

[REDACTED] (AT)

From: Zhongyi Li (AT)
Sent: Monday, 4 September 2017 10:59
To: Christopher Glanfield (AT)
Subject: FW: NZTA 7024 / APP 82592 for Fulton Hogan Limited
Attachments: DetailReportData_82592_106D5X13C13.pdf; ElementComparisonReportData_82592_106D4X13C13.pdf; HPMV Permit Application 170302413.pdf; Summary Report - 82592.pdf

FYI

From: HPMV Auckland [mailto:HPMVAuckland@nzta.govt.nz]
Sent: Friday, 3 March 2017 9:54 a.m.
To: ATHPMV (AT) <ATHPMV@at.govt.nz>; [REDACTED]; [REDACTED]
Subject: NZTA 7024 / APP 82592 for Fulton Hogan Limited

Morning Guys

Can you please review this NZTA 7024 / APP 82592 for Fulton Hogan Limited from McNicol Road to Leon Leicester Ave

Route is as per attached Summary Sheet

Cheers

Joe

NZTA Auckland Northland Region High Productivity Motor Vehicle (HPMV) Permits
Email hpmvauckland@nzta.govt.nz



Please consider the environment before printing this email
Find the latest transport news, information, and advice on our website:
www.nzta.govt.nz

This email is only intended to be read by the named recipient. It may contain information which is confidential, proprietary or the subject of legal privilege. If you are not the intended recipient you must delete this email and may not use any information contained in it. Legal privilege is not waived because you have read this email.

Detail Report

Date/Time: 03 Mar 2017 8:52:35 AM

Permit application number : 82592

Schema Version:

1

Vehicle Information

Owner: Fulton Hogan C/O Transport Specifications Ltd

Units:	Unit Type	Registration
	Prime Mover	JAY191
	Trailer	1U754

Max Speed: 90

Vehicle Type: HPMV

VAI: 1.11

VGI: 1.580

Gross Mass: 64.80

Number Of Axles: 9

Load Width: 2.50

Load Length: 22.70

Load Height: 3.00

Axle No:	Axle Spacing (m):	Axle Load (t):	Axle Type:	Track Width:	Tyre Size:	Axle Index:
1	0.000	5.50	S	2.090	Standard	1.06
2	2.050	5.50	S	2.090	Standard	1.06
3	3.260	8.20	T	1.850	Standard	1.11
4	1.370	8.20	T	1.850	Standard	1.11
5	6.630	8.20	T	1.880	Standard	1.11
6	1.310	8.20	T	1.880	Standard	1.11
7	3.180	7.00	T	1.880	Standard	1.11
8	1.260	7.00	T	1.880	Standard	1.11
9	1.270	7.00	T	1.880	Standard	1.11

Route Data

Section:	Highway:	From RP:	From Junction:	To RP:	To Junction:
1.0	SH1N	448/2.907		431/7.92	
2.0	EXIT438NB	0/0.0	EXIT438NB0	0/0.76	EXIT438NB9
3.0	EXIT438SB	0/0.0	EXIT438SB0	0/0.91	EXIT438SB9
4.0	OB2B	0/0.0	2B0	0/15.0	2B9

Detailed Bridge Results:

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	431	9.480	OTAHUHU CREEK CULVERT	3 - Two-way

Width of Carriageway: 11.10 Speed Limit: 0
 Number of Lanes Loaded: 2 Legal Loading Limit: 100
 Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
 Element Name: CULVERT ROOF SLAB

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
2	1.600	1.800	2.100	311	0

KBASIC:	1.916		
Basic Vehicle Moment:	42.20	Mpost:	76.01
Basic Vehicle Shear:	109.94	Spost:	144.78

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	0.816	111	246	0.36	0.00
50 km/h Own Lane	1.30	1.30	0.753	99	217	0.32	0.00
20 km/h Own Lane	1.20	1.20	0.703	89	195	0.29	0.00
Crawl Own Lane	1.00	1.00	0.600	71	153	0.23	0.00
Crawl Central	1.00	1.00	1.800	76	198	0.24	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Beam
 Element Name: CULVERT ROOF SLAB

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
2	1.600	1.800	2.100	311	0

KBASIC:	1.916		
Basic Vehicle Moment:	42.20	Mpost:	76.01

Basic Vehicle Shear:	109.94	Spost:	144.78
----------------------	--------	--------	--------

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	0.816	111	246	0.36	0.00
50 km/h Own Lane	1.30	1.30	0.753	99	217	0.32	0.00
20 km/h Own Lane	1.20	1.20	0.703	89	195	0.29	0.00
Crawl Own Lane	1.00	1.00	0.600	71	153	0.23	0.00
Crawl Central	1.00	1.00	1.800	76	198	0.24	0.00

Element Messages:

Element Result: **Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted**

Bridge Result: Increasing: -1 - Unrestricted
 Decreasing: -1 - Unrestricted

Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	431	10.530	TRENWITH ST OVERPASS	3 - Two-way

