



Premise

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2020/1160

Date: 26 August 2021



Queensland
Government

MIRVAC

Precinct 9, Everleigh

ENGINEERING SERVICES REPORT

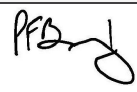
Report No: MIR003/R02003427

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6 August 2021

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DOCUMENT AUTHORISATION					
Revision	Revision Date	Report Details			
C	19/07/21	Earthworks Changes due to Retaining Wall Updates			
D	21/07/21	EDQ Updates and the removal of Water and Acoustic Reports			
E	06/08/21	Precinct 9.3B Boundary Changes			
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1. INTRODUCTION

Premise was commissioned by Mirvac to prepare an Engineering Services Report for Precinct 9 of the Everleigh development. Everleigh is located at Teviot Road, Greenbank and is part of the Priority Development Area (PDA) with EDQ being the assessing authority. The proposed Precinct 9 development consists of 421 residential lots, linear parks and roadways situated over an approximate site area of 30.85 ha. Precinct 9 will be split into eight (8) sub-precincts to accommodate staged delivery. The precinct masterplan and sub-precinct split-up can be seen in the below Figure 1.1. The Precinct 9 Masterplan Layout, prepared by Urbis, can be seen in Appendix A.

This report addresses the engineering services that will be required to service the proposed development and examines the development at an “as if complete” conceptual level for Development Approval. This report should be read in conjunction with the reports provided by Urbis (Town Planning).

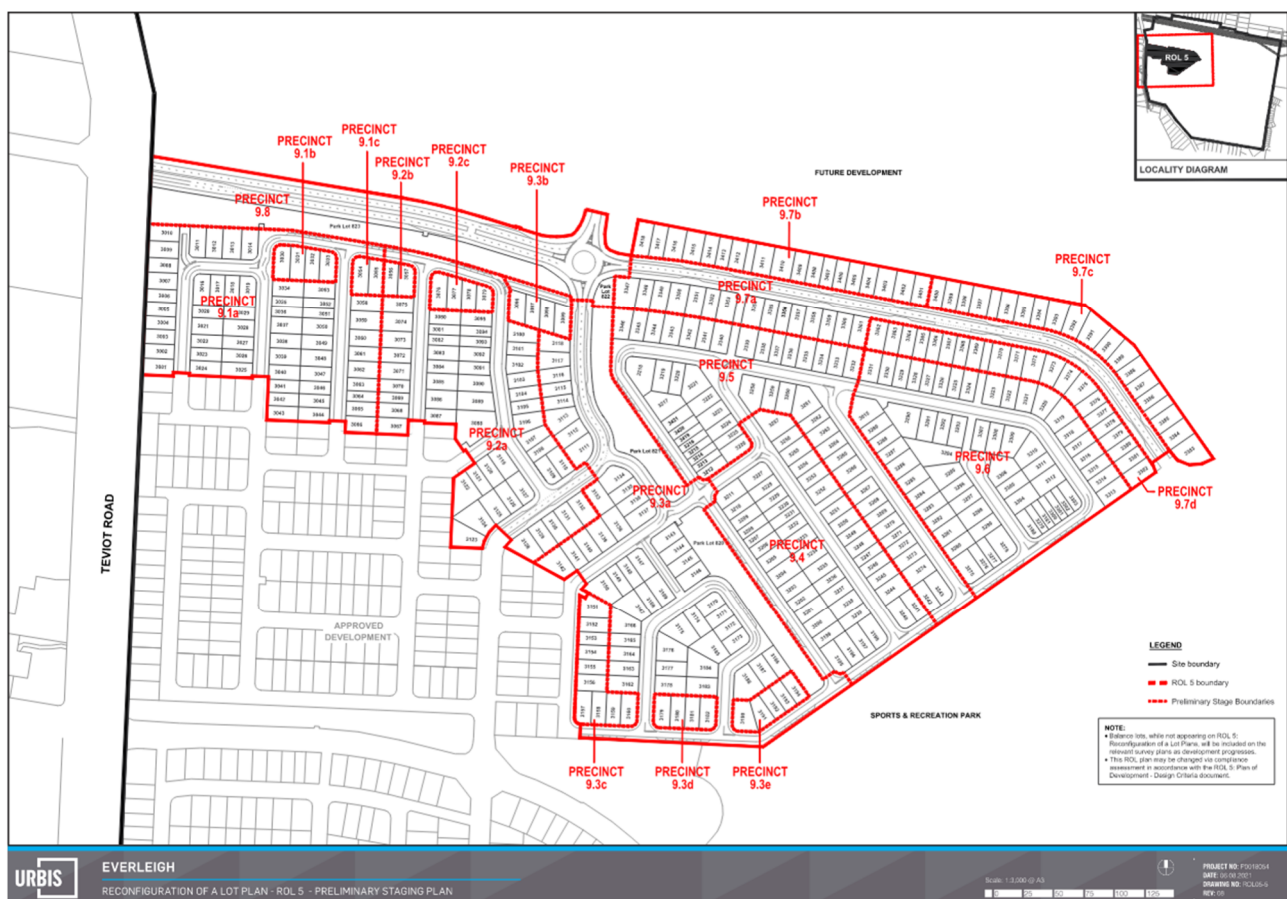


Figure 1.1: Precinct 9 layout & sub-precinct split

2. SITE CHARACTERISTICS

Precinct 9 has an approximate area of 30.85ha and is located to the north of precinct 1, 12, the school parcel and regional park. Precinct 9 also adjoins a portion of Teviot Road on the western boundary, and future development precincts on its northern and eastern boundaries.

Approximately half of the subject site area is situated over land which has previously had vegetation cleared. Vegetation clearing will be required over the balance of the site area to accommodate development.

The natural surface profile within Precinct 9 has been altered by several earthworks packages that were constructed under previous approvals. The Precinct 12 bulk earthworks operation will finalise the earthworks levels across approximately 120 lots in Precinct 9. A portion of the road reserve north of the school site which adjoins the Central Park was completed with the Package 1 school site earthworks.

The natural surface topography within Precinct 9 includes grades of up to 15%. The entire Precinct 9 site falls south towards the existing Precincts 1, 12 and Central Park.

The proposed site location in context with the Everleigh development can be seen in the figure below.

Figure 2.1: Site Location



3. DATA

Data for this report has been gathered from the following sources:

- Urbis Townplanners – Lot layout
- Economic Development Queensland (EDQ) – Greater Flagstone Priority Development Area plans and documents;
- Saunders Havill Group – Detail Survey;
- Approved (EDQ) MWH Global Movement Network Infrastructure Master Plan;
- Approved (EDQ) MWH Global Sewer and Water Master Plan;
- Logan City Council – Existing services location (where applicable and relevant) and Planning Scheme 2015 development information; and
- Dial Before You Dig.

4. SERVICES FOR DEVELOPMENT

4.1 EARTHWORKS

Earthworks will be required to facilitate the construction of the roads, allotments and parks proposed within Precinct 9. The earthworks will consist of excavations, filling, and permanent batters with maximum slope of 1 in 4. Retaining walls will be constructed during civil works to provide level allotments. All retaining wall heights are less than or equal to 2.5m in height, other than for a single instance where the interface with existing development requires a higher wall (between lots 3043 and 3044).

A preliminary “as if complete” earthworks design has been carried out over Precinct 9. While the target for the earthworks design was to minimise the cut and fill volumes associated with the earthworks operation along with targeting a cut to fill volume balance, there were several constraints that needed to be considered which influenced levels. These constraints included:

- Interface to natural surface levels and adjoining developed precincts
- Road Gradings
- Benching of allotments
- Relationship between benched allotments and retaining walls
- Coordination with landscape design in linear parks and pedestrian lanes
- Relationship between the Central Park and the adjoining levels and access requirements
- Access and disability grades along footpaths
- Stormwater drainage outlet and channel levels

The preliminary earthworks design for the site has identified that the overall earthworks cut and fill volumes result in the requirement to source material from a location outside Precinct 9 to meet the fill material volume requirements. The borrow is subject to change and operational requirements and cannot be adequately confirmed at this time. The borrow area will therefore be subject of a future application.

Vegetation clearing will be required to allow earthworks operations to commence. Additional clearing beyond the earthworks extent will be required to accommodate the recommendations of the Bushfire Hazard Assessment and Fire Management Plan.

The proposed earthworks design and extent can be seen on the Concept Earthworks Sketch Plans provided in Appendix B.

4.2 EROSION & SEDIMENT CONTROL

Erosion and Sediment Control (ESC) measures will be required during all stages of development from site establishment to project completion. An Erosion and Sediment Control program will be designed and detailed during the detailed design phase.

4.3 ROADWORKS

Vehicle access to Precinct 9 will be gained via a proposed new external intersection on existing Teviot Road, via extension of Kessels Boulevard and a number of access street temporary ends (constructed with Precinct 12), and via Anderson Drive (constructed with School Site – Package 3).

4.3.1 INTERNAL ROADS

The road layout within Precinct 9 has been developed in accordance with the road typologies nominated in the approved Movement Network Infrastructure Master Plan (MNIMP). The roads servicing the Precinct 9 development include:

- Anderson Drive (Teviot Road to Kessels Blvd) – Trunk Connector 1
- Anderson Drive (East of Kessels Blvd) – Neighbourhood Connector 1
- Kessels Boulevard – Neighbourhood Connector 2
- All other roads – Access Street, Typical and Park types

A Road Hierarchy Plan showing the above road typologies located within the Precinct 9 site can be seen in Appendix C.

All allotments can be accessed from the proposed internal road network via direct driveway access or the dedicated driveway access reserves provided. The proposed roads will be provided with concrete kerb and channel, 1.5m minimum width concrete footpaths or shared paths and minimum 4m wide verges which accommodate necessary service corridors as required by Logan City Council.

Bus stop pairs will be provided at 2 locations on Anderson Drive. The bus stops are positioned in accordance with the MNIMP and configured in accordance with the Bus Stop Infrastructure chapter of Translink's Public Transport Infrastructure Manual (PTIM) 2015 and the Translink agreed Premise bus stop location and details drawings. Hardstands have been located so not to impede on residential driveway locations.

Internal Road Functional drawings detailing the Precinct 9 internal road network can be seen in Appendix D.

4.3.2 EXTERNAL INTERSECTION – TEVIOT RD / LEANNE CRT / ANDERSON DR

As previously discussed, one of the access points to Precinct 9 will be via a new intersection created on Teviot Road. This involves the upgrade of the existing unsignalised tee intersection of Leanne Court and Teviot Road. The proposed upgraded intersection will be a signalised 4-way intersection with the addition of Anderson Drive. Anderson Drive will be the second access point into the Everleigh Development. Currently, access to the Everleigh development is achieved via the Teviot Road / Pub Lane / Everleigh Drive signalised intersection which was constructed in conjunction with the first stage of the Everleigh development in 2018.

4.3.2.1 Ultimate Intersection

A SIDRA layout for the ultimate year 2051 intersection is provided within the approved MNIMP. This layout was resolved in consultation with EDQ and is the most current and best available information to use for intersection planning for the Precinct 9 development. As such, the year 2051 SIDRA details have been used to prepare the ultimate year 2051 intersection functional layout for the proposed Teviot Road / Leanne Court / Anderson Drive intersection. The ultimate year 2051 intersection functional layout has confirmed ultimate road reserve requirements and constraints imposed by the intersection that need to be considered with the internal site layout for Precinct 9. The Ultimate year 2051 intersection functional layout can be seen in Appendix E.

4.3.2.2 Interim Intersection

An interim intersection with an appropriate design horizon is proposed to be constructed with Precinct 9. It is proposed that the interim intersection will incorporate the ultimate intersection layout for the Anderson Drive leg into Precinct 9. This will avoid the requirement for upgrades to the leg in the future and thereby limiting disruption to the Everleigh community. It is proposed that the Teviot Road and Leanne Court legs will be upgraded to an appropriate interim specification that will allow a simple upgrade to the ultimate configuration in the future.

The interim intersection upgrade is required to be constructed prior to sealing of the 851st Everleigh lot. Upon exceedance of this number the existing intersection of Teviot Road / Pub Lane / Everleigh Drive will be unable to sustain effective operation when taking the entirety of Everleigh development traffic. Further details on this timing is provided in the Traffic Statement provided in Appendix J.

It is noted that Logan City Council Roads department is currently planning the upgrade of Teviot Road inclusive of this intersection. Discussions are occurring with LCC to ensure that any design or construction planning relating to this intersection are fully coordinated to the requirements for the Everleigh development. Discussions will continue to ensure that the intersection can be designed and constructed to the appropriate specification and timeframe to support the Precinct 9 development.

4.4 NOISE ATTENUATION

Attenuation of vehicle traffic noise on Teviot Road and higher order roads within Precinct 9 is required. This will be accommodated through the installation of acoustic fencing along boundaries at specific locations adjoining higher roads. Details are provided in the Noise Attenuation Report prepared by ATP Acoustic Engineers.

4.5 TRAFFIC

A Traffic Statement has been prepared which addresses the suitability of the proposed Precinct 9 site layout and road typologies, intersections details and design parameters, and determines traffic volumes in accordance with Precinct 9 and overall site data. The Traffic Statement provides confirmation of the above items with consideration to relevant guidelines, standards, and approved documents.

The Traffic Statement can be seen in Appendix J.

4.6 STORMWATER DRAINAGE

The proposed piped underground drainage, roofwater drainage and major storm overland flow for this site will be designed in accordance with EDQ Guideline 13, Logan City Council and QUDM stormwater design guidelines. It is proposed that a network of underground pipes and gully pits will be constructed to capture and convey stormwater collected from allotments and roadways towards existing and future underground stormwater infrastructure constructed in Precinct 1, 12 and the Central Park. This existing and future infrastructure has been sized to cater for the Precinct 9 catchment. The major storm overland flows generated from the Precinct 9 catchment will be contained in the road reserves and are also conveyed towards existing precincts. Roadways in existing precincts 1 and 12 have been designed to accommodate these flows. There are 2 defined overland flow paths that run through the Central Park site that have also been designed to accommodate overland flows from Precinct 9. There is a small catchment from Anderson Drive roadway that falls towards Teviot Road. The underground stormwater drainage and overland flow generated by this catchment will be conveyed towards the intersection and will discharge to the existing culvert and table drain located in Leanne Court, replicating the pre-developed point of discharge for this catchment.

Refer to the Preliminary Stormwater Drainage Layout provided in Appendix F for further details.

4.7 STORMWATER QUANTITY & QUALITY

The quantity management of Precinct 9 stormwater flows will be accommodated in the detention basin / wetland located within the Central Park area. Stormwater quality management for the Precinct 9 catchment will be treated within the bioretention basins and wetland located in the Central Park area. The Central Park site is located downstream of Precinct 9 and all piped and overland stormwater flows from Precinct 9 are conveyed to this area.

Details on the proposed Stormwater Quantity and Quality treatments proposed for this precinct are provided within the Stormwater Technical Memorandum prepared by Engeny.

4.8 SEWER RETICULATION

All proposed residential allotments within Precinct 9 will be provided with a sewer property service. Property services will be connected to a sewer reticulation pipe network located in the road verge. The sewer reticulation network will be designed and installed in accordance with SEQ D&C Code, Logan City Council requirements and Premise prepared whole of site sewer design master plan. The proposed sewer reticulation can convey sewage flows from all proposed allotments under gravity conditions to previously constructed pipe end connection points located within Precinct 12, Precinct 1, and the Central Park Precinct. All flows downstream of these connection points flow via existing gravity pipe work to the regional sewer pump station (SPS156) located on Ivory Parkway.

In accordance with the whole of site sewer network master plan, there will be two (2) locations where Precinct 9 will receive flows from future sewer rising mains. The receiving pipe network in Precinct 9 will be sized to accommodate the expected flows from these catchments and will allow for corrosion treatment to manholes immediately downstream as required by the SEQ D&C Code. The ultimate arrangement for the discharge manholes and associated componentry will be determined during the detailed design phase.

The details described above are shown on the Concept Sewer Plan in Appendix G.

4.9 WATER RETICULATION

All proposed allotments in Precinct 9 will be provided with a potable water service connection. A water reticulation pipe network will be provided in Precinct 9 to provide service connections to each allotment. The water reticulation network will be designed and installed in accordance with the SEQ D&C Code, Logan City Council requirements and the approved Water Supply Network Modelling Report prepared by Premise.

Precinct 9 will be serviced from the boosted Round Mountain Water Service Zone which is distributed via the existing 300mm diameter trunk water main located in Teviot Road adjoining the Everleigh site. An existing connection to the 300mm diameter main was installed with Precinct 1 and currently services the Everleigh development. The existing connection included a pressure reducing valve to achieve water pressures appropriate for servicing residential lots. It is noted that this connection has capacity to service the entire Precinct 9 development. It is proposed that the Precinct 9 water reticulation pipework will be connected to the existing pipe ends provided at the temporary road ends in Precincts 1, 12 and the Central Park precinct.

In accordance with the approved Water Supply Network Modelling Report a secondary connection to the Everleigh development will need to be provided prior to developing Precinct 13 (Precinct 13 to follow Precinct 9) or with any land developed at an elevation higher than RL70. The second connection will be provided from the 300mm diameter trunk main in Teviot Road and will feed into the Everleigh development via the proposed Anderson Drive road reserve. As such, this connection is proposed to be constructed with Precinct 9 concurrently with the interim intersection works at this location. The connection will include the installation of a new pressure reducing valve and DMA meter arrangement.

The details described above are shown on the Concept Water Plan in Appendix H.

4.10 ELECTRICITY, LIGHTING, TELECOMMUNICATIONS & GAS

Electrical, telecommunication, and gas services exist in previous precincts adjacent to the boundary of the proposed site and have enough capacity for the electrical demands that are proposed to be generated by Precinct 9.

Details of these will be confirmed during the operational works phase and will be designed in accordance with the relevant service provider requirements.

A servicing statement prepared by Robin Russell has been provided in Appendix I.

5. CONCLUSION

Based on the information collected and preliminary investigations carried out it has been established that the proposed development can be adequately serviced.

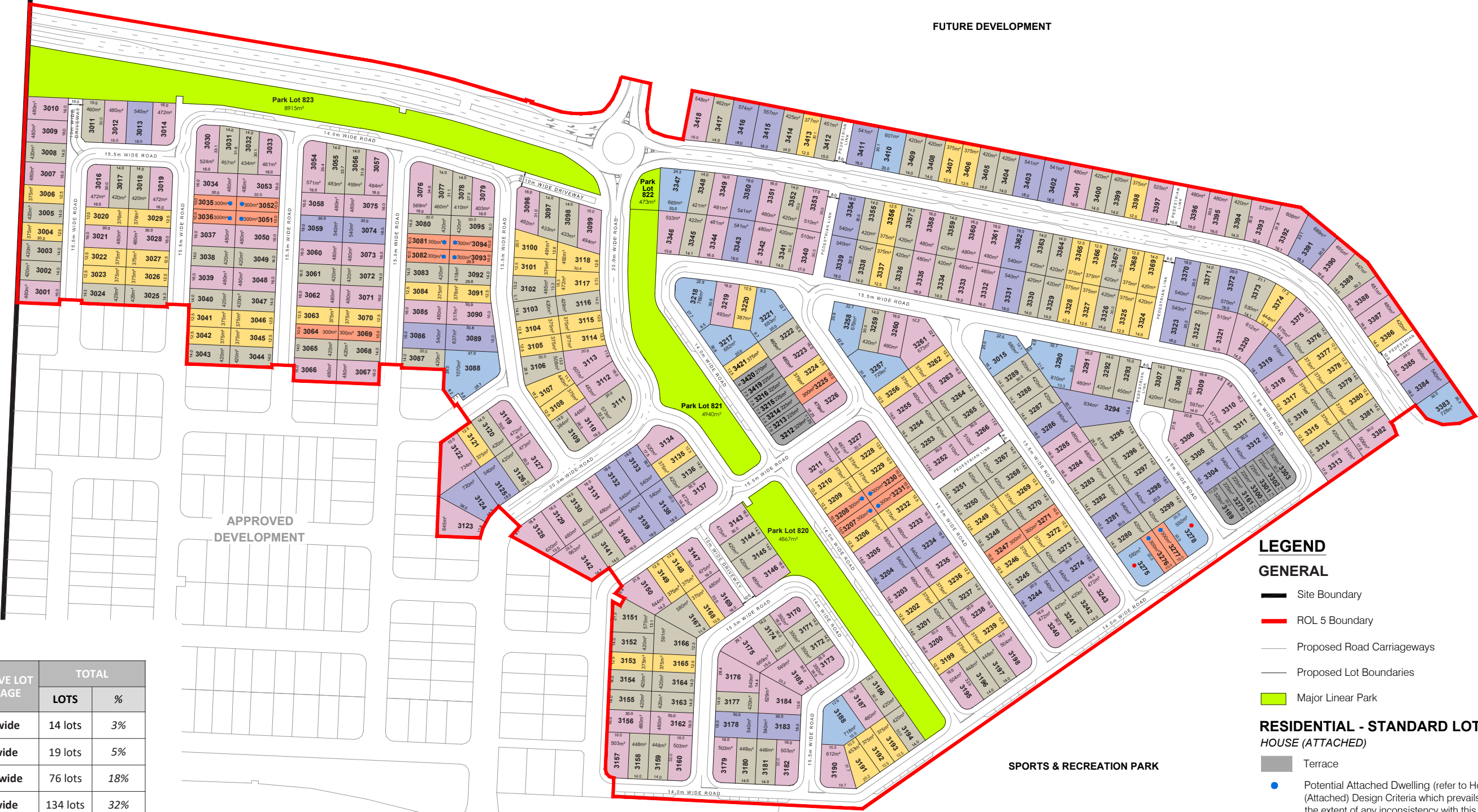
All service and infrastructure layouts are generally in accordance with the relevant approved infrastructure master plans, EDQ requirements, and other relevant and appropriate design standards and guidelines.

