Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

Costin Roe Consulting Pty Ltd
ABN 50 003 696 446
Level 1, 8 Windmill Street, Walsh Bay
PO Box N419, Sydney, NSW, 1220, Australia
tel: (02) 9251 7699 fax: (02) 9241 3731
email: mail@costinroe.com.au
web: www.costinroe.com.au

21 January 2022

Frasers Property Australia & Altis Property Partners
**Attention: Mr Paul Solomon**
PO Box 3307
RHODES NSW 2138

Dear Sir

**Re: 657 - 769 Mamre Road, Kemps Creek (SSD 9522 MOD 2)**
**NSW Planning Industry & Environment – Letter dated 24 December 2021**

Further to your request we are pleased to provide our response to the items raised by NSW Planning Industry & Environment (DPIE), in their information request letter dated 24 December 2021.

We provide the following responses to Items in the letter noted above.

| ***No.*** | ***Item and Response*** |
|---|---|
| ***1)*** | *The proposed amendments to the road reserve, as summarised in the table titled 'Estate Road Cross Section per SSD 9522' on page 14 of the Modification Report dated 19 October 2021, have not been modified in the civil drawings. Drawing CO13362.00 – DA 04 Issue B does not depict the modified road widths (Section 2). This error is carried into other civil drawings (CO13362.00 – DA08 Issue C) used in the swept path analysis. These errors need to be addressed and the swept path analysis reassessed with the agreed road widths.*<br><br><u>Response</u><br><br>We provide updated letter and sectional drawing to confirm the modelled swept paths and agreed road widths.<br><br>We note the road widths assessed are consistent with the Final Mamre Road Precinct DCP, noting Access Road 2 depicts a modified Industrial road with an additional 1.2m wide central median as requested by Penrith City Council.<br><br>The report has been revised to confirm the road dimension for the Industrial Road Type 1, and cul-de-sac cul-se-sac as per the dimensions reflected on Section 2 & 3 of drawing *CO13362.00-DA04 Issue C*.<br><br>The road cross section and road layout assessed (including the turning paths on drawing *CO133621.00-DA08 Issue C*) are consistent with the noted amended Table 2 as agreed with Council and the Final Mamre DCP. |

This letter is provided by Costin Roe Consulting Pty Ltd. Please contact the undersigned if clarification of any of the above items are required.

Yours faithfully,
**COSTIN ROE CONSULTING PTY LTD**

**MARK WILSON** MIEAust CPEng NER
Director

Encl. DPIE letter dated 24 December 2021
Report **Co13362.00-32e.ltr**

**ENCLOSURE 1**
**DPIE Letter dated 24 December 2021**

Planning, Industry & Environment

Mr Paul Solomon
Frasers Property Australia
Level 2, 1C Homebush Bay Drive
RHODES NSW 2138

24/12/2021

Dear Mr Solomon

**Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (SSD-9522-Mod-2)**
**Request for additional information**

I refer to the Modification Report for the Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (SSD-9522-Mod-2).

The Chief Engineer has carried out a review of the documents provided in support of the modification application. The comments provided by the Chief Engineer dated 13 August 2021 are considered addressed. However, the following comments require additional information:

- The proposed amendments to the road reserve, as summarised in the table titled 'Estate Road Cross Section per SSD 9522' on page 14 of the Modification Report dated 19 October 2021, have not been modified in the civil drawings. Drawing CO13362.00 – DA 04 Issue B does not depict the modified road widths (Section 2). This error is carried into other civil drawings (CO13362.00 – DA08 Issue C) used in the swept path analysis. These errors need to be addressed and the swept path analysis reassessed with the agreed road widths.

Please note, the Department is awaiting further advice from TfNSW which will be provided to you once received.

You are requested to provide the information by 28 February 2022. If you cannot meet this deadline, provide an alternative timeframe for providing this information.

If you have any questions, please contact Bianca Thornton on (02) 8217 2040 or via email at bianca.thornton@planning.nsw.gov.au.

Yours sincerely

William Hodgkinson
Team Leader
Industry Assessments

**ENCLOSURE 2**
**Costin Roe Consulting Report Co13362.00-32e.ltr.**

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

Costin Roe Consulting Pty Ltd
ABN 50 003 696 446
Level 1, 8 Windmill Street, Walsh Bay
PO Box N419, Sydney, NSW, 1220, Australia
tel: (02) 9251 7699 fax: (02) 9241 3731
email: mail@costinroe.com.au
web: www.costinroe.com.au

24 January 2022

Frasers Property Australia & Altis Property Partners
**Attention: Mr Paul Solomon**
PO Box 3307
RHODES NSW 2138

Dear Sir

**Re: 657 - 769 Mamre Road, Kemps Creek**
**"The Yards" - SSD 9522 Mod 2**

*Introduction*

Further to your request we are pleased to provide this letter in relation to a proposed modification (Mod2) to SSD 9522 as approved 21 December 2020. The proposed Mod2 Application is for a change to the approved road cross section including the road reserve, verge and road carriageway arrangements, from those included in the current approval.

This letter summaries the changes associated with the road cross sections, and confirms consistency between the approved civil engineering design and stormwater management plan for the estate.

We enclose drawings **Co13362.00-DA01** to **DA10** which show the revised road widths, typical cross sections and key intersection arrangements.

The change in road arrangements comes as a result of precinct traffic modelling and confirmation of the road hierarchy by the DPIE for the whole of the Mamre Road Precinct.

The Master Plan Layout is shown on **Figure 1**.

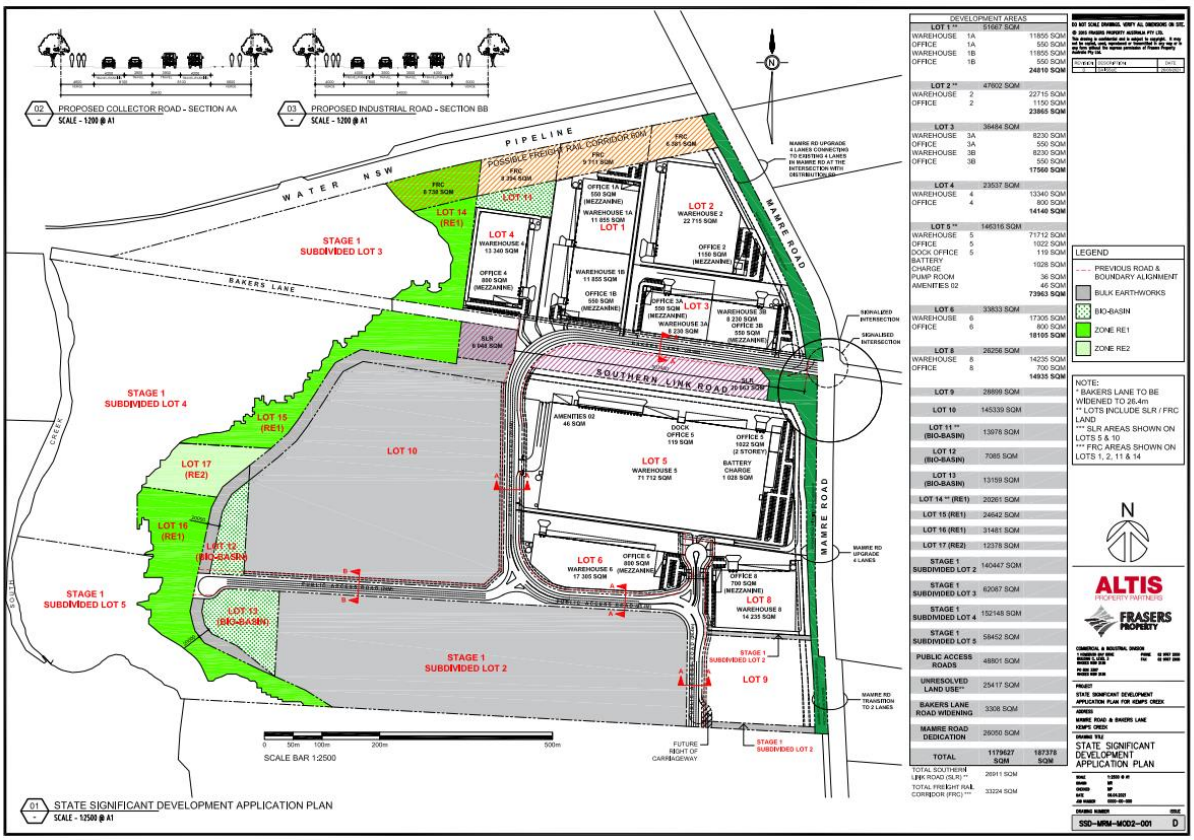



**Figure 1. Masterplan Layout**

*Approved and Proposed Road Cross Sections*

The current approved road cross section is based on a Collector Road with 5m central median as per Figure 14 of the Mamre Road Precinct DCP. The development was approved in December 2020 with the larger road cross section, based on the DCP arrangement, as the traffic modelling was not yet completed and as such the road hierarchy was not fully defined at the time of the approval.

Now that the traffic modelling and road hierarchy is better understood, Frasers Property and Altis Property Partners propose to submit a modification for revised roadway arrangements.

**Table 1** shows the approved road cross section arrangement which was adopted for all roads in the estate.

**Table 1. Estate Road Cross Section per SSD 9522**

| Road Type | Parking Lane Provision | Dedicated Travel Lanes | Verge Width (Footpath Pedestrian) | Total Road Reserve | Number of lanes | 1.5m Footpath or 2.5m Shared Path |
|---|---|---|---|---|---|---|
| All Roads | NA | 7.0m<br>(2 x 3.5m)<br>8.0m<br>(2 x 4.0m)<br>+5.0m Median | 4.6m<br>5.6m | 30.6m | 4 travel/<br>0 parking lane | 1.5m<br>2.5m |

**Table 2** and **Figures 2** & **3** show the proposed road cross sections included in the SSD9522 Mod2. It is noted that provision for a 0.8m wide median is included in the distributor road section however not proposed for construction.

A 1.2m wide median is proposed to be installed within the industrial cul-de-sac between Lots 6 and 8 to ensure left in and left out movements for all property entry and exits within the cul-de-sac. This arrangement has been consulted with Council and DPIE and agreed between the parties.

**Table 2. Estate Road Cross Section – Proposed Mod2**

| Road Type & Traffic Volume | Parking Lane Provision | Dedicated Travel Lanes | Verge Width (Footpath Pedestrian) | Total Road Reserve | Number of lanes | 1.5m Footpath or 2.5m Shared Path |
|---|---|---|---|---|---|---|
| **North-South** Distributor Road | 8.4m<br>(2 x 4.20m) | 7.0m<br>(2 x 3.5m)<br>+ provision for a future 0.8m Median | 5.6m &<br>4.6m | 26.4m | 2 travel/ 2 parking lane | 2.5m &<br>1.5m |
| Industrial Road | 8.0m<br>(2 x 4.00m) | 7.0m<br>(2 x 3.5m) | 5.0m &<br>4.0m | 24.0m | 2 travel/ 2 parking lane | 2.5m &<br>1.5m |
| Industrial cul-de-sac | 8.0m<br>(2 x 4.0m) | 7.0m<br>(2 x 3.5m)<br>+ 1.2m Median | 5.0m &<br>4.0m | 25.2m | 2 travel/ 2 parking lane | 2.5m &<br>1.5m |