Width of Carriageway: 3.67 Speed Limit: 0
Number of Lanes Loaded: 1 Legal Loading Limit: 100
Restrict X: Bypass Description: Bypass through local network

Element Analysis

Element Type: Beam Element Direction: DECREASING (Relevant to Decreasing Travel)
Element Name: PSC T-Beams - Equiv 3.67m strip

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.000	1.000	14.940	2,000	0

KBASIC:	1.686		
Basic Vehicle Moment:	937.52	Mpost:	988.57
Basic Vehicle Shear:	285.73	Spost:	307.49

Element Analysis Direction: DECREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.41	1.43	1.000	1,323	409	0.66	0.00
50 km/h Own Lane	1.28	1.30	1.000	1,203	371	0.60	0.00
20 km/h Own Lane	1.19	1.20	1.000	1,115	343	0.56	0.00
Crawl Own Lane	1.00	1.00	1.000	938	286	0.47	0.00
Crawl Central	1.00	1.00	1.000	938	286	0.47	0.00

Element Messages:

Element Result: Decreasing: -1 - Unrestricted

Element Type: Beam Element Direction: INCREASING (Relevant to Increasing Travel)
Element Name: PSC T-Beams - Equiv 3.67m strip

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.000	1.000	14.940	2,000	0

KBASIC:	1.686		
Basic Vehicle Moment:	937.52	Mpost:	988.57

Basic Vehicle Shear:	285.73	Spost:	307.49
----------------------	--------	--------	--------

Element Analysis Direction: INCREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.41	1.43	1.000	1,323	409	0.66	0.00
50 km/h Own Lane	1.28	1.30	1.000	1,203	371	0.60	0.00
20 km/h Own Lane	1.19	1.20	1.000	1,115	343	0.56	0.00
Crawl Own Lane	1.00	1.00	1.000	938	286	0.47	0.00
Crawl Central	1.00	1.00	1.000	938	286	0.47	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: Over U-Beams

Element Direction: DECREASING (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.25

Impact Code: 2
Length: 1.51

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: Over U-Beams

Element Direction: INCREASING (Relevant to Decreasing Travel)

VAI:	1.11
------	------

DCF:	1.25
------	------

Impact Code: 2
Length: 1.51

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: T-Beam Flanges

Element Direction: DECREASING (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.25

Impact Code: 2
Length: 1.80

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: Between T-Beams & U-Beams

Element Direction: INCREASING (Relevant to Decreasing Travel)

VAI:	1.11
------	------

DCF:	1.25
------	------

Impact Code: 2
 Length: 1.51

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted

Element Type: Deck-Slab
 Element Name: T-Beam Flanges

Element Direction: INCREASING (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.25

Impact Code: 2
 Length: 1.80

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted

Element Type: Deck-Slab
 Element Name: Between T-Beams & U-Beams

Element Direction: DECREASING (Relevant to Decreasing Travel)

VAI:	1.11
------	------

DCF:	1.25
------	------

Impact Code: 2
Length: 1.51

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: **Decreasing: -1 - Unrestricted**

Bridge Result: Increasing: -1 - Unrestricted

Decreasing: -1 - Unrestricted

Bridge Warnings: An off-highway bypass exists: Bypass through local network

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	431	11.120	TAMAKI RIVER BRIDGE	3 - Two-way

Width of Carriageway: 3.67 Speed Limit: 0
Number of Lanes Loaded: 1 Legal Loading Limit: 100
Restrict X: Bypass Description: Local roads and SH20

Element Analysis

Element Type: Beam Element Direction: BOTH (Relevant to Both Directions)
Element Name: Modelled as a 3.67m wide strip of bridge

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.000	1.000	14.935	1,840	602

KBASIC:	1.686		
Basic Vehicle Moment:	937.06	Mpost:	988.06
Basic Vehicle Shear:	285.68	Spost:	307.45

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.41	1.43	1.000	1,323	409	0.72	0.68
50 km/h Own Lane	1.28	1.30	1.000	1,203	371	0.65	0.62
20 km/h Own Lane	1.19	1.20	1.000	1,114	343	0.61	0.57
Crawl Own Lane	1.00	1.00	1.000	937	286	0.51	0.47
Crawl Central	1.00	1.00	1.000	937	286	0.51	0.47

Element Messages:

Element Result: **Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted**

Element Type: Deck-Slab Element Direction: BOTH (Relevant to Decreasing Travel)
Element Name: Deck Slabs on Median Half of Bridge

VAI:	1.11
DCF:	1.25

Impact Code: 2
Length: 7.11

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: Deck Slabs on Outer Half of Bridge

Element Direction: BOTH (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.25

Impact Code: 2
Length: 6.56

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.977
50 km/h Own Lane	1.00	3.00	1.30	0.888
20 km/h Own Lane	1.00	2.00	1.20	0.820
Crawl Own Lane	1.00	0.00	1.00	0.683
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Bridge Result: Increasing: -1 - Unrestricted
Decreasing: -1 - Unrestricted
Bridge Warnings: Two forms of bypass exist: Local roads and SH20

