN.dwg



A1 SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
C	FINAL ISSUE	15.06.11	AMP	GL	X	CA
B	DRAFT ISSUE	14.06.11	AMP	GL	X	
A	ISSUED FOR INFORMATION	29.04.11	AMP	GL	X	

* Drawing Status Warning: Unless there is an authorised Hughes Trueman signature at *, this drawing is not authorised for issue.

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Plan Scale 1:3000 @ A1 (20 0 50 100 200)

North

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Project: CLAYMORE URBAN RENEWAL PROJECT

Drawing Title: EXISTING ELECTRICITY LOW VOLTAGE PLAN

Client: LANDCOM

Architect/Project Manager: AECOM

Drawing No.: 09P700-SKC251

Sheet: Of

Rev: C

Date : 15-6-11 Time : 5:57pm Plotted By : lee55905

PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
C	FINAL ISSUE	15.06.11	AMP	GL	X	CA
B	DRAFT ISSUE	14.06.11	AMP	GL	X	
A	ISSUED FOR INFORMATION	29.04.11	AMP	GL	X	

20 0 50 100 200
Plan Scale 1:3000 @ A1

North

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Project: CLAYMORE URBAN RENEWAL PROJECT

Client: LANDCOM

Architect/Project Manager: AECOM

Drawing Title: EXISTING ELECTRICITY STREET LIGHTING PLAN

Drawing No.: 09P700-SKC252

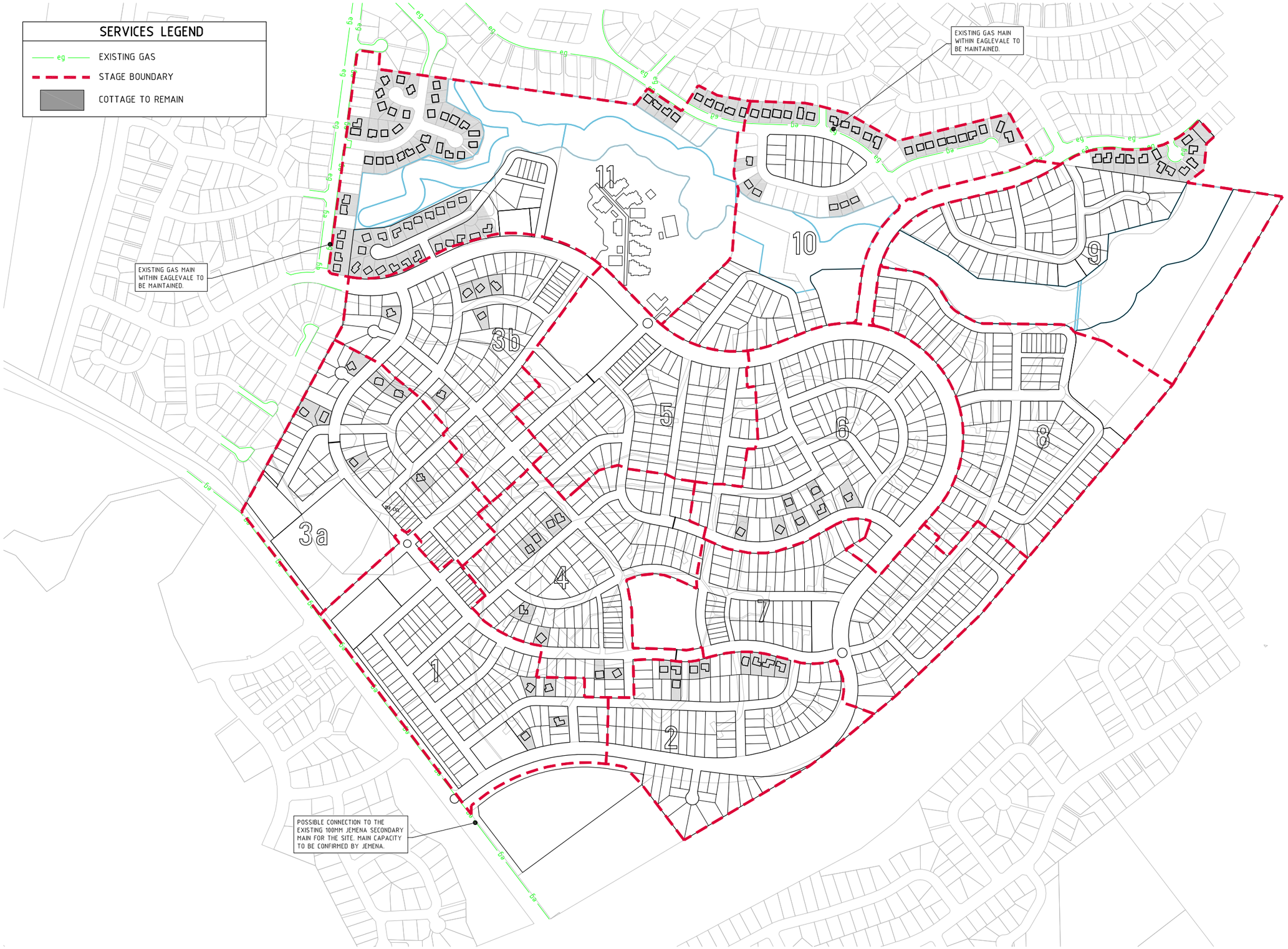
Sheet: Of

Rev: C

Date : 15-6-11 Time : 5:57pm Plotted By : lee55905 Filename:

SERVICES LEGEND

- eg — EXISTING GAS
- STAGE BOUNDARY
- COTTAGE TO REMAIN



PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
C	FINAL ISSUE	15.06.11	AMP	GL	X	CA
B	DRAFT ISSUE	14.06.11	AMP	GL	X	
A	ISSUED FOR INFORMATION	29.04.11	AMP	GL	X	

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20 0 50 100 200
Plan Scale 1:3000 @ A1

North

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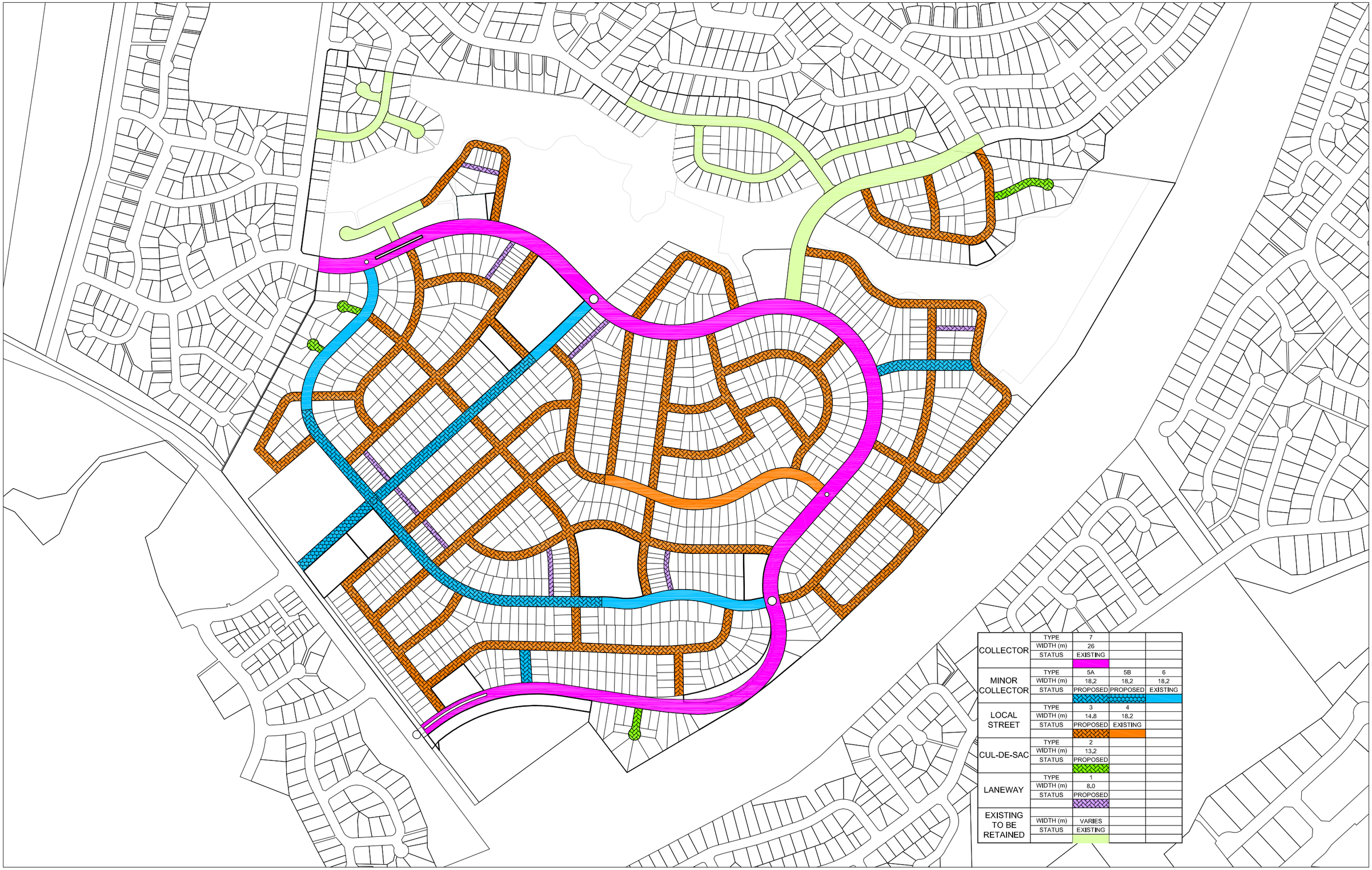
Project: CLAYMORE URBAN RENEWAL PROJECT
Client: LANDCOM
Architect/Project Manager: AECOM