A.1 APPENDIX A – MASTERPLAN LAYOUT

TEVIOT ROAD

ROL 5 - YIELD SUMMARY

LOT TYPE		INDICATIVE LOT FRONTAGE	TOTAL	
			LOTS	%
	Terrace	7.5m wide	14 lots	3%
	Villa	10m wide	19 lots	5%
	Premium Villa	12.5m wide	76 lots	18%
	Courtyard	14m wide	134 lots	32%
	Premium Courtyard	16m wide	124 lots	29%
	Traditional	18m wide	40 lots	10%
	Premium Traditional	20m wide	14 lots	3%
Interface Lots			0 lots	0%
TOTAL RESIDENTIAL LOTS			421 lots	100%
DENSITY (NET RESIDENTIAL DENSITY)			15.37 dw/ha	



LEGEND

GENERAL

-  Site Boundary
 ROL 5 Boundary
 Proposed Road Carriageways
 Proposed Lot Boundaries
 Major Linear Park

RESIDENTIAL - STANDARD LOTS

HOUSE (ATTACHED)

- Potential Attached Dwelling (refer to House (Attached) Design Criteria which prevails to the extent of any inconsistency with this plan)

HOUSE (DETACHED)

- | | |
|---------------------|--|
| Villa | |
| Premium Villa | |
| Courtyard | |
| Premium Courtyard | |
| Traditional | |
| Premium Traditional | |

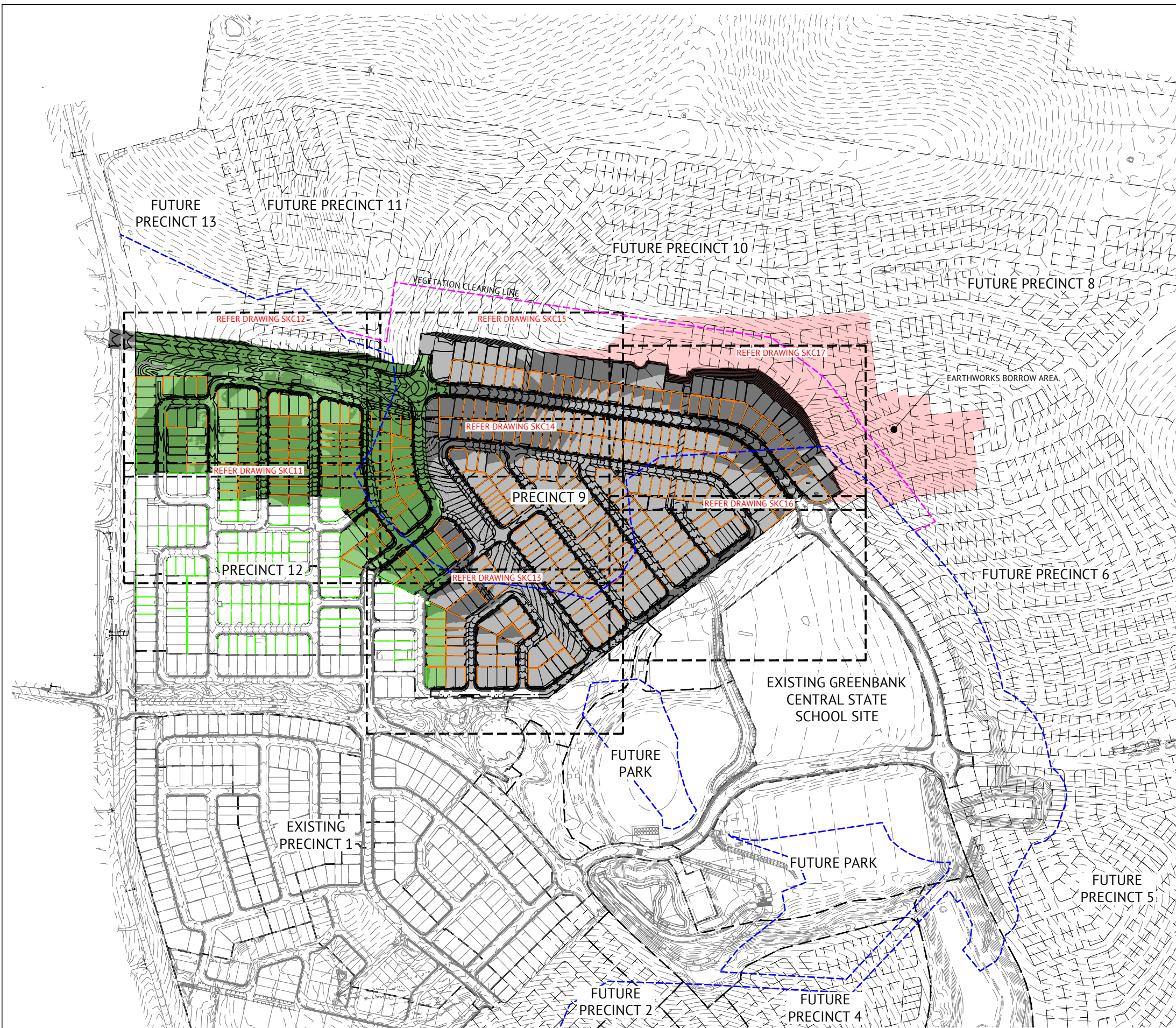
MULTIPLE RESIDENTIAL

-  Multiple Residential
 Potential Duplex Dwelling

NOTE:

- Balance lots, while not appearing on ROL 5: Reconfiguration of a Lot Plans, will be included on the relevant survey plans as development progresses.
- This ROL plan may be changed via compliance assessment in accordance with the ROL 5: Plan of Development - Design Criteria document.

A.2 APPENDIX B – CONCEPTUAL EARTHWORKS PLANS



LEGEND - PROPOSED

- EXTENT OF CUT
- EXTENT OF FILL
- PROPOSED BORROW AREA. FINAL EXTENT TO BE CONFIRMED DURING DETAILED DESIGN
- 12.0 FINISHED MAJOR CONTOURS (0.50m)
- FINISHED MINOR CONTOURS (0.25m)
- RETAINING WALL
- VEGETATION CLEARING LINE

LEGEND - EXISTING

- EARTHWORKS TO BE DONE AS PART OF PRECINCT 12
- 12.0 EXISTING CONTOURS (0.50m)
- RETAINING WALL
- EXISTING VEGETATION CLEARING LINE

P09 EARTHWORKS VOLUMES

	CUT	FILL
P09 EARTHWORKS	283,931m ³	301,978m ³
BULKING (10%)	28,393m ³	
TOTAL VOLUMES	312,324m ³	301,978m ³

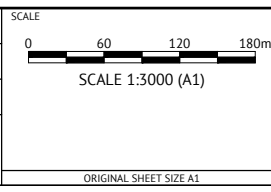
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06/08/2021	3	AMENDED STAGE BOUNDARY		KK	
16/07/2021	2	AMENDED DRAWING REFERENCES AND EARTHWORKS VOLUME TABLE		KK	
16/10/2020	1	ORIGINAL ISSUE		KK	



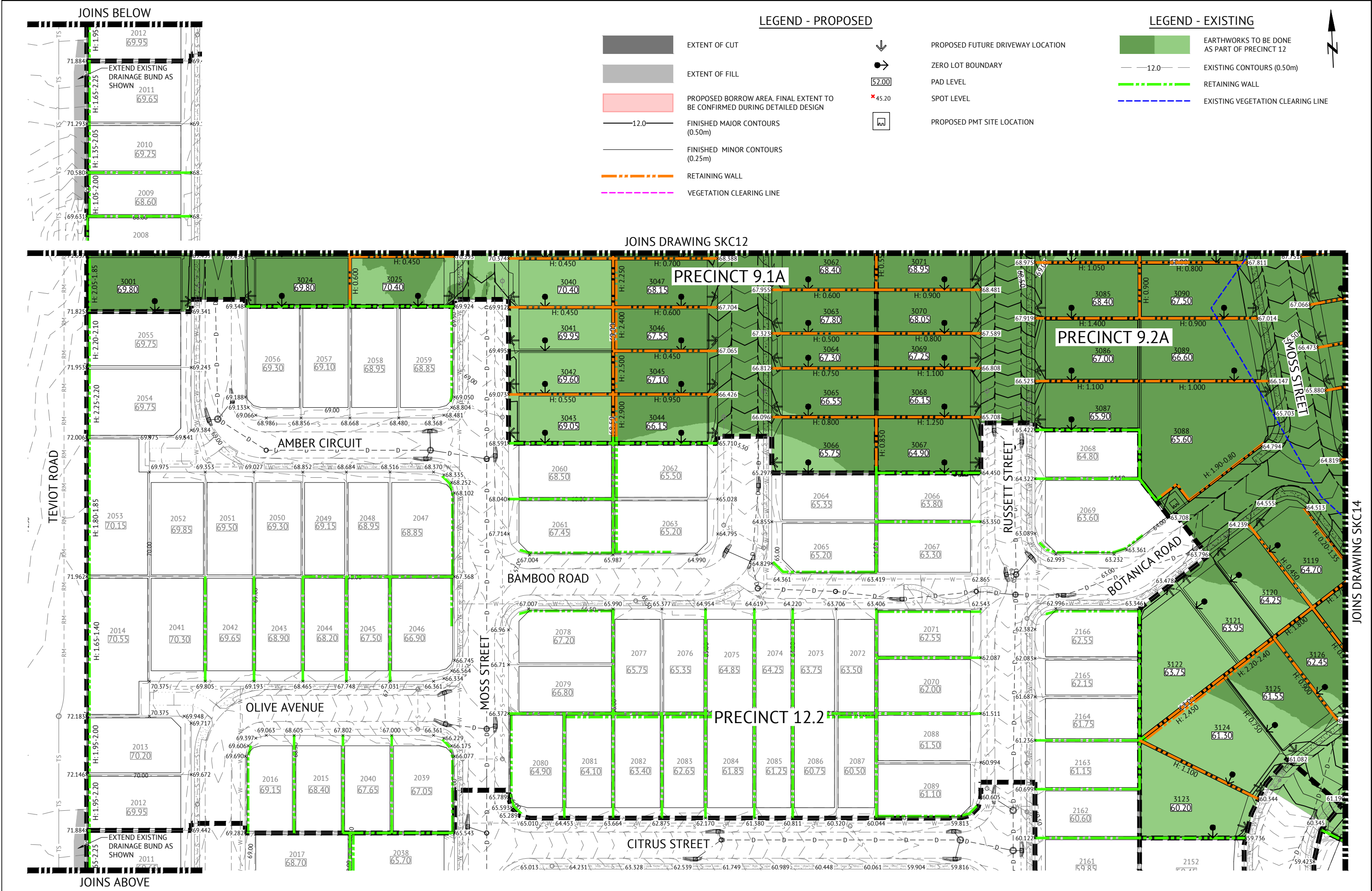
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ENGINEERING CERTIFICATION



CLIENT	MIRVAC
PROJECT	EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION	TEVIOT ROAD, GREENBANK
SHEET TITLE	OVERALL PRELIMINARY EARTHWORKS LAYOUT PLAN

JOB CODE	MIR003
SHEET NUMBER	SKC10
REV	3



PRELIMINARY - NOT FOR CONSTRUCTION				
DATE	REV	DESCRIPTION	REC	APP
14/07/2021	2	AMENDED PAD LEVELS TO SATISFY 2.5M MAX RETAINING WALL	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	



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LEVEL 1, 100 BRUNSWICK STREET

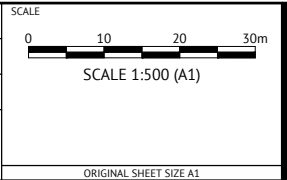
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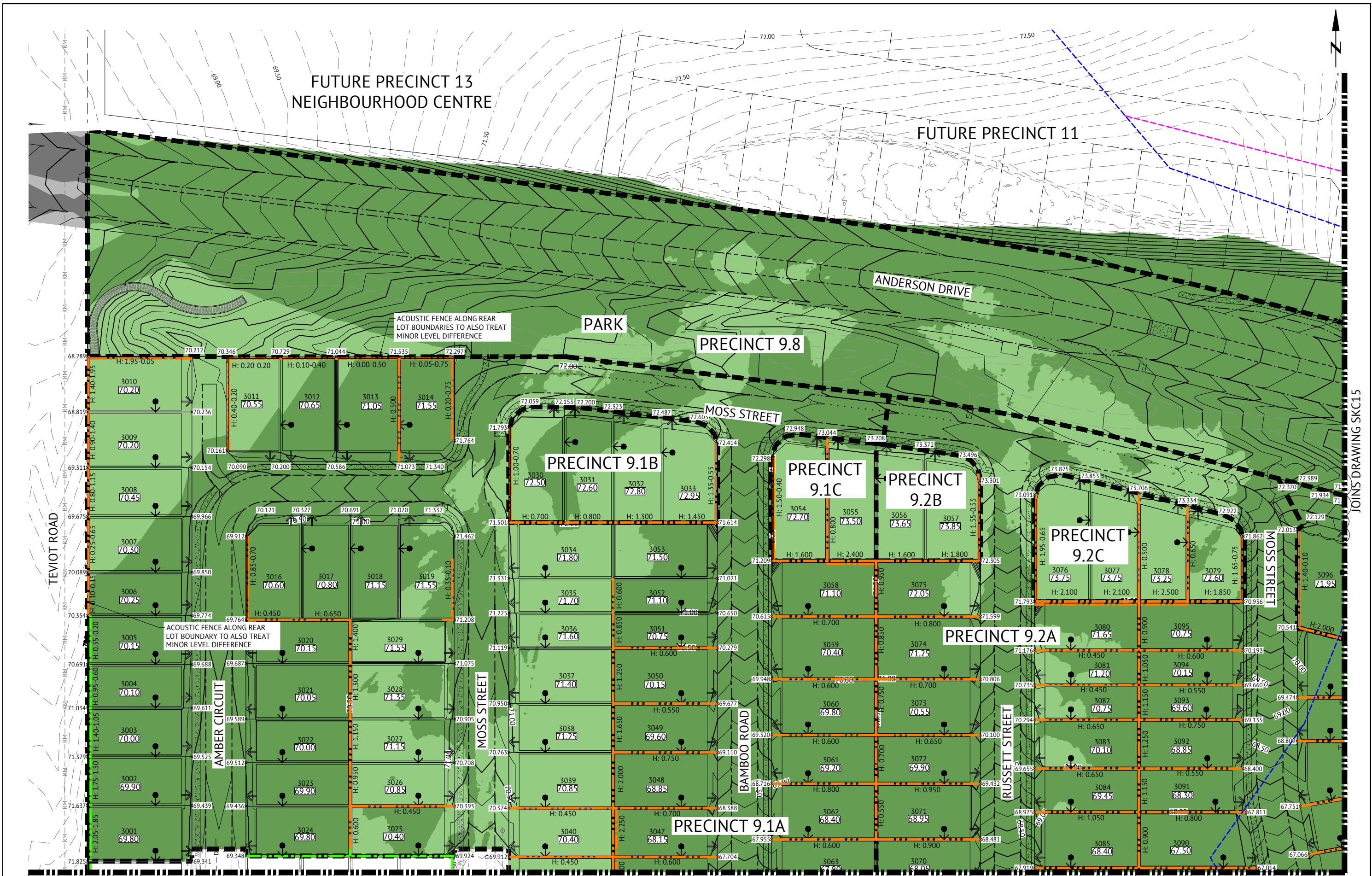
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ENGINEERING CERTIFICATION



CLIENT		MIRVAC
PROJECT		EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION		TEVIOT ROAD, GREENBANK
SHEET TITLE		PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 1

JOB CODE		MIR003
SHEET NUMBER	REV	SKC11 2



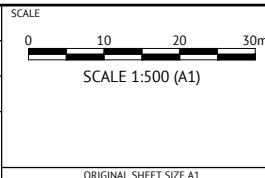
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14/07/2021	3	AMENDED PAD LEVELS TO SATISFY 2.5M MAX RETAINING WALLS		KK	
07/05/2021	2	AMENDED ANDERSON DRIVE LAYOUT		KK	
16/10/2020	1	ORIGINAL ISSUE		KK	



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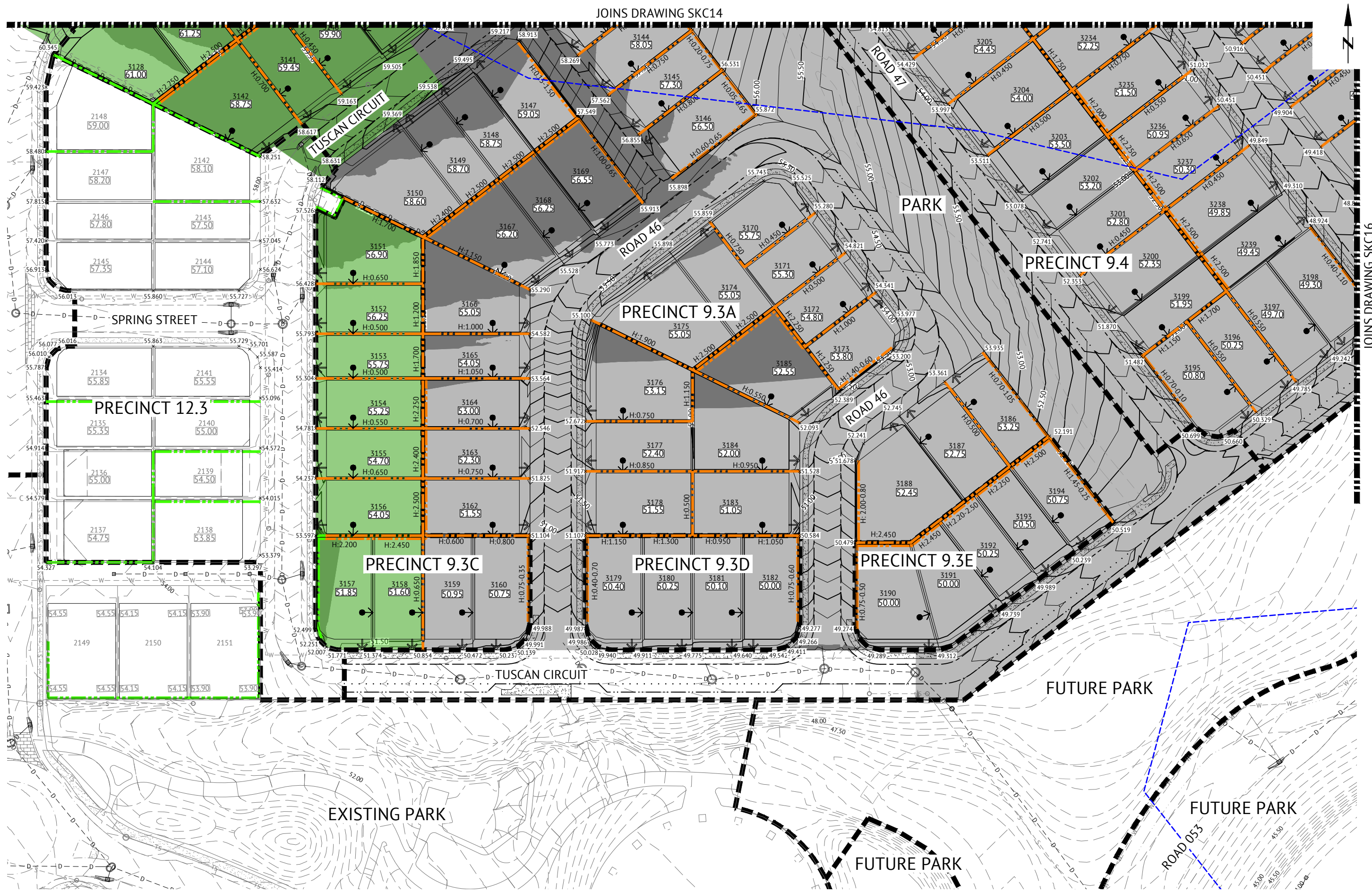


CLIENT
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PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 2

REFER TO DRAWING SKC11 FOR LEGEND

JOB CODE
MIR003
SHEET NUMBER
SKC12
REV
3

JOINS DRAWING SKC14



JOINS DRAWING SKC16

REFER TO DRAWING SKC11 FOR LEGEND

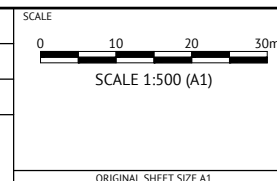
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16/10/2020	1	ORIGINAL ISSUE	KK
			APP



