SUMMARY OF EVIDENCE OF JASON BARTLETT

Submission of Matakauri Lodge Limited (31033)

29 July 2020

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1 My name is Jason Bartlett, my statement of evidence considered the potential traffic effects of the Matakauri Lodge Limited Submission requesting that the lot containing Matakauri Lodge is to be rezoned as Rural Visitor Zone.

2 Since preparing my statement of evidence I have reviewed the rebuttal evidence of Mr Michael Smith (Section 8). Mr Smith's opinion and assessment of the site's access (Farrycroft Row) and its intersection with Glenorchy-Queenstown Road differs from mine.

3 With respect to the traffic flow on Farrycroft Row this has been based on an assessment using design traffic generation rates (85th percentile rates) for similar activities throughout New Zealand and obtained through NZTA research. This is a standard methodology for establishing a traffic flow and using the 85th percentile rates means that the resulting traffic flow is likely to be an overestimation allowing for a more robust assessment.

4 Mr Smith's (and Mr Rossiter's) predominant concern is the available sight distances at the Farrycroft Road intersection being a significant safety concern. In Mr Smith's evidence he quotes portions of a previous version of the Austroads Guidance[1] whilst he has based his assessment on drivers travelling at the speed limit, 100km/hr, and infers that they will be taking in the vast lake views rather than concentrating on driving.

5 I do not agree with Mr Smith's (and Mr Rossiter's) assessment in this matter. To investigate Mr Smith's assumptions, I have recently undertaken a brief speed survey at the site[2]. This revealed an operating speed of less than 70km/hr which aligns with my original assessment based on the road environment. Current versions of Austroads guidance[3] describe the driving environment of Glenorchy-Queenstown Road as a low speed road with difficult alignment resulting in a high degree of driver alertness, this also aligns with my selected driver reaction time of 1.5 seconds. These are important elements when considering an intersection within this road environment. To inform the Commission I have provided extracts from Austroads Guide to Road Design Part 3: Geometric Design (2016 updated 2020) which relates to the assessment of operating speed and reaction time, this is provided in Attachment 1. Based on this I consider that Mr Smith's (and Mr Rossiter's) assessment of sight distance is not based on the actual road environment and operating conditions of Queenstown-Glenorchy Road. On

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[1] Paragraphs 8.17 & 8.19 quote from Austroads Guide to Road Design Part 4A (2009), which refers to Austroads Guide to Road Design Part 3 (2009a).
[2] Bartlett Consulting speed survey undertaken 8 July 2020, measured operating speeds: westbound 68km/hr and eastbound 67km/hr.
[3] Austroads Guide to Road Design Part 4A (2017) and Part 3 (2016 updated 2020)

this matter I consider that the Farrycroft Row intersection has sufficient sight distance for the road environment.

6 In my statement of evidence, I described the safety improvement works proposed on Farrycroft Row and at the intersection with Queenstown-Glenorchy Road[4]. For the benefit of the Commission I have Attached drawings showing these agreed safety improvements under the resource consent RM171104 (refer Attachment 2), this is the resource consent Application which is currently on hold. I confirm that a number of these improvements are on the crown land administered by Department of Conservation (DOC). We have discussed these improvements with DOC who accepted them in principle at the time in 2017, noting that these works will need to be formally applied for and approved by DOC. These are all simple road improvements which do not require extensive earthworks and can be undertaken within the existing road formation.

7 Mr Smith does not consider the suggested zone provisions in my statement of evidence. These zone provisions were specifically suggested such that any development of the site, for example a larger or different type of visitor activity, which breach the site standards would trigger a transport assessment and further consideration of the access concerns. I note that these suggested provisions have been adopted in Ms Grace's rebuttal evidence. This means that the zone provisions have been modified in order to allow for a full assessment of transport effects should the requested zoning result in any future unanticipated development at the site.