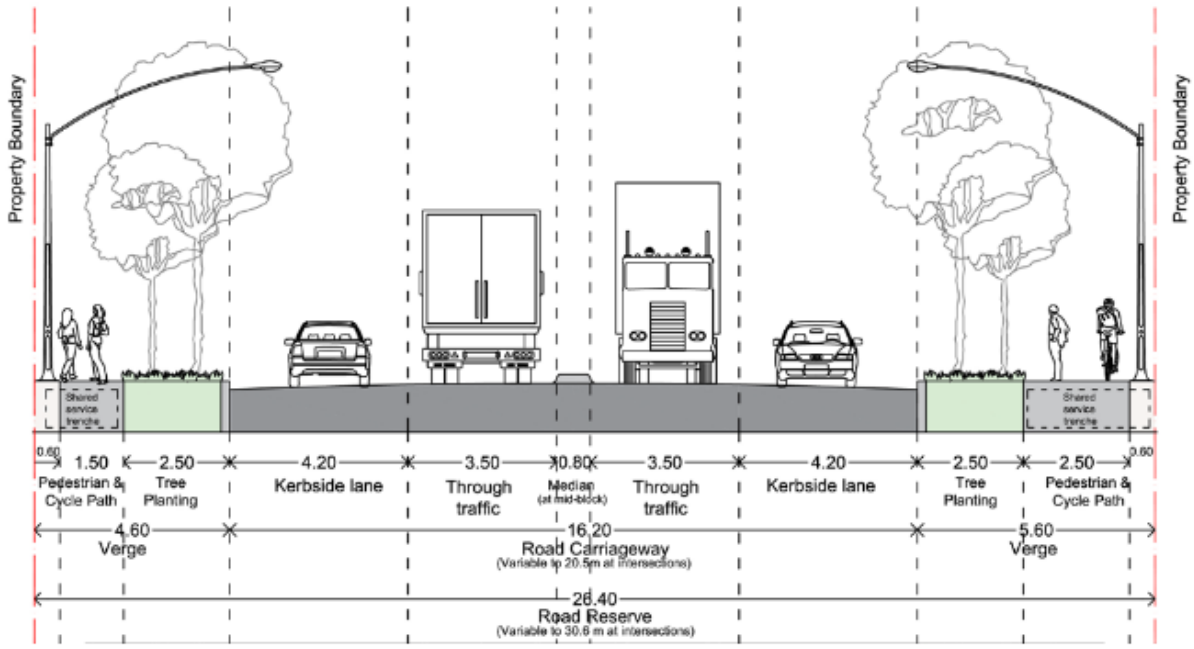



**Figure 2. Distibutor Road Cross Section-Mamre Road DCP**

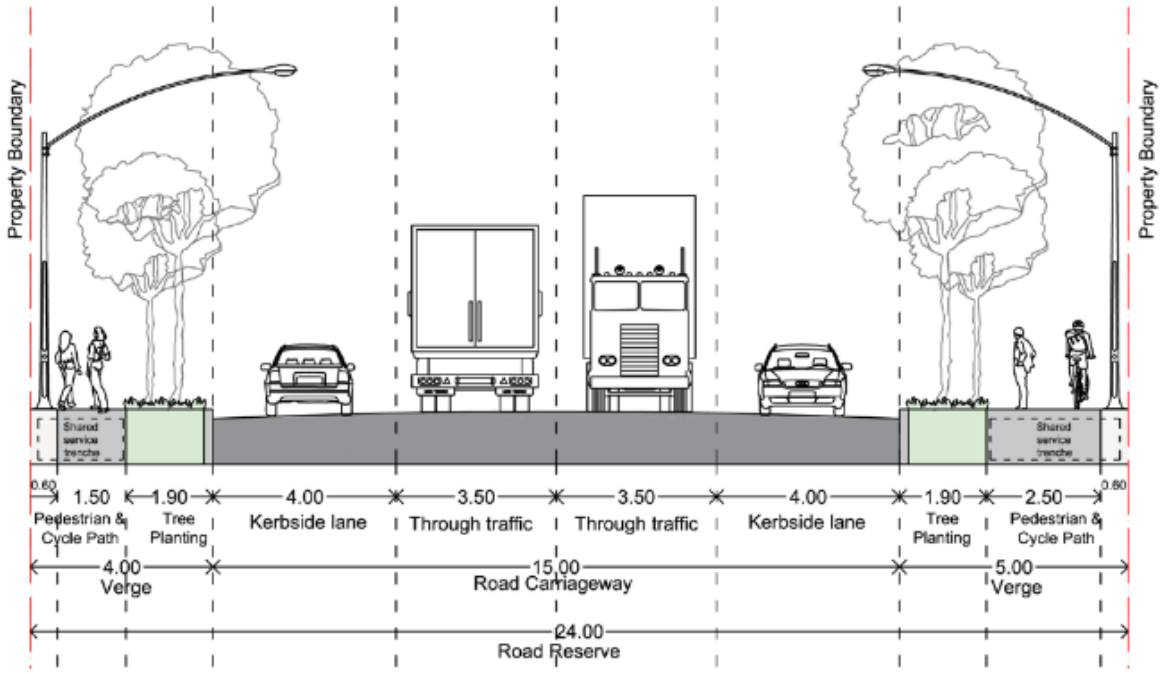



**Figure 3. Industrial Road Cross Section- Mamre Road DCP**

Refer drawings **Co13362.00-DA02, DA03, DA04, DA07 & DA08** for further details of the roadway arrangement and intersection design layouts.

*Soil and Water*

The Mod2 application proposes a change to the road cross section only. As such there are no material changes required or proposed to the approved estate civil engineering design, earthworks designs, stormwater management system, or stormwater discharge arrangements from the overall project, as a result of the modification.

*Conclusion*

The overall estate development area of 89 Ha, and all associated engineering design consideraitons such as percentage impervious coverage, filling and levels remain consistent between the two layouts of the oringal approval and this modification application. As such there will be no change to the assessed management systems and/or discharge arrangements, including on-site detention, water quality and stream health measures.

The SSD 9522 approved stormwater management system incorporates water quantity and quality management systems for the fully developed estate, consistent with accepted engineering practices. The approved system has been assessed as achieving acceptable stormwater discharge flow rates and water quality outcomes and the modification application does not change this result.

Please contact the undersigned if clarification of any of the above items are required.

Yours faithfully,
**COSTIN ROE CONSULTING PTY LTD**

**MARK WILSON** MIEAust CPEng NER
Director

**ENCLOSURE 1**
**Drawings CO13620.00-DA01 to DA10**

# SSD 9522 MOD 2

# 657-708 MAMRE ROAD

# KEMPS CREEK, NSW

## DRAWING LIST:

| DRAWING NO. | DRAWING TITLE |
|---|---|
| C013362.00-DA 01 | DRAWING LIST & GENERAL NOTES |
| C013362.00-DA 02 | CIVIL WORKS PLAN |
| C013362.00-DA 03 | ROAD LONG SECTIONS AND TYPICAL CROSS SECTIONS-SHEET 1 |
| C013362.00-DA 04 | ROAD LONG SECTIONS AND TYPICAL CROSS SECTIONS-SHEET 2 |
| C013362.00-DA 05 | ROADWORKS DETAILS |
| C013362.00-DA 06 | PAVEMENT PLAN |
| C013362.00-DA 07 | INTERSECTION 1 PLAN |
| C013362.00-DA 08 | INTERSECTION 2 PLAN |
| C013362.00-DA 09 | TURNING PATHS PLAN |
| C013362.00-DA 10 | FUNCTIONAL LAYOUT PLAN-LOT 5 |

## GENERAL NOTES:

G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

G2 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.

G3 ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT.
REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.

G4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.

G5 UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.

G6 ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.

## EROSION CONTROL NOTES

REFER TO EARLY WORKS DRAWINGS BY COSTIN ROE CONSULTING FOR ESTATE EROSION AND SEDIMENT CONTROL MEASURES,

## STORMWATER DRAINAGE NOTES:

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3:2003 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI STORM EVENT.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON CIVIL WORKS PLANS PLANS.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP TO AND INCLUDING Ø300 TO BE uPVC GRADE SN8 UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE F'c 32 MPA. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
10. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS OR OTHER SUITABLE TAMPING DETAILS.
12. CONCRETE PIPES UNDER, OR WITHIN THE ZONE OF INFLUENCE OF PAVED AREAS SHALL BE LAID USING HS2 TYPE SUPPORT, AS A MINIMUM, IN ACCORDANCE WITH AS 3725. AGGREGATE BACKFILL SHALL NOT BE USED FOR PIPE BEDDING AND OR HAUNCH/SIDE SUPPORT.
13. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
14. ALL SUBSOIL DRAINAGE LINES SHALL BE Ø100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT/ LANDSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN.
15. ALL PIPE GRADES 1 IN 100 MINIMUM UNO.
16. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
17. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
18. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O.
19. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
20. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
21. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.

## ELECTRONIC INFORMATION NOTES:

1. THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
2. THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
3. THE CONTRACTOR IS REQUIRED TO HIGHLIGHT ANY DISCREPANCIES BETWEEN THE DIGITAL TERRAIN MODEL AND INFORMATION PROVIDED IN THE CONTRACT AND/OR DRAWINGS AND IS REQUIRED TO SEEK CLARIFICATION FROM THE SUPERINTENDENT.
4. THE ENGINEER WILL NOT BE LIABLE OR RESPONSIBLE FOR THE POSSIBLE ON-GOING NEED TO UPDATE THE DIGITAL TERRAIN MODEL, SHOULD THERE BE ANY AMENDMENTS OR CHANGES TO THE DRAWINGS OR CONTRACT INITIATED BY THE CONTRACTOR.

## SURVEY NOTE:

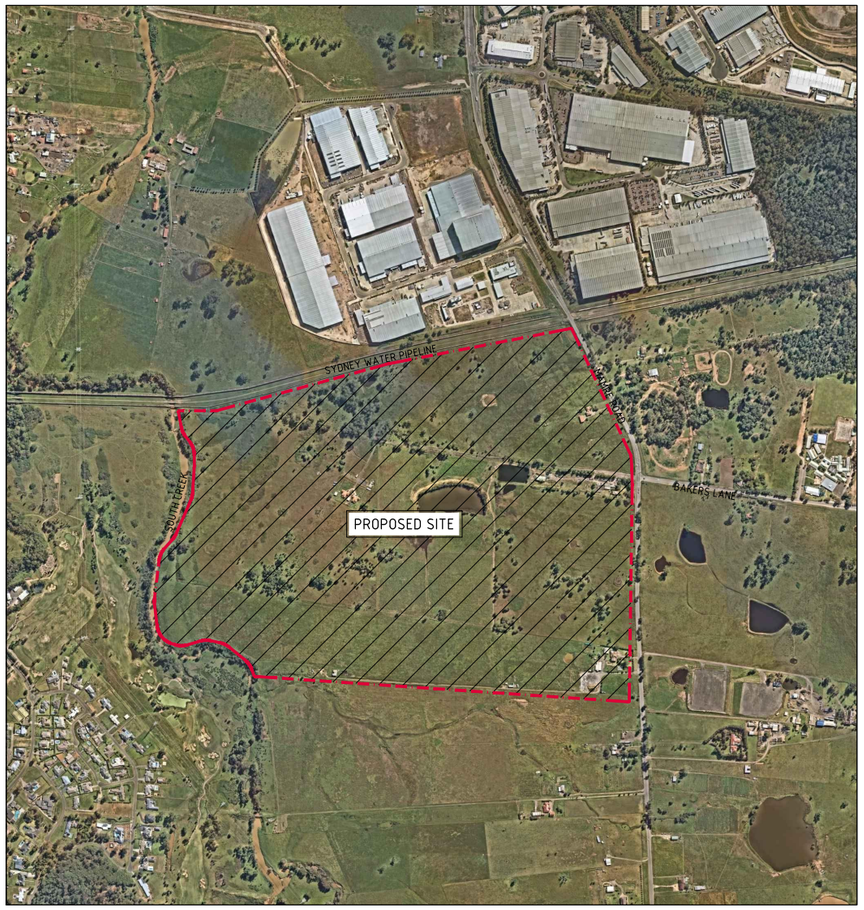
COORDINATES AND DESIGN DRAWINGS ARE BASED ON GROUND SURVEY COORDINATE SYSTEM MGA2020 (ZONE 56). TO CONVERT TO GRID (ALLOWING FOR THE GEODESIC CURVATURE OF THE EARTH) PLEASE NOTE THE ORIGIN PM33568 (E:296645.403 N:6253924.312) AND SCALE FACTOR 1.00109.
REFER TO BOXALL SURVEY 10129-005-TOPO REV B FOR DETAILS.

## CROSS REFERENCE NOTES :

PLANS TO BE READ IN CONJUNCTION WITH CEMP & ASSOCIATED SUB PLANS INLUDING THE CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN (CSWMP), CONTAMINATION MANAGEMENT PLAN & CONSTRUCTION ACCESS MANAGEMENT PLAN.

## FINISHED LEVELS PLAN NOTES:

1. LEVELS DATUM IS A.H.D.
2. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
3. THE MAJOR CONTOUR INTERVAL IS 0.5m
4. THE MINOR CONTOUR INTERVAL IS 0.1m.
5. MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
6. MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) IN CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
7. MAXIMUM RAMP GRADES ARE TO BE 1:12 (8.3%) U.N.O. ON PLAN
8. PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGES GRADE EXCEDE 1:20 (5%).
9. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
10. ALL BATTER SLOPE WITH GRADES AT OR EXCEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
11. ALL ACCESS ROADS TO HAVE A CROSSFALL OF 3% AS INDICATED ON PLAN.
12. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BOUNDARY AT 2.5% NOMINAL GRADE.
13. ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS.