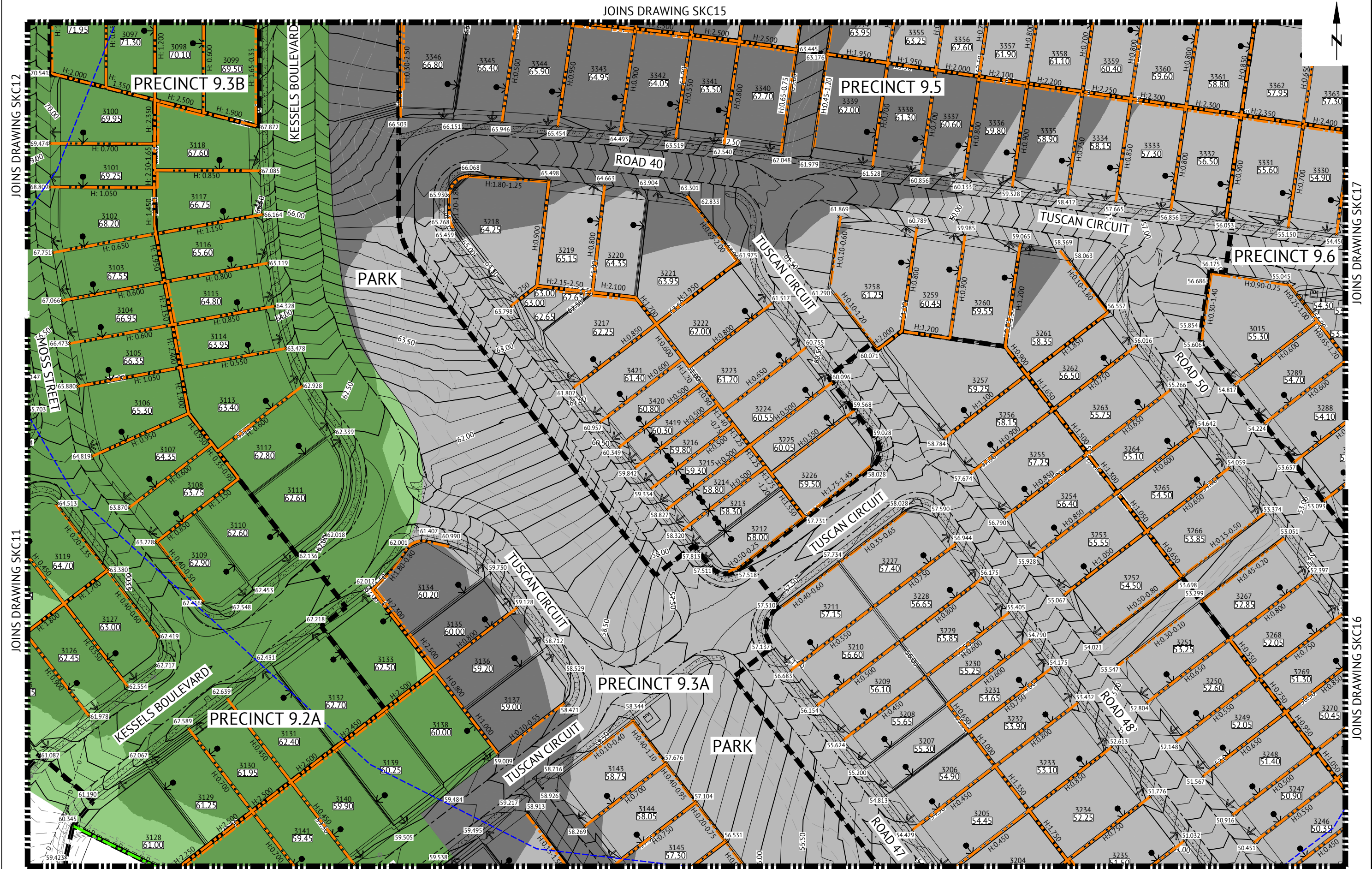
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PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 3

JOB CODE
MIR003
SHEET NUMBER
SKC13
REV
2



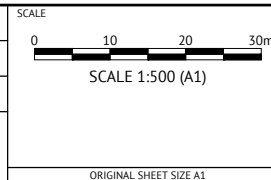
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DATE	REV	DESCRIPTION	REVISIONS	REC	APP
14/07/2021	4	AMENDED PAD LEVELS TO SATISFY 2.5M MAX RETAINING WALL		KK	
14/05/2021	3	AMENDED AS PER MIRVAC REQUEST		KK	
07/05/2021	2	AMENDED LOT LAYOUT, LEVELS, RETAINING WALL HEIGHTS		KK	
16/10/2020	1	ORIGINAL ISSUE		KK	



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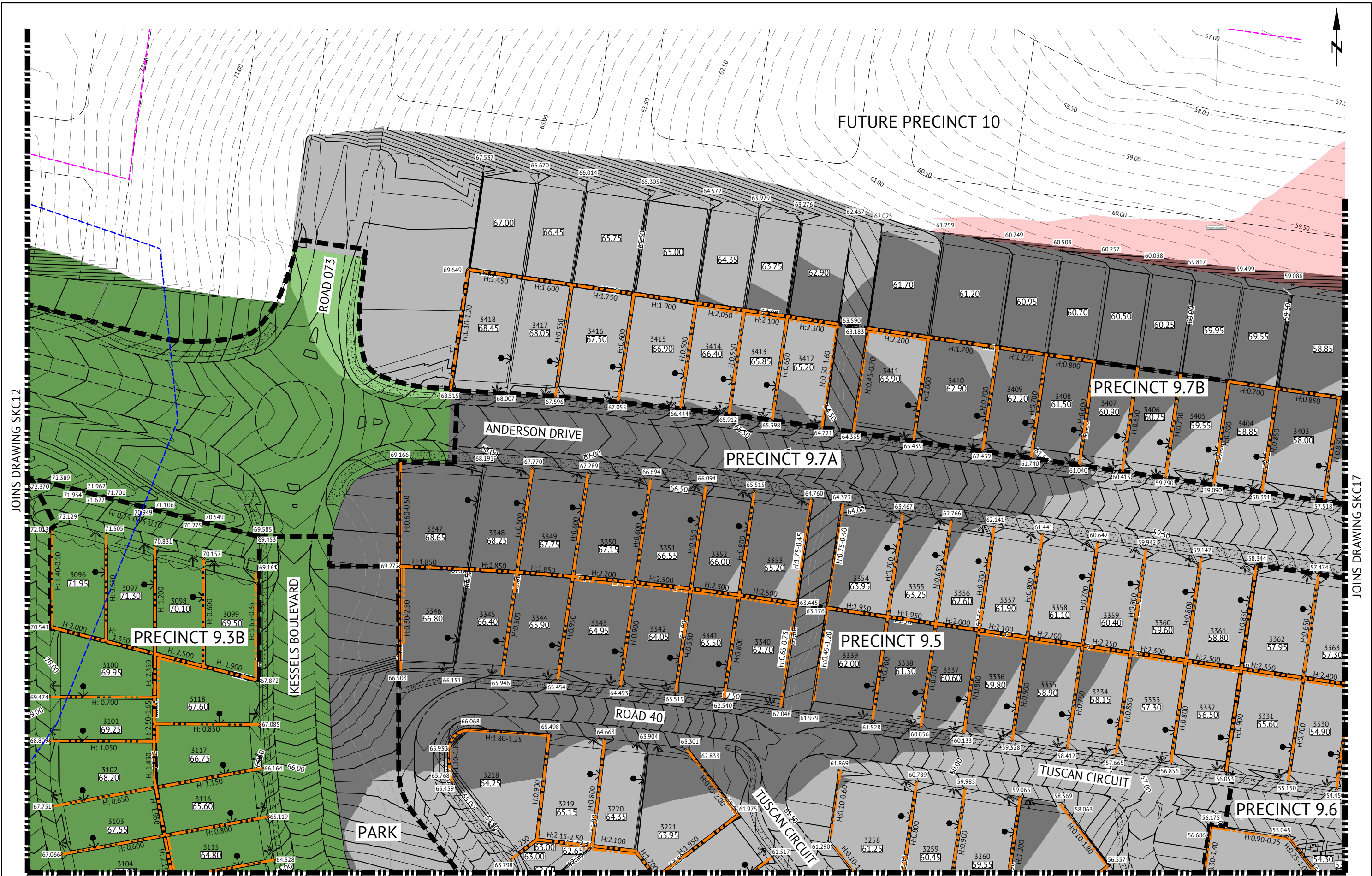
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CLIENT
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PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 4

REFER TO DRAWING SKC11 FOR LEGEND

JOB CODE
MIR003
SHEET NUMBER
SKC14
REV
4



REFER TO DRAWING SKC11 FOR LEGEND

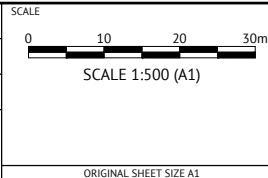
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06/08/2021	5	AMENDED STAGE BOUNDARY	KK	
14/07/2021	4	AMENDED PAD LEVELS TO SATISFY 2.5M MAX RETAINING WALL	KK	
14/05/2021	3	AMENDED AS PER MIRVAC REQUEST	KK	
07/05/2021	2	AMENDED LOT LAYOUT, LEVELS AND RETAINING WALL HEIGHTS	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	
REVISIONS				



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WEB: www.premise.com.au

DESIGNED
K. KIWANG
CHECKED
M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION



CLIENT		MIRVAC		JOB CODE	
PROJECT		EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT		MIR003	
LOCATION		TEVIOT ROAD, GREENBANK		SHEET NUMBER	
SHEET TITLE		PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 5		REV	
				SKC15	
				5	



PRELIMINARY - NOT FOR CONSTRUCTION				
14/07/2021	2	AMENDED PAD LEVELS TO SATISFY 2.5M MAX RETAINING WALL	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	
DATE	REV	DESCRIPTION	REC	APP
REVISIONS				



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DESIGNED
K. KIWANG

CHECKED
M. MAJZNER

PROJECT MANAGER
S. STEINHOFFER

ENGINEERING CERTIFICATION

SCALE



SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT
MIRVAC

PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

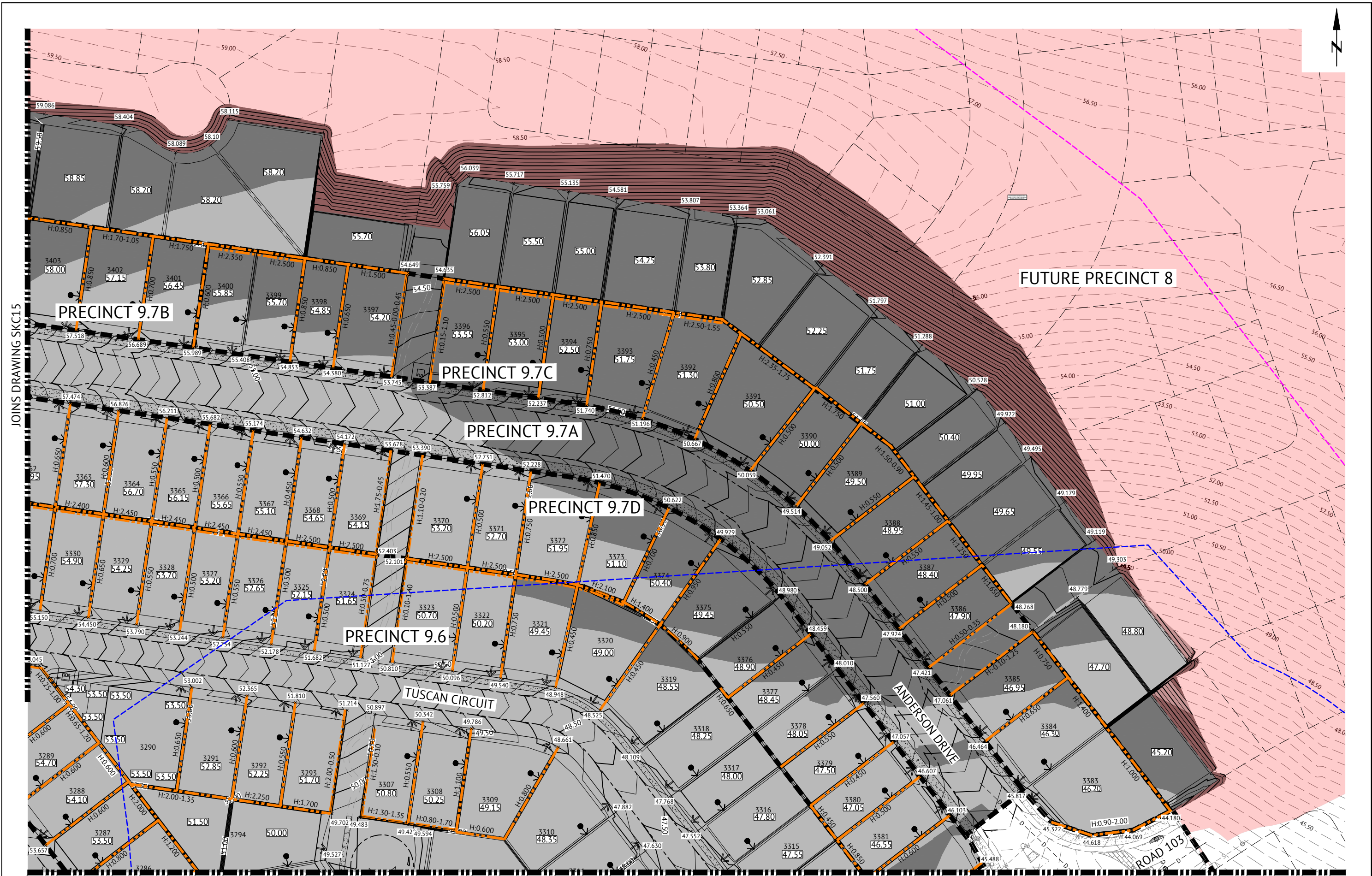
LOCATION
TEVIOT ROAD, GREENBANK

SHEET TITLE
PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 6

JOB CODE
MIR003

SHEET NUMBER
SKC16

REV
2



REFER TO DRAWING SKC11 FOR LEGEND

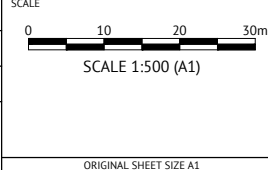
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REVISIONS
14/07/2021	2	AMENDED PAD LEVELS TO SATISFY 2.5M MAX RETAINING WALL	KK
16/10/2020	1	ORIGINAL ISSUE	KK
			REC
			APP



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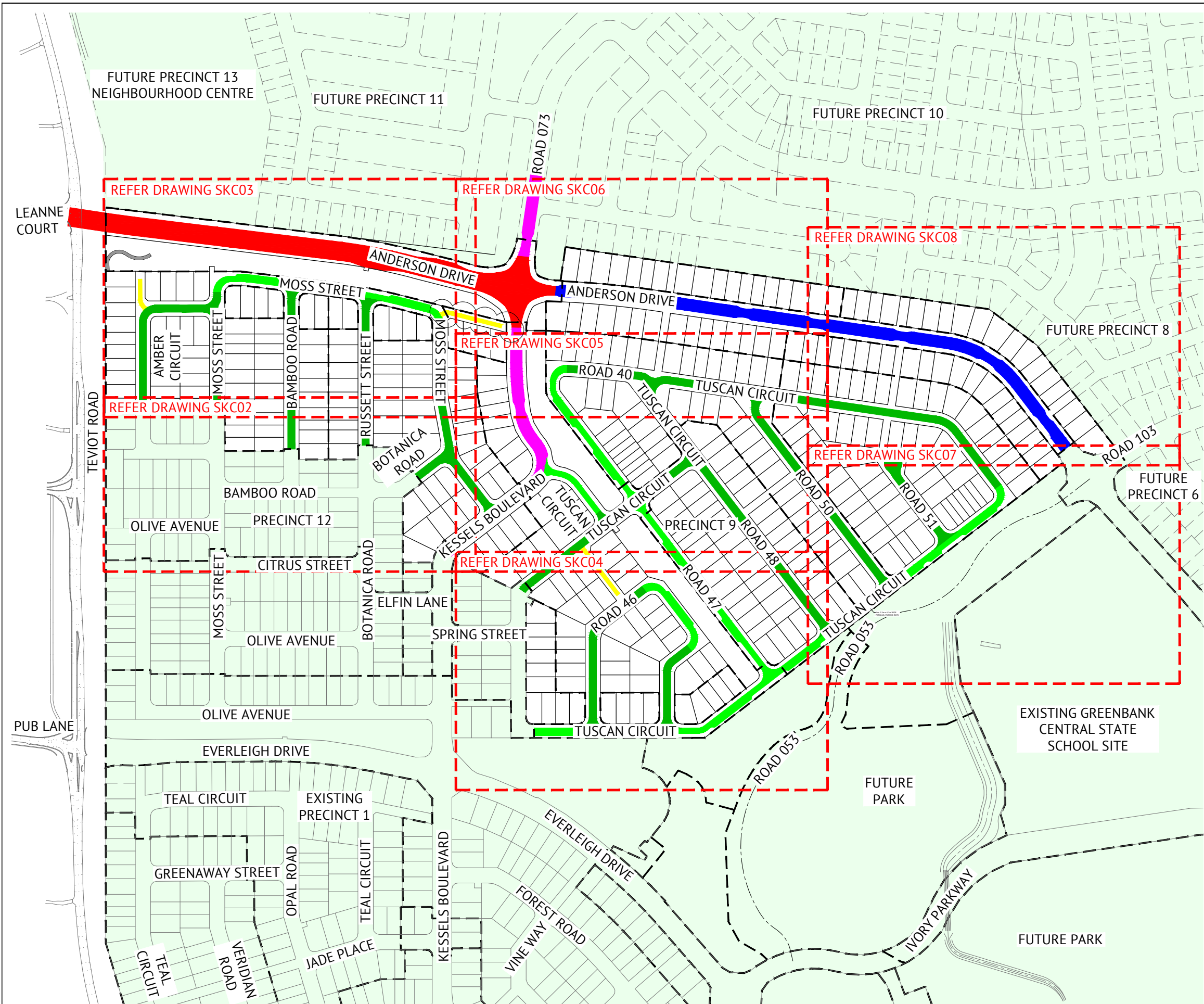
DESIGNED
K. KIWANG
CHECKED
M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION



CLIENT
MIRVAC
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY EARTHWORKS LAYOUT PLAN - SHEET 7

JOB CODE
MIR003
SHEET NUMBER
SKC17
REV
2

A.3 APPENDIX C – ROAD HEIRARCHY PLAN



LEGEND - ROAD HEIRARCHY

- TRUNK CONNECTOR 1
- NEIGHBOURHOOD CONNECTOR 1
- NEIGHBOURHOOD CONNECTOR 2
- ACCESS STREET (TYPICAL)
- ACCESS STREET (PARK)
- DRIVEWAY



PRELIMINARY - NOT FOR CONSTRUCTION				
DATE	REV	DESCRIPTION	REC	APP
06/08/2021	3	AMENDED STAGE BOUNDARY	KK	
07/05/2021	2	AMENDED LOT LAYOUT AND ROAD 40 LAYOUT	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	



BRISBANE OFFICE

LEVEL 1, 100 BRUNSWICK STREET

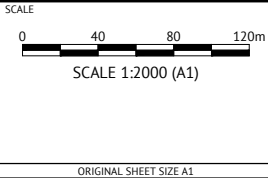
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WEB: www.premise.com.au

DESIGNED
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CHECKED
M. MAJZNER
PROJECT MANAGER
S. STEINHOFER
ENGINEERING CERTIFICATION



CLIENT
MIRVAC

PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

LOCATION
TEVIOT ROAD, GREENBANK

SHEET TITLE
ROAD HEIRARCHY PLAN

JOB CODE	
MIR003	
SHEET NUMBER	REV
SKC01	3

A.4 APPENDIX D – INTERNAL ROAD FUNCTIONAL PLANS

3



REFER TO DRAWING SKC02 FOR LEGEND

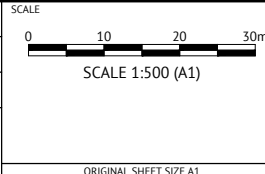
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REVISIONS	KK	REC	APP
16/10/2020	1	ORIGINAL ISSUE				



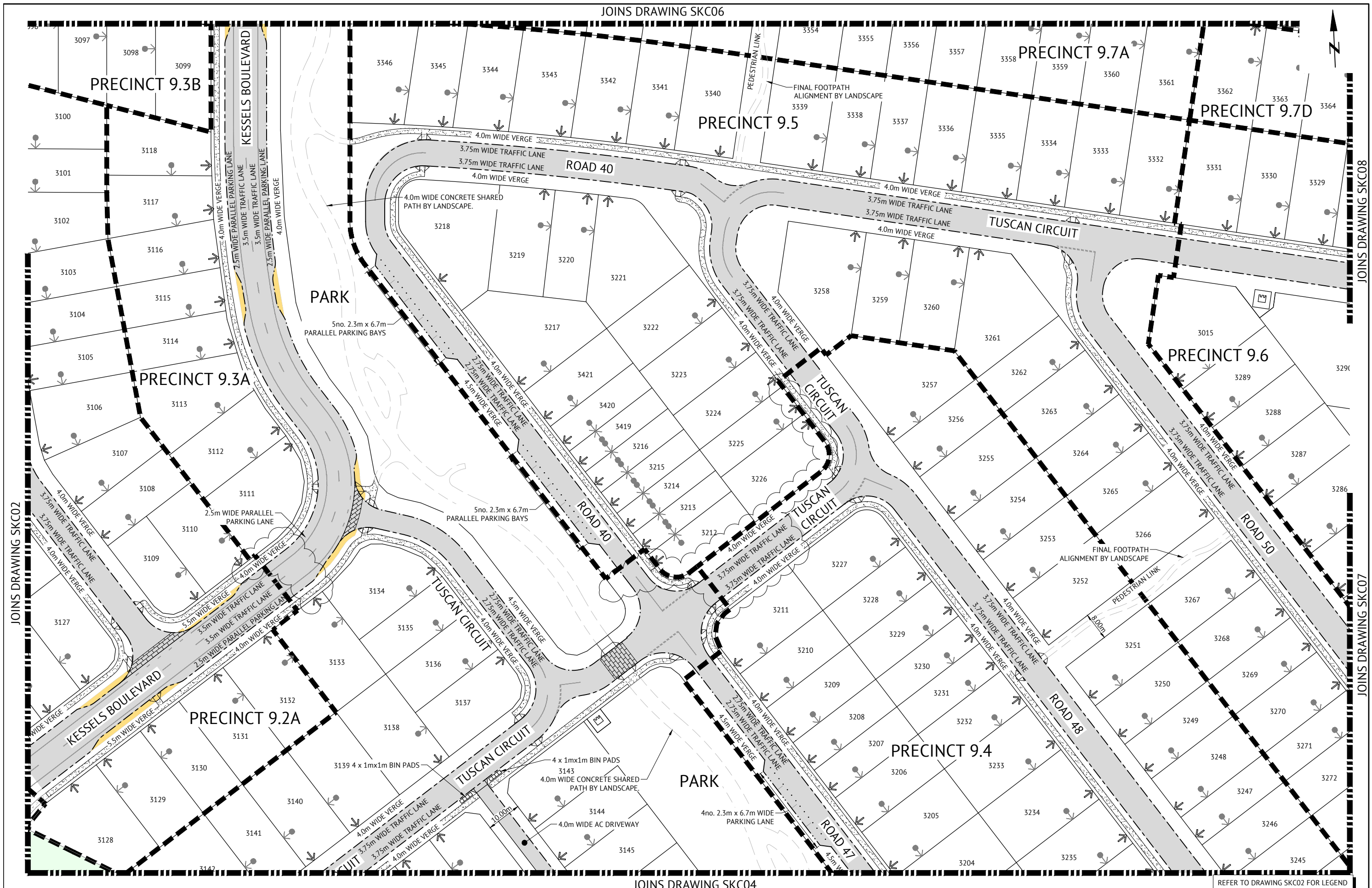
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CHECKED
M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION



