Appendix F

Earthworks Drawings

Proposed Littles Subdivision
Littles Road - Queenstown

Location Plan

Drawing No:	Drawing Title:	Revision:
General		
QV021-D-100	Location and Drawing Schedule	B
Roading/Access		
QV021-D-200	Lot Accesses - Overall Site Plan	B
QV021-D-205	Access 1 Plan	B
QV021-D-220	Access 2 & 2A Plan	B
QV021-D-225	Typical Cross Section	B
QV021-D-230	Access 1 Longitudinal Section	B
QV021-D-250	Access 2A Longitudinal Section	B

REV	DATE	DESCRIPTION	APPROVED
B	22/05/19	Lot layout altered	JFM
A	20/03/19	Initial Issue	JFM

CONSULTANT

Civilised Ltd

CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

JFM	20/03/2019
DESIGN	DATE
JDR	20/03/2019
DRAWN	DATE
JFM	20/03/2019
CHECKED	DATE

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WAKATIPU INVESTMENTS LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

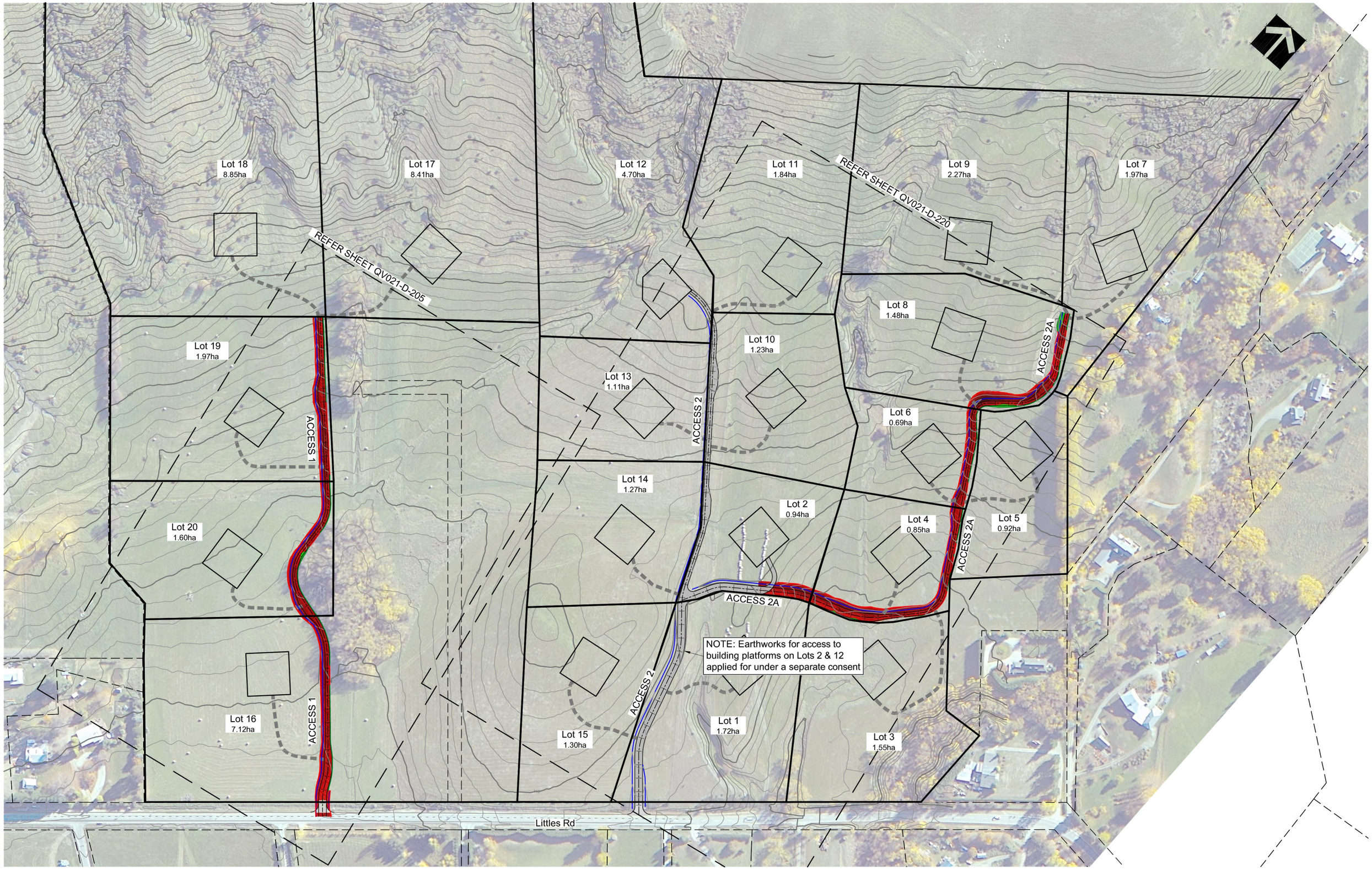
LOCATION AND DRAWING SCHEDULE

CONTRACT NUMBER: -

SCALE (AT A3): 1:50,000

DRAWING NUMBER: QV021-D-100

REVISION: B



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PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

ROADING/ACCESS
LOT ACCESSES - OVERALL SITE PLAN

CONTRACT NUMBER -

SCALE (AT A3) 1:2500

DRAWING NUMBER QV021-D-200

REVISION B

KEY

Cut Depth 0.0m to 0.2m	Fill Depth 0.0m to 0.2m
Cut Depth 0.2 to 0.4m	Fill Depth 0.2 to 0.4m
Cut Depth 0.4m to 0.6m	Fill Depth 0.4 to 0.6m
Cut Depth 0.6m to 0.8m	Fill Depth 0.6 to 0.8m
Cut Depth 0.8m to 1.0m	
Cut Depth 1.0m to 1.2m	

VOLUMES

ACCESS 1 & 1A

Cut	10m^3
Fill	5m^3
Strip	880m^3

EARTHWORKS AREA

Area	2940m^2

DEPTHS

Max. Fill Depth	0.15m
Max. Cut Depth	0.60m

NOTE:
Volumes & Depths are from existing ground to design subgrade.
Pavement - 100mm AP40 on 200mm AP65 Basecourse
Strip depth 300mm

INDIVIDUAL BUILDING PLATFORM ACCESSES
EARTHWORKS ESTIMATES

Lot No	Access Length	Area (m^2)	Strip (m^3)	Cut (m^2)	Fill (m^2)
16	75	675	180	22.5	3
17	85	765	204	25.5	3.4
18	85	765	204	25.5	3.4
19	85	765	204	25.5	3.4
20	65	585	156	19.5	2.6
	TOTAL	3555	948	118.5	15.8

Lot 16 7.12ha
Lot 17 8.41ha
Lot 18 8.85ha
Lot 19 1.97ha
Lot 20 1.60ha
ACCESS 1
LITTLES ROAD
2.5m Wide Passing Bay
Max Fill 0.15m
Max Cut 0.60m
Access 1 width 5.5m to CH160, 3.0m beyond
Grade 3/5 Chip Seal From Existing Edge of Seal to Property Boundary
R6.0m radius to entrance per QLDC District Plan Appendix 7 Diagram 2
Ø900 PVC Farm Tuff Culvert Pipe Complete with Hynds Precast Concrete Mountable Wing Walls (Hynds Product Code: WW0450MOUNT.6) at both ends

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Civilised Ltd
CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348
T: 027 223 3036
E: john@mccartneys.nz

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PROJECT/LOCATION
PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

CONTRACT NUMBER -
SCALE (AT A3) 1:1000

TITLE
ROADING/ACCESS
ACCESS 1 & 1A PLAN

DRAWING NUMBER QV021-D-205
REVISION B

INDIVIDUAL BUILDING PLATFORM ACCESSES EARTHWORKS ESTIMATES

Lot No	Access Length	Area (m^2)	Strip (m^3)	Cut (m^2)	Fill (m^2)
1	55	495	132	16.5	2.2
2		0	0	0	0
3	115	1035	276	34.5	4.6
4	25	225	60	7.5	1
5	75	675	180	22.5	3
6	25	225	60	7.5	1
7	60	540	144	18	2.4
8	40	360	96	12	1.6
9	95	855	228	28.5	3.8
10	55	495	132	16.5	2.2
11	65	585	156	19.5	2.6
12		0	0	0	0
13	40	360	96	12	1.6
14	50	450	120	15	2
15	75	675	180	22.5	3
	TOTAL	6975	1860	232.5	31

Lot 12
4.70ha

Lot 13
1.11ha

Lot 14
1.27ha

Lot 11
1.84ha

Lot 15
1.30ha

Lot 10
1.23ha

Lot 2
0.94ha

Lot 9
2.27ha

Lot 1
1.72ha

Lot 8
1.48ha

Lot 6
0.69ha

Lot 4
0.85ha

Lot 3
1.55ha

Lot 5
0.92ha

Lot 7
1.97ha

ACCESS 2

ACCESS 2A

LITTLES ROAD

2.5m wide passing bay

2.5m wide passing bay

2.5m wide passing bay

2.5m wide corner widening (as passing bay)

Access 2 width 5.5m to CH170, 3.0m beyond

Access 2A width 5.5m to CH145, 3.0m beyond

Ø315 PVC Farm Tuff Culvert Pipe Complete with Hynds Precast Concrete Mountable Wing Walls (Hynds Product Code: WW0450MOUNT.6) at both ends

NOTE: Earthworks for access to building platforms on Lots 2 & 12 applied for under a separate consent

R6.0m radius to entrance per QLDC District Plan Appendix 7 Diagram 2

Grade 3/5 Chip Seal From Existing Edge of Seal to Property Boundary

All existing Broom, Gorse and Scrub to be removed from the road reserve frontage to Lot 1

Max Cut 1.20m

Max Fill 0.71m

KEY

- Cut Depth 0.0m to 0.2m
- Cut Depth 0.2 to 0.4m
- Cut Depth 0.4m to 0.6m
- Cut Depth 0.6m to 0.8m
- Cut Depth 0.8m to 1.0m
- Cut Depth 1.0m to 1.2m
- Fill Depth 0.0m to 0.2m
- Fill Depth 0.2 to 0.4m
- Fill Depth 0.4 to 0.6m
- Fill Depth 0.6 to 0.8m

VOLUMES
ACCESS 2A (CH 70 to END)

Cut	$85m^3$
Fill	$15m^3$
Strip	$1015m^3$

EARTHWORKS AREA

Area	$3375m^2$

DEPTHS

Max. Fill Depth	0.48m
Max. Cut Depth	1.15m

NOTE:
Volumes & Depths are from existing ground to design subgrade.
Pavement - 100mm AP40 on 200mm AP65 Basecourse
Strip depth 300mm

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QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

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WAKATIPU INVESTMENTS LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

CONTRACT NUMBER -

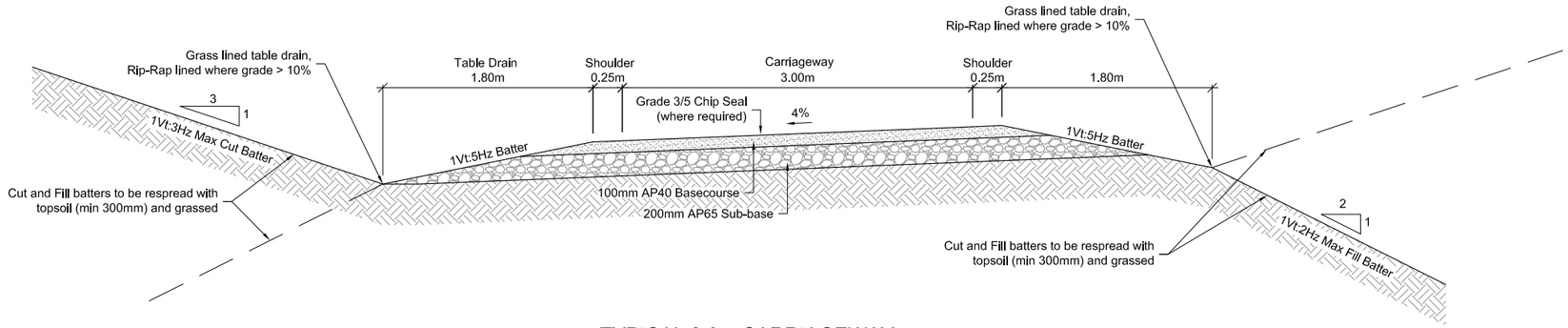
SCALE (AT A3) 1:1250

TITLE

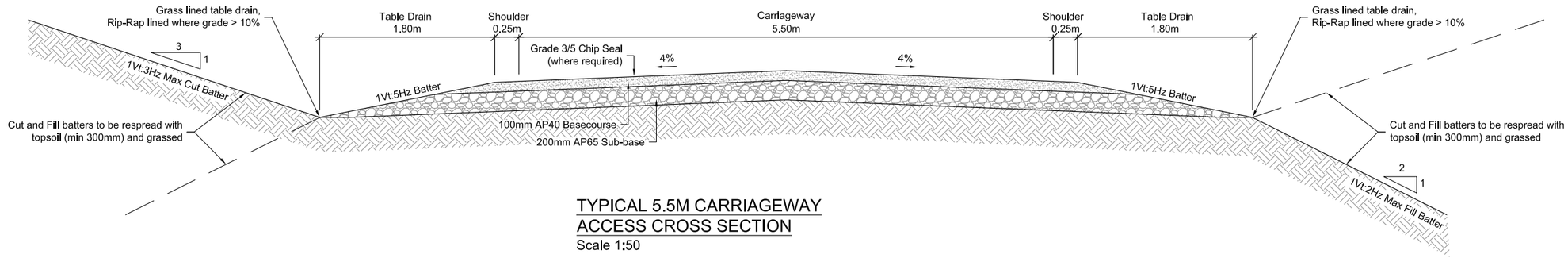
ROADING/ACCESS
ACCESS 2 & 2A PLAN

DRAWING NUMBER QV021-D-220

REVISION B



TYPICAL 3.0m CARRIAGEWAY
ACCESS CROSS SECTION
Scale 1:50



TYPICAL 5.5M CARRIAGEWAY
ACCESS CROSS SECTION
Scale 1:50

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QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

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LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