LOCALITY PLAN
NOT TO SCALE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | C |
| ISSUED FOR DEVELOPMENT APPLICATION | 05.07.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA01 |


Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 9251-7699 Fax: (02) 9241-3731
email: mail@costinroe.com.au

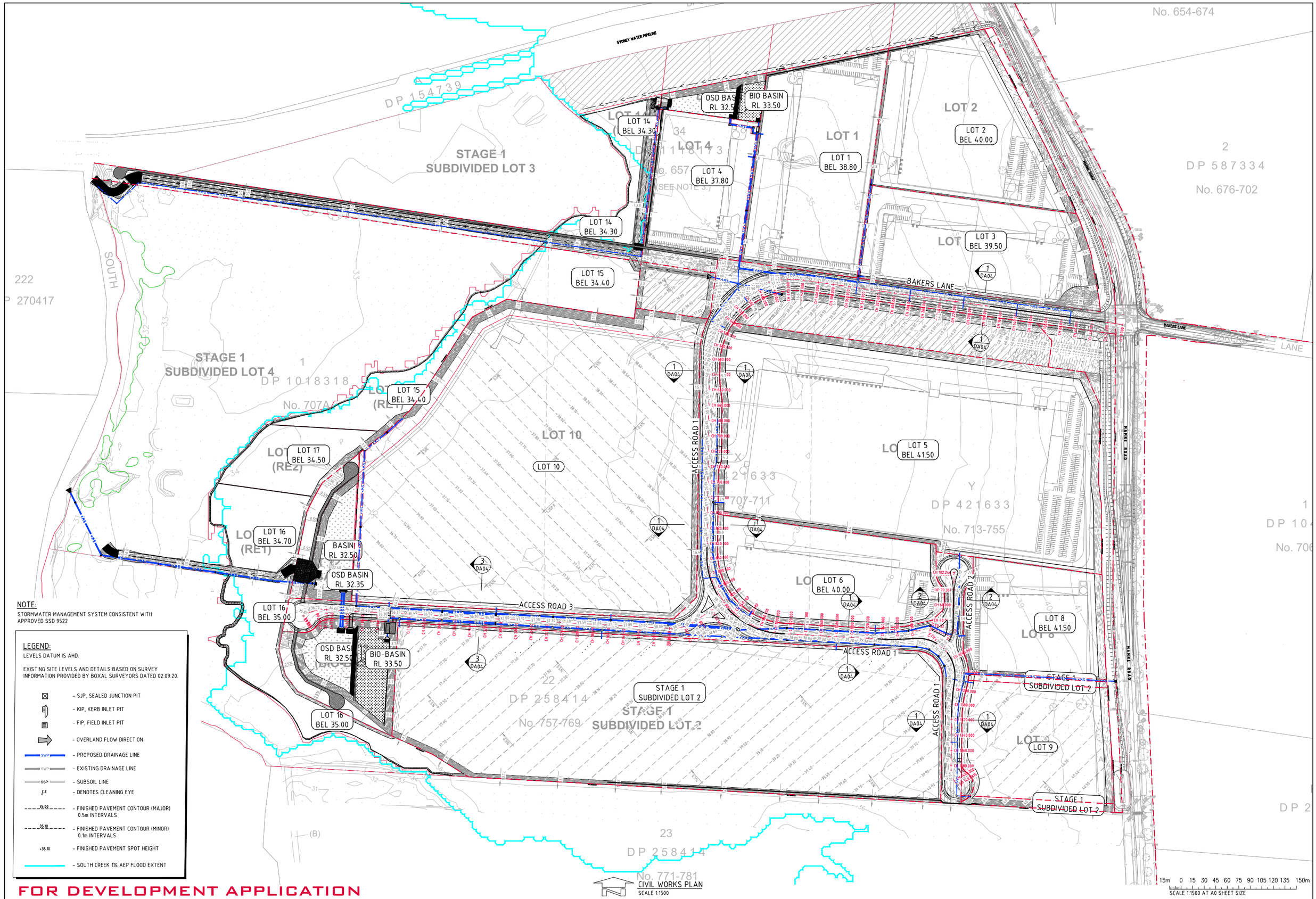

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: DRAWING LIST AND GENERAL NOTES

DRAWING No: C013362.00-DA01

ISSUE: C




NOTE:

STORMWATER MANAGEMENT SYSTEM CONSISTENT WITH APPROVED SSD 9522

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY BOXAL SURVEYORS DATED 02.09.20.

- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- FIP, FIELD INLET PIT
- OVERLAND FLOW DIRECTION
- SW> PROPOSED DRAINAGE LINE
- SW> EXISTING DRAINAGE LINE
- SS> SUBSOIL LINE
- DENOTES CLEANING EYE
- 35.00 FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 35.10 FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- +35.10 FINISHED PAVEMENT SPOT HEIGHT
- SOUTH CREEK 1% AEP FLOOD EXTENT

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | D |
| ISSUED FOR DEVELOPMENT APPLICATION | 06.07.21 | C |
| ISSUED FOR DEVELOPMENT APPLICATION | 05.07.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA02 |

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 8251-7699 Fax: (02) 8241-3721
email: mail@costinroe.com.au ©

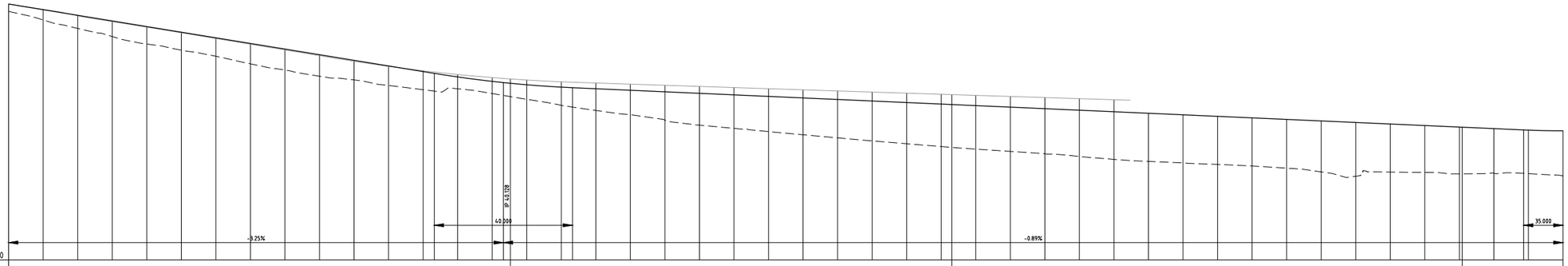
Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: CIVIL WORKS PLAN

DRAWING No: C013362.00- DA02

ISSUE: D



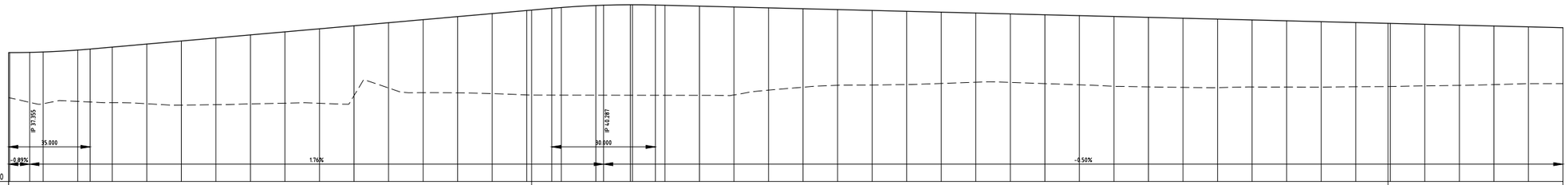

DATUM 30.000

| HORIZONTAL GEOMETRY | 145.248 277°50'52" | 127.811 277°50'52" | 147.781 278°00'00" | R106.350 A180.573 |
|---|---|---|---|---|

| CHAINAGE | CUT/FILL DEPTH | FINISHED SURFACE LEVEL | EXISTING SURFACE LEVEL |
|---|---|---|---|
| 0.000 | 0.425 | 44.784 | 44.359 |
| 10.000 | 0.595 | 44.459 | 43.864 |
| 20.000 | 0.759 | 44.134 | 43.375 |
| 30.000 | 0.901 | 43.809 | 42.908 |
| 40.000 | 1.009 | 43.484 | 42.475 |
| 50.000 | 1.043 | 43.159 | 42.119 |
| 60.000 | 1.066 | 42.834 | 41.768 |
| 70.000 | 1.179 | 42.509 | 41.330 |
| 80.000 | 1.212 | 42.184 | 40.971 |
| 90.000 | 1.245 | 41.859 | 40.614 |
| 100.000 | 1.133 | 41.533 | 40.400 |
| 110.000 | 1.129 | 41.208 | 40.080 |
| 120.000 | 1.048 | 40.883 | 39.835 |
| 123.236 | 1.023 | 40.778 | 39.755 |
| 130.000 | 0.684 | 40.572 | 39.888 |
| 140.000 | 0.702 | 40.316 | 39.614 |
| 143.236 | 0.714 | 40.264 | 39.55 |
| 145.248 | 0.769 | 40.206 | 39.44 |
| 150.000 | 0.839 | 40.103 | 39.381 |
| 160.000 | 1.048 | 39.982 | 38.934 |
| 163.236 | 1.119 | 39.951 | 38.831 |
| 170.000 | 1.254 | 39.891 | 38.636 |
| 180.000 | 1.413 | 39.802 | 38.389 |
| 190.000 | 1.643 | 39.713 | 38.073 |
| 200.000 | 1.841 | 39.625 | 37.784 |
| 210.000 | 1.937 | 39.536 | 37.599 |
| 220.000 | 2.033 | 39.448 | 37.415 |
| 230.000 | 2.127 | 39.359 | 37.231 |
| 240.000 | 2.219 | 39.270 | 37.052 |
| 250.000 | 2.306 | 39.182 | 36.876 |
| 260.000 | 2.381 | 39.093 | 36.712 |
| 270.000 | 2.455 | 39.004 | 36.550 |
| 273.058 | 2.477 | 38.977 | 36.50 |
| 280.000 | 2.514 | 38.916 | 36.402 |
| 290.000 | 2.558 | 38.827 | 36.270 |
| 300.000 | 2.603 | 38.739 | 36.135 |
| 310.000 | 2.679 | 38.650 | 35.971 |
| 320.000 | 2.756 | 38.561 | 35.805 |
| 330.000 | 2.782 | 38.473 | 35.691 |
| 340.000 | 2.782 | 38.384 | 35.602 |
| 350.000 | 2.777 | 38.295 | 35.518 |
| 360.000 | 2.784 | 38.207 | 35.423 |
| 370.000 | 2.816 | 38.118 | 35.302 |
| 380.000 | 2.944 | 38.030 | 35.086 |
| 390.000 | 3.108 | 37.941 | 34.833 |
| 400.000 | 2.778 | 37.852 | 35.075 |
| 410.000 | 2.709 | 37.764 | 35.054 |
| 420.000 | 2.706 | 37.675 | 34.969 |
| 420.839 | 2.698 | 37.668 | 34.97 |
| 430.000 | 2.586 | 37.586 | 35.000 |
| 438.609 | 2.510 | 37.510 | 35.000 |
| 440.000 | 2.595 | 37.499 | 34.984 |
| 450.000 | 2.606 | 37.458 | 34.852 |

LONGITUDINAL SECTION - CL BAKERS LANE & ACCESS ROAD 1

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100



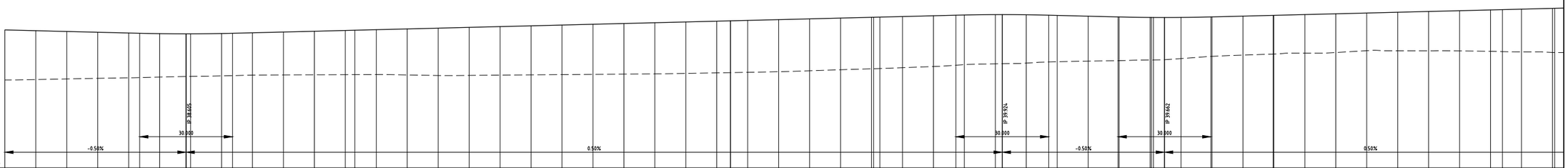

DATUM 30.000

| HORIZONTAL GEOMETRY | R106.350 A180.573 | 247.944 180°42'59" | R107.100 A163.704 |
|---|---|---|---|

| CHAINAGE | CUT/FILL DEPTH | FINISHED SURFACE LEVEL | EXISTING SURFACE LEVEL |
|---|---|---|---|
| 450.000 | 2.606 | 37.458 | 34.852 |
| 456.309 | 2.620 | 37.458 | 34.839 |
| 456.909 | 2.894 | 37.411 | 34.577 |
| 460.000 | 2.995 | 37.414 | 34.499 |
| 470.000 | 3.455 | 37.605 | 34.634 |
| 473.669 | 3.665 | 37.664 | 34.599 |
| 480.000 | 3.817 | 37.777 | 34.559 |
| 490.000 | 3.455 | 37.953 | 34.498 |
| 500.000 | 3.711 | 38.130 | 34.418 |
| 510.000 | 3.863 | 38.306 | 34.443 |
| 520.000 | 3.994 | 38.483 | 34.489 |
| 530.000 | 4.130 | 38.659 | 34.529 |
| 540.000 | 4.312 | 38.836 | 34.524 |
| 550.000 | 4.044 | 39.012 | 34.968 |
| 560.000 | 3.777 | 39.189 | 35.411 |
| 570.000 | 4.226 | 39.365 | 35.139 |
| 580.000 | 4.413 | 39.542 | 35.129 |
| 590.000 | 4.693 | 39.718 | 35.085 |
| 600.000 | 4.880 | 39.895 | 35.006 |
| 601.412 | 4.912 | 39.920 | 35.00 |
| 607.232 | 5.026 | 40.022 | 34.996 |
| 610.000 | 5.073 | 40.068 | 34.995 |
| 620.000 | 5.193 | 40.186 | 34.993 |
| 627.232 | 5.270 | 40.202 | 34.992 |
| 630.000 | 5.238 | 40.228 | 34.991 |
| 630.669 | 5.238 | 40.229 | 34.991 |
| 637.232 | 5.223 | 40.212 | 34.989 |
| 640.000 | 5.210 | 40.198 | 34.988 |
| 650.000 | 5.162 | 40.148 | 34.986 |
| 660.000 | 5.093 | 40.098 | 35.006 |
| 670.000 | 4.962 | 40.048 | 35.086 |
| 680.000 | 4.843 | 39.998 | 35.155 |
| 690.000 | 4.383 | 39.948 | 35.565 |
| 700.000 | 4.316 | 39.898 | 35.582 |
| 710.000 | 4.243 | 39.848 | 35.608 |
| 720.000 | 4.126 | 39.798 | 35.672 |
| 730.000 | 4.066 | 39.748 | 35.742 |
| 740.000 | 3.966 | 39.698 | 35.733 |
| 750.000 | 3.985 | 39.648 | 35.663 |
| 760.000 | 4.004 | 39.598 | 35.594 |
| 770.000 | 4.041 | 39.548 | 35.507 |
| 780.000 | 4.025 | 39.498 | 35.473 |
| 790.000 | 4.093 | 39.448 | 35.445 |
| 800.000 | 3.966 | 39.398 | 35.432 |
| 810.000 | 3.879 | 39.348 | 35.469 |
| 820.000 | 3.893 | 39.298 | 35.455 |
| 830.000 | 3.980 | 39.248 | 35.468 |
| 840.000 | 3.715 | 39.198 | 35.483 |
| 849.356 | 3.660 | 39.151 | 35.49 |
| 850.000 | 3.654 | 39.148 | 35.494 |
| 860.000 | 3.566 | 39.098 | 35.532 |
| 870.000 | 3.488 | 39.048 | 35.560 |
| 880.000 | 3.393 | 38.998 | 35.605 |
| 890.000 | 3.286 | 38.948 | 35.662 |
| 900.000 | 3.233 | 38.898 | 35.665 |