Drawing Title: EXISTING GAS PLAN
Drawing No.: 09P700-SKC260
Sheet: Of
Rev: C

A1 SHEET 300mm 200mm 100mm

Date: 15-6-11 Time: 5:58pm Plotted By: ie65905 Filename: P:\Parramatta\Projects\200\09P700\CAD\C3A\MCAD\Sketches\09P700-SKC226-SKC260 - EXISTING SERVICES PLAN.dwg



PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
C	FINAL	09.06.11	GL	GL	*	CA
B	FINAL DRAFT	04.05.11	GL	GL	*	*
A	FOR COMMENT	30.03.11	GL	GL	*	*

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SCALES
NOT TO SCALE

NORTH

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Project
CLAYMORE URBAN RENEWAL
CAMPBELLTOWN

Drawing Title
ROAD HIERACHY PLAN

Client
LANDCOM

Architect/Project Manager

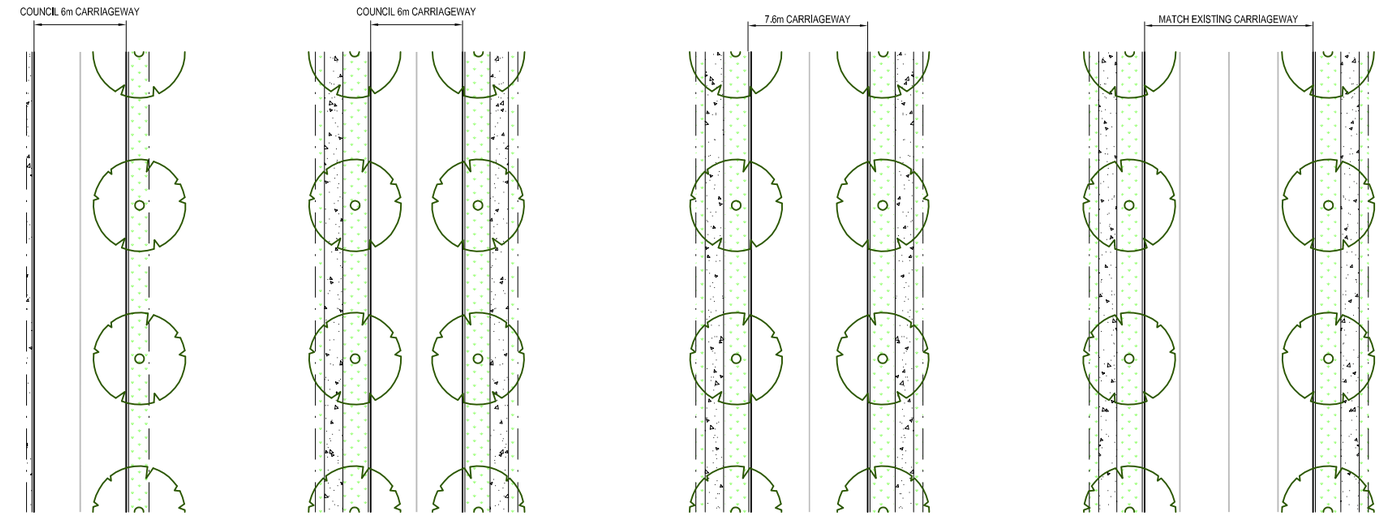
Drawing No.
09P700-SKC280

Sheet 1 Of 1

Rev C

A1 SHEET 300mm 200mm 100mm 0

Date: 22-7-11 Time: 1:47pm Plotted By: ray55928 fRename: P:\Parramatta\Projects\2009\09P700\CADD\Civ\ACAD\Sketches\09P700-SKC280 - ROAD HIERARCHY PLAN.dwg



