

- 3.30 The signalised intersection of Epping Road with Herring Road would continue to operate with average delays of less than 50 and 55 seconds per vehicle during morning and afternoon peak periods respectively. This represents level of service D, a satisfactory level of service for a busy intersection during peak periods.
- 3.31 The signalised intersection of Herring Road with Waterloo Road would operate with average delays of less than 42 seconds per vehicle during morning peak periods and less than 50 seconds per vehicle during afternoon peak periods. This represents levels of service C and D respectively, which are satisfactory levels of service.
- 3.32 The roundabout-controlled intersection of Herring Road with Ivanhoe Place and the Morling College access would continue to operate with average delays, for the highest delayed movement, of less than 20 seconds per vehicle during peak periods. This represents level of service B, a good level of service.
- 3.33 Therefore, the road network will be able to cater for the additional traffic from the proposed development.

#### Principles of Construction Traffic Management

- 3.34 The architect has prepared construction staging diagrams indicating the various subdivision, construction and access stages during construction of the development. These are attached in Appendix A. Construction has been broken into six stages, as follows:
- Stage 1 (create lot 1 as part of three lot subdivision)
    - site preparation works, including demolition of existing child care centre;
    - amend and extend car park area in front of chapel;
    - install temporary crossing from Herring Road; and
    - establish sales and display centre.
-

- Stage 1A (subdivide lot 1, construct Building A and construct road on lot 12)
    - demolish three houses on lot 1;
    - extend construction access road to south and rear part of lot 1 to materials handling area;
    - create three sub-lots (10, 11, 12) and provide new services to 10 and 11;
    - construct Building A.
  - Building B
    - construct Building B, west of Building A; and
    - construction access from Herring Road along southern side of lot 12 to site accommodation and materials handling areas.
  - Stage 2 subdivision and Building C
    - subdivide residential development lot into Lots 20, 21, 22 and road lot 23;
    - demolish 'single men' building & car parking;
    - extend construction access road to serve lots 20 and 21;
    - set up site accommodation and materials handling area;
    - construct Building C; and
    - create lot for and largely construct extension of access road to serve Buildings C and D.
  - Building D
    - construct Building D;
    - finalise construction of access road; and
    - remove construction access road along southern side of access road.
  - Building E
    - demolish chapel;
    - dismantle display centre and retain sales centre;
    - set up site accommodation, materials handling/storage area for Building E;
    - construct Building E.
-

- 3.35 During construction, construction vehicles transporting demolition material from the site will be loaded with excavators. Trucks will enter and exit the site in a forward direction.
- 3.36 The pedestrian footpath along Herring Road adjacent to the site will be maintained during the construction period. Class A construction fencing will be erected around the perimeter of the development.
- 3.37 Openings in the construction fencing, and at the construction access driveways will be managed and controlled by qualified site personnel. The movement of trucks entering and exiting the site will be managed and controlled by site personnel.
- 3.38 The overall principles for traffic management during construction of the development are:
- provide a convenient and appropriate environment for pedestrians;
  - minimise effects on pedestrian movements and amenity;
  - provide appropriate safety fencing/hoardings around the development, as it is being constructed;
  - manage and control vehicular movements to and from the site;
  - maintain existing on-street parking in the vicinity of the site;
  - maintain access to properties adjacent to the site;
  - restrict construction vehicle activity to designated truck routes through the area;
-

- construction vehicles to enter and exit the site in a forward direction;
- construction vehicles will not be permitted to queue on-street near the site;
- construction activity to be carried out in accordance with the approved hours of construction;
- maintain safety for workers; and
- the preparation of the construction traffic management plan, signage detail, control of pedestrians and control and management of construction vehicles in the vicinity of the site will be the responsibility of the builder.

3.39 The builder will be responsible for the preparation of a traffic management plan, which will be prepared prior to the commencement of construction for each building.

Director – General’s Requirements

- *Provide a Transport & Accessibility Impact Study prepared in accordance with the RTA’s Guide to Traffic Generating Developments, considering traffic generation (including daily and peak traffic movements), any required road / intersection upgrades, access, loading dock(s), car parking arrangements, measures to promote public transport usage and pedestrian and bicycle linkages;*

3.40 This report has been prepared with reference to the RTA’s “Guide to Traffic Generating Developments”. Traffic generation and its effects are discussed in paragraphs 3.25 to 3.33. Access and loading arrangements are discussed in paragraphs 3.17 to 3.24. Car parking is discussed in paragraphs 3.10 to 3.16. Public transport, pedestrian and bicycle links are discussed in paragraphs 3.4 to 3.9.

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- *Provide an assessment of the implications of the proposed development for non-car travel modes (including public transport, walking and cycling), including an assessment of existing and proposed pedestrian and cycle movements within the vicinity of the subject site;*
- 3.41 Pedestrians, cyclists and public transport are discussed in paragraphs 2.20 to 2.35 and 3.4 to 3.9.
- *Demonstrate that a minimalist approach to carparking provision is taken based on the accessibility of the site to public transport;*
- 3.42 Parking provision is discussed in paragraphs 3.10 to 3.16.
- *Demonstrate how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets;*
- 3.43 The availability of public transport and the provisions for pedestrians and cyclists, which support a choice of travel modes, are discussed in paragraphs 2.20 to 2.35 and 3.4 to 3.9. State Plan targets are being addressed by the applicant's town planner.
- *Address the accessibility and traffic/transport principles detailed in the Ryde DCP 2006 and draft LEP 2009, including the "Ryde Bicycle Strategy and Master Plan 2007";*
- 3.44 The proposed development provides a new "type 3" street connecting to Herring Road through the subject site in accordance with Sections 3.2 and 5.1.4 of part 4.5 of the Ryde DCP 2006 (Macquarie Park Corridor).
- 3.45 The new access road will provide for cyclists via a pedestrian/cycle path on one side of the road, in accordance with Section 5.3.1 of part 4.5 of the Ryde DCP 2006. Provision is also included for a future pedestrian connection to the west, through the riparian zone.
-

- *Details of service vehicle movements;*
- 3.46 Service vehicles are discussed in paragraph 3.24. Construction access is discussed in paragraph 3.34.
- *Details of the potential impacts on the local road network and in particular, the three intersections identified in the RTA response (12/01/2010). Consideration should also be given to the Macquarie Park 2007 Base Paramics Model, where appropriate; and*
- 3.47 Traffic generation and its effects on the three intersections identified by the RTA are discussed in paragraphs 3.25 to 3.33.
- 3.48 The *Macquarie Park 2007 Base Paramics Model* includes existing traffic estimated to be generated by “zone 14”, which is existing development with access from the western side of Herring Road, between Epping Road and Waterloo Road. We have counted the morning and afternoon traffic generation of the zone 14 development, which was found to be some 210 and 150 vehicles per hour two-way during morning and afternoon peak hours respectively.
- 3.49 With the additional traffic from the proposed development, of some 160 vehicles per hour two-way, traffic generation of the zone 14 land uses would be some 370 and 310 vehicles per hour two-way during morning and afternoon peak hours respectively.
- 3.50 The *Macquarie Park 2007 Base Paramics Model* includes traffic generation from zone 14 of some 480 and 500 vehicles per hour two-way during morning and afternoon peak hours respectively. Therefore, the Paramics model has been based on a higher generation than existing plus development flows. The proposed development traffic has therefore been included in the current Paramics modelling.
-

- *Future pedestrian/vehicular/cycle connectivity with adjoining sites.*

3.51 These matters are discussed in paragraphs 3.8 and 3.20.

- *The EA must demonstrate the provision of sufficient on-site car parking for the proposal having regard to local planning controls and RTA guidelines. (Note: the Department supports reduced car parking rates in areas well-served by public transport).*