LONGITUDINAL SECTION - CL BAKERS LANE & ACCESS ROAD 1

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100




DATUM 30.000

| HORIZONTAL GEOMETRY | R107.100 A163.704 | 121.336 93°08'20" | 0.080 93°08'20" | R349.500 A46.202 | 2.027 85°33'53" | R48.300 A87.695 | 0.683 189°15'32" | R250.000 A38.668 | 74.099 180°43'48" | R30.000 A16.873 | 7 4.8° |
|---|---|---|---|---|---|---|---|---|---|---|---|

| CHAINAGE | CUT/FILL DEPTH | FINISHED SURFACE LEVEL | EXISTING SURFACE LEVEL |
|---|---|---|---|
| 900.000 | 3.233 | 38.898 | 35.665 |
| 910.000 | 3.057 | 38.848 | 35.691 |
| 920.000 | 3.066 | 38.798 | 35.732 |
| 930.000 | 2.976 | 38.748 | 35.772 |
| 940.000 | 2.892 | 38.698 | 35.806 |
| 942.556 | 2.861 | 38.685 | 35.820 |
| 950.000 | 2.802 | 38.653 | 35.853 |
| 958.556 | 2.752 | 38.643 | 35.891 |
| 958.556 | 2.752 | 38.643 | 35.891 |
| 960.000 | 2.745 | 38.643 | 35.897 |
| 970.000 | 2.734 | 38.665 | 35.930 |
| 973.556 | 2.734 | 38.680 | 35.947 |
| 980.000 | 2.731 | 38.713 | 35.981 |
| 990.000 | 2.770 | 38.763 | 35.993 |
| 1000.000 | 2.812 | 38.813 | 36.001 |
| 1010.000 | 2.855 | 38.863 | 36.008 |
| 1013.060 | 2.868 | 38.878 | 36.01 |
| 1020.000 | 2.896 | 38.913 | 36.017 |
| 1030.000 | 2.972 | 38.963 | 35.991 |
| 1040.000 | 3.058 | 39.013 | 35.955 |
| 1050.000 | 3.101 | 39.063 | 35.961 |
| 1060.000 | 3.132 | 39.113 | 35.981 |
| 1070.000 | 3.166 | 39.163 | 35.997 |
| 1080.000 | 3.200 | 39.213 | 36.012 |
| 1090.000 | 3.234 | 39.263 | 36.028 |
| 1100.000 | 3.269 | 39.313 | 36.044 |
| 1110.000 | 3.301 | 39.363 | 36.062 |
| 1120.000 | 3.324 | 39.413 | 36.089 |
| 1130.000 | 3.338 | 39.463 | 36.124 |
| 1134.396 | 3.345 | 39.485 | 36.14 |
| 1134.410 | 3.345 | 39.485 | 36.14 |
| 1140.000 | 3.333 | 39.513 | 36.168 |
| 1150.000 | 3.361 | 39.563 | 36.201 |
| 1160.000 | 3.353 | 39.613 | 36.260 |
| 1170.000 | 3.336 | 39.663 | 36.327 |
| 1180.000 | 3.325 | 39.713 | 36.387 |
| 1189.678 | 3.325 | 39.716 | 36.39 |
| 1192.704 | 3.325 | 39.726 | 36.41 |
| 1199.000 | 3.304 | 39.763 | 36.458 |
| 1200.000 | 3.279 | 39.813 | 36.534 |
| 1207.259 | 3.230 | 39.849 | 36.619 |
| 1210.000 | 3.206 | 39.861 | 36.655 |
| 1220.000 | 3.177 | 39.886 | 36.709 |
| 1222.256 | 3.170 | 39.886 | 36.716 |
| 1222.256 | 3.170 | 39.886 | 36.716 |
| 1230.000 | 3.121 | 39.876 | 36.755 |
| 1237.259 | 3.070 | 39.848 | 36.829 |
| 1240.000 | 3.050 | 39.835 | 36.863 |
| 1250.000 | 2.992 | 39.785 | 36.885 |
| 1259.655 | 2.928 | 39.737 | 36.909 |
| 1260.000 | 2.925 | 39.735 | 36.912 |
| 1270.000 | 2.844 | 39.703 | 36.959 |
| 1270.000 | 2.844 | 39.703 | 36.959 |
| 1271.882 | 2.829 | 39.702 | 36.96 |
| 1274.649 | 2.807 | 39.700 | 36.974 |
| 1275.655 | 2.799 | 39.700 | 36.974 |
| 1280.000 | 2.765 | 39.704 | 37.047 |
| 1289.655 | 2.687 | 39.737 | 37.187 |
| 1290.000 | 2.684 | 39.739 | 37.196 |
| 1300.000 | 2.577 | 39.789 | 37.272 |
| 1309.750 | 2.500 | 39.838 | 37.34 |
| 1310.000 | 2.500 | 39.839 | 37.339 |
| 1320.000 | 2.490 | 39.889 | 37.398 |
| 1330.000 | 2.502 | 39.939 | 37.437 |
| 1340.000 | 2.432 | 39.989 | 37.557 |
| 1350.000 | 2.488 | 40.039 | 37.550 |
| 1360.000 | 2.543 | 40.089 | 37.564 |
| 1370.000 | 2.597 | 40.139 | 37.542 |
| 1380.000 | 2.672 | 40.189 | 37.517 |
| 1383.849 | 2.702 | 40.208 | 37.50 |
| 1390.000 | 2.763 | 40.239 | 37.476 |
| 1400.000 | 2.846 | 40.289 | 37.442 |
| 1408.722 | 2.886 | 40.292 | 37.44 |

LONGITUDINAL SECTION - CL BAKERS LANE & ACCESS ROAD 1

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SHEET SIZE

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SHEET SIZE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | A |

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA03 |

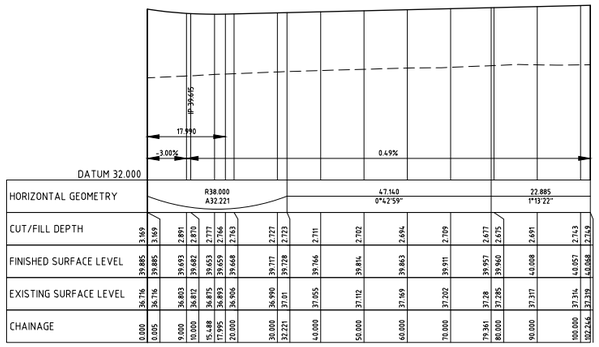

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 9251-7699 Fax: (02) 9241-3731
email: mail@costinroe.com.au


Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

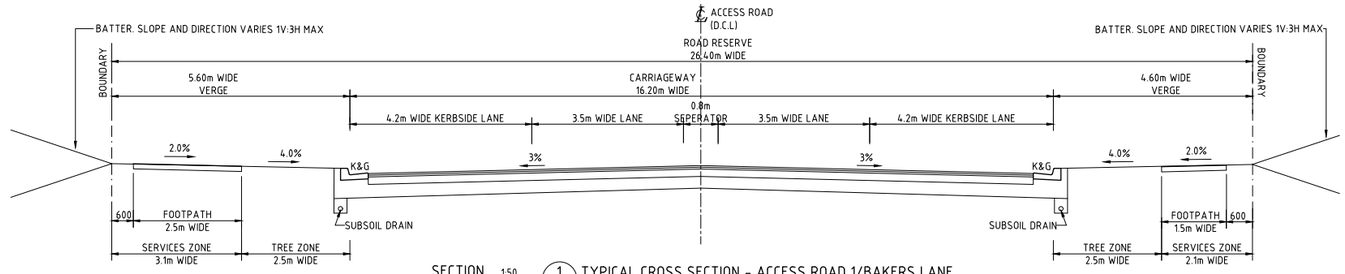
DRAWING TITLE: ROAD LONG SECTIONS SHEET 1

DRAWING No: C013362.00- DA03 ISSUE: A

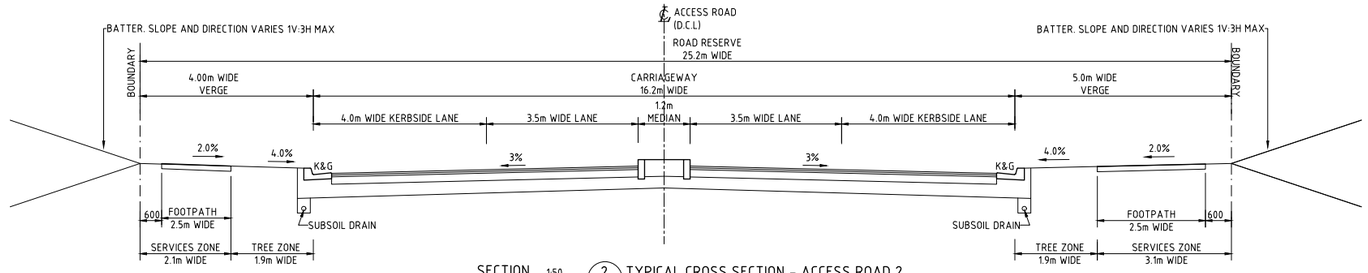



LONGITUDINAL SECTION - CL ACCESS ROAD 2

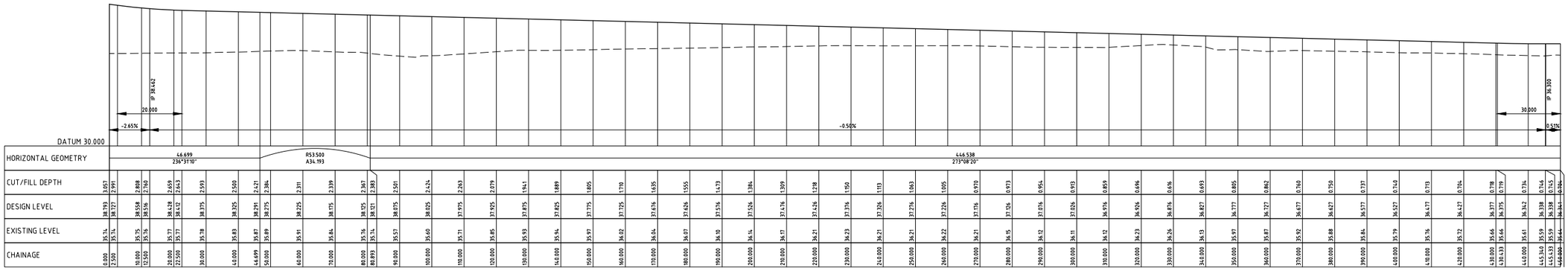
HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100




SECTION 1:50 1 DA02 TYPICAL CROSS SECTION - ACCESS ROAD 1/BAKERS LANE

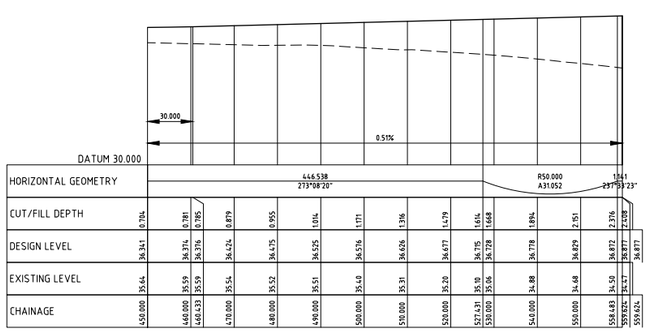



SECTION 1:50 2 DA02 TYPICAL CROSS SECTION - ACCESS ROAD 2



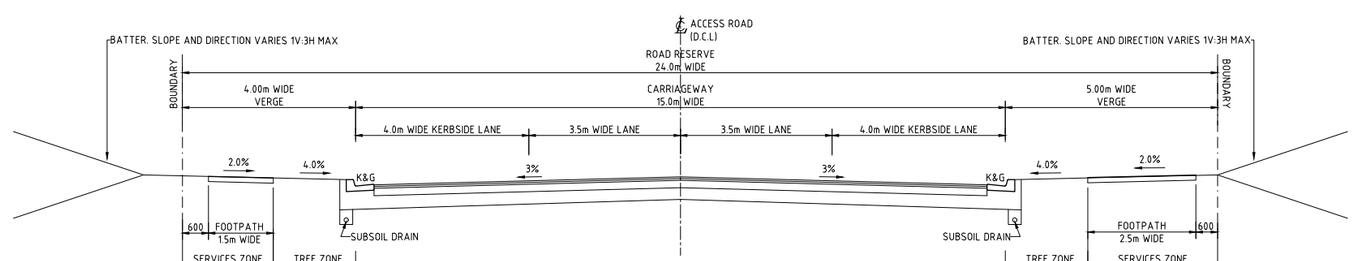

LONGITUDINAL SECTION - CL ACCESS ROAD 3

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100




LONGITUDINAL SECTION - CL ACCESS ROAD 3

HORIZONAL SCALE 1:500
VERTICAL SCALE 1:100




SECTION 1:50 3 DA02 TYPICAL CROSS SECTION - ACCESS ROAD 3

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SHEET SIZE

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SHEET SIZE

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SHEET SIZE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 21.01.22 | C |
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF. |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA04 |