8 I have undertaken the Transport Assessment for the requested zone change and have provided additional information in my evidence and in this summary. I consider that Mr Smith's (and Mr Rossiter's) assessment of sight distances does not consider the true road environment. And, finally, I consider that my suggested zone provisions, which are now part of the draft zone provisions are appropriate to manage and appropriately access for any future change of activity at the site.

Jason Bartlett

29 July 2020

[4] Refer Statement of Evidence of Jason Bartlett dated 29 May 2020, Paragraph 32.

Attachment 1 – Operating Speed and Reaction Time Guidance

The following are extracts from Austroads Guide to Road Design Part 3: Geometric Design (2016 updated 2020) which relates to the assessment of operating speed and reaction time.

Operating Speed

Austroads guidance provided descriptions of various rural road types with respect to the road environment and operating speed. The following road environments are described in Section 3.4.

High Speed Rural Roads are road with operating speeds in excess of 90km/hr. The standard of the road, horizontal and vertical alignment, supports and permits high uniform operating speeds. Examples are shown below.

Figure 3.2: Examples of high speed roads

In contrast there are also intermediate speed road which would have a typical operating speed pf 70-90km/hr where drivers will adjust their speed depending on the alignment ahead of them usually accelerating on the straights and reducing their speed for horizontal curves. Examples are shown below.

Figure 3.3: Examples of intermediate speed roads

At the lower end of the scale are low speed roads which are likely to have many horizontal curves generally varying from 50-70km/hr. These road are generally in areas with difficult terrain where the road alignments in these areas are expected to produce a high degree of driver alertness. Examples are shown below.

Figure 3.4: Examples of low speed roads

Of these examples the general alignment of Glenorchy-Queenstown Road in the vicinity of the intersection with Farrycroft Row is most like a low speed rural road suggesting an operating speed of between 50-70km/hr.

I have also undertaken a number of speed surveys on Glenorchy-Queenstown Road which confirm this assessment in that sections of tight alignment similar to the area near Farrycroft Row have an operating speed between 65km/hr and 60km/hr. In more open sections of Glenorchy-Queenstown Road such as Bobs Cove/Glentui Area the operating speed is closer to 80km/hr.

Reaction Time

Austroads guidance also provides additional information to aid the selection of reaction time for drivers. In addition to noting that driving through difficult terrain with tight road alignments produce a high degree of driver alertness the following Table provides further information.