3.52 Parking provision is discussed in paragraphs 3.10 to 3.16.

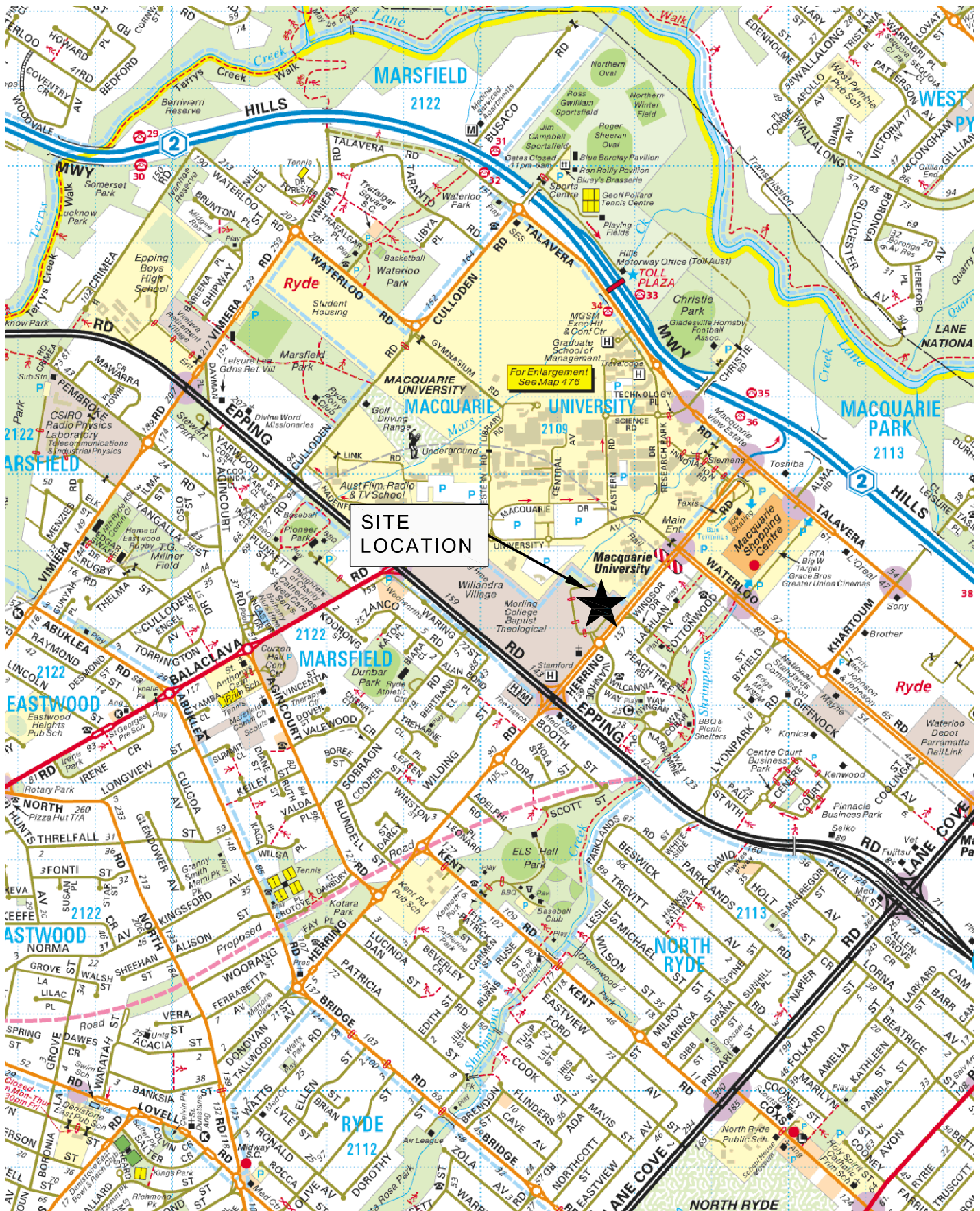
#### Summary

3.53 In summary, the main points relating to the traffic and transport aspects of the proposed development are as follows:

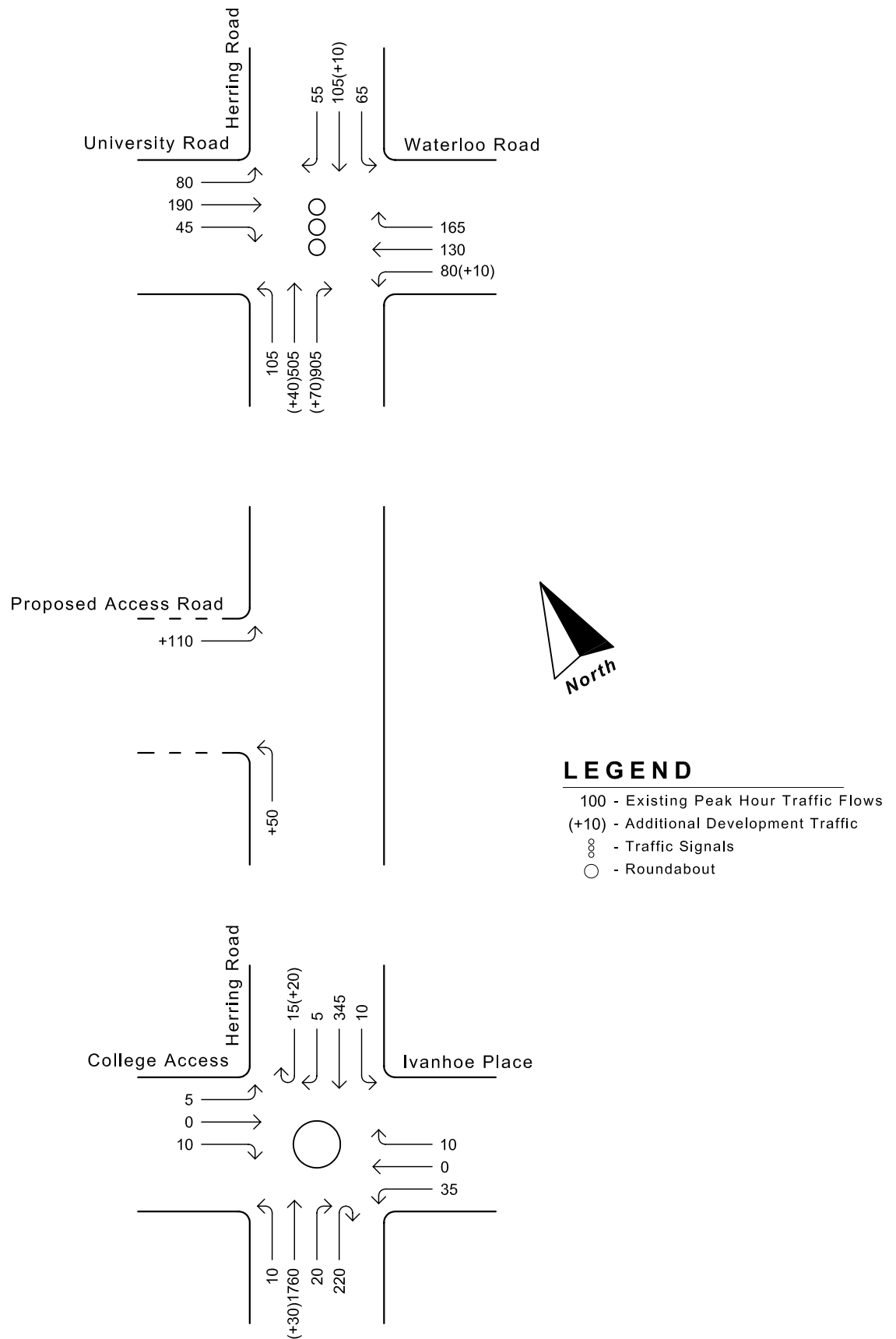
- (i) the proposed development comprises some 557 residential dwellings. The first building, Building A, includes 123 dwellings;
- (ii) vehicular access to the proposed development will be provided via a new road connection to Herring Road. Access to Building A and other future buildings will be provided from the new road;
- (iii) the proposed parking provision for Building A and the overall development is considered to be appropriate;
- (iv) access, internal circulation and layout will be provided in accordance with AS 2890.1:2004;

- (v) the road network will be able to cater for the traffic from the proposed development; and
- (vi) the Director – General’s requirements are addressed in paragraphs 3.40 to 3.52.