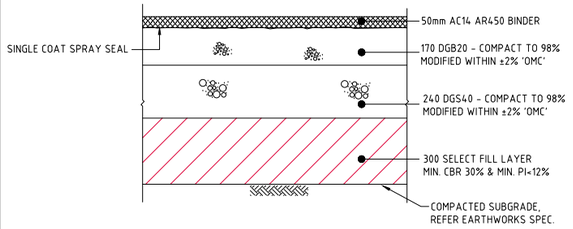
Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 8251-7600 Fax: (02) 8241-3731
email: mail@costinroe.com.au

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

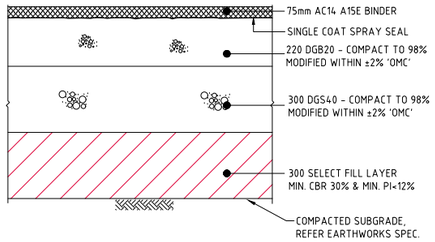
DRAWING TITLE: ROAD LONG SECTIONS AND TYPICAL SECTIONS-SHEET 2

DRAWING No: C013362.00- DA04 ISSUE: C



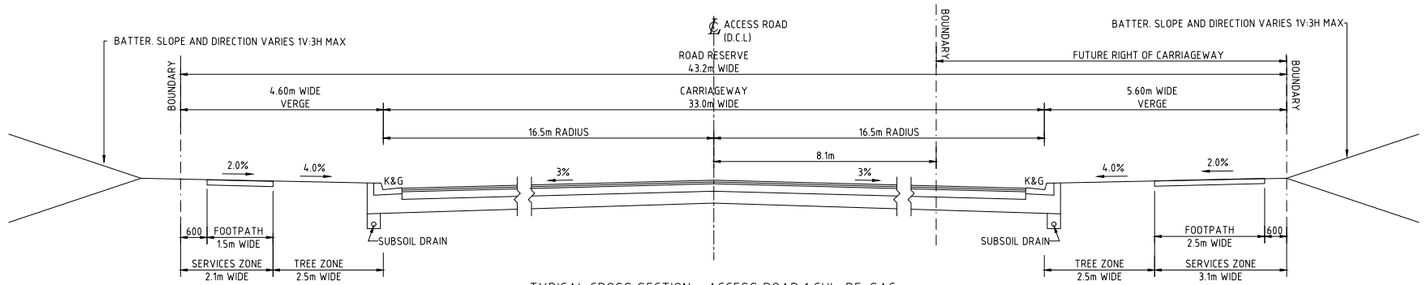

STANDARD INDUSTRIAL ACCESS PEVEMENT DETAILS

SCALE 1:10
DESIGN TRAFFIC $1x10^7$ ESA's
DESIGN CBR VALUE OF 2%
NOTE: FINAL DESIGN SUBJECT TO FURTHER TESTING TO CONFIRM CBR VALUE



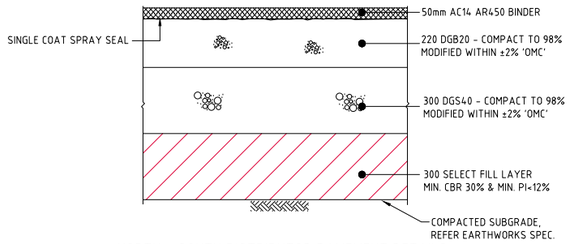

CUL-DE-SAC PAVEMENT DETAILS

SCALE 1:10
DESIGN TRAFFIC $5x10^7$ ESA's
DESIGN CBR VALUE OF 2%
NOTE: FINAL DESIGN SUBJECT TO FURTHER TESTING TO CONFIRM CBR VALUE



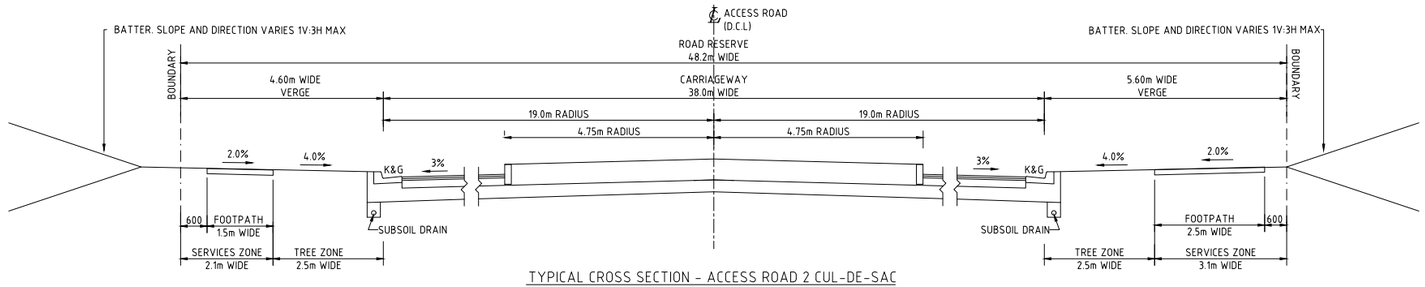

TYPICAL CROSS SECTION - ACCESS ROAD 1 CUL-DE-SAC

SCALE 1:50



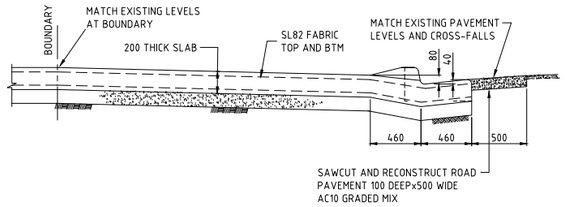

NORTH - SOUTH DISTRIBUTOR PAVEMENT DETAILS

SCALE 1:10
DESIGN TRAFFIC $5x10^7$ ESA's
DESIGN CBR VALUE OF 2%
NOTE: FINAL DESIGN SUBJECT TO FURTHER TESTING TO CONFIRM CBR VALUE



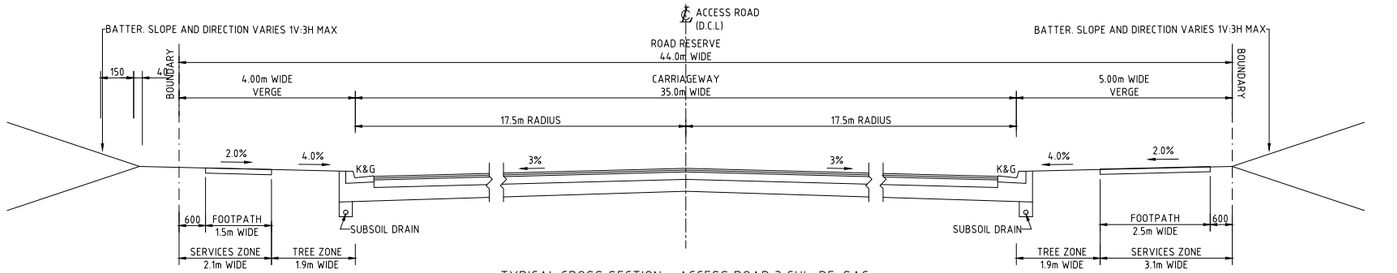

TYPICAL CROSS SECTION - ACCESS ROAD 2 CUL-DE-SAC

SCALE 1:50



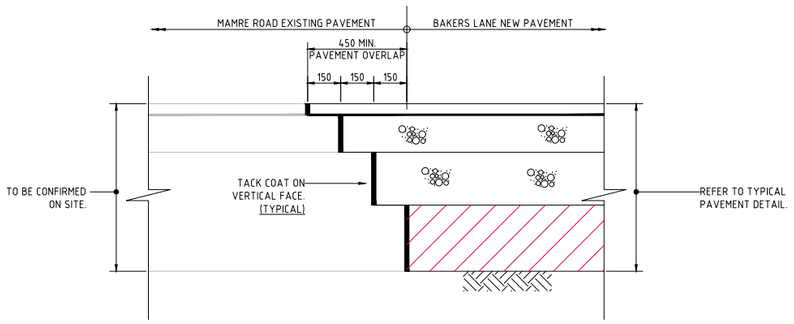

INDUSTRIAL VEHICULAR CROSS OVER DETAIL - IVC

SCALE 1:20



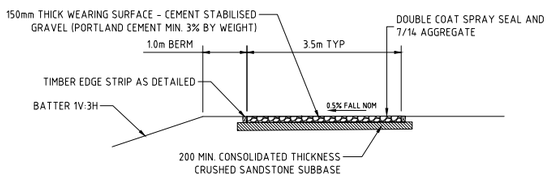

TYPICAL CROSS SECTION - ACCESS ROAD 3 CUL-DE-SAC

SCALE 1:50



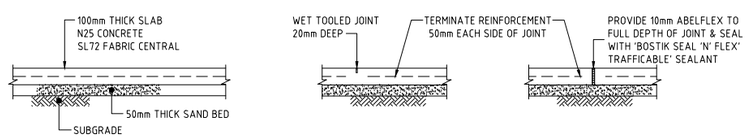

TYPICAL NEW / EXISTING PAVEMENT INTERFACE DETAIL

SCALE 1:10




BASIN MAINTENANCE ACCESS TRACK PAVEMENT DETAIL

SCALE 1:50

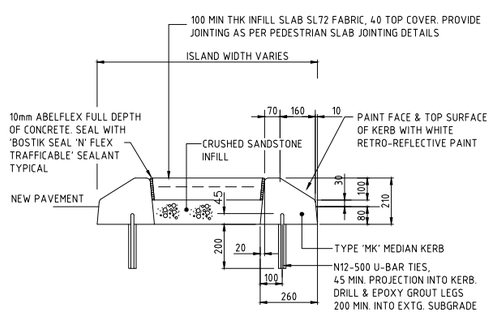



PEDESTRIAN SLAB
SCALE 1:10

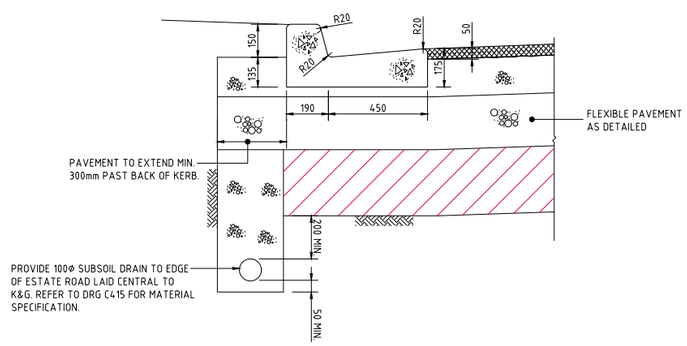
WET TOOLED JOINT
SCALE 1:10
NOTE: PROVIDE SAWCUT JOINTS AT 2000 MAX. CTS.

BUTT JOINT
SCALE 1:10
NOTE: PROVIDE EXPANSION JOINTS AT 6000 MAX. CTS.

PEDESTRIAN SLAB DETAILS

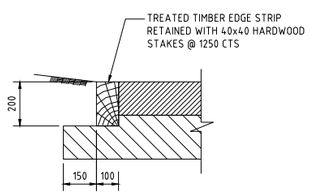



TYPICAL SECTION THRU' MEDIAN ISLAND
1:10




PENRITH CITY COUNCIL KERB & GUTTER

SCALE 1:10




TIMBER EDGE STRIP DETAIL

SCALE 1:10

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| CUL-DE-SAC SECTIONS ADDED | 02.08.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA05 |

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 9251-7699 Fax: (02) 9241-3731
email: mail@costinroe.com.au ©

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: ROADWORKS DETAILS

DRAWING No: C013362.00- DA05 ISSUE: B

LOT 4

LOT 15
(RE1)

LOT 10

LOT 5

LOT 17
(RE2)

TURNING HEAD 10m RADIUS

BASIN MAINTENANCE ACCESS TRACK. REFER PAVEMENT DETAIL ON DRAWING DA05

LOT 16
(RE1)

LOT 12
(BASIN)

PROVIDE 3.5m WIDE DRIVE CROSSING IN ACCORDANCE WITH PCC REQUIREMENTS

PROVIDE 3.5m WIDE DRIVE CROSSING IN ACCORDANCE WITH PCC REQUIREMENTS

LOT 6

BASIN MAINTENANCE ACCESS TRACK PAVEMENT. REFER PAVEMENT DETAIL ON DRAWING DA05

PROVIDE 3.5m WIDE DRIVE CROSSING IN ACCORDANCE WITH PCC REQUIREMENTS

LOT 13
(BASIN)

BASIN MAINTENANCE ACCESS TRACK. REFER PAVEMENT DETAIL ON DRAWING DA05

TURNING HEAD 10m RADIUS

STAGE 1
SUBDIVIDED LOT 2

MAMRE ROAD

## PAVEMENT MAINTENANCE NOTES :

DURING THE LIFE OF THE PAVEMENT, DAMAGE IN VARIOUS FORMS IS LIKELY TO OCCUR. GOOD MAINTENANCE WILL KEEP PROBLEMS TO A MINIMUM AND EXTEND THE LIFE OF PAVEMENTS. THE FOLLOWING LIKELY AREAS OF DAMAGE MAY OR MAY NOT OCCUR DURING THE LIFE OF THE PAVEMENTS:

SLAB PAVEMENTS :

1. DAMAGE TO JOINTS SUCH AS FRETTING OR BREAKING AWAY OF PIECES SHOULD BE REPAIRED USING CONCRETE REPAIR PRODUCTS AND THE JOINTING MATERIAL MADE GOOD.
2. CRACKING OF SLABS WHICH MAY OCCUR OVER THE LIFE OF THE SLAB SHOULD BE REPAIRED BY EPOXY GROUTING AS SOON AS POSSIBLE TO PREVENT LOCAL FRETTING AND BREAKING AWAY. THE DEFINITION OF A CRACK WHICH MAY BECOME DETRIMENTAL IS ONE WHICH IS GREATER THAN 0.3mm.
3. LOCAL DAMAGE DUE TO MECHANICAL PROCESSES OR PALLETS (WITH PROTRUDING NAILS) SHOULD BE REPAIRED AS SOON AS POSSIBLE WITH AN EPOXY CONCRETE REPAIR PRODUCT.
4. LOCAL MOVEMENT OF SLABS CAUSED BY EXTERNAL SOURCES SUCH AS INGRESS OF WATER SHOULD BE REFERRED TO THE ENGINEER TO DETERMINE THE BEST METHOD OF REPAIR.
5. JOINT SEALANTS WILL GENERALLY BREAKDOWN AND NEED REPLACEMENT AFTER 12 MONTHS WHEN MOST OF THE SLAB SHRINKAGE HAS TAKEN PLACE. RESEALING NEEDS TO BE CARRIED OUT TO ENSURE ONGOING SUPPORT TO SLAB EDGES.