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	431	14.850	FLATBUSH RD (TUI CASPER) PEDESTRIAN SUBWAY	2 - Decreasing

Width of Carriageway: 11.10 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: SUBWAY ROOF SLAB

Element Direction: DECREASING (Relevant to Decreasing Travel)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
2	1.600	1.800	2.270	369	0

KBASIC:	1.910		
Basic Vehicle Moment:	46.16	Mpost:	82.72
Basic Vehicle Shear:	110.92	Spost:	145.77

Element Analysis Direction: DECREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	0.832	124	253	0.34	0.00
50 km/h Own Lane	1.30	1.30	0.768	110	223	0.30	0.00
20 km/h Own Lane	1.20	1.20	0.718	99	200	0.27	0.00
Crawl Own Lane	1.00	1.00	0.614	79	158	0.21	0.00
Crawl Central	1.00	1.00	1.800	83	200	0.23	0.00

Element Messages:

Element Result: **Decreasing: -1 - Unrestricted**

Bridge Result: Decreasing: -1 - Unrestricted
Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	431	14.850	FLAT BUSH PEDESTRIAN SUBWAY	3 - Two-way

Width of Carriageway: 11.10 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: SUBWAY ROOF SLAB

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
2	1.600	1.800	2.270	369	0

KBASIC:	1.910		
Basic Vehicle Moment:	46.16	Mpost:	82.72
Basic Vehicle Shear:	110.92	Spost:	145.77

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	0.832	124	253	0.34	0.00
50 km/h Own Lane	1.30	1.30	0.768	110	223	0.30	0.00
20 km/h Own Lane	1.20	1.20	0.718	99	200	0.27	0.00
Crawl Own Lane	1.00	1.00	0.614	79	158	0.21	0.00
Crawl Central	1.00	1.00	1.800	83	200	0.23	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Bridge Result: Increasing: -1 - Unrestricted
Decreasing: -1 - Unrestricted

Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	448	0.530	SHT UNDERPASS	3 - Two-way

Width of Carriageway: 27.62 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description: Local roads

Element Analysis

Element Type: Beam
Element Name: 700mm deck slab with haunch - 3.65m width

Element Direction: DECREASING (Relevant to Decreasing Travel)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.000	1.000	18.785	3,640	1,306

KBASIC:	1.651		
Basic Vehicle Moment:	1,289.02	Mpost:	1,399.05
Basic Vehicle Shear:	335.88	Spost:	338.88

Element Analysis Direction: DECREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.39	1.43	0.895	2,857	733	0.78	0.56
50 km/h Own Lane	1.26	1.30	0.855	2,589	663	0.71	0.51
20 km/h Own Lane	1.18	1.20	0.825	2,404	612	0.66	0.47
Crawl Own Lane	1.00	1.00	0.757	2,034	510	0.56	0.39
Crawl Central	1.00	1.00	1.000	1,289	336	0.35	0.26

Element Messages:

Element Result: Decreasing: -1 - Unrestricted

Element Type: Beam
Element Name: 700mm deck slab with haunch - 3.65m width

Element Direction: INCREASING (Relevant to Increasing Travel)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.000	1.000	18.785	3,640	1,306

KBASIC:	1.651		
Basic Vehicle Moment:	1,289.02	Mpost:	1,399.05

Basic Vehicle Shear:	335.88	Spost:	338.88
----------------------	--------	--------	--------

Element Analysis Direction: INCREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.39	1.43	0.895	2,857	733	0.78	0.56
50 km/h Own Lane	1.26	1.30	0.855	2,589	663	0.71	0.51
20 km/h Own Lane	1.18	1.20	0.825	2,404	612	0.66	0.47
Crawl Own Lane	1.00	1.00	0.757	2,034	510	0.56	0.39
Crawl Central	1.00	1.00	1.000	1,289	336	0.35	0.26

Element Messages:

Element Result: **Increasing: -1 - Unrestricted**

Bridge Result: Increasing: -1 - Unrestricted

Decreasing: -1 - Unrestricted

Bridge Warnings: An off-highway bypass exists: Local roads

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	448	1.930	PUHINUI STREAM BRIDGE No.1	1 - Increasing

Width of Carriageway: 7.92 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: PSC I-Beams

Element Direction: INCREASING (Relevant to Increasing Travel)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.460	1.800	18.290	6,049	0

KBASIC:	1.655		
Basic Vehicle Moment:	1,243.71	Mpost:	1,344.30
Basic Vehicle Shear:	329.41	Spost:	335.06