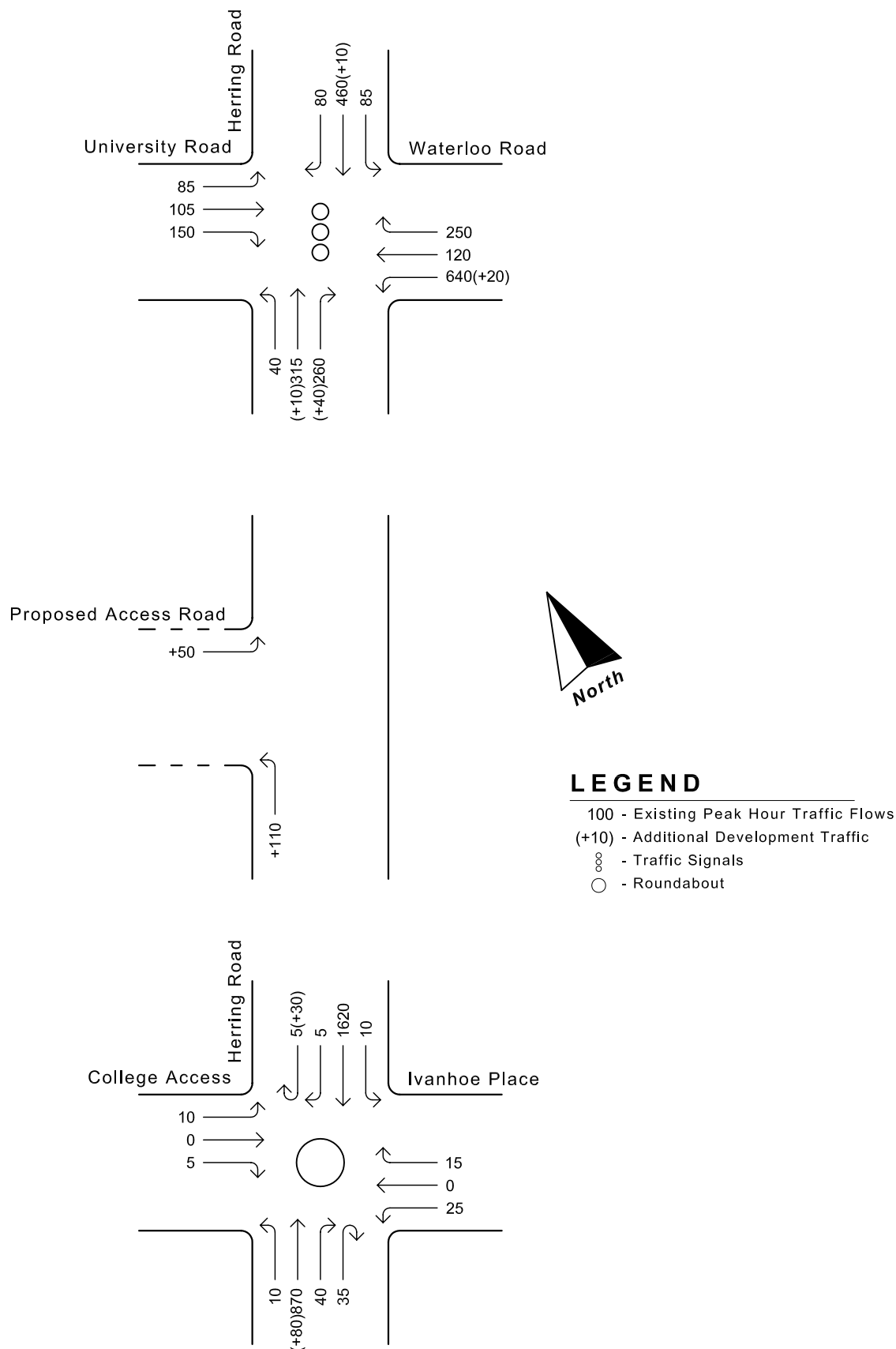




## Location Plan



**Existing morning peak hour traffic flows plus development traffic**



**Existing afternoon peak hour traffic flows plus development traffic**

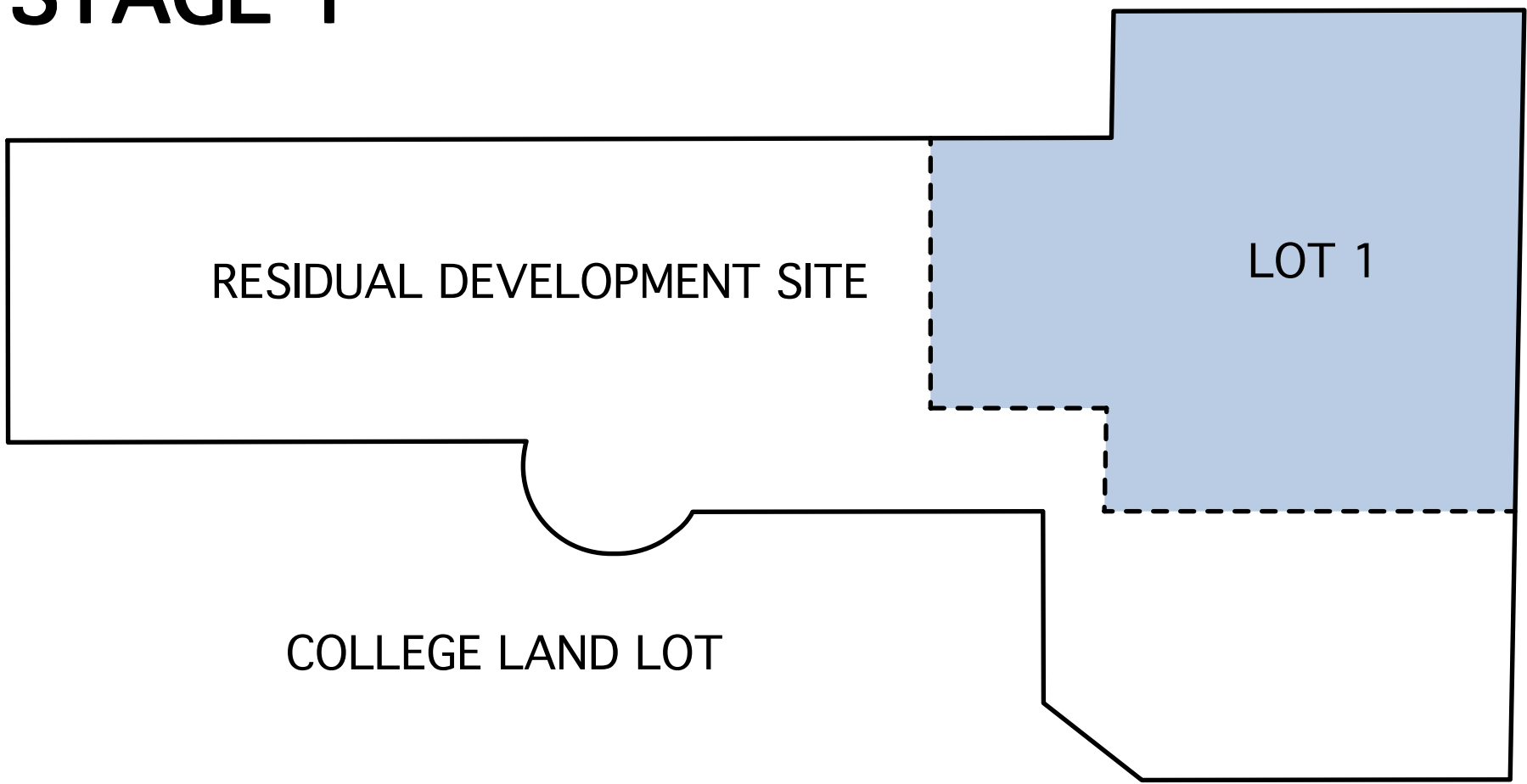