ASPHALT PAVEMENTS :

1. UNLESS NOTED OTHERWISE, FLEXIBLE PAVEMENTS SHOWN ON THESE DRAWINGS ARE THE MINIMUM NECESSARY TO SUPPORT ARTICULATED VEHICLES FOR A MINIMUM DESIGN LIFETIME.
2. CRACKING OF THE ASPHALT SURFACE AND OTHER DEFECTS SHOULD BE REPAIRED QUICKLY TO PREVENT INGRESS OF WATER TO THE SUBGRADE, WHICH WILL ACCELERATE DETERIORATION OF PAVEMENTS.
3. DRAINAGE GRADES SHOULD BE MAINTAINED TO AVOID PONDING OF SURFACE WATER WHICH MAY CONTRIBUTE TO DETERIORATION.

LEGEND:

- INDUSTRIAL ACCESS $1x10^7$ ESA
- N-S DISTRIBUTOR $5x10^7$ ESA TBC
- CUL-DE-SAC PAVEMENT
- CONCRETE FOOTPATH

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SHEET SIZE

ROAD PAVEMENT PLAN
SCALE 1:1000

FOR DEVELOPMENT APPLICATION

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | C |
| ISSUED FOR DEVELOPMENT APPLICATION | 05.07.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA06 |

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 8251-7699 Fax: (02) 8241-3731
email: mail@costinroe.com.au

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: PAVEMENT TYPE PLAN

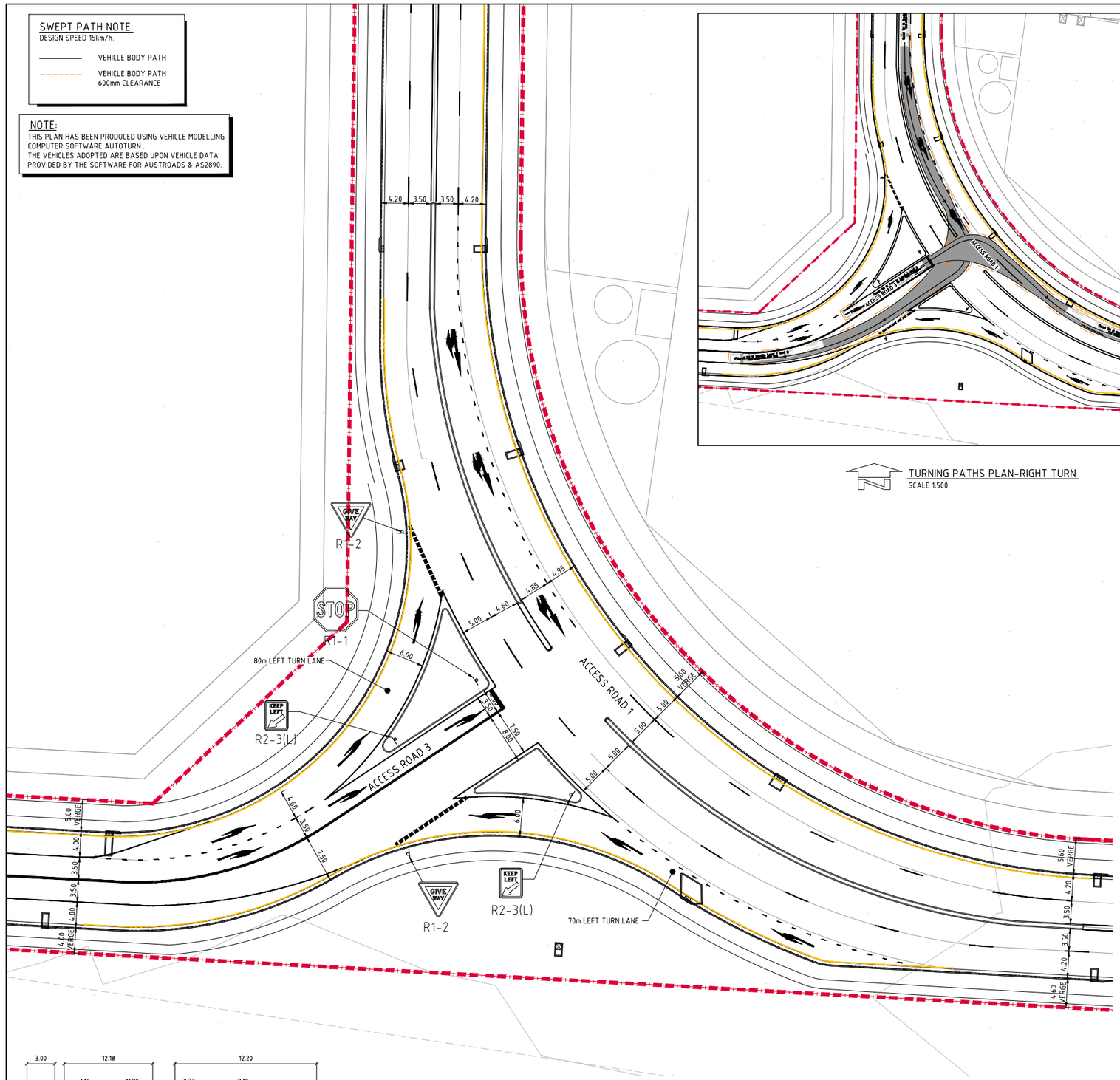
DRAWING No: C013362.00-DA06 ISSUE: C

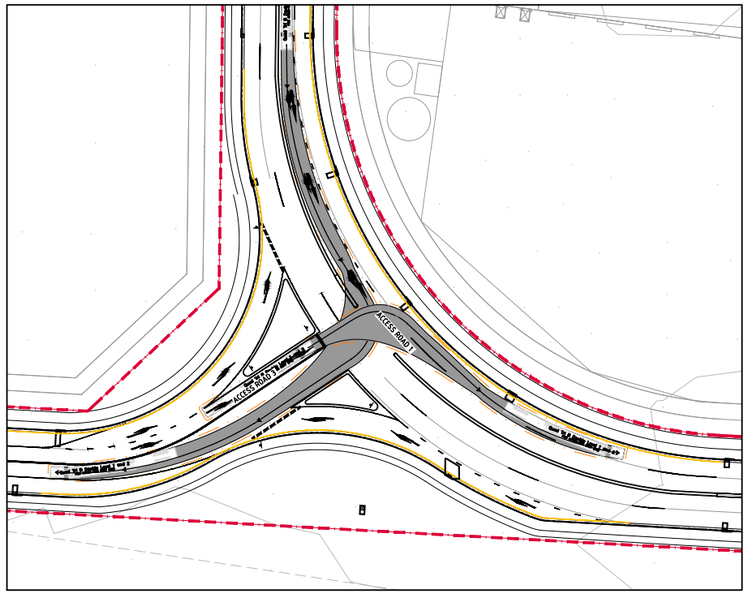
**SWEPT PATH NOTE:**
DESIGN SPEED 15km/h.

VEHICLE BODY PATH

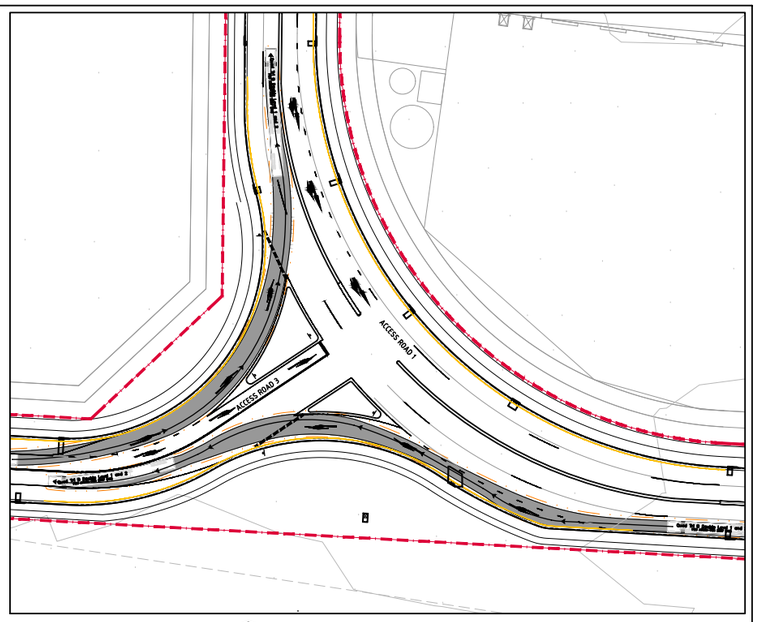
VEHICLE BODY PATH 600mm CLEARANCE

**NOTE:**
THIS PLAN HAS BEEN PRODUCED USING VEHICLE MODELLING COMPUTER SOFTWARE AUTOTURN.
THE VEHICLES ADOPTED ARE BASED UPON VEHICLE DATA PROVIDED BY THE SOFTWARE FOR AUSTROADS & AS2890.



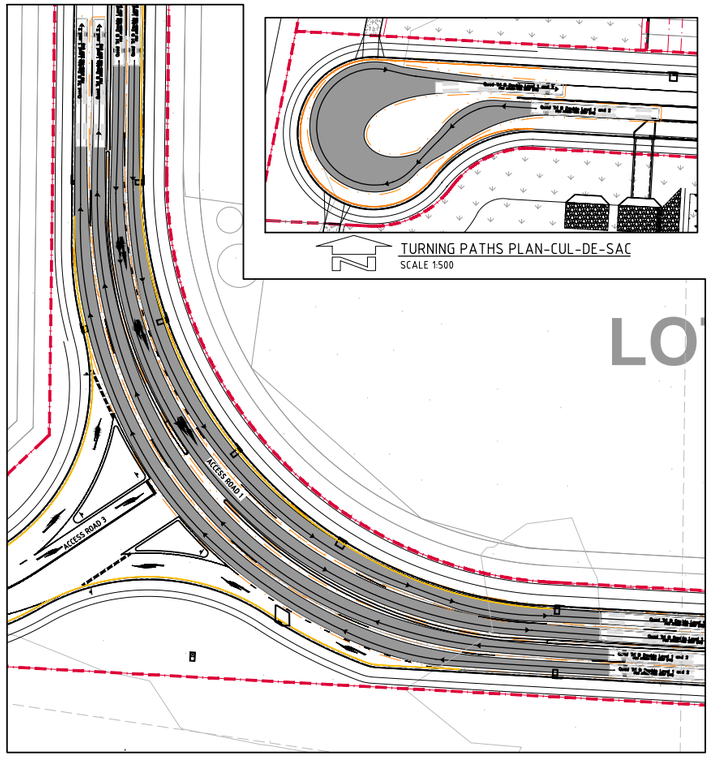

TURNING PATHS PLAN-RIGHT TURN
SCALE 1:500



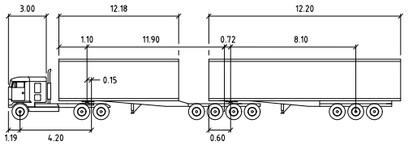

TURNING PATHS PLAN-LEFT TURN
SCALE 1:500



TURNING PATHS PLAN-CUL-DE-SAC
SCALE 1:500




TURNING PATHS PLAN-STRAIGHT
SCALE 1:500




PBS QUAD TRI B-DOUBLE LEVEL 2 - 30m

N.T.S.

| | meters | | |
|---|---|---|---|
| Tractor Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 22.7 |
| Tractor Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |

INTERSECTION 1 PLAN - ROAD 1 & 3
SCALE 1:250

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SHEET SIZE

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SHEET SIZE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | C |
| ISSUED FOR DEVELOPMENT APPLICATION | 05.07.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

AMENDMENTS DATE ISSUE AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA07 |


Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 9251-7699 Fax: (02) 9241-3731
email: mail@costinroe.com.au


Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: INTERSECTION 1 PLAN

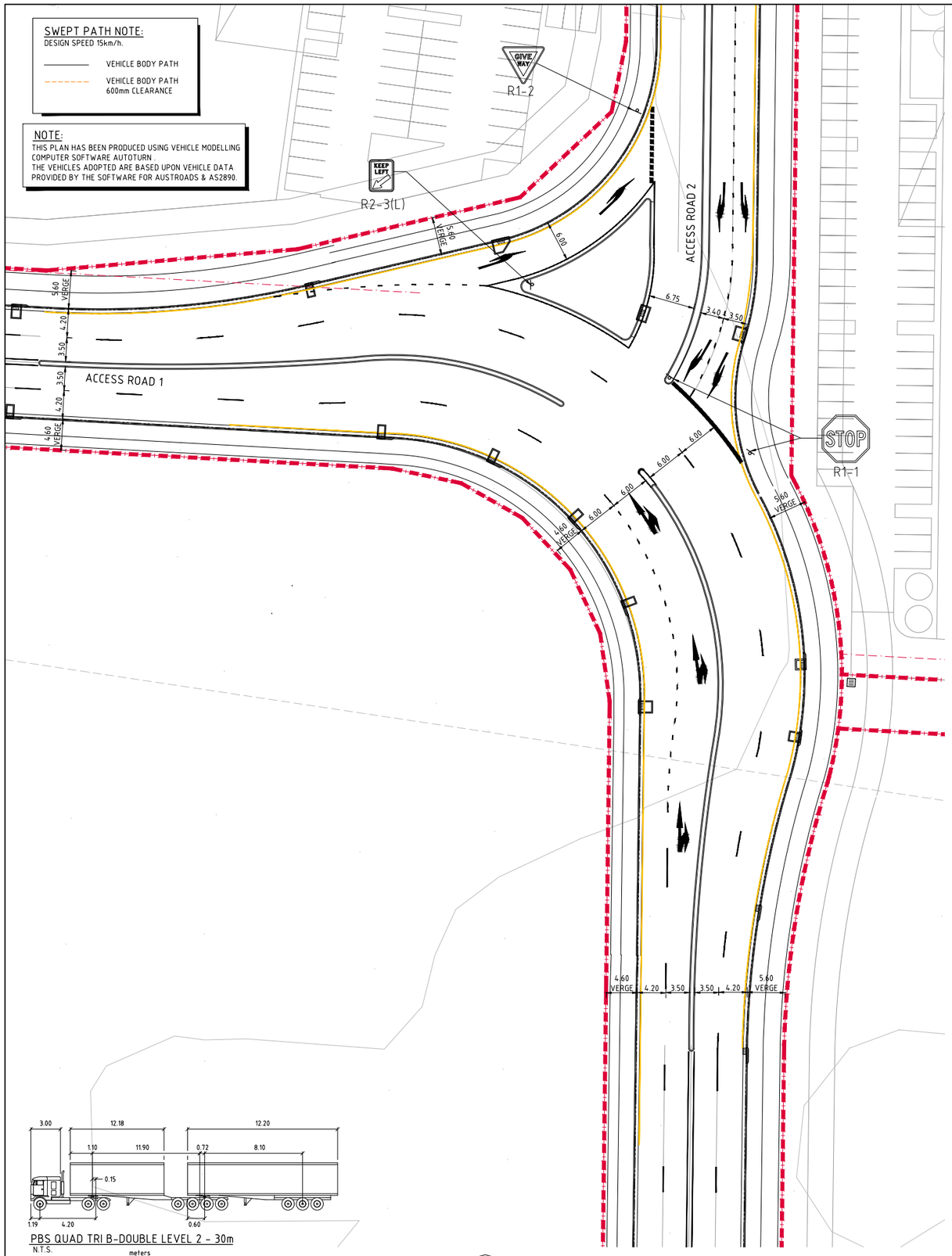
DRAWING No: C013362.00-DA07 ISSUE: C

**SWEPT PATH NOTE:**
DESIGN SPEED 15km/h.

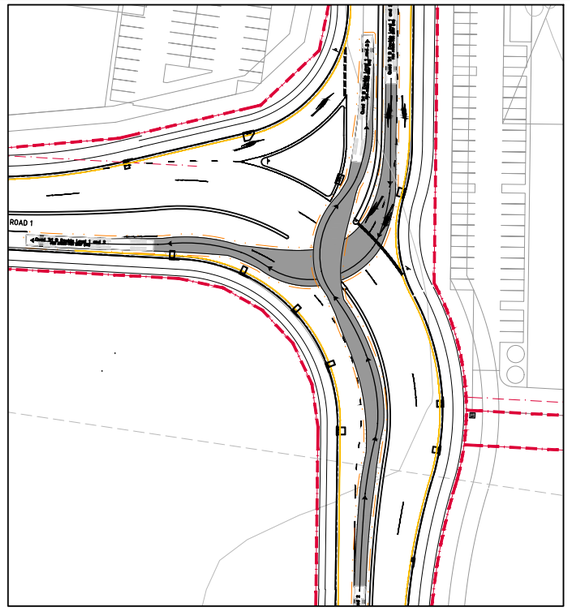
VEHICLE BODY PATH

VEHICLE BODY PATH 600mm CLEARANCE

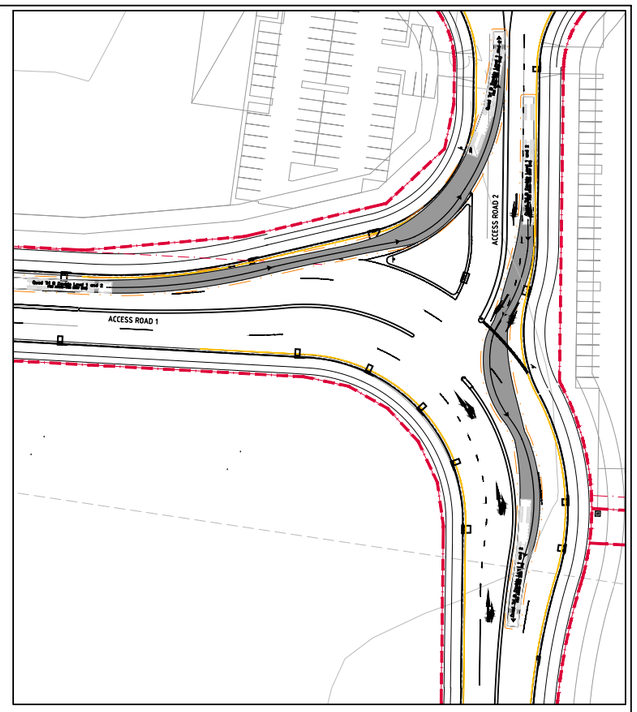
**NOTE:**
THIS PLAN HAS BEEN PRODUCED USING VEHICLE MODELLING COMPUTER SOFTWARE AUTOTURN .
THE VEHICLES ADOPTED ARE BASED UPON VEHICLE DATA PROVIDED BY THE SOFTWARE FOR AUSTROADS & AS2890.



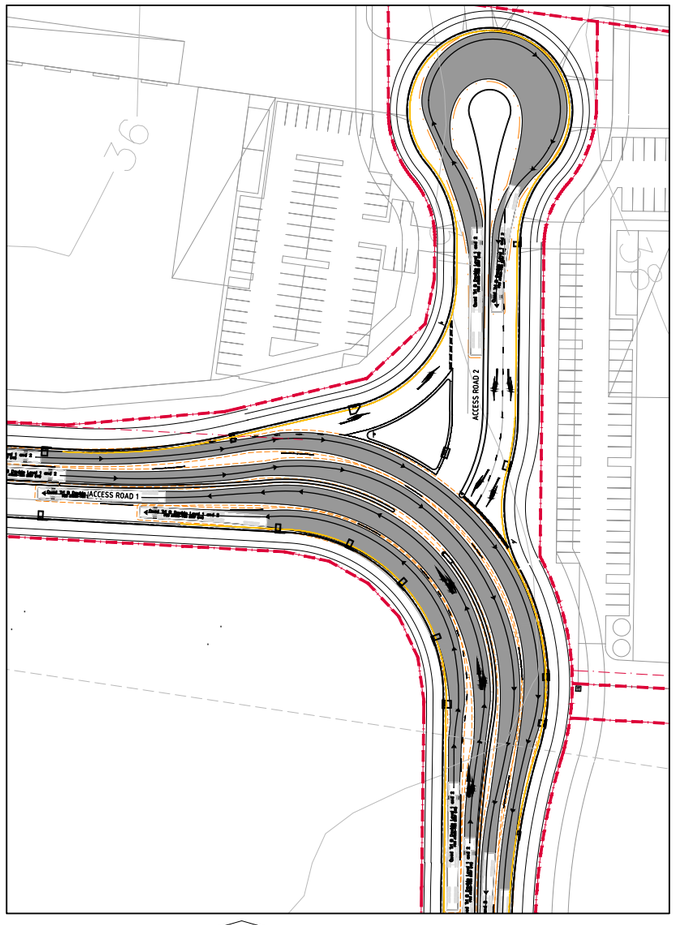

INTERSECTION 2 PLAN - ROAD 1 & 2
SCALE 1:250



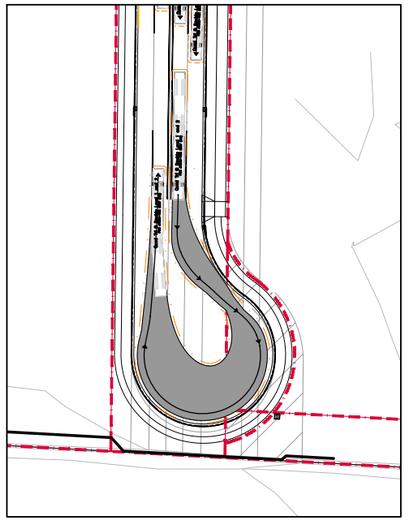

TURNING PATHS PLAN-RIGHT TURN
SCALE 1:500




TURNING PATHS PLAN-LEFT TURN
SCALE 1:500




TURNING PATHS PLAN-STRIAGHT
SCALE 1:500



TURNING PATHS PLAN-CUL-DE-SAC
SCALE 1:500




PBS QUAD TRI B-DOUBLE LEVEL 2 - 30m
N.T.S.

| | meters | | |
|---|---|---|---|
| Tractor Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 22.7 |
| Tractor Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SHEET SIZE

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SHEET SIZE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | C |
| ISSUED FOR DEVELOPMENT APPLICATION | 05.07.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 25.06.21 | A |

AMENDMENTS DATE ISSUE AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA08 |

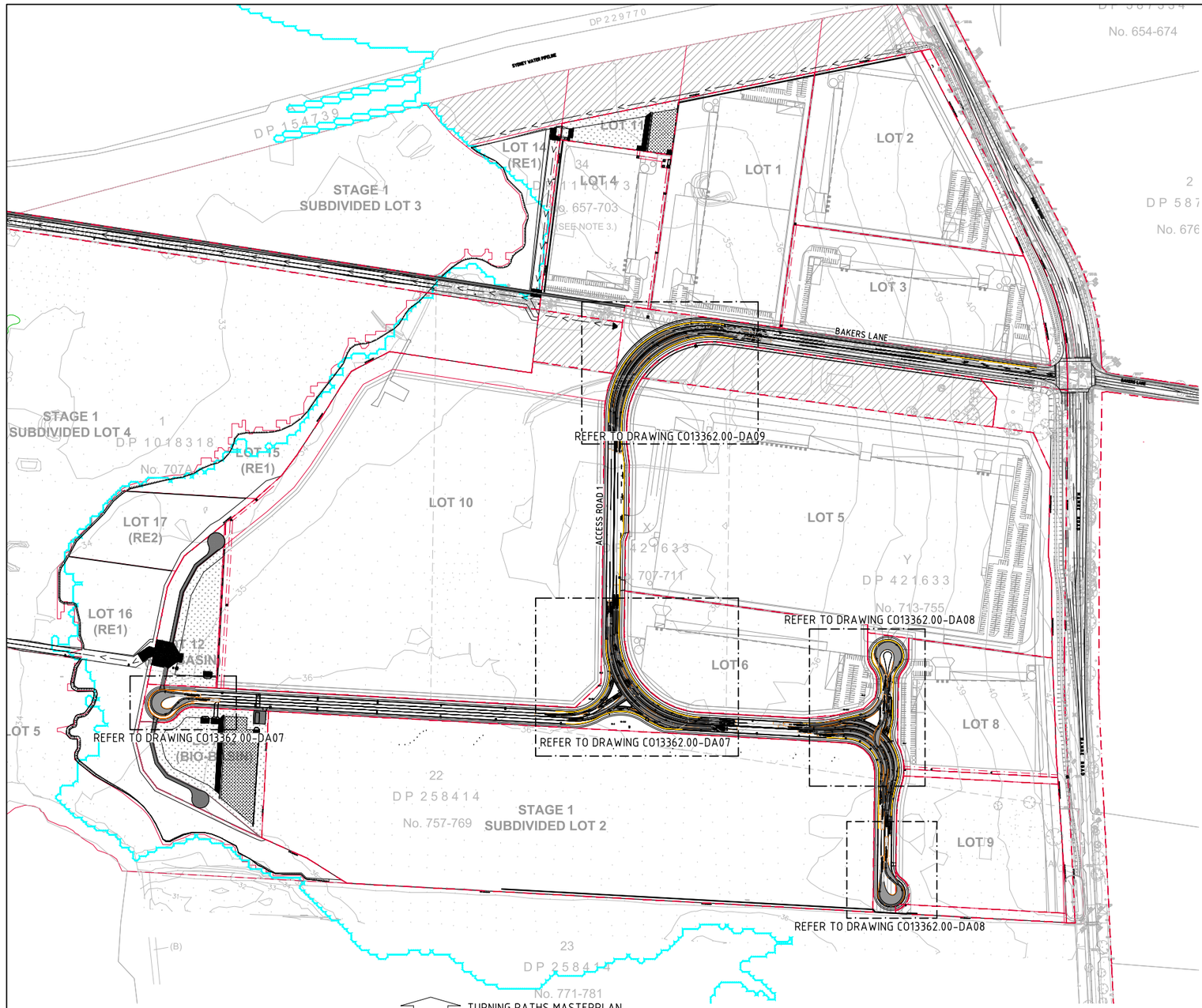

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 8251-7800 Fax: (02) 8251-3731
email: mail@costinroe.com.au