CLIENT
MIRVAC
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
ROAD FUNCTIONAL LAYOUT - SHEET 3

JOB CODE
MIR003
SHEET NUMBER
SKC04
REV
1



PRELIMINARY - NOT FOR CONSTRUCTION				
DATE	REV	DESCRIPTION	REV	APP
14/05/2021	3	AMENDED AS PER MIRVAC REQUEST	KK	
07/05/2021	2	AMENDED LOT BOUNDARIES AND ROAD 40 LAYOUT	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	
REVISIONS				



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M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION

SCALE
0 10 20 30m
SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT
MIRVAC

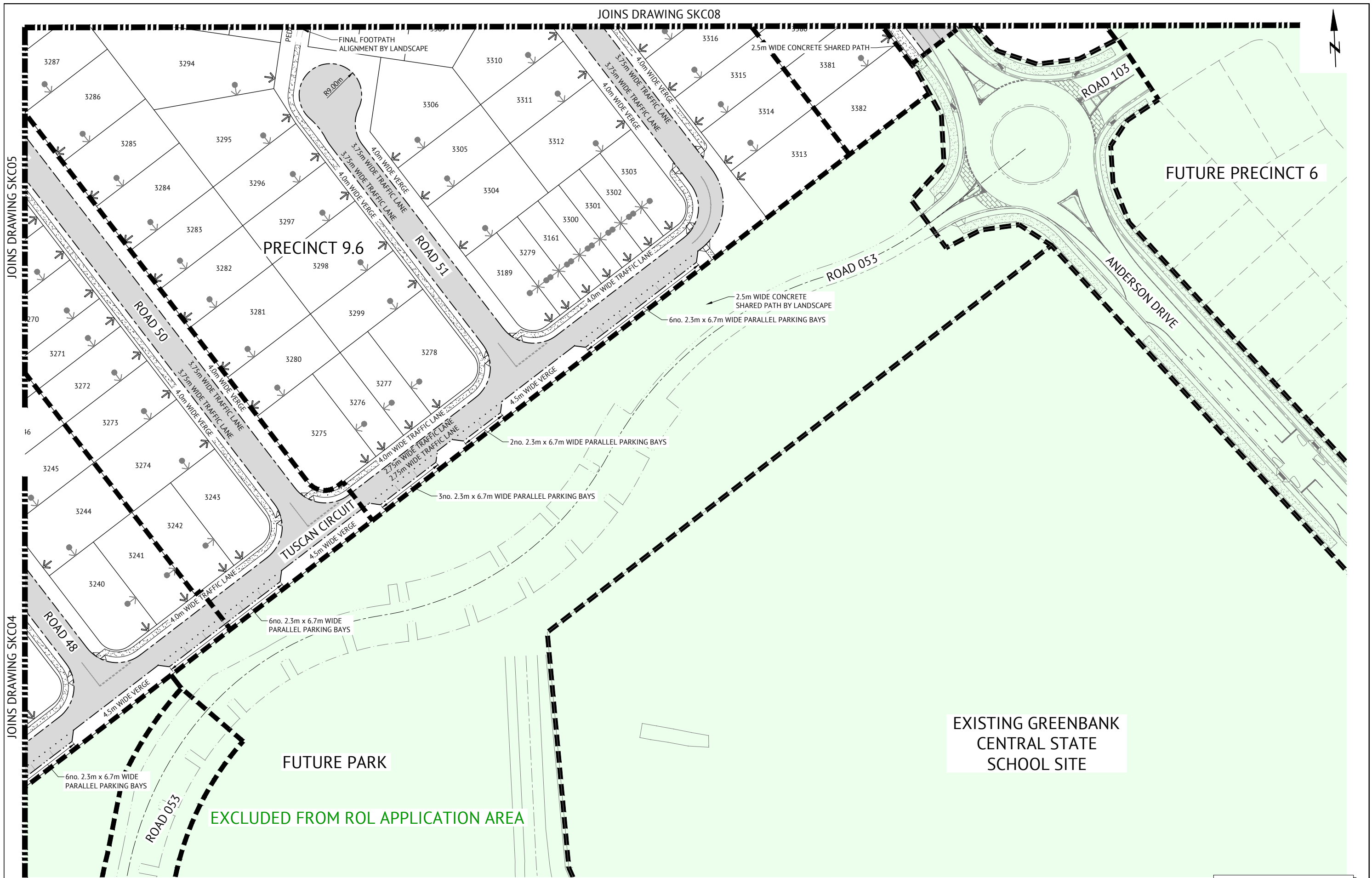
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

LOCATION
TEVIOT ROAD, GREENBANK

SHEET TITLE
ROAD FUNCTIONAL LAYOUT - SHEET 4

JOB CODE
MIR003

SHEET NUMBER	REV
SKC05	3



JOINS DRAWING SKC05

JOINS DRAWING SKC04

REFER TO DRAWING SKC02 FOR LEGEND

PRELIMINARY - NOT FOR CONSTRUCTION				
16/10/2020	1	ORIGINAL ISSUE	KK	
DATE	REV	DESCRIPTION	REC	APP
REVISIONS				



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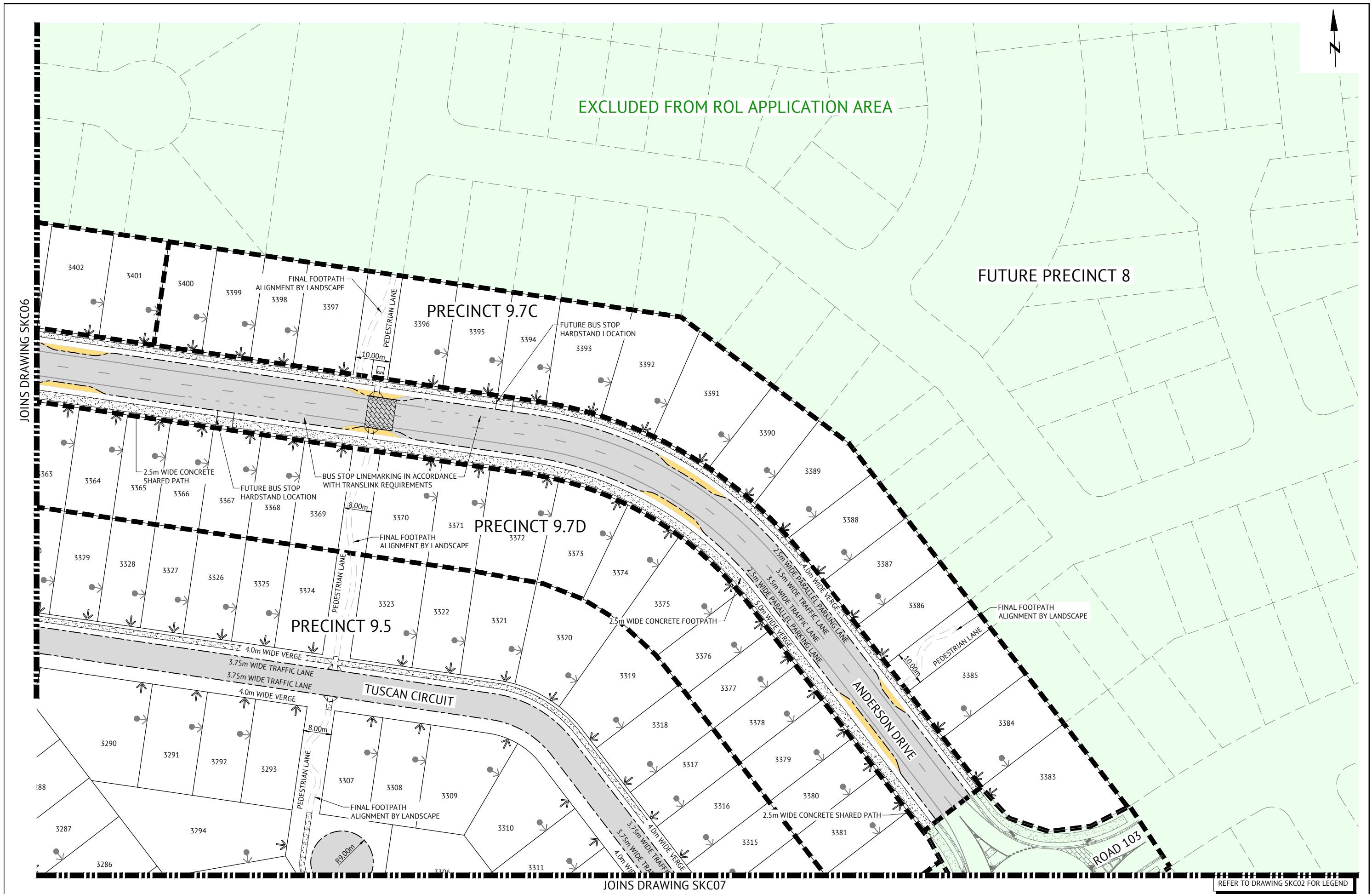
DESIGNED K. KIWANG
CHECKED M. MAJZNER
PROJECT MANAGER S. STEINHOFFER
ENGINEERING CERTIFICATION

SCALE
0 10 20 30m
SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT	MIRVAC
PROJECT	EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION	TEVIOT ROAD, GREENBANK
SHEET TITLE	ROAD FUNCTIONAL LAYOUT - SHEET 6

JOB CODE	MIR003
SHEET NUMBER	SKC07
REV	1



PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REVISIONS	KK	APP
16/10/2020	1	ORIGINAL ISSUE			

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PROJECT MANAGER
S. STEINHOFFER
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SCALE

0 10 20 30m

SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT
MIRVAC

PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

LOCATION
TEVIOT ROAD, GREENBANK

SHEET TITLE
ROAD FUNCTIONAL LAYOUT - SHEET 7

JOB CODE
MIR003

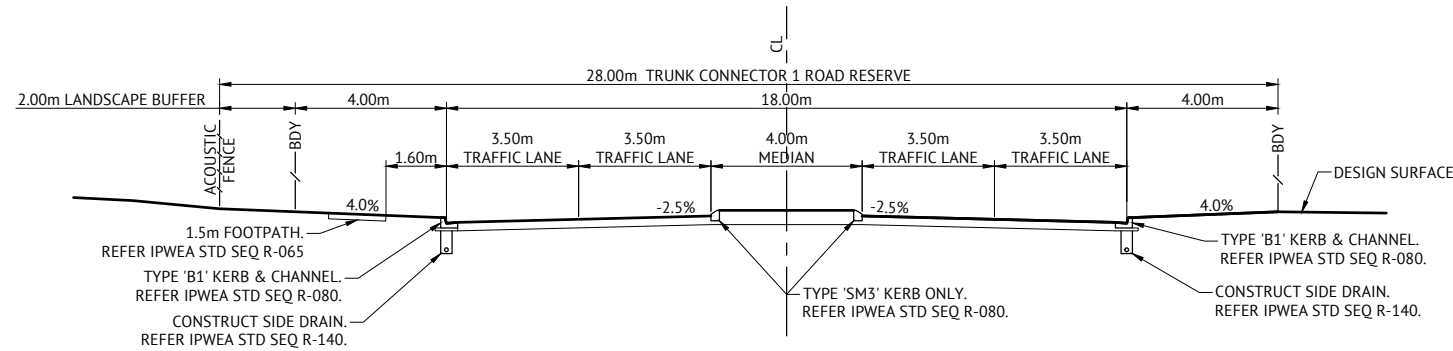
SHEET NUMBER
SKC08

REV
1

JOINS DRAWING SKC06

JOINS DRAWING SKC07

REFER TO DRAWING SKC02 FOR LEGEND

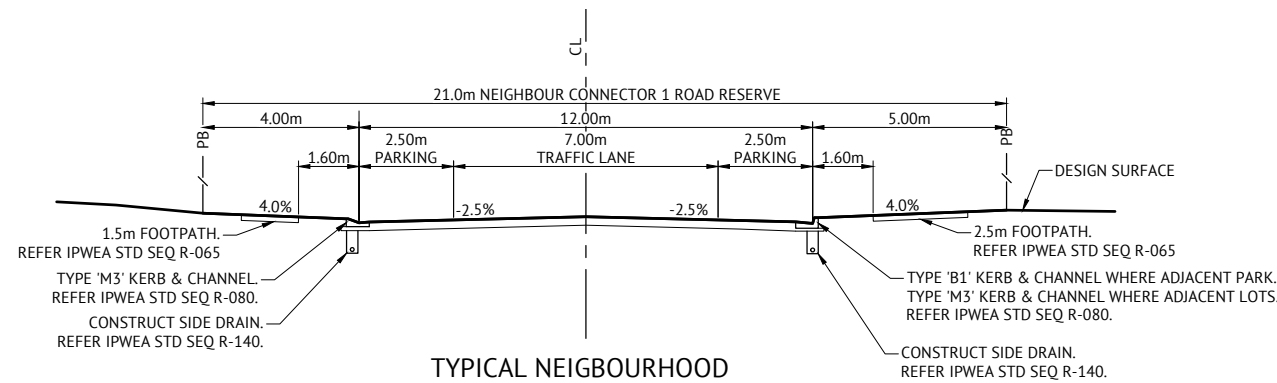


TYPICAL TRUNK CONNECTOR 1 CROSS SECTION

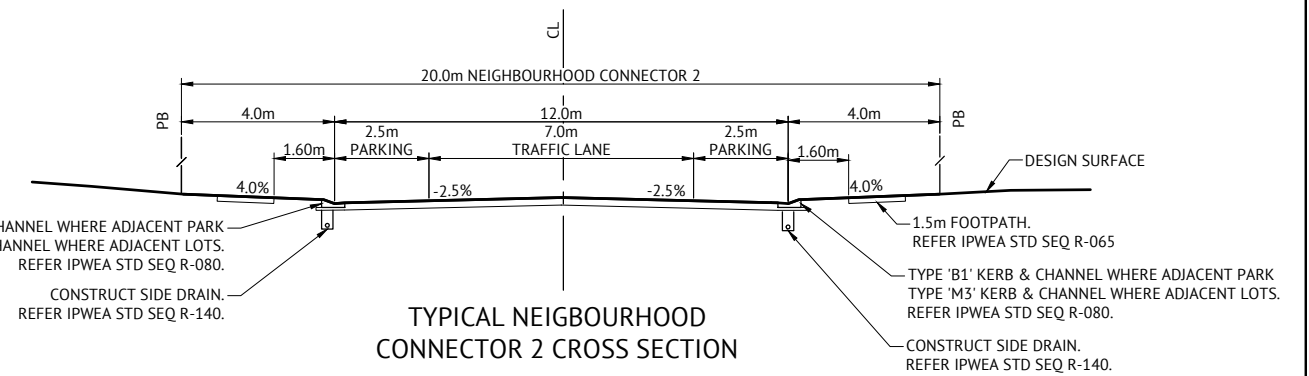
NOTE:

THE ROAD CROSS SECTION FOR ANDERSON DRIVE BETWEEN TEVIOT ROAD AND KESSELS BOULEVARD MAY BE DESIGNED AND CONSTRUCTED AS A 2-LANE (ONE LANE EACH DIRECTION) ROAD. DETAILS REGARDING THE SUITABILITY OF THIS OPTION IS ADDRESSED IN THE PRECINCT 9 TRAFFIC STATEMENT PREPARED BY PREMISE.

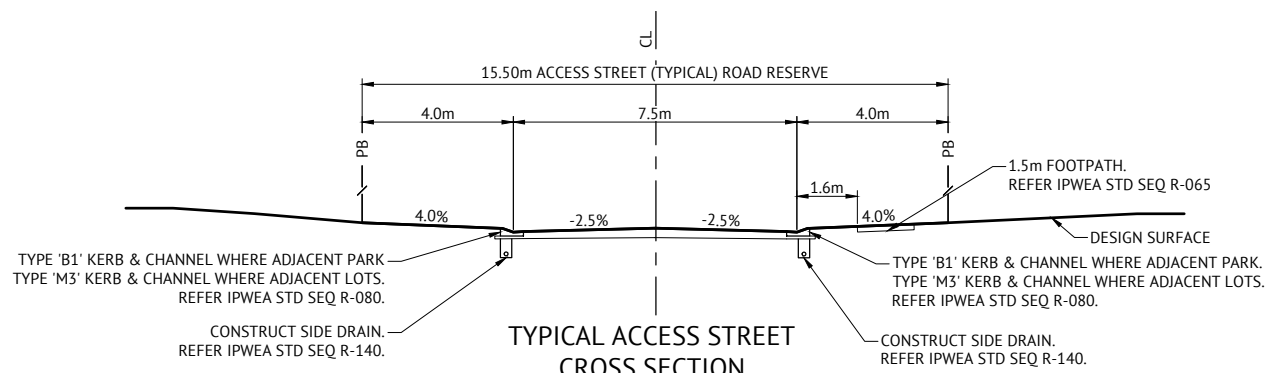
THE ROAD CROSS SECTION SHOWN ON THIS DRAWING DETAILS A 4-LANE CROSS SECTION. THIS IS THE MOST CONSERVATIVE SCENARIO AND DEMONSTRATES THAT THE ROAD RESERVE WIDTH PROVIDED IS SUFFICIENT FOR ALL POSSIBLE OUTCOMES.



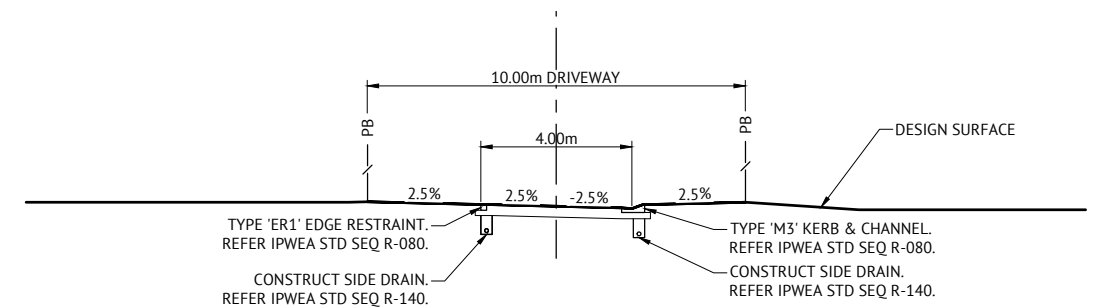
TYPICAL NEIGHBOURHOOD CONNECTOR 1 CROSS SECTION



TYPICAL NEIGHBOURHOOD CONNECTOR 2 CROSS SECTION



TYPICAL ACCESS STREET CROSS SECTION



TYPICAL DRIVEWAY CROSS SECTION

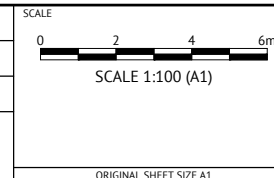
PRELIMINARY - NOT FOR CONSTRUCTION

16/10/2020	1	ORIGINAL ISSUE	KK	
DATE	REV	DESCRIPTION	REC	APP
REVISIONS				



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M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION



CLIENT
MIRVAC

PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

LOCATION
TEVIOT ROAD, GREENBANK

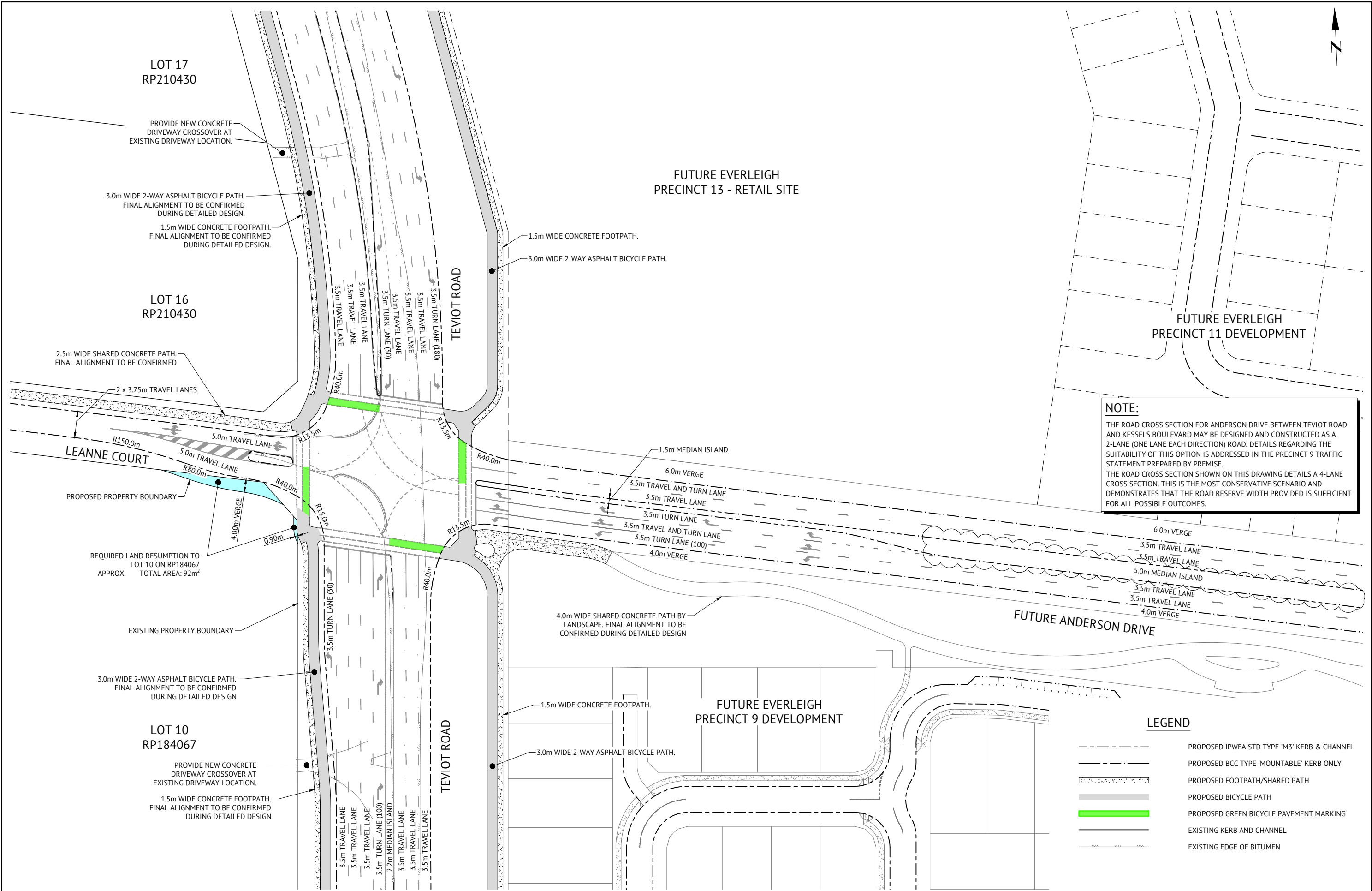
SHEET TITLE
TYPICAL ROAD CROSS SECTIONS

JOB CODE
MIR003

SHEET NUMBER
SKC09

REV
1

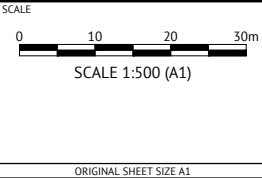
A.5 APPENDIX E – ULTIMATE INTERSECTION FUNCTIONAL PLANS



PRELIMINARY - NOT FOR CONSTRUCTION					
07/05/2021	B	AMENDED ANDERSON DRIVE LAYOUT		KK	
02/11/2020	A	ORIGINAL ISSUE		KK	
DATE	REV	DESCRIPTION		REC	APP
REVISIONS					