## APPENDIX A

### CONSTRUCTION STAGING

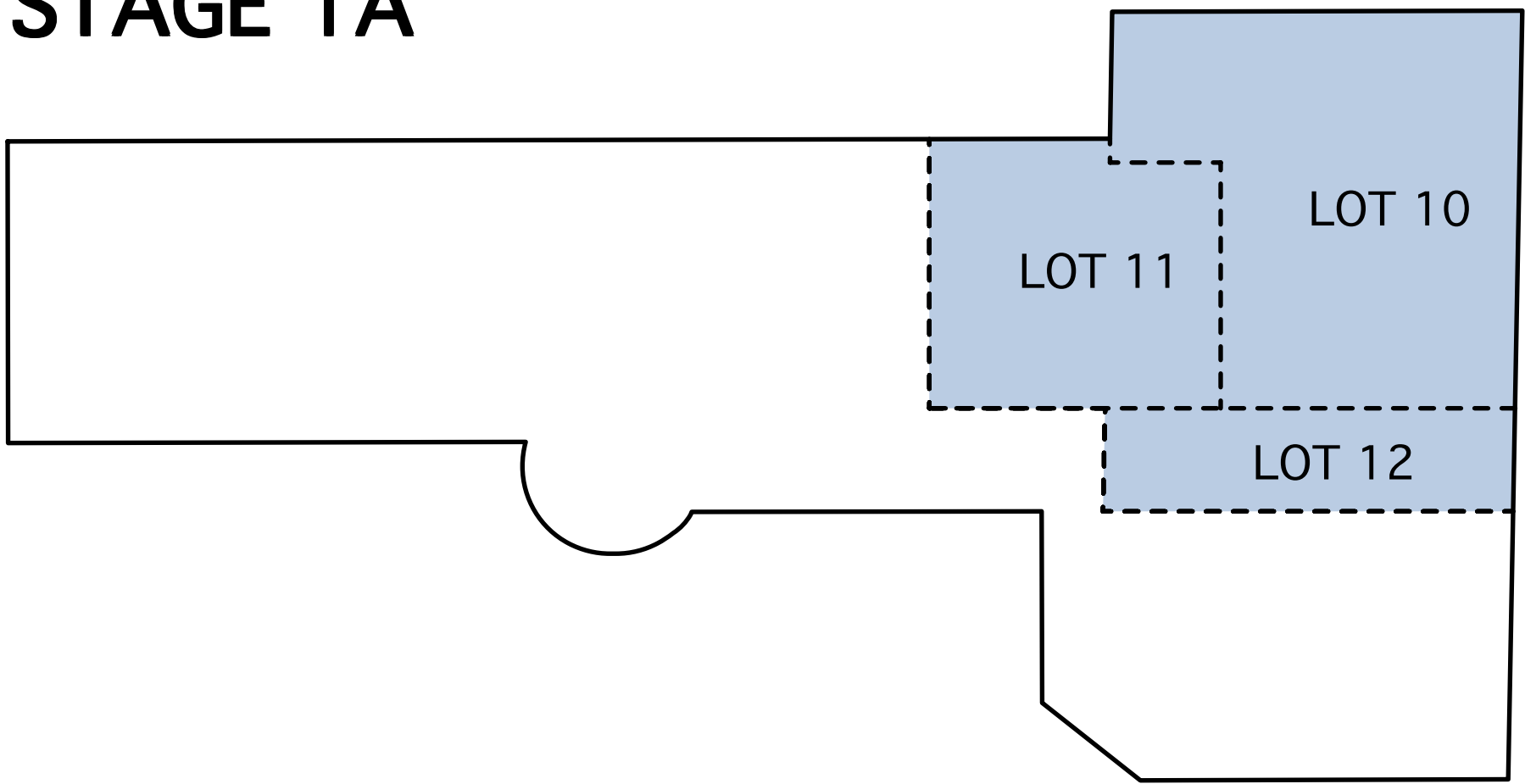
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SUBDIVISION STAGES:

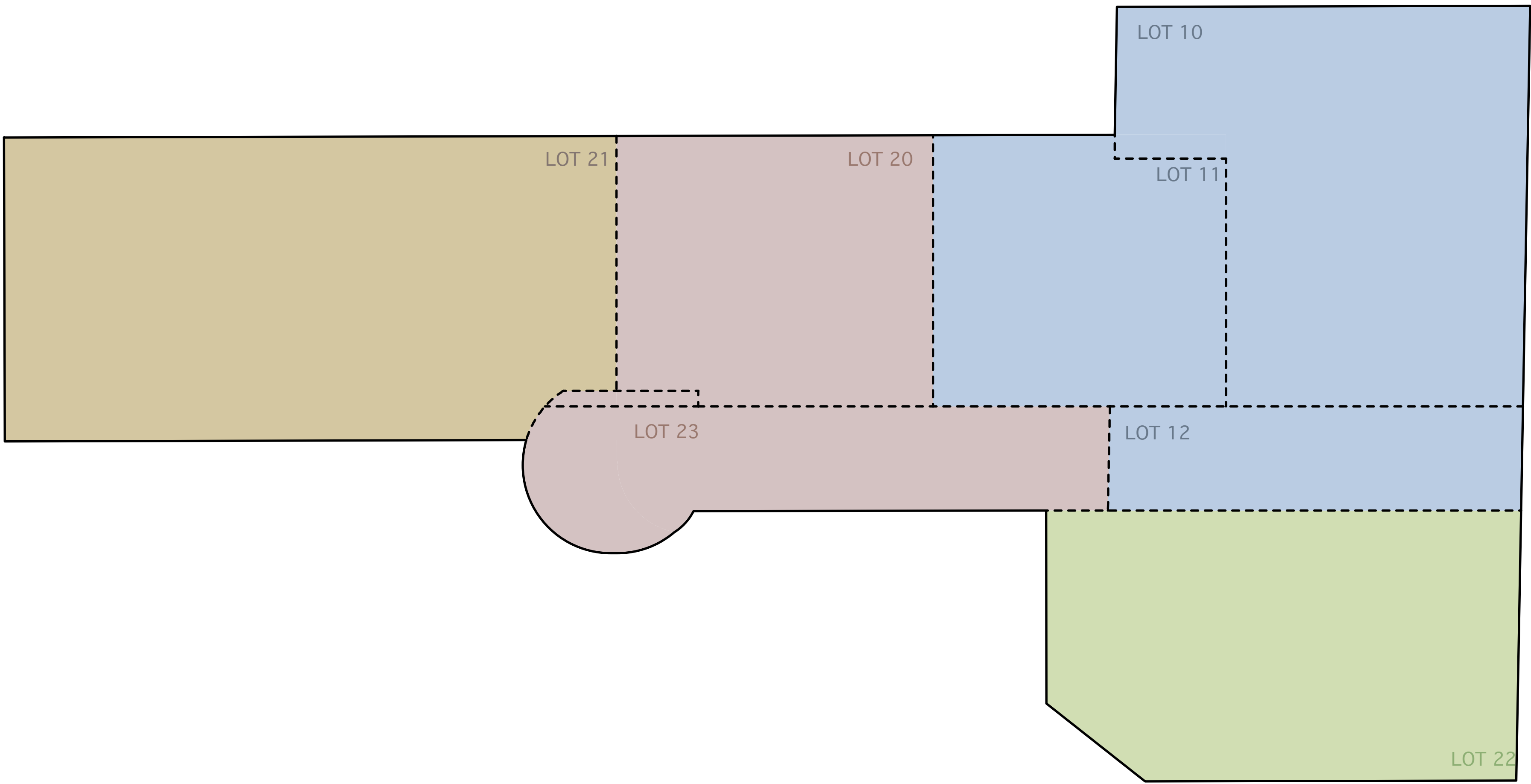
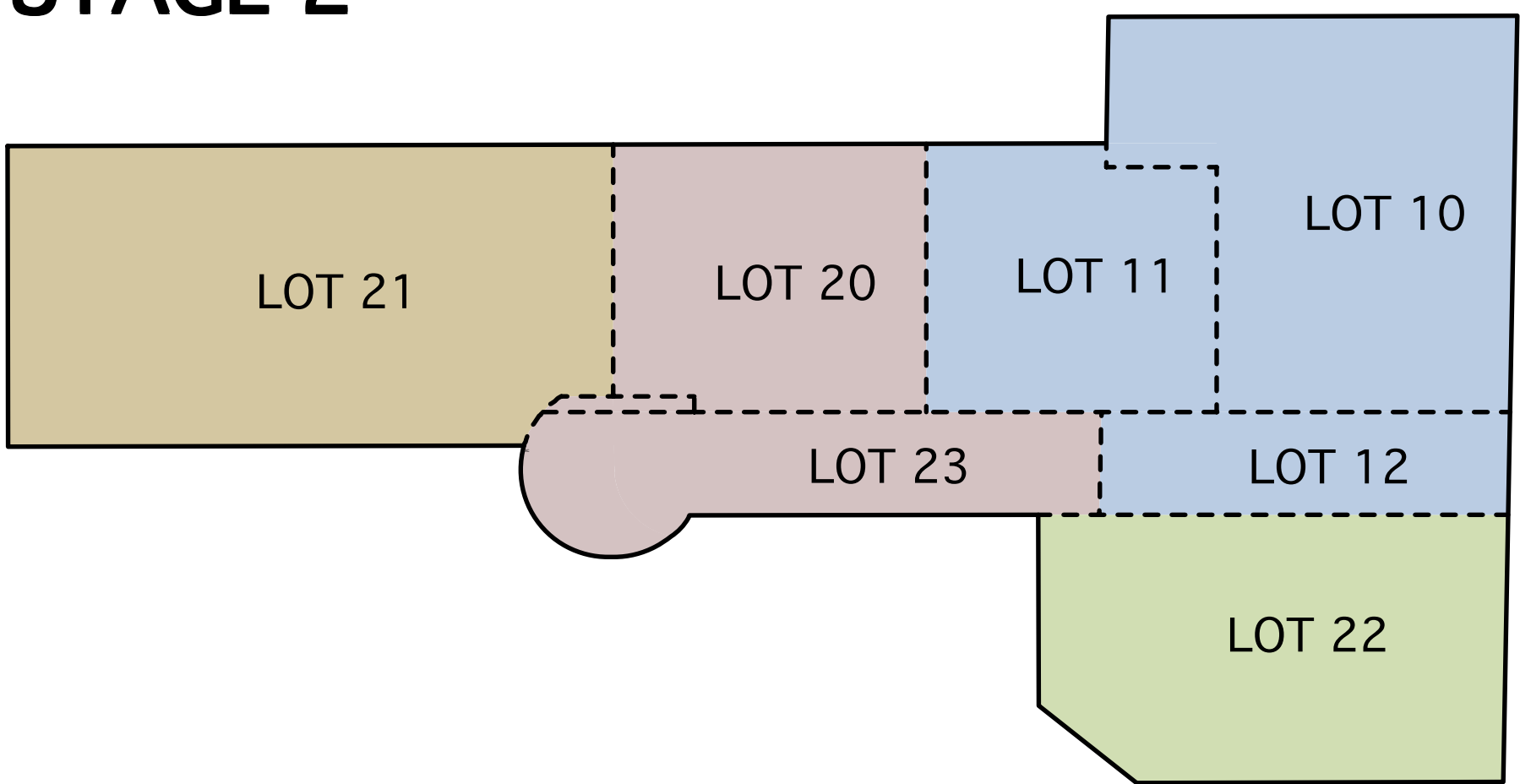
STAGE 1