Costin Roe Consulting

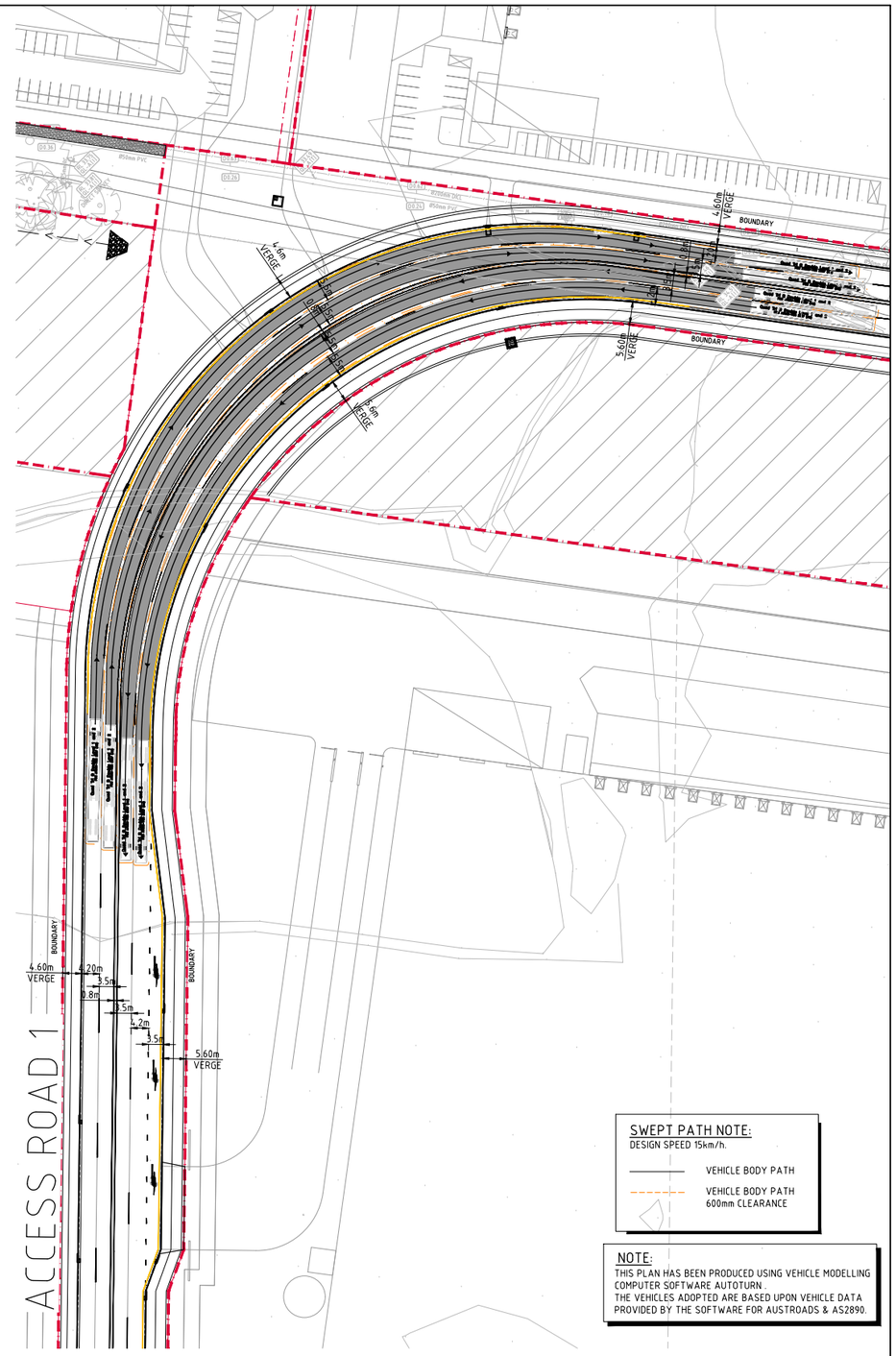
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: INTERSECTION 2 PLAN

DRAWING NO: C013362.00- DA08 ISSUE: C




TURNING PATHS MASTERPLAN
SCALE 1:2000

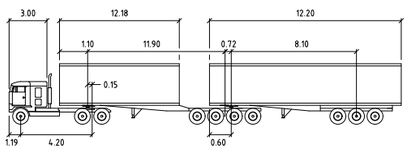



TURNING PATHS PLAN-BAKERS LANE
SCALE 1:500

SWEPT PATH NOTE:
DESIGN SPEED 15km/h.

VEHICLE BODY PATH
VEHICLE BODY PATH 600mm CLEARANCE

NOTE:
THIS PLAN HAS BEEN PRODUCED USING VEHICLE MODELLING COMPUTER SOFTWARE AUTOTURN .
THE VEHICLES ADOPTED ARE BASED UPON VEHICLE DATA PROVIDED BY THE SOFTWARE FOR AUSTROADS & AS2890.




PBS QUAD TRI B-DOUBLE LEVEL 2 - 30m

N.T.S.

| | meters | | |
|---|---|---|---|
| Tractor Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 22.7 |
| Tractor Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |

2m 0 5 10 15 20 25m
SCALE 1:2000 AT A0 SHEET SIZE

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SHEET SIZE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | B |
| ISSUED FOR DEVELOPMENT APPLICATION | 05.07.21 | A |

AMENDMENTS DATE ISSUE | AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT: FRASERS PROPERTY

PROJECT: MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA09 |

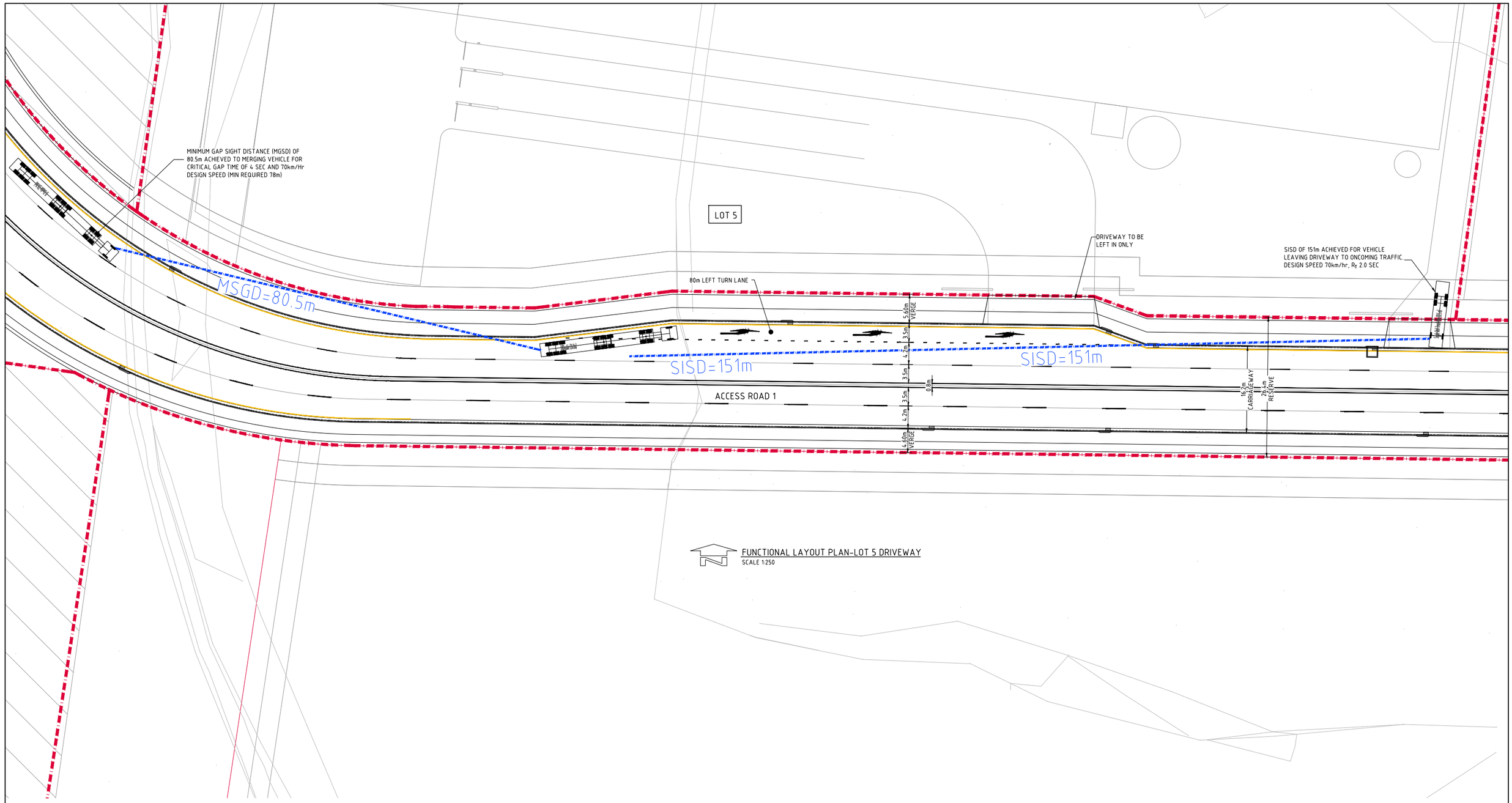
Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 8251-7699 Fax: (02) 8241-3731
email: mail@costinroe.com.au ©

Costin Roe Consulting

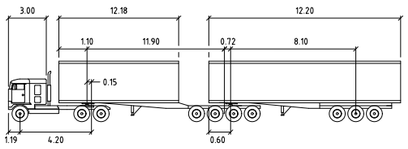
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE: TURNING PATHS PLAN

DRAWING NO: C013362.00- DA09 ISSUE: B




FUNCTIONAL LAYOUT PLAN-LOT 5 DRIVEWAY
SCALE 1:250




PBS QUAD TRI B-DOUBLE LEVEL 2 - 30m
N.T.S.

| | meters | | |
|---|---|---|---|
| Tractor Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 22.7 |
| Tractor Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |

NOTE:
SAFE INTERSECTION SITE DISTANCE (SISD) IN ACCORDANCE WITH SECTION 3.2.2 OF AUSTROADS GUIDE TO ROAD DESIGN PART 4A. MINIMUM REQUIRED SISD FOR DESIGN SPEED OF 70Km/Hr IS 151m FOR $R_T$=2.0 SEC

NOTE:
MINIMUM GAP SITE DISTANCE (MGSD) IN ACCORDANCE WITH SECTION 3.2.3 OF AUSTROADS GUIDE TO ROAD DESIGN PART 4A. MINIMUM REQUIRED MGSD FOR DESIGN SPEED OF 70Km/Hr IS 78m FOR CRITICAL GAP ACCEPTANCE TIME =4.0 SEC

SWEPT PATH NOTE:
DESIGN SPEED 15km/h.

VEHICLE BODY PATH
VEHICLE BODY PATH 600mm CLEARANCE

NOTE:
THIS PLAN HAS BEEN PRODUCED USING VEHICLE MODELLING COMPUTER SOFTWARE AUTOTURN .
THE VEHICLES ADOPTED ARE BASED UPON VEHICLE DATA PROVIDED BY THE SOFTWARE FOR AUSTROADS & AS2890.

2m 0 5 10 15 20 25m
SCALE 1:250 AT A0 SHEET SIZE

**FOR DEVELOPMENT APPLICATION**

| AMENDMENTS | DATE | ISSUE |
|---|---|---|
| ISSUED FOR DEVELOPMENT APPLICATION | 01.09.21 | A |

AMENDMENTS DATE ISSUE
AMENDMENTS DATE ISSUE

ALTIS PROPERTY PARTNERS

CLIENT
FRASERS PROPERTY

PROJECT
MAMRE SOUTH PRECINCT
657 - 708 MAMRE ROAD
KEMPS CREEK, 2178, NSW

| DESIGNED | DRAWN | DATE | CHECKED | SIZE | SCALE | CAD REF: |
|---|---|---|---|---|---|---|
| MW | MC | APRIL '18 | MW | A0 | AS SHOWN | C013362.00-DA10 |

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 8251-7600 Fax: (02) 8241-3231
email: mail@costinroe.com.au ©

Costin Roe Consulting
PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE
FUNCTIONAL LAYOUT PLAN
LOT 5

DRAWING No C013362.00-DA10
ISSUE A