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DESIGNED
MM
CHECKED
MM
PROJECT MANAGER
SS
ENGINEERING CERTIFICATION



CLIENT
MIRVAC

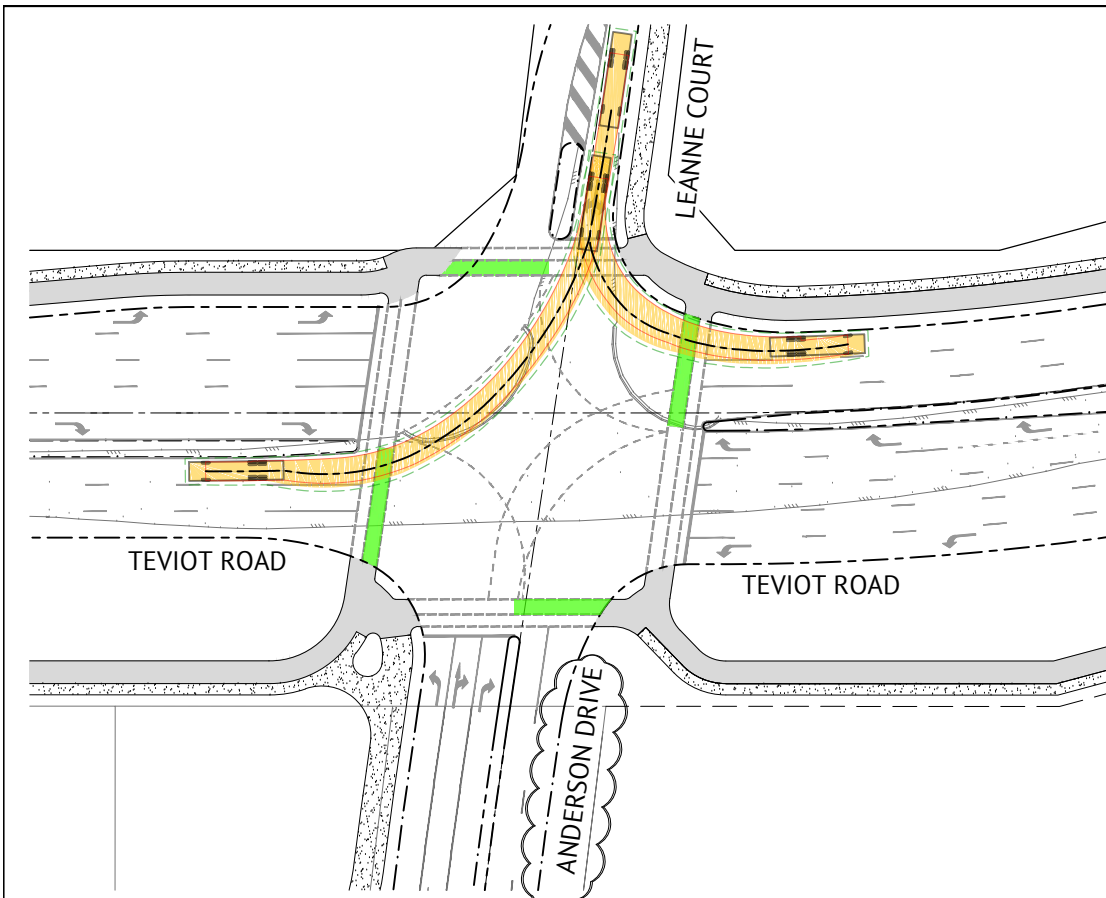
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

LOCATION
TEVIOT ROAD, GREENBANK

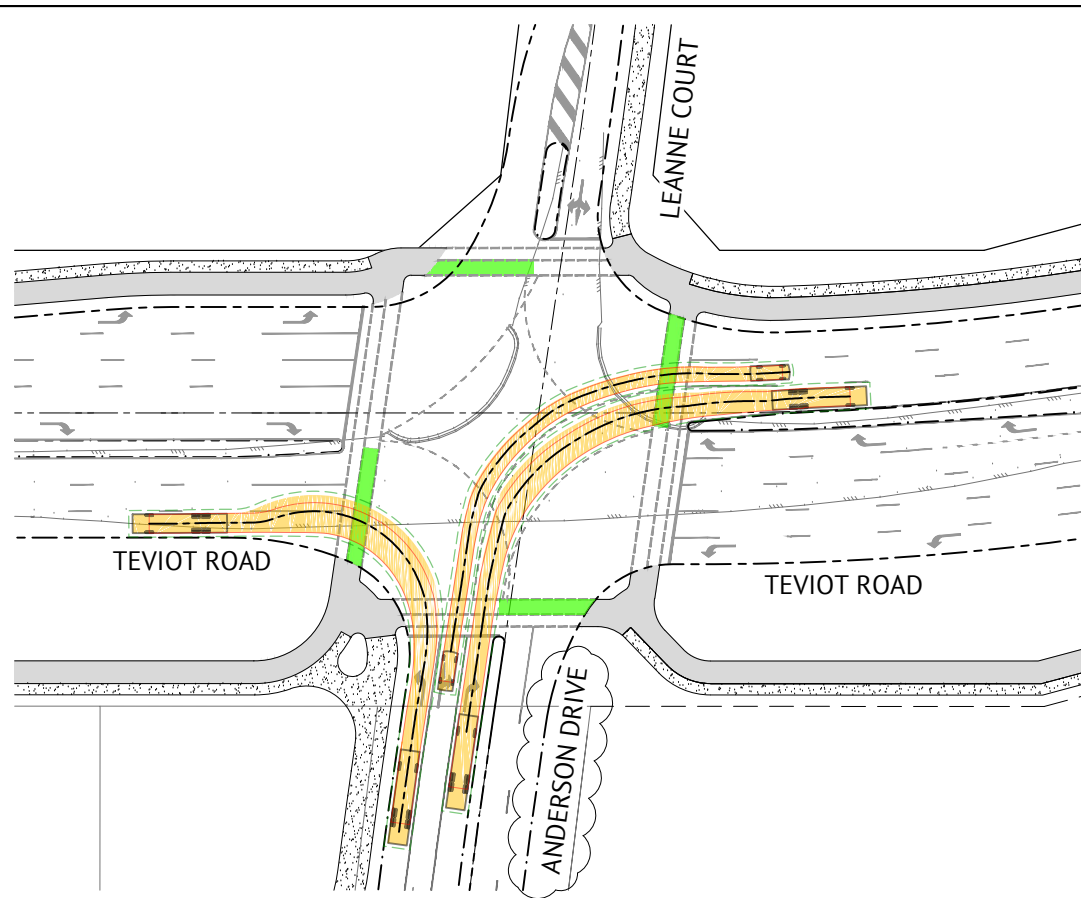
SHEET TITLE
TEVIOT & LEANNE & ANDERSON INTERSECTION FUNCTIONAL 2051

JOB CODE
MIR003

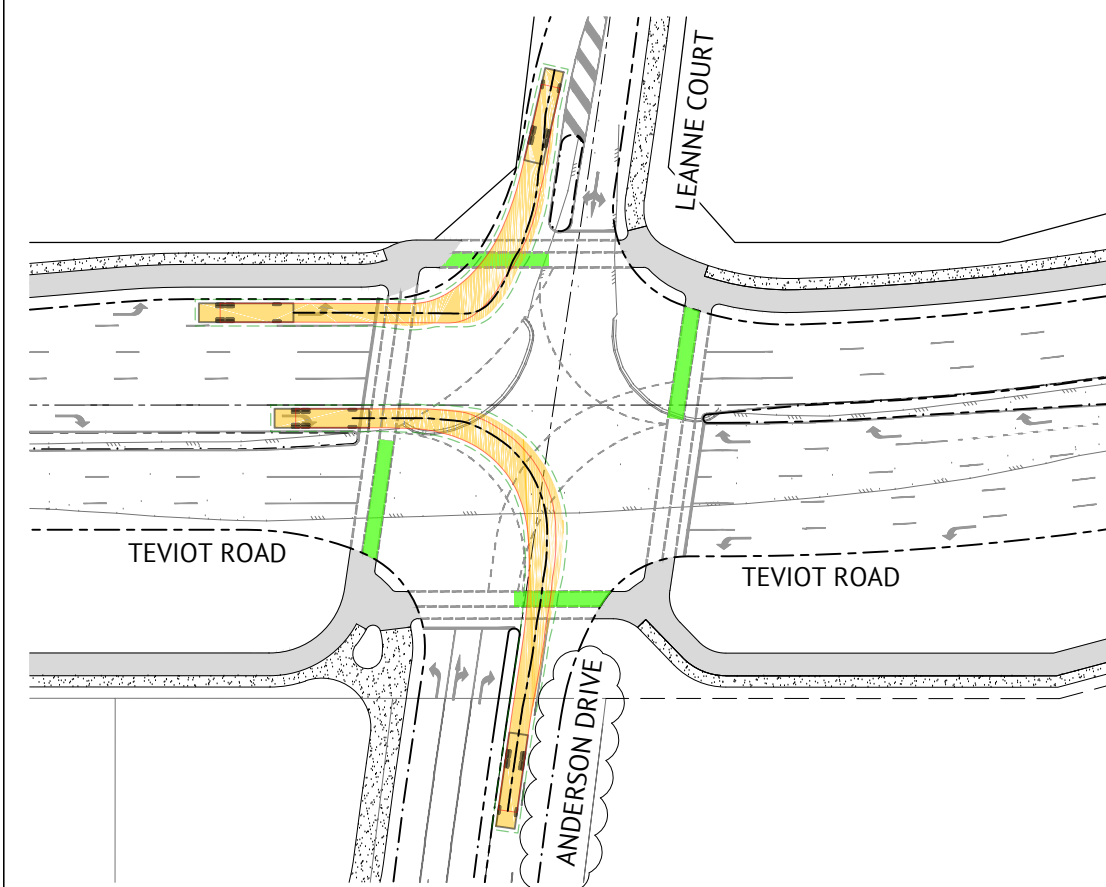
SHEET NUMBER	REV
RF01	B



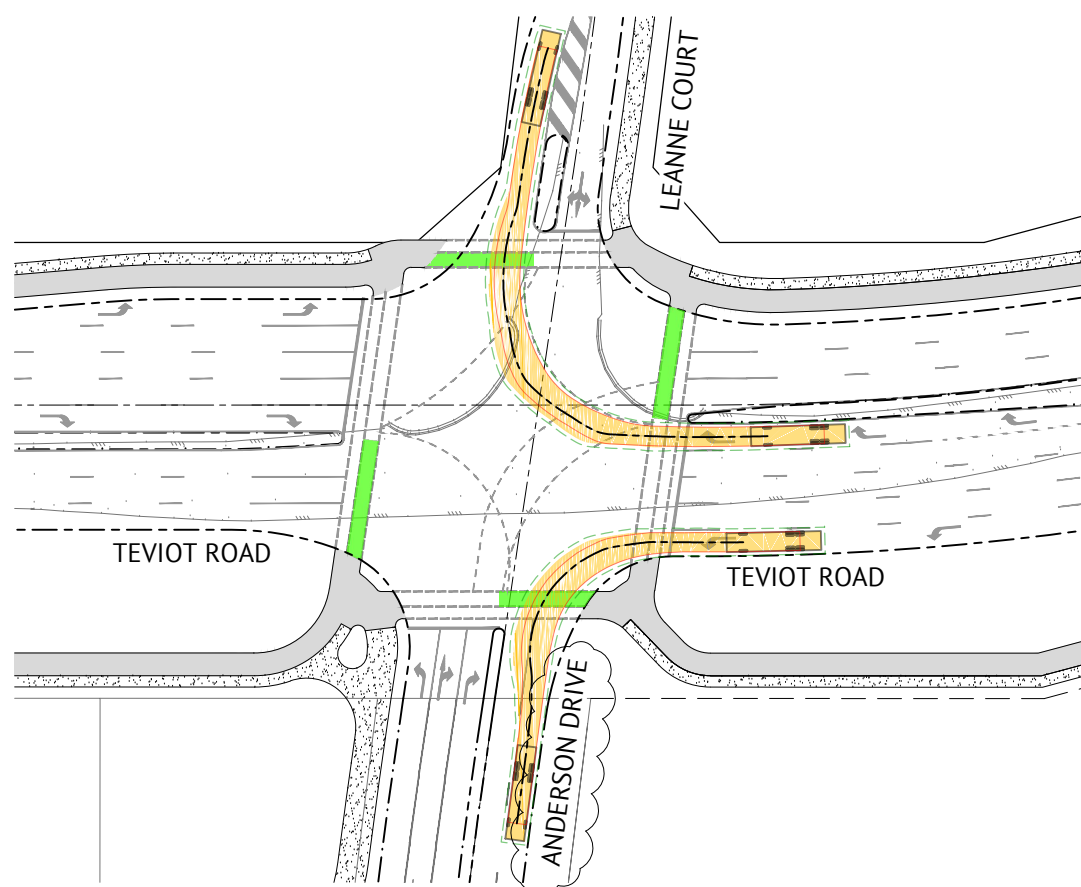
DESIGN VEHICLE (12.5m BUS) TURN PATHS FROM LEANNE COURT TO TEVIOT ROAD



DESIGN VEHICLE (12.5m BUS) TURN PATHS FROM ANDERSON DRIVE TO TEVIOT ROAD



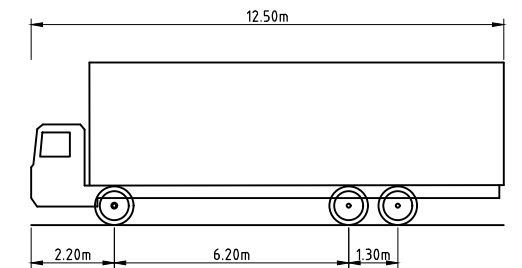
DESIGN VEHICLE (12.5m BUS) TURN PATHS
FROM TEVIOT ROAD TO LEANNE COURT (LEFT) AND ANDERSON DRIVE (RIGHT)



DESIGN VEHICLE (12.5m BUS) TURN PATHS
FROM TEVIOT ROAD TO LEANNE COURT (RIGHT) AND ANDERSON DRIVE (LEFT)

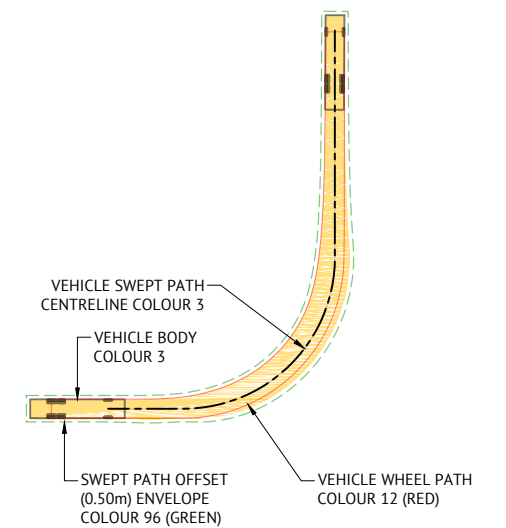
LEGEND

- PROPOSED IPWEA STD TYPE 'M3' KERB & CHANNEL
- PROPOSED BCC TYPE 'MOUNTABLE' KERB ONLY
- PROPOSED FOOTPATH/SHARED PATH
- PROPOSED BICYCLE PATH
- PROPOSED GREEN BICYCLE PAVEMENT MARKING
- EXISTING KERB AND CHANNEL
- EXISTING EDGE OF BITUMEN



AUSTROADS SINGLE UNIT TRUCK/BUS (12.5m)

OVERALL LENGTH	12.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN. BODY GROUND CLEARANCE	0.490m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB-TO-KERB TURNING RADIUS	12.500m



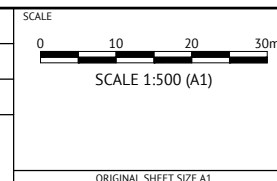
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REVISIONS
07/05/2021	B	AMENDED ANDERSON DRIVE	KK
02/11/2020	A	ORIGINAL ISSUE	KK
			APP



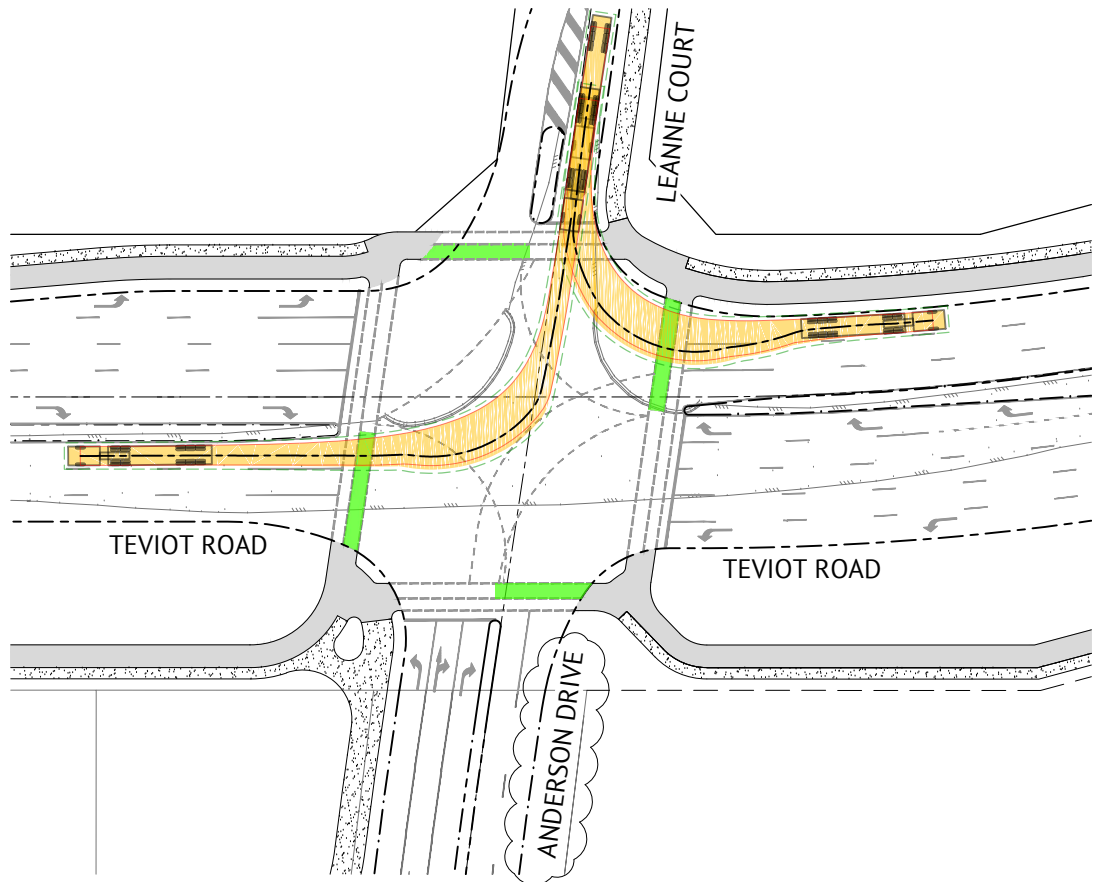
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FORTITUDE VALLEY, QLD 4006
PH: (07) 3253 2222
WEB: www.premise.com.au