STAGE 1A



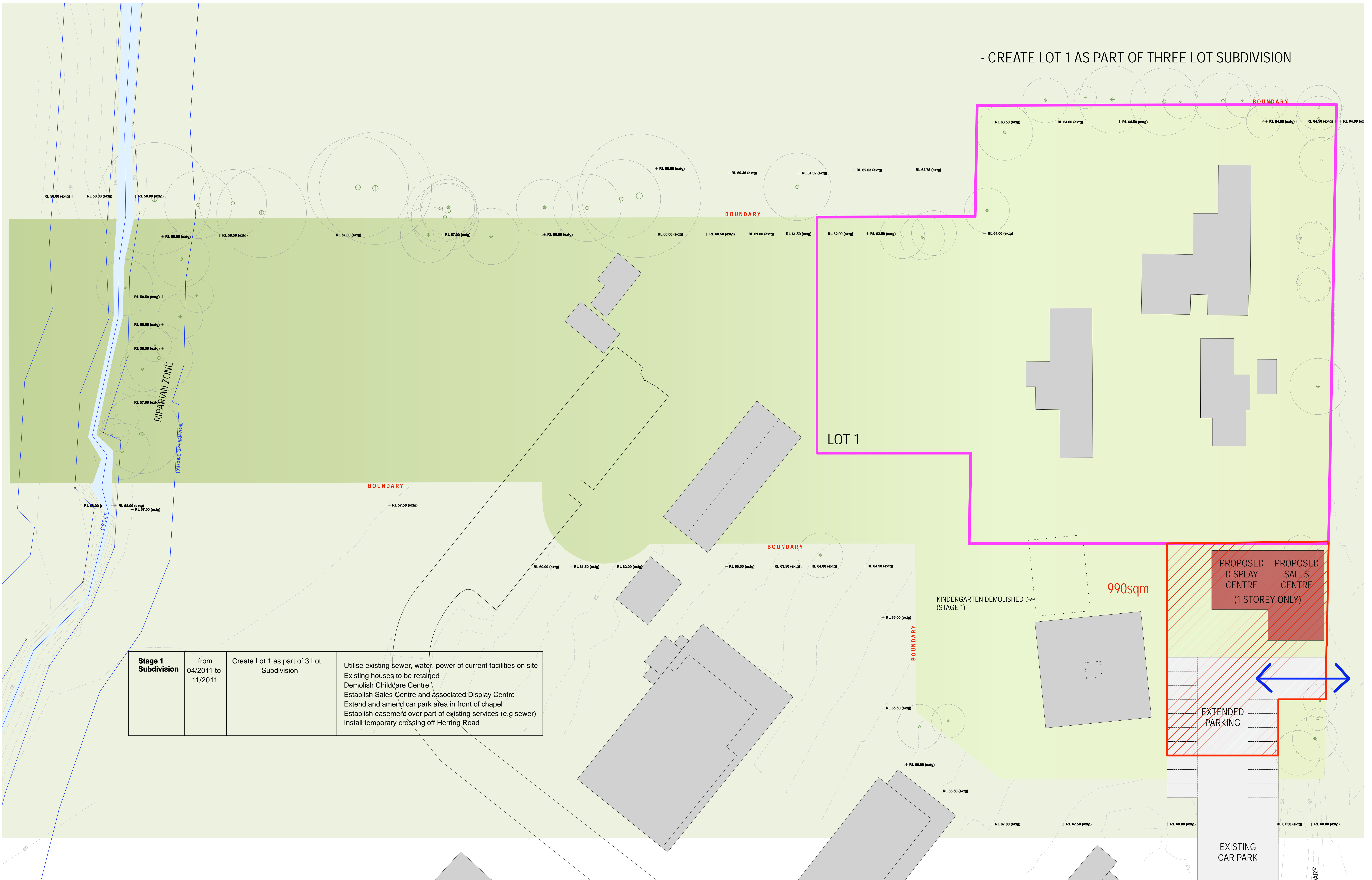
STAGE 2



	CURRENT PROPOSAL LOT NUMBERS	CURRENT PROPOSAL AREAS
	LOT 10 LOT 12 LOT 11	6,165 sqm
	LOT 20 LOT 23	3,645 sqm
	LOT 21	4,373 sqm
	LOT 22	2,990 sqm
TOTAL DEVELOPMENT SITE AREA		17,173 sqm