Element Analysis Direction: INCREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.39	1.43	1.394	4,288	1,123	0.71	0.00
50 km/h Own Lane	1.27	1.30	1.366	3,987	1,042	0.66	0.00
20 km/h Own Lane	1.18	1.20	1.343	3,773	981	0.62	0.00
Crawl Own Lane	1.00	1.00	1.289	3,337	857	0.55	0.00
Crawl Central	1.00	1.00	1.800	2,239	593	0.37	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: ALL DECK SLABS

Element Direction: INCREASING (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.80

Impact Code: 2
Length: 2.17

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.678
50 km/h Own Lane	1.00	3.00	1.30	0.617
20 km/h Own Lane	1.00	2.00	1.20	0.569
Crawl Own Lane	1.00	0.00	1.00	0.474
Crawl Central	1.00	0.00		

Element Messages:

Element Result: **Increasing: -1 - Unrestricted**

Bridge Result: Increasing: -1 - Unrestricted

Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
1N	448	1.930	PUHINUI STREAM BRIDGE NO.2	2 - Decreasing

Width of Carriageway: 7.92 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: PSC I-Beams

Element Direction: DECREASING (Relevant to Decreasing Travel)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.460	1.800	18.290	6,049	0

KBASIC:	1.655		
Basic Vehicle Moment:	1,243.71	Mpost:	1,344.30
Basic Vehicle Shear:	329.41	Spost:	335.06

Element Analysis Direction: DECREASING

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.39	1.43	1.394	4,288	1,123	0.71	0.00
50 km/h Own Lane	1.27	1.30	1.366	3,987	1,042	0.66	0.00
20 km/h Own Lane	1.18	1.20	1.343	3,773	981	0.62	0.00
Crawl Own Lane	1.00	1.00	1.289	3,337	857	0.55	0.00
Crawl Central	1.00	1.00	1.800	2,239	593	0.37	0.00

Element Messages:

Element Result: Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
Element Name: ALL DECK SLABS

Element Direction: DECREASING (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.80

Impact Code: 2
Length: 2.17

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.678
50 km/h Own Lane	1.00	3.00	1.30	0.617
20 km/h Own Lane	1.00	2.00	1.20	0.569
Crawl Own Lane	1.00	0.00	1.00	0.474
Crawl Central	1.00	0.00		

Element Messages:

Element Result: **Decreasing: -1 - Unrestricted**

Bridge Result: Decreasing: -1 - Unrestricted

Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
HILL RD	448	3.080	HILL ROAD UNDERPASS (OVER SH1N)	3 - Two-way

Width of Carriageway: 7.32 Speed Limit: 50
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: LONG BEAMS SPAN 2

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.420	1.800	3.962	13,694	0

KBASIC:	1.852		
Basic Vehicle Moment:	117.09	Mpost:	154.11
Basic Vehicle Shear:	137.10	Spost:	155.58

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	1.087	350	382	0.03	0.00
50 km/h Own Lane	1.30	1.30	1.029	315	344	0.02	0.00
20 km/h Own Lane	1.20	1.20	0.981	289	314	0.02	0.00
Crawl Own Lane	1.00	1.00	0.874	237	256	0.02	0.00
Crawl Central	1.00	1.00	1.800	211	247	0.02	0.00

Element Messages:

Element Result: **Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted**

Element Type: Beam
Element Name: LONG BEAMS SPANS 1 AND 3

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	1.390	1.800	17.069	6,264	0

KBASIC:	1.666		
Basic Vehicle Moment:	1,132.03	Mpost:	1,211.64

Basic Vehicle Shear:	315.22	Spost:	325.38
----------------------	--------	--------	--------

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.40	1.43	1.330	3,718	1,032	0.59	0.00
50 km/h Own Lane	1.27	1.30	1.304	3,457	958	0.55	0.00
20 km/h Own Lane	1.18	1.20	1.282	3,269	902	0.52	0.00
Crawl Own Lane	1.00	1.00	1.231	2,885	788	0.46	0.00
Crawl Central	1.00	1.00	1.800	2,038	567	0.33	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
 Element Name: ALL DECK SLABS

Element Direction: BOTH (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.00

Impact Code: 2
 Length: 6.12

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	1.221
50 km/h Own Lane	1.00	3.00	1.30	1.110
20 km/h Own Lane	1.00	2.00	1.20	1.025
Crawl Own Lane	1.00	0.00	1.00	0.854
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Bridge Result: Increasing: -1 - Unrestricted
 Decreasing: -1 - Unrestricted

Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
OB2B	0	1.250	TAMAKI DRIVE OVER RAIL BRIDGE	3 - Two-way

Width of Carriageway: 22.80 Speed Limit: -1
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description: Off-Highway Bypass

Element Analysis

Element Type: Beam Element Direction: BOTH (Relevant to Both Directions)
Element Name: Pre-stressed I-Beams with composite deck

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	3.380	3.600	20.400	20,720	0

KBASIC:	1.637		
Basic Vehicle Moment:	1,495.21	Mpost:	1,581.53
Basic Vehicle Shear:	355.35	Spost:	351.05