DESIGNED MM
CHECKED MM
PROJECT MANAGER SS
ENGINEERING CERTIFICATION

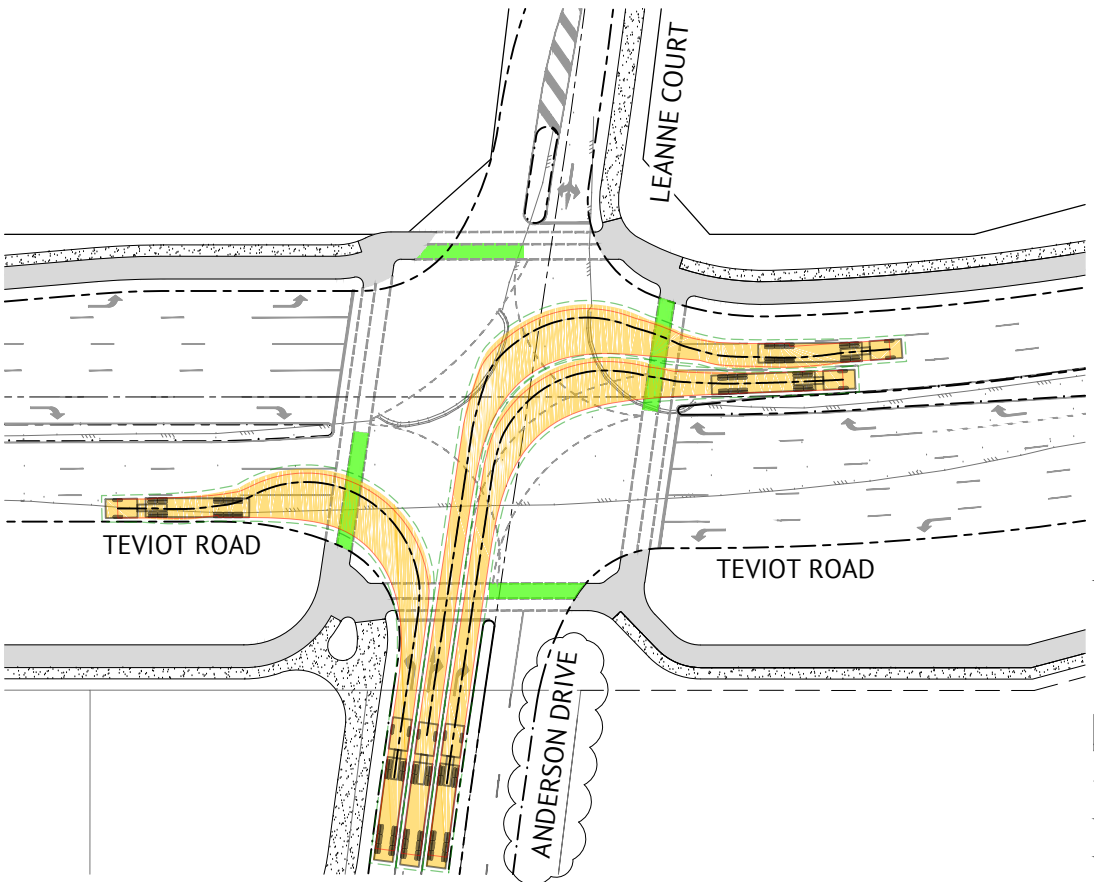


CLIENT	MIRVAC
PROJECT	EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION	TEVIOT ROAD, GREENBANK
SHEET TITLE	DESIGN VEHICLE TURN PATHS

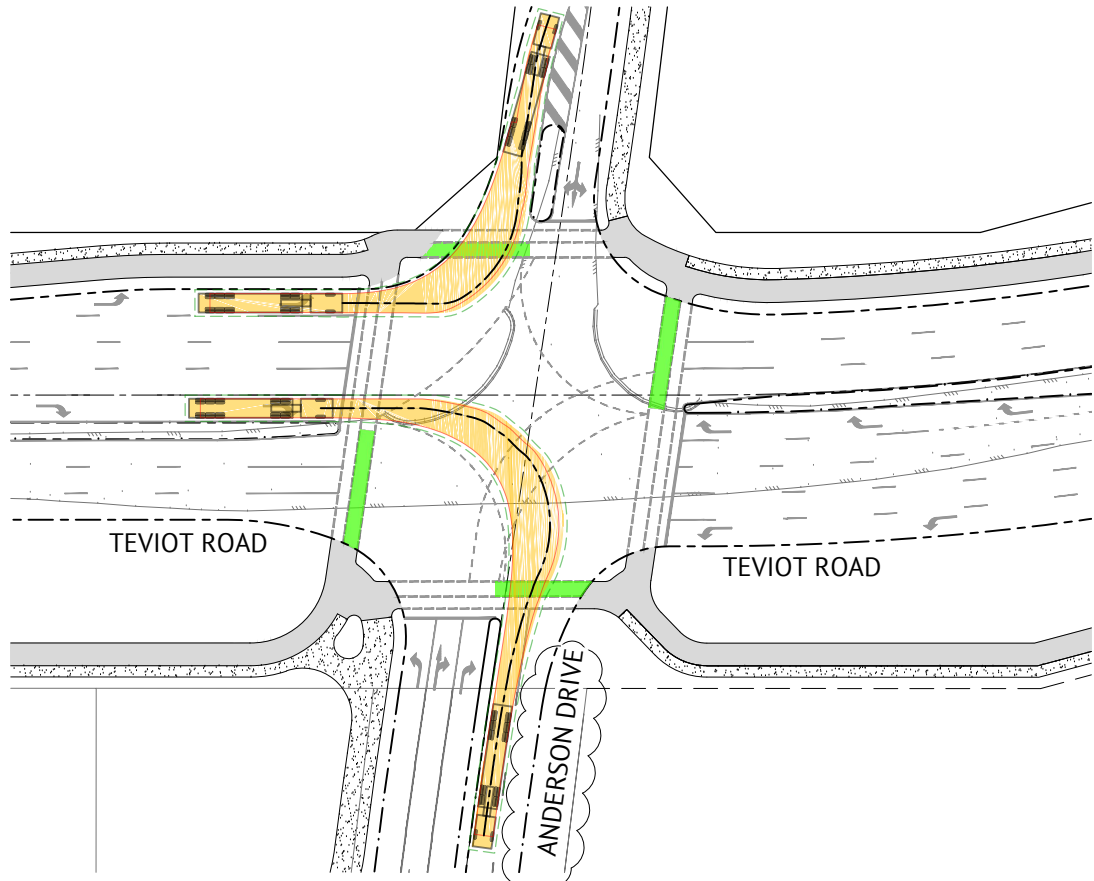
JOB CODE	MIR003
SHEET NUMBER	SKC55
REV	B



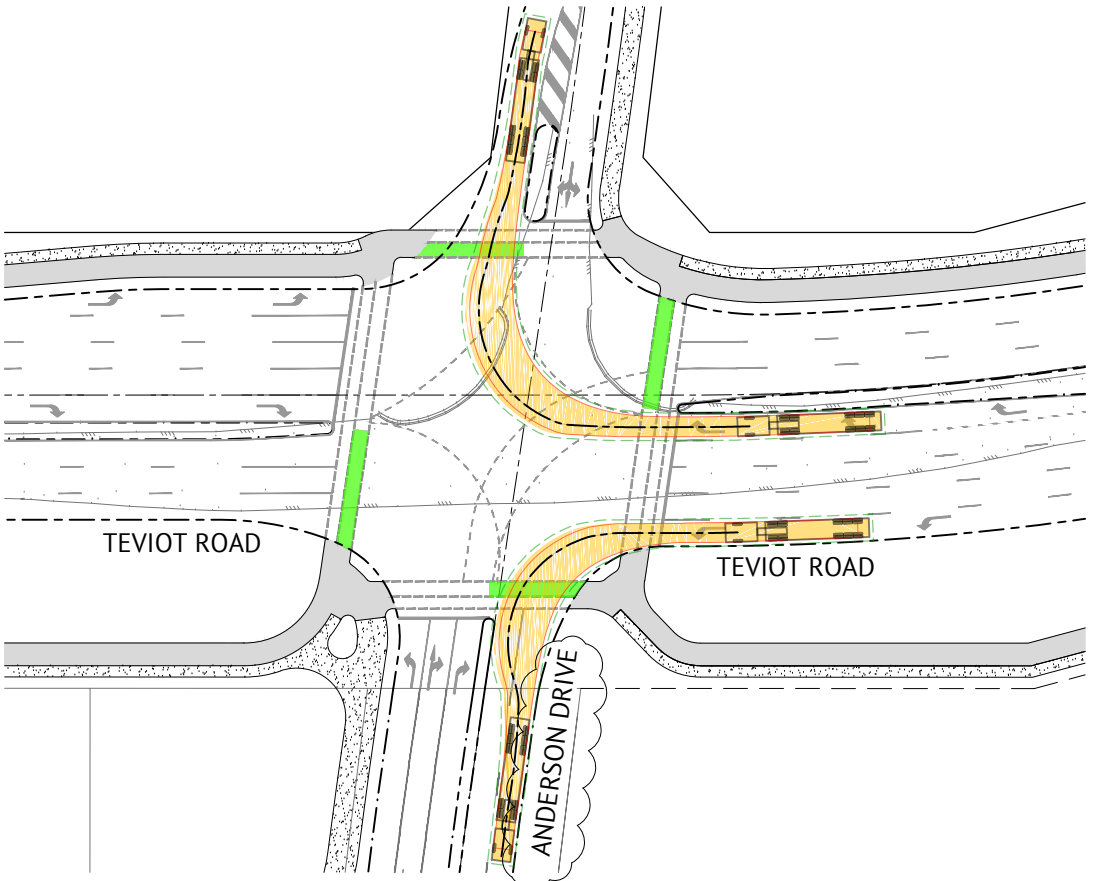
CHECKING VEHICLE (19.0m PRIME MOVER AND SEMI-TRAILER) TURN PATHS
FROM LEANNE COURT TO TEVIOT ROAD



CHECKING VEHICLE (19.0m PRIME MOVER AND SEMI-TRAILER) TURN PATHS
FROM ANDERSON DRIVE TO TEVIOT ROAD



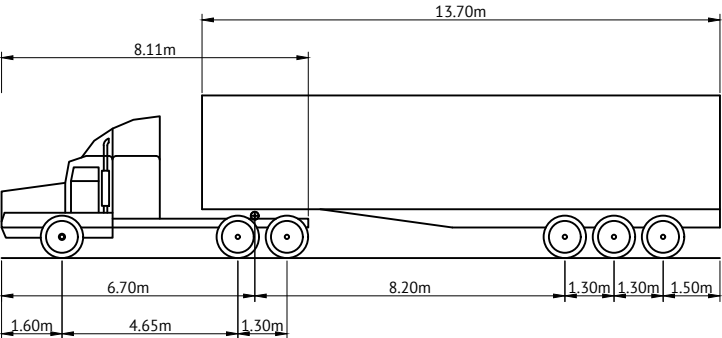
CHECKING VEHICLE (19.0m PRIME MOVER AND SEMI-TRAILER) TURN PATHS
FROM TEVIOT ROAD TO LEANNE COURT (LEFT) AND ANDERSON DRIVE (RIGHT)



CHECKING VEHICLE (19.0m PRIME MOVER AND SEMI-TRAILER) TURN PATHS
FROM TEVIOT ROAD TO LEANNE COURT (RIGHT) AND ANDERSON DRIVE (LEFT)

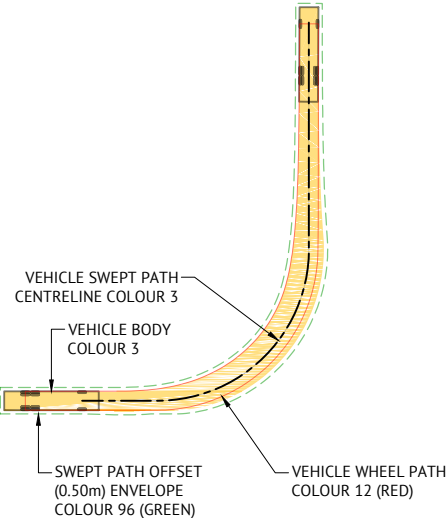
LEGEND

- PROPOSED IPWEA STD TYPE 'M3' KERB & CHANNEL
- PROPOSED BCC TYPE 'MOUNTABLE' KERB ONLY
- PROPOSED FOOTPATH/SHARED PATH
- PROPOSED BICYCLE PATH
- PROPOSED GREEN BICYCLE PAVEMENT MARKING
- EXISTING KERB AND CHANNEL
- EXISTING EDGE OF BITUMEN



AUSTROADS PRIME MOVER & SEMI TRAILER (19m)

OVERALL LENGTH	19.000m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN. BODY GROUND CLEARANCE	0.540m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB-TO-KERB TURNING RADIUS	12.500m



PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REVISIONS
07/05/2021	B	AMENDED ANDERSON DRIVE	KK
02/11/2020	A	ORIGINAL ISSUE	KK
			APP

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DESIGNED MM
CHECKED MM
PROJECT MANAGER SS
ENGINEERING CERTIFICATION

SCALE
0 10 20 30m
SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT MIRVAC

PROJECT EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT

LOCATION TEVIOT ROAD, GREENBANK

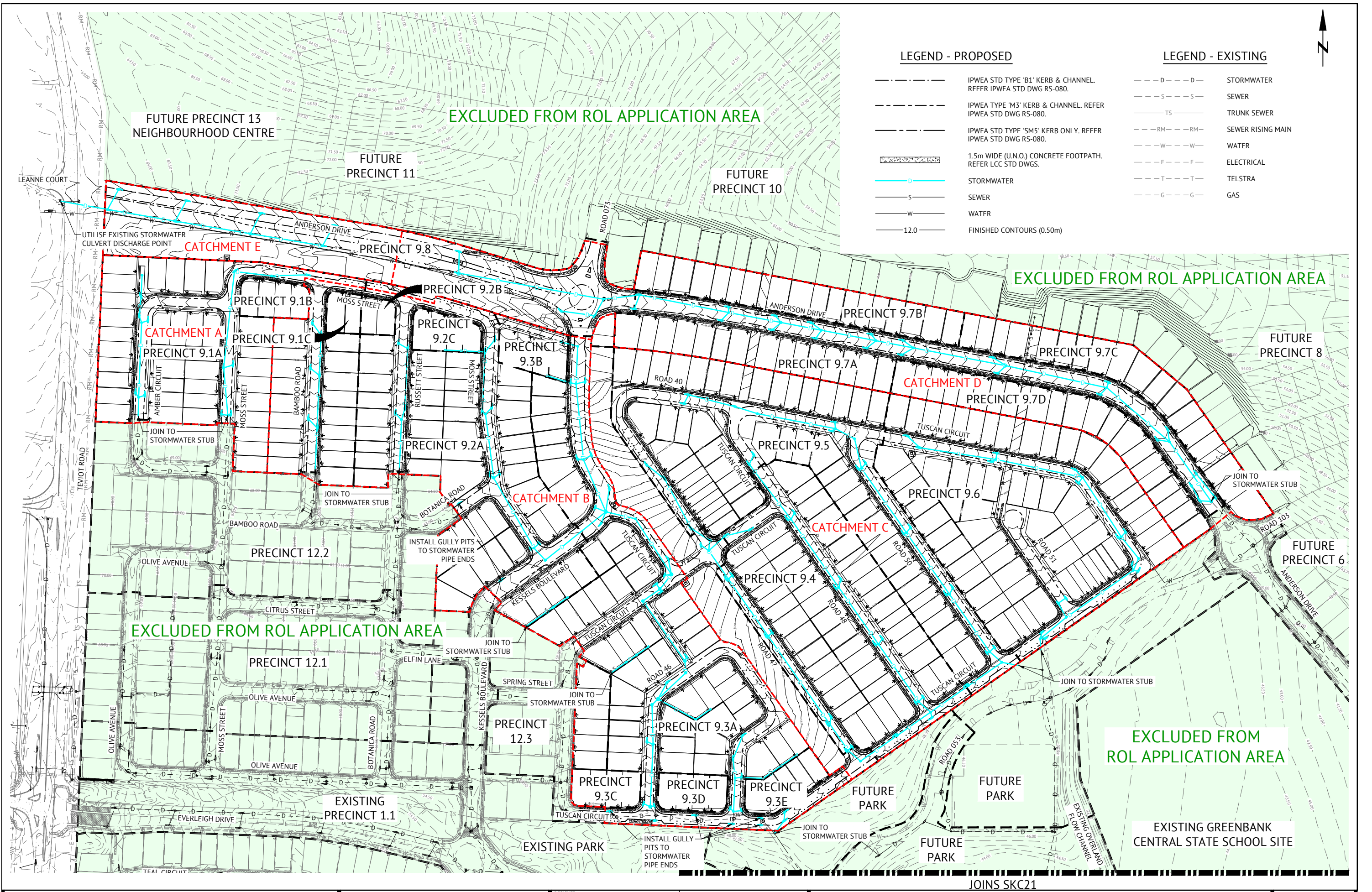
SHEET TITLE CHECKING VEHICLE TURN PATHS

JOB CODE MIR003

SHEET NUMBER SKC56

REV B

A.6 APPENDIX F – CONCEPTUAL STORMWATER DRAINAGE PLAN



LEGEND - PROPOSED

- IPWEA STD TYPE 'B1' KERB & CHANNEL. REFER IPWEA STD DWG RS-080.
- IPWEA TYPE 'M3' KERB & CHANNEL. REFER IPWEA STD DWG RS-080.
- IPWEA STD TYPE 'SM5' KERB ONLY. REFER IPWEA STD DWG RS-080.
- 1.5m WIDE (U.N.O.) CONCRETE FOOTPATH. REFER LCC STD DWGS.
- STORMWATER
- SEWER
- WATER
- FINISHED CONTOURS (0.50m)

LEGEND - EXISTING

- STORMWATER
- SEWER
- TRUNK SEWER
- SEWER RISING MAIN
- WATER
- ELECTRICAL
- TELSTRA
- GAS

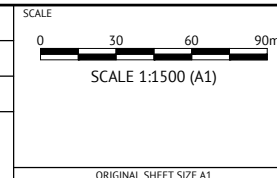
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REC	APP
06/08/2021	5	AMENDED STAGE BOUNDARY	KK	
14/07/2021	4	AMENDED STORMWATER ALIGNMENT TO SOME LOTS	KK	
14/05/2021	3	AMENDED AS PER MIRVAC REQUEST	KK	
07/05/2021	2	AMENDED ANDERSON DRIVE LAYOUT, LOT LAYOUT AND STORMWATER ALIGNMENT	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	



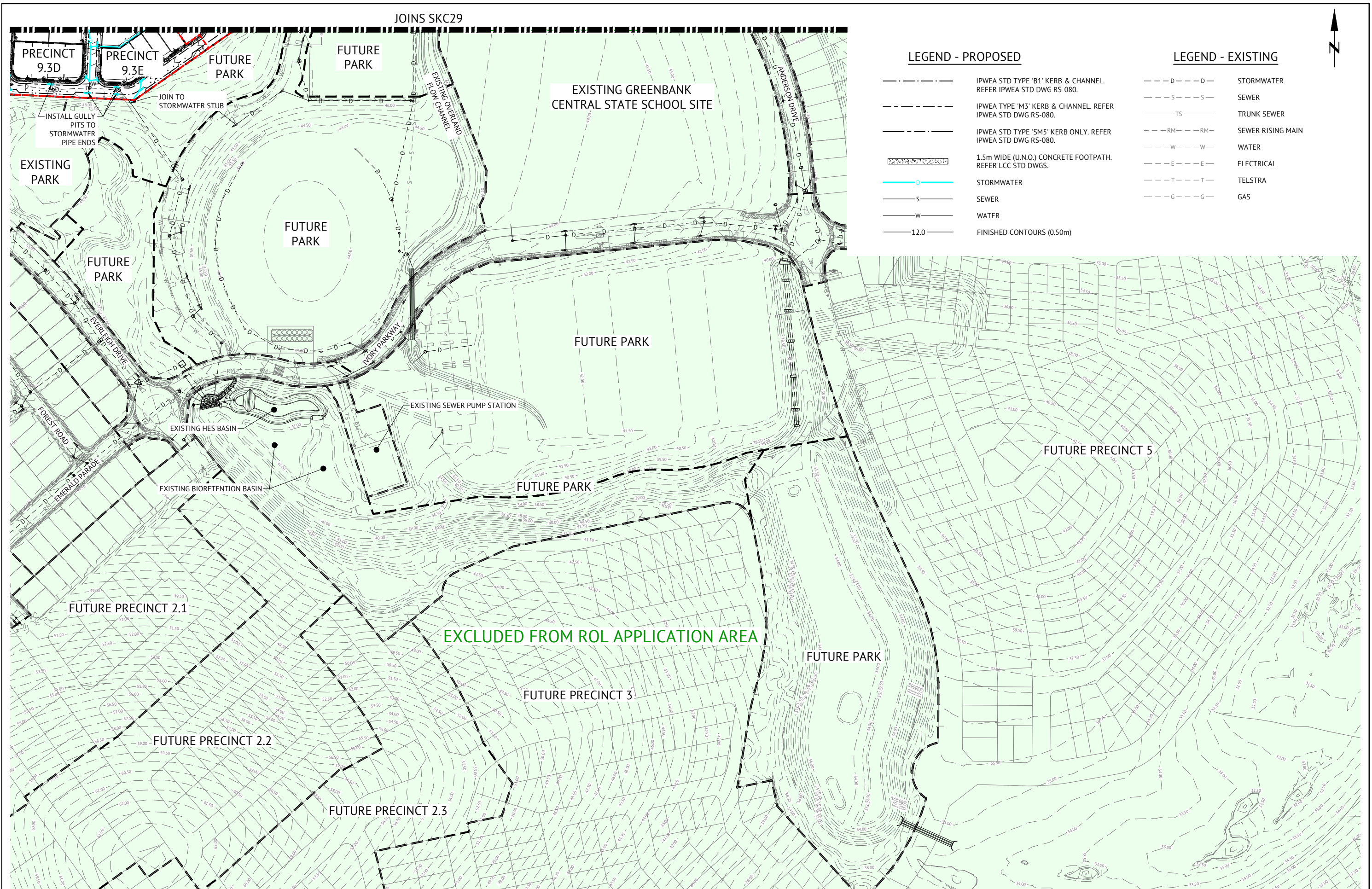
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WEB: www.premise.com.au

DESIGNED
K. KIWANG
CHECKED
M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION



CLIENT
MIRVAC
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY STORMWATER LAYOUT PLAN - SHEET 1

JOB CODE
MIR003
SHEET NUMBER
SKC20
REV
5



LEGEND - PROPOSED

- IPWEA STD TYPE 'B1' KERB & CHANNEL. REFER IPWEA STD DWG RS-080.
- IPWEA TYPE 'M3' KERB & CHANNEL. REFER IPWEA STD DWG RS-080.
- IPWEA STD TYPE 'SM5' KERB ONLY. REFER IPWEA STD DWG RS-080.
- 1.5m WIDE (U.N.O.) CONCRETE FOOTPATH. REFER LCC STD DWGS.
- STORMWATER
- SEWER
- WATER
- FINISHED CONTOURS (0.50m)