- CREATE LOT 1 AS PART OF THREE LOT SUBDIVISION

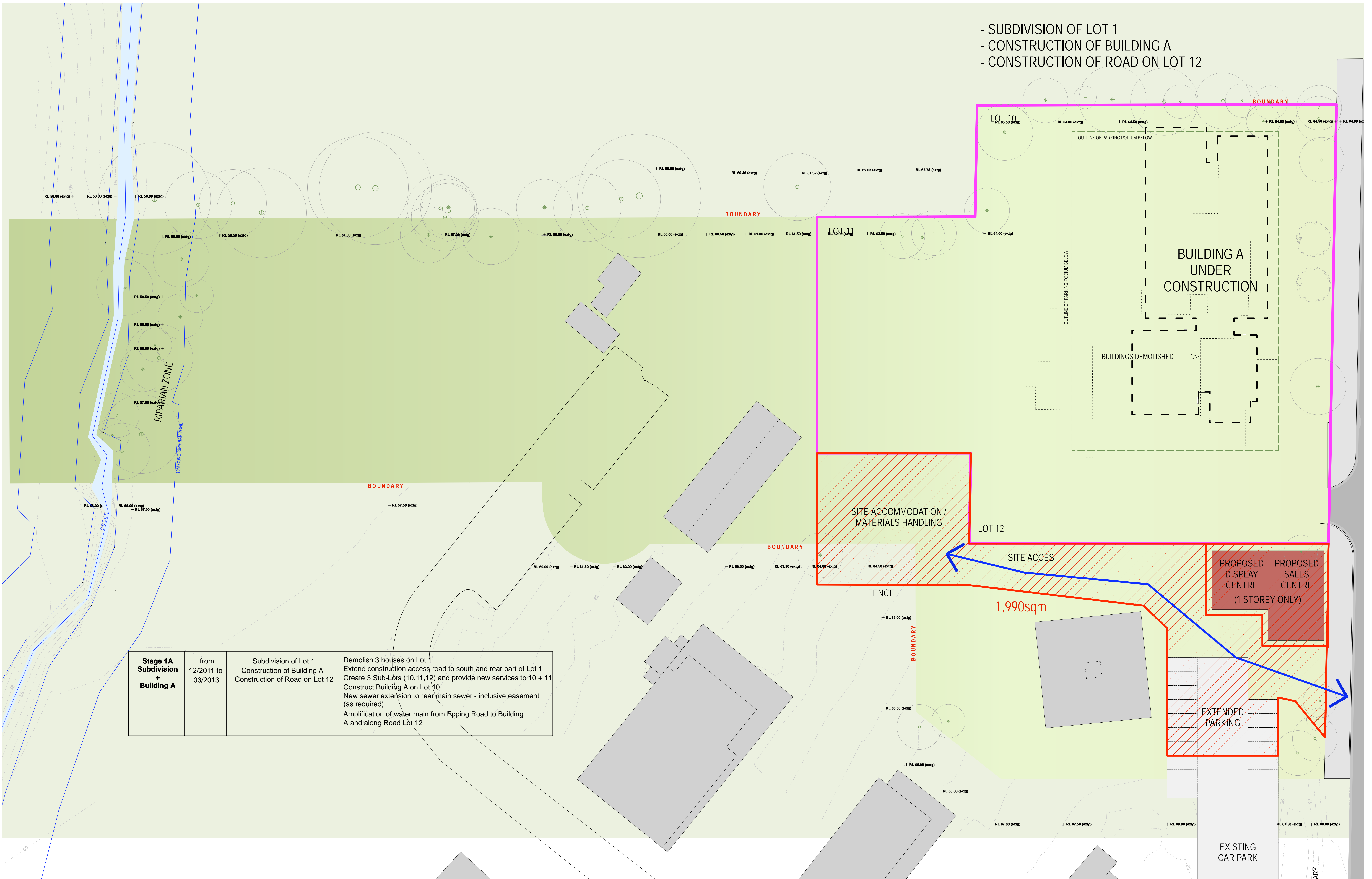


<b>Stage 1 Subdivision</b>	from 04/2011 to 11/2011	Create Lot 1 as part of 3 Lot Subdivision	Utilise existing sewer, water, power of current facilities on site Existing houses to be retained Demolish Childcare Centre Establish Sales Centre and associated Display Centre Extend and amend car park area in front of chapel Establish easement over part of existing services (e.g sewer) Install temporary crossing off Herring Road
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C	5/3/70	kgf	Project Application Submission				
B	1/13/70	kgf	General update				
A	25/20/70	kgf	Issued to Consultants				
Rev.	Date	Approved by	Revision Remarks				
SCALE	1:250	@B1, 40% @ A3	JOB No	09047	DRG/IN	AM	
STATUS FOR INFORMATION			ENVC No.	A 321	REV	C	
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- SUBDIVISION OF LOT 1
- CONSTRUCTION OF BUILDING A
- CONSTRUCTION OF ROAD ON LOT 12



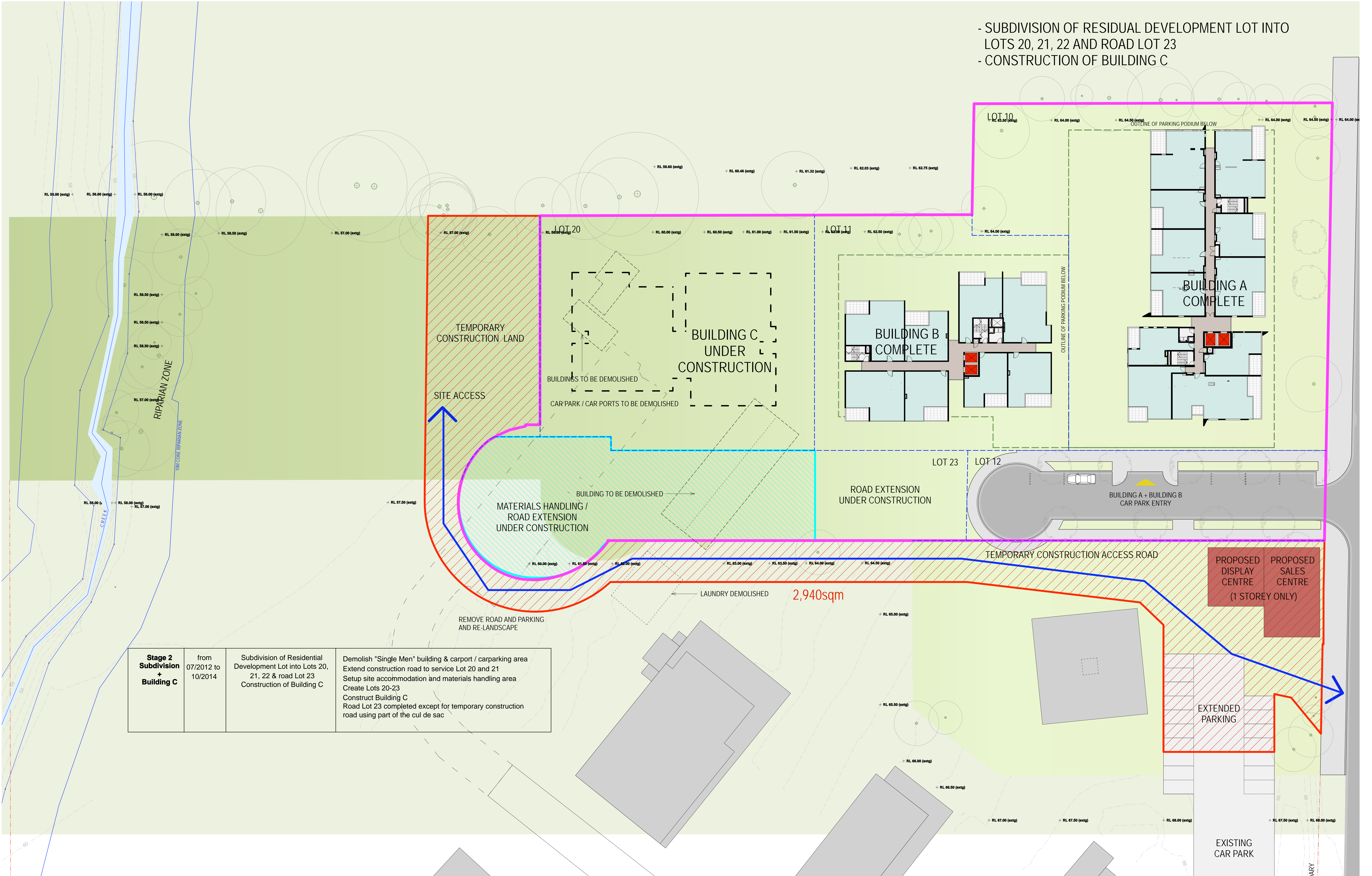
<p><b>Stage 1A</b> <b>Subdivision</b> <b>+</b> <b>Building A</b></p>	<p>from 12/2011 to 03/2013</p>	<p>Subdivision of Lot 1 Construction of Building A Construction of Road on Lot 12</p>	<p>Demolish 3 houses on Lot 1 Extend construction access road to south and rear part of Lot 1 Create 3 Sub-Lots (10,11,12) and provide new services to 10 + 11 Construct Building A on Lot 10 New sewer extension to rear main sewer - inclusive easement (as required) Amplification of water main from Epping Road to Building A and along Road Lot 12</p>
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- SUBDIVISION OF RESIDUAL DEVELOPMENT LOT INTO LOTS 20, 21, 22 AND ROAD LOT 23
- CONSTRUCTION OF BUILDING C