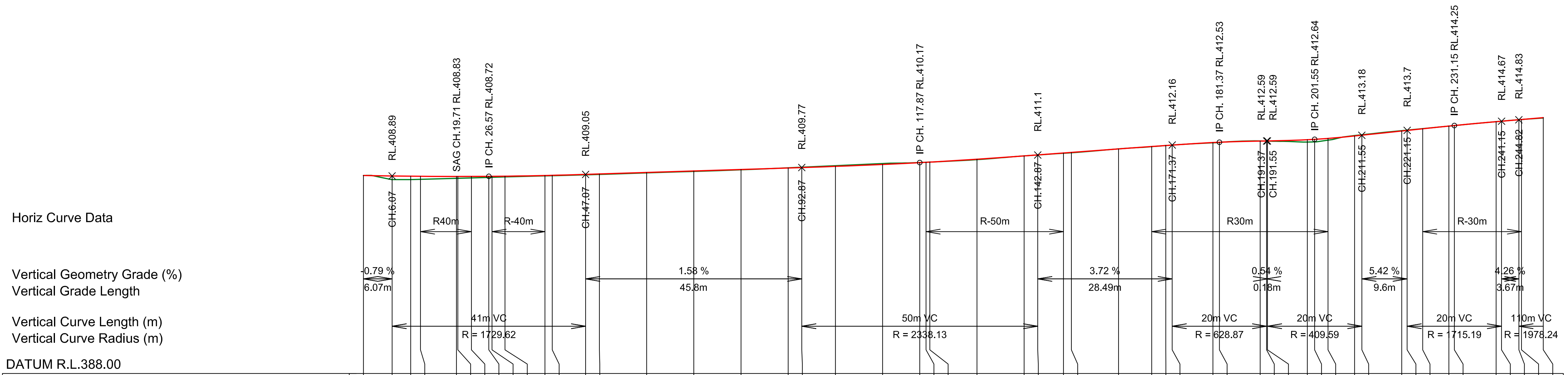
ROADING/ACCESS
TYPICAL CROSS SECTION

CONTRACT NUMBER: -

SCALE (AT A3): As Shown

DRAWING NUMBER: QV021-D225

REVISION: B



DATUM R.L.388.00

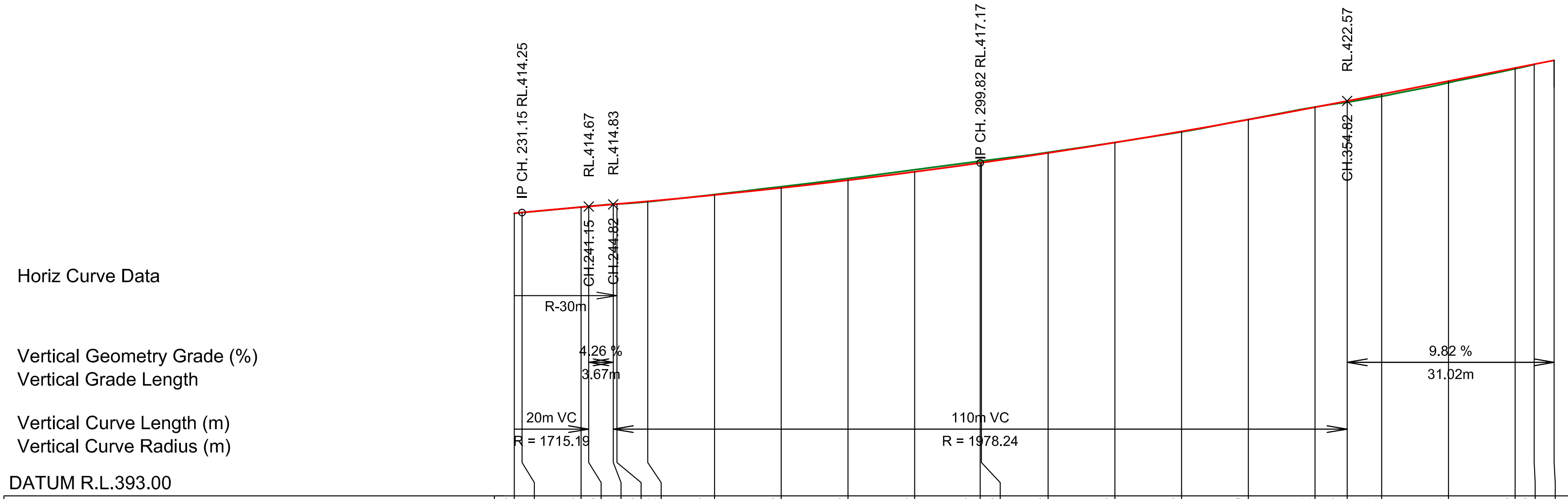
EXISTING LEVEL ON ACCESS CENTRELINE	408.93	408.50	408.50	408.53	408.63	408.64	408.68	408.73	408.74	408.78	408.90	408.91	409.00	409.05
CUT / FILL DEPTH	-0	0.39	0.36	0.32	0.2	0.2	0.16	0.11	0.11	0.08	0.04	0.04	0.05	0.05
DESIGN LEVELS ON ACCESS CENTRELINE	408.93	408.89	408.86	408.85	408.83	408.83	408.83	408.85	408.85	408.86	408.93	408.95	409.05	409.09
CHAINAGE	0.00	6.07	10.00	12.09	19.71	20.00	22.88	26.57	27.24	30.00	38.45	40.00	47.07	50.00

EXISTING LEVEL ON ACCESS CENTRELINE	409.21	409.37	409.54	409.74	409.80	409.96	410.21	410.31	410.33	410.35	410.60	411.01	411.11	411.28
CUT / FILL DEPTH	0.04	0.04	0.03	-0.01	-0.03	-0.06	-0.1	-0	0	0.01	0.05	-0.02	-0.01	0.02
DESIGN LEVELS ON ACCESS CENTRELINE	409.25	409.41	409.57	409.73	409.77	409.90	410.11	410.30	410.34	410.36	410.66	410.99	411.10	411.30
CHAINAGE	60.00	70.00	80.00	90.00	92.87	100.00	110.00	117.87	119.20	120.00	130.00	140.00	142.87	148.34

EXISTING LEVEL ON ACCESS CENTRELINE	411.33	411.73	411.98	412.10	412.15	412.38	412.43	412.59	412.58	412.58	412.47	412.49	412.67
CUT / FILL DEPTH	0.03	0	0.01	0.01	0.01	0.04	0.02	-0.02	0	0.01	0.25	0.27	0.19
DESIGN LEVELS ON ACCESS CENTRELINE	411.36	411.74	412.00	412.11	412.16	412.42	412.45	412.58	412.59	412.59	412.72	412.76	412.86
CHAINAGE	150.00	160.00	167.02	170.00	171.37	180.00	181.37	190.00	191.37	191.55	200.00	201.55	204.39

EXISTING LEVEL ON ACCESS CENTRELINE	413.15	413.24	413.68	413.74	413.90	414.16	414.21	414.63	414.68	414.84	414.86	415.02
CUT / FILL DEPTH	-0.05	-0.06	-0.04	-0.03	-0.02	0	0	-0.01	-0.01	-0.01	-0.01	0.04
DESIGN LEVELS ON ACCESS CENTRELINE	413.10	413.18	413.64	413.70	413.88	414.16	414.22	414.62	414.67	414.83	414.85	415.05
CHAINAGE	210.00	211.55	220.00	221.15	224.44	230.00	231.15	240.00	241.15	244.82	245.38	250.00

Access 1 Longitudinal Section
Horizontal Scale 1:1000
Vertical Scale 1:500



DATUM R.L.393.00

EXISTING LEVEL ON ACCESS CENTRELINE	414.16	414.21	414.63	414.68	414.84	414.86	415.02	415.57	416.16	416.76	417.43	418.07
CUT / FILL DEPTH	0	0	-0.01	-0.01	-0.01	-0.01	0.04	-0.04	-0.1	-0.12	-0.16	-0.14
DESIGN LEVELS ON ACCESS CENTRELINE	414.16	414.22	414.62	414.67	414.83	414.85	415.05	415.53	416.06	416.64	417.27	417.93
CHAINAGE	230.00	231.15	240.00	241.15	244.82	245.38	250.00	260.00	270.00	280.00	290.00	299.82

EXISTING LEVEL ON ACCESS CENTRELINE	418.08	418.73	419.46	420.26	421.19	422.12	422.47	422.92	423.94	424.98	425.30	
CUT / FILL DEPTH	-0.14	-0.05	-0.01	0.02	-0.03	-0.02	0.1	0.16	0.12	0.06	0.02	
DESIGN LEVELS ON ACCESS CENTRELINE	417.95	418.68	419.46	420.29	421.17	422.10	422.57	423.08	424.06	425.04	425.32	425.61
CHAINAGE	300.00	310.00	320.00	330.00	340.00	350.00	354.82	360.00	370.00	380.00	382.84	385.84

Access 1 Longitudinal Section cont'd
Horizontal Scale 1:1000
Vertical Scale 1:500

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Civilised Ltd

CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

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LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

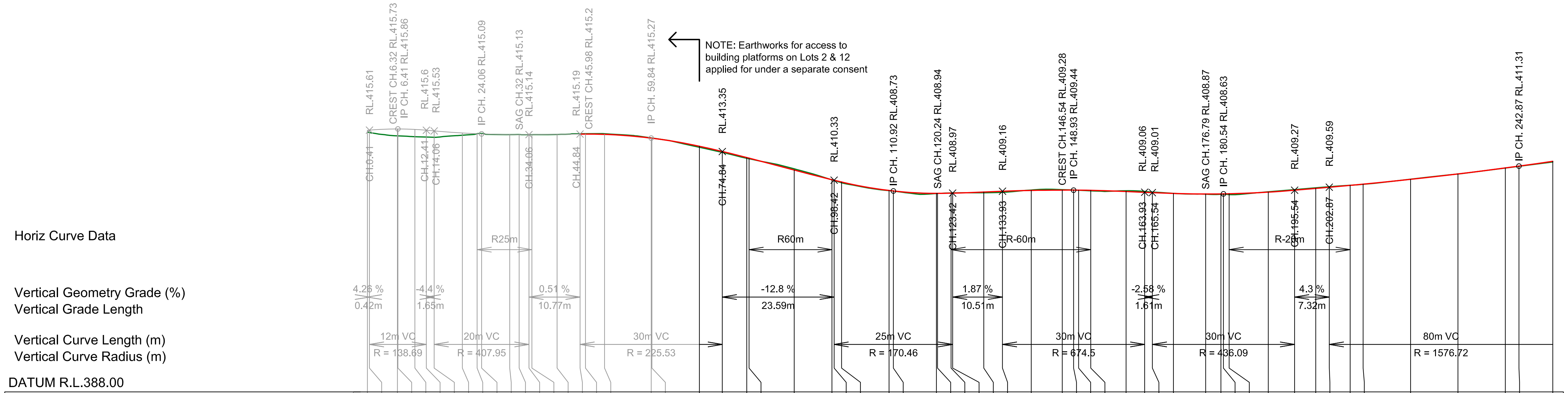
ROADING/ACCESS
ACCESS 1 LONGITUDINAL SECTION

CONTRACT NUMBER -

SCALE (AT A3) As Shown

DRAWING NUMBER QV021-D230

REVISION B



NOTE: Earthworks for access to
building platforms on Lots 2 & 12
applied for under a separate consent

EXISTING LEVEL ON ACCESS CENTRELINE		415.36	415.01	415.01	414.92	414.88	414.85	415.07	415.23	415.26	415.14	415.15	415.13	415.13	415.16
CUT / FILL DEPTH		0.25	0.73	0.73	0.77	0.72	0.68	0.24	-0	-0.04	0	-0.01	0.01	0.01	0.01
DESIGN LEVELS ON ACCESS CENTRELINE	415.59	415.61	415.73	415.73	415.69	415.60	415.53	415.31	415.23	415.21	415.14	415.13	415.14	415.14	415.17
CHAINAGE	-0.00	0.41	6.32	6.41	10.00	12.41	14.06	20.00	23.13	24.06	30.00	32.00	34.06	34.67	40.00

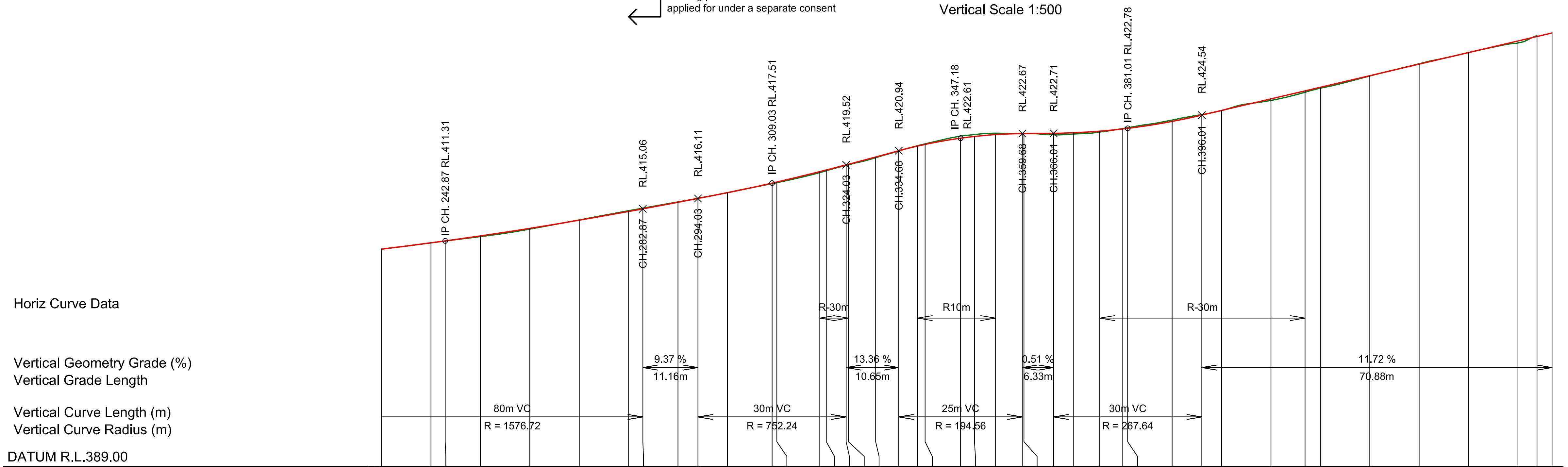
EXISTING LEVEL ON ACCESS CENTRELINE	415.23	415.23	415.23	414.79	414.77	413.80	413.26	412.64	412.59	411.53	410.36	410.29	410.06	409.22	409.19
CUT / FILL DEPTH	-0.03	-0.03	-0.07	-0.02	-0.01	0.11	0.09	0.05	0.03	-0.12	0.03	0.04	0.08	0.02	0
DESIGN LEVELS ON ACCESS CENTRELINE	415.19	415.20	415.16	414.77	414.76	413.92	413.35	412.69	412.63	411.41	410.39	410.33	410.14	409.24	409.19
CHAINAGE	44.84	45.98	50.00	59.84	60.00	70.00	74.84	80.00	80.49	90.00	97.97	98.42	100.00	110.00	110.92

EXISTING LEVEL ON ACCESS CENTRELINE	408.92	408.93	408.99	409.00	409.01	409.05	409.29	409.33	409.29	409.27	409.20	409.22	409.14	409.08	408.94
CUT / FILL DEPTH	0.01	0.01	-0.03	-0.03	0.08	0.12	-0.04	-0.05	-0.01	0	0.05	-0.07	-0.08	-0.07	-0.02
DESIGN LEVELS ON ACCESS CENTRELINE	408.94	408.94	408.96	408.97	409.09	409.16	409.25	409.28	409.28	409.27	409.25	409.15	409.06	409.01	408.92
CHAINAGE	120.00	120.24	123.09	123.42	130.00	133.93	140.00	146.54	148.93	150.00	152.55	160.00	163.93	165.54	170.00

EXISTING LEVEL ON ACCESS CENTRELINE	408.85	408.84	408.84	408.81	409.10	409.33	409.53	409.64	409.79	409.89	410.43	410.98	411.61	411.80	412.25
CUT / FILL DEPTH	0.02	0.04	0.04	0.09	-0.03	-0.06	-0.07	-0.05	-0.01	0.02	-0.01	0	0.01	0.02	0.07
DESIGN LEVELS ON ACCESS CENTRELINE	408.87	408.88	408.89	408.90	409.07	409.27	409.46	409.59	409.78	409.91	410.42	410.99	411.62	411.82	412.32
CHAINAGE	176.79	180.00	180.54	181.74	190.00	195.54	200.00	202.87	207.26	210.00	220.00	230.00	240.00	242.87	250.00

Access 2A Longitudinal Section
Horizontal Scale 1:1000
Vertical Scale 1:500

NOTE: Earthworks for access to
building platforms on Lots 2 & 12
applied for under a separate consent



EXISTING LEVEL ON ACCESS CENTRELINE	410.98	411.61	411.80	412.25	413.00	413.93	414.87	415.13	415.76	416.13	416.70	417.61	417.71	418.71	418.91
CUT / FILL DEPTH	0	0.01	0.02	0.07	0.08	-0.03	-0.08	-0.07	-0.04	-0.02	-0.01	0.05	0.06	0.11	0.08
DESIGN LEVELS ON ACCESS CENTRELINE	410.99	411.62	411.82	412.32	413.08	413.90	414.79	415.06	415.73	416.11	416.69	417.66	417.77	418.82	418.99
CHAINAGE	230.00	240.00	242.87	250.00	260.00	270.00	280.00	282.87	290.00	294.03	300.00	309.03	310.00	318.68	320.00