Table 5.2: Driver reaction times

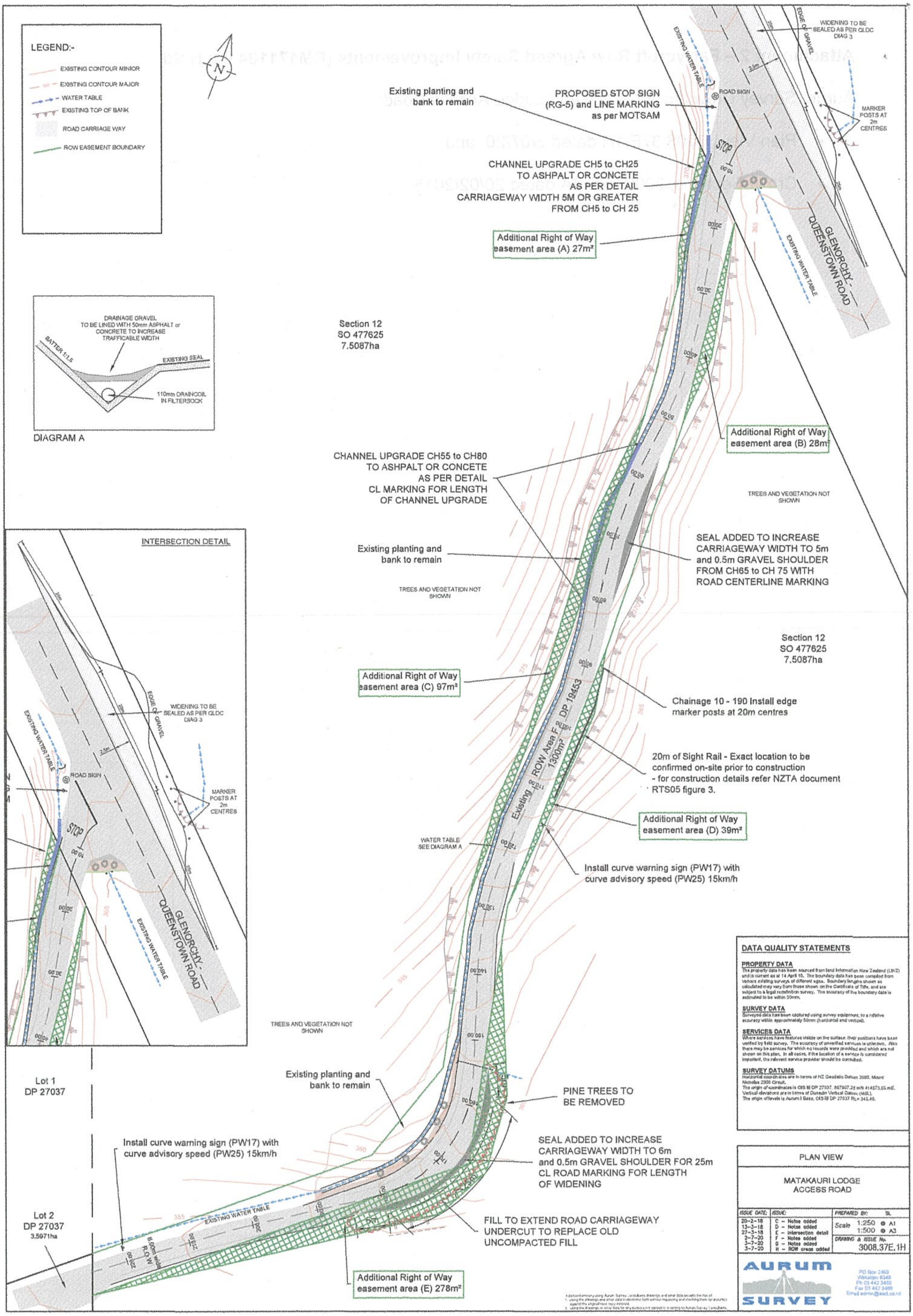
Reaction time R_T (s)	Typical road conditions	Typical use
2.5	• Unalerted driving conditions due to the road only having isolated geometric features to maintain driver interest • Areas with high driver workload/complex decisions • High speed roads with long distances between towns.	Absolute minimum value for high speed roads with unalerted driving conditions. General minimum value for: • high speed rural freeways • high speed rural intersections • isolated alignment features.
2.0	• Higher speed urban areas • Few intersections • Alerted driving situations in rural areas • High speed roads in urban areas comprising numerous intersections or interchanges where the majority of driver trips are of relatively short length.	Absolute minimum value for the road conditions listed in this row. General minimum value for most road types, including those with alert driving conditions.
1.5[1]	Alert driving conditions e.g.: • high expectancy of stopping due to traffic signals • consistently tight alignments for example, mountainous roads • restricted low speed urban areas • built-up areas – high traffic volumes • interchange ramps when sighting over or around barriers.	Absolute minimum value. Only used in very constrained situations where drivers will be alert. Can be considered only where the maximum operating speed is ≤ 90 km/h. Should not be used where other design minima have been used.

A general description to describe Glenorchy-Queenstown Road would be include consistently tight alignments and a mountainous road. This description suggests a appropriate driver reaction time of 1.5 seconds.

Attachment 2 – Farrycroft Row Agreed Safety Improvements (RM171104 On Hold)

Aurum Survey Drawings for Matakauri Lodge Access Road:

- Plan View, 3008.37E.1H dated 3/07/20, and
- Cross-Sections, 3008.37E.2A dated 20/02/2018.