Stage 2 Subdivision + Building C	from 07/2012 to 10/2014	Subdivision of Residential Development Lot into Lots 20, 21, 22 & road Lot 23 Construction of Building C	Demolish "Single Men" building & carport / carparking area Extend construction road to service Lot 20 and 21 Setup site accommodation and materials handling area Create Lots 20-23 Construct Building C Road Lot 23 completed except for temporary construction road using part of the cul de sac
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1m 5m 10m 20m

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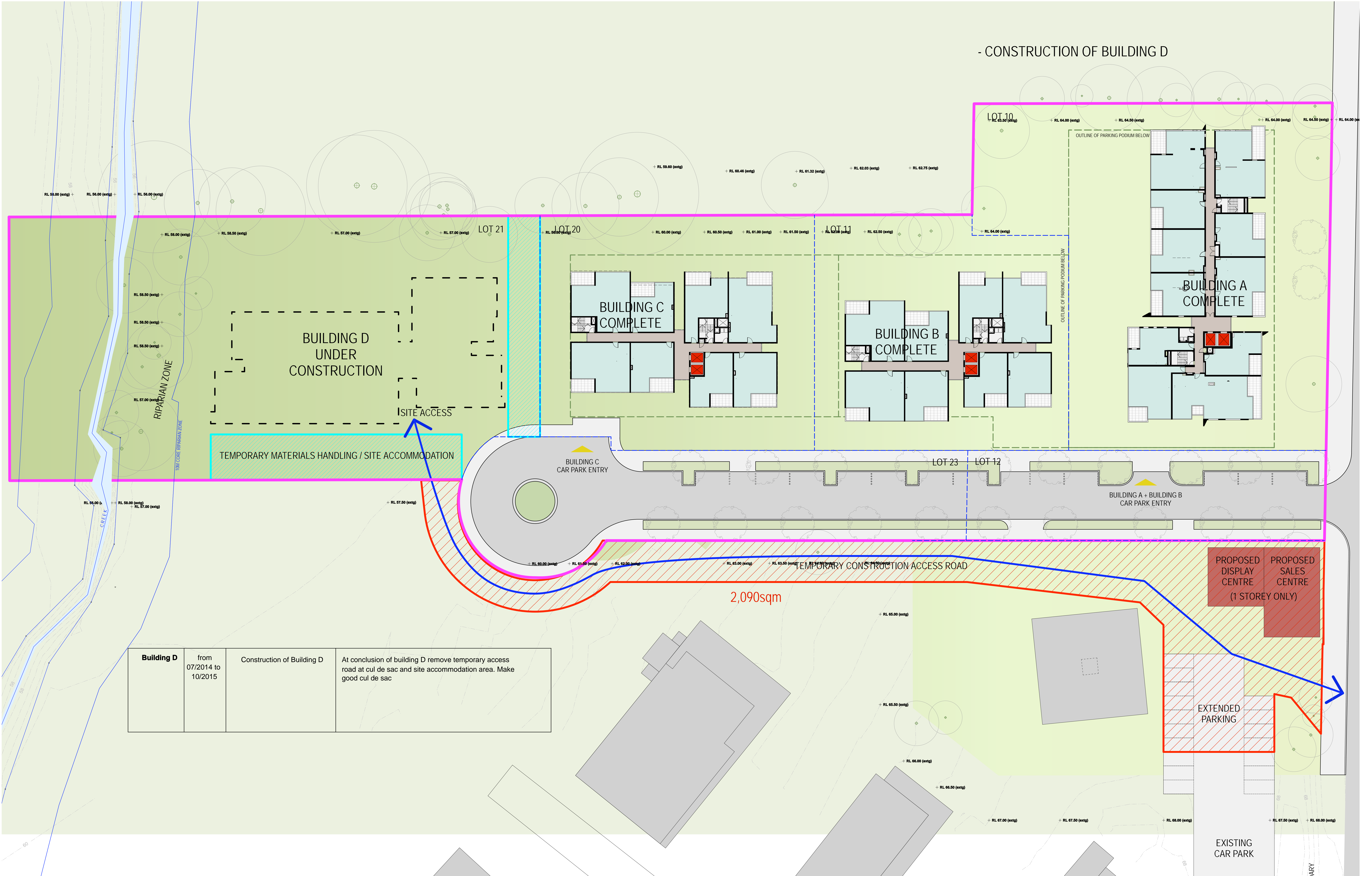


PROJECT TITLE  
RESIDENTIAL DEVELOPMENT  
128 HERRING ROAD, MACQUARIE PARK

DRAWING TITLE  
Stage 2 Subdivision + Building C  
PROJECT APPLICATION, STAGED SUBDIVISION