EXISTING LEVEL ON ACCESS CENTRELINE	419.45	419.50	420.24	420.91	421.45	421.64	422.43	422.58	422.72	422.70	422.70	422.54	422.62	422.83	423.18
CUT / FILL DEPTH	0.07	0.07	0.08	0.02	-0.04	-0.06	-0.22	-0.2	-0.15	-0.02	-0.03	0.17	0.14	0.09	-0.04
DESIGN LEVELS ON ACCESS CENTRELINE	419.52	419.58	420.31	420.94	421.41	421.58	422.21	422.38	422.57	422.67	422.67	422.71	422.76	422.92	423.14
CHAINAGE	324.03	324.49	330.00	334.68	338.47	340.00	347.18	350.00	354.26	359.68	360.00	366.01	370.00	375.35	380.00

EXISTING LEVEL ON ACCESS CENTRELINE	423.26	424.04	424.59	425.00	426.03	426.86	427.26	428.50	429.74	430.87	431.85	432.57	
CUT / FILL DEPTH	-0.06	-0.13	-0.05	0.01	0.15	0.13	0.09	0.02	-0.04	-0	0.2	-0.08	
DESIGN LEVELS ON ACCESS CENTRELINE	423.20	423.90	424.54	425.01	426.18	426.99	427.35	428.53	429.70	430.87	432.04	432.49	432.85
CHAINAGE	381.01	390.00	396.01	400.00	410.00	416.91	420.00	430.00	440.00	450.00	460.00	463.84	466.89

Access 2A Longitudinal Section cont'd
Horizontal Scale 1:1000
Vertical Scale 1:500

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INVESTMENTS
LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

ROADING/ACCESS
ACCESS 2A LONGITUDINAL SECTION

CONTRACT NUMBER
-

SCALE (AT A3)
As Shown

DRAWING NUMBER
QV021-D-250

REVISION
B

Document Set ID: 6165135
Version: 1, Version Date: 24/06/2019

Appendix G

Typical Site Management Plan

Wakatipu Investments Ltd

Typical Site Management Plan And Earthworks Specification For Contractors Undertaking Physical Works

Site Management

1 Site Establishment/Temporary Works

1.1 Roads, Footpaths, Crossings

The Contractor shall:

1. Ensure that no damage beyond fair wear and tear is caused to public roads and paths.
2. Comply with the requirements of the Local Authority regarding protection and cleanliness of roads and paths adjacent to the site. Meet all costs arising from non-compliance.
3. Keep approaches to the site clear of mud and debris. Immediately remove any such material dropped onto the road or footpath surface.
4. Comply with Local Authority requirements regarding protection of paths, kerbs and channels.
5. Comply with Local Authority requirements regarding restrictions on truck movements during peak traffic periods.

1.2 Site Access and Working Areas

1. It is proposed that the Contractor shall access the site from the following public roads: Littles Road.
2. The Contractor shall comply with all requirements of the Local Authority and the traffic authorities with regard to access to the site.
3. Parking for Contractor's service vehicles shall be on the site.

1.3 Road Reserve

1. The Contractor shall carry out all works within the road reserve in such a manner as to comply with all Local Authority requirements.
2. All road, footpath and berm surfaces shall be reinstated fully on completion of installing underground services to Local Authority standards.

1.4 Working Hours

3. The Contractor shall comply with Government or Local Authority requirements regarding site working hours.
4. The Contractor shall comply with Local Authority restrictions on site working hours for noise producing operations (refer to Clause 2.8).

1.5 Temporary Buildings

The Contractor shall provide all necessary site facilities to comply with Government or Local Authority requirements for health and safety. These shall include, as required, a site office for the Contractor's site administration, toilets, washing and telephone facilities. Allow for all Local Authority charges arising from these requirements.

1.6 Temporary Drainage

Supply, install and remove on completion of the Contract all temporary drainage lines, sumps and pumping equipment and other temporary work necessary to properly control and dispose of surface water or groundwater from the site of the work without undue delay in accordance with the requirements of Queenstown Lakes District Council and Otago Regional Council. Exercise care to prevent solid matter, silt, or sediment bearing water entering the permanent stormwater drainage system. Any connection used for temporary discharge of surface or groundwater shall draw from an approved silt trap or catch basin and the inlet of the connection shall be fitted with an approved screen.

1.7 Temporary Power, Water and Drainage

The Contractor shall arrange for any temporary water and power supplies, and drainage connections to the site that may be required. The Contractor shall pay all charges arising from the connection, disconnection and use of such supplies.

1.8 Telephone

The Contractor shall provide temporary telephone facilities for his own use and pay all charges.

1.9 Existing Services

Locate, protect, keep all public systems clean of debris, prevent damage and leave lids exposed, free for inspection at conclusion of work. Meet all the requirements of the relevant Utility Controlling Authorities.

2 Protection of Persons and Property

2.1 Barriers

The Contractor shall erect and maintain temporary fencing, barriers, footpath protection gantries, catch screens, hoardings, guard rails, necessary to protect materials, operations, finished work, operators and the public. Light if required. Comply with the requirements of the Local Authority and police.

2.2 Existing Features

Protect existing buildings, fences, gates, walls, paths and other site features which are to remain in position during the execution of the Works.

2.3 Work by Others

Nil.

2.4 Connection to Existing Services

Obtain written approval from relevant Territorial Authority or utility supplier before making connections to any existing systems. Supply all Method Statements as necessary and follow approved procedures for undertaking the connection works.

2.5 Set Out

Set out the work to conform with the drawings. It remains the contractor's responsibility to set out the works accurately and correctly and to confirm any changes that may result from the carrying out of the contract works.

2.6 Health and Safety in Employment Act

2.6.1 General

The Contractor shall at all times comply with the provisions of the Health and Safety in Employment Act 1992. The Contractor shall take all necessary steps to ensure that the obligations placed on the "Principal" and the "Person who controls the place of work" under the provisions of the Act are complied with at all times and shall immediately advise the Principal or the Principal's representative of any obligations not being fulfilled.

In addition indemnify and keep indemnified the Principal from and against all costs, damages, fines, penalties, loss, expense or other liability incurred or suffered by the Principal arising directly or indirectly from any breach of the Act by the Contractor.

2.6.2 Safety Plan

The Contractor shall prepare a Safety Plan which shall identify all potential risks and hazards to the safety of all personnel on site. The plan shall include safety procedures, requirements for protective clothing and equipment, safety equipment, mitigation procedures, emergency procedures and any other requirements deemed necessary. Details of the provisions made for auditing the plan by the Contractor shall be included. The names and qualifications of the safety supervisors, one of whom shall have overall responsibility for safety on the site, are to be included in the Safety Plan.

The plan shall be submitted to the Engineer for review. No construction works may start until the Contractor has confirmed in writing that the Safety Plan has been implemented and is operating for the site. If at any stage during the course of the works, the Engineer or the delegated representative(s) observe activities or procedures which do not comply with the Safety Plan, a Stop Work notice may be issued to the Contractor, to remain in force until the required provisions of the plan are fully implemented. No extensions of time shall be considered arising out of Stop Work notices issued to the Contractor due to non-compliance with the approved Safety Plan.

2.6.3 Known Site Hazards

The following summarises the site hazards known to the Principal:

(a) Existing services including underground power, telecommunications, water and drainage which may include services not shown on the drawings.

(b) Vehicular and pedestrian movements on the public roads and reserves and within the site.

The Contractor is responsible for incorporating these site hazards together with strategies for their management into the Safety Plan. The Contractor shall ensure that during the execution of the Contract there is no risk to the health and safety of the other contractors, their subcontractors or their employees. Additionally, the Contractor shall advise the Engineer should the activities of any other contractor or subcontractor present a hazard or risk to the Contractor or any of the Contractor's subcontractors or employees.

2.7 Protection of Adjoining Footpath, Roads, Property, Plant and Equipment

Without limiting his obligations under this specification, the Contractor shall be responsible for the protection of any footpath, road, adjacent property, plant and equipment from damage that may be caused by the Contractor in the execution of his works and shall be responsible for making good any damage that may arise from the execution of his Works.

2.8 Explosives

Do not use explosives without the prior approval of the Engineer. Accept all responsibility for any damage and all claims that may arise from their use. Adhere to the requirements of the Construction and Quarries Act.

2.9 Use of Machines

Use of Machines - may be forbidden where the Engineer considers that:

1. They are causing or may cause excessive damage to property, or excessive inconvenience to the public or property owners.
2. The machine is incapable of maintaining the required standard of construction of the works. Accept all costs if in the opinion of the Engineer it could be reasonably foreseen that handwork would be required.

2.10 Protection of Completed Works

The Contractor, at his cost, shall provide any protection necessary to his own Works for the duration of the Contract.

2.11 Traffic Management Plan

The Contractor shall submit to the Engineer for approval a Traffic Management Plan (TMP) prior to commencement of large scale cartage operations, or other construction related activities that may impact on Littles Road or the surrounding area.

The Traffic Management Plan shall show how the Contractor proposes to minimise the impact of the works on local and commuter traffic, and the general public within the vicinity of the contract area(s).

The Traffic Management Plan shall also allow for and be used to identify and allocate any working areas, wheel washing bays, unloading bays or parking requirements the Contractor may need to carry out the works.

The Engineer is to review and approve the Traffic Management Plan prior to the Contractor commencing any excavations within the carriageway.

2.12 Traffic and Pedestrian Control

Single lane traffic is to be maintained at all times. The minimum lane width is to be 3.5 metres

During single lane operations and where traffic is deviated from normal traffic lanes, flagmen suitably dressed shall be employed to direct the traffic. Rules laid down in the "Working on the Road Handbook" Second Edition revised 1993 by Transit New Zealand shall apply.

Signs and layout of signs, including temporary speed restrictions shall be in accordance with the handbook "Working on the Road" Second Edition revised 1993 by Transit New Zealand.

For work undertaken on Local roads during the hours of darkness or when no work is being carried out on site, the appropriate signs and warning lights shall be used as specified in "Working on the Road Handbook" Second Edition revised 1993 by Transit New Zealand.

Instructions concerning the use of signs for the control of traffic from any of the following shall be complied with in addition to those stated above:

- the Engineer
- any officer of the New Zealand Police
- any person authorised by the controller of the Queenstown Lakes District Council's local roads.

A clear pedestrian route of 1200 mm width is to be provided at all times safely around the extent of any construction works. Any diversion of pedestrians from the formed footpath shall be via a protected walkway, separated from moving vehicles by a rigid barrier. Where Pedestrians are to be deviated from the existing path, all deviations shall be clearly marked (with signs/ lights/ barriers) such that pedestrians are clearly informed where the intended route is prior to reaching the works area.

3 Schedule of Guarantees

The Contractor shall provide a guarantee for the works in accordance with the Form of Guarantee included in the Contract Documents, effective from the date of the Maintenance Certificate, for the period of one year.

The Contractor shall assign all outstanding sub-contractor and supplier guarantees to the Principal at expiry of the Guarantee period for the whole works.

4 Noise Control

The Contractor shall carry out the Works in such a manner as to cause the least inconvenience to the Principal and the public, and to comply with all Statutory and Local Authority requirements including NZS6803 – Acoustics – Construction Noise

The maximum noise levels for particular time periods, at the time of application, are as follows:

		Maximum
Monday to Friday	6.30 am - 10.30 pm	L_{10} 80 dBA
Saturday	7.00 am - 11.00 pm	L_{10} 85 dBA
Sunday	9.00 am - 7.00 pm	L_{10} 85 dBA
At all other times		L_{10} 65 dBA

5 Rubbish Removal and Cleaning

1. The Contractor shall be responsible for regular cleaning of all work sites, and regular removal of all rubbish from the site to maintain the site in a clean and tidy condition at all times.
2. The Contractor shall co-ordinate all Subcontractors to keep the site free of rubbish and shall leave the site clean and tidy.

6 Quality Procedures

The responsibility for ensuring that the requirements of the contract are met in terms of performance, workmanship and materials is solely the Contractor's.

If the Contractor has achieved Quality Assurance Certification to ISO 9001 (or equivalent) he shall comply fully with his own quality procedures and any additional procedures needed to ensure that the requirements of the Contract are met in full.

If the Contractor has not achieved formal Quality Assurance certification he shall submit proposals with his tender, outlining what procedures he shall undertake in order to ensure compliance with the requirements of the Contract.

The Contractor's Quality procedures shall be such that he can demonstrate compliance with the Contract specifications.

The Contractor shall allow the Engineer full access to his records at all times during the execution of the works for the purpose of auditing the Contractor's quality procedures.

If the Engineer finds that the Contractor's quality procedures have not been followed for any element of the works then the Contractor shall demonstrate that the element of work to which the non-compliance relates conforms to the Contract specifications.

At all times when requested by the Engineer, the Contractor shall supply copies of his quality records to verify that the specifications are being complied with.

All costs of demonstrating compliance with the requirements of the Contract shall be borne solely by the Contractor.

The above requirements shall apply to all the Contractor's sub-contractors and suppliers.

7 Contact Names of Contractor's Representatives

Before the commencement of any works on site, the contact name of a representative of the Contractor together with a mobile phone number on which the individual can be contacted on a 24 hour basis shall be supplied to the Engineer. The Contractor shall ensure that this individual can be contacted 24 hour/day throughout the duration of the contract. The Contractor shall also supply a complete set of contact phone numbers for all key personnel (of the Contractor and sub-contractors involved in the Contract) to the Engineer and to Lakes Contract Services.

8 Notices

Give at least 3 days notice to the Engineer and any affected party of any proposed interruption to any service.

8.1 Working Areas

Working areas to be used for storage of plant and materials for the sole use of this project and subject to the provisions of the Contract shall be agreed with the Engineer prior to the commencement of the works. These areas shall form part of the site. The Contractor shall not store plant or materials or carry out any other activities outside these areas without the written permission of the Engineer.

8.2 Silt Control

It is the responsibility of the Contractor to ensure that all sediment contaminated water is treated by an appropriate sediment control device prior to discharge off the work site. Prior to any construction activity on the site areas, the Contractor shall submit to the Engineer for review a plan showing all silt control measures proposed. Acceptance of the silt plan shall not relieve the Contractor of the responsibility to maintain full silt control on site at all times.

All existing grassed and vegetated areas are to be left undisturbed where possible. The Contractor is to operate and maintain all silt control measures until reinstatement of the working area has taken place and all top soiled areas have an established grass cover.

8.3 Dust Control

It is the responsibility of the Contractor to ensure that all dust nuisances are appropriately controlled by use of sprinklers.