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.38	1.43	3.110	11,347	2,672	0.55	0.00
50 km/h Own Lane	1.26	1.30	2.991	10,352	2,432	0.50	0.00
20 km/h Own Lane	1.17	1.20	2.902	9,672	2,256	0.47	0.00
Crawl Own Lane	1.00	1.00	2.700	8,308	1,907	0.40	0.00
Crawl Central	1.00	1.00	3.600	5,383	1,279	0.26	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Bridge Result: Increasing: -1 - Unrestricted
Decreasing: -1 - Unrestricted

Bridge Warnings: An off-highway bypass exists: Off-Highway Bypass
Check 1 Message: OVERWEIGHT PERMITS FOR THIS BRIDGE ISSUED BY AUCKLAND TRANSPORT

Highway	Reference Stn	Displacement	Bridge Name	Direction
OB2B	0	3.900	POINT RESOLUTION ESTUARY BRIDGE (HOBSON BAY)	3 - Two-way

Width of Carriageway: 12.20 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: LONG BEAM SPAN 2

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	3.260	3.210	9.140	3,306	0

KBASIC:	1.740		
Basic Vehicle Moment:	409.20	Mpost:	431.91
Basic Vehicle Shear:	223.68	Spost:	245.69

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	2.949	2,999	1,668	0.91	0.00
50 km/h Own Lane	1.30	1.30	2.827	2,725	1,516	0.82	0.00
20 km/h Own Lane	1.20	1.20	2.724	2,514	1,400	0.76	0.00
Crawl Own Lane	1.00	1.00	2.487	2,092	1,168	0.63	0.00
Crawl Central	1.00	1.00	3.210	1,314	718	0.40	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Beam
Element Name: LONG BEAMS SPANS 1 & 3

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	3.240	3.240	6.100	1,918	0

KBASIC:	1.789		
Basic Vehicle Moment:	227.29	Mpost:	256.18

Basic Vehicle Shear:	165.18	Spost:	191.90
----------------------	--------	--------	--------

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	2.723	1,583	1,166	0.83	0.00
50 km/h Own Lane	1.30	1.30	2.582	1,424	1,050	0.74	0.00
20 km/h Own Lane	1.20	1.20	2.465	1,304	961	0.68	0.00
Crawl Own Lane	1.00	1.00	2.204	1,066	787	0.56	0.00
Crawl Central	1.00	1.00	3.240	736	535	0.38	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
 Element Name: SPAN 2 - SPANS 1 & 3 NOT CRITICAL

Element Direction: BOTH (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.29

Impact Code: 2
 Length: 9.14

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.947
50 km/h Own Lane	1.00	3.00	1.30	0.860
20 km/h Own Lane	1.00	2.00	1.20	0.794
Crawl Own Lane	1.00	0.00	1.00	0.662
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Bridge Result: Increasing: -1 - Unrestricted
 Decreasing: -1 - Unrestricted

Bridge Warnings:

Highway	Reference Stn	Displacement	Bridge Name	Direction
OB2B	0	5.000	NGAPIPI ESTUARY BRIDGE (HOBSON BAY)	3 - Two-way

Width of Carriageway: 12.20 Speed Limit: 0
Number of Lanes Loaded: 2 Legal Loading Limit: 100
Restrict X: Bypass Description:

Element Analysis

Element Type: Beam
Element Name: LONG BEAM SPAN 2

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	3.210	3.210	12.190	6,041	0

KBASIC:	1.712		
Basic Vehicle Moment:	686.60	Mpost:	716.51
Basic Vehicle Shear:	261.02	Spost:	281.53

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	2.979	5,056	1,950	0.84	0.00
50 km/h Own Lane	1.30	1.30	2.875	4,624	1,785	0.77	0.00
20 km/h Own Lane	1.20	1.20	2.787	4,291	1,657	0.71	0.00
Crawl Own Lane	1.00	1.00	2.580	3,620	1,400	0.60	0.00
Crawl Central	1.00	1.00	3.210	2,204	838	0.36	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Beam
Element Name: LONG BEAMS SPANS 1 & 3

Element Direction: BOTH (Relevant to Both Directions)

Impact Code	ESTD	E_CENTR	SPAN	MCAP	SCAP
3	3.210	3.210	9.140	3,420	0

KBASIC:	1.740		
Basic Vehicle Moment:	409.20	Mpost:	431.91

Basic Vehicle Shear:	223.68	Spost:	245.69
----------------------	--------	--------	--------

Element Analysis Direction: BOTH

Restriction Level	Impact Factors		Eccent Factor	Total		Fraction of Capacity	
	Moment	Shear		Moment	Shear	Moment	Shear
Unrestricted	1.43	1.43	2.903	2,953	1,642	0.86	0.00
50 km/h Own Lane	1.30	1.30	2.783	2,683	1,493	0.78	0.00
20 km/h Own Lane	1.20	1.20	2.682	2,475	1,379	0.72	0.00
Crawl Own Lane	1.00	1.00	2.449	2,060	1,150	0.60	0.00
Crawl Central	1.00	1.00	3.210	1,314	718	0.38	0.00