C	5/9/10	YH	Project Application Submission
B	10/10/10	YH	General update
A	25/10/10	YH	Issued for information
Rev	Date	Approved by	Revision Notes
SCALE	1:250 @B1, 40% @ A3	JOB No	09047
FOR INFORMATION		DWG No	A 324
		DESIGN	ANM
		REV	C
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Building D	from 07/2014 to 10/2015	Construction of Building D	At conclusion of building D remove temporary access road at cul de sac and site accommodation area. Make good cul de sac
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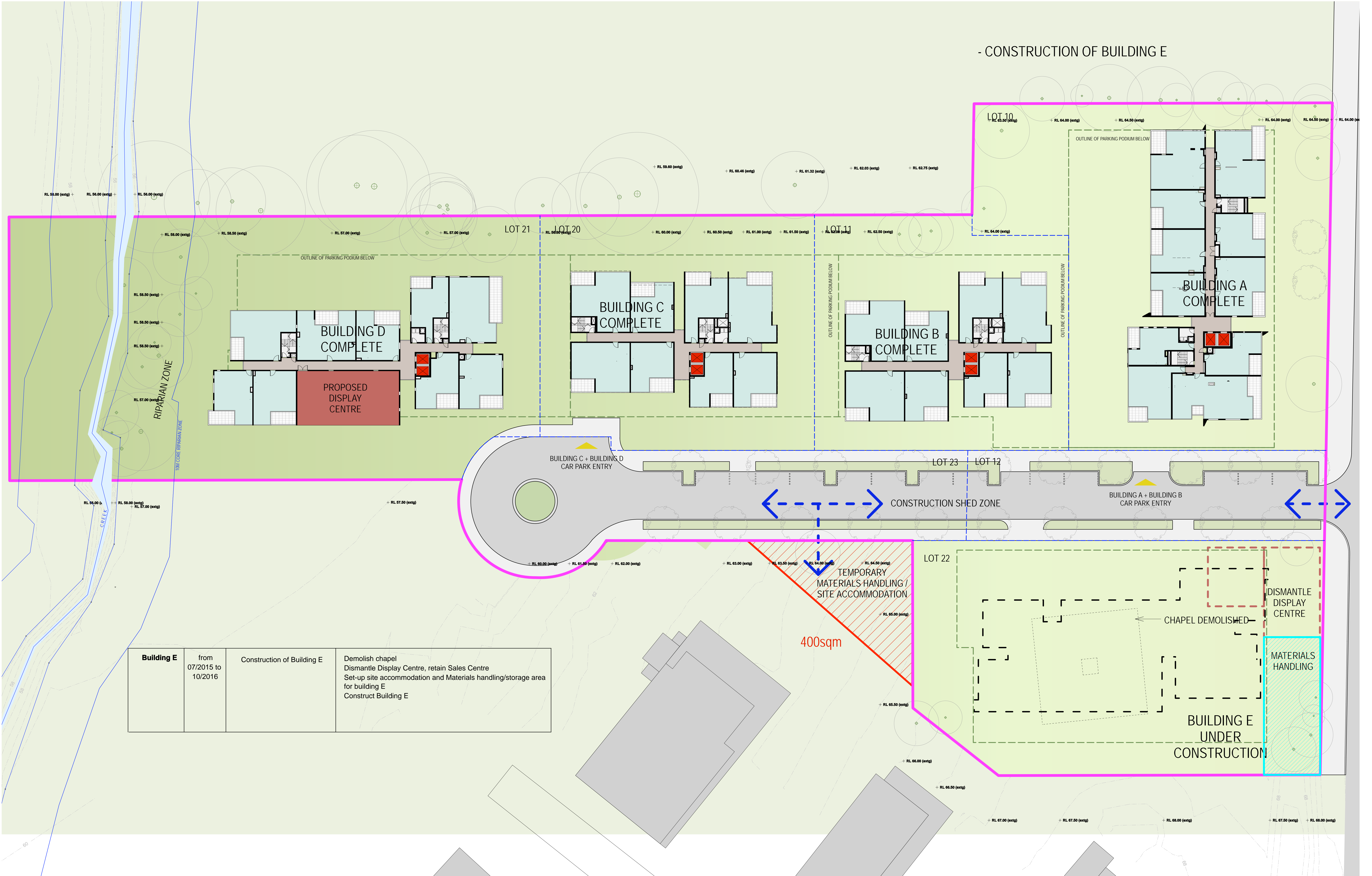
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PROJECT TITLE  
RESIDENTIAL DEVELOPMENT  
128 HERRING ROAD, MACQUARIE PARK

DRAWING TITLE  
Building D  
PROJECT APPLICATION, STAGED SUBDIVISION

C	5/9/10	YH	Project Application Submission
B	10/10/10	YH	General update
A	25/10/10	YH	Issued to Consultants
Rev	Date	Approved by	Revision/Notes
SCALE	1:250 @B1, 40% @ A3	JOB No.	09047
FOR INFORMATION		DWG No.	A 325
		DESIGN	ANM
		REV	C
		NORTH	
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Building E	from 07/2015 to 10/2016	Construction of Building E	Demolish chapel Dismantle Display Centre, retain Sales Centre Set-up site accommodation and Materials handling/storage area for building E Construct Building E
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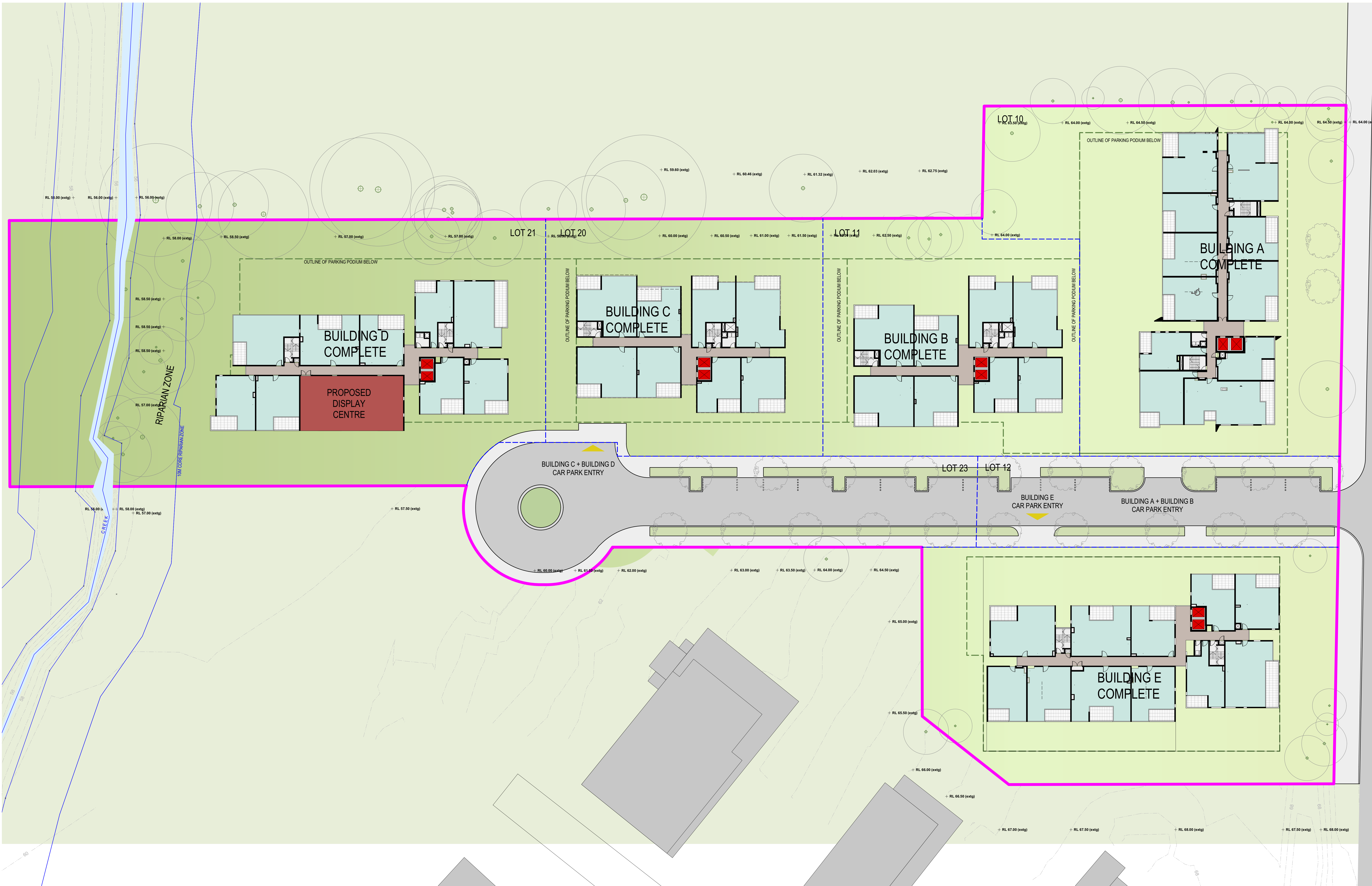
PROJECT TITLE  
**RESIDENTIAL DEVELOPMENT**  
128 HERRING ROAD, MACQUARIE PARK

DRAWING TITLE  
**Building E**  
PROJECT APPLICATION, STAGED SUBDIVISION

Rev	Date	Approved by	Job No	09047	Drawn	ANM	North
C	5/9/10	YH	Project Application Submission				
B	10/10/10	YH	General update				
A	25/10/10	YH	Issued for information				
Rev	Date	Approved by	Drawn	ANM	North		
			FOR INFORMATION	A 326	REV	C	

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PROJECT TITLE  
RESIDENTIAL DEVELOPMENT  
128 HERRING ROAD, MACQUARIE PARK

DRAWING TITLE  
Completion of Staging  
PROJECT APPLICATION, STAGED SUBDIVISION

C	5/9/10	KSP	Project Application Submission
B	10/10	KSP	General Update
A	25/10	KSP	Issued for Information
Rev	Date	Approved by	Revision Notes
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