Proposed Littles Subdivision
Littles Road - Queenstown

Location Plan

Drawing No:	Drawing Title:	Revision:
General		
QV021-D-100	Location and Drawing Schedule	D
Roading/Access		
QV021-D-200	Lot Accesses - Overall Site Plan	D
QV021-D-205	Access 1 Plan	C
QV021-D-220	Access 2 & 2A Plan	D
QV021-D-225	Typical Cross Section	B
QV021-D-230	Access 1 Longitudinal Section	B
QV021-D-250	Access 2A Longitudinal Section	B

REV	DATE	DESCRIPTION	APPROVED
D	07/10/19	Updated building platform on Lot 7 and access road on Lot 1	JFM
C	01/10/19	Updated building platform locations	JFM
B	22/05/19	Lot layout altered	JFM
A	20/03/19	Initial Issue	JFM

CONSULTANT

Civilised Ltd
CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348
T: 027 223 3036
E: john@mccartneys.nz

JFM	20/03/2019	
DESIGN	DATE	
JDR	20/03/2019	
DRAWN	DATE	
JFM	20/03/2019	
CHECKED	DATE	

CLIENT: WAKATIPU INVESTMENTS LTD

PROJECT/LOCATION: PROPOSED SUBDIVISION LITTLES ROAD - QUEENSTOWN

TITLE: LOCATION AND DRAWING SCHEDULE

CONTRACT NUMBER: -

SCALE (AT A3): 1:50,000

DRAWING NUMBER: QV021-D-100

REVISION: D

Lot 18
8.85ha

Lot 17
8.41ha

Lot 12
4.70ha

Lot 11
1.84ha

Lot 9
2.27ha

Lot 7
1.97ha

REFER SHEET QV021-D-205

REFER SHEET QV021-D-220

Lot 19
1.97ha

Lot 10
1.23ha

Lot 8
1.48ha

ACCESS 2A

Lot 13
1.11ha

ACCESS 2

Lot 6
0.69ha

ACCESS 1

Lot 14
1.27ha

Lot 2
0.94ha

Lot 4
0.85ha

Lot 5
0.92ha

ACCESS 2A

Lot 20
1.60ha

NOTE: Earthworks for access to building platforms on Lots 2 & 12 applied for under a separate consent

ACCESS 2A

ACCESS 2

Lot 16
7.12ha

ACCESS 1

Lot 15
1.30ha

Lot 1
1.72ha

Lot 3
1.55ha

Littles Rd

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PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

CONTRACT NUMBER
-

SCALE (AT A3)
1:2500

TITLE

ROADING/ACCESS
LOT ACCESSES - OVERALL SITE PLAN

DRAWING NUMBER
QV021-D-200

REVISION
D

KEY

Cut Depth 0.0m to 0.2m	Fill Depth 0.0m to 0.2m
Cut Depth 0.2 to 0.4m	Fill Depth 0.2 to 0.4m
Cut Depth 0.4m to 0.6m	Fill Depth 0.4 to 0.6m
Cut Depth 0.6m to 0.8m	Fill Depth 0.6 to 0.8m
Cut Depth 0.8m to 1.0m	
Cut Depth 1.0m to 1.2m	

VOLUMES

ACCESS 1

Cut	10m^3
Fill	5m^3
Strip	880m^3

EARTHWORKS AREA

Area	2940m^2

DEPTHS

Max. Fill Depth	0.15m
Max. Cut Depth	0.60m

NOTE:
Volumes & Depths are from existing ground to design subgrade.
Pavement - 100mm AP40 on 200mm AP65 Basecourse
Strip depth 300mm

INDIVIDUAL BUILDING PLATFORM ACCESSES
EARTHWORKS ESTIMATES

Lot No	Access Length	Area (m^2)	Strip (m^3)	Cut (m^2)	Fill (m^2)
16	75	675	180	22.5	3.0
17	97	873	233	29.1	3.9
18	85	765	204	25.5	3.4
19	78	702	187	23.4	3.1
20	65	585	156	19.5	2.6
	TOTAL	3600	960	120	16

Lot 18
8.85ha

Lot 19
1.97ha

Lot 17
8.41ha

Lot 20
1.60ha

Lot 16
7.12ha

2.5m Wide
Passing Bay

ACCESS 1

Max Fill
0.15m

Max Cut
0.60m

ACCESS 1

LITTLES ROAD

Grade 3/5 Chip Seal From
Existing Edge of Seal to
Property Boundary

Access 1 width
5.5m to CH50,
3.0m beyond

R6.0m radius to entrance
per QLDC District Plan
Appendix 7 Diagram 2

Ø900 PVC Farm Tuff Culvert Pipe Complete with Hynds Precast Concrete
Mountable Wing Walls (Hynds Product Code: WW0450MOUNT.6) at both ends

REV	DATE	DESCRIPTION	APPROVED
C	01/10/19	Updated road width notes and building platform locations	JFM
B	22/05/19	Lot layout altered	JFM
A	20/03/19	Initial Issue	JFM

CONSULTANT

Civilised Ltd

CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

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CHECKED	DATE

CLIENT

WAKATIPU
INVESTMENTS
LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

CONTRACT NUMBER: -

SCALE (AT A3): 1:1000

TITLE

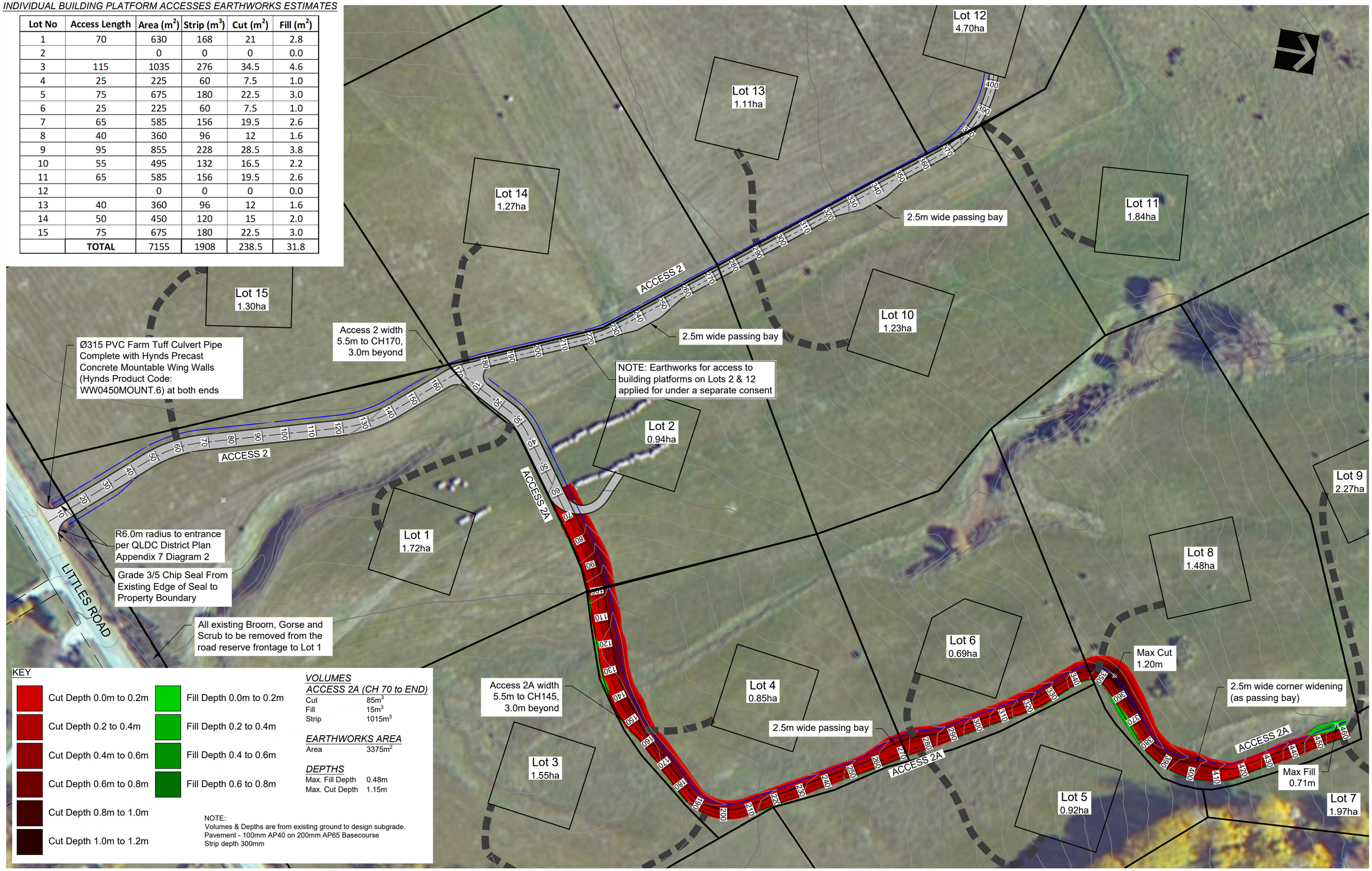
ROADING/ACCESS
ACCESS 1 PLAN

DRAWING NUMBER: QV021-D-205

REVISION: C

INDIVIDUAL BUILDING PLATFORM ACCESSES EARTHWORKS ESTIMATES

Lot No	Access Length	Area (m^2)	Strip (m^3)	Cut (m^2)	Fill (m^2)
1	70	630	168	21	2.8
2		0	0	0	0.0
3	115	1035	276	34.5	4.6
4	25	225	60	7.5	1.0
5	75	675	180	22.5	3.0
6	25	225	60	7.5	1.0
7	65	585	156	19.5	2.6
8	40	360	96	12	1.6
9	95	855	228	28.5	3.8
10	55	495	132	16.5	2.2
11	65	585	156	19.5	2.6
12		0	0	0	0.0
13	40	360	96	12	1.6
14	50	450	120	15	2.0
15	75	675	180	22.5	3.0
	TOTAL	7155	1908	238.5	31.8



KEY

- Cut Depth 0.0m to 0.2m
- Cut Depth 0.2 to 0.4m
- Cut Depth 0.4m to 0.6m
- Cut Depth 0.6m to 0.8m
- Cut Depth 0.8m to 1.0m
- Cut Depth 1.0m to 1.2m
- Fill Depth 0.0m to 0.2m
- Fill Depth 0.2 to 0.4m
- Fill Depth 0.4 to 0.6m
- Fill Depth 0.6 to 0.8m

VOLUMES
ACCESS 2A (CH 70 to END)

Cut	$85m^3$
Fill	$15m^3$
Strip	$1015m^3$

EARTHWORKS AREA

Area	$3375m^2$

DEPTHS

Max. Fill Depth	0.48m
Max. Cut Depth	1.15m

NOTE:
Volumes & Depths are from existing ground to design subgrade.
Pavement - 100mm AP40 on 200mm AP65 Basecourse
Strip depth 300mm

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CHECKED	DATE

CLIENT

WAKATIPU INVESTMENTS LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

CONTRACT NUMBER: -

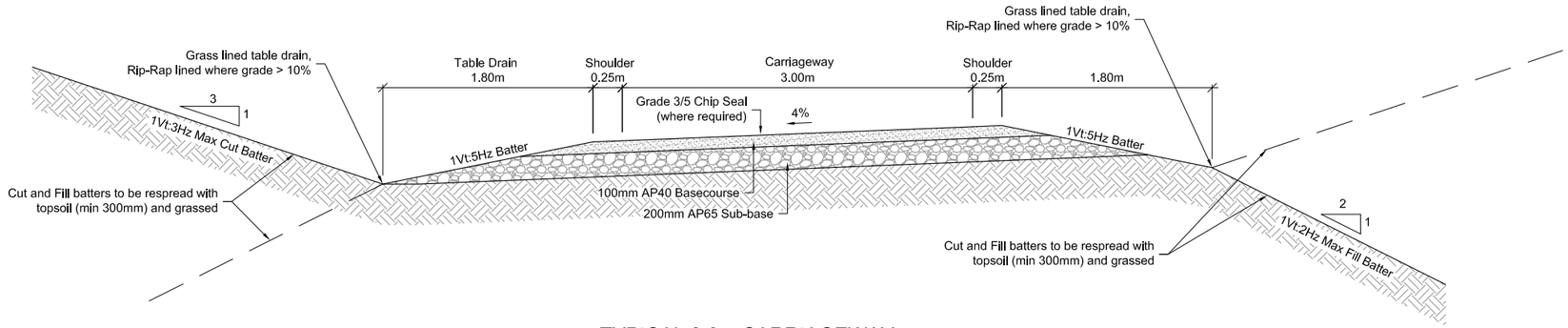
SCALE (AT A3): 1:250

TITLE

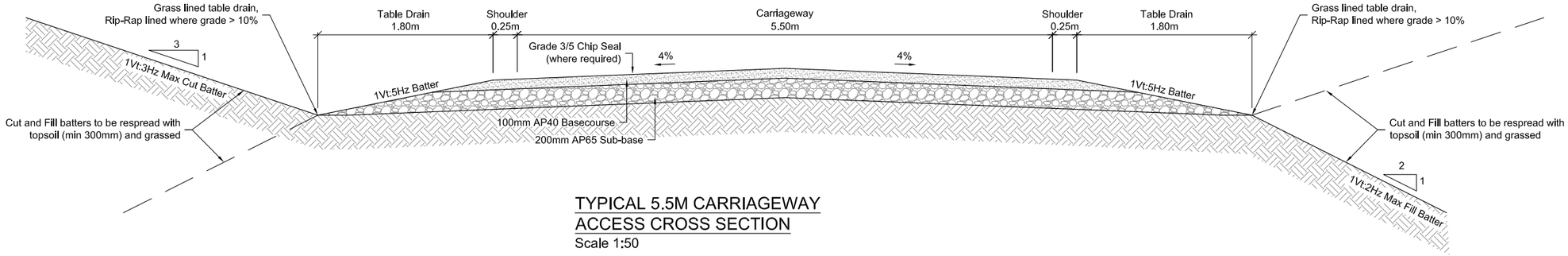
ROADING/ACCESS
ACCESS 2 & 2A PLAN

DRAWING NUMBER: QV021-D-220

REVISION: D



TYPICAL 3.0m CARRIAGEWAY
ACCESS CROSS SECTION
Scale 1:50



TYPICAL 5.5M CARRIAGEWAY
ACCESS CROSS SECTION
Scale 1:50

REV	DATE	DESCRIPTION	APPROVED
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A	20/03/19	Initial Issue	JFM

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CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

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DRAWN	DATE
JFM	20/03/2019
CHECKED	DATE

CLIENT

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INVESTMENTS
LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

ROADING/ACCESS
TYPICAL CROSS SECTION

CONTRACT NUMBER: -

SCALE (AT A3): As Shown

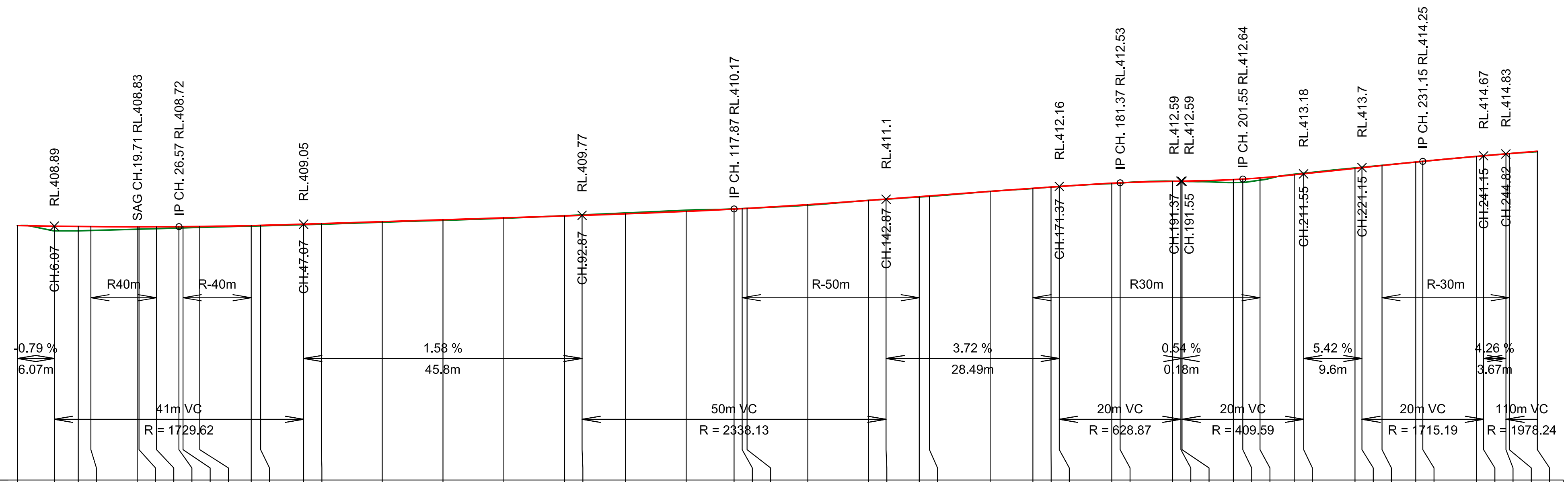
DRAWING NUMBER: QV021-D225

REVISION: B

Horiz Curve Data

Vertical Geometry Grade (%)
Vertical Grade Length

Vertical Curve Length (m)
Vertical Curve Radius (m)