ROAD TYPE 1
8m LANEWAY

ROAD TYPE 2
PROPOSED 13.2m CUL-DE-SAC

ROAD TYPE 3
PROPOSED 14.8m LOCAL STREET

ROAD TYPE 4
EXISTING 18.2m NORMAN CRES TO BE
LINEMARKED WITH PARKING BAYS

PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
E	MINOR COMMENTS	22.06.11	GL	GL	*	CA
D	MINOR COMMENTS	15.06.11	GL	GL	*	CA
C	MINOR COMMENTS	09.06.11	GL	GL	*	CA
B	FINAL DRAFT	04.05.11	GL	GL	*	*
A	FOR COMMENT	30.03.11	GL	GL	*	*

* Drawing Status Warning: Unless there is an authorised Hughes Trueman signature at *, this drawing is not authorised for issue.

This Drawing may have been prepared using COLOUR, and may be incomplete if copied to BLACK & WHITE

2 1 0 2 4 6
PLAN SCALE 1:100 @ A1

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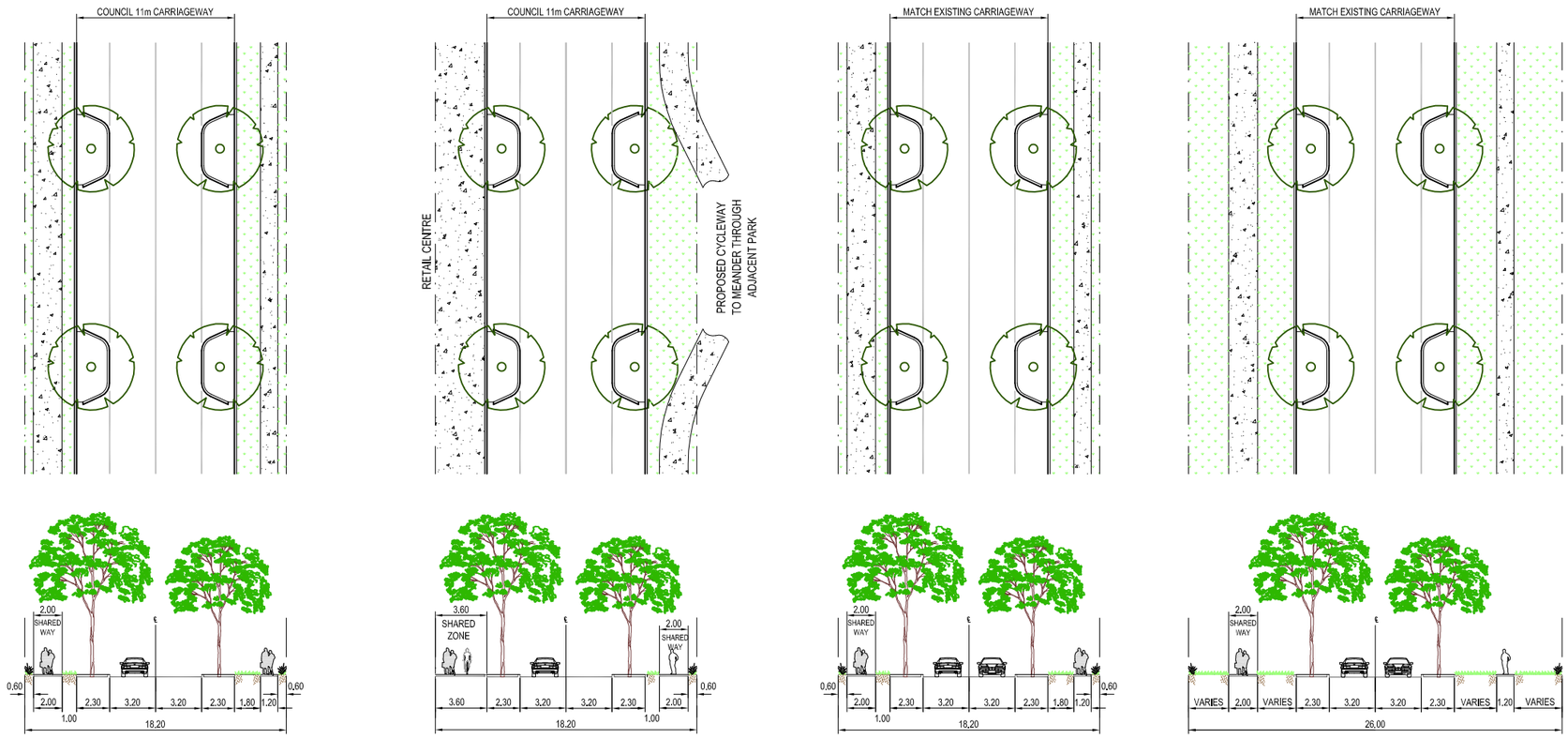
Project: CLAYMORE RENEWAL PROJECT
Drawing Title: ROAD HIERARCHY PLAN
TYPICAL SECTIONS
Client: LANDCOM
Architect/Project Manager: AECOM
Drawing No.: 09P700-SKC290
Sheet: 1 Of 2
Rev: E