LEGEND - EXISTING

- STORMWATER
- SEWER
- TRUNK SEWER
- SEWER RISING MAIN
- WATER
- ELECTRICAL
- TELSTRA
- GAS

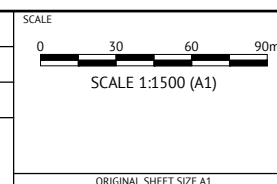
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REC	APP
07/05/2021	2	AMENDED ANDERSON DRIVE LAYOUT	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	



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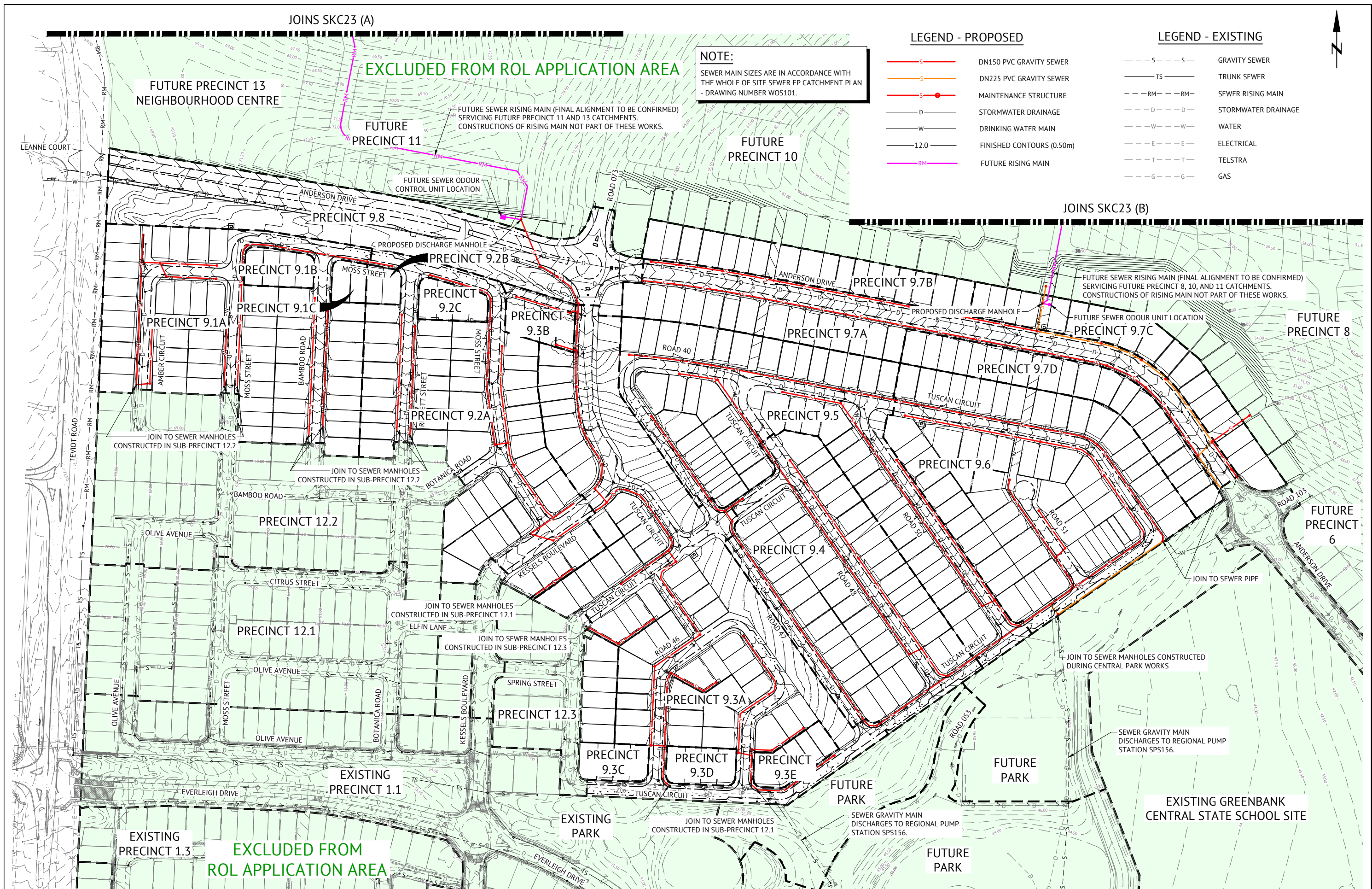
DESIGNED
K. KIWANG
CHECKED
M. MAJZNER
PROJECT MANAGER
S. STEINHOFFER
ENGINEERING CERTIFICATION

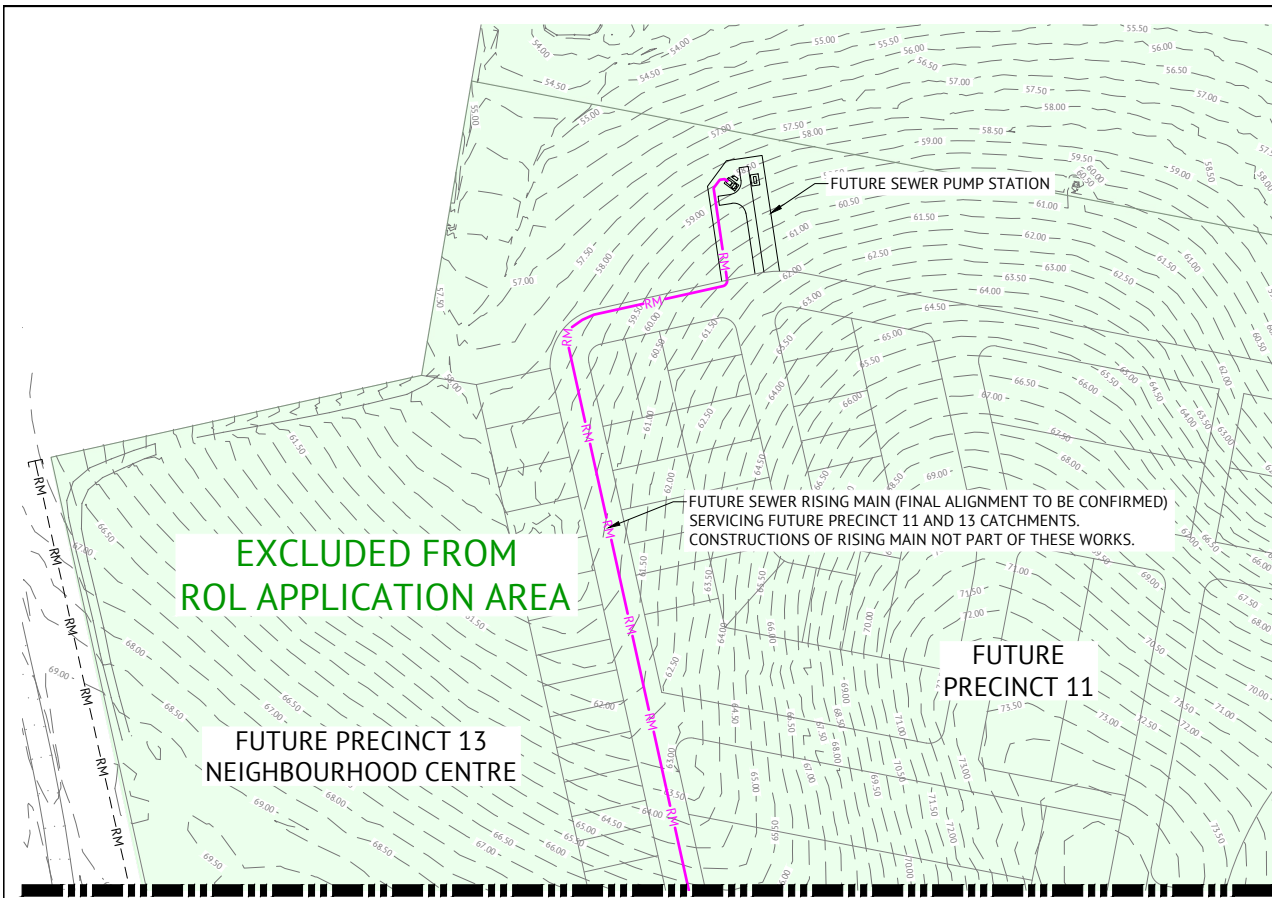


CLIENT
MIRVAC
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY STORMWATER LAYOUT PLAN - SHEET 2

JOB CODE
MIR003
SHEET NUMBER
SKC21
REV
2

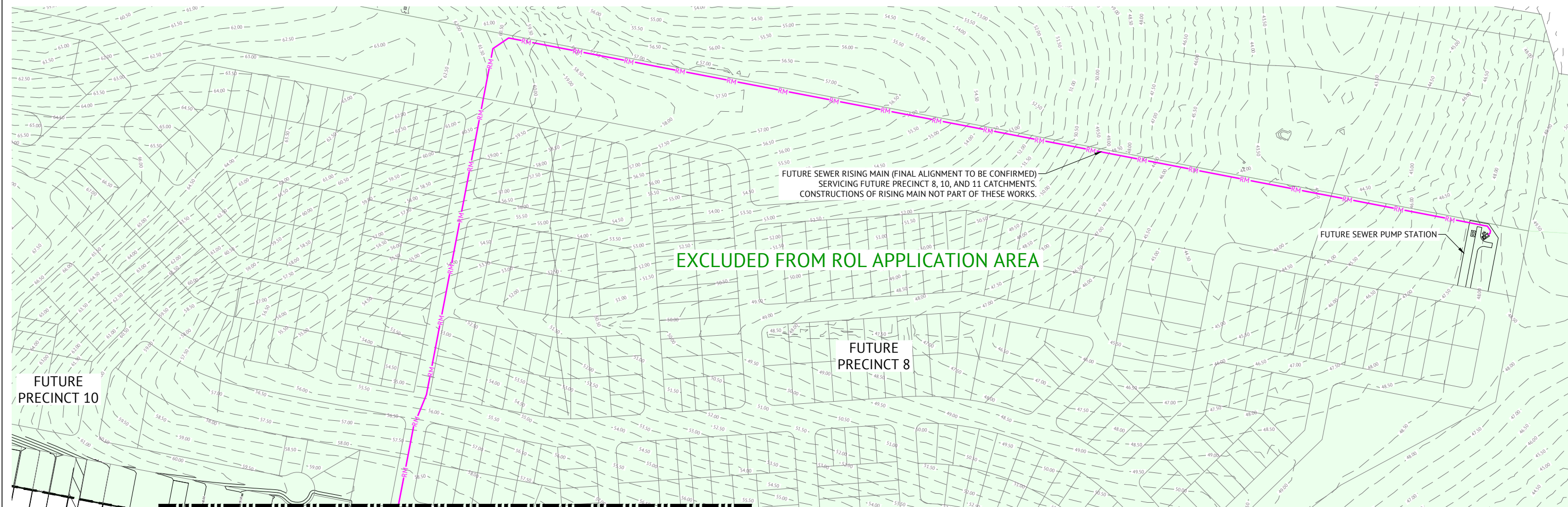
A.7 APPENDIX G – CONCEPTUAL SEWER PLAN





JOINS SKC22 (A)

NOTE:
REFER TO SKC22 - SHEET 1 FOR LEGEND



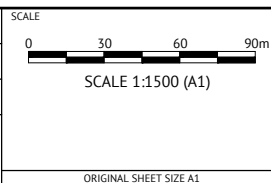
JOINS SKC22 (B)

PRELIMINARY - NOT FOR CONSTRUCTION					
16/10/2020	1	ORIGINAL ISSUE		KK	
DATE	REV	DESCRIPTION		REC	APP
REVISIONS					



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CLIENT	MIRVAC		JOB CODE
PROJECT	EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT		MIR003
LOCATION	TEVIOT ROAD, GREENBANK		
SHEET TITLE	PRELIMINARY SEWER LAYOUT PLAN - SHEET 2		
	SHEET NUMBER	REV	
	SKC23	1	

A.8 APPENDIX H – CONCEPTUAL WATER PLAN



LEGEND - PROPOSED

- DN100 POTABLE WATER MAIN
- DN150 POTABLE WATER MAIN
- DN200 POTABLE WATER MAIN
- DN250 POTABLE WATER MAIN
- STORMWATER
- GRAVITY SEWER

LEGEND - EXISTING

- WATER
- STORMWATER
- GRAVITY SEWER
- TRUNK SEWER
- SEWER RISING MAIN
- ELECTRICAL
- TELSTRA
- GAS

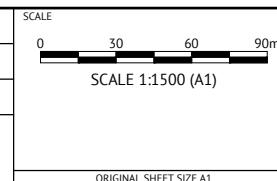
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REC	APP
06/08/2021	4	AMENDED STAGE BOUNDARY	KK	
14/05/2021	3	AMENDED AS PER MIRVAC REQUEST	KK	
07/05/2021	2	AMENDED ANDERSON DRIVE LAYOUT, LOT LAYOUT AND WATER ALIGNMENT	KK	
16/10/2020	1	ORIGINAL ISSUE	KK	



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ENGINEERING CERTIFICATION



CLIENT
MIRVAC
PROJECT
EVERLEIGH PRECINCT 9 SUBDIVISION DEVELOPMENT
LOCATION
TEVIOT ROAD, GREENBANK
SHEET TITLE
PRELIMINARY WATER LAYOUT PLAN

JOB CODE
MIR003
SHEET NUMBER
SKC24
REV
4

A.9 APPENDIX I – ELECTRICAL & NBN SERVICING STATEMENT



13 November 2020

Mirvac Queensland Pty Limited

Attention: Mr Mark Clancy

Dear Sir,

EVERLEIGH - PRECINCT 9: ELECTRICAL SERVICING STATEMENT

As electrical engineering consultants who have previously been engaged to undertake design services for multiple stages of Everleigh Precincts (1 & 12), we can confirm the following in relation to Everleigh – Precinct 9:

- Energex electrical network infrastructure, NBN telecommunications & gas reticulation services have been constructed and/or designed for multiple stages of Everleigh, Precincts 1 & 12, adjacent to proposed Precinct 9,
- Preliminary investigations including consideration of proposed PMT site locations, has commenced,
- Sufficient network capacity exists in the existing electrical & NBN network infrastructure to cater for the increased loading required to service the proposed precinct:
 - Refer to Figure 1 below showing significant spare capacity within the adjacent Energex Zone Substation - North Maclean (NMC)
- Final arrangements will be confirmed during the detailed design phase for each stage of the precinct.

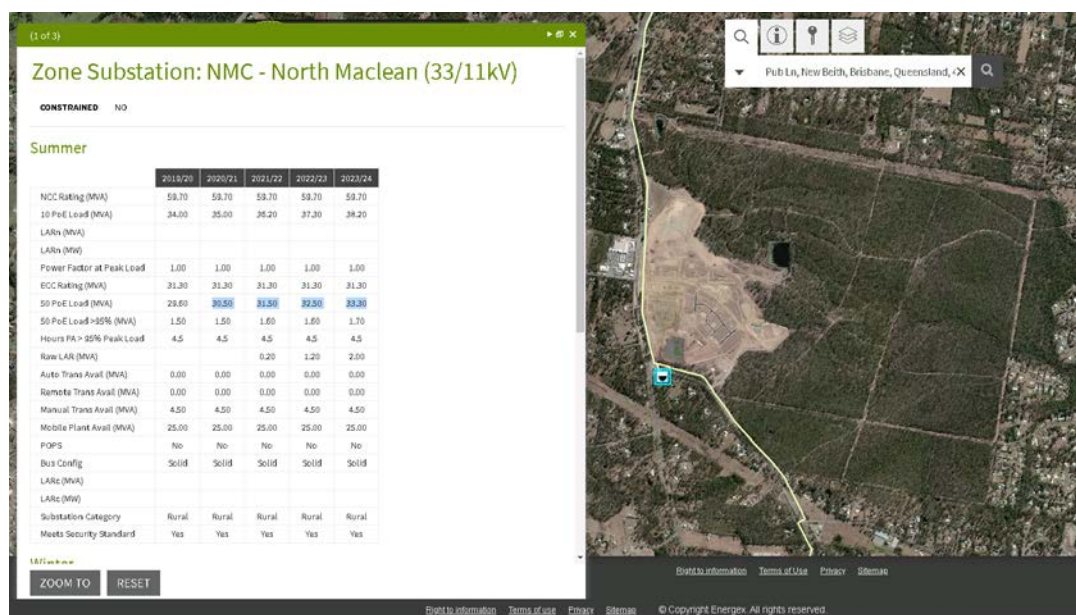


Figure 1: Zone Substation North Maclean - No Constraints

Robin Russell
BE, BCom, FIEAust, CPEng
RPEQ 1548

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13 November 2020

Please feel free to contact us if you require any further details.

Yours faithfully,
ROBIN RUSSELL & ASSOCIATES PTY. LTD.

A handwritten signature in black ink, appearing to read 'Ben Ryan', with a stylized flourish at the end.

Ben Ryan
(RPEQ 18090)
(07) 3872 5555
b.ryan@robrus.com.au

A.10 APPENDIX J – TRAFFIC STATEMENT

TRAFFIC STATEMENT – EVERLEIGH PRECINCT 9

11/05/2021

Bradley Jones RPEQ

Precinct 9 Traffic Statement-revB

1. INTRODUCTION

Premise was engaged by Mirvac to prepare a Traffic Statement for Everleigh Precinct 9 based on:

- Urbis Drawing No. P0018054 ROL05-1 rev08 "Everleigh: Reconfiguration of a Lot Plan – ROL 5"; and
- Premise Drawing Number MIRSGB-TD000-revB "Proposed Subdivision: Greenbank Road, Greenbank – Site Layout and Lot Count" (21/10/2020).

Precinct 9 consists of approximately 421 residential lots to the southeast of the Teviot Road / Leanne Court intersection, Greenbank. It is the extension of Everleigh Precinct 12 north of Everleigh Drive and includes extension of Leanne Court east of Teviot Road as Anderson Drive.

This statement includes:

- Forecast ultimate (2051) Teviot Road / Leanne Court / Anderson Drive (new road) intersection arrangement;
- Proposed Anderson Drive cross sections to accommodate ultimate (2051) traffic;
- Recommendation of a lot trigger for construction of the Anderson Drive leg of the Teviot Road / Leanne Court intersection;
- Forecast ultimate (2051) daily traffic volumes on Everleigh's connector street network; and
- Responses to Economic Development Queensland (EDQ) concerns regarding:
 - Intersection spacing on Anderson Drive;
 - Access to Precinct 9.

1.1 Background

Revision A of this Traffic Statement, dated 21 November 2020, was submitted with the development application to Economic Development Queensland (EDQ) as the assessment manager. Traffic Statement-revA differed from the current (revB) traffic statement in that:

- Traffic Statement-revA included identification of possible Anderson Drive configurations to provide access to a future neighbourhood centre on the northeast corner of the Teviot Road / Anderson Drive intersection. As the neighbourhood centre does not form part of the current development application, consideration of the neighbourhood centre has been removed from the current (revB) traffic statement; and
- Traffic modelling referred to in Traffic Statement-revA allowed trips produced by residential zones within Everleigh to be attracted to non-residential zones within Everleigh. As requested by EDQ, traffic modelling has been revised to match the MWH model assumption that residential trip generation is discounted by 25% to represent self-containment with no modelling of trips within Everleigh.

2. TEVIOT RD / LEANNE CT / ANDERSON DR INTERSECTION (2051)

Figure 1 is an extract from the approved Movement Network Infrastructure Master Plan (MNIMP) depicting the forecast ultimate (2051) Teviot Road / Leanne Court / Anderson Drive intersection. This arrangement has been used to develop the Ultimate Intersection Functional Layout Plans included within the ROL05 Engineering Services Report.

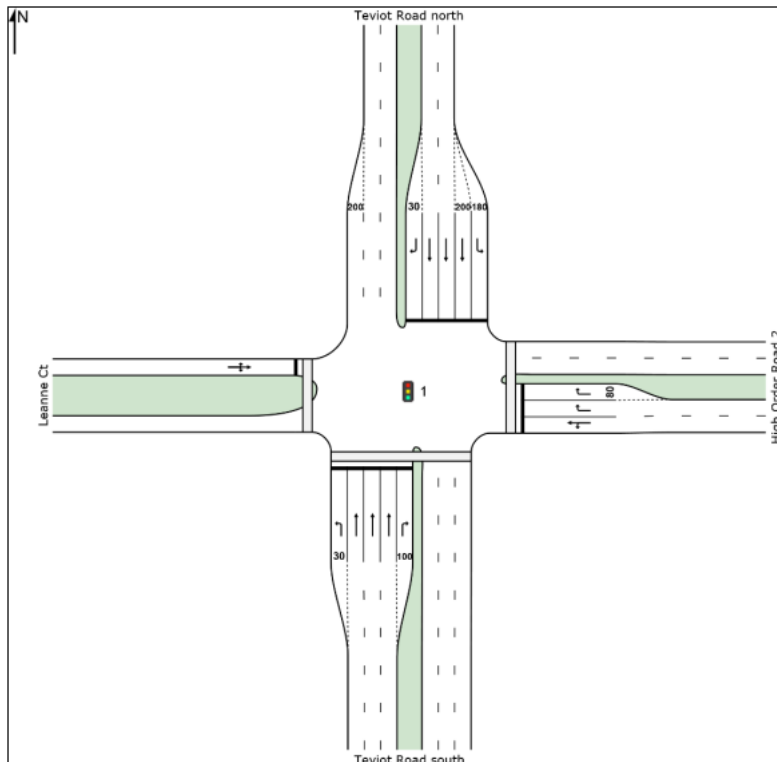


Figure 1: 2051 Teviot Road / Leanne Court / HOR2 (Anderson Drive) Intersection Layout

(Source – MWH Movement Network Infrastructure Master Plan)

3. ANDERSON DRIVE CROSS SECTION

Anderson Drive within Precinct 9 consists of two (2) sections being:

- Between Teviot Road and Kessels Boulevard; and
- East of Kessels Boulevard.
- Commentary on each of these sections is provided below.