DATUM R.L.388.00

EXISTING LEVEL ON ACCESS CENTRELINE	408.93	408.50	408.50	408.53	408.63	408.64	408.68	408.73	408.74	408.78	408.90	408.91	409.00
CUT / FILL DEPTH	-0	0.39	0.36	0.32	0.2	0.2	0.16	0.11	0.11	0.08	0.04	0.04	0.05
DESIGN LEVELS ON ACCESS CENTRELINE	408.93	408.89	408.86	408.85	408.83	408.83	408.83	408.85	408.85	408.86	408.93	408.95	409.05
CHAINAGE	0.00	6.07	10.00	12.09	19.71	20.00	22.88	26.57	27.24	30.00	38.45	40.00	47.07

EXISTING LEVEL ON ACCESS CENTRELINE	409.05	409.21	409.37	409.54	409.74	409.80	409.96	410.21	410.31	410.33	410.35	410.60	411.01
CUT / FILL DEPTH	0.05	0.04	0.04	0.03	-0.01	-0.03	-0.06	-0.1	-0	0	0.01	0.05	-0.02
DESIGN LEVELS ON ACCESS CENTRELINE	409.09	409.25	409.41	409.57	409.73	409.77	409.90	410.11	410.30	410.34	410.36	410.66	410.99
CHAINAGE	50.00	60.00	70.00	80.00	90.00	92.87	100.00	110.00	117.87	119.20	120.00	130.00	140.00

EXISTING LEVEL ON ACCESS CENTRELINE	411.11	411.28	411.33	411.73	411.98	412.10	412.15	412.38	412.43	412.59	412.58	412.58	412.47
CUT / FILL DEPTH	-0.01	0.02	0.03	0	0.01	0.01	0.01	0.04	0.02	-0.02	0	0.01	0.25
DESIGN LEVELS ON ACCESS CENTRELINE	411.10	411.30	411.36	411.74	412.00	412.11	412.16	412.42	412.45	412.58	412.59	412.59	412.72
CHAINAGE	142.87	148.34	150.00	160.00	167.02	170.00	171.37	180.00	181.37	190.00	191.37	191.55	200.00

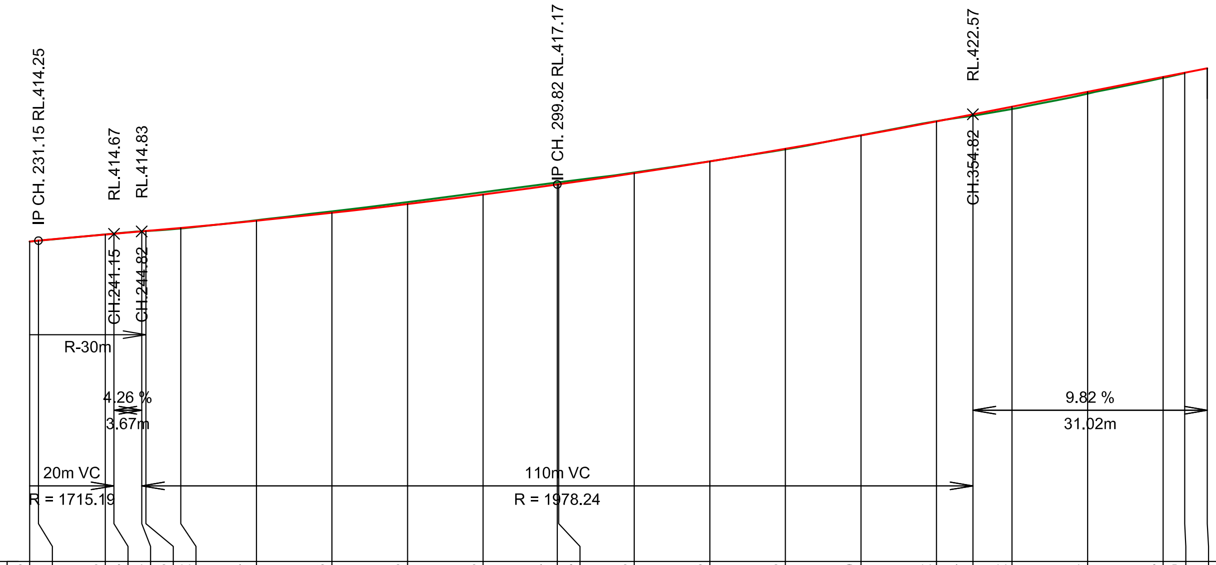
EXISTING LEVEL ON ACCESS CENTRELINE	412.49	412.67	413.15	413.24	413.68	413.74	413.90	414.16	414.21	414.63	414.68	414.84	414.86	415.02
CUT / FILL DEPTH	0.27	0.19	-0.05	-0.06	-0.04	-0.03	-0.02	0	0	-0.01	-0.01	-0.01	-0.01	0.04
DESIGN LEVELS ON ACCESS CENTRELINE	412.76	412.86	413.10	413.18	413.64	413.70	413.88	414.16	414.22	414.62	414.67	414.83	414.85	415.05
CHAINAGE	201.55	204.39	210.00	211.55	220.00	221.15	224.44	230.00	231.15	240.00	241.15	244.82	245.38	250.00

Access 1 Longitudinal Section
Horizontal Scale 1:1000
Vertical Scale 1:500

Horiz Curve Data

Vertical Geometry Grade (%)
Vertical Grade Length

Vertical Curve Length (m)
Vertical Curve Radius (m)



DATUM R.L.393.00

EXISTING LEVEL ON ACCESS CENTRELINE	414.16	414.21	414.63	414.68	414.84	414.86	415.02	415.57	416.16	416.76	417.43	418.07
CUT / FILL DEPTH	0	0	-0.01	-0.01	-0.01	-0.01	0.04	-0.04	-0.1	-0.12	-0.16	-0.14
DESIGN LEVELS ON ACCESS CENTRELINE	414.16	414.22	414.62	414.67	414.83	414.85	415.05	415.53	416.06	416.64	417.27	417.93
CHAINAGE	230.00	231.15	240.00	241.15	244.82	245.38	250.00	260.00	270.00	280.00	290.00	299.82

EXISTING LEVEL ON ACCESS CENTRELINE	418.08	418.73	419.46	420.26	421.19	422.12	422.47	422.92	423.94	424.98	425.30	
CUT / FILL DEPTH	-0.14	-0.05	-0.01	0.02	-0.03	-0.02	0.1	0.16	0.12	0.06	0.02	
DESIGN LEVELS ON ACCESS CENTRELINE	417.95	418.68	419.46	420.29	421.17	422.10	422.57	423.08	424.06	425.04	425.32	425.61
CHAINAGE	300.00	310.00	320.00	330.00	340.00	350.00	354.82	360.00	370.00	380.00	382.84	385.84

Access 1 Longitudinal Section cont'd
Horizontal Scale 1:1000
Vertical Scale 1:500

REV	DATE	DESCRIPTION	APPROVED
B	22/05/19	Lot layout altered	JFM
A	20/03/19	Initial Issue	JFM

CONSULTANT

Civilised Ltd

CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

JFM	20/03/2019
DESIGN	DATE
JDR	20/03/2019
DRAWN	DATE
JFM	20/03/2019
CHECKED	DATE

CLIENT

WAKATIPU
INVESTMENTS
LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

ROADING/ACCESS
ACCESS 1 LONGITUDINAL SECTION

CONTRACT NUMBER -

SCALE (AT A3) As Shown

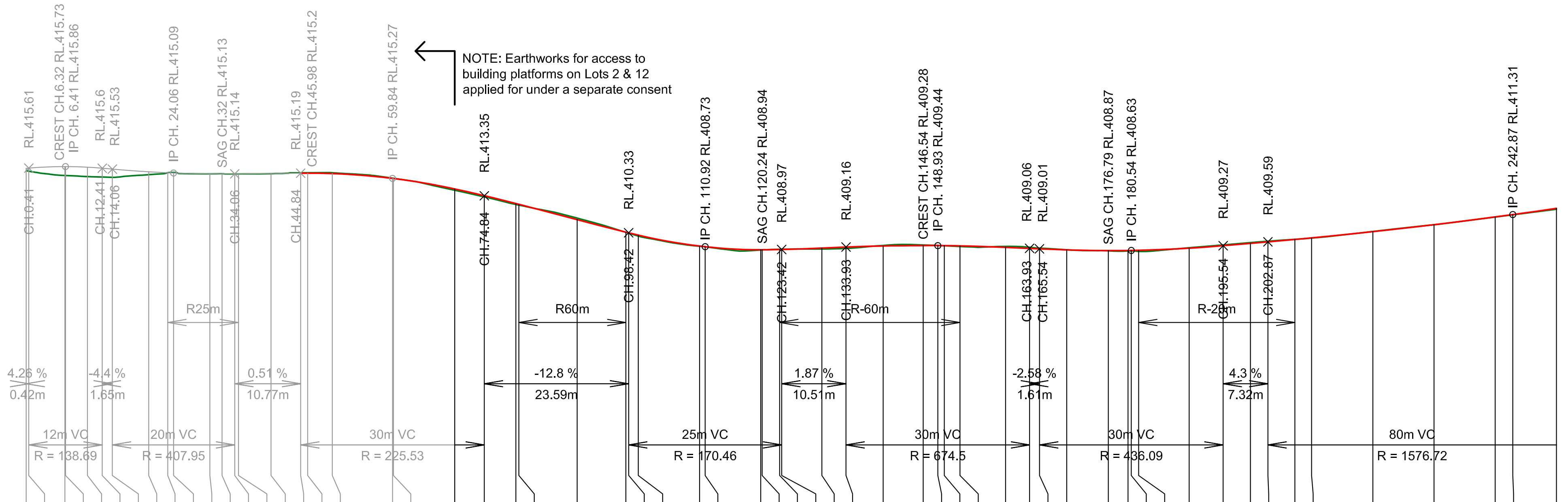
DRAWING NUMBER QV021-D230

REVISION B

Horiz Curve Data

Vertical Geometry Grade (%)
Vertical Grade Length

Vertical Curve Length (m)
Vertical Curve Radius (m)



NOTE: Earthworks for access to
building platforms on Lots 2 & 12
applied for under a separate consent

DATUM R.L.388.00

EXISTING LEVEL ON ACCESS CENTRELINE		415.36	415.01	415.01	414.92	414.88	414.85	415.07	415.23	415.26	415.14	415.15	415.13	415.13	415.16	415.23	415.23	415.23	414.79	414.77
CUT / FILL DEPTH		0.25	0.73	0.73	0.77	0.72	0.68	0.24	-0	-0.04	0	-0.01	0.01	0.01	0.01	-0.03	-0.03	-0.07	-0.02	-0.01
DESIGN LEVELS ON ACCESS CENTRELINE	415.59	415.61	415.73	415.73	415.69	415.60	415.53	415.31	415.23	415.21	415.14	415.13	415.14	415.14	415.17	415.19	415.20	415.16	414.77	414.76
CHAINAGE	-0.00	0.41	6.32	6.41	10.00	12.41	14.06	20.00	23.13	24.06	30.00	32.00	34.06	34.67	40.00	44.84	45.98	50.00	59.84	60.00

EXISTING LEVEL ON ACCESS CENTRELINE	413.80	413.26	412.64	412.59	411.53	410.36	410.29	410.06	409.22	409.19	408.92	408.93	408.99	409.00	409.01	409.05	409.29	409.33	409.29	409.27
CUT / FILL DEPTH	0.11	0.09	0.05	0.03	-0.12	0.03	0.04	0.08	0.02	0	0.01	0.01	-0.03	-0.03	0.08	0.12	-0.04	-0.05	-0.01	0
DESIGN LEVELS ON ACCESS CENTRELINE	413.92	413.35	412.69	412.63	411.41	410.39	410.33	410.14	409.24	409.19	408.94	408.94	408.96	408.97	409.09	409.16	409.25	409.28	409.28	409.27
CHAINAGE	70.00	74.84	80.00	80.49	90.00	97.97	98.42	100.00	110.00	110.92	120.00	120.24	123.09	123.42	130.00	133.93	140.00	146.54	148.93	150.00

EXISTING LEVEL ON ACCESS CENTRELINE	409.20	409.22	409.14	409.08	408.94	408.85	408.84	408.84	408.81	409.10	409.33	409.53	409.64	409.79	409.89	410.43	410.98	411.61	411.80	412.25
CUT / FILL DEPTH	0.05	-0.07	-0.08	-0.07	-0.02	0.02	0.04	0.04	0.09	-0.03	-0.06	-0.07	-0.05	-0.01	0.02	-0.01	0	0.01	0.02	0.07
DESIGN LEVELS ON ACCESS CENTRELINE	409.25	409.15	409.06	409.01	408.92	408.87	408.88	408.89	408.90	409.07	409.27	409.46	409.59	409.78	409.91	410.42	410.99	411.62	411.82	412.32
CHAINAGE	152.55	160.00	163.93	165.54	170.00	176.79	180.00	180.54	181.74	190.00	195.54	200.00	202.87	207.26	210.00	220.00	230.00	240.00	242.87	250.00

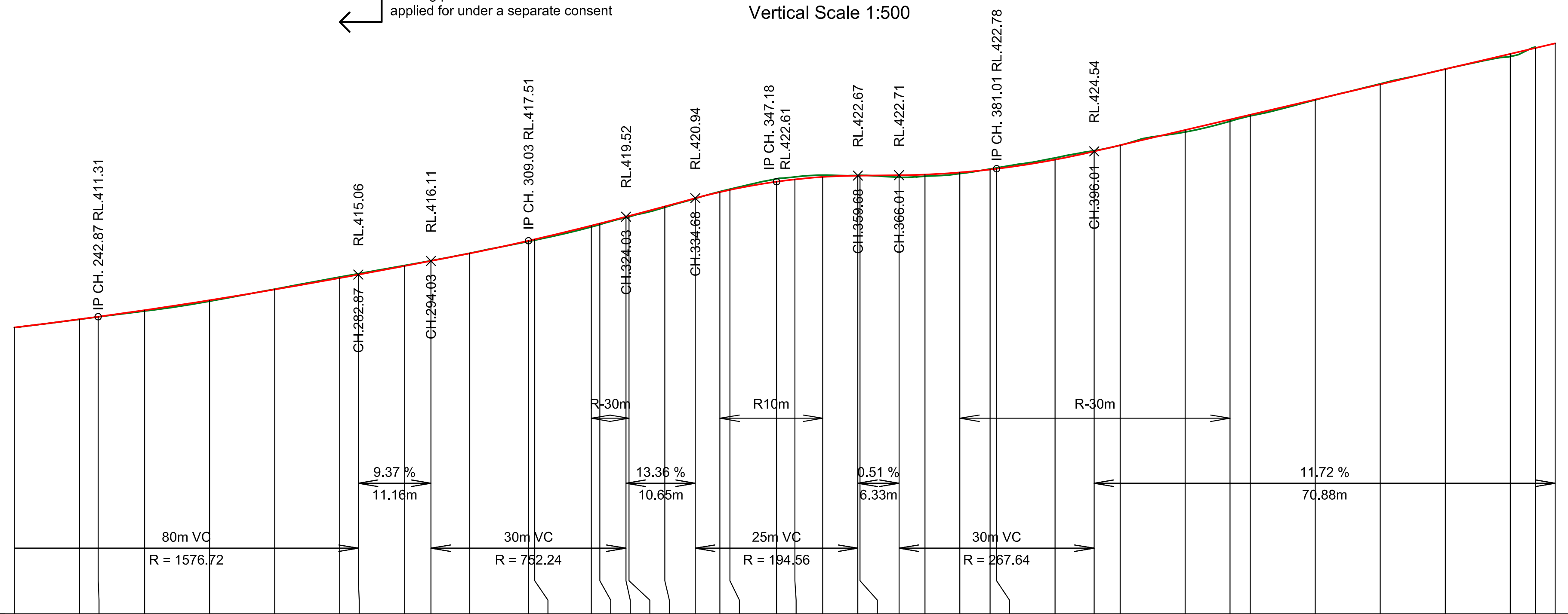
Access 2A Longitudinal Section
Horizontal Scale 1:1000
Vertical Scale 1:500