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Element Type: Deck-Slab
 Element Name: SPAN 2 - SPANS 1 & 3 NOT CRITICAL

Element Direction: BOTH (Relevant to Decreasing Travel)

VAI:	1.11
DCF:	1.32

Impact Code: 2
 Length: 12.19

Restriction Level	Kv	Ks	Impact Factors	DLR
Unrestricted	1.10	3.00	1.43	0.925
50 km/h Own Lane	1.00	3.00	1.30	0.841
20 km/h Own Lane	1.00	2.00	1.20	0.776
Crawl Own Lane	1.00	0.00	1.00	0.647
Crawl Central	1.00	0.00		

Element Messages:

Element Result: Increasing: -1 - Unrestricted, Decreasing: -1 - Unrestricted

Bridge Result: Increasing: -1 - Unrestricted
 Decreasing: -1 - Unrestricted

Bridge Warnings:

Element Comparison Report

Date/Time: 03 Mar 2017 8:37:24 AM

Permit application number : 82592

Schema Version:

1

Vehicle Information

Owner: Fulton Hogan C/O Transport Specifications Ltd

Units:	Unit Type	Registration
	Prime Mover	JAY191
	Trailer	1U754

Max Speed: 90

Vehicle Type: HPMV

VAI: 1.11

VGI: 1.580

Gross Mass: 64.80

Number Of Axles: 9

Load Width: 2.50

Load Length: 22.70

Load Height: 3.00

Axle No:	Axle Spacing (m):	Axle Load (t):	Axle Type:	Track Width:	Tyre Size:	Axle Index:
1	0.000	5.50	S	2.090	Standard	1.06
2	2.050	5.50	S	2.090	Standard	1.06
3	3.260	8.20	T	1.850	Standard	1.11
4	1.370	8.20	T	1.850	Standard	1.11
5	6.630	8.20	T	1.880	Standard	1.11
6	1.310	8.20	T	1.880	Standard	1.11
7	3.180	7.00	T	1.880	Standard	1.11
8	1.260	7.00	T	1.880	Standard	1.11
9	1.270	7.00	T	1.880	Standard	1.11

Route Data

Section:	Highway:	From RP:	From Junction:	To RP:	To Junction:
1.0	SH1N	448/2.907		431/7.92	
2.0	EXIT438NB	0/0.0	EXIT438NB0	0/0.76	EXIT438NB9
3.0	EXIT438SB	0/0.0	EXIT438SB0	0/0.91	EXIT438SB9
4.0	OB2B	0/0.0	2B0	0/15.0	2B9

Bridge Results

Highway:	RP:	BSN:	Bridge Name:	Analysis Direction:	BEAM:	VBEAM:	DECK SLAB:	TIMB DECK:	TRANSOM:	INFLUENCE LINE:	Fraction of Capacity:		Critical Restriction:		Speed Limit:
											Moment	Shear	Code	Description	
1N	431/9.48	4404	OTAHUHU CREEK CULVERT	increasing	- 1	NME	NME	NME	NME	NME	0.36	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	NME	NME	NME	NME	0.36	0.00	- 1	Unrestricted	90
1N	431/10.53	4415	TRENWITH ST OVERPASS	increasing	- 1	NME	- 1	NME	NME	NME	0.66	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	- 1	NME	NME	NME	0.66	0.00	- 1	Unrestricted	90
1N	431/11.12	4422	TAMAKI RIVER BRIDGE	increasing	- 1	NME	- 1	NME	NME	NME	0.72	0.68	- 1	Unrestricted	90
				decreasing	- 1	NME	- 1	NME	NME	NME	0.72	0.68	- 1	Unrestricted	90
1N	431/14.85	4459	FLATBUSH RD (TUI CASPER) PEDESTRIAN SUBWAY	decreasing	- 1	NME	NME	NME	NME	NME	0.34	0.00	- 1	Unrestricted	90
1N	431/14.85	4459	FLAT BUSH PEDESTRIAN SUBWAY	increasing	- 1	NME	NME	NME	NME	NME	0.34	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	NME	NME	NME	NME	0.34	0.00	- 1	Unrestricted	90
1N	448/0.53	4485	SH1 UNDERPASS	increasing	- 1	NME	NME	NME	NME	NME	0.78	0.56	- 1	Unrestricted	90
				decreasing	- 1	NME	NME	NME	NME	NME	0.78	0.56	- 1	Unrestricted	90
1N	448/1.93	4500	PUHINUI STREAM BRIDGE No.1	increasing	- 1	NME	- 1	NME	NME	NME	0.71	0.00	- 1	Unrestricted	90
1N	448/1.93	4501	PUHINUI STREAM BRIDGE NO.2	decreasing	- 1	NME	- 1	NME	NME	NME	0.71	0.00	- 1	Unrestricted	90
HILL RD	448/3.08	4510	HILL ROAD UNDERPASS (OVER SH1N)	increasing	- 1	NME	- 1	NME	NME	NME	0.59	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	- 1	NME	NME	NME	0.59	0.00	- 1	Unrestricted	90
OB2B	0/1.25		TAMAKI DRIVE OVER RAIL BRIDGE	increasing	- 1	NME	NME	NME	NME	NME	0.55	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	NME	NME	NME	NME	0.55	0.00	- 1	Unrestricted	90
CHECK 1: OVERWEIGHT PERMITS FOR THIS BRIDGE ISSUED BY AUCKLAND TRANSPORT															
OB2B	0/3.90		POINT RESOLUTION ESTUARY BRIDGE (HOBSON BAY)	increasing	- 1	NME	- 1	NME	NME	NME	0.91	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	- 1	NME	NME	NME	0.91	0.00	- 1	Unrestricted	90
OB2B	0/5.00		NGAPIPI ESTUARY BRIDGE (HOBSON BAY)	increasing	- 1	NME	- 1	NME	NME	NME	0.86	0.00	- 1	Unrestricted	90
				decreasing	- 1	NME	- 1	NME	NME	NME	0.86	0.00	- 1	Unrestricted	90