Anderson Drive – Between Teviot Road and Kessels Boulevard

Figure 2 provides the MNIMP approved cross section of Anderson Drive between Teviot Road and Kessels Boulevard (described as Trunk Connector 1 in the MNIMP). The 28m wide road reserve has been provided for in the reconfiguration of a lot plans and the Internal Road Functional Plans included within the ROL05 Engineering Services Report.

Traffic Lanes	Traffic Lane Width	Bicycle Lane Width	Median Width	Verge Width	Vegetated Sound Buffer	Total Reserve Width	Road Speed	Residential Frontage
4	3.5m	N/A	4m	4 m	2m	28m	50km/h	No

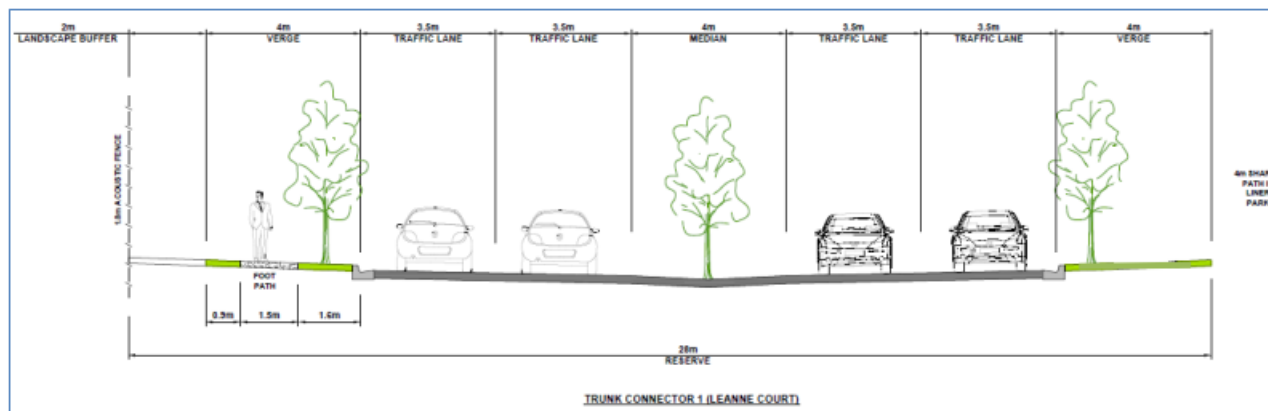


Figure 2: 2051 Trunk Connector 1 (Anderson Drive) Cross Section

(Source – MWH Movement Network Infrastructure Master Plan)

Figure 5 indicates a traffic volume of 15,274vpd for this section of Anderson Drive in the ultimate (2051) scenario. EDQ's "PDA Guideline No. 06: Street and Movement Network" (February 2019) suggests traffic volumes of 10,000vpd to 18,000vpd may be adequately serviced by a Trunk Connector with a 2-lane cross section (either divided or undivided) and no direct access. Accordingly, opportunity exists to reduce the Anderson Drive cross section from 4 to 2 lanes.

Conversely, we understand there is some uncertainty regarding:

- sub-regional traffic planning;
- traffic access, egress and intersection arrangements for the neighbourhood centre and State community health centre to be located north of Anderson Drive; and
- the ultimate design of the Teviot Road / Leanne Court / Anderson Drive Intersection (which requires design coordination with Council).

To provide maximum flexibility, it is recommended the approved 4-lane cross section be adopted as the base case, with opportunities to reduce traffic lanes to be confirmed in detail design and assessed by compliance assessment. Notes have been provided on the Road Functional Plans to this effect.

Anderson Drive – East of Kessels Boulevard

Figure 3 provides the MNIMP approved cross section of Anderson Drive east of Kessels Boulevard (described as Neighbourhood Connector 1 in the MNIMP). The 21m wide road reserve has been provided for in the reconfiguration of a lot plans and the Internal Road Functional Plans included within the ROL05 Engineering Services Report.

Traffic Lanes	Traffic Lane Width	Parking Lane	Median Width	Verge Width	Vegetated Sound Buffer	Total Reserve Width	Road Speed	Residential Frontage
2	3.5m	2.5m	N/A	4 - 5m	N/A	21m	50km/h	Yes

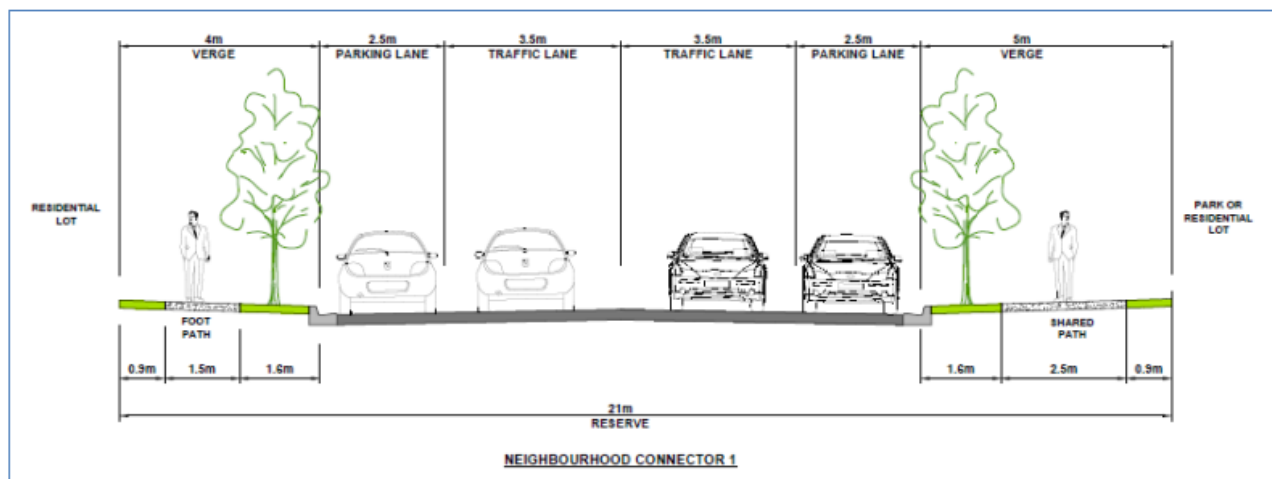


Figure 3: 2051 Neighbourhood Connector 1 (Anderson Drive) Cross Section

(Source – MWH Movement Network Infrastructure Master Plan)

Figure 5 indicates a traffic volume of 7,382vpd for this section of Anderson Drive in the ultimate (2051) scenario. EDQ's "PDA Guideline No. 06: Street and Movement Network" (February 2019) suggests traffic volumes 3,000vpd to 7,499vpd may be adequately serviced by a Neighbourhood Connector Street. Additionally, it is noted that traffic volumes of 7,500vpd to 10,000vpd may be adequately serviced by a Trunk Connector with an identical 2-lane cross section (either divided or undivided) and with direct access permitted. Accordingly, the proposed cross section for this part of Anderson Drive is considered appropriate and also capable of servicing up to a traffic volume of 10,000vpd.

4. LOT TRIGGER FOR ANDERSON DRIVE CONSTRUCTION

The trigger for construction of the Anderson Drive leg of the Teviot Road / Leanne Court intersection will be the Teviot Road / Everleigh Drive/ Pub Lane intersection, currently the only access to Everleigh, reaching capacity.

To assess the operation of the Teviot Road / Everleigh Drive / Pub Lane intersection, Premise has developed a spreadsheet traffic model of Everleigh and the surrounding road network. The model is generally based on the same assumptions as the AIMSUN model developed by MWH for the purpose of preparing "Movement Network Infrastructure Master Plan: Teviot Road, Greenbank" (MNIMP). The MNIMP was approved by EDQ on 9 August 2017 based on:

- 24-hour intersection traffic count data collected on Thursday 5 November 2015;
- Traffic generation rates and directional splits for land uses within Everleigh as agreed by MWH and Veitch Lister Consulting (VLC) on 25 January 2017;
- Growth rates of between 3% and 4%; and

- 25% discounting of trips produced by residential development within Everleigh to represent the communities self-containment.

Further to the above, the Premise traffic model is based on:

- Daily traffic generation rates for land uses within Everleigh which were not specified by MWH are based on the preferred hierarchy of data sources for traffic generation rates specified in the Department of Transport and Main Roads' (TMR's) "Guide to Traffic Impact Assessment" (GTIA); and
- An external trip distribution which was estimated based on the available information regarding the trip distribution in the MWH model.

While Premise has generally sort to keep its spreadsheet traffic model consistent with the MWH model, Premise has increased the number of trip generating zones within Everleigh from four (4) in the MWH model to 16 in the Premise model. EDQ acknowledges that this will provide a more refined traffic model and allow more realistic estimation of traffic on the network.

The Premise traffic model estimates traffic for each year from when traffic count data was collected (2015) until 2051 which was adopted as representative of ultimate traffic in MNIMP. As the model is calibrated to traffic counts conducted in November 2015, forecast traffic is representative of traffic in November of each year.

Advice from Mirvac is that Everleigh produced the first developed lots in 2019 with the current and forecast development rate being approximately 200 lots per annum. Forecast project milestones are:

- 365 sealed lots in December 2020;
- 509 sealed lots in December 2021; and
- 668 sealed lots in September 2022.

There is understood to be a six (6) to nine (9) month lag between the sealing of a lot and its occupation as a residential dwelling.

In light of the above, the Premise traffic model is based on:

- 300 sealed lots including 200 occupied lots in November 2020;
- 500 sealed lots including 400 occupied lots in November 2021; and
- 700 sealed lots including 600 occupied lots in November 2022.
- Only lots with occupied residential dwellings generate traffic in the Premise traffic model.

The Teviot Road / Everleigh Drive / Pub Lane intersection was analysed based on its existing lane and phase arrangement using SIDRA Intersection Version 9 (SIDRA). The pedestrian crossing of Teviot Road on the southern leg of the intersection was omitted from the analysis. It is expected that demand for this crossing movement will be low but, by including it in all signal cycles, the overall intersection capacity estimated by SIDRA was greatly reduced.

SIDRA analysis indicated that the critical peak hour for the existing Teviot Road / Everleigh Drive / Pub Lane intersection is the evening peak hour and that the intersection will reach its practical capacity (degree of saturation (DoS) ≥ 0.90) between November 2022 and November 2023.

To provide a more precise estimate of when the existing intersection would reach capacity, SIDRA's Design Life tool was used with growth rates chosen such that one (1) "year" as modelled by SIDRA represented one (1) month of Everleigh development and background traffic growth. By this process it was estimated that the intersection DoS during the critical evening peak hour will be:

- 0.90 in February 2023 with approximately 750 sealed lots and approximately 650 occupied lots. The DoS during the morning peak hour would be less than 0.90;
- 0.95 in June 2023 with approximately 810 sealed lots and approximately 710 occupied lots. The DoS during the morning peak hour would still be less than 0.90; and
- 1.00 (theoretical capacity) in January 2024 with approximately 930 sealed lots and approximately 830 occupied lots. The DoS during the morning peak hour would still be less than 0.90.

Based on the SIDRA analysis referred to above it is recommended that:

- Design of the Teviot Road / Leanne Court / Anderson Drive intersection be approved prior to sealing of the 751st lot within Everleigh, i.e. prior to the Teviot Road / Everleigh Drive / Pub Lane intersection reaching its practical capacity; and
- Construction of the Anderson Drive leg of the Teviot Road / Leanne Court intersection be completed prior to sealing of the 931st lot within Everleigh, i.e. prior to the Teviot Road / Everleigh Drive / Pub Lane intersection reaching its theoretical capacity.

5. FORECAST ULTIMATE (2051) TRAFFIC

Ultimate traffic on Everleigh's connector street network was forecast using the Premise traffic model. The modelled residential lot yield and distribution is as shown by Figure 4 extracted from Premise Drawing Number MIRSG-B-TD000-revB. Based on advice from Mirvac:

- The school (P2.11) is expected to have an ultimate enrolment of 1,400 students; and
- The retail precinct (P13), also referred to as the Neighbourhood Centre, is expected to have an ultimate gross leasable area (GLA) of 7,600m².

Figure 5 shows estimated ultimate (2051) daily traffic volumes on Everleigh's connector street network

Figure 4 – Site layout and lot count (extracted from MIRSGB-TD000-revA)

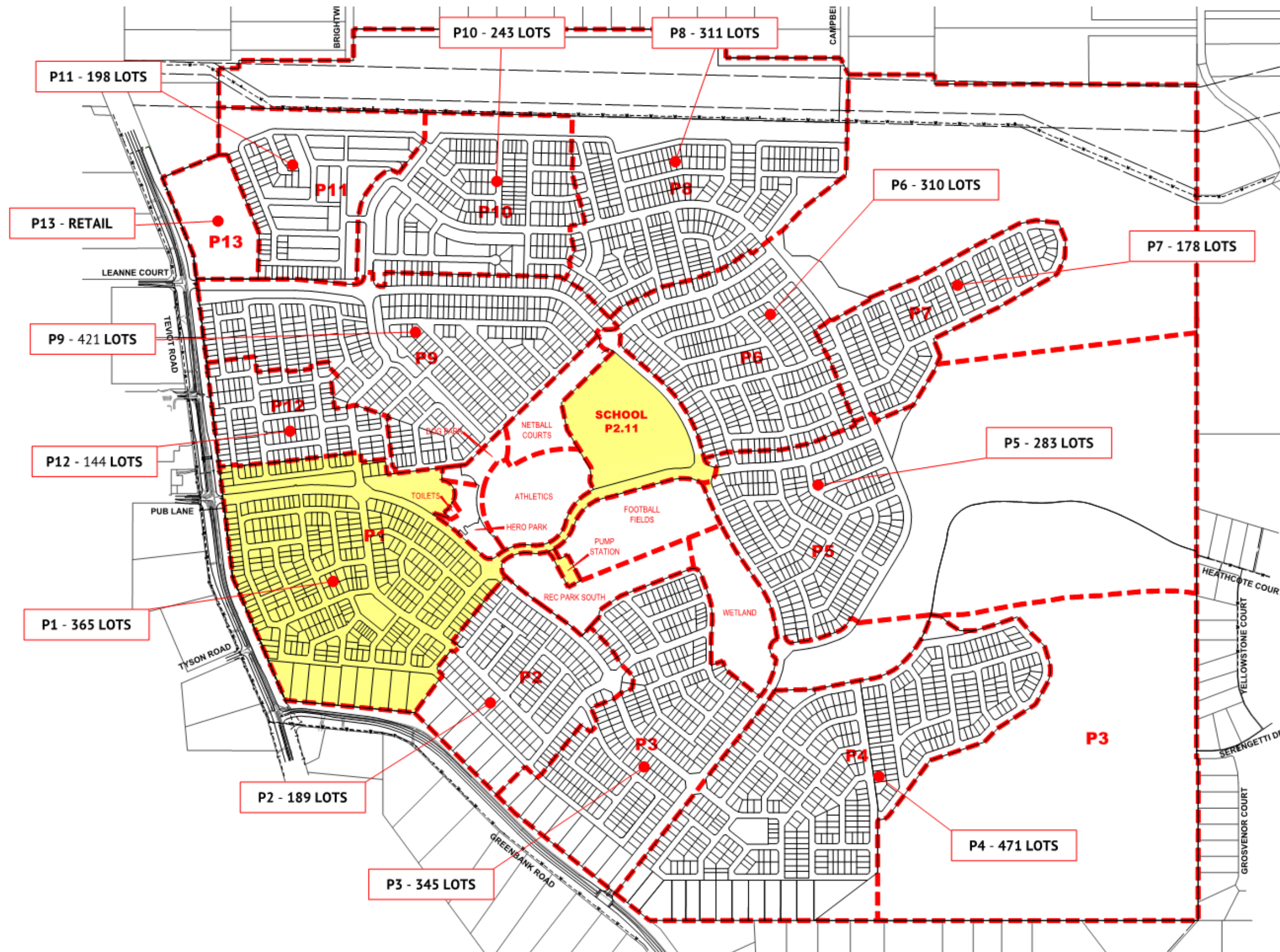
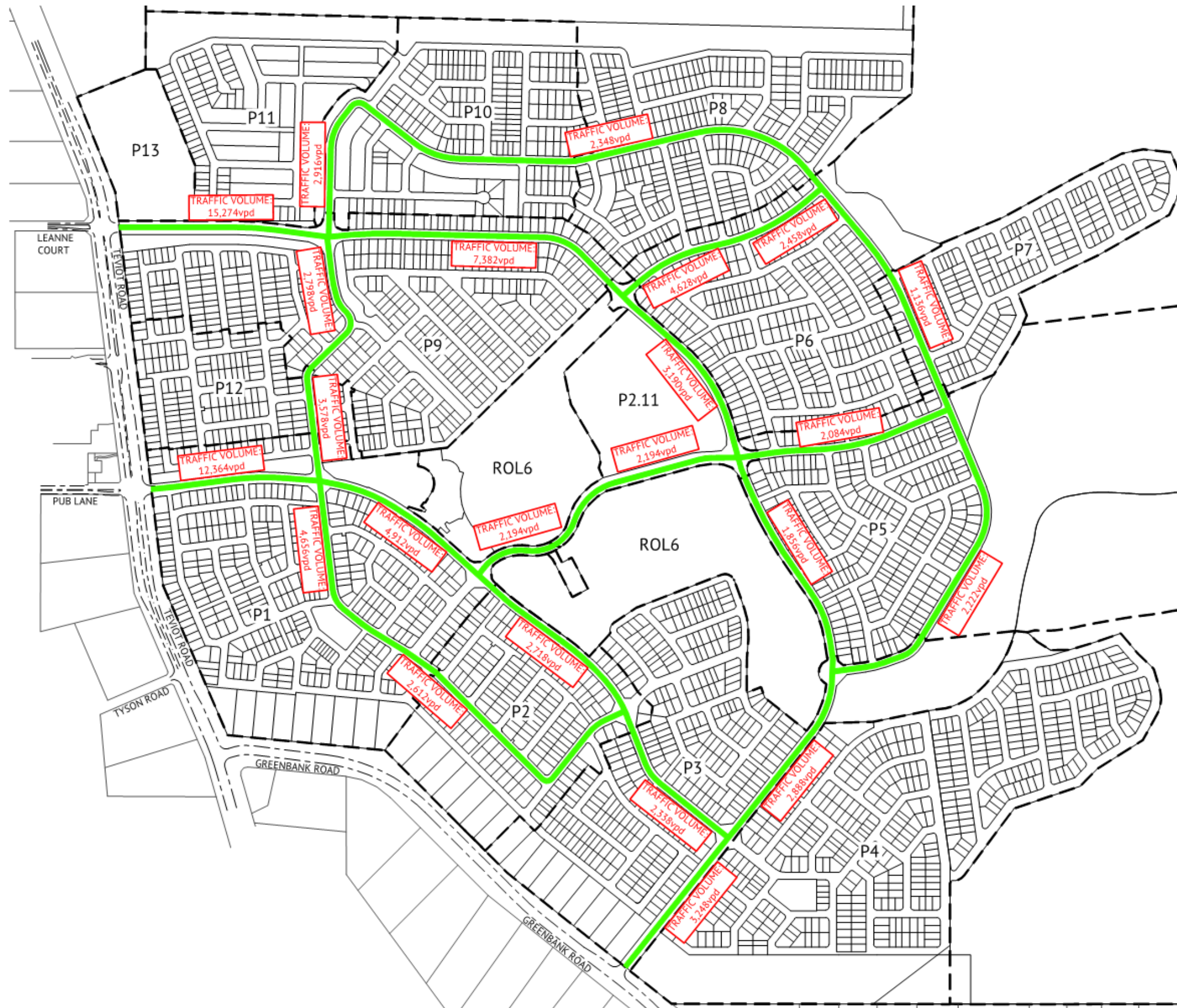


Figure 5 – Everleigh year 2051 traffic volumes



6. RESPONSE TO ECONOMIC DEVELOPMENT QUEENSLAND

6.1 Intersection Spacing

EDQ has queried the distance between the proposed roundabouts on Anderson Drive at Kessels Boulevard and the eastern end of Precinct 9 and have suggested an additional access point be provided for Precinct 9 between these two (2) roundabouts.

In response to EDQ's query, it should be noted that while vehicle connectivity between Anderson Drive and Precinct 9 is not provided to the east of Kessels Boulevard, connectivity for active transport modes is provided at three (3) points. In the context of the overall street and path network, the proposed active transport links provide direct access to local facilities and promote the use of active transport modes for access to local facilities such as parks and schools, and public transport. This type of network arrangement, sometimes referred to as a fused grid or filtered permeability, provides efficient external vehicle connectivity (to / from Teviot Road) with internal connectivity being more efficient for active transport than private vehicles. Research has found that this type of network increases walking, reduces travel by vehicles and results in better health outcomes than conventional urban street networks where private vehicles are given a similar level of access to active transport (<https://www.vtpi.org/tdm/tdm116.htm>).

6.2 Precinct 9 Access

EDQ have also queried traffic access / egress to / from Precinct 9 lots to the east of Kessels Boulevard. No guidance is provided in relation to these issues by PDA Guideline No. 06. Therefore, the following response has been prepared in accordance with Institute of Public Works Engineering Australasia, Queensland (IPWEAQ) guidelines including "Queensland Streets" and "Street Design Manual: Walkable Neighbourhoods".

Approximately 220 residential lots are proposed within Precinct 9 to the east of Kessels Boulevard. These lots will be accessed by two (2) intersections on Kessels Boulevard with one (1) approved for construction within Precinct 12 and the other proposed for construction within Precinct 9. Kessels Boulevard itself provides through connectivity between Everleigh Drive and Anderson Drive. Therefore, a single road closure or accident will not prohibit vehicle access to Precinct 9 lots.

The proposed access street layout servicing Precinct 9 lots utilises straight street alignments which provide legibility and improve wayfinding for visitors to the area. Travel distances between residential lots and the Kessels Boulevard neighbourhood connector are short. In the worst case, the residential lot is less than 700m from Kessels Boulevard which corresponds to approximately 60sec of travel time at 40km/h.

The above strategies comply with the recommendations of IPWEAQ guidelines.



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