NOTE: Earthworks for access to
building platforms on Lots 2 & 12
applied for under a separate consent

Horiz Curve Data

Vertical Geometry Grade (%)
Vertical Grade Length

Vertical Curve Length (m)
Vertical Curve Radius (m)



DATUM R.L.389.00

EXISTING LEVEL ON ACCESS CENTRELINE	410.98	411.61	411.80	412.25	413.00	413.93	414.87	415.13	415.76	416.13	416.70	417.61	417.71	418.71	418.91
CUT / FILL DEPTH	0	0.01	0.02	0.07	0.08	-0.03	-0.08	-0.07	-0.04	-0.02	-0.01	0.05	0.06	0.11	0.08
DESIGN LEVELS ON ACCESS CENTRELINE	410.99	411.62	411.82	412.32	413.08	413.90	414.79	415.06	415.73	416.11	416.69	417.66	417.77	418.82	418.99
CHAINAGE	230.00	240.00	242.87	250.00	260.00	270.00	280.00	282.87	290.00	294.03	300.00	309.03	310.00	318.68	320.00

EXISTING LEVEL ON ACCESS CENTRELINE	419.45	419.50	420.24	420.91	421.45	421.64	422.43	422.58	422.72	422.70	422.70	422.54	422.62	422.83	423.18
CUT / FILL DEPTH	0.07	0.07	0.08	0.02	-0.04	-0.06	-0.22	-0.2	-0.15	-0.02	-0.03	0.17	0.14	0.09	-0.04
DESIGN LEVELS ON ACCESS CENTRELINE	419.52	419.58	420.31	420.94	421.41	421.58	422.21	422.38	422.57	422.67	422.67	422.71	422.76	422.92	423.14
CHAINAGE	324.03	324.49	330.00	334.68	338.47	340.00	347.18	350.00	354.26	359.68	360.00	366.01	370.00	375.35	380.00

EXISTING LEVEL ON ACCESS CENTRELINE	423.26	424.04	424.59	425.00	426.03	426.86	427.26	428.50	429.74	430.87	431.85	432.57	
CUT / FILL DEPTH	-0.06	-0.13	-0.05	0.01	0.15	0.13	0.09	0.02	-0.04	-0	0.2	-0.08	
DESIGN LEVELS ON ACCESS CENTRELINE	423.20	423.90	424.54	425.01	426.18	426.99	427.35	428.53	429.70	430.87	432.04	432.49	432.85
CHAINAGE	381.01	390.00	396.01	400.00	410.00	416.91	420.00	430.00	440.00	450.00	460.00	463.84	466.89

Access 2A Longitudinal Section cont'd
Horizontal Scale 1:1000
Vertical Scale 1:500

REV	DATE	DESCRIPTION	APPROVED
B	22/05/19	Lot layout altered	JFM
A	20/03/19	Initial Issue	JFM

CONSULTANT

Civilised Ltd

CIVILISED LTD
PO BOX 1461
QUEENSTOWN 9348

T: 027 223 3036
E: john@mccartneys.nz

JFM	20/03/2019
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CLIENT

WAKATIPU
INVESTMENTS
LTD

PROJECT/LOCATION

PROPOSED SUBDIVISION
LITTLES ROAD - QUEENSTOWN

TITLE

ROADING/ACCESS
ACCESS 2A LONGITUDINAL SECTION

CONTRACT NUMBER
-

SCALE (AT A3)
As Shown

DRAWING NUMBER
QV021-D-250

REVISION
B

CIVILISED LTD
PO Box 1461
Queenstown, 9348
027 223 3036 | john@mccartneys.nz

19 December 2019

Vivian + Espie Ltd
By Email: carey@vivianespie.co.nz

Attention: Carey Vivian

Dear Carey,

WAKATIPU INVESTMENTS LTD – RM190656

REVISED SUBDIVISION LAYOUT – EARTHWORKS ASSESSMENT

1. INTRODUCTION

As discussed, the layout of the proposed subdivision has been amended to now being an eight-lot subdivision as shown on the attached updated drawing. Below I set out the compliance with the earthworks rules of the Queenstown Lake District Council (QLDC) Proposed District Plan for the revised layout.

The revised subdivision plan shows eight allotments to be created for the purposes of rural domestic living. In addition, there is a balance lot. Of the eight lots for living purposes, each has an identified building platform with two of these being in the same or similar locations to those approved under RM190276 which was a variation to an original six lot subdivision of the underlying land. Subsequent to the granting of consent for RM190276, engineering review and acceptance has been gained for the necessary roading and servicing infrastructure required to implement the subdivision consent. Construction of this infrastructure is ongoing.

Much of the roading required for the current revised subdivision proposal (for the eight allotments) uses the roads currently being constructed under RM190276.

I have reviewed the earthworks rules contained in Chapter 25 of the Proposed District Plan. I can confirm that overall, the activities relating to the proposed eight lot subdivision fall under the Permitted Activity rules and can be completed without requiring a specific earthworks consent.

The only relevant rules in the Proposed District Plan that apply to the earthworks associated with the proposed subdivision are rules 25.5.19 and 25.5.21.

2. PROXIMITY TO WATER BODY

Rules 25.5.19 states:

> *Earthworks within 10m of the bed of any water body, or any drain or water race that flows to a lake or river, shall not exceed 5m3 in total volume, within any consecutive 12-month period.*

The earthworks required to implement the proposed 8 lot subdivision consists of constructing driveways to Lots 1, 10, 11, 13, 14 and 15. These are not located near any water body, drain or water race. The driveway to Lot 1 has been moved from that originally proposed to ensure that the earthworks associated with the construction of the driveway does not occur within 10m of any drain.

3. CLEANFILL QUANTITY

Rules 25.5.21 states:

> *No more than 300m³ of Cleanfill shall be transported by road to or from an area subject to Earthworks.*

All material excavated in site will be retained on site and used in fill areas. The only materials to be imported to site by road are the road construction basecourse materials. This rule does not appear to be relevant to the proposed works as it relates to cleanfill and not road basecourse materials.

Cleanfill is material that is placed on a site as a means of safely storing it long term and not material used in the construction of roads.

Regardless of whether the material is cleanfill or not, I have estimated the quantities of material required to be imported to site for road construction activities. In total, the quantity of material required for the construction of road pavements is approximately 211m³ and is less than the volume

4. SUMMARY

The earthworks associated with the revised subdivision proposal comply with the requirements of the Proposed District Plan.

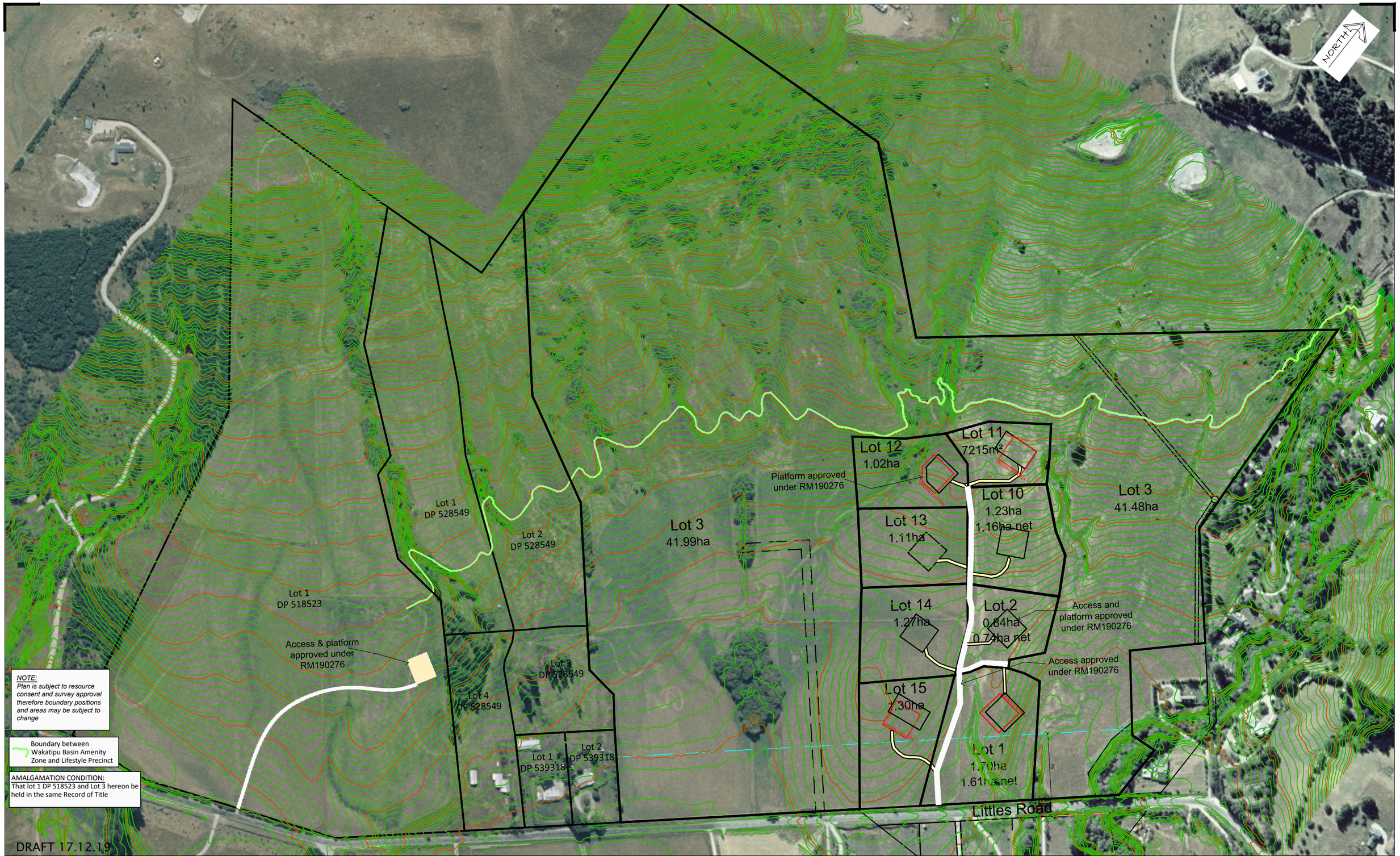
Should you have any questions please contact the undersigned in the first instance.

Yours faithfully,

John McCartney
Director
CIVILISED LTD

Attachments:

- Attachment 1: Updated subdivision layout drawing



Shotover Design Limited trading as
Clark Fortune McDonald & Associates
Licensed Cadastral Surveyors - Land Development - Planning Consultants
309 Lower Shotover Road, P.O.Box 553 Queenstown
Tel. (03)441-6044, Fax (03)442-1066, Email admin@cfma.co.nz
21 Reece Crescent, P.O.Box 550, Wanaka
Tel. (03)443-4448, Fax (03)443-4445, Email admin@cfma.co.nz
Level 1, Bracken Court, 480 Moray Place, P.O. Box 5960
Tel. (03)470-1582, Fax (03)470-1583, Email admin@cfma.co.nz

Rev.	Date	Revision Details	By
C	April19	Amend driveway location for lot 17	ED
D	Aug19	Amend platforms on lots 10 and 11	ED
E	Sep19	Amend BPs on lots 1,6,7,11,12,17,19 as per geotech report	ED
F	Dec19	Delete lot 7, include in lot 9	ED
G	Dec19	Amend BP locations on lots 1 & 15 & delete a number of lots	ED

LOTS 1, 2 AND 10-15 BEING A PROPOSED SUBDIVISION OF LOT 10 DP 518523

Client	Surveyed	Signed	Date	Job No.	Drawing No.
WAKATIPU INVESTMENTS LTD	---		---	12628	13
Notes: All dimensions shown are in meters unless shown otherwise. Any person using Clark Fortune McDonald drawings and other data accepts the risk of: - Using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions. - Ensuring the information is the most recent issue. - Copyright on this drawing is reserved.	Drawn	Signed	Date	Scale	1:2000 @ A1 1:4000 @ A3
	ED		10.12.18		
	Designed	Signed	Date	Datum & Level	Rev.
				MT NIC 2000	G

Shotover Design Limited trading as
Clark Fortune McDonald & Associates
Licensed Cadastral Surveyors - Land Development - Planning Consultants
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Tel. (03)441-6044, Fax (03)442-1066, Email admin@cfma.co.nz
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Level 1, Bracken Court, 480 Moray Place, P.O. Box 5960
Tel. (03)470-1582, Fax (03)470-1583, Email admin@cfma.co.nz

Rev.	Date	Revision Details	By
A	Feb 19	Amend platform and boundary locations	ED
B	March 19	Amend platform locations	ED
C	April19	Amend driveway location for lot 17	ED
D	Aug19	Amend platforms for lots 10 and 11	ED
E	Sep19	Amend platforms on lots 1,6,11,12,17,19 as per geotech report	ED
F	Dec19	Delete lot 7, include in lot 9	ED
G	Dec19	Amend BP locations on lots 1 & 15 & delete a number of lots	ED

LOTS 1 & 2 & 10-15 BEING A PROPOSED SUBDIVISION OF LOT 10 DP 518523

Client	Surveyed	Signed	Date	Job No.	Drawing No.
WAKATIPU INVESTMENTS LTD	---		---	12628	13
	Drawn	Signed	Date	Scale	
	ED		10.12.18	1:2000 @ A1 1:4000 @ A3	
	Designed	Signed	Date	Datum & Level	Rev.
				MT NIC 2000	G

Notes:
All dimensions shown are in meters unless shown otherwise.
Any person using Clark Fortune McDonald drawings and other data accepts the risk of:
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- Ensuring the information is the most recent issue.
- Copyright on this drawing is reserved.

CIVILISED LTD
PO Box 1461
Queenstown, 9348
027 223 3036 | john@mccartneys.nz

7 October 2019

Vivian + Espie Ltd
By Email: carey@vivianespie.co.nz

Attention: Carey Vivian

Dear Carey,

WAKATIPU INVESTMENTS LTD – RM190656

RESPONSE TO QLDC REQUEST FOR FURTHER INFORMATION

Queenstown Lake District Council (QLDC) have requested further information in relation to the application by Wakatipu Investments Ltd for Resource Consent to subdivide their land on Littles Road, Queenstown. This letter is intended to serve as a response to the engineering matters raised by QLDC.

1. ACCESS

QLDC have requested information related to the following items:

> *The subdivision plan by Clark Fortune McDonald & Associates titled Lots 1 -20 being a proposed subdivision of Lot 10 LT 518523 shows private access roads formed via ROW easements over numerous lots to provide vehicle access to each proposed building platform. Please indicate if the access road are intended to be vested with Council or privately owned as this information is not provided within the application information?*

The applicant has advised that they intend the access roads remain in private ownership following subdivision.