Total Checked: 12
Structures with No Restriction: 0

High Productivity Motor Vehicle Permit Application

Permit Information

Reference No.: 170302413	
Road Network: Both	Application Type: New
Existing Permit #:	Permit Type: Higher Mass
Pro-forma: Pro-forma	

General Information

Company Name: Fulton Hogan - Auckland	TSL Number: 05457
Contact Person: Brett Horrobin	Depot Location: Reliable Way, Mt Wellington
Postal Address: Private Bag 11-900 Ellerslie	
Postal Code:	Applicant Email: [REDACTED]
Date of Application: 02/03/2017	Date Permit Required: 16/03/2017
Tel No.: [REDACTED]	Cellphone No.: [REDACTED]
Permit From date :	Permit To date:
Route From: 350 McNicol Road, Clevedon	Route To: 40 Leon Leicester Avenue, Mt Wellington
Route From Postal Code: 2585	Route To Postal Code: 1060
Return Trip: Yes	
Route Description: Head northwest on McNicol Rd toward Quinns Rd then turn left onto Tourist Rd. Turn left onto Papakura-Clevedon Rd. Head southwest on Papakura-Clevedon Rd toward Burnside Rd then turn right onto Mullins Rd. Turn left onto Airfield Rd. Head west on Airfield Rd then at the roundabout, take the 3rd exit onto Mill Rd. At the roundabout, take the 1st exit onto Alfriston Rd/Pacific Coast Hwy. Continue to follow Pacific Coast Hwy. At the roundabout, take the 1st exit onto Hill Rd/Pacific Coast Hwy. Turn right onto Grande Vue Rd/Pacific Coast Hwy then slight right to stay on Grande Vue Rd/Pacific Coast Hwy. Merge onto State Highway 1. Take exit 438 for Urban Route 6/Mount Wellington Hwy. Turn right onto Mount Wellington Hwy/Urban Route 6. Turn left onto Penrose Rd then head west on Penrose Rd toward Ruawai Rd. Turn right onto Leonard Rd and continue straight onto Leon Leicester Ave where the destination is on the right.	
Comments (e.g. Previous related permit number, etc):	

Vehicle Information

Vehicle Type: R22T23	# Units: 2
Total Width (m): 2.50	Total Height (m): 3.00
Total Length (m): 22.70	Width to Outside Tyres (m): 2.50
Load Description: Aggregates	Total Mass Applied For (kg): 57800.00
Load: Divisible	Axle Weight flexibility (AWF): Yes
AWF limits: HPMV	

Unit Reg. JAY191

Reg. Number: JAY191	GVM (kg): 27000.00	GCM (kg): 58000.00
Total Unit Mass (kg): 27000.00	No. Of Axles: 4	Is Prime Mover: Yes

Axle information for unit JAY191

Steering Axle	Axle Set	Axle Type	Tyre Size	Suspension Type	Track Outer	Mass (kg)	Max Mass (user defined kg)	Spacing from prev (m)
Yes	(TS) Twin Steer	(S) Single Tyred Axle	275/70/22.5	(L) Leaf Spring	2.09	5400.00		0.00
Yes	(TS) Twin Steer	(S) Single Tyred Axle	275/70/22.5	(L) Leaf Spring	2.09	5400.00		2.05
No	(T) Tandem	(T) Twin Tyred Axle	275/70/22.5	(AD) Air Bag - Drive Axle	1.85	8000.00		3.26
No	(T) Tandem	(T) Twin Tyred Axle	275/70/22.5	(AD) Air Bag - Drive Axle	1.85	8000.00		1.37

Unit Reg. 1U754

Reg. Number: 1U754	GVM (kg): 32000.00	GCM (kg): 58000.00
Total Unit Mass (kg): 32000.00	No. Of Axles: 5	Is Prime Mover: No