LEGEND:-
EXISTING CONTOUR MINOR
EXISTING CONTOUR MAJOR
WATER TABLE
EXISTING TOP OF BANK
ROAD CARRIAGE WAY
ROW EASEMENT BOUNDARY
N
Existing planting and bank to remain
PROPOSED STOP SIGN (RG-5) and LINE MARKING as per MOTSAM
CHANNEL UPGRADE CH5 to CH25 TO ASHPALT OR CONCETE AS PER DETAIL CARRIAGEWAY WIDTH 5M OR GREATER FROM CH5 to CH 25
Additional Right of Way easement area (A) 27m²
WIDENING TO BE SEALED AS PER QLDC DIAG 3
EDGE OF GRAVEL
EXISTING WATER TABLE
ROAD SIGN
MARKER POSTS AT 2m CENTRES
STOP
GLENORCHY - QUEENSTOWN ROAD
DRAINAGE GRAVEL TO BE LINED WITH 50mm ASPHALT or CONCRETE TO INCREASE TRAFFICABLE WIDTH
BATTER 1:1.5
EXISTING SEAL
110mm DRAINCOIL IN FILTERSOCK
DIAGRAM A
Section 12
SO 477625
7.5087ha
Additional Right of Way easement area (B) 28m²
TREES AND VEGETATION NOT SHOWN
CHANNEL UPGRADE CH55 to CH80 TO ASHPALT OR CONCETE AS PER DETAIL CL MARKING FOR LENGTH OF CHANNEL UPGRADE
SEAL ADDED TO INCREASE CARRIAGEWAY WIDTH TO 5m and 0.5m GRAVEL SHOULDER FROM CH65 to CH 75 WITH ROAD CENTERLINE MARKING
INTERSECTION DETAIL
Existing planting and bank to remain
TREES AND VEGETATION NOT SHOWN
Section 12
SO 477625
7.5087ha
Additional Right of Way easement area (C) 97m²
Chainage 10 - 190 Install edge marker posts at 20m centres
Existing ROW Area F DP 19453 1300m²
20m of Sight Rail - Exact location to be confirmed on-site prior to construction - for construction details refer NZTA document RTS05 figure 3.
Additional Right of Way easement area (D) 39m²
WATER TABLE SEE DIAGRAM A
Install curve warning sign (PW17) with curve advisory speed (PW25) 15km/h
TREES AND VEGETATION NOT SHOWN
Lot 1
DP 27037
Existing planting and bank to remain
PINE TREES TO BE REMOVED
Install curve warning sign (PW17) with curve advisory speed (PW25) 15km/h
SEAL ADDED TO INCREASE CARRIAGEWAY WIDTH TO 6m and 0.5m GRAVEL SHOULDER FOR 25m CL ROAD MARKING FOR LENGTH OF WIDENING
Lot 2
DP 27037
3.5971ha
EXISTING WATER TABLE
6.00m wide R.O.W
FILL TO EXTEND ROAD CARRIAGEWAY UNDERCUT TO REPLACE OLD UNCOMPACTED FILL
Additional Right of Way easement area (E) 278m²
DATA QUALITY STATEMENTS
PROPERTY DATA
The property data has been sourced from land Information New Zealand (LINZ) and is current as at 14 April 10. The boundary data has been compiled from various existing surveys of different ages. Boundary lengths shown as calculated may vary from those shown on the Certificate of Title, and are subject to a legal redefinition survey. The accuracy of the boundary data is estimated to be within 30mm.
SURVEY DATA
Surveyed data has been captured using survey equipment, to a relative accuracy within approximately 50mm (horizontal and vertical).
SERVICES DATA
Where services have features visible on the surface, their positions have been verified by field survey. The accuracy of unverified services is unknown. Also there may be services for which no records were provided and which are not shown on this plan. In all cases, if the location of a service is considered important, the relevant service provider should be consulted.
SURVEY DATUMS
Horizontal coordinates are in terms of NZ Geodetic Datum 2000, Mount Nicholas 2000 Circuit.
The origin of coordinates is OIS III DP 27037, 867807.28 mN 414873.65 mE.
Vertical elevations are in terms of Dunedin Vertical Datum (MSL).
The origin of levels is Aurum I Base, OIS III DP 27037 RL= 345.40.
PLAN VIEW
MATAKAURI LODGE ACCESS ROAD
ISSUE DATE: | ISSUE:
20-2-18 C - Notes added
13-3-18 D - Notes added
27-3-18 E - Intersection detail
2-7-20 F - Notes added
3-7-20 G - Notes added
3-7-20 H - ROW areas added
PREPARED BY: SL
Scale 1:250 @ A1 1:500 @ A3
DRAWING & ISSUE No. 3008.37E.1H
AURUM SURVEY
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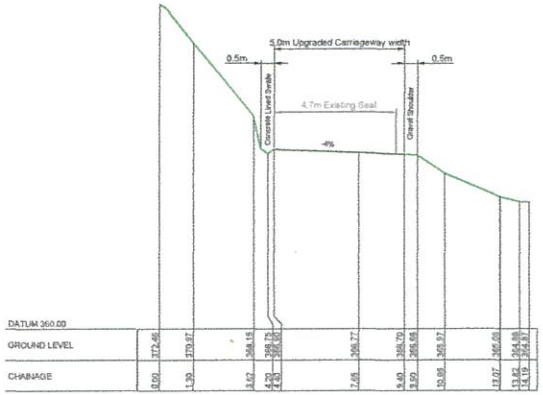