> *The infrastructure report by Civilised Ltd, dated 23 May 2019 indicates that Access road 1 (Ch0 – Ch160), Access road 2 (Ch0 – Ch170) and Access road 2A (Ch0-CH145) will be formed to E1 design standards (suitable to service 1-6 dwelling units) however more than 6 dwelling units are capable of being serviced along these sections of road, please amend to a recommended design standard to a standard capable of servicing 1-20 dwelling units.*
>
> *The infrastructure report by Civilised Ltd, dated 23 May 2019 refers to "Access 1A", please provide plan which details where this access road is located.*

Tables 2 and 3 in the Infrastructure Feasibility Report should read as follows:

Table 2 – Access 1 (ch50-end), Access 2 (ch170-end) and Access 2A (ch145-end) – Road Design Parameters

Feature	Design response
Roads	Access 1 (ch50-end), Access 2 (ch170-end) and Access 2A (ch145-end)
Cross Section Reference	E1
Area Context	Rural
Local Attributes	Access to lifestyle or clustered housing

Feature	Design response
Locality Served	1 to 6 dwelling units
Target Operating Speed	20 km/h
Legal Road Width	6m
Pedestrians	Shared (on shoulder and berm)
Passing, parking, loading and shoulder	Allow for passing up to every 50m, 0.5m sealed shoulder
Cyclists	Shared in movement lane
Movement Lane Width	2.5m
Classification	Lane
Road to be vested in QLDC	No

Table 3 – Access 1 (ch0-ch50), Access 2 (ch0-ch170) and Access 2A (ch0-ch145) – Road Design Parameters

Feature	Design response
Roads	Access 1 (ch0-ch50), Access 2 (ch0-ch170) and Access 2A (ch0-ch145)
Cross Section Reference	E2
Area Context	Rural
Local Attributes	Access to lifestyle or clustered housing
Locality Served	1 to 20 dwelling units
Target Operating Speed	30 km/h
Legal Road Width	9m
Pedestrians	Shared (on shoulder and berm)
Passing, parking, loading and shoulder	Allow for passing in movement lane, 0.5m sealed shoulder
Cyclists	Shared in movement lane
Movement Lane Width	5.5m to 5.7m
Classification	Lane
Road to be vested in QLDC	No

In addition, the earthworks drawings have been updated. This includes correctly labelling the road width changes on Access 1. The updated drawings are attached to this letter as Attachment 1.

2. POWER

QLDC have requested information related to the following item:

The infrastructure report by Civilised Ltd, titled "Wakatipu Investments Ltd – Dalefield Subdivision," dated 23 May 2019 indicates that Aurora Energy has been contacted regarding the ability for electricity to be supplied to each building platform however written evidence of this has not been provided within the application information. Please provide written evidence from Aurora Energy confirming that adequate electrical supply is feasible for the development and can be supplied to each proposed building platform.

The confirmation from Aurora is attached to this letter as Attachment 2.

3. TELECOMMUNCIATIONS

QLDC have requested information related to the following item:

The infrastructure report by Civilised Ltd, titled "Wakatipu Investments Ltd – Dalefield Subdivision," dated 23 May 2019 indicates that Chorus has been contacted regarding the ability for telecommunications to be supplied to each building platform however written evidence of this has not been provided within the application information. Please provide written evidence from Chorus confirming that adequate telecommunication supply is feasible for the development and can be supplied to each proposed building platform.

The confirmation from Chorus is attached to this letter as Attachment 3.

4. POTABLE WATER SUPPLY

QLDC have requested information related to the following item:

The infrastructure report by Civilised Ltd, titled "Wakatipu Investments Ltd – Dalefield Subdivision," dated 23 May 2019 indicates the intention to connect into an existing private water scheme currently managed by an existing private management entity. Please provide written approval from the management entity permitting the proposed 20 lot subdivision to be connected into this existing water scheme.

The water supply is managed and maintained by Southern H2O Company Limited. The confirmation from Southern H2O is attached to this letter as Attachment 4.

5. STORMWATER

QLDC have requested information related to the following item:

The application does not how secondary flow paths will be managed. Please provide a secondary protection system consisting of secondary flow paths to cater for the 1% AEP storm event and/or setting of appropriate building floor levels to ensure that there is no inundation of any buildable areas within the lots, and no increase in run-off onto land beyond the site from the pre-development situation.

The secondary flow paths across the site follow the existing gulleys and ephemeral flow paths. As much as possible, these existing flow paths will remain unchanged as the site is developed. Culverts will be installed under roads where required to allow flow paths to continue uninterrupted

GCL have reviewed the locations of all building platforms and reported on natural hazards including flooding for each allotment. They have recommended minor platform adjustments to ensure platforms are not at risk of inundation. The building platforms have been located away from the identified gulleys and ephemeral flow paths. The drawings included with this report as Attachment 1 reflect the latest

building platform locations as recommended by GCL. The report from GCL is included with this letter as Attachment 5.

Future buildings on the building platforms will be required to ensure that they do not increase runoff from the pre-development flow. It is envisaged that this will be done by installation of soakage facilities or by attenuating flows from any impervious areas constructed.

The construction of the proposed roading network may increase runoff during intense and/or prolonged rainfall events. It is intended that this potential increase in runoff will be managed by attenuating the flows. Runoff flows from across the site leave the site at three defined overland flow paths in lots 1, 3 and 16. The flow paths in these areas are normally dry during the summer months and it is intended that during the summer months attenuation storage will be constructed on each flow path to ensure that post-development runoff does not exceed the pre-development situation.

This type of runoff attenuation has been undertaken elsewhere in the district and is clearly feasible for the site. The details of the attenuation will be worked through during the detailed design phase of the project and will be subject to QLDC review and acceptance as part of the Engineering Review and Acceptance conditions of any resource consent granted for the proposed development.

6. EARTHWORKS

QLDC have requested information related to the following item:

> *The consent application consists of 5216m3 of earthworks which exceeds District Plan limits details within section 22.3.3(i) for Rural General Zoned areas. Please provide a detailed geotechnical report and excavation methodology prepared by a suitably qualified professional. The report shall combine all relevant geotechnical information in both a factual and interpretive manner, provide justifiable statements about all pertinent geotechnical aspects, consider relevant RMA section 106 issues and recommend suitable construction methodologies.*

The applicant has engaged GCL to report on all geotechnical matters in relation to the proposed development. A copy of the GCL report is included with this letter as Attachment 5.

As some of the building platforms have moved, the earthworks drawings have been updated to reflect this (refer Attachment 1). As driveway accesses to the building platforms have changed somewhat, the quantities given in Table 4 of the Infrastructure Feasibility now needs updating. The total earthworks figures for the development as assessed are summarised below:

Table 4 – Proposed Earthworks

Description	Cut Volume	Fill Volume	Total Volume	Maximum Cut Height	Maximum Fill Height	Extent of Earthworks
Accesses 1 Roading	890m³	5m³	895m³	0.60m	0.15m	2,940m²
Access 2A Roading	1,100m³	15m³	1,115m³	1.15m	0.48m	3,375m²
Building Platform accesses	3,227m³	48m³	3,275m³			10,755m²

Should you have any questions please contact the undersigned in the first instance.

Yours faithfully,

John McCartney

Director

CIVILISED LTD

Attachments:

- Attachment 1: Updated earthwork drawings
- Attachment 2: Aurora confirmation
- Attachment 3: Chorus confirmation
- Attachment 4: Southern H2O Company Limited confirmation
- Attachment 5: GCL Geotechnical report

Southern H20 Company Limited
c/-Triumph Capital Limited
Level 1, Shed 19a, Princes Wharf
137 Quay Street
Auckland, 1011

16 August 2019

Queenstown Lakes District Council
Private Bag 50072
Queenstown 9348

Attention: Planning Department

Dear Sir/Madam

RE: RM190656 – WAKATIPU INVESTMENTS LIMITED

1. We refer to Resource Consent Application RM190656 (**Consent Application**) made by Wakatipu Investments Limited (**Wakatipu**).

2. Southern H20 Company Limited (**SHC**) are the holder of permit RM17.190.01 issued by the Otago Regional Council which provides SHC with the right to take water from a bore located on land over which SHC has an easement in gross for the take and conveyance of water.

3. The objects of SHC are specifically to supply water to land contained within Record of Title 756255 or any other land which may have been subdivided from the land contained in this title. We note that the subject land of the Consent Application was formerly contained in Record of Title 756255.

4. SHC confirm that it has the ability and is willing to provide water to each of the 20 lots proposed by Wakatipu under the Consent Application.

5. Should the Council require anything further from SHC please contact SHC's solicitor, Pip Roberts of TODD & WALKER Law pip@toddandwalker.com.

Yours Sincerely,

Kelly McEwan
Director
Southern H20 Company Limited

John McCartney <john@civilised.nz>

Chorus Development, QST53189, Littles Road, Daelfield

1 message

Chorus Property Developments <develop@chorus.co.nz> 30 July 2019 at 15:07
To: "john@civilised.nz" <john@civilised.nz>

Hello John,

Thank you for providing an indication of your development plans in this area. I can confirm that we have infrastructure in the general land area that you are proposing to develop. Chorus will be able to extend our network to provide connection availability. However, please note that this undertaking would of course be subject to Chorus understanding the final total property connections that we would be providing, roll-out of property releases/dates and what investment may or may not be required from yourselves and Chorus to deliver the infrastructure to and throughout the site in as seamless and practical way as possible.

The cost involved would be a minimum of our current standard fee of $1600 per lot excluding GST. This cost can only be finalised at the time that you are ready to proceed.

Chorus is happy to work with you on this project as the network infrastructure provider of choice. What this ultimately means is that the end customers (business and home owners) will have their choice of any retail service providers to take their end use services from once we work with you to provide the physical infrastructure.

Please reapply with a detailed site plan when you are ready to proceed

We're here to help – so please let us know if you need any further information.

Kind regards,

Aimee Smith
Property Development Coordinator

T 0800 782 386 opt1
M
E develop@chorus.co.nz
PO Box 9405
Hamilton
www.chorus.co.nz

CHORUS

Please consider the environment before printing this email

AURORA ENERGY LIMITED
PO Box 5140, Dunedin 9058
PH 0800 22 00 05
WEB www.auroraenergy.co.nz

29 July 2019

John McCartney
Civilised Ltd

By email only: john@civilised.nz

Dear John,

ELECTRICITY SUPPLY AVAILABILITY FOR PROPOSED 20 LOT SUBDIVISION.
LITTLES ROAD, QUEENSTOWN – LOT 10 DP 518523.

Thank you for your inquiry outlining the above proposed development.

Subject to technical, legal and commercial requirements, Aurora Energy can make a Point of Supply[1] (PoS) available for this development.

Disclaimer

This letter confirms that a PoS **can** be made available. This letter **does not** imply that a PoS is available now, or that Aurora Energy will make a PoS available at its cost.

Next Steps

To arrange an electricity connection to the Aurora Energy network, a connection application will be required. General and technical requirements for electricity connections are contained in Aurora Energy's Network Connection Standard. Connection application forms and the Network Connection Standard are available from www.auroraenergy.co.nz.

Yours sincerely

Richard Starkey
COMMERCIAL MANAGER

[1] Point of Supply is defined in section 2(3) of the Electricity Act 1993.

APPENDIX C: ENGINEERING LOGS

INVESTIGATION LOG

TP101 (Lot 12)

GCL Ground Consulting Ltd

Report Ref: R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location: Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS T				
LOESS	Clayey SILT, with trace sand; yellowish brown. Firm to stiff; dry; sand, fine; minor rootlets.							
ALLUVIUM	Gravelly SAND, with some cobbles; greyish brown. Medium dense; dry; sand, medium to coarse; gravel, fine to coarse, subround to subangular, slightly weathered; cobbles, subround to subangular, up to 120mm, slightly weathered; lenses of orangish brown mottling.		1					
GLACIAL DEPOSITS	SILT, with minor sand, with trace gravel; brownish grey. Dense; dry; sand, fine; gravel, fine to medium, subangular to subround, slightly weathered. **End of Investigation: 2.7m Geology Established**		2					
			3					

Investigation Information

Depth	2.7m	**Logged By**	JW	**Start Date**	21/08/19
Termination	ıogy Establis	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP101 (Lot 12)

INVESTIGATION LOG

TP102 (Lot 13)

Report Ref: R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location: Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS T				
COLLUVIUM	Silty SAND, with some gravel; orange brown. Medium dense; dry; sand, medium to coarse; gravel, fine to coarse, rounded to subround, slightly weathered; occasional rootlets.							
ALLUVIAL DEPOSITS	Gravelly SAND, with some cobbles; greyish brown. Medium dense to dense; dry; sand, medium to coarse; gravel, medium to coarse, rounded to subround, slightly weathered, Sandstone; cobbles, subangular to angular, up to 150mm, unweathered.		1					
ALLUVIAL DEPOSITS	Gravelly SAND; brownish grey. Medium dense; dry; sand, medium to coarse; gravel, medium to coarse, rounded to subround, slightly weathered.							
ALLUVIAL DEPOSITS	Sandy GRAVEL; greyish brown. Loose; saturated; gravel, fine to coarse, rounded to subround, slightly weathered; sand, medium to coarse; groundwater inflow at 0.25 - 0.5l/min.		2					IN 2.40m
GLACIAL DEPOSITS	Sandy SILT, with some gravel, with trace cobbles; light greyish brown. Firm; moist; sand, fine; gravel, fine to medium, subround to subangular, slightly weathered; cobbles, subround, up to 80mm, slightly weathered.		3					
	End of Investigation: 3.2m Machine limit							

Investigation Information

Depth	3.2m	**Logged By**	JW	**Start Date**	21/08/19
Termination	ıogy Establis	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP102 (Lot 13)

INVESTIGATION LOG

TP103 (Lot 14)

GCL Ground Consulting Ltd

Report Ref	
R5119-2A	

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location
Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL								
UVIU	Clayey SILT, with trace gravel; orange brown. Firm to stiff; dry; gravel, medium, subangular to subround, slightly weathered; minor rootlets, occasional orange red lenses, often around gravel, to 20mm.							
GLACIAL DEPOSITS	Gravelly SILT, with trace sand; greyish brown. Dense to very dense; dry; gravel, fine to coarse, rounded to subround, slightly weathered; sand, fine; lenses of orangish brown mottling.		1 2 3					
	End of Investigation: 2.1m Refusal							

Investigation Information

Depth	2.1m	**Logged By**	JW	**Start Date**	21/08/19
Termination	Machine limit	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP103 (Lot 14)

INVESTIGATION LOG

TP104 (Lot 15)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL								
COLLUVIUM	Clayey SILT, with trace gravel; orange brown. Firm; dry; gravel, medium, subangular to subround, slightly weathered.							
GLACIAL DEPOSITS	Gravelly SILT, with trace sand and boulders; greyish brown. Dense to very dense; dry; gravel, fine to coarse, rounded to subround, slightly weathered; sand, fine, boulders, angular to subangular, up to 600mm, unweathered, schist; density increases with depth.		1 2 3					
	End of Investigation: 2.5m Refusal							

Investigation Information

Depth	2.5m	**Logged By**	JW	**Start Date**	21/08/19
Termination	Refusal	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP104 (Lot 15)

INVESTIGATION LOG

TP105 (Lot 1)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL								
COLLUVIUM	Cobbly SILT, with some clay, with trace sand; orange brown. Soft to firm; dry; cobbles, rounded to subround, up to 100mm, slightly weathered; sand, fine.							
GLACIAL DEPOSITS	Gravelly SILT, with trace sand and boulders; greyish brown. Dense to very dense; dry; gravel, fine to coarse, rounded to subround, slightly weathered; sand, fine, boulders, angular to subangular, up to 600mm, unweathered, schist; density increases with depth.		1 2 3					
	End of Investigation: 2.1m Refusal							