A1 SHEET
300mm
200mm
100mm

Date: 22-7-11 Time: 1:40pm Plotted By: ray55928 Filename: C:\Temp\AcPublish_3316\09P700-SKC290-SKC291 - ROAD CROSS SECTIONS.dwg



ROAD TYPE 5A
PROPOSED 18.2m MINOR COLLECTOR

ROAD TYPE 5B
PROPOSED 18.2m MINOR COLLECTOR
(GLENROY ROAD)
RETAIL ZONE

ROAD TYPE 6
EXISTING 18.2m MINOR COLLECTOR
NEW LINE MARKING AND TREE BAYS

ROAD TYPE 7
EXISTING 26m COLLECTOR
(DOBELL RD)
NEW LINE MARKING AND TREE BAYS

PRELIMINARY - NOT FOR CONSTRUCTION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by X = Not verified	Issue Authorised (*)
G	TEXT CHANGES	13.07.11	GL	GL	*	CA
F	MINOR COMMENTS	22.06.11	GL	GL	*	CA
E	MINOR AMENDMENT	15.06.11	GL	GL	*	CA
D	MINOR AMENDMENT	14.06.11	GL	GL	*	CA
C	MINOR COMMENTS	09.06.11	GL	GL	*	CA
B	FINAL DRAFT	04.05.11	GL	GL	*	*
A	FOR COMMENT	30.03.11	GL	GL	*	*

* Drawing Status Warning: Unless there is an authorised Hughes Trueman signature at *, this drawing is not authorised for issue.

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2 1 0 2 4 6
PLAN SCALE 1:100 @ A1

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Project: CLAYMORE RENEWAL PROJECT
Drawing Title: ROAD HIERARCHY PLAN TYPICAL SECTIONS
Client: LANDCOM
Architect/Project Manager: AECOM
Drawing No.: 09P700-SKC291
Sheet: 2 Of 2
Rev: G

300mm A1 SHEET
200mm
100mm

Date: 22-7-11 Time: 1:46pm Plotted By: ray55928 Filename: C:\Temp\AcPublish_3376\09P700-SKC290-SKC291 - ROAD CROSS SECTIONS.dwg