CROSS - SECTION CH 14.00
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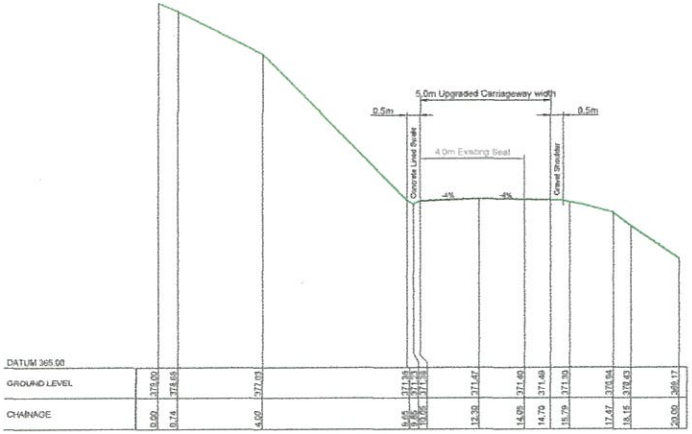
Vertical scale 1:200



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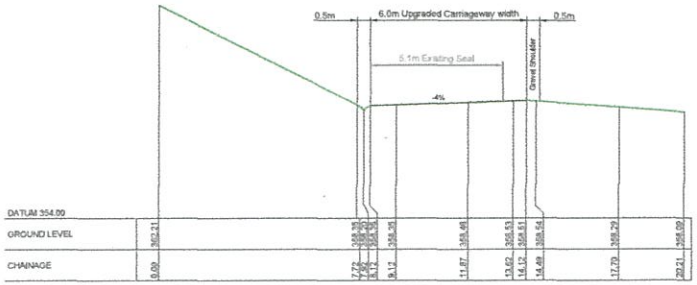

CROSS - SECTION CH 170.00
Horizontal scale 1:200
Vertical scale 1:200

CROSS-SECTIONS

MATAKAURI LODGE
ROAD WIDENING

ISSUE DATE:	20 Feb 2018	PREPARED BY:	SL
ISSUE:	A – Original Issue	Scale	1:200
			Original Plan A3
		DRAWING & ISSUE No.	3008.37E.2A

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