Investigation Information

Depth	2.1m	**Logged By**	JW	**Start Date**	21/08/19
Termination	Refusal	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP105 (Lot 1)

INVESTIGATION LOG

TP106 (Lot 2)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T				
ALLUVIAL DEPOSITS	Gravelly SAND, with trace silt; brownish grey. Dense; moist; sand, fine; gravel, fine to medium, subround to subangular, slightly weathered.							
ALLUVIAL DEPOSITS	Gravelly SAND, with trace silt and boulders; greyish brown. Medium dense to dense; moist; sand, medium to coarse; gravel, fine to coarse, subround to subangular, slightly weathered; boulders, angular, up to 750mm, unweathered, schist; minor seepage in places.		1					
GLACIAL DEPOSITS	SILT; brownish grey. Stiff; dry.		2					
	End of Investigation: 2.4m GEOLOGY ESTABLISHED		3					

Investigation Information

Depth	2.4m	**Logged By**	JW	**Start Date**	21/08/19
Termination	Refusal	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP106 (Lot 2)

INVESTIGATION LOG

TP107 (Lot 10)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Depth (m)
TOPSOIL		
ALLUVIAL DEPOSITS	Gravelly SILT, with trace sand; brownish grey. Firm; dry; gravel, fine to medium, subround to subangular, slightly weathered; sand, fine to medium; occasional rootlets.	
ALLUVIAL DEPOSITS	Gravelly SAND, with trace silt and boulders; greyish brown. Medium dense to loose; moist; sand, medium to coarse; gravel, fine to medium, subangular to subround, slightly weathered; boulders, angular, up to 300mm, moderately weathered, schist; minor seepage in places.	1
SCHIST	Completely weathered; light grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; very weak; minor seepage in places.	2
SCHIST	Moderately weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; moderately strong.	3
	End of Investigation: 3.2m Refusal	

Samples | Legend | Vane Shear Strength (Vane No: / Vane Size: 0mm; 50 100 150 200) | Values (kPa) | Scala Penetrometer (Blows / 100mm; 2 4 6 8 10 12 14 16 18) | Groundwater

Investigation Information

Depth	3.2m	**Logged By**	JW	**Start Date**	21/08/19
Termination	)GY ESTABL	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP107 (Lot 10)

INVESTIGATION LOG

TP108 (Lot 11)

GCL Ground Consulting Ltd

Report Ref	
R5119-2A	

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location
Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
ES	SILT, with some clay; greyish brown. Soft; moist; occasional rootlets.							
ALLUVIAL DEPOSITS	Gravelly SAND, with trace silt; greenish brown. Medium dense; moist to saturated; sand, fine; gravel, fine to medium, subround to subangular, slightly weathered; steady seepage in places slowly failing into pit.							
	Silty SAND, with some gravel; yellowish brown. Medium dense to dense; dry; sand, fine; gravel, fine to medium, subround to subangular, slightly weathered.		1					
	Silty SAND, with some gravel; dark greyish brown. Medium dense to dense; dry; sand, fine; gravel, fine to medium, subround to subangular, slightly weathered.		2					
	Sandy GRAVEL; greyish brown. Loose; saturated; gravel, fine to coarse, rounded to subround, slightly weathered; sand, medium to coarse; groundwater inflow, mainly at base, of 0.25 - 0.5 l/sec. Failing into test pit.							IN 2.70m
SCHIST	Moderately weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; moderately strong.		3					
	End of Investigation: 3.3m Refusal							

Investigation Information

Depth	3.3m	**Logged By**	JW	**Start Date**	21/08/19
Termination	Refusal	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP108 (Lot 11)

INVESTIGATION LOG

TP109 (Lot 4)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Depth (m)
TOPSOIL		
COLLUVIUM	SILT, with some clay, with trace gravel; greyish brown. Soft; moist; gravel, fine to medium, subround to subangular, slightly weathered; occasional rootlets, minor seepage at base.	
COLLUVIUM	SILT, with some gravel; brownish grey. Medium dense; dry; gravel, fine to medium, subround to subangular, slightly weathered.	1
ALLUVIAL DEPOSITS	Sandy GRAVEL; greyish brown. Loose to medium dense; saturated; gravel, fine to coarse, rounded to subround, slightly weathered; sand, medium to coarse; groundwater inflow at 0.25 - 0.5 l/min, failing into test pit.	
GLACIAL DEPOSITS	Sandy SILT, with some gravel, with trace cobbles; greyish brown. Medium dense; dry; sand, fine; gravel, fine to coarse, subangular to angular, slightly weathered; cobbles, angular, up to 80mm, slightly weathered.	2
SCHIST	Moderately weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; moderately strong.	
	End of Investigation: 2.9m Refusal	3

Samples: TS, T, TS

Vane Shear Strength — Vane No: — Vane Size: 0mm — 50 100 150 200

Values (kPa)

Scala Penetrometer (Blows / 100mm) — 2 4 6 8 10 12 14 16 18

Groundwater: IN 1.60m

Investigation Information

Depth	2.9m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP109 (Lot 4)

INVESTIGATION LOG

TP110 (Lot 6)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T				
ALLUVIAL DEPOSITS	Gravelly SAND, with minor silt; greyish brown. Dense to very dense; dry; sand, fine; gravel, fine to coarse, rounded to subround, slightly weathered; orange mottling in places, lenses of brownish grey up to 100mm.		1					
SCHIST	Moderately weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; moderately strong.		2					
	End of Investigation: 1.5m Refusal		3					

Investigation Information

Depth	1.5m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP110 (Lot 6)

INVESTIGATION LOG

TP111 (Lot 8)

GCL Ground Consulting Ltd

Report Ref	
R5119-2A	

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location
Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T				
ALLUVIAL DEPOSITS	Gravelly SAND, with minor silt; light greyish brown. Medium dense; wet; sand, fine to medium; gravel, fine to medium, subround to subangular, unweathered; minor seepage at base, minor failure into test pit.							
	Gravelly SAND, with trace silt and cobbles; brownish grey. Dense to very dense; dry; sand, fine to coarse; gravel, fine to coarse, subround to subangular, slightly weathered; cobbles, angular, up to 80mm, unweathered, schist.		1					
	Sandy SILT; brownish grey. Stiff; dry; sand, fine.							
SCHIST	Slightly weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; strong.							
	End of Investigation: 1.5m Refusal		2					
			3					

Investigation Information

Depth	1.5m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

INVESTIGATION LOG

TP112 (Lot 9)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
ALLUVIAL DEPOSITS	Gravelly SAND, with some silt; light greyish brown. Medium dense; wet; sand, fine to medium; gravel, fine to medium, subround to subangular, unweathered; minor seepage at base, minor failure into test pit.							
ALLUVIAL DEPOSITS	Gravelly SAND, with trace silt and cobbles; brownish grey. Dense to very dense; dry; sand, fine to coarse; gravel, fine to coarse, angular and subangular, slightly weathered; cobbles, angular, up to 120mm, unweathered, schist; dark brown staining in places.		1					
SCHIST	Slightly weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; strong.							
	End of Investigation: 1.5m Refusal		2 3					

Investigation Information

Depth	1.5m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP112 (Lot 9)

INVESTIGATION LOG

TP113 (Lot 7)

Report Ref: R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location: Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL								
COLLUVIUM	Gravelly SILT, with some clay; orange brown. Stiff to firm; dry; gravel, fine to medium, angular to subangular, unweathered.							
GLACIAL DEPOSITS	Cobbly SILT, with trace sand; dark grey. Very dense; dry; cobbles, angular, up to 120mm, unweathered, schist; sand, fine.		1					
	Gravelly SAND, with some cobbles, with trace boulders; greyish brown. Very dense; dry; sand, fine; gravel, fine to medium, subangular to subround, slightly weathered, Sandstone; cobbles, rounded, up to 200mm, unweathered; boulders, rounded, up to 500mm, unweathered.							
	Cobbly SILT, with trace sand; dark grey. Very dense; dry; cobbles, angular, up to 120mm, unweathered, schist; sand, fine.		2					
	Gravelly SAND, with trace cobbles; greyish brown. Very dense; dry; sand, fine; gravel, fine to medium, subangular to subround, slightly weathered; cobbles, rounded, up to 200mm, unweathered.							
	Sandy GRAVEL; dark greyish brown. Loose to medium dense; wet; gravel, fine to coarse, subround to rounded, slightly weathered; sand, medium to coarse; minor seepage.		3					
HIS	Moderately weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; moderately strong.							

Investigation Information

Depth	3.2m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- [ ] Hand Auger (50mm)
- [x] Test Pit
- [ ] Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP113 (Lot 7)

INVESTIGATION LOG

TP113 (Lot 7)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
	End of Investigation: 3.2m Refusal							

Investigation Information

Depth	3.2m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

INVESTIGATION LOG

TP114 (Lot 5)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location
Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
L DEPOSI	Gravelly SAND, with minor silt; light greyish brown. Medium dense; wet; sand, fine to medium; gravel, fine to medium, subround to subangular, unweathered; minor seepage at base, minor failure into test pit.							
GLACIAL DEPOSITS	Gravelly SAND, with trace silt; brownish grey. Dense to very dense; dry; sand, fine to coarse; gravel, fine to coarse, subround to subangular, slightly weathered.		1					
	Sandy SILT; brownish grey. Stiff; dry; sand, fine.							
HIS	Slightly weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; strong.		2					
	End of Investigation: 1.3m Refusal		3					

Investigation Information

Depth	1.3m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP114 (Lot 5)

INVESTIGATION LOG

TP115 (Lot 3)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
LOESS	Clayey SILT; yellowish brown. Soft; moist.							
ALLUVIAL DEPOSITS	Gravelly SILT, with some sand, with trace boulders; greyish brown. Medium dense to dense; dry; gravel, fine to medium, subround to subangular, slightly weathered; sand, fine; boulders, angular, up to 750mm, unweathered, schist.		1					
	Sandy GRAVEL; dark greyish brown. Medium dense to loose; saturated; gravel, fine to coarse, subround to subangular, slightly weathered; sand, medium to coarse; groundwater inflow of 2.0- 5.0 l/min throughout, failing into test pit.		2					IN 1.90m
	End of Investigation: 2.9m GEOLOGY ESTABLISHED		3					

Investigation Information

Depth	2.9m	**Logged By**	JW	**Start Date**	21/08/19
Termination	Refusal	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP115 (Lot 3)

INVESTIGATION LOG

TP116 (Lot 17)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
ALLUVIAL DEPOSITS	SAND, with some silt and gravel; light grey. Medium dense; moist; sand, fine; gravel, fine to coarse, subround to rounded, slightly weathered; minor seepage at base.							
GLACIAL DEPOSITS	Gravelly SAND, with some cobbles, with trace silt; greyish brown. Very dense to dense; dry; sand, fine to medium; gravel, fine to coarse, rounded to subround, slightly weathered; cobbles, rounded, up to 200mm, slightly weathered; orange mottles in places.		1 2 3					
	End of Investigation: 2.5m GEOLOGY ESTABLISHED							

Investigation Information

Depth	2.5m	**Logged By**	JW	**Start Date**	21/08/19
Termination	)GY ESTABL	**Checked By**		**End Date**	21/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	21/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP116 (Lot 17)

INVESTIGATION LOG

TP117 (Lot 18)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
COLLUVIUM	SILT, with some sand, with trace clay and cobbles; greyish brown. Stiff; dry; sand, medium to coarse; cobbles, rounded, up to 200mm, slightly weathered; minor seepage at base, minor failure into test pit.							
ALLUVIAL DEPOSITS	Gravelly SAND, with trace silt; orange brown. Dense; dry; sand, medium to coarse; gravel, fine to medium, rounded to subround, slightly weathered.		1					
	Sandy GRAVEL; dark greyish brown. Medium dense to loose; saturated; gravel, fine to coarse, subround to subangular, slightly weathered; sand, medium to coarse; groundwater inflow at ~2.0 - 5.0 l/min.		2					
SCHIST	Completely weathered; dark bluish grey; fine fabric, foliation, gently inclined, thinly laminated; SCHIST; extremely weak.							
	Slightly weathered; dark grey; fine fabric, foliation, gently inclined, thinly laminated; strong.		3					
	End of Investigation: 3.1m Refusal							

Investigation Information

Depth	3.1m	**Logged By**	JW	**Start Date**	23/08/19
Termination	)GY ESTABL	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP117 (Lot 18)

INVESTIGATION LOG

TP118 (Lot 19)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS T				
ALLUVIAL DEPOSITS	Sandy GRAVEL; dark greyish brown. Medium dense to loose; saturated; gravel, fine to coarse, subround to subangular, slightly weathered; sand, medium to coarse; groundwater inflow at ~2.0 - 5.0 l/min.		1					
GLACIAL TILL	Gravelly cobbly SAND, with trace silt; grey. Very dense; dry; sand, fine; gravel, fine to coarse, rounded to subround, unweathered, cobbles, rounded to subround, up to 200mm, slightly weathered; rare angular cobbles of schist.		2					
	End of Investigation: 2.8m Refusal		3					

Investigation Information

Depth	2.8m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP118 (Lot 19)

INVESTIGATION LOG

TP119 (Lot 20)

GCL Ground Consulting Ltd

Report Ref	
R5119-2A	

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location
Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T TS				
COLLUVIUM	SILT, with trace sand and gravel; greyish brown. Stiff; dry; sand, coarse, gravel, fine, subround to subangular, slightly weathered.							
ALLUVIAL DEPOSITS	Sandy GRAVEL, with some cobbles; dark greyish brown. Medium dense to loose; saturated; gravel, fine to coarse, subround to subangular, slightly weathered; sand, medium to coarse; cobbles, rounded, up to 200mm, unweathered; groundwater inflow at ~1.0 - 3.0 l/min, failing into test pit.		1 2					
GLACIAL DEPOSITS	Gravelly SAND, with some cobbles; greenish grey. Dense to very dense; dry; sand, fine; gravel, fine to coarse, rounded, slightly weathered; cobbles, rounded, up to 200mm, unweathered.		3					
	End of Investigation: 3m Refusal							

Investigation Information

Depth	3m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP119 (Lot 20)

INVESTIGATION LOG

TP120 (Lot X)

Report Ref R5119-2A

Client	Coordinates (NZTM2000)	Elevation	Location Method (±2m)
Wakatipu Investments Ltd			MAP

Location Lot 1 DP518523, Little Road, Dalefield

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength (Vane No: / Vane Size: 0mm) 50 100 150 200	Values (kPa)	Scala Penetrometer (Blows / 100mm) 2 4 6 8 10 12 14 16 18	Groundwater
TOPSOIL				TS T				
LOESS	SILT, with trace clay and sand; greyish brown. Firm; dry; sand, coarse.							
GLACIAL TILL	Gravelly SAND; orange brown. Dense; dry; sand, medium to coarse; gravel, fine to coarse, subround to subangular, slightly weathered.							
	Gravelly SAND, with some cobbles; brownish grey. Dense to very dense; moist; sand, medium to coarse; gravel, fine to coarse, subround to rounded, slightly weathered; cobbles, rounded, up to 200mm, slightly weathered; minor seepage in places.		1 2 3					
	End of Investigation: 3.3m Refusal							

Investigation Information

Depth	3.3m	**Logged By**	JW	**Start Date**	23/08/19
Termination	Refusal	**Checked By**		**End Date**	23/08/19
Machine Used		**Test Pit Dimensions**		**Logged Date**	23/08/19

Investigation Type

- ☐ Hand Auger (50mm)
- ☑ Test Pit
- ☐ Scala Penetrometer

Water Legend

- Standing Water Level
- Out flow
- In flow

Log ref: R5119-2A TP120 (Lot X)