Axle information for unit 1U754

Steering Axle	Axle Set	Axle Type	Tyre Size	Suspension Type	Track Outer	Mass (kg)	Max Mass (user defined kg)	Spacing from prev (m)
No	(T) Tandem	(T) Twin Tyred Axle	265/70 R19.5	(A) Air Bag	1.88	6200.00		6.63
No	(T) Tandem	(T) Twin Tyred Axle	265/70 R19.5	(A) Air Bag	1.88	6200.00		1.31
No	(Tri) Tri-axle	(T) Twin Tyred Axle	265/70 R19.5	(A) Air Bag	1.88	6200.00		3.18
No	(Tri) Tri-axle	(T) Twin Tyred Axle	265/70 R19.5	(A) Air Bag	1.88	6200.00		1.26
No	(Tri) Tri-axle	(T) Twin Tyred Axle	265/70 R19.5	(A) Air Bag	1.88	6200.00		1.27

OPermit**Appl. No. 82592**

Company Name: Fulton Hogan C/O Transport Specifications Ltd

BESS No.: **Region:** Auckland

Contact Person: Jared Dodds **Email:** [REDACTED]

Phone Number: [REDACTED] **Fax Number:** 09 4159085

Depot Location: Penrose **Mobile Number:** [REDACTED]

Comment: SAP Business Partner: 101005093 **Postal Address:** PO BOX 302 852 North Harbour 0751 Auckland

Application Type: HPMV

Permit Type: HPMV - Higher Mass

Load Type: Divisible

Feasibility Study: Yes

Permit From: 17/03/2017

Permit To: 17/03/2019

HVI No.: JAY191+1U754*

Registration Nos: JAY191
1U754 **Vehicle Type:** HPMV

Gross Combined Mass from COL: 58000 **Max Speed:** 90 (km/h)

Overall Dimensions (m)

Width: 2.5

Height: 3.0

Length: 22.7

Load Description: Aggregates

Axle Weight Flexibility: None

Vehicle Design: R22T23

Axle Position:	Type:	Axle Set:	Tyre Size:	Suspn:	Track (Out):	Track (In):	Weight:	Spacing:	Axle Index:
1	S	TS	Standard	L	2.09		5.5	0.0	1.06
2	S	TS	Standard	L	2.09		5.5	2.05	1.06
3	T	T	Standard	AD	1.85		8.2	3.26	1.11
4	T	T	Standard	AD	1.85		8.2	1.37	1.11
5	T	T	Standard	A	1.88		8.2	6.63	1.11
6	T	T	Standard	A	1.88		8.2	1.31	1.11
7	T	TRI	Standard	A	1.88		7.0	3.18	1.11
8	T	TRI	Standard	A	1.88		7.0	1.26	1.11
9	T	TRI	Standard	A	1.88		7.0	1.27	1.11

Vehicle Parameters - GM: 64.80 **VAI:** 1.11 **VGI:** 1.58 **Crit. WB:** 20.33

Route Name: McNicol Road to Leon Leicester Ave **Region:** Auckland
Route Description: HPMV 29/07/16 Return Via Reverse Route (9 Axle Unit Only)

[Group 1: Contains 1 section]

Highway:	From	Junc:	Ref-Stn:	Disp:	To Junc:	Ref-Stn:	Disp:
SH1N			448	2.907		431	7.92

Route Section Comment: McNicol Rd (AT) - Tourist Rd (AT) - Papakura / Clevedon Rd (AT) - Mullins Rd (AT) - Airfield RD (AT) - Mill Rd (AT) - Alfriston Rd (AT) - Straford Rd (AT) - Hill Rd - Grande Vue Rd (AT) - SH1N - Exit 438 (Mt Wellington Northbound Off Ramp Exit 438)

Misc. Bridges

HILL ROAD UNDERPASS (OVER SH1N)

[Group 2: Contains 1 section]

Highway:	From	Junc:	Ref-Stn:	Disp:	To Junc:	Ref-Stn:	Disp:
EXIT438NB			EXIT438NB0			EXIT438NB9	

Route Section Comment: Mt Wellington Highway Northbound Off Ramp

Misc. Bridges

[Group 3: Contains 1 section]

Highway:	From	Junc:	Ref-Stn:	Disp:	To Junc:	Ref-Stn:	Disp:
EXIT438SB			EXIT438SB0			EXIT438SB9	

Route Section Comment: Mt Wellington Highway Southbound Off Ramp

Misc. Bridges

[Group 4: Contains 1 section]

Highway:	From	Junc:	Ref-Stn:	Disp:	To Junc:	Ref-Stn:	Disp:
OB2B			2B0			2B9	

Route Section Comment: Mt Wellington Highway (AT) - Penrose Road (OB2B) - Leonard Road (AT) - Leon Leicester Ave (AT)

Misc. Bridges